# **Reconstruction to: Beacon High School**

## **Beacon City School District** Beacon, NY

### **Drawing List**

GENERAL G001 Title Sheet G100 Symbols and Abbreviations

### **Beacon High School**

CODE COMPLIANCE FG350 Code Compliance Review FG351 Code Compliance First Floor Plan FG352 Code Compliance 2nd Floor Plan

CIVIL

FC100 Site Demolition and Layout Plans and Site Details

MECHANICAL

FM050 First Floor Key Plan

FM100 First Floor, Roof and Yard Demolition Plan

- FM130 Boiler Room and Equipment Yard Piping Plan
- FM200 Hot and Chilled Water Boiler Room Piping Schematics

FM500 Details FM600 Schedules and Controls

ELECTRICAL

FE050 First Floor Key Plan FE100 First Floor and Yard Demolition Plan FE160 First Floor Power Plan FE500 Details



 TETRATECH
 Architecture
 Engineering
 Planning

 ARCHITECTS & ENGINEERS
 J
 J
 High
 Performance
 Facilities



# 13-02-00-01-0-020-013

**BEACON HIGH SCHOOL** 

Drawn By: Date: 03/28/2025 TTAE Project No.: 279180-24002.1



Site Symbols	Architectural Symbols	Structural Sym	nbols			Mechanic	al Symbols			E	Electrical and Tec	hnology Symbols	St
<ul> <li>+ 83.36 SPOT ELEVATION</li> <li>+ 99.50 TC TOP OF CURB ELEVATION</li> <li>+ 99.00 BC BOTTOM OF CURB ELEVATION</li> </ul>	EXISTING TO REMAIN		ES AREA IS G	TAG NO.EQUIPMENT TAG (NON-MOTVALUECFM, GPM, CAPACITY	ORIZED) — ATV — BBD — BBD — OWO	ATMOSPHERIC VENT     BOILER BLOW DOWN	DUPLEX BASK			# LU # #	UMINAIRE* DENOTES TYPE :MERGENCY LUMINAIRE*	CABLE TRAY - LADDER TYPE CABLE TRAY - BASKET TYPE	<ul> <li>✓</li> <li>2</li> <li>A12</li> </ul>
+ 83.36 EXISTING SPOT ELEVATION 		INDICATI DEPRES DECESS	ES SLAB IS SED OR	TAG NO. EQUIPMENT TAG (MOTORIZA	ED)	CHILLED WATER SUPPLY     CHILLED WATER RETURN     CHILLED GLYCOL SUPPLY		(DOMN)	HOSE BIBB		DENOTES TYPE	SR SURFACE RACEWAY TYPE AS DESCRIBED ON DWGS.	
136 EXISTING CONTOUR $ TB-1 SOIL TEST BORING$			FTG ELEVATION		CGS CGR	CHILLED GLYCOL SUPPLY     CHILLED GLYCOL RETURN			LV LABORATORY VENT	# # ₽# #	MERGENCY LUMINIARE* DENOTES TYPE	S CEILING MOUNT SPEAKER S WALL MOUNT SPEAKER	
TP-1 TEST PIT LOCATION		FROM D/ [-4'-0] [-3'-0] CONTINU	ATUM JOUS FTG	NECK SZ. REGISTER, GRILLE, DIFFUSE	R C	CONDENSATE DRAIN     CONDENSER WATER SUPPLY			LABORATORY WASTE     LABORATORY WASTE (BURIED		OMBINATION EXIT/EMERGENCY LUMINAIRE* DENOTES TYPE		
TREE OR SHRUB	NEW WORK IN EXISTING (MATERIAL INDICATION VARIES)			FIN TUBE RADIATION	CR GS	CONDENSER WATER RETURN     GLYCOL SUPPLY	BALANCING VA				MERGENCY LUMINAIRE* W/BATTERY PACK DENOTES TYPE XIT LIGHT*- CEILING MOUNTED	P PROGRAM BELL	
		<-1'-8> FOUNDATI	ION WALL ET	ENC. FT-IN ELEM. FT-IN ELEM. FT-IN W/U: WALL TO WALL,	GR HGS	GLYCOL RETURN     HOT GLYCOL SUPPLY	BUTTERFLY VA		- SAN - SANITARY (BURIED)	$\begin{bmatrix} \bigotimes_{\#} & \#\\ \hline & & \# \end{bmatrix}$	DENOTES TYPE XIT LIGHT* -WALL MOUNTED	FB FLOOR BOX DR DOOR RELEASE	R/
ASPHALT PAVING OR TOP COURSE	NEW WORK (MATERIAL INDICATION VARIES)	ELEVATIO STEPPED	N FROM DATUM	GPM W/D: WALL TO DOOR, ETC	2 HGR	HOT GLYCOL RETURN     HEAT PUMP SUPPLY	CHECK VALVE		INDIRECT WASTE     STORM (ABOVE GRADE)	⊥# " *, R	ALL LUMINAIRE SYMBOLS NOT SHOWN, EFER TO LUMIANIRE SCHEDULE	SECURITY ALARM HORN	2 A112
HEAVY-DUTY ASPHALT PAVING	CMU AND BRICK CAVITY WALL		S PIER TYPE	SUPPLY DUCT	HPWR	<ul> <li>HEAT PUMP RETURN</li> <li>HOT WATER SUPPLY</li> </ul>		ROL, VALVE	ST STORM (BURIED)		AYLIGHT SENSOR REA OF RESCUE LIGHT FIXTURE DENOTES TYPE	SECORITY SENSOR GB - GLASS BREAK MD - MOTION DETECTOR SD - SOUND DETECTOR	
C REMOVE AND REPLACE ASPHALT PAVING	CMU WALL	P1 (-8) - TOP OF PI	IER ELEVATION TUM	RETURN DUCT	HWR	HOT WATER RETURN	(INSTALL STEN 3-WAY CONTR THERMOSTATI	M VERTICAL) ROL, TIC MIXING	FFIRE MAIN	# " ●—◯ P <sup>0</sup> # #	OLE MOUNTED SITE LIGHT DENOTES TYPE	DC SECURITY DOOR CONTACT SECURITY SYSTEM KEYPAD	$ \begin{array}{c c}                                    $
	GYPSUM BOARD PARTITION W/ METAL STUD WALL			EXHAUST DUCT - NEGATIVE	PRESSURE HCR	HOT/CHILLED WATER RETURN		LECTRIC) ON/OFF	-SPRK-FIRE SPRINKLER	\$	IGHT SWITCH (LINE VOLTAGE) K - KEY OPERATED 3 - 3 WAY	# # DENOTES DESIGNATION     SECURITY CAMERA     # DENOTES DESIGNATION	
		F4 [-3'-0] - TOP OF FC ELEVATIO	DOTING N FROM DATUM		SIZE OF LPC	LOW PRESSURE CONDENSATE			EXISTING HOT WATER EXG HOT WATER RETURN	Δ	4 - 4 WAY	REX SECURITY REQUEST TO EXIT SENSOR	PF
CURBING TO REMAIN		INDICATES REFER TO SCHEDULI	S FOOTING TYPE D FOOTING E		LPWC MU	<ul> <li>EOW FRESSORE STEAM WET (FLOODED) CONDENSATE</li> <li>MECHANICAL EQUIPMENT MAKE-</li> </ul>				\$ L0	OW VOLTAGE CONTROL	PS LOW-VOLTAGE POWER SUPPLY # DENOTES DESIGNATION	
CURBING TO BE REMOVED				RECTANGULAR ELBOW	———— RS ————	UP COLD WATER(NON-POTABLE) — REFRIGERANT SUCTION		VALVE		OS O VS V	CCUPANCY SENSOR ACANCY SENSOR	ELH     SECORITY ELECTRIC       LOCKING HARDWARE       DOOR INTERCOM CALL STATION	
$\begin{array}{cccc} \times & \times & \times & & \text{FENCING TO REMAIN} \\ \times & \times & \times & & \text{FENCING TO BE REMOVED} \end{array}$	RELOCATED EQUIPMENT	INDICATI ROOF OF COORD	ES A FRAMED R FLOOR OPNG SIZE AND		RL		GATE VALVE		HOT WATER	PC PI	HOTO CELL IGHTING TOUCHSCREEN CONTROL	<pre># # DENOTES DESIGNATION # ACCESS CONTROL CARD READER # DENOTES DESIGNATION</pre>	
SILT FENCING					PD	PUMP DISCHARGE	OS&Y GATE V/ → ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	ALVE	110° HW 110° HOT WATER		ARBON MONOXIDE DETECTOR	ADA ADA PUSH BUTTON MON SECURITY CCTV MONITOR	
— — — HAY BALES	(P3.8) PARTITION TYPE	INDICATION OPNG IS RD = RO	ES FRAMED FOR: OF DRAIN		EXG	REMOVE EXG. DUCT,     PIPING, EQUIPMENT     EXISTING HVAC PIPE				F F F W	IRE ALARM BELL- //STROBE W/0 STROBE	DB SECURITY DURESS BUTTON	SAND
ш ТЕМРОRARY TREE PROTECTION	MGM BOARD UNIT SYMBOL	SL = SKY SH = SM AH = AC	YLIGHT OKE HATCH CESS HATCH	RADIUS ELBOW W/ TURNING/SPLITTER VANES		— BOTTOM PIPE CONNECTION			TW-TW-TEMPERED (HOT) WATER	F F W	IRE ALARM HORN- I/STROBE W/0 STROBE	EXISTING PANEL TO REPLACE	ш NEW ASP TOP COU
	FINISH CHANGE			RADIUS ELBOW		<ul><li>TOP PIPE CONNECTION</li><li>PIPE ELBOW DOWN</li></ul>		TIC STEAM TRAP	SWSOFT WATER	B→ B	MOKE DETECTOR EAM SMOKE DETECTOR	SPD         SURGE PROTECTION DEVICE	REMOVE
UTILITY POLE TO REMAIN       UTILITY POLE TO BE REMOVED	ROOF SYMBOLS	ELEVATI DRAWIN			0 Ī		B BUCKET STEA	AM TRAP	DE DEIONIZED WATER	$\langle S \rangle_{D}$ D $\langle H \rangle$ R	UCT SMOKE DETECTOR ATE OF RISE HEAT DETECTOR		
$ \begin{array}{c} & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & $	AREA OF TAPERED INSULATION		R OF SHEAR OVER FULL		رــــــــــــــــــــــــــــــــــــ	PIPE DOWN WITH CLEANOUT AT BASE     PIPE DOWN WITH SHUTOFF VALVE		OR	GAS PROPANE		IXED HEAT DETECTOR	LABEL     NEW MOTOR	FINISHED
	ROOF DRAIN INSERT IN NEW FACTORY-TAPERED SUMP	(-6) W8X15 [14] (GIR) → INDICAT 21K 0.7 21K AT ADJ 0	ES TOP OF BEAM GIRDER ELEV	ACOUSTICALLY LINED DUCTWORK	c	CAP OR PLUG	CIRCULATING		D DIESEL FUEL	DH M	IRE ALARM STROBE LIGHT IAGNETIC DOOR HOLDER	PBPULL BOXJJUNCTION BOX	
CATCH BASIN  CATCH BASIN  STORM/SANITARY MANHOLE			ACTION- KIPS	ACOUSTICALLY LINED		FLANGE CONNECTION	CLEANOUT PL	UG	U     UNLEADED GASOLINE     EXG FUEL OIL SUPPLY	A FI A FI	RE ALARM / VOICE NOTIFICATION PEAKER (WALL) IRE ALARM / VOICE NOTIFICATION PEAKER (CEILING)	H HAND/HAIR DRYER	
	TAPERED 1/4"/FT DIRECTION OF DOWNWARD SLOPE AND DEGREE OF SLOPE OF TAPERED INSULATION (MINIMUM 1/8"/FT, TYP UNO)	DEFLEC APPROX	TION (INCHES) ( W/ WET CONC			<ul> <li>PIPING REDUCER (CONCENTRIC)</li> <li>PIPING REDUCER (ECCENTRIC)</li> </ul>	CODP O CLEANOUT DE	ECK PLATE	FOS		IRE ALARM / VOICE NOTIFICATION PEAKER STROBE (CEILING)		KXXXXXX STRUCTU
- TO REMAIN ORYWELL W/ GRATE	OR OR DIRECTION OF DOWNWARD SLOPE OF		DESIGNATION HEDULE 'ES LINTEL	~+-	X	PIPE ANCHOR PIPE GUIDE	∑F ►		FOR FUEL OIL RETURN	A SI	PEAKER STROBE (WALL)	<ul> <li></li></ul>	- ACOUSTI
DRYWELL W/ SOLID COVER TO GRADE	(MINIMUM 1/4"/FT, TYP UNO) SLOPE DIRECTION OF DOWNWARD SLOPE OF					- EXPANSION COMPENSATOR	BS BURNER SHUT	T OFF	FOV EXG FUEL OIL VENT	R R	ELAY	DUPLEX FLOOR RECEPTACLE	
O DRYWELL W/ COVER BURIED	STRU ROLLED OR SLOPED STRUCTURE +X" TOTAL THICKNESS OF INSULATION			III FD FIRE DAMPER		- EXPANSION JOINT - FLEX CONNECTOR	(H) HUMIDISTAT		MU-MU-MAKE-UP COLD WATER (NON-POTABLE)	FS SI TS SI	PRINKLER FLOW SWITCH PRINKLER TAMPER SWITCH	■       TELE./DATA POWER POLE         □       NON-FUSED DISCONNECT SWITCH	ပ PLASTER WALL BO
STSTORM LINE WITH HEADWALL	+X" FLAT TOTAL THICKNESS OF AREA OF FLAT INSULATION		ES MOMENT		][		(H) S HUMIDITY SEN	NSOR		FAA FI FACP FI	IRE ALARM ANNUNCIATOR PANEL IRE ALARM CONTROL PANEL	FUSED DISCONNECT SWITCH       MOTOR STARTER	
	RS-X DESIGNATES ROOF SYSTEM TYPE		OLUMN	III FSD FIRE AND SMOKE DAMPER	[] [			NSOR W/ GUARD	ROOF DRAIN REPLACING EXG	FAGA FI	IRE ALARM GRAPHIC ANNUNCIATOR ONTROL STATION-	COMBINATION STARTER	
STORM LINE WITH END SECTION	WALKWAY PAD		TES SHEAR WALL CTION TO BEAM			PRESSURE SWITCH	PRESSURE SE	ENSOR			YPE AS DESCRIBED ON DWGS. OUSE LIGHTING CONTROL STATION	CB ENCLOSED CIRCUIT BREAKER	A
ST STORM PIPE TO REMAIN	SMOKE VENT OR ROOF HATCH	INDICAT TOP OF	ES BM TO HAVE WALL CLIPS		<u>רן זי</u> ס יץ דף	PRESSURE GAUGE	SG PRESSURE SE	ENSOR W/ GUARD			IMMER CONTROL OUTLET REA OF RESCUE STATION	EQUIPMENT CONNECTION     EMERGENCY OFF BUTTON	т
	● OR ○ PIPE PENETRATION		ESIGNATION	BACKDRAFT DAMPER		MANUAL AIR VENT	T THERMOSTAT		TO BE REMOVED		IICROPHONE JACK PEAKER JACK	T# TRANSFORMER # DENOTES DESIGNATION REFER TO RISER DIAGRAM	
UNDERDRAIN TO REMAIN								W/ GUARD	PLUMBING FIXTURE		UDITORIUM INTERCOM	P UTILITY POLE	B
- <u>SAN</u> SANITARY LINE SAN SANITARY LINE TO REMAIN	ROOFTOP EQUIPMENT ON CURB, TYP (SHAPE AND SIZE VARY)		AL BRIDGING					RE SENSOR	FLOOR DRAINS		LOCK XISTING TELEPHONE	UT     UNDERGROUND TELEPHONE       T     OVERHEAD TELEPHONE	
G GAS LINE	REFLECTED CEILING SYMBOLS	MASONF	RY LOAD G WALL	> DUCT AIR FLOW			CO2 CO2 SENSOR		WALL HYDRANT		ELEPHONE OUTLET V - WALL MOUNT AT 54" AFF	UNDERGROUND TELEVISION     OVERHEAD TELEVISION	N.T
_ G → G → GAS LINE TO REMAIN	A 0'-0" BOTTOM OF CEILING AFF CEILING MATERIAL	SHEAR V	WALL	EXISTING MECHANICAL		- ORIFICE METER		NNECTION	<ul><li>FIRE HOSE CABINET</li><li>UPRIGHT SPRINKLER HEAD</li></ul>		C - INTERCOM SOUND SYSTEM HAND SET BLANK - WALL MOUNT AT 16" AFF LOOR TELEPHONE OUTLET	UL UNDERGROUND LIGHTING UVERHEAD LIGHTING	S.E.D. Cont
W     WATER LINE       W     WATER LINE TO REMAIN	CEILING HUNG UNIT VENTILATOR OR CEILING HUNG FAN COIL UNIT		EARING WALL					MENT CONNECTION	<ul> <li>PENDANT SPRINKLER HEAD</li> <li>CONCEALED SPRINKLER HEAD</li> </ul>		ITERCOM CALL SWITCH ELEVISION OUTLET	URDERGROUND ELECTRIC UNDERGROUND ELECTRIC OVERHEAD ELECTRIC	
	CEILING RETURN/EXHAUST GRILLE	FIREWAI	LL			WYE STRAINER     WYE STRAINER WITH BLOW DOWN VA		IOXIDE SENSOR	RECESSED SPRINKLER HEAD				
GATE VALVE	CEILING SUPPLY DIFFUSER/GRILLE	(SW1) WALL TY	/PE		·>	— DIRECTION OF FLOW	NG NATURAL GAS	S SENSOR	▼ SIDEWALL SPRINKLER HEAD		Symbol	Tags       AC = ABOVE CEILING         AUX = AUXILLARY CONTACT	Rev. No.: Date:
- UNIVERSAL HANDICAP SYMBOL				ACCESS CLEARANCE	M	→ PIPE BREAK → WATER METER		ANE SENSOR		[F] = REM	IOVE EXISTING	WP = WEATHERPROOF WG = WIRE GUARD A = ABOVE (CASEWORK)	
REMOVAL										$F^{E} = EXIS$	TING TO REMAIN	B = BELOW (CASEWORK) H = HORIZONTAL TK = TOE KICK	
RIP-RAP										F <sup>RE</sup> = REP		TS = TEACHER STATION USB = UNIVERSAL SERIAL BUS	
ABCXBOTTOM CHA/SAIR SEPARATORBDBOARDAACASBESTOS ABATEMENTBDDBACKDRAFT	ORD EXTENSIONCHANCHANNELDCCHUVCEILING HUNG UNITDDCDAMPERVENTILATORDE	DIRECT CURRENT ENC ENCL DIRECT DIGITAL CONTROL EOD EDGE DELONIZED WATER EOS EDGE	LOSURE E OF DECK E OF SLAB	FOSFUEL OIL SUPPLYHPFOTFLAT ON TOPFPFIREPROOF (ING)HPC	HORSEPOWER, HIGH PRESSURE, HEAT PUMP HIGH PERFORMANCE	LBL LABEL LBP LEAD BASED PAINT LC LANDSCAPE CONTRACTOR	MIR MIRROR MISC MISCELLANEOUS MO MASONRY OPENING	PL PLATE, PROPERTY LINE PLAM PLASTIC LAMINATE PLAS PLASTER, PLASTIC	REFRREFRIGERATORSHRREGREGISTERSHTREINFREINFORCE (D) (ING)SHT	Shower, She Sheet Ig Sheathing	AR WALL TG TOP GRILLE, TONG GROOVE THK THICKNESS	GUE AND VNR VENEER VOL VOLUME VTR VENT THROUGH ROOF	
CONTRACTOR     BF     BACK FLOW       AAD     AUTOMATIC AIR DAMPER     BG     BOTTOM GR       ✓     AB     ANCHOR BOLT, AIR BARRIER     BIT     BITUMINOUS	PREVENTER CI CAST IRON DEG ILLE CIP CAST IN PLACE DEMO GIRC CIRCUMFERENCE DEP	DEGREES EQ EQUA DEMOLISH EQC EQUI DEPRESS (ED) (ION) EQUIP EQUI	AL, EQUIVALENT IPMENT CONTRACTOR IPMENT	FPM FEET PER MINUTE FR FRAME, FLOOR REGISTER HPL FRA FRESH AIR HPF	HIGH PRESSURE LAMINATE HEAT PUMP LOOP WATER RETURN	(SITE) LCC LEAD COATED COPPER LDR LEADER	MOD MODULE (OR), MODEL MP MULTICOLOR WALL COATING MR MOP RECEPTOR	PLF POUNDS PER LINEAR FOOT PLYWD PLYWOOD PM PLUGMOLD	REMREMOVEDSIMREQDREQUIREDSKRESILRESILIENTSL	SIMILAR SINK SOUND LINED,	, SKYLIGHT THR THRESHOLD TME TO MATCH EXISTIN TMV THERMOSTATIC M	VWC VINYL WALL COVERING NG W IIXING W WEST, WIDTH, WIDE, WAS	complex world CI F
AC AIR CONDITIONING, BLDG BUILDING ALTERNATING CURRENT BLK BLOCK ACCMP ASPHALT COATED CORR BLKG BLOCKING METAL PIPE	CJ CONTROL JOINT DET CL CENTER LINE DF CLG CEILING DH	DETAIL (ED) ERU ENEF DRINKING FOUNTAIN ERV ENEF DOUBLE HUNG VENT	RGY RECOVERY UNIT RGY RECOVERY FILATION	FRC     FIRE RESISTANT COATING       FRP     FIBERGLASS REINFORCED       PANEL       EDT     FIDE RETADDANT	B HEAT PUMP LOOP WATER SUPPLY HANDRAIL, HOUR	LEV LEVEL LF LINEAR FOOT LFMC LIQUID-TIGHT FLEXIBLE METAL CONDUIT	MT MOUNT MTD MOUNTED MTG MOUNTING	PNL PANEL POC POINT OF CURVATURE, POINT OF CONNECTION	RET       RETAINING, RETURN       SLC         REV       REVISION, REVISED, REVEAL       SLV         RF       RUBBER FLOORING       SLVF	SILLCOCK SLEEVE STORM LOUVE	TOD TOP OF DUCT TOF TOP OF FASCIA, TO FOOTING	OP OF W/O WITH	
ACM ASBESTOS CONTAINING BM BEAM MATERIAL BO BY OTHERS ACT ACOUSTICAL CEILING TILE BOD BOTTOM OF	CLKG CAULKING DHU CLL CONTRACT LIMIT LINE DI DUCT CLR CLEAR (ING) (ENCE)	DEHUMIDIFICATION UNIT ES EXPO DROP INLET, DUCTILE IRON, EXPO DISTILLED WATER ESF ELAS	DSED SURFACE, DSED STRUCTURE STIC SHEET FLASHING STIC SHEET MEMBRANE	FRI     FIRE RETARDANT     HT       FS     FLOOR SINK     HT       FSD     FIRE AND SMOKE DAMPER     HT       FT     FEET FLOOP TREATMENT     HV	HEIGHT HEATING HIGH VOLTAGE	LFNC LIQUID-TIGHT FLEXIBLE NONMETALLIC CONDUIT LG LENGTH, LONG	MTH MARBLE THRESHOLD MTL METAL MTR METER	POL POLISHED POS POSITIVE POT POINT OF TANGENCY	RFG     ROOFING     SMH       RFH     ROOF HATCH     SOG       RFM     RECESSED FLOOR MAT     SP	SANITARY MAN SLAB ON GRAI STATIC PRESS	NHOLE TOL TOLERANCE DE TOM TOP OF MASONRY SURE, TOP TOP OF PIPE, TOP	WB WET BULB WC WATER CLOSET, WALL COVERING OF PIER WD WOOD WOOD FLOORING	Tetra Tech Engi
ACU AIR CONDITIONING UNIT BOF BOTTOM OF AD AREA DRAIN BOS BOTTOM OF ADA AMERICAN DISABILITIES ACT BOT BOTTOM BDI BEARING PI	STEEL CMP CORRUGATED METAL PANEL DIAG CMT CERAMIC MOSAIC TILE DIM	DIAMETER EW EACH DIAGONAL EW EACH DIMENSION EWC ELEC DISPENSER EWT ENTE	H WAY CTRIC WATER COOLER ERING WATER	FTG FOOTING FTR FIN TUBE RADIATION FV FLUSH VALVE	AC HEATING/VENTILATING/AIR CONDITIONING J HEATING AND VENTILATING	LGI LARGE GROUP INSTRUCTION LH LEFT HAND LIN LINEAR	MULL MULLION MVEJ MASONRY VENEER EXPANSION JOINT N	PRE POWER ROOF EXHAUSTER PREP PREPARE (ATION) PRE PREFORMED	RG RETORN GRILLE RGS RIGID GALVANIZED STEEL SPE RH RIGHT HAND SPKI RHC REHEAT COIL SPI	SPECIFICATIO SPRINKLER SPECIAI	N (S) TOS TOP OF STEEL, TO TPART TOILET PARTITION TR TOP REGISTER	OP OF STAIR WDW WINDOW WDWC WINDOW CONTRACTOR WF WASH FOUNTAIN	
ADD     ADDENDUM     BFL     BEARING FL       ADDL     ADDITIONAL     BR     BOTTOM RE       ADDN     ADDITION     BRDG     BRIDGING       ADDN     ADDITION     BRG     BEARING	GISTER CO CLEAN OUT DIST CODP CLEAN OUT DECK PLATE DIV COL COLUMN DL	DISTANCE TEMP DIVISION EXG EXIS DEAD LOAD EXH EXHA	PERATURE TING AUST	G GAS, GLYCOL HW GA GAUGE HW	HOT WATER H HOT WATER HEATER H HOT WATER PLIMP	LKR LOCKER LL LIVE LOAD LP LOW PRESSURE	N NORTH NAT NATURAL NC NORMALLY CLOSED	PROJ PROJECT PS PAINT EXPOSED STRUCTURE/DECK	RI ROUGH-IN SQ RL RAIN LEADER, REFRIGERANT SS LIQUID SST	SQUARE STAINLESS ST STRUCTURAL	TRN TRANSOM TEEL TS TOP OF STAIR STEEL TUBING TV TELEVISION	WG WALL GRILLE, WATER GA WH WALL HUNG, WALL HYDR WHA WATER HAMMER ARREST	JGE ANT OR A CONTRACT OF A CON
ADH ADHESIVE BRK BRICK ADJ ADJACENT BRK BRICK ADR ACCESS DOOR BRSH BRICKSHELF BRZ BRONZE	COMB COMBINATION DN COMP COMPRESS (ED) (ION) (IBLE), DO COMPOSITE DP	DOWN EXP EXPA DITTO EXT EXTE DAMPPROOF (ING) F	ANSION ERIOR, EXTERNAL	GAL GALLON HW GALV GALVANIZED HW GASK GASKET (ED)	R HOT WATER RETURN S HOT WATER SUPPLY	LPC LOW PRESSURE CONDENSATE LPG LIQUID PROPANE GAS	NEC NATIONAL ELECTRIC CODE NEG NEGATIVE NEUT NEUTRALIZATION	PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PT POINT, PORCELAIN TILE	RLGRAIL(ING)STRMROOMSTARMCRIGID METAL CONDUITSTC	STORM, STOR STATION SHOWER TEM	AGE TW TEMPERED WATEI WALL PERATURE TYP TYPICAL	R, TOP OF WI WROUGHT IRON WM WIREMOLD WP WATER PROOFING, WORI	
AESS ARCH EXPOSED STRUCTURAL BY	, BOTTOM OF CONC CONCRETE DPR COND CONDENSATE DR CONN CONNECTION DS	DAMPER F FAHF DOOR, DEEP RIB FA FIRE DOWNSPOUT, DRAINAGE FAI FRES	RENHEIT ALARM SH AIR INTAKE	GCGENERAL CONTRACT (OR)IDGCMUGLAZED CONCRETEIEMASONRY UNITIN	INSIDE DIAMETER INVERT ELEVATION INCHES	LPS LOW PRESSURE STEAM LPT LOW POINT LS LINOLEUM SHEET	NG NATURAL GAS NIC NOT IN CONTRACT NO NUMBER, NORMALLY OPEN	PTD PAINTED PTFR PRESSURE TREATED FIRE RETARDANT	RNCRIGID NONMETALLIC CONDUITRNTRUNNING TRAPROROUGH OPENINGSTD	CONTROLLER, CONCRETE STANDARD	, STAINED U UC UNDERCUT UD UNDERDRAIN	POINT WR WATER REPELLENT, WIDI WALL REGISTER	E RIB,
AHU AIR HANDLING UNIT AIB AIR INFILTRATION BARRIER AI T AI TERNATE BTU BRITISH THE	H CONST CONSTRUCTION CONT CONTINUOUS DT RMAL UNITS CONTR CONTRACT (OR) DTA	STRUCTURE     FCU     FAN       DRAIN TILE     FD     FLOC       DOVETAIL ANCHOR     FDC     FDCI	COOLING UNIT DR DRAIN, FIRE DAMPER FIRE DEPARTMENT	GCO     GRADE CLEANOUT GF     INC       GROUND FACE     INS       GL     GLASS, GLAZING     INT	INCLUDE (D) (ING) INSULATE (D) (ION) INTERIOR	LT LIGHT, LINOLEUM TILE LTL LINTEL LV LABORATORY VENT, LOW VOLTAGE	NOM NOMINAL NRC NOISE REDUCTION COEFFICIENT	PTP PRESSURE TREATED PRESERVATIVE PVC POLYVINYL CHLORIDE	ROWRIGHT OF WAYSTGRPMREVOLUTIONS PER MINUTESTLRRREMOVE EXISTING ANDSTN	SEATING STEEL STAIN (ED)	UE UNDERGROUND E UG UNDERGROUND UH UNIT HEATER	UECTRIC WS WATER STOP WSCT WAINSCOT WT WEIGHT	Beacon C
ALTE ACOUSTICALLY LINED TRANSFER BOX ALTN ALTERATION BUR BUILT-UP RO	RMAL UNITS PERCOORDCOORDINATEDTLCORRCORRUGATED, CORRIDORDTRDOFINGCOWPCLEAN OUT WALL PLATEDTS	DETAIL CONT DUAL TEMPERATURE RETURN FE FIRE DUAL TEMPERATURE SUPPLY FEC FIRE	EXTINGUISHER EXTINGUISHER CABINET	GND GROUND GPM GALLONS PER MINUTE INV GR GRADE (ING), GLYCOL IPS RETURN IPS	INVERT IRON PIPE IRON PIPE SIZE	LVR LOUVER LW LABORATORY WASTE LWT LEAVING WATER	NTS NOT TO SCALE O OA OVERALL, OUTSIDE AIR	PVMT PAVEMENT PWE POWER WALL EXHAUSTER Q OF OLIARTZ ELOORING	REPLACE WITH NEW STO RS RUBBER STAIR TREAD/RISER, STRI REFRIGERANT SUCTION SUR	R STORAGE J STRUCTURAL SURFACE	UNF UNFORM UNIF UNIFORM UNO UNLESS NOTED O	THERWISE WWR WELDED WIRE REINFORCEMENT	
≥ ALUM ALUMINUM BW BOTTOM OF AMP AMPERE BWC BACK WATE ANOD ANODIZED C	VVALL     CPVC     CHLORINATED POLY VINYL     DW       R CHECK VALVE     CHLORIDE     DWG       CR     CEILING REGISTER     DWL	DUMBWAITER, DISHWASHER FF FINIS DRAWING FFE FINIS DOWEL FFL FINIS	SH FLOOR ELEVATION SH FLOOR ELEVATION	GS GLYCOL SUPPLY IV GVL GRAVEL J GWB GYPSUM WALL BOARD J	INDIRECT WASTE	TEMPERATURE M MAN MANUAL	OC ON CENTER OD OUTSIDE DIAMETER OH OVERHEAD	QT QUARRY TILE R R RADIUS RETURN	RTU     ROOF TOP HOOD     SUS       RTU     ROOF TOP UNIT     SV       RW     RAW WATER     SW       S     SW	SUSPSUSPEN SHEET VINYL, SWITCH, SOFT	STEAM VENT UT UNDERGROUND T ENED WATER UV UNIT VENTILATOR SHT CAST IRON V	ELEPHONE X XHCI EXTRA HEAVY CAST IRON Y	Reconstru Reconstru
ANT ACID NEUTRALIZATION TANK C CONDUIT, C AP ACCESS PANEL, APPROX, APPROXIMATE(LY) CA COMPRESS	COMMON, CSK COUNTERSINK E CSMT CASEMENT E CD AIR CT COMPLITER TERMINAL	EAST FHC FIRE	DR GRILLE HYDRANT HOSE CABINET	GYP GYPSUM JAN H JB H HEIGHT JC	JANITORS CLOSET JUNCTION BOX JANITORS CLOSET	MAS MASONRY MAT MATERIAL MAU MAKE UP AIR UNIT	OPING OPENING OPP OPPOSITE OPP HD OPPOSITE HAND	REFRIGERANT RA RETURN AIR RAD RADIATION	S SOUTH, SUPPLY, SURGE SYM PROTECTED SYN SA SUPPLY AIR	SYMMETRICAL SYMMETRICAL SYNTHETIC SYSTEM	V VENT, VOLT VAR VARIES, VARIABLE VARN VARNISH	YD YARD DRAIN, YARD	
APC ARCHITECTURAL PRECAST CONCRETE CAB CABINET ARCH ARCHITECT (URAL) ASB ASBESTOS CB CATCH BASI	VISION CTD COATED EB N, CIRCUIT CTOP COUNTER TOP CO	ENTERING AIR TEMPERATURE FIN FINIS EXPANSION BOLT FIXT FIXT ELECTRICAL CONTRACTOR FL FLUS	SH (ED) URE SH	HB HOSE BIB JCT HBD HARD BOARD JT HC HEATING CONTRACT (OR). K	JUNCTION JOINT	MAX MAXIMUM MB MARKER BOARD MBH THOUSAND BTUH	, P PAINT SURFACE(S) INCLUDING SOFFITS PAR PARALI FI	RAF RETURN AIR FAN, RESILIENT ATHLETIC FLOORING RB RESILIENT BASE	SAN SANITARY T SAS SMOOTH ALL SIDES T SC SOLID CORE, SILL COCK.	TREAD, TOP, T TONS, TERRAZ	VAT VINYL ASBESTOS TOILET ROOM, VAV VARIABLE AIR VOL ZZO VB VACUUM BRFAKFI	TILE LUME R, VAPOR	
ASPH ASPHALT ATV ATMOSPHERIC VENT AUD AUDITORIUM AUD AUDITORIUM	HALKBOARD CTR CENTER EC CUIT TELEVISION CU CUBIC FUSER, CUH CABINET UNIT HEATER EF	ENHANCED CONCRETE FLOORING EACH FACE, EXHAUST FAN FLG FLAS	DR DUCT KIBLE SHING	HANDICAP KV HCR HOT/CHILLED RETURN KVA HCS HOT/CHILLED SUPPLY KW	KILOVOLT KILOVOLT AMPERE KILOWATT	MER MEMBER MD MOTORIZED DAMPER ME MECHANICAL EQUIPMENT	PART PARTITION PC PLUMBING CONTRACT (OR), PIGMENTED CONCRETE	KC     ROOFING CONTRACT (OR)       RCA     RECYCLED CONCRETE       AGGREGATE       RCP     PEINEORCED CONCRETE	SEALED CONCRETE TB SCHED SCHEDULE SCT STRUCTURAL CLAY TILE TBD	TOP AND BOT BOARD, TERRA TO BE DETERM	TOM, TACK RETARDER BARRI AZZO BASE VOLLEYBALL MINED VCB VENTED COVE BASE	ER, SE	Symbols a
Z AUTO AUTOMATIC CEM CEMENT AVE AVERAGE CER CERAMIC B CER CERAMIC	CFILING FAN	EXTERIOR INSULATION FLR FLOO SYSTEM FLUOR FLUO EXPANSION JOINT FM FLOO	UK (ING) DRESCENT DR MOUNTED	HD HEAVY DUTY KW HDPE HIGH DENSITY L POLYETHYLENE L HDR HEADER		MEON MECHANICAL (LY) MED MEDIUM MEMB MEMBRANE ME MIXING FALICET	PCC PRECAST CONCRETE PE PORCELAIN ENAMEL PENC PRE-EXISTING	RCU REMOTE CONDENSING UNIT	SD STORM DRAIN, SPLITTER TC DAMPER, SMOKE DAMPER SEC SECTION SE SOLIARE FEET	TEMPERATURI TEMPERED C TELECOMMUN CONTRACTOR	E CONTROL, VCT VINYL COMPOSITE ELEAR, VD VOLUME DAMPER IICATION VERM VERMICULITE R, TOP OF CURB VERTICAL		∠ Drawn By: TTAE
B     BOILER, BRICK, BOTTOM     CFM     CUBIC FEET       BB     BASKETBALL     CFMF     COLD FORM       BBD     BOILER BLOWDOWN     FRAMING	PER MINUTE CWS CHILLED WATER SUPPLY ELEC PER MINUTE CWT CERAMIC WALL TILE ELEM ED METAL D ELEV	FILECTRIC (AL)     FMC     FLEX       1     ELEMENT     FND     FOUN       2     ELEVATION, ELEVATOR     FOB     FREIG       EMERGENICY     FOT     FOT	NDLE METAL CONDUIT NDATION GHT ON BOARD, FLAT ON FOM	HDW HARDWARE LAE HG HOT GLYCOL LAN HIP HIGH IMPACT PANFI	LADDER 1 LAMINATE (D) LEAVING AIR TEMPERATURE	MFR MANUFACTURE (R) MH MAN HOLE MIN MINIMUM	PERF PERFORATE (ION) (ED) PERI PERIMETER PERP PERPENDICI I AP	RD ROOF DRAIN RECEP RECEPTACLE T	SGI SMALL GROUP INSTRUCTION TCX SGT STRUCTURAL GLAZED TILE TDV SH SHELF, SHELVING SMOKE TEL	TOP CHORD E TRIPLE DUTY TELEPHONE	XTENTION VEST VESTIBULE VALVE VIF VERIFY IN FIELD VIN VINVI		Project No.:
BC     BOTTOM OF CURB     CFT     CERAMIC FL       BCU     BLOWER COIL UNIT     CG     CEILING GRI	OOR TILE DB DRY BULB EMT	ELECTRICAL METALLIC FOG FUEL TUBING FOR FUEL	- OIL GAUGE - OIL RETURN	HM HOLLOW METAL LAV HORZ HORIZONTAL LB	2 LAVATORY POUND			REFL REFLECT (ED) (IVE) (OR)	HATCH TEM	P TEMPERATUR	E VIT VITREOUS TILE	I	279180-24
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	13	1	4	15	16	17		
				Electrical and Tee	chnol	ogy Symbols		Sta
	+ + +	CONNECTION TO EXISTING PIPING	#	LUMINAIRE* # DENOTES TYPE		CABLE TRAY - LADDER TYPE	A	
	I N /	PLATE STRAINER		EMERGENCY LUMINAIRE*		CABLE TRAY - BASKET TYPE		A12
	····		#	# DENOTES TYPE	SR	SURFACE RACEWAY TYPE AS DESCRIBED ON DWGS.		FI
	~~ —_CA	COMPRESSED AIR	°_#	LUMINAIRE* # DENOTES TYPE	CI	COMMUNICATION INTERFACE OUTLET	_	1/8
	LV	- LABORATORY VENT	~ " • "	EMERGENCY LUMINIARE*	S	CEILING MOUNT SPEAKER		
	LW-	LABORATORY WASTE	-#		Ś	WALL MOUNT SPEAKER		A112
-	<b>—</b> LW <b>—</b> —	LABORATORY WASTE (BURIED)	<b>▲</b> ▼	# DENOTES TYPE	VC	VOLUME CONTROL		
		VENT	<b>▲</b> *	EMERGENCY LUMINAIRE* W/BATTERY PACK # DENOTES TYPE	H	HORN SPEAKER	В	
		<ul> <li>SANITARY (ABOVE GRADE)</li> </ul>		EXIT LIGHT*- CEILING MOUNTED	P	PROGRAM BELL		
			∞#	# DENOTES TYPE	FB	FLOOR BOX		RAD
				EXIT LIGHT* -WALL MOUNTED # DENOTES TYPE	DR	DOOR RELEASE		
				* ALL LUMINAIRE SYMBOLS NOT SHOWN,	SE	SECURITY ALARM HORN		
			DLS	DAYLIGHT SENSOR				
	SP		AR	AREA OF RESCUE LIGHT FIXTURE	SE -	MD - MOTION DETECTOR SD - SOUND DETECTOR		
	F		#	# DENOTES TYPE POLE MOUNTED SITE LIGHT	DC	SECURITY DOOR CONTACT	ပ	4 A112 2 INTE
			●- <u>,</u> , #	# DENOTES TYPE	KP	SECURITY SYSTEM KEYPAD		3
		EXISTING COLD WATER	\$ 🔨		#	# DENOTES DESIGNATION		
		EXISTING HOT WATER		3 - 3 WAY 4 - 4 WAY		# DENOTES DESIGNATION		
		EXG HOT WATER RETURN	^		REX	SECURITY REQUEST TO EXIT SENSOR		
	110° HW	- EXISTING 110° HOT WATER	\$	LOW VOLTAGE CONTROL	PS "	LOW-VOLTAGE POWER SUPPLY		
	140° HW	EXISTING 140° HOT WATER	TC	TIME CLOCK	#	# DENOTES DESIGNATION		
	180° HW	EXISTING 180° HOT WATER	OS OS	OCCUPANCY SENSOR	ELH	LOCKING HARDWARE	D	
		COLD WATER			IC #	DOOR INTERCOM CALL STATION # DENOTES DESIGNATION		
		HOT WATER			CR	ACCESS CONTROL CARD READER		
		HOT WATER RETURN	CM		ADA	# DENOTES DESIGNATION ADA PUSH BUTTON		EARTH
		• 110° HOT WATER	F		MON	SECURITY CCTV MONITOR	_	
		• 140° HOT WATER		FIRE ALARM BELL-	DB	SECURITY DURESS BUTTON		SAND
		• 180° HOT WATER		W/STROBE W/0 STROBE		EXISTING PANEL TO REMAIN		
	IW	TEMPERED (HOT) WATER	Ĕ Ĕ	FIRE ALARM HORN- W/STROBE W/0 STROBE		EXISTING PANEL TO REPLACE	ш	TOP COURS
		• RAW WATER	$\langle \mathbf{S} \rangle$	SMOKE DETECTOR		NEW PANEL		REMOVE AN
	Svv	• SOFT WATER	<u>⟨B</u> ⟩ <b>→</b>	BEAM SMOKE DETECTOR	SPD	SURGE PROTECTION DEVICE		ASPHALT P
	DE		$\langle \underline{s} \rangle_{D}$	DUCT SMOKE DETECTOR	6	MOTOR		
			$\langle \mathbf{H} \rangle$		LABEL		_	KXXXXXX CONCRETE
	P			FIXED HEAT DETECTOR	9#	SEE SCHEDULE FOR DESCRIPTION		FINISHED W
	D		S		PB	PULL BOX		<u>NANA</u>
	U		(A)	FIRE ALARM / VOICE NOTIFICATION	J	JUNCTION BOX		INSULATION BATT)
	FOS		⊥ (A)	SPEAKER (WALL) FIRE ALARM / VOICE NOTIFICATION	Η	HAND/HAIR DRYER	ш	
	FOS	• FUEL OIL SUPPLY		SPEAKER (CEILING) FIRE ALARM / VOICE NOTIFICATION	φ	SINGLE RECEPTACLE		STRUCTUR
	FOR	EXG FUEL OIL RETURN	(A) 	SPEAKER STROBE (CEILING)	Ψ Φ			METAL, STE
	FOR	FUEL OIL RETURN	A	SPEAKER STROBE (WALL)	₩ Ø	SPECIAL PURPOSE RECEPTACLE	_	
	FOV	· EXG FUEL OIL VENT	Ă	FIRE ALARM / VOICE NOTIFICATION STROBE (WALL)	Ψ	DUPLEX FLOOR RECEPTACLE		ACOUSTICA
	<b> ·</b> FOV <b>·</b> -	• FUEL OIL VENT	R	RELAY	ĈR	CORD REEL		
	MU	MECHANICAL EQUIPMENT MAKE-UP COLD WATER	RTS	REMOTE INDICATOR TEST SWITCH		TELE./DATA POWER POLE		
	I	(NON-POTABLE)	TS	SPRINKLER TAMPER SWITCH		NON-FUSED DISCONNECT SWITCH	G	PLASTER, C
	- <del>(                                    </del>	EXISTING ROOF DRAIN	FAA	FIRE ALARM ANNUNCIATOR PANEL		FUSED DISCONNECT SWITCH		
	-		FACP					
	Ŧ	NUUL DIVAIN REFLACING EAG	FAGA	FIRE ALARM GRAPHIC ANNUNCIATOR	$\square$	COMBINATION STARTER	_	
		ROOF DRAIN	US	TYPE AS DESCRIBED ON DWGS.				
	<b>—</b>	SCUPPER ROOF DRAIN				EQUIPMENT CONNECTION		
	I							



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Structural Loads	Code Compliance Review	General Co
A. <u>ROOF LIVE LOADS</u> PER BCNYS 1607.13 MINIMUM ROOF LIVE LOAD 20 PSF	PROJECT LOCATION: 101 MATTEAWAN RD, BEACON, NY 12508	A. REFER TO COD COMPLIANCE IN
B. <u>RAIN LOADS</u> PER BCNYS 1611 RAIN INTENSITY, i 2.75IN/HR	BOUNDED BY MATTEAWAN RD TO THE SOUTH	<ul> <li>✓</li> <li>B. AT AREAS OF P PENETRATIONS</li> </ul>
RAIN LOAD, R 16 PSF RAIN SURCHARGE LOAD HAS BEEN APPLIED TO AREAS WHERE PC	PROJECT DESCRIPTION:           THIS PROJECT INCLUDES RENOVATION OF APPROXIMATELY 3,752 SF OF MECHANICAL SPACE ON THE FIRST           ONDING OCCRS IN ACCORDANCE WITH           FLOOR OF BEACON HIGH SCHOOL. EXISTING EXTERIOR CHILLERS, INTERIOR BOILERS, AND PUMPS ARE AT	IS NEW OR EXIS
C. <u>SNOW LOADS</u> PER BCNYS 1608	THE END OF THEIR USEFUL LIFE. THESE WILL BE REPLACED WITH NEW AIR COOLED CHILLERS, HIGH EFFICIENCY BOILERS, PUMPS, AND ASSOCIATED PIPING AND ELECTRICAL FEEDS. EXTERIOR BURIED PIPING TO BE DISCONNECTED AND ABANDONED IN PLACE. EXISTING FENCING AND EXTERIOR STRUCTURAL	- REQUIREMENTS REQUIRED TO ( RATINGS INDIC
GROUND SNOW, Pg (FIGURE 1608.2)       30 PSF         FLAT ROOF SNOW LOAD, Pf (ASCE 7)       25.2 PSF         SNOW EXPOSURE FACTOR, Ct       1.0	CONCRETE SLAB TO BE EXTENDED TO SUPPORT NEW LARGER CHILLERS.	DETAILS.
THERMAL FACTOR1.0SLOPE FACTOR. C1.0SNOW LOAD IMPORTANCE FACTOR, Is1.2	WORK GENERALLY CONSISTS OF THE FOLLOWING: ALTERATIONS - LEVEL 2 • REMOVE THE DECOMMISSIONED UNIVERSAL BOILER WORKS, BOILER AND THE SMITH BOILER (AERCO	۵
ADDITIONAL SNOW LOADS HAVE BEEN APPLIED TO AREAS WHERE WITH BCNYS 1608.	E DRIFTING OCCURS IN ACCORDANCE • REPLACE WITH (2) TWO 2-MILLION BTU HIGH EFFICIENCY BOILERS. • REMOVE EXISTING PUMPS AND PROVIDE NEW ENERGY-EFICIENT LAYUT AND ASSOCIATED PUMPS.	
D. <u>WIND LOAD DESIGN CRITERIA</u> PER BCNYS 1609 BASIC DESIGN WIND SPEED (3 SECOND GUST), v 126 MPH	<ul> <li>REPLACE 100-TON AND 400-TON CHILLERS WITH (2) TWO 175-TON AIR COOLED CHILLERS IN EXISTING MECHANICAL YARD.</li> <li>REMOVE OUTDOOR HEAT REJECTION EQUIPMENT (ONE FLUID COOLER AND TWO COOLING TOWERS)</li> </ul>	_
ALLOWABLE STRESS DESIGN WIND SPEED, Vasd 97.6MPF RISK CATEGORY IV EXPOSURE CATEGORY B	<ul> <li>AND ASSOCIATED CONDENSER PIPING AND PUMPS.</li> <li>DISCONNECT AND ABANDON EXISTING BURIED PIPING.</li> <li>REMOVE EXISTING PUMPS AND PROVIDE NEW ENERGY-EFFICIENT LAYOUT AND ASSOCIATED PUMPS.</li> </ul>	
IN TERNAL PRESSURE COEFFICIEN I, GCPi +/- 0.18 E. <u>SEISMIC DESIGN CRITERIA</u> PER BCNYS 1613	ASSOCISATED ELECTRICAL     NEW STRUCTURAL SLAB TO SUPPORT CHILLERS     EXTENSION OF EXISTING SITE FENCEING	O
RISK CATEGORY IV SEISMIC IMPORTANCE FACTOR, Ie 1.50 MAPPED SPECTRAL RESPONSE ACCELERATION	APPLICABLE CODES AND STANDARDS:	
AT SHORT PERIODS, S <sub>s</sub> 23.3%g AT 1 SECOND PERIODS, S <sub>D1</sub> 9.1%g SEISMIC DESIGN CATEGORY C	BASED ON THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE INCLUDING APPLICABLE 2018 ICC CODES AND 2020 BUILDING CODES of NYS, AND ICC A117.1-2017 STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES AND MANUAL OF PLANNING STANDARDS 2022.	Logond
F. <u>SPECIAL LOADS</u> PER BCNYS 1603.1.8 MECHANICAL EQUIPMENT DEAD LOADS	REFER TO PROJECT MANUAL FOR REQUIREMENTS STATED IN "NYCRR 155 REGULATIONS OF THE COMMISSIONER OF EDUCATION".	ALL WALLS, INCLUDIN
CHILLER - 1 10000 LB CHILLER - 2 10000 LB	BUILDING DATA:	OR FLOOR DECK ABC
	BUILDING: BEACON HIGH SCHOOL 101 MATTEAWAN RD, BEACON, NY 12508	
	DESCRIPTION: TWO STORY MASONRY AND REINFORCED CONCRETE BUILDING.	
	YEAR BUILT: 2002 COMPLETION	
	BUILDING AREA: 1ST FLOOR 152,300 SQFT 2ND FLOOR 55,700 SQFT	EXIST
	TOTAL GROSS AREA= 208,000 SQFT	ш 🗘 алтог
	CODE DATA SUMMARY:       USE GROUP:     E : EDUCATION	
	CONSTRUCTION TYPE -	
	EXISTING: IIB FIRE SAFETY: NOT SPRINKLERED	
	WORK AREA:     LOCATION     AREA     % OF TOTAL       1ST FLOOR     3,752 SQFT     2.4%	ш
	PATH OF CODE COMPLIANCE:	_
	2018 IEBC CODES AND 2020 EXISTING BUILDING CODE of NYS 301.1.2 WORK AREA COMPLIANCE METHOD	
	CHAPTER 5 - CLASSIFICATION OF WORK 504 ALTERATION - LEVEL 2 (CHAPTER 8)	U
		т
	UL DESIGN NUMBERS: RESCUE LABEL / SIGNAGE NOTES:	
	BEAMS       UL# S721       1.       REFER TO PLANS FOR RESCUE WINDOW LOCATIONS.         BAR JOISTS       UL# D902         COMPOSITE SLAB       UL# D902	
	COLUMNS UL# X528 1 HR. STUD PARTITIONS UL# U465 1 HR BLOCK PARTITIONS UI # U905	N.T.S
	2 HR. BLOCK PARTITIONS UL# U905	- S.E.D. Contr
$ \begin{pmatrix} 1 \\ \frac{1}{1/64"} = 1'-0" \end{pmatrix} $	1. RATING PROVIDED BY 4" SOLID CONCRETE MASONRY UNITS - DETERMINATION OF EQUIVALENT THICKNESS OF CMU REQUIRED IS BASED ON SECTION 721 PRESCRIPTIVE	
	FIRE RESISTANCE, TABLE 721.1 (2) RATED FIRE RESISTANCE PERIODS FOR VARIOUS WALLS AND PARTITIONS, ITEM NUMBER 3-1.2	
	2. ALL CMU CONSTRUCTION SHALL MEET FIRE RESISTANCE REQUIREMENTS INDICATED IN CHART OF	
	SAME NAME ABOVE, BLOCK TYPE AS REQUIRED TO COMPLY WITH UL DESIGN NUMBERS AND AS REQUIRED TO COMPLY WITH RATED WALLS INDICATED ON CODE	
	COMPLIANCE DRAWINGS. PROVIDE MINIMUM 4" SOLID CMU AT SUCH LOCATIONS <u>REGARDLESS</u> IF NOTED AS SUCH ON PLAN DETAILS.	
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Project No.: 279180-24002.1

Drawn By: ACB





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			<u>Ge</u>	eneral Notes				<u>General Co</u>
			A. B.	DO <u>NOT</u> SCALE DRAV	VINGS TO OBTAIN DIN	IENSIONS. NORK PROPERI Y.	A	A. REFER TO CO COMPLIANCE
			2.	VERIFY ALL EXISTING	CONDITIONS AND DI	MENSIONS IN THE		PENETRATIO RATINGS IDEI IS NEW OR EX
			C.	REFER INCONSISTEN THE WORK IN AFFEC	ICIES TO ARCHITECT TED AREA. DIAGRAMMATICALLY (	PRIOR TO COMMENCING	_	C. ALL CMU CON REQUIREMEN
		$\wedge$	5.	SPACE REQUIREMEN PROPERLY.	ITS AND DIMENSIONS	TO FIT THE WORK		RATINGS INDI DETAILS.
			E.	NOTES SHOWN ON O DRAWINGS.		TO ALL SIMILAR	в	
				HAZARDOUS MATERI ARCHITECT, CONSTR	AL. IF ENCOUNTEREE RUCTION MANAGER A	ND OWNER.		
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				, , ,				Legend ALL WALLS, INCLUE
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								Project No.: 279180-24
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### THESE GENERAL SITE NOTES APPLY TO C-SERIES DRAWINGS. REFER TO SURVEY FOR INFORMATION ON EXISTING FEATURES IF EXISTING FEATURES ARE MISSING, MODIFIED, OBSCURED, OR THERE IS A CONFLICT BETWEEN HOW AN EXISTING FEATURE IS PORTRAYED ON THIS SHEET AND THE SURVEY, THE SURVEY PRIOR TO CONSTRUCTION, LOCATE AND PROMINENTLY MARK THE PROPERTY LINES IN THE FIELD. PROTECT PROPERTY LINE MARKING AND MONUMENTS DURING CONSTRUCTION UNTIL THE SURVEY(S) INCLUDED IN THESE DOCUMENTS ARE PROVIDED FOR INFORMATION ONLY AND ARE THE BASE INFORMATION USED TO PREPARE THE WORK INDICATED ON THESE DRAWINGS. THE DATA INDICATED REGARDING EXISTING CONDITIONS IS NOT INTENDED AS REPRESENTATIONS OR WARRANTIES OF THEIR ACCURACY. BY INCLUSION OF THE SURVEY(S) IN THIS SET OF DOCUMENTS, TETRA TECH AND THE OWNER DO NOT ASSUME RESPONSIBILITY FOR ACCURACY OF THE SURVEY, NOR FOR INTERPRETATIONS OR CONCLUSIONS DRAWN THEREFROM BY THE CONTRACTOR. THE CONTRACTOR SHALL FIELD VERIFY EXISTING FEATURES, CONDITIONS, UTILITIES, PROPERTY LINES AND TOPOGRAPHY PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES WHICH WILL AFFECT THE WORK REQUIRED AS PART OF THE CONTRACT DOCUMENTS SHALL BE IMMEDIATELY REPORTED IN WRITING TO THE ARCHITECT. COMMENCEMENT OF WORK WITHOUT THIS WRITTEN NOTIFICATION SHALL CONSTITUTE CONTRACTOR ACCEPTANCE OF THE EXISTING INFORMATION INDICATED ON THE DRAWINGS AS ACCURATE. NO ADJUSTMENTS TO THE CONTRACT WILL BE MADE FOR THE DISCREPANCIES BROUGHT TO THE OWNER'S ATTENTION AFTER WORK HAS NO ATTEMPT HAS BEEN MADE TO SHOW ALL UNDERGROUND UTILITIES ON THIS DRAWING. CONTACT UNDERGROUND UTILITY LOCATION ORGANIZATION AND LOCAL UTILITY COMPANIES TO VERIFY THE LOCATION OF UTILITIES PRIOR TO EARTHWORK, TRENCHING OR EXCAVATION OPERATIONS. CONTRACT LIMIT LINE SHALL BE TEN FEET OUTSIDE OF LIMITS OF WORK INDICATED ON THESE DRAWINGS AND NOT TO EXTEND BEYOND THE PROPERTY LINE UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL PROVIDE CONSTRUCTION/PROTECTIVE FENCING OR OTHER MEANS NECESSARY TO PROTECT WORK AND TO ENSURE SAFETY OF THE PUBLIC, PEDESTRIANS AND VEHICULAR TRAFFIC DURING CONSTRUCTION. FOR INFORMATION REGARDING SUBSURFACE CONDITIONS AND TEST LOCATIONS, COORDINATE WITH OWNER REGARDING THE AVAILABILITY OF GEOTECHNICAL INFORMATION. . AT EDGE OF ALL NEW PAVING MEETING LAWN, REMOVE EXISTING TURF TO MINIMUM OF 4-FT FROM NEW PAVEMENT EDGE, UNLESS OTHERWISE NOTED. CUT NEAT REMOVAL LINE AND SCARIFY EXISTING GRADE. PROVIDE TAMPED TOPSOIL TO BRING EXISTING GRADE FLUSH WITH NEW PAVING. SLOPE LAWN AWAY FROM PAVING TO PREVENT PONDING. FINE GRADE, FERTILIZE, SEED AND MULCH IN ACCORDANCE WITH THE General Tank Removal Notes REFER TO SPECIFICATION SECTION 02 65 00- UNDERGROUND STORAGE TANK PERMANENT CLOSURE FOR INFORMATION REGARDING TANK REMOVAL AND ASSOCIATED TESTING. S.E.D. Control No. 13-02-00-04-0-020-xx CLEAR SOLUTIONS Pamele D. Hamel Reg. Expires: 03/31/2027 **TETRA TECH ARCHITECTS & ENGINEERS** Beacon City School District Beacon City High School Site Demolition and Layout Plans and Drawing No.: Date: 12/--/2024

FC100









- Reconstruction to: Beacon High School
- **Piping Schematics**





_	1 2 3 4 5 6 7 8	9 10
	HEAT EXCHANGER (HX) SCHEDULE	
A	HOT SIDE HOT SIDE HEATED SIDE	
_	DWGCAPACITYCAPACITYImage: ConvectionWPDImage: ConvectionWPDImage: ConvectionWPDLABELLOCATIONMODEL(MBH)MEDIUMGPM(F)(F)SIZE (IN)(FT HD)MEDIUMGPM(F)SIZE (IN)(FT HD)NOTESHX-1BOILER ROOMBPDW422-78717WATER2915010021.3WATER165014020.431, 2NOTES:	P-1AMECH F302BASE MOUNTED END SUP-1BMECH F302BASE MOUNTED END SUP-1CMECH F302BASE MOUNTED END SU
	<ol> <li>DESIGN MAKE: BELL &amp; GOSSET</li> <li>PROVIDE DOUBLE WALL ASME CONSTRUCTION FOR DOMESTIC WATER.</li> </ol>	P-2AMECH F302BASE MOUNTED END SUP-2BMECH F302BASE MOUNTED END SUP-2CMECH F302BASE MOUNTED END SUP-3MECH F302IN-LINE CENTRIFUG.
В	BOILER SCHEDULE	P-4     MECH F302     IN-LINE CIRCULATO       NOTES:     1.     DESIGN BASIS: BELL & GOSSETT       2.     PROVIDE SUCTION DIFFUSERS WITH FLUSH
_	DWG       MODEL       MIN. INPUT       MAX. INPUT       OUTPUT       EFFICIENCY       EWT       LWT       (MIN./MAX.       DROP @170         LABEL       LOCATION       (MBH)       (MBH)       (MBH)       (MBH)       (150-180°F)       (°F)       (°F)       GPM)       GPM (PSI)       VOLTAGE       PHASE       FLA       NOTES         B-1       MECH F320       BMK 3000       200       3000       2880       87       150       180       25/350       2       460       3       5       1.2.3.4.5	
	B-2       MECH F320       BMK 3000       200       3000       2880       87       150       180       25/350       2       460       3       5       1,2,3,4,5         NOTES:         1.       BASIS OF DESIGN: AERCO       3.       REFER TO SPECIFICATION FOR MINIMUM BOILER EFFICIENCIES.       5.       PROVIDE CONDENSATE NEUTRALIZING TANK.         2       PROVIDE BAS-BOILER INTERFACE       4       PROVIDE WITH MANUFACTURERS STANDARD DISCONNECT SWITCH       5.       PROVIDE CONDENSATE NEUTRALIZING TANK.	
U		
_	AIR SEPARATOR SCHEDULE         MAX       MAX.         PRESS.       TEMP.         CONNECT.       BODY         WEIGHT	
	LABEL       LOCATION       SYSTEM SERVED       MODEL       (PSI)       (°F)       (GPM)       (FT. HD)       COEF.       (IN. NPT)       CONST.       (LB)       NOTES         AS-1       MECH F320       HOT WATER LOOP       R-8F       120       350       1000       2.2       1020       8"       STEEL       460       1,2,3         NOTES:       1       BASIS OF DESIGN: BELL & GOSSETT       3       STAMPED AND ASME RATED       STAMPED AND ASME RATED	
D	2. PROVIDE HIGH CAPACITY AIR VENT.	
_	MAXIMUM LEVEL SOUND SCHEDULE         SOUND READING       SOUND POWER	DWG     CA       LABEL     LOCATION     MODEL     (TON       CH-1     EXTERIOR PAD     AGZ014F     17       CH-2     EXTERIOR PAD     AGZ014F     17
	UNIT TYPE       LOCATION       63 HZ       125 HZ       250 HZ       500 HZ       1000 HZ       2000 HZ       4000 HZ       8000 HZ       NOTES         AIR-COOLED CHILLER       AT UNIT, AT 30 FEET       77, 50       81, 54       85, 58       93, 66       91, 64       92, 65       84, 57       80, 53       1         NOTES:       1       SOUND DATA RATED IN ACCORDANCE WITH AHRI STANDARD 370       370	NOTES:         1.       DESIGN MAKE: DAIKIN         2.       PROVIDE PAINT OVER G-90 HOT DIPPED G         3.       REFER TO MAXIMUM LEVEL SOUND SCHEI
Ш		4. PROVIDE AN INSULATED EVAPORATOR HX
_		
L	BS     AI     AI     TS     TS     AI-ST     TS     TS     TS       BOILER     I     I     I     I     I     I     I     I       BOILER     I     I     I     I     I     I     I       BOIL     I <td< th=""><th></th></td<>	
	SWITCH CO INTO TANKS TANKS TANKS (TYP. FOR 2) CO SENSOR NAT. GAS SENSOR BOILER ROOM SPACE OUTSIDE AIR TEMPERATURE TEMPERATURE TEMPERATURE	
_		-0
ი		
		COM LOCATE WHERE INDICATED ON FM050 (TYP. 2) AI- $\Delta P$
_	KWH     CV>600     KWH     CV>600     KWH     CV>600     A     CV>600     A     CV>600     A </th <th>Al-ST-P-1C</th>	Al-ST-P-1C
т	%     % <th></th>	
		нwsz0[,
_	HEATING PLANT CONTROL	
_	BOILER CONTROL:       BOILER / BUILDING HEATING WATER LOOP SUPPLY TEMPERATURE CONTROL:         1.       THE EMCS SHALL PROVIDE FUNCTIONAL CONTROL OF THE BOILER SYSTEM.         1.       VARY SUPPLY HEATING WATER TEMPERATURE SETPOINT INVERSELY WITH OUTDOOR IN	AIR TEMPERATURE.
_	<ul> <li>A. THE BOILER SYSTEM ENABLE INSTRUCTION SHALL BE MANUALLY INPUT FROM THE OWS. THEREAFTER, THE BOILER SYSTEM</li> <li>A. SUPPLY TEMPERATURE SHALL VARY INVERSELY WITH OUTDOOR AIR TEMPERATUR</li> <li>SHALL FUNCTION AUTOMATICALLY AS CONTROLLED BY THE EMCS, SUBJECT TO OPERATOR OVERRIDE AND BOILER INTERNAL</li> <li>SAFETIES.</li> <li>B. THE DISABLE INSTRUCTION SHALL ALSO BE MANUALLY INPUT AND DISABLE SEQUENCE SHALL BE THE REVERSE OF ENABLE.</li> <li>A. SUPPLY TEMPERATURE SHALL VARY INVERSELY WITH OUTDOOR AIR TEMPERATUR</li> <li>SUPPLY TEMPERATURE SHALL VARY INVERSELY WITH OUTDOOR AIR TEMPERATUR</li> <li>SUPPLY TEMPERATURE SHALL VARY INVERSELY WITH OUTDOOR AIR TEMPERATUR</li> <li>SUPPLY WATER TEMPERATURE VARIES FROM 55°F (ADJ.) TO -5°F (ADJ.). ABOVE AN SUPPLY WATER TEMPERATURE SHALL REMAIN CONSTANT.</li> <li>SUPPLY WATER TEMPERATURE SHALL REMAIN CONSTANT.</li> <li>B. MODULATE THE BOILER FIRING RATES TO MAINTAIN THE SUPPLY LOOP TEMPERATURE</li> </ul>	JRE FROM 90°F (ADJ.) TO 180°F (ADJ.), AS THE D BELOW THESE OUTDOOR TEMPERATURES THE \TURE.
	<ol> <li>TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ALL FIELD CONTROLS WIRING OF BOILER CONTROL PANELS AND INTEGRATION INTO THE EMCS. COORDINATE AND RECEIVE INSTRUCTIONS FOR THE BOILER MANUFACTURER'S CONTROLS (LEAD/LAG, BOILER PANELS). UPON FAILURE OF EMCS, BOILER SYSTEM CONTROL SHALL REVERT TO ENABLED INDIVIDUAL BOILER CONTROLS.</li> <li>BOILER WATER OUTLET TEMPERATURE SHALL BE SUBJECT TO DOMESTIC HO (ADJ.)) AS DESCRIBED BELOW. WHEN THE BOILER TEMPERATURE CALLED FOR THAT CALLED FOR BY THE HIGH TEMPERATURE BUILDING LOOP, MODULATE T MAINTAIN BUILDING LOOP TEMPERATURE.</li> </ol>	F WATER TEMPERATURE OVERRIDE (150°F BY DOMESTIC WATER HEAT IS HIGHER THAN HE THREE WAY VALVE AS REQUIRED TO
7	<ul> <li>WHEN THE BOILER SHUT-OFF SWITCH IS ACTIVATED SHUT OFF THE FUEL SUPPLY AND INITIATE BOILER SHUTDOWN FOR BOTH BOILERS.</li> <li>THE OWS SHALL HAVE INDICATION CAPABILITY FOR OUTDOOR AIR TEMPERATURE, BUIL RETURN HEATING WATER TEMPERATURE, AND ALL OTHER INDIVIDUAL HYDRONIC TEMPERATURE.</li> <li>BOILER ROOM VENTILATION:</li> </ul>	LDING SUPPLY HEATING WATER TEMPERATURE, PERATURE SENSORS INSTALLED ON THIS LOOP.
_	<ul> <li>A. WHEN THE BOILER ROOM SPACE TEMPERATURE EXCEEDS 75°F (ADJ.), OPEN BOILER ROOM VENTILATION AIR DAMPERS.</li> <li>5. HOT WATER HEATING BOILER OPERATION.</li> <li>6. START ONE SYSTEM HOT WATER CIRCULATION PUMP.</li> </ul>	ABLE FREQUENCY DRIVES TO VARY THE POWER TO RUN. PUMPS ARE DESIGNED TO RUN PEAK LOAD CONDITIONS STAGE AND SEQUENCE
	<ul> <li>B. PROVIDE SLOW ACTING TWO POSITION, SPRING RETURN, FAIL OPEN, BUTTERFLY CONTROL VALVES TO CONTROL THE FLOW THROUGH EACH BOILER. OPEN ON CALL FOR THAT BOILER TO FIRE AND PROVE OPEN BY MEANS OF AN END SWITCH. TO AVOID "DEAD-HEADING" SYSTEM PUMPS, CONTROL VALVE SERVING BOILER CURRENTLY DESIGNATED AS "LEAD BOILER"</li> <li>ADVIDUALET ONDER CONTROL FOR CONTROL VALVE SERVING BOILER FIRING RATE.</li> <li>WILEN A POIL FD OXICLES OF SYSTEM FLOW OR LEAD BOILER FIRING RATE.</li> </ul>	.ED WATER SUPPLY TEMPERATURE. URE SETPOINT CANNOT BE MAINTAINED, ENERGIZE
¥	<ul> <li>WHEN A BOILER OFFICES OFF, LEAVE VALVE OPEN AND CONTINUE CIRCULATING UNTIL THE OUTLET TEMP IS WITHIN 3°F OF</li> <li>THE BOILER RETURN TEMP, THEN CLOSE THE CONTROL VALVE WHILE OFF.</li> <li>BOILER LEAD LAG CONTROL:</li> <li>BOILER LEAD LAG CONTROL:</li> </ul>	OF SUFFLET WATER FLOW. IF THIS OCCURS, THE ONDITION. SWITCHING BETWEEN CHILLED WATER PUMPS. IF EAD AND LAG PUMPS AND CAUSE AN ALARM TO BE
_	<ol> <li>CONTROL AND SEQUENCE THE BOILERS TO MAINTAIN THE REQUIRED BOILER OUTPUT AND FLOWRATE WHICH WILL MAINTAIN THE BUILDING HEATING LOOP AT THE REQUIRED TEMPERATURES. PROVIDE CONTROL AS REQUIRED TO MINIMIZE SEEKING AND BURNER CYCLING, COORDINATED WITH BOILER/BURNER MANUFACTURER'S RECOMMENDATIONS.</li> <li>FIRE THE LEAD BOILER TO THE MINIMUM FIRING RATE REQUIRED TO MAINTAIN LOOP TEMPERATURE.</li> <li>AS THE FLOWRATE AND SYSTEM HEATING LOAD INCREASES TO APOLY. THE MINIMUM FIRING RATE REQUIRED TO MAINTAIN LOOP TEMPERATURE.</li> <li>BURNER CYCLING, COORDINATED WITH BOILER/BURNER MANUFACTURER'S RECOMMENDATIONS.</li> <li>FIRE THE LEAD BOILER TO THE MINIMUM FIRING RATE REQUIRED TO MAINTAIN LOOP TEMPERATURE.</li> <li>AS THE FLOWRATE AND SYSTEM HEATING LOAD INCREASES TO APOLY. THE MINIMUM FIRING RATE REQUIRED TO MAINTAIN LOOP TEMPERATURE.</li> </ol>	'UMP TO AND RUN ALL PUMPS AT THE SAME _AG PUMP AND RUN OPERATING PUMP AT THE
	<ul> <li>CALCULATED FROM THE MEASURED FLOWRATE AND BOILER TEMPERATURE RISE, PROVE FLOW THROUGH AND FIRE SECOND</li> <li>BOILER SIMULTANEOUSLY. MODULATE THE FIRING RATE OF BOTH BOILERS SIMULTANEOUSLY AT THE MINIMUM RATE WHICH WILL</li> <li>MAINTAIN THE REQUIRED LOOP TEMPERATURE. IF THE FLOWRATE AND SYSTEM HEATING LOAD INCREASES, FOLLOW THE ABOVE</li> <li>BOILER FOR ENABLING THE THIRD AND FOURTH BOILERS ACCORDINGLY.</li> </ul>	
	<ul> <li>4. ON A REDUCTION IN DEMAND WHEN THE COMBINED FIRING RATE OF ACTIVE BOILERS IS LESS THAN THEIR COMBINED MINIMUM CAPACITY AS MEASURED BY A RISE IN SUPPLY WATER TEMPERATURE ABOVE SETPOINT IN SPITE OF BOILERS AT LOW FIRE, DE- STAGE THE LAG BOILERS IN ORDER, CLOSE THE RESPECTIVE CONTROL VALVE AS DESCRIBED ABOVE CAUSING ALL FLOW TO GO THROUGH THE LEAD BOILER, AND MODULATE IT'S FIRING RATE AS REQUIRED TO MAINTAIN THE LOOP TEMPERATURE.</li> <li>5. ON A FURTHER REDUCTION IN DEMAND, MODULATE THE LEAD BOIL FROM THE LEAD BOIL FROM THE LEAD BOIL FOR THE LEAD BOIL FROM THE LEAD BOIL FOR THE LEAD</li></ul>	ND ENABLING THE OWNER TO RESET THE DHW BASED ON CUSTOMIZED SCHEDULES
_	<ul> <li>6. SHOULD A LEAD BOILER FAIL TO FIRE ON REQUEST, SWITCH THE LEAD BOILER TO LAG AS DESCRIBED ABOVE, FIRE THE NEW LEAD</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>7. SHOULD A LAG BOILER FAIL TO FIRE ON REQUEST, CONTINUE TO FIRE THE LEAD AS REQUIRED, AND INITIATE A PROPERLY</li> <li>8. CONTROL THE HEATING OF THE DOMESTIC HOT WATER TANKS AS FOLLOWING AND INTERVAL AND INTER</li></ul>	(S, THE BOILER WATER SUPPLY AND RETURN ATURE AS WELL AS REDUCED TEMPERATURE
_	<ol> <li>THE CONTROLS SHALL ALTERNATE BOILERS AS DESCRIBED ABOVE, SHALL AUTOMATICALLY ALTERNATE THE LEAD/LAG BOILERS AT LEAST ONCE PER WEEK, AND SHALL ALSO PROVIDE FOR MANUAL SWITCHING OF LEAD AND LAG BOILERS.</li> <li>WHEN THE EMCS IS DISABLED, THE BOILERS SHALL OPERATE UNDER CONTROL OF THEIR STANDALONE MODULATING AQUASTATS AND OTHER CONTROLS.</li> <li>PROVIDE START/STOP CONTROL AND CURRENT SENSING RUN INDIC SERVING DOMESTIC HOT WATER HEAT EXCHANGER AS WELL AS TH BETWEEN THE TANKS AND HX-1.</li> <li>PROVIDE TWO DHW TANK TEMPERATURE SENSORS FOR EACH TANK ONE SUPERCE MOUNTED ANALOS SENSORS FOR EACH TANK INCLUDENTIAL OF SUPERCEMPTINE ANALOS SENSORS FOR EACH TANK</li> </ol>	CATION FOR THE HEATING WATER PUMP P-3 IE DOMESTIC WATER PUMP P-4 CIRCULATING K, ONE IN THE TANK NEAR THE BOTTOM AND ATION NEAR THE TANK OUTLET LISE THE
Σ	BOILER RETURN WATER TEMPERATURE CONTROL: THE DESIGN MAKE BOILERS SHALL NOT REQUIRE ANY RETURN WATER THERMAL SHOCK TEMPERATURE PROTECTION, AND OPERATE AT INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED EFFICIENCY AT LOWER RETURN WATER TEMPERATURE. TWO WAY VALVE MODULATING HEATING CONTROL IS DESIGNED TO INCREASED INCREASED AND AND AND AND BOILER HEATING CONTROL IS DESIGNED TO	LET SENSOR RISES TO MORE THAN 10°F READINGS. T ALLOW TANK TEMPERATURE TO DROP TO TO AVOID SHORT CYCLING BOILERS.
_	AND SHALL BE CONTROLLED TO MAXIMIZE THE TEMPERATURE DROP THROUGH THE SYSTEM CONSISTENT WITH PROVIDING ADEQUATE HEAT. BOILER ROOM SAFETIES: 4. WHEN DHW TANK IS CALLING FOR HEAT, CIRCULATE ONE BOILER M MAINTAIN 155°F MINIMUM BOILER SUPPLY WATER TEMPERATURE, A (P-3 & P-4) TO RUN AND HEAT THE DHW TANK.	NIMUM, FIRE ITS RESPECTIVE BURNER TO ND CONTROL THE HEAT EXCHANGER PUMPS
_	<ul> <li>CARBON MONOXIDE AND LP/NATURAL GAS SENSOR CONTROL:</li> <li>CARBON MONOXIDE AND LP/NATURAL GAS SENSOR CONTROL:</li> <li>PROVIDE AND INSTALL CO AND NATURAL GAS SENSORS WITHIN THE BOILER ROOM, WHENEVER EITHER ONE OF THE CONTAMINANT SENSORS INCREASES FROM 10% TO 25% OF ITS THRESHOLD EXPOSURE LIMIT (TEL) SOUND AN AUDIBLE</li> </ul>	BELOW SETPOINT, ENERGIZE (FUTURE) PUMP P-5, BER.
-	ALARM AND SEND AN ALARM AT THE OPERATOR WORK STATION.	

#### 7 8 9 10 11

8.



#### NG HEATING WATER LOOP SUPPLY TEMPERATURE CONTROL:

	12		13	}		14	15			16			17	<u> </u>	
		PUMP (F	) SCH	EDULE											
/	MODEL /	FLOWRATE	HEAD	MAX. OPER.	MIN. EFF.	SUCTION CONNECTION	DISCHARGE CONNECTION		MOTOR		ELECTRI	CAL		A	AI ANALOG
	SIZE 3 GB 3 GB	(GPM) 500 500	(FT HD) 116 116	TEMP (°F) 225 225	% 75.4 75.4	(IN) 4 4	(IN) 3 3	RPM 1800 1800	BHP 19.4 19.4	HP 30 4 30 4	V/PH 460 V / 3ø 460 V / 3ø	FLA 40 40	NOTES 1,2,3,4,5,7 1,2,3,4,5,7		
	3 GB 4 GC	500 720	116 130	225 225	75.4 79.5	4 5	3 4	1800 1800	19.4 29.6	30 4 40 4	460 V / 3ø 460 V / 3ø	40 52	1,2,3,4,5,7 1,2,3,4,5,7	_	CS AIRBORN
	4 GC 4 GC 1.5AB	720 720 30	130 130 24	225 225 250	79.5 79.5 0	5 5 1.5	4 4 1.5	1800 1800 1725	29.6 0.31	40     40       40     40       0.75     2	460 V / 3ø 460 V / 3ø 208 V / 3ø	52 52 2	1,2,3,4,5,7 1,2,3,4,5,7 1,3,5		
EL	NBF-36	16 -OVERLOADING C	10 CONDITIONS	225 . 5. F	0 LUID: WA	1.5	1.5 7. PUMPS RUN	3300 S IN PARA		0.36	115 V / 1ø	2	1,3,6,8	В	
EC	HANICAL SEA	LS.		6. F	LUID: DOM	MESTIC WATER	8. PUMP RATE	D FOR DO	MESTIC SEI	RVICE					EMCS ENERGY
		VAR	IABLE	FREQUE	ENCY	DRIVE (VF	D) SCHED	ULE						_	(FM) FLOW ME
		D.: MOTOI	R AMPEF	RAGE KW	DR VOI	LTAGE FREQU (V) (H2	ENCY Z) UL ENCL		NO. O PULSE	F CO			NOTES		FS AIR FLOV
/	ACH550-PDR-04 ACH550-PDR-04 ACH550-PDR-04	45A-4 30 45A-4 30	44	22.4		460 60 460 60	UL Type 1 UL Type 1 UL Type 1	/ NEMA 1 / NEMA 1	6 6	PDR PDR PDR	= Drive, Disc = Drive, Disc = Drive, Disc	onnect onnect	1,2,3,4 1,2,3,4 1,2,3,4	C	FZ FREEZE
	ACH550-PDR-03 ACH550-PDR-03 ACH550-PDR-03	59A-4         40           59A-4         40           59A-4         40           59A-4         40	59 59 59	29.8           29.8           29.8           29.8		460         60           460         60           460         60           460         60	UL Type 1 UL Type 1 UL Type 1	/ NEMA 1 / NEMA 1 / NEMA 1	6 6 6	PDR PDR PDR	= Drive, Disc = Drive, Disc = Drive, Disc	onnect onnect onnect	1,2,3,4 1,2,3,4 1,2,3,4		
PE	DANCE			3. EXTERNA 4. OUTPUT (	L FILTERS CABLE (WI	S HEN CABLE IS GREA	TER THAN 50 FT)							_	KWH KILOWAT
ł	AIR COC	EVAPOR	LLER ( ATOR	(CH) SCI		JLE T SIZE (IN) DES	SIGN	ELECT	RICAL		OPER.				
111 (	N. FLOW F GPM) (	LOW EWT GPM) (°F)	LWT (°F) RE	WP FRIG. (FT W	D /G) L	W H (°	/IB. F) IPLV EER	VOLT.	PH (A)	A MOCF (A)	> WT. (LB)	NC	DTES		
	276 276	380         54           380         54	42 42	R32 7.40 R32 7.40	) 298 ) 298	88         99         9           88         99         9           88         99         9	95         17.8         10.3           95         17.8         10.3	460 460	3     402       3     402	450 450	9927 9927	1,2,3,4,5	5,6,7,8,9,10 5,6,7,8,9,10		(PS) POSITION
PR	AY 6000 HOUF	5. P RS. 6. P 7. P	PROVIDE FAC PROVIDE VAF PROVIDE CHI	CTORY INSTALL RIABLE SPEED ( ILLER CONTROL	ED DISCO CONDENSI LER BACN	NNECTS. ER FANS. NET INTERFACE.		8. PR 9. PR 10. SC	ROVIDE GRO ROVIDE 120\ CCR:65KA.	DUND FAUL / CONVEN	_T PROTECT	ΓΙΟΝ. .ET.			SS STOP / S
		PIPE FF	REEZE	PROTE	CTIO	N HEAT TF								_	START STARTER
RI	ER MODEL	. # APPLICA	TION	PIPE SIZE & TYPE	WA PER	TTS OPERAT	ING V/PH BR	EAKER (A)	LENGTH	1 AT 40F UP (FT)	CONTRO w/ 30m	OLLER A GFI	NOTES		
RA(	CE 8XLE2-C	R FREEZE PRO	DTECTION	6" &8" METAL		8 40F	208 V / 1ø	20	30	)9	C910-	485	1,2,3,4,5	ш	
	WITH MANUFA	CTURER SPECIFI IN FOLLOWING M ITS FOR POWER	CATIONS. XL ANUFACTUR CONNECTIO	TRACE INSTAL RER'S INSTRUC NS, TEES/SPLIC	L MANUAL TIONS. ES AND E	- H58033. ND SEALS. GT-66 GL	ASS TAPE & ETL EL		RACE LABE	LS.					WS WATER S
	FOR AMBIENT	SENSING WITH F	RTD-200 TO T	TURN ON HEAT	TRACE AT	40F. PROVIDE RTD	10CS LINE SENSING	THERMOS	STAT TO MO	D CAPACIT NITOR PIP	E TEMPERA	TURE. E	KTEND	_	% PERCEN
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C	HILLER PLANT	CV CONTROLS - SE		OPERATIONS:											
C 1	HILLER:			BASED ON THE	ENERGY		TROL PROGRAM.							_	
3	NORMA NORMA WHEN F	LLY OPEN CHILLE LOW IS PROVEN	ER CONTROI	LING, OPEN LE L VALVES TO AL CHILLER LOOP I ONTROL SYSTE	LOW VAL' BY THE DI	ER 2-WAY VALVE AN VES TO FAIL OPEN F FFERENTIAL PRESS CHILLER CONTROL F	OR DRAINAGE IN WI URE SENSOR SET FO ANEL TO MAINTAIN (	ILLER LOC INTER. DR MINIMU CHILLED V	JM FLOW T	HROUGH	THE CHILLE	Y. PROVIL R, ENABL ETPOINT	JE E	-	
4	(ADJUS LEAVIN IF FLOV	TABLE). VARY TH G CHILLED WATE / IS BELOW MININ	E SUPPLY TI R TEMPERA //UM CHILLEI	EMPERATURE S TURE IS 50°F AI R FLOW, MODU	SETPOINT ND AT 95°F LATE OPE	AS AN ADJUSTABLE THE LEAVING CHIL N BYPASS VALVE AT	LINEAR FUNCTION ( LED WATER TEMPER END OF PIPING LOC	OF OUTSIE RATURE IS OP, ALLOV	DE AIR TEMI 3 40°F. VING PUMP	PERATURE	E SUCH THA	T AT 65°F ASE SPEE		¥	complex world
5	AND GF BARREI WITH TI PROVID	M UNTIL MINIMUI _ MINIMUM. HE LEAD CHILLEF DE COM PORT INT	M FLOW REG R RUNNING A	QUIREMENTS AN AT CAPACITY, AN TH CHILLER CE	REMEL. N ND THE CH	HILLED WATER TEM	VALVES TO BE CLOS PERATURE SETPOIN	ED TIGHT T CANNOT	AT A SYST T BE MAINT DATA POIN	EM FLOW 2 AINED, ENE TS WITH D	20 GPM ABC ERGIZE TO I ESCRIPTIVE	LAG CHILL	LER. G.OF		
Ŭ	EACH. F a. b.	PROVIDE AN ALAF FAIL ALARM PUMP FAILURE	RM FOR EAC	CH OF THE FOLL	OWING:									_	Tetra Tech Eng & Landscape A
	c. d. e.	CHILLED WATER CHILLED WATER CHILLED WATER	PRESSURE SUPPLY TEN RETURN TE	SETPOINT LOW MPERATURE SE MPERATURE SI	/HIGH LIM TPOINT LO ETPOINT L	ITS. OW/HIGH LIMITS. .OW/HIGH LIMITS.								-	
F 1	PUMPS . THE EM	ICS SHALL CONT	ROL OPERAT	TION OF THE SY	STEM PU	MPS AND CAUSE TH	E VARIABLE FREQUE		/ES TO VAR		WER FREQU	JENCY TO	) THE	_	The
2	BUILDIN UPON II INDIVID	IG CHILLED WATE NITIAL CALL FOR UALLY UNDER LIC	ER PUMPS. MECHANICA GHT TO AVEI	L COOLING, CO RAGE LOAD CO	NTROL TH NDITIONS	IE LEAD CHILLED W. , AND IN PARALLEL I	ATER PUMP (P-2A,2B JNDER PEAK LOAD (	,2C) TO RI CONDITION	UN. PUMPS NS. STAGE /	ARE DESI AND SEQU	GNED TO RU ENCE THE L	JN _EAD LAG	3		
3 4	OPERA ONCE F A MANU ALARM	LOW HAS BEEN F JAL OVERRIDE AT SYSTEM SHALL	PROVEN, EN THE DRIVE NITIATE A PF	IERGIZE THE LE SHALL PERMIT ROPERLY ANNI	AD CHILLE TEMPORA NCIATED	ER TO MAINTAIN THE ARY MANUAL ADJUS ALARM CONDITION	E CHILLED WATER SU TMENT OF SUPPLY V	JPPLY TEI WATER FL	Mperatur .ow. If this	E. S OCCURS	, THE CONT	ROL PAN	IEL	-	Beacon C
5 6	PROVID CANNO QUANT	E AUTOMATIC, A T MAINTAIN THE I ITY OF PUMPS IN	DJUSTABLE, REQUIRED F OPERATION	, PARALLEL ANE LOW, THE EMC I SHALL VARY A	) LEAD-LA S SHALL S S FOLLOW	G CAPABILITY TO PE SWITCH LEAD AND L VS:	ERMIT SWITCHING BE	ETWEEN C	CHILLED WA		PS. IF THE L	EAD PUN	1P		вeacon, I
	a. b.	WHEN THE OPEF (ADJ.). WHEN THE OPEF HZ (AD.L)	KATING PUM RATING PUM	P(S) RAMP UP 1 PS RAMP DOWI	0 55 HZ (/ N TO 25 HZ	אטז.), ENERGIZE THI Z (ADJ.), DE-ENERGIZ	E NEXT PUMP TO AN ZE ONE LAG PUMP A	א ע RUN ALI ND RUN C	∟ PUMPS AT	I THE SAM	E FREQUEN	ENCY OF 35	50 H∠	×	Reconstr
7	. WINTEF a. b.	R OPERATION: CHILLERS AND O WHEN OUTDOOF	OUTDOOR PI	PING HAS BEEN RATURE IS BEL	DRAINED OW 35°F (	AND SEASONAL BY ADJ.) ALLOW ONE P	PASS VALVE IS OPEI UMP TO RUN AT 35 F	N HZ (ADJ.) T	fo allow f	PARTIAL FL	OW THROU	GH TERM	IINAL		
8	a.	COILS FOR FREE S SHALL BE PROV HIGH DIFFERENT	ZE PROTEC /IDED AS FO TAL PRESSU	FION. DLLOWS: JRE: IF 25% (AD. RE: IF 25% (AD.	I.) GREAT	ER THAN SETPOINT		-						-	Schodula
	U.		" IL FRESSU	и 20% (ADJ	., LLOO IF										
					ir Ca		and Duran	Cart						z	Drawn By: DPM/JPF1
					s	Jiea Chiller		Contr	U						Project No.: 279180-2





![](_page_12_Figure_0.jpeg)

![](_page_13_Figure_0.jpeg)

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![](_page_14_Figure_1.jpeg)

![](_page_14_Figure_2.jpeg)

- 1

3 Fire Rated Metal Stud Conduit Penetration Detail

![](_page_14_Figure_4.jpeg)

		<
		_
BUILDING	PACK CERAMIC FIBER OR MINERAL WOOL TO RETAIN SEALANT MATERIAL CONDUIT CONDUIT	Ω.
	CAULK ANNULAR SPACE WITH FIRE STOP SEALANT TO A WET DEPTH OF 5/8" MINIMUM (BOTH SIDES) FIRE RATED WALL	U
		1
	1 Fire Rated CMU Wall Conduit Penetration Detail	

![](_page_14_Figure_7.jpeg)