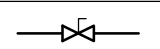
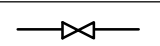
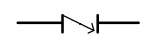
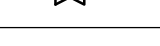
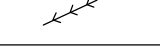
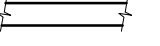
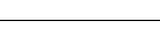
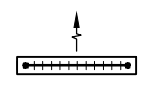
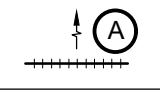
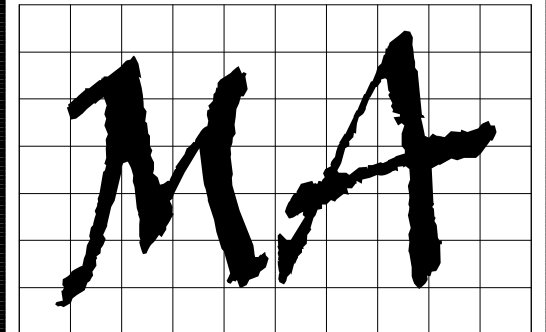


MECHANICAL EQUIPMENT SCHEDULE CON'T			
SYMBOL	MANUFACTURER	CATALOG #	DESCRIPTION
P-1, 3	GRUNDFOS	MAGNA3 65-150F	MAGNA SERIES INLINE VARIABLE SPEED PUMP WITH WIRELESS REMOTE CONTROL, FACTORY START-UP, AUTO ADAPT, FLOWADAPT, AND FLOW LIMIT. PROPORTIONAL-PRESSURE CONTROL, CONSTANT PRESSURE CONTROL, AND CONSTANT-TEMPERATURE CONTROL. SEALS COMPATIBLE WITH 30% PROPYLENE GLYCOL. MAX. WORKING PRESSURE 174 PSI. MAX. OPERATING TEMPERATURE 230°F. MOTOR STARTER H-O-A W/OVERLOADS. 45 GPM @ 40 FT. HEAD, POWER INPUT 24 - 1301 WATTS - 208V/1
P-2	GRUNDFOS	MAGNA3 65-150F	MAGNA SERIES INLINE VARIABLE SPEED PUMP WITH WIRELESS REMOTE CONTROL, FACTORY START-UP, AUTO ADAPT, FLOWADAPT, AND FLOW LIMIT. PROPORTIONAL-PRESSURE CONTROL, CONSTANT PRESSURE CONTROL, AND CONSTANT-TEMPERATURE CONTROL. SEALS COMPATIBLE WITH 30% PROPYLENE GLYCOL. MAX. WORKING PRESSURE 174 PSI. MAX. OPERATING TEMPERATURE 230°F. MOTOR STARTER H-O-A W/OVERLOADS. 45 GPM @ 34 FT. HEAD, POWER INPUT 24 - 1301 WATTS - 208V/1
P-4, 5	GRUNDFOS	MAGNA3 40-180F	MAGNA SERIES INLINE VARIABLE SPEED PUMP WITH WIRELESS REMOTE CONTROL, FACTORY START-UP, AUTO ADAPT, FLOWADAPT, AND FLOW LIMIT. PROPORTIONAL-PRESSURE CONTROL, CONSTANT PRESSURE CONTROL, AND CONSTANT-TEMPERATURE CONTROL. SEALS COMPATIBLE WITH 30% PROPYLENE GLYCOL. MAX. WORKING PRESSURE 174 PSI. MAX. OPERATING TEMPERATURE 230°F. MOTOR STARTER H-O-A W/OVERLOADS. 21 GPM @ 43 FT. HEAD, POWER INPUT 16 - 614 WATTS - 120V/1
P-6, 7	GRUNDFOS	UPS 50-60 F	INLINE BOOSTER PUMP, IRON BODY, THREE SPEED MOTOR, MAX. WORKING PRESSURE 145 PSI, MAX. OPERATING TEMPERATURE 230°F, SEALS COMPATIBLE WITH 30% PROPYLENE GLYCOL. SET MOTOR SPEED ON (3)-THREE. 50 GPM @ 12 FT. HEAD, .33 HP, RPM, MOTOR STARTER H-O-A W/OVERLOADS - 120V/1
P-8, 9	GRUNDFOS	UPS 40-160/2	INLINE BOOSTER PUMP, IRON BODY, THREE SPEED MOTOR, MAX. WORKING PRESSURE 145 PSI, MAX. OPERATING TEMPERATURE 230°F, SEALS COMPATIBLE WITH 30% PROPYLENE GLYCOL. SET MOTOR SPEED ON (3)-THREE. 80 GPM @ 22 FT. HEAD, .75 HP, RPM, MOTOR STARTER H-O-A W/OVERLOADS - 120V/1
ET-1	AMTROL	400-L	HYDRONIC EXPANSION TANK, HEAVY DUTY BUTYL BLADDER, TANK VOLUME 106 GALLONS
RC-1	GREENHECK	F61-	INTAKE ROOF HOOD CONSTRUCTED OF HEAVY GAUGE ALUMINUM THROAT AREA (3.75 SQFT). THROAT WIDTH (18"X 30") 1780 CFM @.03"/s.c. WITH 18" HIGH INSULATED SLOPED ROOF CURB. COLOR AS DIRECTED BY ARCHITECT.
① _{H/C}	WHITE RODGERS	IF45-0680	PROGRAMMABLE MULTI-STAGE THERMOSTAT T-DAY, HEAT/COOL WITH ON/OFF/AUTO FAN SWITCH, T-DAY PROGRAMMABLE WITH SET BACK CAPABILITIES, REMOTE SENSING, PROGRAMMABLE FAN, OUTDOOR DAMPER CONTROL, LOW VOLTAGE (24V). WITH CLEAR LOCKING COVER UNLESS OTHERWISE NOTED.
③		FI45-1328	REMOTE SENSOR WITH WIRE CAGE PROTECTOR
① _L	WHITE RODGERS	IF80-361	PROGRAMMABLE SINGLE-STAGE THERMOSTAT, HEAT/COOL WITH ON/OFF/AUTO FAN SWITCH, 5-1-1 DAY, PROGRAMMABLE WITH SET BACK CAPABILITIES, LOW VOLTAGE (24V). WITH CLEAR LOCKING COVER UNLESS OTHERWISE NOTED.

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	BOILER ROOM	BOILER ROOM
SERVICE	HOT WATER	HOT WATER
MANUFACTURER	HARSCO P-K SONIC	HARSCO P-K SONIC
MODEL NUMBER	SC-1000	SC-1000
OPERATING HEIGHT (LBS)	810	810
WATER CONTENT	10.0 GAL	10.0 GAL
GROSS OUTPUT (MBH)	423	423
FUEL SOURCE	PROPANE	PROPANE
INPUT (MBH)	1000	1000
BOILER HP	27.5	27.5
MIN/MAX. INLET GAS PRESSURE (IN W.C.)	7/14	7/14
HEATED WET SURFACE AREA (SQ. FT.)	87	87
LNT/EXT (°F)	180/160	180/160
FLOW RATE (GPM)	80	80
WATER P.D. (FT.)	22.0	22.0
COMBUSTION EFFICIENCY	42.3%	42.3%
BOILER DESIGN PRESSURE (PSI)	80	80
FIRESIDE SURFACE AREA (SQ. FT)	17.2	17.2
ELECTRICAL REQUIREMENTS		
VOLTAGE/ Ø / Hz.	120 / 1 / 60	120 / 1 / 60
TOTAL OPERATING AMPS	10 AMPS	10 AMPS
NOTES: 1. ASME CODE, SECTION IV, MAX PRESSURE= 125 PSIG, MAX TEMP 220°F. 2. ASME CSD-1 BOILER CONTROLS. 3. FULL INDEPENDENT CAST SECTIONAL HEAT EXCHANGER. 4. FULL MODULATION, 5:1 TURNDOWN WITH EXCESS AIR NO HIGHER THAN 30% ACROSS THE FIRING RANGE. 5. VARIABLE SPEED COMBUSTION AIR BLOWER. 6. COMBUSTION EFFICIENCY TO BE CSA CERTIFIED BASED ON OPERATING CONDITIONS FOR TESTING UNDER ANSI Z21.9/CSA4.4. 7. PROVIDE NIRO TOUCH SCREEN CONTROL SYSTEM FOR EACH BOILER. 8. PROVIDE MODBUS OR BACNET MSIP MASTER SLAVE (TOKEN PASSING) GATEWAY/INTERFACE AND FULL INTEGRATION OF ALL BOILER CONTROL AND ALARM POINTS TO THE BUILDING MANAGEMENT SYSTEM. 9. PROVIDE CONDENSATE TRAP AND ACID NEUTRALIZATION SYSTEM. 10. BOILERS FURNISHED FOR PROPANE. ALL GAS TRAINS AND CONTROLS FURNISHED WITH BOILERS ARE TO BE VENTLESS. 11. BOILERS SHALL BE FURNISHED WITH ADAPTORS FOR CPVC VENTING. 12. ASME LABELED		

MECHANICAL EQUIPMENT SCHEDULE			
SYMBOL	MANUFACTURER	CATALOG #	DESCRIPTION
— CD —	—	—	CONDENSATE DRAIN PIPING. SCHEDULE 40 PVC IN MECHANICAL ROOM. CONDENSATE PIPING RUN IN RETURN AIR PLENUM SPACE COPPER TYPE "M" WITH ½" FIBERGLASS INSULATION WITH VAPOR PROOF JACKET. TAPED JOINTS AND PVC FITTING COVERS.
— HWS — — HWR —	—	—	HYDRONIC PIPING, COPPER TYPE "L" UP TO 2". ABOVE 2" USE SCHEDULE 40 STEEL WITH SCREWED JOINTS. BOILER HEADER SHALL BE PIPED WITH SCHEDULE 40 STEEL. INSULATE WITH FIBERGLASS PIPE INSULATION WITH VAPOR PROOF JACKET, TAPED JOINTS AND PVC FITTING COVERS. EXPOSED PIPING SHALL BE COVERED WITH PVC PIPE COVER AND PAINTED. SEE THIS DRAWING FOR INSULATION THICKNESS SCHEDULE.
— ULP —	—	—	UNDERGROUND LIQUID PETROLEUM "LP" GAS PIPING SCHEDULE 40 BLACK STEEL WITH WELDED JOINTS. POLYETHYLENE JACKET AND DOUBLE LAYER HALF LAPPED 10 MIL POLYETHYLENE TAPE OR PE PIPE ASTM D 2683, SOCKET- FUSION TYPE, BUTT-FUSION TYPE WITH DIMENSIONS MATCHING PE PIPE. COPPER TUBE TYPE "K" DRAWN/ANNEALED WITH PROTECTIVE COATING EXTRUDED PE ASTM B88
— LP —	—	—	ABOVEGROUND LIQUID PETROLEUM "LP" GAS PIPING, SCHEDULE 40 STEEL WITH SCREWED JOINTS UP TO 3" DIAMETER. WELDED JOINTS ON ALL PIPE SIZES ABOVE 3" DIAMETER.
— REF —	—	—	REFRIGERANT PIPING SHALL BE COPPER TUBING TYPE ACR HARD DRAWN. WROUGHT COPPER FITTINGS, SILVER BRAZE JOINTS. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS BASED ON ELEVATION AND LENGTH. INSULATE SUCTION LINE WITH 1 ½" ELASTOMETRIC CELLULAR FOAM. CONCEAL REFRIGERATION PIPING IN EXTERIOR WALL PARTITION AND ABOVE CEILING.
			GAS VALVE FULL PORT, ASA APPROVED.
	NIBCO	—	BALL VALVE, BRONZE BODY, FULL PORT.
	NIBCO	—	CHECK VALVE, BRONZE BODY SWING.
	—	—	MOTORIZED DAMPER, SEE SPECIFICATION SECTION 23 33 00 AIR DUCT ACCESSORIES & 23 04 00 INSTRUMENTATION & CONTROL.
	—	—	FIRE DAMPER
	—	—	GAS VALVE FULL PORT, ASA APPROVED.
	—	—	TRAP.
	—	—	TURNING VALVES.
	—	—	DUCTWORK, GALVANIZED STEEL, THICKNESS PER SMAGNA STANDARDS, MINIMUM 26 GAUGE
	—	—	VOLUME DAMPER, SEE SPECIFICATION SECTION 23 33 00 AIR DUCT ACCESSORIES & 23 04 00 INSTRUMENTATION & CONTROL.
	FLEXMASTER USA, INC.	TYPE 4M	FLEXIBLE DUCTWORK, MECHANICAL LOCK HELIX, FIBERGLASS INSULATION, FIRE RETARDANT ALUMINUM OUTER JACKET, UL 181 CLASS 1 AIR DUCT, MAXIMUM LENGTH (6'-0")
	FRIGIDAIRE	FHNC3040M5	RANGE HOOD UNDER-COUNTER STAINLESS STEEL FINISH, BACKDRAFT DAMPER, 7"Ø EXHAUST DUCT CONNECTION - 300 CFM, LAMPS: (2) HALOGEN 50 WATT - 120V/1
AH-G, H	CARRIER	38MAGBI2-3	INDOOR DUCTLESS SPLIT HEAT PUMP UNIT, WALL MOUNTED, FIELD LOCATED WIRED REMOTE CONTROLLER, CONDENSATE PUMP, COOLING CAPACITY MAX. 12,000 BTUH. MIN. 4,000 BTUH. HEATING CAPACITY 13,500 BTUH @ 47 °F OAT. SEER 21.5, HSPF 10.0 - 208/230V, 1Ø
HP-G, H	CARRIER	40MAGBI2-3	OUTDOOR AIR COOLED HEAT PUMP CONDENSING UNIT, R-410A, COOLING 4,000 BTUH MIN, 12,000 BTUH MAX., HEATING 5,000 BTUH MIN, 13,000 BTUH MAX @ 47°F. INVERTER DRIVEN COMPRESSOR, EXPANSION VALVE, DISCONNECT SWITCH, INDOOR UNIT POWERED BY 3 WIRES FROM OUTDOOR UNIT - SEER 21.5, HSPF 10.0. - MCA=15A, MOCP=15A, 208/230V, 1Ø
UH-1	BEACON MORRIS	HB-204	HYDRONIC UNIT HEATER, HEAT OUTPUT 126,920 BTU/HR @ 180°F E.W.T. 14.9 GPM, 2900 CFM WITH DISCONNECT SWITCH, AQUASTAT FAN START, ¼ HP - 120V/1
UH-2	BEACON MORRIS	HB-24	HORIZONTAL UNIT HEATER, HOT WATER, OUTPUT 121,00 BTU/HR @ 180°F E.W.T. 1.8 GPM, 380 CFM, WITH DISCONNECT SWITCH, AQUASTAT FAN START, 120V/1.
UH-3	BEACON MORRIS	HB-60	HORIZONTAL UNIT HEATER, HOT WATER, OUTPUT 33,875 BTU/HR @ 180°F E.W.T. 4.4 GPM, 900 CFM, WITH DISCONNECT SWITCH, AQUASTAT FAN START, 120V/1.
CH-1	BEACON MORRIS	RC-1200-03	CABINET HEATER RECESSED CEILING MOUNTED, WITH WALL SEAL FRAME, AQUASTAT FAN START, TAMPER PROOF FASTENERS AND CONTROLS. HEATING HIGH CAPACITY COIL 25,715 BTU/HR @ 180°F E.W.T. - 2.0 GPM - 330 CFM - 120V/1.
CH-2	BEACON MORRIS	F-1020-03	CABINET HEATER FLOOR MOUNTED WITH LOUVERED INLET GRILLE, DISCONNECT SWITCH, AQUASTAT FAN START, TAMPER PROOF FASTENERS AND CONTROLS. HEATING HIGH CAPACITY COIL 25,715 BTU/HR @ 180°F E.W.T. - 2.0 GPM - 330 CFM - 120V/1.
CH-3	BEACON MORRIS	RN-1020-03	CABINET HEATER RECESSED WALL MOUNTED WITH DISCONNECT SWITCH, WALL SEAL, AQUASTAT FAN START, TAMPER PROOF FASTENERS AND CONTROLS. HEATING HIGH CAPACITY COIL 25,715 BTU/HR @ 180°F E.W.T. - 2.0 GPM - 330 CFM - 120V/1.
	SLANT/FIN	JR-10	BASEBOARD RADIATION J-SERIES SLOPE TOP, COPPER (C-340) ELEMENT AND 16 GAUGE FRONT COVER. 1210 BTU/HR PER FOOT @ 180°F E.W.T. INCLUDING ALL END CAPS, SPACERS, SPLICE PLATES, VALVE COVERS, INSIDE & OUTSIDE CORNERS, WALL BRACKETS/HANGERS, E.T.C. COLOR AS DIRECTED BY ARCHITECT.
	SLANT/FIN	EM-12	BASEBOARD RADIATION TWO-TIER COPPER (C-340) ELEMENT AND 16 GAUGE EM COVER GALVANIZED STEEL INCLUDING WALL BRACKETS/HANGERS. 2,014 BTU/HR PER FOOT @ 180°F E.W.T.
MAU-1	CARRIER	34L603MBF---ALF-A9	HORIZONTAL CENTRAL STATION AIR HANDLER, HYDRONIC HEATING MEDIUM COIL SECTION (2.7 SQFT 2 ROW 11 FPI, HALF CIRCUIT) 153,260 BTU/HR @ 17 GPM @ 180°F E.W.T. 35% PROPYLENE GLYCOL. WITH LG HORIZONTAL FAN ONLY SECTION, COMBO FILTER MIXING BOX (TOP & REAR) 2" PLEATED FILTERS MERV 8 (TYPE 3), ADJUSTABLE VARIABLE PITCH PULLEY, VARIABLE FREQUENCY DRIVE WITH OVERLOADS, DISCONNECT SWITCH. 1800 CFM @ 5" W.C. EXT. FAN MOTOR 1.5 HP INVERTER RATED PREMIUM HIGH EFFICIENCY MOTOR SUITABLE FOR VARIABLE SPEED AND TORQUE APPLICATIONS. TURN DOWN RATIO OF 10:1 - 208V/3.
ERU-1	RENEHAIRE	EV450	ENERGY RECOVERY UNIT, 375 CFM @ .84" W.C. TOTAL EFF % WINTER/SUMMER (ε _{ws}) WITH TWO POSITION DAMPER MOTORIZED DAMPERS ON INTAKE AND EXHAUST AIR DUCT, SOLID STATE SPEED CONTROLLER MOUNTED NEAR UNIT, (2) - .6 HP ECM MOTORS - 120V/1
EF-A	GREENHECK	CUBE-180-V6D-15	CENTRIFUGAL SIDEWALL MOUNTED EXHAUSTER, HOUSING CONSTRUCTED OF SPUN ALUMINUM, 24" HIGH ROOF CURB, HINGE BRACKET, HINGE LATCH. BELT DRIVE, ADJUSTABLE PULLEY, TWO-POSITION INSULATED DAMPER W/ACTUATOR, VARI-GREEN REMOTE DIAL FOR INDOOR WALL MOUNTING, INTERNAL WIRING, DISCONNECT SWITCH, VARI-GREEN DRIVE, 4,660 CFM @ .375" W.C. - PREMIUM EFFICIENCY MOTOR SUITABLE FOR VARIABLE SPEED AND TORQUE APPLICATIONS. 1 ½ HP - 208V/3.
EF-B	GREENHECK	SQ-40-V6	INLINE CABINET EXHAUST FAN, BACKDRAFT DAMPER, VARI-GREEN REMOTE DIAL MOUNTED ON FAN, VARI-GREEN TRANSFORMER FIELD MOUNTED AND WIRED, DISCONNECT SWITCH, BACKDRAFT DAMPER, MOTOR COVER, ISOLATORS & BRACKETS & SPRING HANGING KIT, FLEXIBLE DUCT CONNECTORS, 300 CFM @ .375" W.C., ½ HP - 120V/1
EF-C	GREENHECK	SQ-40-V6	INLINE CABINET EXHAUST FAN, VARI-GREEN REMOTE DIAL FIELD MOUNTED IN SPACE FOR OCCUPANT USE, EXACT LOCATION AS APPROVED BY ARCHITECT, VARI-GREEN TRANSFORMER FIELD MOUNTED AND WIRED, DISCONNECT SWITCH, BACKDRAFT DAMPER, MOTOR COVER, ISOLATORS & BRACKETS & SPRING HANGING KIT, FLEXIBLE DUCT CONNECTORS, 300 CFM @ .375" W.C., ½ HP - 120V/1
EF-D	GREENHECK	SQ-75-V6	INLINE CABINET EXHAUST FAN, VARI-GREEN REMOTE DIAL MOUNTED ON FAN, VARI-GREEN TRANSFORMER FIELD MOUNTED AND WIRED, DISCONNECT SWITCH, BACKDRAFT DAMPER, MOTOR COVER, ISOLATORS & BRACKETS & SPRING HANGING KIT, FLEXIBLE DUCT CONNECTORS, 150 CFM @ .375" W.C., ½ HP - 120V/1
EF-E	GREENHECK	SQ-75-V6	INLINE CABINET EXHAUST FAN, VARI-GREEN REMOTE DIAL FIELD MOUNTED IN SPACE FOR OCCUPANT USE, EXACT LOCATION AS APPROVED BY ARCHITECT, VARI-GREEN TRANSFORMER FIELD MOUNTED AND WIRED, DISCONNECT SWITCH, BACKDRAFT DAMPER, MOTOR COVER, ISOLATORS & BRACKETS & SPRING HANGING KIT, FLEXIBLE DUCT CONNECTORS, 150 CFM @ .375" W.C., ½ HP - 120V/1
EF-F	ENERVEX	MBESV250	DRYER BOOSTER EXHAUST FAN SYSTEM WITH PRESSURE CONTROLLER, PRESSURE TRANSDUCER, DUCT PROBE AND EXHAUST FAN, CURRENT SENSING RELAY SHALL ACTIVATE EXHAUST FAN, PRESSURE CONTROLLER SHALL MAINTAIN A CONSTANT PRESSURE INCREASING/DECREASING FAN SPEED, DISCONNECT SWITCH, 300 CFM @ .734" W.C., ½ HP (TEFC) INVERTER DUTY MOTOR - 120V/1
EF-G	T.JERNLUND	LB2	DRYER BOOSTER EXHAUST FAN SYSTEM AUTOMATICALLY ACTIVATES BOOSTER FAN BASED ON DRYER OPERATION, LED INDICATOR PANEL MOUNTED NEAR DRYER, CONTROLLER MONITORS PRESSURE AND TEMPERATURE IN DUCT TO OPERATE BOOSTER FAN IN SYNC WITH DRYER. 160 CFM - MOTOR 50 WATT - 120V/1
		LB4	4" SECONDARY DRYER LINT TRAP



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NEW STATION FOR PUTNAM VALLEY FIRE STATION #1

OSCAWANA LAKE ROAD
PUTNAM VALLEY, NEW YORK

REVISION HISTORY		
	DATE	DESCRIPTION
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MECHANICAL: EQUIPMENT SCHEDULES
SCALE: AS NOTED
DWG. BY: KC
DWG. DATE: 8/14/2020
STATUS: BID DRAWINGS

M302