

No.	Description	Date
1	SED Submission	09/15/2020
2	SED Submission Addendum #1	01/08/2021
3	ISSUED FOR BID	01/19/2021
4	BID ADDENDUM #1	01/29/2021

GENERAL DATA			SIZE					AIR SIDE							WATER SIDE		REMARKS
MARK	BUILDING	SERVICE	WIDTH (IN.)	HEIGHT (INCHES)	FACE AREA (FT ²)	ROWS	FINS PER INCH	CFM	MBH	PRESS. DROP (W.C.)	VELOCITY FPM	E.A.T. °F	L.A.T. °F	FLOW RATE (GPM)	PRESS. DROP Δ HEAD (FT)		
HP-1	HIGH SCHOOL	ERU-1	-	-	-	2 MINIMUM	12 MAXIMUM	6600	435	0.2" MAX	600 MAX.	10	70	STEAM	5 FT. MAX	REFER TO ①②③	
HP-2	HIGH SCHOOL	ERU-2	-	-	-			6600	435					STEAM			
HP-3	HIGH SCHOOL	ERU-3	-	-	-			600	36					STEAM			
HP-4	HIGH SCHOOL	ERU-4	-	-	-			400	27					3.0			
HP-5	HIGH SCHOOL	ERU-5	-	-	-			200	14					2.0			
HP-6	HIGH SCHOOL	ERU-6	-	-	-			6000	396					40.0			
HP-7	MIDDLE SCHOOL	ERU-7	-	-	-			8000	528					53.0			
HP-8	HIGH SCHOOL	ERU-8	-	-	-			1500	99					10.0			
HP-9	HIGH SCHOOL	ERU-9	-	-	-			400	27					3.0			
HP-10	MIDDLE SCHOOL	ERU-10	-	-	-			400	27					3.0			

NOTES

①

ENTERING WATER TEMPERATURE 180°F, 20°F ΔT.

②

PROVIDE INSPECTION AND CLEANING DUCT ACCESS DOOR ON UPTEAM SIDE OF COIL.

③

THE HOT WATER COIL IS SIZED TO HANDLE OUTDOOR AIR QUANTITIES AT 100 PERCENT OF OCCUPANCY WITHOUT HAVING TO RESORT TO CLOSING OUTDOOR AIR INTAKE DAMPERS ON A "DESIGN HEATING DAY" TO PREVENT FREEZE-UP.

SCHEDULE OF EXPANSION TANK				
MARK	MODEL NO. ①	TANK VOLUME GALS.	ACCEPTANCE VOLUME GALS.	REMARKS
② +	B-400	106	106	REFER TO ③ ③

NOTES

- ① AS MANUFACTURED BY "BELL & GOSSETT".
- ② INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- ③ VERTICAL MOUNTING 125PSI ASME TANK, DIMENSIONS 24"x65"H / 1200LBS.

SCHEDULE OF BOILERS												
BOILER DATA			BURNER DATA		ELECTRICAL		PHYSICAL DATA		REMARKS			
MARK	LOCATION	MODEL N° ④	INPUT (MBH)	OUTPUT (MBH)	FUEL	SERVICE	MCA	(IN)			WEIGHT (LBS)	
①	②	③	BOILER ROOM	ENDURIA 1000	1000	902	GAS	120/1/60	20	28Wx51x6BH	2000	REFER TO ②③④⑤⑥
⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿	⑤ AS MANUFACTURED BY "FULTON".											
	⑥ MANUFACTURER INTEGRAL TO BOILER.											
	⑦ INSTALL PER MANUFACTURER'S RECOMMENDATIONS.											
	⑧ BOILER INSTALLATION SHALL CONFORM TO ALL REQUIREMENTS OF INSURANCE UNDERWRITER, NFPA AND ALL AUTHORITIES HAVING JURISDICTION. BOILERS SHALL BE FULLY FIELD COMMISSIONED BY AUTHORIZED TECHNICIAN FOR THE TYPE OF GAS FIRED (LPG OR NG), IF THE TYPE OF GAS IS CHANGED AFTER STARTUP THE BOILERS SHALL BE FULLY RE-COMMISSIONED BY AUTHORIZED TECHNICIAN.											
⑨ PROVIDE MANUFACTURER RECOMMENDED COMBUSTION AIR INTAKE AND EXHAUST VENT PIPING, VENT PIPE CONDENSATE DRAIN, HIGH/LOW LIMIT CONTROLLER, DUAL LOW WATER CUT OFFTS, OUTDOOR AIR TEMPERATURE SENSOR KIT, MULTIPLE BOILER CONDENSATE NEUTRALIZER PACKAGE, VENT PIPING PER THIS MANUFACTURER AL-29-4C OR 316L, BACKET CONTROLS, DISCONNECT SWITCH, LEAD LAMP CONTROLS, MOTORIZED ISOLATION VALVES, BOILER PUMP START/STOP SIGNAL, VENTLESS GAS TRAIN, MODCON CONTROL PANEL.												
⑩ HOT WATER BASED ON 140°F E.W.T., 160°F L.W.T.												

SCHEDULE OF EXISTING STEAM BOILERS														
BOILER DATA				BURNER DATA							INDUCED DRAFT FAN DATA		REMARKS	
MARK	SERVICE	MODEL N# & Q	NUMBER OF SECTIONS	MODEL N# & Q	OUTPUT (BHP)	OUTPUT MBH/HR.	BOILER EFFICIENCY	FIRING RATE OIL (GPH)	FIRING RATE GAS (MBH)	BURNER MOTOR HP	OIL PUMP MOTOR HP	MODEL N# & Q		MOTOR HP
BOILER #1	ORIG. BLDG. & ADDITION	6500 -5-21	21	C7-GO-30	325	846.3	83.7%	92	—	1/2 (208/3/60)	3/4 (208/3/60)	24C300-3	3 (208/3/60)	
BOILER #2														
BOILER #3														

NOTES

①

AS MANUFACTURED BY "H.B. SMITH".

②

AS MANUFACTURED BY "POWERFLAME".

③

AS MANUFACTURED BY "AUBURN".

SCHEDULE OF PUMPS											
MARK	SERVICE	LOCATION	MODEL N ^o ①	GPM	HEAD FT.H ₂ O	RPM	MOTOR HP/BHP	ELECTRIC SERVICE	PHYSICAL DATA		REMARKS
									(IN)	WEIGHT (LBS)	
① ② ③	HEATING LOOP	MECHANICAL	SERIES E-1510 569	800	80	1800	300/21	460/3/60	25Wx56Lx30H	1100	REFER TO ② ③
④ ⑤ ⑥	HEATING LOOP	MECHANICAL	SERIES E-1510 340	300	130	1800	25/17.5		21Wx52Lx24H	900	REFER TO ② ③
⑦ ⑧ ⑨	HEATING LOOP	MECHANICAL	SERIES E-1510 340	300	130	1800	25/17.5		21Wx52Lx24H	900	REFER TO ② ③
⑩ ⑪ ⑫	HEATING LOOP	MECHANICAL	SERIES E-80 4x4.9, 58	200	20	1170	2/1.5		12Wx25Lx29H	300	REFER TO ② ③
⑬ ⑭ ⑮	HEATING LOOP	MECHANICAL	-	200	75	1750	7.5/-		-	-	REFER TO ④

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AS MANUFACTURED BY "BELL & GOSSETT".
② INSTALL PUMPS PER MANUFACTURER'S RECOMMENDATIONS.
③ PROVIDE VFD'S FOR ALL PUMPS. VFD'S SHALL BE WALL OR STAND MOUNTED. NEXT PUMPS, PROVIDE ALL MOUNTING HARDWARE.

④ EXISTING PUMPS SHALL BE INSPECTED, REFURBISHED TO EXISTING DESIGN CONDITIONS. REPAIR PUMPS AS REQUIRED IF FOUND NOT OPERATING PROPERLY. PROVIDE ALL PUMP BALANCING REPORT PRIOR TO HEAT EXCHANGER DEMOLITION. FOR BASELINE OF EXISTING PUMP PERFORMANCES.

MARK	MODEL No.	CFM	MIN. O.A. CFM	COOLING DATA TOTAL CAPACITY MBH	SENSIBLE CAPACITY MBH	HEATING DATA CAPACITY MBH	GPM	ROWS	FILTER TYPE	MOTOR H.P.	ELEC. SERV.	MOTOR FLA	MCA	MOP	PHYSICAL DATA DIMENSION / WEIGHT	REMARKS
ULV-L	FRESHMAN HNA100BC	1000	550	—	—	76	5	2	THROWAWAY 2"12"x20"x2"	0.5	EA08/1/60	4.7	9.5	15	40"Lx36"Wx115"H/600LBS	REFER TO 3A
ULV-B	FRESHMAN HNA180BC	1750	550	—	—	76	5	2	THROWAWAY 2"12"x20"x2"	0.5	EA08/1/60	4.7	14.4	20	47"Lx36"Wx115"H/600LBS	3A
ULV-C	MAUV1500	1500	1055	—	—	84	9	3	THROWAWAY	0.5	115/1/60	4.7	5.9	15	100"Lx22"Wx30"H/750LBS	3B

NOTES

A AS MANUFACTURED BY "CHANGEAIR SYSTEMS".

B AS MANUFACTURED BY "MAGIC AIR CORP".

C BASED ON 160" F.W.I.T., 140" F.L.W.T.

D INSTALL PER MANUFACTURER'S RECOMMENDATIONS

UNIT SHALL INCLUDE ERV (ENERGY RECOVERY WHEEL) PACKAGE, SOUND PACKAGE, HOT WATER HEATING COIL, DX COIL FOR FUTURE CONNECTION, 24" HIGH ACoustically LINED SUPPLY PLENUM WITH MULTIPLE REGISTERS, FIELD ERECTED TOP EXTENSION SECTIONS TO CEILING, MODULATING ECONOMIZER (100% OA) CONTROLS, POWERED EXHAUST, FIELD ERECTED REAR PLENUM SECTIONS, FULL SIZE LOUVER, BACKUP CONTROLLER, ISOLATION VALVES, STRAINERS, PT PORTS, BRAIDED HOSE-KIT, 2" THICK MERV 13 FILTERS, SIDE PIPE COVERS, FULL HEIGHT SIDE PANELS FROM UNIT TO WALL AND TOP/BOTTOM TRIM/COVE BASE PIECES. (ALL EXTENSIONS, PANELS, PIPE ENCLOSURES AND TRIM/COVE BASE SECTIONS SHALL MATCH UNIT COLOR AND FINISH).

UNIT SHALL INCLUDE HOT WATER HEATING COIL, FULL ADAPTER BACK WITH PIPE TUNNEL, INSULATED VALVE PACKAGE, DISCHARGE GRILLE WITH SCREEN, INSULATED OUTSIDE AIR DAMPER, FACE AND BYPASS DAMPER, 2" MERV 8 FILTERS.

SCHEDULE OF MINIMUM VENTILATION ROOM FLOW RATES											
		A	B	C	D	E	F	G	H	I	
ROOM NAME/NUMBER	OCCUPANCY CATEGORY	ROOM AREA (SQ.FT.)	PEOPLE DENSITY (#P/1000 SQ.FT.)	PEOPLE OUTDOOR AIR FLOW RATE (CFM/PERSON)	AREA OUTDOOR AIR FLOW RATE IN BREATHING ZONE (CFM/SQ.FT.)	EXHAUST AIR FLOW RATE (CFM/SQ.FT.)	NUMBER OF PEOPLE (A×B÷1000)=#P	OUTDOOR AIR FLOW RATE WITHOUT ZONE EFFECTIVENESS FACTOR (P×C)÷(A×D)=CFM	ZONE AIR DISTRIBUTION EFFECTIVENESS FACTOR	MINIMUM ROOM VENTILATION AIR FLOW RATE G×H÷CFM	MINIMUM EXHAUST AIR FLOW RATE A×E÷CFM
H203											
CLASSROOM 191	CLASSROOM (AGES 9+)	743	35	10	0.12	0	27	359	0.8	449	0
CONFERENCE ROOM 102	CONFERENCE/MEETING	377	50	5	0.06	0	19	118	0.8	147	0
OFFICE 112	OFFICE SPACE	99	5	5	0.06	0	1	11	0.8	14	0
OFFICE 116	OFFICE SPACE	105	5	5	0.06	0	1	11	0.8	14	0
NURSE 118	OFFICE SPACE	115	5	5	0.06	0	1	12	0.8	15	0
TOILET 118A	TOILETS - PUBLIC	53	2 FIXTURES	-	-	50 CFM/ FIXTURE	-	-	-	-	100
ROOM 143J	BREAK ROOMS	50	50	5	0.12	0	3	21	0.8	26	0
H204											
MIDDLE SCHOOL GYM 131	GYM, SPORTS ARENA (PLAY AREA)	6287	7	20	0.18	0.5	45	2032	0.8	2540	3144
H205											
LEARNING COMMONS 143	MEDIA CENTER	1996	25	10	0.12	0	50	740	0.8	924	0
OFFICE 141A	OFFICE SPACE	253	5	5	0.06	0	2	25	0.8	31	0
CLASSROOM 138	CLASSROOM (AGES 9+)	677	35	10	0.12	0	24	321	0.8	402	0
CLASSROOM 138	CLASSROOM (AGES 9+)	677	35	10	0.12	0	24	321	0.8	402	0
CLASSROOM 140	CLASSROOM (AGES 9+)	677	35	10	0.12	0	24	321	0.8	402	0
TEACHER WORKROOM 145	CLASSROOM (AGES 9+)	756	35	10	0.12	0	27	361	0.8	451	0
H206											
HIGH SCHOOL GYM 179	GYM, SPORTS ARENA (PLAY AREA)	8987	7	20	0.18	0.5	63	2878	0.8	3597	4494
AUXILIARY GYM 177	GYM, SPORTS ARENA (PLAY AREA)	5507	7	20	0.18	0.5	39	1771	0.8	2214	2754
H207											
CAFETERIA	CAFETERIA/FAST-FOOD DINING	4488	100	7.5	0.18	0	449	4175	0.8	5219	0
H209											
CLASSROOM 221	CLASSROOM (AGES 9+)	691	35	10	0.12	0	25	333	0.8	416	0
CLASSROOM 223	CLASSROOM (AGES 9+)	691	35	10	0.12	0	25	333	0.8	416	0
CLASSROOM 225	CLASSROOM (AGES 9+)	691	35	10	0.12	0	25	333	0.8	416	0
CLASSROOM 224	CLASSROOM (AGES 9+)	920	35	10	0.12	0	33	440	0.8	551	0
CLASSROOM 226	CLASSROOM (AGES 9+)	716	35	10	0.12	0	26	346	0.8	432	0
CLASSROOM 218	CLASSROOM (AGES 9+)	1040	35	10	0.12	0	37	495	0.8	619	0
CLASSROOM 220	CLASSROOM (AGES 9+)	1030	35	10	0.12	0	37	494	0.8	617	0
CLASSROOM 222	CLASSROOM (AGES 9+)	908	35	10	0.12	0	32	429	0.8	536	0
H210											
OFFICE 239	OFFICE SPACE	870	5	5	0.06	0	5	77	0.8	97	0
OFFICE 240	OFFICE SPACE	870	5	5	0.06	0	5	77	0.8	97	0
H211											
LEARNING STUDIO 310	CLASSROOM (AGES 9+)	402	35	10	0.12	0	15	198	0.8	248	0
LEARNING STUDIO 312	CLASSROOM (AGES 9+)	402	35	10	0.12	0	15	198	0.8	248	0
LEARNING COMMONS	CLASSROOM (AGES 9+)	2240	35	10	0.12	0	79	1059	0.8	1324	0
SGR 315	CLASSROOM (AGES 9+)	105	35	10	0.12	0	4	53	0.8	66	0
ELEVATOR LOBBY 300	LOBBIES	80	150	5	0.06	0	12	65	0.8	81	0

DBE: TAB: Layout1 - Y:\RYE CITY SD\Rye CSD - 2019 Bond - Phase 2 (1937.00)\Drawings\HVAC\193700H-302-MHS.dwg - DATE: Jan 28, 2021 - 2:31pm

SEAL & SIGNATURE	DATE:	11/07/19
	PROJECT No:	9200
	DRAWING BY:	BGA
	CHK BY:	BGA
	DWG No:	H2-302