

FAN SCHEDULE							
DESIGNATION	TX-1	TX-2	GX-1&2	GS-1&2	VEF-1&2	SF-1	EF-1
LOCATION	ROOF	WC 124	ROOF	MER 131	APPARATUS BAY	DRYING ROOM	AIR ROOM
AREA SERVED	TOILET ROOMS	WC 124	APPARATUS BAY	APPARATUS BAY	VEHICLE EXHAUST	DRYING ROOM	AIR ROOM
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK	PLYMOVENT	GREENHECK	GREENHECK
MODEL	GB-141HP	SP-B70	GB-141	BSQ-140	TEV-3110	SQ-90-G	SS1-16-436-A
WEIGHT (LBS)	64				40.5	49	63
FAN TYPE	GETRIFUGAL	CENTRIFUGAL	GETRIFUGAL	INLINE GETRIFUGAL	CENTRIFUGAL	INLINE CENTRIFUGAL	SIDEWALL
DRIVE TYPE	BELT	DIRECT	BELT	BELT	DIRECT	DIRECT	DIRECT
CFM	1210	50	2000	2000	2000	200	3200
BHP	.38	.01	.76	.6	2.75	.04	0.79
HP	.5	16 WATTS	1	.75	3	½ <sub>5</sub>	1
RPM	1508	675	1483	1364	3460	1300	1,750
SP (IN H <sub>2</sub> O)	1	.25	1	.75	3.2	0.25	0.5
VOLTS/φ/Hz	208/1/60	120/1/60	208/3/60	208/1/60	208/3/60	120/1/60	208/1/60
STARTER TYPE	HOA	HOA	VFD	VFD	VFD	HOA	HOA
STARTER LOCATION	MER 216	MER 131	MER 216	STORAGE 129	MER 114	DRYING ROOM	AIR ROOM

- NOTES:
- ALL MOTORS 1 HP OR GREATER SHALL BE PREMIUM EFFICIENCY.
  - ALL MOTORS FURNISHED WITH VARIABLE FREQUENCY DRIVES SHALL BE INVERTER DUTY RATED & APPROVED FOR VARIABLE SPEED AND TORQUE APPLICATIONS.
  - FURNISH RUBBER IN SHEAR OR SPRING VIBRATION ISOLATORS AS PER THE SPECIFICATION.
  - FURNISH WALL MOUNTED SPEED CONTROLLER OR THERMOSTAT AS INDICATED ON PLAN.
  - FURNISH MOTOR AND BELT GUARDS FOR ALL EXTERNAL MOTOR DRIVES.
  - MOTOR STARTER AND DISCONNECT SWITCH FOR EACH FAN SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. EACH ROOFTOP FAN SHALL BE FURNISHED WITH WEATHERPROOF UNIT-MOUNTED LOCAL DISCONNECT SWITCH.
  - ALL TX AND EX FANS SHALL HAVE ECM MOTORS.
  - FOR EF-1 PROVIDE WALL HOUSING MOUNTING OPTION WITH BACKDRAFT DAMPER AND WEATHER HOOD WITH ½" WMS.

DIFFUSER, REGISTER, GRILLE SCHEDULE						
ID	A	B	C	D	E	F
MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS
DESIGNATION	CD	CD	RR	ER	SR	RR
MODEL	OMNI-AA	TDC	355FL	355FL	300FL	355FL
SIZE	24x24	12x12	24x24 OR 12x12	8x8	12x8	12x8
TYPE	CEILING SUPPLY	CEILIGN SUPPLY	CEILING RETURN	EXHAUST	SIDEWALL SUPPLY	SIDEWALL RETURN
DESCRIPTION	ALL-ALUMINUM PLAQUE FACE DIFFUSER FOR USE IN ARCHITECTURAL CEILINGS.	STEEL CONSTRUCTION, 4-WAY DIFFUSER	ALUMINUM CONSTRUCTION, WITH ½" SPACING, 35" FIXED DEFLECTION AIRFOIL BLADES.	ALUMINUM CONSTRUCTION, WITH ½" SPACING, 35" FIXED DEFLECTION AIRFOIL BLADES.	ALUMINUM CONSTRUCTION, WITH ¾" SPACING, DOUBLE DEFLECTION SUPPLY GRILLE.	ALUMINUM CONSTRUCTION, WITH ½" SPACING, 35" FIXED DEFLECTION AIRFOIL BLADES.
NOTES	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4	1,2,3,4,5	1,2,3,4,5

NOTES:

- BAKED ENAMEL FINISH; COORDINATE COLOR WITH ARCHITECT.
- PROVIDE OPPOSED BLADE VOLUME DAMPER IN NECK.
- COORDINATE MOUNTING FRAME WITH CEILING/WALL CONSTRUCTION & PROVIDE SURFACE LAY-IN AS REQUIRED.
- NOISE CRITERION SHALL BE KEPT <30 NC.
- NECK SIZE SHALL BE ACCORDING TO NECK SCHEDULE.

NECK SCHEDULE:

6"φ | 75 - 195 CFM  
8"φ | 196 - 310 CFM  
10"φ | 311 - 435 CFM  
12"φ | 436 - 600 CFM  
14"φ | 601 - 750 CFM  
15"φ | 751 - 850 CFM

## EQUIPMENT NOTES

- RECESSED ELECTRIC CABINET UNIT HEATER (ECUH-B):** SHALL BE INDEECO MODEL WRI, CATALOG NUMBER 930U00750V RATED AT 563 WATTS, 208V/1PH/60HZ, 2.9 AMPS, 40 CFM. PROVIDE DISCONNECT SWITCH AND ADJUSTABLE THERMOSTAT WITH OFF POSITION. SUBMIT COLOR CHART FOR ARCHITECTURAL APPROVAL.
- ELECTRIC DUCT HEATER EDH-1&2:** SHALL BE GREENHECK MODEL IDHC, 32 KW, 208V/3φ/60HZ, 90 FLA, 2000 CFM, 50° AIR TEMP RISE. FURNISH THE FOLLOWING CONTROL OPTIONS: SCR CONTROL, DISCONNECT SWITCH, FAN INTERLOCK WITH GS-1, DUCT THERMOSTAT ARRANGED TO PROVIDE 60° AIR. INTERLOCK WITH FAN GS-1 SO THAT HEATER ONLY OPERATES WHILE FAN GS-1 IS RUNNING, AS NECESSARY TO MAINTAIN AIR DISCHARGE TEMPERATURE MINIMUM OF 50°.
- ELECTRIC DUCT HEATER EDH-3:** SHALL BE GREENHECK MODEL IDHC, 5 KW, 208V/3φ/60HZ, 14 FLA, 200 CFM, 80° AIR TEMP RISE. FURNISH THE FOLLOWING CONTROL OPTIONS: SCR CONTROL, DISCONNECT SWITCH, FAN INTERLOCK WITH SF-1, DUCT THERMOSTAT ARRANGED TO PROVIDE 60° AIR. INTERLOCK WITH FAN SF-1 SO THAT HEATER ONLY OPERATES WHILE FAN SF-1 IS RUNNING, AS NECESSARY TO MAINTAIN AIR DISCHARGE TEMPERATURE MINIMUM OF 80°.
- HORIZONTAL DISCHARGE HOT WATER UNIT HEATER (HWUH-A):** SHALL BE VULCAN MODEL HV-118A, HORIZONTAL DISCHARGE CONFIGURATION, RATED AT 9.2 MBH, 1.9 GPM, 140° F EWT, 120° F LWT, 2.2' WPD (FT H<sub>2</sub>O), 500 CFM. MOTOR SHALL BE RATED AT 16 WATTS, 1550 RPM, 0.8 AMPS, 1.0 MCA, 15 MOCP, 115V/1φ/60HZ. PROVIDE WALL THERMOSTAT, FAN GUARD, AND AIR DEFLECTION LOUVER. HANG UNIT FROM BUILDING STRUCTURE WITH VIBRATION ISOLATORS. FURNISH DISCONNECT SWITCH.
- HOT WATER EXPANSION TANK (ET-1):** SHALL BE AMTROL MODEL AX-15V-DD, 12" DIAMETER, 22" HIGH, 8 GALLONS, WITH 3/4" NPT SYSTEM CONNECTION, 3/4" NPT CHARGING VALVE, 3/4" DRAIN PLUG, 240° F MAX OPERATING TEMPERATURE, 125 PSI MAX WORKING PRESSURE, FACTORY PRE-CHARGED TO 12 PSIG. UNIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ASME SECTION VIII.
- CO & NO<sub>2</sub> DETECTION SYSTEM:** SHALL BE SIERRA MONITOR CORPORATION. PROVIDE SENTRY 5000-IT CONTROLLERS (SEE PLANS FOR LOCATION) WITH NATIVE BACNET INPUT/OUTPUT. CONTROL PANELS SHALL BE LINKED TO BMS. ALL SPACE TRANSMITTERS SHALL BE MOUNTED 5'-0" AFF IN A PROTECTED LOCATION. PROVIDE LIGHT/HORN STROBE AS INDICATED ON PLAN TO BE ENERGIZED UPON LEVEL "HIGH HIGH" ALARM. PROVIDE SIGNAGE "CO & NO<sub>2</sub> DETECTION" NEAR HORN STROBE
  - CO TRANSMITTERS SHALL BE 5100-04-IT-S1-01-00-0-0-C
  - NO<sub>2</sub> TRANSMITTERS SHALL BE 5100-12-IT-S1-01-00-0-0-C
- VEHICLE EXHAUST RAIL SYSTEM:** SHALL BE BASED ON PLYMOVENT EXHAUST RAIL SYSTEM COMPOSED OF (8) VSRX RAILS MOUNTED BELOW THE OPEN GARAGE DOOR PATH & LENGTH NOTED ON PLAN, (8) FLEXIBLE HOSES WITH TROLLEY FOR MOUNTING TO RAIL, 6" 40' LONG HOSES CAPABLE OF 600° F CONTINUOUS & 1250° F INTERMITTENT. 400° F TEMPERATURE RESISTANCE ON ALL COMPONENTS. FANS (VX-1&2) SHALL BE TEV-3110 AS NOTED IN SCHEDULE ON THIS PLAN. PROVIDE VFD FOR FAN MOTOR. PROVIDE (2) NTX NEMA 4X WALL MOUNT TRANSMITTERS WITH 433 MHz RCRC-3R RECEIVER MOUNTED TO FAN VFD. PROVIDE ALL SUPPORTS AND HANGERS AS REQUIRED. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR DETAILS. COORDINATE WITH ALL PIPING, EQUIPMENT, GARAGE DOORS, ETC IN APPARATUS BAY.
- HEAVY DUTY LOUVERS:** SHALL BE RUSKIN MODEL L26, 6" DEEP, WITH 47% FREE AREA, OPTIONAL 16 GAGE STEEL CONSTRUCTION, CHEVRON STYLE BLADES AT 3-1/2" SPACING, 6" DEEP STEEL FRAME. REFER TO PLANS FOR SIZE. COORDINATE INSTALLATION REQUIREMENTS WITH ARCHITECTURAL PLANS. ANODIZED CUSTOM COLOR TO BE SELECTED BY ARCHITECT. COORDINATE WITH ARCHITECTURAL PLANS.
- ELECTRIC UNIT HEATERS (EUH-A):** SHALL BE MARKEL MODEL F3FUH07C03, RATED AT 575 CFM, 25.6 MBH, 7.5 kW, 208V/3φ/60Hz, 20.8 AMPS. PROVIDE THE FOLLOWING OPTIONS: FAN GUARD, AIR DEFLECTION LOUVER, SUMMER FAN SWITCH, HEAT PURGE FAN DELAY SWITCH, DISCONNECT SWITCH, & WALL THERMOSTAT.
- VERTICAL DRYER VENT CAP:** SHALL BE SIMILAR TO DRYERJACK MODEL 466.

## EQUIPMENT NOTES

- ELECTRIC CABINET UNIT HEATER (ECUH-A):** UNIT SHALL BE BASED ON MARKEL MODEL F30522T2DWB RECESSED TYPE COMMERCIAL FAN FORCED WALL HEATER. BUILT IN TAMPERPROOF THERMOSTAT, THERMAL OVERLOAD CUTOFF, FAN DELAY SWITCH. UNIT SHALL BE RATED ACCORDING TO THE FOLLOWING SPECIFICATIONS:
  - FAN CFM: 100
  - ELECTRIC COIL CAPACITY: 7.7 MBH
  - kw: 1.5
  - VOLTS/PH/HZ: 208/1/60
  - AMPS: 10.8
  - FURNISH DISCONNECT SWITCH WITH EACH UNIT.
- LOUVERS:** SHALL BE RUSKIN MODEL ELF375DX, 4" DEEP, WITH 54% FREE AREA, 6063T5 EXTRUDED ALUMINUM DRAINABLE BLADES AT 37.5' AND 5-3/32" SPACING, 4" DEEP 6063T5 EXTRUDED ALUMINUM FRAME. AND 1/2" CUSTOMIZED STEEL BIRD SCREEN. MINIMUM LOUVER SIZE 12"x12". ANODIZED CUSTOM COLOR TO BE SELECTED BY ARCHITECT. COORDINATE WITH ARCHITECTURAL PLANS.
- GAS-FIRED UNIT HEATERS (GFUH-A):** SHALL BE MODINE MODEL HDS-125, 125 MBH INPUT, 102.5 MBH OUTPUT. UNITS SHALL BE DIRECT-VENT SEPARATED COMBUSTION TYPE WITH 4"φ FLUE OUTLET, 4"φ AIR INLET, AND 1/2"φ GAS CONNECTION. FAN SHALL BE 1/8 HP, 1625 RPM. ELECTRICAL REQUIREMENTS: 120V/1φ/60HZ. PROVIDE PROPANE CONVERSION KIT AND LOCAL DISCONNECT SWITCH. FURNISH WITH SINGLE-STAGE, DIRECT SPARK IGNITION CONTROLS, WITH 100% SHUT-OFF AND CONTINUOUS RETRY. PROVIDE ELECTRIC WALL THERMOSTAT AND CONDENSATE NEUTRALIZING KIT.
- GAS-FIRED HOT WATER BOILER (B-1):** SHALL BE WEIL MCALIN EVG-299, STAINLESS STEEL FIRE-TUBE CONDENSING HOT WATER BOILER, RATED AS FOLLOWS:
  - 299 MBH PROPANE GAS INPUT.
  - 280 MBH GROSS OUTPUT.
  - 140° F MAXIMUM SUPPLY WATER TEMPERATURE.
  - 160 PSI MAXIMUM OPERATING PRESSURE.
  - 208V/1PH/60Hz
  - 10-TO-1 TURNDOWN RATIO
FURNISH THE FOLLOWING FEATURES & OPTIONS:
  - WALL-MOUNT KIT.
  - BOILER DIGITAL CONTROL PACKAGE
  - 1-1/2"φ HOT WATER INLET & OUTLET CONNECTIONS.
  - 1" CONDENSATE DRAIN
  - 3"φ DIRECT VENT CONNECTIONS.
  - CONDENSATE NEUTRALIZER KIT
  - SIDEWALL VENT/AIR TERMINATION KIT
  - PROPANE CONVERSION KIT
  - BOILER CIRCULATOR - TACO 0014
  - DISCONNECT SWITCH
- PRIMARY HOT WATER PUMP (P-1):** SHALL BE ARMSTRONG MODEL 4380 0103-000.3 CLOSE COUPLED VERTICAL IN-LINE CENTRIFUGAL PUMP RATED AT 29 GPM, 25' TDH, .333 HP, 208V/1PH/60HZ, 1675 RPM. PROVIDE DISCONNECT SWITCH.
- CONDENSATE PUMP (CP-1):** SHALL BE LITTLE GIANT MODEL VCM-20ULS, RATED AT 25 GPH @ 15' HEAD, WITH 1/2 GALLON TANK, 3/8" DISCHARGE CONNECTION, & SHUT-OFF AT 20' HEAD. MOTOR SHALL 1/30 HP, 93 WATTS, 115V/1φ/60Hz, 1.5 AMPS. INCLUDE THE FOLLOWING OPTIONS: SAFETY SWITCH, 6' POWER CORD, THERMAL OVERLOAD PROTECTOR, NYLON SUMP PAN, POLYPROPYLENE CONTROL FLOAT, BUILT-IN CHECK VALVE, FILTER SCREEN, STAINLESS STEEL SHAFT. PUMP SHALL BE ARRANGED TO SHUT DOWN AC UNIT IF THE SAFETY SWITCH DETECTS NO FLOW. PROVIDE DISCONNECT SWITCH.
- OUTSIDE AIR INTAKE FOR GAS FIRED EQUIPMENT:** FOR ALL GAS FIRED DIRECT VENTING CONDENSING & NON-CONDENSING APPLIANCES SHALL BE SINGLE-WALL SPIRAL GALVANIZED STEEL BY SHEET METAL CONNECTORS, INC. ALL DUCTWORK IS 4-PLY SPIRAL LOCKSEAM MEETING ASTM A-653. ALL DUCT CONNECTIONS SHALL BE MADE WITH A DOUBLE LEGGED EPDM GASKET CREATING AN AIR-TIGHT CONNECTION MEETING ASTM A-653. SINGLE-WALL DUCT GAUGE SHALL BE SELECTED FOR POSITIVE, NEUTRAL, AND NEGATIVE DRAFT UP TO 15"WC WITH A MINIMUM GAUGE OF 24. PRODUCT IS RATED FOR ZERO CLEARANCE TO COMBUSTIBLES. PROVIDE STRAIGHT SECTIONS, ELBOWS, OFFSETS, CONNECTION ADAPTERS, WALL SLEEVES, AND SCREENED TERMINATIONS.
- LISTED SPECIAL GAS VENTING FOR GAS FIRED EQUIPMENT:** SHALL BE HEATFAB "SAF-T VENT CI PLUS" DOUBLE WALL CONSTRUCTION, 1" FIBERGLASS INSULATION, AL-29-4C STAINLESS STEEL SPECIAL VENT UL 1738 FOR POSITIVE, NEUTRAL, AND NEGATIVE DRAFT UP TO 15"WC. PRODUCT IS RATED FOR ZERO CLEARANCE TO COMBUSTIBLES. PROVIDE STRAIGHT SECTIONS, ELBOWS, OFFSETS, CONNECTION ADAPTERS, WALL SLEEVES, AND SCREENED TERMINATIONS.
- AIR SEPARATOR:** SHALL BE ARMSTRONG MODEL 1"-ASL, 350F MAXIMUM WORKING TEMPERATURE, 125 PSIG MAXIMUM WORKING PRESSURE, 1" INLET & OUTLET CONNECTIONS, 3/4" NPT AIR OUTLET, 3/4" NPT DRAIN. UNIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ASME CODE. PROVIDE AUTOMATIC AIR ELIMINATOR, ARMSTRONG MODEL AAE-750, WITH 250F MAXIMUM OPERATING TEMPERATURE, 2-133 PSIG AIR PRESSURE OPERATING RANGE, 100% SPRING ACTION POSITIVE SHUTOFF, 3/4" NPT SYSTEM CONNECTION.
- RADIANT MANIFOLD #1&2:** SHALL BE VIEGA STAINLESS STEEL MANIFOLD (PART #15906) INCLUDING 8 OUTLETS, 1" CONNECTIONS, SHUTOFFS, AND BALANCING VALVES.
- RADIANT MIXING STATION #1&2:** SHALL BE VIEGA HIGH HEAD MIXING STATION PART #12127, INCLUDING BALL VALVE SHUT OFF VALVES, BALANCING VALVES, 3-WAY DIVERTING OR MIXING VALVE, SENSOR WELL, STRAP ON TEMPERATURE SENSOR, TEMPERATURE AND PRESSURE GAUGE, SECONDARY 3-SPEED CIRCULATOR PUMP (HWCP-1&2) RATED AT 12 GPM @ 22' HEAD, 120V/1φ/60Hz.
- APPARATUS BAY DUCT-MOUNTED EXHAUST GRILLE:** SHALL BE TITUS MODEL US-DL SPIRAL DUCT DRUM LOUVER, ALUMINUM CONSTRUCTION, OPPOSED BLADE VOLUME DAMPER OPTION AG-15-HD, 24x10, CFM AS NOTED ON PLANS. FINISH SHALL BE BAKED ON ENAMEL. SUBMIT COLOR CHART TO ARCHITECT FOR APPROVAL. FRAME SHALL BE SUITABLE SURFACE MOUNTING ON ROUND SPIRAL DUCTWORK.

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Date Issue

03.10.20	MEETING
03.27.20	DESIGN DEVELOPMENT
05.07.20	PROGRESS
05.08.20	CD PROGRESS SET
05.28.20	CD PROGRESS SET
06.30.20	CD REVIEW SET
09.01.20	CONSTRUCTION PROGRESS
09.15.20	ICC SUBMISSION
01.15.21	ISSUED FOR BID

Project Title

## Bedford Fire Headquarters

550 Old Post Road  
Bedford, NY 10506

## Drawing Title MECHANICAL SCHEDULES & EQUIPMENT NOTES

Project No.	NSPC001000
Date	03-21-20
Scale	AS NOTED
Drawing by	JRT

Checked by: **JF/RS**

Drawing No.



M6.1