

EXHAUST FANS

FAN NO.	LOCATION	SERVICE	MODEL NO. *	FAN TYPE	CAPACITY CFM	S.P. W.G.	TIP SPEED FPM	EST. FAN RPM	SONES	DRIVE	MOTOR			ACCESSORIES	REMARKS	INTER-LOCK WITH	
											TYPE	H.P.	R.P.M.				
EF-1	ROOF	STORAGE AREA	G-160-C	PRV	1560	0.20	3687	860	7.5	DIRECT	OPEN	1/8	860	115/60/1	ROOF CURB, MOT. DAMPER		WL-1
EF-2	ROOF	DISINFECTION RM	GB-360	PRV	11200	0.20	4400	470	14.8	BELT	OPEN	2	1750/875	460/60/3	2 SPEED MOTOR, ROOF CURB, MOT. DAMPER		WL-2&3

* BASED ON: GREENHECK

GAS-FIRED UNIT HEATERS

UNIT NO.	LOCATION	MODEL NO. *	UNIT TYPE	FAN TYPE	CFM	AIR ENT. T.	GAS INLET PRESSURE	INPUT MBH	OUTPUT MBH	POWER VENTER	H.P.	RPM	ELECTRICAL CHARACTERISTICS	CONTROLS	REMARKS
UH-1	STORAGE RM	GHND-003	HORIZ	PROP	750	60	7" W.G.	30.0	24.9	YES	1/30	1050	115/60/1	24V T-STAT	
UH-2	DISINFECTION RM	GHND-004	HORIZ	PROP	800	60	7" W.G.	45.0	37.4	YES	1/30	1050	115/60/1	24V T-STAT	

* BASED ON: TRANE

WALL LOUVERS

LOUVER NO.	LOCATION	SERVING	WIDTH INCHES	HEIGHT INCHES	DEPTH INCHES	FRAME TYPE	BLADE TYPE	REMARKS
WL-1	STORAGE RM	STORAGE RM	30	30	4	AL	STORMPROOF	W/MOT. DMPR., 2.73 SQ.FT. F.A.
WL-2	DISINFECTION RM	DISINFECTION RM	42	60	4	AL	STORMPROOF	W/MOT. DMPR., 9.31 SQ.FT. F.A.
WL-3	DISINFECTION RM	DISINFECTION RM	42	60	4	AL	STORMPROOF	W/MOT. DMPR., 9.31 SQ.FT. F.A.

* BASED ON: RUSKIN

MECHANICAL SPECIFICATIONS

GENERAL

The Mechanical Work includes work as indicated on the drawings to provide complete heating and ventilating systems installations for the new building. Provide all construction engineering, supervision, labor, material and any and all items necessary for complete and functioning installations.

Comply with all Owner requirements.

Obtain all permits required for the Mechanical Work and arrange for inspections as required by the city Inspection Department.

Pay all sales taxes, fees, permit and other costs pertaining to the Mechanical Work.

Coordinate the Mechanical Work with the General Contractor and other sub-contractors.

All work is to be performed in a craftsmanship manner, and except where otherwise indicated, using only new, quality materials.

Do all cutting and patching necessary for the installation of the Mechanical Work. All cutting shall be done in a manner directed by the General Contractor. Patching shall match adjacent surfaces.

All electrical power wiring will be furnished and installed by the Electrical Contractor.

Make an operating test of the completed installations and remedy all defects disclosed as a result of the test.

Guarantee all workmanship and material against defects for at least one year from the date of Owner's acceptance.

GAS PIPING

Natural gas to be black steel Schedule 40 pipe and standard weight malleable iron screwed fittings.

Furnish and install valves required to isolate equipment and segments of the piping systems.

Valves for gas to be screwed end ball valve, 600 PSI WOG, bronze two-piece body, chromium-plated ball, lever handle, Teflon seats and seal, Apollo 80-100 Series, or equal.

Support piping from structure with adjustable hangers.

- For steel piping 2" and smaller: Grinnell Fig. 269, Fee and Mason Figure 202, Elcen Figure 202.

Gas piping requires a dirt pocket, shut-off cock and union in branch connection. Verify need and provide gas pressure regulator for 2 PSI gas pipe as required.

PIPE SLEEVES

Provide pipe sleeves where pipes pass through masonry walls. Sleeves shall be zinc-coated schedule 40 steel pipe with 1-1/2" integrally cast seep ring.

Space between the pipe and the sleeve shall be not less than 1/4". Seal the annular space between the pipe and the sleeve with 3M brand fire barrier caulk or putty. Firmly pack the space between the piping and the sleeve with a mineral wool insulation and caulk both ends of the sleeve watertight with elastic cement.

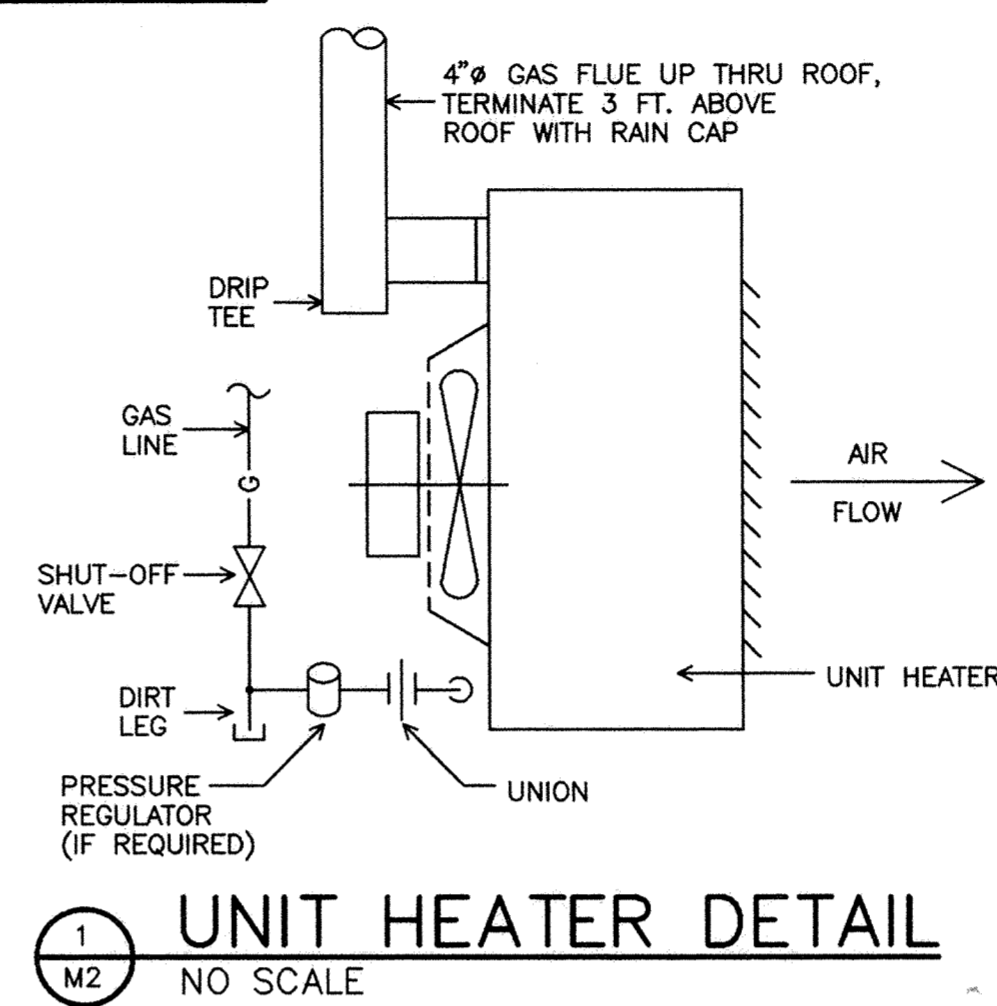
UNIT HEATERS

Furnish and install where indicated on the Drawings, Trane, Rez-nor, or approved equal, indirect natural gas fired, high efficiency horizontal suspended unit heaters. Each unit heater shall be A.C.A. certified and shall include:

- Steel cabinet, 10 gauge, with hanger connections and baked enamel finish.
- Air distribution louvers with four-way adjustability.
- Aluminized steel heat exchanger.
- Stainless steel ribbon burners.
- Gas cock and pilot valve.
- Propeller type fan and direct drive motor with overload protection, for 120 VAC electrical service.
- Complete 24 volt control system including electric spark ignited intermittent pilot with 100% safety shut-off, electronic flame supervision, 24 volt automatic gas valve, transformer, high limit and fan delay controls.
- Low-voltage thermostat for remote mounting.
- Flue vent fan.

Capacities and characteristics shall be as scheduled on the Drawings.

Support each unit heater from the structure using threaded rod. Maintain maximum height beneath the unit.



1 UNIT HEATER DETAIL
M2 NO SCALE

POWER ROOF VENTILATOR

Furnish and install where indicated on the Drawings, Greenheck, Acme, Penn, or approved equal, centrifugal roof exhauster, AMCA certified. Ventilator shall have backward curved blade fan, motor, mounting base, detachable hood, discharge baffles, bird screen, vibration isolation, safety disconnect switch and internal wiring post. All exposed parts of units shall be aluminum. Steel supporting parts and other internal steel framework shall be prime coated.

- Variable pitch V-belt drive or direct drive as scheduled on the Drawings.
- Lubrication and belts shall be suitable for low temperature operation.
- Provide electrically actuated dampers and 120V damper actuator. Damper shall be normally closed.
- Provide a factory manufactured 8" high roof curb for each fan.

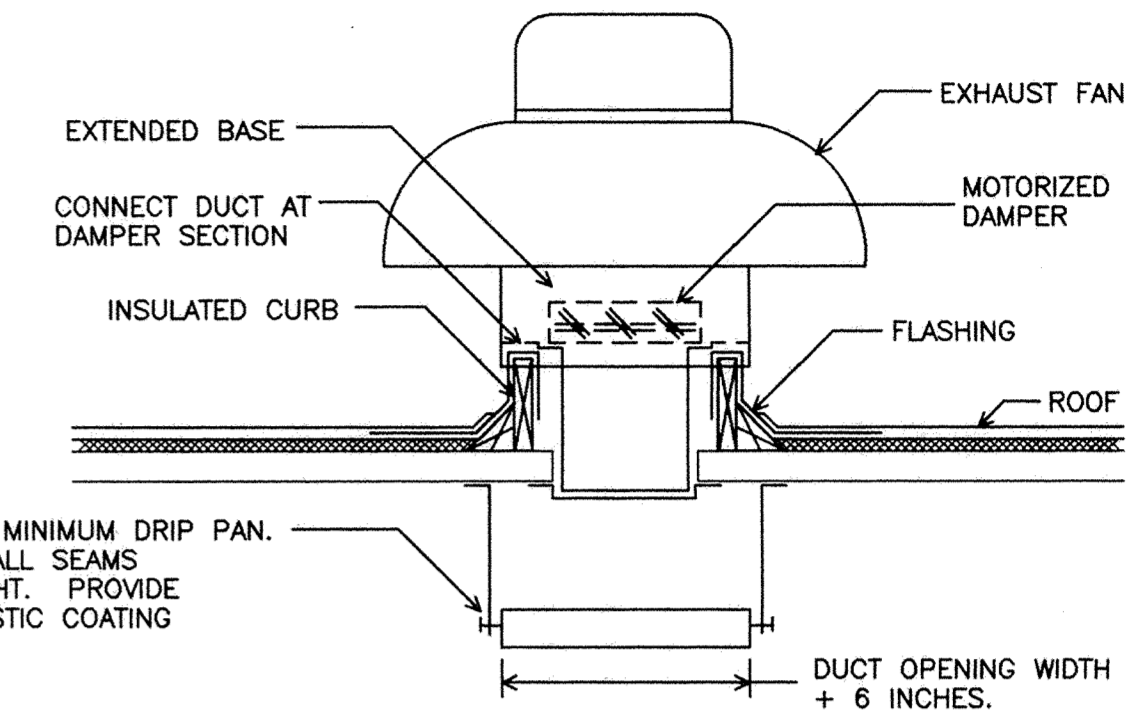
Capacities and characteristics are scheduled on the Drawings.

CONTROL DAMPER

Furnish and install where indicated on the Drawings, Cesco, Ruskin, Greenheck, or approved equal, frame mounted rectangular control damper. Damper axle shall be extended for motor actuator attachment.

Damper shall be louver size.

Damper shall be mounted in the air intakes to the Storage Room and Disinfection Room.



2 ROOF MOUNTED EXHAUST FAN DETAIL
M2 NO SCALE

DAMPER ACTUATOR AND CONTROL

Furnish and install Honeywell, Barber Colman, Robertshaw, or equal, 120 volt electric actuator for damper above of ample output for actuation and shut-off.

Damper shall be normally fully closed and shall fully open whenever fans EF-1 and EF-2 are energized.

GAS VENTS

Furnish and install, for all indirect gas fired heaters, Metalbestos Model RV, or approved equal, galvanized steel double wall pipe and fittings including tee, roof thimble, storm collar and stack cap.

Terminate gas vent at 3 ft. above roof. Provide sealant around gas vent at storm collar.

WALL LOUVERS

Furnish and install where indicated, Ruskin, Cesco, Dowco, or Arrow wall louver with formed stormproof blades fixed to a 4" frame, 18 gauge galvanized steel construction, baked enamel finish and 1/2" expanded aluminum bird screen.

This drawing was prepared by:
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I hereby certify that this report, plan, or specification was prepared by me or under my direct supervision and I am a duly registered Professional Engineer under the laws of the State of Minnesota.
Thomas A. Wentz
Date: 16 AUG 93 Registration No.: 18609

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DATE	DESCRIPTION	DESIGNED TAW
		CHECKED TAW
		DRAWN SRS
		GRAPHIC SCALE
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CITY OF ELK RIVER
WASTEWATER TREATMENT PLANT U.V. DISINFECTION
DISINFECTION BUILDING MECHANICAL PLAN

DATE AUG 1993 SHEET 8 OF 14 SHEETS PROJECT NO. 230-137-20