

EXISTING DAMPER DATA USED TO SIZE ACTUATOR TORQUE (FOR REFERENCE ONLY)							
DAMPER		SIZE	MAX CFM	AIR VELOCITY	LEAK	LB-IN/SF (TABLE)	
①	R/A (BY-PASS) DAMPER	168" x 32"	81,000 CFM	2170 FT/MIN	STD	8	
②	O/A CEILING DAMPER	200" x 30"	35,000 CFM	840 FT/MIN	STD	6	
③	RELIEF (EXH) AIR DAMPER	90" x 26"	30,000 CFM	1850 FT/MIN	STD	7	
④	R/A FAN DAMPER	FUNCTIONS AS ONE DAMPER	60" x 62"	45,000 CFM	1750 FT/MIN	STD	7
⑤	R/A FAN DAMPER		60" x 62"	45,000 CFM	1750 FT/MIN	STD	7

	ACTUATOR TORQUE NEEDED	AMT REQD
①	300 LB-IN	2
②	250 LB-IN	2
③	200 LB-IN	2
④	200 LB-IN	1
⑤	200 LB-IN	1

NOTE: BOTH S/A FANS TOGETHER ARE DESIGNED FOR 90,000 CFM TOTAL. THE O/A DAMPER IS DESIGNED FOR 35,000 CFM. TO CALCULATE TORQUE FOR R/A DAMPERS, 90% R/A IS ASSUMED.

10 SCOPE OF WORK MECHANICAL:

11 Remove (8) existing Pneumatic Actuators and replace with Electric Actuators. Replacement shall include all Linkages, Bushings, and Brackets at Dampers. See Electrical Drawing for work by Elect Contractor. Note: MARCRAFT can install or recommend a firm to install Actuators + Linkages. 1 (800) 325-1303.

12 Dampers shall remain.

13 All associated Pneumatics and Power/Signal Wiring/Conduit made obsolete shall be removed including Tubing, EP Switches etc, back to Main(s). Elect Drawing requires new Signal Wiring in EMT + re-use of existing. Coordinate wiring demo with Electrical Contractor.

14 Thoroughly patch all holes thru MARCRAFT RTU wall made by Electrical Sub.

15 Coordinate with HVAC Mechanics for Fan Shutdown.

16 Take care not to demo any Mechanical or Pneumatic devices in use.

20 ACTUATORS:

21 Electric, 120VAC, Spring Return, Direct Coupled Damper Actuator designed for On-Off, Fail-Safe control of Dampers in HVAC Systems.

22 Brushless DC Motor and True Spring Return operation.

3.0 LINKAGES:

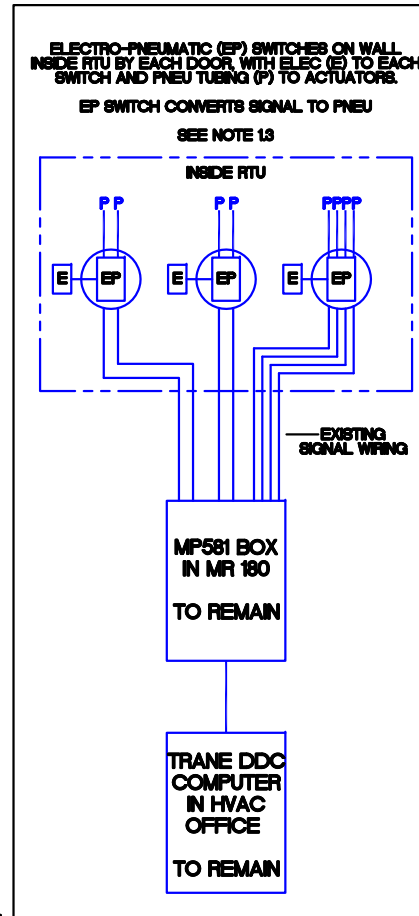
31 Connecting Rods and Linkages shall be zinc-plated steel and shall be non-slip. Working parts of joints shall be brass, bronze, nylon, or stainless steel.

4.0 TRANE DDC SYSTEM:

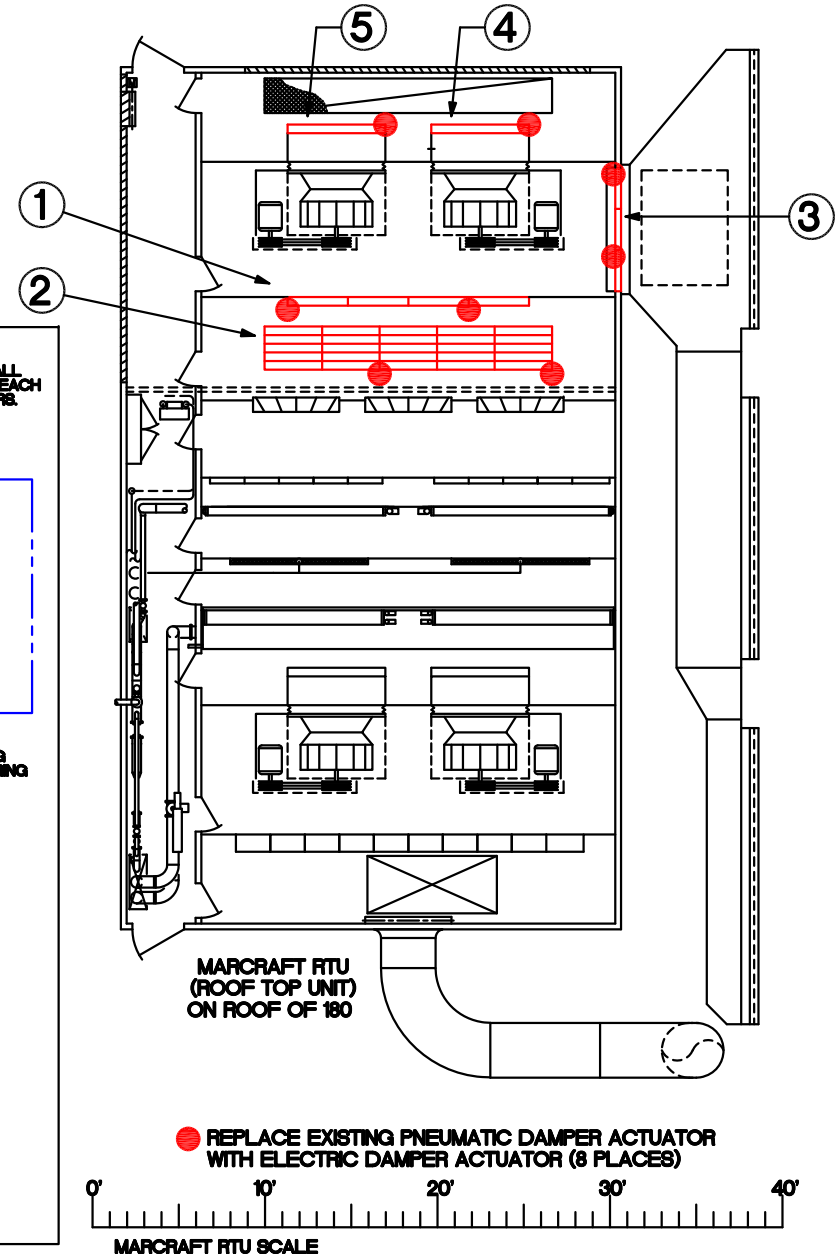
41 Existing Pneumatic Actuators are controlled by existing TRANE Tracer-Summit DDC computer system. Include costs for TRANE approval to dis-connect and re-connect Signal Wiring. TRANE USA INC. PO 1287, Johnstown, Pa. 15907. (814) 266-3020, Julie Luthi.

42 Electrical Contractor will run Signal Wiring in rigid or EMT Conduit and re-use existing from each new Electric Actuator to the existing MP581 Board in MR 180 below. Include costs for TRANE recommendations and approval of this work.

5.0 CLEAN-UP: All items made useless shall become contractors property + removed.



CONTRACTOR SHALL MAN JOB SO THAT (3) CREWS OF MECHANICAL WORKERS ARE INSTALLING ACTUATORS AND LINKAGES IN ALL (3) COMPARTMENTS SIMULTANEOUSLY, FOLLOWED BY (3) CREWS OF ELECTRICAL WORKERS IN LIKE MANNER. RUN POWER AND SIGNAL WIRING UP TO EACH OF 3 COMPARTMENT DOORS PRIOR TO SHUT-DOWN. VA WILL ALSO RUN STATIC PRESSURE AND FAN SPEED TO TOLERABLE WORKING CONDITIONS. THIS IS TO REDUCE SUMMER A/C INTERRUPTIONS AS MUCH AS POSSIBLE.



Revisions	Date



James E. Van Zandt
Department Of Veterans
Affairs Medical Center

Drawing Title MARCRAFT RTU (ROOF TOP UNIT)		Project Title REPLACE ACTUATORS AND LINKAGES		Date
Approved: Division Chief		Building Number		Project No.
Approved: Service Director		Checked	Drawn	DRAWING NO. H-1
Location VAMC Altoona, Pennsylvania		Dwg. 1 of 2		VAMC