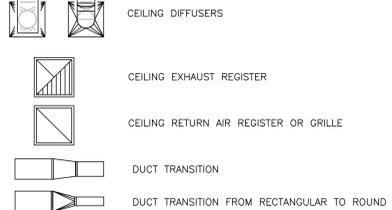
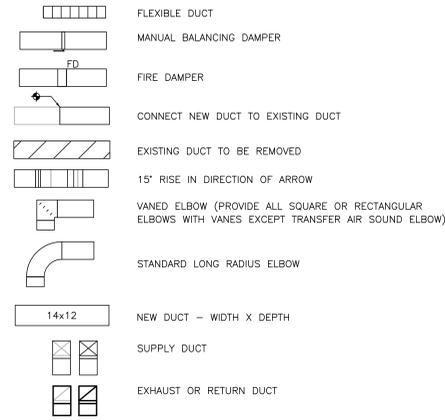


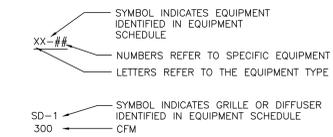
MECHANICAL SYMBOL LEGEND

DUCTWORK SYMBOLS

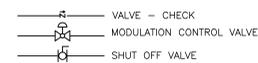


24x12 INDICATES A 24"x12" RECTANGULAR DUCT
 12"φ INDICATES A 12" ROUND DUCT
 24x12φ INDICATES A 24"x12" FLAT OVAL DUCT
 ROOM THERMOSTAT/TEMP. TRANSMITTER LOCATION ONLY SEE CONTROL DRAWINGS FOR TYPE

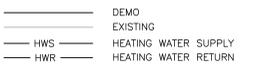
EQUIPMENT SYMBOLS



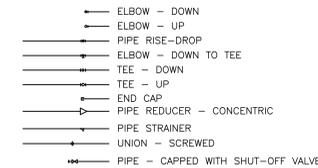
VALVE SYMBOLS SCHEMATIC



PIPING SYMBOLS



FITTING SYMBOLS



ABBREVIATIONS

AD	ACCESS DOOR	KW	KILOWATT
BTUH	BTU PER HOUR	NA	NOT APPLICABLE
CFM	CUBIC FEET PER MINUTE	NIC	NOT IN CONTRACT
D	DRAIN	NO.	NUMBER (QUANTITY)
ENT	ENTERING	OBD	OPPOSED BLADE DAMPER
EXH	EXHAUST	PSIG	POUNDS PER SQUARE INCH GAGE
*F	DEGREES FAHRENHEIT	QTY	QUANTITY
FD	FIRE DAMPER	R.A.	RETURN AIR
FLEX	FLEXIBLE	RPM	REVOLUTIONS PER MINUTE
FPM	FEET PER MINUTE	SP	STATIC PRESSURE (INCHES OF WATER)
FT	FEET	TP	TOTAL PRESSURE (INCHES OF WATER)
GPM	GALLONS PER MINUTE	V	VOLTS
HB	HOSE BIBB	VAC	VOLTS, ALTERNATING CURRENT
HD	HAND DAMPER (VOLUME DAMPER)	VAV	VARIABLE AIR VOLUME
IN	INCHES		

DETAIL TITLES



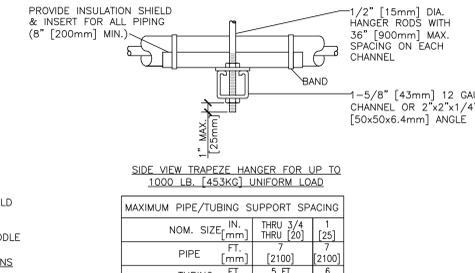
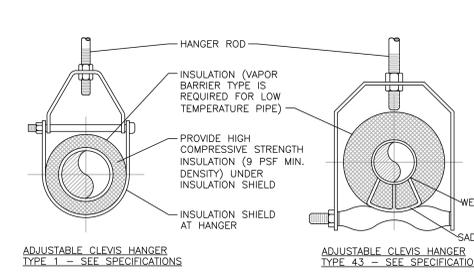
DETAIL SYMBOL



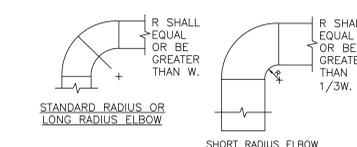
GENERAL NOTES

- PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILINGS, UNLESS OTHERWISE NOTED.
- PROVIDE ACCESS PANELS OR DOORS IN INACCESSIBLE CEILINGS AND/OR CHASES FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, COILS, FANS, CONTROLS, ETC. THEY SHALL BE FURNISHED UNDER DIVISION 23 AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATION. ACCESS DOOR RATING SHALL MATCH CLASSIFICATION OF WALL AND CEILING FIRE RATING.
- WATER PIPE CONNECTIONS TO WATER COILS SHALL BE MADE SO THERE WILL BE COUNTER FLOW BETWEEN WATER AND AIR.
- COORDINATE THE LOCATION OF DIFFUSERS, GRILLES, REGISTERS, ACCESS DOORS, ETC., WITH THE ARCHITECTURAL REFLECTED CEILING PLAN(S), SHEET A102.
- ROUND RUNOUTS AND DROPS TO DIFFUSERS SHALL BE THE SAME NOMINAL SIZE AS THE SCHEDULED DIFFUSER NECK SIZE.
- THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES SHOWN ON DRAWINGS ARE NET INSIDE DIMENSIONS. PROVIDE ONE INCH ACOUSTICAL LINING IN LOW VELOCITY RECTANGULAR DUCTWORK UNLESS NOTED OTHERWISE ON THE DRAWINGS. SEE SPECIFICATIONS.
- PROVIDE 1/2" MANUAL AIR VENTS AT HIGH POINTS OF CLOSED SYSTEM PIPING AND 1/2" MANUAL DRAIN VALVES WITH HOSE CONNECTION AT LOW POINTS AS REQUIRED TO PROVIDE COMPLETE SYSTEM DRAINAGE. WHERE DRAIN VALVES OCCUR ABOVE CEILING AREAS AND IN AREAS OUTSIDE MECHANICAL RANGE PROVIDE HOSE CONNECTION ON VALVE.
- PROVIDE TURNING VANES IN ALL SQUARE ELBOWS, EXCEPT TRANSFER AIR SOUND ELBOWS.
- THE CFM OF EACH DIFFUSER, REGISTER, ETC., IS INDICATED AS A NUMBER NEXT TO THE SYMBOL DESIGNATION ON THE DRAWINGS.
- REFER TO G102 FOR LOCATION OF FIRE RATED AND/OR SMOKE RATED WALLS AND ASSEMBLIES. PROVIDE APPROVED FIRE DAMPERS IN REQUIRED PENETRATIONS FOR DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS. PIPE AND DUCTWORK PENETRATIONS OF FIRE, SMOKE AND FULL HEIGHT WALLS SHALL BE CAULKED AIRTIGHT TO THE ADJACENT STRUCTURE BY MEANS OF U.L. APPROVED FIRE PROOF CAULKING MATERIAL.
- CONTRACTOR SHALL COORDINATE DUCTWORK, PIPING, PLUMBING AND FIRE PROTECTION PIPING WITH STRUCTURAL AND ELECTRICAL SYSTEMS AND SHALL PROVIDE NECESSARY OFFSETS TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
- CONTRACTOR SHALL FURNISH NECESSARY STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, DUCTWORK AND PIPING, ETC. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND OTHER BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING NECESSARY MISCELLANEOUS ANGLES, CHANNELS, UNISTRUT, ETC., AS MAY BE REQUIRED TO ADEQUATELY SUPPORT THE MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT IN A MANNER THAT WILL NOT OVERLOAD THE BUILDING STRUCTURAL SYSTEM.
- CONTRACTOR SHALL PROVIDE RETURN AIR OR TRANSFER AIR OPENINGS IN FULL HEIGHT WALLS SIZED AT 350 FPM (UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE DRAWINGS) TO CREATE AND/OR MAINTAIN A RETURN AIR PATH AS REQUIRED. FIRE DAMPERS AND/OR SMOKE DAMPERS SHALL BE PROVIDED IN SUCH OPENINGS WHERE REQUIRED BY NOTE "10".
- SEAL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, DUCT WALL PENETRATIONS AND FITTING CONNECTIONS ON DUCT SYSTEMS.
- MECHANICAL ITEMS SUCH AS ROOF DRAINS, FLOOR DRAINS, PLUMBING FIXTURES, ETC. SHOWN ON THE ARCHITECTURAL DRAWINGS BUT NOT SHOWN ON THE MECHANICAL DRAWINGS SHALL BE INCLUDED IN THE PROJECT. THESE ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR INCLUSION IN ADDENDUM.
- ATTACHMENTS TO STRUCTURE:
 - ROOF JOISTS

MAXIMUM 50 LBS. APPLIED BETWEEN PANEL POINTS.
LOADS EXCEEDING 50 LBS. SHALL BE APPLIED AT PANEL POINTS OR AT BOTTOM CHORD WITH INTERMEDIATE SUPPORT.
 - ROOF DECK: SUPPORTS FROM ROOF DECK NOT PERMITTED.
 - BLOCK WALLS: MIN. 5/8" EXPANSION ANCHOR INTO GROUTED CELLS WITH MIN. 4" EMBEDMENT. MAXIMUM 1000 LBS. PER ANCHOR, SHEAR OR TENSION. MINIMUM 2 ANCHORS PER ATTACHMENT.
 - FRAME WALLS: MINIMUM NO.10 TEK SCREWS INTO STUDS.
 - 25 GA. STUDS: MAXIMUM 30 LB. SHEAR OR TENSION PER SCREW
 - 30 GA. STUDS: MAXIMUM 50 LB. SHEAR OR TENSION PER SCREW
 - CONCRETE WALLS AND FLOORS: MIN. 5/8" EXPANSION ANCHOR WITH MIN. 3-1/2" EMBEDMENT. SIZE FOR SAFETY FACTOR OF 4.



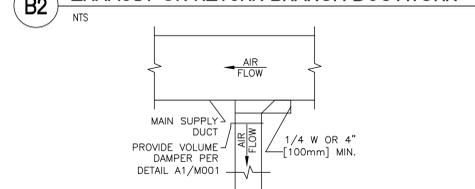
B3 PIPE HANGERS



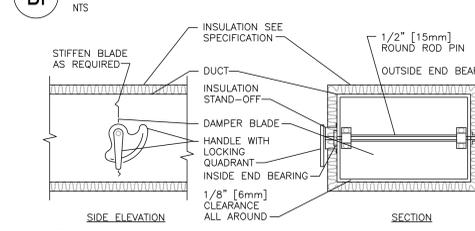
- NOTE:
- THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
 - STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

A2 DUCTWORK RADIUS ELBOWS

B2 EXHAUST OR RETURN BRANCH DUCTWORK



B1 SUPPLY DUCTWORK TAKE-OFFS



- NOTE:
- DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
 - DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

A1 VOLUME DAMPER DETAIL

THE DESIGN GROUP
 ARCHITECTS • PLANNERS • INTERIOR DESIGN
 120 VASSAR DRIVE SE SUITE 100
 ALBUQUERQUE, NEW MEXICO 87106
 PHONE: 505.242.6880 FAX: 505.242.6881

JOHN P. BRAPSAS
 71446
 REGISTERED PROFESSIONAL ENGINEER
 10-12-11
 Architect Engineer

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△	
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△	
△	
Revisions	Date

Approved For:	Initials	Date
Director		
Associate Director		
Chief of Staff		
Chief of Services		
Chief of Engineering		
Chief, Project Section		

Construction <input type="checkbox"/>	Submittal <input type="checkbox"/>
Approved: Division Chief	Approved: Service Director

Drawing Title	MECHANICAL GENERAL NOTES, SYMBOL LEGEND, ABBREVIATIONS, AND DETAILS
Approved: Division Chief	
Approved: Service Director	

Project Title	ICU ENDO STORAGE WAITING ROOM RENOVATION Building 28 Amarillo VA Health Care Center
Date	October 12, 2011
Project No.	504-10-101
Building Number	28
Location	4th Floor
Drawn By	LCO
Checked By	LCO
Drawing No.	M-001
Dwg. -	Of -

Veterans Administration