



# VETERANS AFFAIRS MEDICAL CENTER BOILER REPLACEMENT OMAHA, NEBRASKA

## MECHANICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NATURAL GAS		GATE VALVE		EQUIPMENT DRAIN
	COMPRESSED AIR		GLOBE VALVE		LOW PRESSURE STEAM
	NON POTABLE COLD WATER		CHECK VALVE		MEDIUM PRESSURE STEAM
	DRAIN		BUTTERFLY VALVE		HIGH PRESSURE STEAM
	NON POTABLE HOT WATER		ECCENTRIC PLUG VALVE		LOW PRESSURE CONDENSATE
	NON POTABLE SOFT HOT WATER		BALL VALVE		MEDIUM PRESSURE CONDENSATE
			STRAINER		HIGH PRESSURE CONDENSATE
			UNION		PUMPED CONDENSATE
			FLANGE		CHEMICAL FEED
			CAP		BOILER FEEDWATER
			BLIND FLANGE		FUEL OIL SUPPLY
			SHUTOFF VALVE (GATE, PLUG, BUTTERFLY OR BALL)		FUEL OIL RETURN
			GAS COOK		BLOWDOWN
			PRESSURE REGULATING VALVE		CONTINUOUS BLOWDOWN
			SOLENOID VALVE		PROPANE GAS
			CONTROL VALVE (2-WAY)		
			CONTROL VALVE (3-WAY)		
			THERMOMETER		
			PRESSURE GAGE		
			SAFETY RELIEF VALVE		
			COOK (GAGE, AIR VENT, DRAIN)		
			PIPE ANCHOR		
			PIPE GUIDE		
			PIPE EXPANSION COMPENSATOR		
			VACUUM BREAKER		
			SUPERVISED G S & Y VALVE		
			THERMOSTAT		
			HUMIDISTAT		
			TEMPERATURE SENSOR		
			PRESSURE SENSOR		
			FLOW MEASURING ELEMENT		
			TEST PLUG		
			SIGHT GLASS (FLOW TYPE)		
			AIR ELIMINATOR		
			TEMP & PRESS. RELIEF VALVE		
			STEAM TRAP		
			CIRCUIT SETTER BALANCING VALVE		
			PIPE ELBOW UP		
			PIPE ELBOW DOWN		
			TEE UP		
			TEE DOWN		
			CLEANOUT		
			FLOOR CLEANOUT		
			GUTTER CLEANOUT		
			FLOOR TO TRENCH TO AREA TO DRAIN		
			ROOF DRAIN		
			OVERFLOW ROOF DRAIN		
			HOSE BIBB		
			WALL HYDRANT		
			FIRE DEPARTMENT CONNECTION		
			FLOW SWITCH		
			WATER METER		
			BACKFLOW PREVENTER		
			CONNECT TO EXISTING		

## ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CEILING FIXTURE - LETTER INDICATES FIXTURE TYPE		FIRE ALARM MANUAL STATION
	BRACKET FIXTURE - LETTER INDICATES FIXTURE TYPE		FIRE ALARM AUDIBLE HORN
	FLUORESCENT FIXTURE - LETTER INDICATES FIXTURE TYPE		FIRE ALARM AUDIBLE AND STROBE VISUAL SIGNAL
	FLUORESCENT STRIP FIXTURE - LETTER INDICATES FIXTURE TYPE		FIRE ALARM EXTERIOR AUDIBLE SIGNAL (WP)
	BRACKET MOUNTED EXIT LIGHT, ARROWS AS INDICATED		FIRE ALARM CHIME
	CEILING OR PENDANT MOUNTED EXIT LIGHT, ARROWS AS INDICATED		FIRE ALARM STROBE VISUAL SIGNAL
	EMERGENCY WALL PACK FIXTURE		FIRE ALARM RELAY
	DUPLEX RECEPTACLE 15A, 125V		FIRE ALARM DOOR HOLDER
	SPECIAL RECEPTACLE AS NOTED		FIRE ALARM SHUTTER RELEASE RELAY
	DOUBLE DUPLEX RECEPTACLE 15A-125V		TAMPER SWITCH
	20A, 250V RECEPTACLE		WATER FLOW ALARM SWITCH
	DUPLEX RECEPTACLE - ONE SIDE SWITCHED		FIRE ALARM CONTROL PANEL
	DUPLEX RECEPTACLE - 15A, 125V		FIRE ALARM ANNUNCIATOR
	DUPLEX RECEPTACLE - COMBINATION		FIRE ALARM IONIZATION TYPE SMOKE DETECTOR
	CEILING DUPLEX RECEPTACLE		FIRE ALARM IONIZATION TYPE SMOKE DETECTOR DUCT MOUNTED
	FLOOR DUPLEX RECEPTACLE		FIRE ALARM PHOTOELECTRIC TYPE SMOKE DETECTOR
	MULTI-OUTLET ASSEMBLY		FIRE ALARM HEAT DETECTOR 135 COMB. FIXED TEMP. & RATE OF RISE
	SINGLE POLE SWITCH		FIRE ALARM HEAT DETECTOR 200 COMB. FIXED TEMP. & RATE OF RISE
	DOUBLE POLE SWITCH		FIRE ALARM HEAT DETECTOR 135 FIXED TEMP.
	3-WAY SWITCH		FIRE ALARM HEAT DETECTOR 200 FIXED TEMP.
	4-WAY SWITCH		BRANCH CIRCUIT: 2 WIRES PLUS GROUND UNLESS OTHERWISE NOTED BY CROSS MARKS - GROUND WIRE NOT SHOWN
	DIMMER SWITCH		HOME RUN TO PANEL - NO. OF CIRCUITS INDICATED BY NO. OF ARROWS
	MOMENTARY CONTACT SWITCH		TELEVISION CIRCUIT
	PHOTOCELL		TELEPHONE RACEWAY - 3/4" UNLESS OTHERWISE NOTED
	TIME SWITCH		SOUND SYSTEM RACEWAY - 3/4" UNLESS OTHERWISE NOTED
	SECURITY DOOR SWITCH		FIRE ALARM SYSTEM CIRCUIT
	CARD READER		CONDUIT SEAL
	CCTV CAMERA		CIRCUIT DOWN
	JUNCTION BOX WALL		CIRCUIT UP
	JUNCTION BOX CEILING		EMERGENCY CIRCUIT
	WALL CLOCK OUTLET		NURSE CALL CORRIDOR DOME LIGHT OUTLET
	WALL CLOCK HANGER OUTLET		NURSE CALL PATIENT STATION OUTLET
	DATA OUTLET		NURSE CALL NURSE LOCKOUT OUTLET
	TELEPHONE OUTLET		NURSE CALL STAFF STATION OUTLET
	TELEPHONE/DATA COMBINATION OUTLET		NURSE CALL BATH EMERGENCY STATION OUTLET
	CEILING SPEAKER		NURSE CALL EMERGENCY CALL STATION OUTLET
	WALL SPEAKER		NURSE CALL MASTER STATION OUTLET
	WALL MICROPHONE OUTLET		BUZZER
	WALL TELEVISION OUTLET		CHIME
	WALL VOLUME CONTROL		PUSHBUTTON
	WALL INTERCOM OUTLET		
	LIGHTING & APPLIANCE PANELBOARD		
	TELEPHONE CABINET		
	DISTRIBUTION PANELBOARD		
	TRANSFORMER - VOLTAGE AS INDICATED		
	PULL BOX - SIZE AS INDICATED		
	AUTOMATIC TRANSFER SWITCH		
	TRANSIENT VOLTAGE SURGE SUPPRESSOR - LOCATION CATEGORY A, B OR C AS NOTED/SEE 684.41		
	MOTOR		
	SINGLE PHASE MANUAL MOTOR STARTER		
	MOTOR CONTROL PUSHBUTTON STATION		
	DISCONNECT SWITCH NON-FUSED UNLESS OTHERWISE NOTED		
	MAGNETIC STARTER		
	COMBINATION MAGNETIC STARTER WITH FUSED DISCONNECT UNLESS OTHERWISE NOTED		
	ALTERNATOR		

## STANDARD ABBREVIATIONS

<b>A</b> ANCHOR BOLT / AIR BLENDER ABS ACRYLONITRILE-BUTADIENE-STYRENE AC ALTERNATING CURRENT / AIR COMPRESSOR A/C AIR CONDITIONING ADU AIR CONDITIONING UNIT AD AREA DRAIN ADA AMERICAN WITH DISABILITIES ACT ADJ ADJACENT / ADJUSTABLE ADR ACCESS DOOR AFF ABOVE FINISH FLOOR AHJ AUTHORITY HAVING JURISDICTION AHU AIR HANDLING UNIT AL ALUMINUM ALT ALTERNATE APPROX APPROXIMATELY ARCH ARCHITECT(URAL) ASPH ASPHALT ATB AIR TERMINAL BOX ATC ACOUSTICAL TILE CEILING ATD AIR TRANSFER DUCT ATU AIR TERMINAL UNIT AUX AUXILIARY AVG AVERAGE AZ AZIMUTH  <b>B</b> BALLED AND BURLAPPED BO BOARD BDD BACK DRAFT DAMPER BE BOTTOM ELEVATION BL BUILDING LINE BLDG BUILDING BLKG BLOCKING BM BENCH MARK / BEAM BRG BEARING BTU BRITISH THERMAL UNIT BTUH BRITISH THERMAL UNIT PER HOUR	<b>C</b> CONDUIT CAB CABINET CB CIRCUIT BREAKER / CATCH BASIN CC COOLING COIL C/C CENTER TO CENTER CE COVER ELEVATION CEM CEMENT CFM CUBIC FEET PER MINUTE CFS CUBIC FEET PER SECOND CG CORNER GUARD CH CHILLER CI CURB INLET / CAST IRON CIP CAST IRON PIPE CJ CONTROL JOINT OR CONTRACTION JOINT CP CEMENT PIPE CKT CIRCUIT CL CENTER LINE CLG CEILING CLO CLOSET CLR CLEAR CM CENTIMETER CMH CUBIC METER PER HOUR CMP CORRUGATED METAL PIPE CMT CERAMIC MOSAIC TILE CMU CONCRETE MASONRY UNIT CO CLEANOUT / CARBON MONOXIDE CO2 CARBON DIOXIDE COL COLUMN COMB COMBINATION / COMBINE COMP COMPRESSIBLE CONC CONCRETE CONN CONNECTION CONST CONSTRUCTION CONT CONTINUOUS / CONTINUATION CONTR CONTRACTOR CORR CORRIDOR	<b>D</b> DRAIN / DIFFUSER DA DENTAL AIR DBL DOUBLE DEPR DEPRESSED DET DETAIL DEPT DEPARTMENT DFO DENT FOUNTAIN DF DISK DIA DIAMETER DIAG DIAGONAL DIT DUCTILE IRON PIPE DISC DISCONNECT DISP DISPENSER DST DISTRIBUTION DK DECK DL DEAD LOAD DN DOWN DO DITTO DPR DAMPER DR DOOR DS DOWNSPOUT DV DENTAL VACUUM DWG DRAWING DNL DOWEL DWP DOMESTIC WATER PUMP	<b>E</b> EACH / EXHAUST AIR EF EACH FACE / EXHAUST FAN EJ EXPANSION JOINT EL ELEVATION ELEC ELECTRIC (AL) ELEV ELEVATOR EMBED EMBEDMENT EMD ESTIMATED MAXIMUM DEMAND EMT ELECTRICAL METAL TUBING EQ EQUAL EQUI EQUIPMENT ET EXPANSION TANK EVAC MEDICAL GAS EVACUATION EW EACH WAY EWC ELECTRIC WATER COOLER EWH ELECTRIC WATER HEATER EXH EXHAUST EXIST EXISTING EXP EXPOSED EXPN EXPANSION EXT EXTERIOR  <b>F</b> FIRE MAIN FA FIRE ALARM FCU FAN COIL UNIT FD FLOOR DRAIN / FIRE DAMPER FDC FIRE DEPARTMENT CONNECTION FDN FOUNDATION FOR FEEDER FE FIRE EXTINGUISHER FEC FIRE EXTINGUISHER CABINET FH FIRE HYDRANT FHC FIRE HOSE CABINET FIN FINISH FIX FIXTURE FL FLOOR	<b>G</b> GAS / GRILLE GA GAGE GALV GALVANIZED GB GRAB BAR GBD GRAVITY BACKDRAFT DAMPER GEN GENERATOR GI GALVANIZED IRON GL GLASS GLB GLASS BLOCK GP GLAZED PAINT GPM GALLONS PER MINUTE GR GRADE GRV GRAVITY ROOF VENTILATOR GFRG GLASS FIBER REINFORCED CONCRETE GWB GYPSUM WALLBOARD GYP GYPSUM  <b>H</b> HOSE BIBB HC HEATING COIL HDNR HARDENER HDW HARDWARE HWD HARDWOOD HK1E HOOK ONE END HK2E HOOK TWO ENDS HM HOLLOW METAL	<b>I</b> INSTRUMENT AIR IC INTERCOM ID INSIDE DIAMETER IE INVERT ELEVATION IF INSIDE FACE IN INCH INSUL INSULATION INT INTERIOR  <b>J</b> JANITOR JB JUNCTION BOX JP JOCKEY PUMP JST JOIST JT JOINT  <b>K</b> KEYED CONSTRUCTION JOINT KOML THOUSAND CIRCULAR MILS KIT KITCHEN KPA KILOPASCALS MET METAL KVS KILOVOLT KVA KILOVOLT AMPERE KW KILOWATTS	<b>L</b> LITER LAB LABORATORY LAM LAMINATE LAV LAVATORY LBS POUNDS LF LINEAR FEET LIN LINEAR LL LIVE LOAD LLH LONG LEG HORIZONTAL LLV LONG LEG VERTICAL LMU LIGHTWEIGHT MASONRY UNITS LONG LONGITUDINAL LPM LITERS PER MINUTE LT LIGHT LTG LIGHTING LT WT LIGHT WEIGHT LV LABORATORY VACUUM LVL LEVEL  <b>M</b> METER M2 SQUARE METER M3 CUBIC METER MA MEDICAL AIR MAINT MAINTENANCE MAR MARBLE MAS MASONRY MAT MATERIAL MAX MAXIMUM MBH 1000 BTUH MDO MEDIUM DENSITY OVERLAY MECH MECHANICAL MET METAL MFR MANUFACTURER MG MOTOR GENERATOR / MEDICAL GAS MH MANHOLE	<b>N</b> NITROGEN NFA NATIONAL FIRE PROTECTION ASSOCIATION NEC NATIONAL ELECTRICAL CODE NO NUMBER N2O NITROUS OXIDE NOM NOMINAL NIC NOT IN CONTRACT NTS NOT TO SCALE  <b>O</b> OUTSIDE AIR OBD OPPOSED BLADE DAMPER OC ON CENTER OD OUTSIDE DIAMETER OF OUTSIDE FACE OPNG OPENING OPP OPPOSITE O/S OFFSET OX OXYGEN OZ OUNCE  <b>P</b> PAINT / PUMP / PENDANT PA PASCAL PART PARTITION PAVT PAVEMENT PC POINT OF CURVATURE PCF POUNDS PER CUBIC FOOT PED PEDESTAL	<b>P</b> PEND PERPENDICULAR PHC PREHEAT COIL PHVC PLUMBING, HEATING, VENTILATING AND AIR CONDITIONING PI POINT OF INTERSECTION PV POST INDICATOR VALVE PKG PARKING PL PLASTIC LAMINATE / PROPERTY LINE / PLATE PLAS PLASTER PLBG PLUMBING PLF POUNDS PER LINEAR FOOT PLYWD PLYWOOD PNL PANEL PR PAIR PROJ PROJECTION PRV PRESSURE REGULATING VALVE PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PT PORCELAIN TILE / POINT OF TANGENCY PTVC POINT OF VERTICAL CURVATURE PVC POLYVINYL CHLORIDE PVI POINT OF VERTICAL INTERSECTION PVT POINT OF VERTICAL TANGENCY  <b>Q</b> QUARRY TILE  <b>R</b> RADIUS, REGISTER REG REGISTER RA RETURN AIR RB RESILIENT BASE RCP REINFORCED CONCRETE PIPE RD ROOF DRAIN REF REFERENCE REFL REFLECTED REINF REINFORCING REQD REQUIRED REV REVERSE / REVISION	<b>R</b> RETURN FAN RGS RIGID GALVANIZED STEEL RH ROOF HOOD / RELATIVE HUMIDITY / REHEAT RHC REHEAT COIL RM ROOM RO ROUGH OPENING ROW RIGHT OF WAY  <b>S</b> STAIR / STAIN / SURFACE / SANITARY SA SUPPLY AIR / SOUND ATTENUATOR SAN SANITARY SCH SCHEDULE SD SMOKE DAMPER / SUB DRAIN SECT SECTION SF SUPPLY FAN SHT SHEET SK SKIN SM SPRINKLER MAIN SOG SLAB-ON-GRADE SP SUMP PUMP SPEC SPECIFICATIONS SQ SQUARE SS SERVICE SINK / STORM SEWER SSO STORM SEWER OVERFLOW SSTL STAINLESS STEEL STA STATION STD STANDARD STE STANDARD TAPERED END STIFF STIFFENER STR STIRRUP STL STEEL STOR STORAGE STR STRUCTURAL SUSP SUSPENDED SW SWITCH SWGR SWITCHGEAR	<b>S</b> SYMMETRICAL T TREAD T&B TOP AND BOTTOM TAG TONGUE AND GROOVE TC TOP OF CURB TE TOP ELEVATION TEL TELEPHONE TEMP TEMPERATURE TERR TERRAZZO TLT TOILET TOPO TOPOGRAPHY TOS TOP OF STEEL TOW TOP OF WALL TP TOP OF PAVEMENT TRANS TRANSVERSE TYP TYPICAL  <b>U</b> UNDERCUT UC UNDERGROUND UG UNIT HEATER UNO UNLESS NOTED OTHERWISE UV UNIT VENTILATOR UR URINAL U URINAL  <b>V</b> VOLT VAV VARIABLE AIR VOLUME VB VINYL BASE VC VERTICAL CURVE VCP VITRIFIED CLAY PIPE VCT VINYL COMPOSITION TILE VERT VERTICAL VEST VESTIBULE VFD VARIABLE FREQUENCY DRIVE VTR VENT THROUGH ROOF	<b>W</b> WATT / WATER W/ WITH WAGD WATER ANESTHESIA GAS DISPOSAL WC WATER CLOSET / WALL COVERING WD WOOD WDW WINDOW WH WATER HEATER / WALL HYDRANT W/O WITHOUT WP WEATHERPROOF WPFG WATERPROOFING WS WATER STOP WT WEIGHT WWF WELDED WIRE FABRIC  <b>X</b> XTMR TRANSFORMER	<b>Y</b> YARD YH YARD HYDRANT
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Drawing Title  
SYMBOLS AND ABBREVIATIONS

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BOILER REPLACEMENT

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