PLUMBING ABBREVIATIONS

A/E	ARCHITECT / ENGINEER
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AG	AIR GAP
AP	ACCESS PANEL
AS	AUTOMATIC SPRINKLER
ASD	ADJUSTABLE SPEED DRIVES
ASD	AUTOMATIC SPRINKLER DRAIN
ASHRAE	AMERICAN SOCIETY HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY PLUMBING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
AV	ACID VENT
AW	ACID WASTE
BFP	REDUCED PRESSURE BACKFLOW PREVENTER
BHP	BREAK HORSEPOWER
BSP	BLACK STEEL PIPE
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CELSIUS
CGA	COMPRESSED GAS ASSOCIATION
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
CV	CONTROL VALVE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DHWR	DOMESTIC WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DI	DEIONIZED WATER
DN	DOWN
DOE	DEPARTMENT OF ENERGY
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWR	DRINKING WATER RETURN
DWS	DRINKING WATER SUPPLY
DWV	DRAIN WASTE VENT
EL	ELEVATION
EMCS	ENERGY MONOSERRAT AND CENTRAL SYSTEM
EPA	ENVIROMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESC	ESCUTCHEON
ESH	EMERGENCY SHOWER
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWS	EYE WASH STATION
EX	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FCW	FILTERED COLD WATER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT (HOSE) CONNECTION
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FS	FLOOR SINK
FS	FLOW SWITCH
FU	FIXTURE UNITS
GAL	GALLON
GCO	GRADE CLEANOUT
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GRS	GAS REGULATOR STATION
GT	GREASE TRAP
GVTR	GAS VENT THROUGH ROOF
GWH	GAS FIRED WATER HEATER
H&CW	HOT AND COLD WATER
HB	HOSE BIBB
HD	HUB DRAIN
HEX	HEAT EXCHANGER
HP	HORSEPOWER
HS	HAND SINK
HST	HOT WATER STORAGE TANK (DOMESTIC)
HWB	HOT WATER BOILER
HWCP	HOT WATER CIRCULATING PUMP
HWP	HOT WATER PUMP
HYD	HYDRANT
ICW	INDUSTRIAL COLD WATER
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IRW	IRRIGATION WATER
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HEATER
IWR	INDUSTRIAL WATER RETURN
IWS	INDUSTRIAL WATER SUPPLY
KW	KILOWATT
KWHR	KILOWATT-HOUR
L/S	LITER PER SECOND
LA	LABORATORY AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER
LNG	LIQUID NATURAL GAS
LOX	LIQUID OXYGEN
LV	LABORATORY VACUUM
LW	LOW WATER
M	METER
MA	MEDICAL AIR
MAV	MANUAL AIR VENT
MBH	1000 BTUH
MED	MEDICAL
MER	MECHANICAL EQUIPMENT ROOM
MH	MANHOLE
MOU	MEMORANDUM OF UNDERSTADING
MSB	MOP SERVICE BASIN
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM.	NOMINAL
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
O2	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OR	OPERATING ROOM
OVFL	OVERFLOW
PA	PASCAL
PD	PRESSURE DROP OR DIFFERENCE
PDI	PLUMBING AND DRAINAGE INSTITUTE
PG	PRESSURE GAGE
PP	PLUMBING PUMP
PPM	PARTS PER MILLION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PW	POTABLE WATER
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RL	ROOF LEADER
RO	REVERSE OSMOSIS WATER
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SCFM	STANDARD CUBIC FOOT/MINUTE
SCW	SOFTENED COLD WATER
SDMH	STORM DRAIN MANHOLE
SP	SUMP PUMP
SPR	SPRINKLER LINE
SQFT	SQUARE FEET
SS	STAINLESS STEEL
ST	STORAGE TANK
SW	STORM WATER
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TSTAT	THERMOSTAT
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TYP	TYPICAL
UPC	UNIFORM PLUMBING CODE
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VCO	VACUUM CLEANER OUTLET
VP	VACUUM PUMP
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WALL HYDRANT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTER
WL	WATER LINE
WM	WATER METER
WPD	WATER PRESSURE DROP
WS	WASTE STACK
YCO	YARD CLEANOUT
YH	YARD HYDRANT

GENERAL NOTES

1. THE PLUMBING SYSTEM SHALL COMFORM TO INTERNATIONAL PLUMBING CODE 2006.
2. FOR HOT WATER HEATING AND SUPPLY, PROVIDE A MAXIMUM TEMP OF 120 DEG. F AT THE FIXTURE (PER ADA SPECS), UNLESS SPECIFIC APPLIANCES OR EQUIPMENT SPECIFICALLY REQUIRE HIGHER TEMPERATURE WATER SUPPLY.
3. UNLESS OTHERWISE SPECIFIED OF DIRECTED, PROVIDE IN ACCORDANCE WITH ASHRAE HANDBOOK SERIES (APPROPRIATE CHAPTERS), ASHRAE STANDARD 90.1, AND THE ENERGY CONSERVATION REQUIREMENTS OF THE CONTRACT. SIZE AND PLACE EQUIPMENT SO THAT IT IS EASILY ACCESSIBLE AND REMOVEABLE FOR REPAIR OR REPLACEMENT.
4. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES.
5. COORDINATE PLUMBING PIPING WITH AIR CONDITIONING DUCTS, ELECTRICAL CONDUIT AND ALL TRADES.
6. CONTRACTOR SHALL VERIFY DISTANCE TO CONNECTION TO EXISTING UTILITIES PRIOR TO BID.
7. USE PROPRESS OR SILVER SOLDER FOR PLUMBING SUPPLY PIPING. BALL VALVES FOR DOMESTIC WATER TO BE SILVER SOLDER.

PLUMBING PIPING SYMBOLS

	DOMESTIC COLD WATER, COLD WATER
	DOMESTIC HOT WATER, HOT WATER
	DOMESTIC HOW WATER RETURN, HOT WATER RETURN
MA	MEDICAL AIR
MV	MEDICAL VACUUM
LA	LABORATORY AIR
LV	LABORATORY VACUUM
OA	ORAL EVACUATION
IA	INDUSTRIAL AIR
D	DRAIN
SS	SANITARY SEWER
SAN	SANITARY SEWER, BELOW GRADE
	SANITARY SEWER VENT
SD	STORM WATER
SD	STORM WATER, BELOW GRADE
SCW	SOFTEN COLD WATER
FCW	FILTERED COLD WATER
DWS	DRINKING WATER SUPPLY
DWR	DRINKING WATER RETURN
TWS	TEMPERED WATER SUPPLY
TWR	TEMPERED WATER RETURN
N_2O	NITROUS OXIDE
O	OXYGEN
N_2	NITROGEN
NG	NATURAL GAS
NG	NATURAL GAS, BELOW GRADE
FOD	FUEL OIL DISCHARGE
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FOR	FUEL OIL RETURN

GENERAL PLUMBING SYMBOLS

	DIRECTION OF PIPE PITCH (DOWN)
	DIRECTION OF FLOW
	ANCHOR
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	SIDE CONNECTION
	CAPPED OUTLET
	RISE OR DROP IN PIPE
	UNION
	PIPE UP
	PIPE DOWN
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	LIMIT OF DEMOLITION
	INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES
	FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES
	STRAINER
	THERMOMETER
	PRESSURE GAGE
	FLOW ELEMENT
	CLEAN OUT
	HOSE BIB
FD TP	FLOOR DRAIN W/ TRAP PRIMER

PLUMBING VALVE SYMBOLS

	GATE VALVE
	GLOBE VALVE
	GATE VALVE WITH 3/4 " HOSE ADAPTER
	CHECK VALVE
	ANGLE GLOBE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	MODULATING CONTROL VALVE
	TWO POSITION CONTROL VALVE
	THREE-WAY MODULATING CONTROL VALVE
	THREE-WAY TWO POSITION CONTROL VALVE
	PRESSURE REGULATING VALVE
	AUTOMATIC FLOW CONTROL VALVE
	PRESSURE RELIEF VALVE
	MANUAL AIR VENT
	TEST PLUG (PRESSURE/TEMPERATURE)
AV	AUTOMATIC AIR VENT

FINAL SUBMISSION / FULLY SPRINKLERED

Revisions: | Date

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Drawing Title: PLUMBING LEGEND, ABBREVIATIONS AND SYMBOLS

Approved: Project Director

Project Title: CONSTRUCT VA OUTPATIENT CLINIC, PANAMA CITY

Location: PANAMA CITY, FLORIDA

Date: APRIL 2013 | Checked: WWB | Drawn: JLL

Project Number: 520-326

Building Number: -

Drawing Number: PL001

Dwg. 1 of 16

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231