

PLUMBING ABBREVIATIONS

A/E	ARCHITECT / ENGINEER	EL	ELEVATION
AD	AREA DRAIN	EMCS	ENERGY MONOSERRAT
AFF	ABOVE FINISH FLOOR	EPA	ENVIRONMENTAL PROTECTION
AFG	ABOVE FINISH GRADE	AGENCY	AGENCY
AG	AIR GAP	EPACT	ENERGY POLICY ACT
AP	ACCESS PANEL	ESC	ESCUOTHEON
AS	AUTOMATIC SPRINKLER	ESH	EMERGENCY SHOWER
ASD	ADJUSTABLE SPEED DRIVES	ET	EXPANSION TANK
ASD	AUTOMATIC SPRINKLER DRAIN	EW	ELECTRIC WATER COOLER
ASHRAE	AMERICAN SOCIETY HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS	EW	ELECTRIC WATER COOLER
ASME	AMERICAN SOCIETY MECHANICAL ENGINEERS	EW	ELECTRIC WATER HEATER
ASPE	AMERICAN SOCIETY PLUMBING ENGINEERS	EX	EXISTING
ASR	AUTOMATIC SPRINKLER RISER		
AV	ACID VENT		
AW	ACID WASTE		
BFP	REDUCED PRESSURE BACKFLOW PREVENTER	F	FAHRENHEIT
BHP	BREAK HORSEPOWER	FCO	FLOOR CLEANOUT
BSP	BLACK STEEL PIPE	FCW	FILTERED COLD WATER
BT	BATHTUB	FD	FLOOR DRAIN
BTU	BRITISH THERMAL UNIT	FE	FIRE DEPARTMENT
BTUH	BRITISH THERMAL UNIT PER HOUR	FD	FLOOR DRAIN
		FC	FLOOR CLEANOUT
C	CELSIUS	FC	FLOOR CLEANOUT
CCA	COMPRESSED GAS ASSOCIATION	FC	FLOOR CLEANOUT
CI	CAST IRON	FC	FLOOR CLEANOUT
CO	CLEANOUT	FC	FLOOR CLEANOUT
CS	CLINICAL SINK	FC	FLOOR CLEANOUT
CY	CONTROL VALVE	FC	FLOOR CLEANOUT
		FC	FLOOR CLEANOUT
DOW	DOMESTIC COLD WATER	FC	FLOOR CLEANOUT
DHW	DOMESTIC HOT WATER	FC	FLOOR CLEANOUT
DHWR	DOMESTIC HOT WATER RETURN	FC	FLOOR CLEANOUT
DHWR	DOMESTIC HOT WATER RETURN	FC	FLOOR CLEANOUT
DHWS	DOMESTIC HOT WATER SUPPLY	FC	FLOOR CLEANOUT
DI	DEIONIZED WATER	FC	FLOOR CLEANOUT
DN	DOWN	FC	FLOOR CLEANOUT
DOE	DEPARTMENT OF ENERGY	FC	FLOOR CLEANOUT
DS	DOWNSPOUT	FC	FLOOR CLEANOUT
DW	DISHWASHER	FC	FLOOR CLEANOUT
DWC	DRAINING	FC	FLOOR CLEANOUT
DWH	DOMESTIC WATER HEATER	FC	FLOOR CLEANOUT
DWR	DRINKING WATER RETURN	FC	FLOOR CLEANOUT
DWS	DRINKING WATER SUPPLY	FC	FLOOR CLEANOUT
DWV	DRAIN WASTE VENT	FC	FLOOR CLEANOUT

PLUMBING ABBREVIATIONS

GAL	GALLON	M	METER
GCO	GRADE CLEANOUTS	MA	MEDICAL AIR
GPD	GALLONS PER DAY	MAV	MEDICAL AIR VENT
GPH	GALLONS PER HOUR	MBH	1000 BTUH
GPM	GALLONS PER MINUTE	ME	MEDICAL
GPR	GAS PRESSURE REGULATOR	MER	MEDICAL EQUIPMENT ROOM
GRT	GAS REGULATOR STATION	MH	MANHOLE
GT	GREASE TRAP	MOU	MEMORANDUM OF UNDERSTANDING
GVR	GAS VENT THROUGH ROOF	MSB	MSP SERVICE BASIN
GWH	GAS FIRED WATER HEATER	MV	MEDICAL VACUUM
HACW	HOT AND COLD WATER	N2	NITROGEN
HB	HOSE BIBB	N2O	NITROUS OXIDE
HD	HUB DRAIN	NC	NORMALLY CLOSED
HEX	HEAT EXCHANGER	NC	NATURAL GAS
HP	HORSEPOWER	NC	NOT IN CONTRACT
HS	HAND SINK	NO	NORMALLY OPEN
HST	HOT WATER STORAGE TANK	NOM	NOMINAL
		NPW	NON POTABLE WATER
HWB	HOT WATER BOILER	NTC	NOT TO SCALE
HWCP	HOT WATER CIRCULATING PUMP		
HWP	HOT WATER PUMP		
HYD	HYDRANT		
ICW	INDUSTRIAL COLD WATER	O2	OXYGEN
INV	INVERT	OC	ON CENTER
IPC	INTERNATIONAL PLUMBING CODE	OD	OUTSIDE DIAMETER
IRR	IRRIGATION WATER	OFD	OVERFLOW DRAIN OR OPERATING ROOM
IW	INDIRECT WASTE	OVFL	OVERFLOW
IWS	INSTANTANEOUS WATER HEATER		
IWR	INDUSTRIAL WATER RETURN		
IWS	INDUSTRIAL WATER SUPPLY		
KW	KILOWATT		
KWH	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		

PLUMBING ABBREVIATIONS

PA	PASCAL	V	VENT
PD	PRESSURE DROP OR DIFFERENCE	VAC	VACUUM
PDI	PLUMBING AND DRAINAGE INSTITUTE	VB	VACUUM BREAKER
PG	PRESSURE GAGE	VCO	VACUUM CLEANER OUTLET
PP	PLUMBING PUMP	VP	VACUUM PUMP
PPM	PARTS PER MILLION	VS	VENT STACK
PRIS	PRESSURE REDUCING STATION	VTR	VENT THROUGH ROOF
PRV	PRESSURE REDUCING VALVE		
PSI	POUNDS PER SQUARE INCH	W	WASTE
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE	WC	WATER CLOSET
		WCO	WALL CLEANOUT
PSIG	POUNDS PER SQUARE INCH GAUGE	WG	WATER GAGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE	WH	WALL HYDRANT
PW	POTABLE WATER	WH	WATER HEATER
		WH	WATER HAMMER ARRESTER
RD	ROOF DRAIN	WL	WATER LINE
RDL	ROOF DRAIN LEADER	WM	WATER METER
RL	ROOF LEADER	WPD	WATER PRESSURE DROP
RO	REVERSE OSMOSIS WATER	WS	WASTE STACK
RWL	RAIN WATER LEADER		
SAN	SANITARY SEWER	YCD	YARD CLEANOUT
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION	YH	YARD HYDRANT
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		
TMY	THERMOSTATIC MIXING VALVE		
TP	TRAP PRIMER		
TSIAT	THERMOSTAT		
TWR	TEMPERED WATER RETURN		
TWS	TEMPERED WATER SUPPLY		
TYP	TYPICAL		
UPC	UNIFORM PLUMBING CODE		

PLUMBING PIPING SYMBOLS

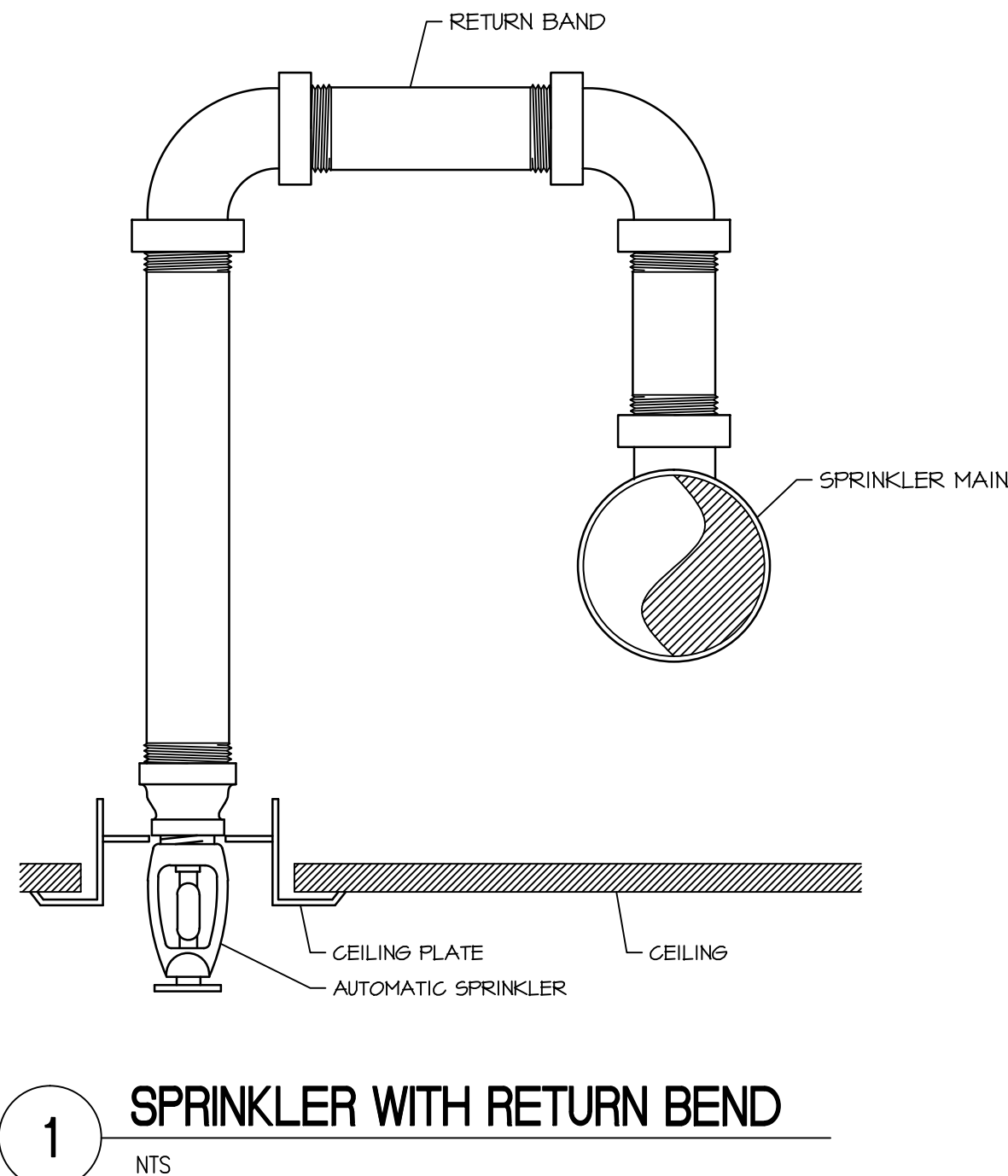
—	DOMESTIC COLD WATER, COLD WATER
—	DOMESTIC HOT WATER, HOT WATER
—	DOMESTIC HOW WATER RETURN, HOT WATER RETURN
— MA — MA — MA —	MEDICAL AIR
— MV — MV — MV —	MEDICAL VACUUM
— LA — LA — LA —	LABORATORY AIR
— LV — LV — LV —	LABORATORY VACUUM
— OA — OA — OA —	ORAL EVACUATION
— IA — IA — IA —	INDUSTRIAL AIR
— D — D — D —	DRAIN
— SAN — SAN — SAN —	SANITARY SEWER
— SS — SS — SS —	SANITARY SEWER (OPTIONAL)
— SAN — SAN — SAN —	SANITARY SEWER, BELOW GRADE
— SD — SD — SD —	STORM WATER
— SD — SD — SD —	STORM WATER, BELOW GRADE
— SCW — SCW — SCW —	SOFTENED COLD WATER
— FCW — FCW — FCW —	FILTERED COLD WATER
— DWS — DWS — DWS —	DRINKING WATER SUPPLY
— DWR — DWR — DWR —	DRINKING WATER RETURN
— TWS — TWS — TWS —	TEMPERED WATER SUPPLY
— TWR — TWR — TWR —	TEMPERED WATER RETURN
— NO — NO — NO —	NITROUS OXIDE
— O — O — O —	OXYGEN
— N — N — N —	NITROGEN
— NG — NG — NG —	NATURAL GAS
— NG — NG — NG —	NATURAL GAS, BELOW GRADE
— FOD — FOD — FOD —	FUEL OIL DISCHARGE
— FOS — FOS — FOS —	FUEL OIL SUPPLY
— FOV — FOV — FOV —	FUEL OIL VENT
— FOR — FOR — FOR —	FUEL OIL RETURN

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)
—	AUTOMATIC AIR VENT

GENERAL FIRE PROTECTION NOTES

- EXISTING CONDITIONS ARE BASED ON INFORMATION OBTAINED FROM SITE SURVEYS AND EXISTING BUILDING DOCUMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS. NOT ALL PIPES, DUCTS, WIRINGS, ETC. HAVE BEEN SHOWN.
- UNLESS NOTED OTHERWISE, WHERE WORK REQUIRES PATCHING OF WALLS OR FLOORS THAT WILL REMAIN, THE CONTRACTOR WHOSE WORK CAUSES DAMAGE OR CREATES OPENINGS IS RESPONSIBLE FOR PATCHING AS REQUIRED TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING AND FINISH.
- REMOVE AND RE-INSTALL EXISTING CEILINGS FOR DEMOLITION OF EXISTING FIRE PROTECTION AND INSTALLATION OF NEW WHERE FP WORK OCCURS OUTSIDE GENERAL CONSTRUCTION AREA. MATCH EXISTING CEILING/CONSTRUCTION TYPE. IF ANY DAMAGE OCCURS TO CEILING THIS CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS.
- FP PIPE ROUTING AND ZONING IS SHOWN FOR GENERAL LAYOUT. DESIGN BUILD CONTRACTOR TO DETERMINE EXACT NUMBER OF SPRINKLERS, PIPE SIZING AND PIPE ROUTING.
- THIS CONTRACTOR SHALL COORDINATE EXACT PIPE ROUTING AND SPRINKLER LOCATIONS WITH ALL OTHER UTILITIES PRIOR TO INSTALLATION.
- ALL FIRE PROTECTION RELOCATION AND SHUT-DOWNS THAT WILL INTERRUPT SERVICE TO OCCUPIED AREAS BEYOND THE LIMITS OF CONSTRUCTION SHALL OCCUR AFTER NORMAL BUSINESS HOURS AND IN INTERVALS NO GREATER THAN (8) HOURS. COORDINATE SHUT-DOWN TIME WITH OWNER'S REPRESENTATIVE (2) WEEKS IN ADVANCE OF ALL UTILITY INTERRUPTIONS.
- THE SPRINKLER SYSTEM DESIGN AND INSTALLATION SHALL BE THE RESPONSIBILITY OF THE DESIGN BUILD FIRE PROTECTION CONTRACTOR. INSTALL NEW SPRINKLER MAINS, BRANCH PIPING AND SPRINKLERS PER NFPA 13 AND SPECIFICATION SECTIONS. F.P.C. IS RESPONSIBLE FOR FINAL SIZING FROM HYDRAULIC CALCULATIONS. SPRINKLER MAINS AND BRANCH PIPING SHALL BE COORDINATED WITH OTHER TRADES.
- THE FIRE PROTECTION DRAWINGS ARE CONCEPTUAL, FOR GENERAL INFORMATION ONLY AND SHALL NOT BE CONSTRUED AS FINAL DESIGN OR INSTALLATION DOCUMENTS. THE SPRINKLER DESIGN AND INSTALLATION SHALL BE THE RESPONSIBILITY OF THE DESIGN BUILD FIRE PROTECTION CONTRACTOR. THIS INCLUDES THE RELOCATION OF SPRINKLER MAINS, BRANCH PIPING AND HEADS AS NECESSARY FOR THE NEW DESIGN. REFER TO SPECIFICATION FOR DESIGN CRITERIA. DESIGN TO BE IN ACCORDANCE WITH VA FIRE PROTECTION DESIGN MANUAL, DATED APRIL, 2009.
- SPRINKLER COVERAGE SHALL BE BASED ON LIGHT HAZARD, 0.10 GPM/SF FOR GENERAL AREAS. SPRINKLER COVERAGE SHALL BE BASED ON ORDINARY HAZARD, GROUP 1 - 0.15 GPM/SF FOR ELECTRICAL ROOMS AND FOOD SERVICE AREAS. SPRINKLER COVERAGE SHALL BE BASED ON ORDINARY HAZARD GROUP 2 - 0.20 GPM/SF FOR STORAGE ROOMS.
- THE RETURN BEND ARRANGEMENT SHALL BE UTILIZED FOR ALL PENDENT SPRINKLERS.
- PROVIDE NEW SPRINKLERS ALONG TEMPORARY BARRIERS FOR THE VARIOUS PHASES. PROVIDE ADEQUATE SPRINKLER COVERAGE THROUGHOUT ALL PHASES OF CONSTRUCTION.



1 SPRINKLER WITH RETURN BEND
NTS

IN THE CASE OF CONFLICTS OR DISCREPANCIES WITHIN OR AMONG THE CONTRACT DRAWINGS, THE BETTER QUALITY, MORE STRINGENT REQUIREMENTS OR GREATER QUANTITY OF WORK, AS DETERMINED BY THE GOVERNMENT, SHALL BE PROVIDED.

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

DRAWING SYMBOLS

2	DETAIL NUMBER
PL105	DRAWING NUMBER WHERE DRAWN
A	SECTION LETTER
PL105	DRAWING NUMBER WHERE SHOWN
26-P 3	BUILDING NO. WHERE EQUIPMENT IS LOCATED.
	EQUIPMENT ABBREVIATION (PUMP)
	PUMP NO.3 IN BUILDING NO.26
	TYPICAL UNIT NO.

FIRE PROTECTION SHEET INDEX

FX-000	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
FD-200	OVERALL BASEMENT DEMOLITION PLAN
FX-200	OVERALL BASEMENT PLAN
FX-201	OVERALL FIRST FLOOR PLAN
FX-202	OVERALL PENTHOUSE PLAN

FINAL BID DOCUMENTS

Federal Health Care Center U.S. Department of Veterans Affairs U.S. Department of Defense		Captain James A. Lovell Federal Health Care Center 3001 Green Bay Road North Chicago, IL, 60064		CONSULTANTS: ARNOLD & O'SHERIDAN Consulting Engineers MACKESY AND ASSOCIATES, LLC		PROJECT LEADER: Plunkett Ray-sich architects 11000 West Park Place • Milwaukee WI 53224 • Tel 414 359-3060 • Fax 414 359-3070 Intelligent Designs Inspired Results www.prarch.com PRA Job No. 110172-01		Drawing Title General Notes, Abbreviations, and Symbols		Project Title AE SCIP for Building 6 FHCC		Project Number 556-11-119		Office of Facilities Management Department of Veterans Affairs	
FINAL BID DOCUMENTS		12-14-12		95% CONSTRUCTION DOCUMENT SUBMISSION		11-26-12		50% REVISED DOCUMENTS FOR REVIEW		11-19-12		90% CONSTRUCTION DOCUMENTS SUBMISSION		05-17-12	
50% CONSTRUCTION DOCUMENTS SUBMISSION		04-06-12		35% DOCUMENTS SUBMISSION		02-22-12		SCHEMATIC DESIGN SUBMISSION		11-21-11		Revisions:		Date	
Date		Date		Date		Date		Date		Date		Date		Date	