PLUMBING ABBREVIATIONS

ABS: ACRYLONITRILE BUTADIENE STYRENE
AC: ALTERNATING CURRENT
ACR: AIR CONDITIONING AND REFRIGERATION
A/E: ARCHITECT/ENGINEER
AFF: ABOVE FINISH FLOOR
AG: AIR GAP
AI: ANALOG INPUT
AISI: AMERICAN IRON AND STEEL INSTITUTE
AO: ANALOG OUTPUT
ASHRAE: AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING AND ENGINEERS
ASJ: ALL SERVICE JACKET
ASME: AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE: AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASR: AUTOMATIC SPRINKLER RISER
AWG: AMERICAN WIRE GAUGE
BACNET: BUILDING AUTOMATION AND CONTROL NETWORK
BAG: SILVER–COPPER–ZINC BRAZING ALLOY
BAS: BUILDING AUTOMATION SYSTEM
BCUP: SILVER–COPPER–PHOSPHORUS BRAZING ALLOY
BFP: REDUCED PRESSURE BACKFLOW PREVENTER
BHP: BRAKE HORSEPOWER
BTU: BRITISH THERMAL UNIT
BTU/H: BRITISH THERMAL UNIT PER HOUR
BSC: BOROSILICATE GLASS PIPE
C: CELSIUS
CD: COMPACT DISK
CDA: COPPER DEVELOPMENT ASSOCIATION
CGA: COMPRESSED GAS ASSOCIATION
CFM: CUBIC FEET PER MINUTE
CO: CLEANOUT
COR: CONTRACTING OFFICER’S REPRESENTATIVE
CPVC: CHLORINATED POLYVINYL CHLORIDE
CR: CHLOROPRENE
CRS: CORROSION RESISTANT STEEL
CV: CONTROL VALVE
CXA: COMMISSIONING AGENT

DB: DECIBELS
DB(A): DECIBELS (A WEIGHTED)
DOC: DIRECT DIGITAL CONTROL
DFU: DRAINAGE Fixture UNITS
DIA: DIGITAL INPUT
DID: DEIONIZED WATER
DISS: DIAMETER INDEX SAFETY SYSTEM
DN: DIAMETER NOMINAL
DO: DIGITAL OUTPUT
DOE: DEPARTMENT OF ENERGY
DVO: DIGITAL VIDEO DISC
DWS: DISHWASHER
DWG: DRAWING
DWW: DRAINAGE, WASTE AND VENT

ECC: ENGINEERING CONTROL CENTER AKA BAS
EL: ELEVATION
EPA: ENVIRONMENTAL PROTECTION AGENCY
EPACT: ENERGY POLICY ACT
EPDM: ETHYLENE PROPYLENE DIENE MONOMER
EPT: ETHYLENE PROPYLENE TERPOLYMER
ETO: ETHYLENE OXIDE
EX: EXISTING

F: FAHRENHEIT
FARS: FEDERAL ACQUISITION REGULATIONS
FCO: FLOOR CLEANOUT
FD: FLOOR DRAIN
FDC: FIRE DEPARTMENT (HOSE) CONNECTION
FNPT: FEMALE NATIONAL PIPE THREAD
FOP: FUEL OIL PUMP
FOR: FUEL OIL RETURN
FOS: FUEL OIL SUPPLY
FOV: FUEL OIL VENT
FP: FLUORELASTOMER POLYMER
FS: FLOW SWITCH
FSK: FOIL–SCRIM–KRAFT FACING
FSS: VA CONSTRUCTION & FACILITIES MANAGEMENT, FACILITY STANDARDS SERVICE
FU: FIXTURE UNITS
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAL</td>
<td>GALLON</td>
</tr>
<tr>
<td>GCO</td>
<td>GRADE CLEANOUTS</td>
</tr>
<tr>
<td>GDP</td>
<td>GALLONS PER DAY</td>
</tr>
<tr>
<td>GPH</td>
<td>GALLONS PER HOUR</td>
</tr>
<tr>
<td>GPM</td>
<td>GALLONS PER MINUTE</td>
</tr>
<tr>
<td>GPR</td>
<td>GAS PRESSURE REGULATOR</td>
</tr>
<tr>
<td>GRS</td>
<td>GAS REGULATOR STATION</td>
</tr>
<tr>
<td>GT</td>
<td>GREASE TRAP</td>
</tr>
<tr>
<td>GWTR</td>
<td>GAS VENT THROUGH ROOF</td>
</tr>
<tr>
<td>H&amp;CW</td>
<td>HOT AND COLD WATER</td>
</tr>
<tr>
<td>HB</td>
<td>HOSE BIBB</td>
</tr>
<tr>
<td>HD</td>
<td>HUB DRAIN</td>
</tr>
<tr>
<td>HDPE</td>
<td>HIGH DENSITY POLYETHYLENE</td>
</tr>
<tr>
<td>HEFP</td>
<td>HEALTHCARE ENVIRONMENT AND</td>
</tr>
<tr>
<td></td>
<td>FACILITIES PROGRAM (REPLACEMENT</td>
</tr>
<tr>
<td></td>
<td>FOR OCAMES)</td>
</tr>
<tr>
<td>HEX</td>
<td>HEAT EXCHANGER</td>
</tr>
<tr>
<td>HG</td>
<td>MERCURY</td>
</tr>
<tr>
<td>HOA</td>
<td>HANDS-OFF-AUTOMATIC</td>
</tr>
<tr>
<td>HP</td>
<td>HORSEPOWER</td>
</tr>
<tr>
<td>HVE</td>
<td>HIGH VOLUME EVACUATION</td>
</tr>
<tr>
<td>HWCP</td>
<td>HOT WATER CIRCULATING PUMP</td>
</tr>
<tr>
<td>HYD</td>
<td>HYDRANT</td>
</tr>
<tr>
<td>HZ</td>
<td>HERTZ</td>
</tr>
<tr>
<td>ID</td>
<td>INSIDE DIAMETER</td>
</tr>
<tr>
<td>IE</td>
<td>INVERT ELEVATION</td>
</tr>
<tr>
<td>INV</td>
<td>INVERT</td>
</tr>
<tr>
<td>IPC</td>
<td>INTERNATIONAL PLUMBING CODE</td>
</tr>
<tr>
<td>IPS</td>
<td>IRON PIPE SIZE</td>
</tr>
<tr>
<td>KG</td>
<td>KILOGRAM</td>
</tr>
<tr>
<td>KPA</td>
<td>KILOPASCAL</td>
</tr>
<tr>
<td>KW</td>
<td>KILOWATT</td>
</tr>
<tr>
<td>KWH</td>
<td>KILOWATT HOUR</td>
</tr>
<tr>
<td>LAV</td>
<td>LAVATORY</td>
</tr>
<tr>
<td>LB</td>
<td>POUND</td>
</tr>
<tr>
<td>LBS/HR</td>
<td>POUNDS PER HOUR</td>
</tr>
<tr>
<td>LNG</td>
<td>LIQUID NATURAL GAS</td>
</tr>
<tr>
<td>L/MIN</td>
<td>LITERS PER MINUTE</td>
</tr>
<tr>
<td>L/S</td>
<td>LITERS PER SECOND</td>
</tr>
<tr>
<td>M</td>
<td>METER</td>
</tr>
<tr>
<td>MA</td>
<td>MEDICAL AIR</td>
</tr>
<tr>
<td>MAV</td>
<td>MEDICAL AIR VENT</td>
</tr>
<tr>
<td>MAX</td>
<td>MAXIMUM</td>
</tr>
<tr>
<td>MBH</td>
<td>1000 BTU PER HOUR</td>
</tr>
<tr>
<td>MER</td>
<td>MECHANICAL EQUIPMENT ROOM</td>
</tr>
<tr>
<td>MFG</td>
<td>MANUFACTURER</td>
</tr>
<tr>
<td>MG</td>
<td>MILLIGRAM</td>
</tr>
<tr>
<td>MG/L</td>
<td>MILLIGRAMS PER LITER</td>
</tr>
<tr>
<td>ML</td>
<td>MILILITER</td>
</tr>
<tr>
<td>MM</td>
<td>MILLIMETER</td>
</tr>
<tr>
<td>MIN</td>
<td>MINIMUM</td>
</tr>
<tr>
<td>MV</td>
<td>MEDICAL VACUUM</td>
</tr>
<tr>
<td>N2</td>
<td>NITROGEN</td>
</tr>
<tr>
<td>N2O</td>
<td>NITROGEN OXIDE</td>
</tr>
<tr>
<td>NC</td>
<td>NORMALLY CLOSED</td>
</tr>
<tr>
<td>NF</td>
<td>OIL FREE DRY (NITROGEN)</td>
</tr>
<tr>
<td>NG</td>
<td>NATURAL GAS</td>
</tr>
<tr>
<td>NIC</td>
<td>NOT IN CONTRACT</td>
</tr>
<tr>
<td>NO</td>
<td>NORMALLY OPEN</td>
</tr>
<tr>
<td>NOM</td>
<td>NOMINAL</td>
</tr>
<tr>
<td>NPTF</td>
<td>NATIONAL PIPE THREAD FEMALE</td>
</tr>
<tr>
<td>NPS</td>
<td>NOMINAL PIPE SIZE</td>
</tr>
<tr>
<td>NPT</td>
<td>NOMINAL PIPE THREAD</td>
</tr>
<tr>
<td>NTS</td>
<td>NOT TO SCALE</td>
</tr>
<tr>
<td>O2</td>
<td>OXYGEN</td>
</tr>
<tr>
<td>OC</td>
<td>ON CENTER</td>
</tr>
<tr>
<td>OCMES</td>
<td>REPLACED BY HEFP</td>
</tr>
<tr>
<td>OD</td>
<td>OUTSIDE DIAMETER</td>
</tr>
<tr>
<td>OR</td>
<td>OPERATING ROOM</td>
</tr>
<tr>
<td>OSD</td>
<td>OPEN SIGHT DRAIN</td>
</tr>
<tr>
<td>OS&amp;Y</td>
<td>OUTSIDE STEM AND YOKE</td>
</tr>
<tr>
<td>OXY</td>
<td>OXYGEN</td>
</tr>
<tr>
<td>PA</td>
<td>PASCAL</td>
</tr>
<tr>
<td>PBPU</td>
<td>PREFABRICATED BEDSIDE PATIENT</td>
</tr>
<tr>
<td></td>
<td>UNITS</td>
</tr>
<tr>
<td>PD</td>
<td>PRESSURE DROP OR DIFFERENCE</td>
</tr>
<tr>
<td>PDI</td>
<td>PLUMBING AND DRAINAGE INSTITUTE</td>
</tr>
<tr>
<td>PG</td>
<td>PRESSURE GAUGE</td>
</tr>
<tr>
<td>PH</td>
<td>POWER OF HYDROGEN</td>
</tr>
<tr>
<td>PID</td>
<td>PROPORTIONAL–INTEGRAL–</td>
</tr>
<tr>
<td></td>
<td>DIFFERENTIAL</td>
</tr>
<tr>
<td>PLC</td>
<td>PROGRAMMABLE LOG CONTROLLERS</td>
</tr>
<tr>
<td>PP</td>
<td>POLYPROPYLENE</td>
</tr>
<tr>
<td>PBB</td>
<td>PARTS PER BILLION</td>
</tr>
<tr>
<td>PPM</td>
<td>PARTS PER MILLION</td>
</tr>
<tr>
<td>PRV</td>
<td>PRESSURE REDUCING VALVE</td>
</tr>
<tr>
<td>PSI</td>
<td>POUNDS PER SQUARE INCH</td>
</tr>
<tr>
<td>PSA</td>
<td>POUNDS PER SQUARE INCH ATMOSPHERE</td>
</tr>
<tr>
<td>PSIG</td>
<td>POUNDS PER SQUARE INCH GAUGE</td>
</tr>
<tr>
<td>PTTF</td>
<td>POLYETHYLENE FLUORIDE</td>
</tr>
<tr>
<td>PVC</td>
<td>POLYVINYL CHLORIDE</td>
</tr>
<tr>
<td>PVDF</td>
<td>POLYVINYLIDENE FLUORIDE</td>
</tr>
<tr>
<td>PW</td>
<td>POTABLE WATER</td>
</tr>
<tr>
<td>RAD</td>
<td>RADIANS</td>
</tr>
<tr>
<td>RO</td>
<td>ROOF DRAIN</td>
</tr>
<tr>
<td>ROO</td>
<td>REVERSE OSMOSIS</td>
</tr>
<tr>
<td>RPM</td>
<td>REVOLUTIONS PER MINUTE</td>
</tr>
<tr>
<td>RTD</td>
<td>RESISTANCE TEMPERATURE</td>
</tr>
<tr>
<td>DET</td>
<td>DETECTORS</td>
</tr>
<tr>
<td>RTRP</td>
<td>REINFORCED THERMOSETTING RESIN</td>
</tr>
<tr>
<td></td>
<td>PIPE</td>
</tr>
</tbody>
</table>
PLUMBING ABBREVIATIONS

SAN: SANITARY SEWER
SCFM: STANDARD CUBIC FEET PER MINUTE
SDL: SILT DENSITY INDEX
SDMH: STORM DRAIN MANHOLE
SF: SQUARE FEET
SMACNA: SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SPEC: SPECIFICATION
SPS: STERILE PROCESSING SERVICES
SOFT: SQUARE FEET
SS: STAINLESS STEEL
STD: STANDARD
SUS: SAYBOLT UNIVERSAL SECOND
SW: STORM WATER
SWP: STEAM WORKING PRESSURE
TCV: TEMPERATURE CONTROL VALVE
TD: TRENCH DRAIN
TDH: TOTAL DYNAMIC HEAD
TEFC: TOTALLY ENCLOSED FAN-COOLED
TEMP: TEMPERATURE
TFE: TETRAFLUOROETHYLENE
THERM: 100,000 BTU
THHN: THERMOPLASTIC HIGH-HEAT RESISTANT NYLON COATED WIRE
THWN: THERMOPLASTIC HEAT & WATER RESISTANT NYLON COATED WIRE
TMV: THERMOSTATIC MIXING VALVE
T/P: TEMPERATURE AND PRESSURE
TP: TRAP PRIMER
TSTAT: THERMOSTAT
TYP: TYPICAL

USDA: U.S. DEPARTMENT OF AGRICULTURE
V: VOLT
VA: VETERANS ADMINISTRATION
VA CFM: VA CONSTRUCTION & FACILITIES MANAGEMENT
VA CFM: VA CFM CONSULTING SUPPORT
CSS: SERVICE
VAC: VACUUM
VAC: VOLTAGE IN ALTERNATING CURRENT
VAMC: VETERANS ADMINISTRATION MEDICAL CENTER
VA TIL: WWW.CFM.VA.GOV/TIL/INDEX.ASP
VHA: VETERANS HEALTH ADMINISTRATION
VSD: VARIABLE SPEED DRIVE
VTR: VENT THROUGH ROOF

SCALE: NONE
DATE ISSUED: SEPTEMBER 1, 2020 CAD DETAIL NO.: SD220511-04.DWG
DRAWING SYMBOLS

2
PL105
DETAIL NUMBER
DRAWING NUMBER WHERE DRAWN

A
PL105
SECTION LETTER
DRAWING NUMBER WHERE SHOWN

BUILDING NO. WHERE EQUIPMENT IS LOCATED.

EQUIPMENT ABBREVIATION (PUMP)

PUMP NO.3 IN BUILDING NO.26

26-P 3

TYPICAL UNIT NO.

SAN
1
RISER SYSTEM
RISER NUMBER
PLUMBING PIPING SYMBOLS

- - - - - - - DOMESTIC COLD WATER, COLD WATER
- - - - - - - DOMESTIC HOT WATER, HOT WATER
- - - - - - - DOMESTIC HOT 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
- - - - - - - VENT (SANITARY)
- SS ----- SS ----- SS ----- SOIL, WASTE, OR SANITARY SEWER
- SAN ----- SAN ----- SAN ----- SANITARY SEWER, BELOW GRADE
- SD ----- SD ----- SD ----- STORM WATER
- SD ----- SD ----- SD ----- STORM WATER, BELOW GRADE
- SCW ----- SCW ----- SCW ----- SOFTEN 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
- FD ----- FD ----- FD ----- FUEL OIL DISCHARGE
- FOS ----- FOS ----- FOS ----- FUEL OIL SUPPLY
- FOV ----- FOV ----- FOV ----- FUEL OIL VENT
- FOR ----- FOR ----- 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
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
FLUSHING RIM FLOOR DRAIN "L" CYSTOSCOPY ROOM

NTS
DRAIN STANDPIPE - TO BE UTILIZED FOR HIGH RATE OF DISCHARGE EQUIPMENT SUCH AS WASHING MACHINES, OR TO CREATE ADDED HEAD PRESSURE. (OPTIONAL)

HUB DRAIN

4" [100mm] P-TRAP

TYPE "W" HUB DRAIN WITH STANDPIPE
Provide a metal support plate when drain is installed in an existing floor - caulk around drain prior to re-grouting.

NOTE: Slope membrane liner 2% to drain.

Type "C" Floor Drain Detail

Detail Title / Type "C" Floor Drain

U.S. Department of Veterans Affairs

Scale: None

Date Issued: September 1, 2020  CAD Detail No.: SD221300-03.DWG
COMPOSITION FLOORING

ADJUSTABLE NICKEL BRONZE STRAINER WITH 4" [100mm] FLANGE (FLUSH WITH FINISHED FLOOR)

LOOSE GRAVEL AT WEEP HOLES 3mm TO 6mm GRAVEL SIZE

FLASHING MEMBRANE, MIN. 24” [600mm] SQUARE 2 1/2 LB. [1.1kg] TO 4 LB. [1.8kg] LEAD OR 16 OZ. [0.45kg] COPPER

WIDE FLANGE

INVERTIBLE FLASHER COLLAR

CAULKED, NO-HUB OR THREADED CONNECTION

WEEP HOLES

NOTES:

1. SLOPE MEMBRANE LINER 2% TO DRAIN.

2. PROVIDE FLASHING MEMBRANE WHEN DRAIN IS INSTALLED IN A NON-MEMBRANE FLOOR

TYPE "D" FLOOR DRAIN DETAIL

# NTS

U.S. Department of Veterans Affairs

DETAIL TITLE / TYPE "D" FLOOR DRAIN

SCALE: NONE

DATE ISSUED: SEPTEMBER 1, 2020    CAD DETAIL NO.: SD221300-04.DWG
NOTES:

1. SLOPE MEMBRANE LINER 2% TO DRAIN.

2. PROVIDE FLASHING MEMBRANE WHEN DRAIN IS INSTALLED IN A NON-MEMBRANE FLOOR.
NOTES:

1. VERTICAL COIL TYPE DOMESTIC WATER HEATER IS SHOWN. IF HORIZONTAL TUBE BUNDLE TYPE IS FURNISHED, PIPING SHALL BE SIMILAR.

2. SEE PLUMBING DRAWINGS FOR PIPING CONNECTIONS.

3. PIPING TO UPPER HEATER HEAD SHOULD BE PROVIDED WITH UNION OR FLANGES, LOCATED OUTSIDE THE OUTER DIAMETER OF HEAD TO FACILITATE REMOVAL OF HEAD AND SHELL.

4. PIPING BETWEEN CONTROL VALVE AND HEATER CONNECTION SHOULD BE AS SHORT AS POSSIBLE.

5. PROVIDE INTEGRAL OR EXTERNAL HEAT TRAPS.

6. PROVIDE HOSE CONNECTION TO DRAIN.

DESIGNER'S NOTES:

ENSURE ENOUGH HEIGHT IS PROVIDED SO CONDENSATE CAN RETURN BY GRAVITY. SIZE END OF MAIN TRAP SET ON FLOOR PLANS. IF STEAM PRESSURE IS 5 PSIG [34 kPa] OR LOWER FURNISH CONTROL AIR FOR CONTROLS. WITH 30 PSIG [206 kPa] STEAM CONTROLS ARE PILOT OPERATED.

CONNECTIONS TO DOMESTIC WATER HEATER

VA | U.S. Department of Veterans Affairs

DETAIL TITLE / CONNECTIONS TO DOMESTIC WATER HEATER

SCALE: NONE

DATE ISSUED: SEPTEMBER 1, 2020 CAD DETAIL NO.: SD223500-01.DWG
NOTES:
1. ALL STEAM BOOSTER HEATERS REQUIRED BY EQUIPMENT SPECIFICATION SHALL BE PIPED AS ShOWN ABOVE.
2. SEE EQUIPMENT SPECIFICATION AND PLUMBING DRAWINGS FOR PIPING CONNECTIONS.

CONNECTIONS TO DOMESTIC WATER BOOSTER HEATER

VA | U.S. Department of Veterans Affairs
DETAIL TITLE / CONNECTIONS TO DOMESTIC WATER BOOSTER HEATER

SCALE: NONE
DATE ISSUED: SEPTEMBER 1, 2020   CAD DETAIL NO.: SD223500-02.DWG
10"x16" [254x406mm] STAINLESS STEEL ACCESS DOOR WITH KEY-OPERATED CYLINDER LOCK. MOUNT ELECTRONIC WITHIN. SENSOR & MOR SHALL OPERATE THROUGH ACCESS DOOR.

TRANSFORMER IN JUNCTION BOX
Solenoid
MANUAL OVER-RIDE BUTTON
SENSOR

BACK CHECK ANGLE STOP

FINISHED WALL
FINISHED FLOOR

FOR FIXTURE HEIGHTS SEE ARCHITECTURAL DRAWINGS

GRAB BAR SUPPORT (TYPICAL)
GRAB BAR, SEE ARCH. DRAWINGS

P-112 WATER CLOSET DETAIL - SENSOR OPERATED

NTS
**P-113 WATER CLOSET DETAIL - SENSOR OPERATED**

FINISHED WALL

36" [900mm] FROM FLOOR

34 3/8" [861mm]

Finished Floor

18" [450mm]

ELECTRICAL BOXES
MANUAL OVER-RIDE BUTTON
SENSOR

BED PAN WASHER DIVERTER VALVE

C/L OF FIXTURE

FOR FIXTURE HEIGHT SEE ARCHITECTURAL DRAWINGS

NOTE:
FURNISH 24 VOLT TRANSFORMER

1" [25mm] STOP

1 1/2" [33mm]

2 1/4" [56mm]

2 3/4" [69mm]

4 3/4" [119mm]

18 1/2" [238mm]

9 1/2" [235mm]
TYPICAL WHEELCHAIR LAVATORY DETAIL

NOTE:
PROVIDE COVER FOR EXPOSED PIPING
P-519 SCRUB SINK - SINGLE COMPARTMENT

LOCATION OF SENSOR

1. SINGLE SCRUB SINK
2. ELECTRONIC SENSOR
3. GOOSENECK FAUCET - SURGICAL BED
4. LAMINAR FLOW CONTROL
5. CONTROL MODULE
6. MIXING VALVE
7. SOLENOID VALVE
8. TRANSFORMER

P-519 SCRUB SINK - SINGLE COMPARTMENT

VA U.S. Department of Veterans Affairs

DATE ISSUED: FEBRUARY 2017 CADD DETAIL NO.: SD224000-10

SCALE: NONE
P-520 SURGEONS SCRUB SINK DETAIL

NTS
P-701 PATIENT SHOWER

NOTE: LINEAR TRENCH DRAIN AT SHOWER ENTRANCE IS AN ACCEPTABLE OPTION.
(P-809) DIALYSIS BOX DETAIL

NTS

DETAIL TITLE / (P-809) DIALYSIS BOX DETAIL

SCALE: NONE

DATE ISSUED: DECEMBER 1, 2015 CAD DETAIL NO.: SD224000-17.DWG
P-810 STEAM AND WATER MIXING VALVE DETAIL

NTS

DEPARTMENT OF VETERANS AFFAIRS

DETAIL TITLE: P-810 STEAM & WATER MIXING VALVE DETAIL

SCALE: NONE

DATE ISSUED: DECEMBER 1, 2015

CAD DETAIL NO.: SD224000-18.DWG
NOTES:
1" [25mm] TO SINK OR SPRAY UNIT
3/8" [11mm]
3/4" [19mm]
1" [25mm]
2" [50mm]
3" [75mm]
5'-0" [1500mm]

NOTE:
SOME LOCAL CODES MAY REQUIRE REDUCED PRESSURE BACKFLOW PREVENTION DEVICES

NOTE:
DISPOSER IS AN OPTION FOR THIS FIXTURE

RECESSED FLUSH VALVE FOR FLOOR DRAIN, WITH VACUUM BREAKER

IN WALL

VACUUM BREAKER (PRESSURE TYPE)

FINISHED FLOOR

EXHAUST DUCT BY HVAC CONTR.
Instead of using a double nut – a pipe sleeve over rod may be used.

Bolt to floor (typical)

Hanger rod support foot

Installation of hanger support foot

NTS
MINIMUM 16 GAGE GALVANIZED STEEL PLATE 12"x48" [300x1200mm] MIN. SECURED TO A MIN. 4 STUDS PER LAVATORY

MIN. 5 1/4" [131mm]Ø GALV. MACHINE BOLTS WELDED TO PLATE
MIN. (3) 1/4" [6mm] MACHINE BOLTS W/DITWONE LOCK NUTS ON BACK SIDE

1/4" [6mm]Ø MOLLY BOLT HOLLOW WALL ANCHOR (1 EA. SIDE OF LAV)

PLATE

NOTE:

1. AT LAVS WITH FOOT PEDAL CONTROLS PROVIDE AN ADDITIONAL 16 GAGE GALVANIZED STEEL PLATE 12"x16" [300x600mm] SECURED TO A MINIMUM OF 2 STUDS PER FOOT PEDAL
2. PROVIDE 20 GAGE STUDS WHEN HEIGHT EXCEEDS 12'-0" [3600mm]

STEEL HANGER BY LAV MFGR
FOR FIXTURE HEIGHT SEE ARCHITECTURAL DRAWINGS

LAVATORY MOUNTING DETAIL

NTS

Department of Veterans Affairs

DETAIL TITLE / LAVATORY MOUNTING DETAIL

SCALE: NONE

DATE ISSUED: DECEMBER 1, 2015 CAD DETAIL NO.: SD224000-21.DWG
DENTAL AIR (DA) ALARM PANEL SCHEDULE

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE OF PANEL</th>
<th>GAGES</th>
<th>SERVICE INDICATOR LIGHTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILER PLANT CONTROL OFFICE -OR- ENGINEERING CONTROL CENTER (ECC) -OR- OTHER LOCATION WITH ENGINEERING PERSONNEL SUPERVISION -AND- DENTAL RECEPTION AREA</td>
<td>MASTER (SYSTEM) ALARM PANEL</td>
<td>NO</td>
<td>DENTAL AIR (DA) DEW POINT HIGH DA FILTER PRESS DROP HIGH DA HIGH TEMP SHUTDOWN DA LOW LUBRICANT DA CARBON MONOXIDE LEVEL HIGH DA LINE PRESSURE LOW DA LINE PRESSURE HIGH DESICCANT DRYER MALFUNCTION TEST BUTTON</td>
</tr>
</tbody>
</table>

NOTES TO DESIGNER:

1. LOCATE MASTER ALARM PANELS IN CONFORMANCE WITH INDIVIDUAL MEDICAL CENTER'S OPERATING PRACTICES FOR CRITICAL ALARM LOCATIONS.

2. INDICATE ROOM NUMBERS WHERE PANELS ARE TO BE LOCATED.
# Medical Gas Alarm Panel Schedule

<table>
<thead>
<tr>
<th>Location</th>
<th>Type of Panel</th>
<th>Gages</th>
<th>Service Indicator Lights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler Plant Control Office</td>
<td>Master (System) Alarm Panel</td>
<td>No</td>
<td>Liquid Oxygen Level Low</td>
</tr>
<tr>
<td>OR Engineering Control Center (ECC)</td>
<td></td>
<td></td>
<td>Oxygen Reserve Switchover</td>
</tr>
<tr>
<td>OR Other Location With Engineering Personnel Supervision</td>
<td></td>
<td></td>
<td>Oxygen Reserve in Use</td>
</tr>
<tr>
<td>OR Intensive Care Nursing</td>
<td></td>
<td></td>
<td>Oxygen Reserve Low Liquid Level</td>
</tr>
<tr>
<td>OR Fire Station</td>
<td></td>
<td></td>
<td>Oxygen Reserve Pressure Low</td>
</tr>
<tr>
<td>OR Phone Switchboard</td>
<td></td>
<td></td>
<td>Oxygen Main Line Pressure Low</td>
</tr>
<tr>
<td>OR Security Office</td>
<td></td>
<td></td>
<td>Oxygen Main Line Pressure High</td>
</tr>
<tr>
<td>OR Nitrous Oxide Change Over to Secondary</td>
<td></td>
<td></td>
<td>Nitrous Oxide Reserve in Use</td>
</tr>
<tr>
<td>OR Nitrous Oxide Main Line Pressure Low</td>
<td></td>
<td></td>
<td>Nitrous Oxide Main Line Pressure High</td>
</tr>
<tr>
<td>OR Nitrogen Change Over to Secondary</td>
<td></td>
<td></td>
<td>Nitrogen Reserve in Use</td>
</tr>
<tr>
<td>OR Nitrogen Main Line Pressure Low</td>
<td></td>
<td></td>
<td>Nitrogen Main Line Pressure High</td>
</tr>
<tr>
<td>OR Medical Air Dewpoint High</td>
<td></td>
<td></td>
<td>Medical Air Line Pressure Low</td>
</tr>
<tr>
<td>OR MA Compressor Malfunction</td>
<td></td>
<td></td>
<td>Medical Air Main Line Pressure High</td>
</tr>
<tr>
<td>OR MA System Carbon Monoxide High</td>
<td></td>
<td></td>
<td>Desiccant Dryer Malfunction</td>
</tr>
<tr>
<td>OR Desiccant Dryer Post Filter Dirty</td>
<td></td>
<td></td>
<td>Desiccant Dryer Inlet Filter Dirty</td>
</tr>
<tr>
<td>OR Main Line Filter Bank Dirty</td>
<td></td>
<td></td>
<td>MA Refrigerated Dryer Post Filter Dirty</td>
</tr>
<tr>
<td>OR After Cooler High Air Temperature</td>
<td></td>
<td></td>
<td>After Cooler High Air Temperature</td>
</tr>
<tr>
<td>OR Medical Vacuum Line Vacuum Low</td>
<td></td>
<td></td>
<td>Medical Vacuum Line Vacuum Low</td>
</tr>
<tr>
<td>OR Medical Vacuum Filter Back Pressure Test Button</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery Control Room</td>
<td>Area Alarm Panel</td>
<td>Yes</td>
<td>Oxygen Line Pressure Abnormal</td>
</tr>
<tr>
<td>Recovery Rooms Critical Care Areas</td>
<td></td>
<td></td>
<td>Nitrous Oxide Line Pressure Abnormal</td>
</tr>
<tr>
<td>Emergency Areas Patient Areas</td>
<td>Area (Zone) Alarm Panel</td>
<td>Yes</td>
<td>Medical Air Line Pressure Abnormal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medical Vacuum Line Vacuum Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Test Button</td>
</tr>
</tbody>
</table>

**Designer's Notes:**

1. Locate master alarm panels in conformance with individual medical center operating practices for critical alarm locations.

2. Indicate room numbers where panels are to be located.

3. Add additional mixed gas alarms as required to the master and area alarm panels.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE OF PANEL</th>
<th>GAGES</th>
<th>SERVICE INDICATOR LIGHTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOILER PLANT CONTROL OFFICE -OR- ENGINEERING CONTROL CENTER (ECC) -OR- OTHER LOCATION WITH ENGINEERING PERSONNEL SUPERVISION -AND- INTENSIVE CARE NURSING -OR- FIRE STATION -OR- PHONE SWITCHBOARD -OR- SECURITY OFFICE</td>
<td>MASTER (SYSTEM) ALARM PANEL</td>
<td>NO</td>
<td>CARBON DIOXIDE MAIN LINE PRESSURE HIGH CARBON DIOXIDE MAIN LINE PRESSURE LOW CARBON DIOXIDE CHANGEOVER TO SECONDARY SUPPLY CARBON DIOXIDE MAIN SUPPLY LESS THAN 1 DAY (LOW CONTENTS) CARBON DIOXIDE RESERVE IN USE CARBON DIOXIDE RESERVE SUPPLY LESS THAN 1 DAY (LOW CONTENTS) CARBON DIOXIDE RESERVE PRESSURE LOW (NOT FUNCTIONAL) MEDICAL AIR PRODUCTION STOP MEDICAL AIR CHANGEOVER TO SECONDARY SUPPLY OXYGEN CHANGE OVER TO SECONDARY SUP. OXYGEN MAIN SUPPLY LESS THAN 1 DAY (LOW CONTENTS) OXYGEN RESERVE SUPPLY LESS THAN 1 DAY (LOW CONTENTS) NITROUS OXIDE MAIN SUPPLY LESS THAN 1 DAY (LOW CONTENTS) NITROUS OXIDE RESERVE SUPPLY LESS THAN 1 DAY (LOW CONTENTS) NITROUS OXIDE RESERVE PRESSURE LOW (NOT FUNCTIONAL) MEDICAL-SURGICAL MAIN LINE VACUUM LOW WAGD MAIN LINE VACUUM LOW INSTRUMENT AIR CYLINDER RESERVE IN USE INSTRUMENT AIR CYLINDER RESERVE LESS THAN 1 HOUR SUPPLY NITROGEN MAIN SUPPLY LESS THAN 1 DAY (LOW CONTENTS) NITROGEN RESERVE SUPPLY LESS THAN 1 DAY (LOW CONTENTS) NITROUS OXIDE RESERVE PRESSURE LOW</td>
</tr>
</tbody>
</table>

DESIGNER’S NOTES:

1. LOCATE MASTER ALARM PANELS IN CONFORMANCE WITH INDIVIDUAL MEDICAL CENTER OPERATING PRACTICES FOR CRITICAL ALARM LOCATIONS.

2. INDICATE ROOM NUMBERS WHERE PANELS ARE TO BE LOCATED.

3. ADD ADDITIONAL MIXED GAS ALARMS AS REQUIRED TO THE MAIN AND AREA ALARM PANELS.
GALVANIZED STEEL LIQUID SEPARATOR TANKS WITH AUTO PUMP AND ELECTRIC SURGE CONTROL (ALSO AVAILABLE WITH SOLENOID CONTROL)

PARTS LIST

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DCP</td>
<td>DUPLEX ELEC. MOTOR MOTOR</td>
<td>8</td>
<td>ABV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTROL PANEL</td>
<td></td>
<td>THROTTLING VALVE</td>
</tr>
<tr>
<td>2</td>
<td>AIP</td>
<td>ISOLATOR PAD</td>
<td>9</td>
<td>SLG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CYCLONIC LIQUID SEPARATOR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TET</td>
<td>TURBO EXHAUSTER</td>
<td>10</td>
<td>FSA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ELECTRONIC LIQUID LEVEL SENSOR (OPT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>ASV</td>
<td>MECHANICAL ANTI-SURGE VALVE</td>
<td>11</td>
<td>SV-300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOLENOID VALVE ELECTRONIC LIQUID LEVEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>AEX</td>
<td>AIR DISCHARGE SILENCER</td>
<td>12</td>
<td>AF-300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOLID STATE AUTO-SHUT ASSEMBLY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RPL</td>
<td>FLEXIBLE PLUMBING ISOLATOR</td>
<td>13</td>
<td>ACV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHECK VALVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>ACV</td>
<td>DIRECTIONAL FLOW CHECK VALVE</td>
<td>14</td>
<td>ACV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DIRECTIONAL FLOW VALVE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ORAL EVACUATION SYSTEM PIPING DETAIL

NTS
# Laboratory Gas Alarm Panel Schedule

<table>
<thead>
<tr>
<th>Location</th>
<th>Type of Panel</th>
<th>Gages</th>
<th>Service Indicator Lights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler Plant Control Office</td>
<td>Master (system)</td>
<td>No</td>
<td>LA Air Dew Point High&lt;br&gt;LA Air Carbon Monoxide High&lt;br&gt;LA Air Desiccant Dryer Malfunction&lt;br&gt;LA Air Desiccant Dryer Post Filter Dirty&lt;br&gt;LA Refrigerated Dryer Post Filter Dirty&lt;br&gt;LA Air Compressor Malfunction&lt;br&gt;LA Aftercooler High Temp&lt;br&gt;LA Desiccant Dryer Inlet Filter Dirty&lt;br&gt;LA Main Line Filter Bank Dirty&lt;br&gt;LA Pressure High&lt;br&gt;LA Pressure Low&lt;br&gt;LA Vacuum Filter Back Pressure&lt;br&gt;LA Vacuum Line Vacuum Low&lt;br&gt;(Special Gas) Line Pressure Low&lt;br&gt;(Special Gas) Line Pressure High&lt;br&gt;Test Button</td>
</tr>
<tr>
<td>Engineering Control Center (ECC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Location with Engineering Personnel Supervision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Station</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone Switchboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security Office</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes to Designer:**

1. Locate Master Alarm Panels in conformance with individual Medical Center’s operating practices for critical alarm locations.

2. Indicate room numbers where panels are to be located.