PIPE AND FITTINGS
- All hot and cold water piping shall be “Type K” hard drawn copper with wrought copper fittings, soldered with bridget lead free solder.
- All hot water return lines shall be “Type K” hard drawn copper.
- All piping shall be labeled on each side of wall or every 20ft. Mechanical tees must be used. Tees pulled from straight pipe will not be accepted.

VALVES
- Water lines smaller than 2.5 inches, use Watts 6001# WOG with packing nut ball valves.
- Valves should be furnished on all main lines and branch lines.
- For water lines 2.5 inches and larger, use American series 3700 valves with CTS Fabrication series “BF” flanges. Use only viega fitting on press fit no nibco fittings or valves.
- Press copper systems use cimberio series 220 with double O-ring

INSULATION
- All hot and cold water piping and valve bodies and piping above ceiling shall be insulated with ½ inch thick “Type FR” flexible foam plastic pipe insulation, installed in complete accordance with the manufacturer’s recommendations.
- Insulation shall pass unbroken through pipe hangers, utilizing galvanized steel saddles.
- All roof drains should be fiberglass insulation.

DRAINS
- All drains shall be cast iron body with nickel bronze top.
- In tile floor areas, drains shall be square ones.
- In mechanical rooms, round drains are acceptable. Use Zurn drain model 415 N.H with adjustable body.
- For acid waste drains, manufacturer shall be Spears.
- All roof drains shall have a mushroom dome gravel stop.

WATER CLOSETS-WALL MOUNT
- For flush valve types, use only American Standard, Crane, or Toto elongated bowl, with Zurn solid white plastic seat with open front, less cover. Toilets in all patient rooms must have bed pan lugs.
- For standard or handicap applications, use only American Standard, Crane, or Toto.
- On tank type closets, use only Toto Drake Model CST744SL.
- For bariatric rooms use Zurn water closet model Z5610-XH. Use Zurn horizontal carrier model Z-1203-XH, or vertical carrier model #Z-1204-XH when using this water closet. These carriers are rated for 750#.

FLUSH VALVES
- Use Sloan Royal Flushometer Model 110 in patient rooms. Patient rooms require bed pan washer, Sloan #BPW 1000.
- For restrooms not requiring bed pan washers:
  Use Toto automatic flush valve TET1GNC-32 for water closets.
  Use Toto automatic flush valve TEU1GNC-12 for urinals.

URINALS
• All urinals shall be American Standard, Toto, or Crane.

LAVATORIES
• Wall hung or drop-in lavatories shall be American Standard or Crane.
• Provide standard or handicap as applicable.

FAUCETS
• Standard faucets shall be Chicago models #1100 and #895, and are acceptable with wrist blade handles and gooseneck spouts.
• For janitor sinks, use Chicago model #897.
• Foot valves shall be Chicago #625 C.P.
• For Toto sensor faucets only, use Zurn Model P6900MV mixing valve. Where sensors are required, use Toto TEL3GSC-10 (no gooseneck) or Toto TEL3GGC-10 (gooseneck) models.
• All faucets must have LAMN-A FLOW adapters including sensor faucet.

DRAIN FITTINGS
• All drain fittings to be 17 Gauge with cleanout, and insulated as required for handicap specs.

STOP AND SUPPLIES
• Use only Chicago #1013 Angle stops with wall flange, chrome plated.

SHOWER
• One piece fiberglass preferred. If tile is used, then a vinyl pan designed to rise up on all sides, front and back is required.
• Shower valve should be Symmons #S-96-1-131, non-scald.

TOILET PAPER DISPENSERS
• All toilet paper dispensers shall be Bobrick brand.

WATER RISERS
• Water risers should have drains in lowest places.

SEWERS-BACK TO BACK
• Back to back plumbing shall be plumbed with stacked individual fittings instead of crosses, tees or combination Y’s.

BACKFLOW PREVENTERS
• Backflow preventers shall be Watts 919QT (1/2 inch) and Watts 909 (3/4” & larger).
• All double check backflow preventers shall be Watts 007QT (1/2 inch through 2 inch) and Watts 709 (3” through 10”).
• Backflow preventers should always be installed as two in parallel, so while checking one, the system may remain on.

UTILITY ROOM SINKS
• All sinks shall be 18 gauge stainless.

EYE WASH STATIONS
• All stations shall meet ANSI standards. Eye wash stations to be Bradley or Guardian.
**DRAIN PIPE**
- Use cast iron no-hub pipe for general drainage.
- Use Husky no-hub couplings on drainage and vents.
- For underground piping up to 6 inch, use cast iron no-hub pipe with Husky-no hub couplings.
- For underground piping 6 inch and larger, use cast iron pipe, hub and spigot type.
- For acid waste piping, use Spears Acid Waste Pipe with acid waste approved glue and cleaner.
- All cast iron pipe and couplings must be of domestic origin and manufacture.

**DEIONIZED WATER**
- Use schedule 80 PVC pipe.

**STEAM VALVES**
- For steam lines 2 inch and smaller, use 300# Nibco gate valve #T174ss.
- For steam lines 2-1/2” and larger, use Nibco gate valve #F-617-0F.
- For steam lines 2” and smaller, use Nibco globe valve #T276-AP with stainless steel disc and ring.
- For steam lines 2-1/2” and larger, use Nibco globe valve #F-718-B.

**GAS SERVICE**
- Use only lubricated plug cock or AGA approved rated ball valves.

**CHECK VALVES**
- Use brass check valves, swing check or spring loaded check valves, depending on application.

**CIRCUIT SETTERS**
- On all hot water return lines, there must be a circuit setter at the end of the return line.
- Balance valves shall be Tour & Andersson, sweat-in type.

**FIRE SPRINKLERS**
- Fire sprinkler heads shall be Tyco quick response Model # TY3231 with removal escutcheon.
- Note: Contractor shall supply 12 extra heads and escutcheons.
- Braided stainless steel flexible hose is not acceptable.

**MEDICAL GASES**
- See attachment: Beacon Medical Products.

**MAN HOLES (PARKING LOTS)**
- Manholes in parking lots shall be a minimum of 300 ft within each other, and at any change in direction of flow.

**RECIRCULATING PUMPS**
- Recirculating pumps shall be Bell & Gossett.