

DIVISION 11 - PLUMBING (SUBJECT TO DIVISION 1)

11.A. GENERAL

All work shall conform to all applicable codes.

Work performed under this section shall result in complete and updated plumbing systems. All material, labor, equipment, and other items to complete the plumbing system as outlined in Bid Document shall be furnished.

All plumbing work performed under this contract SHALL BE INSPECTED, tested, and approved by the Building Inspection Department.

Cutting, patching, and cleaning shall be done as necessary by the contractor performing the work; however, special permission shall be obtained from the Rehab Office and Building Inspector before cutting structural members of finished construction.

The plumbing contractor shall clean away all debris caused by his work at the close of each work day, and upon completion of the job. Labels must be removed from all fixtures only after inspection by the Rehab Office and/or the Building Inspection Department.

All new plumbing fixtures shall be Gerber or approved equal manufacturer. All fixtures shall have shut-off valves unless otherwise noted in Bid Documents. Color shall be chosen by owner. A salvaged plumbing fixture can be used upon approval by the Rehab Office.

Upon removal of old fixtures, contractor shall inspect all cleats, supports, and floor joists to assure a solid and secure installation. If unforeseen repair or replacement is needed, contractor shall notify the Rehab Office.

The contractor shall further determine if a change in the location of any plumbing fixture and/or pipes is necessary for proper functional replacement of the unit, and to meet codes.

11.B. TOILET & BATH ACCESSORIES

1. General

Accessories shall match existing as far as possible.

A. Each bathroom referenced on the Bid Document shall be provided with the following accessories at a minimum:

- 1 medicine cabinet as specified in Bid Document
- 1 soap/grab @ tub/shower
- 1 paper holder
- 1 towel bar @ lavatory
- 1 towel bar @ tub/shower

2. Products

A. Accessories shall conform to Federal Specifications WW-P 54 lb.

- 1) Accessories located in ceramic tile wainscots shall be stock ceramic units.
- 2) All other accessories shall be chrome finish brass or zinc die cast metal with concealed mounting brackets.

- B. Furnish and install a wall hung or recessed medicine cabinet, to be owner's choice. Cabinet shall be complete with mirror, and may be lighted. Doors shall swing past 90 degrees or slide smoothly in the track. A good quality cabinet shall be allowed for in the bid.
- C. Soap/grab shall be recessed model #HM-1964 when installed on tile shower enclosure, and HM-868 at tub without shower, as manufactured by Nuttiness or an approved equal.
- D. Paper holder - recessed - mounted with metal roller. Model #HM-877 as manufactured by Nutone or approved equal.
- E. Towel bar - surface mounted 3/4" x 24" square stainless steel tube. Model #896 as manufactured by Nutone or an approved equal.

3. Execution

- A. Install accessories with fasteners as recommended by manufacturer. Installation shall be level and rigid.
- B. Mounting should be at standard heights and located for convenience and to avoid conflict with door wings and passage clearance.
- C. Installation

1. Water Service

Domestic Water Piping - minimum water service size to housing unit shall be 1".

Where new piping to housing unit is required, new water service shall be provided from existing curb box valve if, and only if, valve and curb box are in good working condition, service is not less than 3/4", and lines can be cleaned to provide proper operating pressures as required by code at highest fixture. If these conditions cannot be met, a new service shall be provided.

A water meter where required shall be installed in accordance with utility standards, but in no case less than 3/4" in size. Pipe sizes shall be as follows: 3/4" to first branch off; 3/4" to hot water heater; 1/2" for branch supplies to fixtures. The work shall also include all necessary arrangements with the utility company involved, and all necessary excavating and back filling required by the work.

2. Sanitary Sewer

Where new sanitary sewer line to the house is required, a new 4" drainage line shall be provided. A main vent may be 3"; fresh air inlet shall be of four (4) inch diameter. Drain lines as required shall be installed with a minimum slope of 1/4" per foot. A lower slope of 1/8" per foot may be used only if sewer connection cannot be made at 1/4" slope. Clean out shall be provided at the base of each stack and within 3' of the exit point of the building, and in main drain line at over 135° turns, and not more than 100 foot intervals. The work shall also include all necessary arrangements with the utility company involved, and all necessary excavating and back filling required by the work.

3. Sillcock

Furnish and install new frost-proof sillcock with vacuum breaker. Location to be as set forth in Bid Document. This includes copper cold water feeder lines if applicable.

4. Plumbing Fixtures, Trim & Accessories

Plumbing fixtures, trim, and accessories, as required by the Bid Document, shall be installed complete with all necessary water supply, soil, and vent piping to sanitary drainage system. All fixtures shall be furnished with necessary accessories, such as escutcheons, traps, shut-off valves, and installation hardware. Traps shall be chrome plated tubular adjustable type with clean out. Shut-off valves shall be placed adjacent to, or under the fixture, to permit the line to the fixture to be shut off separately. Chrome finished escutcheon plates shall be provided at all exposed piping passing through the floor, wall, or ceiling.

5. Grab Bars

a. Structural reinforcement for future installation of grab bars shall be provided. Backing shall be a minimum 2 x 8 in a continuous band at the height specified in Exhibit 1. The backing shall be able to withstand a 250 lb. load. Plywood may be substituted for wallboard behind tub walls.

b. Owner shall be given a choice as to the brand and style of grab bar used. Owner shall also be consulted as to the location and height of installation.

6. Medicine Cabinet

Furnish and install a wall hung or recessed medicine cabinet, to be owner's choice. Cabinet shall be complete with mirror, and may be lighted. Doors shall swing past 90 degrees or slide smoothly in the track. A good quality cabinet acceptable to the owner and the rehab staff shall be allowed for in the bid.

7. Drains, Wastes, Vents, Traps

Furnish and install all required drains, wastes, vents, and traps. Installation shall meet all local plumbing codes. Stack shall extend through roof and be made waterproof. Repair all scarring. When a new plumbing fixture is installed, or an existing fixture is relocated, all work shall conform to local plumbing code.

8. Waste Connections

New waste piping shall be properly installed and vented to exterior.

9. Water Connections

Furnish and install hot and cold supply with shut-offs. All work to conform to local code.

10. Repair Water Connections

Furnish and install all labor and materials necessary to repair existing supply line. All work to conform to local plumbing code.
11. Repair Existing Drain

Furnish and install all labor and materials necessary to restore drain to good condition (no leaks and fast positive drainage) in accordance with the Code. Care to be taken to not damage any plumbing fixture or other pipes.
12. Replace Existing Drain

Furnish and install all labor and materials to replace existing drain. If existing drain is not vented, provisions shall be made to vent the replacement drain. Size and slope shall conform to the current plumbing code. Plastic may be used upon approval of the City's Plumbing Inspector.
13. Floor Drain Cover

Furnish and install new floor drain cover on existing drain. Cover should fit snugly.
14. Replace Existing Supply Lines

Furnish and install all labor and materials necessary to replace supply lines as indicated in the Bid Document. Piping to be 3/4" copper with all necessary fittings, hangers, supports, and all accessories needed to run piping in a workmanlike manner in conformance with the plumbing code.
15. Water Closet

Replace existing water closet with new first quality vitreous china water closet. Installation shall be complete with new toilet seat and all required plumbing connections. Plumbing equipment and materials and workmanship shall comply with local codes.

Color and style of fixture to be selected by owner.
16. Reseat Toilet

Remove toilet and old seating gasket. Clean area and reseat toilet with new wax seal. Make all connections and leave free of any leaks. Installation shall meet all local plumbing codes. If Contractor shall uncover a lead flange once toilet is removed, the Contractor shall notify the Rehab Office for a decision on whether the flange should be replaced.
17. Replace Toilet Seat

Furnish and install high impact toilet seat with rust-proof nylon hinges and plastic nuts and bolts.

18. Replace Flush Mechanism
- Remove deteriorated flushing unit and install a suitable listed Ballcock with critical level at least one inch above the overflow. All new seals to be installed with new unit. After replacement, unit shall function properly with moderate pressure and completely shut-off when optimum water level is reached.
19. Lavatory Legs
- Furnish and install lavatory legs on all new wall hung lavatories except as noted in Bid Documents.
20. Toilet Set Accessories
- Furnish and install chrome plated bathroom accessories as follows: recessed paper holder, recessed soap dish with grab bar at shower/bath, two stainless steel towel bars 24" x 30" in length. Furnish proper anchorage in wall for all fixtures.
21. Kitchen Sink
- Furnish and install double well, stainless steel sink with sound dampening. Replace all waste to the wall, new single lever faucets.
22. Kitchen Faucet
- Furnish and install new Delta or equal kitchen faucet, complete with all accessories. New unit must cover all existing openings in the present sink. Unit shall be securely fastened and watertight.
23. Repair Faucet
- Repair existing defective faucet(s) as set forth in Bid Document. Restore to a watertight condition in accordance with code. Any replacement handles or equipment shall conform to original style as closely as possible. Contractor shall take all necessary precautions to prevent tool scarring or damage to fixture or other accessories.
24. Garbage Disposal
- Furnish and install all labor and materials necessary to install one garbage disposal at kitchen sink. Garbage disposal to have toggle switch easily accessible at counter.
25. Washer Connection
- Washer connection is to be installed in location called for in Bid Document. ½" copper lines with double valve shut-off shall be provided. A 2" stand pipe and necessary waste line with venting shall be provided, all in accordance with code requirements.
26. Dryer Vent
- Supply and install as required 4" aluminum dryer vent to exterior, with

vent cap on exterior. Installation shall be in accordance with manufacturer's direction, and shall be located within two (2) feet of dryer location.

27. Stand Pipe

Furnish and install all labor and materials necessary to install new stand pipe for washing machine. Include all necessary cement work. Work shall conform to the Uniform Plumbing Code.

28. Water Heater

Furnish and install 40 gallon direct fire gas water heater, bearing UL or AGA listing and label.

Heater shall be provided with a reseating type temperature and pressure relief valve, constructed, listed, and installed in accordance with ANSI Z21.22. This requirement is in addition to the energy cut-off device installed by the heater manufacturer, and which conforms to the labeling requirements of the appropriate AGA and UL standards.

Listed BTU relieving capacity of relief valves shall be not less than the BTU input capacity of the water heater. The pressure relief elements of relief valves shall be set to open at not less than 25 psi in excess of available water pressure. Setting shall not exceed tank working pressure. There shall be no shut-off or check valve between the pressure relief valve and water heater. Relief valves shall be piped to discharge by gravity into a laundry tray or floor drain. Relief valve pipe extension shall extend down to within 6" of the floor. In those installations where neither floor drains nor laundry trays have been provided, or are inaccessible, the relief discharge shall then be piped through an exterior wall, terminating in an elbow turned to discharge downward, and shall be located approximately one foot above the exterior grade. Discharge piping shall be the same size as relief valve outlet. Energy shut-off devices incorporated integrally with heater controls shall be provided and calibrated for the specific usage by the water heater manufacturer. Energy shut-off devices shall be set to shut off all gas, oil or electricity to the water heater when the water in the tank reaches a temperature of not more than 210° F. Temperature sensing elements shall be accessible without requiring removal of tank jacket.

Storage tanks for direct fired storage type water heaters shall be constructed to withstand a minimum of 300 psi test pressure without leakage or permanent distortion, and shall bear the manufacturer's marking showing test and working pressure, except that in lieu thereof, pressure markings appearing on AGA or UL listed water fittings shall be provided between water lines and water heater when dissimilar metals are connected.

The warranty issued by the manufacturer shall be given to the owner, and shall provide for the free replacement of parts found to be defective in materials or workmanship under normal conditions of service during the first year after installation. It shall further provide for the free replacement of the entire heater assembly should a tank leak develop during the first two years after installation, and for the replacement of

the entire heater assembly on a prorated basis should a tank leak develop during the third, fourth or fifth year after installation. Installation shall be complete with all new vent piping and all work to conform to code.

29. Demolition

Where required, demolition shall be performed without damage to adjacent existing work. All existing fixtures, equipment and piping which have been removed or disconnected by the contractor shall become the property of this contractor and shall be removed from the site at his expense. All remaining lines that are not to be reused shall be deactivated and properly capped and plugged in basement or crawl space areas.

When concrete is removed in a basement floor for access to underground pipes, concrete shall be replaced in accordance with Division 3.

4. Materials

- A. Sanitary and Storm Water Underground Lines - to be of service weight, cast iron, Bell and Spigot, or no-hub pipe and fittings.
- B. Sanitary and Storm Water Line Above Ground - to be of service weight, cast iron, Bell and Spigot pipe, or no-hub and fittings.
- C. Plastic Piping - ABS schedule 40, DWV and PVC schedule 40, DWV with approved fittings may be used only where approved by the City code.
- D. Branch Waste and Vent - piping less than 2" may be Type "M" hard drawn copper with soldered drainage fittings, or schedule 40 galvanized steel pipe with screwed cast iron fittings. All waste lines to be type M, vents can be DWV, PVC, or ABS.
- E. Water Service Line Below Ground - to be Type "K" copper with cast brass or wrought copper fittings or a cross-linked polyethylene such as wirsbo aquapex or approved equivalent. Other lines below grade may be Type "L."
- F. Water Lines Above Ground - to be Type "M" or "L" copper with wrought copper fittings.
- G. Any fitting below a slab shall be braised and not soldered.
- H. Exposed Water Piping at Fixtures - to be chromium plated brass threaded tubing and fittings.
- I. Gas Piping - to be schedule 40 black steel or galvanized steel with black malleable iron screwed fittings.
- J. Kitchen Sink - to be 20 gauge, stainless steel, double bowl sink 29" x 18" x 7½" Elkay or approved equal. Sink to come complete with countertop deck faucet Delta, or approved equal, 1½" drain and tail piece, and all

accessories necessary for mounting the sink to the countertop.

- K. Water Closet - to be vitreous china, with reverse trap and siphon jet, such as Gerber or approved equal with 3/8" chrome plated supply valve.
- L. Lavatory - to be enameled cast iron Gerber, with Delta faucet fittings and pop-up waste, or approved equal. A molded vanity top may be substituted when called for in the bid document.
- M. Bath Tub - to be porcelain enamel on steel or cast iron with "Ultima" over the rim tub filler with C.P. Brass handles, by-pass valves, and drop spout. A fiberglass tub as manufactured by AquaGlass or approved equal may be used with the approval of the owner and Rehab Office.
- N. Shower Compartment - to be one piece thermo-formed Fiberglass seamless unit as manufactured by Aqua Glass or approved equal. Size to be 36" x 36" unless specified otherwise in the Bid Document.
- O. Gas Fired Water Heater - shall be glass lined, 40 gallon capacity with a five year written guarantee. Tank to come complete with safety valve, pressure relief valve/pipe extension. It shall have a five year written warranty.
- P. Electric Water Heater - shall only be installed under special circumstances with the approval of the Rehab Office and owner. It shall be sized so as to take advantage of the utility company's most economical rate and be equipped with a pressure relief valve and drain. An electric water heater shall have a five year written guarantee.
- Q. Insulation - all pipes, valves, and fittings in unheated areas to be insulated with high density Fiberglass or styrofoam to prevent lines from freezing.
- R. Free-standing shower stall to be a Durastall by Mustee, or approved equal.
- S. Tub wall or shower wall shall be fiberglass as manufactured by Swan, or approved equal.
- T. Backflow prevention valve shall be as approved by the City of Iowa City Water Department.