

Element D Services

Plumbing

D2000 Plumbing - General Design Guidelines

PART 1 - GENERAL

1.01 OVERVIEW

- A. Plumbing systems design shall be performed by individual(s) certified in Plumbing Engineering /Design (C.I.P.E or C.P.D.) by the American Society of Plumbing Engineers or by a Texas licensed professional engineer having minimum five years experience designing the types of plumbing systems included within this Project.
- B. Where it is considered by the A/E that proposed systems design cannot comply with the requirements stated and referenced herein, the A/E shall communicate such concerns to the Owner's Project Manager in writing and resolve non-compliance in sufficient time during the design phase of the Project to meet contract schedule obligations.

PART 2 - DESIGN CRITERIA

2.01 GENERAL

- A. Where provisions for future equipment, fixtures or building expansion are required, systems equipment capacity, pipe sizing and arrangement shall accommodate proposed demand.
- B. When developing floor plans, the A/E shall coordinate location of plumbing fixtures with the lower floor levels to avoid the need to route drainage, waste or sanitary vent piping within the ceilings of or exposed above sensitive equipment or areas where water leakage could cause contamination or major property loss. Refer to Element Z2050 for additional related requirements.

2.02 CODES AND REGULATIONS

- A. The A/E is required to make themselves aware of all applicable codes and ordinances and assure compliance thereto.
- B. Refer to Element Z2005 for referenced Codes and Applicable Regulatory Agencies, especially the "Water Conservation Design Standards" by SECO.
- C. NOTE: MD Anderson Cancer Center takes various exceptions to the International Plumbing Code and has adopted the more stringent requirements within the Uniform Plumbing Code. These exceptions are addressed within MD Anderson Cancer Center Master Construction Specifications and these Elements. The A/E shall include these exceptions within the Contract Drawings.

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2.03 RENOVATION WORK

- A. Where permanently disconnecting domestic water, medical vacuum, medical gas, natural gas, treated water, drainage, vent, or other piping serving demolished fixtures, inlets, outlets or equipment, remove all associated piping back to remaining active mains.
- B. All existing floor drains that will not remain in service after Project completion shall be isolated from the remaining active building drainage and vent system. Floor drain bodies remaining within slabs shall be sealed watertight. Slab shall be finished to allow specified application of flooring or to match surface of the adjacent finished area. Completed patching of the slab shall prevent the passage of water and provide a structural integrity and fire rating equal to or greater than the existing slab. Remove all associated piping serving decommissioned floor drains located in suspended slabs back to remaining active mains. C. All existing supports serving demolished piping and equipment shall be removed.
- D. Portions of the existing medical vacuum and gas systems affected by work within this Project shall be re-certified in strict accordance with NFPA 99.
- E. Design of new domestic hot water distribution piping system shall provide circulation within all portions of the system to within ten feet of each outlet. Rework existing system piping as required to facilitate this requirement.

2.04 WALL AND FLOOR PENETRATIONS

- A. All new and existing penetrations through rated partitions and floor slabs within the project boundary shall be sealed to provide a fire/smoke rating equal to or greater than the rating of the floor slab.
- B. All new and existing penetrations through floor slabs within the project boundary shall be sealed watertight.

PART 3 - SPECIAL CONTRACT DOCUMENT REQUIREMENTS

3.01 GENERAL

- A. Include provisions within Contract Documents addressing all applicable requirements within these Elements to insure they are included in the Project scope.
- B. Room names and numbers, and column lines and designations shall appear on all plumbing underground, floor and partial floor plans as they appear on Architectural sheets.
- C. Plumbing floor and partial plans shall include finished floor elevations, graphic scales, north arrows and key plan.

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- D. Floor plans shall show piping, valves, fixtures, equipment, etc. on the floor that they are to be installed. Where piping systems are to be installed below slab on grade, these shall be shown on a separate underground plan.
- E. A separate plumbing roof plan shall be included for projects having components located on, in or penetrating through roofs, such as roof drains, sanitary vents, etc.
- F. Be specific and precisely show all points of connection and flow rates for utilities. Inverts, when applicable, shall be determined and indicated.
- G. Project specific characteristics (capacities, electrical requirements, model numbers, etc.) for equipment shall be shown in schedules on the drawings. Information indicated within drawing schedules shall not conflict with information included within specifications.
- H. Information specified within the Project Manual (piping materials, support spacing, insulation thickness, etc.) shall be not be addressed on drawings.
- I. Include legend on drawings identifying applicable symbols and abbreviations.
- J. Plumbing plans shall clearly indicate location and ratings of all fire and smoke walls.
- K. Coordinate with the Project Architect and identify all locations where plumbing components may jeopardize the integrity of partition and floor ratings. Indicate these locations on drawings and provide detailed directions to the Contractor for insuring that all required partition and floor ratings are maintained.
- L. Refer to individual Element sections for additional document requirements applicable to the various systems.

PART 4 - PRODUCTS

4.01 GENERAL

- A. Refer to Master Construction Specifications.
- B. System design and piping specified for renovation of existing facilities shall be compatible with existing installation.

PART 5 - DOCUMENT REVISION HISTORY

| Issue | Date | Revision Description | Reviser |
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