CR 85-174

RULES CERTIFICATE

STATE OF WISCONSIN)
) SS
DEPT. OF INDUSTRY,)
LABOR & HUMAN RELATIONS)

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Revisor of Statutes
Bureau

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, John T. Coughlin, Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said department, do hereby certify that the annexed rule(s) relating to Plumbing Code (Subject) were duly approved and adopted by this department on March 2, 1988 (Date).

I further certify that said copy has been compared by me with the original on file in this department and that the same is a true copy thereof, and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the department at 8:00 a.m. in the city of Madison, this 2nd day of March A.D. 19 88.

John T. Coughlin
Secretary

6-1-88

ORDER OF ADOPTION

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by section(s) 101.02 (1), 101.63 (1), 101.73 (1), 145.02 (2), and 145.02 (2), Stats., the Department of Industry, Labor and Human Relations [x] creates; [x] amends; [x] repeals and recreates; [x] repeals and adopts rules of Wisconsin Administrative Code chapter (s):

ILHR 81 and 82 (Number) Plumbing Code (Title)

The attached rules shall take effect on the first day of the month following publication in the Wisconsin Administrative Register pursuant to section 227.22, Stats.

Adopted at Madison, Wisconsin, this

date: March 2, 1988

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

John T. Coughlin
Secretary

State of Wisconsin \ Department of Industry, Labor and Human Relations

RULES in FINAL DRAFT FORM

Rule: Chapters ILHR 81 and 82

Relating to: State Uniform Plumbing Code

Clearinghouse Rule No.: 85-174

AN ORDER to repeal ILHR 81.05 (8)(b), 82.11 (43), (71), (74),(120), and (177) to (184), ILHR 82.20 (5), 82.30 (9)(c) 4., and 82.31 (13)(a) 2.; to renumber ILHR 81.05 (8)(c), ILHR 82.20 (6) to (12); to renumber and amend ILHR 82.30 (9)(c) 5.; to amend ILHR 52.60 (3)(a) and (5)(b), ILHR 81.13 (3)(a) 1. and 2., ILHR 82.11 (56) and (163), 82.20 (1)(intro.), 82.21 (1)(d) 7. (intro.), Table 82.30-1, 82.30 (8)(a), 82.30(9)(c)(intro.) and 3., 82.30 (10)(b) 3. b., 82.31 (11)(a), 82.31 (17)(c) 2. b., 82.32 (4)(a) and 82.35 (3)(i); to repeal and recreate ILHR 21.17 (3)(a) 3. and (4), ILHR 81.02 (3), 81.03 (3), ILHR 81.12, ILHR 82.11 (53), (68) and (115), Tables 82.20-1 and -2, 82.21 (1)(d)5., 82.30 (4)(d) 2., Table 82.30-4, 82.30 (10)(a) 2. b., (11) (intro.) and (11) (f) 2., 82.31 (11)(b), Table 82.33-1, 82.33 (9)(g) 5., 82.35 (3)(j), 82.36 (3)(a), (b) 1. and (c) 1., 82.36 (11)(a) 4., 82.40, 82.60, A-82.20 and A-82.21; to create ILHR 52.60 (6), ILHR 81.01 (11m) and (17m), ILHR 82.11 (67m), (159m) and (177) to (180), 82.20 (5)(intro.) and (12), 82.30 (8)(a) 1. to 3., 82.30 (9)(d), 82.31 (17)(b) 3. c. and (c) 2. c., 82.32 (5)(intro.) and (d), 82.33 (8)(c) 3., 82.33 (9)(g) 6.and (9)(k), 82.36 (3)(c) 3. and A-82.40 (7)(a) and (b), relating to plumbing.

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ANALYSIS OF RULES

Pursuant to s. 145.02, Stats., the Department of Industry, Labor and Human Relations is responsible for the supervision of plumbing in order to safeguard the public's health. This responsibility has been delegated to the Bureau of Plumbing within the Division of Safety and Buildings which administers and enforces the State Uniform Plumbing Code, chapters ILHR 81 to 86.

Chapter ILHR 82 of the State Uniform Plumbing Code establishes minimum standards for the design, construction, installation, supervision and inspection of plumbing. In order for the plumbing code to be effective and reasonable, the standards must be updated periodically to reflect changing technologies and practices and new materials for plumbing. The major proposed changes for chapter ILHR 82 include:

(1) Section ILHR 82.40; Repeal and recreate the provisions for the design and installation of water supply systems. The revisions:

(a) Codify an exception to the general rule requiring hot water to be provided to lavatories located in waysides and seasonal use park shelters and bath houses which are not places of employment.

(b) Codify an exception to permit the use of tempered water in lieu of hot water for lavatories and showers which are not located in dwelling units or living units.

(c) Eliminate the use of figures, sketches, and graphs as code provisions for the location of control valves and the sizing of water distribution piping.

(d) Decrease the number of required locations where control valves are to be installed within water distribution systems.

(e) Clarify specific locations for control valves to be installed for water services, private water mains and water distribution systems.

(g) Employ performance orientated standards for sizing water supply systems.

(h) Eliminate gravity tanks as a water pressure booster system.

(i) Recognize other types of systems and methods, not just circulation systems, for maintaining the temperature of hot water for water distribution systems greater than 100 feet in developed length.

(j) Reduce the requirements for disinfecting water distribution systems when repairs are made.

(k) Replace water pipe sizing graphs with tables to reduce inconsistencies when interpreting the graphs.

(l) Revise water supply fixture unit values relative to the sizing of water distribution systems to reflect water conserving fixtures.

(2) Sections ILHR 82.11 and 82.60; Revisions made in these sections, relative to definitions and pipe hangers reflect and complement the revisions to s. ILHR 82.40, Water Supply Systems.

(3) ILHR 82.30; 82.33 and 82.36; Changes in these sections:

(a) Modify requirements permitting additions or connections to existing private interceptor main sewers less than 8 inches in diameter.

(b) Require the use of an air gap for the drain of a food preparation sink in food handling establishments.

(c) Permit the connection to existing combined sanitary/storm sewer systems for discharging storm water and clearwater wastes.

(d) Reduce the minimum dimensions for clear water sumps.

The proposed rules were developed from department prepared working drafts which included concepts of several nationally recognized model plumbing codes. The drafts were reviewed and refined with joint input of the Plumbers Council and a citizens advisory committee. Members of that review group were:

Jim Sargent, Director, Bureau of Plumbing, Department of Industry, Labor and Human Relations

William Reigel, Master Plumbers

Stephen Jesmok, Journeyman Plumbers

F. R. Badeau, Wisconsin Plumbing Contractors Association

James Barrett, City of Milwaukee, Building Inspection, Plumbing Bureau

Paul Gobster, Wisconsin Society of Professional Engineers

Gary Hamilton, Wisconsin Pipe Trades Association

Tom Nelson, Wisconsin Plumbing Contractors Association

Alex Neuwirth, Wisconsin Pipe Trades Association

Eugene Shumann, Plumbing Designer

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Pursuant to the authority vested in the state of Wisconsin, Department of Industry, Labor and Human Relations by ss. 101.02 (1), 101.63 (1), 101.73 (1), 145.02 (2) and 145.02 (4), Stats., the department hereby amends rules interpreting ss. 101.02 (15) (a) to (j), 145.02 (1) and (3), 145.06 (1) and (2), 145.08 (2) and 145.11 (1) to (3), Stats., as follows:

SECTION 1. ILHR 21.17 (3) (a) 3. is repealed and recreated to read:

ILHR 21.17 (3) (a) 3. 'Size'. The size of each clear water sump shall be as recommended by the sump pump manufacturer, but may not be smaller than 16 inches in diameter at the top, 14 inches in diameter at the bottom and 22 inches in depth.

SECTION 2. ILHR 21.17 (4) is repealed and recreated to read:

ILHR 21.17 (4) SUMP DISCHARGE DISPOSAL. (a) Storm sewer. Storm water, surface water, groundwater and clear water wastes shall be discharged to a storm sewer system or a combined sanitary-storm sewer system where available. Combined public sanitary-storm sewer systems shall be approved by the department of natural resources. Combined private sanitary-storm sewer systems shall be approved by the department.

(b) Other disposal methods. 1. Where no storm sewer system or combined sanitary-storm sewer system is available or adequate to receive the anticipated load, the storm water, surface water, groundwater and clear water wastes shall be discharged in accordance with local governmental requirements.

2. Where approved by the local governmental authority, storm water, surface water, groundwater and clear water wastes of the properties of one- and 2-family dwellings may be discharged onto flat areas, such as streets or lawns, so long as the water flows away from the buildings and does not create a nuisance.

(c) Segregation of wastes. 1. a. Except as provided in subd. 3., where a sanitary sewer system and a storm sewer system are available the drain piping for storm water or clear water wastes may not connect to any part of the sanitary drain system.

b. Where a combined sanitary-storm sewer system is available storm water wastes, clear water wastes and sanitary wastes may not be combined until discharging to the building sewer.

2. Storm water wastes and clear water wastes may not be combined until discharging into the storm building drain.

3. The clear water wastes from a refrigerated drinking fountain, water heater or storage tank relief valve or water softner shall be discharged to either a sanitary drain system or a storm drain system.

Note: Subsections (3) (a) and (4) are excerpts from the state uniform plumbing code, s. ILHR 82.36.

SECTION 3. ILHR 52.60 (3) (a) is amended to read:

ILHR 52.60 (3) (a) Lavatories. ~~Lavatories~~ Except as provided in sub. (6), lavatories shall be of an approved type and shall be provided with hot and cold running water. The faucets of such lavatories shall be of a type which limits the flow of water through the faucet, after the handle is released, to not more than one gallon. Lavatories in toilet rooms of private living units shall be equipped to limit the flow of water to not more than 3 gallons per minute. The lavatories may be equipped with a hot and cold regulating device. If a multiple-use lavatory is installed, 24 lineal inches of wash sink or 20 inches measured along the edge of a circular basin will be considered equivalent to one lavatory.

SECTION 4. ILHR 52.60 (5) (b) is amended to read:

ILHR 52.60 (5) (b) Hot and cold water. ~~Bathing~~ Except as provided in sub. (6), bathing facilities shall be provided with hot and cold water and be equipped with a hot and cold water regulating device. The device shall be plainly marked. Supply or feed pipes to showers shall be placed overhead or protected to avoid the probability of a person coming in contact with the hot water pipes. Showers shall be equipped to limit the flow of water to not more than 3 gallons per minute per shower head.

SECTION 5. ILHR 52.60 (6) is created to read:

ILHR 52.60 (6) (a) Lavatories, wash fountains and shower heads which are not located in dwelling units or living units shall be supplied with either tempered water or hot water.

1. Tempered water shall be provided to lavatories, wash fountains and shower heads by means of tempering mixing valves.

2. No more than 4 lavatories which are located in the same room may be served by a single tempering mixing valve.

3. Only shower heads which are located in the same room may be served by a single tempering mixing valve.

(b) Lavatories located in park shelters and bath houses which are not open during the period from November 15 to March 15 and which are not places of employment shall not be required to be provided with hot water.

(c) Lavatories located in waysides which are not places of employment shall not be required to be provided with hot water.

Note: The exception of providing hot water under pars. (a) to (c) does not supercede the requirements of other state agencies for providing hot water.

SECTION 6. ILHR 81.01 (11m) and (17m) are created to read:

ILHR 81.01 (11m) "Master plumber in charge" means a master plumber who assumes the responsibility for the installation of plumbing and training of apprentices and registered learners in accordance with ch. 145, Stats., and chs. ILHR 81 to 86.

(17m) "Secretary" means the secretary of the department of industry, labor and human relations.

SECTION 7. ILHR 81.02 (3) is repealed and recreated to read:

ILHR 81.02 (3) RESPONSIBILITY OF EMPLOYER. Registration as a plumbing apprentice may not be accepted unless the particular organization in which the apprentice is to work is equipped to have an apprentice. The master plumber in charge shall see that the requirements as to both practical and school training are complied with in accordance with subs. (5) and (6). The master plumber in charge shall report to the department any changes made in relation to the continued employment of an apprentice. All changes in relation to the continued employment of plumbing apprentices shall be subject to the joint approval of the divisions of the department of industry, labor and human relations having jurisdiction.

SECTION 8. ILHR 81.03 is repealed and recreated to read:

ILHR 81.03 (3) RESPONSIBILITY OF EMPLOYER. (a) Registration as a registered learner may not be accepted unless the particular organization in which the learner is to work is equipped to have a learner in the specific restricted classification for which learner is requesting registration and the master plumber in charge is qualified to train the learner in the specific restricted classification. The master plumber in charge shall see that the requirements as to both practical and school training are complied with in accordance with subs. (5) and (6). The master plumber in charge shall report to the department any changes made in the relation to the continued employment of a learner. All changes in relation to the continued employment of registered learners shall be subject to the approval of the department.

(b) For each registered learner there shall be at least one journeyman plumber or journeyman plumber-restricted. For this purpose, a master plumber or master plumber-restricted may act as a journeyman plumber or a journeyman plumber-restricted, respectively.

SECTION 9. ILHR 81.05 (8)(b) is repealed.

SECTION 10. ILHR 81.05 (8)(c) is renumbered 81.05 (8)(b).

SECTION 11. ILHR 81.12 is repealed and recreated to read:

ILHR 81.12 EXPIRATION OF LICENSES AND REGISTRATIONS. Except as provided in ss. ILHR 81.08 (2) and 81.16 (7), no license or registration issued under this subchapter shall be valid for longer than one year and all licenses and registrations shall expire on December 31 of each year.

(1) A license or a registration may be renewed upon application and payment of a renewal fee received by the department prior to the date of expiration.

(2) A license or a registration may be renewed upon application and payment of a renewal fee and late fee received by the department within 3 months following the date of expiration.

(3) The department may renew a license or a registration upon application and payment of a renewal fee and a late fee received by the department more than 3 months following the date of expiration, if it is determined that the applicant has good cause for not making an application for renewal within the 3 months following the date of expiration.

SECTION 13. ILHR 81.13 (3) (a) 1. and 2. are amended to read:

ILHR 81.13 (3) DELINQUENT OR ELAPSED LICENSES. (a) Plumbers licenses. 1. Master plumber and master plumber-restricted licenses shall be renewed within 5 years from the date of issuance. Failure to do so shall require reexamination to again qualify for licensure. Renewal of a delinquent or elapsed master plumber license or master plumber-restricted license that has not been renewed ~~annually~~ in accordance with s. ILHR 81.12 shall require the applicant to have a valid journeyman plumber license or journeyman plumber-restricted license, respectively. Upon the renewal of the master license, a licensee may exchange their license for the appropriate journeyman license in accordance with s. ILHR 81.07.

2. Journeyman plumber and journeyman plumber-restricted licenses shall be renewed ~~every year~~ in accordance with s. ILHR 81.12. Failure to do so shall require reexamination to again qualify for licensure.

SECTION 15. ILHR 82.11 (43) is repealed.

SECTION 16. ILHR 82.11 (53) is repealed and recreated to read:

ILHR 82.11 (53) "Corporation cock" means a valve:

a. Installed in a private water main or a water service at or near the connection to public water main; or

b. Installed in the side of a forced main sewer to which a forced building sewer is connected.

SECTION 17. ILHR 82.11 (56) is amended to read:

ILHR 82.11 (56) "Curb stop" means a valve placed in a water service ~~pipe~~ or a private water main.

SECTION 18. ILHR 82.11 (67m) is created to read:

ILHR 82.11 (67m) "Fixture supply" means that portion of a water distribution system serving one plumbing fixture, appliance or piece of equipment.

SECTION 19. ILHR 82.11 (68) is repealed and recreated to read:

ILHR 82.11 (68) "Fixture supply connector" means that portion of water supply piping which connects a plumbing fixture, appliance or a piece of equipment to the water distribution system.

SECTION 20. ILHR 82.11 (71) and (74) are repealed.

SECTION 21. ILHR 82.11 (115) is repealed and recreated to read:

ILHR 82.11 (115) "Plumbing system" includes the water supply system, the drain system, the vent system, plumbing fixtures, plumbing appliances and plumbing appurtenances which serve a building, structure or premises.

SECTION 22. ILHR 82.11 (120) is repealed.

SECTION 23. ILHR 82.11 (159m) is created to read:

ILHR 82.11 (159m) "Tempered water" means water ranging in temperature from 85° F. to less than 110° F.

SECTION 24. ILHR 82.11 (163) is amended to read:

ILHR 82.11 (163) "Turf sprinkler system" means a system of piping, appurtenances and devices ~~so~~ installed ~~as~~ underground to distribute water for lawn or other similar irrigation purposes.

SECTION 25. ILHR 82.11 (177) to (184) are repealed.

SECTION 26. ILHR 82.11 (177) to (180) are created to read:

ILHR 82.11 (177) "Water distribution system" means that portion of a water supply system from the building control valve to the connection of a fixture supply connector, plumbing fixture, plumbing appliance, water using equipment or other piping systems to be served.

(178) "Water heater" means any heating device with piping connections to the water supply system which is intended to supply hot water for domestic or commercial purposes other than space heating.

(179) "Water service" means that portion of a water supply system from the water main or private water supply to the building control valve.

(180) "Water supply system" means the piping of a private water main, water service and water distribution system, fixture supply connectors, fittings, valves, and appurtenances through which water is conveyed to points of usage such as plumbing fixtures, plumbing appliances, water using equipment or other piping systems to be served.

SECTION 27. ILHR 82.20 (1) (intro.) is amended to read:

ILHR 82.20 PLAN REVIEW AND APPROVAL. (1) GENERAL. Plumbing plans and specifications shall be submitted to the department or to an approved agent municipality for review in accordance with pars. (a) and (b). ~~Prior to July 1, 1985, the department shall review and make a determination on an application for plan review within 20 business days of receiving the required information and fees. Beginning on July 1, 1985, and thereafter, the department shall review and make a determination or an application for plan review within 15 business days of receiving the required information and fees.~~

SECTION 28. Tables 82.20-1 and 82.20-2 are repealed and recreated to read:

Table 82.20-1
SUBMITTALS TO DEPARTMENT

Type of Plumbing Installation
1. All plumbing, new installations, additions and alterations, regardless of the number of plumbing fixtures involved, to be installed in health care facilities.
2. Plumbing, new installations, additions and alterations involving 6 or more plumbing fixtures, to be installed in buildings owned by a metropolitan or sanitary sewer district.[a]
3. Plumbing, new installations, additions and alterations involving 6 or more plumbing fixtures, to be installed in buildings owned by the state.[a]
4. Engineered plumbing systems.
5. Controlled roof drainage systems.
6. Reduced pressure zone principle backflow preventers.
7. Water treatment devices for removing contaminants exceeding the maximum contaminant levels specified in chs. NR 140 or NR 109.

Note a: A water heater is to be counted as a plumbing fixture.

Table 82.20-2
SUBMITTALS TO DEPARTMENT OR
AGENT MUNICIPALITY

Type of Plumbing Installation
1. New installations, additions and alterations to drain systems, vent systems, water service systems, and water distribution systems involving 6 or more plumbing fixtures to be installed in public buildings.[a,b]
2. Grease interceptors to be installed for public buildings.
3. Garage catch basins and oil interceptors to be installed for public buildings.
4. Automatic car wash facilities.
5. Sanitary dump stations.
6. Turf sprinkler systems connected to a potable water system.
7. Private water mains.
8. Water supply systems and drain systems to be installed for mobile home parks and campgrounds.[c]
9. Private interceptor main sewers.[c]
10. Chemical waste systems regardless of the number of plumbing fixtures involved.[c]

Note a: A water heater is to be counted as a plumbing fixture.

Note b: For the purpose of plan submittal, public buildings do not include zero-lot-line row houses where each living unit is served by an individual water service and an individual building sewer.

Note c: Only agent municipalities which are cities of the first class may review these types of installations.

SECTION 29. ILHR 82.20 (5) is repealed.

SECTION 30. ILHR 82.20 (6) to (12) are renumbered 82.20 (5) to (11).

SECTION 31. ILHR 82.20 (5) (intro.) is created to read:

ILHR 82.20 (5) PLAN REVIEW. Except as provided in sub. (12), the department shall review and make a determination on an application for plan review within 15 days of receiving the required information and fees.

SECTION 32. ILHR 82.20 (12) is created to read:

ILHR 82.20 (12) ENGINEERED PLUMBING SYSTEMS. The provisions of this chapter or ch. ILHR 84 are not intended to prevent design and use of engineered plumbing systems if the system has been first approved by the department. The department may approve an engineered plumbing system, if the system complies with the intent of chs. ILHR 82 to 84.

(a) Plans and specifications. Plans and specifications for all engineered plumbing systems shall be submitted and reviewed in accordance with subs. (4) to (10).

1. The plans, specifications and all pertinent data shall indicate the nature and extent of the proposed system before an approval is granted.

2. Plans, specifications and data for an engineered plumbing system shall show the complete drain system, vent system, and water supply system including:

a. The plumbing fixture and appliance arrangements;

b. The pipe sizes;

c. The direction of flow for drain pipes;

d. The grade of horizontal drain pipes;

e. The drainage fixture unit values for all drain pipes; and

f. The water supply fixture unit values for all water supply pipes.

3. When requested, additional details and data pertaining to the design, installations and materials of an engineered plumbing system shall be submitted to the department.

4. The department shall review and make a determination on an application for plan review of an engineered plumbing system within 3 months of receiving the required information and fees.

(b) Inspections. The registered architect, engineer, plumbing designer or master plumber responsible for the design of the engineered plumbing system shall provide on-site supervision of the installation.

1. Upon completion of the installation, the registered architect, engineer, plumbing designer or master plumber shall certify in writing to the department that the installation is in compliance with the approved plans, specifications and data.

2. The department may require periodic inspections of the system by the registered architect, engineer, plumbing designer or master plumber after the installation is completed to monitor the performance of the system.

SECTION 33. ILHR 82.21 (1) (d) 5. is repealed and recreated to read:

ILHR 82.21 (1) (d) 5. 'Private water mains and water services'. Private water mains and water services shall be inspected before being covered. The private water mains and water services shall be tested and proven water tight under water pressure not less than the working pressure under which it is to be used. The water used for testing shall be obtained from a potable source of supply.

SECTION 34. ILHR 82.21 (1) (d) 7. (intro.) is amended to read:

ILHR 82.21 (1) (d) 7. 'Test methods for drain and vent systems.' A test for watertightness ~~may~~ shall be applied to ~~an entire piping~~ the entire drain and vent system ~~or~~ at one time or to the entire system in sections after the rough piping has been installed in accordance with either subpars. a. or b.

SECTION 35. Table 82.30-1 is amended to read:

(Partial)
Table 82.30-1
DRAINAGE FIXTURE UNIT VALUES

Type of Fixture	Drainage Fixture Unit Value (dfu)	Trap Size Minimum Diameter (in inches)
Wash Fountain, circular and semicircular	~~3~~ 2	~~2~~ 1-1/2

SECTION 36. ILHR 82.30 (4) (d) 2. is repealed and recreated to read:

ILHR 82.30 (4) (d) 2. 'Public buildings'. A private interceptor main sewer serving public buildings may not be less than 8 inches in diameter. A proposed private interceptor main sewer 8 inches in diameter may discharge to an existing private interceptor main sewer 6 inches or greater in diameter, if the existing private intercepter main sewer was installed prior to March 1, 1985 or was approved by the department or the department of natural resources prior to March 1, 1985. The reduction in diameter for the private interceptor main sewer shall be made in a manhole.

SECTION 37. ILHR 82.30 (8) (a) is amended to read:

ILHR 82.30 (8) (a) Fittings. All changes in direction of flow in drain piping shall be made by the appropriate use of 45 degree wyes, long or short sweep quarter bends, sixth, eighth, or sixteenth bends, or by a combination of these or equivalent fittings. ~~Fittings~~ Except as provided in subds. 1. to 3., fittings which change the direction of flow for drain piping 8 inches or less in diameter shall conform to the minimum radii specified in Table 82.30-4.

Note: See Appendix for further explanatory material.

SECTION 38. ILHR 82.30 (8) (a) 1. to 3. are created to read:

ILHR 82.30 (8) (a) 1. The minimum radius for the first 90° fitting downstream from a trap serving a lavatory or sink shall be 1-3/4 inches for drain piping 1-1/2 inches in diameter. The fitting shall be a tee or quarter bend.

2. The minimum radius for the first 90° bend or elbow downstream from a water closet shall be 2-1/2 inches for drain piping 3 inches in diameter.

3. The minimum radius for the first 90° bend or elbow downstream from a water closet shall be 3 inches for drain piping 4 inches in diameter.

SECTION 39. Table 82.30-4 is repealed and recreated to read:

Table 82.30-4
MINIMUM RADII OF FITTINGS
(in inches)

Diameter of pipe (in inches)	Changes in Direction of Flow	
	Horizontal to Vertical	Vertical to Horizontal and Horizontal to Horizontal
1-1/4	1-1/8	2-1/4
1-1/2	1-3/8	2-3/4
2	1-7/8	3-1/4
3	2-7/8	4-1/16
4	3-3/4	4-7/8
5	4-1/2	6-1/2
6	5	7
8	6	8

SECTION 40. ILHR 82.30 (9) (c) (intro.) and 3. are amended to read:

ILHR 82.30 (9) (c) Prohibited fittings and connections. The types of fittings and connections specified in subds. 1. to ~~3.~~ 4. shall not be used for drain piping:

3. A fitting which has running threads: and

SECTION 41. ILHR 82.30 (9) (c) 4. is repealed.

SECTION 42. ILHR 82.30 (9) (c) 5. is renumbered 82.30 (9) (c) 4. and amended to read:

ILHR 82.30 (9) (c) 4. A connection by means of ~~tapping/or/drilling~~ drilling and tapping of a drain or vent pipe, unless as otherwise approved by the department.

SECTION 43. ILHR 82.30 (9) (d) is created to read:

ILHR 82.30 (9) (d) Saddles. If a pipe saddle is used to connect drain piping together, the saddle shall be installed in accordance with s. ILHR 84.30 (5) (d).

SECTION 44. ILHR 82.30 (10) (a) 2. b. is repealed and recreated to read:

ILHR 82.30 (10) (a) 2. b. The capacity of the sump shall be such that the pump when actuated by the lowest "pump on" switch runs at least 20 seconds.

SECTION 45. ILHR 82.30 (10) (b) 3. b. is amended to read:

ILHR 82.30 (10) (b) 3. b. Nongrinder-type sewage pumps. All nongrinder-type sewage pumps serving water closets shall be capable of passing a 2-inch diameter solid ball and shall have a minimum 2-inch diameter discharge opening and discharge piping. All other pumps handling sanitary wastes shall be rated by the manufacturer as an effluent pump, shall be capable of passing a 1/2-inch diameter solid ball and shall have a mimimum ~~1 1/2~~ 1-1/4 inch diameter discharge opening and discharge piping.

SECTION 46. ILHR 82.30 (11) (intro.) is repealed and recreated to read:

ILHR 82.30 (11) BUILDING DRAINS AND BUILDING SEWERS. The interior drain system or systems of each building shall be entirely separate and independent of any other interior drain system serving another building. All sanitary building sewers, storm building sewers or other special type building sewers shall discharge to a public sewer, private interceptor main sewer or private sewage system. No building sewer may pass through or under a building to serve another building.

SECTION 47. ILHR 82.30 (11) (f) 2. is repealed and recreated to read:

ILHR 82.30 (11) (f) 2. 'Storm and Clear Water Connections'. Storm drain piping and clear water drain piping may not discharge to a sanitary building drain or to a private sewage system.

SECTION 48. ILHR 82.31 (11) (a) is amended to read:

ILHR 82.31 (11) (a) Vertical drains. A common vent may serve 2 fixture traps where both fixture drains connect to a vertical drain a the same elevation. Where this connection is by means of a sanitary tee fitting with a side inlet, the centerline of the side inlet opening may not be below the centerline of the larger opening. The drain connection of a blowout type fixture or a kitchen sink served by a common vent ~~shall~~ may not be by means of a double sanitary tee fitting.

SECTION 49. ILHR 82.31 (11) (b) is repealed and recreated to read:

ILHR 82.31 (11) (b) Horizontal branches. The fixture drains from 2 wall-outlet fixtures, each with a drainage fixture unit value of one or less, or the fixture drains from 2 traps serving a kitchen sink with or without a dishwasher may connect to a horizontal branch without individual vents provided a common vent connects to the branch drain downstream of both fixture drains. Both fixture drains shall be of the same diameter. The developed length of the drain from the vent to the farthest trap shall conform to sub. (9).

SECTION 50. ILHR 82.31 (13) (a) 2. is repealed.

SECTION 51. ILHR 82.31 (17) (b) 3. b. is amended to read:

ILHR 82.31 (17) (b) 3. b. The vent stack or drain stack required in subd. 1. shall be at least one-half the diameter of that portion of the building drain which is vented by the stack, but ~~shall~~ may not be less than 2 inches in diameter. ~~The stack vent serving a drain stack required in subd. 1. shall be at least one half the diameter of that portion of the building drain which is vented by the stack, but may not be less than 2 inches in diameter.~~

SECTION 52. ILHR 82.31 (17) (b) 3. c. is created to read:

ILHR 82.31 (17) (b) 3. c. A stack vent serving a drain stack required in subd. 1. shall be at least one half the diameter of that portion of the building drain which is vented by the stack, but may not be less than 2 inches in diameter.

SECTION 53. ILHR 82.32 (4) (a) is amended to read:

ILHR 82.31 (4) INSTALLATION. (a) Setting of traps. All traps shall be ~~so~~ rigidly supported and set true with respect to the water level and so located as to protect the water seals, and shall be protected from freezing and evaporation.

SECTION 54. ILHR 82.31 (17)(c) 2. b. is amended to read:

ILHR 82.31 (17)(c) 2. b. The vent stack or drain stack required in subd. 1 shall be at least one-half the diameter of that portion of the horizontal drain which is vented by the stack, but ~~shall~~ may not be less than 2 inches in diameter. ~~The stack vent serving a drain stack required in subd. 1 shall be at least one half the diameter of that portion of the horizontal drain which is vented by the stack, but may not be less than 2 inches in diameter.~~

SECTION 55. ILHR 82.31 (17)(c) 2. c. is created to read:

ILHR 82.31(17)(c) 2. c. A stack vent serving a drain stack required in subd. 1 shall be at least one half the diameter of that portion of the horizontal drain which is vented by the stack, but may not be less than 2 inches in diameter.

SECTION 56. ILHR 82.32 (5) (intro.) is created to read:

ILHR 82.32 (5) DIRECT FIXTURE DRAIN CONNECTION. Except as provided in s. ILHR 82.33, all plumbing fixtures and appliances discharging wastes shall connect directly to a drain system.

SECTION 57. ILHR 82.32 (5) (d) is created to read:

ILHR 82.32 (5) (d) Blowout-type fixtures. Blowout-type plumbing fixtures shall be installed in accordance with the approval of the department.

SECTION 58. Table 82.33-1 is repealed and recreated to read:

Table 82.33-1
TYPES OF FIXTURES, APPLIANCES AND DEVICES OF A PUBLIC HEALTH CONCERN

Refrigerated food storage rooms and compartments	Coffee makers and urns
Refrigerated food display cases	Food processing equipment –
Ice compartments	Baptismal founts
Vending machines	Clothes washers and extractors
Steam tables and kettles	Dishwashers
Food preparation sinks	Stills
Potato peelers	Sterilizers
Egg boilers	Bar and soda fountains
	Boiler blowoff basin outlet drains

SECTION 59. ILHR 82.33 (8)(c) 3. is created to read:

ILHR 82.33 (8)(c) 3. Local waste piping may not receive the discharge from another local waste pipe.

SECTION 60. ILHR 82.33 (9) (g) 5. is repealed and recreated to read:

ILHR 82.33 (g) 5. 'Enclosed food processing equipment.' Coffee urns, egg boilers, potato peelers, steam kettles, steam tables, vending machines and similar types of enclosed food processing equipment shall be discharged to the sanitary drain system through indirect waste piping by means of an air-gap.

SECTION 51. ILHR 82.33 (9) (g) 6. is created to read:

ILHR 82.33 (9) (g) 6. 'Preparation sinks'. Open culinary sinks for thawing or washing food shall discharge to the sanitary drain system through indirect waste piping by means of an air-gap. The indirect waste piping may not exceed a length of 30 inches.

SECTION 62. ILHR 82.33 (9) (k) is created to read:

ILHR 82.33 (9) (k) Water treatment devices. The wastes from water treatment devices shall discharge to a drain system through indirect waste piping by means of an air-gap.

SECTION 63. ILHR 82.35 (3) (i) is amended to read:

ILHR 82.35 (3) (i) Double sanitary tees. A cleanout shall be provided immediately above or below a double sanitary tee drain fitting which is installed in a vertical drain pipe of less than 3 inches in diameter, unless a stack cleanout is provided in accordance with ~~par. (f)~~ par. (f).

SECTION 64. ILHR 82.35 (3) (j) is repealed and recreated to read:

ILHR 82.35 (3) (j) Traps. All traps shall be constructed or installed so that stoppages may be removed from the traps. If a trap is not accessible for removal or does not contain a removable dip, a cleanout or a removable inlet shall be installed to enable cleaning of the trap passageway.

SECTION 65. ILHR 82.36 (3) (a) and (b) 1. are repealed and recreated to read:

ILHR 82.36 (3) (a) Storm sewer. Storm water, surface water, groundwater and clear water wastes shall be discharged to a storm sewer system or a combined sanitary-storm sewer system where available. Combined public sanitary-storm sewer systems shall be approved by the department of natural resources. Combined private sanitary-storm sewer systems shall be approved by the department.

(b) Other disposal methods. 1. Where no storm sewer system or combined sanitary-storm sewer system is available or adequate to receive the anticipated load, the storm water, surface water, groundwater and clear water wastes shall be discharged in accordance with local governmental requirements.

SECTION 66. ILHR 82.36 (3) (c) 1. is repealed and recreated to read:

ILHR 82.36 (3) (c) Segregation of wastes. 1. a. Except as provided in subd. 3., where a sanitary sewer system and a storm sewer system are available the drain piping for storm water or clear water wastes may not connect to any part of the sanitary drain system.

b. Where a combined sanitary-storm sewer system is available storm water wastes, clear water wastes and sanitary wastes may not be combined until discharging to the building sewer.

SECTION 67. ILHR 82.36 (3) (c) 3. is created to read:

ILHR 82.36 (3) (c) 3. The clear water wastes from a refrigerated drinking fountain, water heater or storage tank relief valve or water softener shall be discharged to either a sanitary drain system or a storm drain system.

SECTION 68. ILHR 82.36 (11) (a) 4. is repealed and recreated to read:

ILHR 82.36 (11) (a) 4. 'Size'. The size of each clear water sump shall be as recommended by the sump pump manufacturer, but may not be smaller than 16 inches in diameter at the top, 14 inches in diameter at the bottom, and 22 inches in depth.

SECTION 69. ILHR 82.40 is repealed and recreated to read:

ILHR 82.40 WATER SUPPLY SYSTEMS. (1) SCOPE. The provisions of this section set forth the requirements for the design and installation of water supply systems.

Note: Chapter NR 111 governs the design and construction of community water systems or waterworks.

(2) MATERIALS. All water supply systems shall be constructed of approved materials in accordance with ch. ILHR 84.

(3) GENERAL. (a) Potable water required. Every piece of equipment used in the preparation or processing of food, medical or pharmaceutical products and every plumbing fixture and appliance which demands a supply of water shall be provided with only potable water.

(b) Hot water required. Except as provided in subds. 1. and 2., hot water shall be provided to all plumbing fixtures, appliances and equipment used for personal washing, culinary purposes or laundering.

1. Lavatories, wash fountains and shower heads which are not located in dwelling units or living units shall be supplied with either tempered water or hot water.

a. Tempered water shall be provided to lavatories, wash fountains and shower heads by means of tempering mixing valves.

b. A single tempering mixing valve may serve no more than 4 lavatories and/or wash fountains which are located in the same room.

c. A single tempering mixing valve may serve only shower heads which are located in the same room..

2. Lavatories located in park shelters and bath houses which are not open during the period from November 15 to March 15 and which are not places of employment shall not be required to be provided with hot water.

3. Lavatories located in waysides which are not places of employment shall not be required to be provided with hot water.

Note: The exception of providing hot water under subds. 1. to 3. does not supercede the requirements of other state agencies for providing hot water.

(c) Protection. A water supply system shall be designed and installed in accordance with s. ILHR 82.41 and maintained to prevent nonpotable liquids, solids or gases from being introduced into the potable water supply system through cross connections.

(d) Identification. 1. Where a building or a structure is served by a nonpotable water distribution system and a potable water distribution system each distribution system shall be identified in accordance with this subdivision.

a. All above ground piping supplying nonpotable water shall be identified nonpotable by tags or yellow bands. The yellow bands shall be at least 3 inches wide.

b. All above ground piping supplying potable water shall be identified potable by tags or green bands. The green bands shall be at least 3 inches wide.

c. The tags or colored bands identifying nonpotable water and potable water piping shall be placed at intervals of not more than 25 feet and at each side where the piping passes through a wall, floor or roof.

d. All valves and outlets supplying nonpotable water shall be identified nonpotable by tags.

e. All valves, except fixture stop valves, supplying potable water shall be identified potable by tags.

f. Tags used to identify nonpotable water outlets, valves and piping shall be of metal or plastic in the shape of an equilateral triangle with 4 inch sides and bearing the legend "water unsafe" or other similar wording approved in writing by the department. The lettering on the tags shall be raised or indented and at least 1/2-inch in height.

g. Tags used to identify potable water valves shall be of metal or plastic in the shape of a 3-inch diameter circle bearing the legend "safe water" or other similar wording approved in writing by the department. The lettering on the tags shall be raised or indented and at least 1/2-inch in height.

2. Where a building or a structure is served by 2 distribution systems, one system supplied by a public water supply and the other system supplied by a private well, each water distribution system shall be identified to indicate the supply source.

(4) CONTROL VALVES. (a) Private water mains. Private water mains shall be provided with control valves as specified in this subsection.

1. 'Corporation cocks'. a. If a private water main 2 inches or less in diameter connects to a public water main, a corporation cock shall be installed at the connection to the public water main.

b. If a private water main 2-1/2 inches or larger in diameter connects to a public water main, a corporation cock shall be installed not more than 8 feet from the connection to the public water main.

2. 'Curb stops'. a. Except as provided in subpar. b., if a private water main connects to public water main, a curb stop shall be installed in the private water main between the corporation cock and the property line.

b. If a private water main 2-1/2 inches or larger in diameter connects to a public water main, one control valve may serve as the corporation cock and the curb stop. The control valve shall be located not more than 8 feet from the connection to the public water main and shall be accessible for operation.

(b) Water services. Water services shall be provided with control valves as specified in this subsection.

1. 'Corporation cocks'. a. If a water service 2 inches or less in diameter connects to a public water main, a corporation cock shall be installed at the connection to the public water main.

b. If a water service 2-1/2 inches or larger in diameter connects to a public water main, a corporation cock shall be installed not more than 8 feet from the connection to the public water main.

2. 'Curb stops'. a. Except for water services serving farm buildings and farm houses, a curb stop shall be installed in each water service which connects to a private water main. The curb stop shall be located outside the building served by the water service.

b. Except as provided in subpar. c., a curb stop shall be installed in each water service which connects to a public water main. The curb stop shall be located between the corporation cock and the property line.

c. If a water service 2-1/2 inches or larger in diameter connects to a public water main, one control valve may serve as the corporation cock and the curb stop. The control valve shall be located not more than 8 feet from the connection to a public water main and shall be accessible for operation.

3. 'Building control valves'. If a water service serves a building, a building control valve shall be provided in the water service as specified in this subsection.

a. If the water service connects to a public water supply or to a private water supply which has an external pressure tank, the building control valve shall be installed inside the building and located within 3 feet of developed length from the point where the water service first enters the building. If a water meter is provided, the building control valve shall be located upstream of the water meter.

b. If a private water supply includes an internal pressure tank, the building control valve shall be installed inside the building and located within 3 feet of developed length downstream from the internal pressure tank.

Note: See Appendix for further explanatory material.

(c) Water distribution systems. 1. Control valves shall be installed in water distribution systems serving public buildings as specified in this subdivision.

a. Water meters. If a water meter is provided, a control valve shall be installed within 3 feet of developed length downstream from the outlet of the water meter. If bypass piping is provided around a water meter, a control valve shall be installed in the bypass piping.

Note: See sub. (8) (d) 3. for the requirements relating to the bypassing of water meters.

b. Fixtures and appliances. A control valve shall be installed in the supply piping to each water heater and water treatment device and in the fixture supply to each plumbing fixture, plumbing appliance and piece of equipment.

c. Hot water circulation systems. If a hot water circulation system is provided, a control valve shall be installed on both the inlet and outlet piping to the circulation pump. If a hot water circulation system has 2 or more return pipe lines, a balancing control valve shall be installed in each return piping line.

d. Dwelling units and living units. The water distribution system for buildings with more than 4 dwelling units or living units shall be provided with control valves in such numbers and at such locations so that the water supplied to all the units within the building can be isolated into groups of 4 or less units.

Note: See sub. (8) (g) for the valve requirements for water temperature control.

2. Control valves shall be installed in water distribution systems serving one- and 2-family dwellings as specified in this subdivision.

a. Water meters. If a water meter is provided, a control valve shall be installed within 3 feet of developed length downstream from the outlet of the water meter. If bypass piping is provided around a water meter, a control valve shall be installed in the bypass piping.

Note: See sub. (8) (d) 3. for the requirements relating to the bypassing of water meters.

b. Fixtures and appliances. A control valve shall be installed in the supply piping to each water heater and water treatment device and in the fixture supply to each water closet, exterior hose bibb, plumbing appliance and piece of equipment.

c. Hot water circulation systems. If a hot water circulation system is provided, a control valve shall be installed on both the inlet and outlet piping to the circulation pump. If a hot water circulation system has 2 or more return pipe lines, a balancing control valve shall be installed in each return piping line.

(5) HOT WATER SUPPLY SYSTEMS. (a) General. Water heating systems shall be sized to provide sufficient hot water to supply both the daily requirements and hourly peak loads of the building.

(b) Temperature maintenance. If the developed length of hot water distribution piping from the source of the hot water supply to a plumbing fixture or appliance exceeds 100 feet, a circulation system or self-regulating electric heating cable shall be provided to maintain the temperature of the hot water within the distribution piping.

1. If a circulation system is used to maintain the temperature, no uncirculated hot water distribution piping may exceed 25 feet in developed length.

2. If a self-regulating electric heating cable is used to maintain the temperature, the cable shall extend to within 25 feet of each fixture or the appliance.

3. Water distribution piping conveying circulated water or served by a self-regulating electric heating cable shall be insulated to limit the heat loss at the external surface of the pipe insulation to a maximum of 25 BTUs per hour per square foot for aboveground piping and 35 BTUs per hour per square foot for underground piping. The maximum heat loss shall be determined at a temperature differential, T, equal to the maximum water temperature minus a design ambient temperature no higher than 65°F.

4. Water distribution piping served by self-regulating electric heating cable shall be identified as being electrically traced in accordance with ch. ILHR 16.

5. The installation of self-regulating electric heating cable may be subcontracted by a plumber to another trade.

(c) Water heaters. All water heaters and safety devices shall be designed and constructed in accordance with s. ILHR 84.20 (5) (n).

Note: Water heaters are to be installed in accordance with the requirements specified in chs. ILHR 50 to 64 and ILHR 20 to 25 with respect to enclosures and venting.

(d) Safety devices. Water heaters shall be equipped with safety devices as specified in this paragraph.

1. All pressurized storage-type water heaters and unfired hot water storage tanks shall be equipped with one or more combination temperature and pressure relief valves. The temperature steam rating of a combination temperature and pressure relief valve or valves shall equal or exceed the energy input rating in BTU per hour of the water heater. No shut off valve or other restricting device may be installed between the water heater or storage tank and the combination temperature and pressure relief valve.

2. All pressurized non-storage type water heaters shall be provided with a pressure relief valve installed at the hot water outlet with no shut off valve between the heater and the relief valve.

3. Temperature and pressure relief valves shall be installed so that the sensing element of the valve extends into the heater or tank and monitors the temperature in the top 6 inches of the heater or tank.

4. A vacuum relief valve shall be installed in each water heater and hot water storage tank which, when measured from the bottom of the heater or tank, is located more than 20 feet above any faucet or outlet served by the heater or tank.

5. Every relief valve which is designed to discharge water or steam shall be connected to a discharge pipe.

a. The discharge pipe and fittings shall be made of a material acceptable for water distribution piping in accordance with s. ILHR 84.30 (4) (b) 1.

b. The discharge pipe and fittings shall have a diameter not less than the diameter of the relief valve outlet.

c. The discharge pipe may not be trapped.

d. No valve may be installed in the discharge pipe.

e. The discharge pipe shall be installed to drain by gravity flow to a floor served by a floor drain or to a receptor in accordance with s. ILHR 82.33 (8). The outlet of the discharge pipe shall terminate within 6 inches over the floor or receptor, but not less than a distance equal to twice the diameter of the outlet pipe. The outlet of the discharge pipe may not be threaded.

f. The discharge pipe for a water heater shall terminate within the same room or enclosure within which the water heater or hot water storage tank is located.

(e) Controls. 1. All hot water supply systems shall be equipped with automatic temperature controls capable of adjustments from the lowest to the highest acceptable temperature settings for the intended use.

2. A separate means shall be provided to terminate the energy supplied to each water heater and each hot water circulation system.

(6) LOAD FACTORS FOR WATER SUPPLY SYSTEMS. (a) Intermittent flow fixtures. The load factor for intermittent flow fixtures on water supply piping shall be computed in terms of water supply fixture units as specified in Tables 82.40-1 and 82.40-2 for the corresponding fixture and use. Water supply fixture units may be converted to gallons per minute in accordance with Table 82.40-3.

(b) Continuous flow devices. The load factor for equipment which demands a continuous flow of water shall be computed on the basis of anticipated flow rate in terms of gallons per minute.

TABLE 82.40-1

WATER SUPPLY FIXTURES UNITS FOR NONPUBLIC USE FIXTURES

Type of Fixture[a]	Water Supply Fixture Units (WSFU)		
	Hot	Cold	Total
Automatic Clothes Washer	1.0	1.0	1.5
Bar Sink	0.5	0.5	1.0
Bathtub, with or without Shower Head	1.5	1.5	2.0
Bidet	1.0	1.0	1.5
Dishwashing Machine	1.0		1.0
Glass Filler		0.5	0.5
Hose Bibb:			
1/2" diameter		3.0	3.0
3/4" diameter		4.0	4.0
Kitchen Sink	1.0	1.0	1.5
Laundry Tray, 1 or 2 Compartment	1.0	1.0	1.5
Lavatory	0.5	0.5	1.0
Shower, Per Head	1.0	1.0	1.5
Water Closet, Flushometer Type		6.0	6.0
Water Closet, Gravity Type Flush Tank		2.0	2.0
Bathroom Groups:			
Bathtub, Lavatory and Water Closet-FM[b]	2.0	7.5	8.0
Bathtub, Lavatory and Water Closet-FT[c]	2.0	3.5	4.0
Shower Stall, Lavatory and Water Closet-FM	1.5	7.0	7.5
Shower Stall, Lavatory and Water Closet-FT	1.5	3.0	3.5

Note a: For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.

Note b: FM means flushometer type.

Note c: FT means flush tank type.

TABLE 82.40-2

WATER SUPPLY FIXTURE UNITS FOR PUBLIC USE FIXTURES

Type of Fixture[a]	Water Supply Fixture Units (WSFU)		
	Hot	Cold	Total
Automatic Clothes Washer, Individual	2.0	2.0	3.0
Automatic Clothes Washer, Large Capacity	b	b	b
Bathtub, With or Without Shower Head	2.0	2.0	3.0
Coffeemaker		0.5	0.5
Dishwasher, Commercial	b	b	b
Drink Dispenser		0.5	0.5
Drinking Fountain		0.25	0.25
Glass Filler		0.5	0.5
Hose Bibb:			
1/2" diameter		3.0	3.0
3/4" diameter		4.0	4.0
Icemaker		0.5	0.5
Lavatory	0.5	0.5	1.0
Shower, Per Head	2.0	2.0	3.0
Sinks:			
Bar and Fountain	1.5	1.5	2.0
Barber and Shampoo	1.5	1.5	2.0
Cup		0.5	0.5
Flushing Rim		7.0	7.0
Kitchen and Food Preparation per faucet	2.0	2.0	3.0
Laboratory	1.0	1.0	1.5
Medical Exam and Treatment	1.0	1.0	1.5
Service	2.0	2.0	3.0
Surgeon Washup	1.5	1.5	2.0
Urinal:			
Syphon Jet		4.0	4.0
Washdown		2.0	2.0
Wall Hydrant, Hot and Cold Mix:			
1/2" diameter	2.0	2.0	3.0
3/4" diameter	3.0	3.0	4.0
Wash Fountain:			
Semicircular	1.5	1.5	2.0
Circular	2.0	2.0	3.0
Water Closet:			
Flushometer		7.0	7.0
Gravity Type Flush Tank		3.0	3.0

Note a: For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.

Note b: Load factors in gallons per minute, gpm, based on manufacturer's requirements.

TABLE 82.40-3

CONVERSION OF WATER SUPPLY FIXTURE UNITS TO GALLONS PER MINUTE

Water Supply Fixture Units	Gallons Per Minute	
	Predominately Flushometer Type Water Closets or Syphon Jet Urinals	Predominately Flush Tank Type Water Closets or Washdown Urinals
1	-	1
2	-	2
3	-	3
4	10	4
5	15	4.5
6	18	5
7	21	6
8	24	6.5
9	26	7
10	27	8
20	35	14
30	40	20
40	46	24
50	51	28
60	54	32
70	58	35
80	62	38
90	65	41
100	68	42
120	73	48
140	78	53
160	83	57
180	87	61
200	92	65
250	101	75
300	110	85
400	126	105
500	142	125
600	157	143
700	170	161
800	183	178
900	197	195
1000	208	208
1250	240	240
1500	267	267
1750	294	294
2000	321	321
2250	348	348
2500	375	375
2750	402	402
3000	432	432
4000	525	525
5000	593	593

Note: Values not specified in the table may be calculated by interpolation.

(7) SIZING OF WATER SUPPLY PIPING. The sizing of the water supply system shall be based on the empirical method and limitations outlined in this subsection or on a detailed engineering analysis acceptable to the department.

(a) Methodology. The determination of minimum pipe sizes shall take into account the pressure losses which occur throughout the entire water supply system and the flow velocities within the water distribution system. Calculations for sizing a water distribution system shall include:

1. The load factor in water supply fixture units or gallons per minute on the piping;

2. The minimum pressure available from the water main or pressure tank;

3. The pressure loss due to the differences in elevation from the:

a. Water main or pressure tank to the building control valve; and

b. Building control valve to the controlling plumbing fixture;

4. The pressure losses due to flow through water heaters, water treatment devices, water meters and backflow preventers;

5. The minimum flow pressure needed at the controlling plumbing fixture; and

6. The pressure losses due to flow friction through piping, fittings, valves and other plumbing appurtenances. This pressure loss may be calculated in terms of equivalent lengths of piping. The equivalent length of piping to a controlling plumbing fixture, including fittings, valves and other appurtenances, may be obtained by multiplying the developed length by 1.5.

Note: See Appendix for further explanatory material.

(b) Private water mains and water services. Private water mains and water services shall be designed to supply water to the water distribution systems to maintain the minimum flow pressures specified in par. (d), but shall not be less than 3/4 inch in diameter.

NOTE: See Appendix for further explanatory material.

(c) Maximum loading. The calculated load on any portion of the water distribution system may not exceed the limits specified in Tables 82.40-4 to 82.40-8.

(d) Pressure. 1. Except as provided in subpars. a. to c., water supply systems shall be designed to provide at least 8 psig of flow pressure at the outlets of all fixture supplies.

a. The flow pressure at the outlets of the fixture supplies serving syphonic type urinals, washdown type urinals and water closets, and syphonic type flushometer water closets shall be at least 15 psig.

b. The flow pressure at the outlets of the fixture supplies serving one piece tank type water closets, pressure balance mixing valves, and thermostatic mixing valves shall be at least 20 psig.

c. The flow pressure at the outlets of the fixture supplies serving blowout type urinals and blowout type water closets shall be at least 25 psig.

2.a. Except as provided in subd. 3., if the water pressure available from a water main or private water supply exceeds 80 psig, a pressure reducing valve and strainer, if a strainer is not a component of the valve, shall be installed in the water distribution system.

b. A pressure reducing valve required under subpar. a. shall be installed upstream from all plumbing fixtures and plumbing appliances and downstream from the water meter of an utility, if a meter is provided.

3. A pressure reducing valve shall not be required to be installed in a water distribution system which supplies water directly to a water pressure booster pump.

4. If the pressure available from the water main or private water supply is inadequate by calculation to provide the minimum pressures specified in subd. 1., a hydropneumatic pressure booster system or a water pressure booster pump shall be installed to increase the supply of water.

a. Each water pressure booster pump shall be provided with an automatic low pressure cut-off switch. The cut-off switch shall be located on the inlet side of the pump and shall be set to terminate the energy supplied to the pump when a positive pressure of less than 10 psig occurs.

b. A vacuum relief valve not less than one-half inch in diameter shall be installed in each water pressure tank, if the bottom of the pressure tank is more than 20 feet above any water supply outlet served by the pressure tank.

(e) Maximum velocity. A water distribution system shall be designed so that the flow velocity does not exceed 8 feet per second.

(f) Minimum sizes. 1. Water distribution piping 1/2 inch in diameter serving 2 or more plumbing fixtures may not have a load of more than 2 water supply fixture units.

2. Water distribution piping 1/2 inch in diameter serving a shower which is not individually pressure balanced or individually thermostatically blended may not serve any additional fixtures.

(g) Minimum sizes for fixture supplies. Except as provided in subds. 1. to 3., the fixture supplies serving all plumbing fixtures, appliances and pieces of equipment shall be at least 1/2 inch in diameter.

1. Fixture supplies serving syphon jet type urinals shall be at least 3/4 inch in diameter.

2. Fixture supplies serving flushometer type water closets shall be at least one inch in diameter.

3. Fixture supplies serving emergency eye wash or shower outlets shall be not less than recommended by the manufacturer.

(h) Maximum lengths for fixture supply connectors. 1. Fixture supply connectors may not extend more than 24 inches in developed length from a plumbing fixture or the body of a faucet.

2. Fixture supply connectors may not extend more than 10 feet in developed length from a plumbing appliance.

(8) INSTALLATION. (a) Frost protection. Adequate measures shall be taken to protect all portions of the water supply system from freezing. All private water mains and water services shall be installed below the predicted depths of frost specified in s. ILHR 82.30 (11) (a) 2. d., Figure 82.30-1 and Table 82.30-6, unless other protective measures from freezing are taken.

(b) Location. 1. Water supply piping may not be located in, under or above sanitary sewer manholes, septic tanks, holding tanks, soil absorption areas or seepage pits for private sewage systems.

2. Water supply piping shall be located at least 10 feet horizontally away from a septic tank or soil absorption area for a private sewage system.

3. Water supply piping located downslope from of a mound type private sewage system shall be at 25 feet horizontally away from the toe of the basal area.

NOTE: See also s. ILHR 84.30 (4) relative to water supply piping to be installed in contaminated soils.

(c) Private water mains and water services. Private water mains and water services shall be installed in accordance with this paragraph.

1. No private water main or water service may pass under or through a building to serve another building.

2. If a private water main or a water service crosses a sanitary sewer, the water piping within 10 feet of the point of crossing shall be installed:

a. At least 12 inches above the top of the sewer from the bottom of the water piping;

b. At least 18 inches below the bottom of the sewer from the top of the water piping; or

c. Within a waterproof sleeve made of materials as specified for sanitary building sewers in s. ILHR 84.30 (1).

3. Private water mains and water services 2-1/2 inches or larger in diameter shall be installed at least 8 feet horizontally from any sanitary sewer. The distance shall be measured from center to center of the piping.

4. Except as provided in subd. 5., private water mains and water services 2 inches or less in diameter shall be installed at least 30 inches horizontally from any sanitary sewer. The distance shall be measured from center to center of the piping.

5. Private water mains and water services 2 inches or less in diameter may be installed less than 30 inches horizontally from a sanitary sewer, if the bottom of the water piping is installed at least 12 inches above the sewer, except that portion of a water service within 5 feet of developed length from the point where the water service first enters the building may be less than 12 inches above the sewer.

6. No private water main or water service may be installed within 6 inches of a storm sewer.

(d) Water distribution piping. 1. Water distribution piping shall be supported in accordance with s. ILHR 82.60.

2. Provisions shall be made to evacuate all water out of the water distribution system.

3. Except where parallel water meters are installed, water distribution piping shall be provided to bypass a water meter 1-1/2 inches or larger.

4. Water distribution piping shall be provided to bypass a water softener and an iron removal device. The bypass piping may be an internal part of the water softener or the iron removal device.

(e) Valves. 1. All control valves installed in a water service, except a valve serving only as a corporation cock, shall be accessible.

2. Stop and waste-type control valves may not be installed underground.

3. All control valves and fixture stop valves installed in a water distribution system shall be accessible. Control valves for the individual plumbing fixtures and appliances within dwelling units shall be accessible from within the dwelling unit.

(f) Water hammer arrestors. All plumbing fixtures, appliances and appurtenances with 3/8 inch or larger inlet openings and with solenoid actuated quick closing valves shall be provided with water hammer arrestors. Water hammer arrestors shall be installed in the fixture supplies serving the fixtures, appliances or appurtenances. Water hammer arrestors shall be accessible.

(g) Temperature control. The water temperature to all showers in public buildings shall be controlled by thermostatic mixing valves or by individually controlled pressure balanced mixing valves.

(h) Fittings and connections. The drilling and tapping of water supply piping shall be prohibited except for:

1. Corporation cocks for a water service or a private water main; and

2. Self-tapping valves which serve individual plumbing appliances.

(i) Flushing and disinfection of potable water supply systems. 1. a. Before a newly constructed water supply system is to be put into use, the piping of the system shall be filled with water and allowed to stand for at least 24 hours. After 24 hours each water outlet shall be flushed beginning with the outlet closest to the building control valve and then each successive outlet in the system. The flushing at each water outlet shall continue for at least one minute and until the water appears clear at the outlet.

b. Each portion of a water supply system which is altered or repaired shall be flushed for at least one minute and until the water appears clear.

2. New private water mains and extensions to private water mains shall be disinfected prior to use in accordance with AWWA C601 or the following method:

a. The pipe system shall be flushed with clean water until no dirty water appears at the points of outlet.

b. The system or part thereof shall be filled with a solution of water and chlorine containing at least 50 parts per million of chlorine and the system or part thereof shall be valved off and allowed to stand for 24 hours or the system or part thereof shall be filled with a solution of water and chlorine containing at least 200 parts per million of chlorine and allowed to stand for 3 hours.

c. Following the allowed standing time, the system shall be flushed with clean potable water.

d. The procedures shall be repeated if it is shown by a bacteriological examination that contamination still exists in the system.

3. The department may require a water quality analysis to be done for a new or repaired water supply system. The analysis shall be performed in accordance with acceptable nationally recognized laboratory practices. If the water supply system has been disinfected, water samples for the analysis may not be taken sooner than 24 hours after disinfection.

NOTE: See s. ILHR 84.30 (1) regarding the bending of pipe and protection from puncture.

(9) PIPING BY PLUMBER. In accordance with ch. 145, Stats., piping which conveys water for human use or consumption, or to plumbing fixtures and plumbing appliances of every description, shall be installed by persons licensed by the department.

(a) Private water mains and water services shall be installed by persons licensed by the department as a plumber or utility contractor.

(b) Water distribution piping shall be installed by persons licensed by the department as a plumber.

(c) Except for automatic fire sprinkler systems, piping or piping systems, which may include water heating or water treatment equipment, and which convey water not for human use or consumption from a water distribution system to water using equipment, are not required to be installed by persons licensed by the department.

(d) Where a pipe or piping system, which conveys water not for human use or consumption, connects to a water distribution system, that connection shall be provided with an approved means of backflow prevention in accordance with s. ILHR 82.41. The means of backflow prevention shall be installed by persons licensed by the department as a plumber.

TABLE 82.40-4
MAXIMUM ALLOWABLE LOAD FOR COPPER TUBE - TYPE K, ASTM B88

Pressure Loss Due to Friction (in lbs. per 100 ft. of length	Pipe Diameter (in Inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
	GPM	WSFU		GPM	WSFU		GPM	WSFU		GPM	WSFU		GPM	WSFU		GPM	WSFU		GPM	WSFU		GPM	WSFU		GPM	WSFU	
		FM	FT		FM	FT		FM	FT		FM	FT		FM	FT		FM	FT		FM	FT		FM	FT		FM	FT
0.5	–	–		0.5	–	0.5	3.0	–	3.0	5.0	–	6.0	9.0	–	12.0	18.0	6.0	27.0	31.0	15.0	57.0	51.0	50.0	132	110	300	425
1	–	–		2.0	–	2.0	4.0	–	4.0	8.0	–	10.0	13.0	4.5	18.0	27.0	10.0	47.0	48.0	44.0	120	75.0	128	250	160	620	695
2	0.5	–	0.5	3.0	–	3.0	6.5	–	8.0	12.0	4.0	17.0	18.0	6.0	27.0	39.0	26.0	83.0	70.0	108	225	110	300	425	230	1180	
3	1.0	–	1.0	4.0	–	4.0	8.0	–	10.0	15.0	5.0	22.0	23.0	7.5	38.0	50.0	48.0	128	85.0	170	300	140	485	580	280	1630	
4	1.5	–	1.5	4.0	–	4.0	9.0	–	12.0	17.0	5.5	25.0	27.0	10.0	47.0	56.0	65.0	154	100	245	375	160	620	695	NP		
5	2.0	–	2.0	5.0	–	6.0	11.0	4.0	15.0	19.0	6.0	28.5	31.0	15.0	57.0	65.0	90.0	200	115	335	450	NP					
6	2.0	–	2.0	5.5	–	6.5	12.0	4.0	17.0	21.0	7.0	32.0	34.0	19.0	67.0	70.0	108	225	NP								
7	2.5	–	2.5	6.0	–	7.0	13.0	4.5	18.0	23.0	7.5	38.0	37.0	23.0	77.0	73.0	120	240									
8	2.5	–	2.5	6.5	–	8.0	14.0	4.5	20.0	25.0	8.5	43.0	40.0	27.0	87.0	NP											
9	3.0	–	3.0	7.0	–	9.0	15.0	5.0	22.0	27.0	10.0	47.0	42.0	30.0	100												
10	3.0	–	3.0	7.5	–	9.5	16.0	5.0	23.0	28.0	11.0	50.0	NP														
11	3.0	–	3.0	7.5	–	9.5	17.0	5.5	25.0	30.0	14.0	55.0															
12	3.5	–	3.5	8.0	–	10.0	18.0	6.0	27.0	NP																	
13	3.5	–	3.5	8.5	–	11.0	19.0	6.0	28.5																		
14	3.5	–	3.5	9.0	–	12.0	20.0	6.5	30.0																		
15	3.5	–	3.5	9.0	–	12.0	NP																				
16	3.5	–	3.5	9.5	–	12.5																					
17	4.0	–	4.0	9.5	–	12.5																					
18	4.0	–	4.0	10.0	4.0	13.0																					
19	4.0	–	4.0	10.5	4.0	14.0																					
20	4.0	–	4.0	11.0	4.0	15.0																					
21	4.5	–	5.0	NP																							
22	4.5	–	5.0																								
23	4.5	–	5.0																								
24	4.5	–	5.0																								
25	5.0	–	6.0																								
26	5.0	–	6.0																								
27	5.0	–	6.0																								
28	5.0	–	6.0																								
29	5.5	–	6.5																								
30	5.5	–	6.5																								
	NP																										

Notes: WSFU means water supply fixture units.
GPM means - gallons per minute.
FM means - predominately flushometer type water closets or syphon jet urinals.
FT means - predominately flush tank type water closets or washdown urinals.
NP means - not permitted, velocities exceed 8 feet per second

For using this table, round the calculated pressure loss due to friction to the next higher number shown

ILHR 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping

TABLE 82.40-5

MAXIMUM ALLOWABLE LOAD FOR COPPER TUBE - TYPE L, ASTM B88

CDD/81:82/FD

Pressure Loss Due to Friction (in lbs. per 100 ft. of length	Pipe Diameter (in Inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	-	-		1.0	-	1.0	3.0	-	3.0	6.0	-	7.0	9.0	-	12.0	19.0	6.0	28.5	34.0	19.0	67.0	54.0	60.0	144	112	315	435
1	-	-		2.5	-	2.5	5.0	-	6.0	8.0	-	10.0	13.0	4.5	18.0	28.0	11.0	50.0	50.0	48.0	128	77.0	136	260	164	655	715
2	0.5	-	0.5	3.5	-	3.5	7.0	-	9.0	12.0	4.0	17.0	19.0	6.0	28.5	41.0	28.0	90.0	72.0	116	235	115	335	450	240	1540	
3	1.5	-	1.5	4.5	-	5.0	9.0	-	12.0	15.0	5.0	22.0	24.0	8.0	40.0	51.0	50.0	132	90.0	192	325	144	515	605	NP		
4	2.0	-	2.0	5.0	-	6.0	10.0	4.0	13.0	18.0	6.0	27.0	29.0	12.0	52.0	60.0	75.0	174	105	270	400	170	700	700			
5	2.0	-	2.0	5.5	-	6.5	12.0	4.0	17.0	21.0	7.0	32.0	33.0	17.0	63.0	67.0	97.0	210	120	365	475	NP					
6	2.5	-	2.5	6.5	-	8.0	13.0	4.5	18.0	23.0	7.5	38.0	36.0	22.0	73.0	75.0	128	250	NP								
7	2.5	-	2.5	7.0	-	9.0	14.0	4.5	20.0	25.0	8.5	43.0	39.0	26.0	83.0	NP											
8	3.0	-	3.0	7.5	-	9.5	15.0	5.0	22.0	26.0	9.0	45.0	42.0	30.0	100												
9	3.0	-	3.0	8.0	-	10.0	16.0	5.0	23.0	28.0	11.0	50.0	45.0	37.0	110												
10	3.0	-	3.0	8.5	-	11.0	17.0	5.5	25.0	30.0	13.5	55.0	NP														
11	3.5	-	3.5	9.0	-	12.0	18.0	6.0	27.0	32.0	16.0	60.0															
12	3.5	-	3.5	9.0	-	12.0	19.0	6.0	28.5	NP																	
13	3.5	-	3.5	9.5	-	12.5	20.0	6.5	30.0																		
14	4.0	-	4.0	10.0	4.0	13.0	21.0	7.0	32.0																		
15	4.0	-	4.0	10.5	4.0	14.0	NP																				
16	4.0	-	4.0	11.0	4.0	15.0																					
17	4.5	-	5.0	11.5	4.0	16.0																					
18	4.5	-	5.0	12.0	4.0	17.0																					
19	4.5	-	5.0	12.0	4.0	17.0																					
20	4.5	-	5.0	NP																							
21	5.0	-	6.0																								
22	5.0	-	6.0																								
23	5.0	-	6.0																								
24	5.0	-	6.0																								
25	5.5	-	6.5																								
26	5.5	-	6.5																								
27	5.5	-	5.5																								
28	6.0	-	7.0																								
29	6.0	-	7.0																								
	NP																										

Note: WSFU means water supply fixture units.
GPM means - gallons per minute.
FM means - predominately flushometer type water closets or syphon jet urinals.
FT means - predominately flush tank type water closets or washdown urinals.
NP means - not permitted, velocities exceed 8 feet per second

For using this table, round the calculated pressure loss due to friction to the next higher number shown

ILHR 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping

TABLE 82.40-6

MAXIMUM ALLOWABLE LOAD FOR COPPER TUBE - TYPE M,-ASTM B88

Pressure Loss Due to Friction (in lbs. per 100 ft. of length	Pipe Diameter (in Inches)																											
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	-	-	-	1.5	-	1.5	3.5	-	3.5	6.0	-	7.0	9.5	-	12.5	20.0	6.5	30.0	34.0	19.0	67.0	56.0	65.0	154	115	334	450
1	-	-	-	3.0	-	3.0	6.0	-	6.0	9.0	-	12.0	14.0	4.5	20.0	29.0	12.0	52.0	50.0	48.0	128	80.0	148	275	170	700	150
2	1.0	-	1.0	4.0	-	4.0	7.5	-	9.5	13.0	4.5	18.0	20.0	6.5	30.0	42.0	30.0	100	75.0	128	250	120	365	475	250	1350	
3	1.5	-	1.5	5.0	-	6.0	9.5	-	12.5	16.0	5.0	23.0	25.0	8.5	42.0	52.0	53.0	136	93.0	205	340	150	555	640	280	1630	
4	2.0	-	2.0	5.5	-	6.5	11.0	4.0	15.0	19.0	6.0	28.5	30.0	13.5	55.0	62.0	80.0	184	110	300	425	175	740	780	NP		
5	2.5	-	2.5	6.5	-	8.0	12.5	4.5	17.5	22.0	7.0	35.0	34.0	19.0	67.0	70.0	108	225	120	365	475	NP					
6	2.5	-	2.5	7.0	-	9.0	14.0	4.5	20.0	24.0	8.0	40.0	37.0	23.0	77.0	77.0	136	260	NP								
7	3.0	-	3.0	7.5	-	9.5	15.0	5.0	22.0	26.0	9.0	45.0	40.0	27.0	87.0	80.0	148	275									
8	3.5	-	3.5	8.0	-	10.0	16.0	5.0	23.0	28.0	11.0	50.0	44.0	35.0	107	NP											
9	3.5	-	3.5	8.5	-	11.0	17.0	5.5	25.0	30.0	13.5	55.0	46.0	40.0	113												
10	3.5	-	3.5	9.5	-	12.5	18.0	6.0	27.0	31.0	15.0	57.0	NP														
11	4.0	-	4.0	10.0	4.0	13.0	19.0	6.0	28.0	32.0	16.0	60.0															
12	4.0	-	4.0	10.0	4.0	13.0	20.0	6.5	30.0	NP																	
13	4.0	-	4.0	10.5	4.0	14.0	21.0	7.0	32.0																		
14	4.5	-	5.0	11.0	4.0	15.0	NP																				
15	4.5	-	5.0	11.5	4.0	16.0																					
16	4.5	-	5.0	12.0	4.0	17.0																					
17	5.0	-	6.0	12.5	4.5	17.5																					
18	5.0	-	6.0	13.0	4.5	18.0																					
19	5.0	-	6.0	NP																							
20	5.5	-	6.5																								
21	5.5	-	6.5																								
22	5.5	-	6.5																								
23	5.5	-	6.5																								
24	6.0	-	7.0																								
25	6.0	-	7.0																								
26	6.0	-	7.0																								
27	6.0	-	7.0																								
28	6.5	-	8.0																								
	NP																										

Notes: WSFU means water supply fixture units.
GPM means - gallons per minute.
FM means - predominately flushometer type water closets or syphon jet urinals.
FT means - predominately flush tank type water closets or washdown urinals.
NP means - not permitted, velocities exceed 8 feet per second

For using this table, round the calculated pressure loss due to friction to the next higher number shown

ILHR 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping

TABLE 82.40-7
ALLOWABLE MAXIMUM LOAD FOR GALVANIZED STEEL PIPE, SCHEDULE 40
ASTM A53 and ASTM 120

Pressure Loss Due to Friction (in lbs. per 100 ft. of length	Pipe Diameter (in Inches)																										
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"			2 1/2"			3"			4"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	-	-	-	1.5	-	1.5	3.5	-	3.5	7.0	-	9.0	11.0	4.0	15.0	21.0	7.0	32.0	34.0	19.0	67.0	60.0	75.0	175	122	375	485
1	0.5	-	0.5	2.5	-	2.5	5.0	-	6.0	10.5	4.0	14.0	16.0	5.0	23.0	30.0	14.0	55.0	49.0	46.0	124	87.0	180	310	180	770	810
2	2.0	-	2.0	4.0	-	4.0	7.5	-	9.5	15.5	5.0	22.5	23.0	7.5	37.0	45.0	37.0	110	72.0	116	235	127	405	510	260	1440	
3	2.5	-	2.5	5.0	-	6.0	9.5	-	12.5	19.0	6.0	28.5	29.0	12.0	52.0	55.0	62.0	150	90.0	192	325	160	615	695	285	1660	
4	2.5	-	2.5	5.5	-	6.5	11.0	4.0	15.0	22.0	7.0	35.0	34.0	19.0	67.0	65.0	90.0	200	105	270	400	180	770	810	NP		
5	3.0	-	3.0	6.5	-	8.0	12.5	4.5	17.5	25.0	8.5	42.0	39.0	26.0	83.0	73.0	120	240	120	365	475	NP					
6	3.5	-	3.5	7.5	-	9.5	14.0	4.5	20.0	28.0	11.0	50.0	43.0	32.0	103	81.0	152	280	NP								
7	3.5	-	3.5	8.0	-	10.0	15.0	5.0	22.0	31.0	15.0	57.0	46.0	40.0	113	NP											
8	4.0	-	4.0	8.5	-	11.0	16.0	5.0	23.0	33.0	17.0	63.0	50.0	48.0	128												
9	4.0	-	4.0	9.0	-	12.0	17.0	5.5	25.0	35.0	20.0	70.0	NP														
10	4.5	-	5.0	9.5	-	12.5	18.0	6.0	27.0	37.0	23.0	77.0															
11	5.0	-	6.0	10.0	4.0	13.0	19.0	6.0	28.5	NP																	
12	5.0	-	6.0	10.5	4.0	14.0	20.0	6.5	30.0																		
13	5.0	-	6.0	11.0	4.0	15.0	21.0	7.0	32.0																		
14	5.5	-	6.5	11.5	4.0	16.0	NP																				
15	6.0	-	7.0	12.0	4.0	17.0																					
16	6.0	-	7.0	12.5	4.5	17.5																					
17	6.0	-	7.0	13.0	4.5	18.0																					
18	6.0	-	7.0	13.5	4.5	19.0																					
19	6.5	-	8.0	NP																							
20	6.5	-	8.0																								
21	7.0	-	9.0																								
22	7.0	-	9.0																								
23	7.0	-	9.0																								
24	7.5	-	9.5																								
25	7.5	-	9.5																								
	NP																										

Note: WSFU means water supply fixture units.
GPM means - gallons per minute.
FM means - predominately flushometer type water closets or syphon jet urinals.
FT means - predominately flush tank type water closets or washdown urinals.
NP means - not permitted, velocities exceed 8 feet per second

For using this table, round the calculated pressure loss due to friction to the next higher number shown

ILHR 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping

TABLE 82.40-8
MAXIMUM ALLOWABLE LOAD FOR POLYBUTYLENE TUBING - ASTM D3309 AND CHLORINATED POLYVINYL CHLORIDE TUBING - ASTM D2846

Pressure Loss Due to Friction (in lbs. per 100 ft. of length	Pipe Diameter (in Inches)																	
	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"		
		WSFU			WSFU			WSFU			WSFU			WSFU			WSFU	
	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT	GPM	FM	FT
0.5	-	-	-	0.5	-	0.5	2.5	-	2.5	4.0	-	4.0	6.5	-	8.0	13.0	4.5	18.0
1	-	-	-	1.5	-	1.5	3.5	-	3.5	6.0	-	7.0	9.5	-	12.5	19.0	6.0	28.5
2	-	-	-	2.5	-	2.5	5.5	-	6.5	9.0	-	12.0	14.0	4.5	20.0	28.0	11.0	50.0
3	0.5	-	0.5	3.5	-	3.5	6.5	-	8.0	11.5	4.0	15.0	17.0	5.5	25.0	35.0	20.0	70.0
4	1.0	-	1.0	4.0	-	4.0	7.5	-	9.5	13.0	4.5	18.0	20.0	6.5	30.0	42.0	30.0	100
5	1.5	-	1.5	4.5	-	5.0	8.5	-	11.0	15.0	5.0	22.0	23.0	7.5	37.0	47.0	42.0	117
6	2.0	-	2.0	5.0	-	6.0	9.5	-	12.5	16.5	5.5	24.0	25.0	8.5	43.0	52.0	53.0	136
7	2.0	-	2.0	5.5	-	6.5	10.5	-	14.0	18.0	6.0	27.0	27.0	10.0	48.0	58.0	70.0	165
8	2.0	-	2.0	6.0	-	7.0	11.5	4.0	16.0	19.0	6.0	28.5	30.0	14.0	55.0	NP		
9	2.5	-	2.5	6.0	-	7.0	12.0	4.0	17.0	20.5	6.5	31.0	32.0	16.0	60.0			
10	2.5	-	2.5	6.5	-	8.0	12.5	4.5	17.5	22.0	5.0	35.0	34.0	19.0	67.0			
11	2.5	-	2.5	7.0	-	9.0	13.5	4.5	19.0	23.0	6.0	38.0	NP					
12	3.0	-	3.0	7.0	-	9.0	14.0	4.5	20.0	24.0	7.0	40.0						
13	3.0	-	3.0	7.5	-	9.5	14.5	4.5	21.0	NP								
14	3.0	-	3.0	8.0	-	10.0	15.5	5.0	22.0									
15	3.0	-	3.0	8.0	-	10.0	16.0	5.0	23.0									
16	3.5	-	3.5	8.5	-	11.0	16.5	5.5	24.0									
17	3.5	-	3.5	8.5	-	11.0	NP											
18	3.5	-	3.5	9.0	-	12.0												
19	3.5	-	3.5	9.0	-	12.0												
20	4.0	-	4.0	9.5	-	12.5												
21	4.0	-	4.0	10.0	4.0	13.0												
22	4.0	-	4.0	NP														
23	4.0	-	4.0															
24	4.0	-	4.0															
25	4.0	-	4.0															
26	4.0	-	4.0															
27	4.5	-	5.0															
28	4.5	-	5.0															
29	4.5	-	5.0															
30	5.0	-	6.0															
31	5.0	-	6.0															
	NP																	

Note: WSFU means water supply fixture units.
GPM means gallons per minute.
FM means predominately flushometer type water closets or syphon jet urinals.
FT means predominately flush tank type water closets or washdown urinals.
NP means - not permitted, velocities exceed 8 feet per second

For using this table, round the calculated pressure loss due to friction to the next higher number shown

ILHR 82.40 (7) (f) and (g) specifies minimum sizes for water distribution piping.

SECTION 70. ILHR 82.60 is repealed and recreated to read:

ILHR 82.60 PIPE HANGERS AND SUPPORTS. The provisions of this section control the types, materials and installation of anchors, hangers and supports for plumbing piping.

(1) MATERIAL. (a) Strength. Hangers, anchors and supports for piping shall be of sufficient strength to support the piping and its contents. Drain piping shall be considered as being full of water. Underground piers for pipe support shall be of concrete, masonry, plastic or pressure treated wood.

(b) Compatibility. 1. Hangers and straps shall be of a compatible material that will reduce the potential for galvanic action with the piping.

2. Hangers and straps may not distort, cut or abrade piping.

(2) INSTALLATION. (a) Piping hangers and anchors shall be securely attached to the building's structure at intervals to support the piping and its contents, but not at intervals greater than those specified in Table 82.60. The connection of drain piping to a fixture or appliance shall be considered a point of support.

(b) Hubless pipe installed in the horizontal position shall be supported within 24 inches on each side of a joint, unless the joint has an alignment retaining shield.

(c) Hangers shall not be attached to a building's structure by means of wood plugs.

TABLE 82.60

SUPPORT SPACING

Pipe Material	Maximum Horizontal Spacing	Maximum Vertical Spacing
Cast Iron	5'-0" or within 18" of each joint which is between lengths of pipe over 5'-0" long.	Each story height, but not to exceed 15'-0".
Steel and Brass	10'-0" for pipe 3/4" or less in diameter. 12'-0" for pipe larger than 3/4" in diameter.	Every other story height, but not to exceed 30'-0".
Copper	6'-0" for pipe 1-1/4" or less in diameter. 10'-0" for pipe larger than 1-1/4" in diameter.	Each story height, but not to exceed 10'-0".
Lead	Continuous support.	4'-0"
Plastic	4'-0" for drain and vent piping. 32" for water distribution piping.	Each story, height, but not to exceed 10'-0" for drain and vent piping 4'-0" for water distribution piping
Borosilicate glass[a]	8'-0"	Each story height for pipe 3" or larger in diameter. Every other story height for pipe less than 3" in diameter.

Note a: Padded hangers shall be used.

SECTION 71. A-82.20 - 82.21, Forms SBD 6154, SBD 6099, SBD 6479 and SBD 7278 are repealed and recreated to read: (See attached)

GENERAL PLUMBING

PLAN APPROVAL APPLICATION

STATE OF WISCONSIN DILHR
DIVISION OF SAFETY & BUILDINGS
BUREAU OF PLUMBING
201 E. Washington Avenue, Rm 141
P.O. Box 7969, Madison, WI 53707
608-266-3815

INSTRUCTIONS: This form is required with each general plumbing plan submittal. Please complete both sides. Examination fees, as determined on this form, shall accompany plan submittal. Data required in submittal is described on reverse side of this form.

1. PROJECT INFORMATION (type or print clearly)

Date Submitted:

Name of Submitting Party (Plans returned to same)

Project Name

Street & No.

Project Location - Street & No. or Legal Description

City State Zip

City ☐ Village ☐ Town ☐ OF:

County

Telephone No. (Include area code)

Designer (Plumbing) Telephone No. (Include area code)

2. PLANS FOR:

☐ New Building ☐ Addition ☐ Remodel

☐ Revision to plumbing plan No.

2a. Fee For Revisions - $20.00

Owners Name Telephone No. (Include area code)

Street & No. (current address)

City State Zip

Office Use Only	3. THIS APPLICATION IS FOR: Check Appropriate Box(es)	FEE COMPUTATIONS (See Reverse Side for Remodeling Fees)	4. FEE SUBMITTED	Office Use Only
20.	3a. ☐ Sanitary Building Sewer **Only** (no drain and vent)	Sum of Sanitary Sewer Diameters.... ___ Inches × $10.00	= 4a.	
21.	3b ☐ Sanitary Drain and Vent, with or w/o Sanitary Building Sewer	Sum of Sanitary Sewer Diameters.... ___ Inches × $20.00	= 4b.	
22.	3c. ☐ Sanitary Private Interceptor Main Sewer	Sum of Largest Diameters ___ Inches × $8.00	= 4c.	
23.	3d. ☐ Water Service **Only** (no water distribution system)	Sum of Water Service Diameters.... ___ Inches × $10.00	= 4d.	
24.	3e. ☐ Water Distribution System with or w/o Water Service	Sum of Water Service Diameters.... ___ Inches × $20.00	= 4e.	
25.	3f. ☐ Private Water Main	Number of Water Main Systems.... ___ × $35.00	= 4f.	
27.	3g. ☐ Building Storm Drainage with or w/o Storm Sewer	Sum of Storm Sewer Diameters.... ___ Inches × $4.00	= 4g.	
28.	3h. ☐ Storm Private Interceptor Main Sewer	Sum of Largest Diameters.... ___ Inches × $8.00	= 4h.	
29.	3i. ☐ Controlled Roof Drainage System	$30.00 Required	= 4i.	
32.	3j. ☐ Reduced Pressure Principle Backflow Preventer	Number of Valves.... ___ × $35.00	= 4j.	
33.	3k. ☐ Turf Sprinkler System	Number of Turf Sprinkler Systems... ___ × $30.00	= 4k.	
34.	3l. ☐ Grease Interceptor*	Number of Grease Interceptors.... ___ × $40.00	= 4l.	
35.	3m. ☐ Chemical Waste System*	Fee determined as per fees for additions and remodeling	= 4m.	
36.	3n. ☐ Garage Catch Basin*	Number of Garage Catch Basins.... ___ × $40.00	= 4n.	
37.	3o. ☐ Oil Interceptor*	Number of Oil Interceptors.... ___ × $40.00	= 4o.	
38.	3p. ☐ Car Wash Interceptor*	Number of Car Wash Interceptors.... ___ × $40.00	= 4p.	
39.	3q. ☐ Sanitary Dump Station*	Number of Sanitary Dump Stations.. ___ × $40.00	= 4q.	
	3r. ☐ Mobile Home Parks	1-25 Sites $155.00 26-50 Sites $210.00 51-125 Sites $270.00 Over 125 Sites $335.00	= 4r.	
	3s. ☐ Engineered Plumbing System	Contact Department for Review Fee	= 4s.	
	3t. ☐ Petition for Variance (must be submitted on form SB-8)	$100.00	= 4t	
		SUBTOTAL	=	
	3u. ☐ Priority Plan Review	Enter Same Amount as Subtotal	= 4u.	
		TOTAL FEE	=	

★ NOTE ★ No Additional Fee Required If Submitted With Sanitary Drain and Vent System

NOTE: Fees are pursuant to Wis. Adm. Code, Chapter Ind. 69, and may be subject to change annually Effective July 1, 1984

– CONTINUE ON REVERSE SIDE –

State of Wisconsin \ Department of Industry, Labor and Human Relations

GENERAL PLUMBING PLAN APPROVAL

SAFETY & BUILDINGS DIVISION
Bureau of Plumbing
201 East Washington Avenue
P.O. Box 7969
Madison, Wisconsin 53707

SUBMITTER'S NAME
ATTENTION LINE
SUBMITTER'S ADDRESS
CITY, STATE ZIP CODE

OWNER'S NAME —
ATTENTION LINE
OWNER'S ADDRESS
CITY, STATE ZIP CODE

RE: Plan Number G88-01234
Date Approved: MONTH, DATE, YEAR
Project Name: BUILDING'S NAME

Date Received: MONTH, DATE, YEAR
Location: PROJECT'S STREET ADDRESS

City of PROJECT
Fees Received : 100.00

County: OF THE PROJECT

The plumbing plans and specifications for this project have been reviewed for compliance with applicable code requirements. This approval is based on Chapter 145, Wisconsin Statutes and the Wisconsin Administrative Code. The plans are stamped 'conditionally approved'. This approval is contingent upon compliance with any stipulations shown on the plans. All items that are noted must be corrected. All items required by the city, village, township or county shall be obtained prior to construction. The licensed plumber responsible for this installation shall keep one set of plans with the department's approval stamp at the construction site. The installer shall notify the appropriate inspector when inspections can be made.

This approval will expire two years from the date approved. If construction has not commenced before the expiration date, new plan approval must be obtained.

The Bureau of Plumbing has reviewed these plans for plumbing code requirements only.

This approval is for the following elements only:

THIS PORTION OF THE LETTER LIST THE SPECIFIC PLUMBING ELEMENTS THAT THE APPROVAL COVERS AND SPECIAL NOTES REGARDING THE APPROVAL.

Inquiries concerning this approval may be made by calling (608) 266-3815.

Sincerely,

PLAN REVIEWER
Bureau of Plumbing
Safety and Buildings Division
PGP006/0011w/11
cc:OWNER OF THE PROJECT
___Owner ___Plumbing Consultan ___Local PI
___Plumber ___Environmental Health ___Facilities Need Analysis Section

WATER CALCULATION WORKSHEET

Information Needed for Water Service Sizing

1) _____ Demand of building in G.P.M.

2) _____ Low pressure at main in street (or at external pressure tank).

3) _____ Difference in elevation. Main to meter (or external pressure tank to building control valve).

4) _____ Size of water meter (if applicable).

5) _____ Developed length from main to meter (or external pressure tank to building control valve).

Your First Goal is to Find the Available Pressure After the Water Meter (or at building control valve). To obtain this, you must

1) _____ Find pressure loss due to friction in _____ inch water service.

2) _____ Find pressure loss due to elevation, main to meter (or external pressure tank to building control valve) multiply difference in elevation by .434 psi/ft.

3) _____ Find pressure loss due to meter. (from manufacturer or AWWA).

4) _____ Subtract the loss due to friction (Step 1), loss due to elevation (Step 2), and loss due to meter (Step 3) from the low street pressure (or low pressure at external pressure tank). This gives you available pressure after the water meter (or at the building control valve).

Information Needed for Water Distribution Sizing

Using the following formula, find permissible uniform pressure loss for friction (p.s.i./100' of pipe)

WHERE:

$$A = \frac{B - (C + D + E)}{F} \times 100$$

A. _____ Permissible uniform pressure loss for friction. (p.s.i./100' of pipe).

B. _____ Available pressure after water meter (at the building control valve or low pressure at internal pressure tank).

C. _____ Pressure needed at controlling fixture.

D. _____ Difference in elevation between water meter (building control valve or internal pressure tank) and controlling fixture in feet ____ x .434 psi/ft.

E. _____ Pressure loss due to water heater, water treatment devices and backflow preventers.

F. _____ Developed length from water meter (building control valve or internal pressure tank) to controlling fixture in feet _____ x 1.5.

With permissible uniform pressure loss, go to applicable table for distribution sizing.

SBD-6479 (R.05/86)

Bureau of Plumbing
201 East Washington Avenue
P. O. Box 7969
Madison, WI 53707
(608) 266-0521

ATTENTION

NOTICE OF INSTALLATION

The enclosed plans for the reduced pressure principle backflow preventer(s) (RP's) have been approved by the department. This form is required to be filled out and returned to the department in accordance with A or B. FAILURE TO DO SO CANCELS THE APPROVAL FOR INSTALLATION.

A. For a new installation this form must be completed by the master plumber in charge of the installation.

B. For an existing installation this form must be completed by the person responsible for the design of the approved plumbing plans.

DATE OF APPROVAL:_____ PLAN IDENTIFICATION NO:_____

NAME AND ADDRESS OF PROJECT:_____

_____

_____

RP valves are required by the Department to be tested at the time of installation and at least once a year thereafter. (Refer to plan approval letter, attachment 1, item 6)

VALVE INFORMATION

DATE OF INSTALLATION:_____

SIZE	MFR	MODEL	SERIAL #	LOCATION IN BUILDING	INSTALLED PER APPROVED PLAN
					☐ YES ☐ NO
					☐ YES ☐ NO
					☐ YES ☐ NO
					☐ YES ☐ NO
					☐ YES ☐ NO

NAME_____ (circle one) REG DESIGNER OR M.P. NO:_____

ADDRESS_____
(type or print) (city) (state) (zip)

SIGNATURE_____ DAYTIME PHONE #_____

SBD-7278 (R.10/87)

SECTION 72. A-82.20 - 82.21, Forms SBD 6114 and SBD 6212 are repealed.

SECTION 73. A-82.20 (4) is repealed and recreated to read:

A-82.20 (4) The following is a list od Designated Management Agencies and the counties they serve.

DESIGNATED MANAGEMENT AGENCY:	COUNTIES SERVED:
Harlan P. Kiesow, Clearing House Review Coordinator East Central Wisconsin Regional Planning Commission 132 Main Street Menasha, WI 54952 (414) 729-4770	Menomonee, Shawano Waupaca, Outagamie, Waushara, Marquette, Green Lake, Winnebago, Calumet, Fond du Lac
William N. Lane Director, Environmental Resources Planning Dane County Regional Planning Commission Room 523, City County Building Madison, WI 53709 (608) 266-4417	Dane
Patrick M. Vaile, Senior Planner Brown County Planning Commission Room 608, City Hall 100 North Jefferson Street Green Bay, WI 54301 (414) 436-3633	Brown
Kurt W. Bauer, Executive Director Southeastern Wisconsin Regional Planning Commission 916 North East Avenue P.O. Box 1607 Waukesha, WI 53187-1607 (414) 547-6721	Washington, Ozaukee, Waukesha, Milwaukee Walworth, Racine, Kenosha

The following is a list of Sewer Service Area Plans approved by the Department of Natural Resources. For each Sewer Service Area Plan the approved Planning Agency and affected communities are shown.

CONTACTS - SEWER SERVICE AREA PLANS	AFFECTED COMMUNITIES
Eau Claire - Chippewa Falls	
Jerry Chasteen, Director West Central Wisconsin Regional Planning Commission 124 1/2 Graham Avenue Eau Claire, WI 54701 (715) 836-2918	City of Eau Claire City of Altoona City of Chippewa Falls Town of Hallie Town of Seymour Town of Union Town of Washington
Hudson	
Richard Thompson, County Planner St. Croix County Planning Office Courthouse Hudson, WI 54016 (715) 386-5581	City of Hudson Town of Hudson Town of St. Joseph Village of North Hudson Town of Troy
Janesville	
Phil Blazkowski, Director Rock County Planning Development Agency 51 South Main Street, Courthouse Janesville, WI 53545 (608) 755-2087	City of Janesville Town of Harmony Town of Janesville Town of La Prairie Town of Rock
LaCrosse	
Arthur Bernhard Department of Natural Resources West Central District Office 1300 Clairmont Avenue Eau Claire, WI 54701 (715) 839-3722	City of LaCrosse City and Town of Onalaska Town of Shelby Town of Medary Town of Campbell
Stevens Point	
Chuck Kell, Director Portage County Planning Department County - City Building 1516 Church Street Stevens Point, WI 54481 (715) 346-1334	City of Stevens Point Village of Whiting Village of Plover Village of Park Ridge Town of Hull Town of Plover Town of Linwood

Wausau

Joseph Pribanich
Marathon County Planning Commission
Courthouse
Forest Street
Wausau, WI 54401
(715) 847-5227

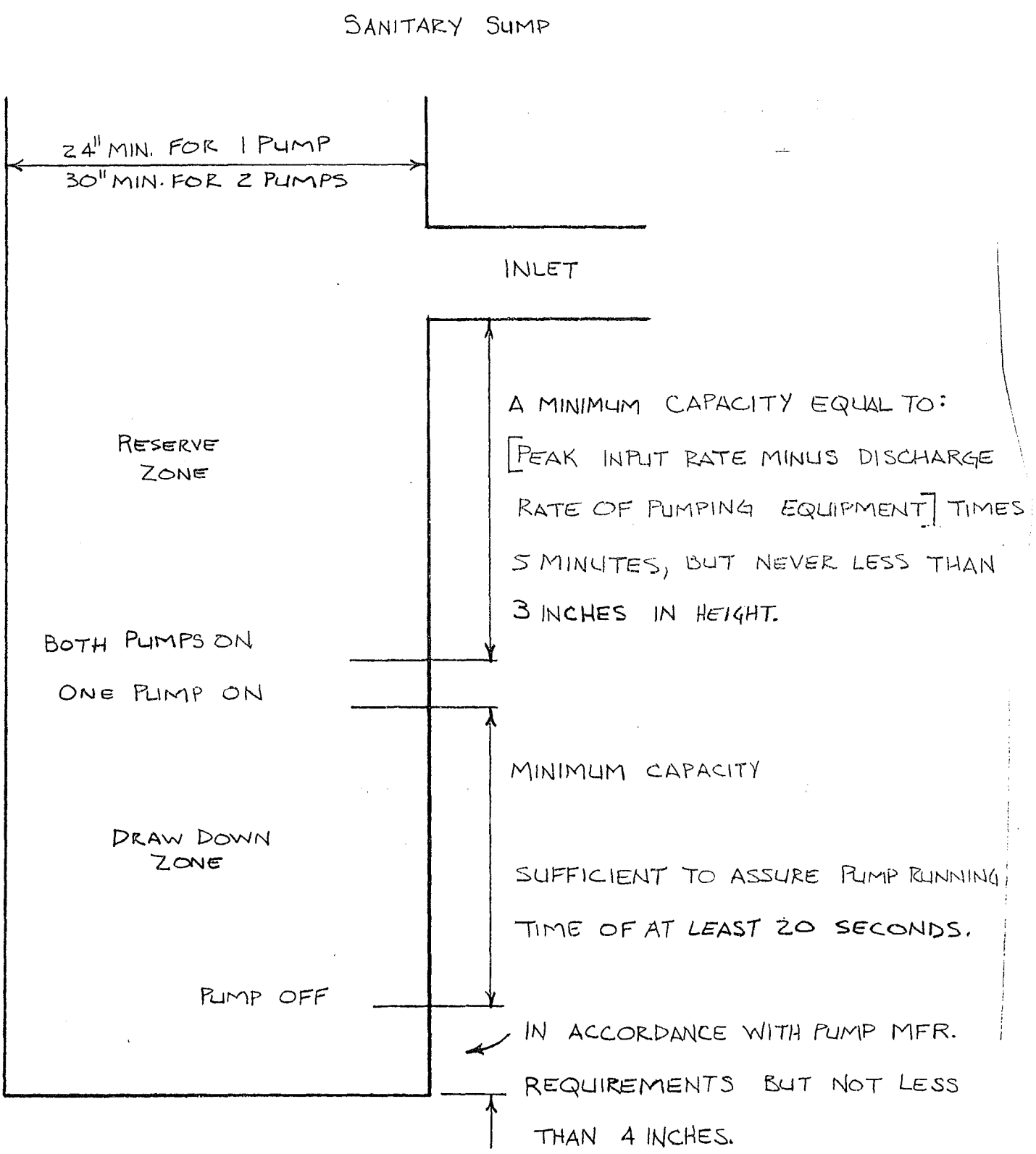
City of Wausau
Village of Rothschild
City of Schofield
Town of Weston
Town of Stettin
Town of Rib Mountain
Town of Kronenwetter

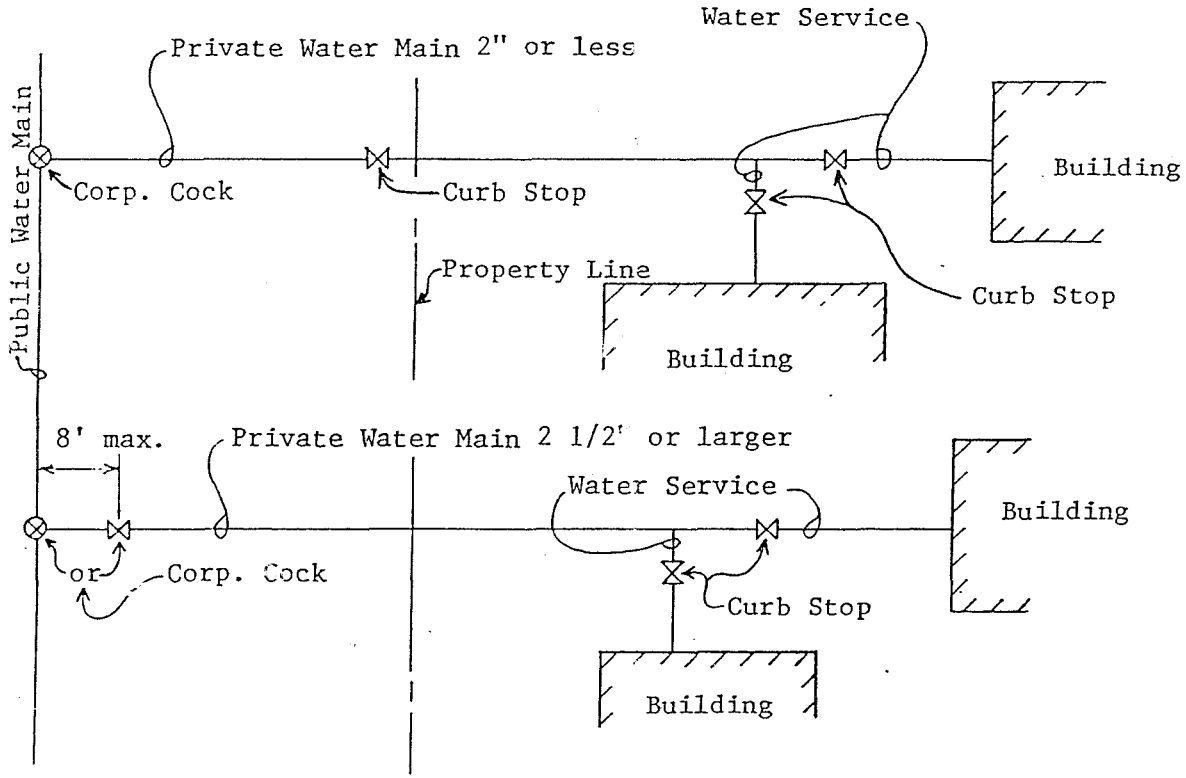
Wisconsin Rapids

Gary Popelka
Office of County Planning
Wood County Courthouse
400 Market Street
Wisconsin Rapids, WI 54495
(715) 421-8466

City of Wisconsin Rapids
Village of Biron
Town of Grand Rapids
Town of Rudolph
Town of Sigel
Town of Seneca
Town of Grant

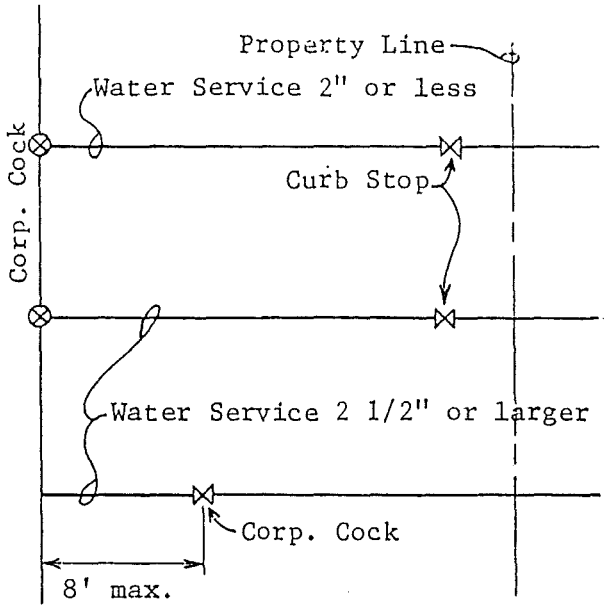
A-82.30 (10) (a) Determining required capacity of sanitary sump.

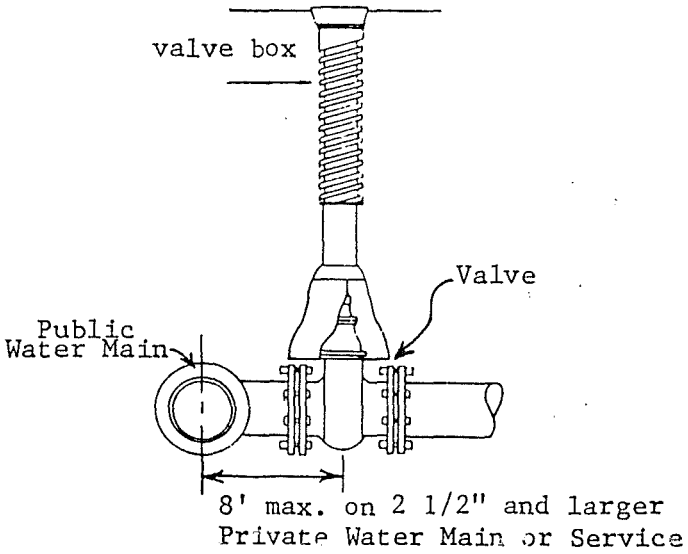




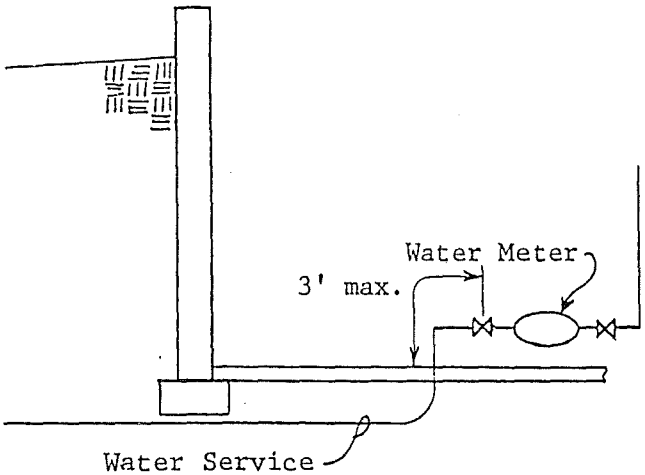
A-82.40 (4) CONTROL VALVES

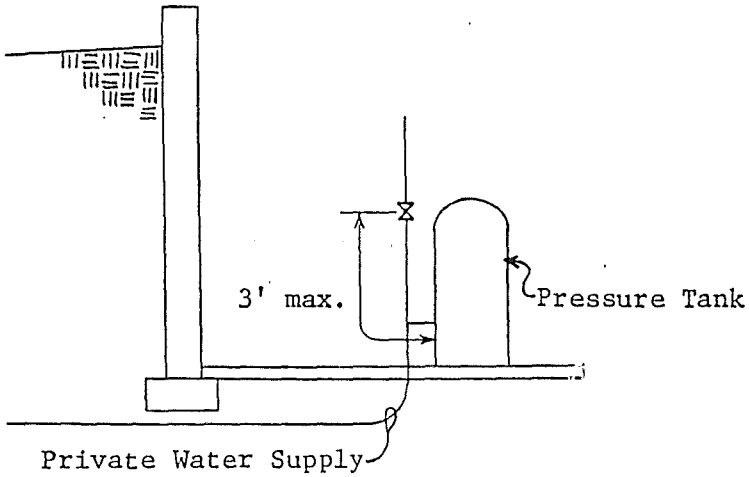
A-82.40 (4) (b) Control Valves for Water Services





A-82.40 (4) (b) Control Valves for Water Services



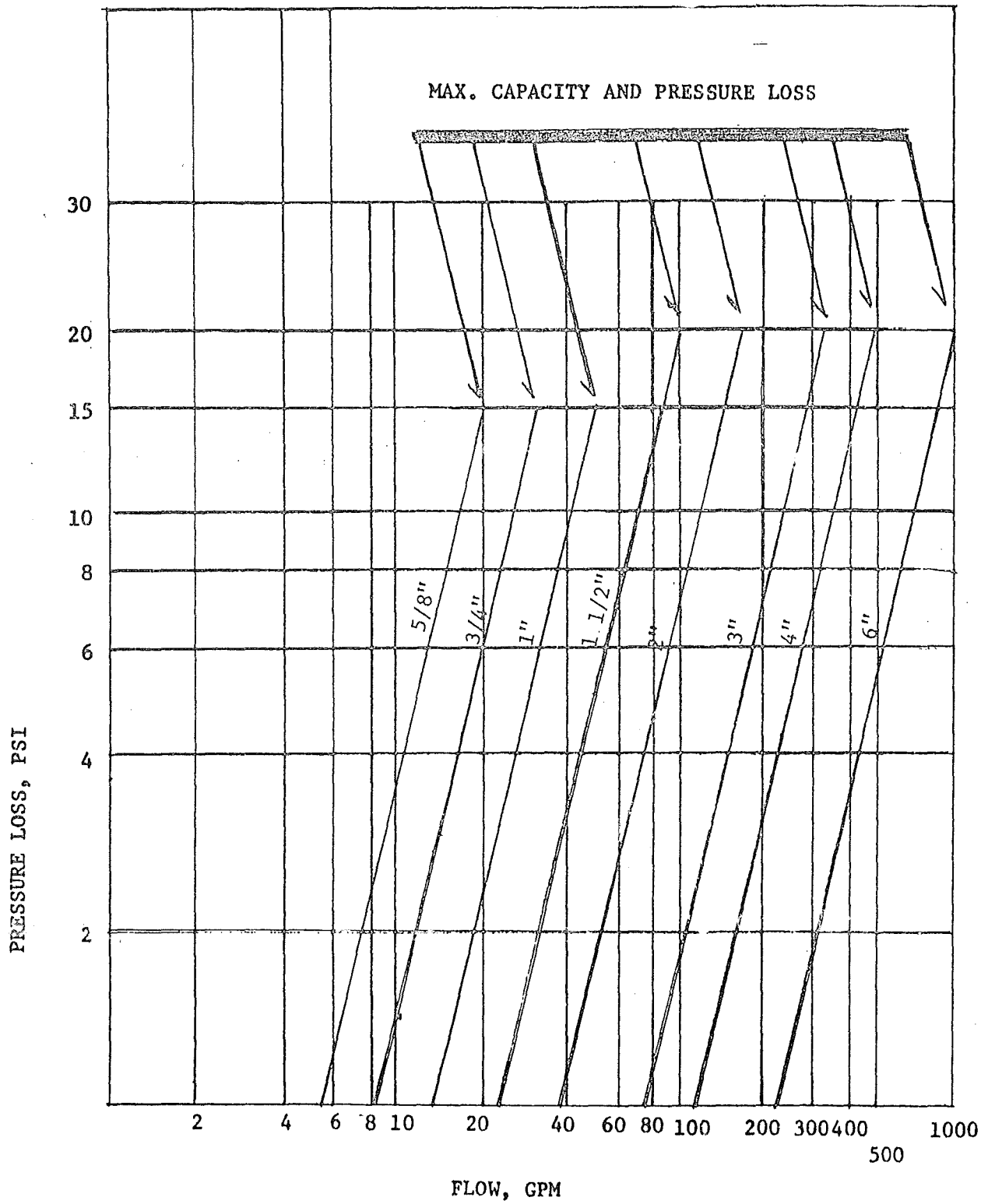


SECTION 74. A-82.40 (7) (a) is created to read:

A-82.40 (7) (a). The pressure losses due to flow friction through water meters may be calculated from Graph A-82.40 (7)-1.

GRAPH A-82.40 (7)-1

PRESSURE LOSS IN COLD-WATER METERS, DISPLACEMENT TYPE



A-82.40 (7) (a)

Where equipment such as an instantaneous or tankless water heater, water treatment device, water meter, and backflow preventer is provided in the design, the friction loss in such equipment, corresponding to the GPM demand, should be determined from the manufacturer or other reliable source.

Where a direct fired pressurized tank type water heater is provided in the design, the friction loss for such equipment can be assumed as part of the pressure losses due to flow through piping, fittings, valves and other plumbing appurtenances when the developed length of piping is multiplied by 1.5.

The pressure losses due to flow friction through displacement type cold-water meters may be calculated from Graph A-82.40 (7) (a)-1.

4745x

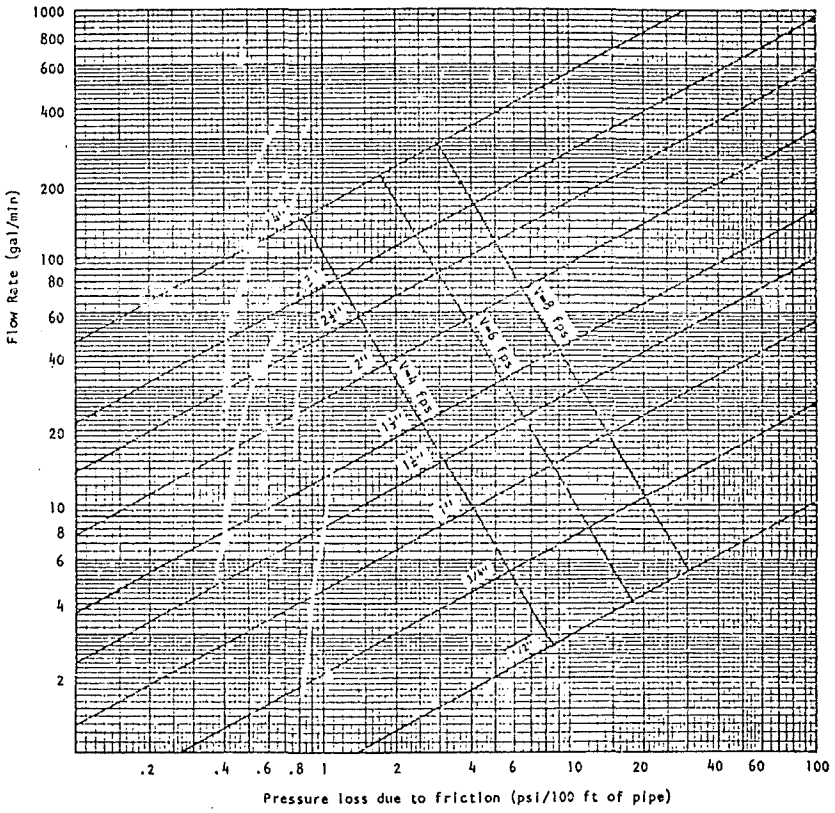
SECTION 75. A-82.40 (7) (b) is created to read:

A-82.40 (7) (b). Graphs A-82.40 (7)-2 to A-82.40 (7)-5. may be used to size private water mains and water services.

GRAPH A-82.40 (7)-2

Pressure losses due to flow friction

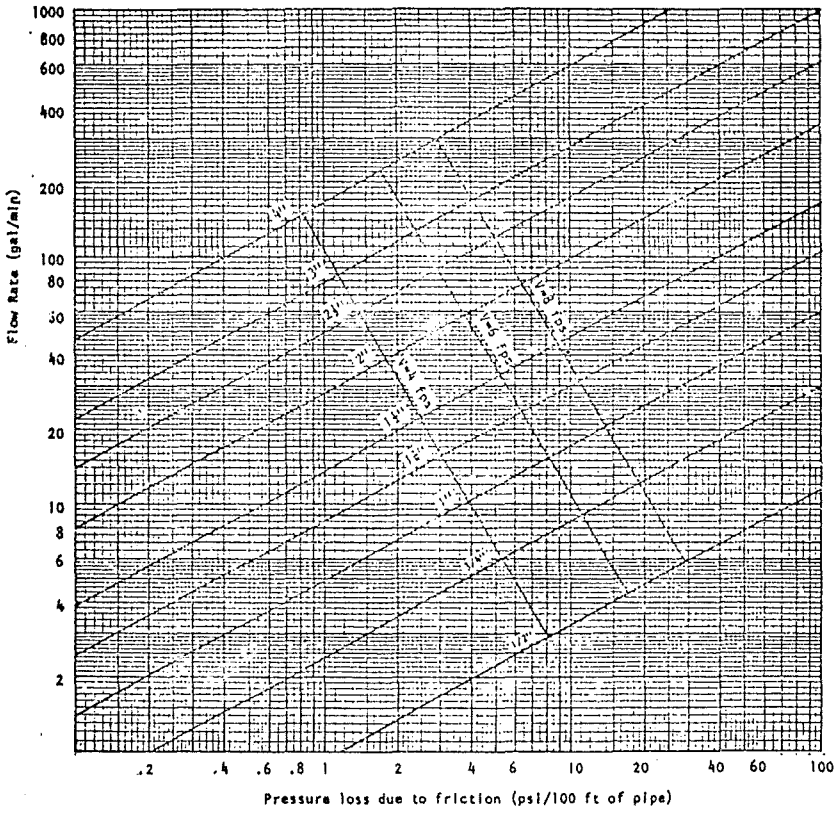
Material: Copper tube - Type K, ASTM B88



GRAPH 82.40 (7)-3

Pressure losses due to flow friction

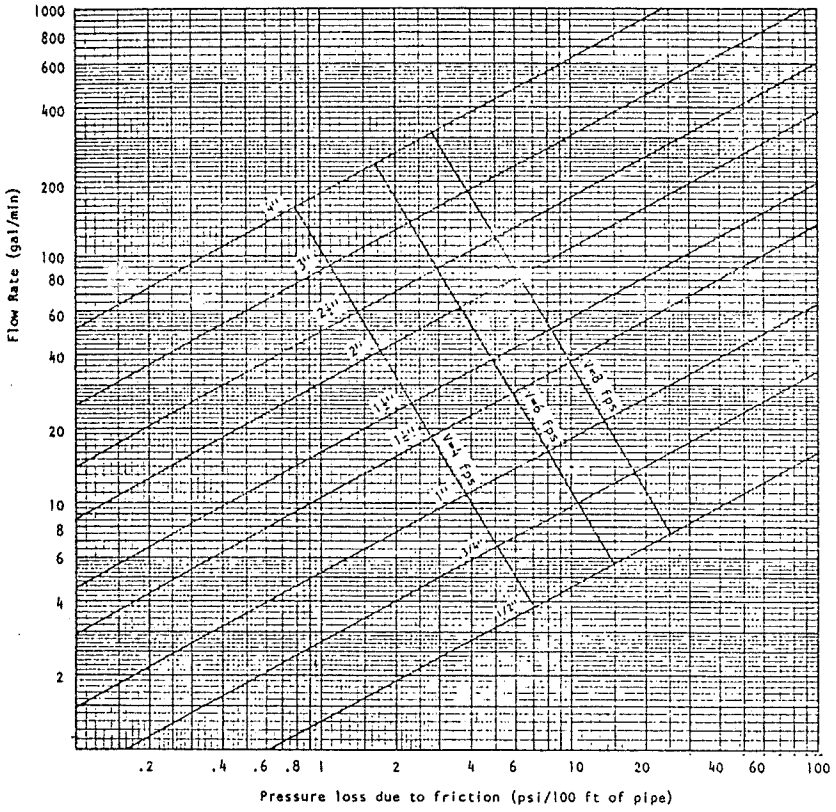
Material: Copper Tube - Type L, ASTM B88



GRAPH A-82.40 (7)-4

Pressure losses due to flow friction

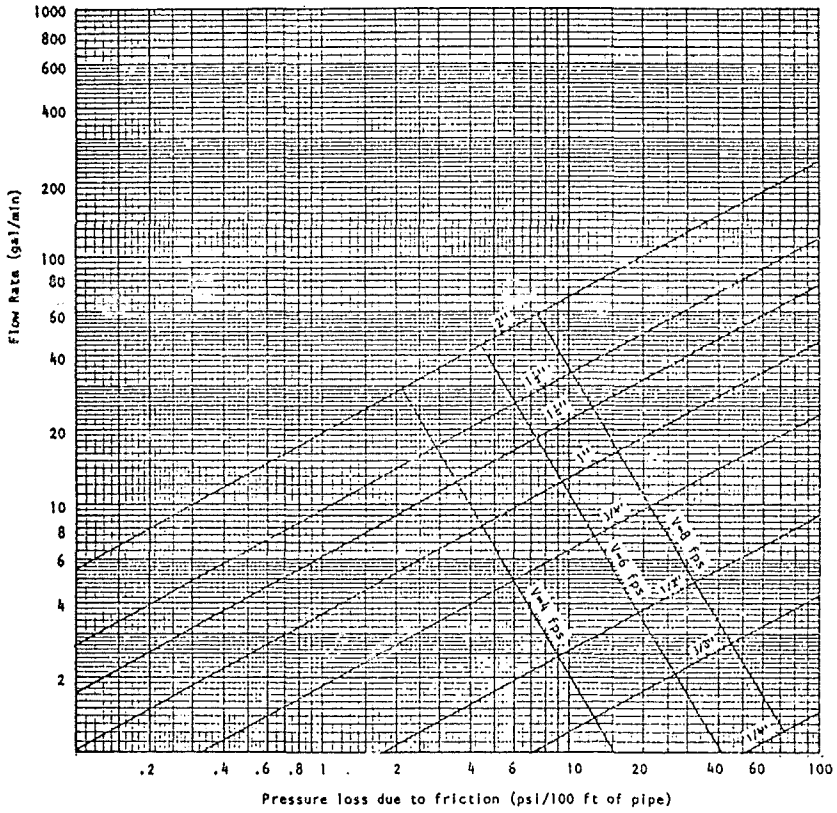
Material: Galvanized steel Pipe-Schedule 40, ASTM A53; ASTM A120; or
ABS pipe-Schedule 40, ASTM D1527; or
CPVC pipe-Schedule 40, ASTM F441; or
PE pipe-Schedule 40, ASTM D2104; ASTM D2447; or
PVC pipe-Schedule 40, ASTM D1785; ASTM D2672



GRAPH A-82.40 (7)-5

Pressure losses due to flow friction

Material: Polybutylene tubing, ASTM D3309; or
CPVC tubing, ASTM D2846



(END)

* * * * * * * * * *

Pursuant to s. 227.22 (2) (intro.), Stats., these rules shall take effect on the first day of the month following publication in the Wisconsin Administrative Register.

* *

State of Wisconsin \ Department of Industry, Labor and Human Relations

Office of the Secretary
201 E. Washington Avenue
P.O. Box 7946
Madison, Wisconsin 53707
Telephone 608/266-7552

March 2, 1988

Gary Poulson
Assistant Revisor of Statutes
Suite 904
30 West Mifflin Street
Madison, Wisconsin 53703

Douglas LaFollette
Secretary of State
Room 271, GEF-1
201 East Washington Avenue
Madison, Wisconsin 53702

Dear Messrs. Poulson and LaFollette:

TRANSMITTAL OF RULE ADOPTION

CLEARINGHOUSE RULE NO. 85-174

RULE NO. Chapters ILHR 81 and 82

RELATING TO Plumbing Code

Pursuant to section 227.023, Stats., agencies are required to file a certified copy of every rule adopted by the agency in the offices of the Secretary of State and the Revisor of Statutes.

At this time, the following material is being submitted to you.

1. Order of Adoption.
2. Rules Certificate Form.
3. Rules in Final Draft Form.

Pursuant to section 227.016 (6), Stats., a summary of the final regulatory flexibility analysis is also included.

Respectfully submitted,

John T. Coughlin
Secretary
cc: Agency Contact Person