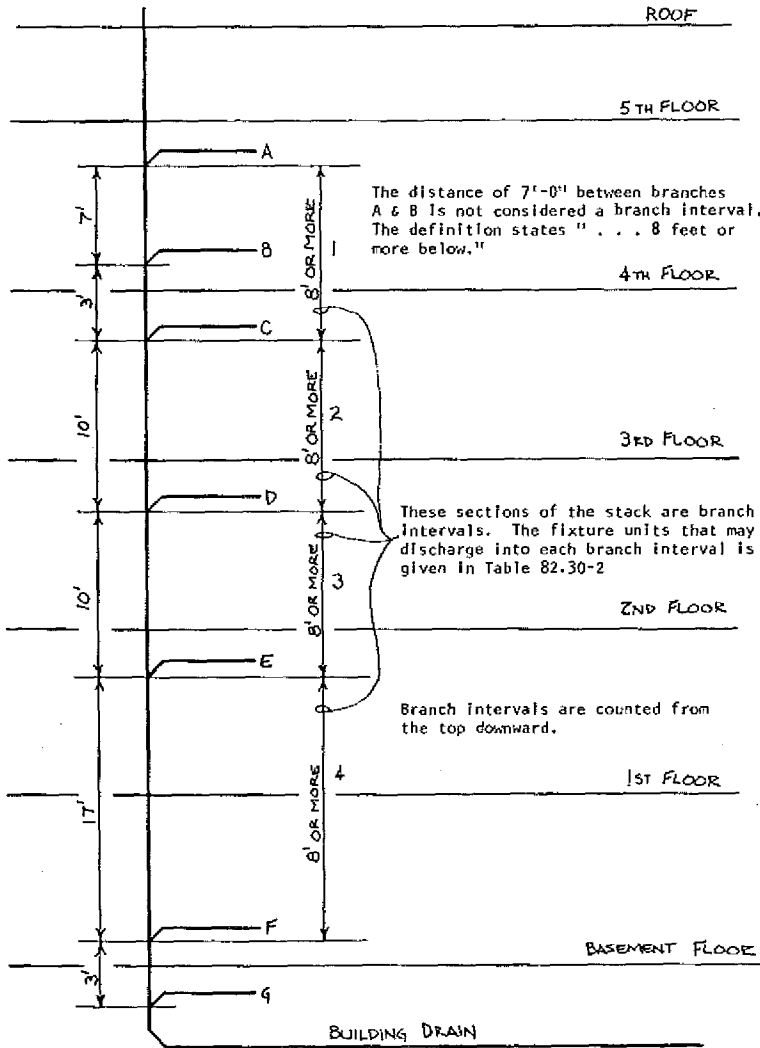


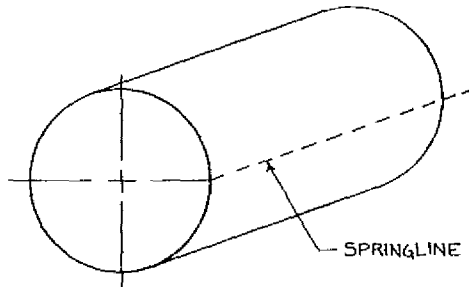
ILHR 82**APPENDIX**

The material contained in this appendix is for clarification purposes only. The notes, illustrations, etc., are numbered to correspond to the number of the rule as it appears in the text of the code.

A-82.11 (29) Branch intervals.



A-82.11 (140) Springline of pipe.



On a round pipe the springline is along the horizontal centerline.

A-82.20 and A-82.21 FORMS. The following forms (DILHR SBX-8, SBD-6154, 6115, 6479, 6192 and 7278) are used by the department in administration of this administrative code. Copies of these forms are available from the Division of Safety and Buildings, Plumbing Bureau, P.O. Box 7969, Madison, Wisconsin 53707.



**GENERAL PLUMBING
PLAN APPROVAL APPLICATION**

STATE OF WISCONSIN DILHR
DIVISION OF SAFETY & BUILDINGS
BUREAU OF PLUMBING
251 E. Washington Avenue, Rm. 141
P.O. Box 7969, Madison, WI 53707
608-266-3615

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. of Legal Description
City	State	Zip	City <input type="checkbox"/> Village <input type="checkbox"/> OF <input type="checkbox"/> Town <input type="checkbox"/> County
Telephone No. (include area code)			Designer (Plumbing) Telephone No. (include area code)
2. PLANS FOR:			Owner's Name Telephone No. (include area code)
<input type="checkbox"/> New Building <input type="checkbox"/> Addition <input type="checkbox"/> Remodel			Street & No. (current address)
<input type="checkbox"/> Revision to plumbing plan No.			City State Zip
24. Fee For Revisions - \$20.00			

Office Use Only	3. THIS APPLICATION IS FOR:	4. COMPUTATIONS	4. FEE SUBMITTED	Office Use Only
	(Check Appropriate Box(es))	(See Reverse Side for Remodeling Fees)		
28.	<input type="checkbox"/> Sanitary Building Sewer Only (no drain)	Sum of Sanitary Sewer Diameters	Inches x \$10.00 =	48.
29.	<input type="checkbox"/> Sanitary Drain and Vent, with or w/o Sanitary Building Sewer	Sum of Sanitary Sewer Diameters	Inches x \$20.00 =	49.
30.	<input type="checkbox"/> Sanitary Private Interceptor Main Sewer	Sum of Largest Diameters	Inches x \$8.00 =	50.
31.	<input type="checkbox"/> Water Service Only (no water distribution system)	Sum of Water Service Diameters	Inches x \$10.00 =	51.
32.	<input type="checkbox"/> Water Distribution System with or w/o Water Service	Sum of Water Service Diameters	Inches x \$20.00 =	52.
33.	<input type="checkbox"/> Private Water Main	Number of Water Main Systems	x \$55.00 =	53.
34.	<input type="checkbox"/> Building Storm Drainage with or w/o Storm Sewer	Sum of Storm Sewer Diameters	Inches x \$10.00 =	54.
35.	<input type="checkbox"/> Storm Private Interceptor Main Sewer	Sum of Largest Diameters	Inches x \$5.00 =	55.
36.	<input type="checkbox"/> Controlled Root Drainage System	\$30.00 Required	=	56.
37.	<input type="checkbox"/> Reduced Pressure Principle Backflow Preventer	Number of Valves	x \$35.00 =	57.
38.	<input type="checkbox"/> Turf Sprinkler System	Number of Turf Sprinkler Systems	x \$30.00 =	58.
39.	<input type="checkbox"/> Grease Interceptor*	Number of Grease Interceptors	x \$40.00 =	59.
40.	<input type="checkbox"/> Chemical Waste System*	Fee determined as per fees for additions and remodeling	=	60.
41.	<input type="checkbox"/> Garage Catch Basin*	Number of Garage Catch Basins	x \$40.00 =	61.
42.	<input type="checkbox"/> Oil Interceptor*	Number of Oil Interceptors	x \$40.00 =	62.
43.	<input type="checkbox"/> Car Wash Interceptor*	Number of Car Wash Interceptors	x \$40.00 =	63.
44.	<input type="checkbox"/> Sanitary Dump Station*	Number of Sanitary Dump Stations	x \$40.00 =	64.
45.	<input type="checkbox"/> Mobile Home Parks	1-25 Sites \$155.00 26-50 Sites \$210.00 51-125 Sites \$270.00 Over 125 Sites \$335.00	=	65.
46.	<input type="checkbox"/> Engineered Plumbing System	Contact Department for Review Fee	=	66.
47.	<input type="checkbox"/> Fees for Variance (must be submitted on form SR-8)	\$100.00	=	67.
		SUBTOTAL	=	68.
48.	<input type="checkbox"/> Priority Plan Review	Enter Same Amount as Subtotal	=	69.
		TOTAL FEE	=	70.

* NOTE: No Additional Fee Required if Submitted With Sanitary Drain and Vent System

NOTE: Fees are pursuant to Wis. Adm. Code, Chapter Ind. 15, and may be subject to change annually Effective July 1, 1984

5004 (10/81) 0789

- CONTINUE ON REVERSE SIDE -

6. ENCLOSURES

- Enclosed Under separate cover, please find the following:
 Two sets of plans and Three sets of plans and One set of Specifications
 Check Number _____ In the amount of _____ Written by _____

MAKE ALL CHECKS PAYABLE TO: DRLHR, SAFETY & BUILDINGS DIVISION.

6. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER DATA.

Indicate Valve Size, Manufacturer, Model No. and Location in Building (Room No., etc.) for each valve.

1. _____ 3. _____
 2. _____ 4. _____

7. PLAN SUBMITTAL SHALL INCLUDE THE FOLLOWING IN ACCORD WITH CODE SECTION ILHR 82.20.

A. One complete set of properly signed plans and specifications (indicating materials and fixtures) with one additional copy of plumbing drawings. Plans shall include:

1. Plot plan showing sewer and water.
2. Floor plan showing horizontal drains, water distribution mains and all fixtures and equipment to be installed.
3. Riser diagrams of the drain, vent and water distribution systems, with pipe sizes and fixture unit loads shown.
4. Complete water calculations in accordance with ILHR 82.40(5)(a).
5. Complete storm drain sizing calculations.
6. Remodeling or additions shall include existing loads.
7. Water Quality Management Letter if required by s. ILHR 20.17(4).
8. Plans including common ownership plumbing systems must be accompanied by form SBD-7815.

8. EXAMINATION FEES FOR ADDITIONS AND REMODELING.

When new or relocated fixtures or both are connected to the existing piping inside a building the fee shall be determined in accordance with the following procedures:

Ind. Table 69.23-2

A. 'Sanitary Building Sewer, Drain and Vent.'

1. Total all of the drainage fixture units that are being added or relocated.
2. Refer to Table 69.23-2, Chapter ILHR 82, and determine the horizontal drain size that would be required if all new or relocated fixtures discharged through one pipe.
3. Determine fee based on Table 69.23-1 Type 1, Chapter Ind. 69.

GPM	FEE
6	\$10.00
12	\$15.00
21	\$20.00
31	\$25.00
48	\$30.00
77	\$40.00
119	\$50.00
170	\$60.00
298	\$90.00

B. 'Building Water Distribution System.'

1. Total all of the water supply fixture units that are being added or relocated, using s. ILHR 82.40 Table 13, and convert to gallons per minute (GPM) in accordance with s. ILHR 82.40 Table 14.
2. The fees shall be determined in accordance with the GPM demand of the new or relocated fixtures as specified in Ind. Table 69.23-2.

C. 'Building Storm Sewer and Drainage System.'

1. Total each different type of area that the new or relocated drains serve and convert to GPM using Tables 69.23-1, 2, and 3, Chapter ILHR 82. To this add the GPM discharge from any added or relocated clear water drains located inside the building.
2. Refer to Table 69.23-4, Chapter ILHR 82, using the column for WTR pipe, determine the horizontal drain size that would be required if all new or relocated fixtures discharged through one pipe. Use this pipe size for determining the fee.
3. Determine the fee based on Table 69.23-1 Type 5, Chapter Ind. 69.

INDUSTRY, LABOR AND HUMAN RELATIONS 167
ILHR 82

PETITION FOR VARIANCE
 OF A RULE IN THE
 WISCONSIN ADMINISTRATIVE CODE

WISCONSIN DEPARTMENT OF
 INDUSTRY, LABOR AND HUMAN RELATIONS
 DIVISION OF SAFETY & BUILDINGS
 P.O. BOX 7969, MADISON, WI 53707

OFFICE USE ONLY	
Petition No.	
F-Number	
E-	

Name of Owner	Building Occupancy or Use	Agent, Architect or Engineering Firm
Company	Tenant Name, if any	Street & No.
Street & No.	Building Location, Street & No.	City
City	State & Zip	State & Zip
Phone	City	County
	Phone	Phone
	Plan Number(s) IF KNOWN	Name of Contact Person

1. Rule _____ of the Wisconsin Administrative Code cannot be entirely satisfied because:

2. In lieu of complying exactly with the rule, the following alternative is proposed as a means of providing an equivalent degree of safety:

3. Supporting arguments are:

VERIFICATION BY OWNER - PETITION IS VALID ONLY IF NOTARIZED

For Fee Information See ILHR 89.15 or Contact The Department at (608) 267-7843

NOTE: Petitioner must be building owner. Tenants, agents, designers, contractors, attorneys, etc. may not sign petition unless a Power of Attorney is submitted with the Petition.

_____, being duly sworn, I state as petitioner: that I have read (NAME OF PETITIONER Please type/print) the foregoing petition, that I believe it to be true and I have significant ownership rights in the subject building.

Signature of Owner _____

Subscribed and sworn to me this date: _____

_____, County, Wisconsin.

Notary Public _____

My commission expires: _____

OFFICE USE ONLY		
Date Received	Amount Paid	Receipt No.
Department Action		
Office of The Secretary	Date	

SB 8 (R. 12/84)

FILL OUT THIS FORM COMPLETELY AND RETURN TO:
 DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS
 DIVISION OF SAFETY AND BUILDINGS, BUREAU OF PLUMBING
 P.O. BOX 7469, MADISON, WI 53707

REDUCED PRESSURE BACKFLOW PREVENTER ANNUAL TEST REPORT

MANUFACTURER _____ MODEL _____ SIZE _____ SERIAL NUMBER _____

NAME OF PROJECT _____ COUNTY _____

ADDRESS (street, city, zip) _____

LOCATION OF DEVICE IN-BUILDING _____

	CHECK VALVE #1	CHECK VALVE #2	DIFFERENTIAL PRESSURE RELIEF VALVE	COMMENTS
ANNUAL TEST	1. LEAKED <input type="checkbox"/> 2. CLOSED TIGHT <input type="checkbox"/>	1. LEAKED <input type="checkbox"/> 2. CLOSED TIGHT <input type="checkbox"/>	OPENED AT _____ LBS. REDUCED PRESSURE. DID NOT OPEN <input type="checkbox"/>	
REPAIRS	CLEANED _____ REPLACED: DISC _____ SPRING _____ GUIDE _____ PIN RETAINER _____ HINGE PIN _____ SEAT _____ DIAPHRAGM _____ OTHER, DESCRIBE _____	CLEANED _____ REPLACED: DISC _____ SPRING _____ GUIDE _____ PIN RETAINER _____ HINGE PIN _____ SEAT _____ DIAPHRAGM _____ OTHER, DESCRIBE _____	CLEANED _____ REPLACED: DISC _____ UPPER _____ LOWER _____ SPRING _____ DIAPHRAGM: LARGE: _____ UPPER _____ LOWER _____ SMALL _____ SEAT: _____ UPPER _____ LOWER _____ SPACER: _____ LOWER _____ OTHER, DESCRIBE _____	
FINAL TEST	CLOSED TIGHT <input type="checkbox"/>	CLOSED TIGHT <input type="checkbox"/>	OPENED AT _____ LBS. REDUCED PRESSURE	

THE ABOVE REPORT IS CERTIFIED TO BE TRUE. CERTIFICATION # _____

INITIAL TEST BY _____ REPRESENTING (CO.) _____ DATE:

MO.	DAY	YR.

REPAIRED BY _____ DATE: _____

FINAL TEST BY _____ REPRESENTING (CO.) _____ DATE:

MO.	DAY	YR.

SBD-6115 (R.06/82)

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

PLB-1

INSPECTION REPORT

Wisconsin Department of Industry,
Labor & Human Relations
Safety & Buildings Division
Bureau of Plumbing

Name of Premises		Date	Plan I.D. No.
Street	City	County	Sanitary Permit #
Master Plumber & Firm Name	Address		
Journeyman Plumber	Address		
Owner	Address		

SAMPLE

Discussed with	Signature
----------------	-----------

() See Attached.

DILHR-SD-6192 (R. 11/83)

Signature of Dist. Plumbing Sup. On-site Waste Specialist



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
_____	_____	_____	_____	_____	<input type="checkbox"/> YES <input type="checkbox"/> NO
_____	_____	_____	_____	_____	<input type="checkbox"/> YES <input type="checkbox"/> NO
_____	_____	_____	_____	_____	<input type="checkbox"/> YES <input type="checkbox"/> NO
_____	_____	_____	_____	_____	<input type="checkbox"/> YES <input type="checkbox"/> NO
_____	_____	_____	_____	_____	<input type="checkbox"/> YES <input type="checkbox"/> 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)

A-82.20 (2) **AGENT MUNICIPALITIES.** The department has designated to the following municipalities, the authority to review and approve plumbing plans and specifications for those plumbing installations to be located within the municipality's boundary limits and which require approval under s. ILHR 82.20 (1) (b).

Appleton	Kenosha	Oconomowoc
Beloit	Madison	Oshkosh
Eau Claire	Manitowoc	Racine
Green Bay	Mequon	Two Rivers
Greenfield	Milwaukee	

A-82.20 (4) The following is a list of 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	Menominee, 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
Wm Patzke and B.F. Paruleski 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
<u>Eau Claire - Chippewa Falls</u> Jerry Chasteen, Director West Central Wisconsin Regional Planning Commission 124½ 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
<u>Hudson</u> 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 Prlbanich
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-82.20 (8) FEES. The following reprint of s. Ind 69.23 (1) may be used to determine the amount of fee required for general plumbing plan review by the department.

Ind 69.23 Plumbing and private sewage systems. (1) PLUMBING PLAN EXAMINATION FEES. (a) *Applicability.* Plan examination fees for preliminary or complete plans shall accompany the plans and specifications when submitted. If the department determines upon review of the plans that inadequate fees were provided, the necessary additional fee shall be provided prior to departmental approval.

(b) *Examination fees.* The plan examination fee shall be determined in accordance with Table 69.23-1.

Table 69.23-1

Type of Review	Fee
1. Sanitary drain and vent system.....	\$ 20.00 per inch diameter of each bldg. sewer
2. Sanitary building sewer only, no drain and vent.....	\$ 10.00 per inch diameter of each bldg. sewer
3. Building water distribution system	\$ 20.00 per inch diameter of each water service

ILHR 82

4. Building water service only, no water distribution system	\$ 10.00 per inch diameter of each water service
5. Building storm and clear water drain system	\$ 4.00 per inch diameter of each bldg. storm sewer
6. Sanitary private interceptor main sewers, determined on the largest diameter of each interceptor main sewer	\$ 8.00 per inch diameter
7. Private water main	\$ 35.00
8. Controlled roof drainage system, does not include building storm sewer	\$ 30.00
9. Reduced pressure zone principle type backflow preventer	\$ 35.00
10. Turf sprinkler system	\$ 30.00
11. Mobile home parks:	
1-25 sites	\$155.00
26-50 sites	\$210.00
51-125 sites	\$270.00
Over 125 sites	\$335.00
12. Manufactured homes, each model	\$250.00

(c) *Examination fees for additions and remodeling.* When new or relocated fixtures or both are connected to the existing piping inside a building the fee shall be determined in accordance with the following procedures:

1. Sanitary building sewer, drain, waste and vent. a. Total all of the drainage fixture units that are being added or relocated.

b. Refer to s. ILHR 82.30 Table 82.30-2, and determine the horizontal drain size that would be required if all new or relocated fixtures discharged through one pipe.

Note: Disregard Note c limitation regarding water closets. This pipe size is used for determining the fee only and does not necessarily mean this pipe size is used in actual design or installation.

c. Determine fee based on Table 69.23-1 1.

2. Building water distribution system. a. Total all of the water supply fixture units that are being added or relocated, using s. ILHR 82.40 Table 13, and convert to gallons per minute (GPM) in accordance with s. ILHR 82.40 Table 14.

b. The fees shall be determined in accordance with GPM demand of the new or relocated fixtures as specified in Table 69.23-2.

Table 69.23-2

GPM	FEE
6.....	\$10.00
12.....	\$15.00
21.....	\$20.00
31.....	\$25.00
46.....	\$30.00
77.....	\$40.00
119.....	\$50.00
170.....	\$60.00
298.....	\$80.00

3. Building storm sewer and drainage system. a. Total all of the roof area that the new or relocated roof drains serve. For added or relocated clear water drains inside the building receiving continuous or semi-continuous discharge into the building storm drain, each gallon per minute (GPM) of discharge shall be computed as 26 square feet of roof area.

b. Refer to s. ILHR 82.36 Table 82.36-1, the column for 1/4" pitch, and determine the horizontal drain size that would be required if all new or relocated fixtures discharged through one pipe. Use this pipe size for determining the fee.

c. Determine the fee based on Table 69.23-1 5.

(d) *Priority plan review.* An appointment may be made with the department to facilitate the examination of plans in less than the normal processing time. The plans shall comply with the provisions of s. ILHR 82.20. Delivery of the plans for priority plan review shall be made in person. The fee for this type of plan examination shall be determined at twice the normal rate.

(e) *Reproduction fee.* If the correct number of plans or specifications have not been submitted, a minimum reproduction fee of \$7.00 per set shall be charged except that reproductions exceeding \$7.00 per set shall be charged actual costs. Reproduction fees shall be charged to the party submitting the plans.

(f) *Plan appraisal - additional copies.* Approval for sets of plans in excess of 3 sets shall be provided upon receipt of a fee of \$10.00 plus \$3.50 per plan sheet.

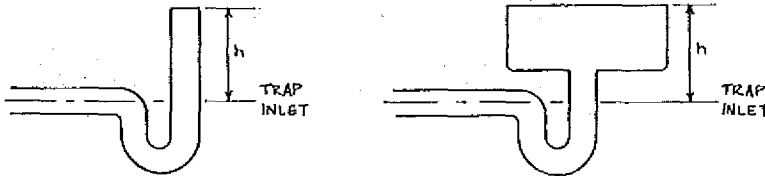
(g) *Revisions.* The fee for revisions to previously examined plans shall be \$20.00 per plan. This fee applies when plans are revised for reasons other than those that were requested by the department.

(h) *Projects without approval.* The fees specified in pars. (b) to (g) shall be doubled for those projects for which the installation of plumbing has started without department approval.

A-82.30 (4) The following table lists the maximum GPM which can be expected to readily flow through a given size trap where the receptor has a height as indicated.

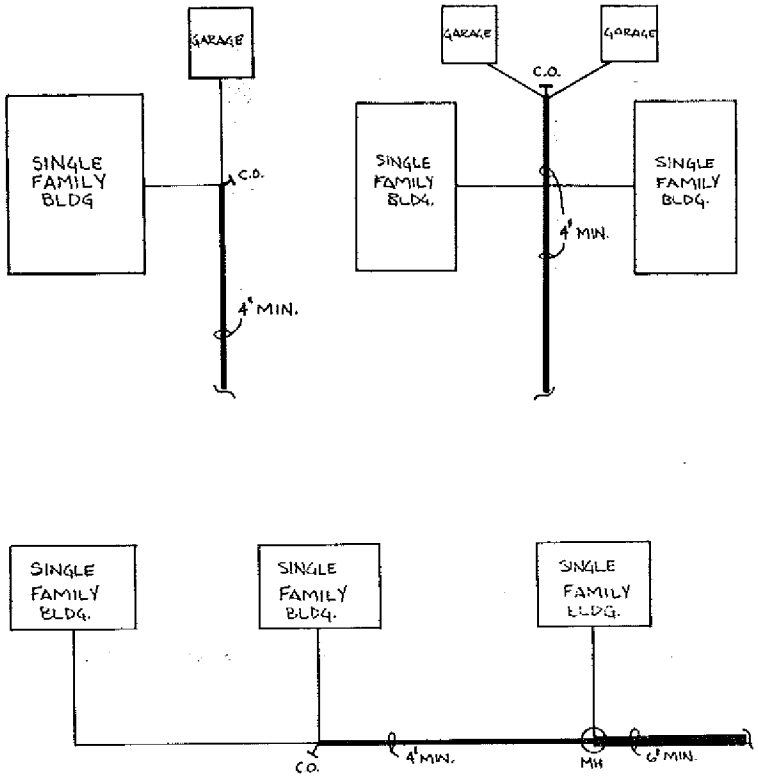
Also listed is a maximum drainage fixture unit load which a given size receptor trap may be expected to adequately receive.

Note: The department recommends an individual 4-inch diameter minimum trap and drain pipe for a commercial type dishwasher.

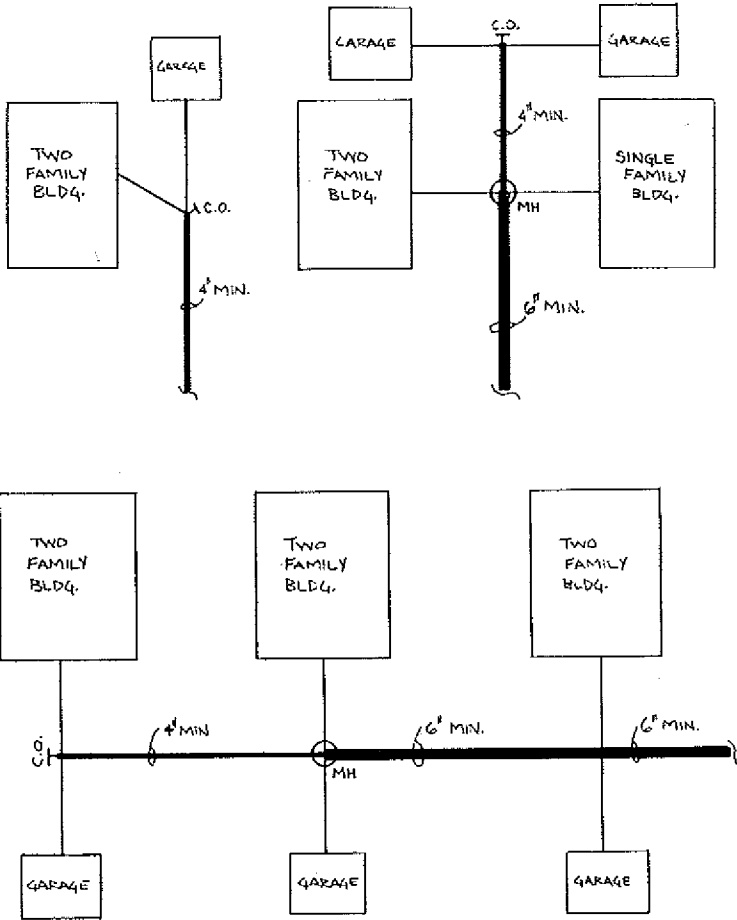


Receptor Trap size	H Height	GPM	d. f. u.
1-1/2"	12"	4	2
2"	14"	8	4
3"	15"	12	6
4"	17"	40	20
5"	20"	70	35
6"	22"	120	60
8"	25"	250	125

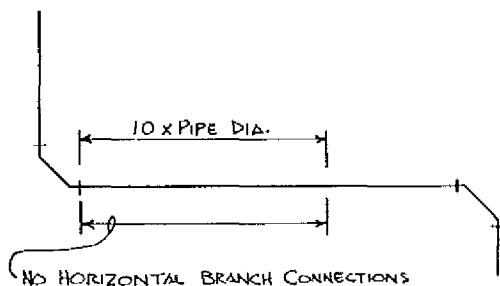
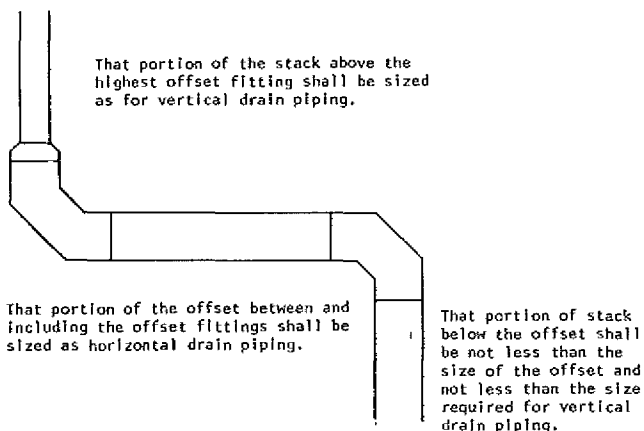
A-82.30 (4) (d) Minimum size of private interceptor main sewers.



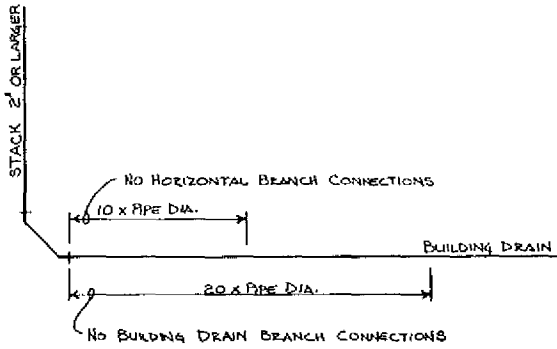
A-82.30 (4) (d) Minimum size of private interceptor main sewers.



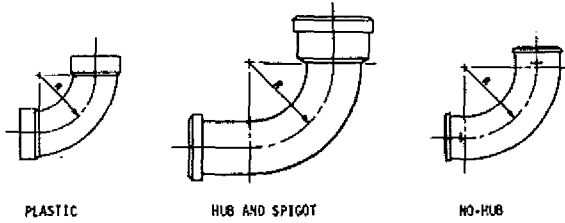
A-82.30 (6) (b) Offsets in vertical drains.



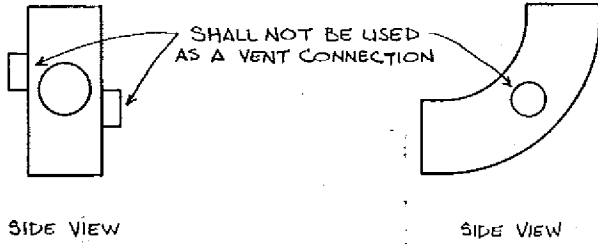
A-82.30 (7) Horizontal branch drain connection at base of a stack.



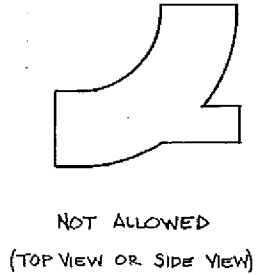
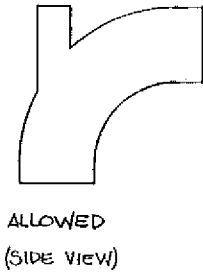
A-82.30 (8) Measuring radius of a fitting.



A-82.30 (9) Drain fittings and connections.

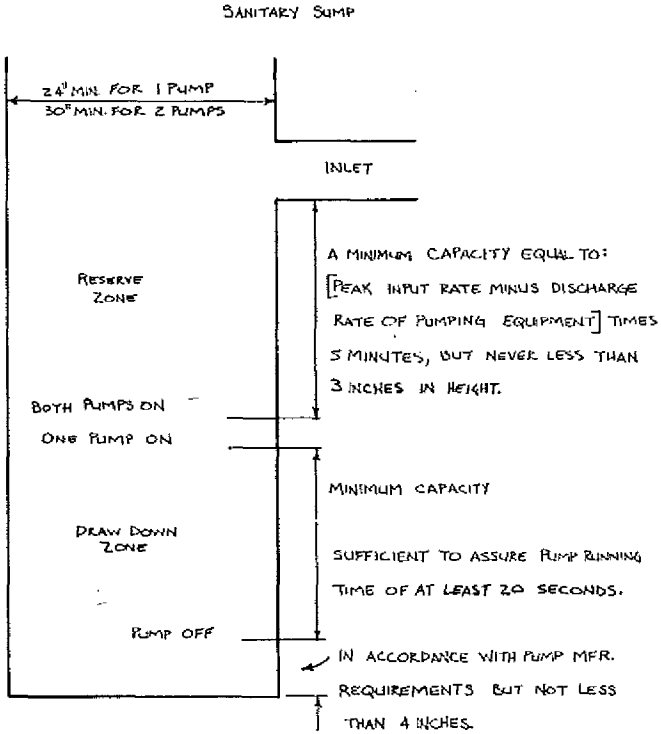


SIDE INLETS



HEEL INLETS

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

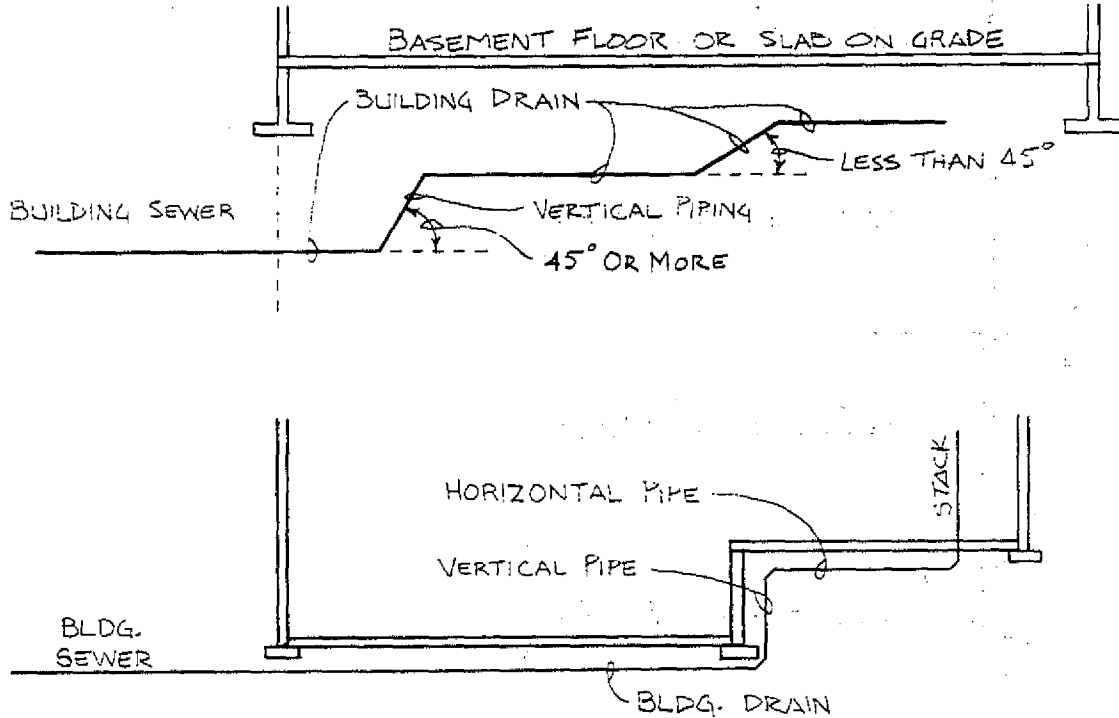


A-82.30 (10 (a))

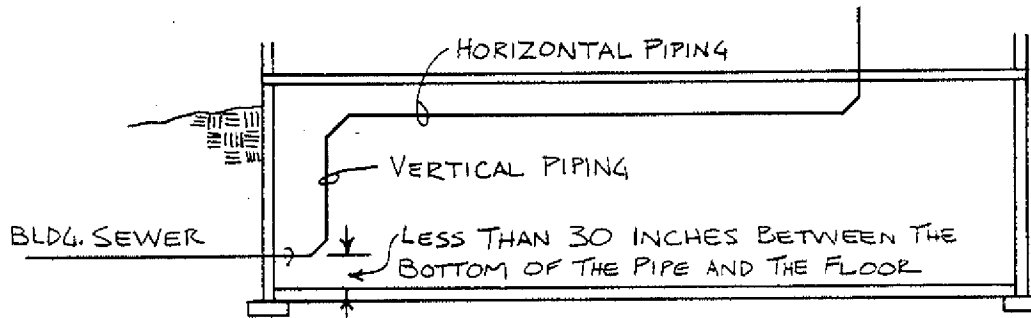
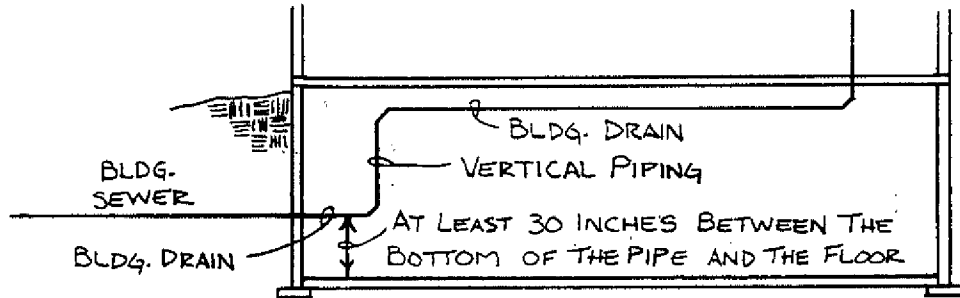
Capacity of Sumps
(in gallons)

Diameter of sump in inches	Volume in gal/ft	Diameter of sump in inches	Volume in gal/ft
24	23.5	41	68.6
25	25.5	42	72.1
26	27.6	43	75.5
27	29.7	44	79.1
28	32.0	45	82.7
29	34.3	46	86.5
30	36.8	47	90.2
31	39.2	48	94.0
32	41.8	54	119.0
33	44.5	60	147.0
34	47.2	66	178.0
35	50.0	72	211.5
36	52.8	78	248.4
37	55.9	84	288.1
38	59.0	90	330.8
39	62.1	96	376.3
40	65.3	108	477.3

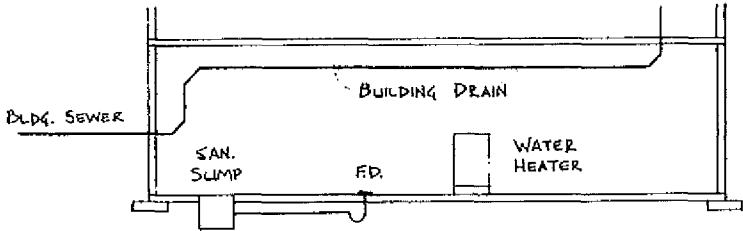
A-82.30 (11) (a) Building drains serving any building.



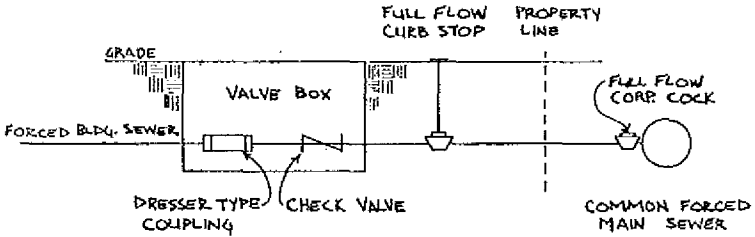
A-82.30 (11) (a) Building drains serving dwelling units.



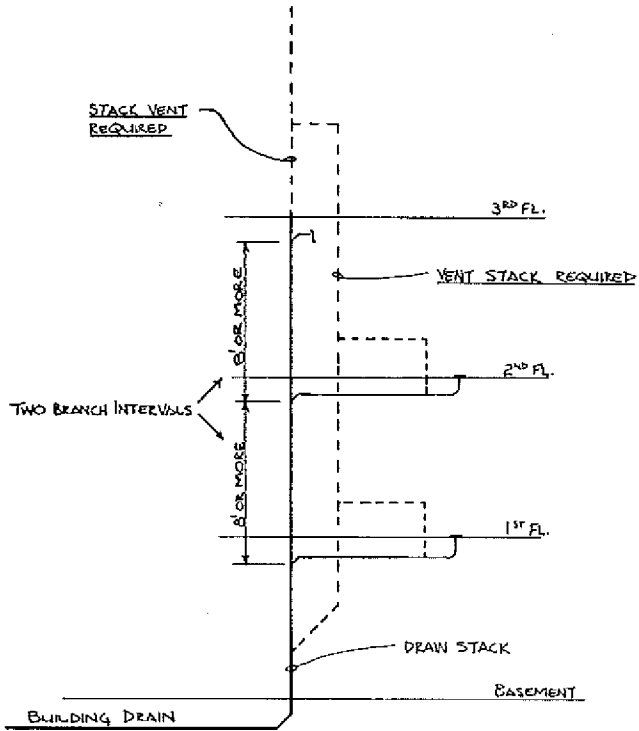
A-82.30 (11) (a) Floor drain required.



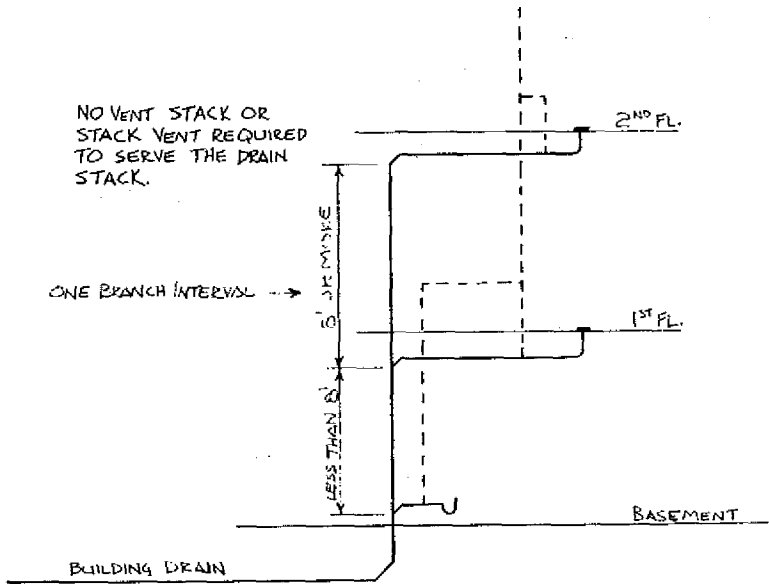
A-82.30 (11) (e) Connection to pressurized public sewer.



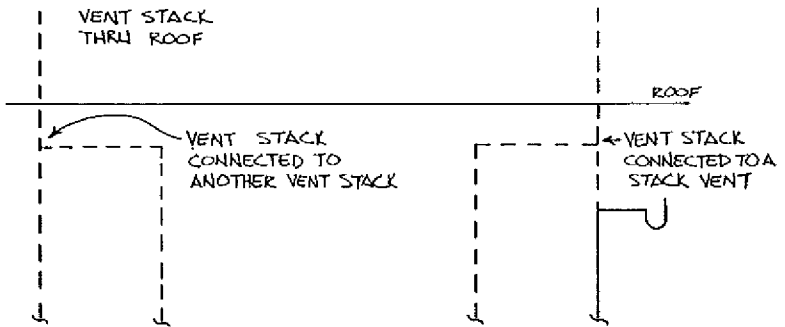
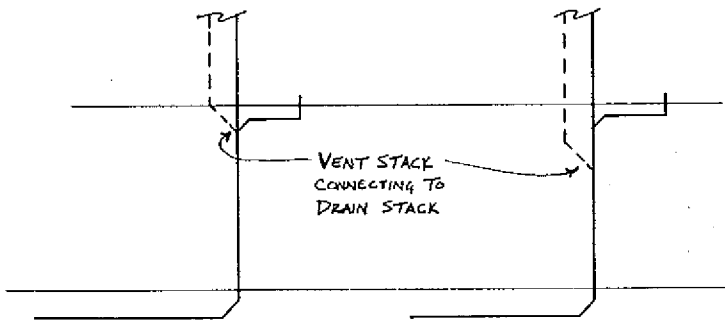
A-82.31 (4) (a) Where a vent stack and stack vent are required.



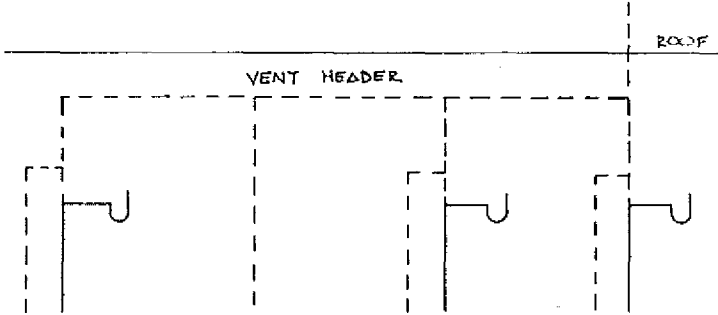
A-82.31 (4) (a) Where a vent stack and stack vent are not required.



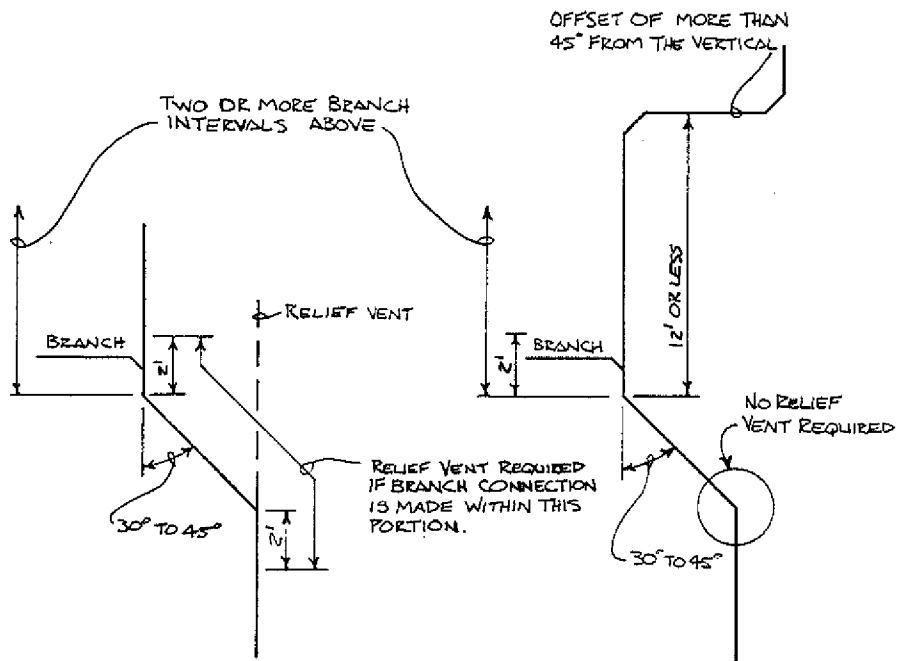
A-82.31 (4) (b) Installation of vent stack and stack vent.



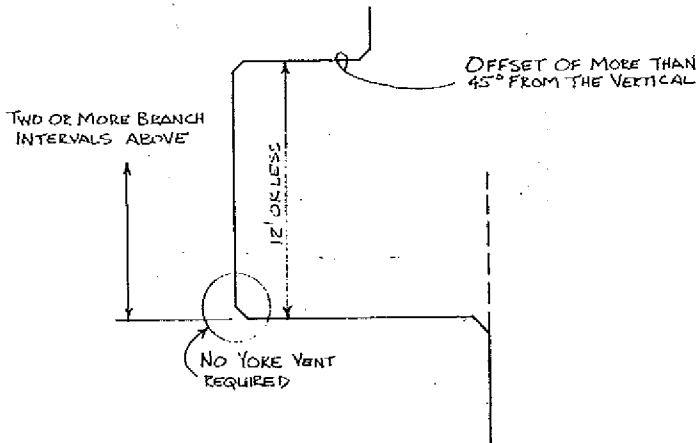
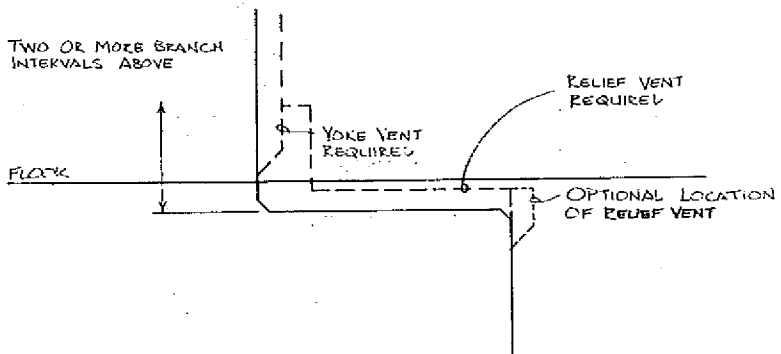
A-82.31 (4) (b) Installation of vent stack and stack vent.



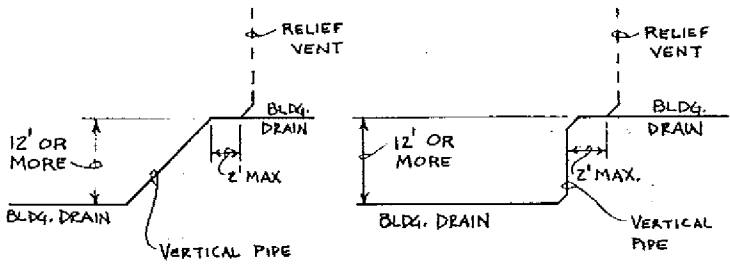
A-82.31 (5) (a) Relief vent for offsets of 30 to 45 degrees.



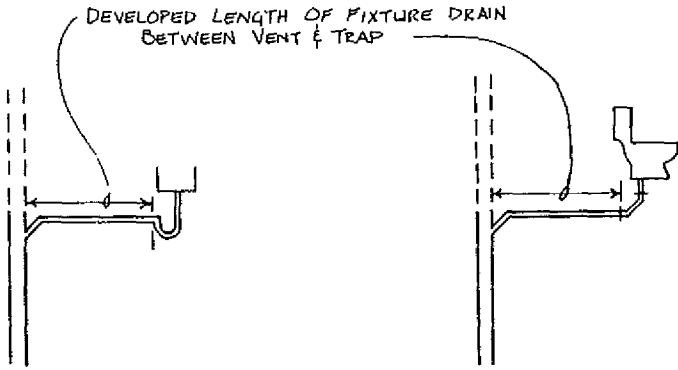
A-82.31 (5) (b) Relief and yoke vents for offsets of more than 45 degrees.



A-82.31 (7) Relief vents for building drains.

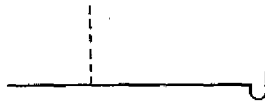


A-82.31 (9) Fixture vents.



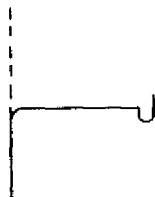
WHERE TRAP IS NOT AN INTEGRAL PART OF THE FIXTURE

WHERE TRAP IS AN INTEGRAL PART OF THE FIXTURE

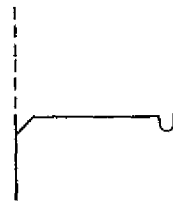


VENT CONNECTING TO HORIZONTAL DRAIN PIPING

VENT CONNECTING TO VERTICAL DRAIN PIPING

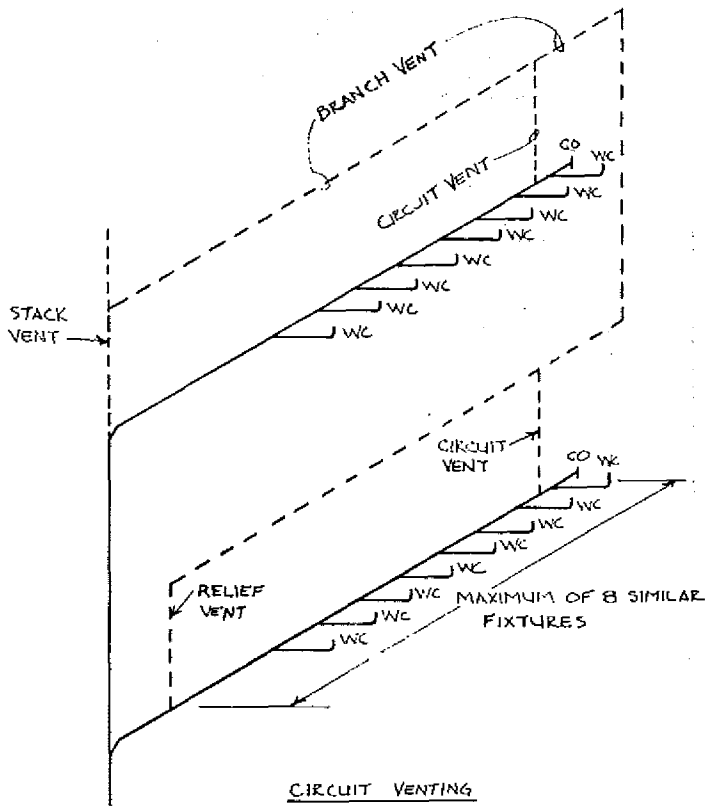


BY MEANS OF A SANITARY TEE FITTING

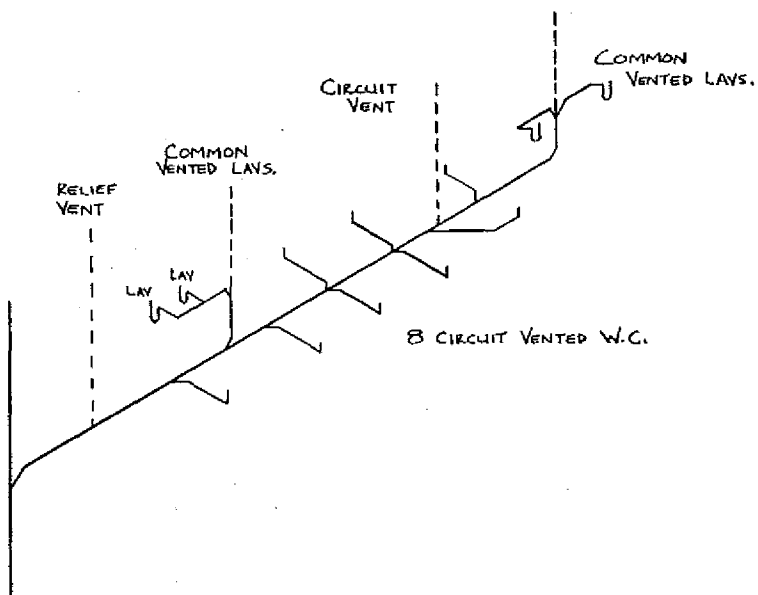


BY MEANS OF A WYE PATTERN FITTING

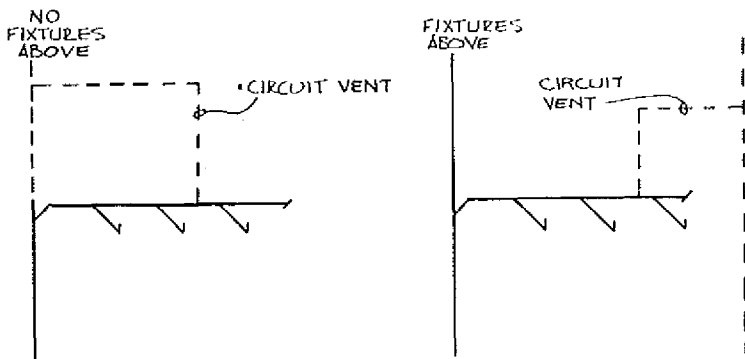
A-82.31 (10) Circuit venting.



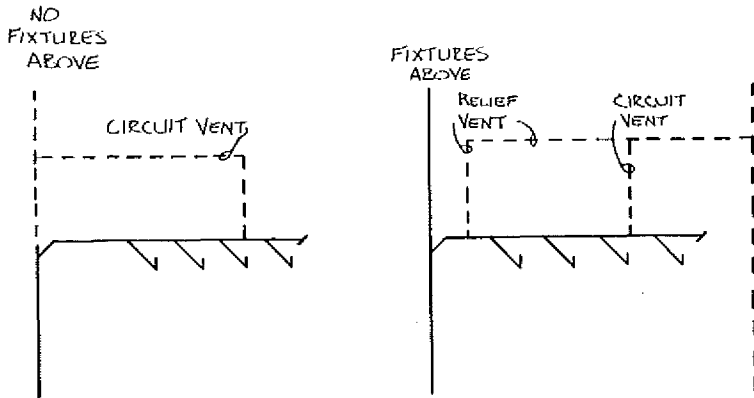
A-82.31 (10) Circuit venting.



A-82.31 (10) Circuit venting.

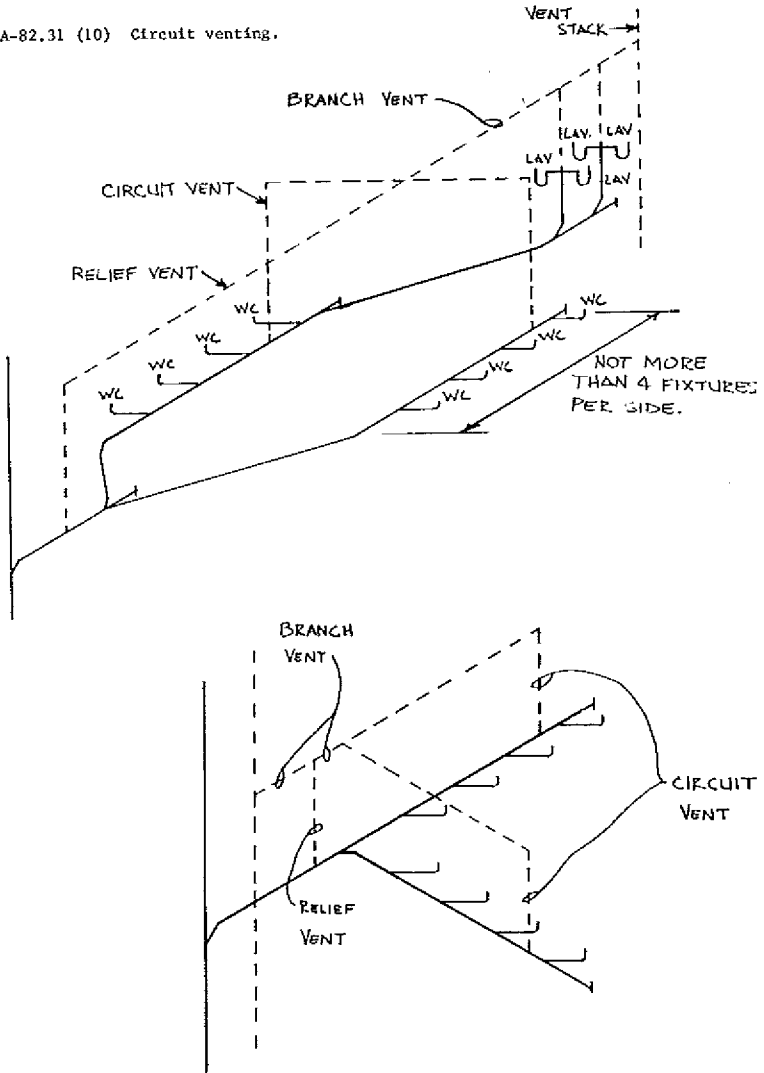


CIRCUIT VENTING
3 FIXTURES

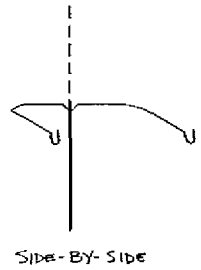
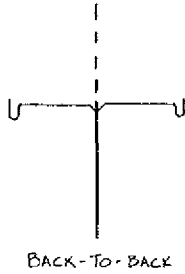


CIRCUIT VENTING 4 OR
MORE FIXTURES

A-82.31 (10) Circuit venting.

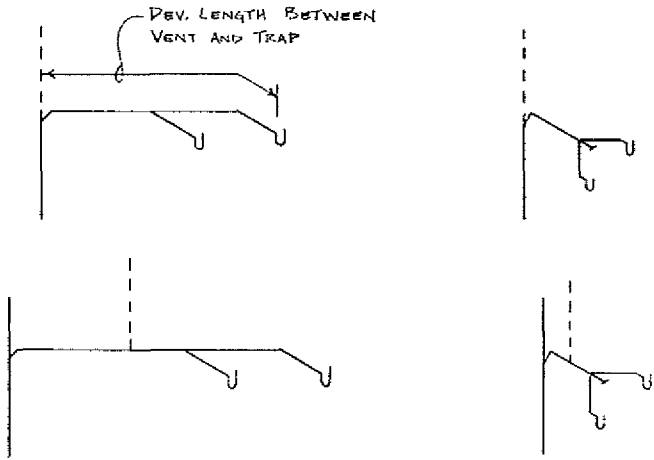


A-82.31 (11) (a) Common vents, vertical drains.



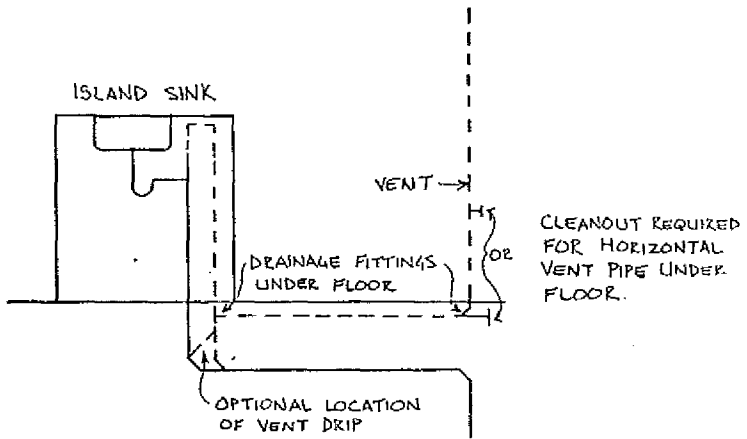
COMMON VENT SERVING ANY TWO FIXTURES

A-82.31 (11) (b) Common vents, horizontal drains.

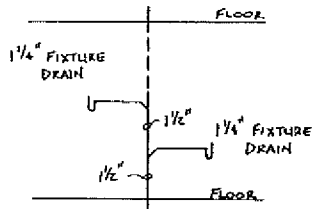
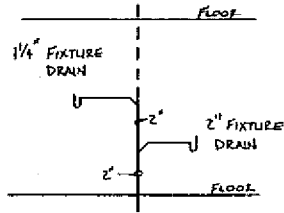


COMMON VENTS SERVING TWO LAVATORIES OR
TWO COMPARTMENTS OF ONE KITCHEN SINK

A-82.31 (12) Island fixture venting.

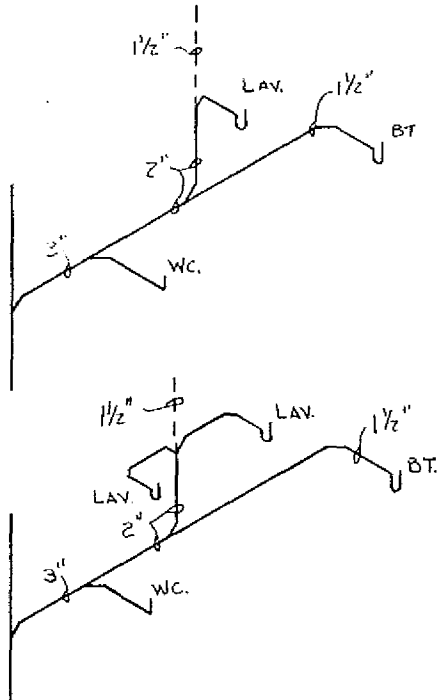
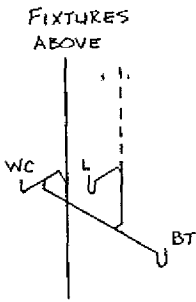
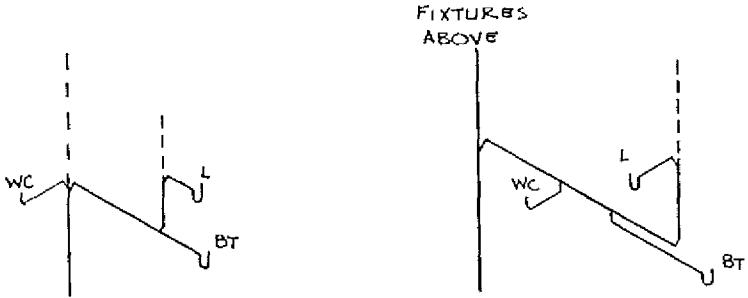


A-82.31 (13) (a) Vertical wet vents.

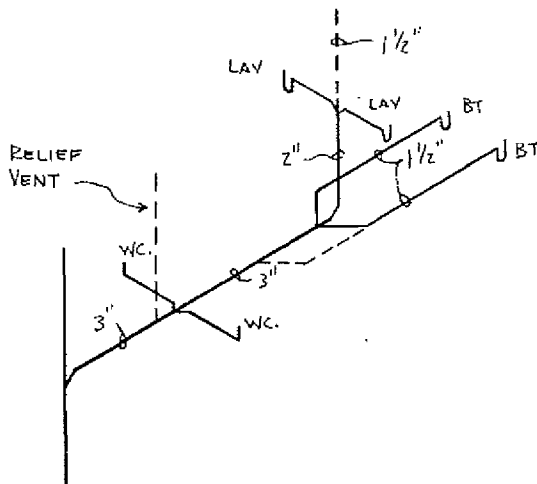


VERTICAL WET VENT

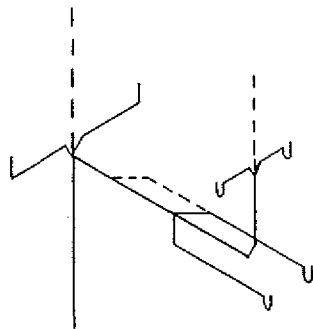
A-82.31 (13) (b) Horizontal wet vents.



A-82.31 (13) (b) Horizontal wet vents.

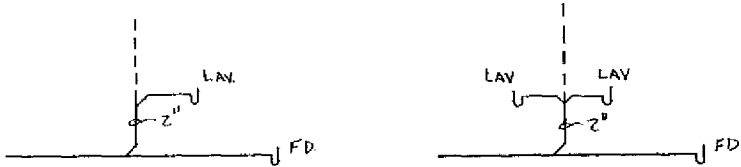


HORIZONTAL WET VENTS

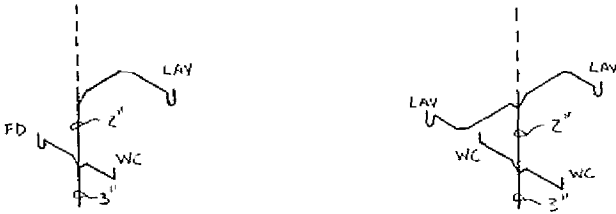


BACK-TO-BACK TOP FLOOR

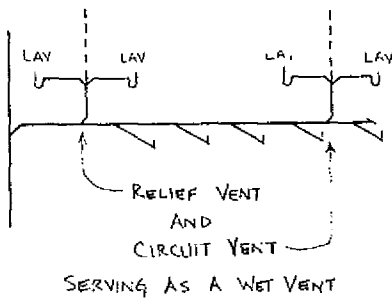
A-82.31 (13) (c) Wet venting - floor outlet fixtures.



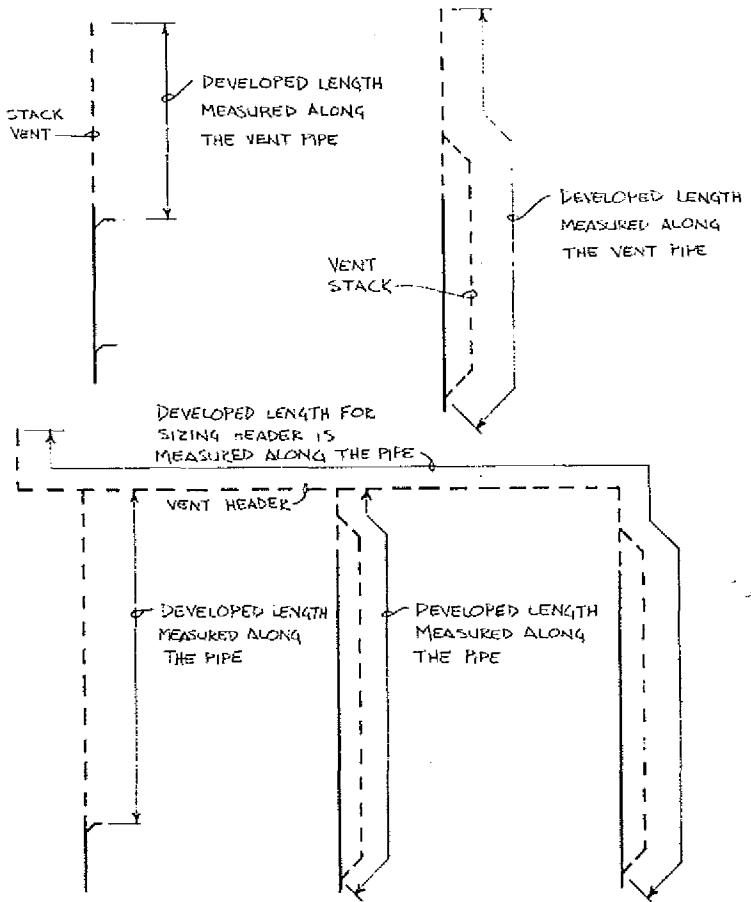
INDIVIDUAL VENT FOR FLOOR OUTLET FIXTURE
SERVING AS A WET VENT



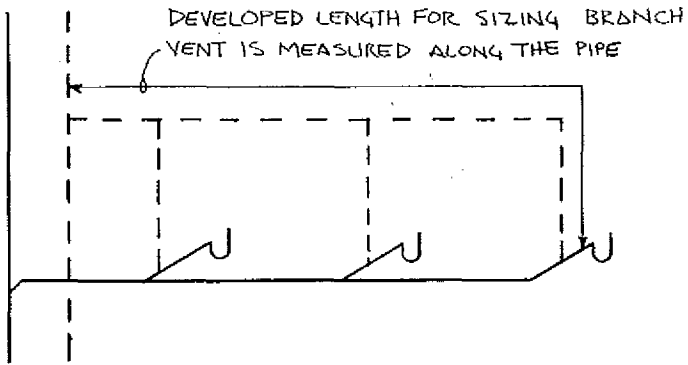
COMMON VENT FOR FLOOR OUTLET FIXTURES
SERVING AS A WET VENT



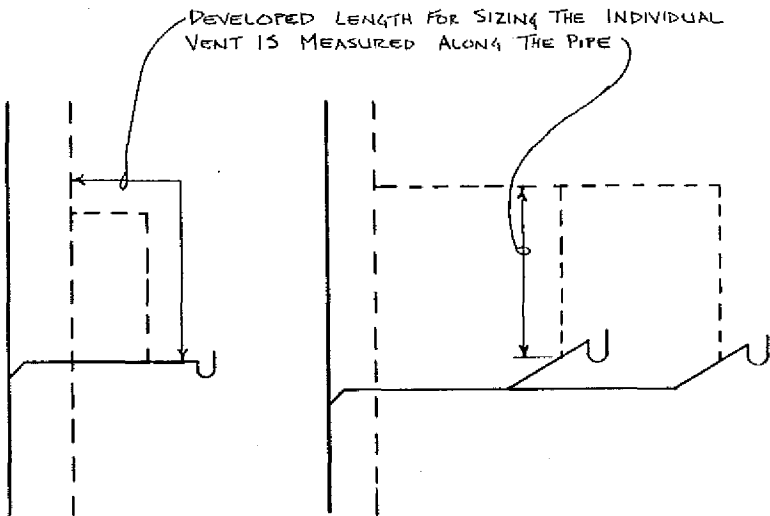
A-82.31 (14) (a) and (b) Sizing vent stacks and stack vents.



A-82.31 (14) (c) Sizing branch vents.

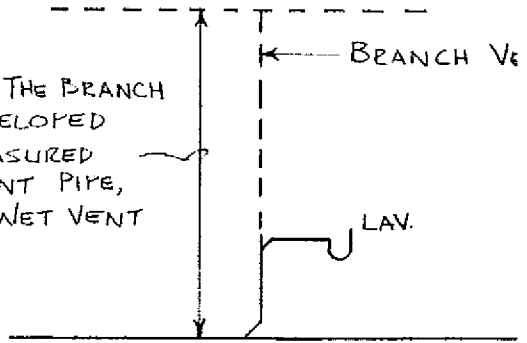


A-82.31 (14) (d) Sizing individual vents.

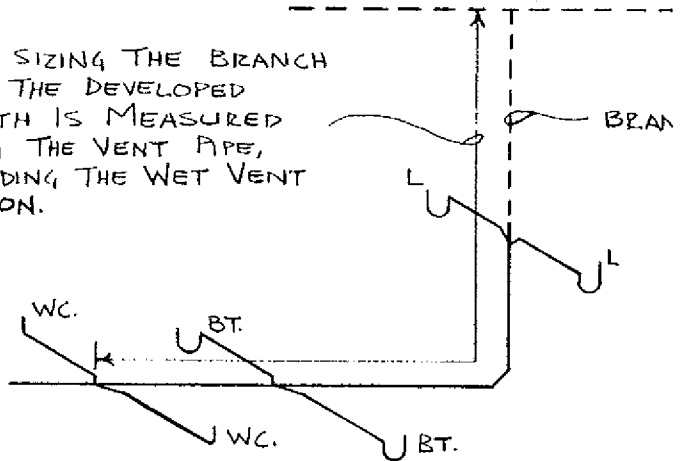


A-82.31 (14) (c) Sizing branch vents serving a wet vent.

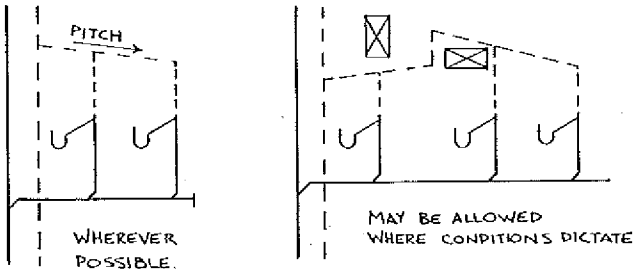
WHEN SIZING THE BRANCH VENT, THE DEVELOPED LENGTH IS MEASURED ALONG THE VENT PIPE, INCLUDING THE WET VENT PORTION.



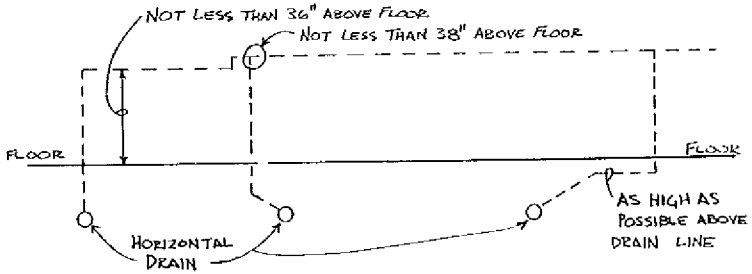
WHEN SIZING THE BRANCH VENT, THE DEVELOPED LENGTH IS MEASURED ALONG THE VENT PIPE, INCLUDING THE WET VENT PORTION.



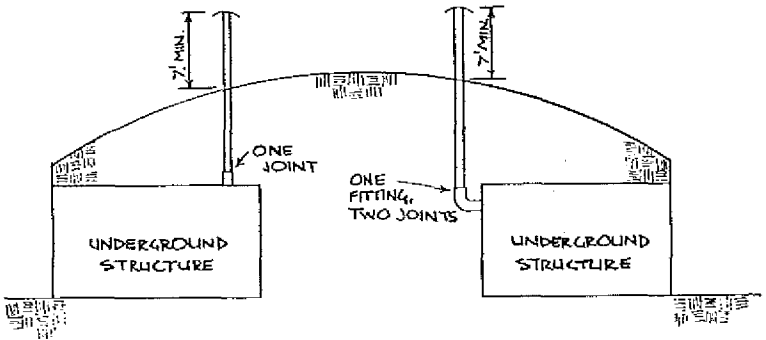
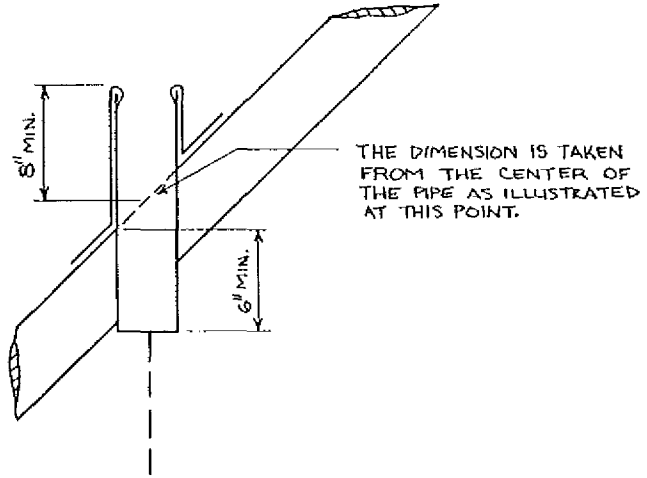
A-82.31 (15) (a) Vent grades and connections.



A-82.31 (15) (b) Vent grades and connections.

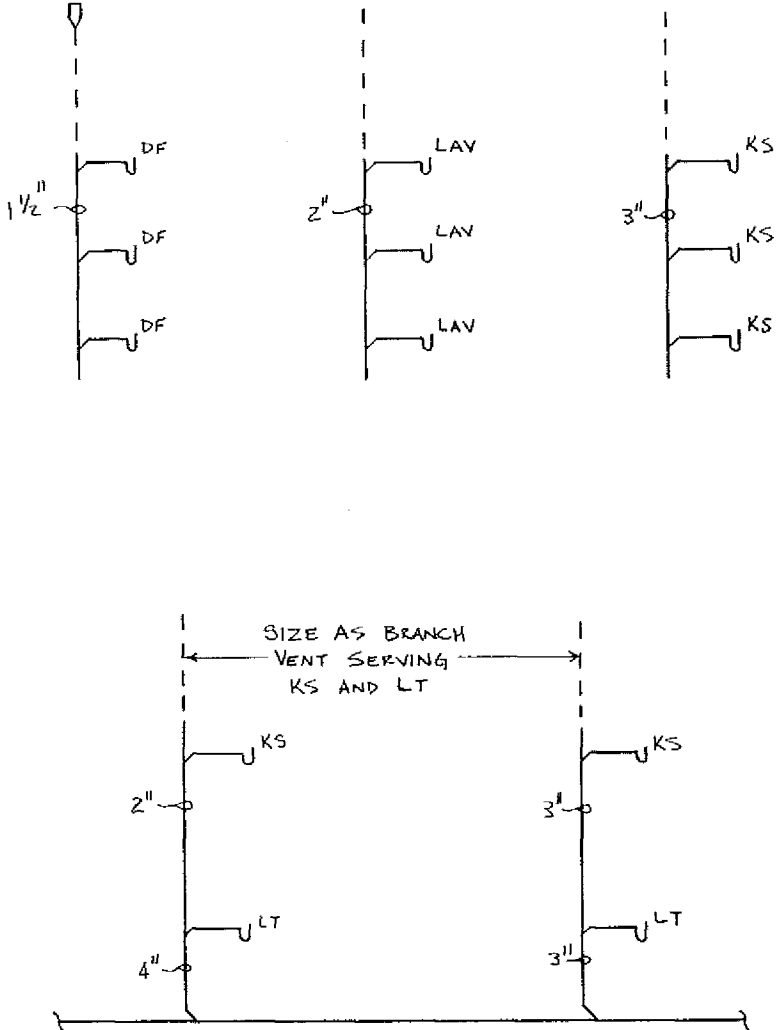


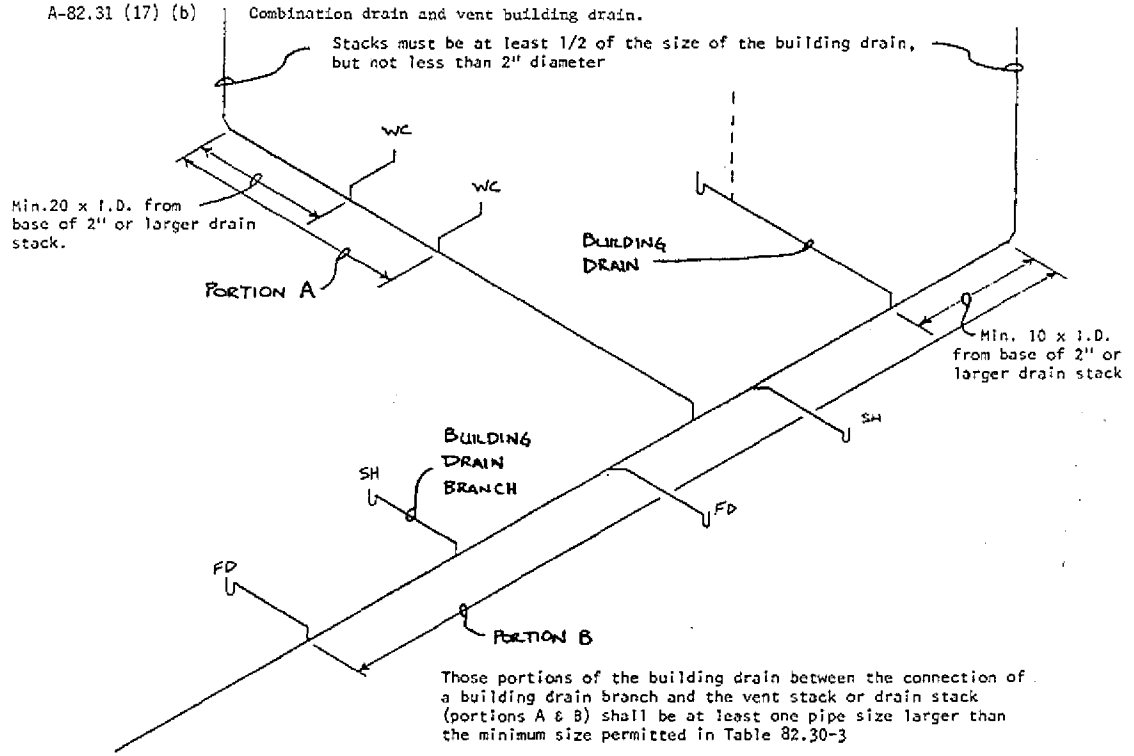
A-82.31 (16) Vent terminals.



VENT TERMINALS FOR UNDERGROUND STRUCTURES

A-82.31 (17) (a) Combination drain and vent stacks.

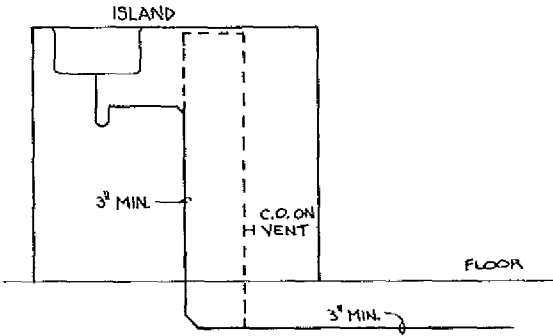
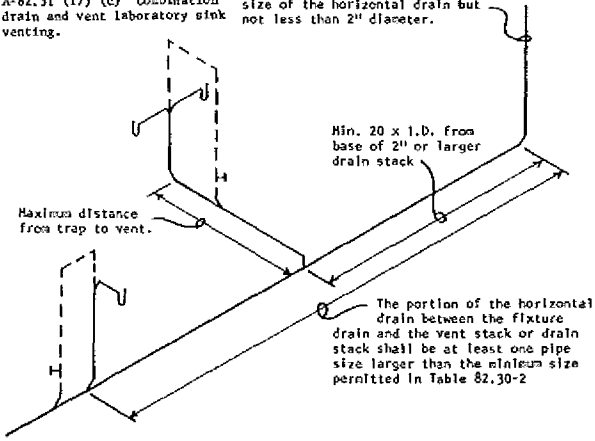




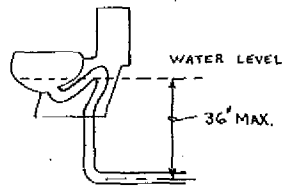
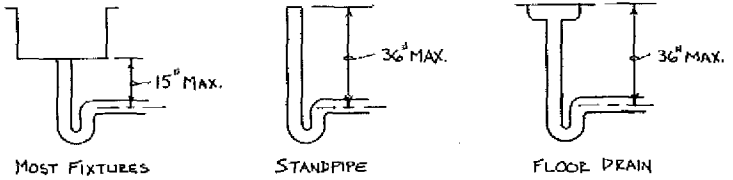
53

A-82.31 (17) (c) Combination drain and vent laboratory sink venting.

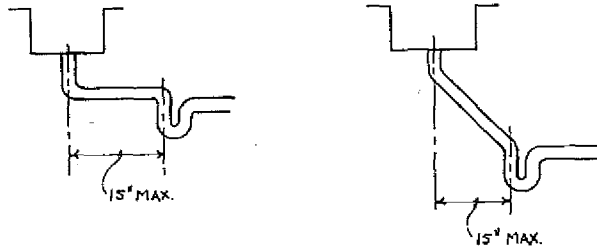
Stack must be at least 1/2 of the size of the horizontal drain but not less than 2" diameter.



A-82.32 (4) (b) Installation of traps.

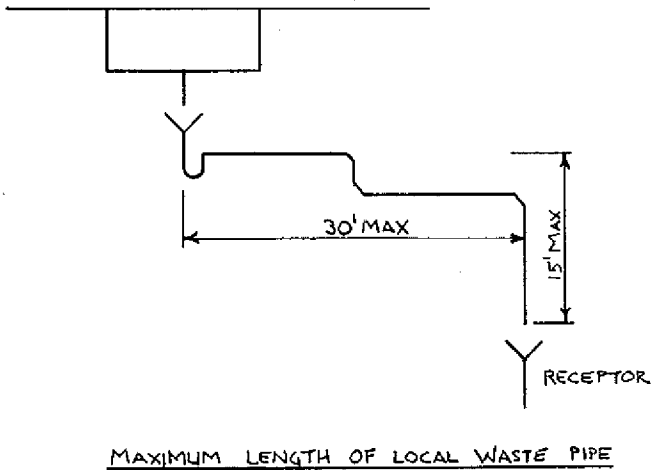
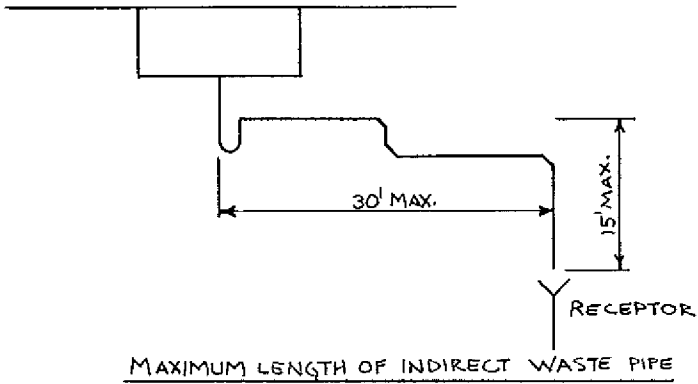


VERTICAL DISTANCE BETWEEN FIXTURE DRAIN OUTLET AND TRAP

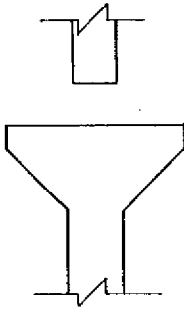


HORIZONTAL DISTANCE BETWEEN FIXTURE DRAIN OUTLET AND TRAP

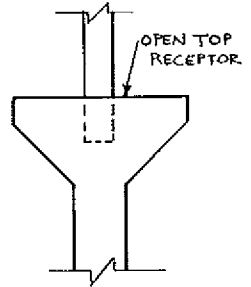
A-82.33 (6) Indirect and local waste piping.



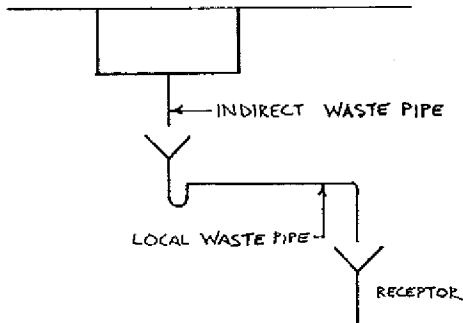
A-82.33 (7) Air-gaps and air-breaks.



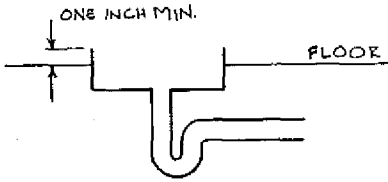
AIR GAP



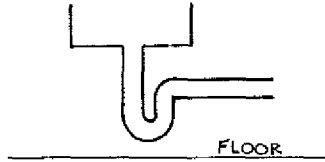
AIR BREAK



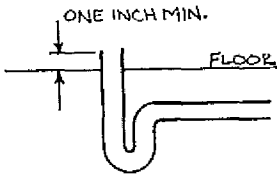
A-82.33 (8) (a) Waste sinks and standpipes.



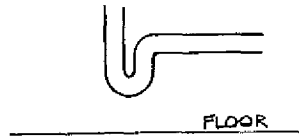
WASTE SINK IN FLOOR



WASTE SINK ABOVE FLOOR

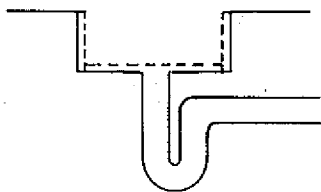


STANDPIPE IN FLOOR

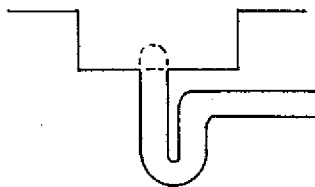


STANDPIPE ABOVE FLOOR

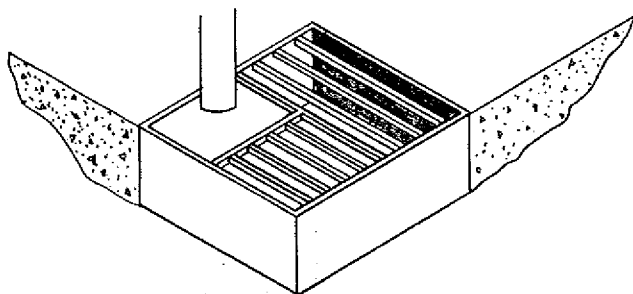
A-82.33 (8) (b) Floor sinks.



FLOOR SINK WITH BASKET

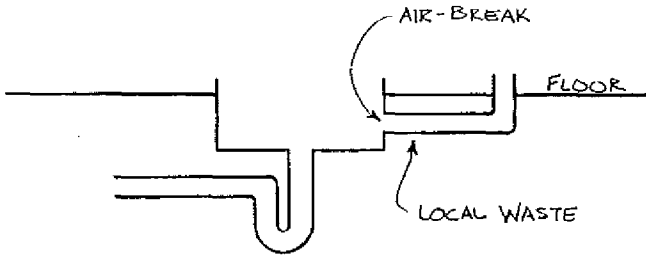


FLOOR SINK WITH DOME STRAINER

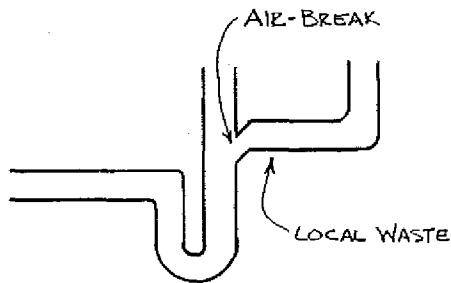


FLOOR SINK WITH GRATE OPENING
FOR AIR GAP

A-82.33 (8) (c) Local waste piping.

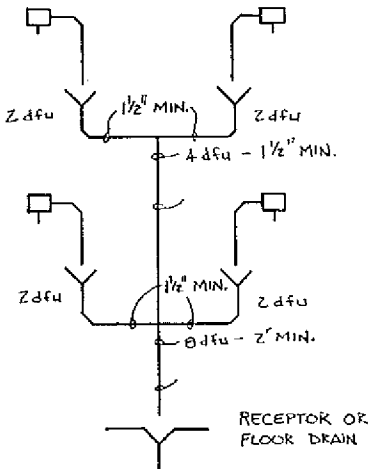
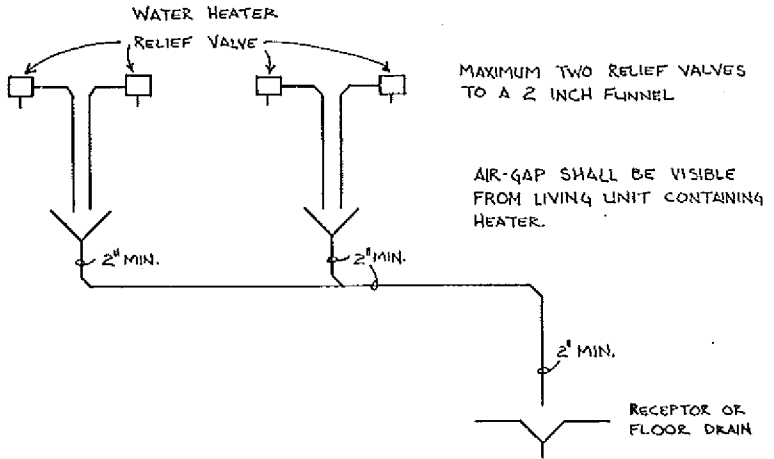


LOCAL WASTE LEADING TO A WASTE SINK,
FLOOR SINK OR FLOOR DRAIN



LOCAL WASTE LEADING TO A STANDPIPE

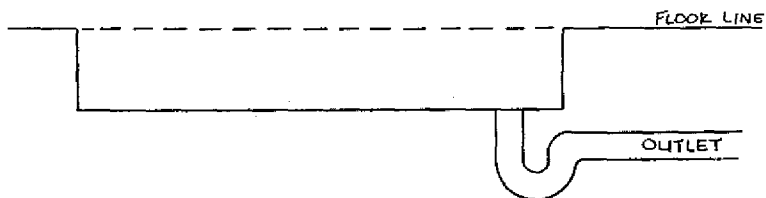
A-82.33 (8) (c) Local waste piping serving water heater relief valves.



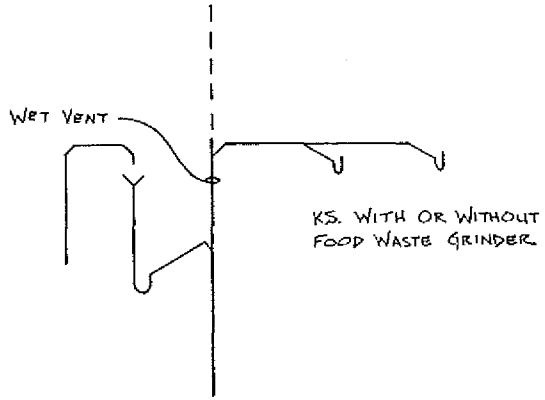
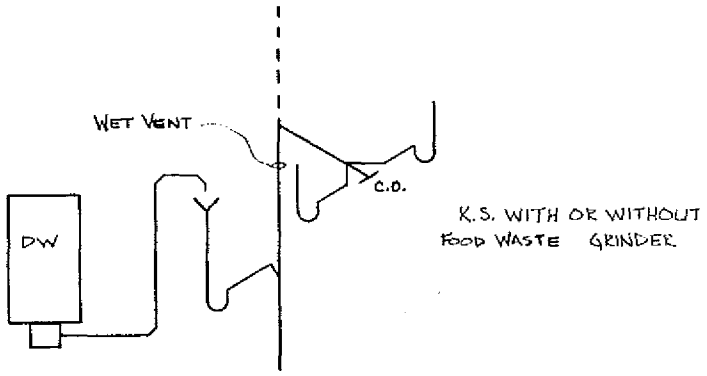
LOCAL WASTE PIPES SERVING WATER HEATER RELIEF VALVES.

A-82.33 (9) (c) Commercial gravity discharge-type clothes washers.

TRENCH TYPE LAUNDEY RECEPTOR

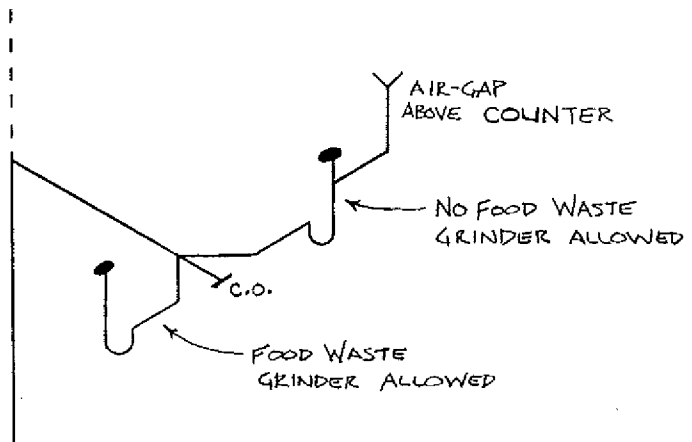
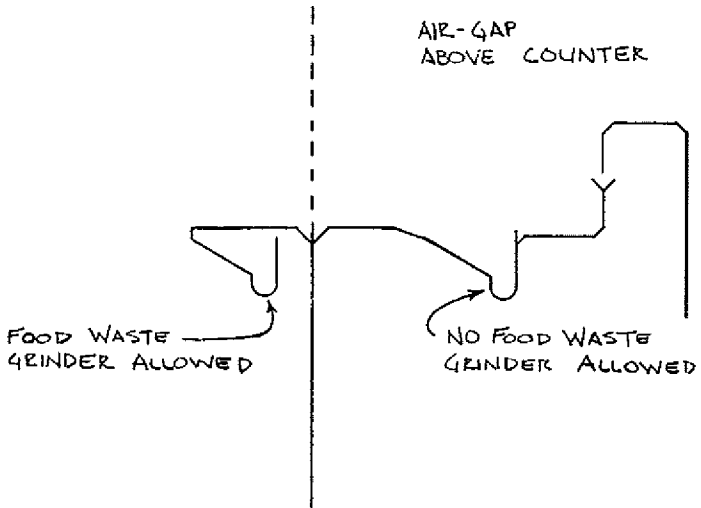


A-82.33 (9) (d) Residential-type dishwashers.

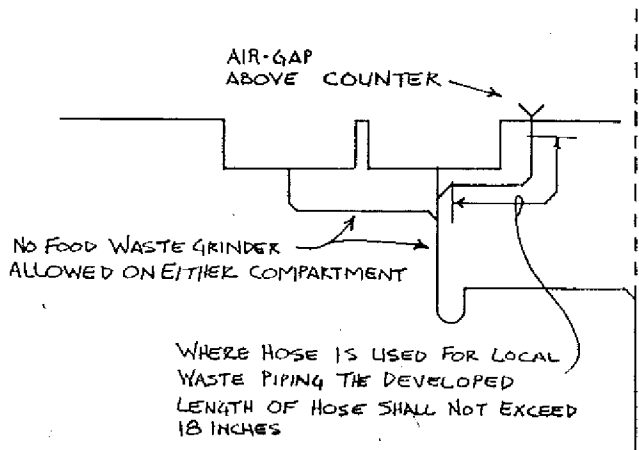
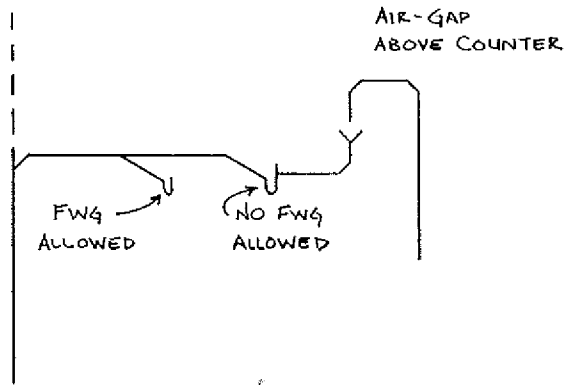


DISHWASHER DISCHARGING TO A STANDPIPE
BELOW THE COUNTER TOP.

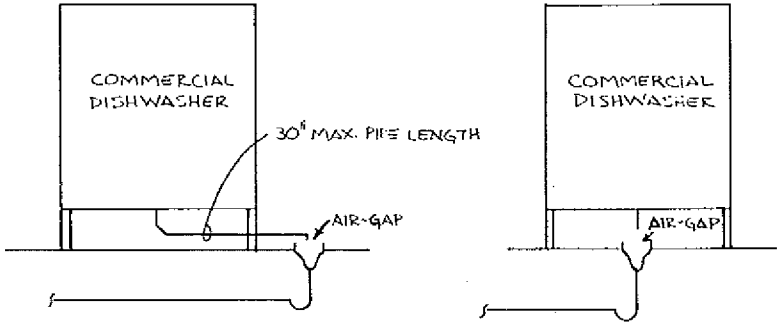
A-82.33 (9) (d) Residential-type dishwashers.



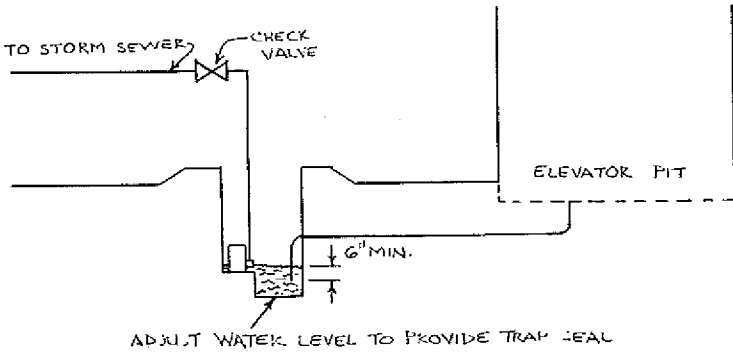
A-82,33 (9) (d) Residential-type dishwashers.



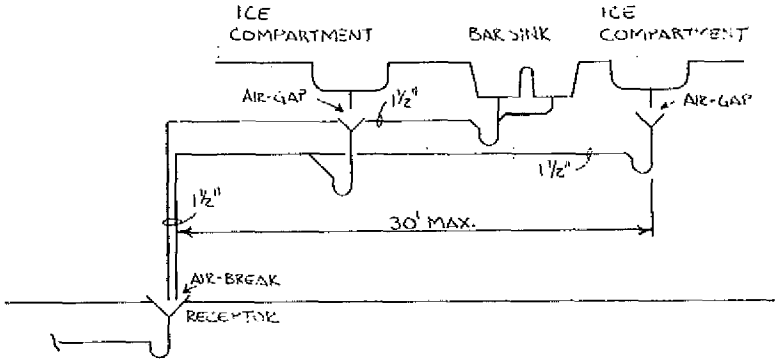
A-82.33 (9) (d) Commercial dishwashers.



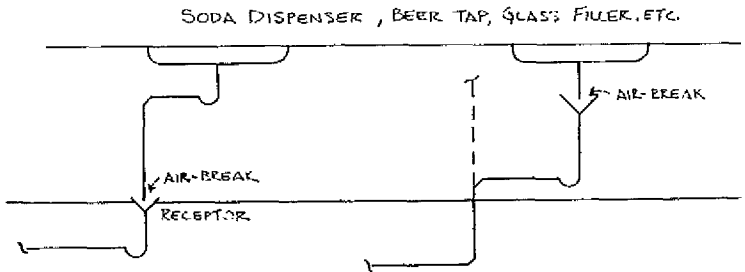
A-82.33 (9) (f) Elevator pit subsoil and floor drains.



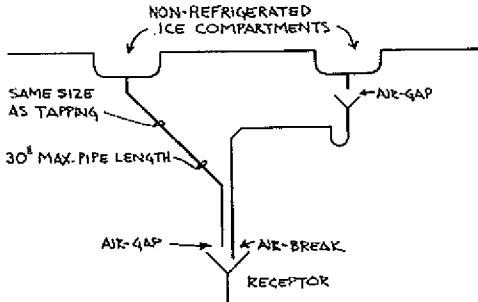
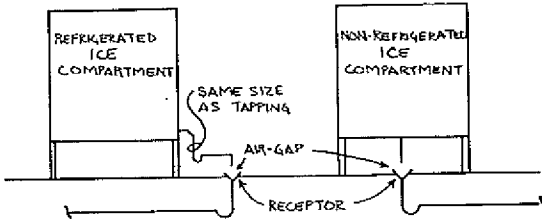
A-82.33 (9) (g) 1. Bar and soda fountain sinks.



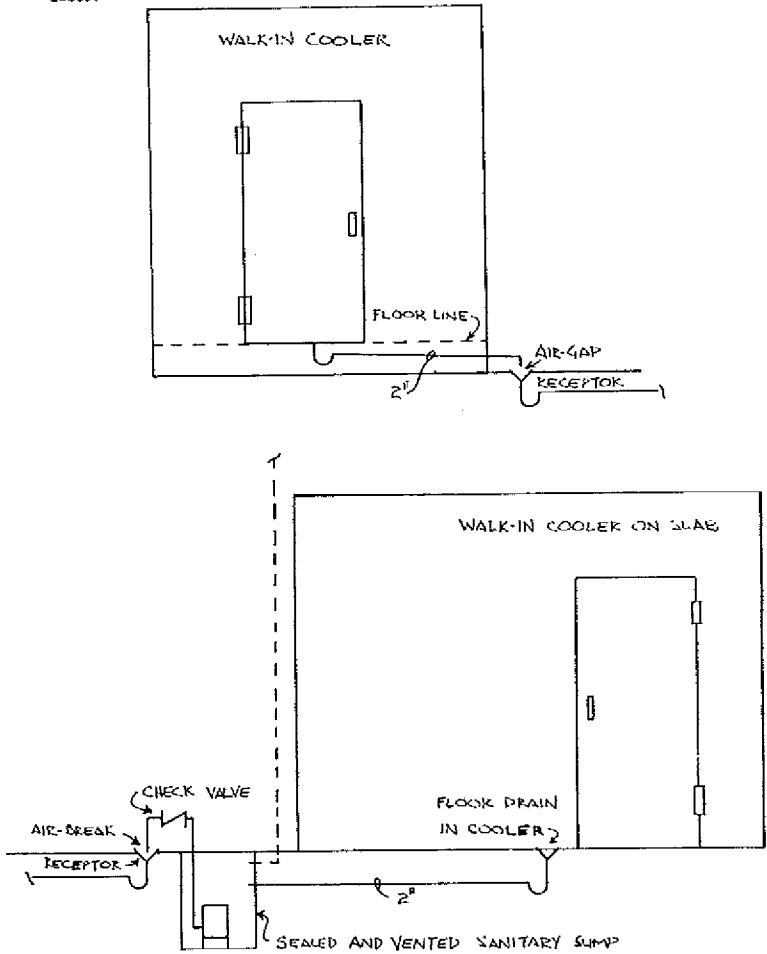
A-82.33 (9) (g) 2.



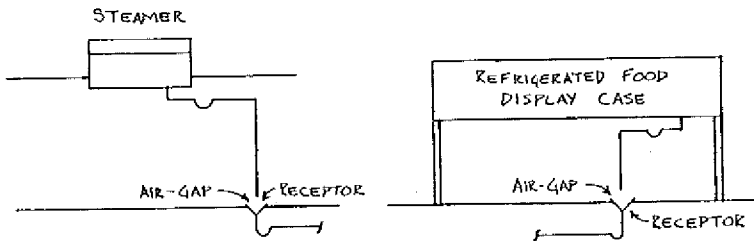
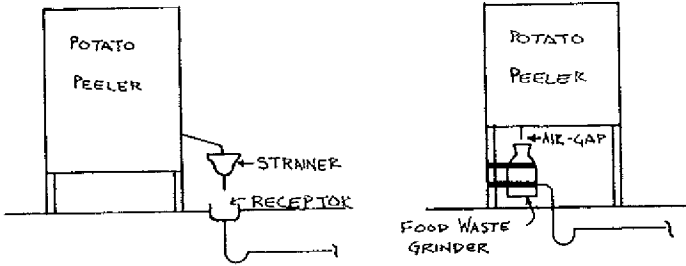
A-82.33 (9) (g) 3. Novelty boxes, ice compartments and ice cream dipper wells.



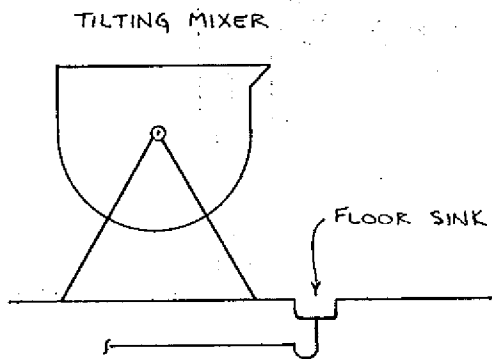
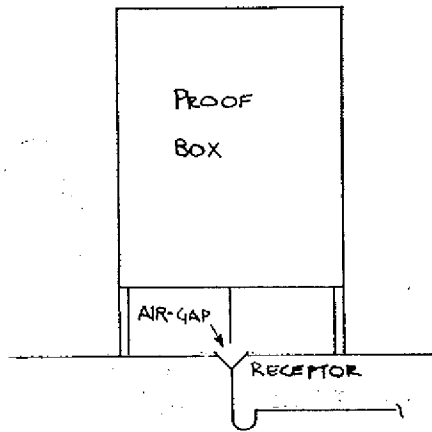
A-82.33 (9) (g) 4. Refrigerated food storage rooms, compartments, and display cases.



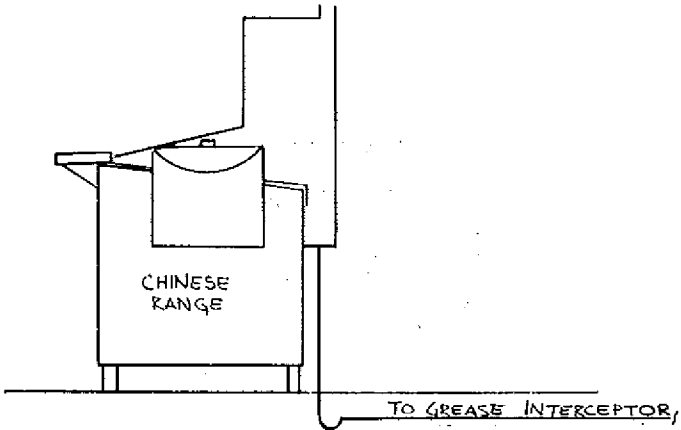
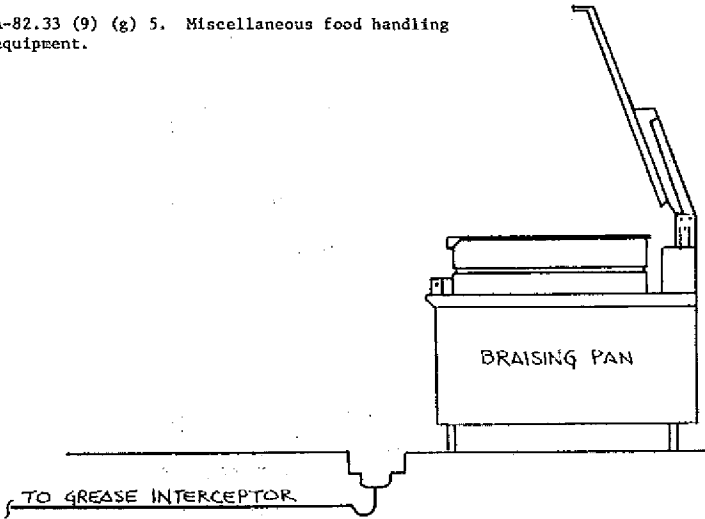
A-82.33 (9) (g) 5. Miscellaneous food handling equipment.



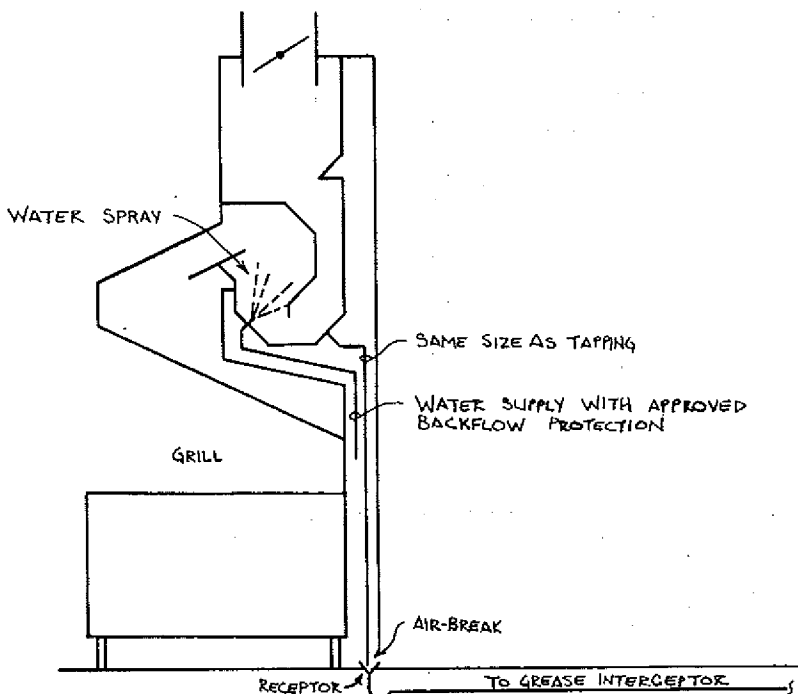
A-82.33 (9) (g) 5. Miscellaneous food handling equipment.



A-82.33 (9) (g) 5. Miscellaneous food handling equipment.



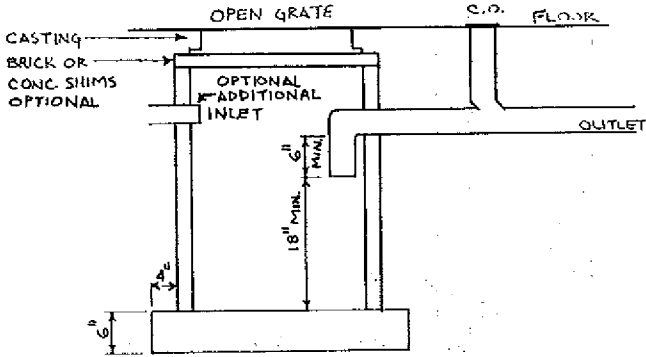
A-82.33 (9) (g) 5. Miscellaneous food handling equipment.



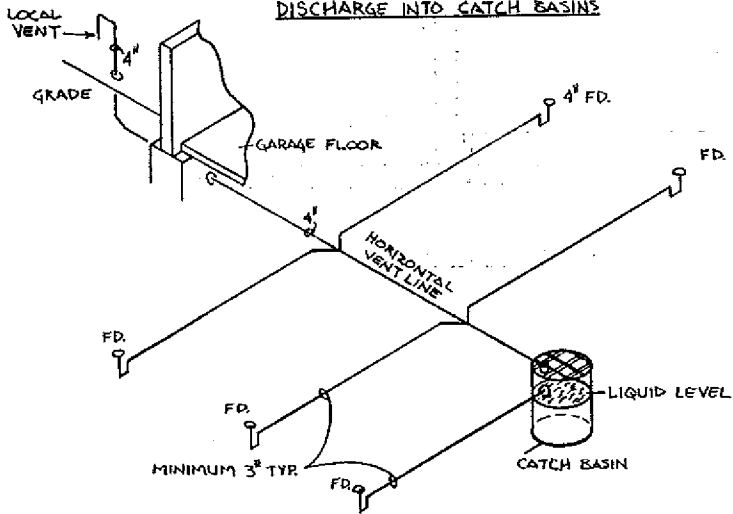
EXHAUST HOOD WASHER

A-82.34 (4) (a)

GARAGE CATCH BASIN



DISCHARGE INTO CATCH BASINS

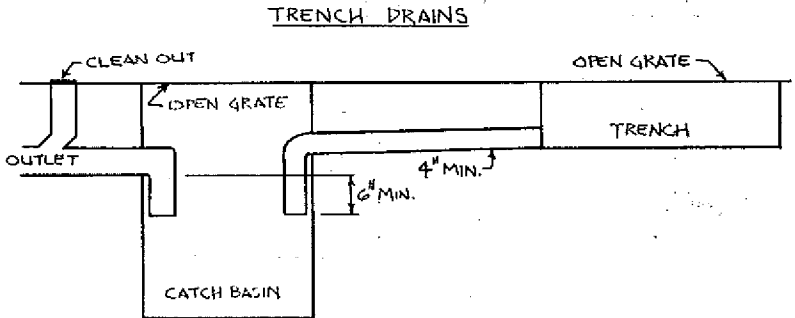


A-82.34 (4) (a)

Capacity of Catch Basins
 (in cubic feet)

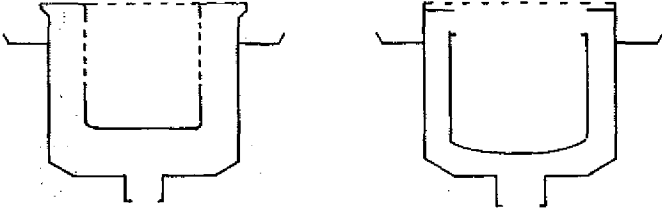
Diameter of Catch Basin	Volume in cubic feet per foot of depth	Diameter of Catch Basin	Volume in cubic feet per foot of depth
36	7.1	45	11.1
37	7.5	46	11.6
38	7.9	47	12.1
39	8.3	48	12.6
40	8.7	54	15.9
41	9.2	60	19.7
42	9.7	66	23.8
43	10.1	72	28.3
44	10.6	84	38.6

A-82.34 (4) (a)



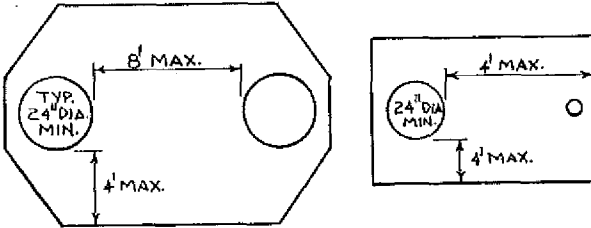
A-82.34 (4) (b)

TYPICAL FLOOR DRAIN WITH SOLID BOTTOM SEDIMENT BASKET

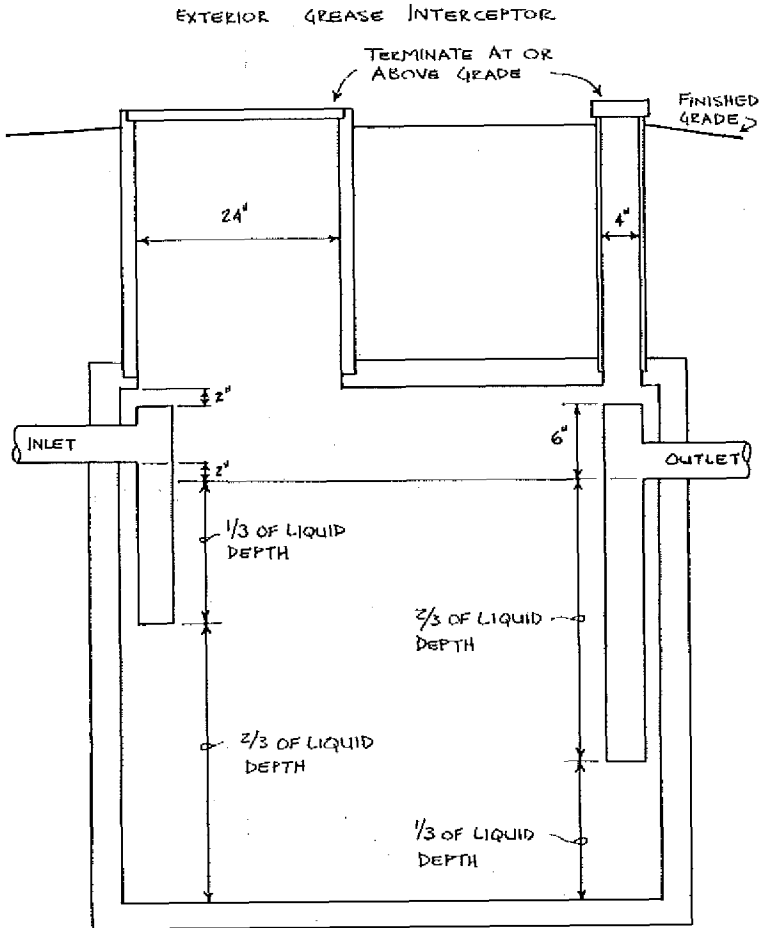


A-82.34 (5) (b)

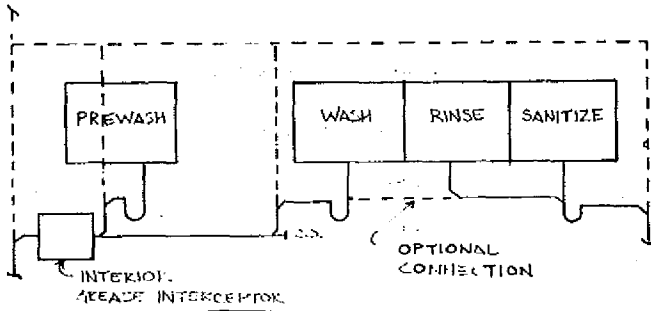
GREASE INTERCEPTOR MANHOLE LOCATION



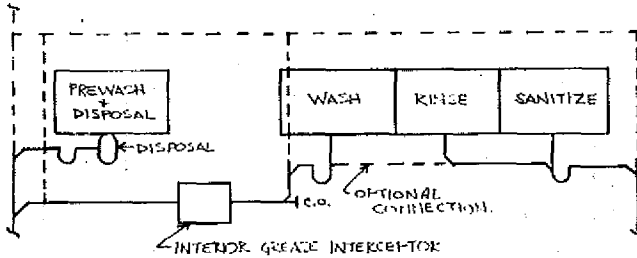
A-82.34 (5) (b)



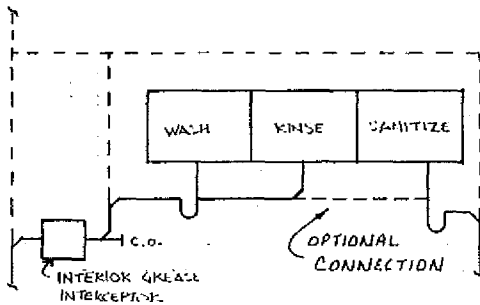
A-82.34 (5) (c) Interior grease interceptors.



PREWASH AND 3 COMPARTMENT SCULLERY SINK

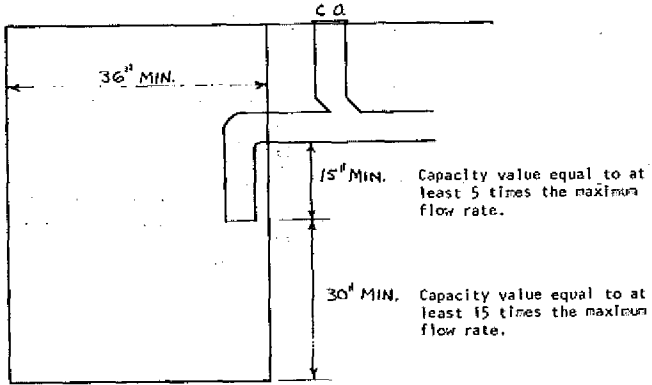


PREWASH + DISPOSAL + 3 COMPARTMENT SCULLERY SINK

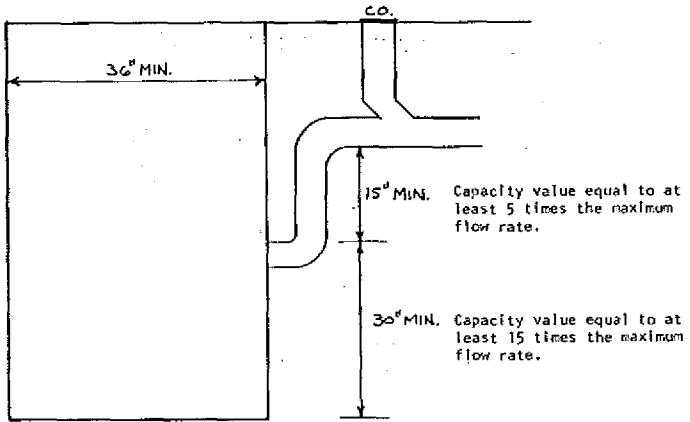


3 COMPARTMENT SCULLERY SINK

A-82.34 (6) Automatic car washes.

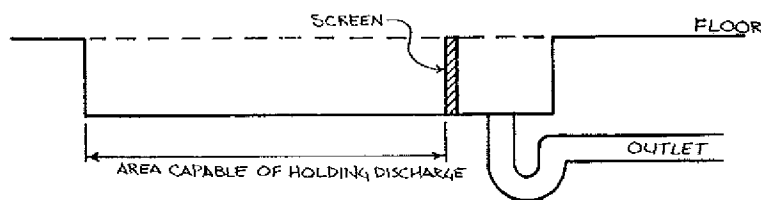
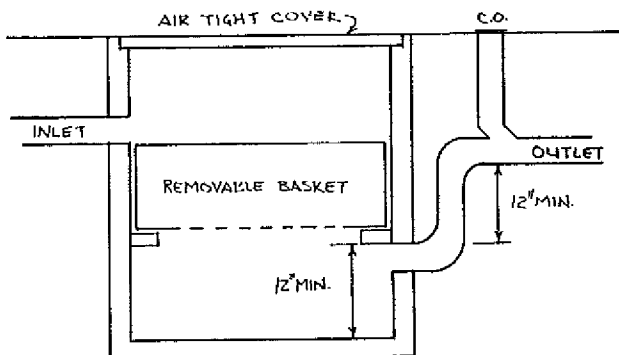


CAR WASH INTERCEPTOR WITH CAST IRON INVERT INSIDE OF BASIN

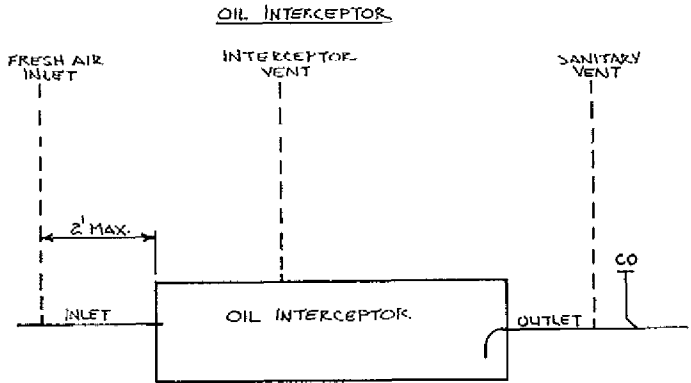


CAR WASH INTERCEPTOR WITH INVERT OUTSIDE OF BASIN

A-82.34 (7) Commercial laundries.

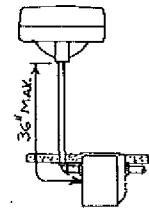
TRENCH TYPE LAUNDRY INTERCEPTORIN-LINE LAUNDRY INTERCEPTOR

A-82.34 (8)

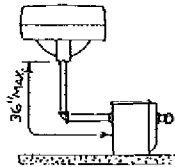


A-82.34 (13)

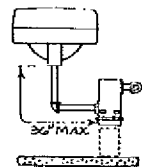
PLASTER AND HEAVY SOLIDS TRAP



FLUSH WITH
FLOOR INSTALLATION

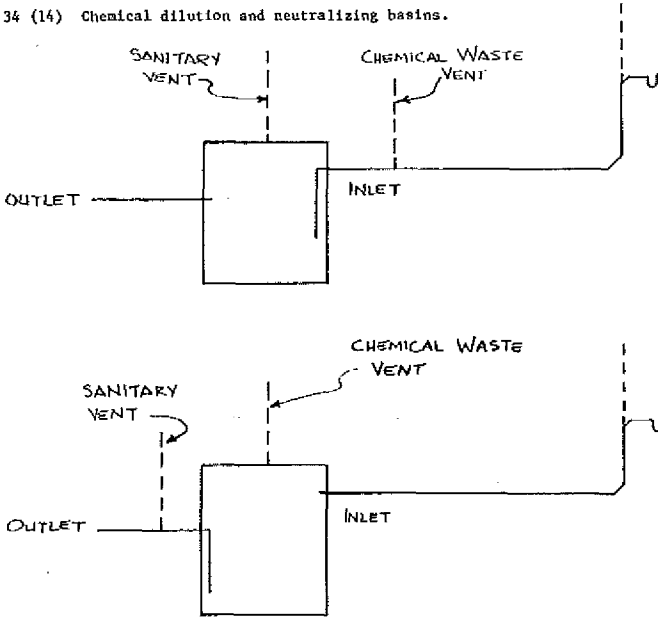


ON THE FLOOR
INSTALLATION



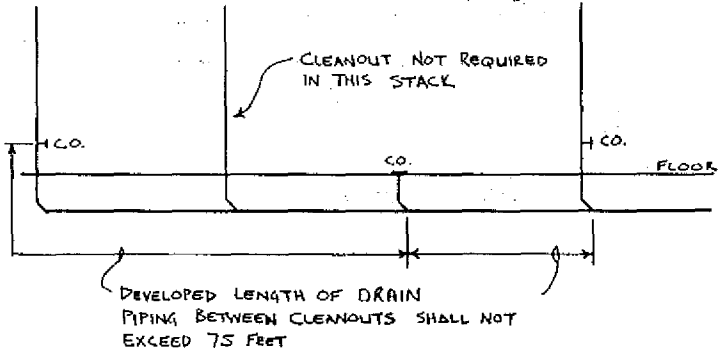
SUSPENDED
TYPE INSTALLATION

A-82.34 (14) Chemical dilution and neutralizing basins.

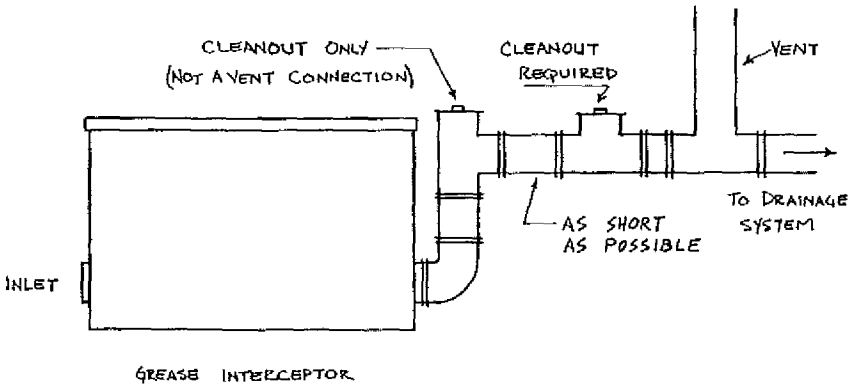
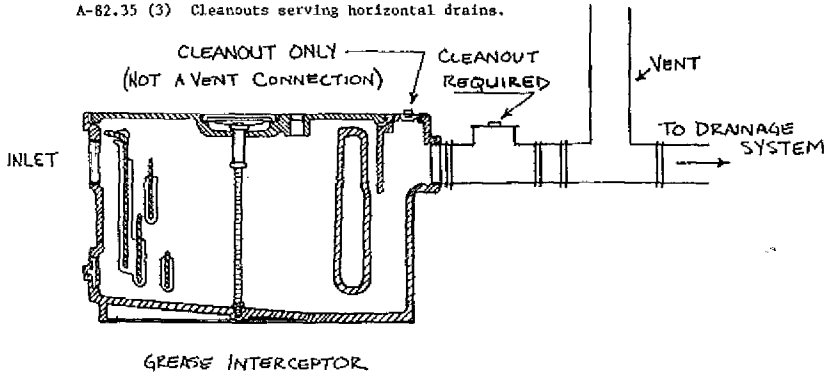


A-82.35 (3)

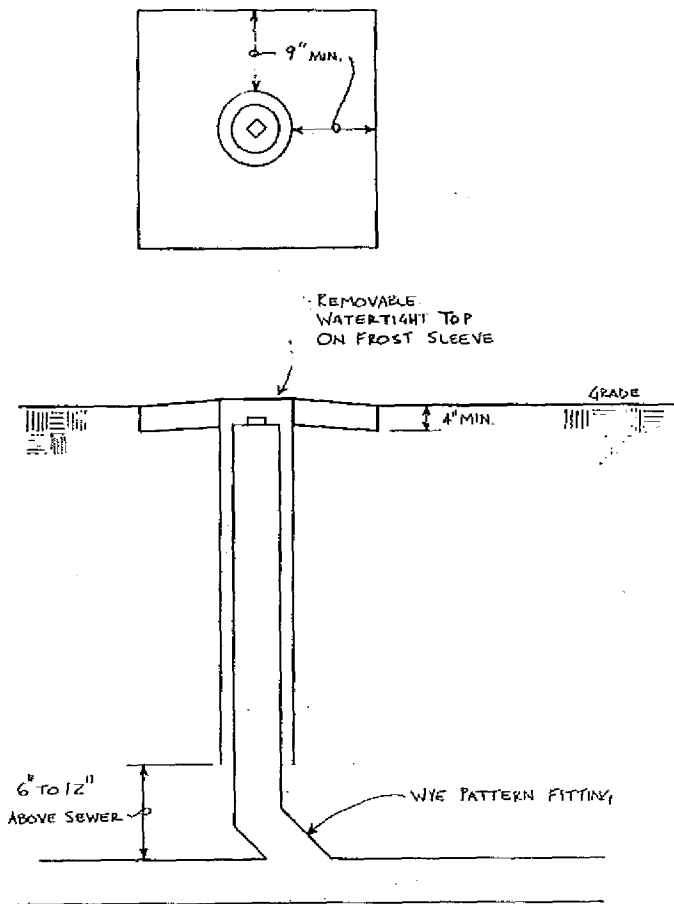
CLEANOUTS SERVING HORIZONTAL
DRAINS WITHIN OR UNDER A BUILDING



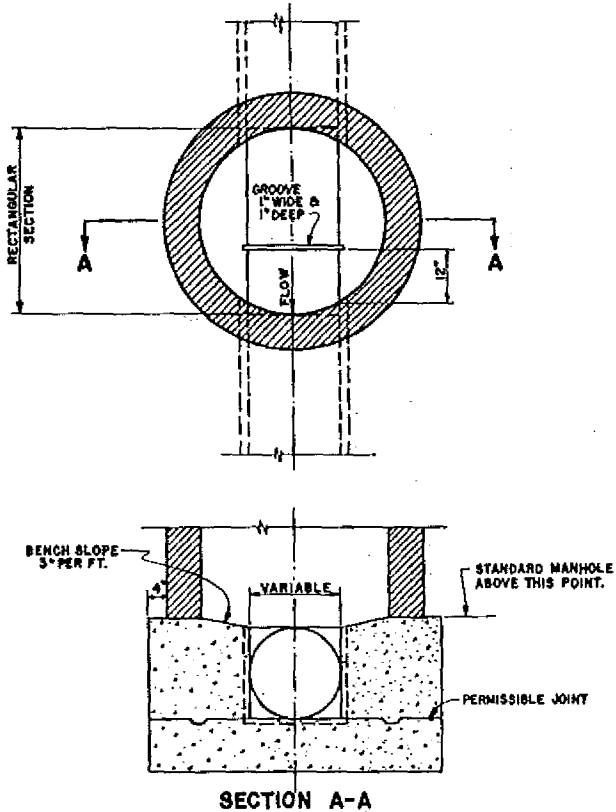
A-82.35 (3) Cleanouts serving horizontal drains.



A-82.34 (5) (a) Cleanout extension to grade.

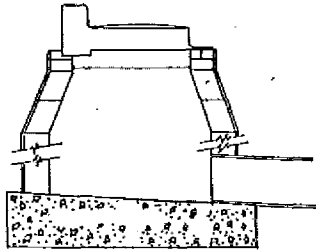


A-82.35 (8)

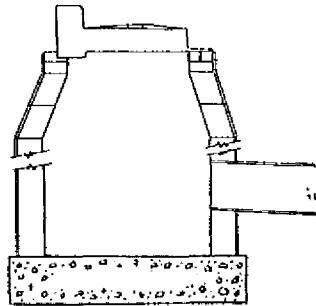


**DETAIL OF
SAMPLING MANHOLE**

A-82.36 (17) Area drain inlets.



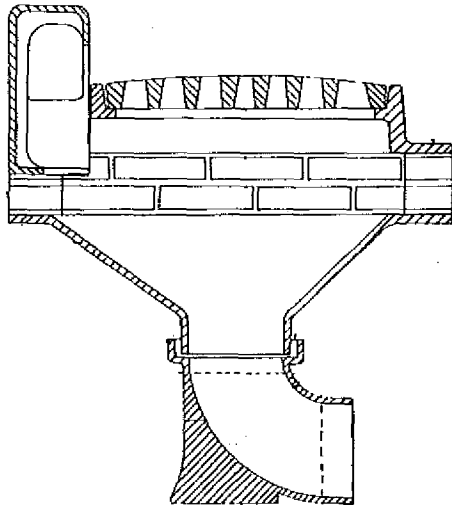
STANDARD STORM WATER
INLET (MASONRY)



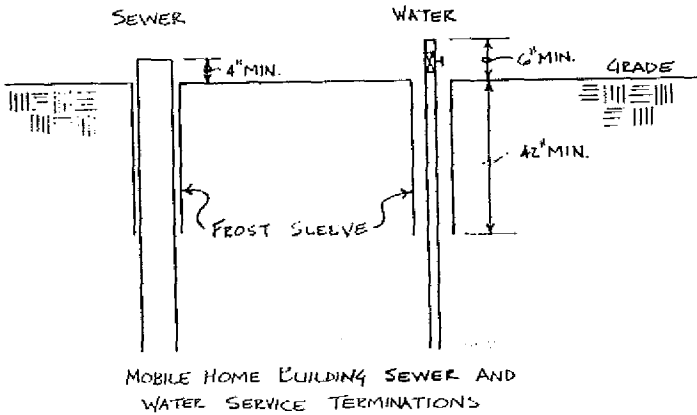
STANDARD STORM WATER
CATCH BASIN (MASONRY)

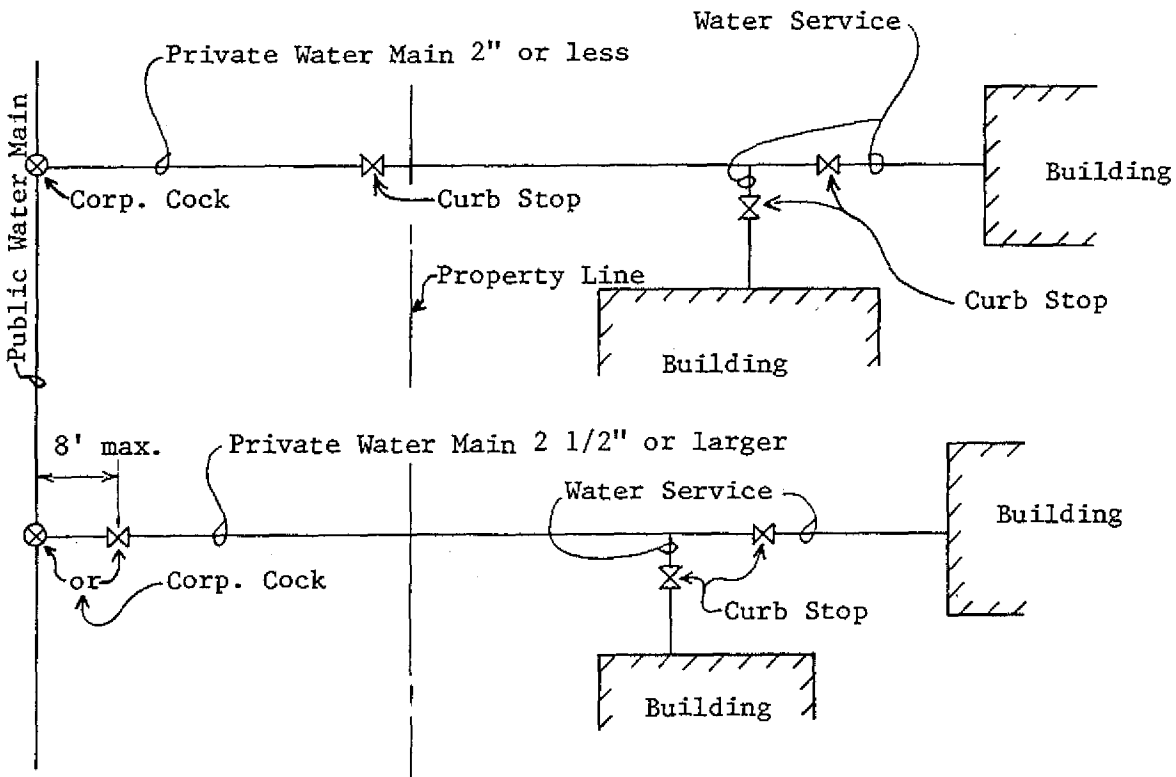
A-82.36 (17) Area
drain inlets.

CAST IRON STORM
WATER INLET

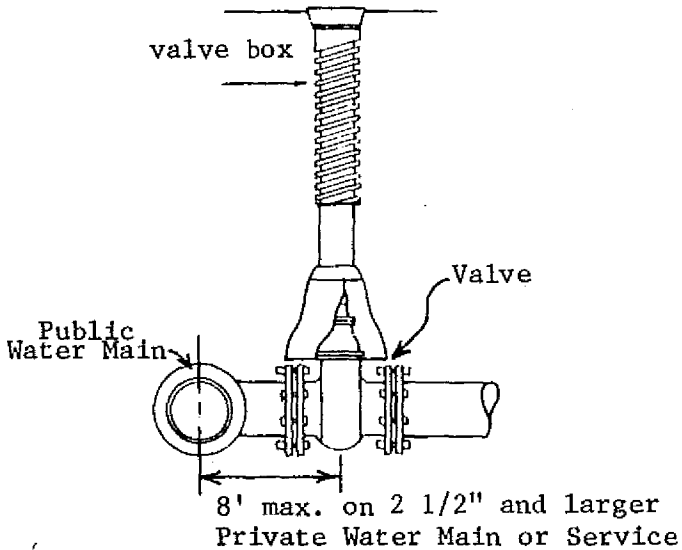
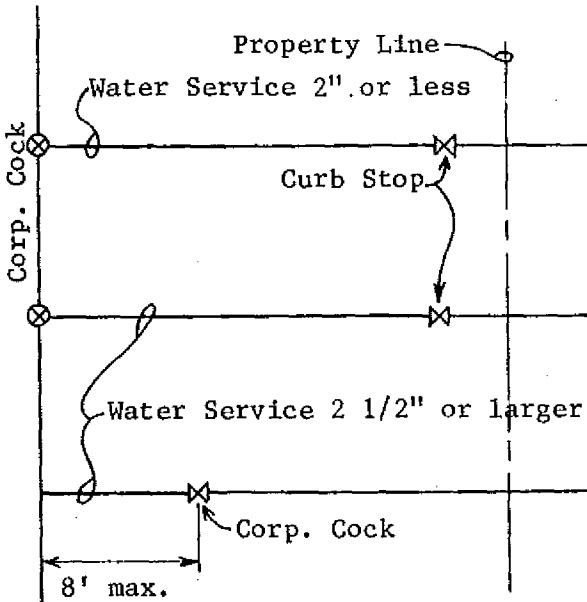


A-82.51 (3) Mobile home sites and parks.

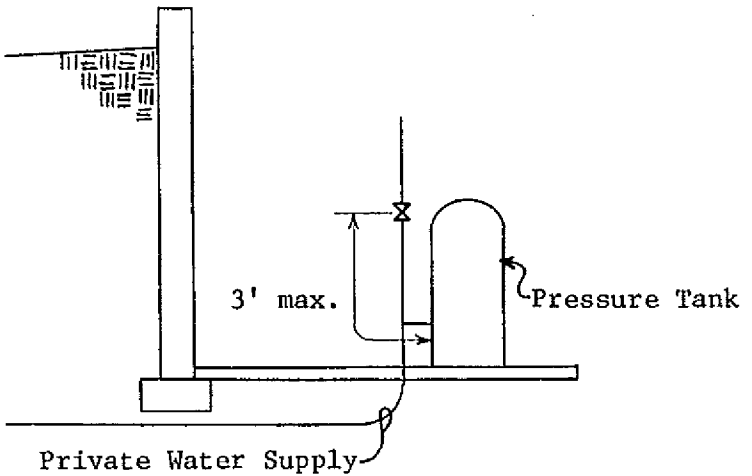
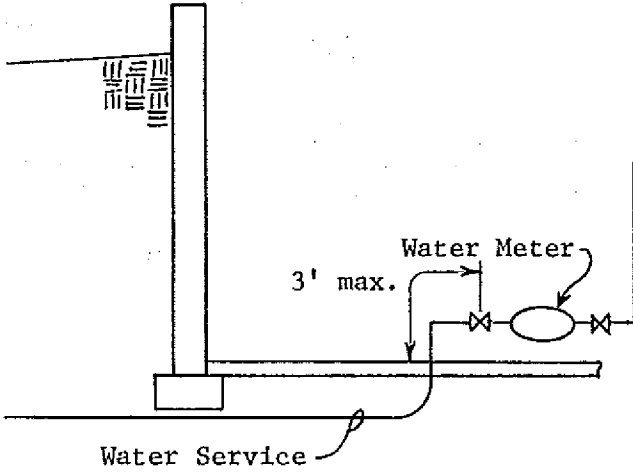




A-82.40 (4) b)



A-82.40 (4) (b)



A-82.40 (7) (a)

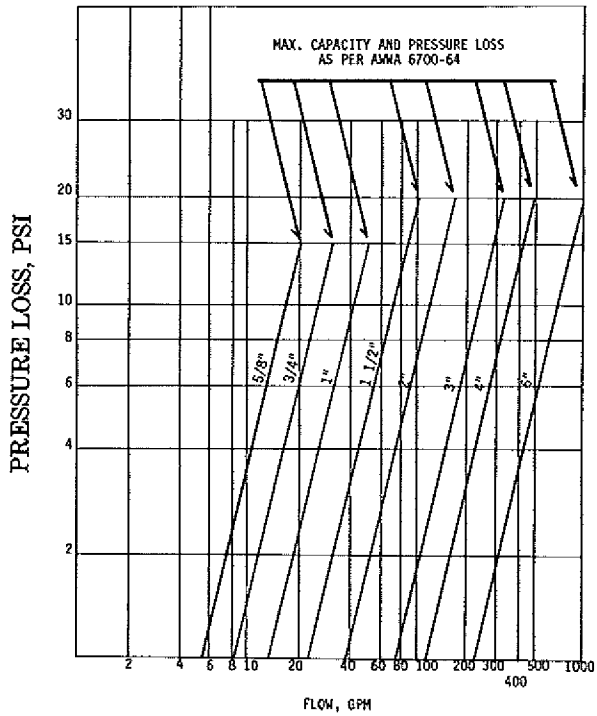
Where equipment such as an instantaneous or tankless water heater, water treatment device, water meter, and backflow preventer is provided in the design, the friction loss in such equipment, corresponding to the GPM demand, should be determined from the manufacturer or other reliable source.

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.

Graph A-82.40 (7)-1

PRESSURE LOSS IN COLD-WATER METERS, DISPLACEMENT TYPE

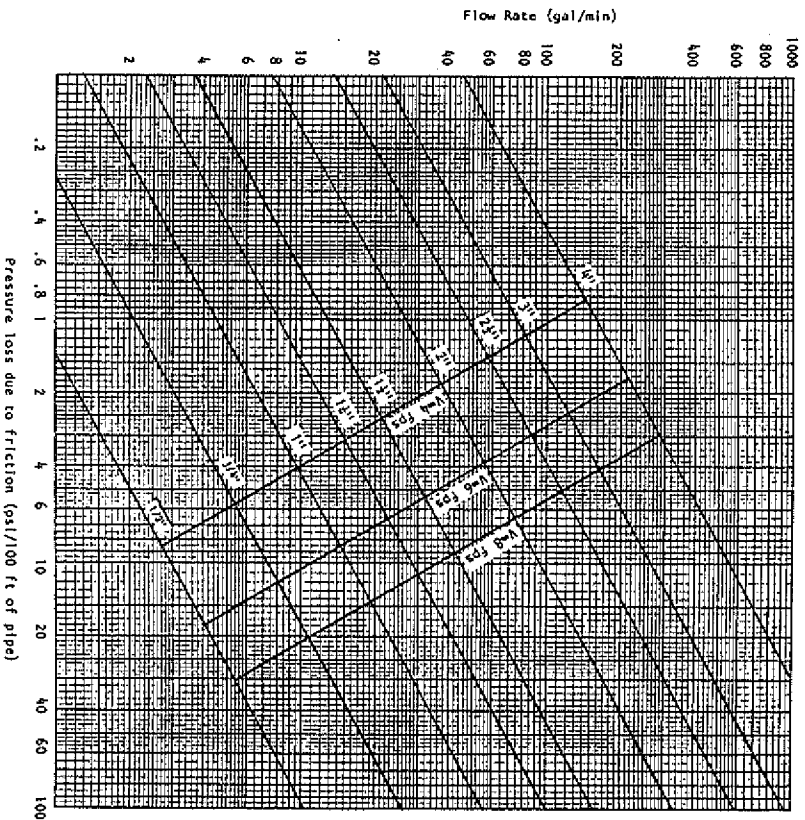


ILHR 82

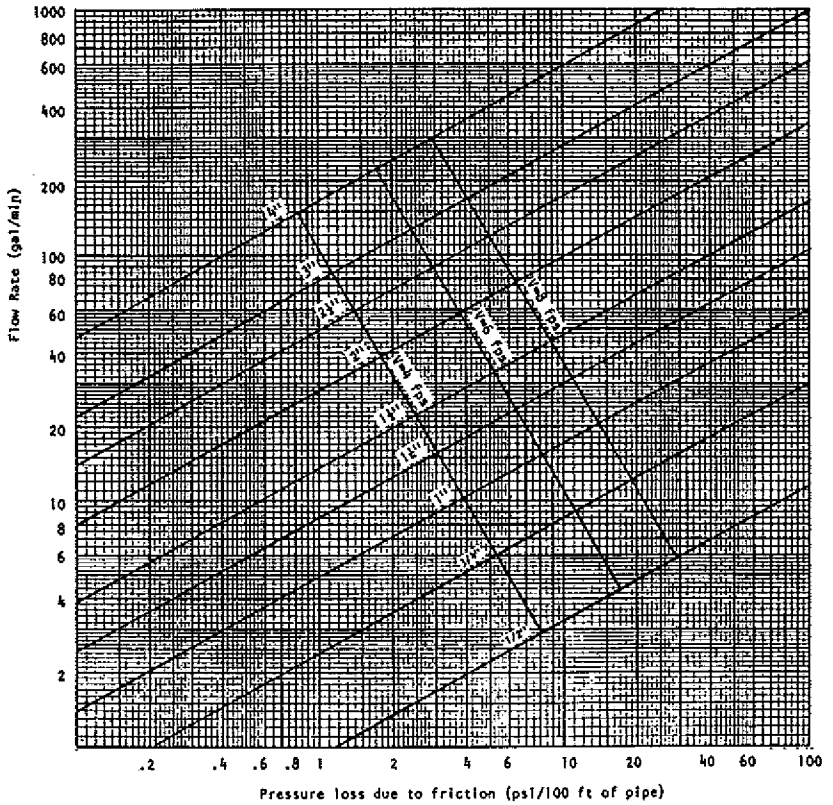
A-82.40 (7) (b)

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

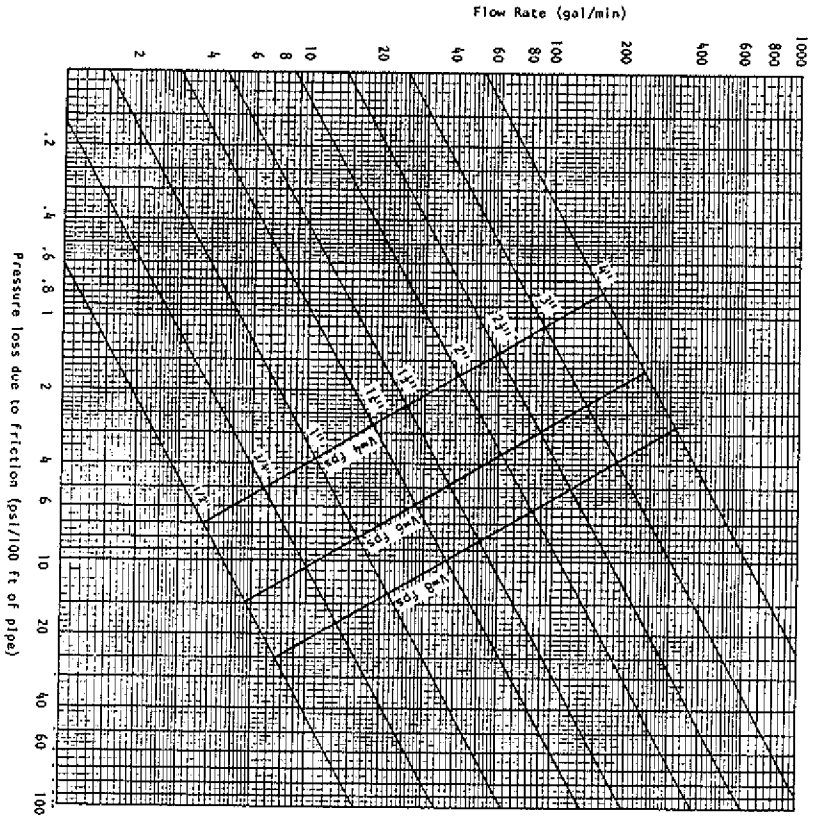
Graph A-82,40 (7)-2



Graph A-82.40 (7)-3



Graph A-82.40 (7)-4



Graph A-82.40 (7)-5

