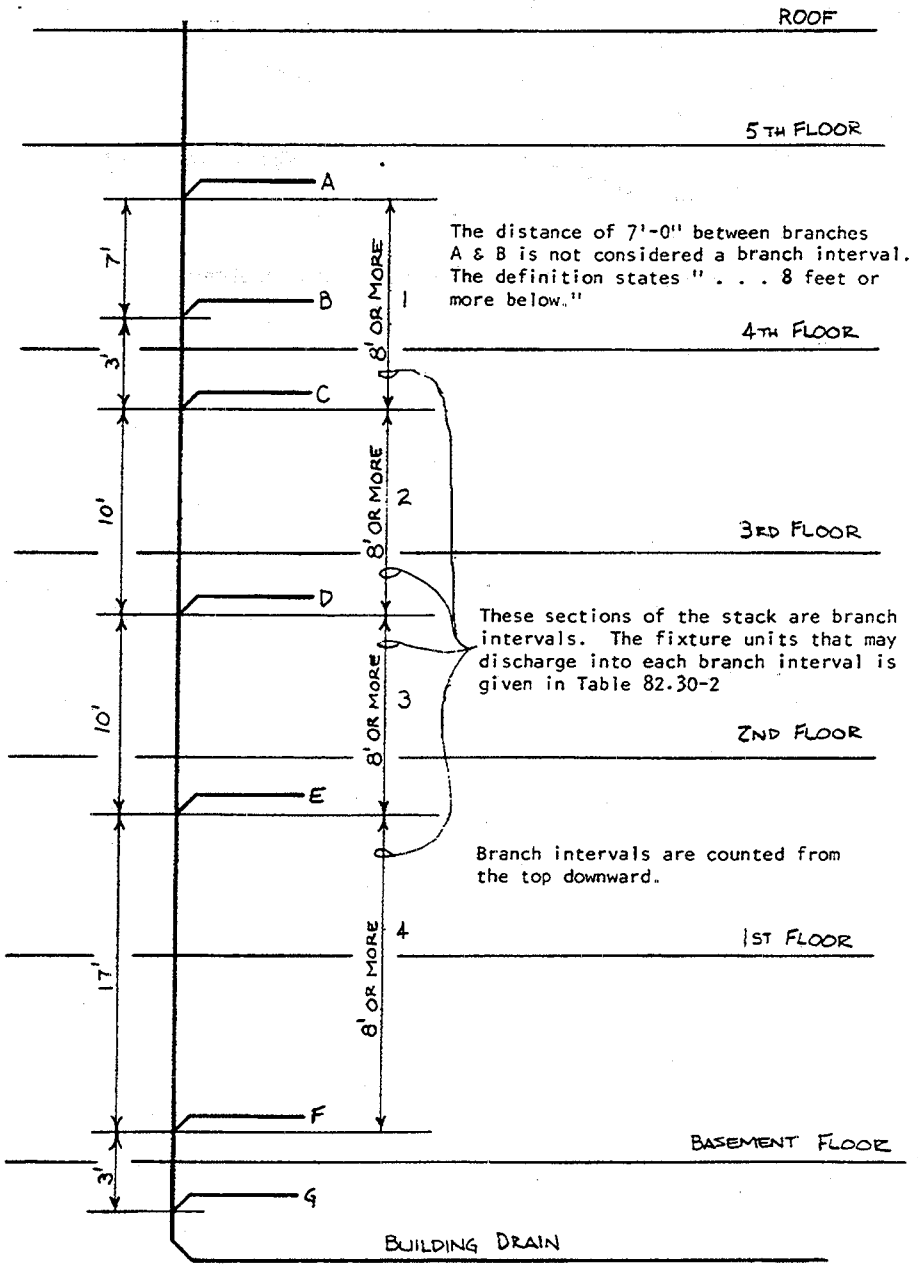
Chapter Comm 82

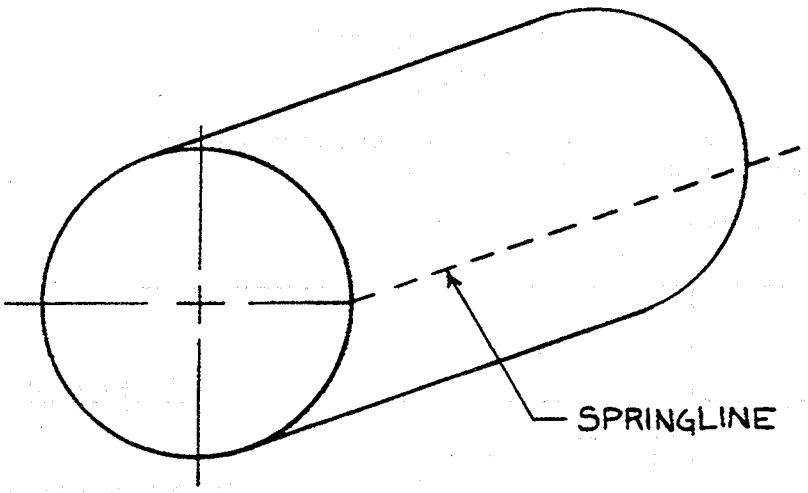
APPENDIX

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 (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. Comm 82.20 (1) (b).

Appleton
100 N. Appleton Street
Appleton, WI 54911–4799
(414) 832–6411

Eau Claire
203 South Farwell Street,
Eau Claire, WI 54701
(715) 839–4947

Green Bay
100 N. Jefferson St., Rm. 403
Green Bay, WI 54301
(414) 448–3295

Greenfield
7325 W. Forest Home Ave.
Greenfield, WI 53220
(414) 543–5500

Janesville
P. O. Box 5005
Janesville, WI 53547–5005
(608) 755–3064

Kenosha
Dept. of Housing
625 52nd St., Rm. 100
Kenosha, WI 53140
(414) 658–4263

Madison
P. O. Box 2984
Madison, WI 53701–2984
(608) 266–4568

Milwaukee
Municipal Bldg., Rm. 1017
841 N. Broadway Street
Milwaukee, WI 53202
(414) 286–3364

Oshkosh
215 Church Ave.
Oshkosh, WI 54901
(414) 236–5052

Racine
730 Washington Ave.
Racine, WI 53403
(414) 636–9164

Sheboygan
City Hall – 3rd Floor
828 Center Ave.
Sheboygan, WI 53081
(414) 459–3479

Two Rivers
P. O. Box 87
Two Rivers, WI 54241
(414) 793–5580

A–82.20 (4) PLANS AND SPECIFICATIONS. The following is a list of water quality management agencies and the areas they serve.

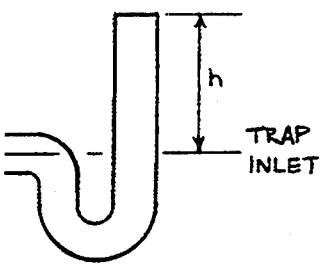
AGENCY	AREAS SERVED
East Central Wisconsin Regional Planning Commission 132 Main Street Menasha, WI 54952 (414) 751–4770	Counties of Menominee, Shawano, Waupaca, Outagamie, Waushara, Marquette, Green Lake, Winnebago, Calumet, Fond du Lac
Dane County Regional Planning Commission 217 South Hamilton, Room 403 Madison, WI 53703 (608) 266–4137	County of Dane
Brown County Planning Commission 100 N. Jefferson Street, Room 608 Green Bay, WI 54301 (414) 448–3400	County of Brown
Southeastern Wisconsin Regional Planning Commission 916 North East Avenue P. O. Box 1607 Waukesha, WI 53187–1607 (414) 547–6721	Counties of Washington, Ozaukee, Waukesha, Milwaukee, Walworth, Racine, Kenosha
West Central Wisconsin Regional Planning Commission 800 Wisconsin Street, Mailbox 9 Eau Claire, WI 54703–3606 (715) 836–2918	Cities of Eau Claire, Altoona, Chippewa Falls Towns of Hallie, Seymour, Union, Washington
St. Croix County Planning Office 1101 Carmichael Road Hudson, WI 54016 (715) 286–4673	City of Hudson Towns of Hudson, St. Joseph, Troy Village of North Hudson
Bay–Lake Regional Planning Commission 211 N. Broadway, Suite 211 Green Bay, WI 54303 (414) 448–2820	Cities of Marinette, Kohler, Sheboygan, Sheboygan Falls, Sturgeon Bay Towns of Peshtigo, Porterfield, Mosel, Wilson, Lima, Herman, Sheboygan, Sheboygan Falls

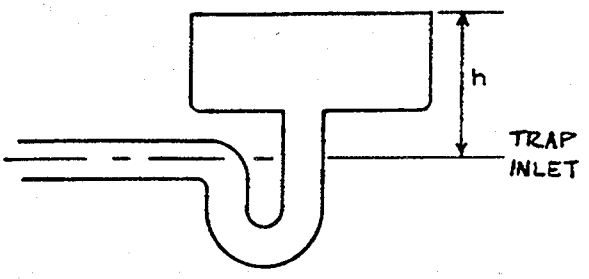
AGENCY (continued)	AREAS SERVED
Rock County Planning Agency 51 South Main Street Janesville, WI 53545 (608) 757–5587	Cities of Janesville, Beloit, Edgerton, Evansville, Milton Towns of Beloit, Harmony, Rock, Janesville, LaPrairie, Turtle
Office of City Engineer 400 LaCrosse Street LaCrosse, WI 54601 (608) 789–7505	Cities of LaCrosse, Onalaska Towns of Onalaska, Shelby, Medary, Campbell
Portage County Planning Department 1516 Church Street Stevens Point, WI 54481 (715) 346–1334	City of Stevens Point Towns of Hull, Plover, Linwood Villages of Whiting, Plover, Park Ridge
Marathon County Planning Department 210 River Drive Wausau, WI 54403 (715) 847–5227	Cities of Wausau, Schofield Towns of Weston, Stettin, Rib Mountain, Kronenwetter Village of Rothschild
Wood County Planning 400 Market Street Wisconsin Rapids, WI 54495 (715) 421–8466	City of Wisconsin Rapids Towns of Grand Rapids, Rudolph, Sigel, Seneca, Grant Village of Biron
Dunn County Land Conservation 390 Red Cedar Street Menomonie, WI 54751 (715) 232–1520	City of Menomonie

A–82.30 (4) SIZE OF DRAIN PIPING. The following tables list 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.

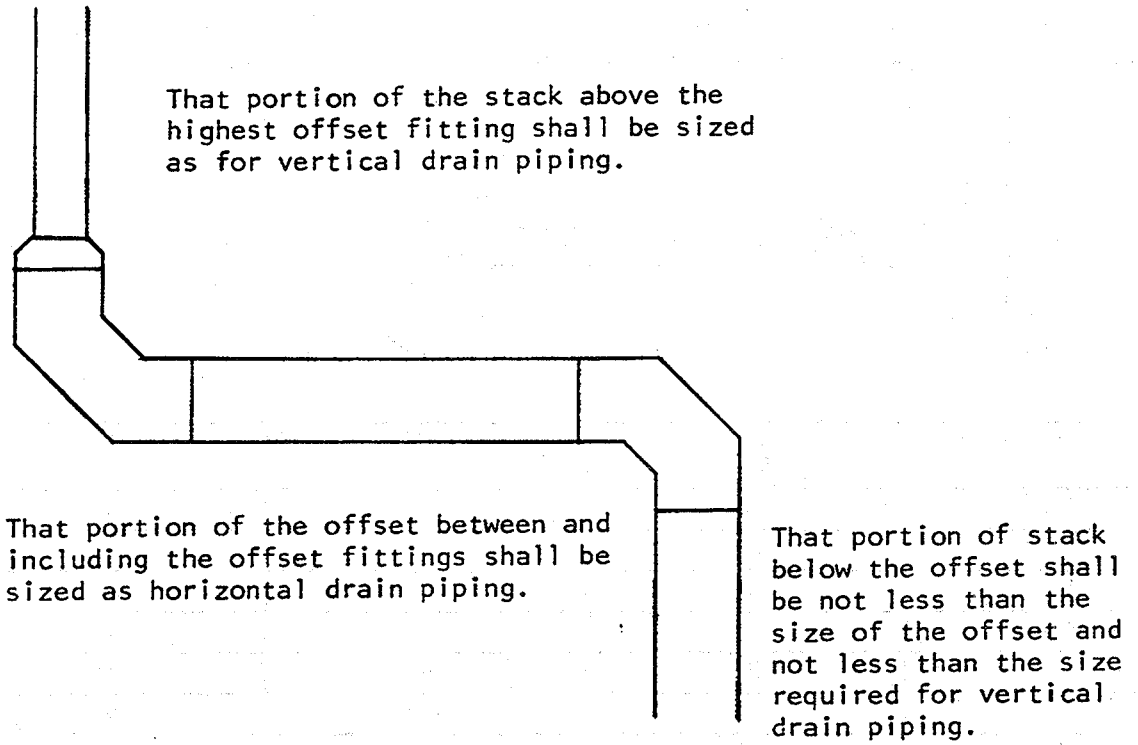
Note: The department recommends an individual 4–inch diameter minimum trap and drain pipe for a commercial type dishwasher.

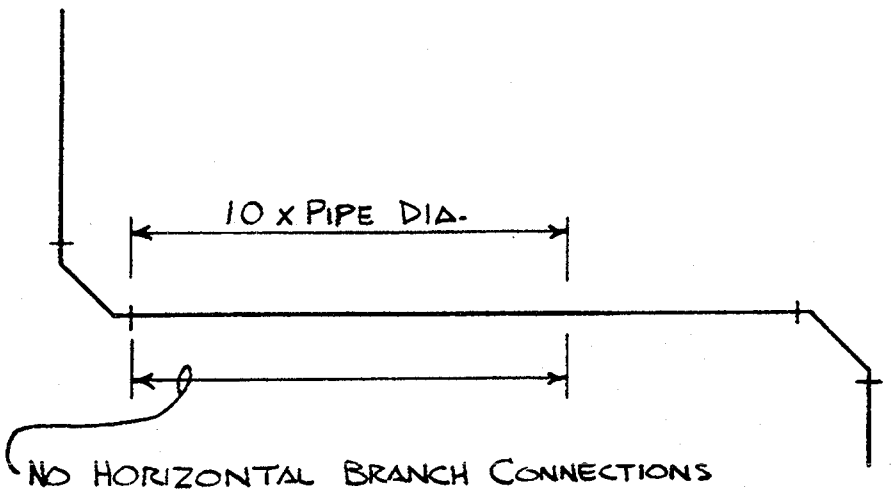




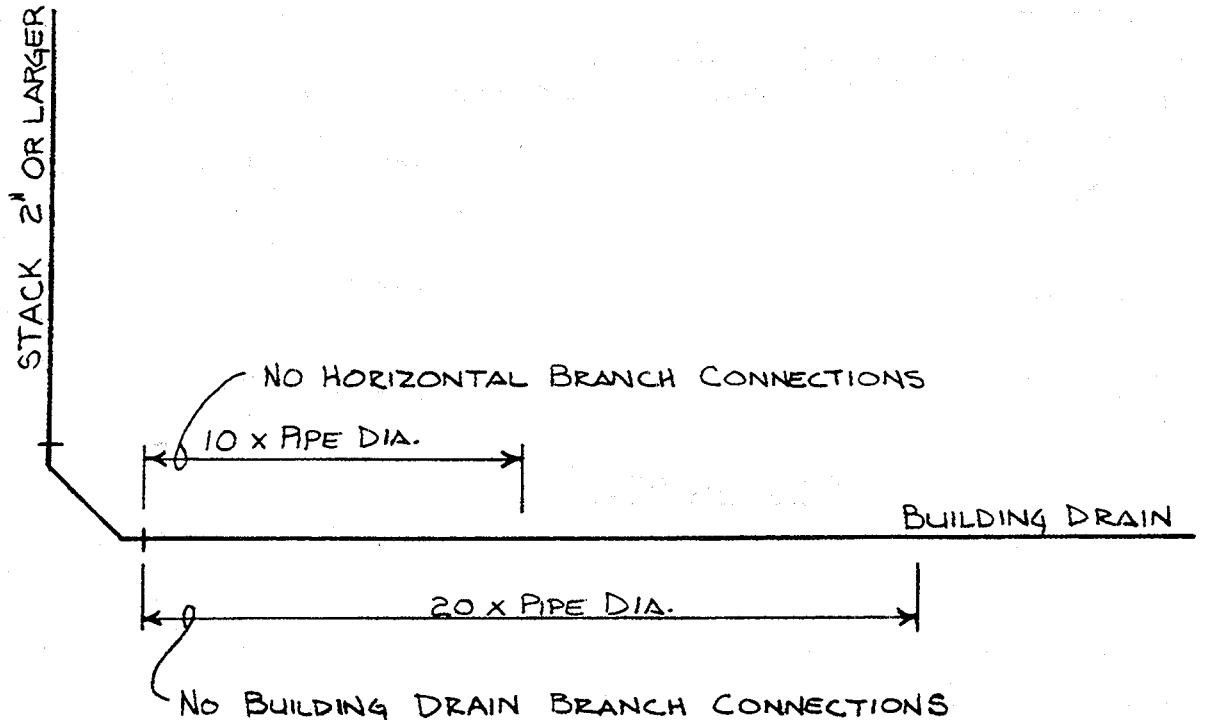
Receptor Trap Size	H – Height	GPM	d.f.u.
1–1/2"	12"	4	2
2"	14"	8	4
3"	15"	12	6
4"	17"	40	20
5"	20"	70	35
6"	22"	120	60
8"	25"	250	125

A–82.30 (6) (b) OFFSETS IN VERTICAL DRAINS.

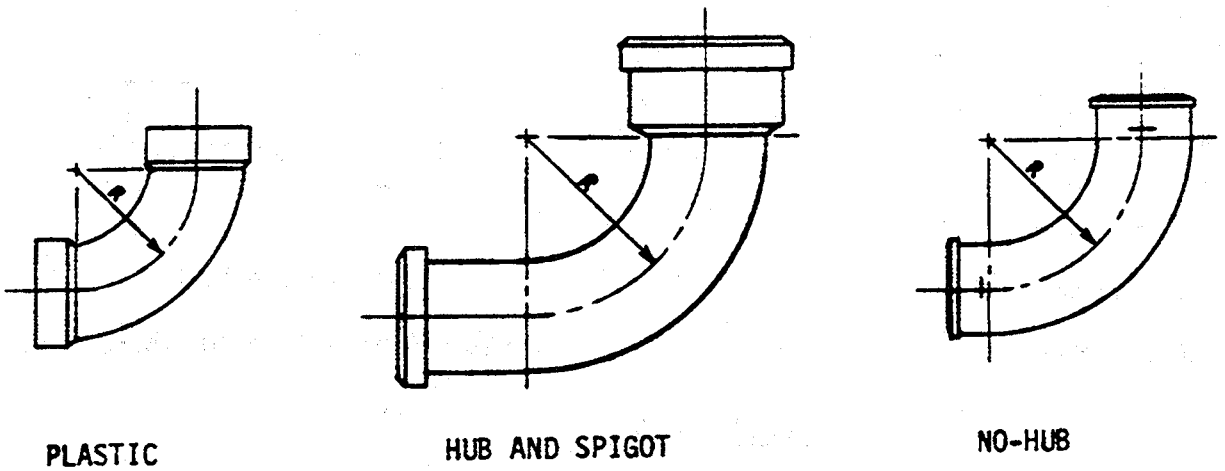




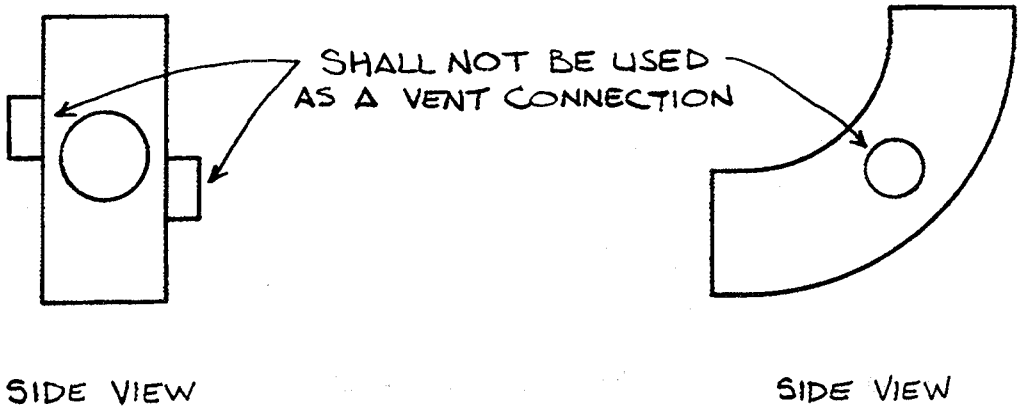
A–82.30 (7) HORIZONTAL BRANCH DRAIN CONNECTION AT BASE OF A STACK.



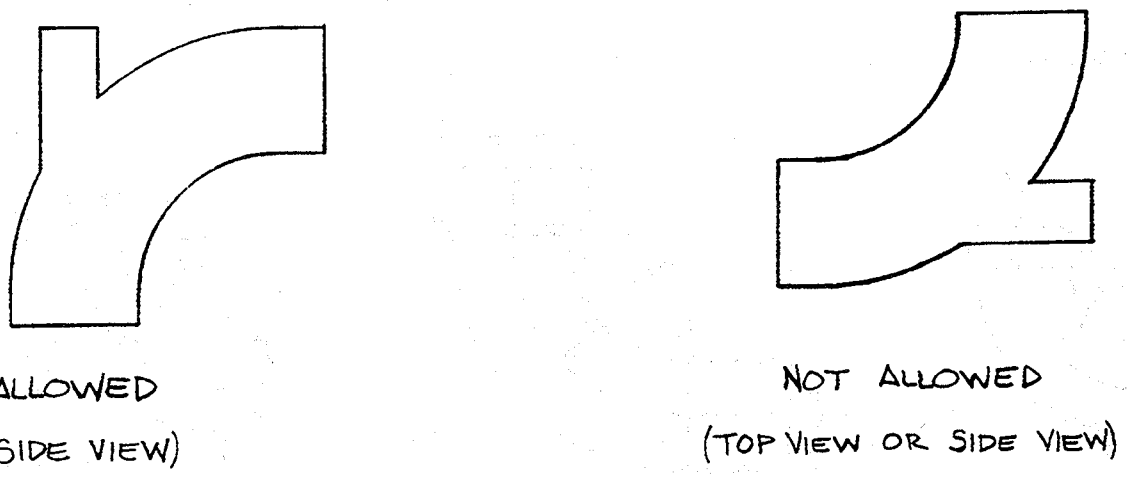
A–82.30 (8) MEASURING RADIUS OF A FITTING.



A–82.30 (9) DRAIN FITTINGS AND CONNECTIONS.

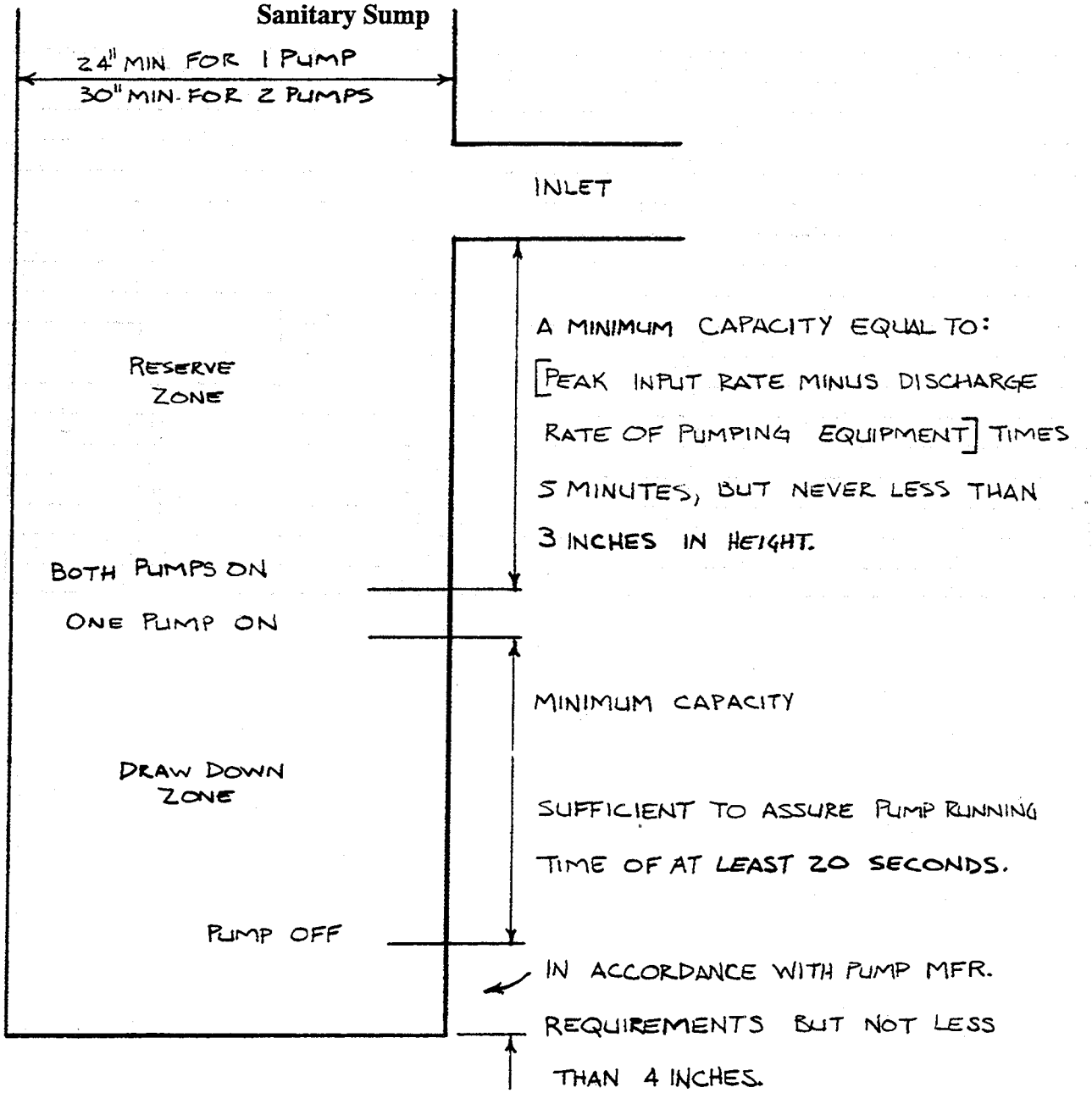


SIDE INLETS



HEEL INLETS

A–82.30 (10) (a) DETERMINING REQUIRED CAPACITY OF SANITARY PUMP.

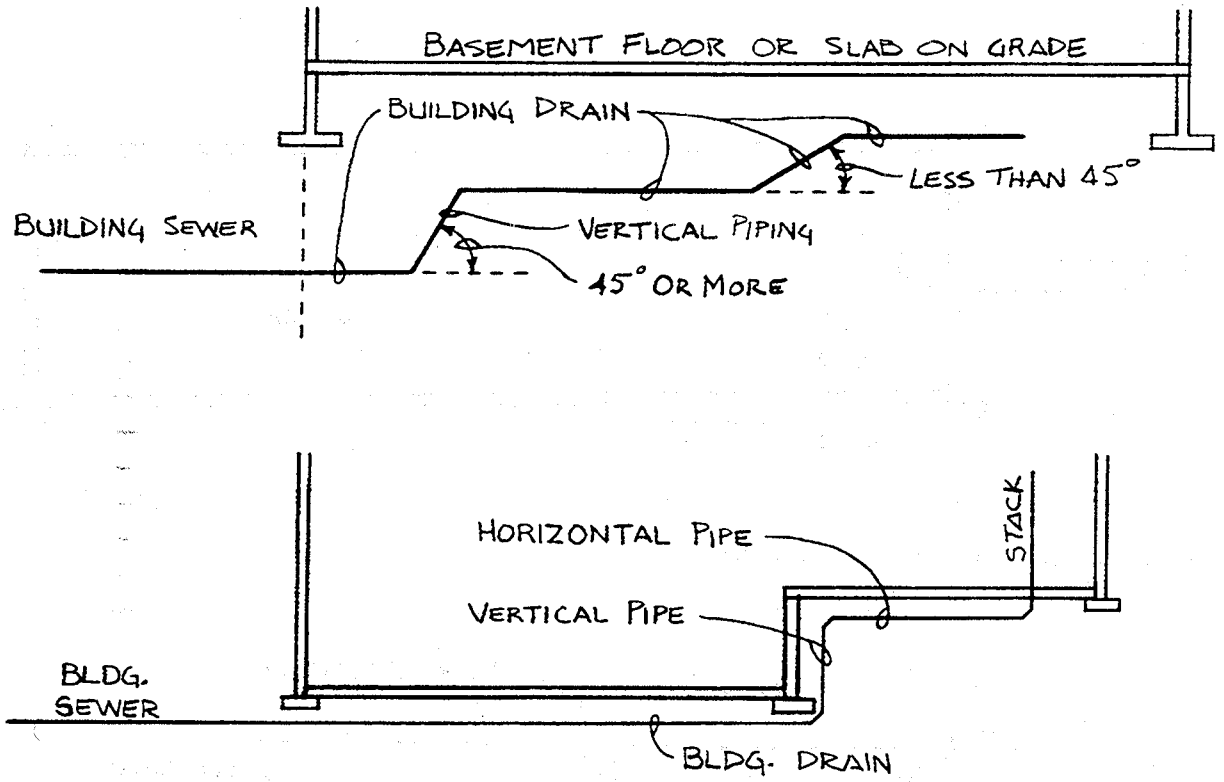


A–82.30 (10) (a) SUMPS.

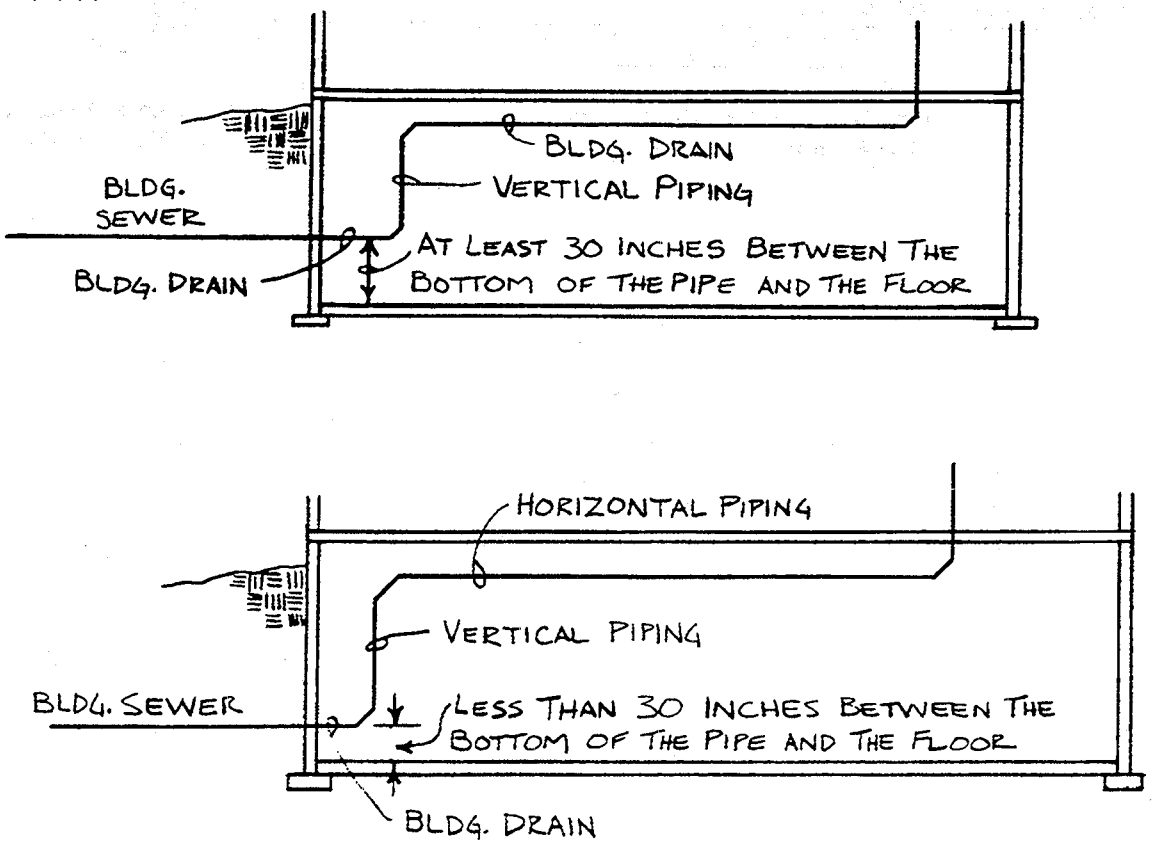
Capacity of sumps
(in gallons)

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

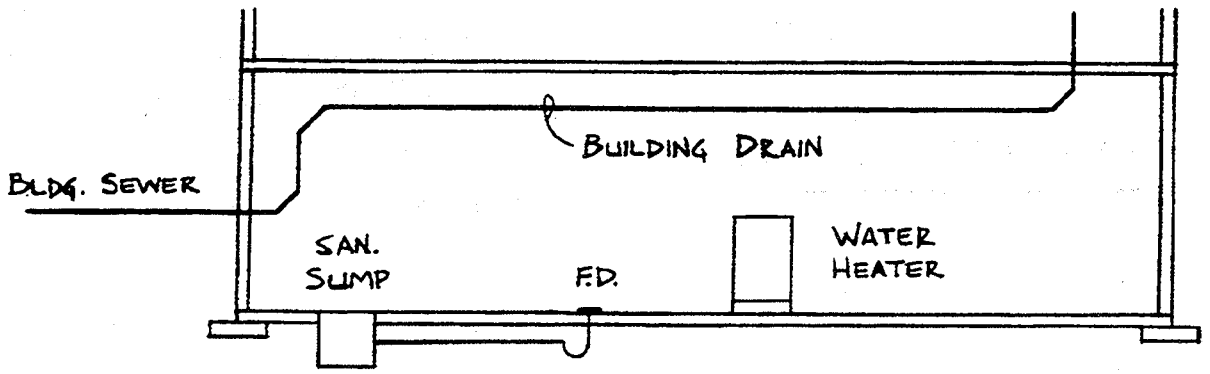
A–82.30 (11) (b) BUILDING DRAINS SERVING ANY BUILDING.



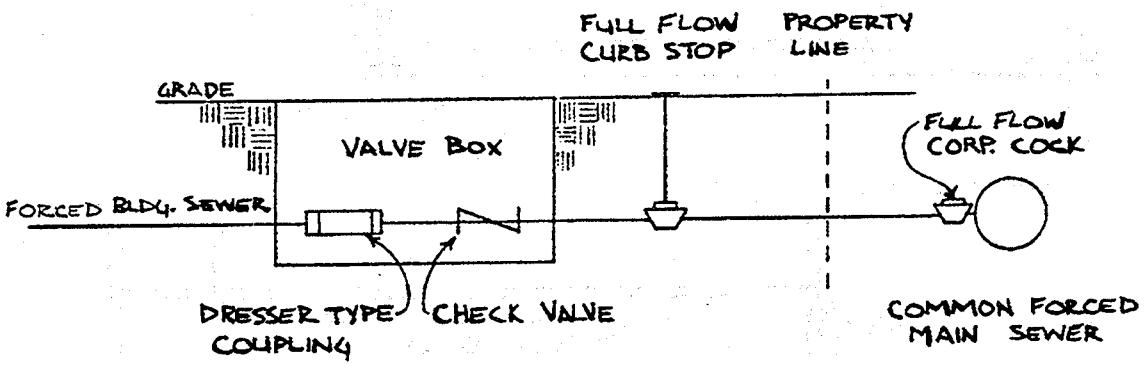
A–82.30 (11) (b) BUILDING DRAINS.



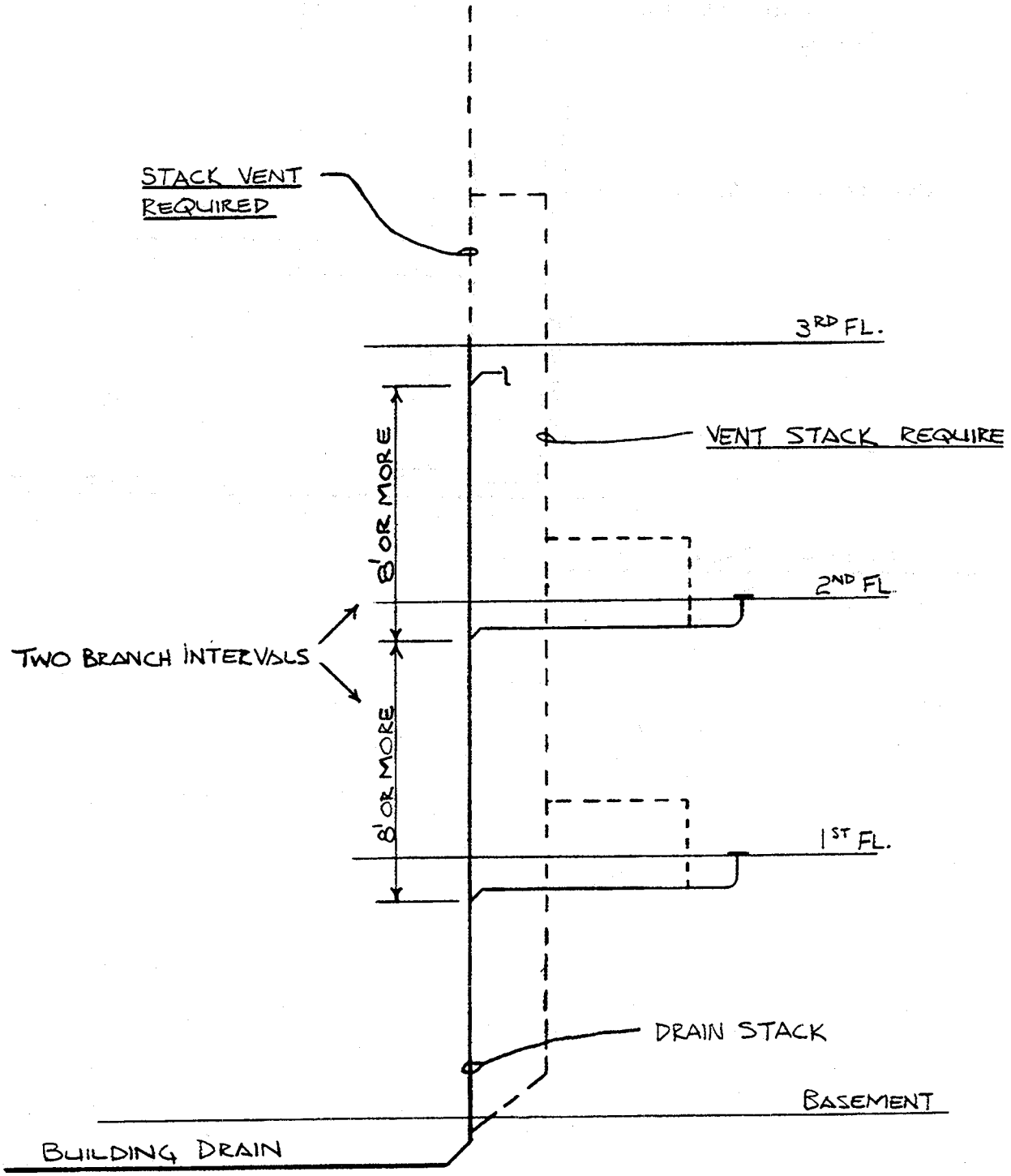
A–82.30 (11) (b) FLOOR DRAIN REQUIRED.



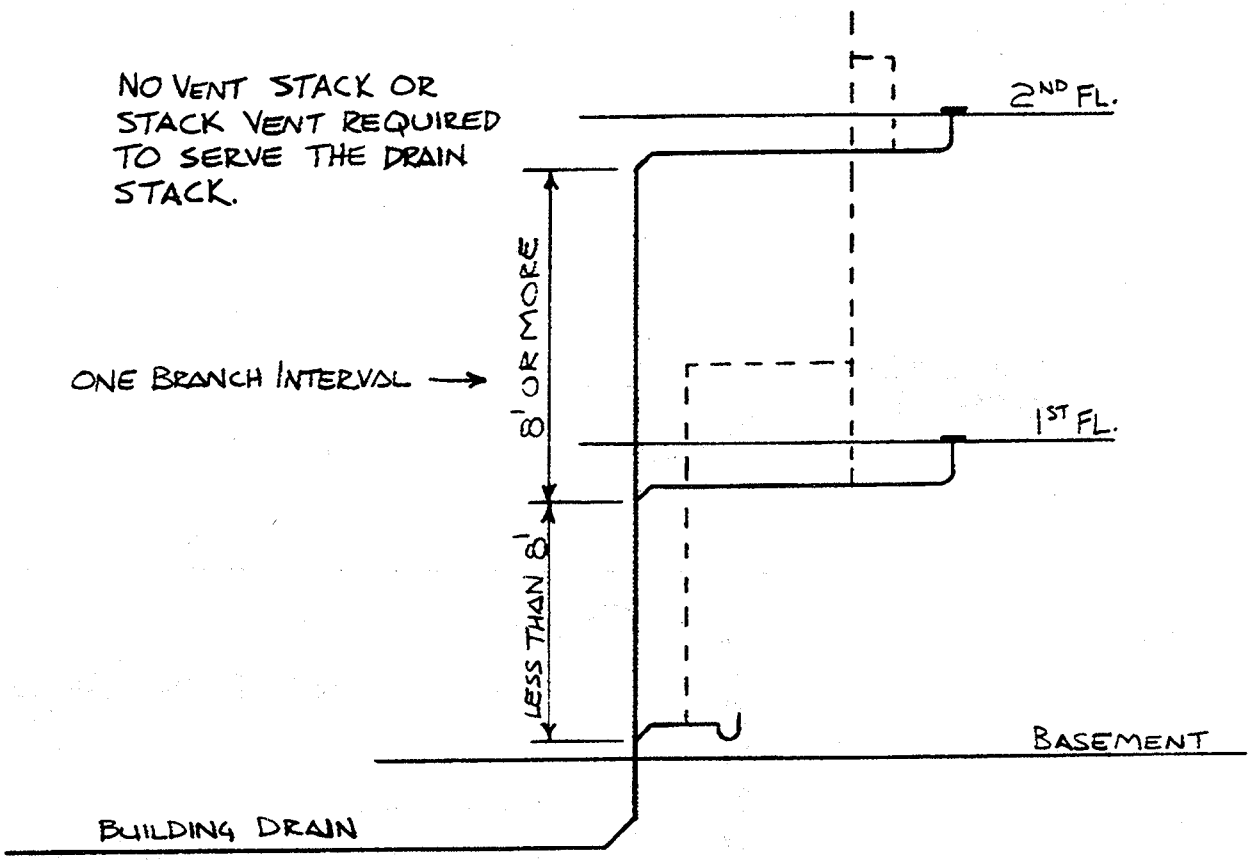
A–82.30 (11) (f) CONNECTION TO PRESSURIZED PUBLIC SEWER.



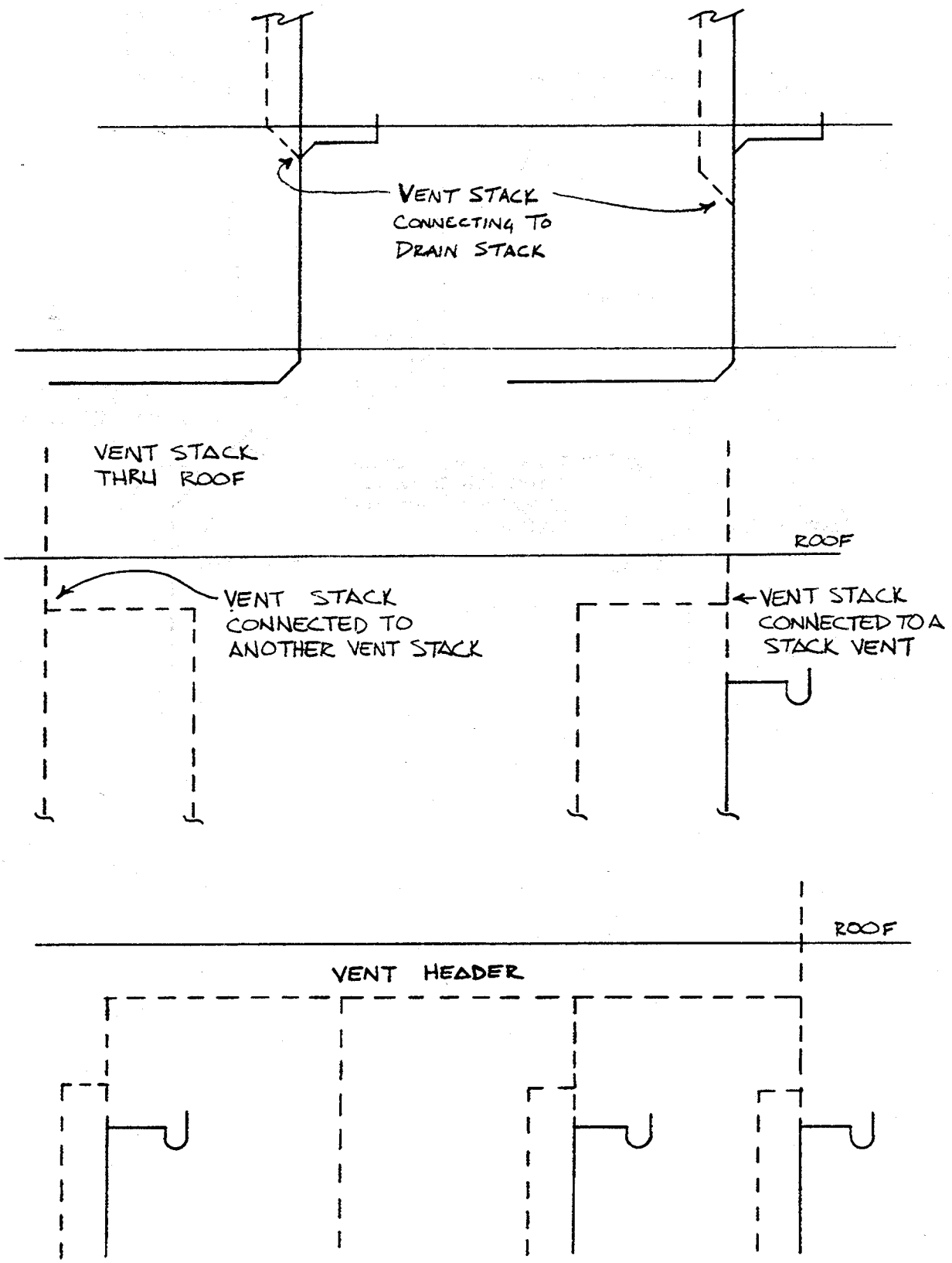
A–82.31 (4) (a) WHERE A VENT STACK AND STACK VENT ARE REQUIRED.



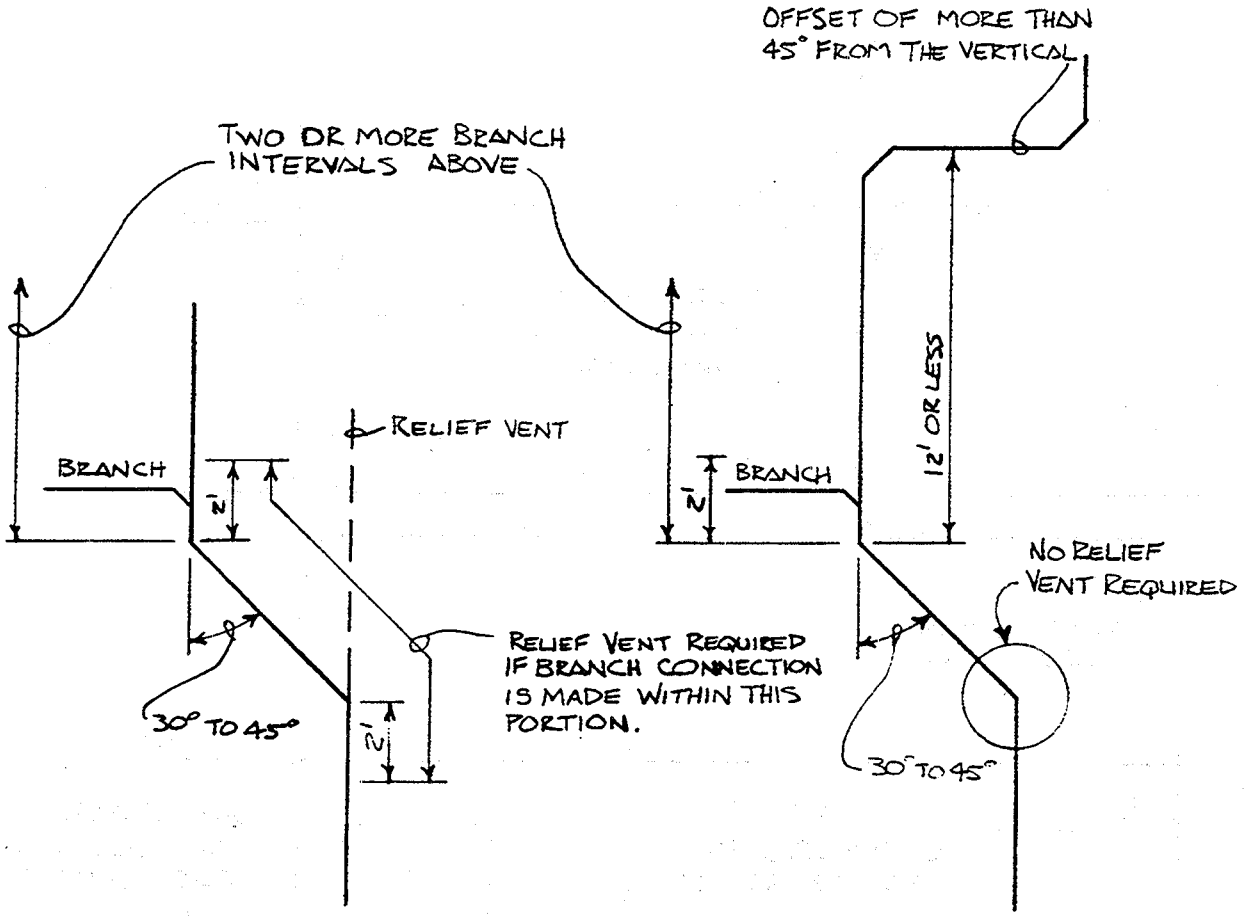
A–82.31 (4) (a) WHERE A VENT STACK AND STACK VENT ARE NOT REQUIRED.



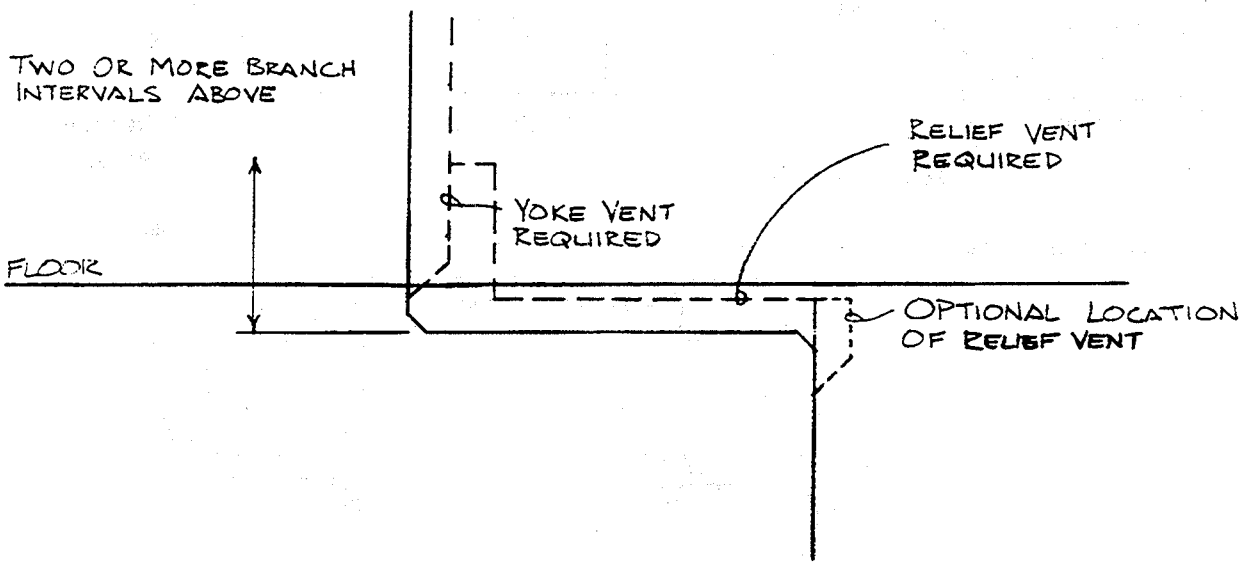
A–82.31 (4) (b) INSTALLATION OF VENT STACK AND STACK VENT.

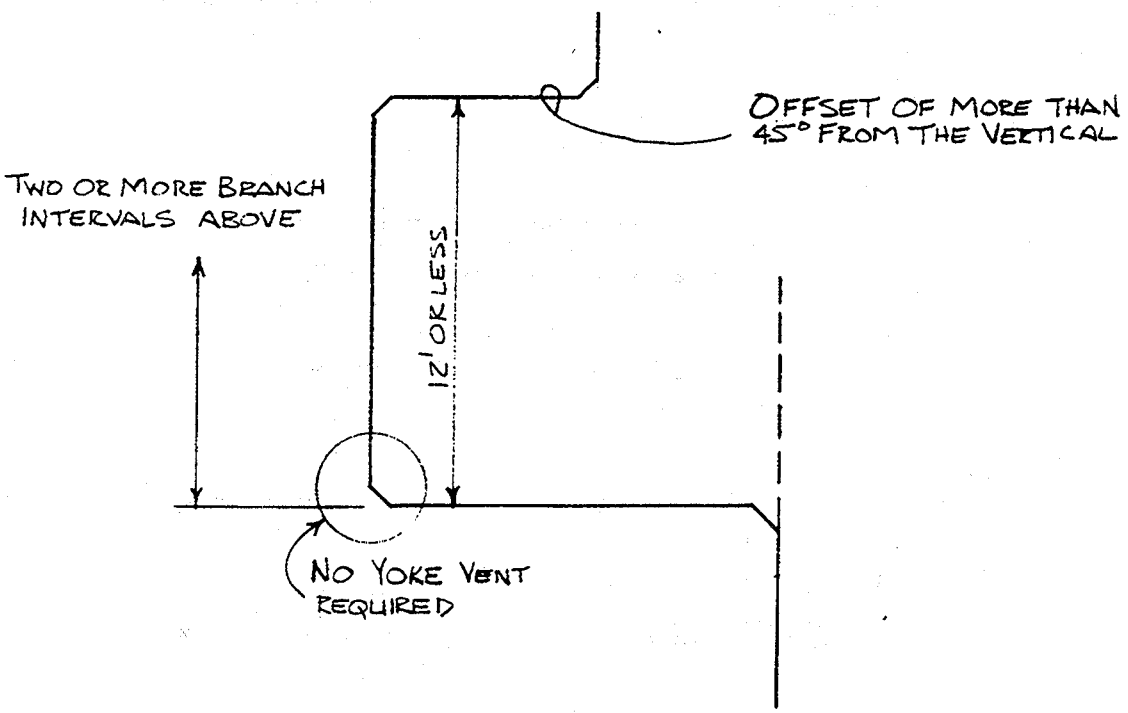


A–82.31 (5) (a) Relief vent for offsets of 30 to 45 degrees.

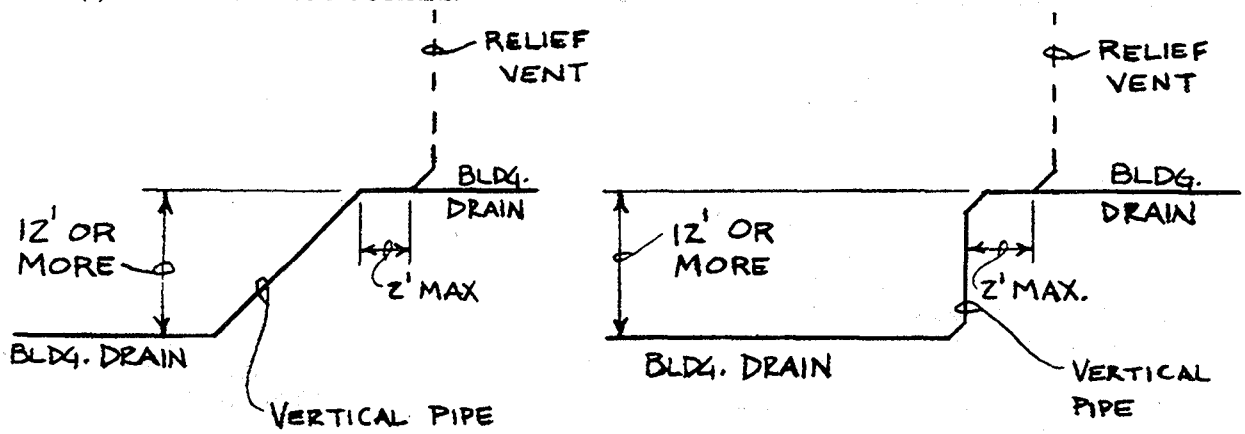


A–82.31 (5) (b) RELIEF AND YOKE VENTS FOR OFFSETS OF MORE THAN 45 DEGREES.

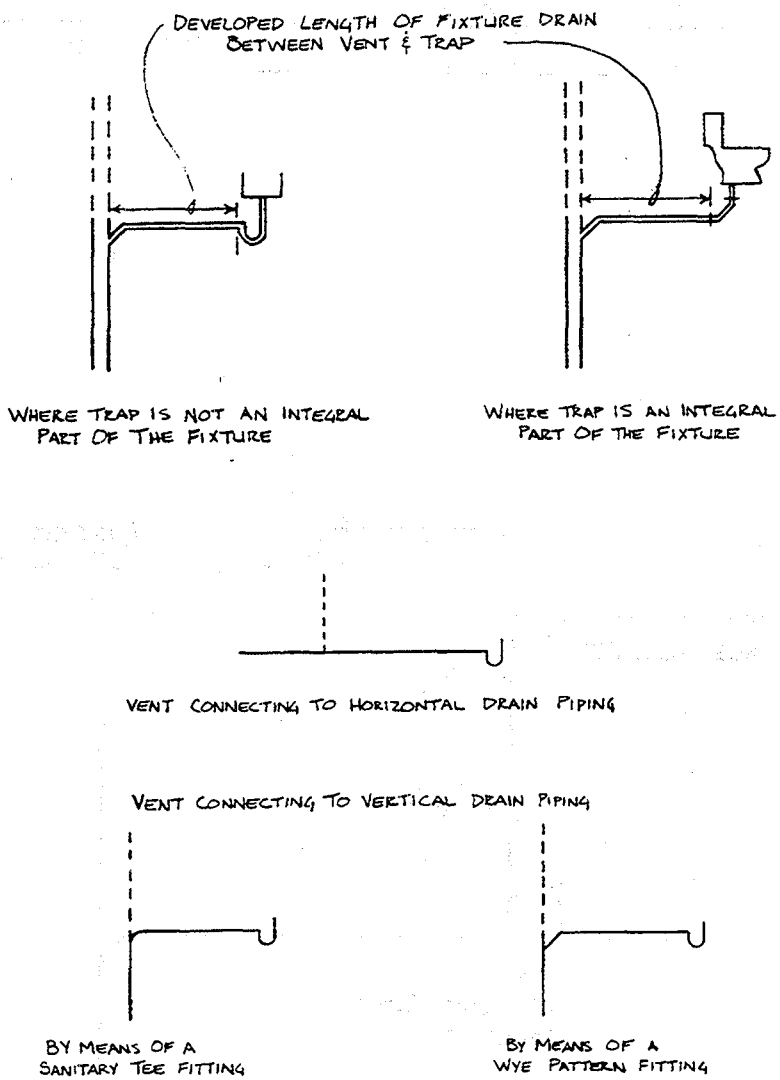




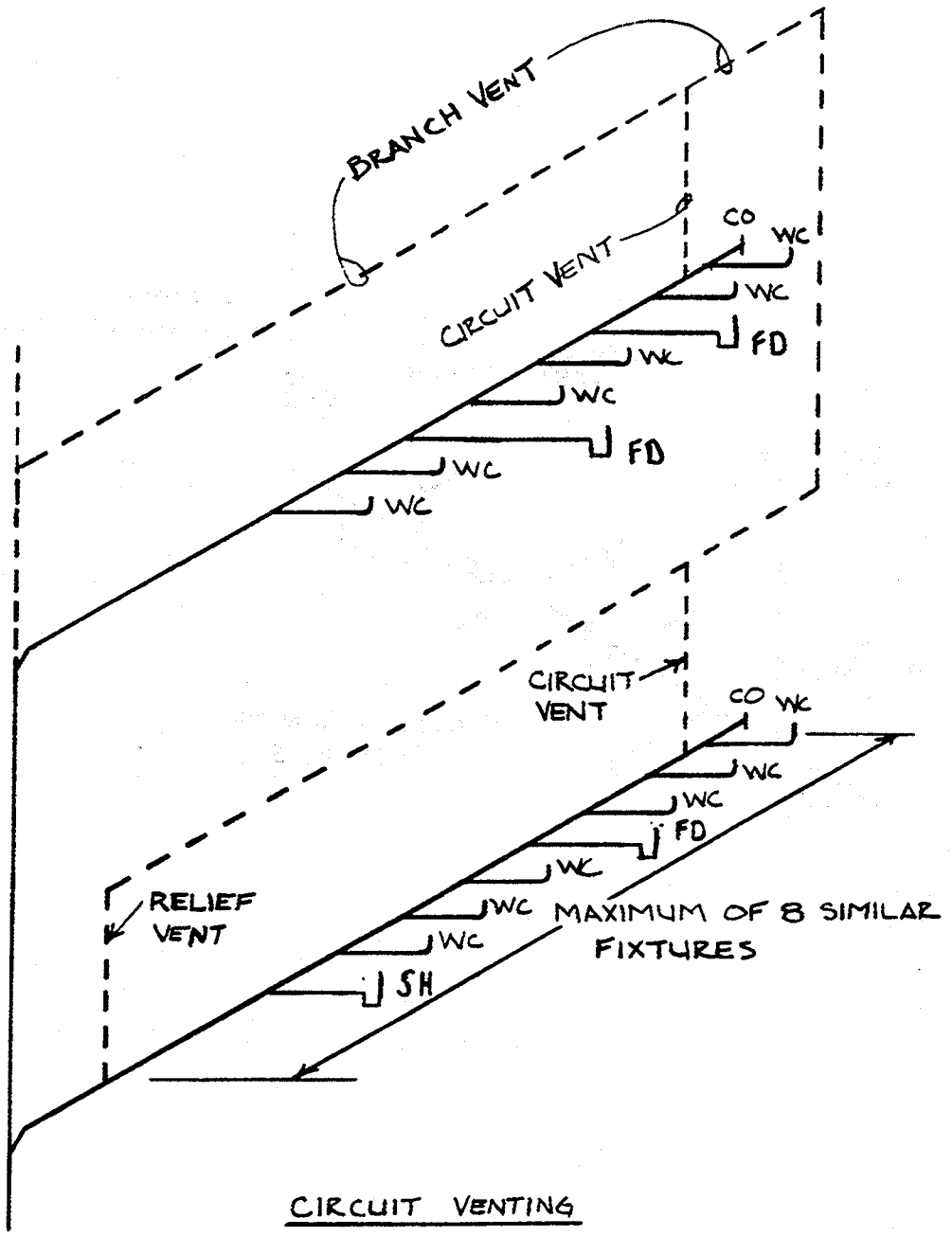
A–82.31 (7) RELIEF VENTS FOR BUILDING DRAINS.



A–82.31 (9) FIXTURE VENTS.

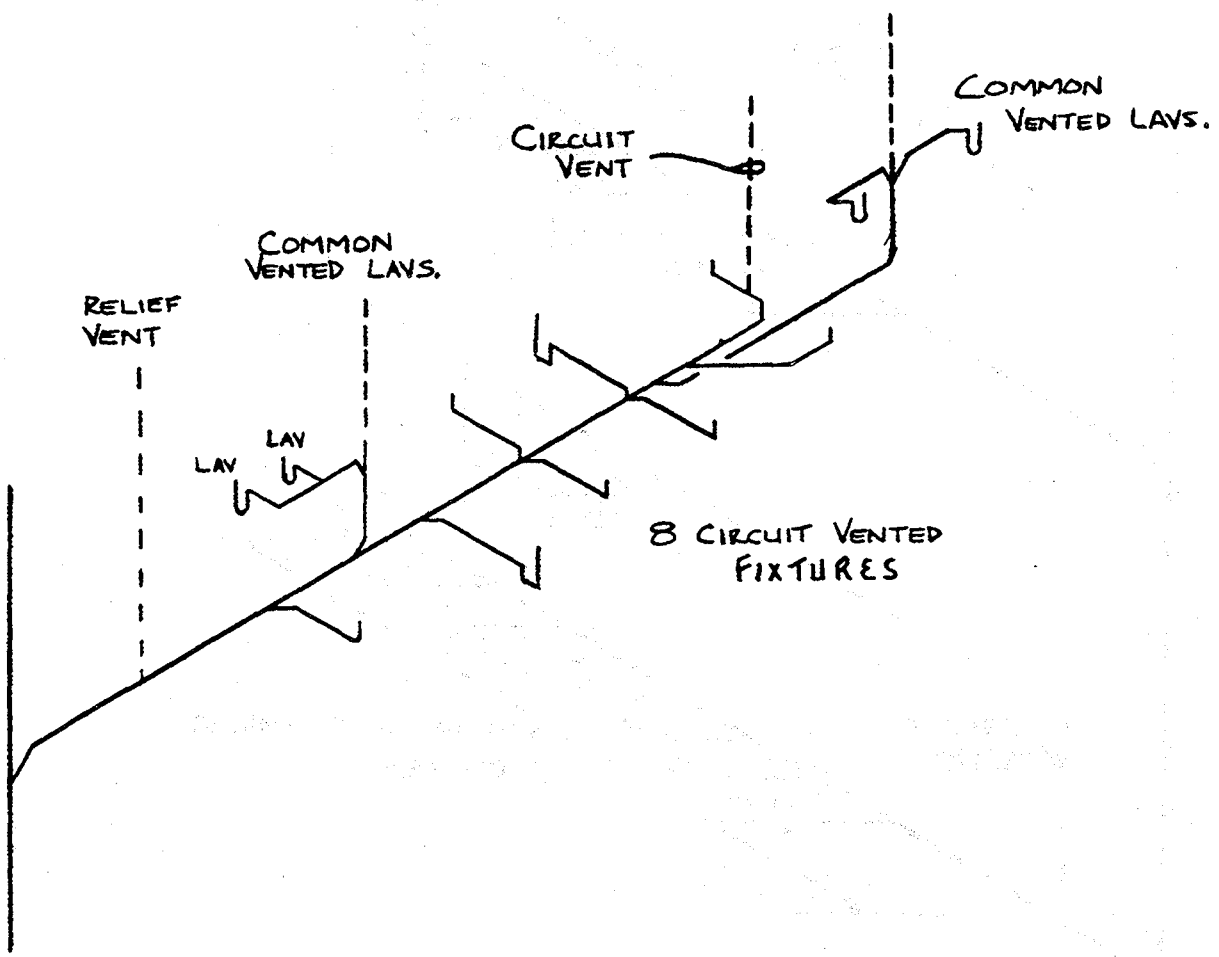


A–82.31 (10) CIRCUIT VENTING.

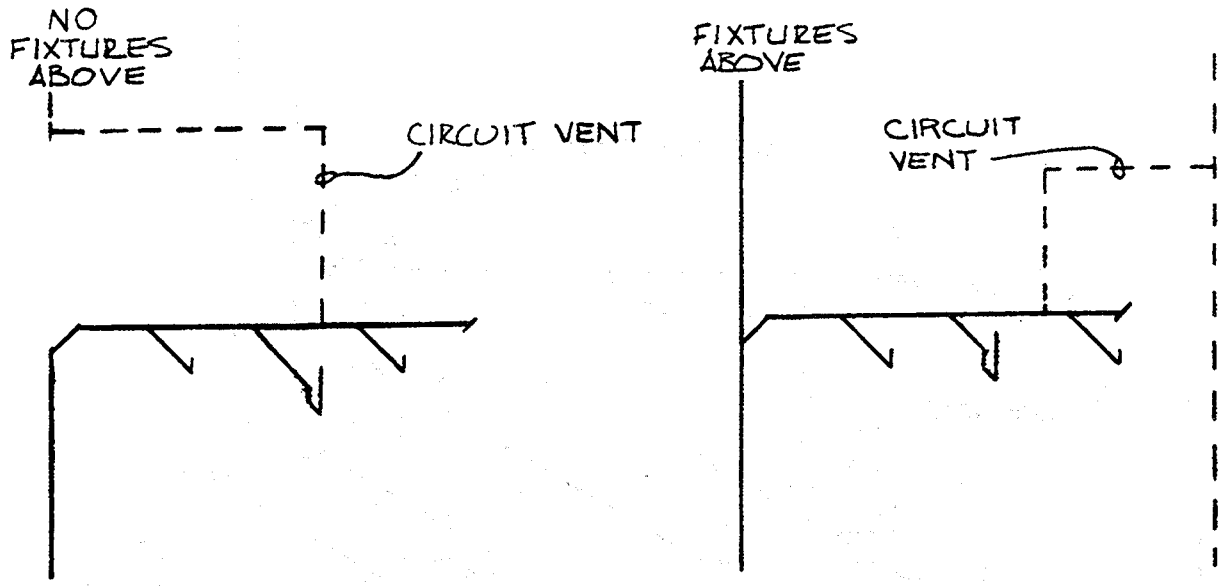


CIRCUIT VENTING

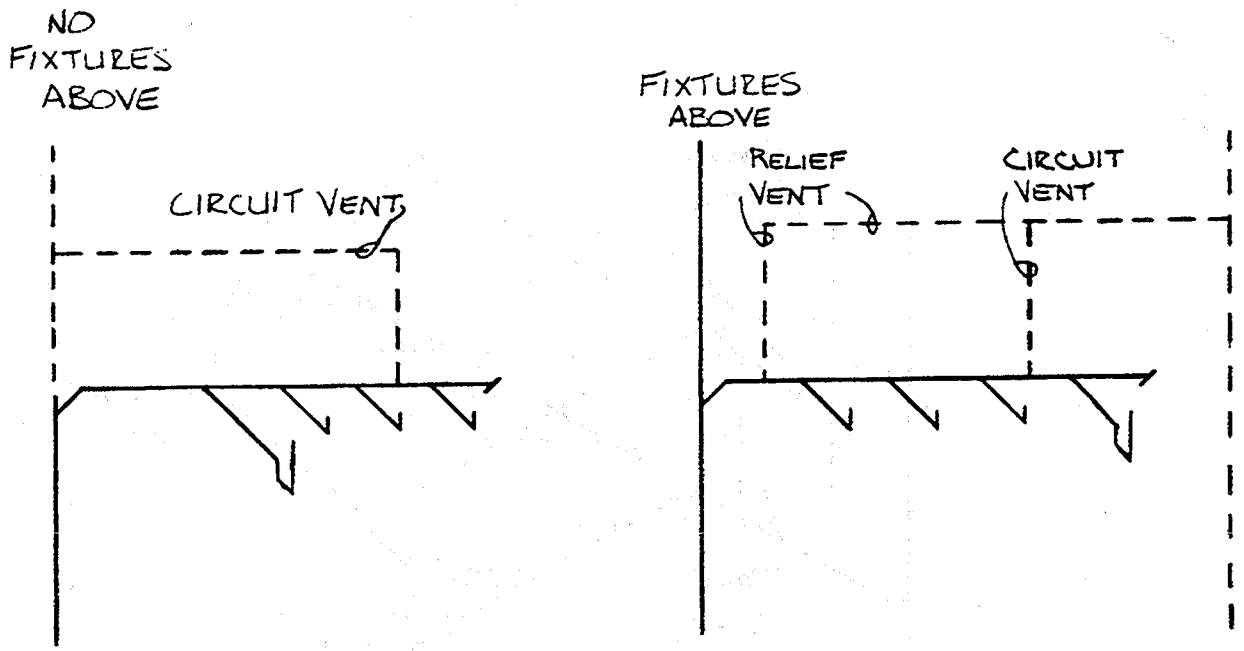
A–82.31 (10) CIRCUIT VENTING.



A–82.31 (10) CIRCUIT VENTING.

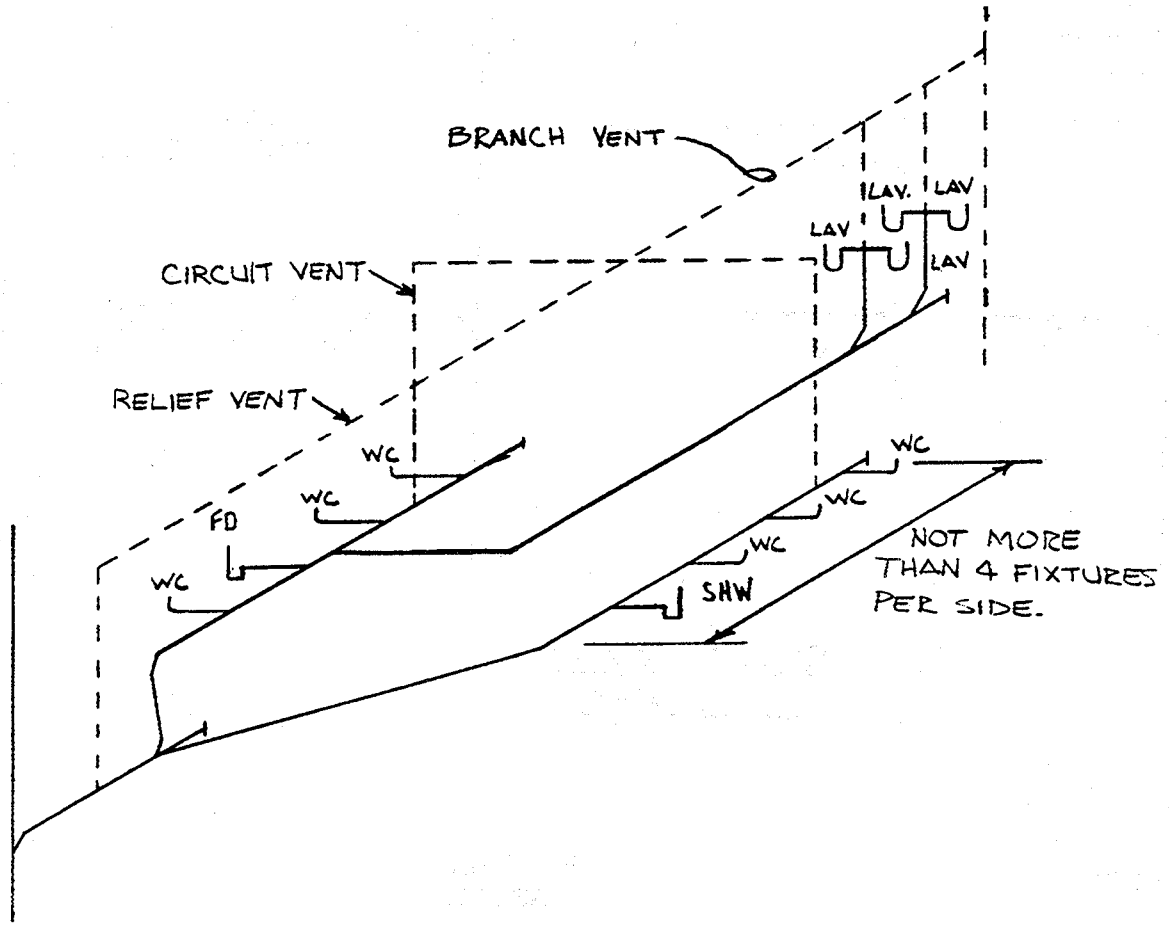


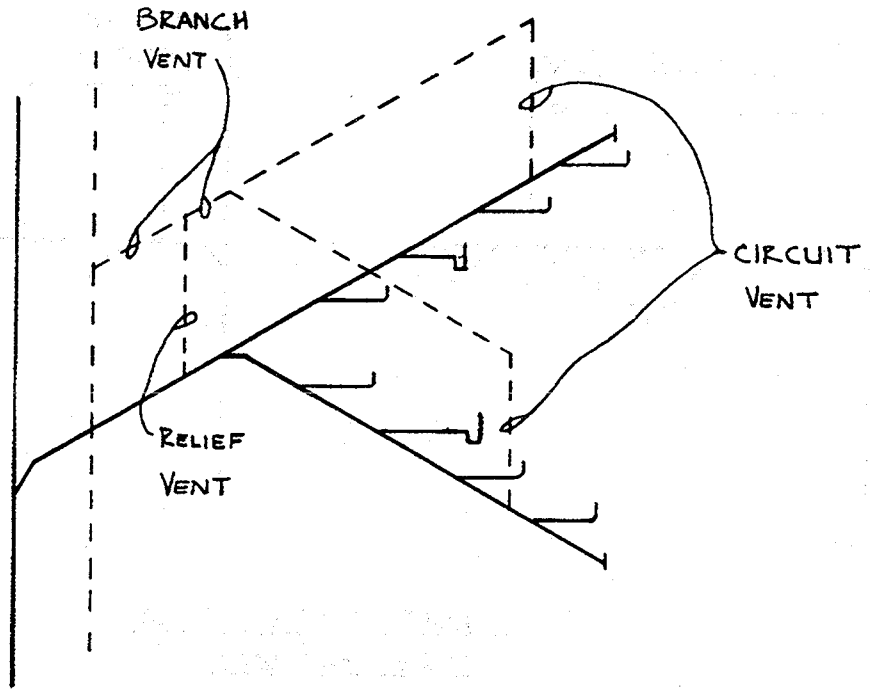
CIRCUIT VENTING 3 FIXTURES



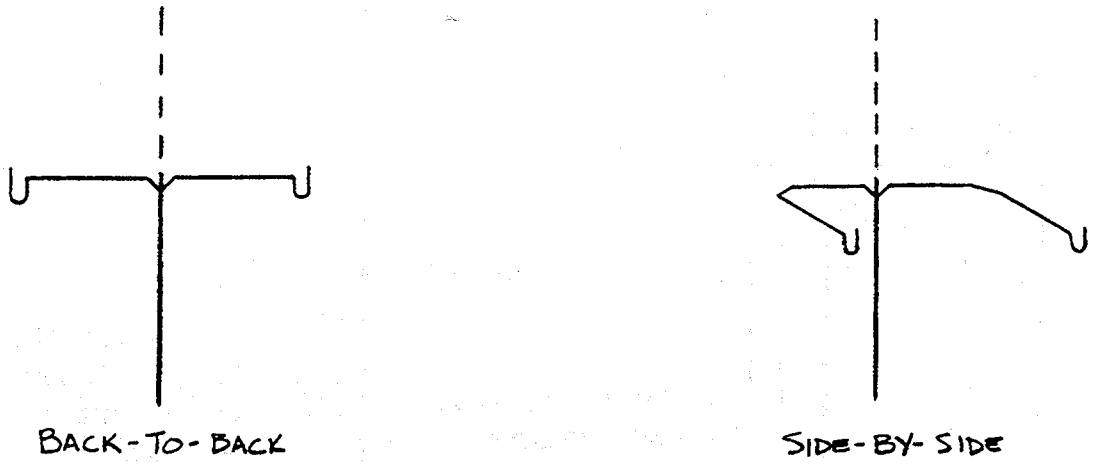
CIRCUIT VENTING 4 OR MORE FIXTURES

A–82.31 (10) CIRCUIT VENTING.



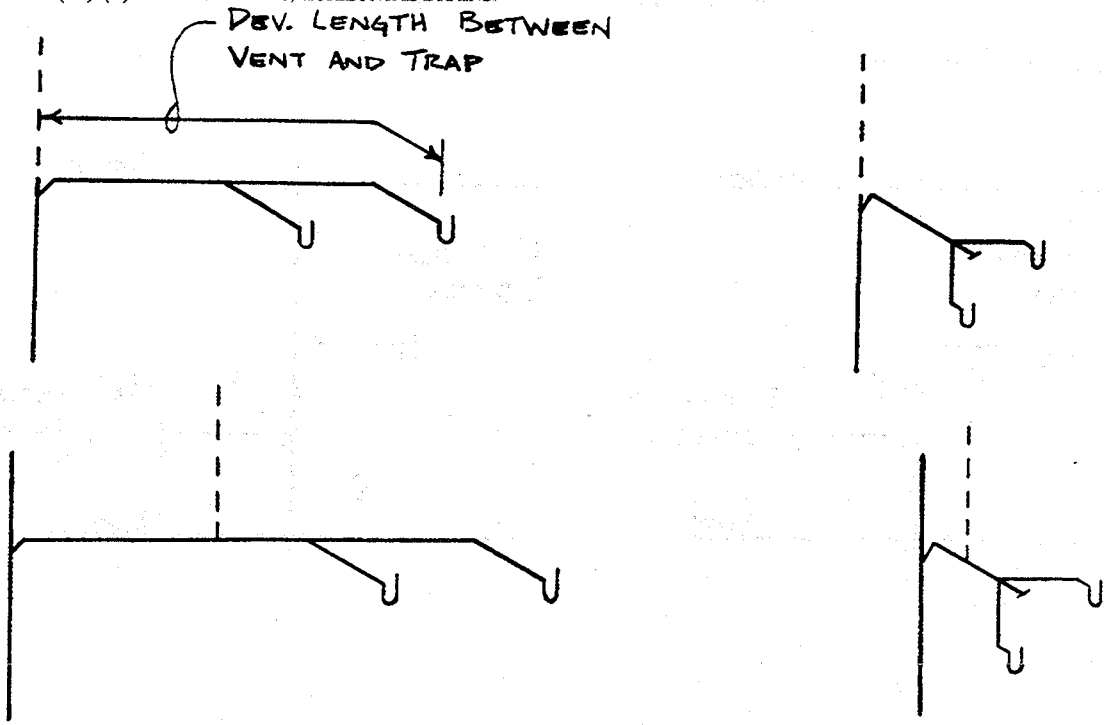


A–82.31 (11) (a) COMMON VENTS, VERTICAL DRAINS.

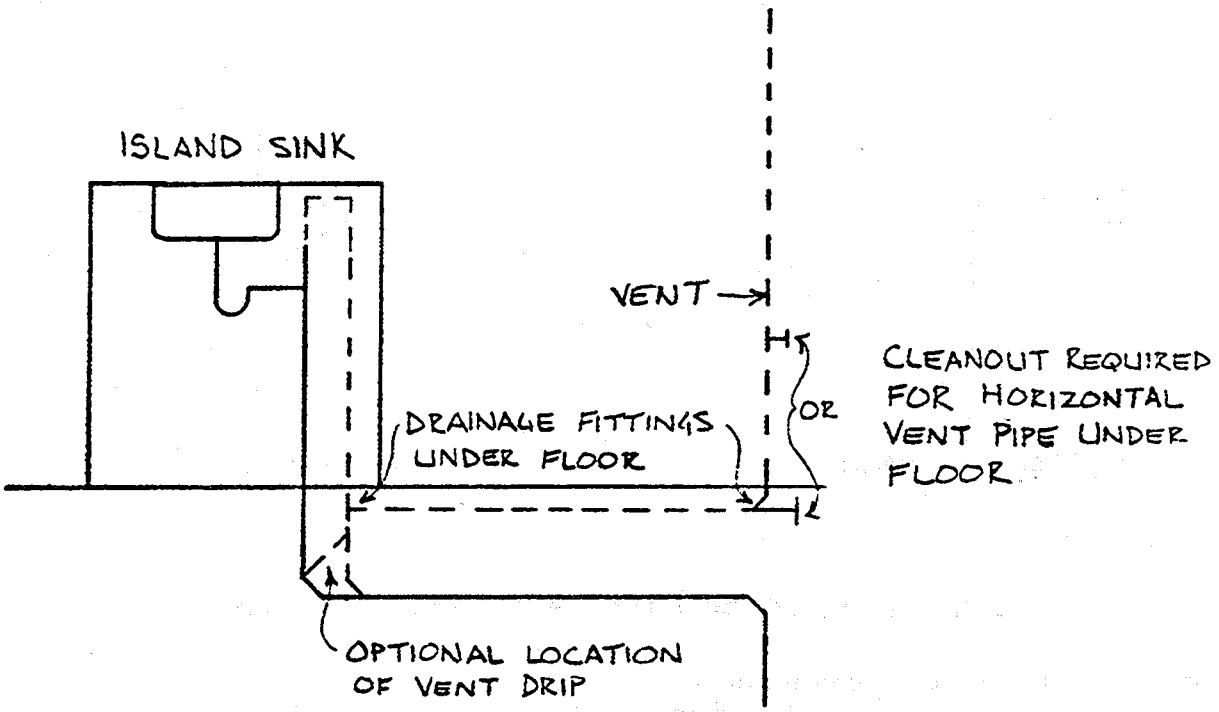


COMMON VENT SERVING ANY TWO FIXTURES

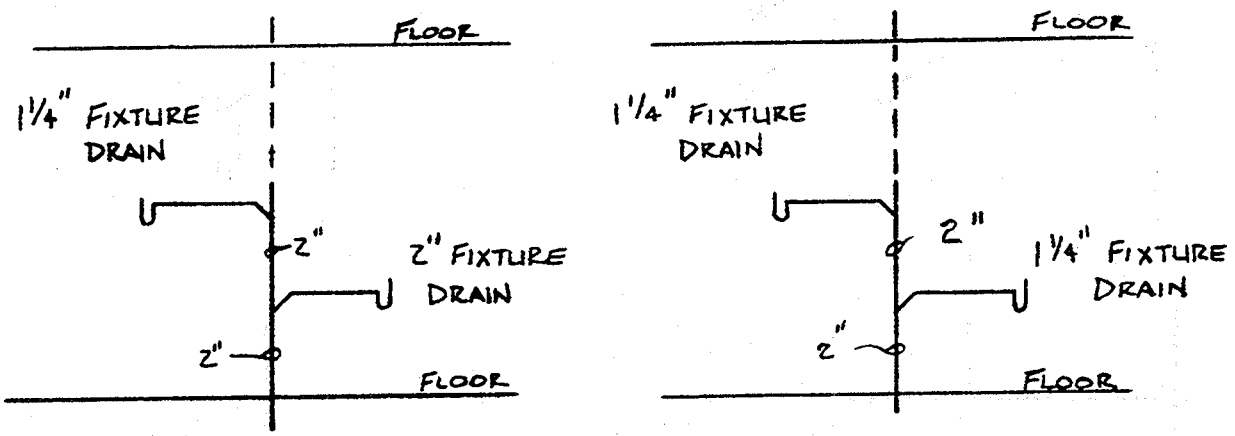
A–82.31 (11) (b) COMMON VENTS, HORIZONTAL DRAINS.



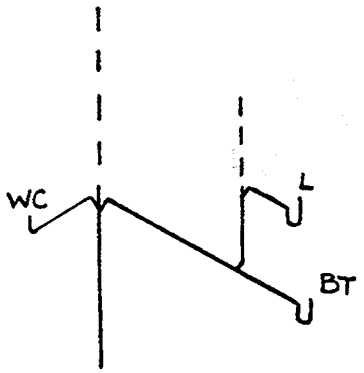
A–82.31 (12) ISLAND FIXTURE VENTING.

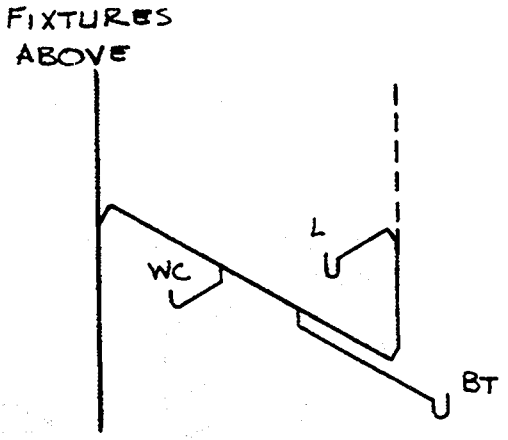


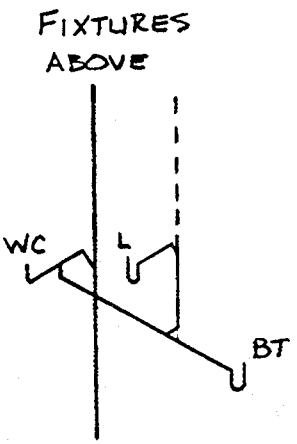
A–82.31 (13) (a) VERTICAL WET VENTS.

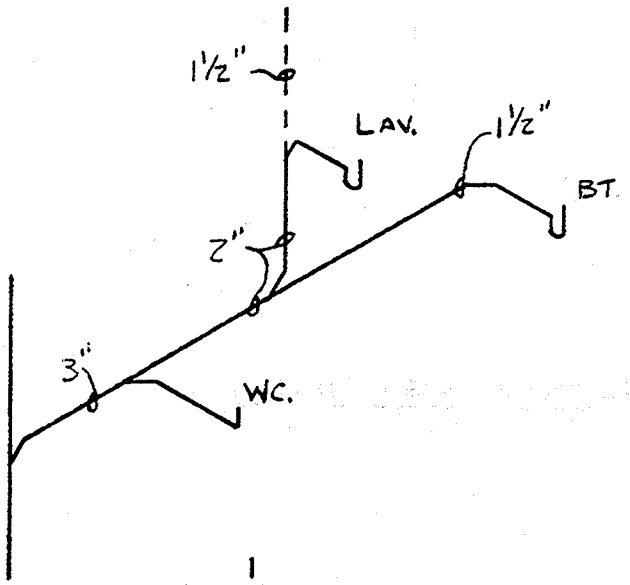


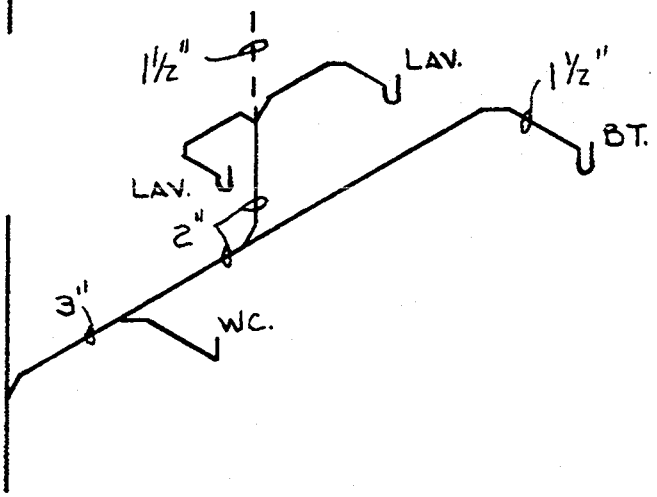
A–82.31 (13) (b) HORIZONTAL WET VENTS.



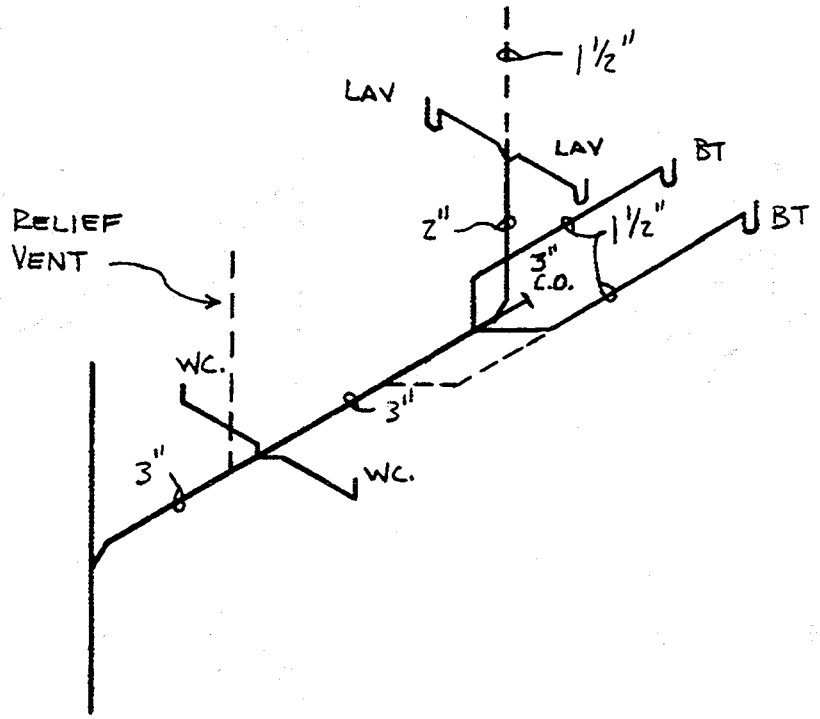




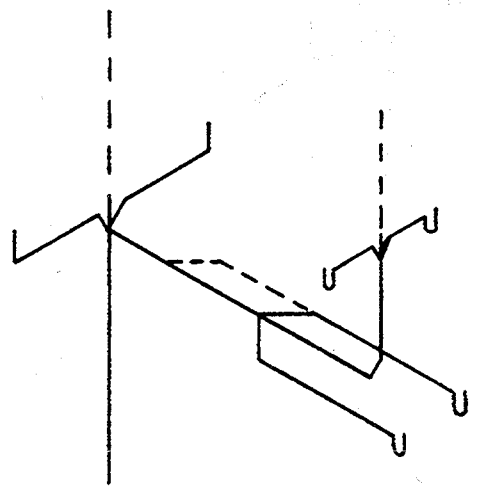




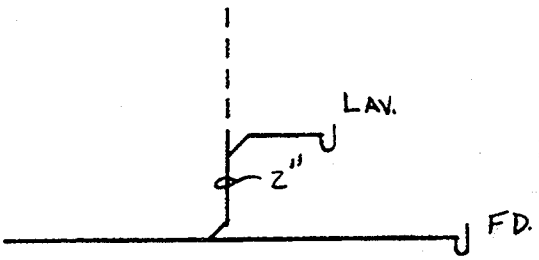
A–82.31 (13) (b) HORIZONTAL WET VENTS.

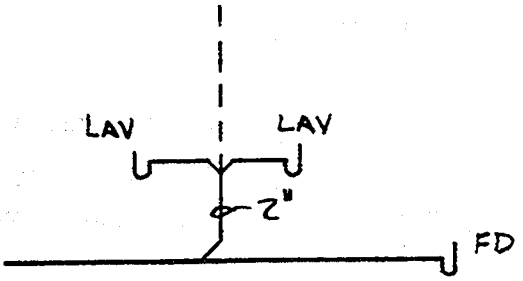


HORIZONTAL WET VENTS

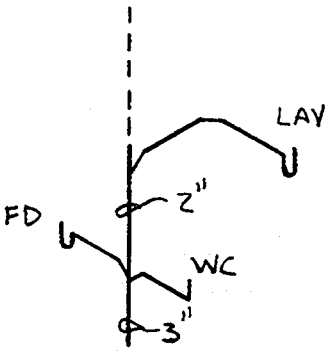


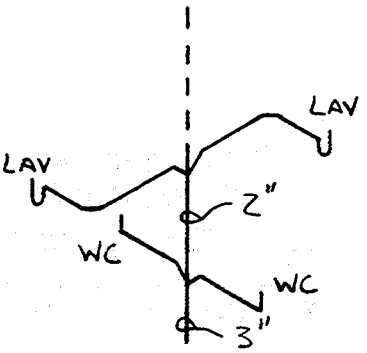
A–82.31 (13) (c) WET VENTING – FLOOR OUTLET FIXTURES



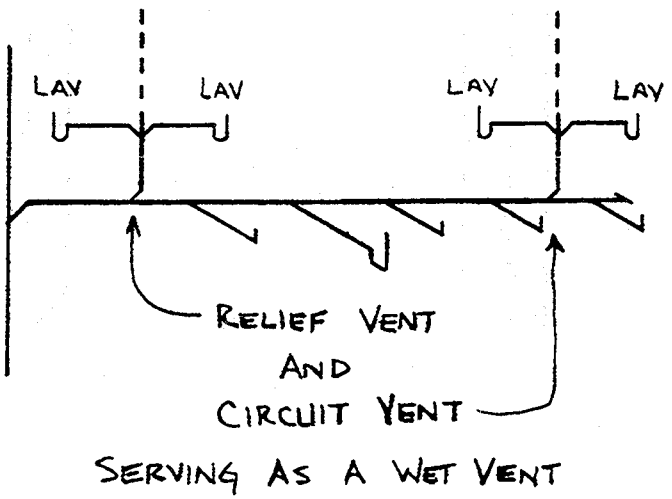


INDIVIDUAL VENT FOR FLOOR OUTLET FIXTURE SERVING AS A WET VENT



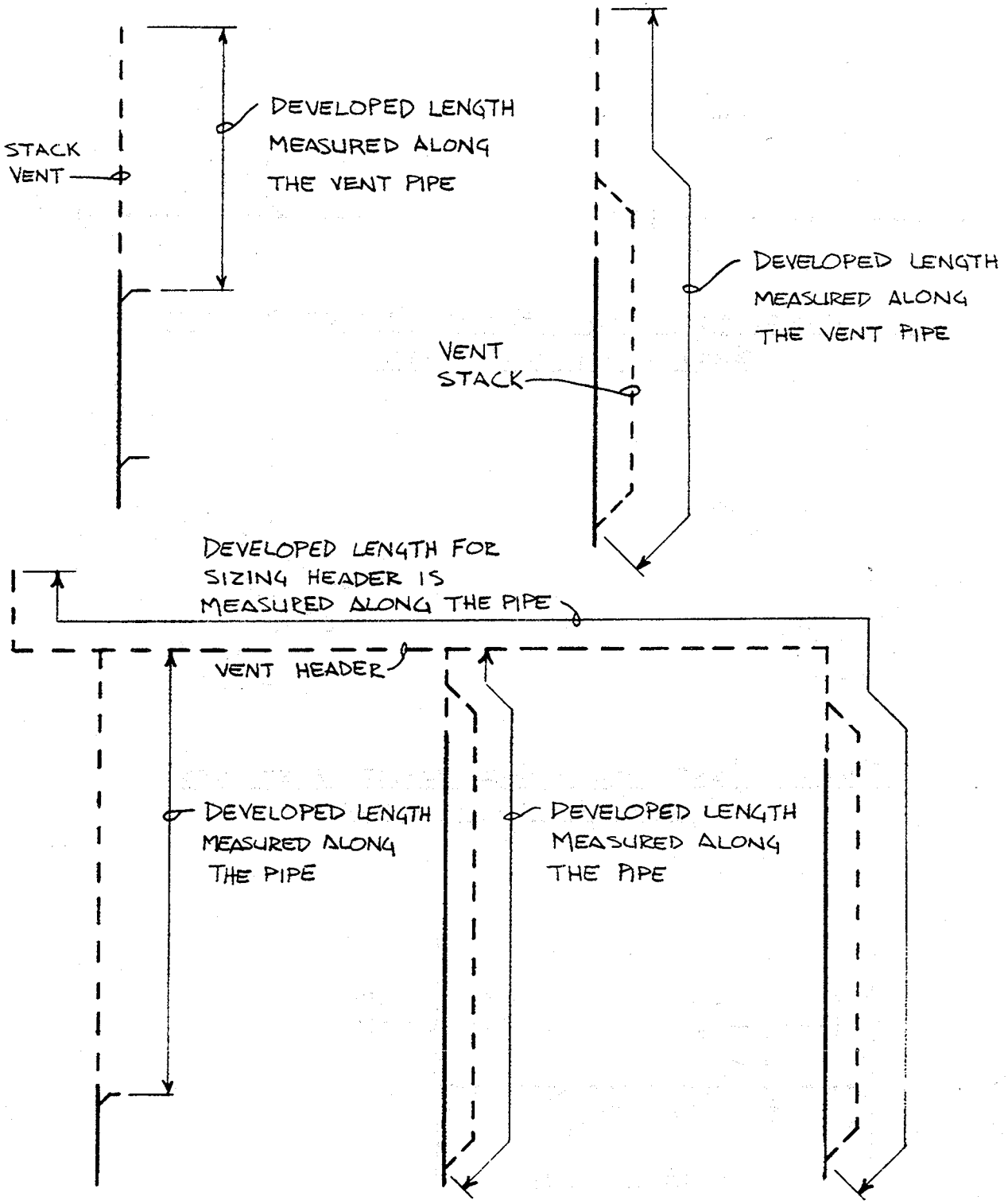


COMMON VENT FOR FLOOR OUTLET FIXTURES SERVING AS A WET VENT

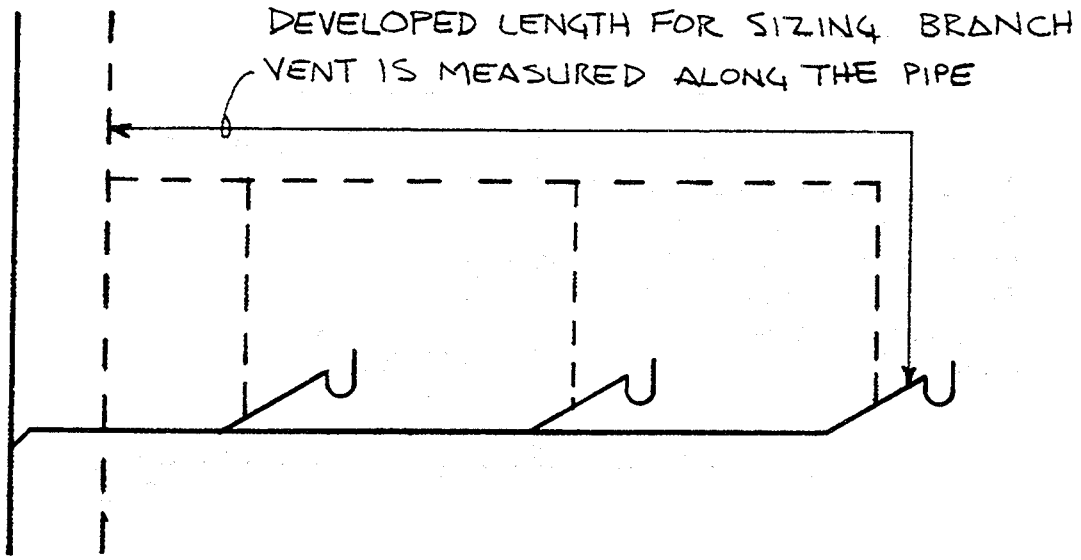


SERVING AS A WET VENT

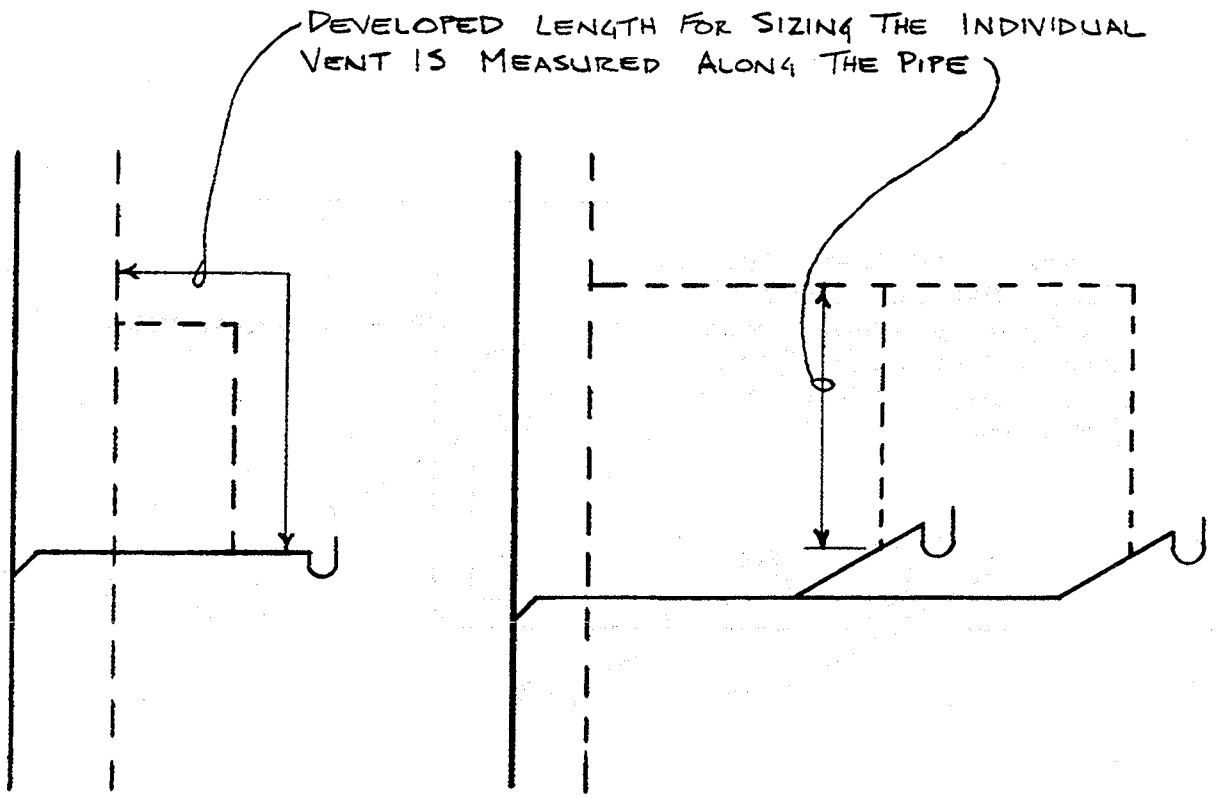
A–82.31 (14) (a) and (b) SIZING VENT STACKS AND STACK VENTS.



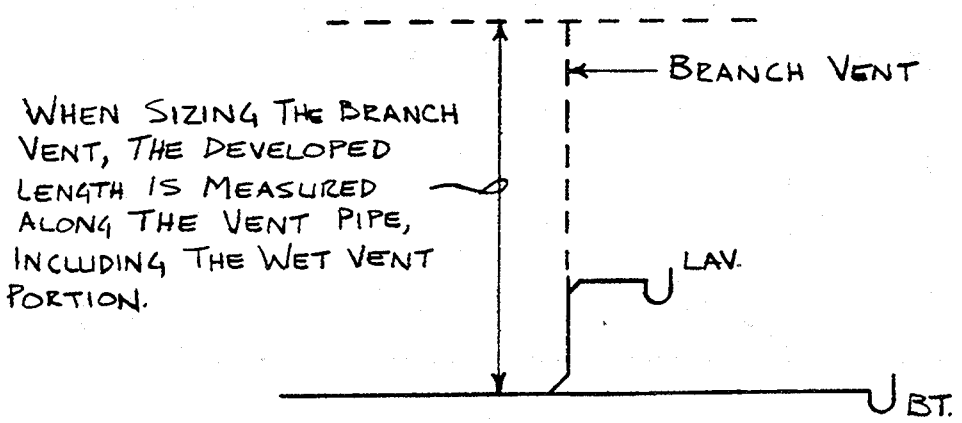
A–82.31 (14) (c) SIZING BRANCH VENTS

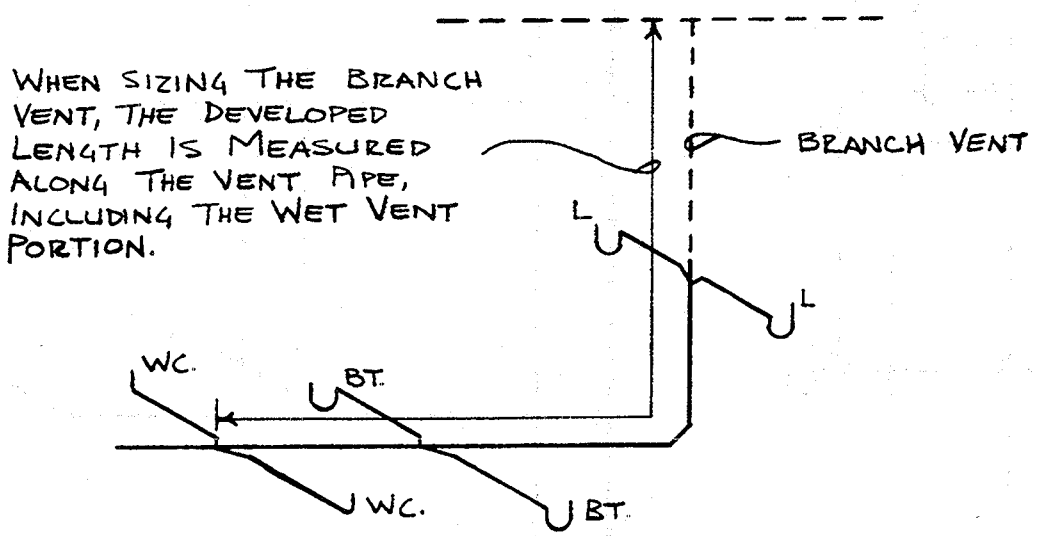


A–82.31 (14) (d) SIZING INDIVIDUAL VENTS

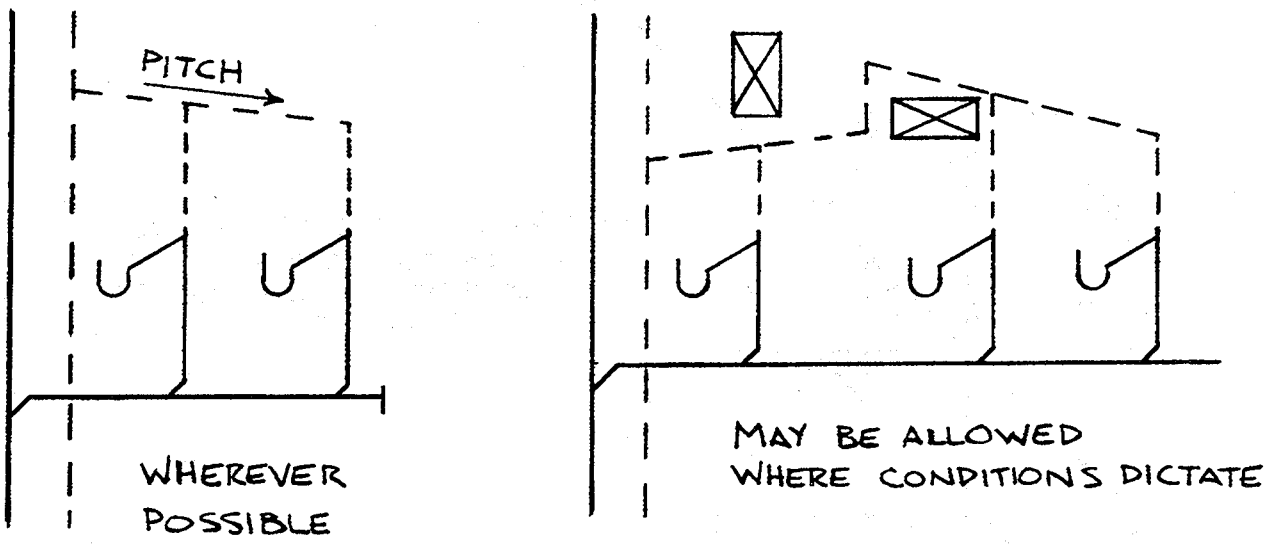


A–82.31 (14) (c) SIZING BRANCH VENTS SERVING A WET VENT.

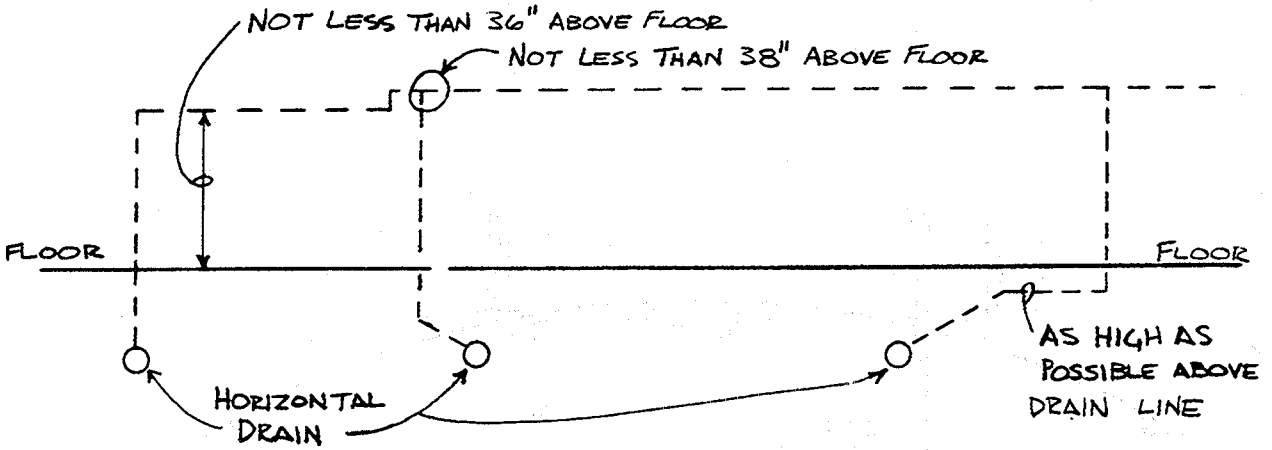




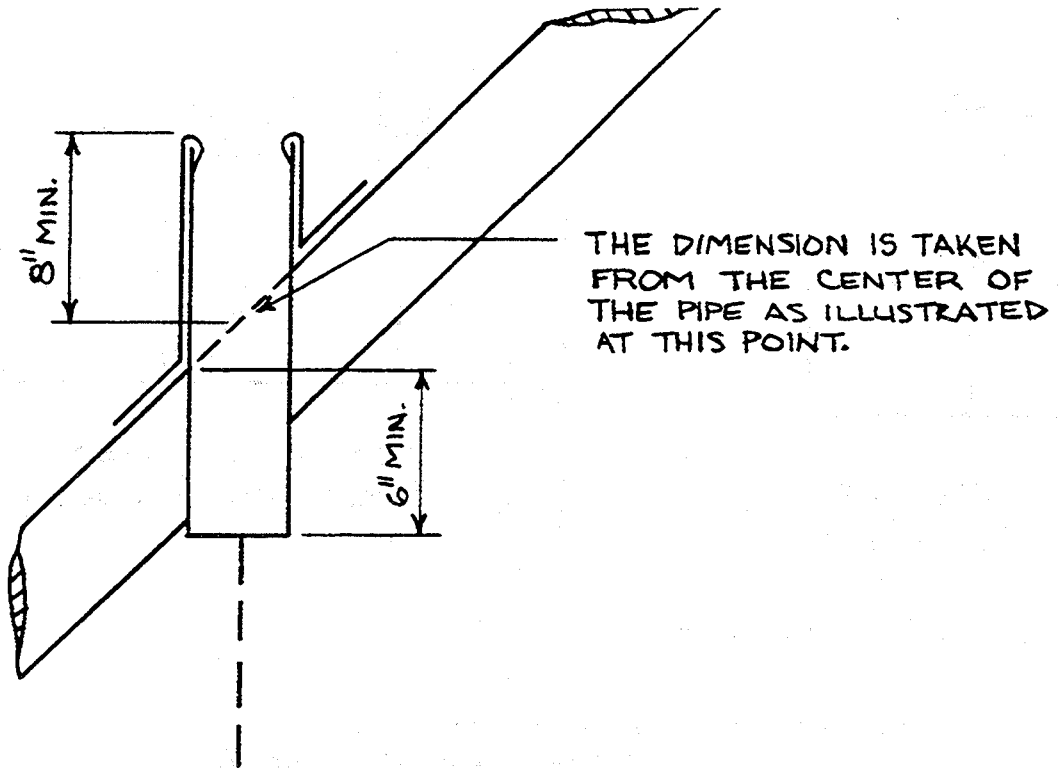
A–82.31 (15) (a) VENT GRADES AND CONNECTIONS.

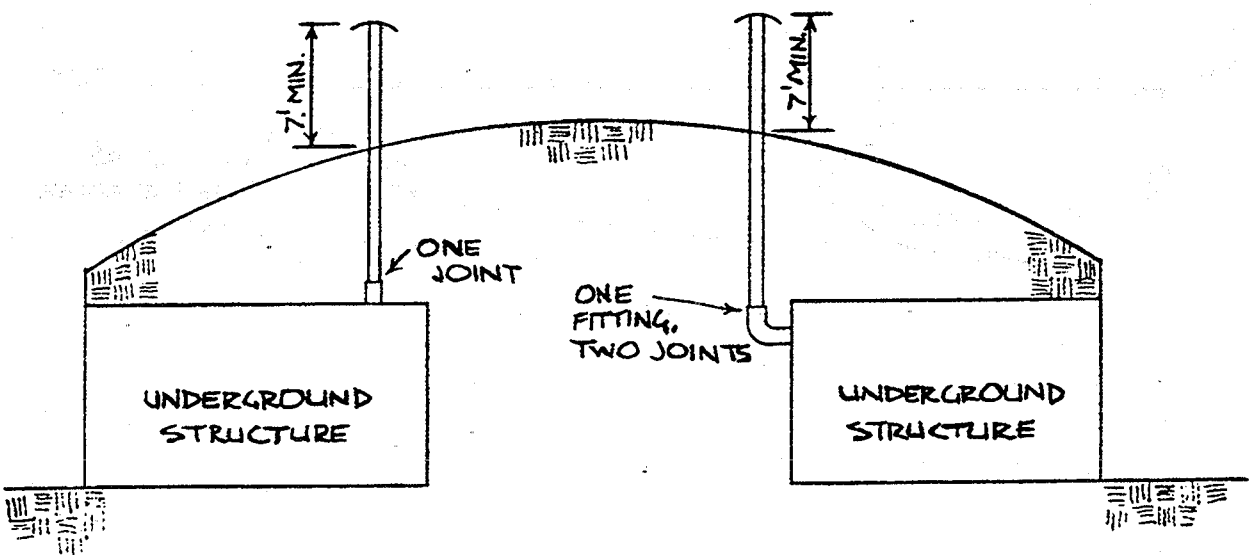


A–82.31 (15) (b) VENT GRADES AND CONNECTIONS.



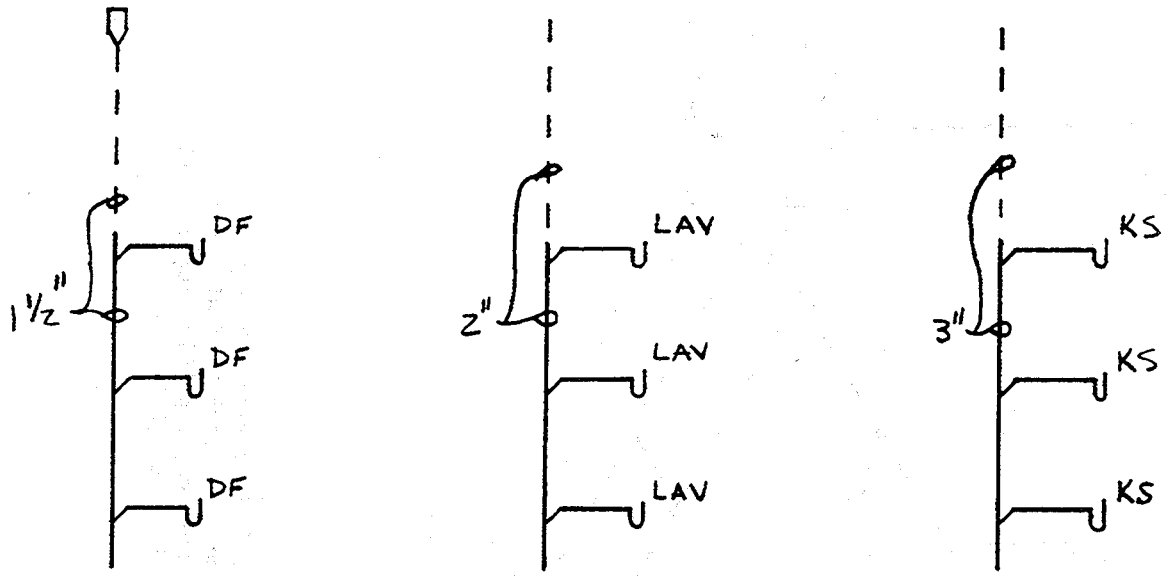
A–82.31 (16) VENT TERMINALS

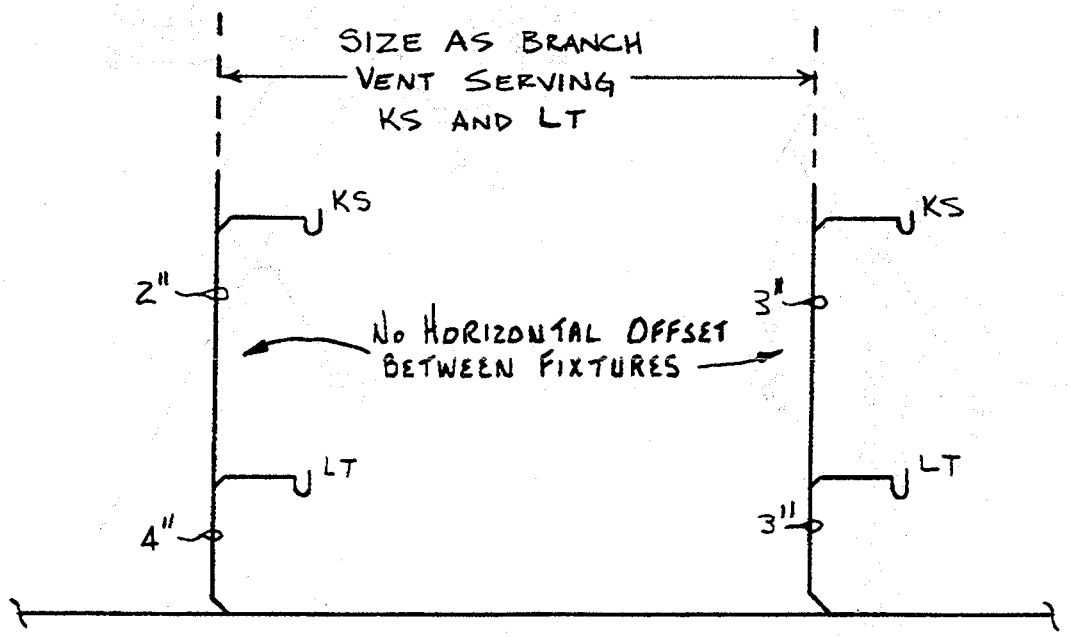




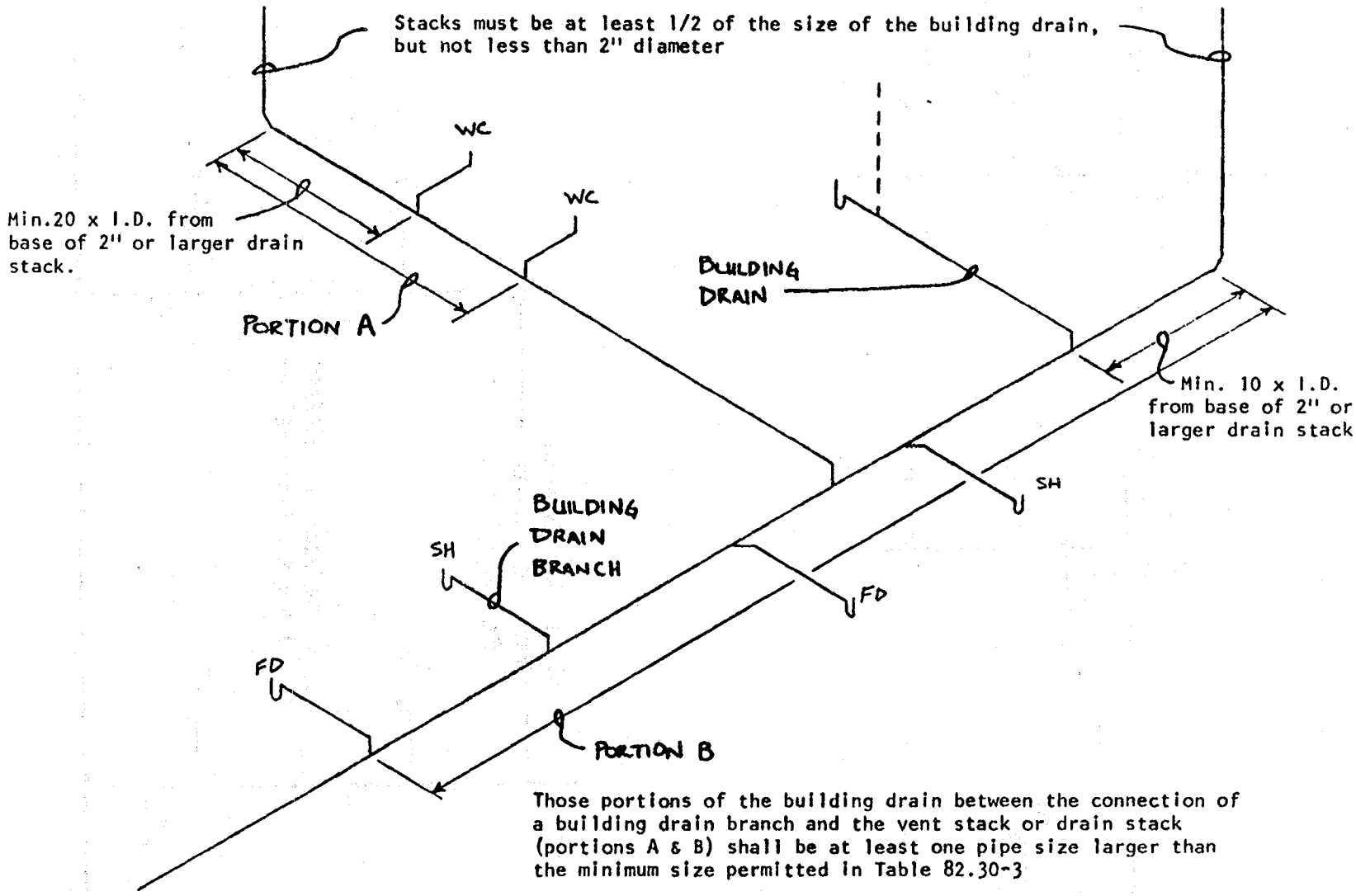
VENT TERMINALS FOR UNDERGROUND STRUCTURES

A–82.31 (17) (a) COMBINATION DRAIN AND VENT STACKS.



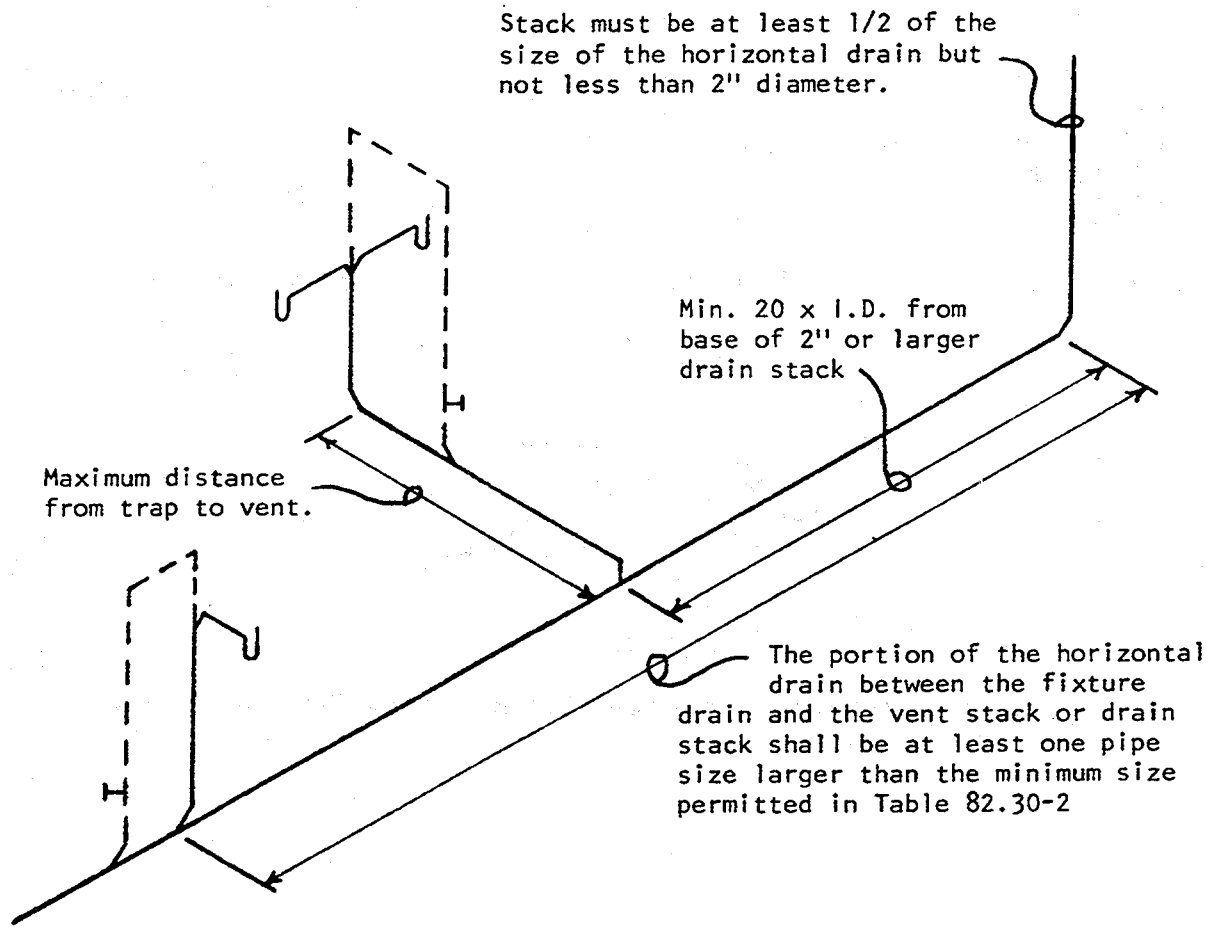


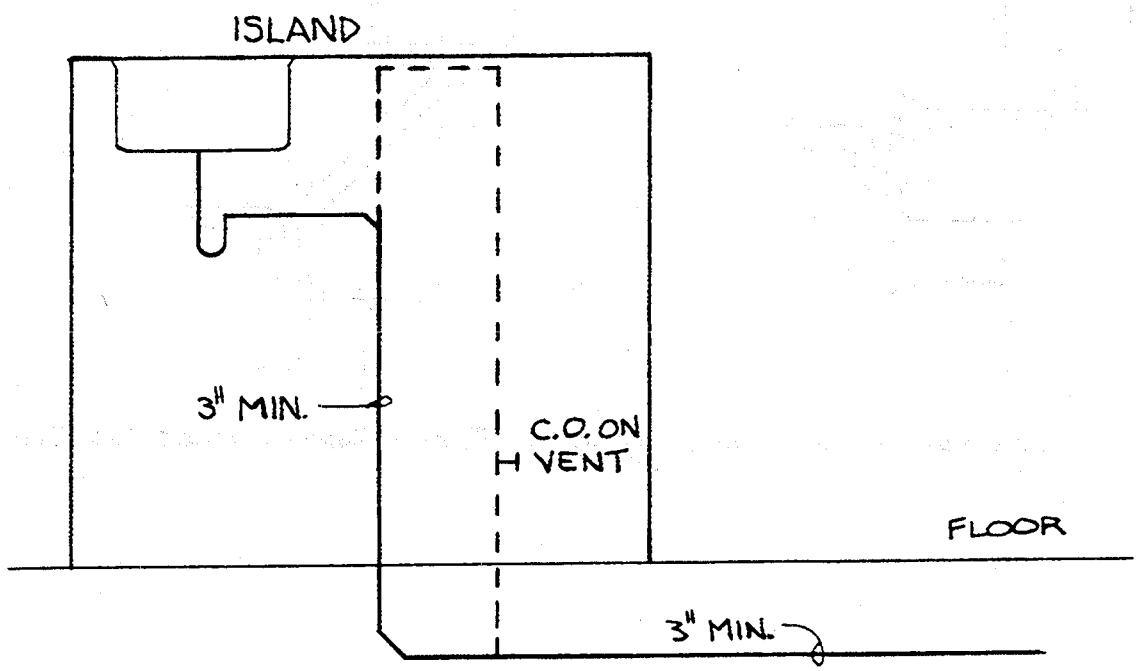
A–82.31 (17) (b) COMBINATION DRAIN AND VENT BUILDING DRAIN.



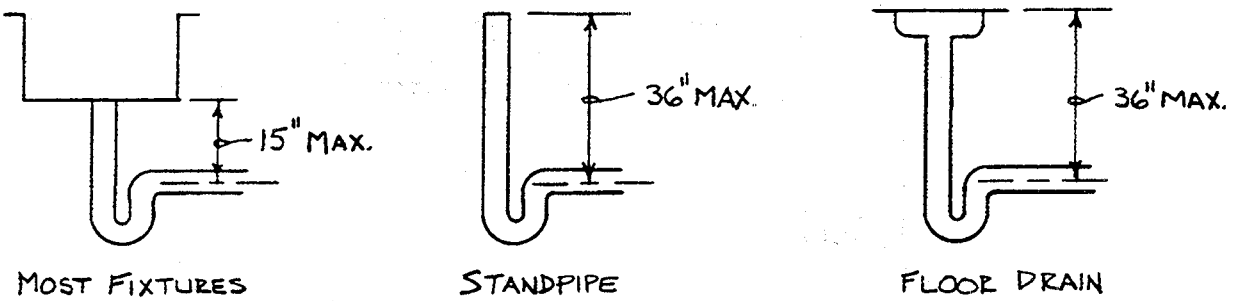
Those portions of the building drain between the connection of a building drain branch and the vent stack or drain stack (portions A & B) shall be at least one pipe size larger than the minimum size permitted in Table 82.30-3

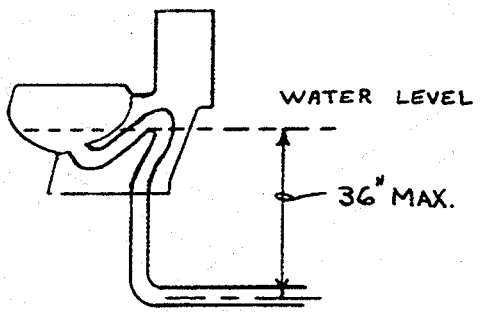
A–82.31 (17) (c) COMBINATION DRAIN AND VENT LABORATORY SINK VENTING.



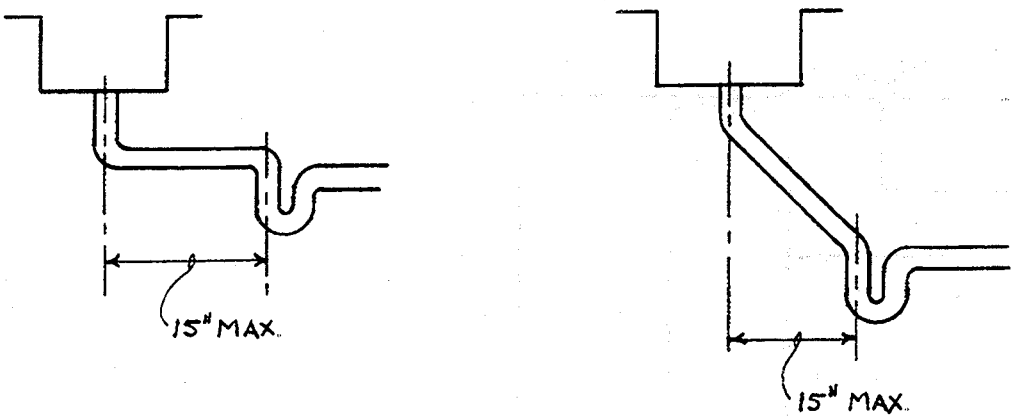


A–82.32 (4) (b) INSTALLATION OF TRAPS



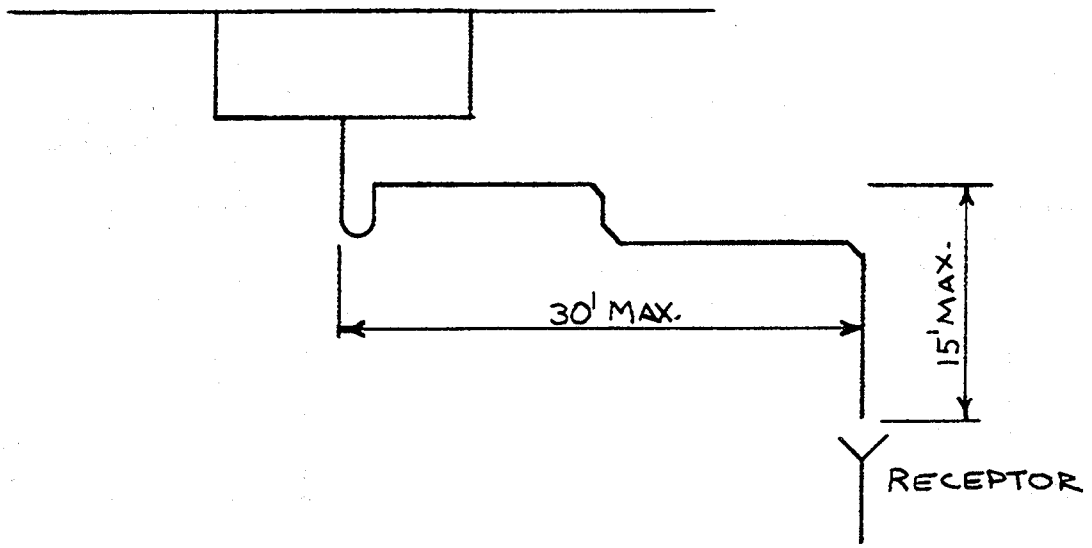


VERTICAL DISTANCE BETWEEN FIXTURE DRAIN OUTLET AND TRAP

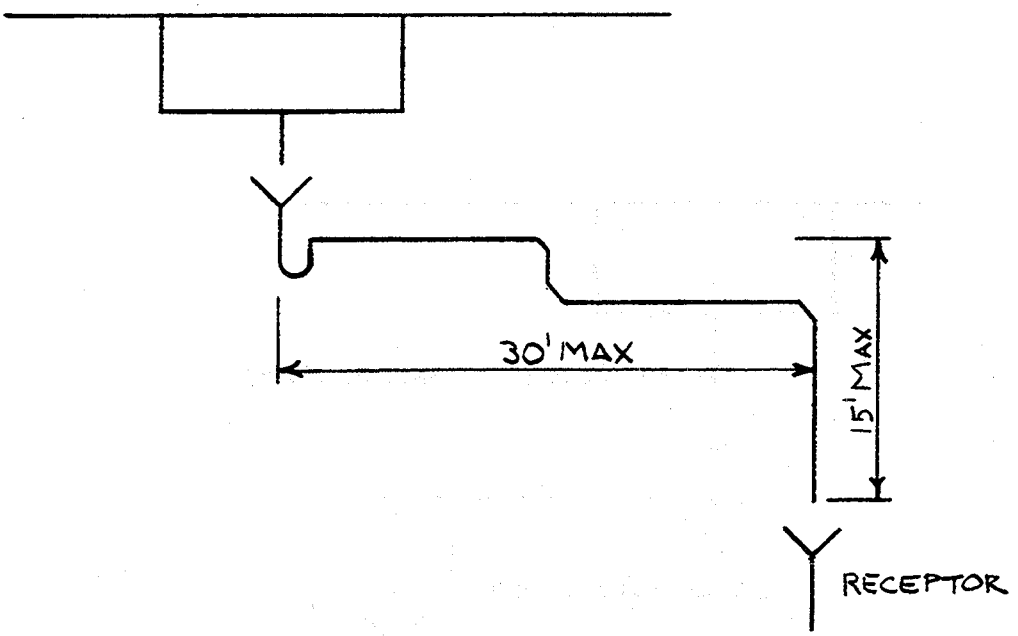


HORIZONTAL DISTANCE BETWEEN FIXTURE DRAIN OUTLET AND TRAP

A–82.33 (6) INDIRECT AND LOCAL WASTE PIPING.

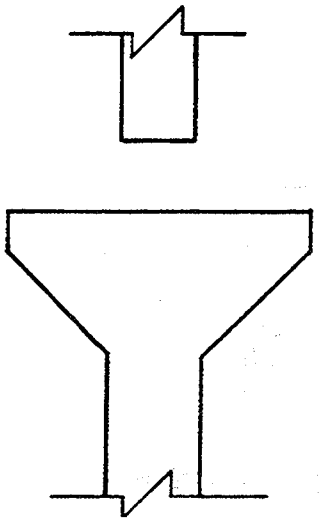


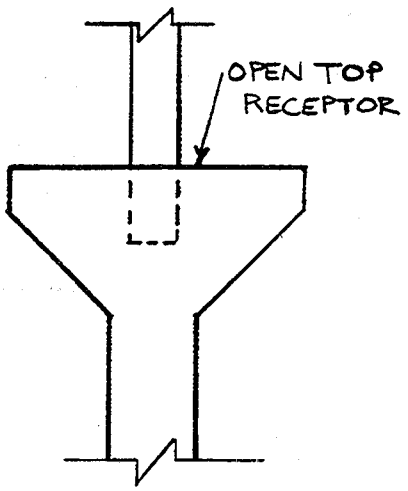
MAXIMUM LENGTH OF INDIRECT WASTE PIPE

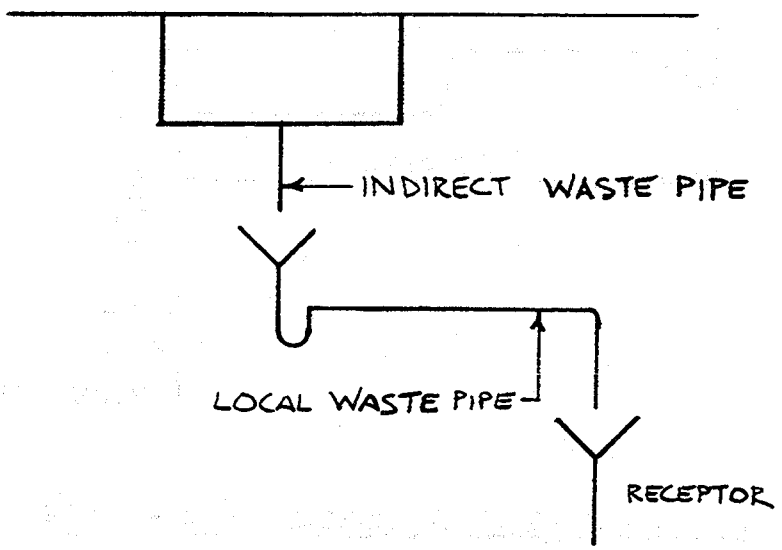


MAXIMUM LENGTH OF LOCAL WASTE PIPE

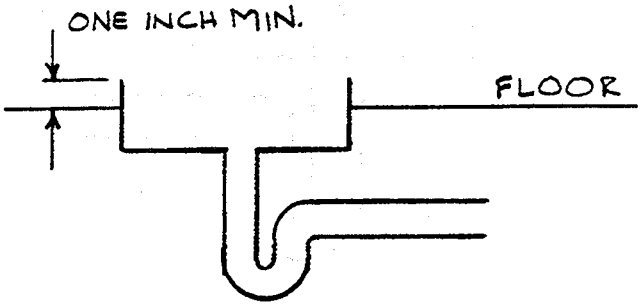
A–82.33 (7) AIR–GAPS AND AIR–BREAKS.



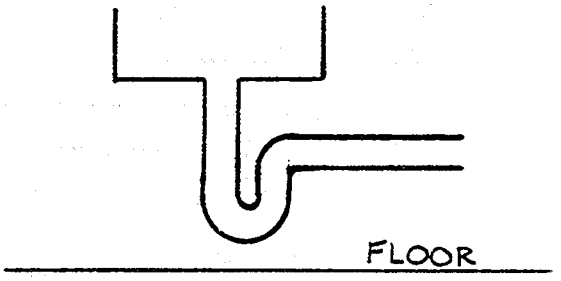




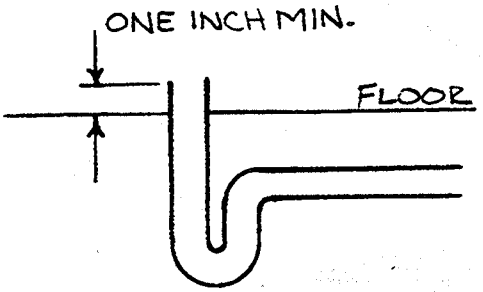
A–82.33 (8) (a) WASTE SINKS AND STANDPIPES



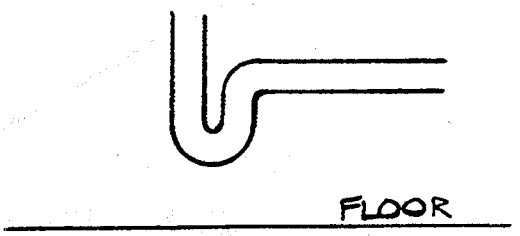
WASTE SINK IN FLOOR



WASTE SINK ABOVE FLOOR

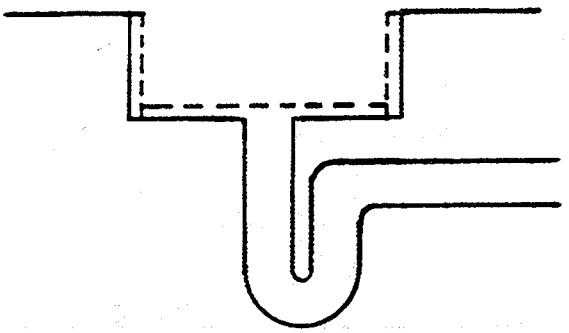


STANDPIPE IN FLOOR

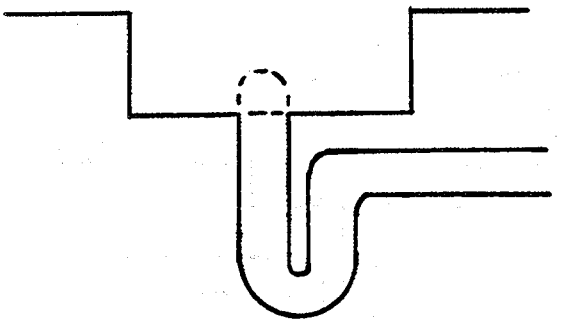


STANDPIPE ABOVE FLOOR

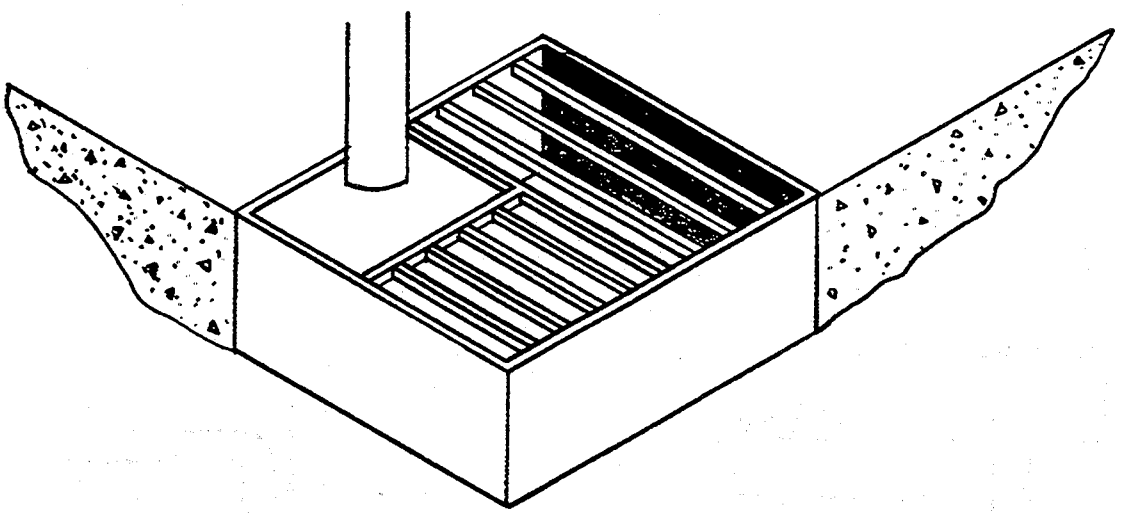
A–82.33 (8) (b) FLOOR SINKS.



FLOOR SINK WITH BASKET

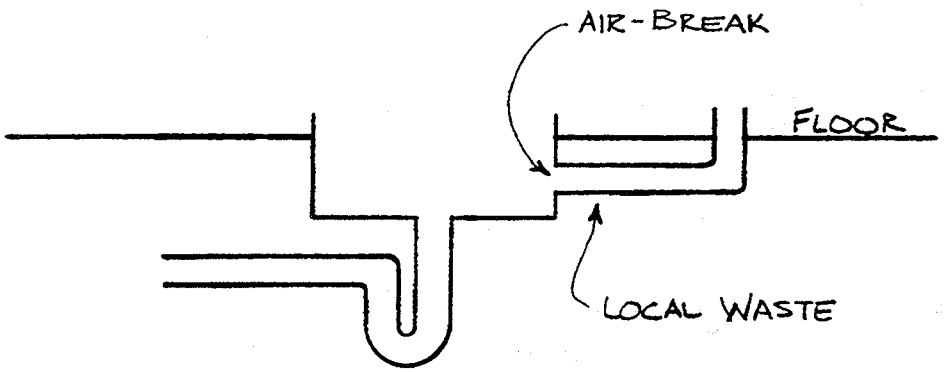


FLOOR SINK WITH DOME STRAINER

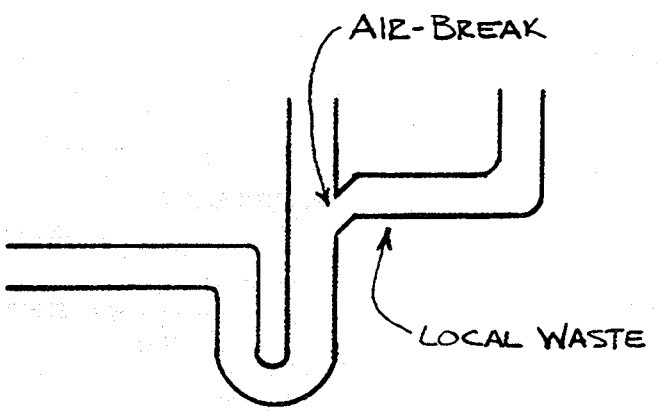


FLOOR SINK WITH GRATE OPENING FOR AIR GAP

A–82.33 (8) (c) LOCAL WASTE PIPING.

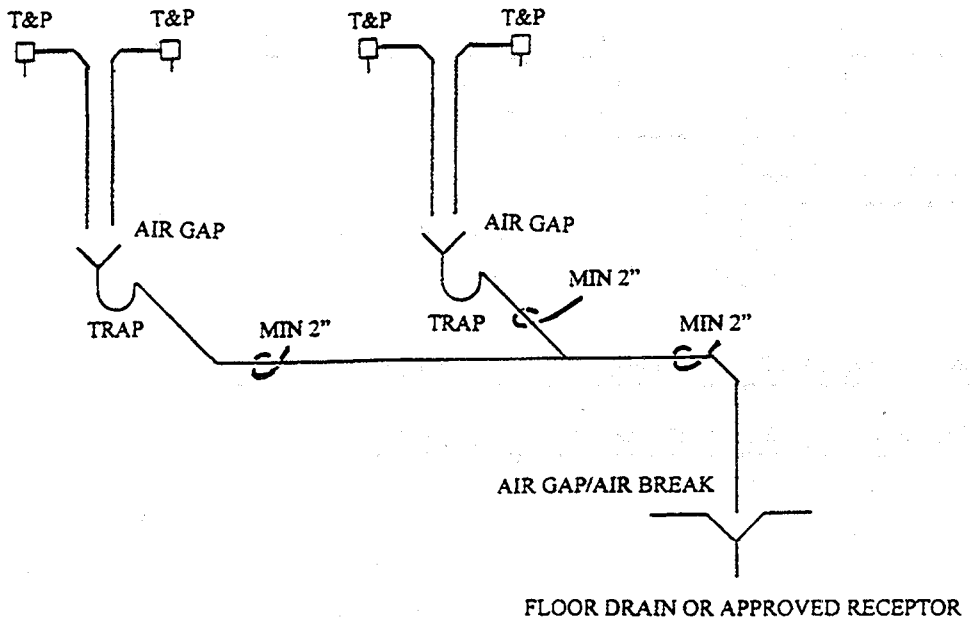


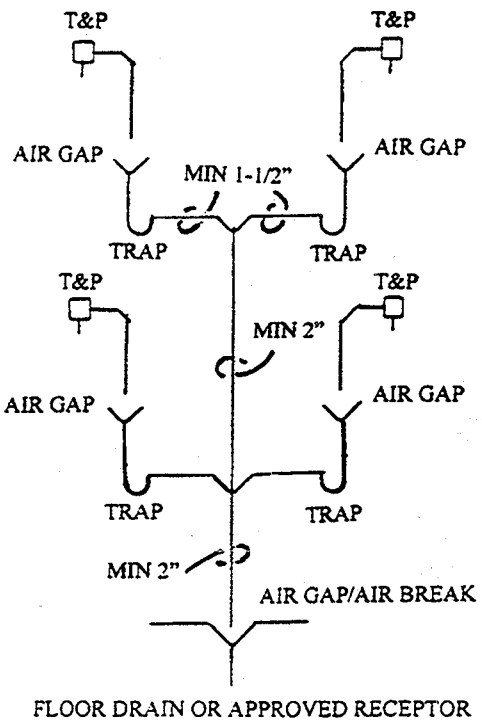
LOCAL WASTE LEADING TO A WASTE SINK, FLOOR SINK OR FLOOR DRAIN

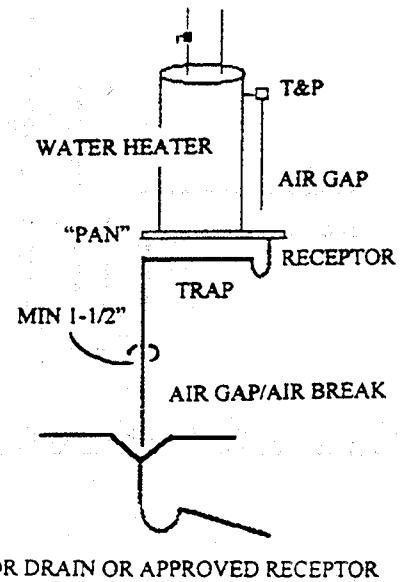


LOCAL WASTE LEADING TO A STANDPIPE

A–82.33 (8) (c) LOCAL WASTE PIPING SERVING WATER HEATER RELIEF VALVES.

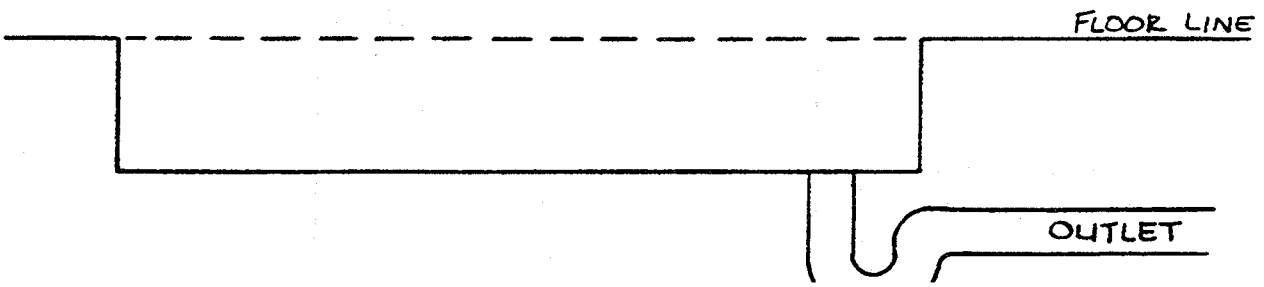




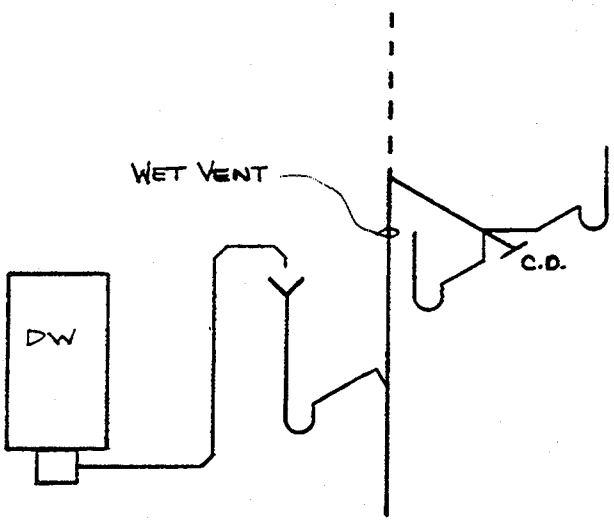


A–82.33 (9) (c) COMMERCIAL GRAVITY DISCHARGE–TYPE CLOTHES WASHERS.

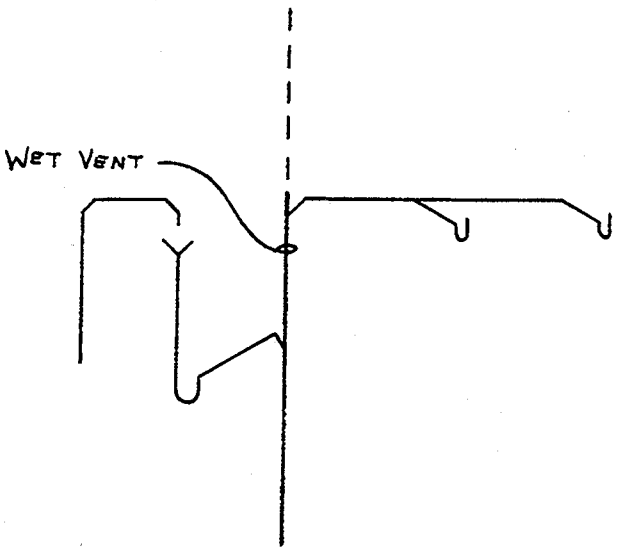
TRENCH TYPE LAUNDRY RECEPTOR



A–82.33 (9) (d) RESIDENTIAL–TYPE DISHWASHERS.



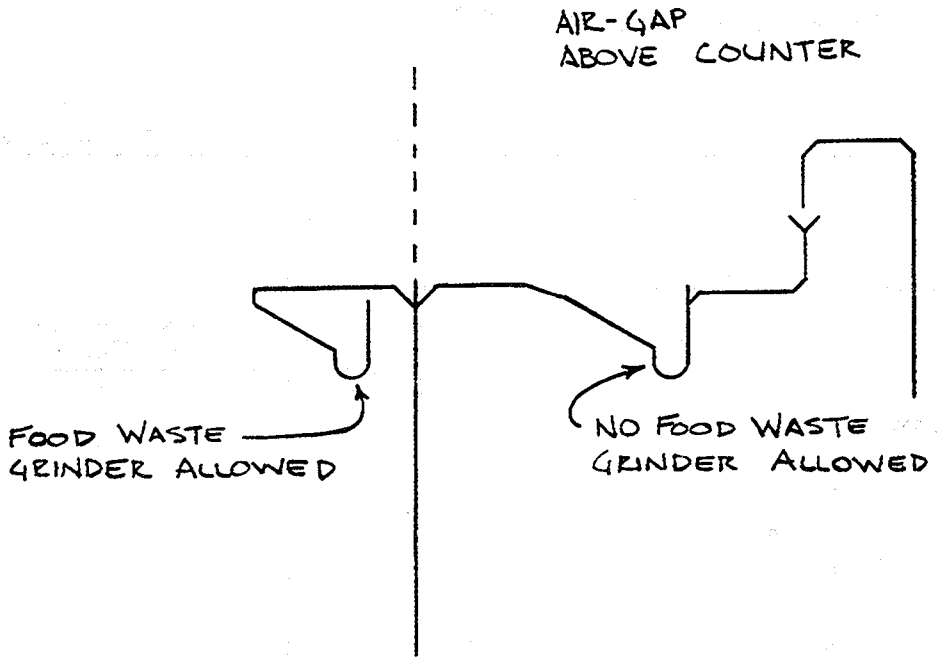
K.S. WITH OR WITHOUT
FOOD WASTE GRINDER

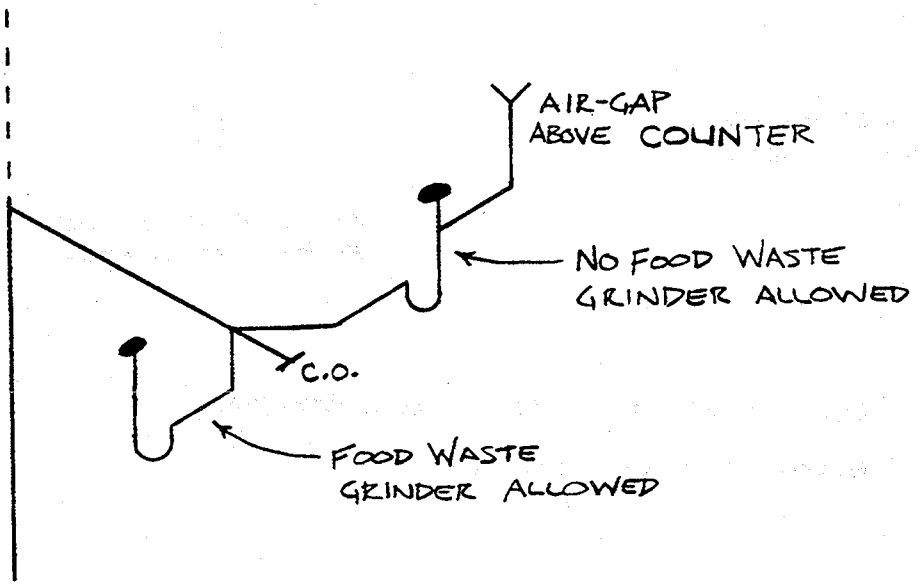


KS. WITH OR WITHOUT
FOOD WASTE GRINDER

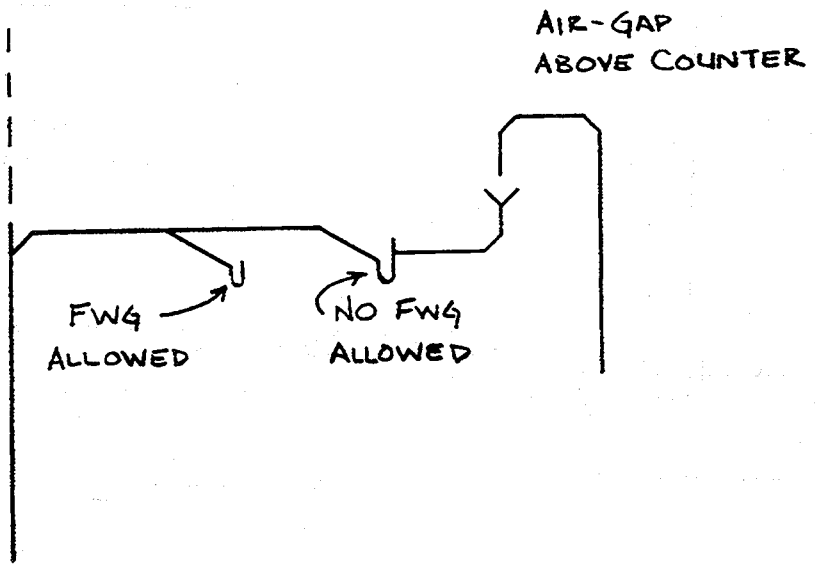
DISWASHER DISCHARGING TO A STANDPIPE
BELOW THE COUNTER TOP.

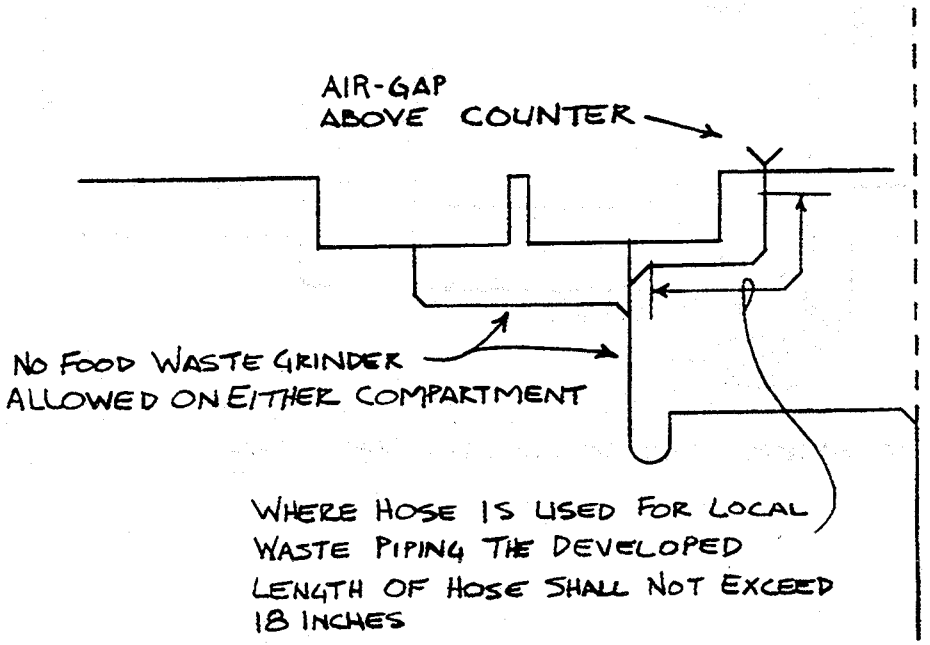
A–82.33 (9) (d) RESIDENTIAL–TYPE DISHWASHERS.



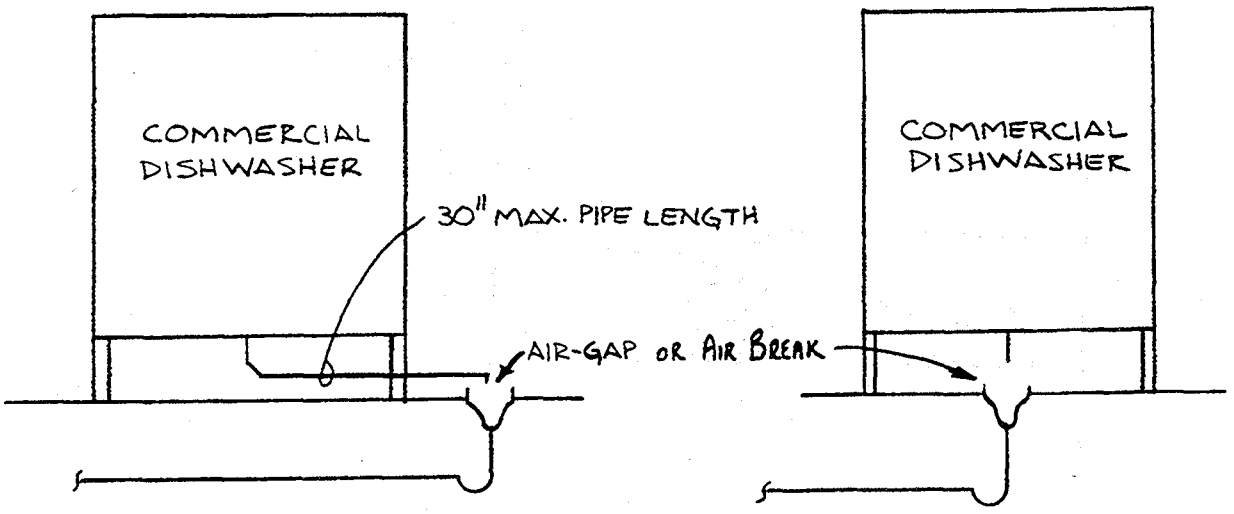


A–82.33 (9) (d) RESIDENTIAL–TYPE DISHWASHERS.

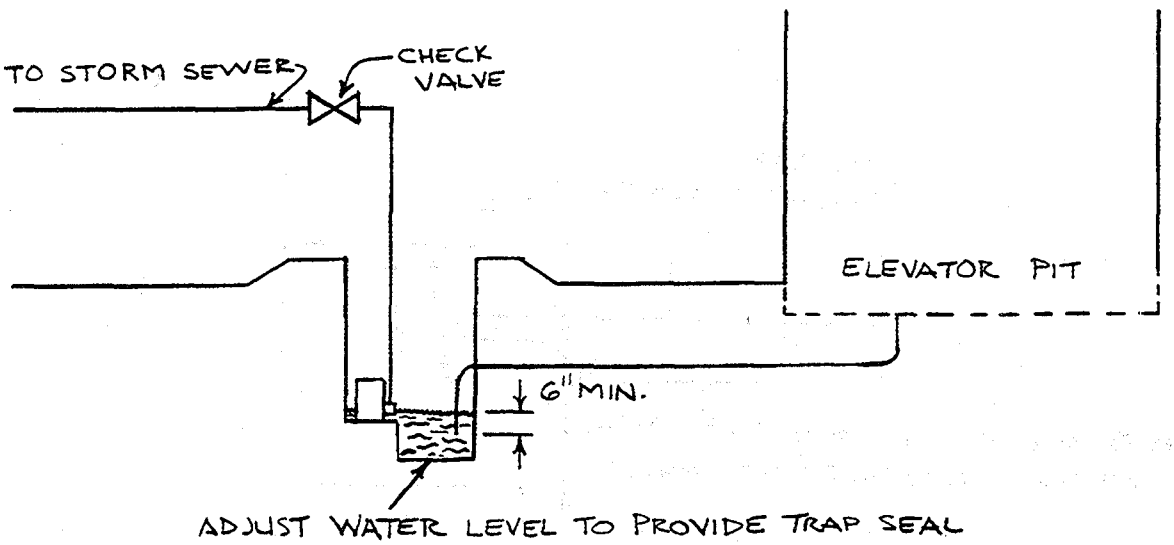




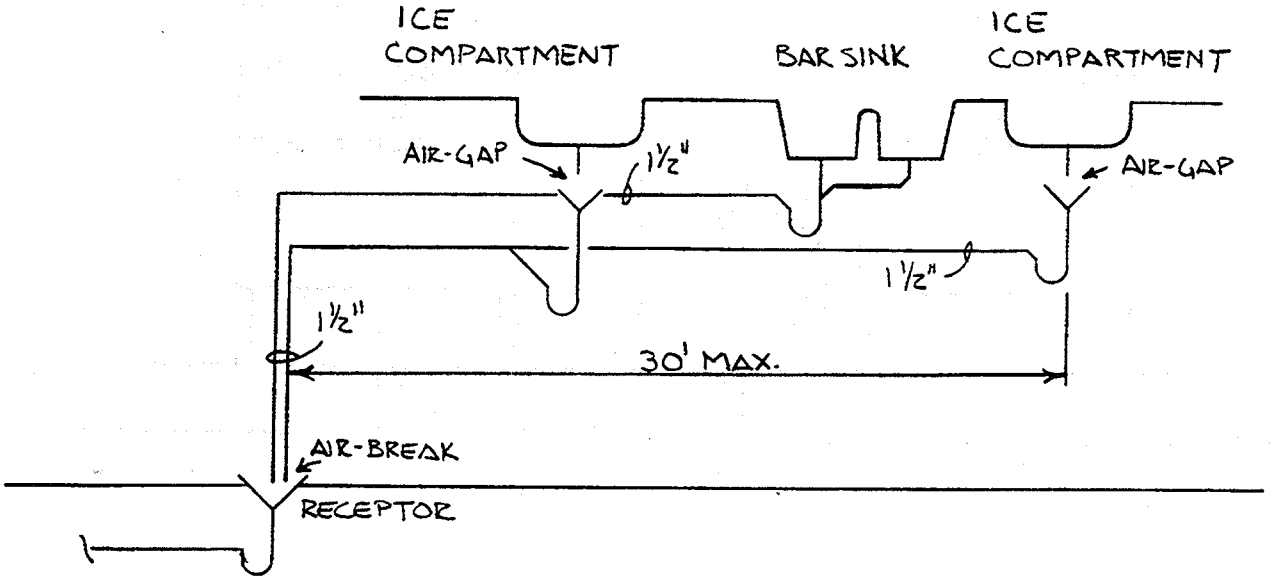
A–82.33 (9) (d) COMMERCIAL DISHWASHERS.



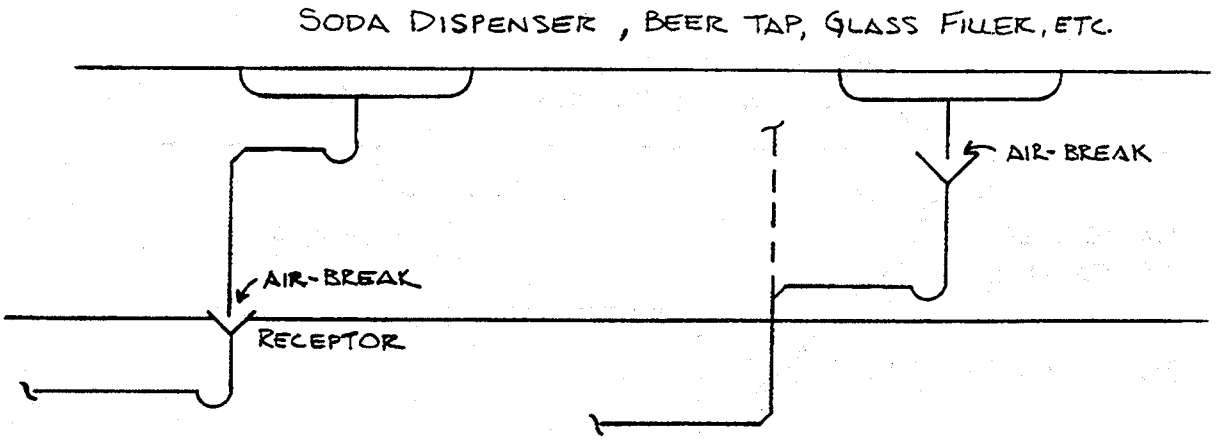
A–82.33 (9) (f) ELEVATOR PIT SUBSOIL AND FLOOR DRAINS.



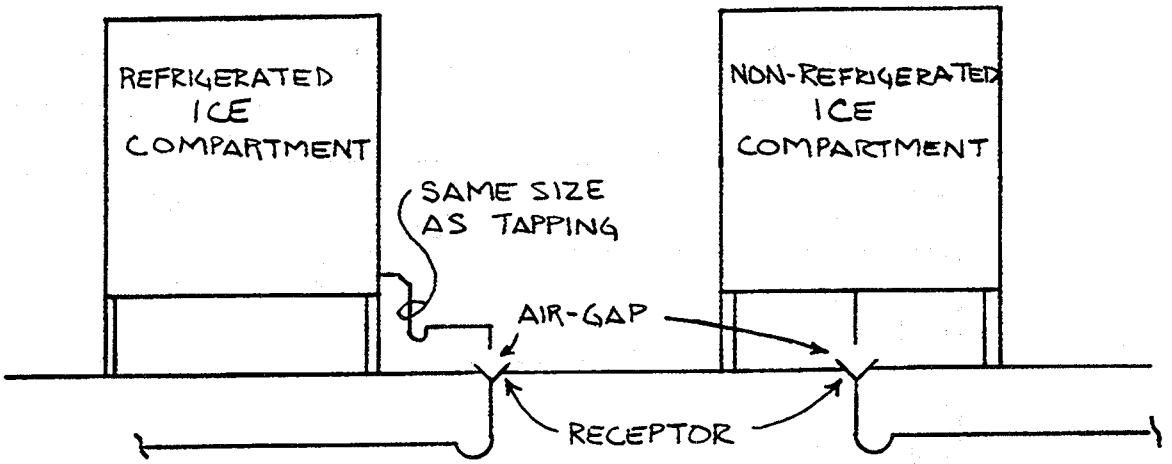
A–82.33 (9) (g) 1. BAR AND SODA FOUNTAIN SINKS.

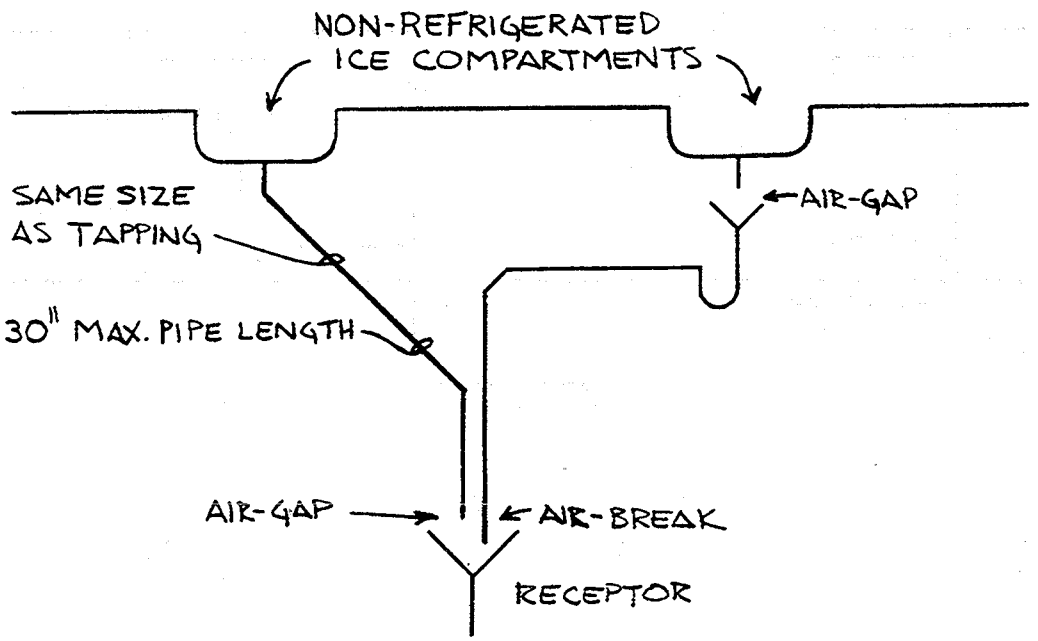


A–82.33 (9) (g) 2. BEER TAPS, COFFEE MAKERS, GLASS FILLERS AND SODA DISPENSERS.

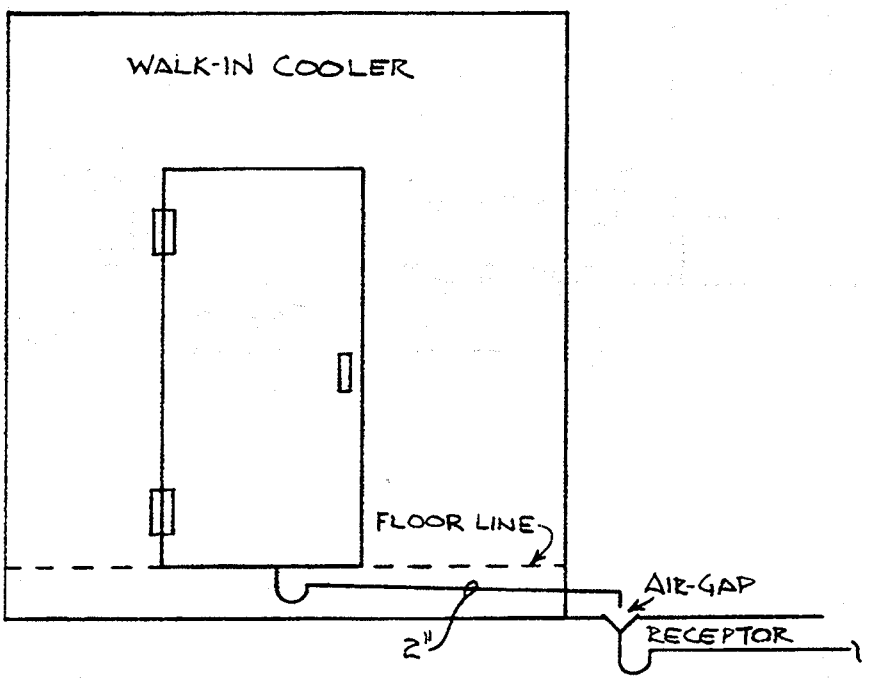


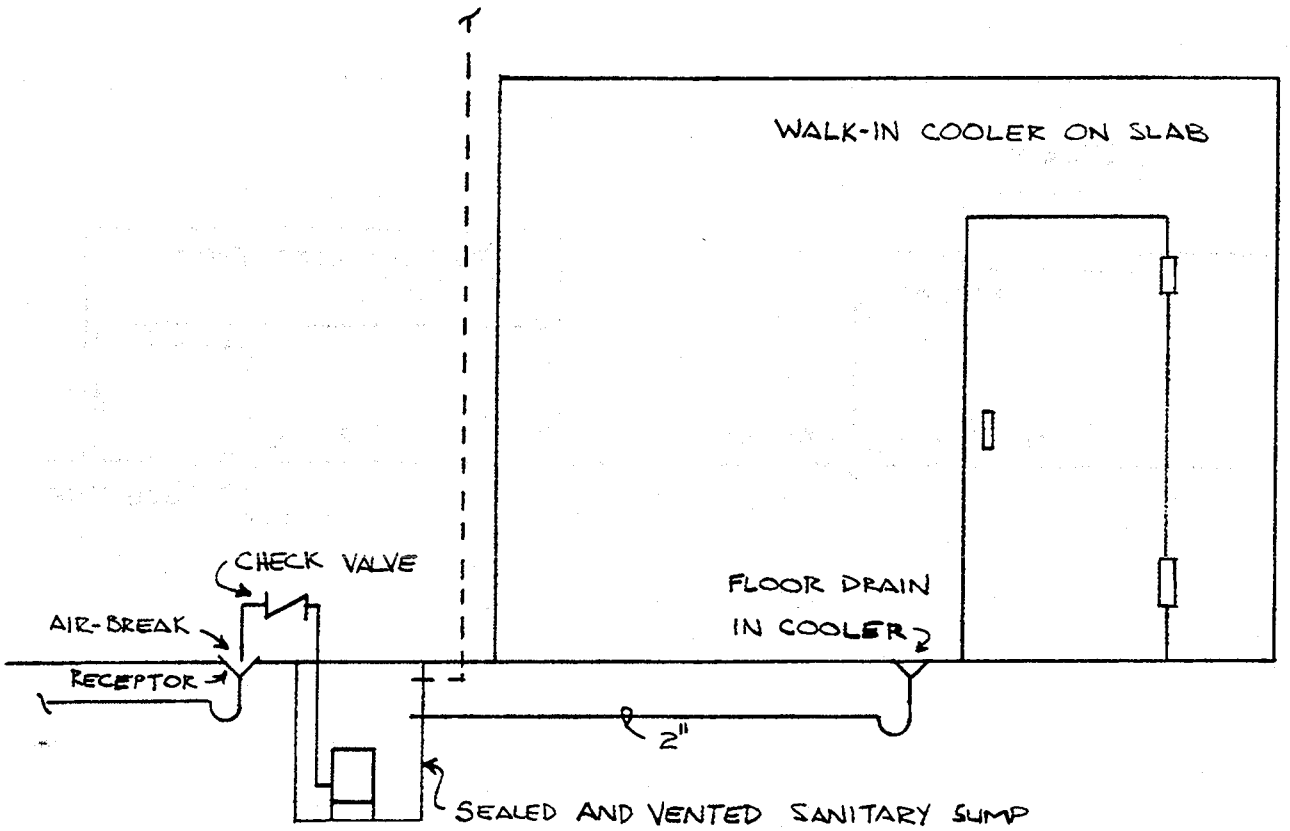
A–82.33 (9) (g) 3. NOVELTY BOXES, AND ICE COMPARTMENTS AND ICE CREAM DIPPER WELLS.



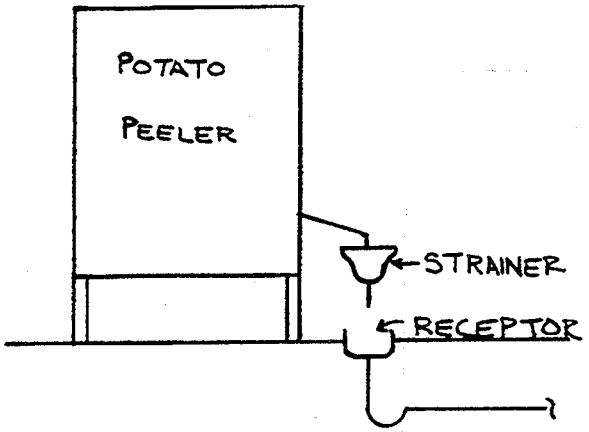


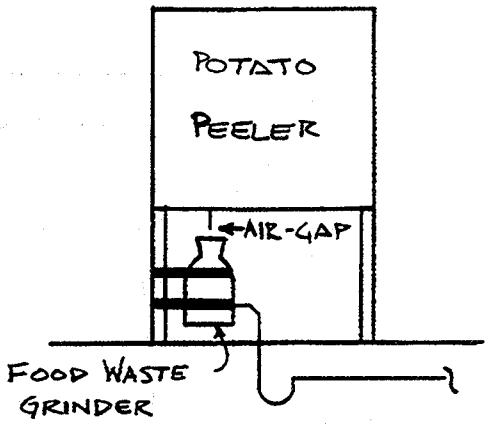
A–82.33 (9) (g) 4. REFRIGERATED FOOD STORAGE ROOMS, COMPARTMENTS, AND DISPLAY CASES.

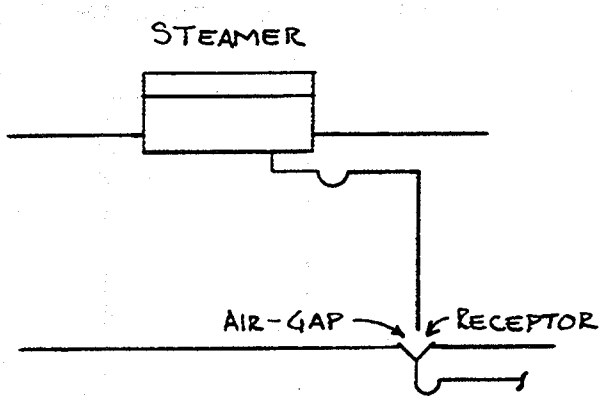


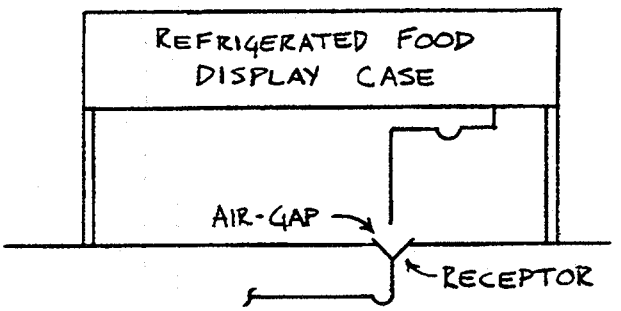


A–82.33 (9) (g) 5. MISCELLANEOUS FOOD HANDLING EQUIPMENT.

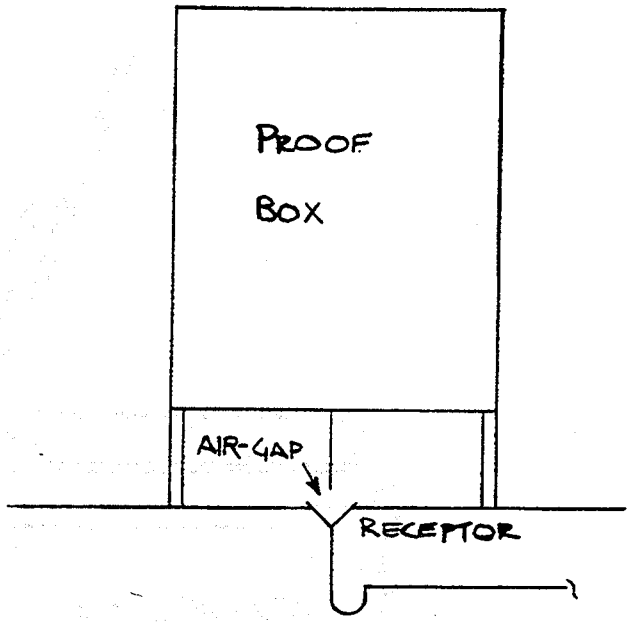


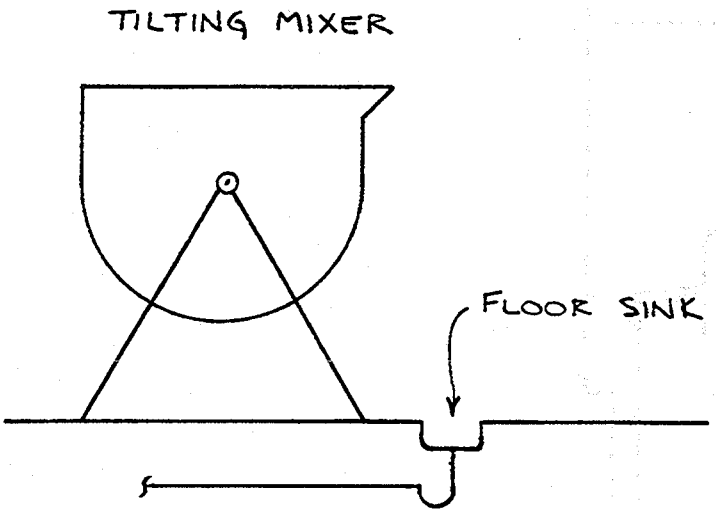




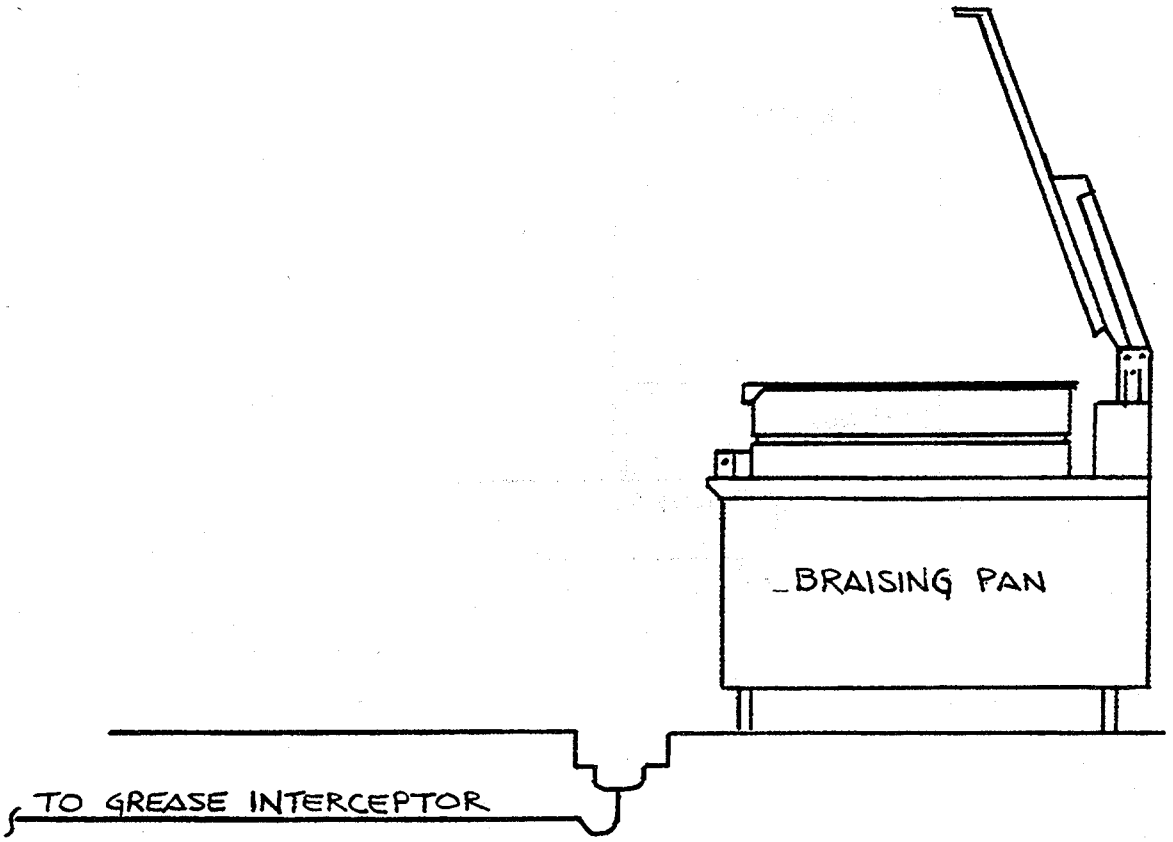


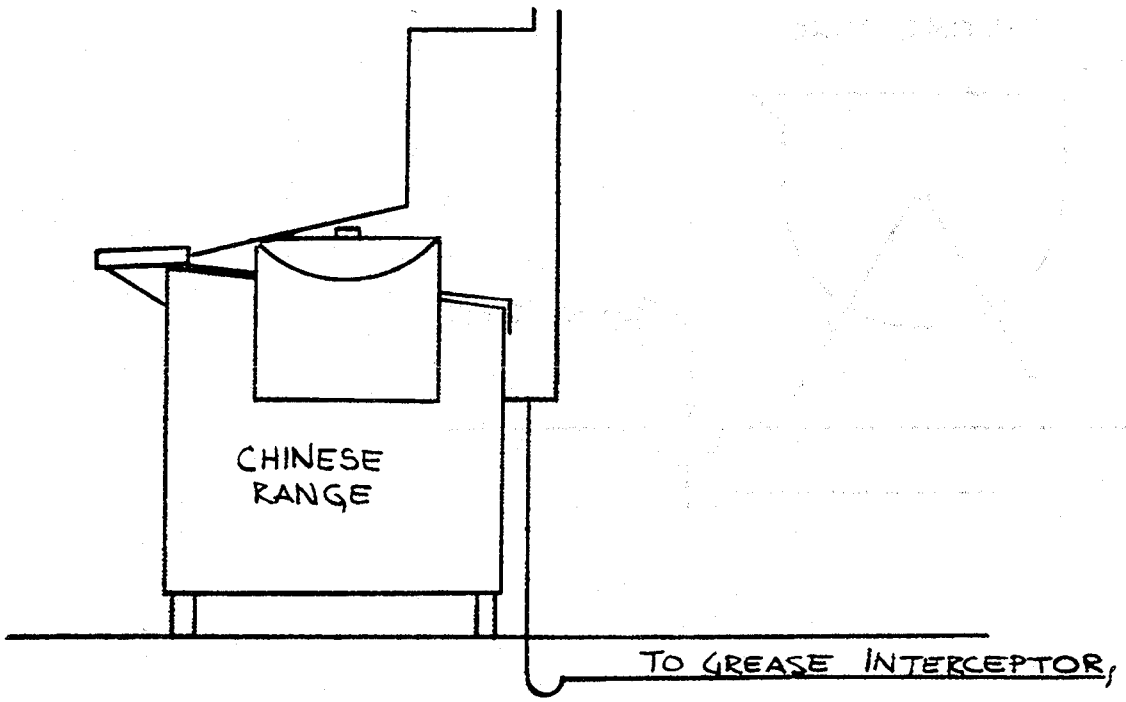
A–82.33 (9) (g) 5. MISCELLANEOUS FOOD HANDLING EQUIPMENT.



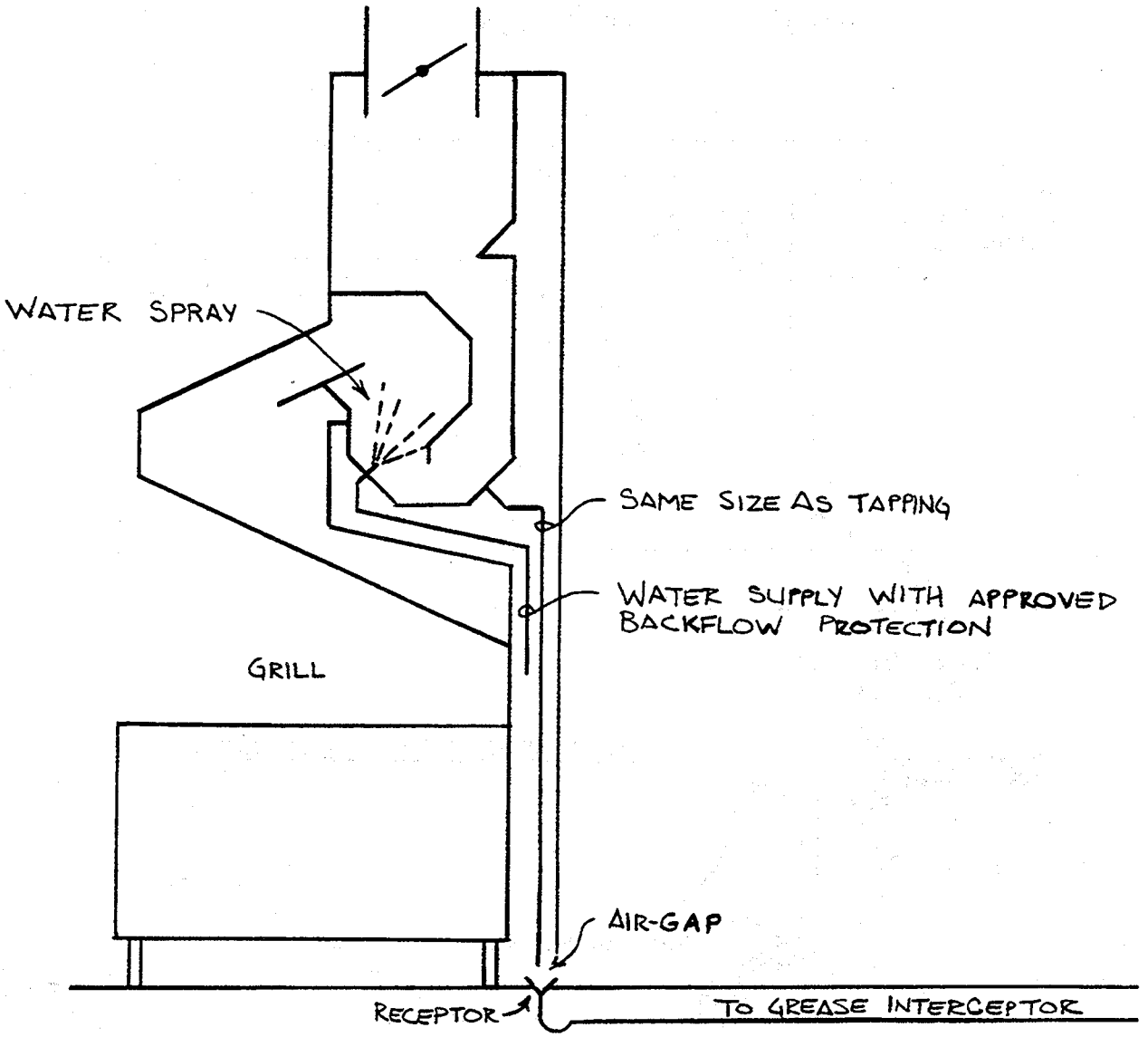


A–82.33 (9) (g) 5. MISCELLANEOUS FOOD HANDLING EQUIPMENT



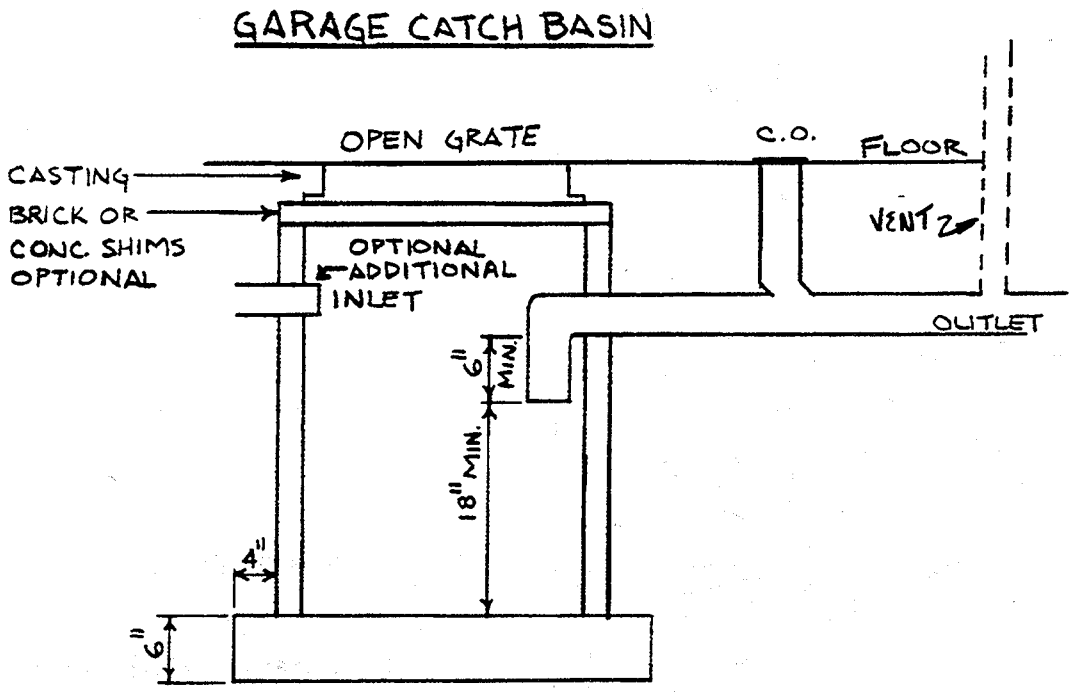


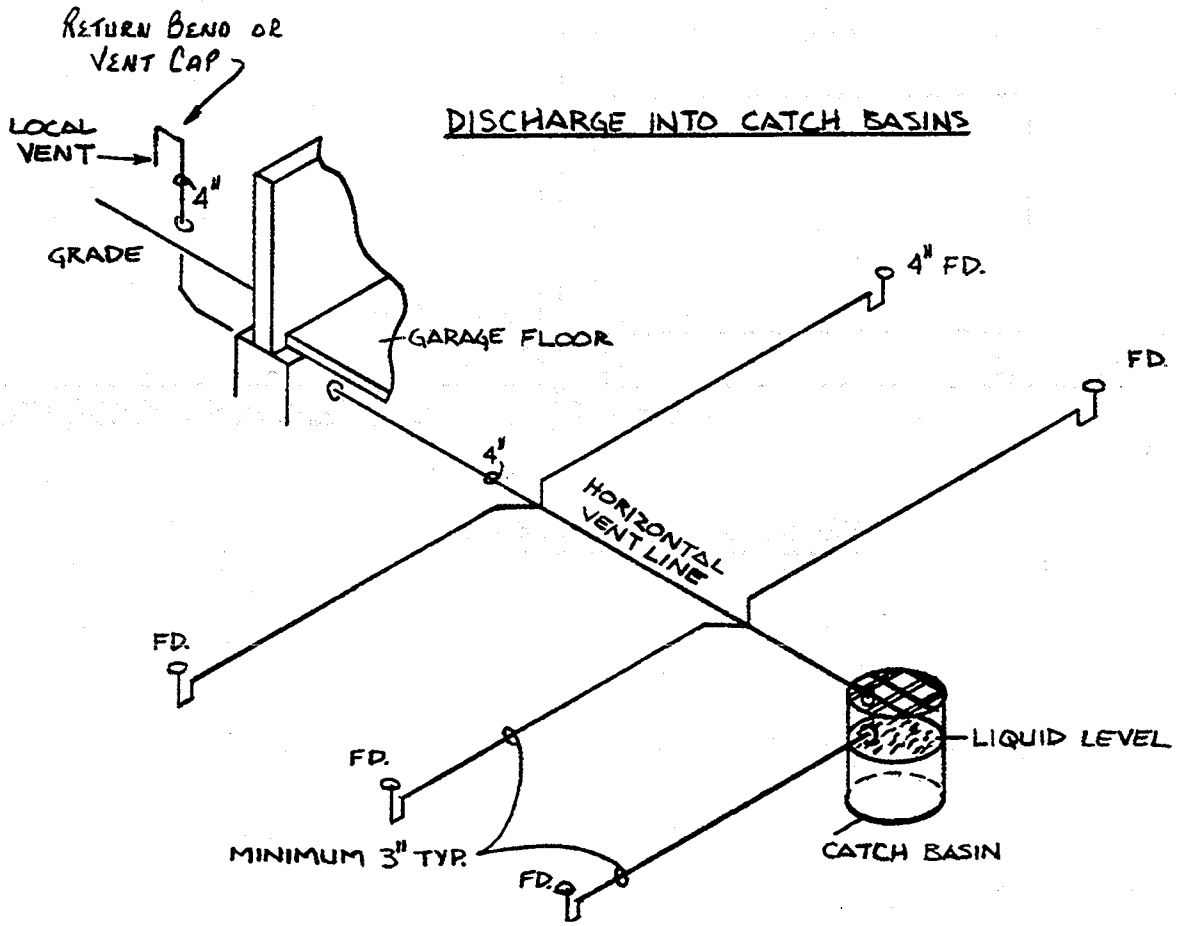
A–82.33 (9) (g) 5. MISCELLANEOUS FOOD HANDLING EQUIPMENT



EXHAUST HOOD WASHER

A–82.34 (4) (a) PUBLIC BUILDINGS.



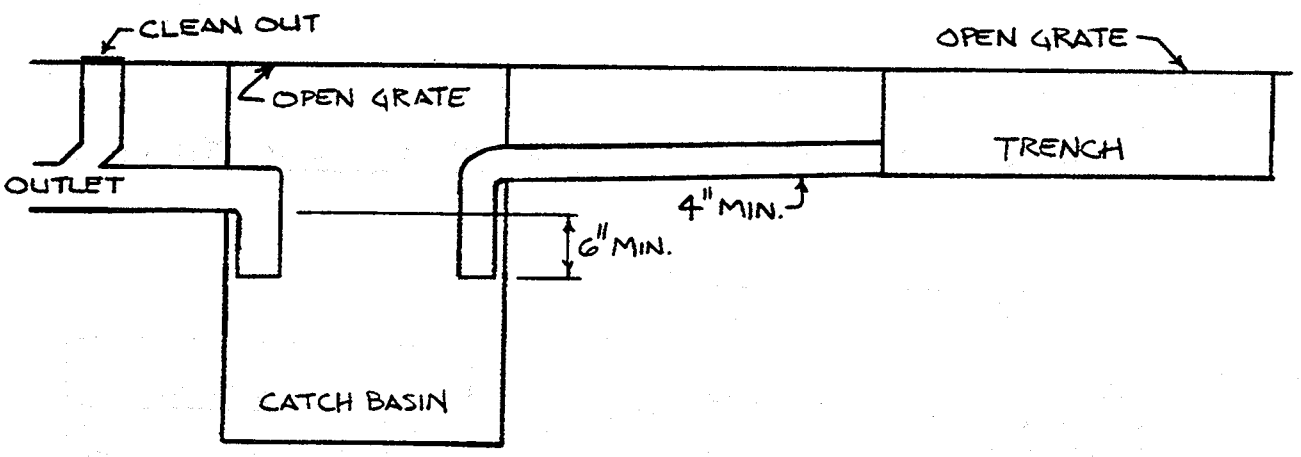


A–82.34 (4) (a) PUBLIC BUILDINGS.

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

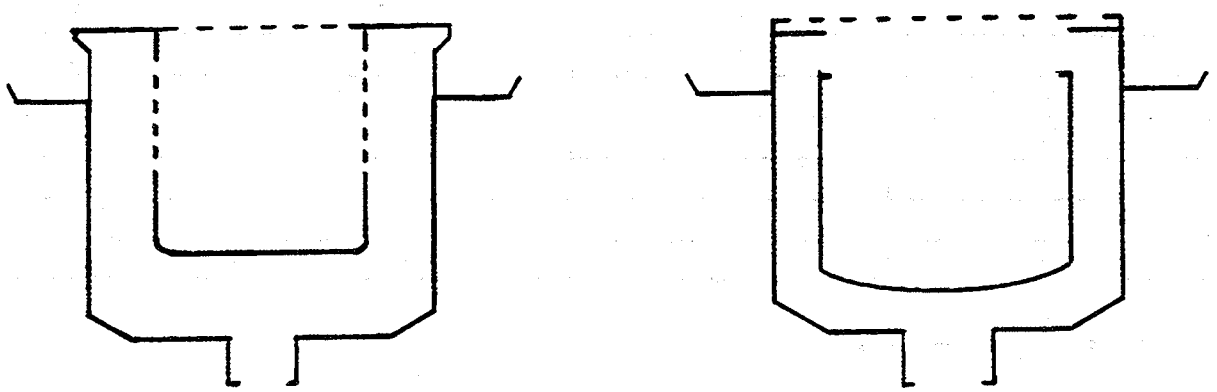
A–82.34 (4) (a) PUBLIC BUILDINGS.

TRENCH DRAINS



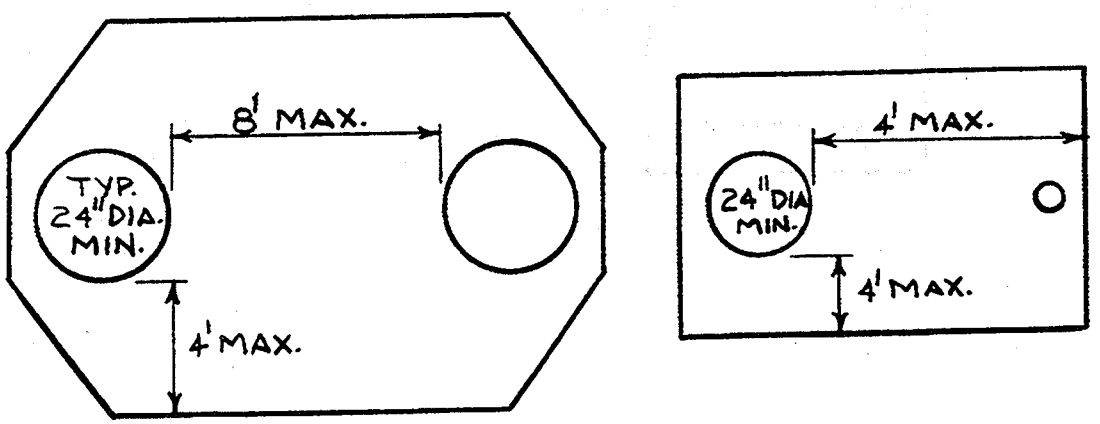
A–82.34 (4) (b) GARAGES FOR ONE– AND 2–FAMILY DWELLINGS.

TYPICAL FLOOR DRAIN WITH SOLID BOTTOM SEDIMENT BASKET

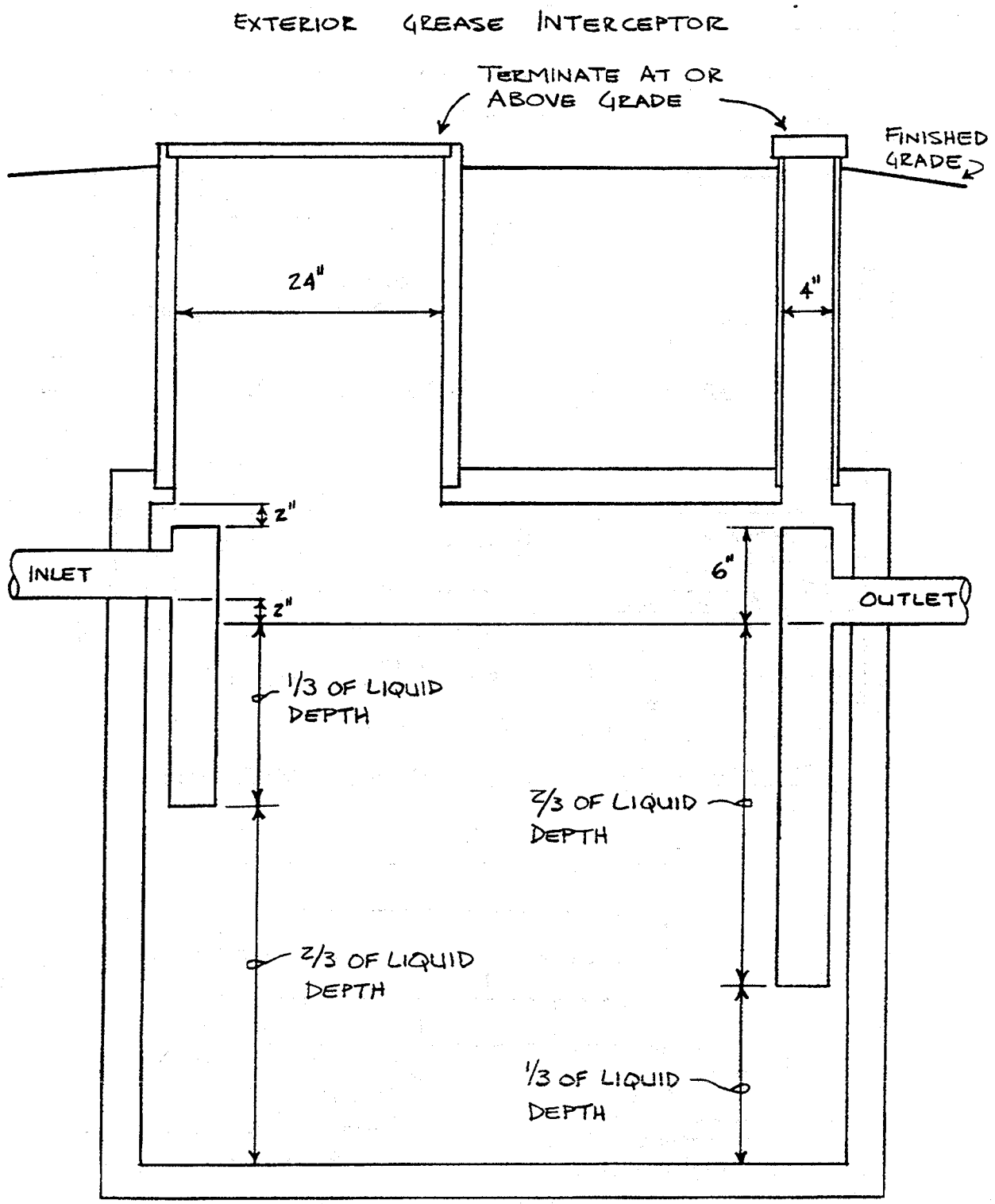


A–82.34 (5) (b) EXTERIOR GREASE INTERCEPTORS.

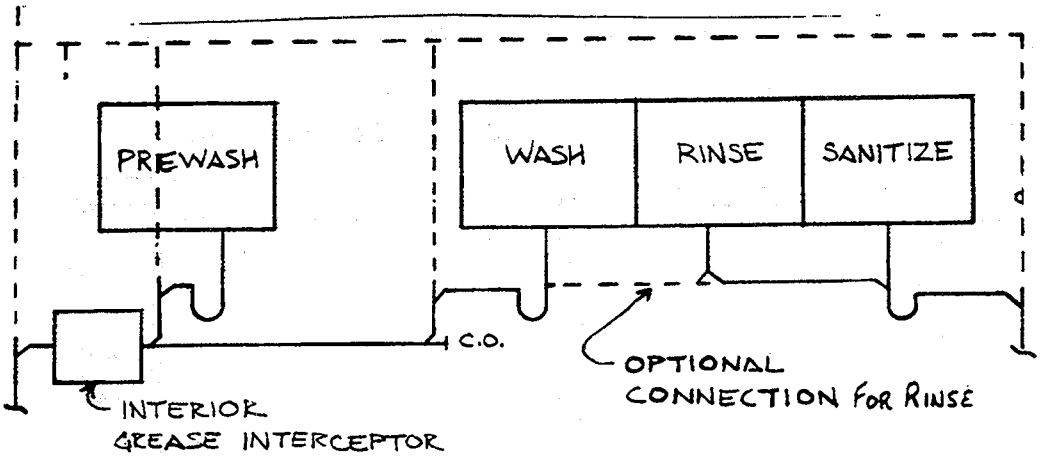
GREASE INTERCEPTOR MANHOLE LOCATION



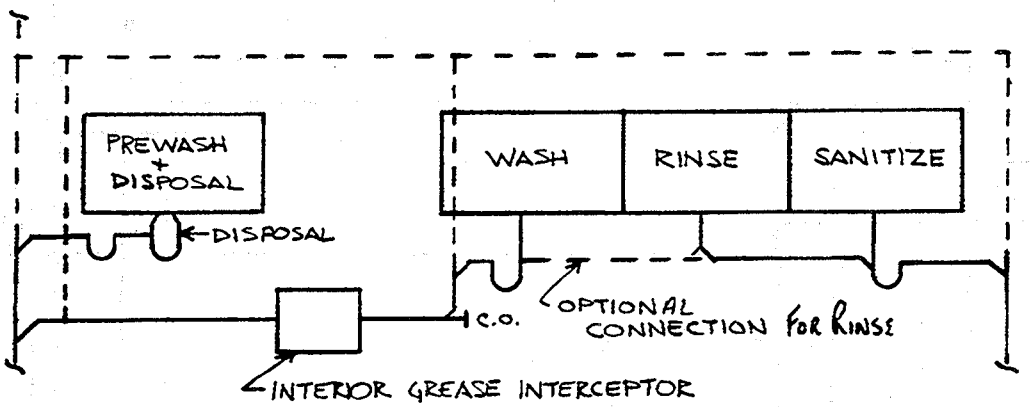
A–82.34 (5) (b) EXTERIOR GREASE INTERCEPTORS.



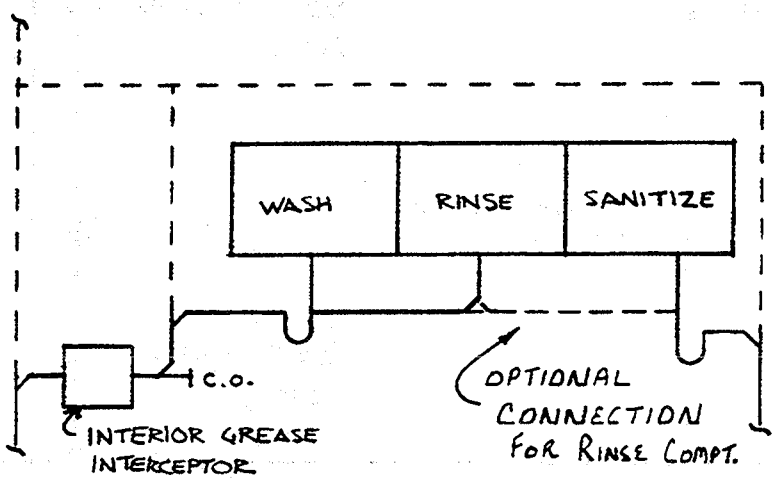
A–82.34 (5) (c) INTERIOR GREASE INTERCEPTORS.



PREWASH AND 3 COMPARTMENT SCULLERY SINK



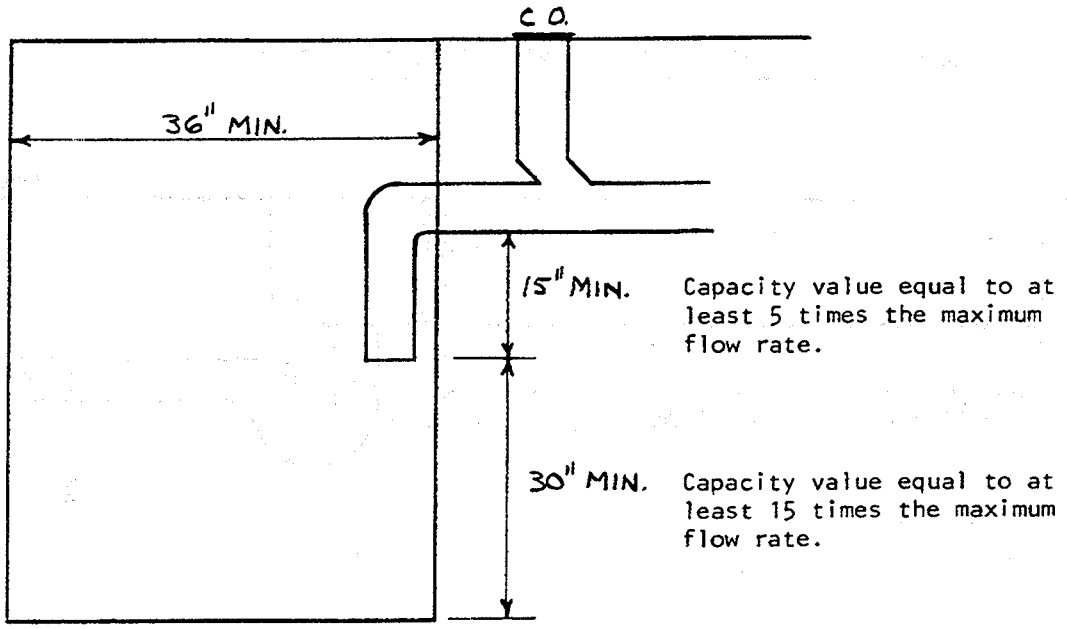
PREWASH + DISPOSAL + 3 COMPARTMENT SCULLERY SINK



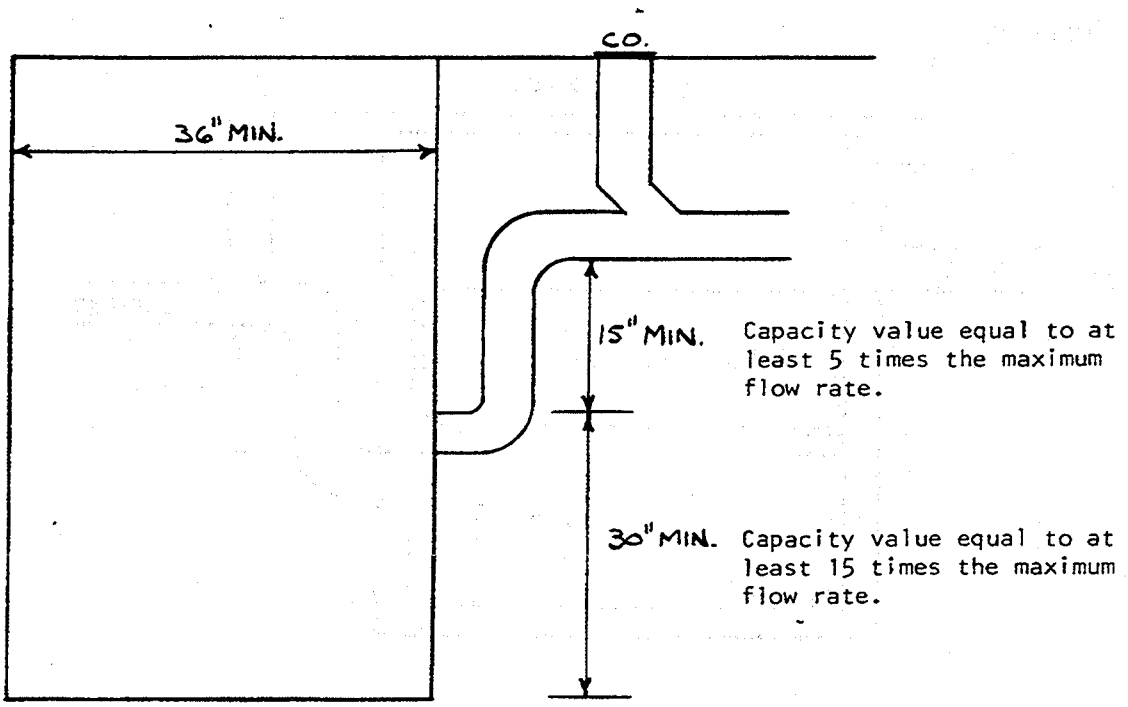
3 COMPARTMENT SCULLERY SINK

Note: Rinse and sanitize compartments and garbage disposals may discharge through interior grease interceptors.

A–82.34 (6) AUTOMATIC CAR WASHES



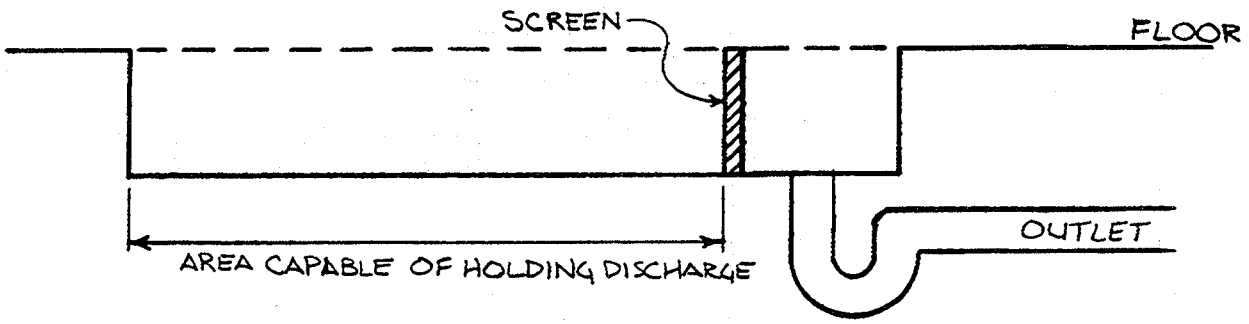
CAR WASH INTERCEPTOR WITH INVERT INSIDE OF BASIN



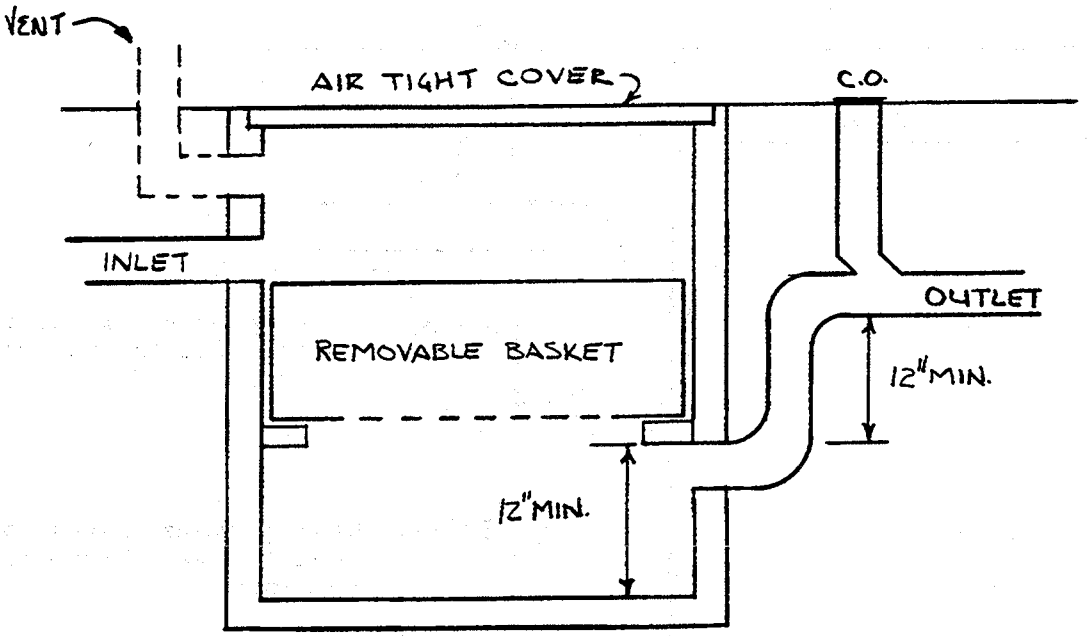
CAR WASH INTERCEPTOR WITH INVERT OUTSIDE OF BASIN

A–82.34 (7) COMMERCIAL LAUNDRIES.

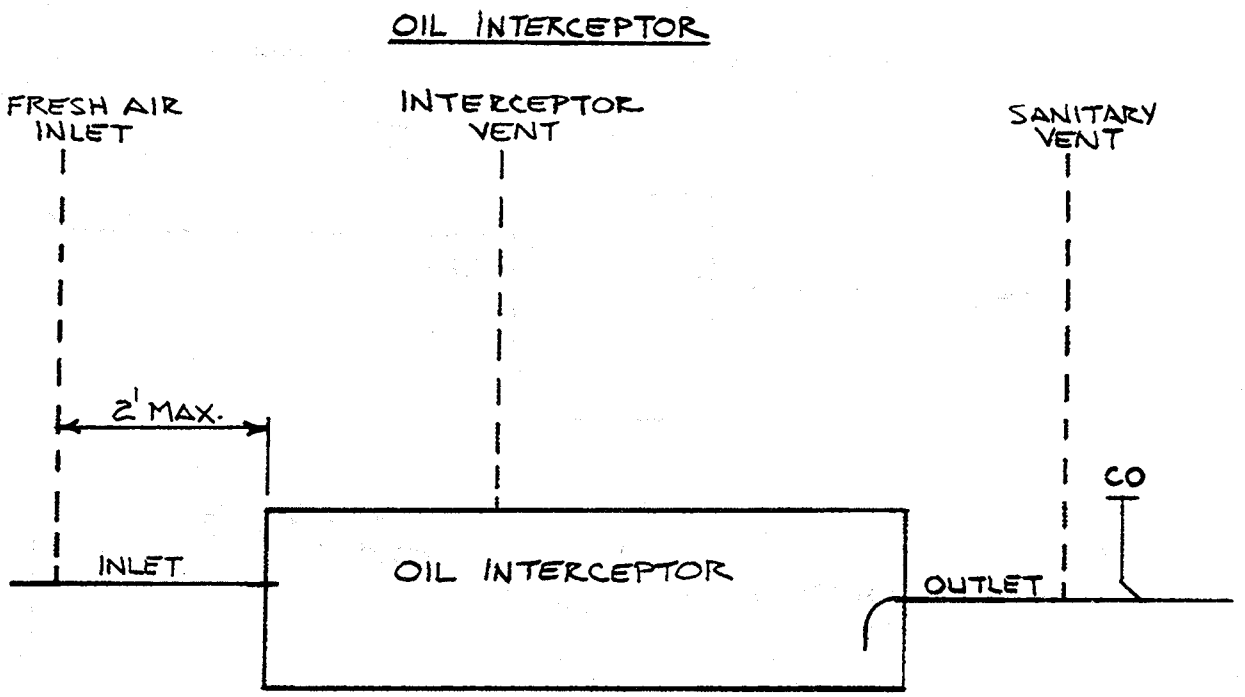
TRENCH TYPE LAUNDRY INTERCEPTOR



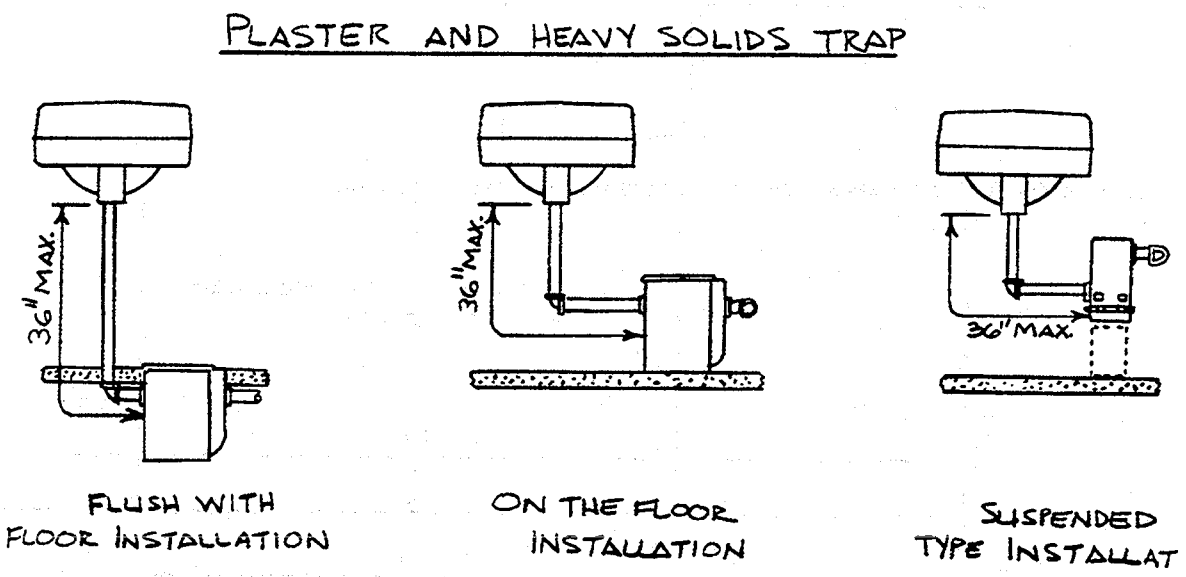
IN-LINE LAUNDRY INTERCEPTOR



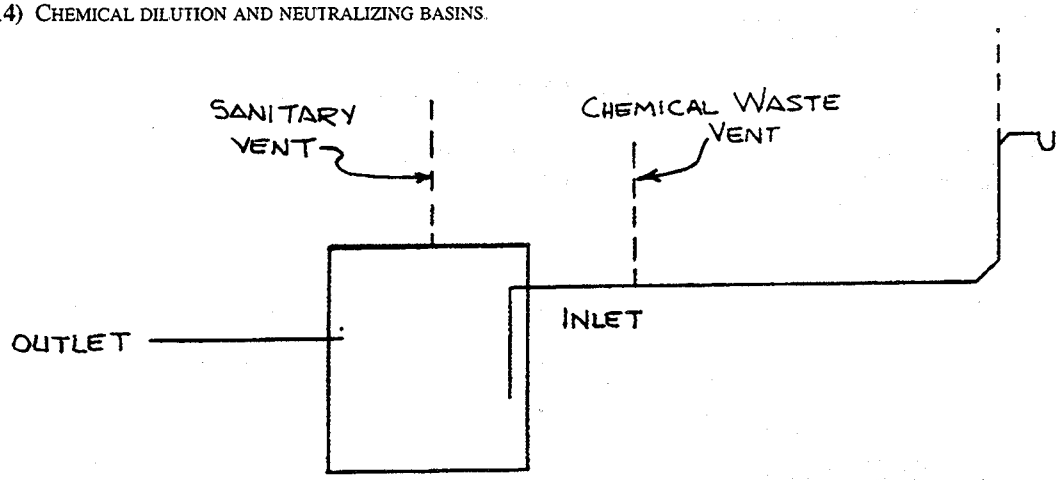
A–82.34 (8) OIL AND FLAMMABLE LIQUIDS.

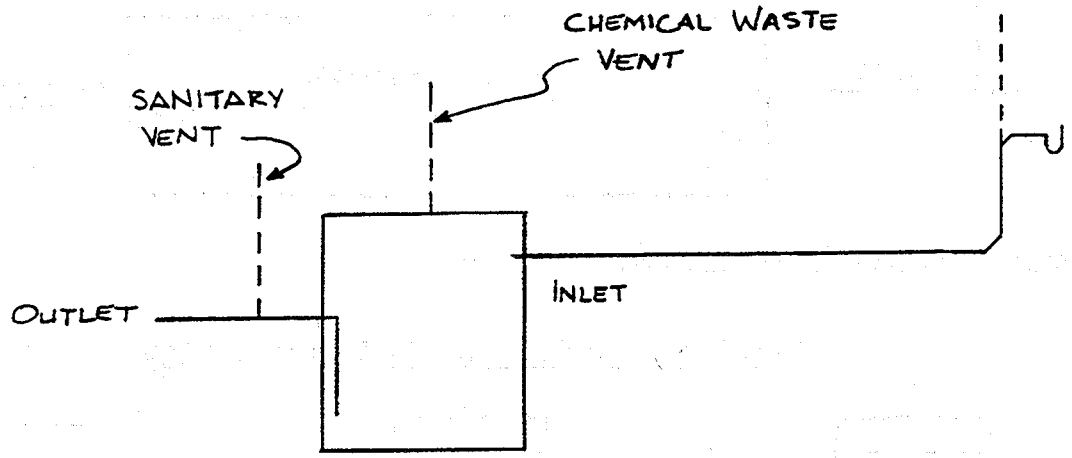


A–82.34 (13) PLASTER AND HEAVY SOLIDS TRAP TYPE INTERCEPTORS.

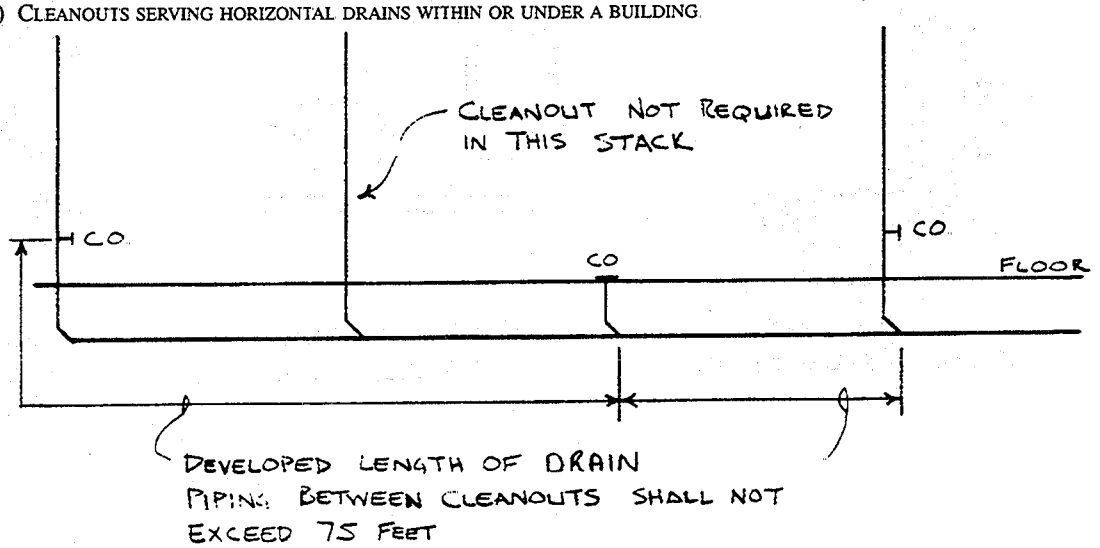


A–82.34 (14) CHEMICAL DILUTION AND NEUTRALIZING BASINS.

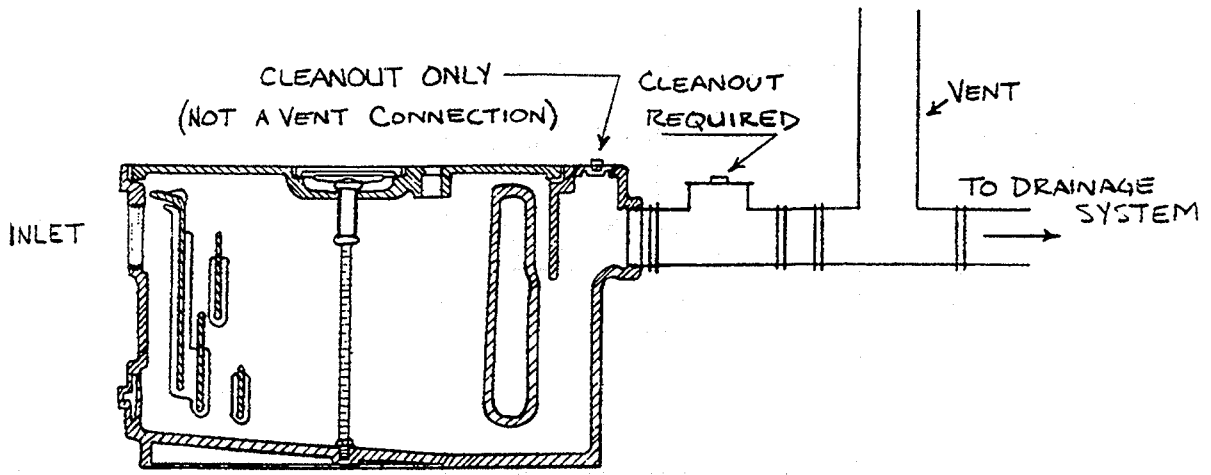




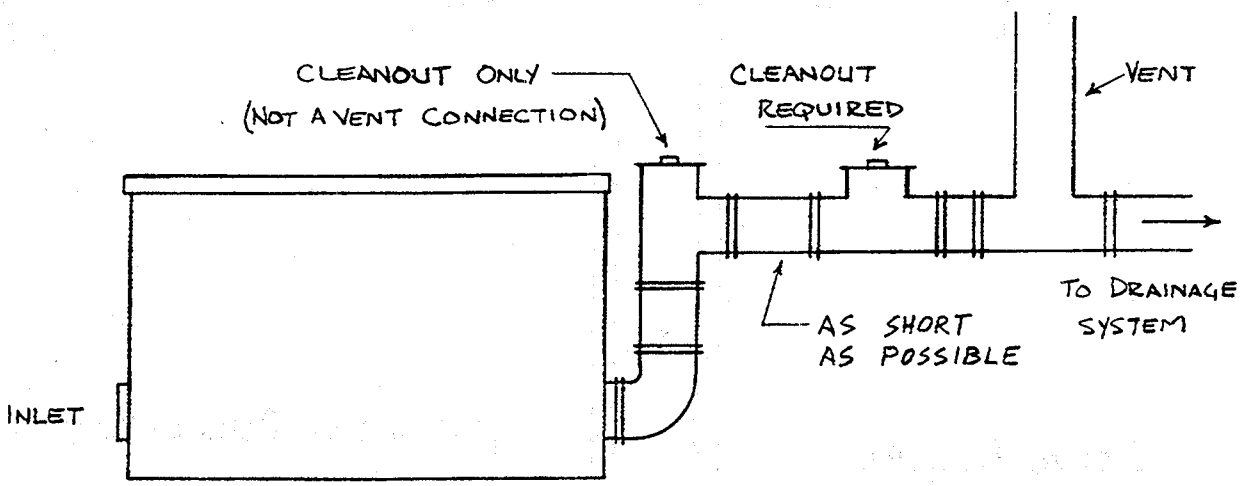
A–82.35 (3) CLEANOUTS SERVING HORIZONTAL DRAINS WITHIN OR UNDER A BUILDING.



A–82.35 (3) CLEANOUTS SERVING HORIZONTAL DRAINS

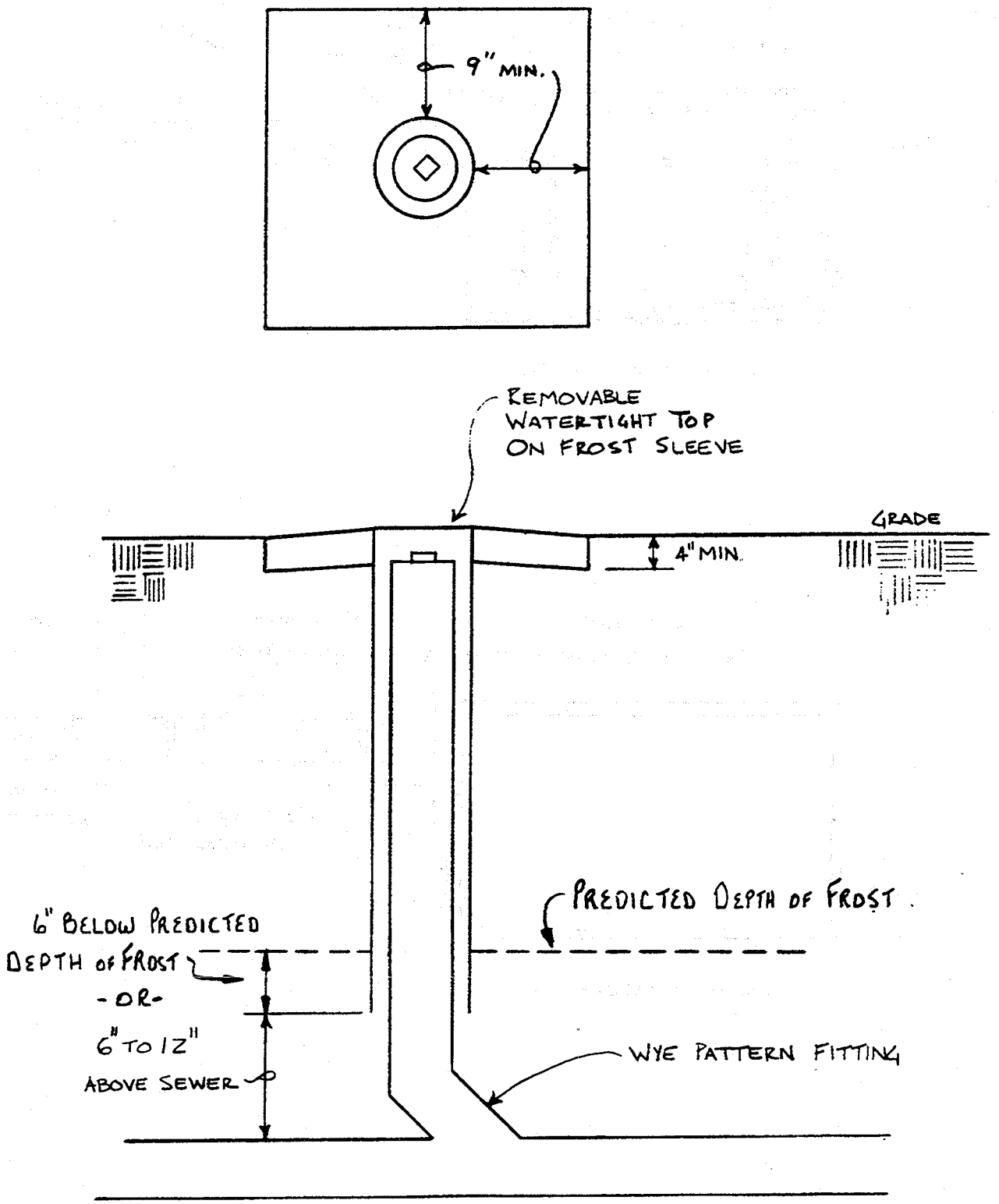


GREASE INTERCEPTOR

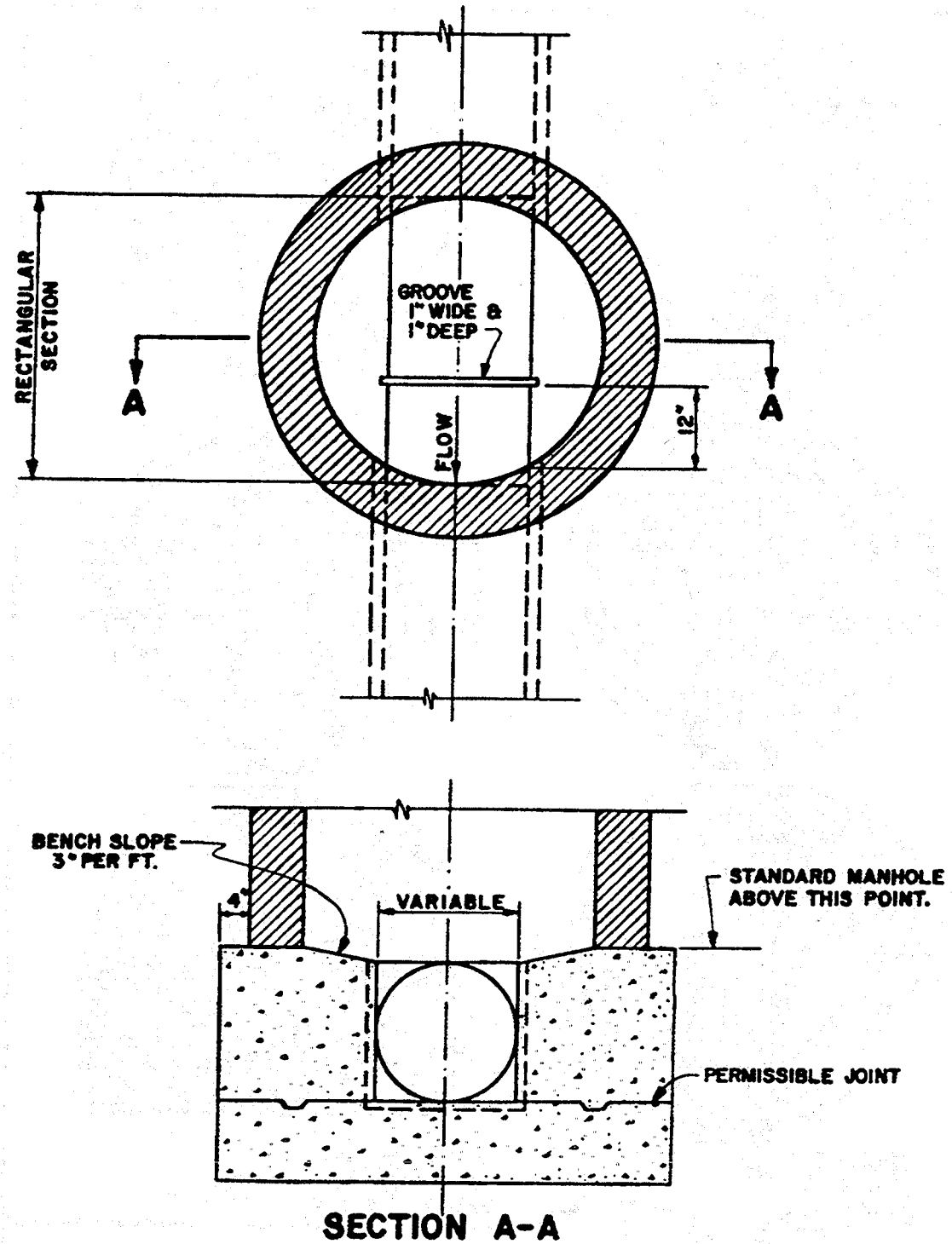


GREASE INTERCEPTOR

A–82.35 (5) (a) CLEANOUT EXTENSION TO GRADE.

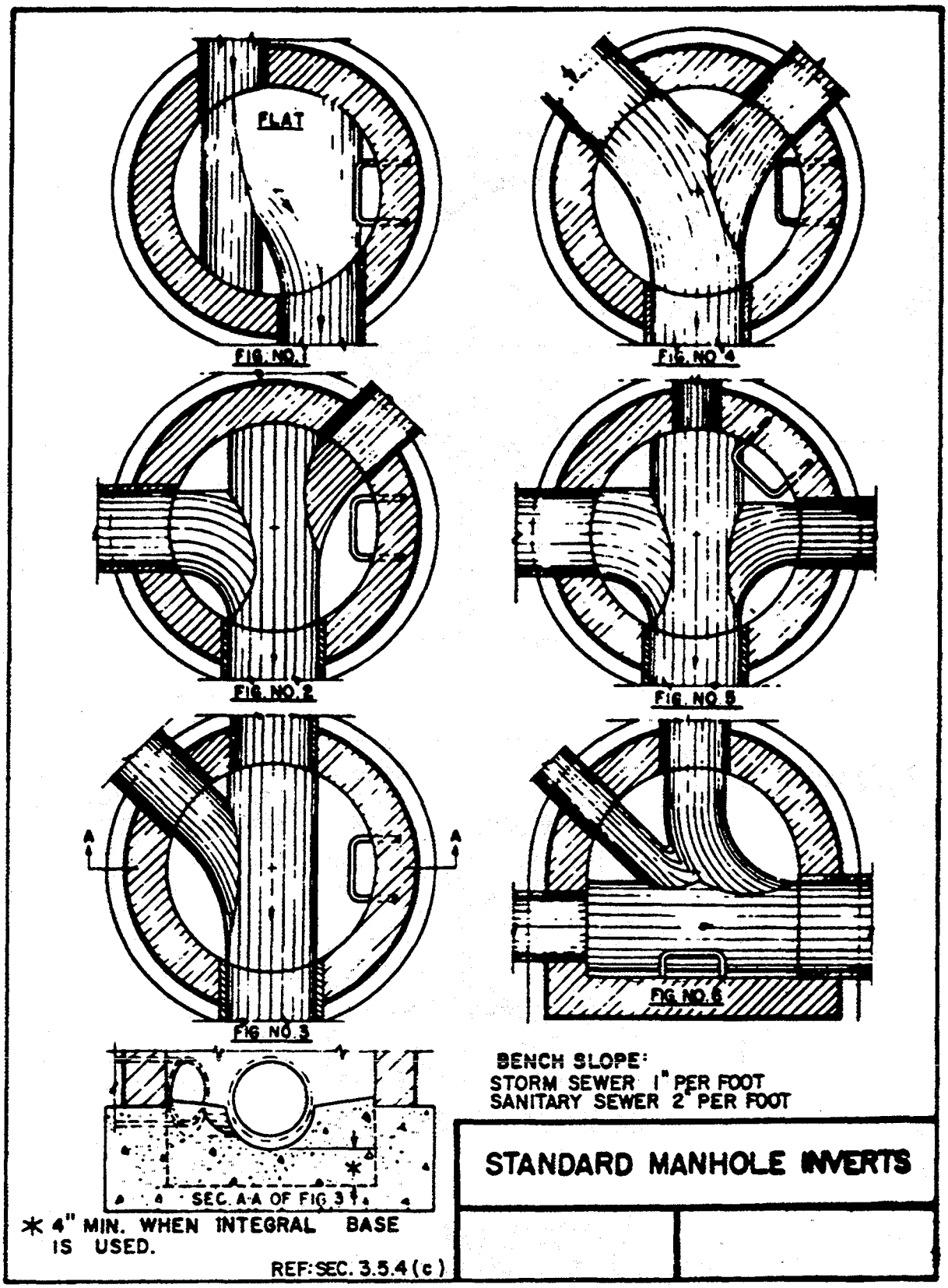


A–82.35 (8) MANHOLES.

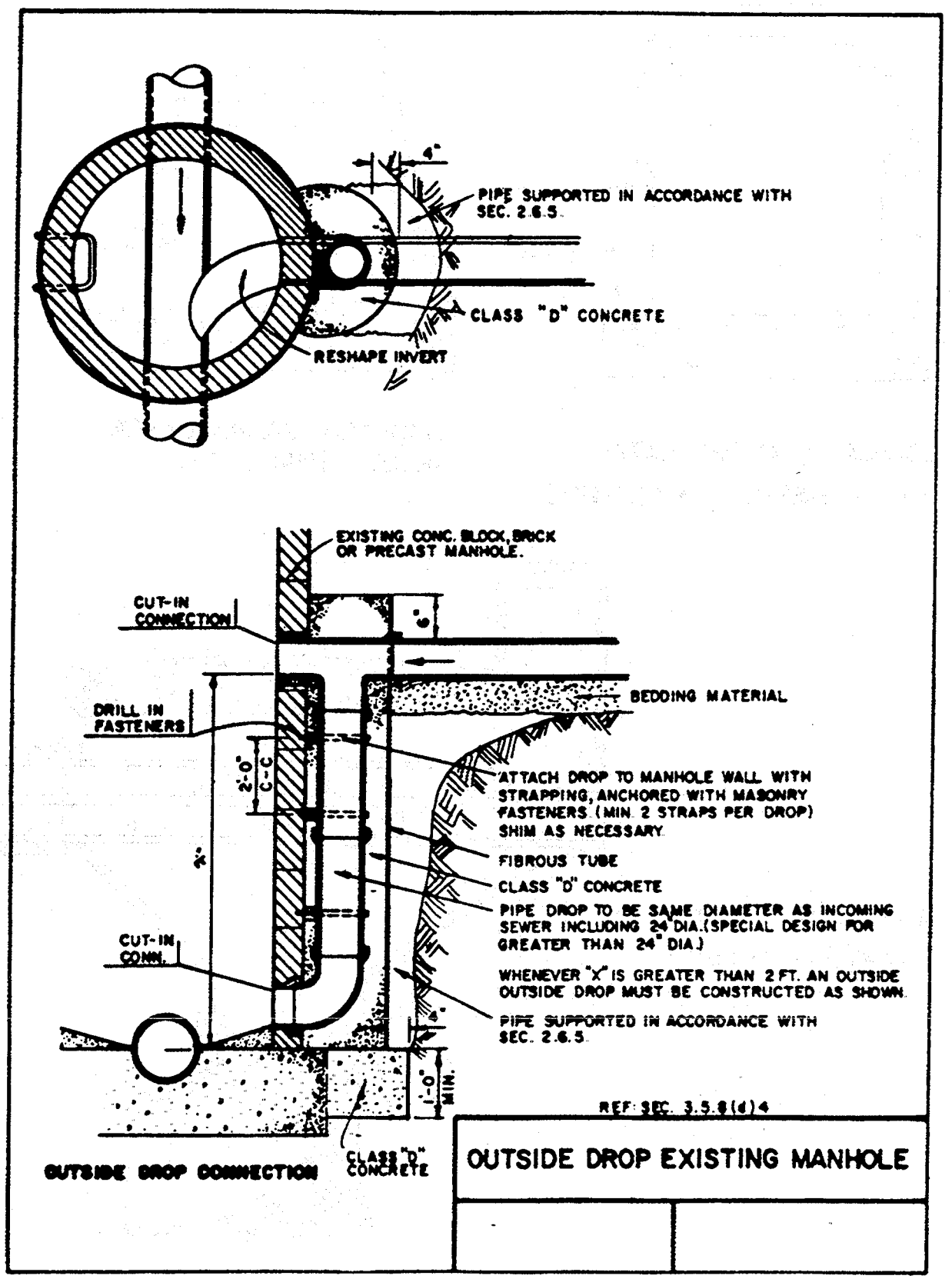


DETAIL OF SAMPLING MANHOLE

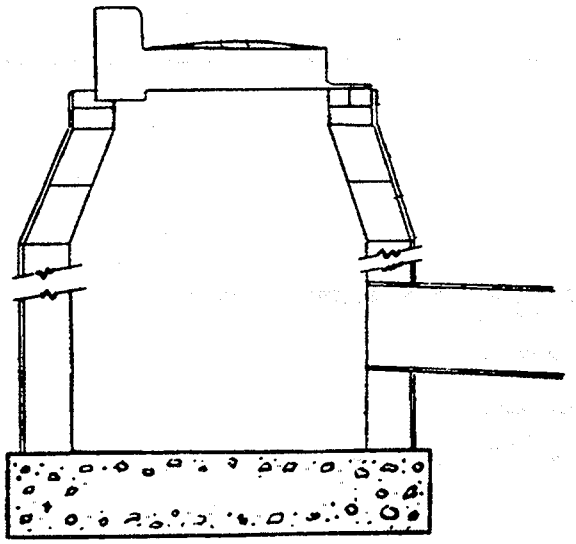
A–82.35 (8) MANHOLES.



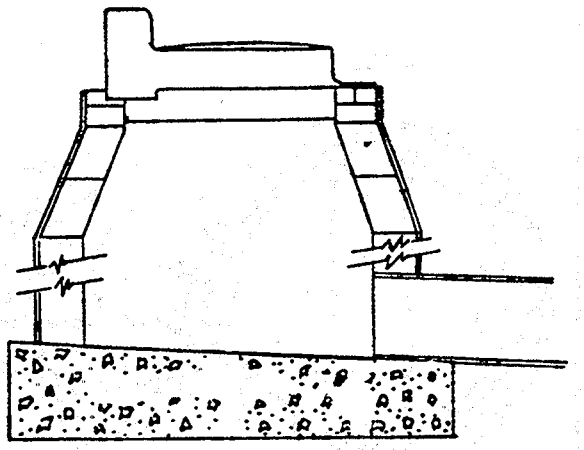
A–82.35 (8) MANHOLES.



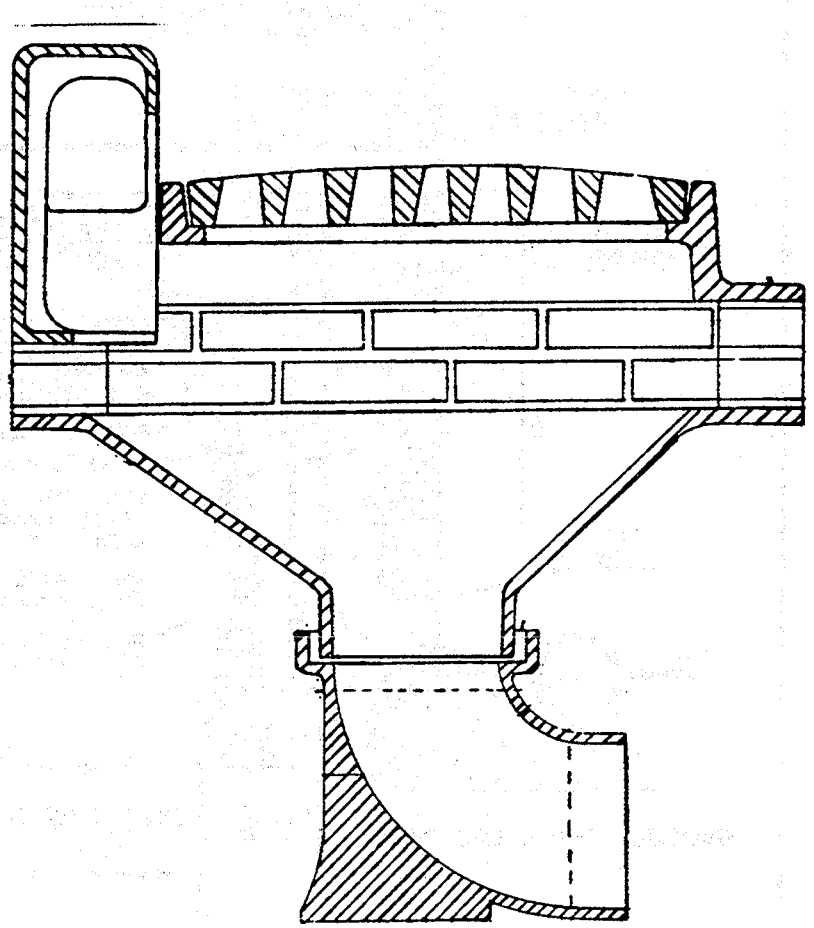
A–82.36 (17) AREA DRAIN INLETS.



STANDARD STORM WATER CATCH BASIN (MASONRY)

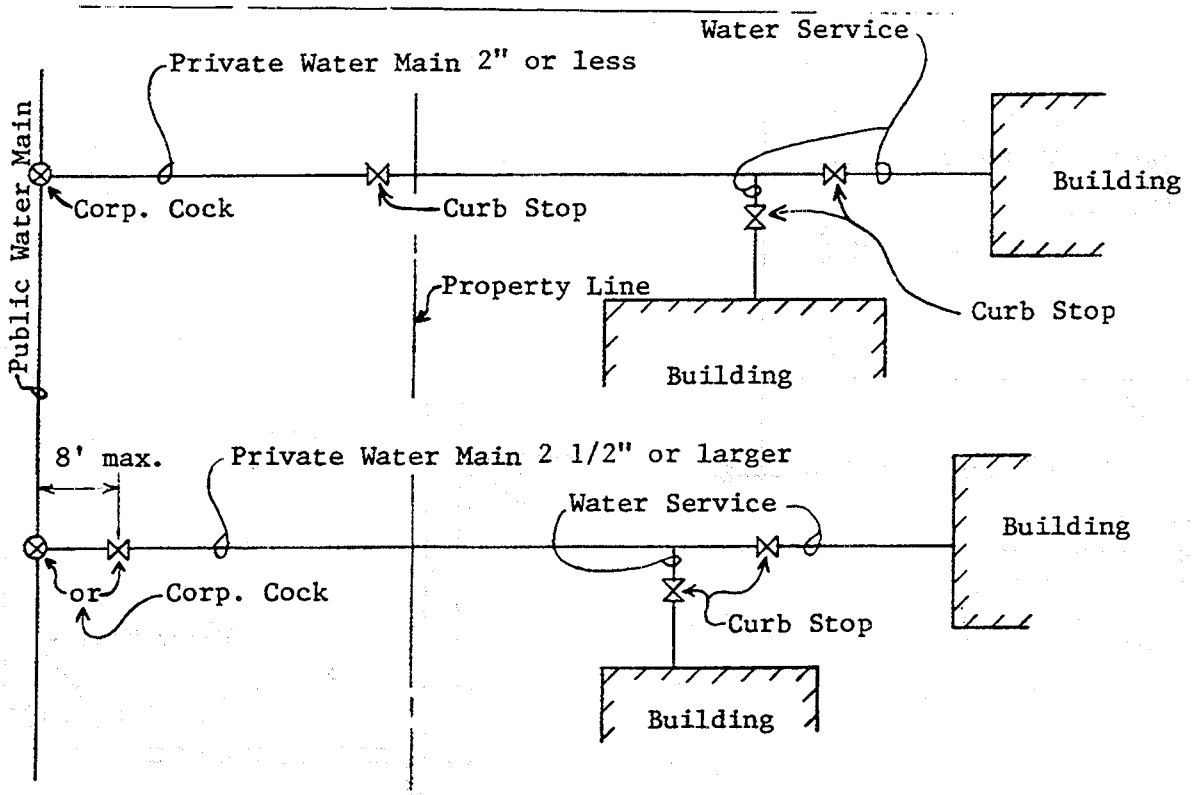


STANDARD STORM WATER INLET (MASONRY)

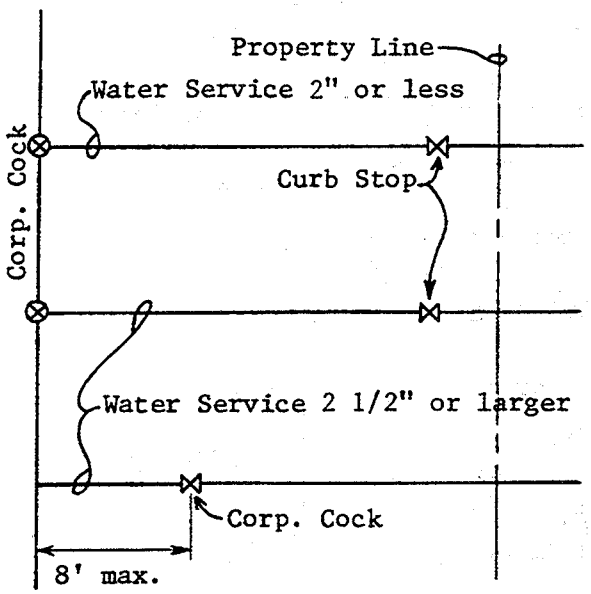


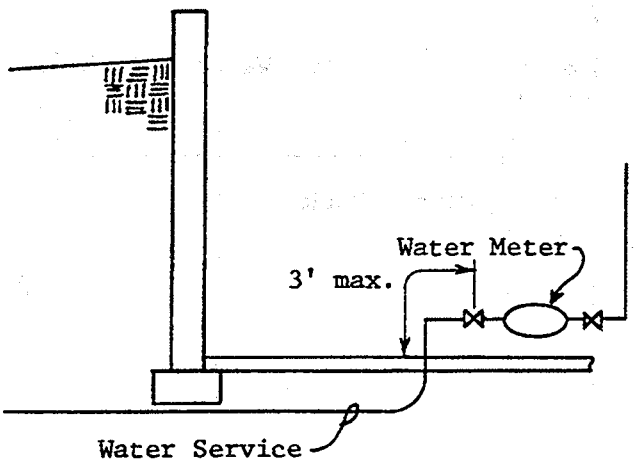
CAST IRON STORM WATER INLET

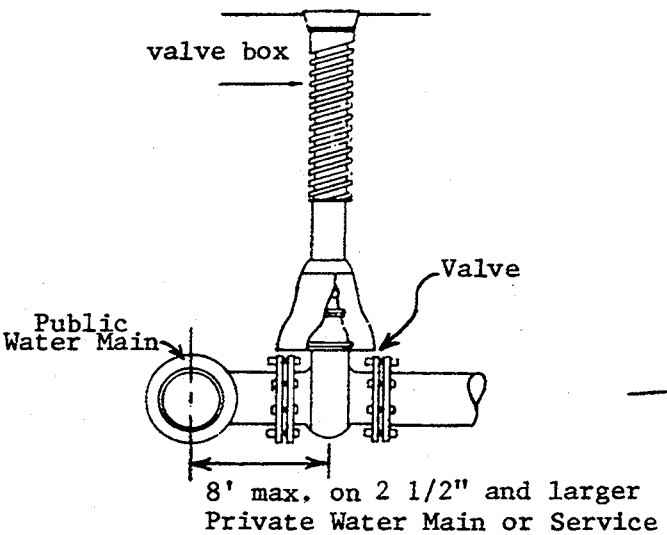
A–82.40 (4) CONTROL VALVES.

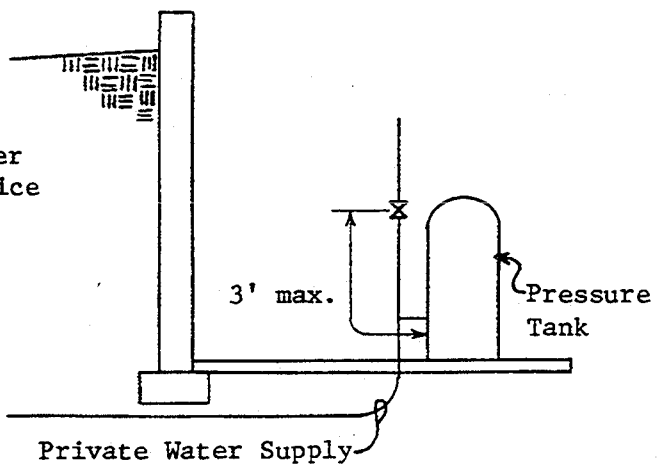


A–82.40 (4) (b) WATER SERVICES.









A–82.40 (5) STORAGE TANK AND PIPING INSULATION. The following is a reprint of section ILHR 63.63.

ILHR 63.33 Insulation. (1) STORAGE TANKS. Heat loss from unfired hot water storage tanks shall be limited to 15 Btu of 25 Btu per hour square foot of external pipe insulation surface area. The design ambient temperature shall be no higher than 65° F.

(2) PIPING. (a) Except as provided in par. (b), piping heat loss for recirculation systems shall be limited to a maximum of 25 Btu per hour square foot of external pipe insulation surface for aboveground piping and a maximum of 35 Btu per hour per square foot of external pipe insulation for under ground piping. Maximum heat loss shall be determined at a ΔT equal to the maximum water temperature minus a design ambient temperature no higher than 65° F.

(b) Conformance to the minimum pipe insulation requirements specified in Table 63.22 shall be deemed as complying with the requirements of this subsection.

A–82.40 (7) (a) METHODOLOGY.

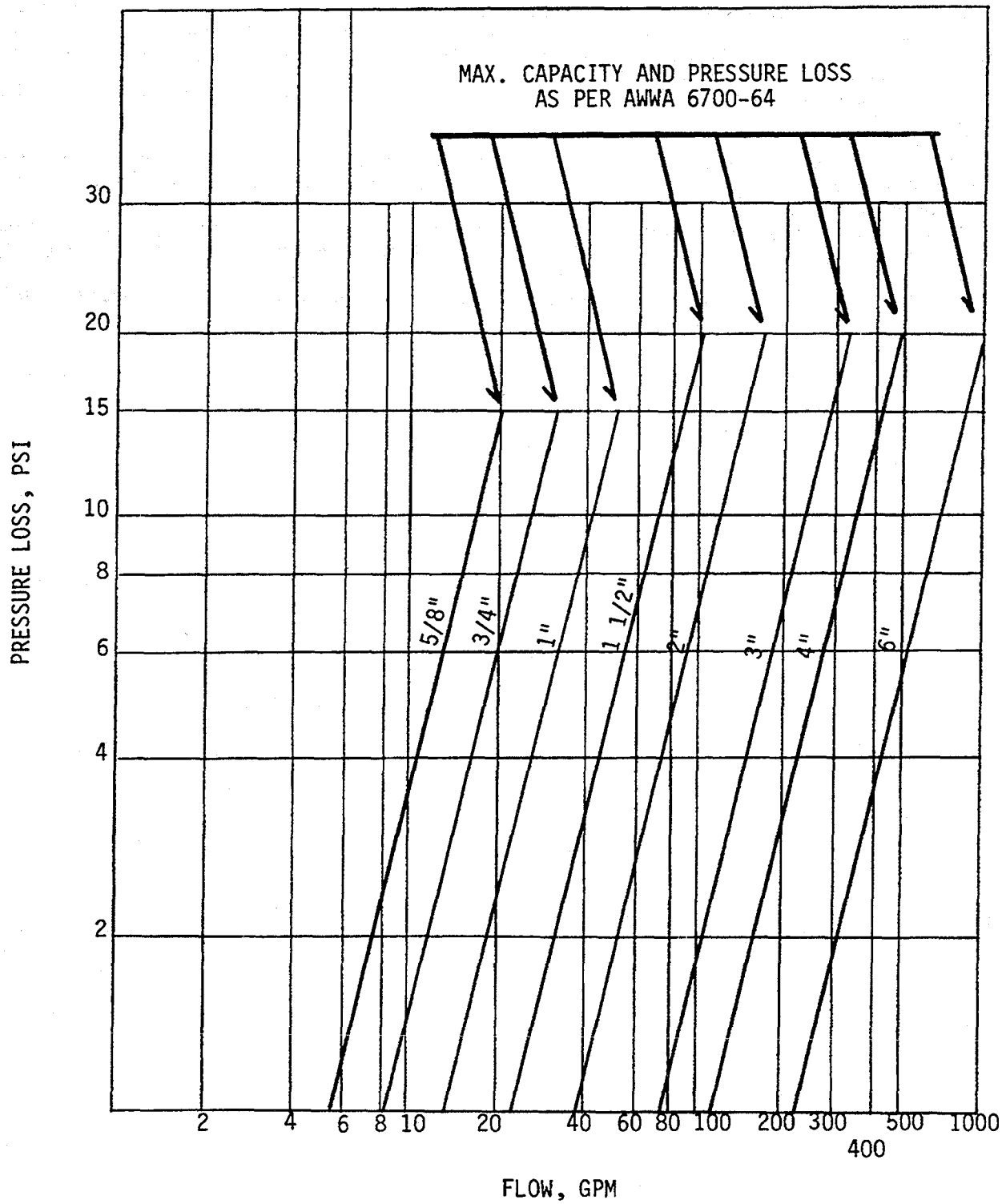
Where equipment such as an instantaneous or tankless water heater, water treatment device, water meter, and backflow preventer is provided in the design, the friction loss in such equipment, corresponding to the GPM demand, should be determined from the manufacturer or other reliable source.

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)–1.

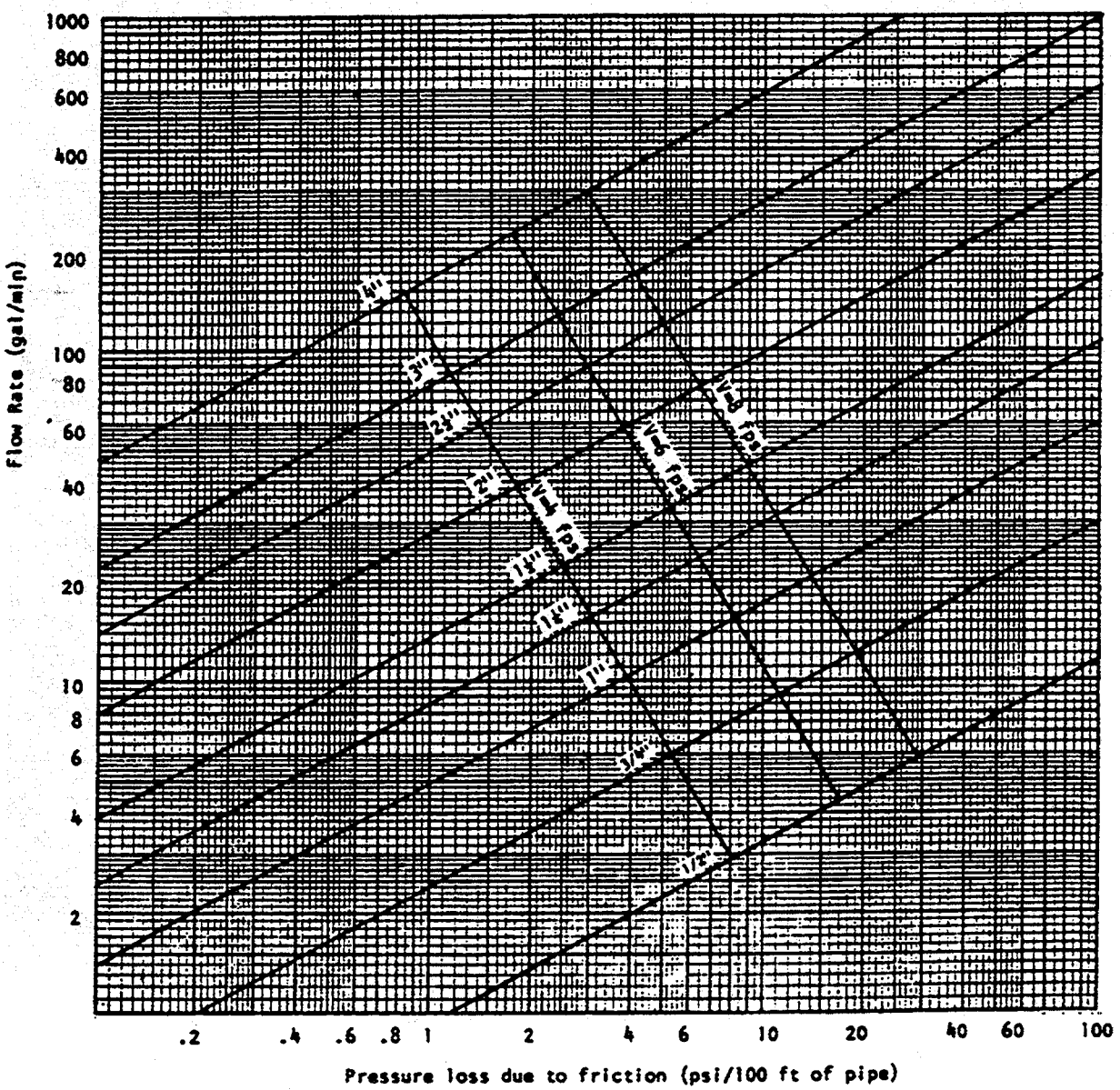
Graph A–82.40 (7) – 1

PRESSURE LOSS IN COLD-WATER METERS, DISPLACEMENT TYPE

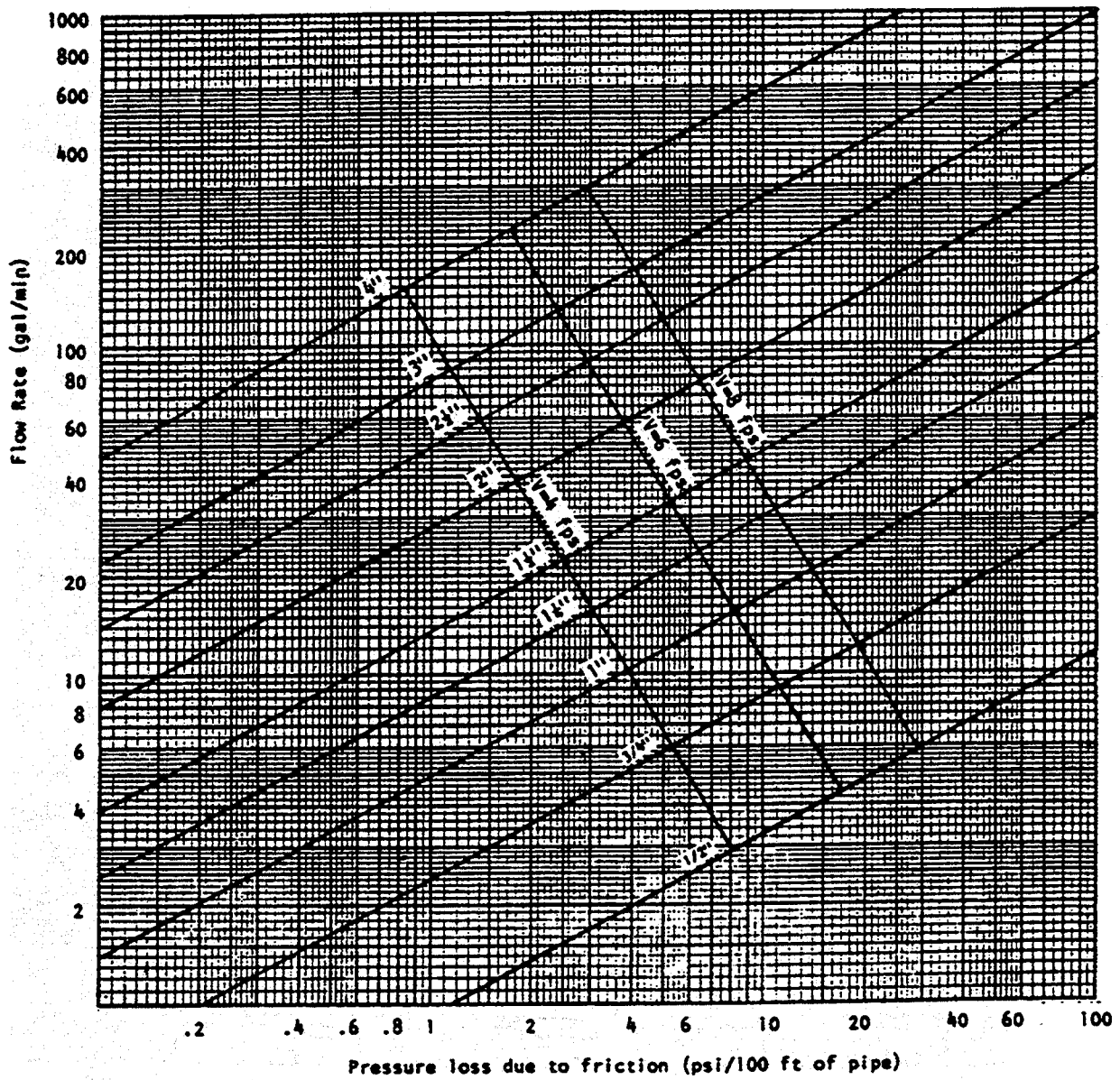


A–82.40 (7) (b) PRIVATE WATER MAINS AND WATER SERVICES.
Graphs A–82.40 (7)–2 to A–82.40 (7)–6 may be used to size private water mains and water services.

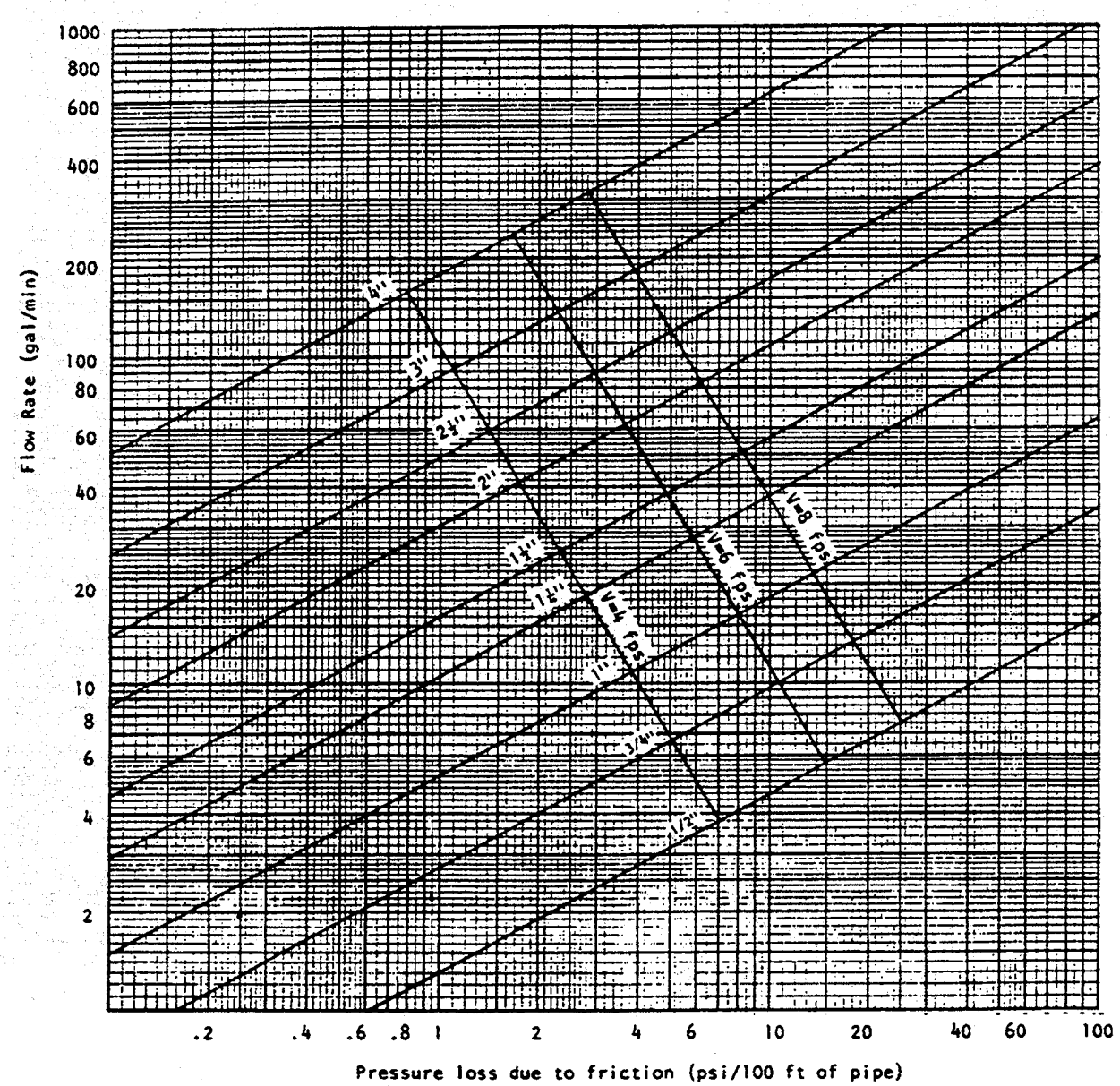
Graph A–82.40 (7)–2
Pressure losses due to flow friction
Material: Copper Tube–Type K, ASTM B88



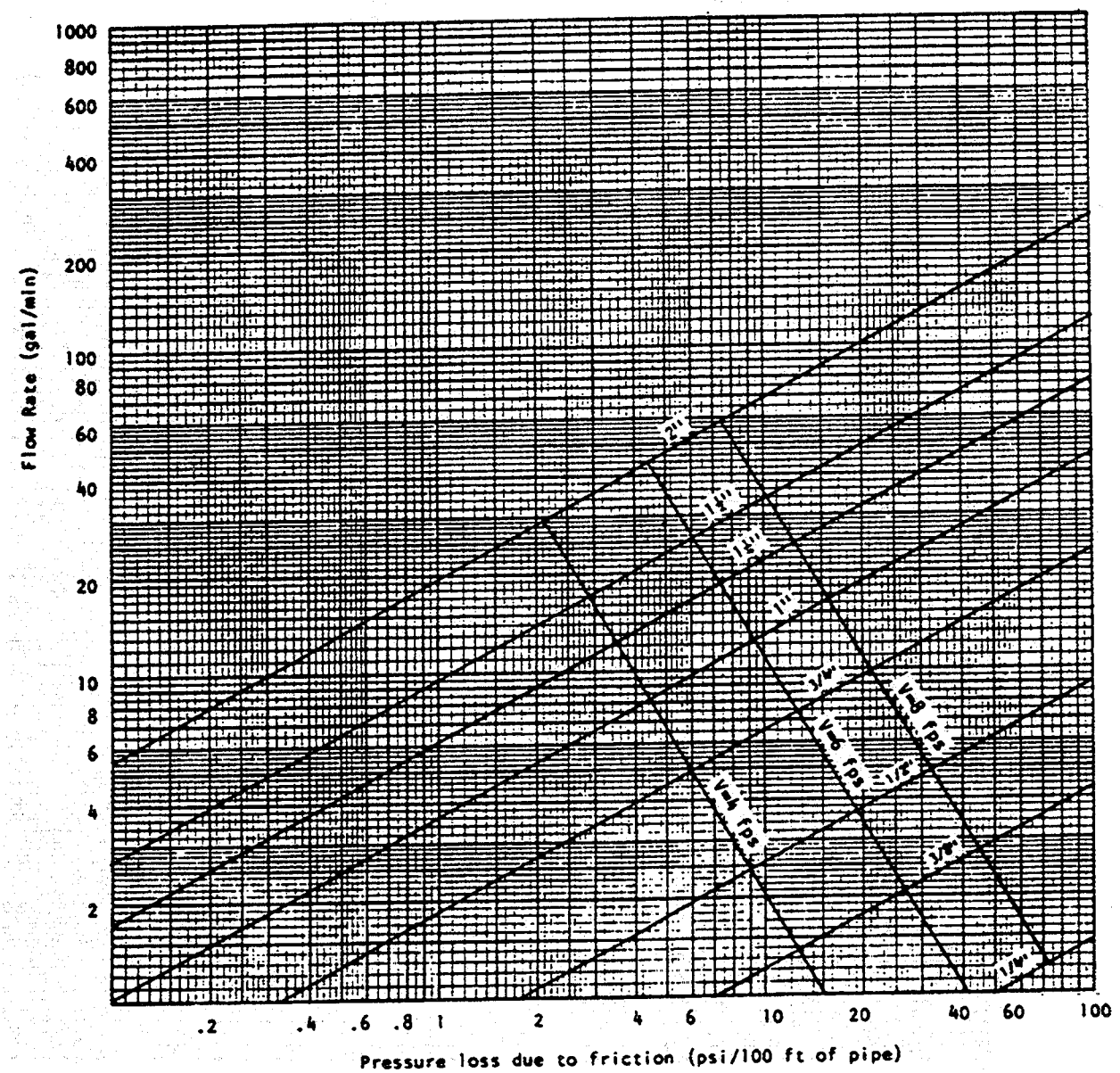
Graph A–82.40 (7)–3
Pressure losses due to flow friction
Material: Copper Tube–Type L, ASTM B88



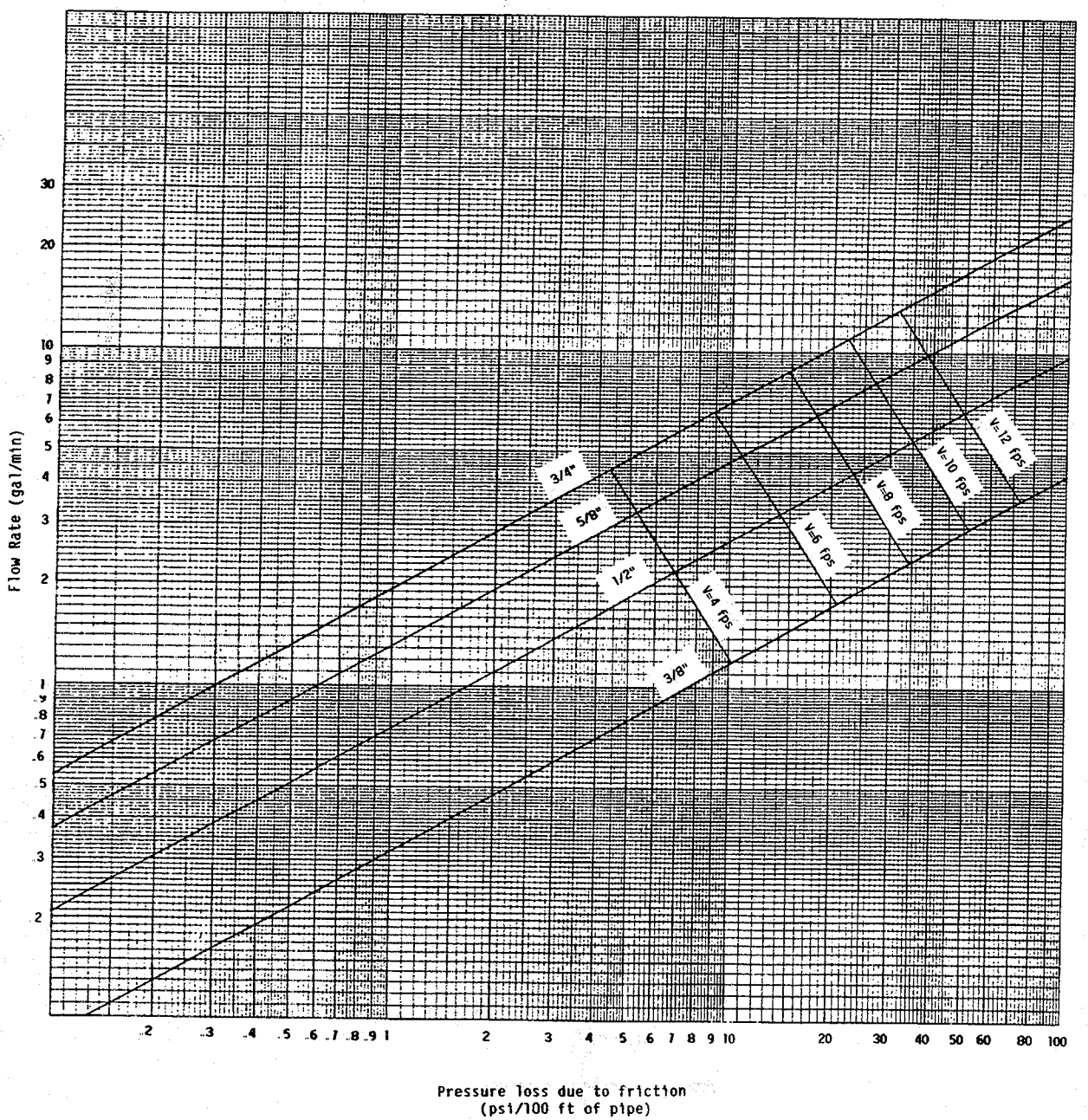
Graph A–82.40 (7)–4
Pressure losses due to flow friction
Material: Galvanized Steel Pipe–Schedule 40, ASTM A53, ASTM A120;
ABS Pipe–Schedule 40; ASTM D1527; or
CPVC Pipe–Schedule 40; ASTM F441; or
PE Pipe–Schedule 40; ASTM D2104; ASTM D2447; or
PVC Pipe–Schedule 40; ASTM D1785; ASTM D2672



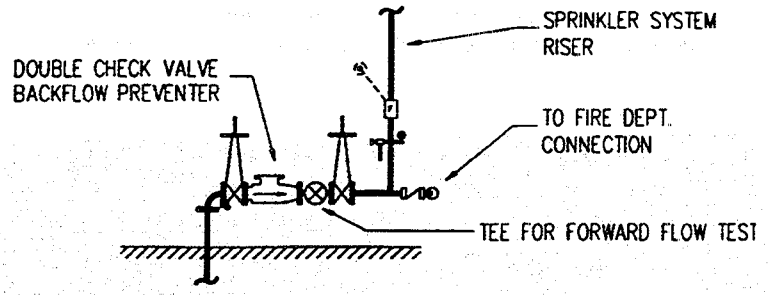
Graph A–82.40 (7)–5
Pressure losses due to flow friction
Material: Polybutylene Tubing, ASTM D3309; or
CPVC Tubing; ASTM D2846



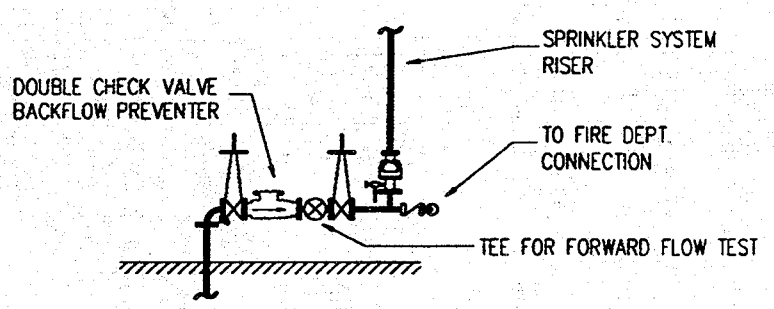
Graph A–82.40 (7)–6
Pressure losses due to flow friction
Material: Crosslinked Polyethylene (PEX) Tubing, ASTM F876



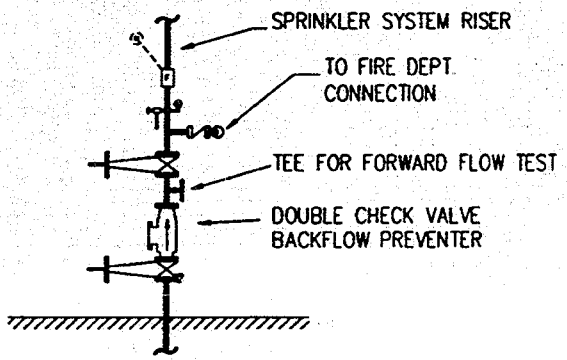
A82.41 (4) (g) 2. TEST OUTLET



SINGLE WET SYSTEM ARRANGEMENT

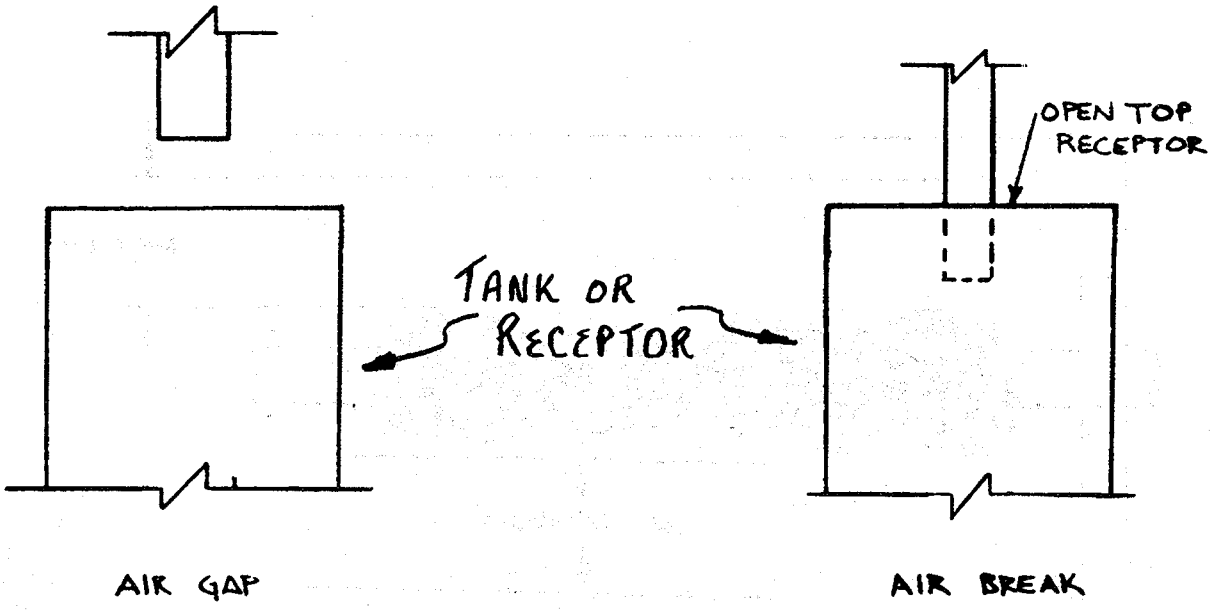


SINGLE DRY SYSTEM ARRANGEMENT



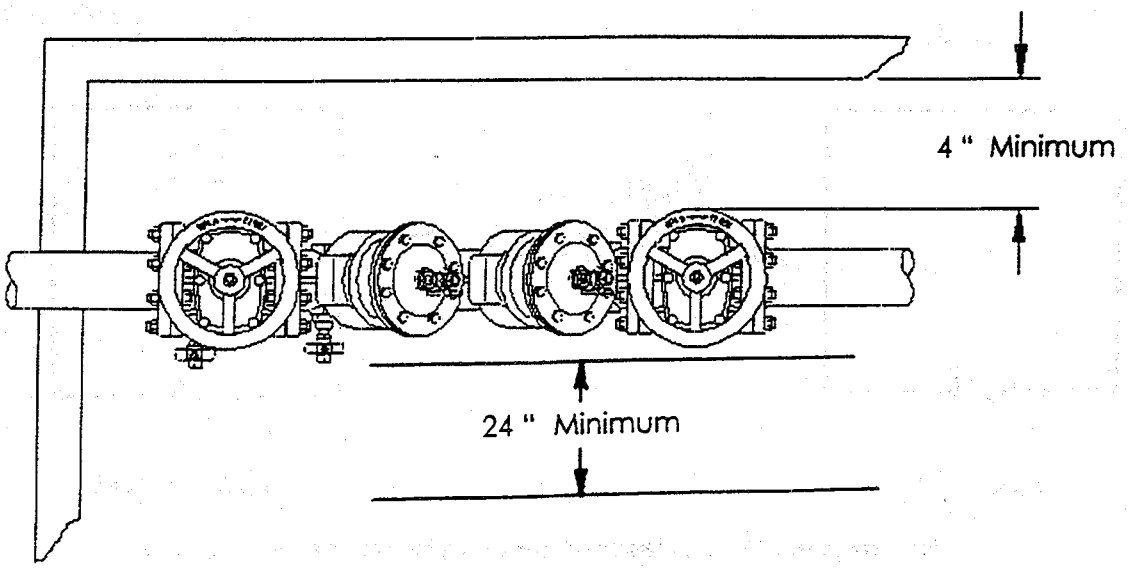
SINGLE WET SYSTEM ARRANGEMENT

A–82.41 (5) (a) AIR GAP

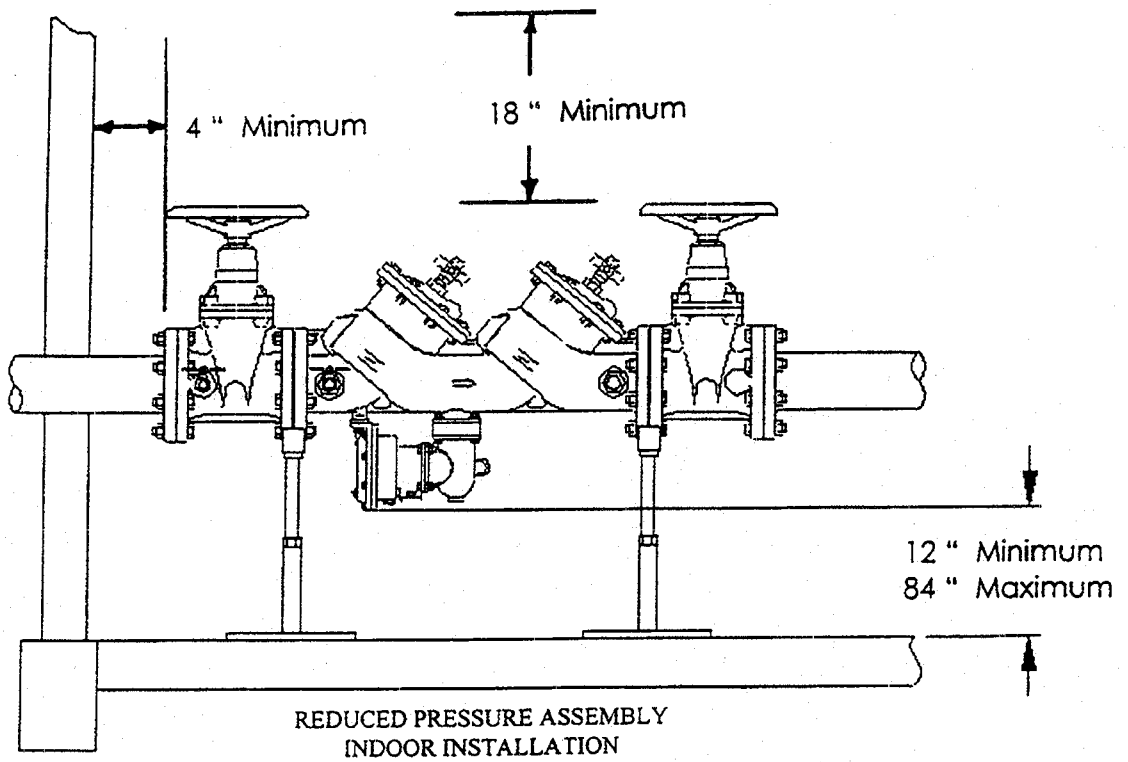


ANSI STANDARD A112.1.2 DESCRIBES OTHER ACCEPTABLE TYPES OF AIR GAPS.

A–82.41 (5) (f) CROSS CONNECTION CONTROL DEVICE INSTALLATION.

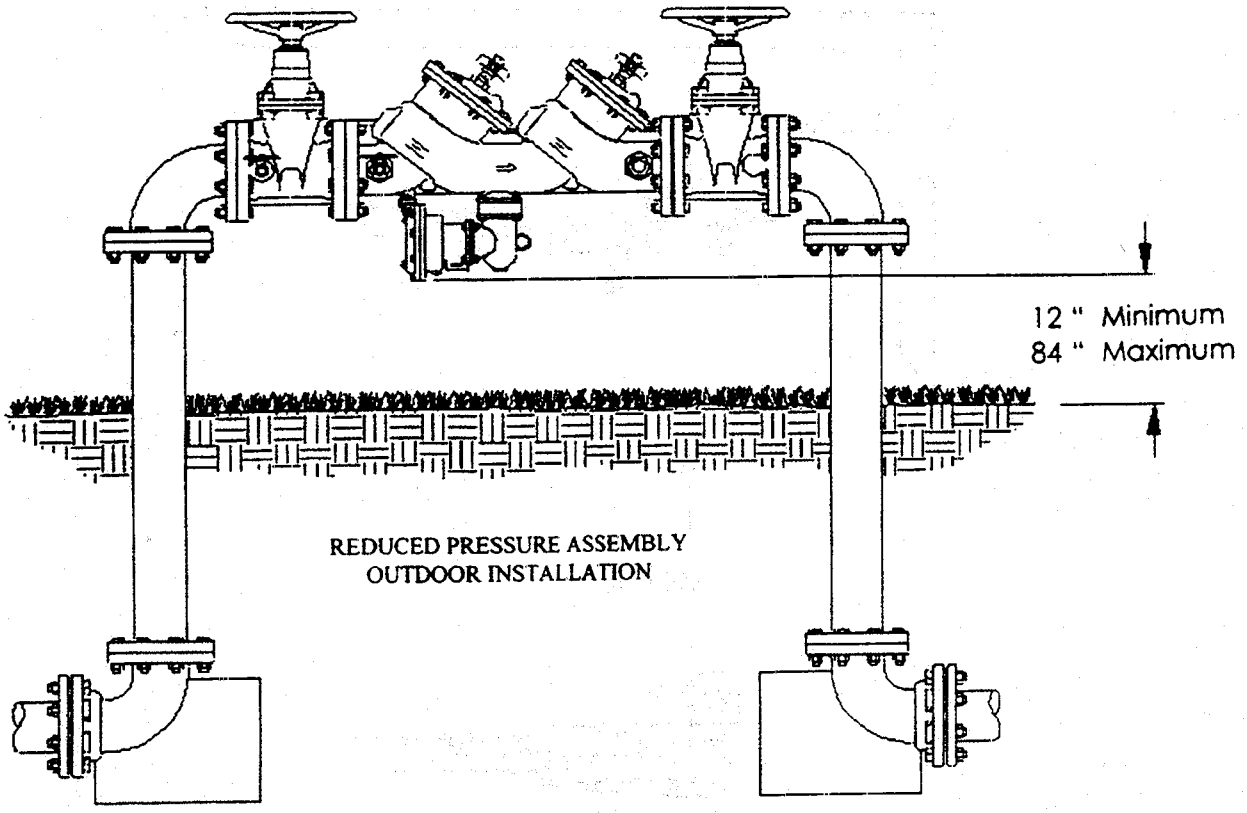


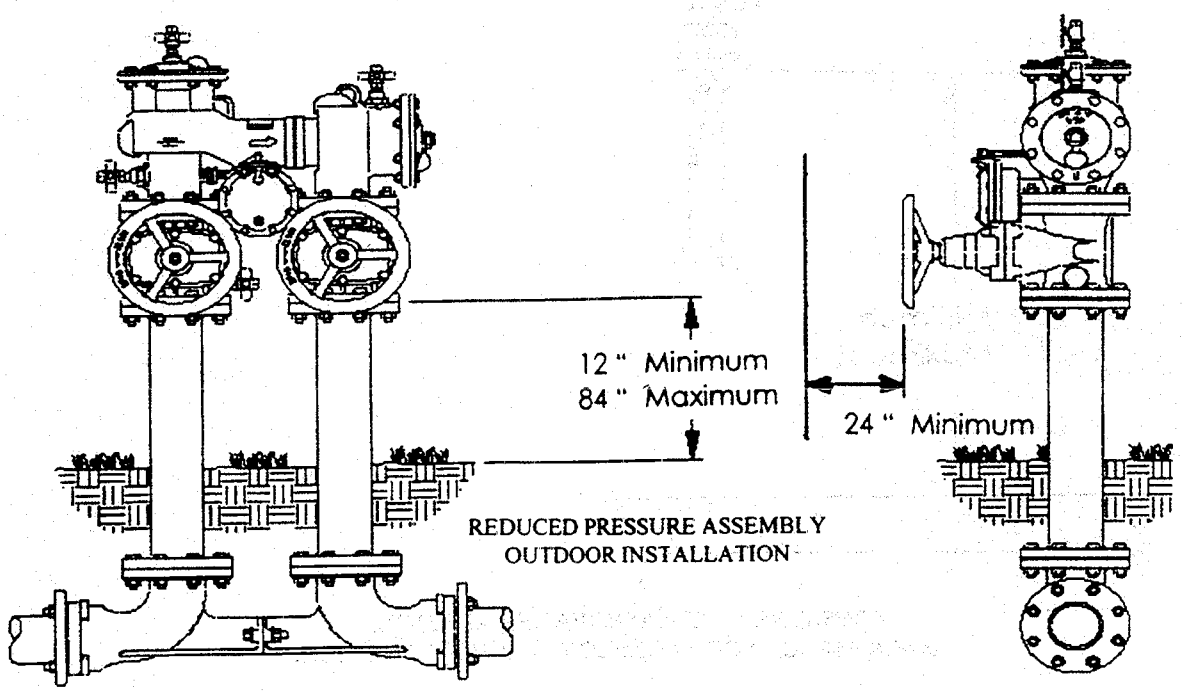
NOTE: ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION SPECIFICATIONS OR WITHIN THE DIMENSIONS SHOWN.



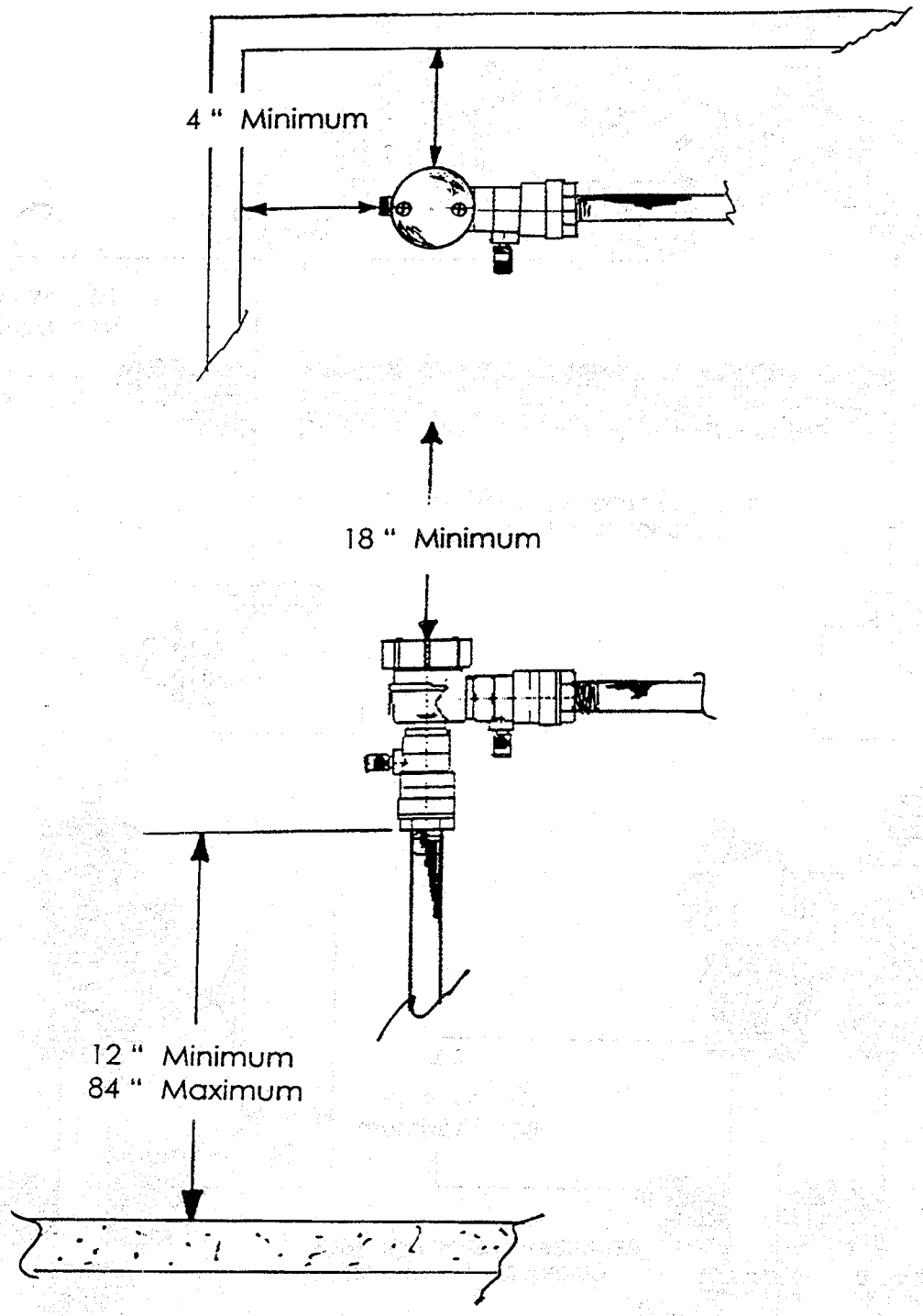
REDUCED PRESSURE ASSEMBLY
INDOOR INSTALLATION

A–82.41 (5) (f) CROSS CONNECTION CONTROL DEVICE INSTALLATION.



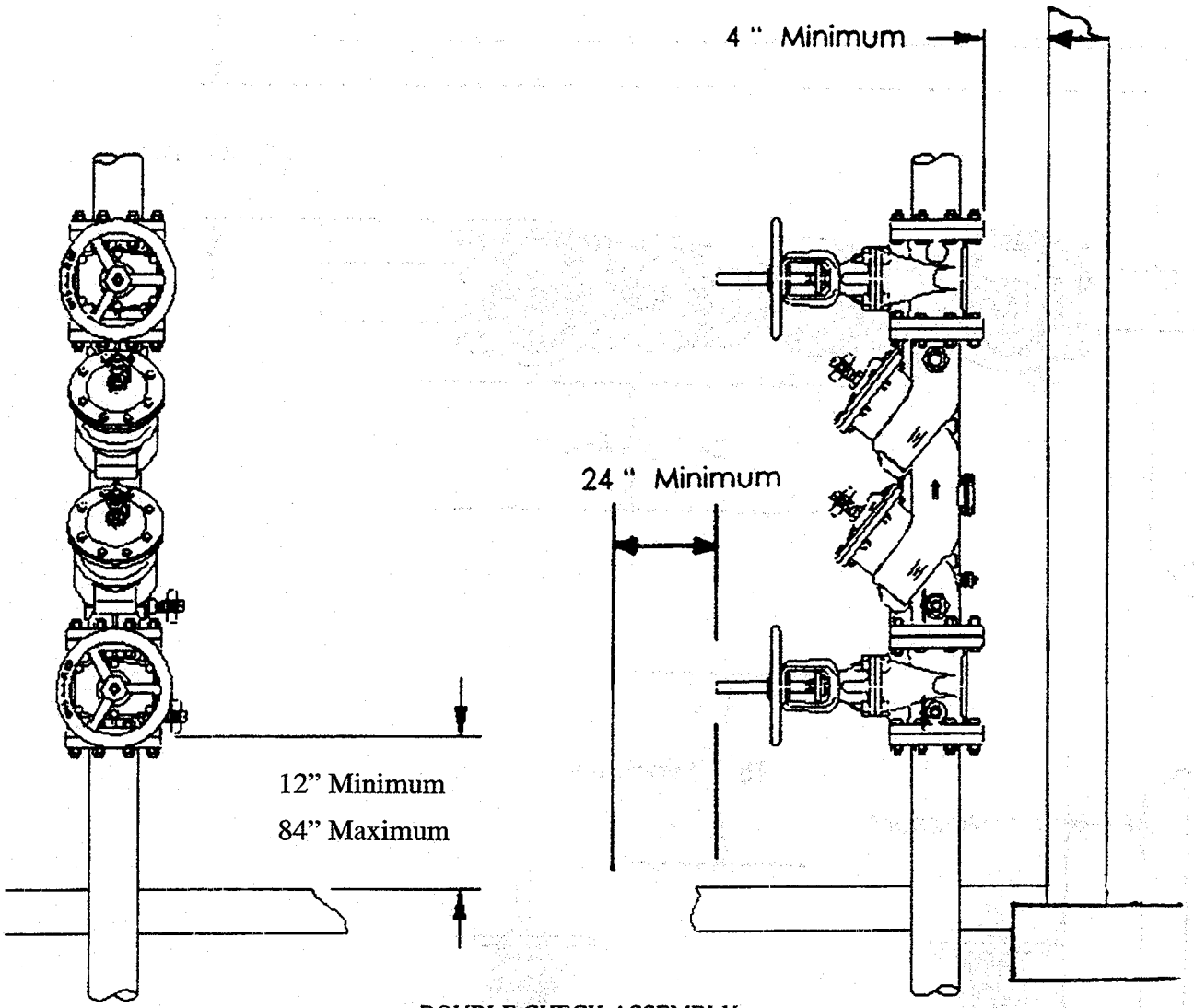


A–82.41 (5) (f) CROSS CONNECTION CONTROL DEVICE INSTALLATION



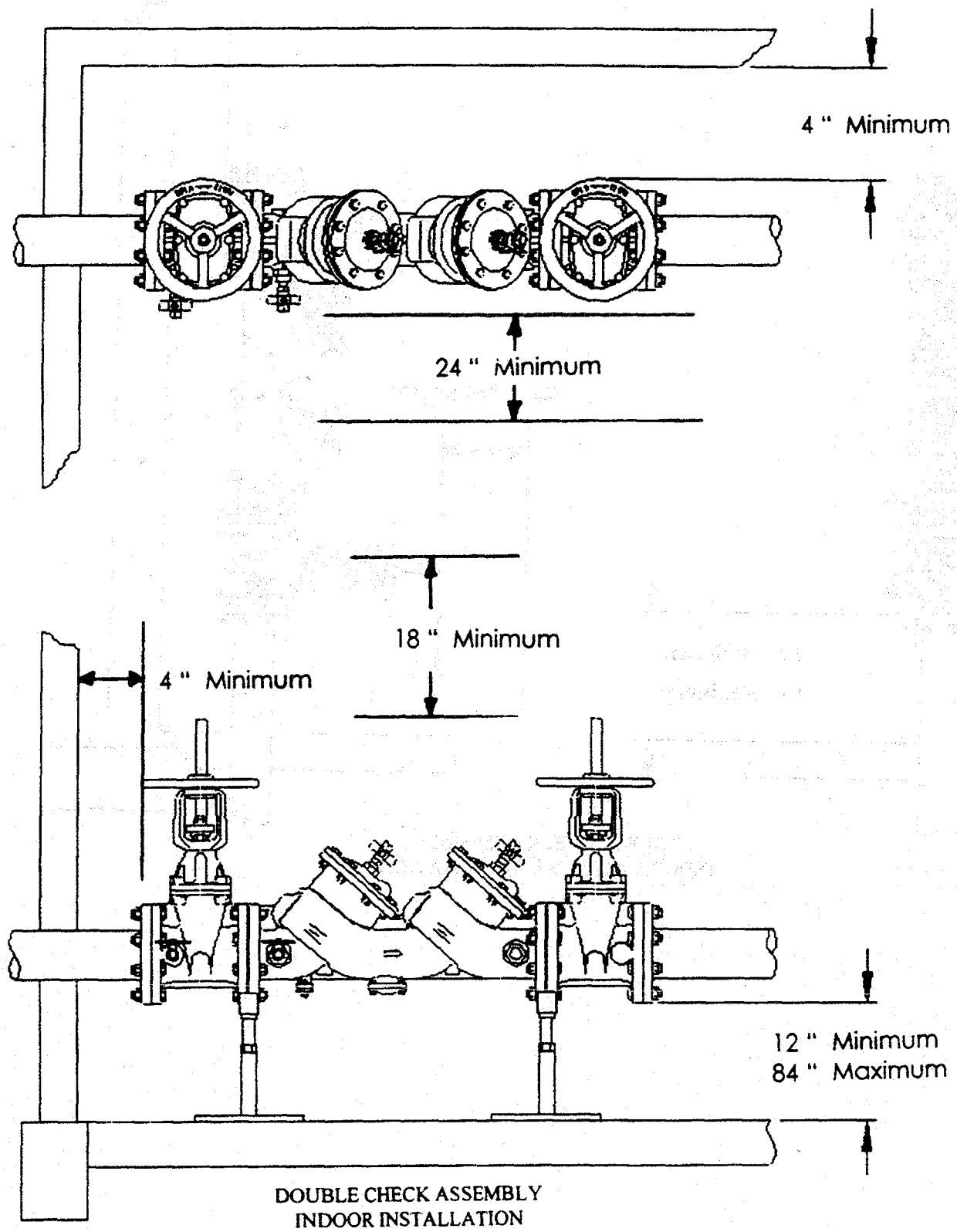
PRESSURE VACUUM BREAKER ASSEMBLY
BACK SIPHONAGE BACKFLOW VACUUM BREAKER

A–82.41 (5) (f) CROSS CONNECTION CONTROL DEVICE INSTALLATION.



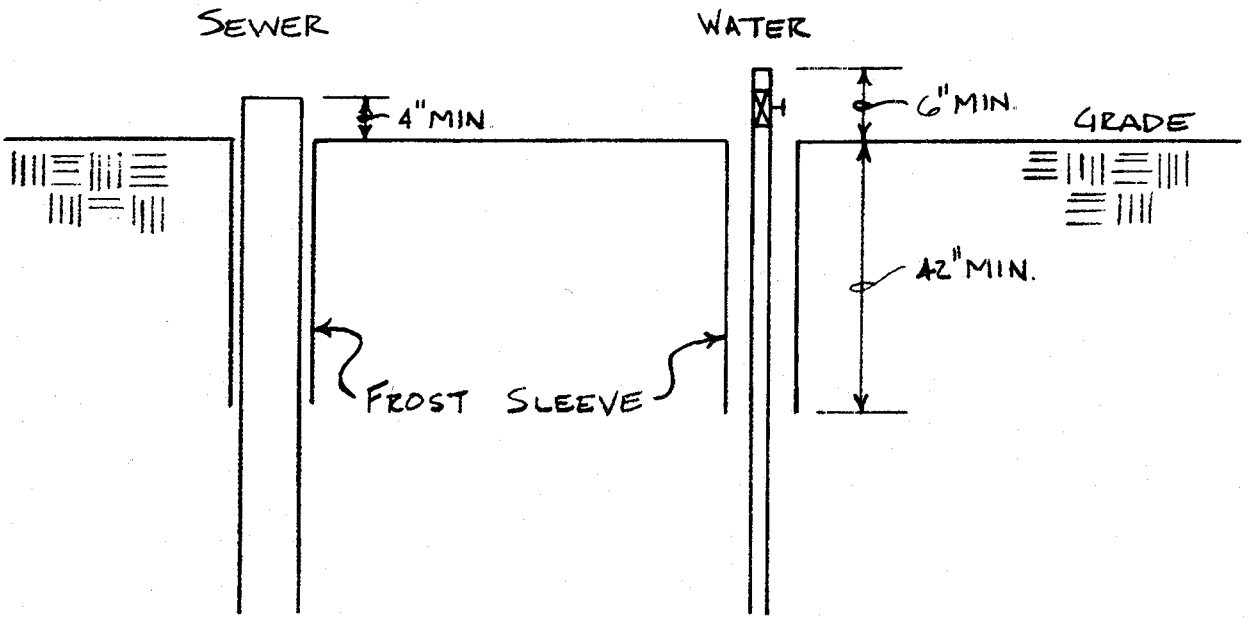
DOUBLE CHECK ASSEMBLY
INDOOR VERTICAL INSTALLATION

A–82.41 (5) (f) CROSS CONNECTION CONTROL DEVICE INSTALLATION.



DOUBLE CHECK ASSEMBLY
INDOOR INSTALLATION

A–82.51 (3) MOBILE HOME SITES AND PARKS.



MOBILE HOME BUILDING SEWER AND WATER SERVICE TERMINATIONS