Exterior Plumbing Quiz Part 2

Instructions: **$40**

1. Print these pages…..all reference materials are included.
2. Review and answer the simple questions in each **mini section**.
3. Circle the correct answers and transfer them to the answer sheets below.
4. Page down to the last page for the verification forms, answer sheets and mailing instructions.

This 4 hours course is approved for the following Credentials

1. Master Plumber
2. Journeymen Plumber
3. Master Plumber Restricted Service
4. Journeymen Plumber Restricted Service
5. POWTS Inspector
6. POWTS Maintainer
7. UDC Plumbing Inspector
8. Commercial Plumbing Inspector
9. Soil Tester
10. Utility Contractor

SPS 382.35 Cleanouts. (1) SCOPE. The provisions of this section set forth the requirements for the installation of cleanouts and manholes for all drain piping.
(2) MATERIALS. Cleanouts shall be constructed of approved materials in accordance with SPS 384.
(3) WHERE REQUIRED. (a) *Horizontal drains.* All gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements:
1. The developed length of drain piping between cleanouts for above−ground piping may not exceed 75 feet.
2. The developed length of drain piping between cleanouts for below ground piping 2 inches or less in diameter may not exceed 40 feet.
3. The developed length of drain piping between cleanouts for below ground piping greater than 2 inches in diameter may not exceed 75 feet. **Note:** See Appendix for further explanatory material.
(b) *Sanitary building sewers.* 1. Sanitary building sewers 6” or less in diameter shall be provided with cleanouts or manholes such that:
a. Cleanouts are located not more than 100 feet apart;
b. Manholes are located not more than 400 feet apart;
c. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or
d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.
2. Sanitary building sewers 8” or larger in diameter shall be provided with manholes at:
a. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet;
b. Every change in pipe diameters where both connections are 8 inches or larger; and
c. Intervals of not more than 400 feet.

1. All gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements: The developed length of drain piping between cleanouts for below ground piping greater than 2 inches in diameter may not exceed ____ feet.

a. 40
b. 75
c. 100
d. none of the above

2. All gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements: The developed length of drain piping between cleanouts for below ground piping 2 inches or less in diameter may not exceed ____ feet.

a. 40
b. 75
c. 100
d. none of the above

3. All gravity horizontal drains within or under a building shall be accessible through a cleanout in accordance with one of the following requirements: The developed length of drain piping between cleanouts for above−ground piping may not exceed ____ feet.

a. 40
b. 75
c. 100
d. none of the above

4. Sanitary building sewers 6” or less in diameter shall be provided with cleanouts or manholes such that: The distance from a manhole to a cleanout located upstream is not more than _____ feet.

a. 100
b. 200
c. 300
d. 400

5. Sanitary building sewers 6” or less in diameter shall be provided with cleanouts or manholes such that: The distance from a cleanout to a manhole located upstream is not more than _____ feet

a. 100
b. 200
c. 300
d. 400

6. Sanitary building sewers 6” or less in diameter shall be provided with cleanouts or manholes such that: Manholes are located not more than _____ feet apart

a. 100
b. 200
c. 300
d. 400

7. Sanitary building sewers 6” or less in diameter shall be provided with cleanouts or manholes such that: Cleanouts are located not more than _____ feet apart

a. 100
b. 200
c. 300
d. 400

8. Sanitary building sewers 8” or larger in diameter shall be provided with manholes at:

a. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet
b. Every change in pipe diameters where both connections are 8 inches or larger
c. Intervals of not more than 300 feet.
d. only a & b

(c) *Storm building sewers.* 1. Storm building sewers 10” or less in diameter shall be provided with cleanouts or manholes such that:

a. Cleanouts are located not more than 100 feet apart;
b. Manholes are located not more than 400 feet apart;
c. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or

d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.
2. Storm building sewers 12” or larger in diameter shall be provided with manholes or storm drain inlets with an inside diameter of at least 36” at:
a. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet,
b. Every change in pipe diameter where both connections are 12 inches or larger, and
c. Intervals of not more than 400 feet.

9. Storm building sewers 10” or less in diameter shall be provided with cleanouts or manholes such that:
a. The distance from a cleanout to a manhole located upstream is not more than 200 feet
b. The distance from a manhole to a cleanout located upstream is not more than 400 feet.
c. both a or b
d. none of the above
10. Storm building sewers 10” or less in diameter shall be provided with cleanouts or manholes such that:
a. Cleanouts are located not more than 200 feet apart;
b. Manholes are located not more than 500 feet apart;
c. both a or b
d. none of the above
11. Storm building sewers 12” or larger in diameter shall be provided with manholes or storm drain inlets with an inside diameter of at least 36” at:
a. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet,
b. Every change in pipe diameter where both connections are 12 inches or larger, and
c. Intervals of not more than 500 feet.
d. both a or b

(d) *Private interceptor main sewers.* 1. Private interceptor main sewers 5” or less in diameter shall be provided with an exterior cleanout or manhole upstream of the point of the creation of the private interceptor main sewer and such that:
a. Cleanouts are located not more than 100 feet apart;
b. Manholes are located not more than 400 feet apart;
c. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or
d. The distance from a manhole to a cleanout located upstream is not more than 300 feet.
2. Private interceptor main sewers 6” or larger in diameter shall be provided with a manhole at:
a. The most upstream point of the private interceptor main sewer;
b. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 10 feet,
c. Every change in pipe diameter where both connections are 6 inches or larger, and
d. Intervals of not more than 400 feet.

12. Private interceptor main sewers 5” or less in diameter shall be provided with an exterior cleanout or manhole upstream of the point of the creation of the private interceptor main sewer and such that:
a. Cleanouts are located not more than 200 feet apart
b. Manholes are located not more than 400 feet apart
c. both a or b
d. none of the above
13. Private interceptor main sewers 5” or less in diameter shall be provided with an exterior cleanout or manhole upstream of the point of the creation of the private interceptor main sewer and such that:
a. The distance from a cleanout to a manhole located upstream is not more than 200 feet; or
b. The distance from a manhole to a cleanout located upstream is not more than 300 feet.

c. both a or b
d. none of the above

14. Private interceptor main sewers 6” or larger in diameter shall be provided with a manhole at:
a. The most downstream point of the private interceptor main sewer
b. Every horizontal change in direction of more than 45 degrees where the change in direction is created within a distance of less than 20 feet
c. both a or b
d. none of the above

15. Private interceptor main sewers 6” or larger in diameter shall be provided with a manhole at:
a. Every change in pipe diameter where both connections are 8 inches or larger
b. Intervals of not more than 500 feet.
c. both a or b
d. none of the above

(e) *Junction of building drain and building sewer.* A cleanout shall be provided near the junction of a building drain and a building sewer.
1. The cleanout shall be located within 5 feet of where the building drain and the building sewer connect. The cleanout may be located either inside or outside the building.
2. A cleanout in a drain stack may serve as the cleanout at the junction of the building drain and building sewer, if the stack is within 5 feet of where the building drain and building sewer connect.
(f) *Stacks.* Where a cleanout is provided in a drain stack, the cleanout shall be located 28 to 60 inches above the lowest floor penetrated by the stack.
(g) *Branches.* 1. Except as provided in subd. 2., cleanouts shall be provided in connection with batteries of fixtures at such points that all parts of the branch drain may be accessible for cleaning or removal of stoppages. For the purposes of this requirement, removable fixture traps may serve as cleanout openings.
2. A cleanout shall not be required for a branch drain when the fixtures on the branch include one floor outlet fixture and any fixtures discharging into an accompanying wet vent.
(h) *Greasy wastes.* Drain pipes carrying greasy wastes shall be provided with cleanouts located not more than 40 feet apart and at all changes in direction of more than 45 degrees.
(i) *Double sanitary tees.* A cleanout shall be provided immediately above or below a double sanitary tee drain fitting which is installed in a vertical drain pipe of less than 3” in diameter, unless a stack cleanout is provided in accordance with par. (f).
(j) *Traps and fixture drains.* 1. All traps shall be constructed or installed so that stoppages may be removed from the traps and the horizontal portions of fixture drains.
2. If a trap is not accessible for removal or does not contain a removable dip, a cleanout or a removable inlet shall be installed to enable cleaning of the trap passageway and the horizontal portions of the fixture drain.
(k) *Conductors.* Where a cleanout is provided in a conductor, the cleanout shall be located 28” to 60” above the lowest floor penetrated by the conductor.
(L) *Sampling manholes.* Municipalities or sanitary sewage districts by ordinance or rule may require the installation of sampling manholes for periodic sewage monitoring.
(m) *Catch basins and interceptors.* The fixture drain from all interceptors designed in accordance with SPS 382.34 (4) (a) 2. shall be provided with an accessible cleanout located outside of the basin and not more than 15 inches from the weir of the trap.

16. Where a cleanout is provided in a _____, the cleanout shall be located 28” to 60” above the lowest floor penetrated by the conductor.
a. conductor
b. branched
c. manholes

d. basins and interceptors

17. Sanitary sewage districts by ordinance or rule may require the installation of _____ for periodic sewage monitoring.

a. conductor
b. branched
c. sampling manholes
d. basins and interceptors

18. A cleanout shall be provided near the junction of a building drain and a building sewer.

a. The cleanout shall be located within 5 feet of where the building drain and the building sewer connect. The cleanout may be located either inside or outside the building.
b. A cleanout in a drain stack may serve as the cleanout at the junction of the building drain and building sewer, if the stack is within 3 feet of where the building drain and building sewer connect.
c. both a or b
d. none of the above

19. Where a cleanout is provided in a drain stack, the cleanout shall be located _____ inches above the lowest floor penetrated by the stack.

a. 32 to 60
b. 28 to 62
c. 28 to 64
d. none of the above

20. The fixture drain from all interceptors designed in accordance with SPS 382.34 (4) (a) 2. shall be provided with an accessible cleanout located outside of the basin and not more than ___ inches from the weir of the trap.

a. 10
b. 12
c. 15
d. 24

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(4) DIRECTION OF FLOW. Every cleanout shall be installed so as to open in the direction of the waste flow or at a right angle thereto.

(5) ACCESSIBILITY. Cleanout plugs shall not be covered with cement, plaster, or any other similar permanent finishing material.

(a) *Underground piping.* Cleanouts installed in underground drain piping shall be extended vertically to or above the finish grade.

1. All interior and exterior cleanouts where the vertical distance between the horizontal drain pipe being served and the top of the cleanout opening exceeds 18 inches in length, shall connect to the drain piping through a fitting as specified in Table 82.30–4.

2. A cleanout located outside of a building shall be provided with a frost sleeve.

a. The frost sleeve shall be of a material approved for building sewers in accordance with SPS 384.30 (2) (c).

b. Where a cleanout is located in an area subject to vehicular traffic the top of the frost sleeve shall terminate in a concrete pad at least 4” thick and extending at least 9” from the sleeve on all sides, sloping away from the sleeve.

c. The bottom of the frost sleeve shall terminate 6” to 12” above the top of the drain piping or at least 6” below the predicted frost depth in accordance with SPS 382.30 Table 82.30−6.

d. The frost sleeve shall have a removable watertight top of sufficient thickness and strength to sustain the weight of anticipated traffic. **Note:** See Appendix for further explanatory material.

(b) *Concealed piping.* Cleanout access for drain piping located in concealed spaces shall be provided by either extending the cleanout to at least the surface of a wall or floor or by providing access panels of a sufficient size to permit removal of the cleanout plug and proper cleaning of the pipe.
(7) PROHIBITED USE OF CLEANOUT OPENINGS. Cleanout openings shall not be used for the installation of fixtures or floor drains, except where another cleanout of equal access and capacity is provided

21. Cleanouts installed in underground drain piping shall be _____.
    a. extended horizontally
    b. extended above or just below the finish grade
    c. both a or b
    d. none of the above
22. All interior and exterior cleanouts where the vertical distance between the horizontal drain pipe being served and the top of the cleanout opening exceeds ___ inches in length, shall connect to the drain piping through a fitting as specified in Table 82.30–4.
    a. 6
    b. 12
    c. 18
    d. 24
23. A cleanout located outside of a building may be provided with a frost sleeve.
    a. true
    b. false
24. Where a cleanout is located in an area subject to vehicular traffic the top of the frost sleeve shall terminate in a concrete pad at least ___" thick.
    a. 2
    b. 4
    c. 6
    d. 9
25. Where a cleanout is located in an area subject to vehicular traffic the top of the frost sleeve shall terminate in a concrete pad extending at least ___" from the sleeve on all sides, sloping away from the sleeve.
    a. 2
    b. 4
    c. 6
    d. 9
26. The bottom of the frost sleeve shall terminate _____ above the top of the drain piping.
    a. 4" to 8"
    b. 6" to 12"
    c. 1/2' to 1'
    d. both b & c
27. The bottom of the frost sleeve shall terminate at least ____" below the predicted frost depth in accordance with SPS 382.30 Table 82.30−6.
    a. 2
    b. 4
    c. 6
    d. 9
28. The frost sleeve shall have a removable watertight top of sufficient thickness and strength to sustain the weight of anticipated _____.
    a. load
    b. impact

c. traffic
d. all of the above

29. Cleanout openings shall not be used for the installation of fixtures or floor drains, even when another cleanout of equal access and capacity is provided.
a. true
b.false

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(6) CLEANOUT SIZE. Cleanouts and cleanout extensions shall be sized in accordance with Table 82.35.

Table 382.35 Cleanout Sizes

Diameter of Pipe Served by Cleanout (inches)	Minimum Diameter of Cleanout Extension (inches)	Minimum Diameter of Cleanout Opening (inches)
1 1/4	1 1/4	1 1/4
1 1/2	1 1/2	1 1/4
2	1 1/2	1 1/2
3	3	2 1/2
4	4	3 1/2
5	5	4
6	6	5
8 and larger	6	6

30. The minimum size for a clean out extension pipe for a 3” pipe served would be ___?
a. 2 ½”
b. 2”
c. 3”
d. any of the above

31. The minimum size for a cleanout opening serving a 3” pipe would be ___?
a. 2 ½”
b. 2”
c. 3”
d. any of the above

32. The minimum size for a cleanout opening serving a 10” pipe would be ___?
a. 6”
b. 2”
c. 3”
d. any of the above

33. The minimum size for a clean out extension pipe for a 1” pipe served would be ___?
a. 2 ½”
b. 1 1/4”
c. 1”
d. none of the above

.

(8) MANHOLES. (a) *Diameter.* The minimum diameter of manholes shall be 42". A manhole shall have a minimum access opening of 24".

(b) *Materials.* Manholes shall be constructed of approved materials in accordance with SPS 384 and in accordance with the design provisions of s. NR 110.13. **Note:** The provisions of s. NR 110.13 regarding the manhole's flow channel, watertightness, and drop pipe indicate the following specifications:

—The flow channel through manholes shall be made to conform to the shape and slope of the sewer.

—Solid watertight manhole covers are to be used wherever the manhole tops may be flooded by street runoff or high water. Where groundwater conditions are unfavorable, manholes of brick or block shall be waterproofed on the exterior with plastic coatings supplemented by a bituminous waterproof coating or other approved coatings. Inlet and outlet pipes are to be joined to the manhole with a gasketed flexible watertight connection or any watertight connection arrangement that allows differential settlement of the pipe and manhole wall to take place.

—An outside drop pipe is to be provided for a sewer entering a manhole where the invert elevation of the entering sewer is 2 feet or more above the spring line of the outgoing sewer. The entire drop connection shall be encased in the concrete. Inside drop connection may be approved on a case−by−case basis.

34. Manholes shall be constructed regarding the manhole's flow channel, watertightness, and drop pipe indicate the following specifications:

a. The flow channel through manholes shall be made to conform to the shape and slope of the sewer.

b. Solid watertight manhole covers are to be used wherever the manhole tops may be flooded by street runoff or high water.

c. Where groundwater conditions are unfavorable, manholes of brick or block shall be waterproofed on the exterior with plastic coatings supplemented by a bituminous waterproof coating or other approved coatings.

d. all of the above

35. Manhole _____ pipes are to be joined to the manhole with a gasketed flexible watertight connection or any watertight connection arrangement that allows differential settlement of the pipe and manhole wall to take place.

a. inlet

b. outlet

c. overflow

d. both a & b

36. An outside drop pipe is to be provided for a sewer entering a manhole where the invert elevation of the entering sewer is ____ or more above the spring line of the outgoing sewer.

a. 24"

b. 2"

c. 2'

d. both a & c

37. The entire _____ drop connection shall be encased in the concrete.

a. outside

b. inside

c. both a & b

d. none of the above

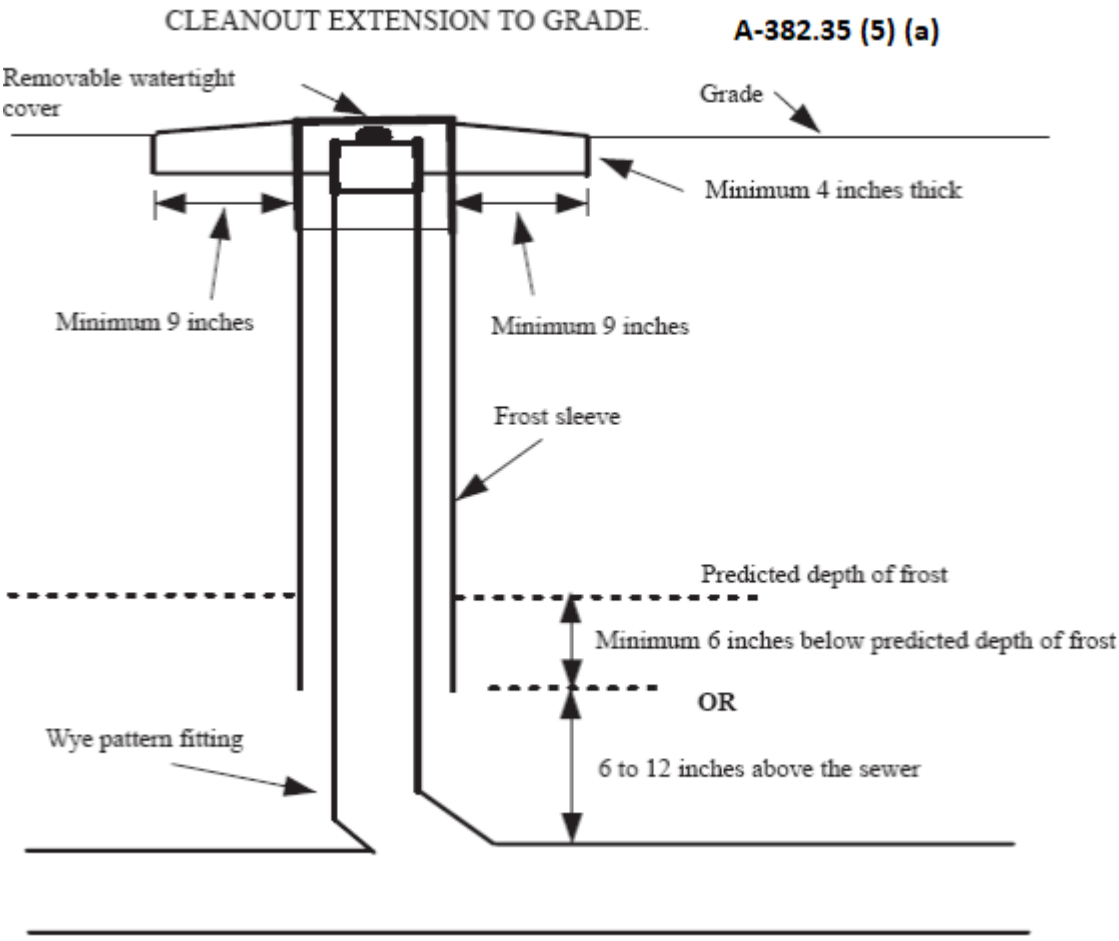
38. _____ drop connection may be approved on a case−by−case basis.

a. Outside

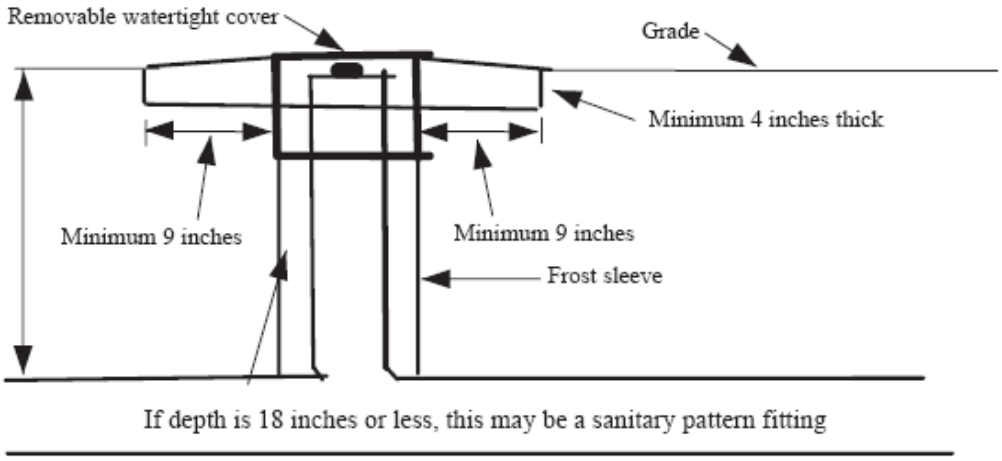
b. Inside

c. both a & b

d. none of the above

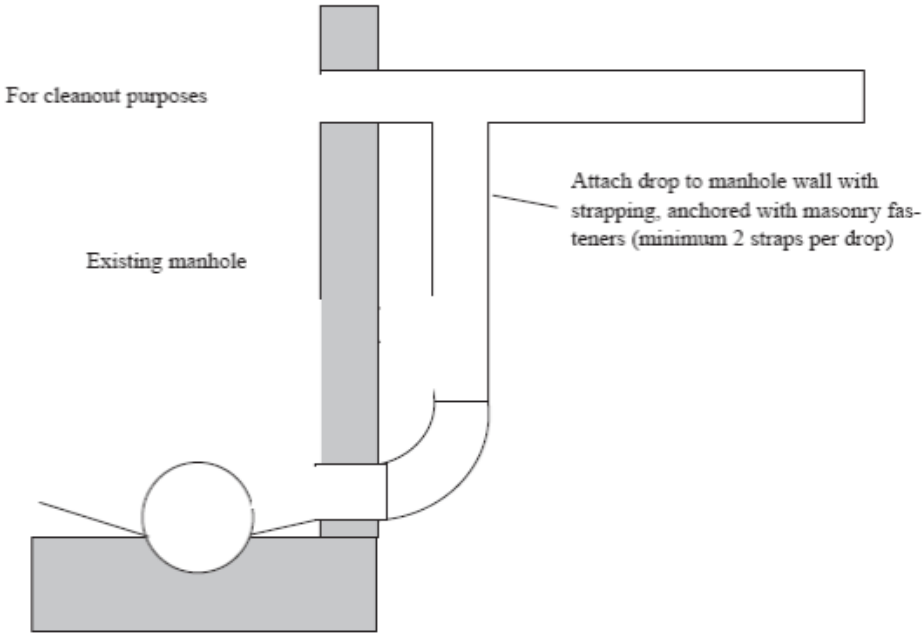


39. The frost sleeve must be installed ____ inches below the predicted depth of the frost.
    a. 6
    b. 12
    c. 18
    d. 24
40. The above pipe connection from vertical to horizontal must be a _____ pattern fitting.
    a. Tee
    b. Wye
    c. N/A
    d. both a or b
41. The concrete cap above must extend _____ at least 9".
    a. vertically
    b. horizontally
    c. both a or b
    d. none of the above



42. The above pipe connection from vertical to horizontal must be a _____ pattern fitting.
    a. Tee
    b. Wye
    c. N/A
    d. both a or b

OUTSIDE DROP INTO AN EXISTING MANHOLE. **A-382.35 (8)**



43. The minimum amount of straps per drop above would be ____?
    a. 1
    b. 2
    c. 3
    d. 4

44. The upper most pipe entering the manhole would be used for ____ purposes?
    a. drainage
    b. cleanout
    c. televising
    d. all of the above

(d) *Location limitations.* Building drains, building sewers or private interceptor main sewers shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812 or as otherwise approved by the department of natural resources

NR 811.12 (5) (d)

(d) *Minimum separation from contamination sources.* The well shall be adequately separated from potential sources of contamination. Unless a hydrogeologic investigation indicates lesser separation distances would provide adequate protection of a well from contamination or department approved treatment is installed to address the potential contamination concerns, the minimum separation distances shall be:

1. Ten feet between a well and an emergency or standby power system that is operated by the same facility which operates the well and that has a double wall above ground storage tank with continuous electronic interstitial leakage monitoring. These facilities shall meet the installation requirements of SPS 310.260 and receive written approval from the department of Safety and Professional services or its designated Local Program Operator under SPS 310.110.

2. Fifty feet between a well and a storm sewer main or a sanitary sewer main where the sanitary sewer main is constructed of water main class materials and joints. Gravity sanitary sewers shall be successfully air pressure tested in place. The air pressure test shall meet or exceed the requirements of the 4 psi low pressure air test for plastic gravity sewer lines found in the latest edition of Standard Specifications for Sewer & Water Construction in Wisconsin. Force mains shall be successfully pressure tested with water to meet the AWWA C600 pressure and leakage testing requirements for one hour at 125% of the pump shut−off head.

3. Two hundred feet between a well and any sanitary sewer main not constructed of water main class materials, sanitary sewer manhole**,** lift station, one or 2 family residential heating fuel oil underground storage tank or above ground storage tank or POWTS treatment tank or holding tank component and associated piping.

4. Three hundred feet between a well and any farm underground storage tank system or other underground storage tank system with double wall and with electronic interstitial monitoring for the system, which means the tank and any piping connected to it. These installations shall meet the most restrictive installation requirements of SPS 310.260 and receive written approval from the SPS or its designated Local Program Operator under SPS 310.110.
These requirements apply to tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances.

5. Three hundred feet between a well and any farm above ground storage tank with double wall, or single wall tank with other secondary containment and under a canopy; other above ground storage tank system with double wall, or single wall tank with secondary containment and under a canopy and with electronic interstitial monitoring for a double wall tank or electronic leakage monitoring for a single wall tank secondary containment structure. These installations shall meet the most restrictive installation requirements of SPS 310.260 and receive written approval from the SPS or its designated Local Program Operator under SPS 310.110. These requirements apply to tanks containing gasoline,
diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances.

6. Four hundred feet between a well and a POWTS dispersal component with a design capacity of less than 12,000 gallons per day, a cemetery or a storm water retention or detention pond.

7. Six hundred feet between a well and any farm underground storage tank system or other underground storage tank system with double wall and with electronic interstitial monitoring for the system, which means the tank and any piping connected to it; any farm above ground storage tank with double wall, or single wall tank with other secondary containment and under a canopy or other above ground storage tank system with double wall, or single wall tank with secondary containment
and under a canopy; and with electronic interstitial monitoring for a double wall tank or electronic leakage monitoring for a single wall tank secondary containment structure. These installations shall meet the standard double wall tank or single wall tank secondary containment installation requirements of SPS 310.260 and receive written approval from the SPS or its designated Local Program Operator under SPS 310.110. These requirements apply to
tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances.

8. One thousand feet between a well and land application of municipal, commercial, or industrial waste; the boundaries of a landspreading facility for spreading of petroleum−contaminated soil regulated under ch. NR 718 while that facility is in operation; agricultural, industrial, commercial or municipal waste water treatment plant treatment units, lagoons, or storage structures; manure stacks or storage structures; or POWTS dispersal component with a design capacity of 12,000 gallons per day or more.

9. Twelve hundred feet between a well and any solid waste storage, transportation, transfer, incineration, air curtain destructor, processing, wood burning, one time disposal or small demolition facility; sanitary landfill; any property with residual groundwater contamination that exceeds ch. NR 140 enforcement standards; coal storage area; salt or deicing material storage area; any single wall farm underground storage tank or single wall farm above ground storage tank or other

single wall underground storage tank or above ground storage tank that has or has not received written approval from the SPS or its designated Local Program Operator under SPS 310.110 for a single wall tank installation.
These requirements apply to tanks containing gasoline, diesel, bio−diesel, ethanol, other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substances; and bulk pesticide or fertilizer handling or storage facilities.
Note: The department's database of contaminated properties, established in accordance with ss. 292.12 (3), 292.31 (1), and 292.57, Stats., can be found on the department's Bureau for Remediation and Redevelopment internet web site. The Bureau for Remediation and Redevelopment Tracking System (BRRTS) is an on−line database that provides information on known contaminated soil or groundwater and tracks the status of the cleanup actions. RR Sites Map is the program's geographic information system that provides a map−based system of contaminated properties in Wisconsin. The SPS Storage Tank Database Information can be found at the SPS web site.

45. *Minimum separation from contamination sources.* Fifty feet between a well and a storm sewer main or a sanitary sewer main where the sanitary sewer main is constructed of water main class materials and joints. Gravity sanitary sewers shall be successfully air pressure tested in place. The air pressure test shall meet or exceed the requirements of the ____ psi low pressure air test for plastic gravity sewer lines found in the latest edition of Standard Specifications for Sewer & Water Construction in Wisconsin.

a. 3
b. 4
c. 5
d. 10

46. *Minimum separation from contamination sources.* _____ between a well and any sanitary sewer main not constructed of water main class materials, sanitary sewer manhole**,** lift station, one or 2 family residential heating fuel oil underground storage tank or above ground storage tank or POWTS treatment tank or holding tank component and associated piping.

a. 50'
b. 200'
c. 300'
d. 400'

47. *Minimum separation from contamination sources.* _____ between a well and a POWTS dispersal component with a design capacity of less than 12,000 gallons per day, a cemetery or a storm water retention or detention pond.

a. 50'
b. 200'
c. 300'
d. 400'

48. *Minimum separation from contamination sources.* _____ between a well and any farm underground storage tank system or other underground storage tank system with double wall and with electronic interstitial monitoring for the system, which means the tank and any piping connected to it

a. 50'
b. 200'
c. 300'
d. 400'

NR 812.08 Well, reservoir and spring location. (1) GENERAL. Any potable or nonpotable well or reservoir shall be located:
(a) So the well and its surroundings can be kept in a sanitary condition.
(b) At the highest point on the property consistent with the general layout and surroundings if reasonably possible, but in any case protected against surface water flow and flooding and not downslope from a contamination source on the property or on an adjacent property regardless of what was installed first, the well or the contamination source. When a contamination source is installed upslope from a well in violation of this section after the well construction has been completed, the violation is not the responsibility of the well driller, except if the well driller knew or should have known of the proposed upslope installation of the contamination source. When there is no location on the property where this requirement can be

met, a well may be constructed without a variance if it is constructed with a minimum of 20 or more feet of well casing pipe than is required by ss. NR 812.12 and 812.13 and Tables I and II or with a minimum of 60 feet of well casing pipe provided that the minimum well casing pipe depth requirements of s. NR 812.12 or 812.13 and Table I or II are met. This exception does not apply to high capacity, school or wastewater treatment plant wells. A well or reservoir is located downslope from a contamination source, regardless of the presence or absence of a structure between the well and the contamination source, if:
1. The ground surface elevation at the well or reservoir is lower than the elevation at the contamination source, and
2. Surface water that washes over the contamination source would travel within eight feet of the well or reservoir, or over the well or reservoir.
(c) As far away from any known or possible source of contamination as the general layout of the premises and the surroundings allow.
Note: Section PSC 114.234 C8 requires that a horizontal clearance of at least 3/4 of the vertical clearance of the conductors, including overhead power lines to the ground required by Rule 232 shall be maintained between open conductors and wells. Persons installing wells must comply with this requirement.
(d) Such that any potential contaminant source, not identified in this section or in Table A, is a minimum of 8 feet from the well or reservoir.
(e) Every well shall be located so that it is reasonably accessible with proper equipment for cleaning, treatment, repair, testing, inspection and any other maintenance that may be necessary.

49. Any potable or nonpotable well or reservoir shall be located: Such that any potential contaminant source, not identified in this section or in Table A, is a minimum of _____ from the well or reservoir.
    a. 5’
    b. 8’
    c. 50’
    d. none of the above
50. A well or reservoir is located downslope from a contamination source, regardless of the presence or absence of a structure between the well and the contamination source, if:
    a. The ground surface elevation at the well or reservoir is lower than the elevation at the contamination source
    b. Surface water that washes over the contamination source would travel within eighteen feet of the well or reservoir
    c. Surface water that washes over the contamination source would travel within eight feeteen of the over the well or reservoir.
    d. all of the above
51. Section PSC 114.234 C8 requires that a horizontal clearance of at least ____ of the vertical clearance of the conductors, including overhead power lines to the ground required by Rule 232 shall be maintained between open conductors and wells. Persons installing wells must comply with this requirement.
    a. ½
    b. ¾
    c. 1/3
    d. 1/4

NR 812.08 Well, reservoir and spring location. (2) RELATION TO BUILDINGS. In relation to buildings, the location of any potable or nonpotable well shall be as follows:
(a) When a well is located outside and adjacent to a building, it shall be located so that the center line of the well extended vertically will clear any projection from the building by not less than 2 feet and so that the top of the well casing pipe extends at least 12 inches above the final established ground grade.
(b) When a structure is built over a drilled well, it shall have an access hatch or removable hatch, or provide other access to allow for pulling of the pump. The well casing pipe shall extend at least 12 inches above the floor and be sealed watertight at the point where it extends through the floor.
(c) No well may be located, nor a building constructed, such that the well casing pipe will terminate in or extend through the basement of any building or terminate under the floor of a building having no basement. The top of a well casing pipe may terminate in a walkout basement meeting the criteria of s. NR 812.42 (9) (b) 1. to 4. A well may not terminate in or extend through a crawl space having a below ground grade depression or excavation.

52. When a structure is built over a drilled well, it shall have an access hatch or removable hatch, or provide other access to allow for pulling of the pump. The well casing pipe shall extend at least ___ inches above the floor and be sealed watertight at the point where it extends through the floor.

a. 8
b. 10
c. 12
d. 24

53. When a well is located outside and adjacent to a building, it shall be located so that the center line of the well extended vertically will clear any projection from the building by not less than ____.

a. 1'
b. 18"
c. 2'
d. none of the above

54. When a well is located outside and adjacent to a building, it shall be located so that the center line of the well extended vertically so that the top of the well casing pipe extends at least _____" above the final established ground grade.

a. 8
b. 10
c. 12
d. 24

55. A well may terminate in or extend through a crawl space having a below ground grade depression or excavation.

a. true
b. false

NR 812.08 Well, reservoir and spring location. (3) RELATION TO FLOODPLAINS. (a) A potable or nonpotable well may be constructed, reconstructed or replaced in a floodfringe provided that the top of the well is terminated at least 2 feet above the regional flood elevation for the well site.
(b) A well may be reconstructed or replaced in a floodway provided that the top of the well is terminated at least 2 feet above the regional flood elevation for the well site.
(c) A well may not be constructed on a floodway property that is either undeveloped or has building structures but no existing well.
(d) The regional flood elevation may be obtained from the department.

56. A potable or nonpotable well may be constructed, reconstructed or replaced in a flood fringe provided that the top of the well is terminated at least ____" above the regional flood elevation for the well site.

a. 8
b. 10
c. 12
d. 24

57. A well may not be constructed on a floodway property that is either undeveloped or has building structures even if it has an existing well.

a. true
b. false

NR 812.08 Well, reservoir and spring location. (4) RELATION TO CONTAMINATION SOURCES. Minimum separating distances between any new potable or nonpotable well, reservoir or spring and existing sources of contamination; or between new sources of contamination and existing potable or nonpotable wells, reservoirs or springs shall be maintained as described in this subsection. The minimum separating distances of this subsection do not apply to dewatering wells approved under s. NR 812.09 (4) (a). Greater separation distances may be required for wells requiring plan approval under s. NR 812.09. Separation distance requirements to possible sources of contamination will not be waived because of property lines. Minimum separating distances are listed in Table A and are as follows:

(a) Eight feet between a well or reservoir and a:
1. Buried gravity flow sanitary or storm building drain having pipe conforming to SPS 384;
2. Buried gravity flow sanitary or storm building sewer having pipe conforming to SPS 384;
3. Watertight clear water waste sump;
4. Buried clear water waste drain having pipe conforming to SPS 384;
5. Buried gravity flow foundation drain;
6. Rainwater downspout outlet;
7. Cistern;
8. Buried building foundation drain connected to a clear water waste drain or other subsoil drain;
9. Noncomplying pit, subsurface pumproom, alcove, or reservoir;
10. Nonpotable well;
11. Fertilizer or pesticide storage tank with a capacity of less than 1,500 gallons, but only when the well is nonpotable;
Note: For potable wells see par. (d) 1.
12. Plastic silage storage and transfer tube;
13. Yard hydrant;
14. Swimming pool, measured to the nearest edge of the water; or
15. Dog or other small pet house, animal shelter or kennel housing not more than 3 adult pets on a residential lot.
(b) Twenty−five feet between a well or reservoir and a:
1. Buried grease interceptor or trap;
2. Septic tank;
3. Holding tank;
4. Buried building drain or building sewer having pipe not conforming to SPS 384, wastewater sump, or non−watertight clear water waste sumps,
5. Buried pressurized sanitary building sewer having pipe conforming to SPS 384;
6. Buried gravity manure sewer;
7. Lake, river, stream, ditch or stormwater detention pond or basin measured to the regional high water elevation in the case of a lake or stormwater detention pond, to the edge of the floodway in the case of a river or stream or to the edge in the case of a ditch or stormwater detention basin;
8. Liquid−tight barn gutter;
9. Animal barn pen with concrete floor;
10. Buried pressurized sewer pipe conveying manure provided that the pipe meets ASTM specification D−2241, with standard dimension ratio of 21 or less or pressure pipe meeting the requirements of s. NR 110.13 or 811.62.
11. Buried fuel oil tanks serving single family residences, including any associated buried piping;
12. Discharge to ground from a water treatment device;
13. Vertical shaft installed below grade used for intake of air for a heating or air conditioning system; or
14. Buried sanitary or storm collector sewer serving 4 or fewer living units or having a diameter of 6 inches or less.
(c) Fifty feet between a well or reservoir and a:
1. Soil absorption unit receiving less than 8,000 gallons/day, existing, abandoned or alternate, but not including a school soil absorption unit;
Note: For school soil absorption units see par. (e); for soil absorption units receiving more than 8,000 gallons/day see par. (f) 3.
2. Privy;
3. Pet waste pit disposal unit;
4. Animal shelter;
5. Animal yard;
6. Silo;
7. Buried sewer used to convey manure having pipe conforming to SPS 384 that does not meet the specifications in par. (b);
8. Liquid tight manure hopper or reception tank;
9. Filter strip;
10. Buried sanitary or storm collector sewer serving more than 4 living units or larger than 6 inches in diameter except that wells may be located or sewers installed such that a well is less than 50 feet, but at least 25 feet, from gravity collector sewers smaller than 16 inches in diameter or from force main collector sewers 4 inches or smaller in diameter provided that within a 50−foot radius of the well the installed sewer pipe meets the allowable leakage requirements of AWWA C600 and the requirements for water main equivalent type pipe as follows:
a. For sewers > 4 inch diameter, but < 16 inch diameter: PVC pipe > 4 inch diameter, but < 12inch diameter shall meet AWWA C900 with elastomeric joints having a standard dimension ratio of 18 or less; PVC pipe > 12inch diameter, but < 16 inch diameter shall meet AWWA C905 with elastomeric joints having a standard dimension ratio of 18 or less; Ductile iron pipe shall meet AWWA C115 or AWWA C151 having a thickness class 50 or more.
b. For sewers < 3 inch diameter, the pipe shall be any rigid pipe in the SPS 384 “Table for Pipe and Tubing for Water Services and Private Water Mains,” including approved ABS, brass, cast iron, CPVC, copper (not

including type M copper) ductile iron, galvanized steel, polybutylene (PB), polyethylene (PE), PVC, or stainless steel pipe.
11. An influent sewer to a wastewater treatment plant;
12. The nearest existing or future grave site in cemeteries;
13. Wastewater treatment plant effluent pipe;
14. Buried pressurized sewer having pipe not conforming to SPS 384; or
15. Manure loading area.
Note: The minimum separating distance between a well or reservoir and a lift station is based on the presence of a sewer force main at the lift station.
(d) One hundred feet between a well or reservoir and a:
1. Bulk surface storage tank with a capacity greater than 1,500 gallons or any bulk buried storage tank regardless of capacity, including, for both surface or buried tanks, associated buried piping for any solid, semi−solid or liquid product but not including those regulated under par. (b) 12. This subdivision includes, but is not limited to petroleum product tanks, waste oil tanks and pesticide or fertilizer storage tanks not regulated under par. (a) 11. This subdivision does not include septic, holding and manure reception tanks, or liquefied petroleum gas tanks as specified in c SPS 311.
Note: Chapters SPS 311, 312 and as they existed on October 31, 1999 were repealed and a new chapter SPS 340 was created effective
November 1, 1999.
2. Liquid−tight, fabricated manure or silage storage structure, in ground or at ground surface;
3. Wastewater treatment plant structure, conveyance or treatment unit; or
4. Dry fertilizer or pesticide storage building or area when more than 100 pounds of either or both materials are stored;
5. Well, drillhole or water system used for the underground placement of any waste, surface or subsurface water or any substance as defined in s. 160.01 (8), Stats.;
6. Stormwater infiltration basin;
7. Uncovered storage of silage on the ground surface;
8. Water−tight silage storage trench or pit; or
9. Lift station.
(e) Two hundred feet between a school well and a soil absorption unit receiving less than 8,000 gallons per day, existing or abandoned.
(ee) One hundred fifty feet between a well or reservoir and a temporary manure stack.
(f) Two hundred fifty feet between a well or reservoir and a:
1. Manure stack.
2. Earthen or excavated manure storage structure.
Note: Variances from the separating distances may be granted as specified in s. NR 812.43 for earthen storage and manure stacks constructed and
maintained to the specifications of Soil Conservation Standards No. 425 or 312, respectively.
3. Soil absorption unit receiving 8,000 or more gallons per day, existing, abandoned, or alternate.
4. Sludge landspreading or drying area.
5. An earthen silage storage trench or pit.
6. Liquid waste disposal system including, but not limited to a treatment pond or lagoon, ridge and furrow system and spray irrigation system.
Note: Variance from this separating distance may be granted for treatment ponds or lagoons constructed and maintained to an approval granted
under ch. NR 213.
7. Salvage yard.
8. A salt or deicing material storage area including the building structure and the surrounding area where the material is transferred to vehicles. This subdivision does not include bagged deicing material.
9. Solid waste processing facility.
10. Solid waste transfer facility.
11. The boundaries of a landspreading facility for spreading of petroleum−contaminated soil regulated under ch. NR 718 while that facility is in operation.
(g) Twelve hundred feet between a well or reservoir and:
1. The nearest edge of the limits of filling of an existing, proposed or abandoned landfill, measured to the nearest fill area of abandoned landfills, if known. Otherwise measured to the nearest property line where the landfill is located. The department may require, as part of a variance request, a land survey map, a scaled diagram of the landfill and the well location, or another accurate measurement method to determine and demonstrate the distance between the landfill and the well;
2. The nearest edge of a coal storage area in excess of 500 tons; or

3. A hazardous waste treatment facility regulated by the department.

58. The minimum separating distances between any new potable or nonpotable well and buried gravity flow sanitary or storm building drain having pipe conforming to SPS 384 would be ____?
    a. 8
    b. 25
    c. 50
    d. 100
59. The minimum separating distances between any new potable or nonpotable well and a buried gravity flow sanitary or storm building sewer having pipe conforming to SPS 384 would be ____?
    a. 8
    b. 25
    c. 50
    d. 100
60. The minimum separating distances between any new potable or nonpotable well and a watertight clear water waste sump would be ____?
    a. 8
    b. 25
    c. 50
    d. 100
61. The minimum separating distances between any new potable or nonpotable well and a buried clear water waste drain having pipe conforming to ch. SPS 384 would be ____?
    a. 8
    b. 25
    c. 50
    d. 100
62. The minimum separating distances between any new potable or nonpotable well and a buried gravity flow foundation drain would be ____?
    a. 8
    b. 25
    c. 50
    d. 100
63. The minimum separating distances of 25' is required between any well or reservoir and a:
    a. Buried grease interceptor or trap
    b. Septic tank
    c. Holding tank
    d. all of the above
64. The minimum separating distances of 25' is required between any well or reservoir and a:
    a. Buried pressurized sewer having pipe not conforming to SPS 384
    b. Holding tank
    c. Solid waste transfer facility
    d. both a & b
65. The minimum separating distances of _____' is required between any well or reservoir and a stormwater infiltration basin.
    a. 8
    b. 25
    c. 50
    d. 100

TABLE A

MINIMUM SEPARATION DISTANCE REQUIREMENTS BETWEEN POTABLE OR NONPOTABLE WELLS, RESERVOIRS, SPRINGS AND POSSIBLE SOURCES OF CONTAMINATION

New installations shall meet the separation requirements in the far−right column. Existing installations shall meet the separation requirements in effect at the time of construction, those in effect at the time of installation of the possible source of contamination, if later, or to the requirements adopted on October 1, 1994.

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
Absorption Unit (field), soil	50′	50′	50′	50′	50′
Air shaft−heating/air conditioning (Vertical, Below grade)	None	None	None	None	25′
Animal Barn Pen with Concrete Floor	None** (25/20)**	25′	25′	25′	25′
Animal Shelter (not including small pet shelter housing 3 or fewer adult pets)	None** (50/25)**	50′	50′	50′	50′
Animal Yard—Includes Calf Hutch (but not residential lot dog kennel enclosing 3 or fewer adult pets)	None**	50′	50′	50′	50′
Barn Gutter—Liquid−Tight	None** (25/18)**	25′	25′	25′	25′
Building Overhang (from centerline of well)	2′	2′	2′	2′	2′
Cemetery Grave Sites	None*	100′	100′	50′	50′
Cistern	10′	10′	10′	8′	8′
Coal Storage (greater than 500 tons)	None*	None*	None*	1,200′	1,200′
Composting Site (See Solid Waste Processing Facility)	None	None	None	None	250′
Discharge to ground from a Water Treatment Device	None	None	None	25′	25′
Ditch−Edge of	None	None	None	None	25′
Doghouse or kennel housing 3 or fewer adult pets on residential lot	None	None	None	50′	8′
Downspout Outlet	10′	10′	10′	8′	8′
Drain−Sewerage (having pipe conforming to ch. Comm 84) (Buried)	10′	8′	8′	8′	8′
Drain−Sewerage (not having pipe conforming to ch. Comm 84) (Buried)	10′	25′	25′	25′	25′
Drain (any material) (Buried)					
Clear Water Waste	10′	10′	10′	8′	8′
Building−Foundation	10′	10′	10′	8′	8′
Building−Foundation—Sewer Connected	15′	15′	15′	8′	8′
Drillhole used for the underground placement of any waste, surface water or any substance as defined in s. 160.01 (8), Stats.	None	None	None	None	100′
Fertilizer or Pesticide, any size Storage Tank (Buried tank or surface tank > 1,500 gal.)	None	None	None	100′	100′
Filter Strip	None	None	None	50′	50′
Fuel Oil Tank—Buried	None*	100′ (25′ Allowed for Private Res. Lots Only)	100′ (25′ Allowed for Private Res. Lots Only)	100′ (Including any associated buried piping) (25′ allowed for those serving single family residences)	100′ (Including any associated buried piping) (25′ allowed for those serving single family residences)
Fuel Oil Tank—Surface (>1,500 gallons) (including any associated buried piping)	None*	None*	None*	100′	100′
Fertilizer or Pesticide (Dry) Storage Area or Building (more than100 pounds)	None	None	None	None	100′
Gasoline or Other Petroleum or Liquid Product Tank — Buried (not including L.P. tanks)	None*	100′	100′	100′ (Including any associated buried piping)	100′ (Including any associated buried piping)
Gasoline or Other Petroleum or Liquid Product Tank—Surface (>1,500 gallons including any associated buried piping)	None*	None*	None*	100′	100′
Glass Lined Feed Storage Facility (Harvestor−Type Silos)	None**	25′	25′	50′	50′

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
Grease Interceptor (Trap) (Buried)	25′	25′	25′	25′	25′
Hazardous Waste Treatment Facility Regulated by DNR	None*	None*	None*	1,200′	1,200′
Holding Tank (Sewage)	None	25′	25′	25′	25′
Infiltration basin, Stormwater	None	None	None	None	100′
Kennel on residential lot enclosing 3 or fewer adult pets	None	None	None	50′	8′
Kennel, other than above	None	None	None	50′	50′
Lagoon, Treatment (See liquid waste disposal system)	—	—	—	—	—
Lake Shoreline (Measured to the edge of the floodway	None*	25′	25′ (60′ For Schools and High Cap. Wells)	25′	25′
Landfills (existing, proposed or abandoned) (Distance to Nearest Fill Area of abandoned landfills if Known; Otherwise to the Property Line)	None*	400 yards	400 yards	1,200′	1,200′
Lift Station##				##	100′
Liquid Waste Disposal System	None	250′	250′–300′	250′#	250′#
Manure Hopper or Reception Tank—Liquid–Tight	None*	75′	75′–150′	50′	50′
Manure Loading Area	None	None	None	None	50′
Manure Stack	None*	100′	100′–175′	250′***	250′***
Manure Stack,—Temporary	None	100′	100′	250′	150′
Manure—Storage Structure (Earthen, Excavated or Non–liquid tight)	None*	250′	250′–300′	250′***	250′***
Manure Storage Structure (Fabricated, Liquid–Tight)	None*	100′	100′–175′	100′	100′
Manure—Storage Basin—Liquid–Tight Concrete Floor with an Acceptable Drainage Facility	None*	100′	150′–300′	Now in category of Manure Storage Structure	Now in category of Manure Storage Structure
Mound System (Measured to the toe of the mound)	50′	50′	50′	50′	50′
Nonpotable Well	None*	None*	None*	8′	8′
Pesticide or Fertilizer (Dry) Storage Area or Building (More than 100 Pounds)	None	None	None	None	100′
Pesticide or Fertilizer Storage Tank (not buried)—less than 1,500 gallons (distance only for nonpotable wells)	None	None	None	8′	8′
Pesticide or Fertilizer Storage Tank—Buried tank, any size, or surface tank >1,500 gal.)	None	None	None	100′	100′
Pet Waste Pit Disposal Unit	None*	50′	50′	50′	50′
Pits—Noncomplying	None	10′	10′ (20′ For Schools, WWTP's, and High Capacity–Including Approved Pits)	8′	8′
Plastic Silage Storage and Transfer Tube	None	None	None	8′	8′
Pond, Stormwater detention (Edge of)	None	None	None	None	25′
Pond, treatment (See liquid waste, disposal system)					
Privy	50′ (Sewage Disposal Units)	50′	50′	50′	50′
Quarry (See s. NR 812.12 (16) for well casing depth requirements for wells within 1,200 feet of a quarry.)					
Reservoir—Noncomplying	10′ (Cistern)	10′	10′	8′	8′
Ridge and Furrow System (See liquid waste disposal system)					
River or Stream Edge (Measured to the edge of the floodway)	None*	25′	25′ (60′ For Schools and High Cap. Wells)	25′	25′
Salt or Deicing Material Storage Area (Including structure and area surrounding where material is transferred to vehicles)	None*	None*	None*	250′	250′
Salvage Yard	None*	None*	None*	250′	250′
Septic Tank	25′	25′	25′	25′	25′
Sewer (ch. Comm 84 Materials) (Buried)					
—Manure/Gravity	8′	8′	8′	25′	25′
—Manure/Pressurized	8′	8′	25′	25′	25′
—Sanitary or Storm Building/Gravity	8′	8′	8′	8′	8′

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
—Sanitary Building/Pressurized	8′	25′	25′	25′	25′
—Sanitary Collector (Serving ≤ 4 living units or ≤ 6″ diameter)	8′	50′	50′[c]	50′[c]	25′
—Sanitary Collector (Serving > 4 living units or > 6″ diameter)	8′	50′	50′[c]	50′[c]	50′[c]
—Influent	50′	50′	50′	50′	50′
—Storm Collector (≤ 6″ diameter)	8′	50′	50′	50′	25′
—Storm Collector (> 6″ diameter)	8′	50′	50′	50′	50′[c]
Sewer (not ch. ILHR 84 Materials) (Buried)					
—Manure/Gravity	25′	25′	25′	25′	25′
—Manure/Pressurized	25′	50′	50′	50′	50′
—Sanitary Building/gravity	25′	25′	25′	25′	25′
—Sanitary Building/Pressurized	25′	25′	25′	25′	50′
—Storm Building	25′	25′	25′	25′	8′
—Sanitary Collector	50′	50′	50′	50′	50′
—Storm Collector	25′	50′	50′	50′	50′
—Influent	50′	50′	50′	50′	50′
Shoreline—Lake, River or Stream (Measured as indicated in sub. (4) (b) 7.)	None*	25′	25′ (60′ For Schools and High Capacity Wells)	25′	25′
Silage Storage, Earthen Trench or Pit	None*	100′	100′– 175′	250′	250′
Silage Storage Structure (Fabricated liquid–tight) (In–ground or surface)	None	None	None	None	100′
Silage Storage—Surface, Uncovered	None	None	None	None	100′
Silage Storage Tube (Plastic)	None	None	None	8′	8′
Silo With Pit	None**	50′	50′	50′	50′
Silo Without Pit But With Concrete Floor and Drain	None**	25′	25′	50′	50′
Single application landspreading of petroleum–contaminated soil					250′
Sludge Landspreading or Drying	None*	200′	200′	250′	250′
Soil Absorption Unit (< 8,000 gal/day, includes alternate unit)	50′	50′	50′ (200′ for schools as of 1978)	50′ (200′ for schools)	50′ (200′ for schools)
Soil Absorption Unit (′≥8,000 gal/day, existing or abandoned)	50′	50′	50′ (200′ for schools as of 1978)	250′	250′
Solid Waste Processing Facility (Including composting facilities)	None	None	None	None	250′
Solid Waste Site (Distance to Nearest Fill Area or Proposed Fill Area If Known; Otherwise to the Property Line)	None	400 yards	400 yards	1,200′	1,200′
Solid Waste Transfer Facility	None	None	None	None	250′
Spray Irrigation Waste Disposal Site (See liquid waste disposal system)					
Stormwater detention pond or basin	None	None	None	None	25′
Stormwater infiltration basin	None	None	None	None	100′
Sump—Watertight clear water	None	None	None	8′	8′
Sump—Wastewater (Watertight) (form. cast–iron equiv.)	None*	8′	8′	25′	25′
Sump—Wastewater (not watertight or equiv. to cast iron)	None*	25′	25′	25′	25′
Swimming Pool (from edge of water)	None*	25′ (Below ground)	25′ (Below ground)	25′ (Below ground)	8′ (above or below ground)
Temporary Manure Stack	None	100′	100′	250′	150′
Wastewater Treatment Plant Effluent Pipe	None	None	None	50′	50′
Wastewater Treatment Plant Structure, Conveyance or Treatment Unit	None*	None	150′	100′	100′

Source	Prior to@ Oct. 1975	Oct. 1975 to Oct. 1981	Oct. 1981 to Jan. 1991	Feb. 1991 to Oct. 1994	After Oct. 1994
Well approved for underground placement of any waste, surface water or any substance as defined in s. 160.01, Stats.	None	None	None	None	100′
Yard Hydrant	None	10′	10′	8′	8′

*The minimum separating distance between a well and a collector sewer serving more than 4 living units or larger than 6 inch diameter is 50 feet regardless of whether the well or the sewer was installed first. However for such sewers less than 16–inch diameter, wells may be located or sewers installed such that a well is less than 50 feet, but at least 25 feet from gravity collector sewers smaller than 16 inches in diameter or from force main collector sewers 4 inches or smaller in diameter provided that within a 50–foot radius of the well the installed sewer pipe meets the allowable leakage requirements of AWWA C600 and the requirements for water–main equivalent type pipe as follows:

—For sewers ≥ 4″ diameter, but < 16″ diameter:

*PVC pipe 4″ diameter, but ≤ 12″ diameter shall meet AWWA C900 with elastomeric joints having a standard dimension ratio of 18 or less;

*PVC pipe > 12″ diameter, but < 16″ diameter shall meet AWWA C905 with elastomeric joints having a standard dimension ratio of 18 or less.

*Ductile iron pipe shall meet AWWA C115 or AWWA C151 having a thickness class 50 or more.

—For sewers < 3″ diameter, the pipe shall be any rigid pipe in the ch. Comm 84 "Table for Pipe and Tubing for Water Services and Private Water Mains," including approved ABS, brass, cast iron, CPVC, copper, (not including type M copper), ductile iron, galvanized steel, polybutylene (PB), polyethylene (PE), PVC, or stainless steel pipe.

*"None" Although there were no minimum separation distances required by the code between these possible sources of contamination and a well or reservoir prior to 1975, and in some cases, prior to 1981, it is strongly recommended that the present standard minimum separation distance requirements be met whenever possible.

**Distances were developed under the Public Health Service Grade A Milk Ordinance and have been used by the department of agriculture, trade and consumer protection field inspectors.

***Variances from these separating distances may be granted for earthen manure storage and temporary manure stacks meeting specifications of Soil Conservation Service Standards No. 425 and 312, respectively.

#Variances from this minimum separating distance may be granted for treatment ponds or for storage or treatment lagoons constructed and maintained to the requirements of an approval granted under ch. NR 213.

##After Feb. 1, 1991 and prior to October 1, 1994 the minimum separating distance between a well or reservoir and a lift station is based on the presence of a sewer force main at the lift station.

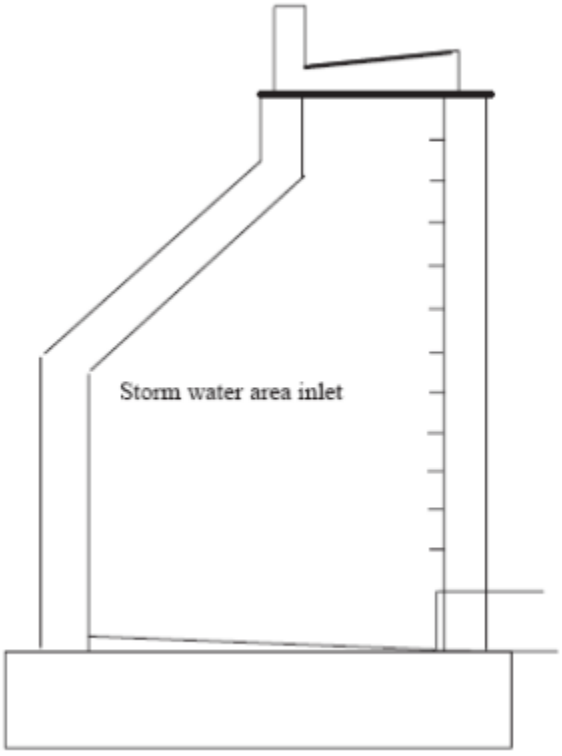
@ There are several code revisions prior to 1975. The dates of these revisions and the minimum separating distances were as follows:

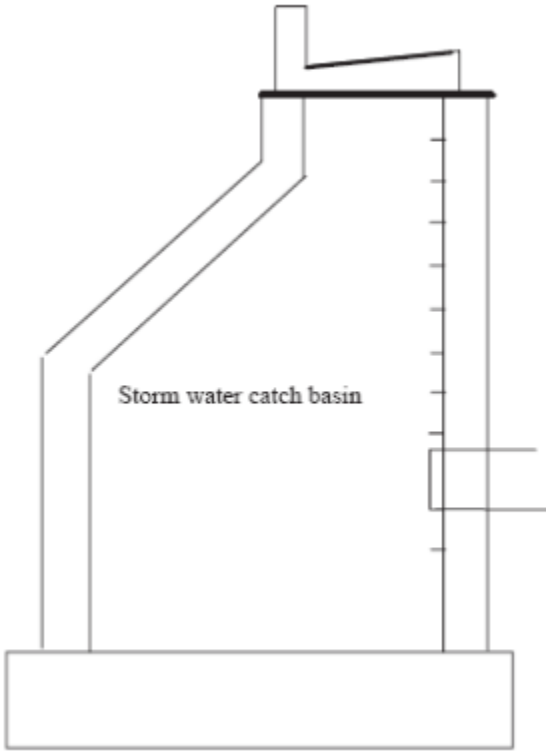
Source	April 24, 1936	March 1939	July 1951	April 10, 1953	May 1, 1971
Building Overhang	2′	2′	2′	2′	2′
Cistern	None	None	10′	10′	10′
Downspout	None	None	10′	10′	10′
Drain					
—Building Foundation	10′	10′	10′	10′	10′
—Sewer Connected Building Foundation	10′	10′	15′	15′	15′
—Clear Water	None	None	10′	10′	10′
—Cast Iron (With Lead Joints)	10′	10′	10′	10′	10′
Grease Trap (Watertight)	None	None	25′	25′	25′
Septic Tank	None	None	25′	25′	25′
Sewage Disposal Unit (Absorption Field)	None	None	50′	50′	50′
Sewer					
—Cast Iron (With Lead Joints)	10′	10′	8′	8′	8′
—Not Cast Iron or equivalent	25′	25′	25′	25′	25′

66. As of May 1, 1971 the minimum distance between a well and a clear water drain would be?
    a. 2’
    b. 10’
    c. 15’
    d. 25’
67. As of May 1, 1971 the minimum distance between a well and a cast iron drain with lead joints would be?
    a. 2’
    b. 10’
    c. 15’
    d. 25’
68. As of May 1, 1971 the minimum distance between a well and a sewer with cast iron drains and with lead joints would be?

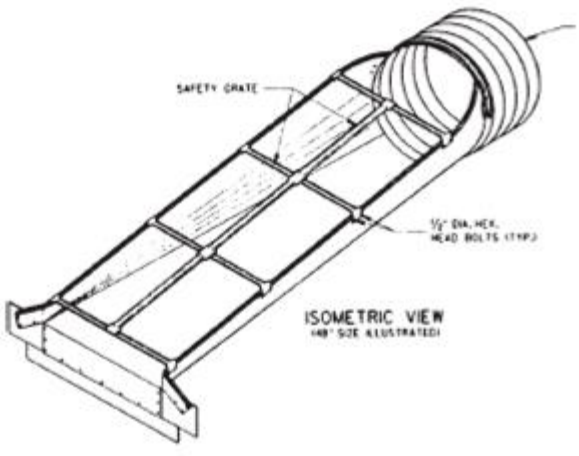
a. 2’
b. 8’
c. 15’
d. 25’

AREA DRAIN INLETS. **A-382.36 (9) (b)**





INLET GRATES. **A-382.36 (9) (b) 3**



GRATES FOR HORIZONTAL PIPING

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systems. (1) SCOPE. The provisions of this section set forth the requirements for the design, installation and maintenance of piping, conveyance, venting, detention and treatment of stormwater and clearwater in plumbing systems. **Note:** Refer to ch. NR 151 for stormwater management requirements.
(2) MATERIALS. All stormwater and clearwater plumbing systems shall be constructed of approved materials in accordance with SPS 384.30 (3).
(3) DESIGN OF STORMWATER PLUMBING SYSTEMS. (a) Plumbing systems upstream of detention shall be designed, at a minimum, based on the 10−year, 24−hour storm event.
(b) Plumbing detention systems and plumbing systems located downstream of detention shall be designed based on anticipated flows and volumes.
(c) Stormwater and clearwater infiltration systems shall comply with SPS 382.365. **Note:** For a listing of best management practices (BMPs) refer to Appendix A−82.36 (3)−1. **Note:** Where local discharge requirements are more stringent, stormwater plumbing systems may provide detention and treatment to comply with the local stormwater management plan.
(4) DISCHARGE, DISPERSAL, CLEARWATER REUSE OR STORMWATER USE. (a) *Discharge points.* The discharge points for stormwater and clearwater shall be as specified in Table 82.38−1.
(b) *Segregation of wastewater.* 1. Except as provided in subd. 2., stormwater or clearwater piping may not connect to a sanitary drain system.
2. Where a combined sanitary−storm sewer system is available, stormwater, clearwater and sanitary wastewater may be combined in the building sewer.
3. Stormwater gravity drains shall not be combined with clearwater drains prior to discharging to the storm building drain except where approved by the department. **Note:** See also Table 82.38−1 which limits clearwater discharges to sanitary sewer at 50 gpd. **Note:** For the use of stormwater or reuse of clearwater, refer to the appropriate requirements in SPS 382.30, 382.34, 382.40, 382.41, 382.70 and this section.

69. Plumbing systems _____ of detention shall be designed, at a minimum, based on the 10−year, 24−hour storm event.
a. downstream
b. upstream
c. point of use
d. all of the above

70. Plumbing detention systems and plumbing systems located _____ of detention shall be designed based on anticipated flows and volumes.
a. downstream
b. upstream
c. point of use
d. all of the above

71. Where local discharge requirements are more stringent, stormwater plumbing systems may provide _____ to comply with the local stormwater management plan.
a. detention
b. treatment
c. both a & b
d. none of the above

72. Where a combined sanitary−storm sewer system is available, stormwater, clearwater and sanitary wastewater may be combined in the building _____.
a. drain
b. sewer
c. conductor pipes
d. all of the above

73. Stormwater gravity drains may be combined with clearwater drains prior to discharging to the storm building drain.

a. true
b. false

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(5) INPUT CALCULATIONS. (a) *Peak flow.* The peak flow of stormwater influent to a plumbing system shall be calculated using any of the following methods:
1. 'Area method.' For sizing of conveyance piping, when calculating stormwater peak flow based on the tributary area, the area in square feet shall be divided by the following applicable divisors:
a. For roofs the divisor is 26 square feet/gpm.
b. For paved or graveled ground surfaces the divisor is 32.5 square feet/gpm.
c. For lawns, parks and similar land surfaces the divisor is 104 square feet/gpm.
Note: For example, 10,000 square feet of roof area/26 square feet/gpm = 385 gpm or 0.85 cubic feet/second.
2. 'Rational method.' For calculating peak flow, the intensity shall be determined using the time of concentration for the tributary area. **Note:** For the equation procedure for runoff coefficients for use with the rational method, refer to Appendix A−82.36 (5)−1.
3. 'Engineering analysis method.' An engineering analysis, acceptable to the department, shall be based on the peak flow calculated in accordance with sub. (3) (a). **Note:** A model that calculates peak flow such as SWMM, TR−20, TR−55, P8 or an equivalent methodology may be used.
(b) *Volume.* The volume of stormwater influent to a plumbing system shall be based on an engineering design acceptable to the department and a minimum of a two−year, 24−hour storm event and designed so that no property damage occurs at 100−year, 24−hour storm event with a Type II distribution.
(c) *Additional inputs to stormwater systems.* Additional inputs to stormwater systems shall be estimated based on anticipated flows and volumes.

74. The peak flow of stormwater influent to a plumbing system shall be calculated using the following method:

a. Area method
b. Rational method
c. Engineering analysis method
d all of the above

75. For sizing of conveyance piping, when calculating stormwater peak flow based on the tributary area, the area in square feet shall be divided by the following applicable divisors:
a. For roofs the divisor is 26 square feet/gpm.
b. For paved or graveled ground surfaces the divisor is 32.5 square feet/gpm.
c. For lawns, parks and similar land surfaces the divisor is 104 square feet/gpm.
The above information describes the _____ method.

a. Area method
b. Rational method
c. Engineering analysis method
d all of the above

76. 20,000 square feet of roof area/26 square feet/gpm = _____ gpm.

a. 385
b. 780
c. 769.2
d. none of the above

77. Additional inputs to stormwater systems shall be estimated based on anticipated_____.

a. flows
b. volumes

c. GPM
d. both a & b

---

(6) CONVEYANCE AND DETENTION SYSTEMS. (a) *Design.* The design of stormwater and clearwater conveyance systems shall conform to all of the following:
1. Horizontal stormwater conveyance piping shall be sized using either of the following:
a. An engineering analysis, based on full flow capacity, acceptable to the department.
b. Tables 82.36−1 to 82.36−5 based on pipe type, diameter and pitch.
2. a. A vertical conductor for stormwater may not be smaller than the largest horizontal branch discharging into the conductor.
b. Vertical conductors shall be sized in accordance with Tables 82.36−1 and 82.36−3 or by an engineering analysis acceptable to the department. **Note:** For the use of Baird's equation, refer to Appendix A−82.36 (6)−1.
3. Clearwater conveyance systems shall be sized in accordance with SPS 382.30 (3) and (4).
4. Underground, gravity−flow storm building sewers shall have a minimum 3−inch inside diameter.
(b) *Velocity in stormwater conveyance system piping.* The pitch of stormwater conveyance system piping shall be designed to create a minimum velocity of one foot per second when flowing full.
(c) *Fittings and connections.* 1. Except as provided in subd.
2., fittings and connections for stormwater and clearwater conveyance systems shall comply with SPS 382.30 (8) and (9).
2. The minimum radius for the first 90° fitting located downstream of a roof drain shall comply with the horizontal to vertical requirements in Table 82.30−4.
(d) *Stack offsets.* Stack offsets for piping of a clearwater conveyance system piping shall comply with SPS 382.30 (6).
(e) *Pitch of clearwater gravity conveyance system piping.* 1. The minimum pitch of gravity conveyance system piping having a 2−inch inside diameter or less shall be 1/8 inch per foot.
2. The minimum pitch of clearwater gravity conveyance system piping having at least a 3−inch inside diameter or more shall be 1/16 inch per foot.
(f) *Branch connections near base of stack.* Branch drains from interior clearwater inlets may not connect downstream from the base fitting or fittings of a drain stack within a distance equal to 20 pipe diameters of the building drain.
(g) *Detention systems.* 1. The storage volume of a dry detention system shall be designed and installed with a drain time of 72 hours after a storm event.
2. Paved surfaces or parking lots serving as detention areas shall be limited to a design depth of 6 inches, unless otherwise limited by local ordinance.
3. By design, ground surface ponding shall drain within 24 hours after a storm event.

78. (b) Velocity in stormwater conveyance system piping. The pitch of stormwater conveyance system piping shall be designed to create a minimum velocity of one foot per second when flowing _____.
a. ½ full
b. 1/3 full
c. 2/3 full
d. full

79. Branch drains from interior clearwater inlets may not connect downstream from the base fitting or fittings of a drain stack within a distance equal to _____ pipe diameters of the building drain.
a. 5
b. 10
c. 15
d. 20

80. The minimum pitch of gravity conveyance system piping having a 2−inch inside diameter or less shall be ____ inch per foot.
a. 1/16
b. 1/8
c. ¼
d. ½
81. The minimum pitch of clearwater gravity conveyance system piping having at least a 3−inch inside diameter or more shall be ____ inch per foot.
a. 1/16
b. 1/8
c. ¼
d. ½
82. The storage volume of a dry detention system shall be designed and installed with a drain time of __ hours after a storm event.
a. 24
b. 36
c. 72
d. 96
83. By design, ground surface ponding shall drain within ____ hours after a storm event.
a. 24
b. 36
c. 72
d. 96
84. Paved surfaces or parking lots serving as detention areas shall be limited to a design depth of ___ inches.
a. 3
b. 6
c. 9
d. 12
---
(7) OTHER DESIGN REQUIREMENTS. (a) *Subsoil drains.* 1. A subsoil drain discharging to a plumbing system shall discharge into an area drain, manhole or storm sewer, trapped receptor or a sump with a pump.
2. Where a foundation drain is subject to backwater, the drain shall be protected by a backwater valve or a sump with a pump.
(b) *Backwater valve.* All backwater valves shall be accessible for maintenance.
(c) *Sewer location.* 1. No storm building sewer or private interceptor main storm sewer may pass through or under a building to serve another building, unless one of the following conditions is met:
a. The storm building sewer or private interceptor main storm sewer serves farm buildings or farm houses, or both, that are located on one property.
b. Where a storm building sewer or private interceptor main storm sewer serves buildings that are located on one property, a document that indicates the piping and distribution arrangement for the property and buildings is recorded with the register of deeds no later than 90 days after installation.
2. The location of storm building drains and building sewers shall comply with SPS 382.30 (11) (d) and 82.40 (8) (b) 7.
(d) *Installation requirements.* 1. The connection of a stormwater leader discharging to a storm building sewer shall be made above the finished grade. **Note:** For more information regarding joints and connections, refer to SPS 384.40.
2. The elevation of a storm building drain shall comply with SPS 382.30 (11) (b) 1.

3. Interior inlets and drains subject to backflow or backwater shall be protected with a check valve or backwater valve.
4. Storm building drains and building sewers shall be installed to comply with SPS 382.30 (11) (e).
5. Storm building sewer connections to public sewers shall be in accordance with SPS 382.30 (11) (f).
6. Cleanouts for conveyance system piping shall be installed in accordance with SPS 382.35.
7. Storm building sewers that receive clearwater and that may be subject to freezing shall be installed in accordance with SPS 382.30 (11) (c) 2.
8. Storm building drains, clearwater building drains, and building storm sewers and appurtenances shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, or as otherwise permitted by the department of natural resources.
9. All underground stormwater storage tanks for water reuse shall be separated from sanitary sewers by a minimum of 8 feet.
10. a. A means to locate buried non−metallic storm building sewers and private interceptor main sewers that discharge to municipal mains shall be provided in accordance with the options under SPS 382.30 (11) (h), except as provided in subd. 10. b. b. Tracer wire insulation color for non−metallic storm pipe shall be brown.

85. Where a foundation drain is subject to backwater, the drain shall be protected by _____.
a. a backwater valve
b. a sump with a pump
c. both a or b
d. none of the above
86. All backwater valves shall be _____ for maintenance.
a. accessible
b. visible
c. both a & b
d. none of the above
87. No storm building sewer or private interceptor main storm sewer may pass through or under a building to serve another building, unless one of the following conditions is met:
a. The storm building sewer or private interceptor main storm sewer serves farm buildings or farm houses, or both, that are located on one property.
b. Where a storm building sewer or private interceptor main storm sewer serves buildings that are located on one property, a document that indicates the piping and distribution arrangement for the property and buildings is recorded with the register of deeds no later than 90 days after installation.
c. both a & b
d. none of the above
88. All underground stormwater storage tanks for water reuse shall be separated from sanitary sewers by a minimum of ____ feet.
a. 3
b. 8
c. 9
d. 12
89. Tracer wire insulation color for non−metallic storm pipe shall be _____.
a. black
b. white
c. brown
d. green
---

(8) SUMPS AND PUMPS. (a) *Sumps.* 1. 'General.' All storm building subdrains shall discharge into a sump, the contents of which shall be automatically lifted and discharged, dispersed or used in accordance with sub. (4).
2. 'Construction and installation'. a. Except as provided in subd. 2. c. and d., an interior sump shall have a rim extending at least one inch above the floor immediately adjacent to the sump.
b. A sump shall have a removable cover of sufficient strength for anticipated loads.
c. Where a sump is installed in an exterior meter pit or elevator pit, the rim may be level with the floor.
d. When a sump is provided with an airtight, solid cover.
3. 'Location'. All sumps installed for the purpose of receiving clearwater, groundwater or stormwater shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, (8' noted on Table A above here) or as otherwise permitted by the department of natural resources.
Note: See Appendix A−82.30 (11) (d) for material reprinted from s. NR 812.08.
4. 'Size'. a. Except as permitted under subd. 4. b. or c. the size of each sump shall be no smaller than 16 inches in diameter at the top, 14 inches in diameter at the bottom, and 22 inches in depth.
b. The minimum sump diameter may be smaller than 16 inches when specified by the manufacturer for a combination sump and pump.
c. A sump located in an elevator pit may have a width or diameter of not less than 12 inches and a depth of not less than 12 inches.
(b) *Pumps.* 1. 'Size.' The pump shall be of a capacity appropriate for the anticipated use.
2. 'Discharge piping.' a. Where a pump discharges into a storm drain system, a check valve shall be installed.
b. The minimum diameter discharge piping shall be based on the design flow rate of the pump and a minimum velocity of one foot/second.

90. Interior sump shall have a rim extending at least _____ floor immediately adjacent to the sump.
    a. ½" above the
    b. 1" above the
    c. ¾" above the
    d. level with
91. Where a sump is installed in an exterior meter pit or elevator pit, the rim may be ____ floor.
    a. ½" above the
    b. 1" above the
    c. ¾" above the
    d. level with the
92. All sumps installed for the purpose of receiving clearwater, groundwater or stormwater shall be separated from water wells by the applicable separation distances contained in chs. NR 811 and 812, or ____.
    a. 8'
    b. 10'
    c. 15'
    d. 25"

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(9) INLET REQUIREMENTS. (a) *Interior clearwater drain inlets.* Interior clearwater drain inlets shall terminate at least one inch above the finished floor.
(b) *Exterior stormwater inlets.* 1. 'Construction.' a. All exterior stormwater inlets shall be constructed of material in accordance with SPS 384.30. **Note:** For additional information on approved materials, refer to SPS 384.30 (3) (f).
b. All exterior stormwater inlets subject to vehicular traffic shall be set on a suitable base capable of sustaining the anticipated load.

2. 'Design'. All exterior stormwater inlets shall be designed for the anticipated flow. **Note:** For manhole requirements, refer to SPS 382.35 (3).
3. 'Inlet grates'. a. General. All inlets shall be provided with a well−fitted, removable grate of a thickness and strength to sustain the anticipated loads.
Note: Sections SPS 362.1101 to 362.1110 specify that for floor or ground surface inlets when placed within an identifiable accessible route, openings in the floor or ground surface shall be of a size that does not permit the passage of a 1/2−inch sphere. Also, it states that grates having elongated openings be placed so that the longest dimension is perpendicular to the dominant direction of travel.
b. Floor or ground surface inlets. Openings in the floor or ground surface shall be of a size that prohibits the entrapment of wheeled vehicles, wheelchairs or pedestrians within the grate openings.
c. Grates on horizontal pipes. Grates shall be provided on horizontal inlets greater than 6 inches in diameter. The grates shall be placed so that the rods or bars are not more than 3 inches downstream of the inlet. Rods or bars shall be spaced so that the openings do not permit the passage of a 6−inch sphere.
(c) *Subsurface areas of 50 square feet or less.* Other than stairwells, all subsurface areas not exceeding 50 square feet and exposed to the weather, shall comply with one of the following:
1. Drain to foundation drains through a minimum 2−inch diameter pipe or a through a continuous layer of washed stone aggregate.
2. Drain to the storm building drain, storm subdrain or storm sewer through a minimum 3−inch diameter pipe.
(d) *Subsurface areas of more than 50 square feet and stairwells.* An area drain shall be provided in subsurface areas greater than 50 square feet and in all stairwells exposed to the weather. The area drain shall comply with all of the following:
1. Drain to the storm building drain, storm subdrain or storm sewer.
2. The fixture drain shall have a minimum 3−inch inside diameter and may not discharge into a subsoil or foundation drain.

93. The construction requirements for exterior stormwater inlets would include:
    a. All exterior stormwater inlets shall be constructed of material in accordance with SPS 384.30. b. All exterior stormwater inlets subject to vehicular traffic shall be set on a suitable base capable of sustaining the anticipated load.
    b. 'Design'. All exterior stormwater inlets shall be designed for the anticipated flow. **Note:** For manhole requirements, refer to SPS 382.35 (3).
    c. 'Inlet grates'. a. General. All inlets shall be provided with a well−fitted, removable grate of a thickness and strength to sustain the anticipated loads.
    d. all of the above
94. Floor or ground surface inlets when placed within an identifiable accessible route, openings in the floor or ground surface shall be of a size that does not permit the passage of a ____ inch sphere.
    a. ¼
    b. ½
    c. ¾
    d. 1
95. Floor or ground surface inlets when placed within an identifiable accessible route, openings in the floor or ground surface shall install the grates having elongated openings placed so that the longest dimension is _____ the dominant direction of travel.
    a. parallel to
    b. perpendicular to
    c. not in
    d. all of the above

96. Floor or ground surface inlets. Openings in the floor or ground surface shall be of a size that prohibits the entrapment of _____ within the grate openings.

a. wheeled vehicles
b. wheelchairs
c. pedestrians
d. all of the above

97. Grates on horizontal pipes. Grates shall be provided on horizontal inlets greater than 6 inches in diameter. The grates shall be placed so that the rods or bars are not more than 3 inches downstream of the inlet. Rods or bars shall be spaced so that the openings do not permit the passage of a ___ inch sphere.

a. 2
b. 3
c. 6
d. 8

98. Subsurface areas of 50 square feet or less. Other than stairwells, all subsurface areas not exceeding 50 square feet and exposed to the weather, shall comply with one of the following:

a. Drain to foundation drains through a minimum 4−inch diameter pipe or a through a continuous layer of washed stone aggregate.
b. Drain to the storm building drain, storm subdrain or storm sewer through a minimum 6−inch diameter pipe.
c. both a & b
d. neither a or b

99. *Subsurface areas of more than 50 square feet and stairwells.* An area drain shall be provided in subsurface areas greater than 50 square feet and in all stairwells exposed to the weather. The area drain shall comply with all of the following:

a. Drain to the storm building drain, storm subdrain or storm sewer.
b. The fixture drain shall have a minimum 6−inch inside diameter and may not discharge into a subsoil or foundation drain.
c. both a & b
d. neither a or b

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(10) ROOF DRAINS. (a) *General roofs.* Roof drains shall be equipped with strainers extending not less than 4 inches above the surface of the roof immediately adjacent to the roof drain. Strainers shall have an available inlet area above the roof of not less than 1.5 times the area of the conductor to which the drain connects.
(b) *Flat decks.* Roof drain strainers used on sun decks, open parking decks and similar areas shall be of the flat surface type, shall be level with the deck and shall have an available inlet area of not less than 2 times the area of the conductor to which the drain connects.
(11) SECONDARY ROOF DRAINS. (a) *Sizing.* When secondary roof drain systems are installed the secondary system shall be sized and installed in accordance with the requirements in this section.
(b) *Prohibited connection.* Secondary roof drain systems may not be connected to primary roof drain systems.
(c) *Discharge.* All secondary roof drain systems shall discharge in accordance with Table 82.38–1.

100. Roof drain strainers used on sun decks, open parking decks and similar areas shall be of the flat surface type, shall be level with the deck and shall have an available inlet area of not less than ___ times the area of the conductor to which the drain connects.

a. 1/1/2
b. 2
c. 3

d. none of the above

101. Roof drains shall be equipped with strainers shall have an available inlet area above the roof of not less than _____ times the area of the conductor to which the drain connects.

a. 1/1/2
b. 2
c. 4
d. none of the above

102. Roof drains shall be equipped with strainers extending not less than ___ inches above the surface of the roof immediately adjacent to the roof drain.

a. 1/1/2
b. 2
c. 4
d. none of the above

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(12) TRAPS AND VENTS. (a) *Traps.* 1. Traps are required for interior drain inlets receiving clearwater.
2. Except for exterior loading dock drains, traps are required for exterior drain inlets located within 10 feet of an air inlet, door or openable window.
3. More than one drain inlet may discharge to the same trap.
4. A foundation drain that discharges by gravity to a storm sewer shall be trapped. The trap shall be provided with cleanouts.
(b) *Vents.* 1. A trap receiving clearwater shall be vented in accordance with SPS 382.31. Vent piping for a clearwater drain system may not be connected to a vent system serving a sanitary drain system or chemical waste system.
2. a. Vents serving a solid covered sump shall terminate a minimum of one inch above finished floor.
b. Sump vents shall be sized as per Table 382.31−4.

103. Except for exterior loading dock drains, traps are required for exterior drain inlets located within ___ feet of an air inlet, door or openable window.

a. 5
b. 6
c. 8
d. none of the above

104. A foundation drain that discharges by gravity to a storm sewer shall be trapped. The trap shall be provided with _____.

a. venting
b. cleanouts
c. both a & b
d. none of the above

105. A trap receiving clearwater shall be vented in accordance with SPS 382.31. Vent piping for a clearwater drain system may not be connected to a vent system serving a _____.

a. sanitary drain system
b. chemical waste system
c. both a & b
d. none of the above

106. Vents serving a solid covered sump shall terminate ____ finished floor.

a. flush with the
b. a minimum of 2” above
c. a minimum of 1/2” above
d. none of the above

---

(13) OPERATION AND MAINTENANCE. (a) *Plan.* An operation and maintenance plan shall be implemented for all stormwater plumbing systems for drainage areas of one or more acres that are installed on or after December 1, 2004.
(b) *Plan information.* An operation and maintenance plan as required in par. (a) shall include at least all of the following information, applicable to the system:
1. Accumulated solids or byproduct removal requirements.
2. Identification of safety hazards.
3. Cleaning and inspection schedule.
4. Inspection and maintenance checklist, including at least the following items:
a. Filters.
b. Disinfection units.
c. Sedimentation chambers.
d. Detention devices.
e. Infiltration systems.
5. Start up and shutdown procedures.
6. Vector control requirements.
7. A contingency plan in the event of system failure.
(c) *Plan location.* The operation and maintenance plan shall remain onsite and be available for inspection when requested by the department.
(d) *Record of maintenance.* When requested the owner shall make available for inspection all maintenance records to the department or agent for the life of the system.

107. When requested the _____ shall make available for inspection all maintenance records to the department or agent for the life of the system.
a. plumber
b. contractor
c. owner
d. all of the above

108. An operation and maintenance plan shall be implemented for all stormwater plumbing systems for drainage areas of one or more acres that are installed _____ December 1, 2004.
a. on
b. after
c. both a & b
d. none of the above

109. The operation and maintenance plan shall remain onsite and be available for inspection when requested by the _____.
a. plumber
b. contractor
c. owner
d. department

SPS 382.37 Sanitation facilities and campgrounds.
(1) COMPOSTING SYSTEMS. (a) Composting systems which employ water or other liquids as a transport medium for wastes shall conform with this subsection. **Note:** Composting systems where water or other liquids are not employed as a transport medium are addressed under SPS 391.
(b) The materials, design, construction and performance of a composting system which employs water or other liquids as a transport medium for wastes shall conform to NSF Standard 41.
(c) All composting systems shall be listed by a testing agency acceptable to the department.
Note: For a listing of agencies acceptable to the department, see Appendix A−84.11.

(d) 1. Components for the storage or treatment of wastes shall be continuously ventilated.
2. Ventilation ducts or vents for the composting system shall conform to SPS 382.31 (16).
(e) 1. The disposal of the end product from a composting system shall be in accordance with 40 CFR Part 503, Standards for the Use or Disposal of Sewage Sludge.
Note: EPA materials relating to EPA 503, including, "Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule", are available from the Office of Water Resource, US EPA, 401 M Street SW, Washington D.C. 20460.
2. The disposal of any liquid from a composting system shall be either to a publicly owned treatment works or a POWTS conforming to SPS 383.
(f) The connection of potable water supplies to a composting system shall be protected in accordance with SPS 382.41.
(g) The drainage systems for the composting system shall conform to the applicable requirements of SPS 382.30 to 382.36 and the manufacturer's specifications.

110. COMPOSTING SYSTEMS. Components for the storage or treatment of wastes shall be continuously _____.

a. monitored
b. tested
c. maintained
d. ventilated

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(2) SANITARY DUMP STATIONS. (a) Sanitary dump stations which are used to receive domestic wastes and domestic wastewater from the holding tanks of travel trailers, recreational vehicles or other similar mobile vehicles, and transfer containers shall conform with this subsection. **Note:** See Appendix A−82.37 (2) for further explanatory material.
(b) The drain receptor for a sanitary dump station shall be at least 4" in diameter.
(c) 1. The drain receptor shall be provided with a self−closing cover.
2. The cover for the drain receptor shall be operable without touching the cover with one's hands.
(d) The drain receptor shall be surrounded by an impervious pad at least 6 feet in diameter. The pad shall be:
1. Pitched toward the drain receptor with a minimum slope of ¼" per foot; and
2. Of sufficient strength to sustain anticipated loads.
(e) The drain receptor shall be trapped in accordance with SPS 382.32.
(f) The drain receptor for a sanitary dump station that is installed within an enclosed structure shall be vented in accordance with SPS 382.31.
(g) A supply of water shall be provided to wash down the drain receptor and pad. The water supply shall be:
1. Provided with cross connection control in accordance with SPS 382.41; and
2. Labeled indicating that the supply is not for drinking purposes.
(h) 1. Aboveground drains shall be constructed of approved materials in accordance with SPS 384.30 (2) (a).
2. Aboveground water supply piping shall be constructed of approved materials in accordance with SPS 384.30 (4) (e).

111. The drain receptor for a sanitary dump station shall be at least ___" in diameter.

a. 3
b. 4
c. 6
d. any of the above

112. The drain receptor pad shall be pitched toward the drain receptor with a minimum slope of ____" per foot.

a. 1/8
b. ¼
c. 3/8
d. ½

113. A supply of water shall be provided to wash down the drain receptor and pad. The water supply shall be:

a. Provided with cross connection control in accordance with SPS 382.41
b. Labeled indicating that the supply is for drinking purposes
c. both a & b
d. none of the above

114. The drain receptor shall be surrounded by an impervious pad at least ___ feet in diameter.

a. 4
b. 5
c. 6
d. 10

115. The drain receptor & pad shall be:

a. Pitched toward the drain receptor with a minimum slope of 1/8" per foot
b. Of sufficient strength to sustain anticipated loads.
c. The drain receptor shall be trapped in accordance with SPS 383.32.
d. all of the above

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(3) CAMPGROUNDS. (a) *Drain systems.* Sewers serving campgrounds shall comply with the provisions in SPS 382.30 and all of the following:

1. A drain line serving a recreational vehicle shall discharge to a minimum 4−inch diameter campsite receptor by means of an indirect waste pipe.
2. One campsite receptor shall be designed to serve no more than 4 recreational vehicles.
3. Where 2 or more drain lines are designed to discharge into the same campsite receptor, an increaser shall be installed in the vertical portion of the trap riser to accommodate the drains.
4. The rim of a campsite receptor shall terminate no less than 4 inches above the finished grade.
5. The rim of a campsite receptor shall not terminate at an elevation that is higher than the water supply termination serving the same site.
6. A vent is not required to serve the trap serving a campsite receptor.
7. When not in use, a campsite receptor shall be capped.

(b) *Water supply systems.* Water supply systems serving campgrounds shall comply with the provisions in SPS 382.40 and all of the following:

1. An accessible control valve shall be installed at the most upstream point of the campground water supply distribution system and downstream of the municipal meter or pressure tank.
2. If water is provided to a campsite, individual approved backflow protection shall serve each hose connection in accordance with SPS 382.41.
3. A campsite water supply riser shall terminate no less than 18 inches above finished grade.

116. If water is provided to a campsite, one approved backflow protection shall serve all hose connection in accordance with SPS 382.41.

a. true
b. false

117. A campsite water supply riser shall terminate no less than _____ above finished grade.

a. 12"
b. 1 1/2'

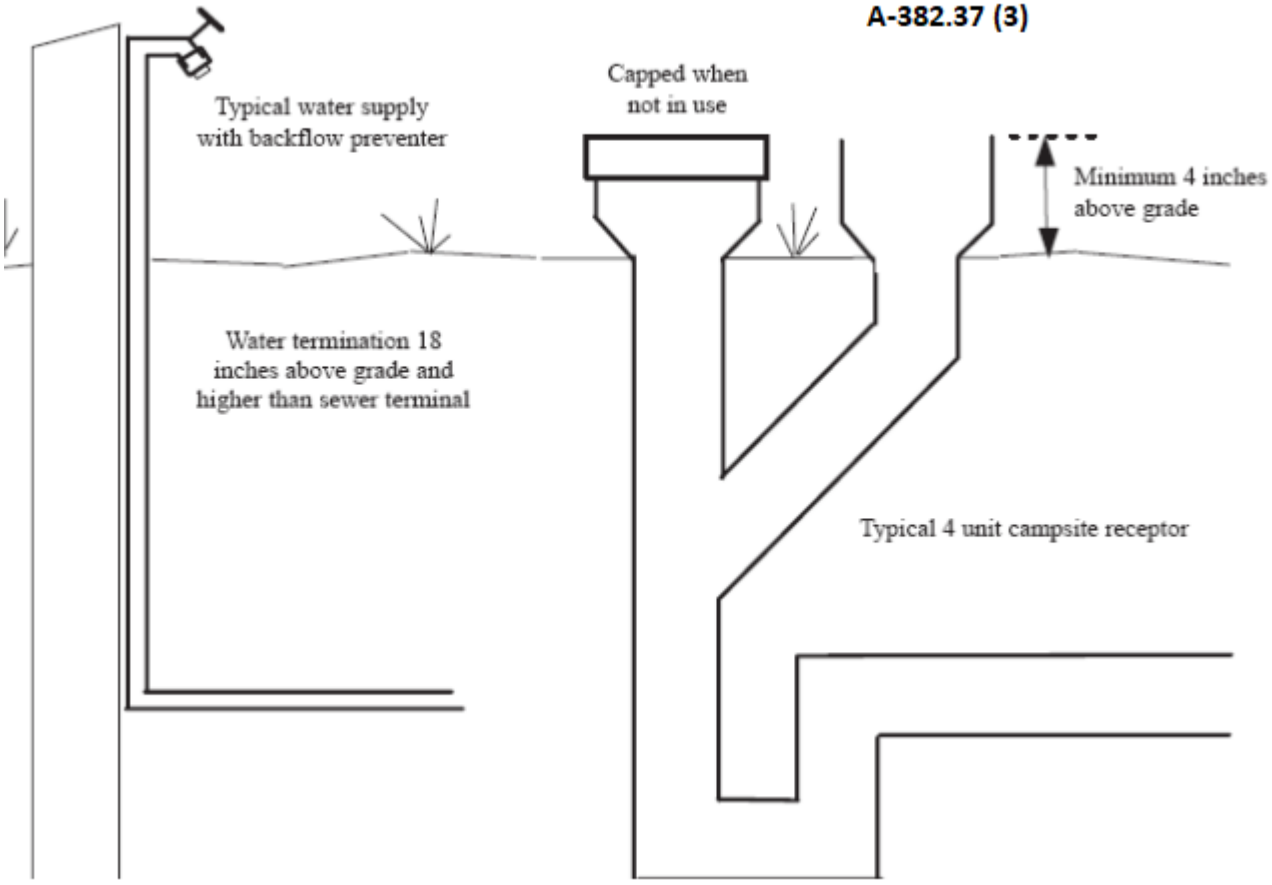
c. 18”
d. both b & c

118. A vent is not required to serve the trap serving a campsite receptor only if the receptor is capped when not in use.
a. true
b. false

119. The rim of a campsite receptor shall terminate at an elevation that is higher than the water supply termination serving the same site.
a. true
b. false

120. An accessible control valve shall be installed at the most upstream point of the campground water supply distribution system and downstream of the _____.
a. municipal meter
b. pressure tank
c. well pump
d. both a & b

CAMPSITE RECEPTORS AND WATER SUPPLY



Exterior Plumbing Quiz Part 2

1	a	b	c	d	41	a	b	c	d	81	a	b	c	d
2	a	b	c	d	42	a	b	c	d	82	a	b	c	d
3	a	b	c	d	43	a	b	c	d	83	a	b	c	d
4	a	b	c	d	44	a	b	c	d	84	a	b	c	d
5	a	b	c	d	45	a	b	c	d	85	a	b	c	d
6	a	b	c	d	46	a	b	c	d	86	a	b	c	d
7	a	b	c	d	47	a	b	c	d	87	a	b	c	d
8	a	b	c	d	48	a	b	c	d	88	a	b	c	d
9	a	b	c	d	49	a	b	c	d	89	a	b	c	d
10	a	b	c	d	50	a	b	c	d	90	a	b	c	d
11	a	b	c	d	51	a	b	c	d	91	a	b	c	d
12	a	b	c	d	52	a	b	c	d	92	a	b	c	d
13	a	b	c	d	53	a	b	c	d	93	a	b	c	d
14	a	b	c	d	54	a	b	c	d	94	a	b	c	d
15	a	b	c	d	55	a	b	c	d	95	a	b	c	d
16	a	b	c	d	56	a	b	c	d	96	a	b	c	d
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18	a	b	c	d	58	a	b	c	d	98	a	b	c	d
19	a	b	c	d	59	a	b	c	d	99	a	b	c	d
20	a	b	c	d	60	a	b	c	d	100	a	b	c	d
21	a	b	c	d	61	a	b	c	d	101	a	b	c	d
22	a	b	c	d	62	a	b	c	d	102	a	b	c	d
23	a	b	c	d	63	a	b	c	d	103	a	b	c	d
24	a	b	c	d	64	a	b	c	d	104	a	b	c	d
25	a	b	c	d	65	a	b	c	d	105	a	b	c	d
26	a	b	c	d	66	a	b	c	d	106	a	b	c	d
27	a	b	c	d	67	a	b	c	d	107	a	b	c	d
28	a	b	c	d	68	a	b	c	d	108	a	b	c	d
29	a	b	c	d	69	a	b	c	d	109	a	b	c	d
30	a	b	c	d	70	a	b	c	d	110	a	b	c	d
31	a	b	c	d	71	a	b	c	d	111	a	b	c	d
32	a	b	c	d	72	a	b	c	d	112	a	b	c	d
33	a	b	c	d	73	a	b	c	d	113	a	b	c	d
34	a	b	c	d	74	a	b	c	d	114	a	b	c	d
35	a	b	c	d	75	a	b	c	d	115	a	b	c	d
36	a	b	c	d	76	a	b	c	d	116	a	b	c	d
37	a	b	c	d	77	a	b	c	d	117	a	b	c	d
38	a	b	c	d	78	a	b	c	d	118	a	b	c	d
39	a	b	c	d	79	a	b	c	d	119	a	b	c	d
40	a	b	c	d	80	a	b	c	d	120	a	b	c	d

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