

2 - CENTER FEED MANIFOLDS + LATERALS

2X

University of Minnesota Pressure Distribution System Design - 10/25/04

All boxed rectangles must be entered, the rest will be calculated.



1. Select number of perforated laterals:

2. Select perforation spacing = ft

3. Since perforations should not be placed closer than 1 foot to the edge of the rock layer (see diagram), subtract 2 feet from the rock layer length

- 2 ft = ft



4. Determine the number of spaces between perforations. Divide the length (3) by perforation spacing (2) and round down to nearest whole number.
Perforation spacing = ft / ft =

5. Select perforation size inch

6. Number of perforations is equal to one plus the number of perforation spaces (4).
* Check figure E-4 to assure the number of perforations per lateral guarantees < 10% discharge variation.
 spaces + 1 = perforations/lateral

Perforation Spacing ft	Pipe Diameter			
	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	8	14	18	28
3.0	8	13	17	26
3.3	7	12	16	25
4.0	7	11	15	23
5.0	6	10	14	22

Perforation Spacing feet	Pipe Diameter			
	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	12	19	25	39
3	11	18	24	37
3.3	10	17	23	36
4	10	16	21	33
5	9	15	20	31

7. A. Total number of perforations = perforations per lateral (5) times number of laterals (1).
 perfs/ lat x laterals = perforations

B. Calculate the square footage per perforation. Recommended value is 6-10 sqft/perf. Does not apply to at-grades.

1. Rock bed area = rock width (ft) x rock length (ft)
 ft x ft = ft²

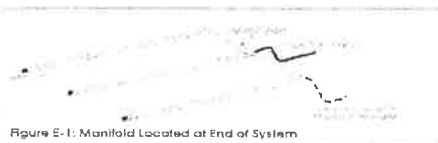
2. Square foot per perforation = Rock Bed Area / number of perfs (6)
 ft² / perfs = ft² / perf

8. Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforations (see figure E-6)
 perfs x gpm / perfs = gpm

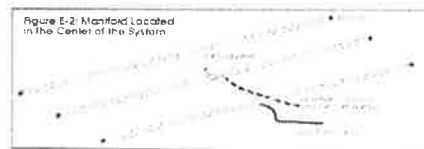
Head (feet)	Perforations diameter (inches)		
	3/16	7/32	1/4
1"	0.42	0.56	0.74
2"	0.59	0.80	1.04
5	0.94	1.26	1.65

a. Use 1.0 foot for single-family homes.
b. Use 2.0 feet for anything else

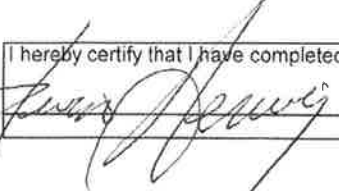
9. Determine Minimum Pipe Size
A. **Manifold on End.** If laterals are connected to header pipe as shown in Figure E-1, to select minimum required lateral diameter; enter figure E-4 or E-5 with perforation spacing and number of perforations per lateral. Select minimum diameter for perforated laterals = inches



B. **Center Manifold.** If perforated lateral system is attached to manifold pipe near the center, like Figure E-2, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step A. Using these values, select minimum diameter for perforated lateral = inches



X2

I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.
 (signature) (license #) (date)