Subpart M - Pipeline Sampling (§§761.240-761.257)

1. Cut into 40 foot segments, and number from upstream end.

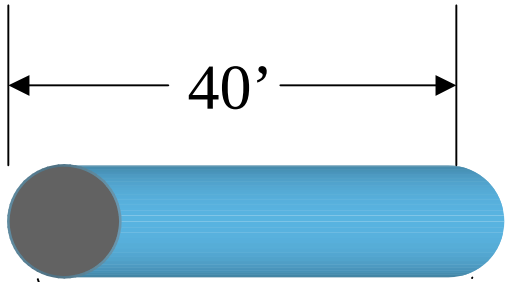
2. Is pipeline section greater than 3 miles long?

   Yes - Sample first segment, and segments every half mile or 66th segment (1, 67, 133, etc.)

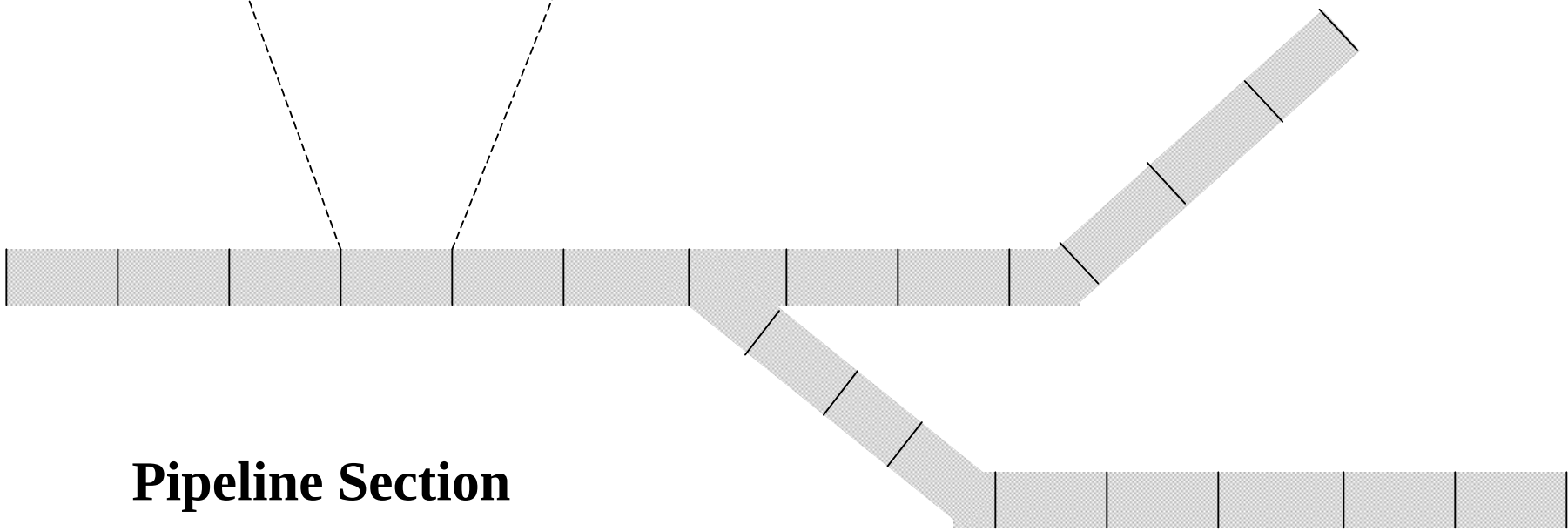
   No - Take 7 samples: first segment, last segment, and five interim segments

3. Sampling points are on upstream end of segment, inside pipe on bottom

Definition of Pipe Segment and Pipeline Section (§761.240)



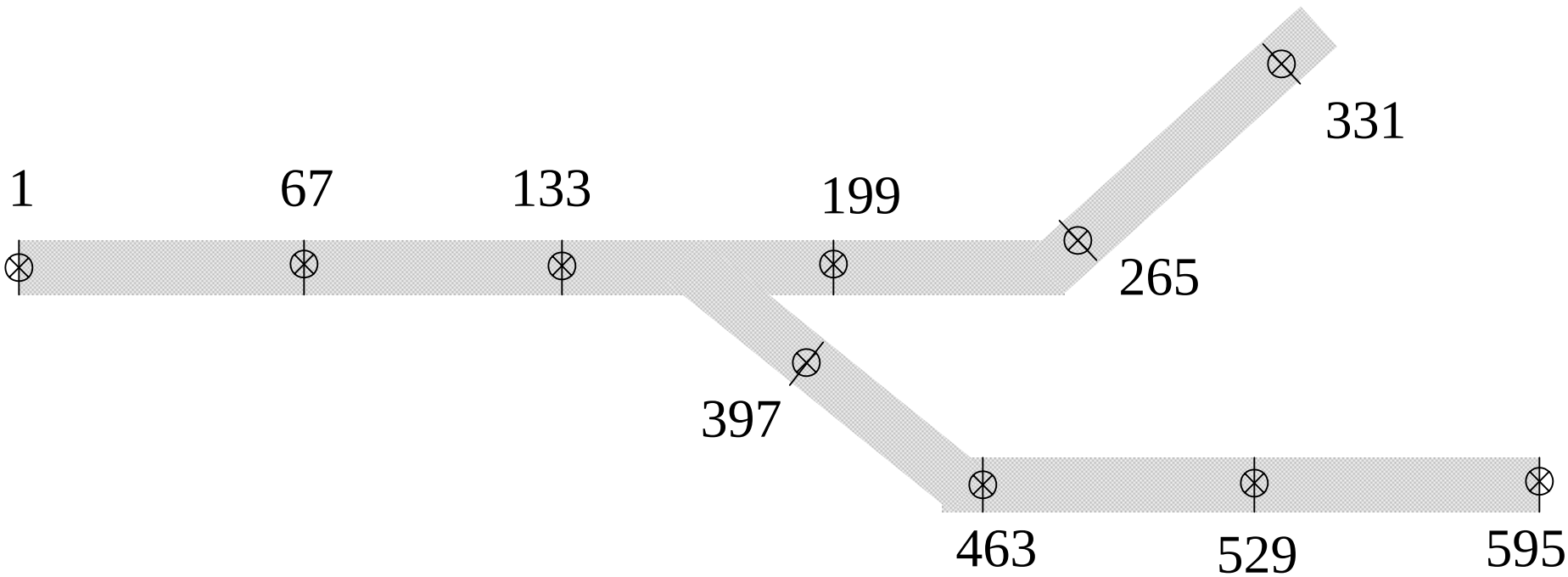
Pipe Segment



Pipeline Section

Sampling Pipeline Section (longer than 3 miles) (§761.247)

Every half mile, or 66th segment



Sampling Pipeline Section (shorter than 3 miles) (§761.247)

1. Number segments (i.e., 1- 383)
2. Sample first and last segments

3a. Find Sampling Interval

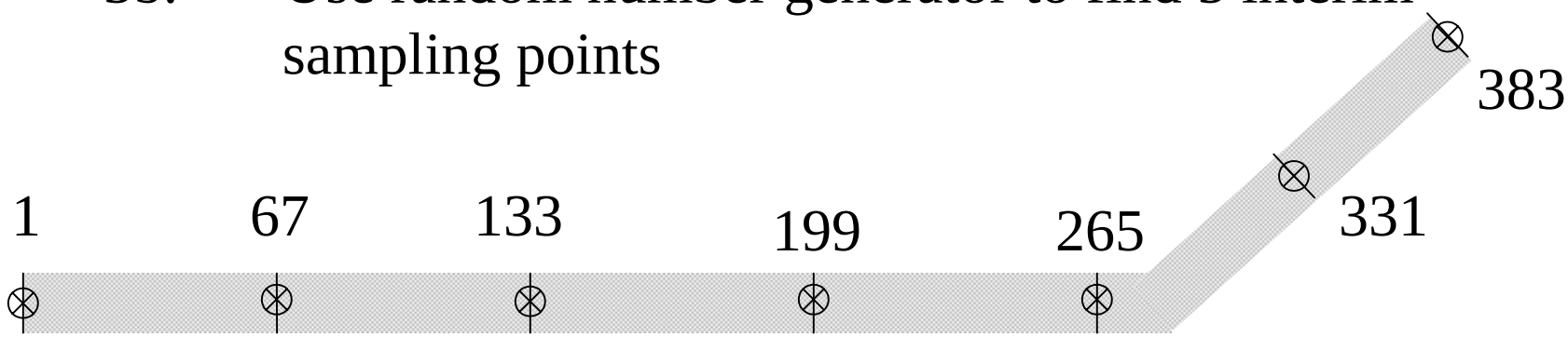
= Total number of segments divided by 6

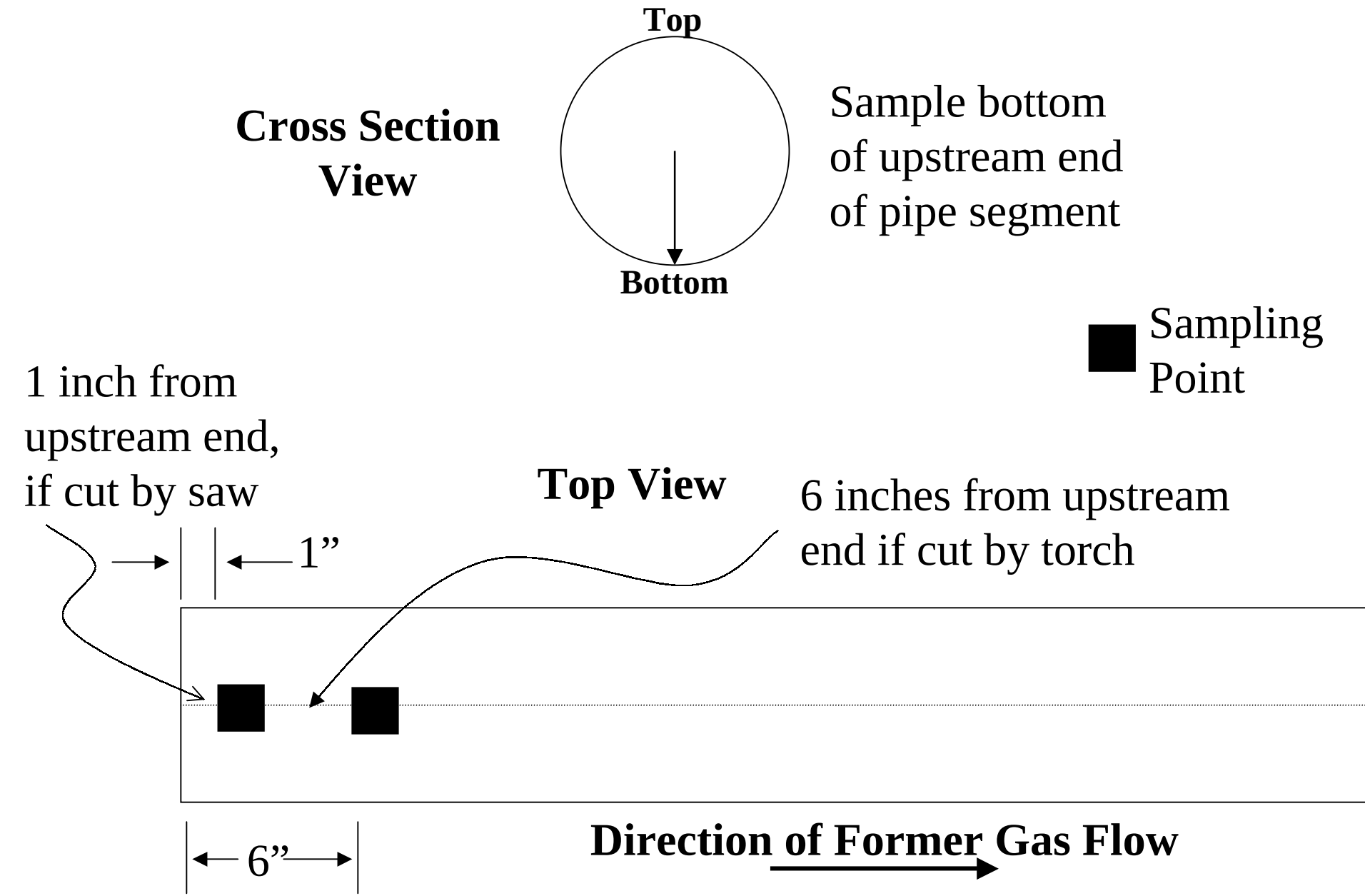
= 383/6 = 63.8 = 64

Take 5 interim samples at sampling intervals (i.e., 65, 133, 199, 265, and 331)

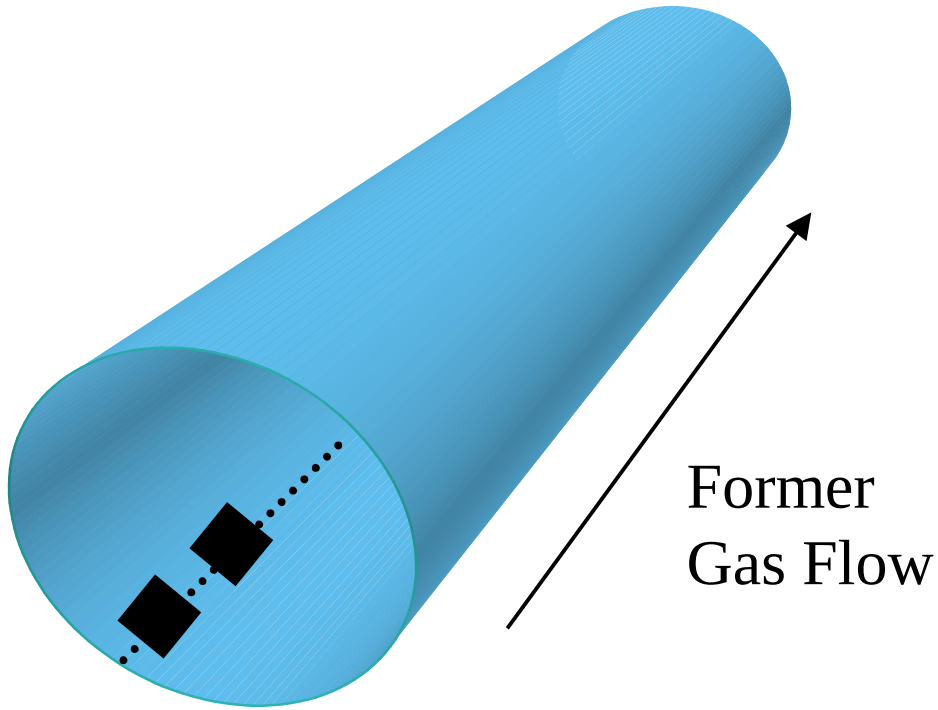
or

3b. Use random number generator to find 5 interim sampling points




Top
Cross Section View
Bottom
Sample bottom of upstream end of pipe segment
Sampling Point
1 inch from upstream end, if cut by saw
Top View
6 inches from upstream end if cut by torch
1”
6”
Direction of Former Gas Flow

Three Dimensional View



Sampling Point

Subpart O
Verification Sampling of Self-Implementing Cleanup
(§§761.280 -761.298)

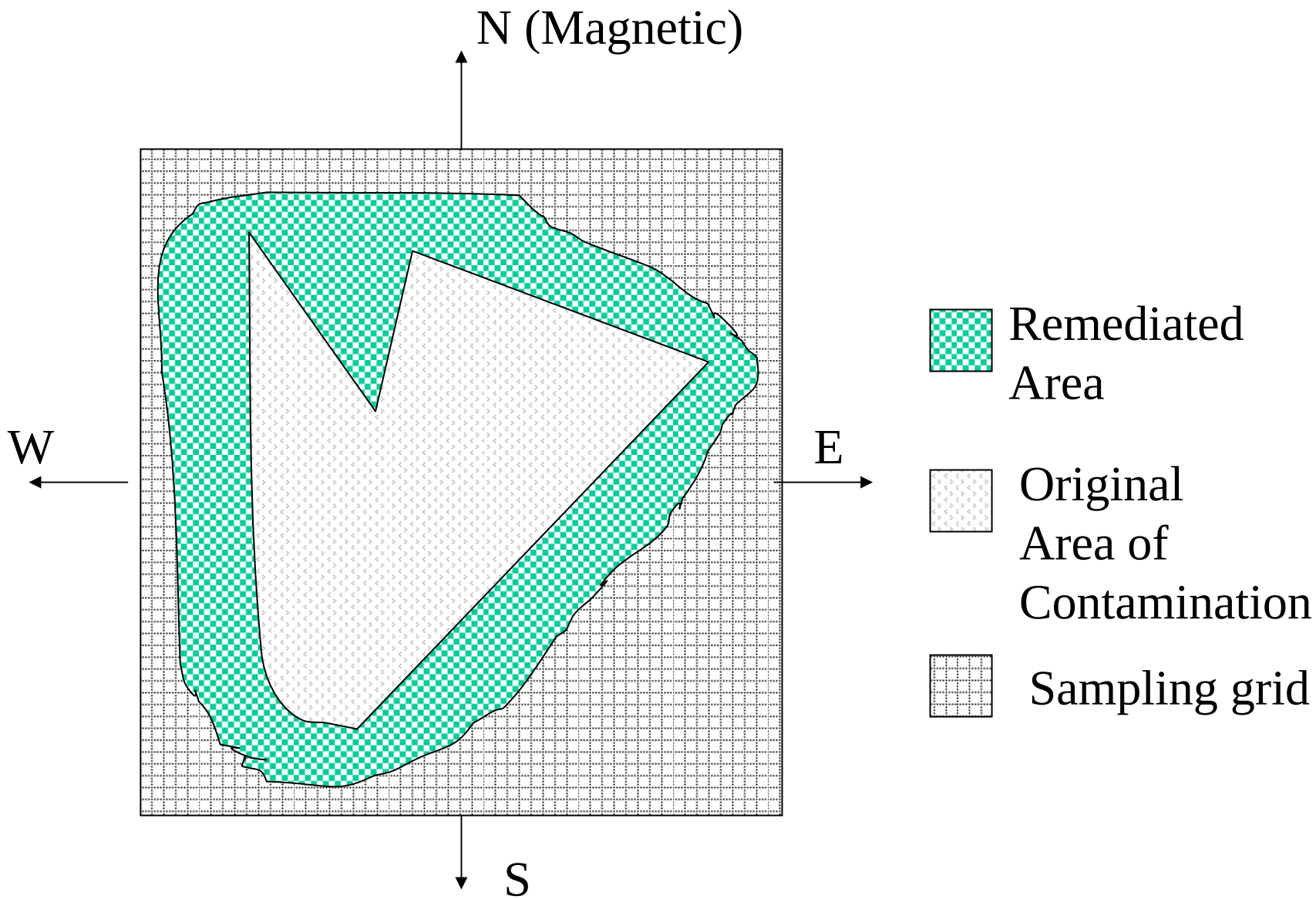
1. Overlay grid oriented on Magnetic N/S/E/W

2. Mark Sampling Points

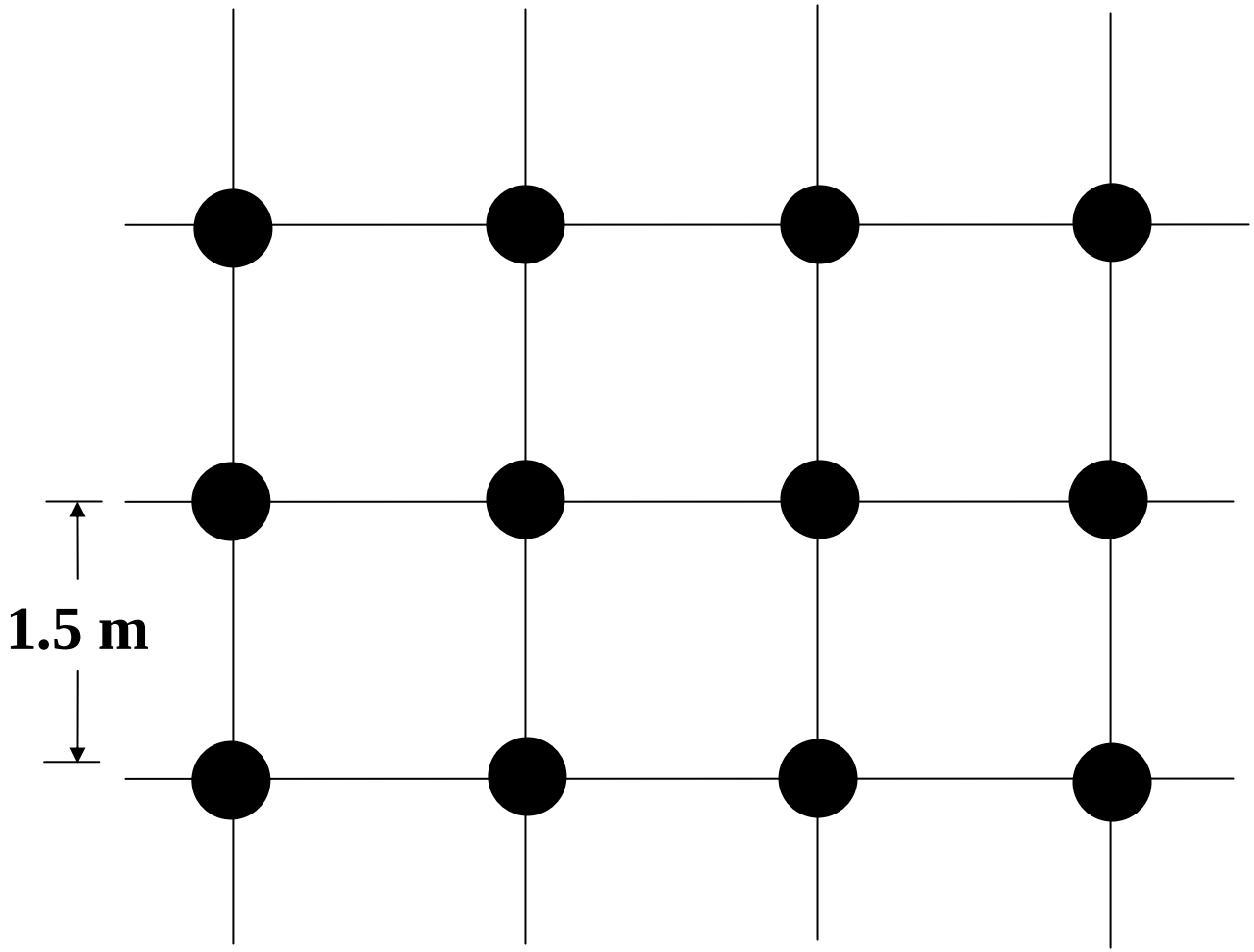
3. Collect Samples

4. Composite Samples

Center Grid on Remediated Area

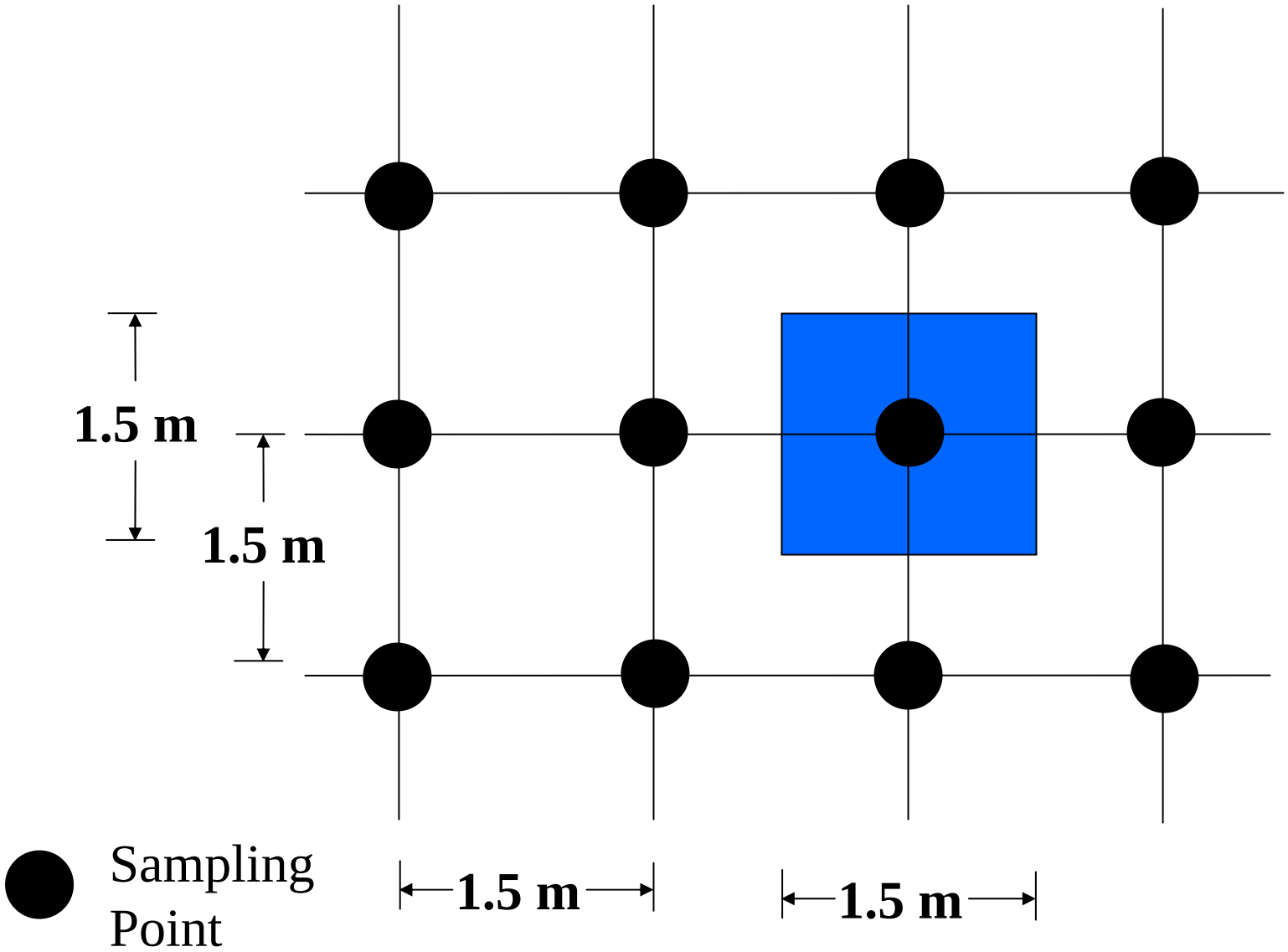


Mark Sampling Points at Intersection of Grid Lines

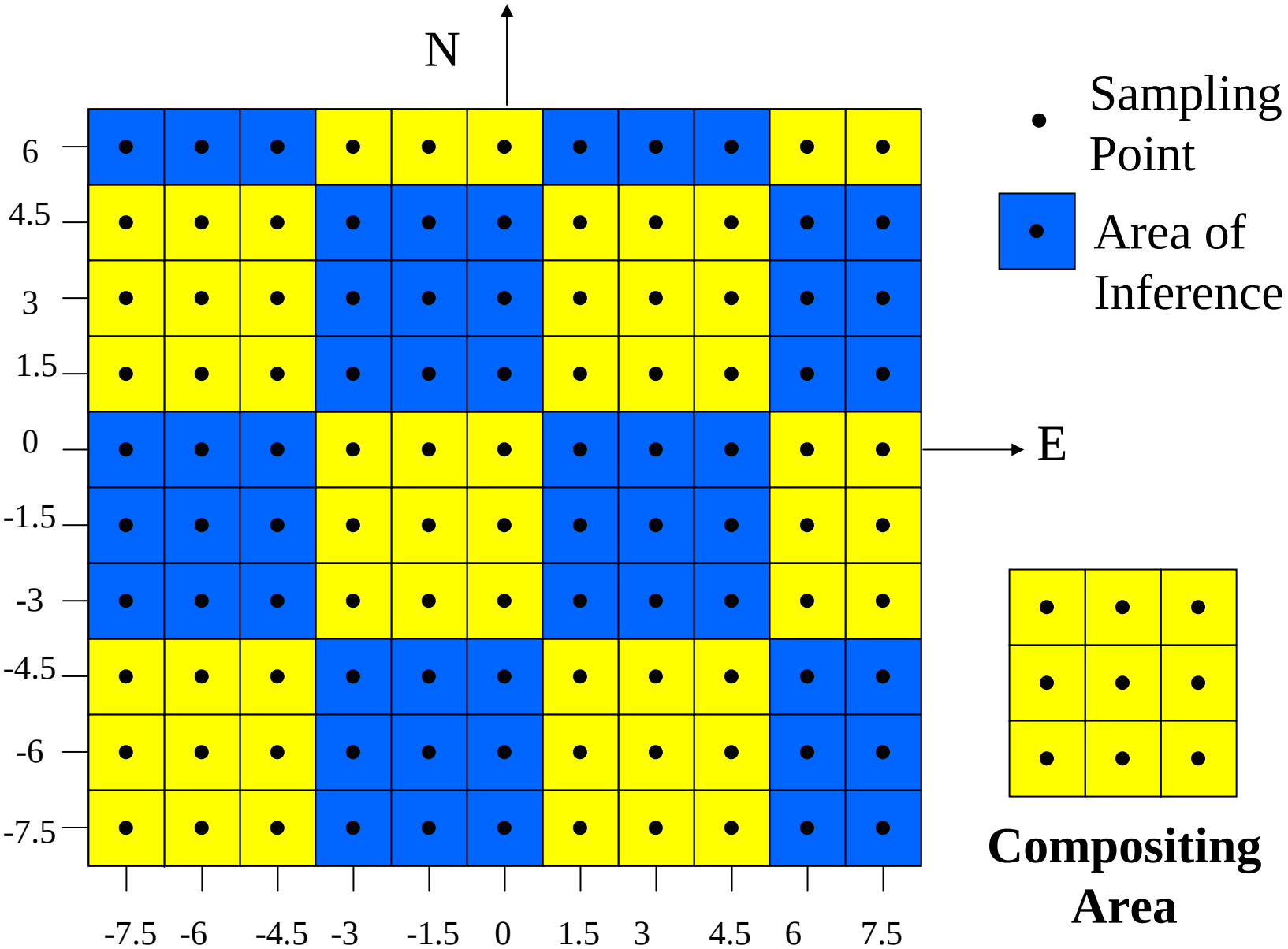


Sampling Point

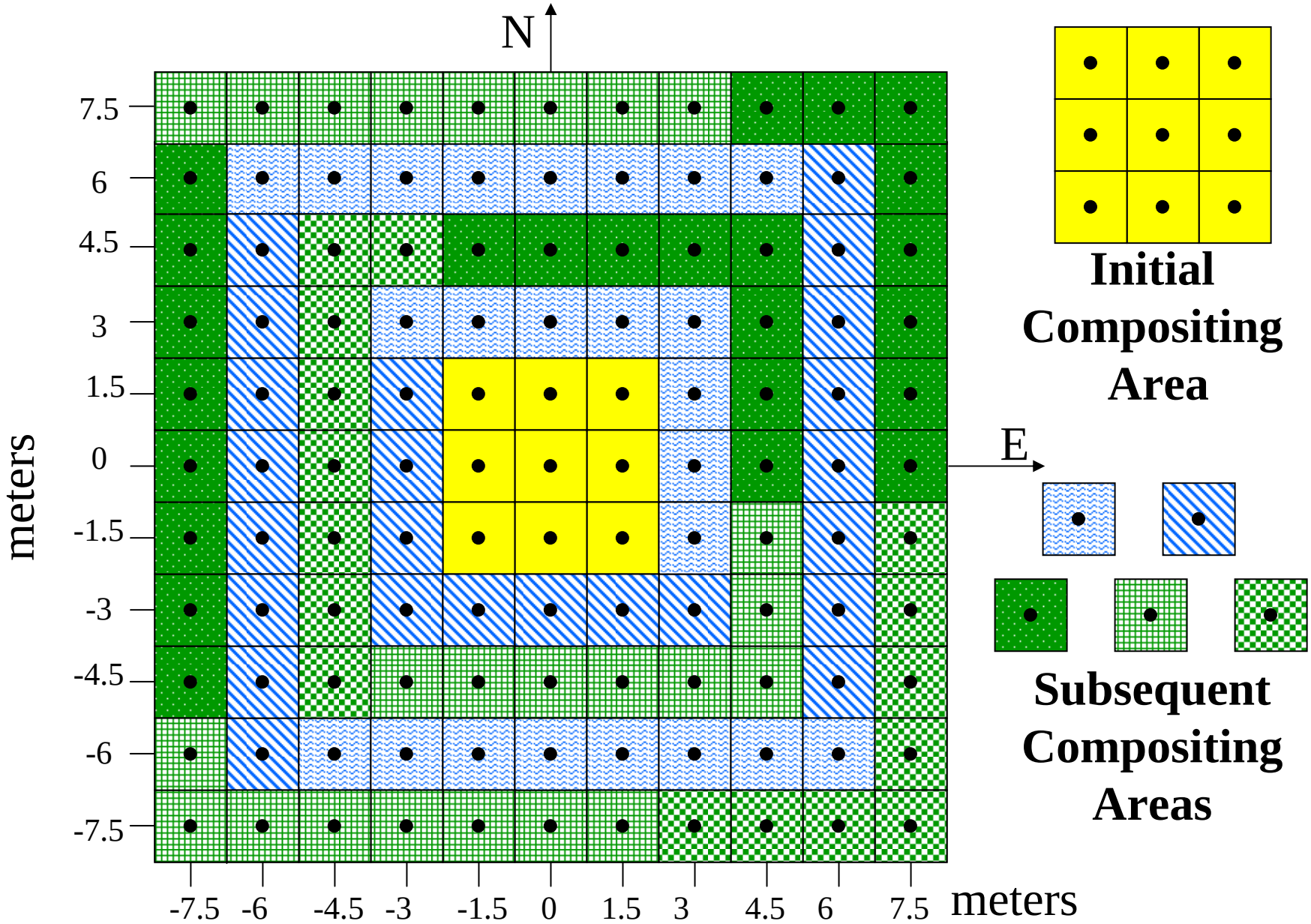
Area of Inference Around Sampling Point



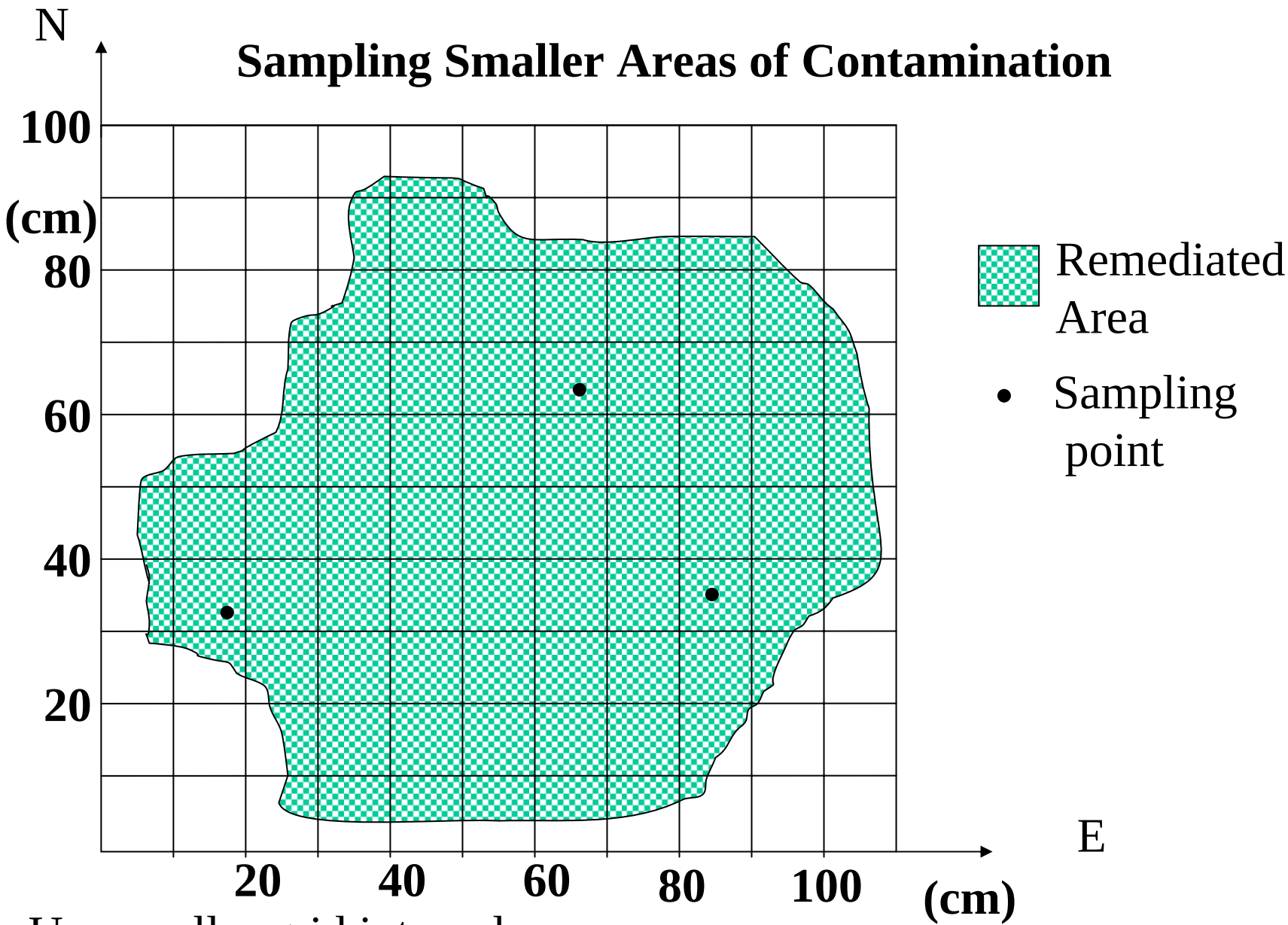
Compositing Areas: Non-point Source



Compositing Areas: Point Source



Sampling Smaller Areas of Contamination

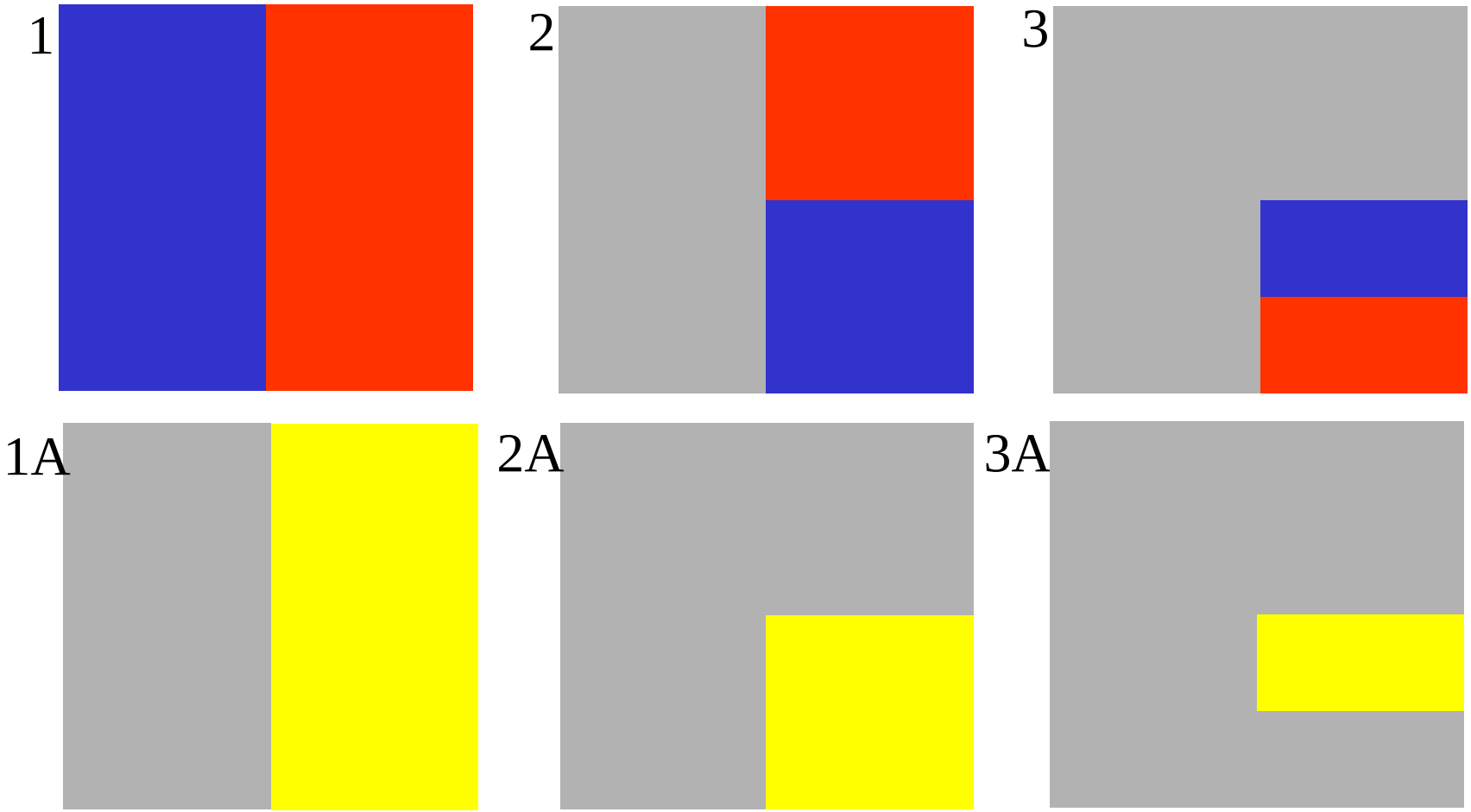


1. Use smaller grid interval
2. Use random number to identify 3 coordinates within remediated area

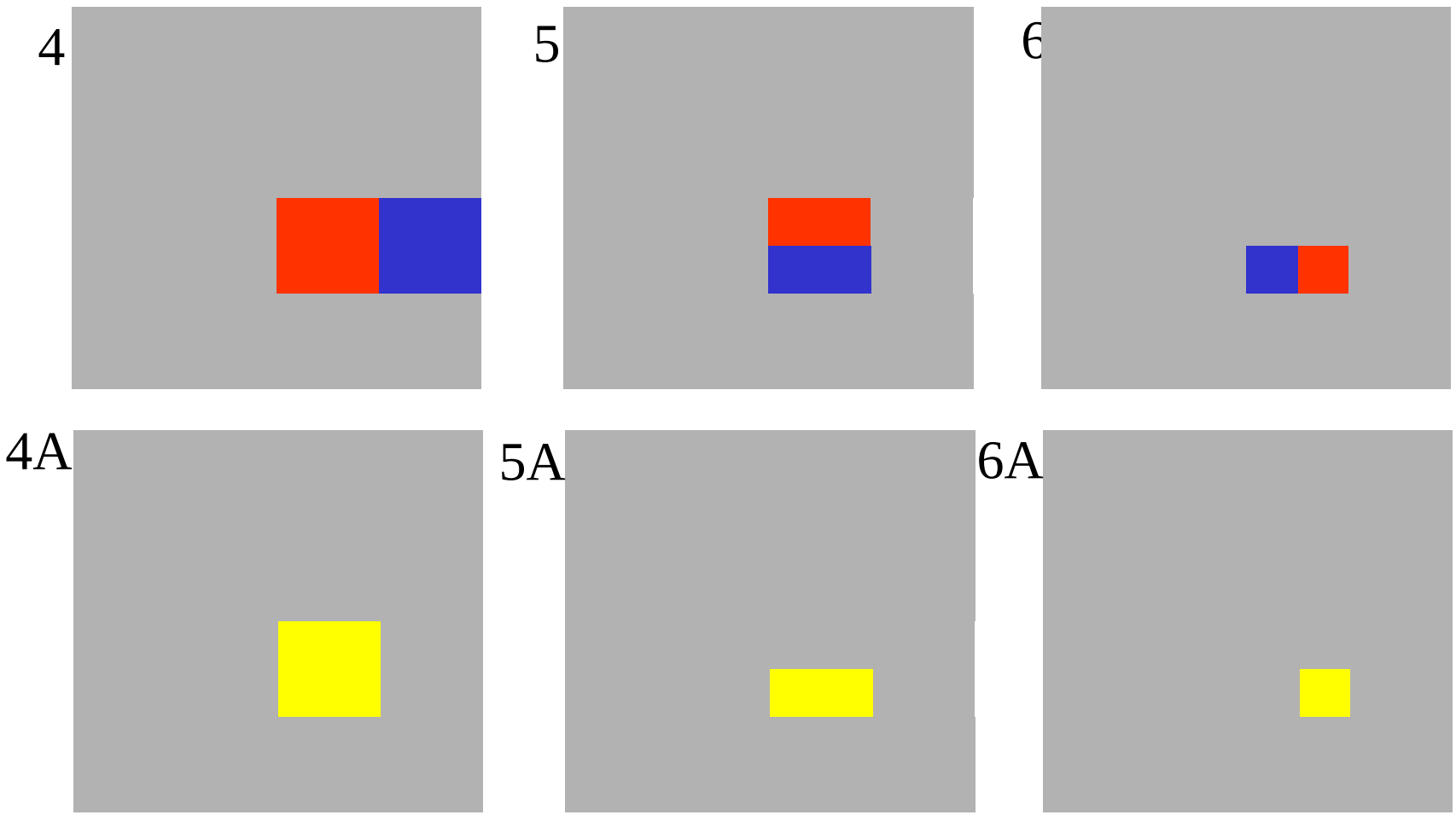
Subpart P - Sampling Non-Porous Surfaces by Halves (§761.306)

1. Divide 1 square meter area in half
2. Assign each half “heads” or “tails”
3. Flip coin
4. Select “winning side” and divide in half
5. Repeat from step 2 until selected half is >100 cm^2 and <200 cm^2

Subpart P - Sampling Non-Porous Surfaces by Halves (§761.306)

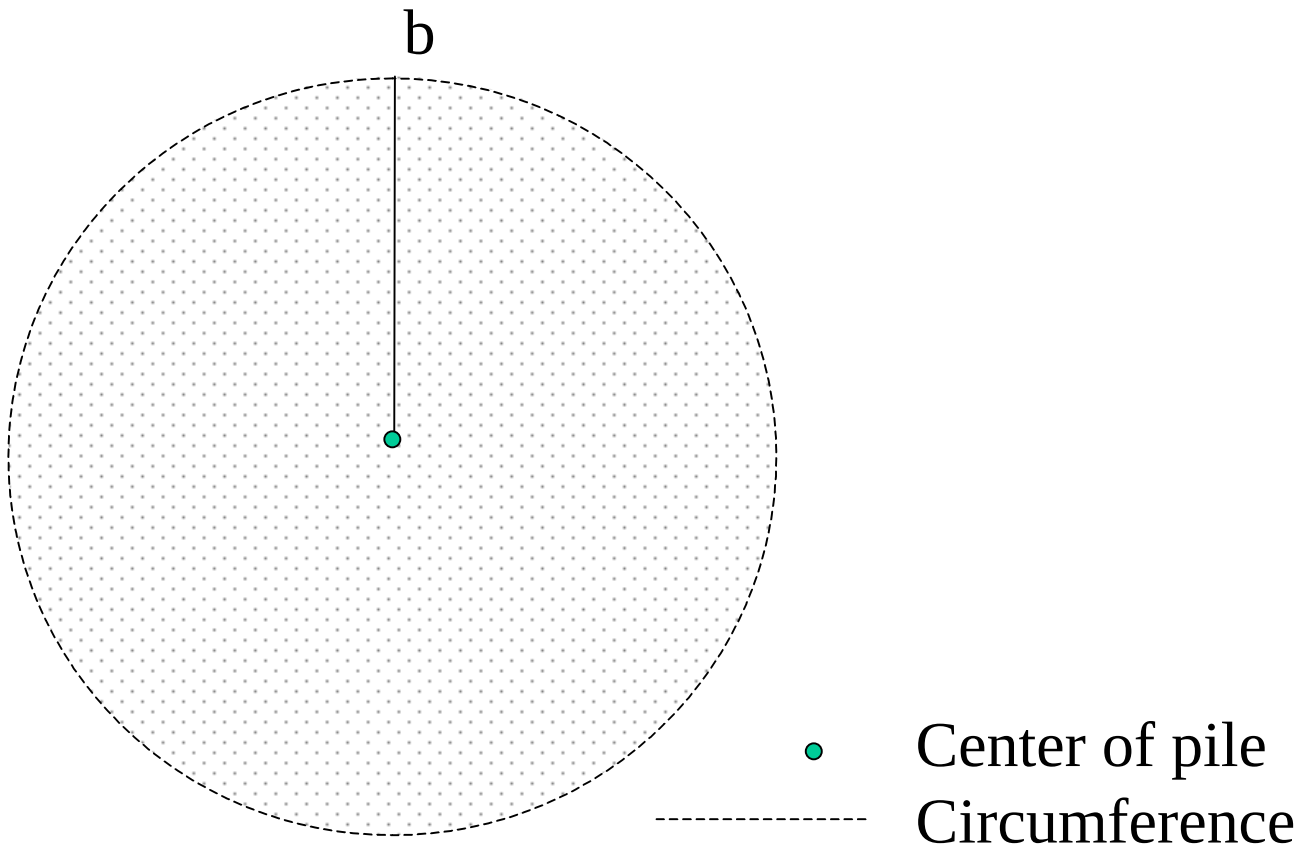


Subpart P - Sampling Non-Porous Surfaces by Halves (§761.306)



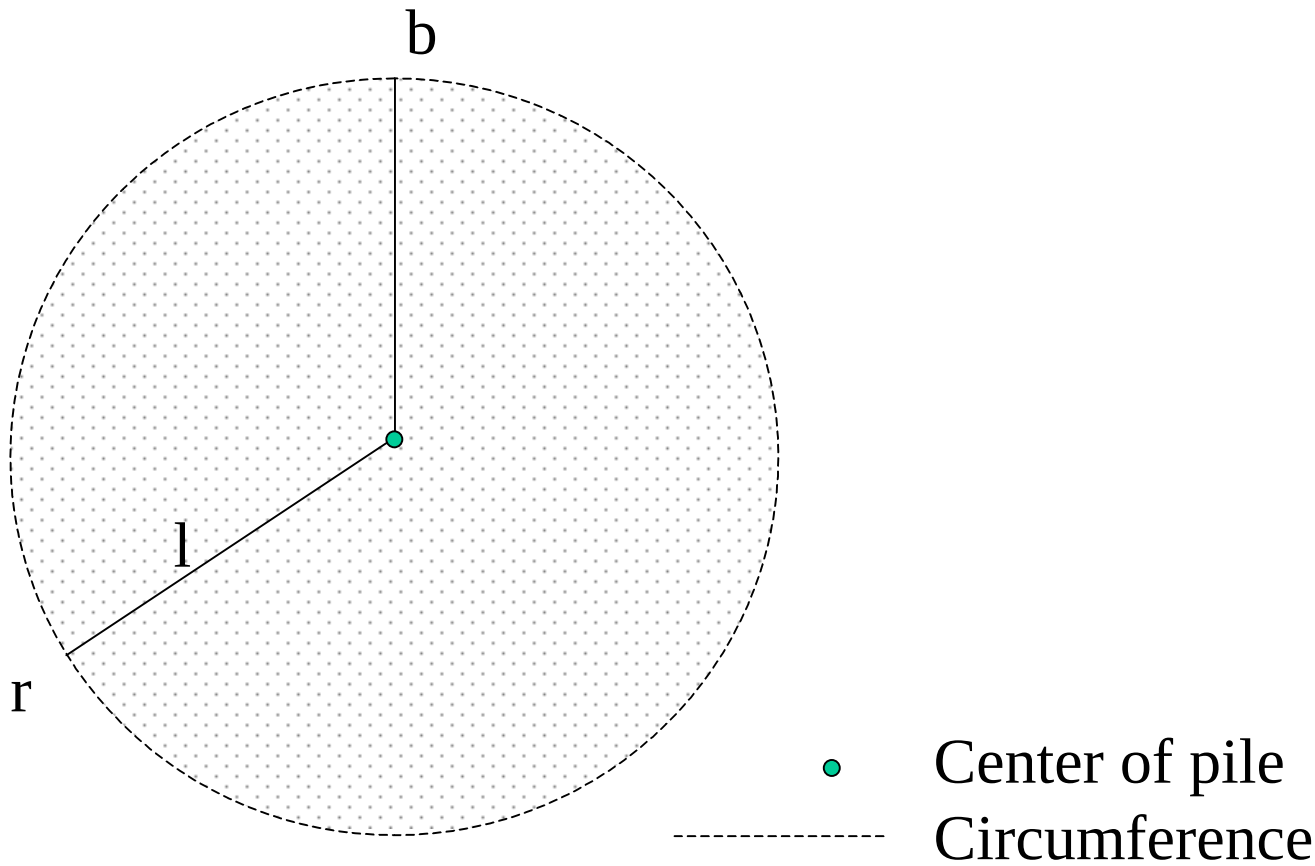
Subpart R - Sampling a Conical Pile (§761.347)

Top View



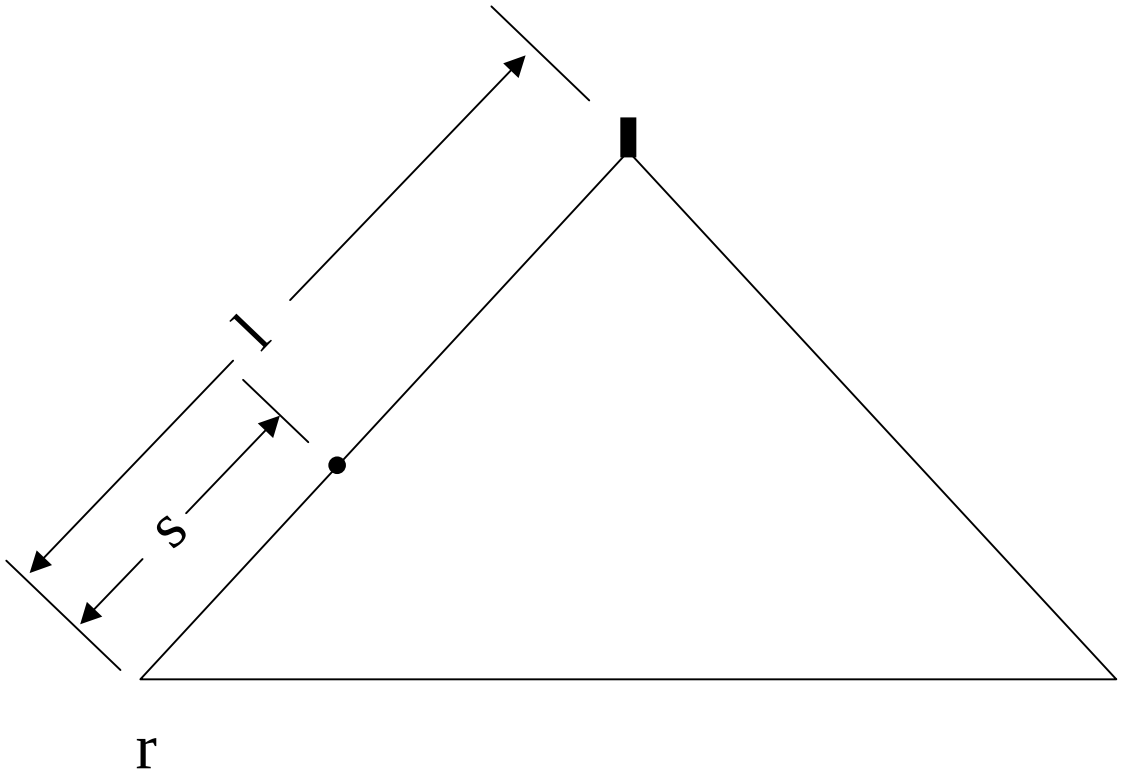
1. Mark center of pile using rod, stake, etc.
2. Run string from top of center marker to base (b)
3. Measure circumference (c) from base (b)

Top View



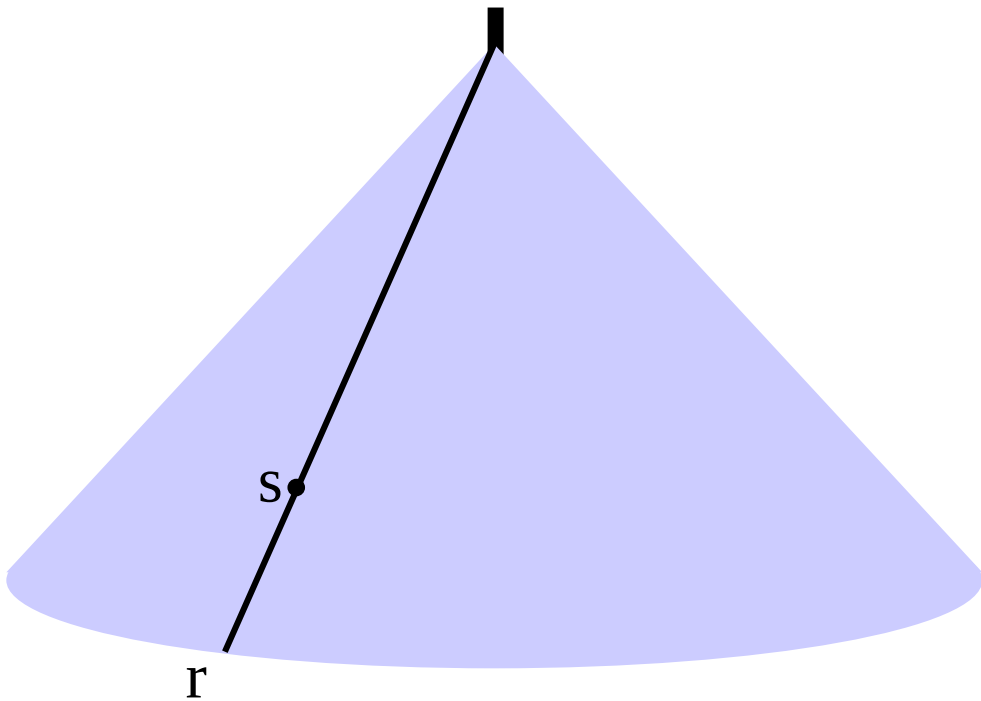
4. Find sampling radius (r) by multiplying circumference (c) by a random number
5. Run string from center marker to base at point (r)
6. Measure length (l) from center marker to base (r)

Cross Section at r

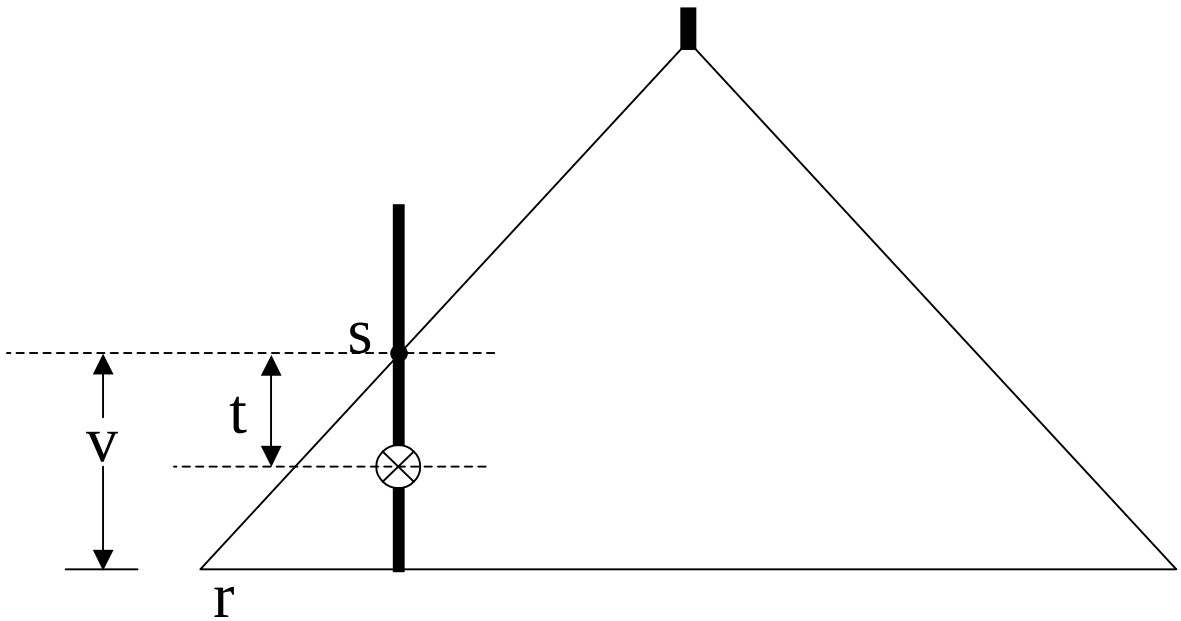


7. Find sampling length (s) by multiplying (l) by a random number
8. Starting from base (r), find point (s) on length (l)

Three Dimensional View

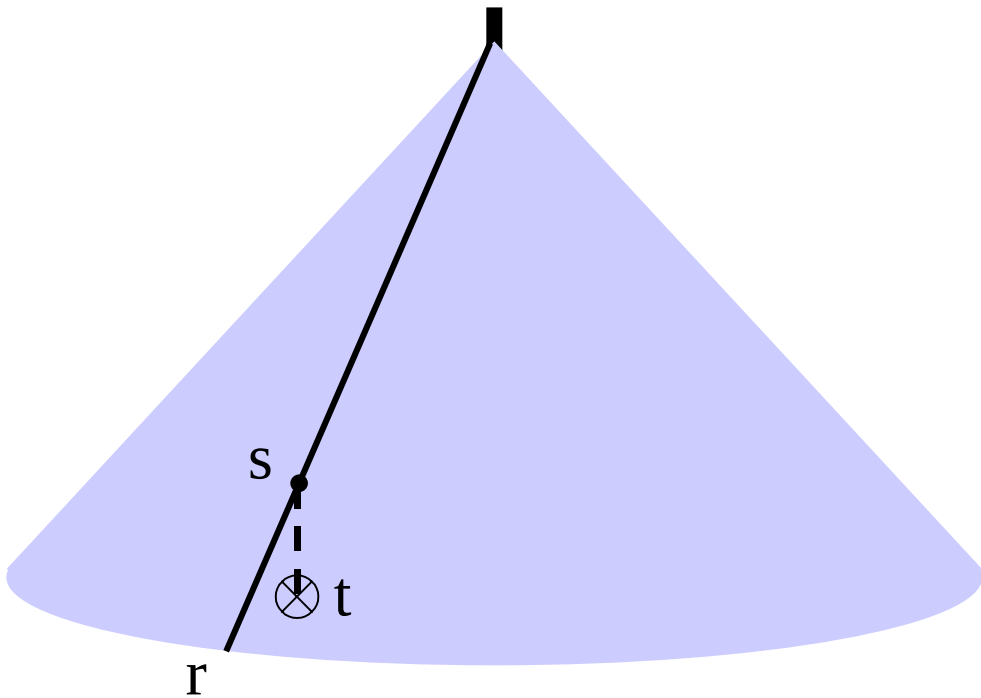


Cross Section at r



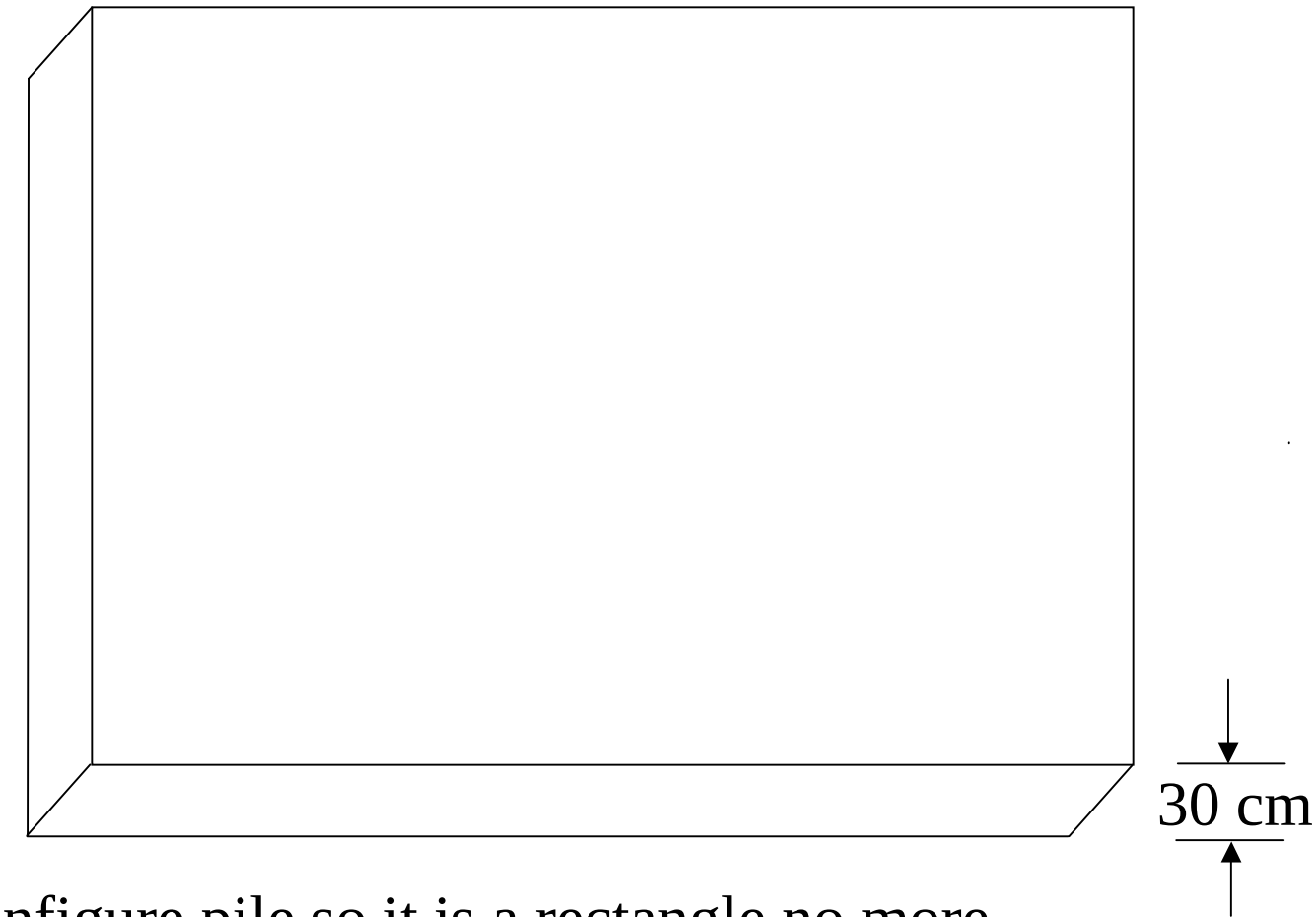
9. Determine the vertical distance (v) by inserting a rod marked in cm
10. Find sampling depth (t) by multiplying (v) by a random number
11. Take sample at point (t)

Three Dimensional View



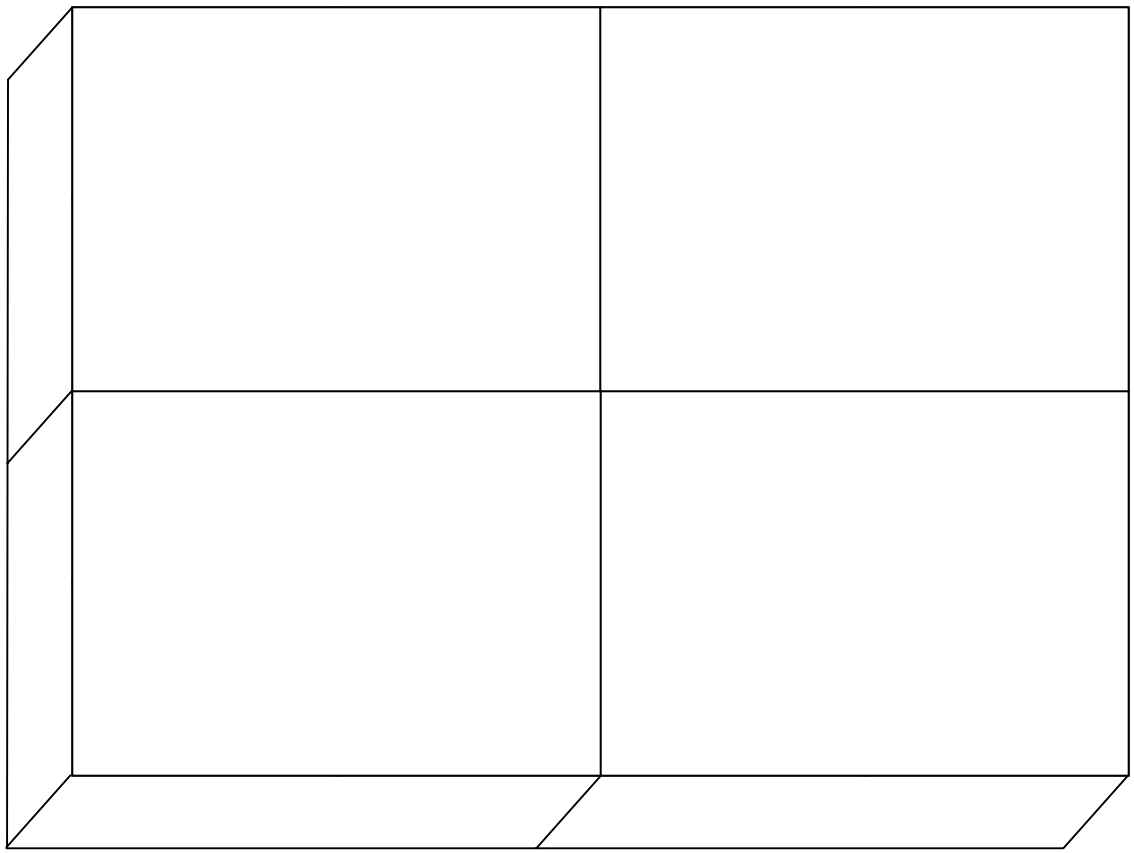
⊗ Sampling Point

Subpart R - Sampling a Specifically Configured Pile (§761.347)



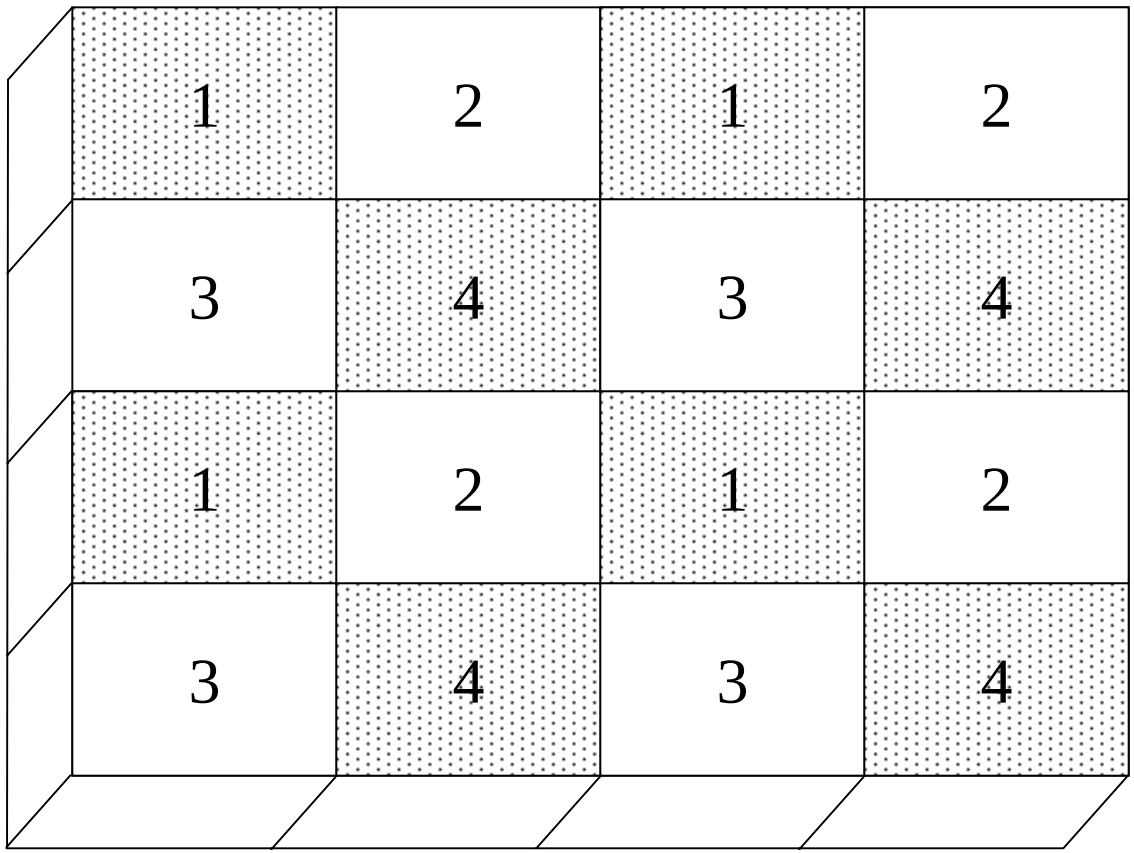
1. Configure pile so it is a rectangle no more than 30 cm (1 ft) deep

Subpart R - Sampling a Specifically Configured Pile



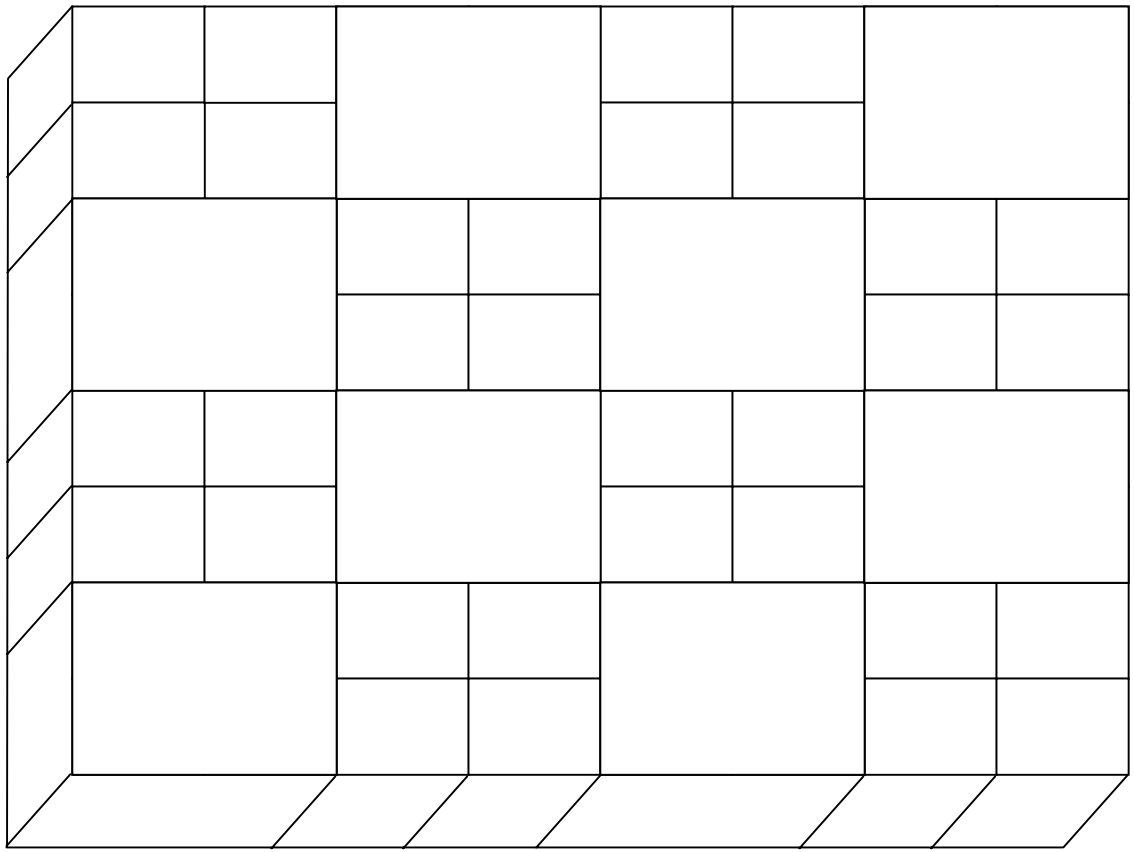
2. Divide pile into quarters

Subpart R - Sampling a Specifically Configured Pile



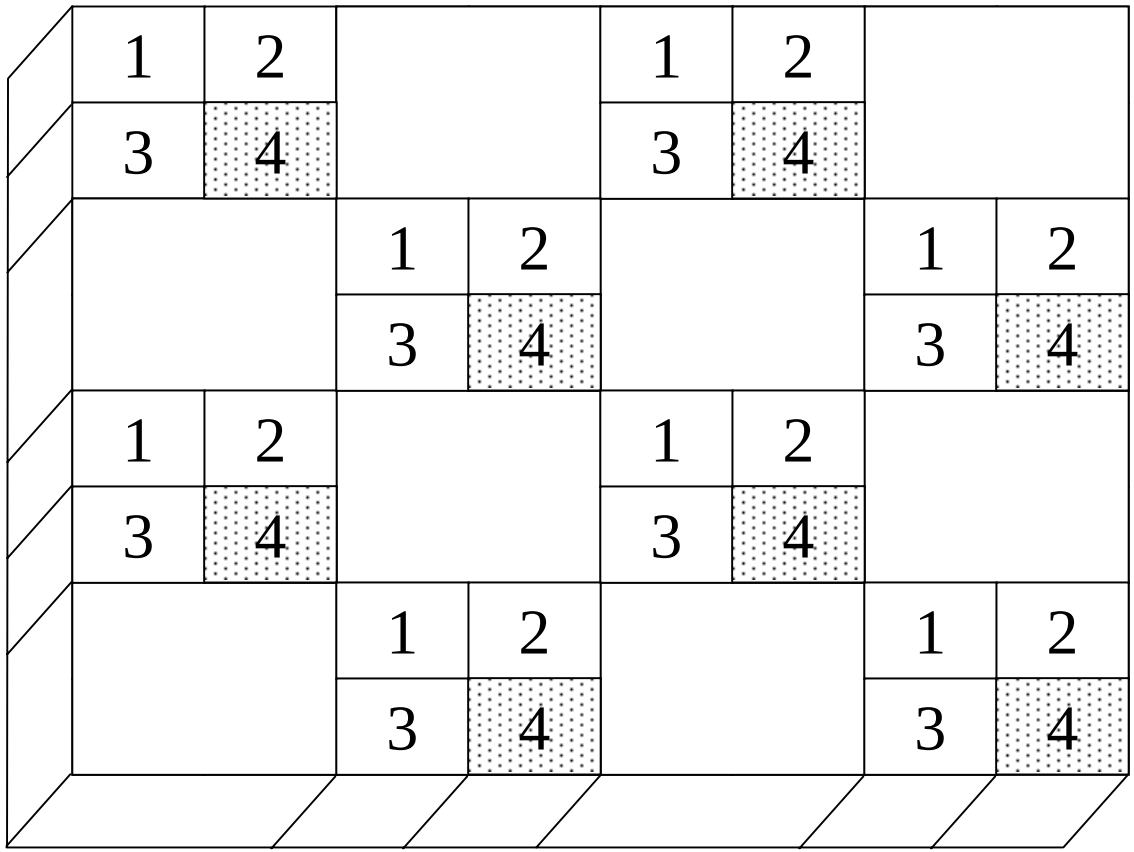
3. Divide quarters into quarters, and number from 1 to 4
4. Randomly select 2 of the 4 numbers to sample (e.g., 1 and 4)

Subpart R - Sampling a Specifically Configured Pile



5. If volume of 1/16th of the original area is greater than 76 liters, continuing dividing into quarters until volume is <76 liters but >19 liters

Subpart R - Sampling a Specifically Configured Pile



6. Number and randomly select subsection for sampling (e.g., 4)
7. Take samples in same position in each corresponding subsection
8. Composite samples