



Professional Engineers. Regulatory Experts. Trusted Partners.

# Texas Railroad Commission Pipeline Regulation Updates

May 12, 2009

Chris Foley

Vice President

[cfoley@rcp.com](mailto:cfoley@rcp.com)

(713) 882-9891

# TRRC Pipeline Changes

- Eliminated Gas Gathering from TX-IMP
- Incorporated Gas Production Pipelines into pipeline safety regulations
- Supplemental Corrosion Control updates
- Incident Reporting triggers now match DOT
- New incident telephone report data
- Semi-Annual Leak Reporting (PS-95)
- Odorization changes
- Public Liaison frequency changes

# TX-IMP Changes

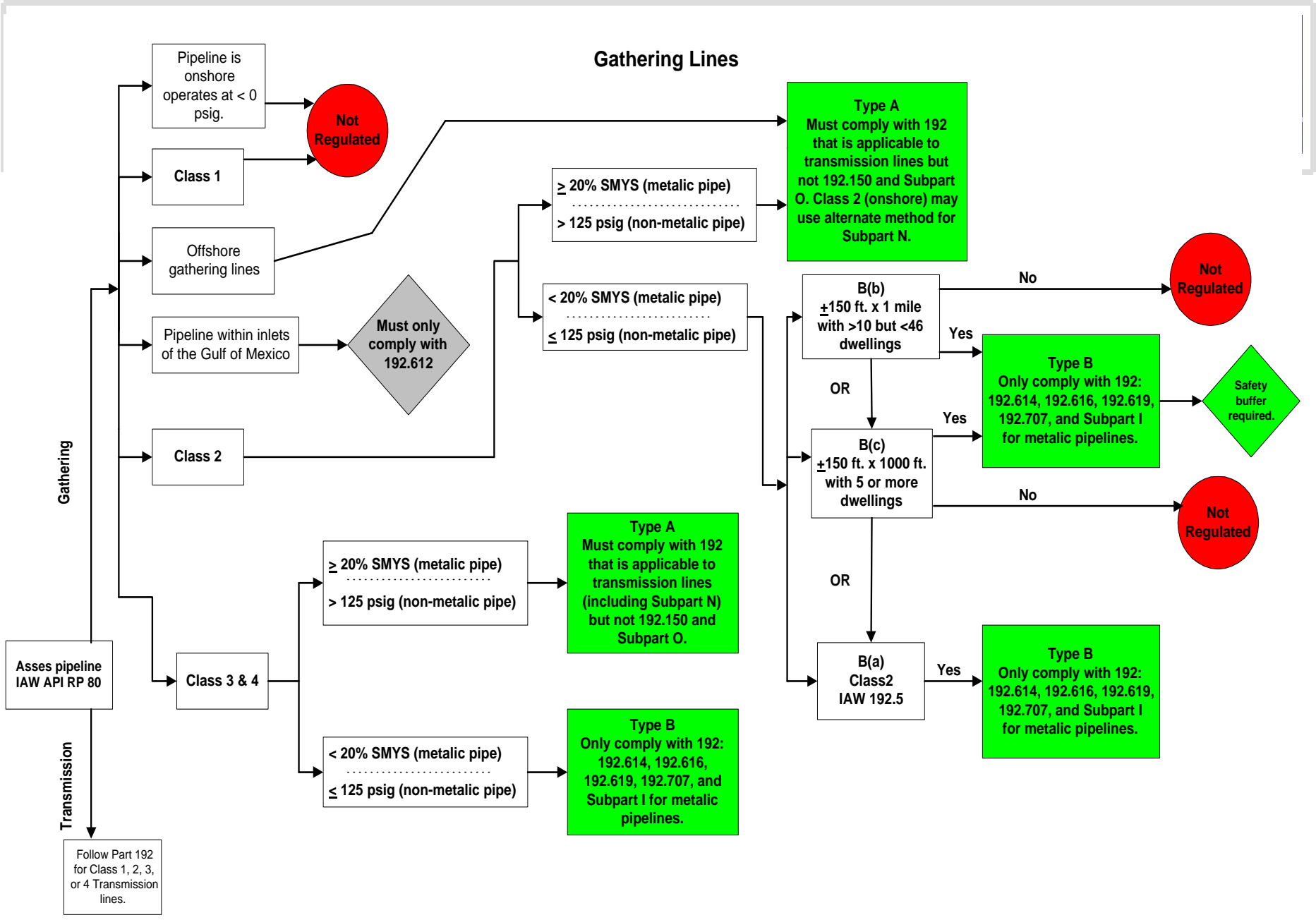
| <b>GAS TRANSMISSION [<del>AND GATHERING</del>] LINES</b> |  |                      |                   |                                  |
|--|--|----------------------|-------------------|----------------------------------|
| <b>Size</b>  | <b>Pressure</b>                              | <b>Class 2, 3, 4</b> | <b>Class 1</b>    | <b>Offshore</b>                  |
| Less than or equal to 8 inches                           | Less than 100 psig                           | n/a                  | n/a               | Intervals prescribed by operator |
|  | Greater than 100 psig and less than 20% SMYS | 10 year intervals    | n/a               | Intervals prescribed by operator |
|  | Greater than 20% SMYS                        | 5 year intervals     | n/a               | Intervals prescribed by operator |
| Greater than 8 inches                                    | Less than 100 psig                           | n/a                  | n/a               | Intervals prescribed by operator |
|  | Greater than 100 psig and less than 20% SMYS | 5 year intervals     | n/a               | Intervals prescribed by operator |
|  | Greater than 20% SMYS                        | 5 year intervals     | 10 year intervals | Intervals prescribed by operator |

# Production Pipelines

- Texas Railroad Commission
  - Production Pipelines after the first point of measurement treated the same as gas gathering pipelines
- City of Ft. Worth Drilling Ordinance
  - All production pipelines must meet or exceed federal and state regulatory requirements...
  - Saltwater pipeline requirements
    - permit required, PE certification, 5' below existing utilities, automatic shutdown, markers

# TRRC Regulated Production/Gathering

| Type | With these features  | In this area  | Plus this buffer  |
|------|--|---|---|
| A    | <p>Metal, MAOP<math>\geq</math>20%<br/>SMYS</p> <p>--- or ---</p> <p>Non-Metal,<br/>MAOP<math>&gt;</math>125 psig</p>                        | Class 2, 3, or 4  | No extra area   |
| B    | <p>Metal, MAOP<math>&lt;</math>20%<br/>SMYS</p> <p>(“low stress”)</p> <p>--- or ---</p> <p>Non-Metal,<br/>MAOP<math>\leq</math> 125 psig</p> | <p>Area 1: Class 3 or 4</p> <p>Area 2: class 2, and</p> <p>(a) class 2, or</p> <p>(b) skinny class 2, or</p> <p>(c) skinny, short class 1.5</p> | For 2(b) or (c) ,<br>add 150' from last<br>dwelling / cluster |



### Gathering Lines

Pipeline is onshore operates at < 0 psig.

**Not Regulated**

**Class 1**

Offshore gathering lines

Pipeline within inlets of the Gulf of Mexico

**Must only comply with 192.612**

**Class 2**

**Type A**  
Must comply with 192 that is applicable to transmission lines but not 192.150 and Subpart O. Class 2 (onshore) may use alternate method for Subpart N.

≥ 20% SMYS (metallic pipe)  
.....  
> 125 psig (non-metallic pipe)

< 20% SMYS (metallic pipe)  
.....  
≤ 125 psig (non-metallic pipe)

**B(b)**  
±150 ft. x 1 mile  
with >10 but <46 dwellings

No

**Not Regulated**

Yes

**Type B**  
Only comply with 192: 192.614, 192.616, 192.619, 192.707, and Subpart I for metallic pipelines.

**Safety buffer required.**

**B(c)**  
±150 ft. x 1000 ft.  
with 5 or more dwellings

No

**Not Regulated**

Yes

**Type A**  
Must comply with 192 that is applicable to transmission lines (including Subpart N) but not 192.150 and Subpart O.

≥ 20% SMYS (metallic pipe)  
.....  
> 125 psig (non-metallic pipe)

**Type B**  
Only comply with 192: 192.614, 192.616, 192.619, 192.707, and Subpart I for metallic pipelines.

< 20% SMYS (metallic pipe)  
.....  
≤ 125 psig (non-metallic pipe)

**B(a)**  
Class2  
IAW 192.5

Yes

**Type B**  
Only comply with 192: 192.614, 192.616, 192.619, 192.707, and Subpart I for metallic pipelines.

Gathering

Transmission

Asses pipeline IAW API RP 80

Follow Part 192 for Class 1, 2, 3, or 4 Transmission lines.

# Type A Regulatory Scope

- Design of new / repaired pipelines
- Construction of new / repaired pipelines
- Testing of new / repaired pipelines
- Operations of existing pipelines
- Emergency Response of existing pipelines
- Maintenance / Inspection / Repair
- Corrosion Control of existing pipelines
- Qualification / Training of OMER personnel
- Drug & Alcohol Testing of OMER personnel
- Does not include:
  - Commercial tariffs (FERC), ROW agreements and siting

# TRRC Compliance Deadlines

| Requirement  | Regulated Production | Regulated Gathering |
|--|----------------------|---------------------|
| Establish MAOP 192.619   | March 1, 2010        | October 15, 2007    |
| Damage Prevention 192.614  | September 1, 2010    | October 15, 2007    |
| Install & Maintain Line Markers 192.707                              | March 1, 2011        | April 15, 2008      |
| Public Education & liaison 192.616                                   | March 1, 2011        | April 15, 2008      |
| Corrosion Control<br>Subpart I for Transmission Lines                | March 1, 2012        | April 15, 2009      |
| Type A lines – all other requirements of Part 192 except ILI and IMP | March 1, 2011        | April 15, 2009      |

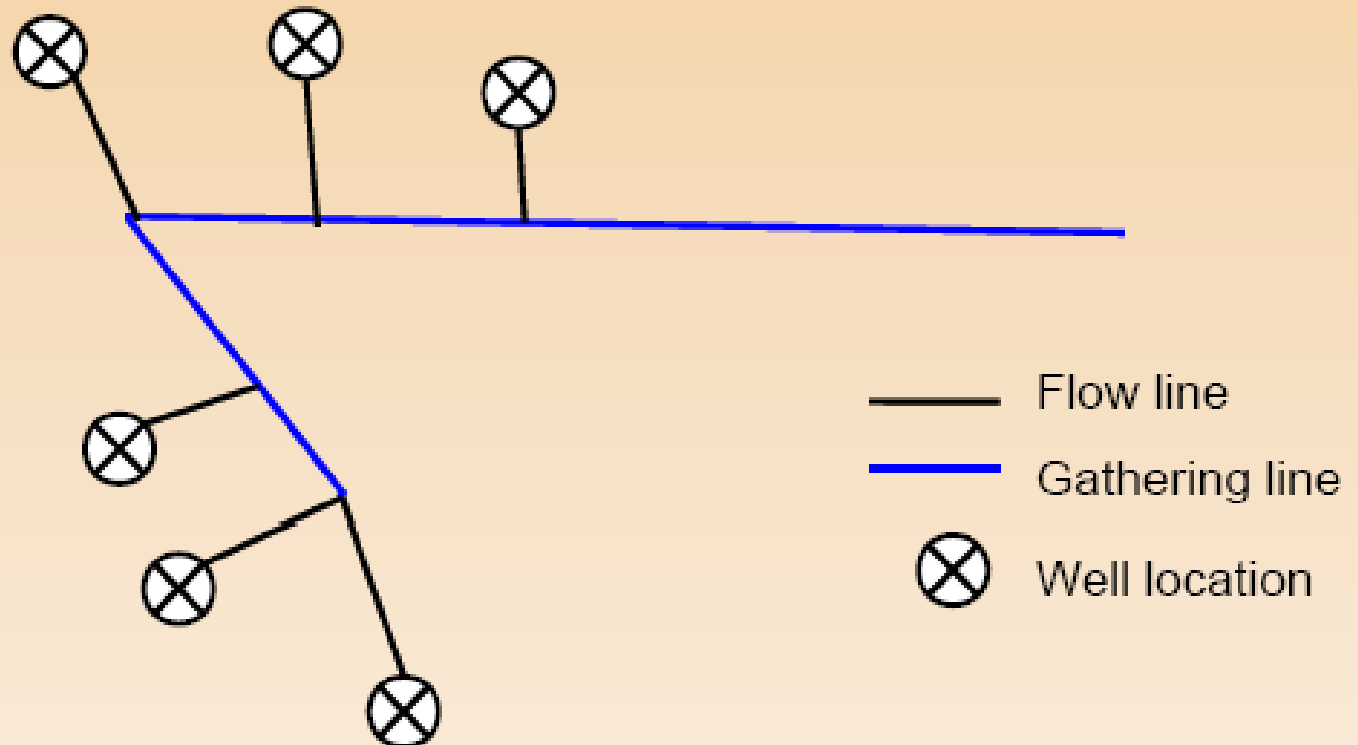


# TRRC Compliance Deadlines

- If class location change causes a previously exempt line to become “regulated”
  - Type A: 2 Years
  - Type B: 1 Year
- New, replaced, relocated, or otherwise changed
  - Must be in compliance when pipeline goes into service

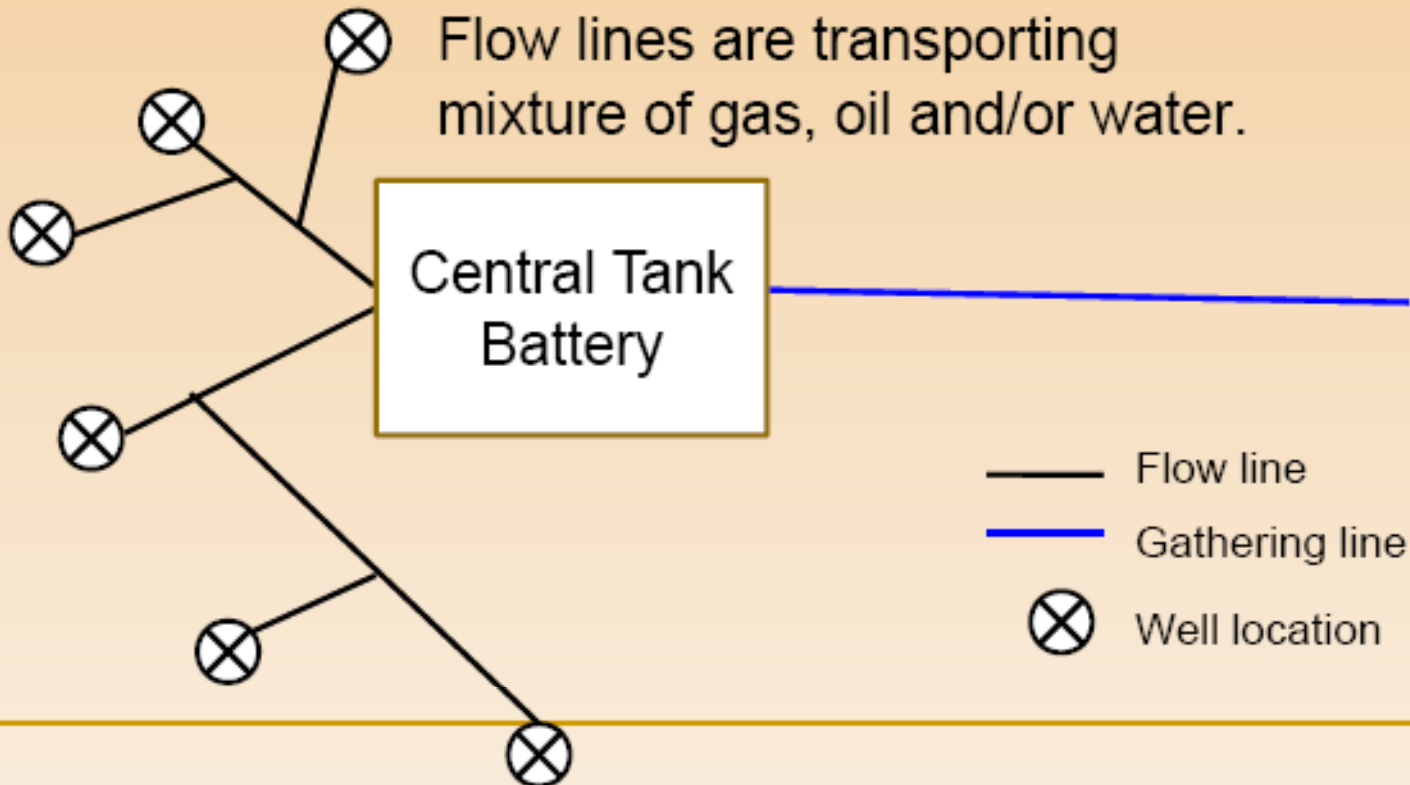
# End of Production

Wells have separation, heater treaters and stock tanks. Flow lines transporting gas only.



# End of Production

Wells all flow to central tank battery (no treatment of well stream on location). Tank battery has separation, heater treaters and stock tanks.

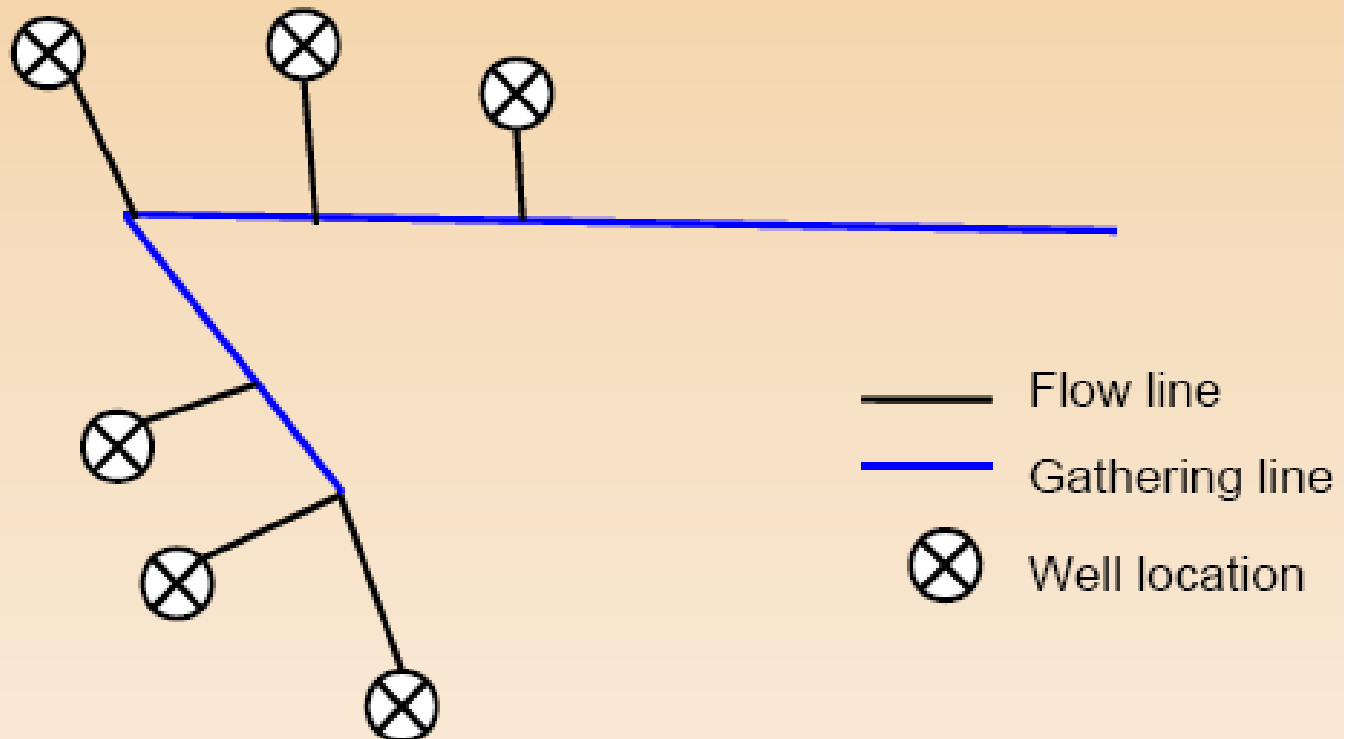


# Central Tank Battery

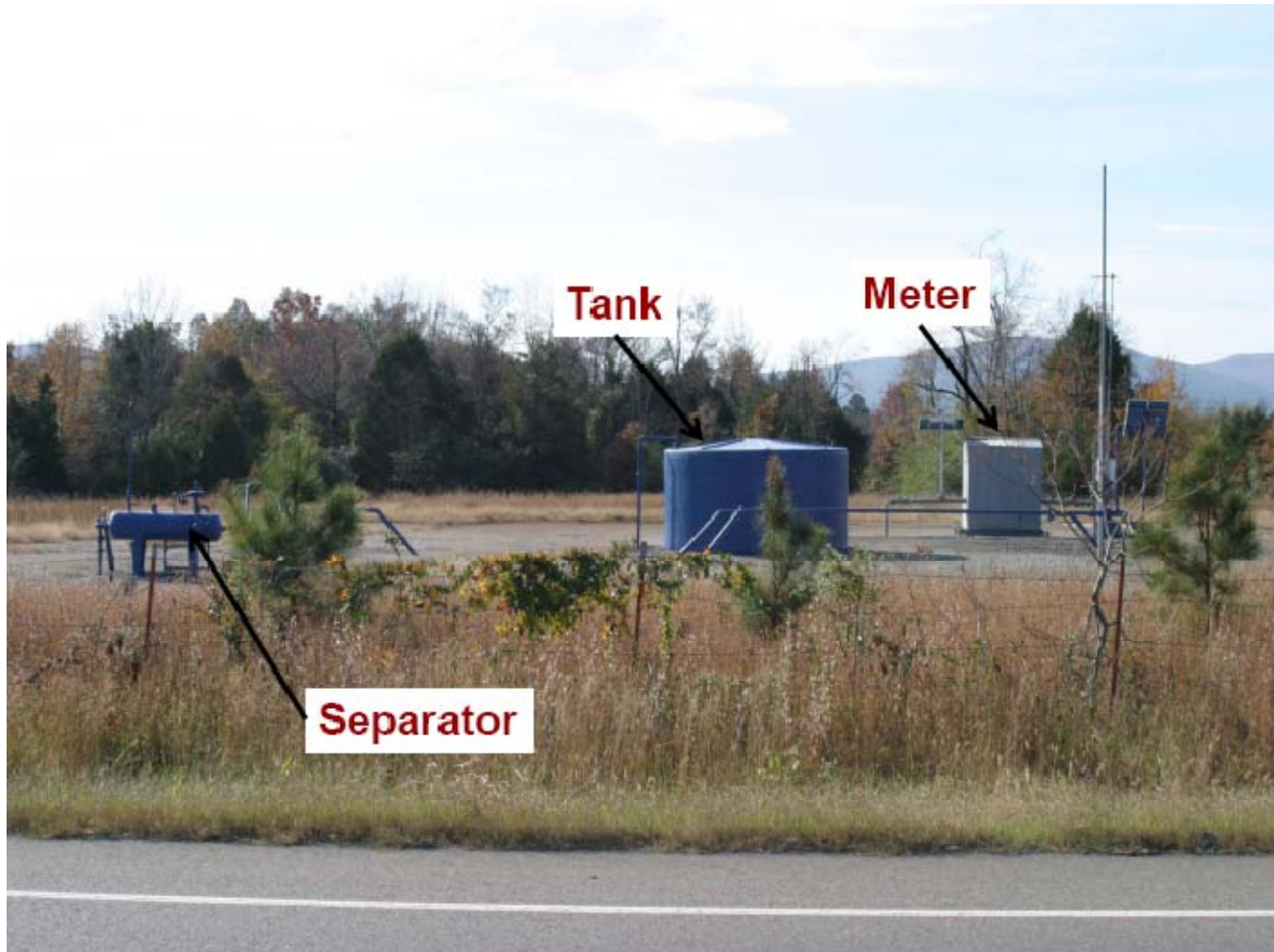


# End of Production

Wells have no equipment because it is not needed.

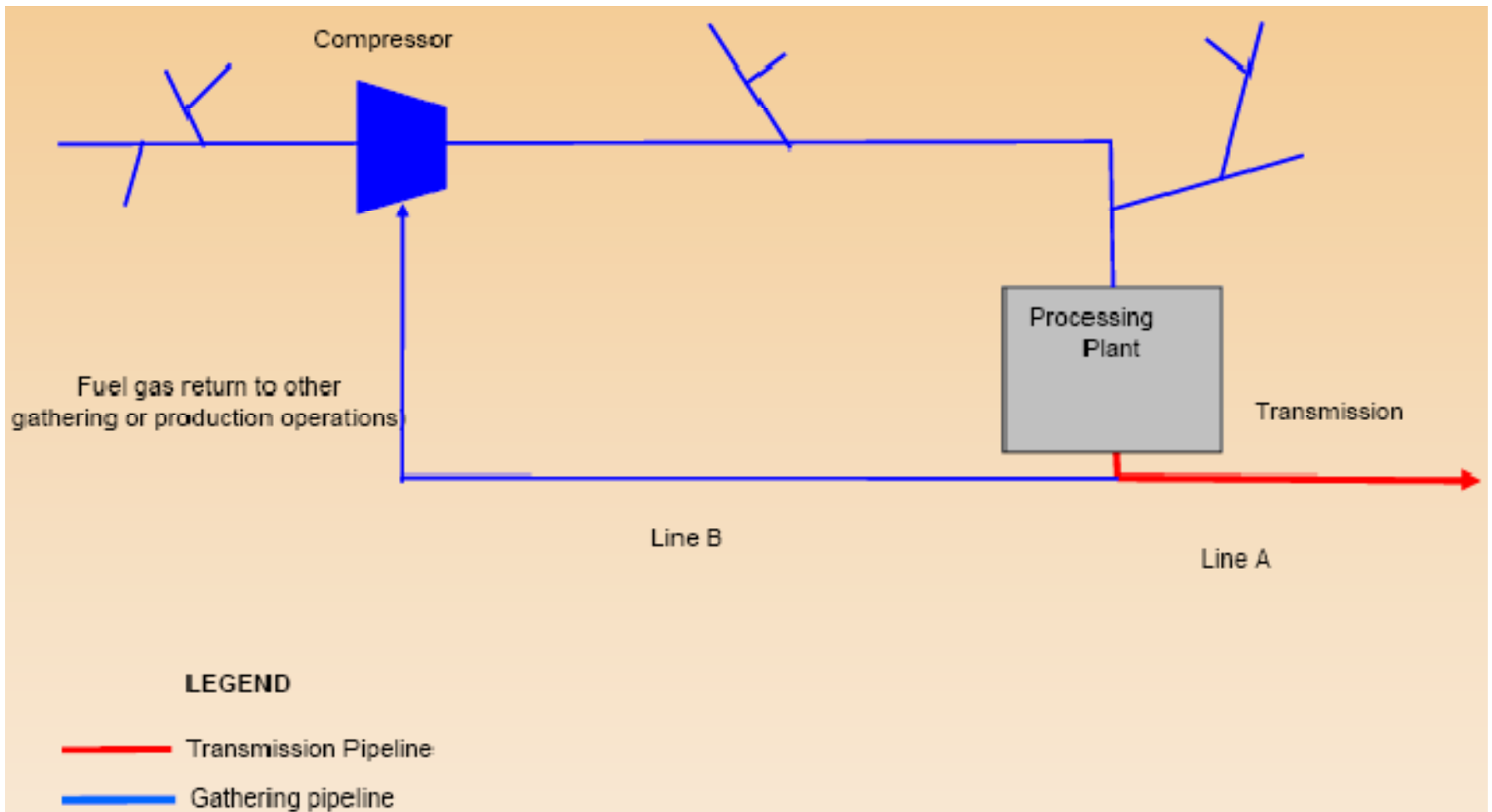


# Beginning of Gathering



“Production stops when single phase flow starts”  
- TSI

# Gas Gathering – Fuel Gas



# Design of Steel Pipe

$$P = (2St/D) * \cancel{(F)(E)(T)}$$

- ◆ P = Design Pressure
- ◆ S = Yield Strength
- ◆ D = Nominal Outside Diameter
- ◆ t = Nominal Wall Thickness
- ◆ F = Design factor - §192.111 , §195.106
- ◆ E = Longitudinal joint factor - §192.113 , §195.106
- ◆ T = Temperature derating factor - §192.115



# Example Low Stress Pipeline

*API 5L Grade B 8" .322" wt.*

$$D = 8.625$$

$$S = 35,000$$

$$t = 0.322$$

$$P = (2)(35,000)(.322)/8.625 = 2613\#$$

with no safety factors (100% of SMYS)

To determine pressure equivalent to 20%  
SMYS:  $2613(.20) = 522.6\#$

If this pipe operated at 500 psi, it would be considered “low stress”



# §192.5 - Class Location Definition

(gas)

- ◆ The *class location unit* is an onshore area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline.

The class location is determined by the buildings in the *class location unit*. For the purposes of this section, each separate dwelling unit in a multiple dwelling building is counted as a separate building intended for human occupancy.

# Class Location Unit (gas)

- ◆ A **Class 1** = 10 or less buildings intended for human occupancy or an offshore area.
- ◆ A **Class 2** = > 10 but less than 46 buildings intended for human occupancy.
- ◆ A **Class 3** = 46 or more buildings intended for human occupancy; or

# Class Location Unit (gas)

**Class 3** - where the pipeline lies within 100 yards of either a building or a small,

◆ Well-defined Outside Area

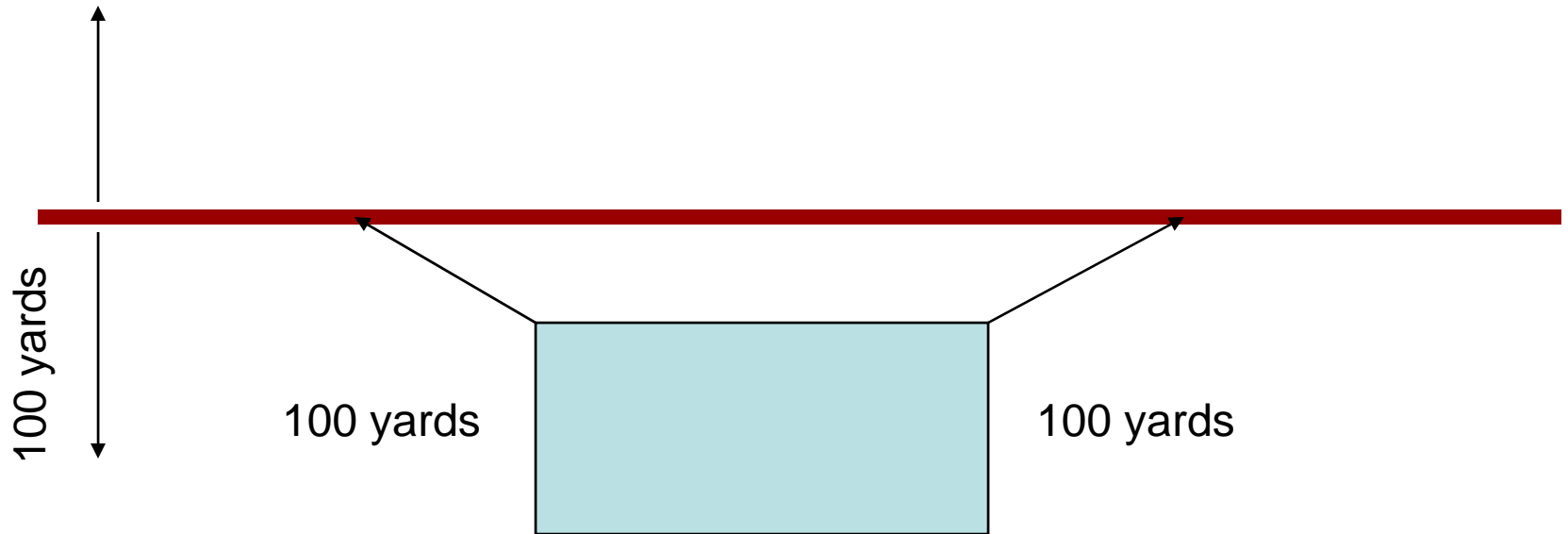
- Playground
- Recreation Area
- Outdoor Theater

◆ Occupied by 20 or more persons on at least 5 days week for 10 weeks in any 12-month period





# Class 3 – Small well defined area

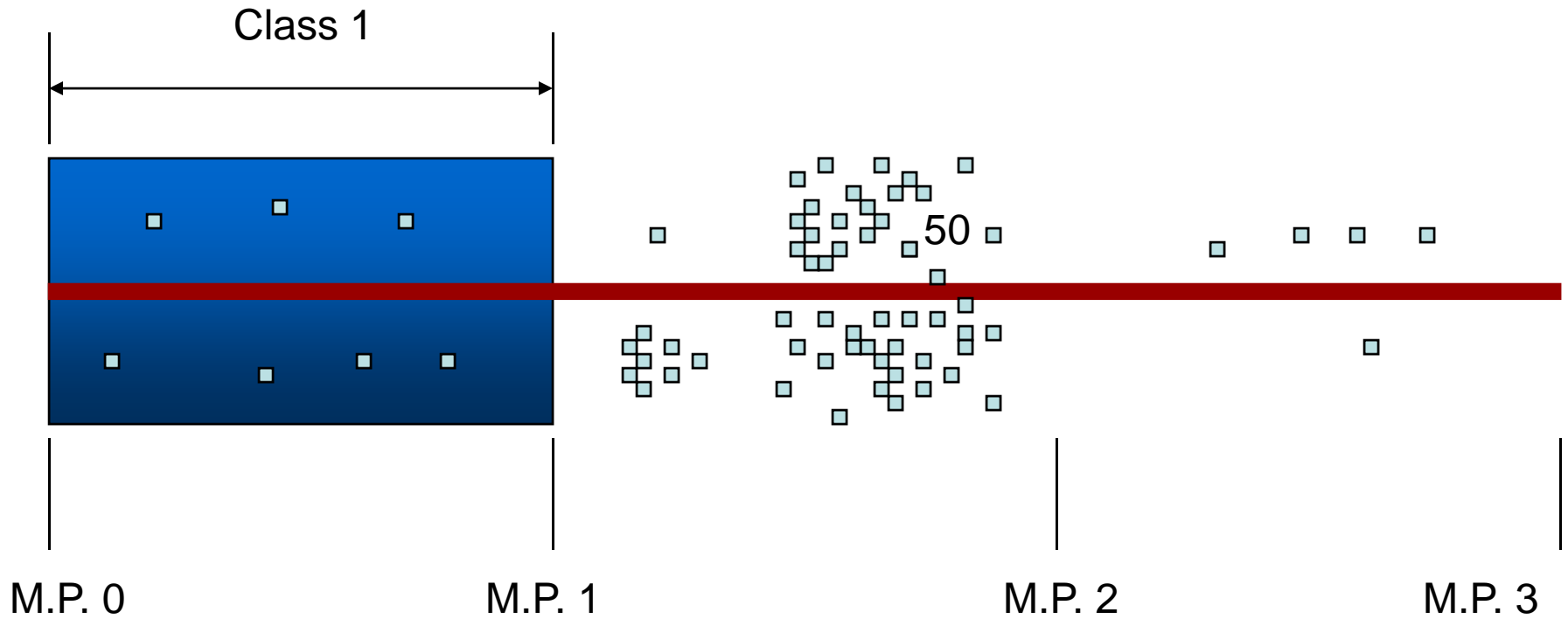


**20 or more persons, any five days of the week,  
any ten weeks in a 12-month period**

# Class Location Unit (gas)

*Class 4* - where buildings with four or more stories aboveground are prevalent.



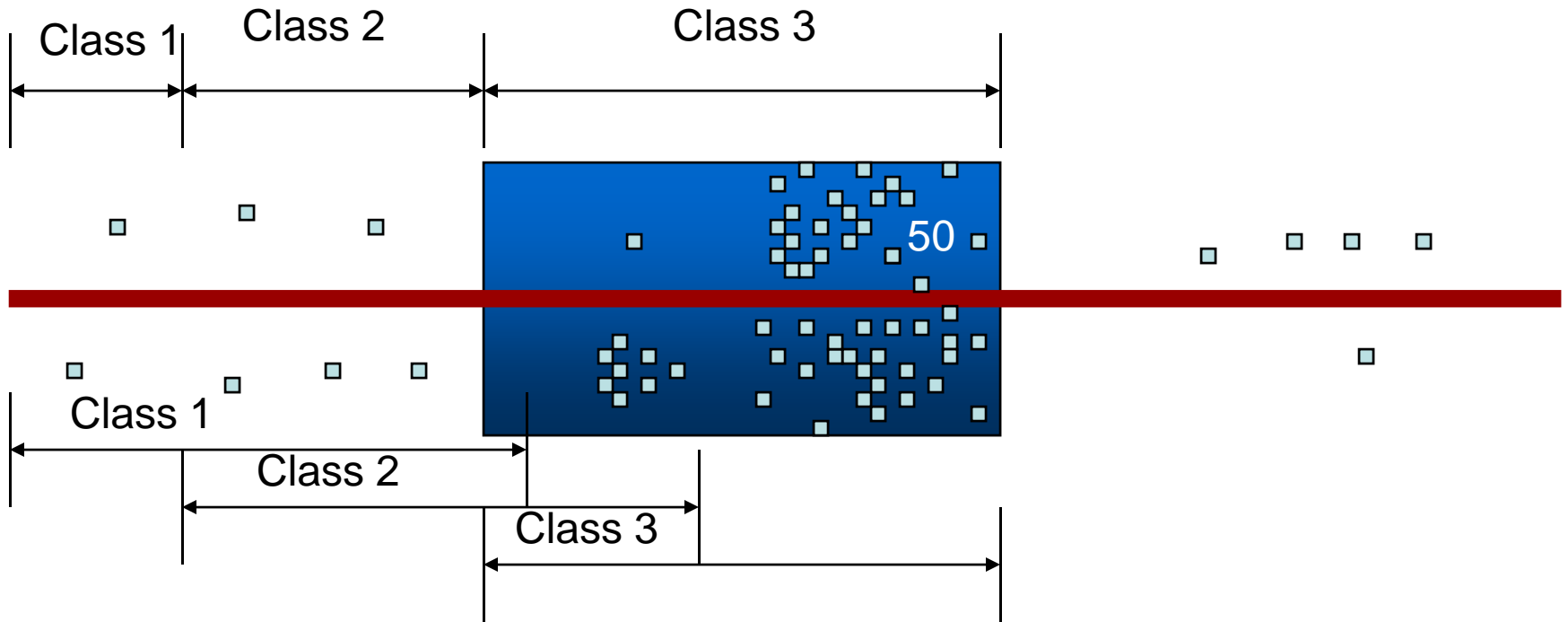


## Continuous Sliding Mile



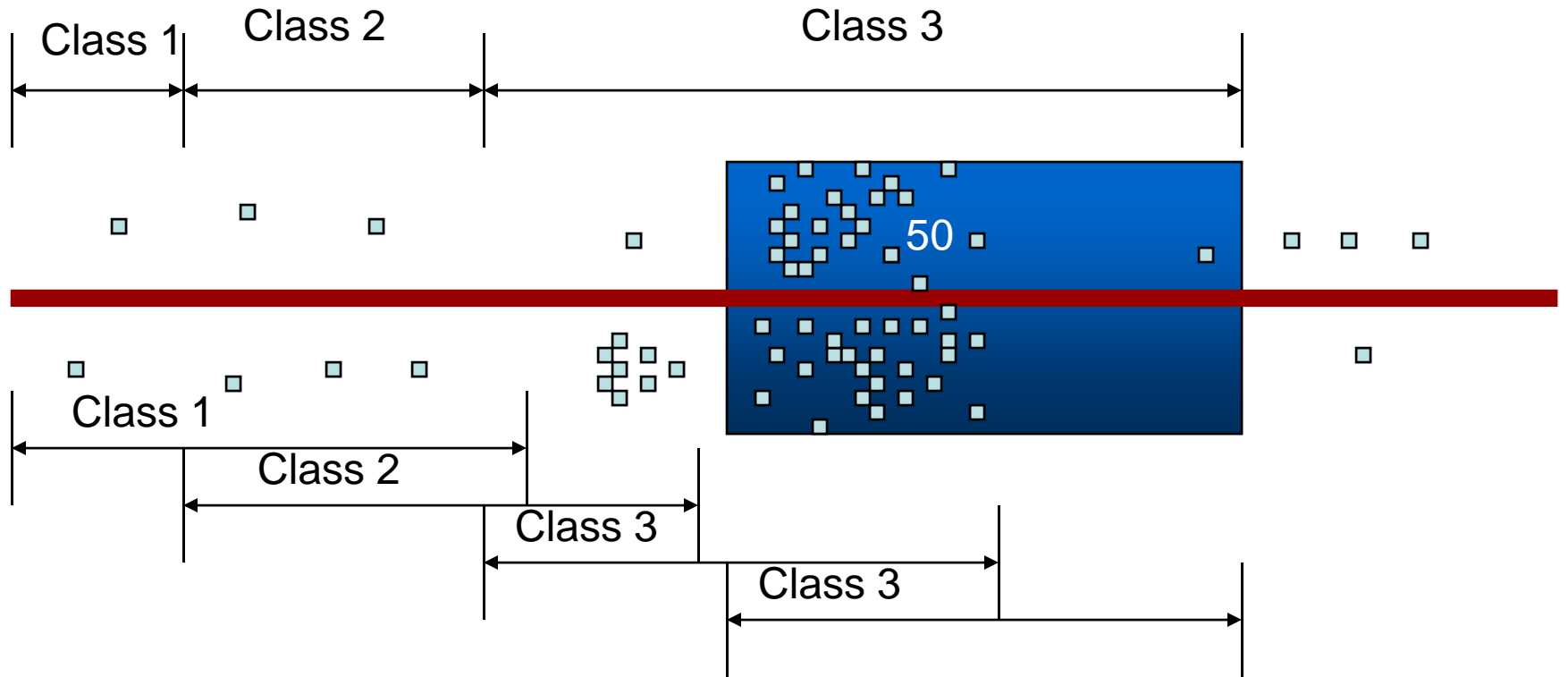


# Continuous Sliding Mile



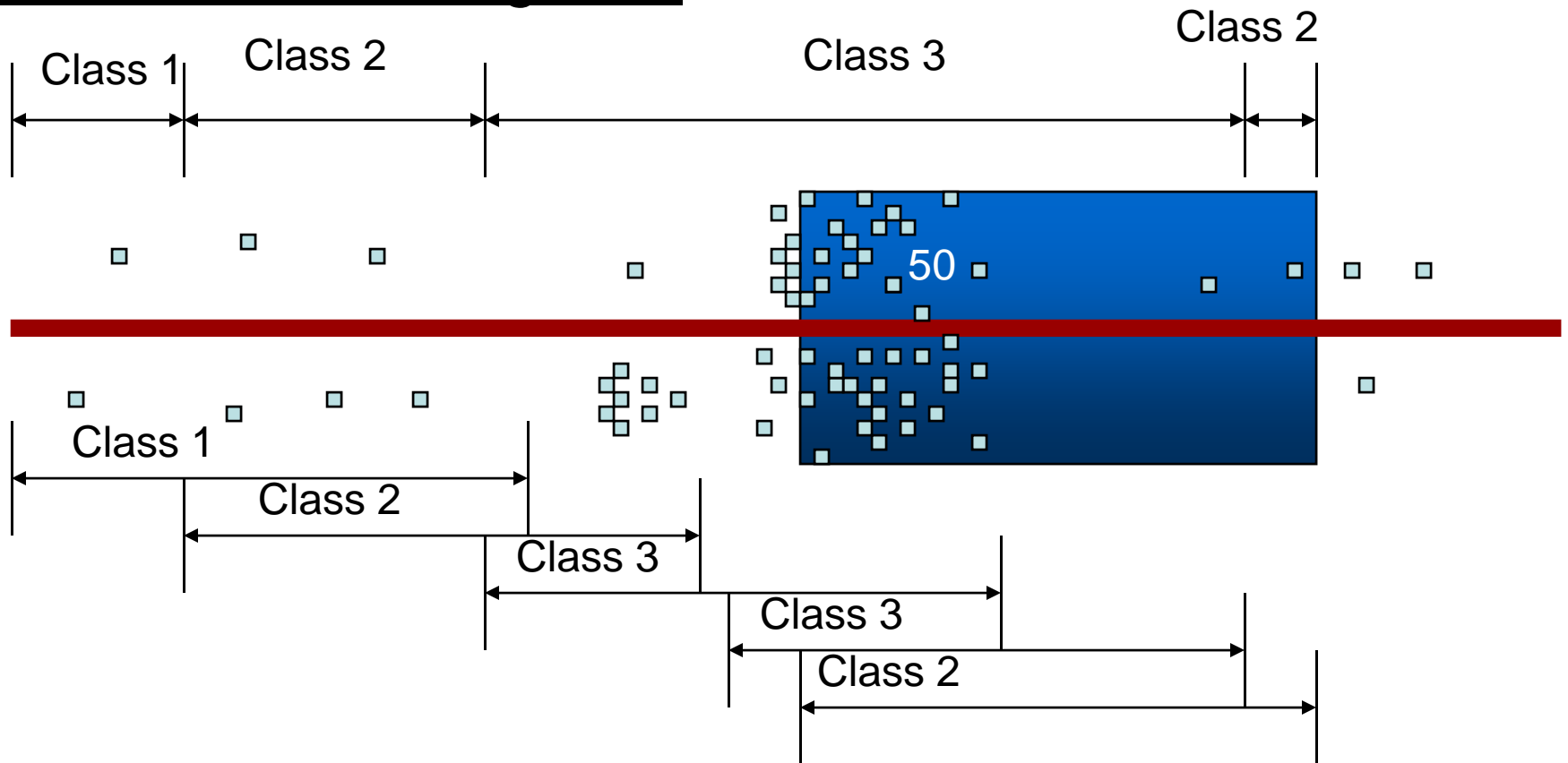


# Continuous Sliding Mile

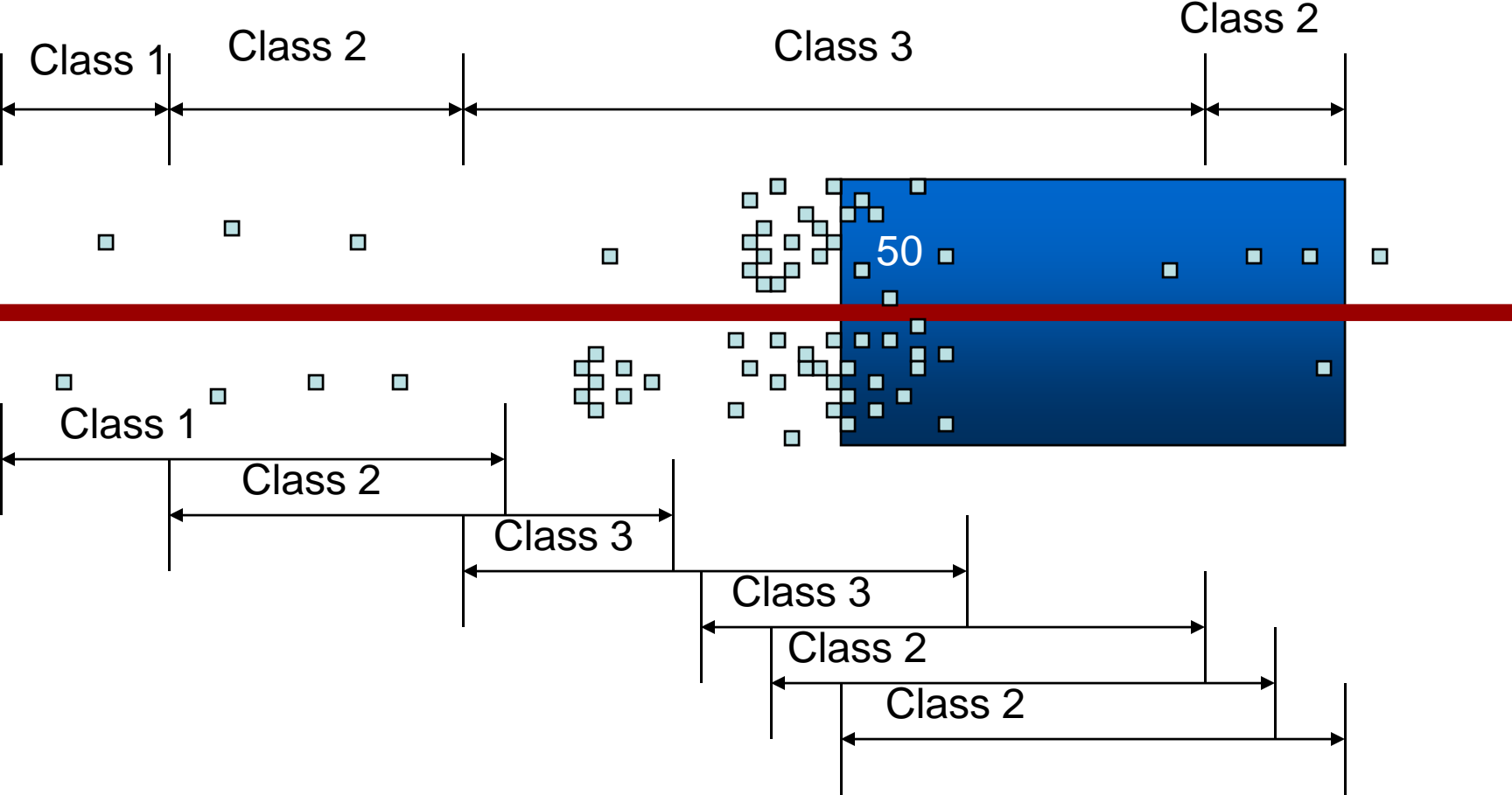




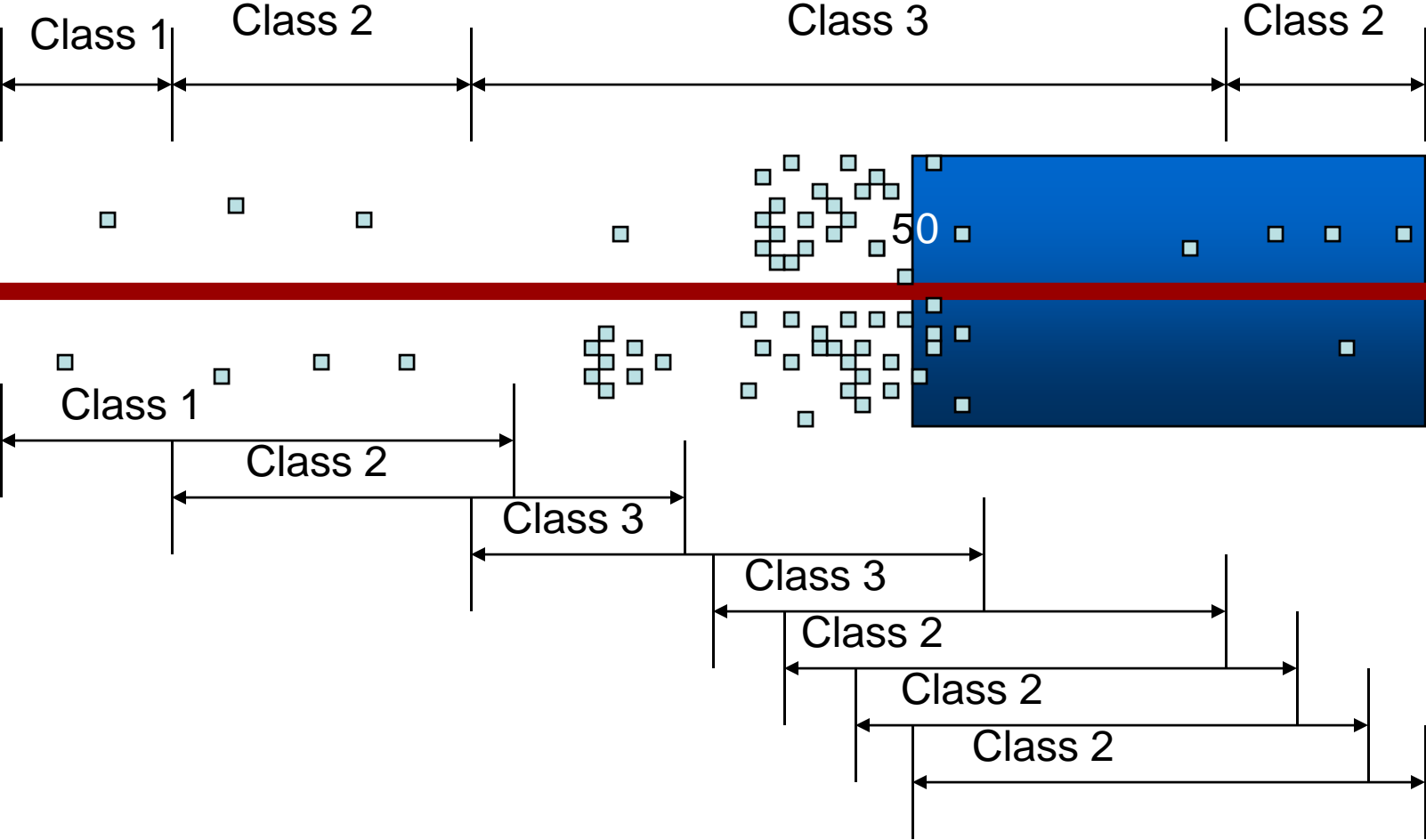
# Continuous Sliding Mile



# Continuous Sliding Mile

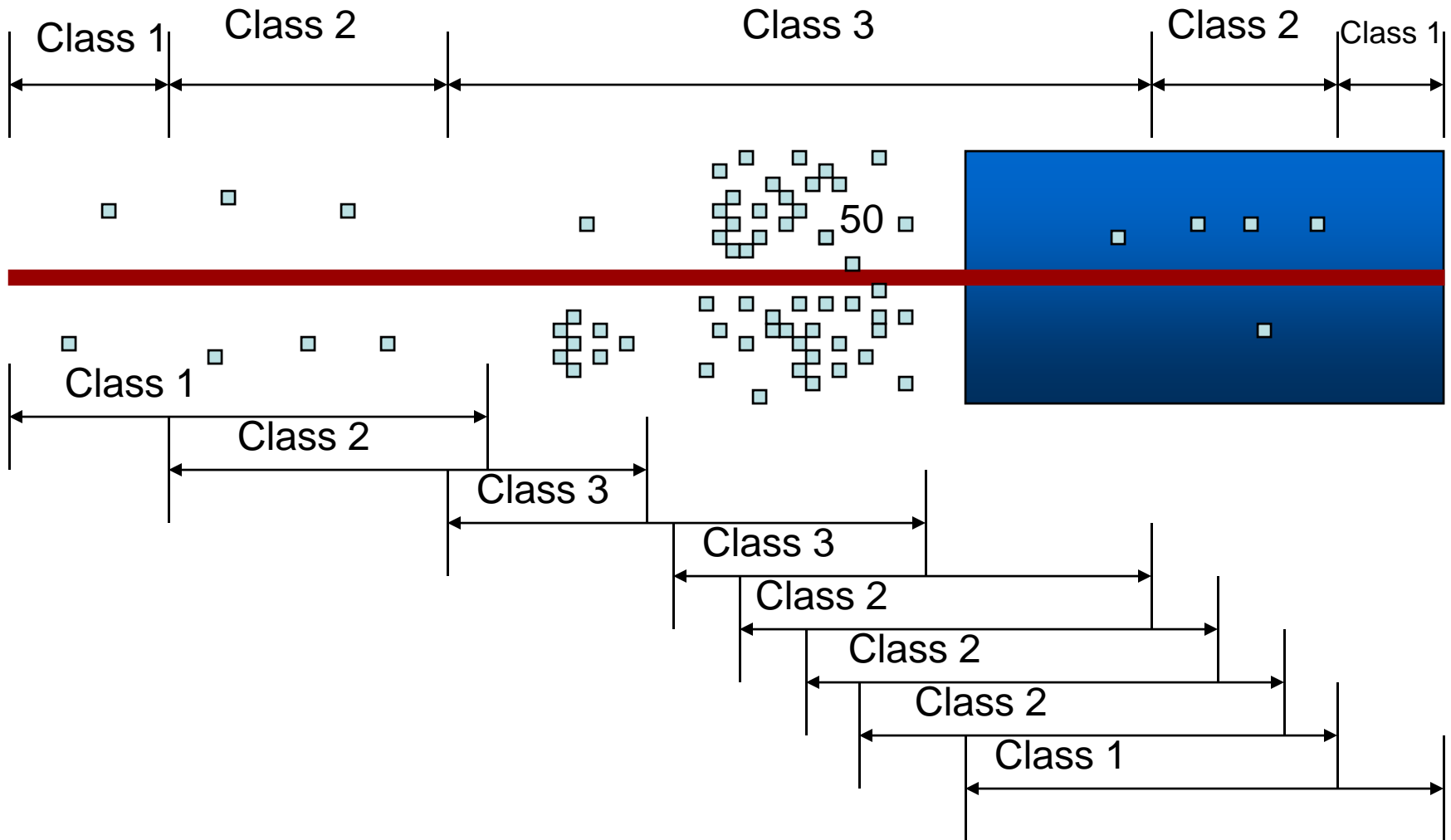


# Continuous Sliding Mile



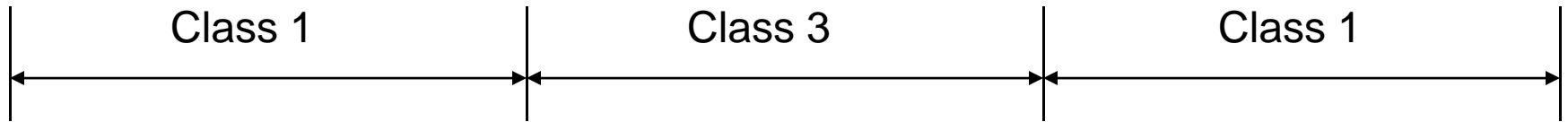
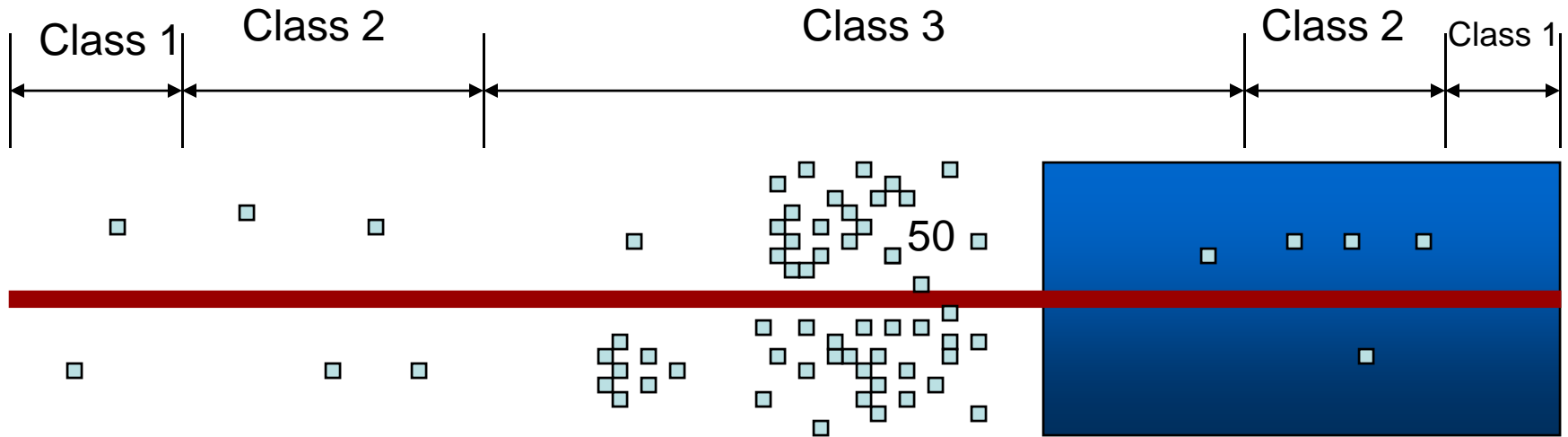


# Continuous Sliding Mile





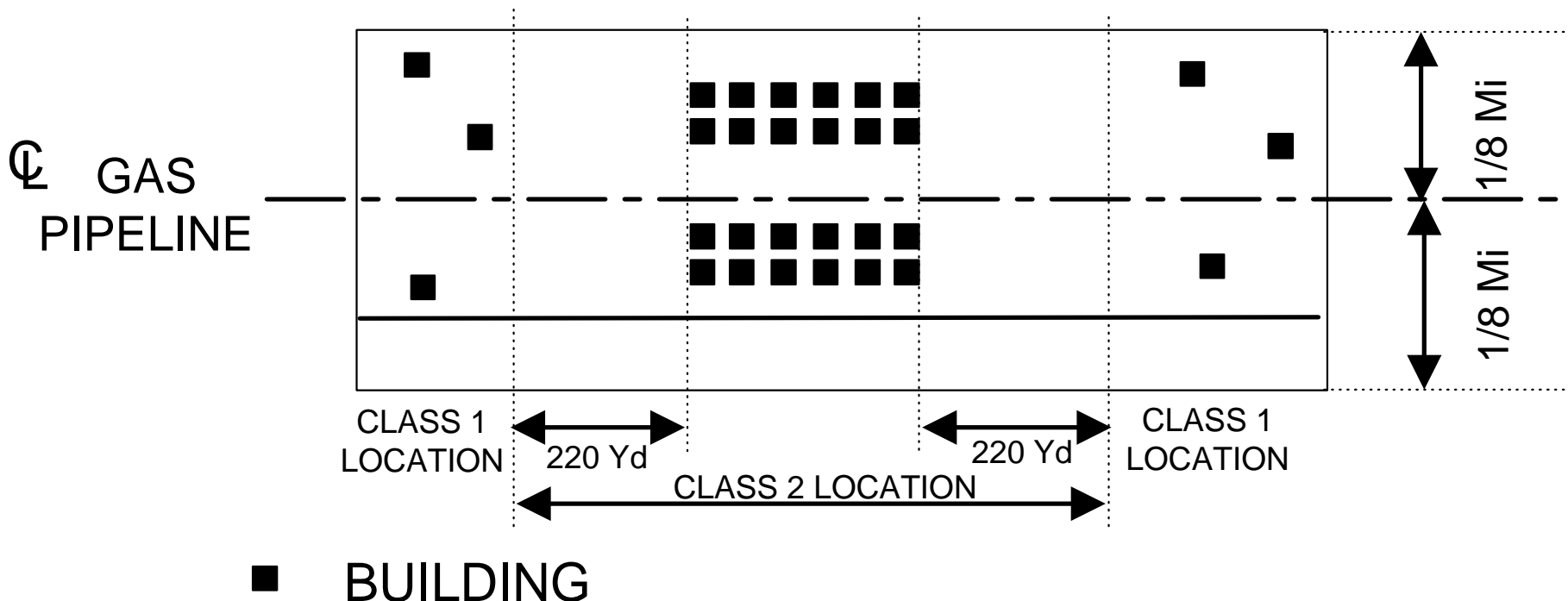
# Continuous Sliding Mile



End to End Mile

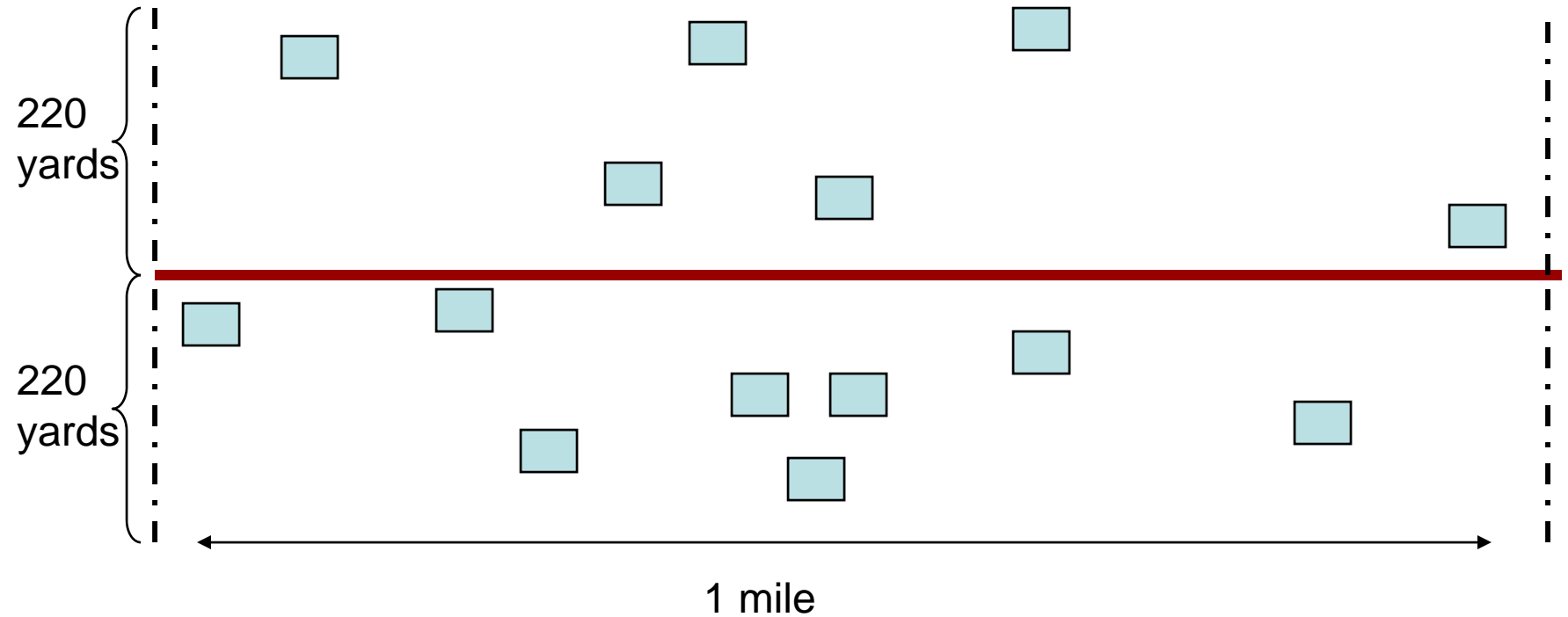
# Class Location Buffers

Class 2 and 3 locations end 220 yards from the nearest building in the cluster of buildings that require the class location.





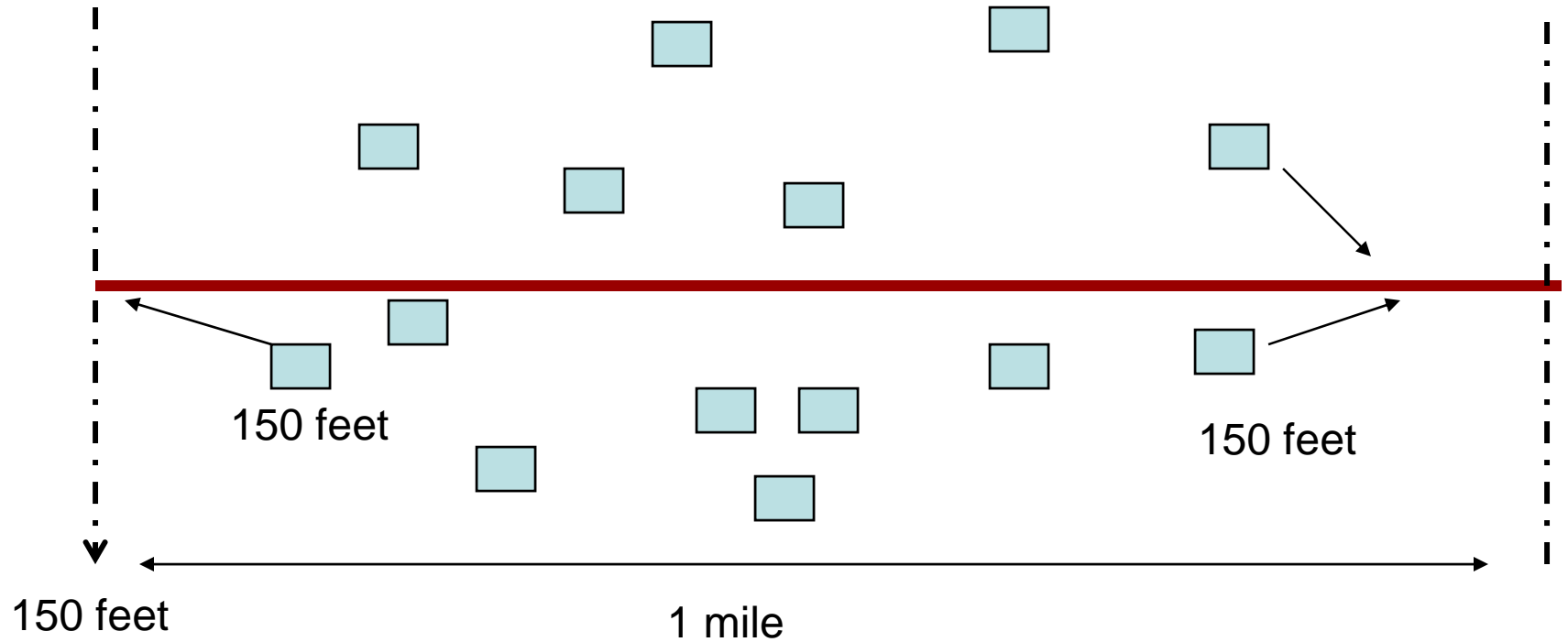
# Type B – Low Stress Class 2(a)





# Type B – Low Stress Class 2(b)

150 feet





**RCP**

Professional Engineers. Regulatory Experts. Trusted Partners.

**THANK YOU**

**QUESTIONS???**