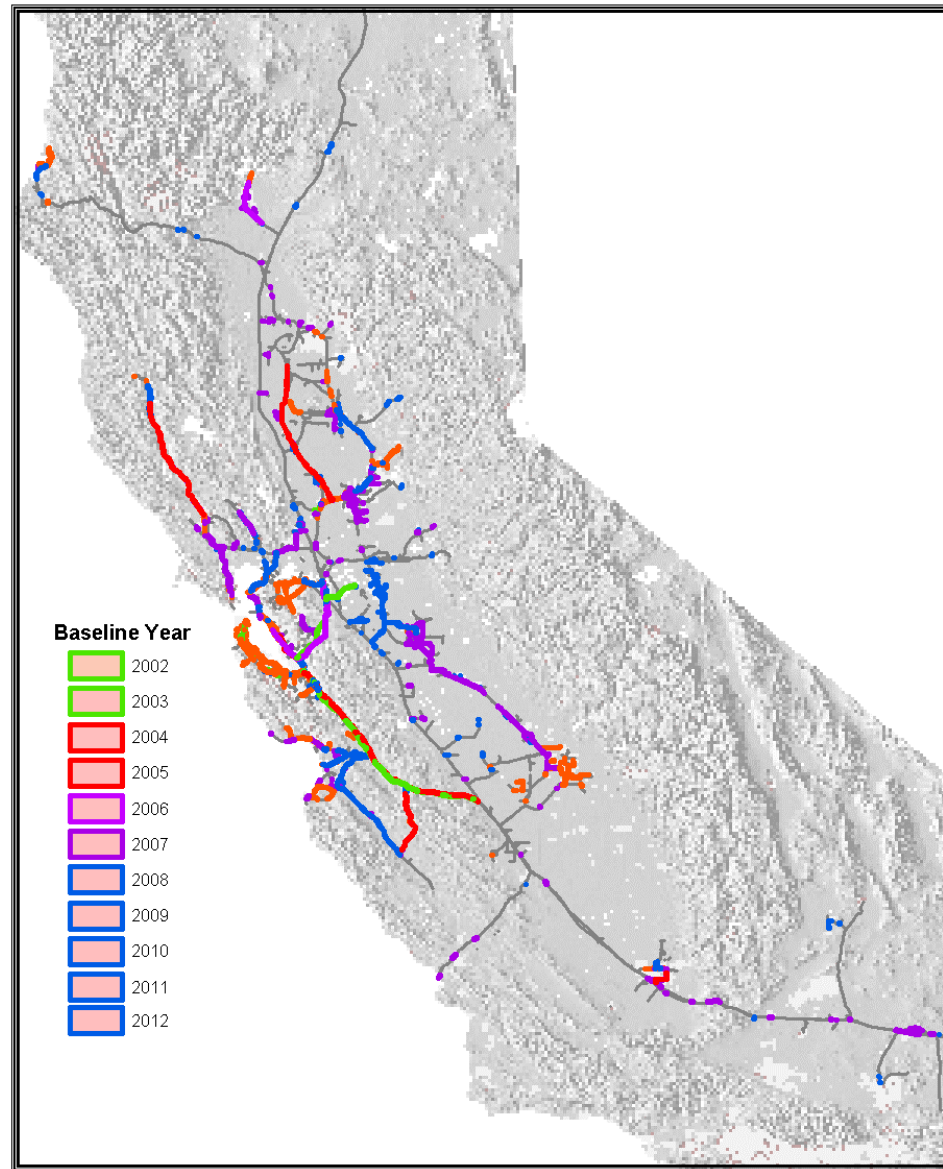


# Segments Outside HCAs

Andy Drake  
Director - Codes, Metallurgical Services & QA  
Duke Energy Gas Transmission

Chairman, INGAA Pipeline Safety Committee &  
Integrity Task Team

# PG&E Baseline Inspection Plan



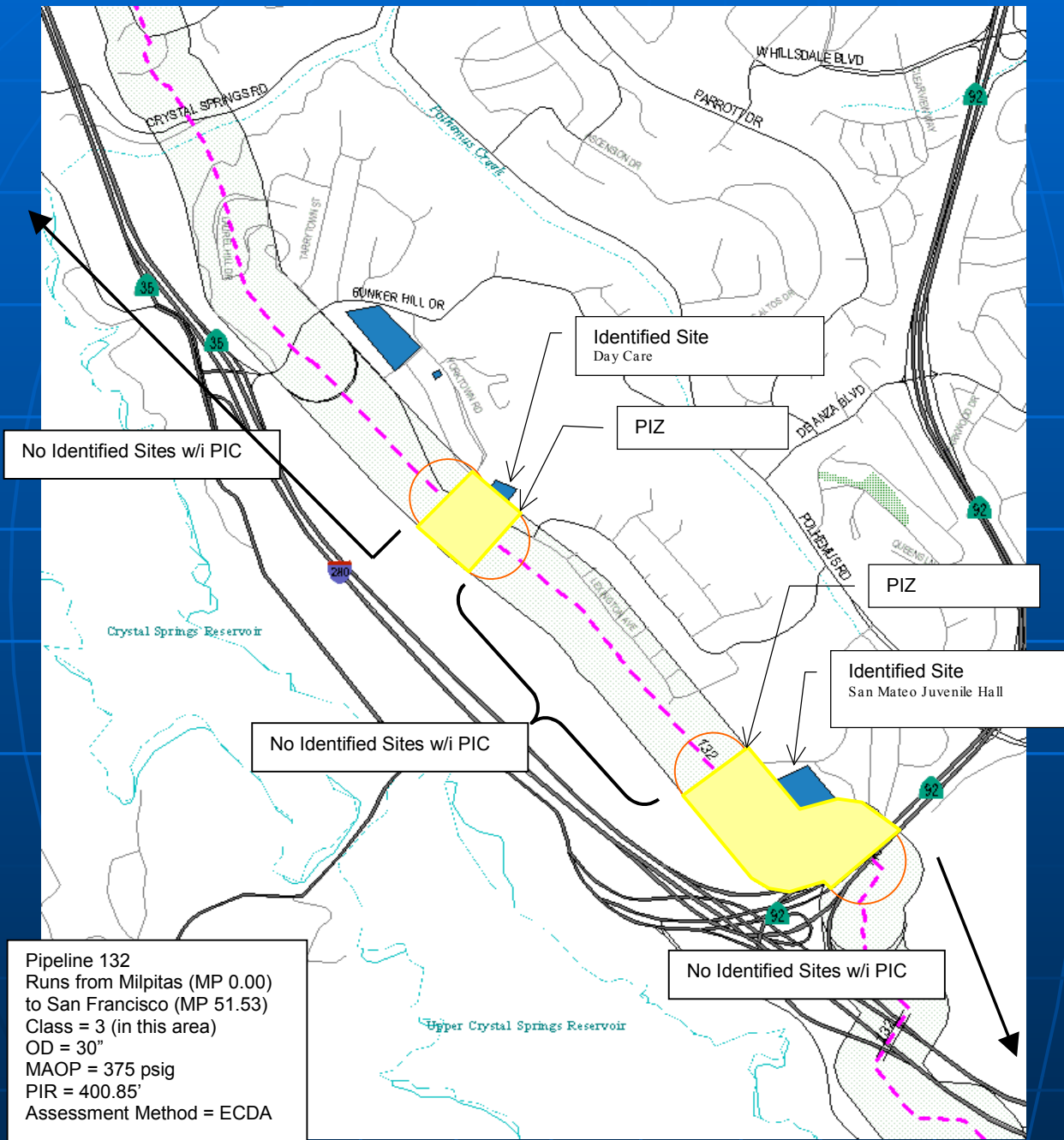
April 14, 2003

# Overall Scope

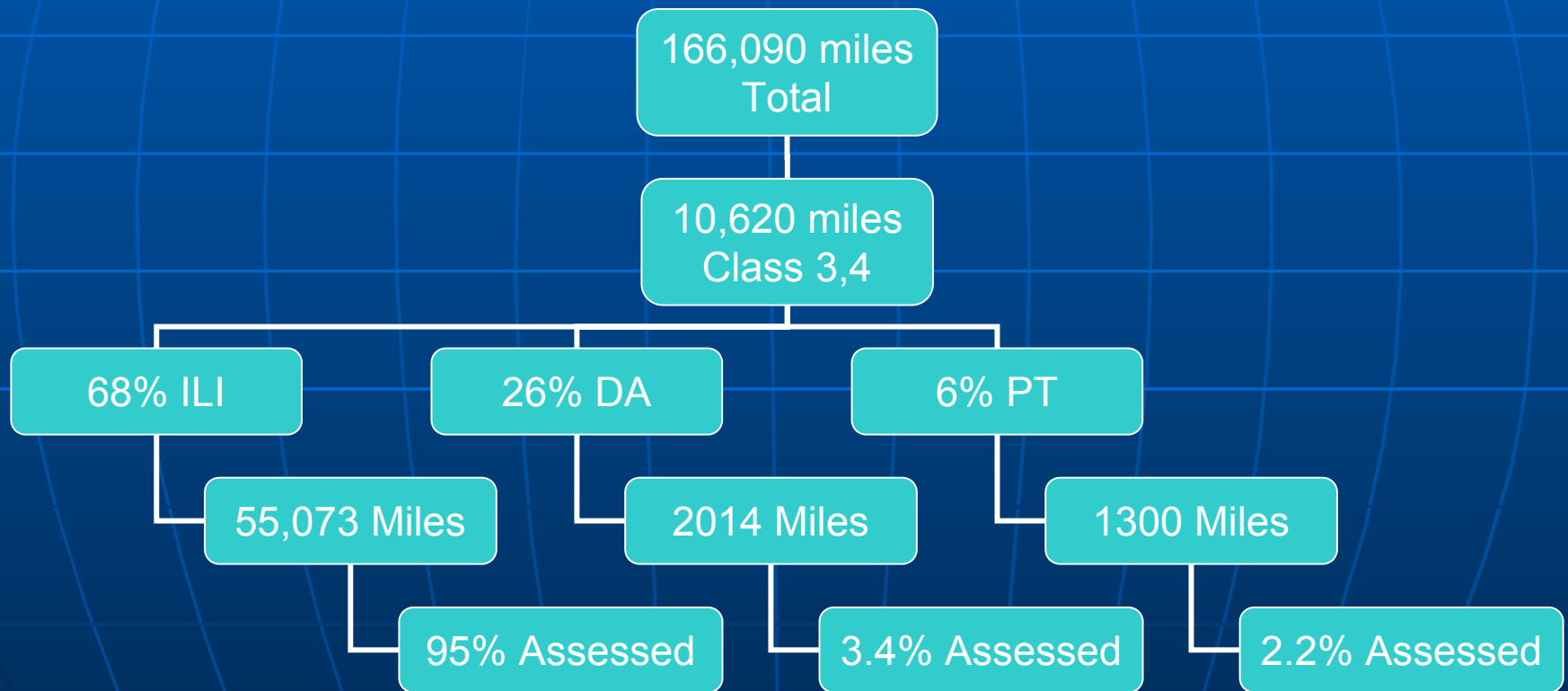
**2192 miles to assess 1673 miles of “covered” transmission lines**

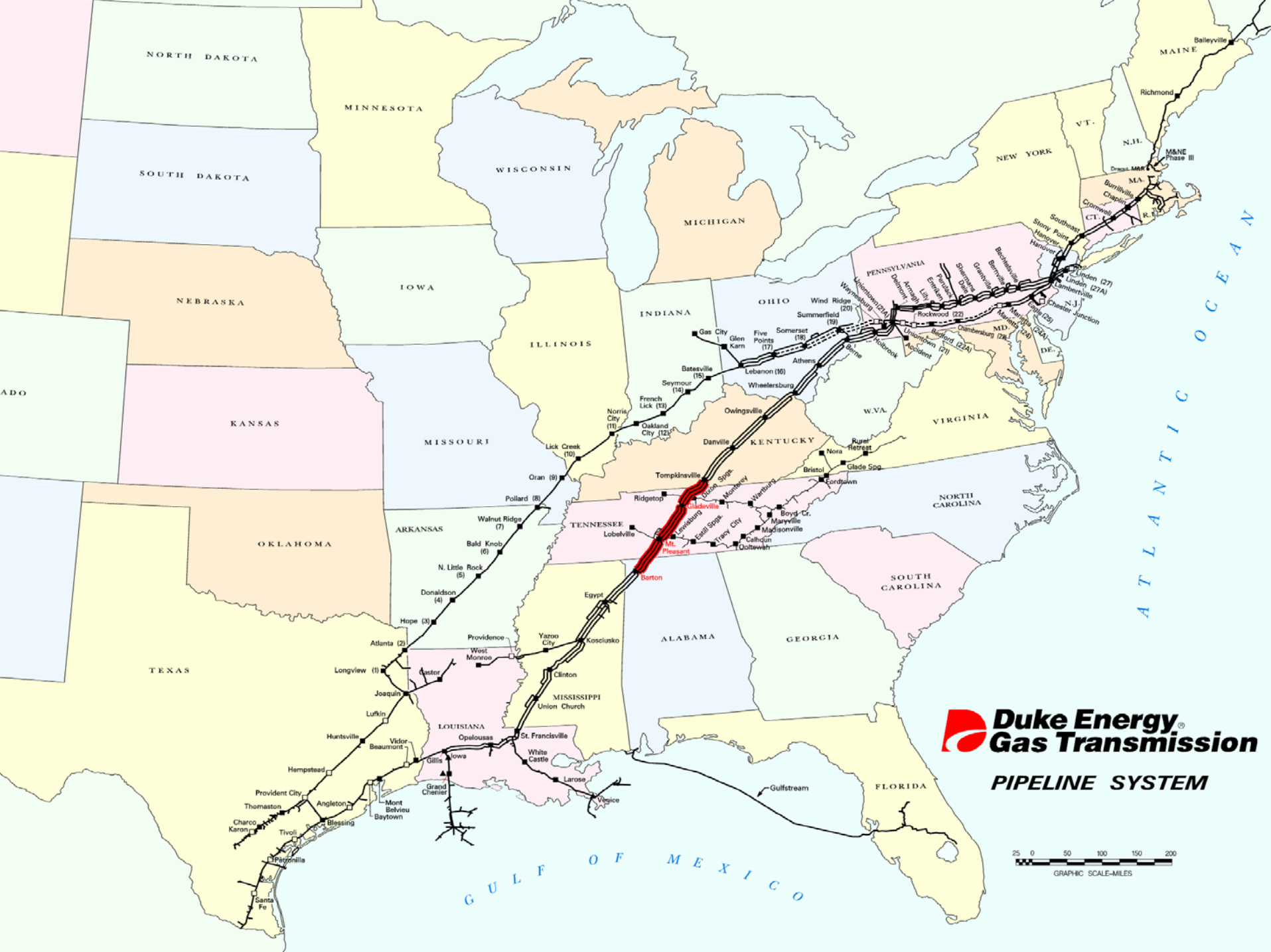
- ⇒ **1,213 miles of DA**
- ⇒ **394 miles assessed during 913 miles of ILI**
- ⇒ **60 miles of Pressure Testing or Reduction**
- ⇒ **6.5 miles of Pipeline Replacement**

## Identified Sites in Class 3



# Prediction of INGAA Pipe Assessed

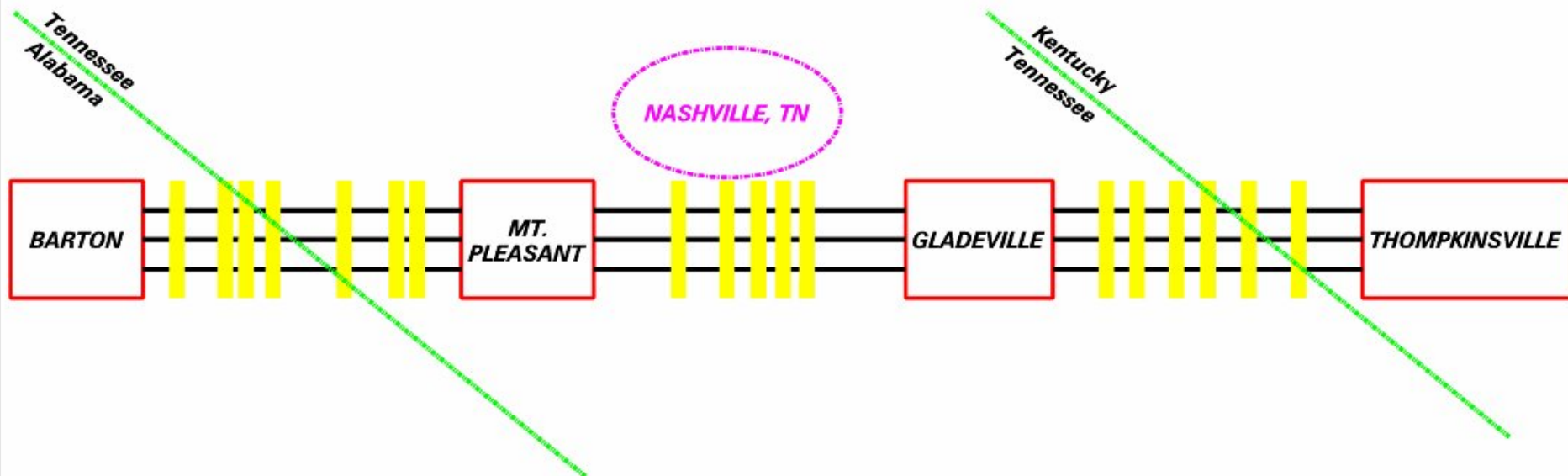




**Duke Energy**  
**Gas Transmission**  
**PIPELINE SYSTEM**



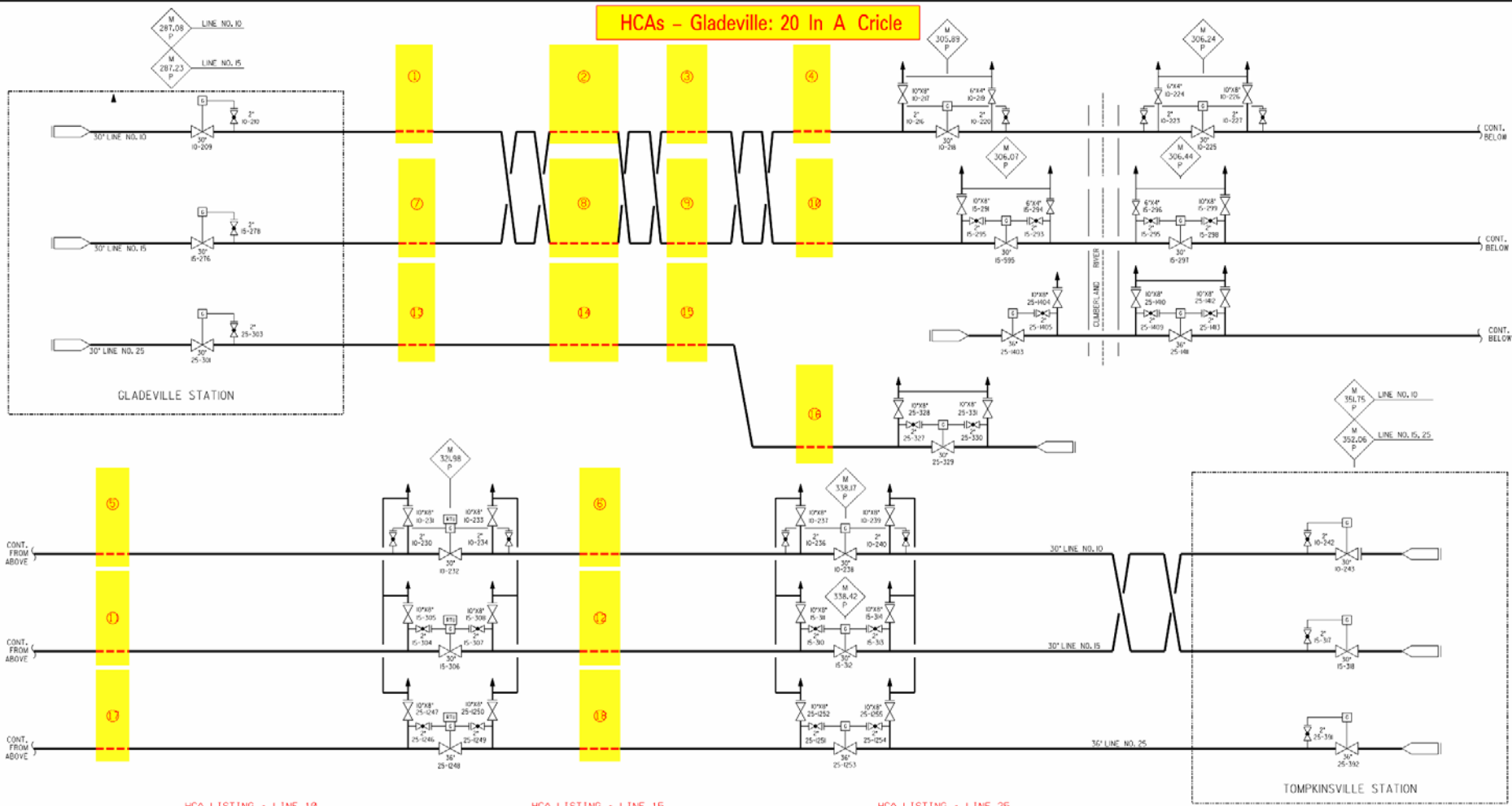
# ***Duke Energy Gas Transmission HCA Sites***



***17 Total Miles of HCA's from 603 Pipeline Miles (3%)***



# HCAs - Gladeville: 20 In A Circle



## HCA LISTING - LINE 10

1	MP 290.71 TO MP 290.86	- .15 MI.
2	MP 292.89 TO MP 293.80	- .91 MI.
3	MP 290.15 TO MP 290.67	- .52 MI.
4	MP 300.24 TO MP 300.28	- .04 MI.
5	MP 309.31 TO MP 309.46	- .15 MI.
6	MP 322.11 TO MP 322.18	- .07 MI.

## HCA LISTING - LINE 15

7	MP 290.87 TO MP 291.02	- .15 MI.
8	MP 293.04 TO MP 294.05	- 1.01 MI.
9	MP 290.31 TO MP 290.02	- .51 MI.
10	MP 300.41 TO MP 300.45	- .04 MI.
11	MP 309.51 TO MP 309.65	- .14 MI.
12	MP 322.35 TO MP 322.42	- .07 MI.

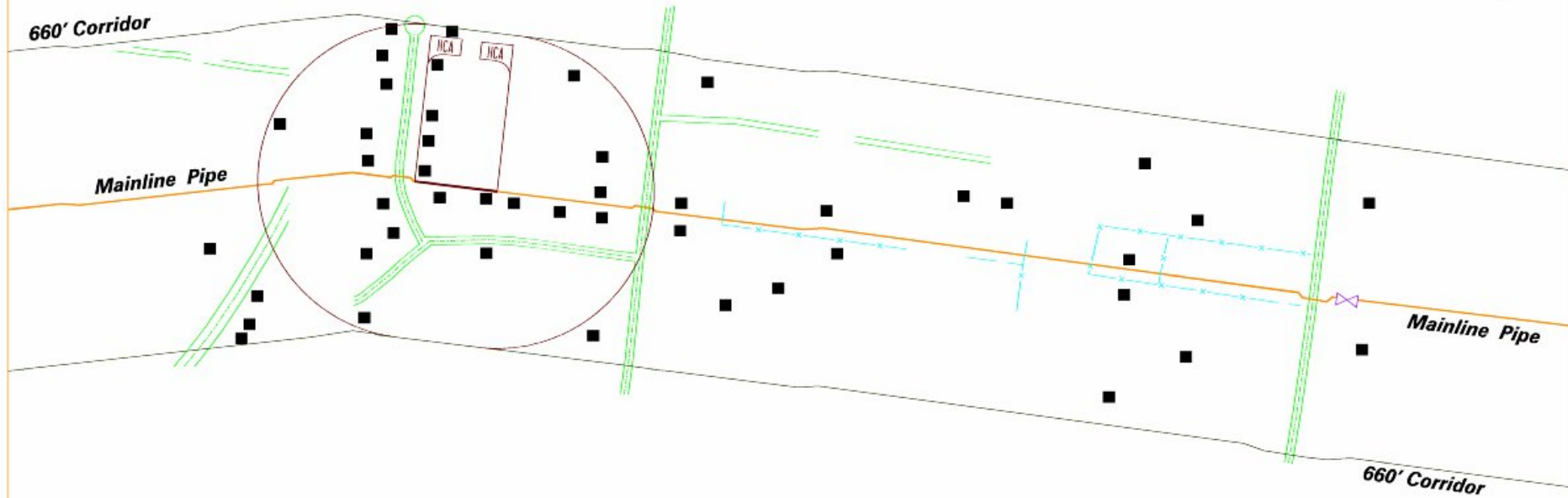
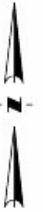
## HCA LISTING - LINE 25

13	MP 290.87 TO MP 291.02	- .15 MI.
14	MP 293.06 TO MP 294.08	- 1.02 MI.
15	MP 290.31 TO MP 290.02	- .51 MI.
16	MP 300.41 TO MP 300.45	- .04 MI.
17	MP 309.50 TO MP 309.66	- .16 MI.
18	MP 322.35 TO MP 322.43	- .08 MI.



# Structure Density Equals 20 Example 1

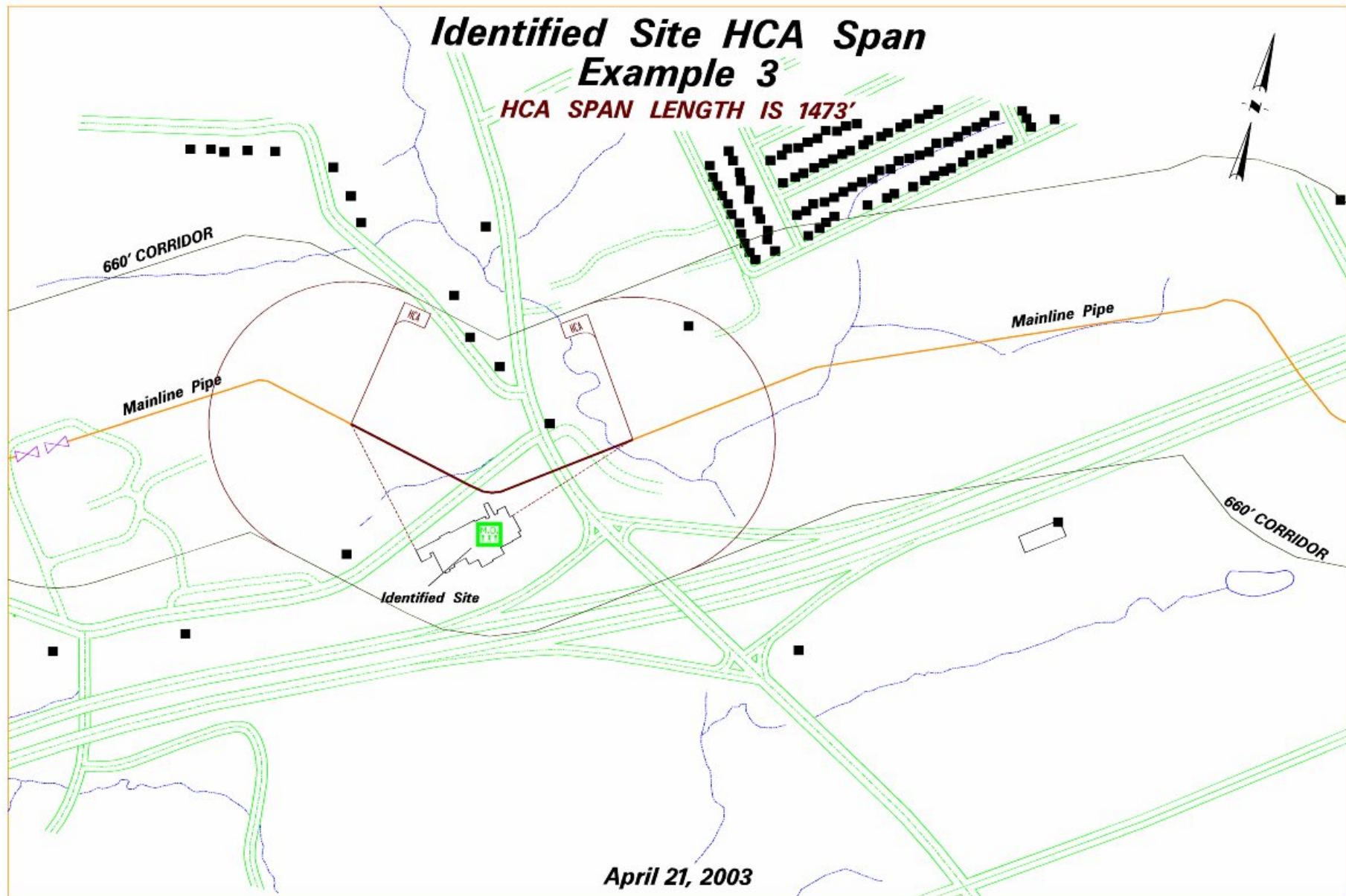
HCA SPAN LENGTH IS 325'



April 21, 2003

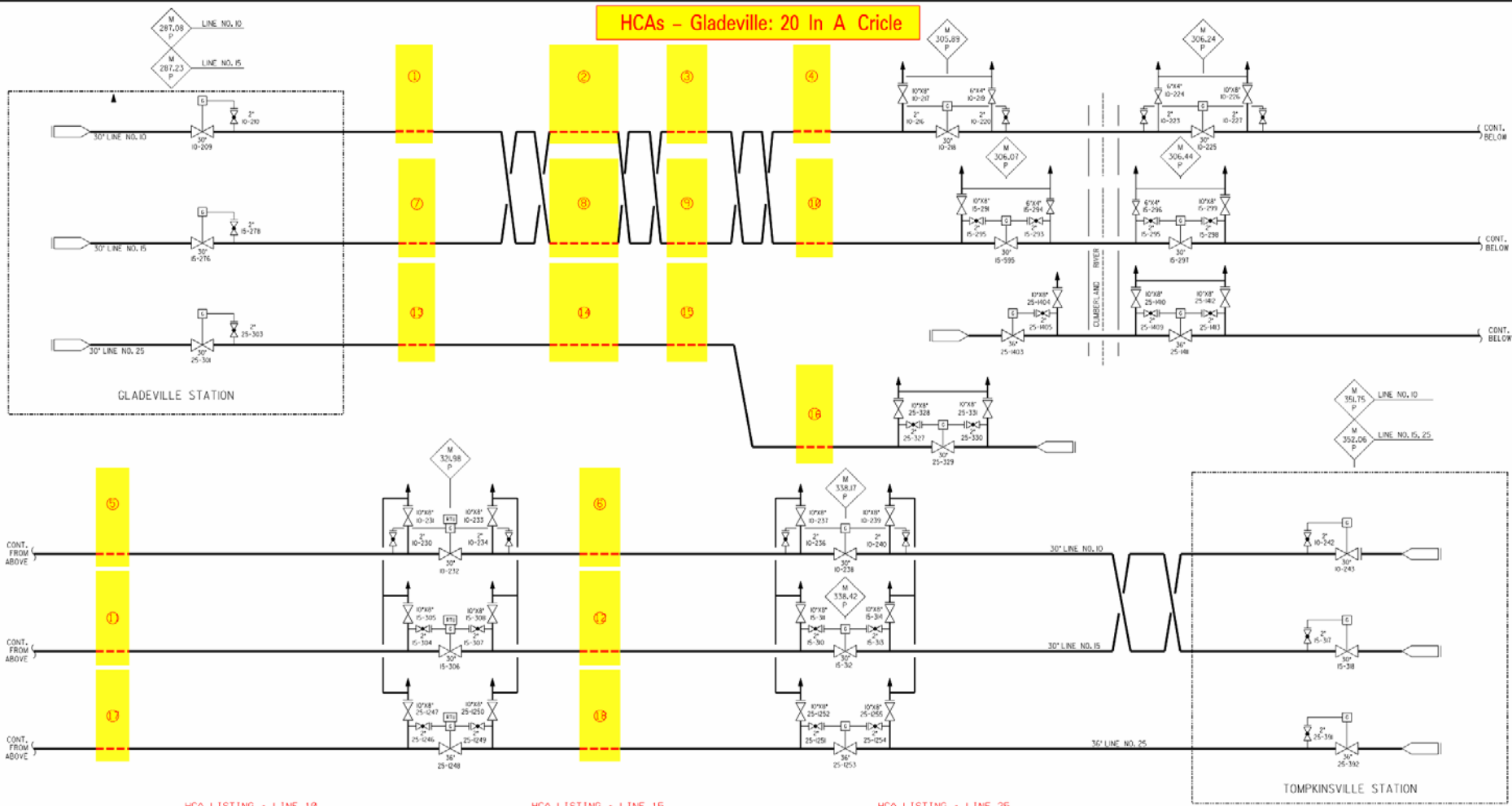
# Identified Site HCA Span Example 3

HCA SPAN LENGTH IS 1473'



April 21, 2003

# HCAs - Gladeville: 20 In A Circle



HCA LISTING - LINE 10

1	MP 290.71 TO MP 290.86	- .15 MI.
2	MP 292.89 TO MP 293.80	- .91 MI.
3	MP 290.15 TO MP 290.67	- .52 MI.
4	MP 300.24 TO MP 300.28	- .04 MI.
5	MP 309.31 TO MP 309.46	- .15 MI.
6	MP 322.11 TO MP 322.18	- .07 MI.

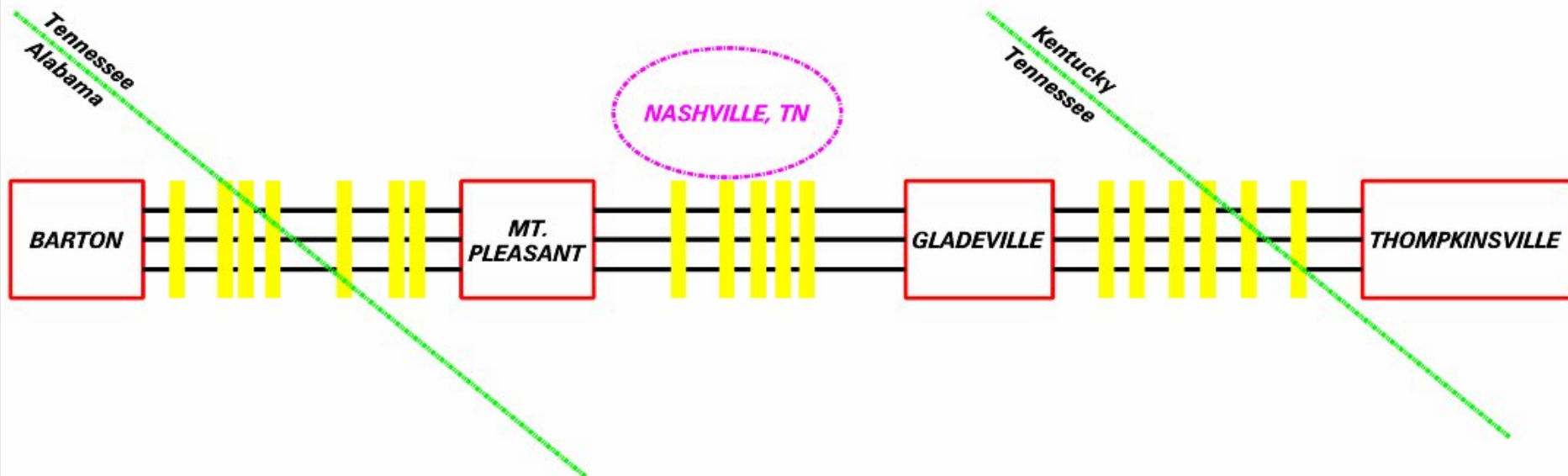
HCA LISTING - LINE 15

7	MP 290.87 TO MP 291.02	- .15 MI.
8	MP 293.04 TO MP 294.05	- 1.01 MI.
9	MP 290.31 TO MP 290.02	- .51 MI.
10	MP 300.41 TO MP 300.45	- .04 MI.
11	MP 309.51 TO MP 309.65	- .14 MI.
12	MP 322.35 TO MP 322.42	- .07 MI.

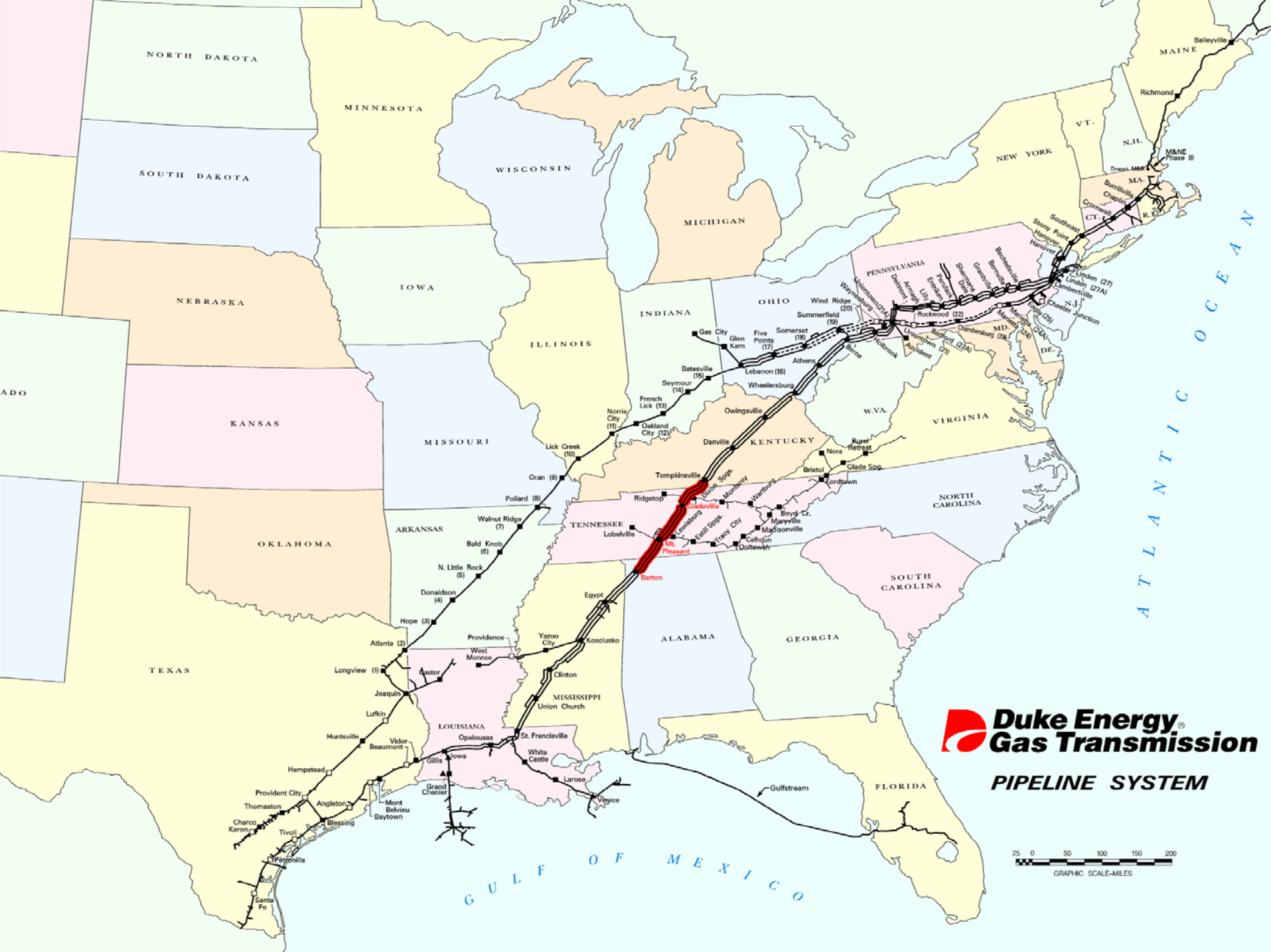
HCA LISTING - LINE 25

13	MP 290.87 TO MP 291.02	- .15 MI.
14	MP 293.06 TO MP 294.08	- 1.02 MI.
15	MP 290.31 TO MP 290.02	- .51 MI.
16	MP 300.41 TO MP 300.45	- .04 MI.
17	MP 309.50 TO MP 309.66	- .16 MI.
18	MP 322.35 TO MP 322.43	- .08 MI.

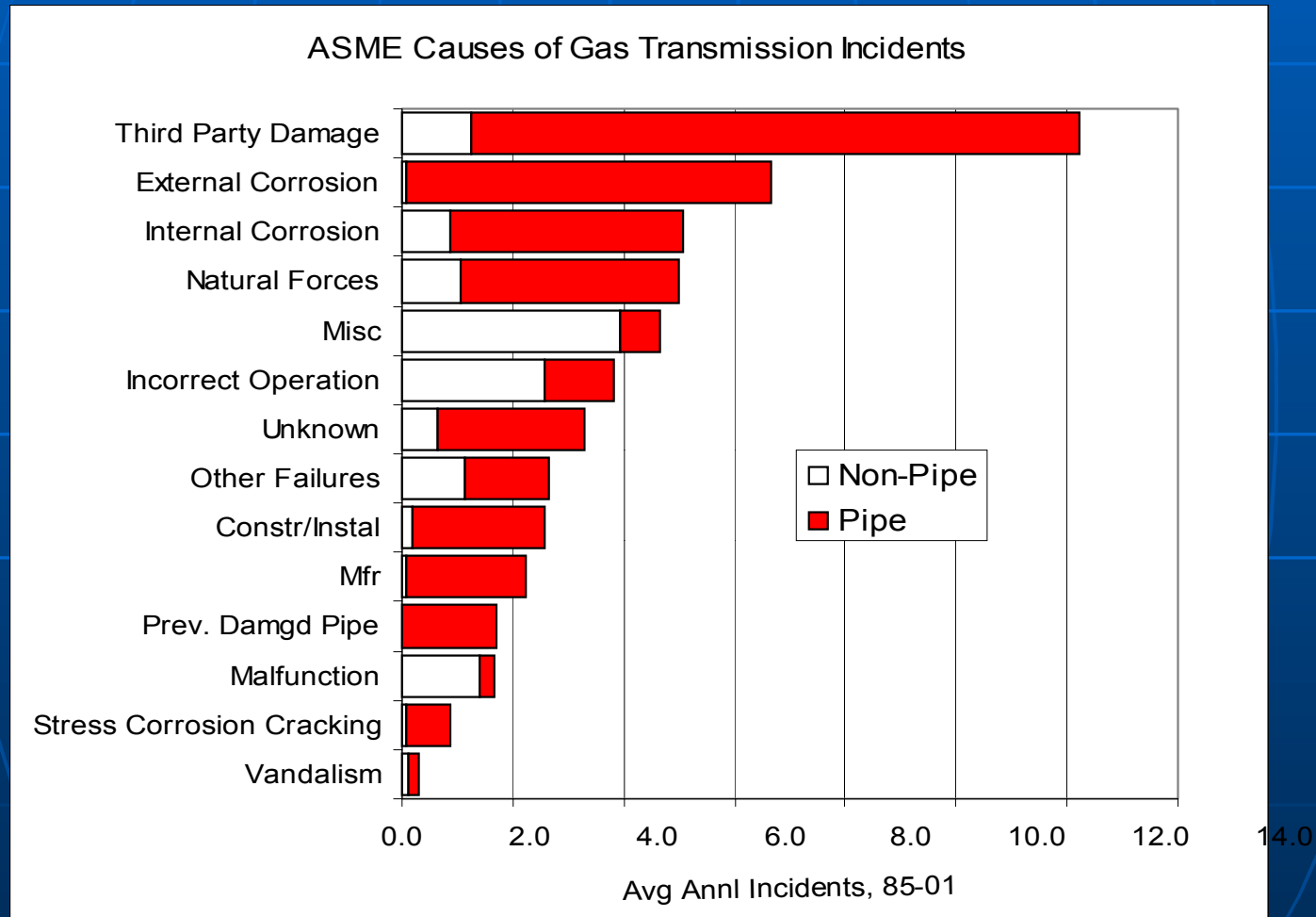
# ***Duke Energy Gas Transmission HCA Sites***



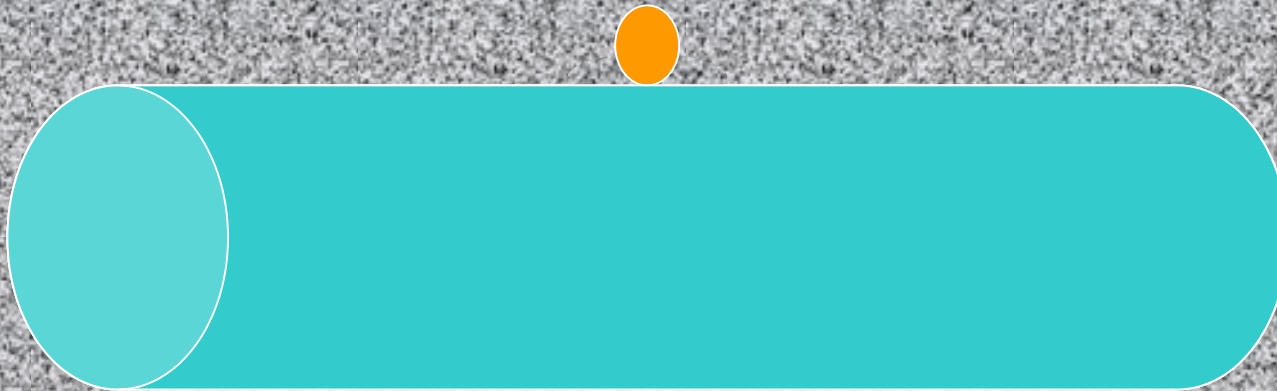
***17 Total Miles of HCA's from 603 Pipeline Miles (3%)***



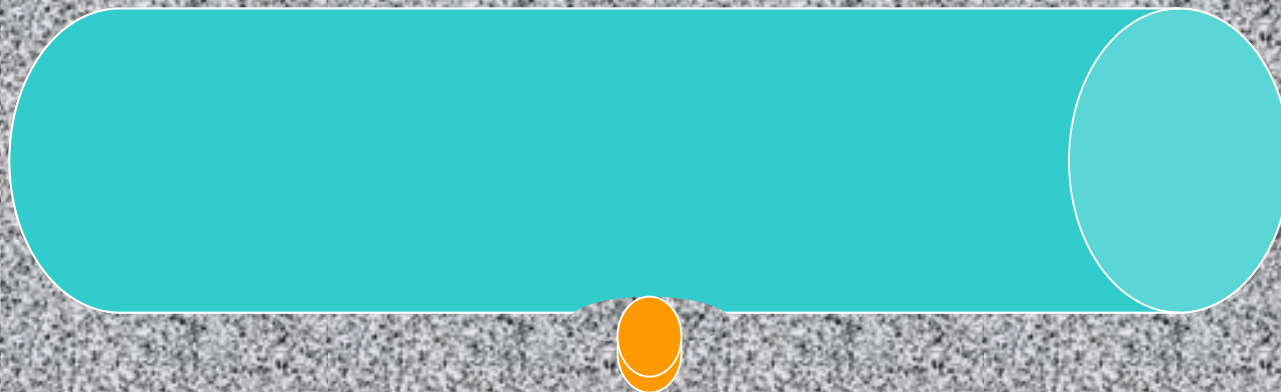
# Summary of Incident Causes







Unconstrained



Constrained



# OPS IMP Performance Metrics System

- Company ID
- Name
- Password

12345

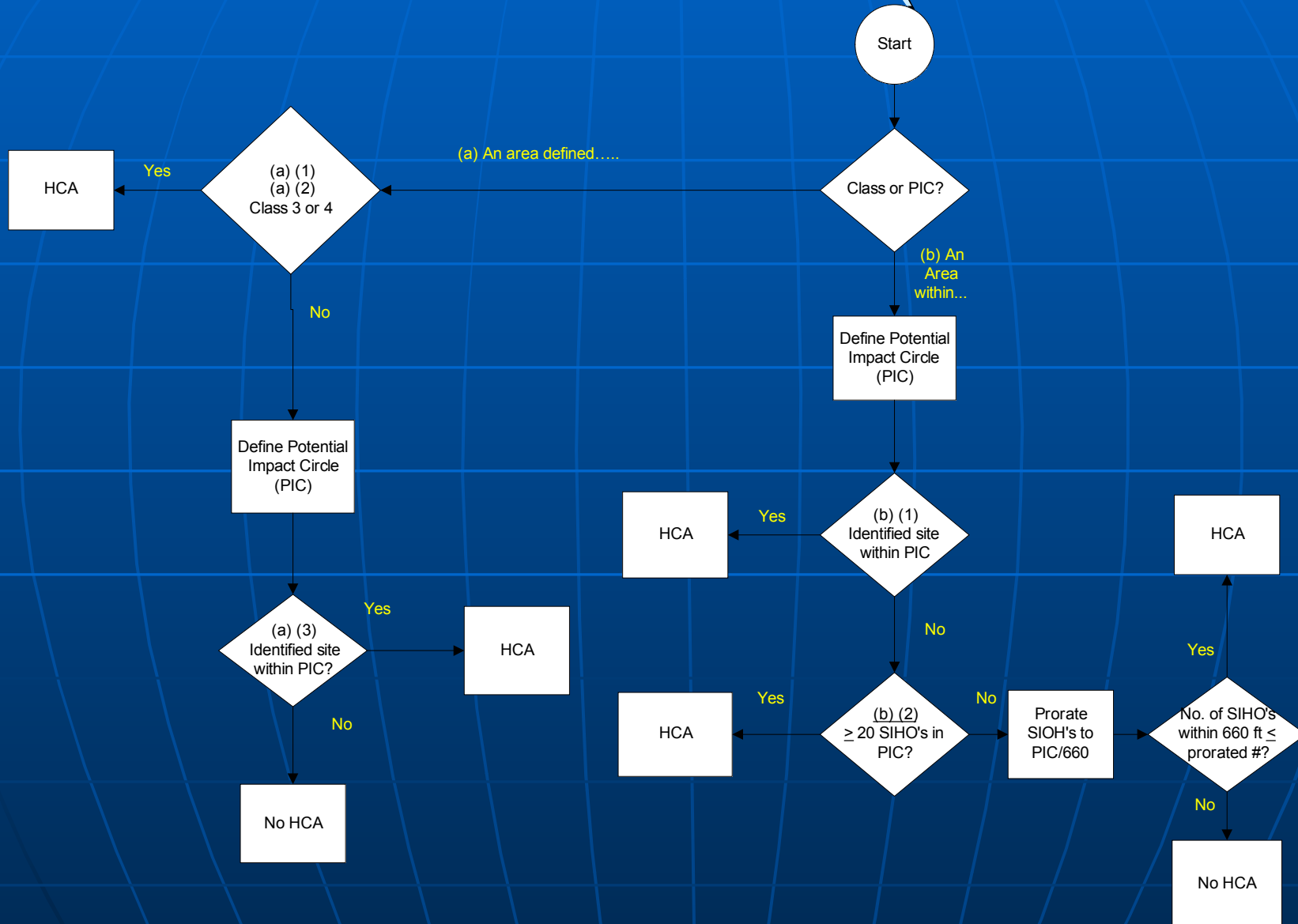
Joe Pipeliner

xxxxxxxxx

# OPS IMP Performance Metric System

■ Year	2003
■ Quarter	4
■ Miles of HCA Assessed	57
■ Immediate Defects Repaired	1
■ Scheduled Defects Repaired	4

# Alternate HCA Definition (INGAA/AGA)



# Model Validation - North American Incidents

