CH4 Connections
What's Going on Underground?

By Roger C. Carson II

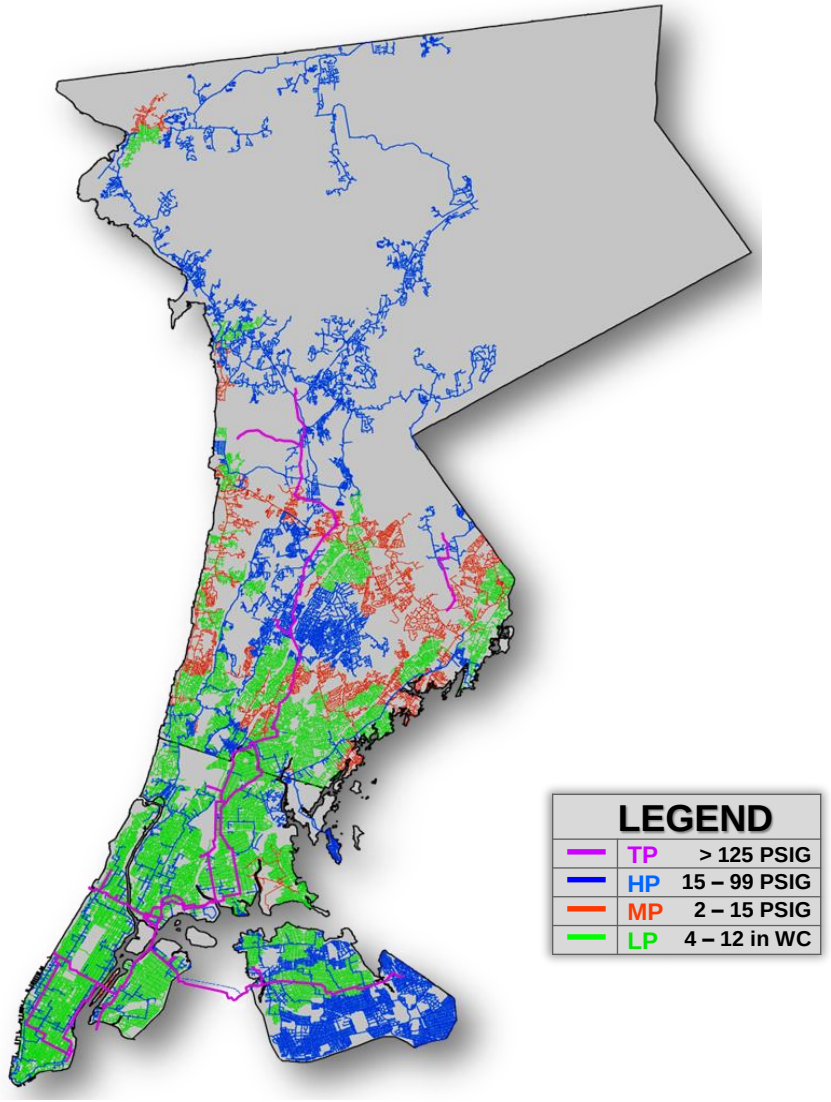
Operating Supervisor, Con Edison

Agenda

- Con Edison Gas System Overview
- Leak Detection
- Leak Response Time
- Gas Leak Backlog Management
- Leak Pinpointing
- So What's Going on Underground?
- Type 3 Example
- Type 1 Example
- Follow Up

Con Edison System Overview

- System
  - ~ 4300 mi – Distribution
  - ~ 100 mi - Transmission
- System Materials:
  - Cast Iron (~24%)
  - Steel (~30%)
    - Unprotected (~22%)
    - Protected (~8%)
  - Wrought Iron (Less than 1%)
  - Plastic (~46%)
- 1.1 Million Customers



Leak Detection
How we Receive leaks

- Leak Survey
  - Monthly Survey
  - Company/Contractor
  - Heath Detecto-Pak Infrared (DP-IR)
  - Picarro
  - ABB MobileGuard
- Natural Gas Detector
- Public

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Figure 1. Picarro System Hardware

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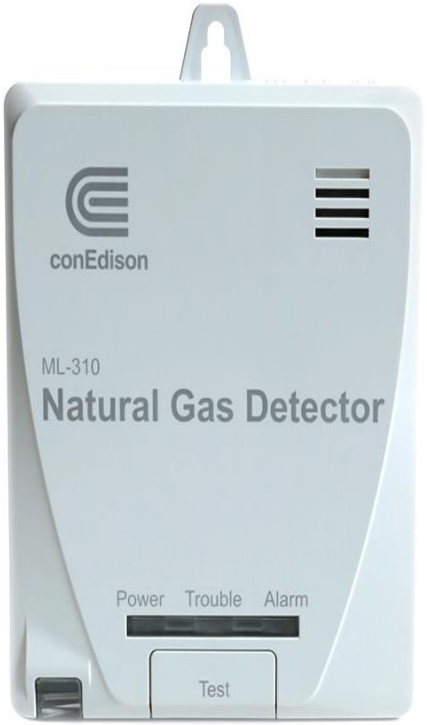
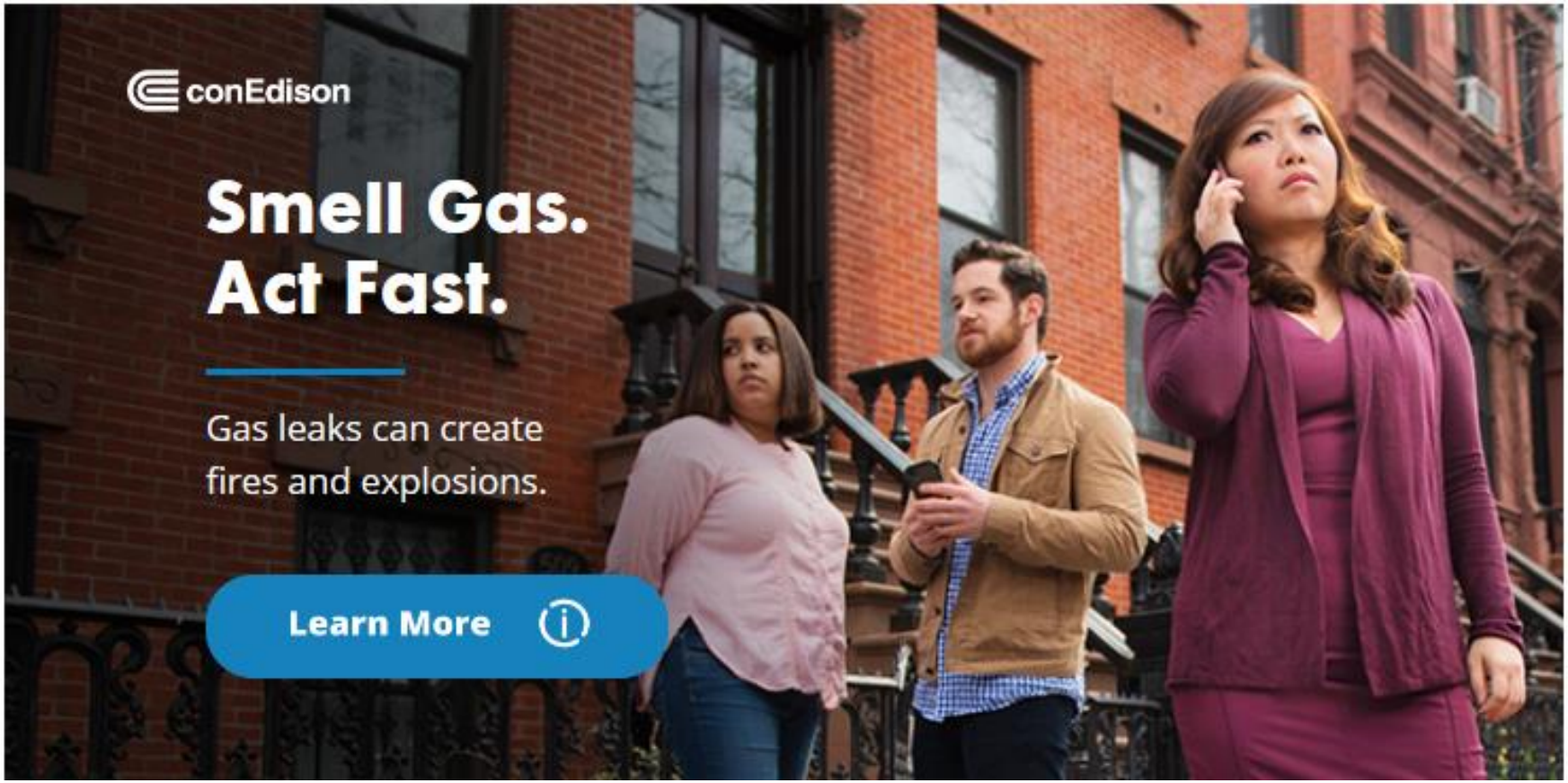


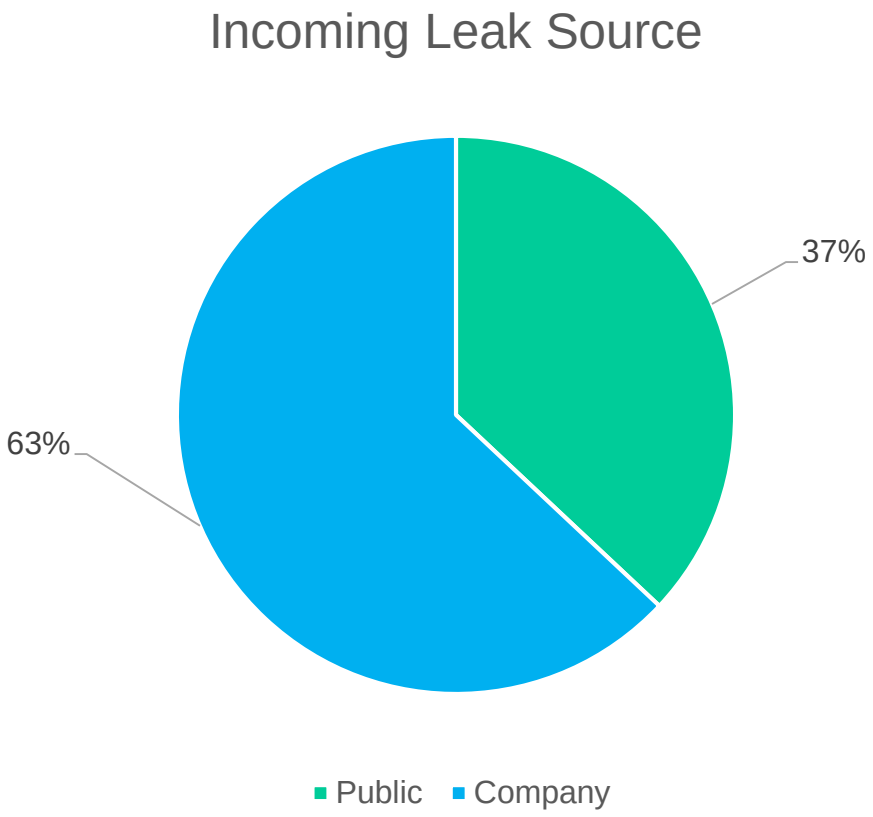
Leak Detection (cont.)
Public Awareness Campaigns

Don't assume someone else will make the call.

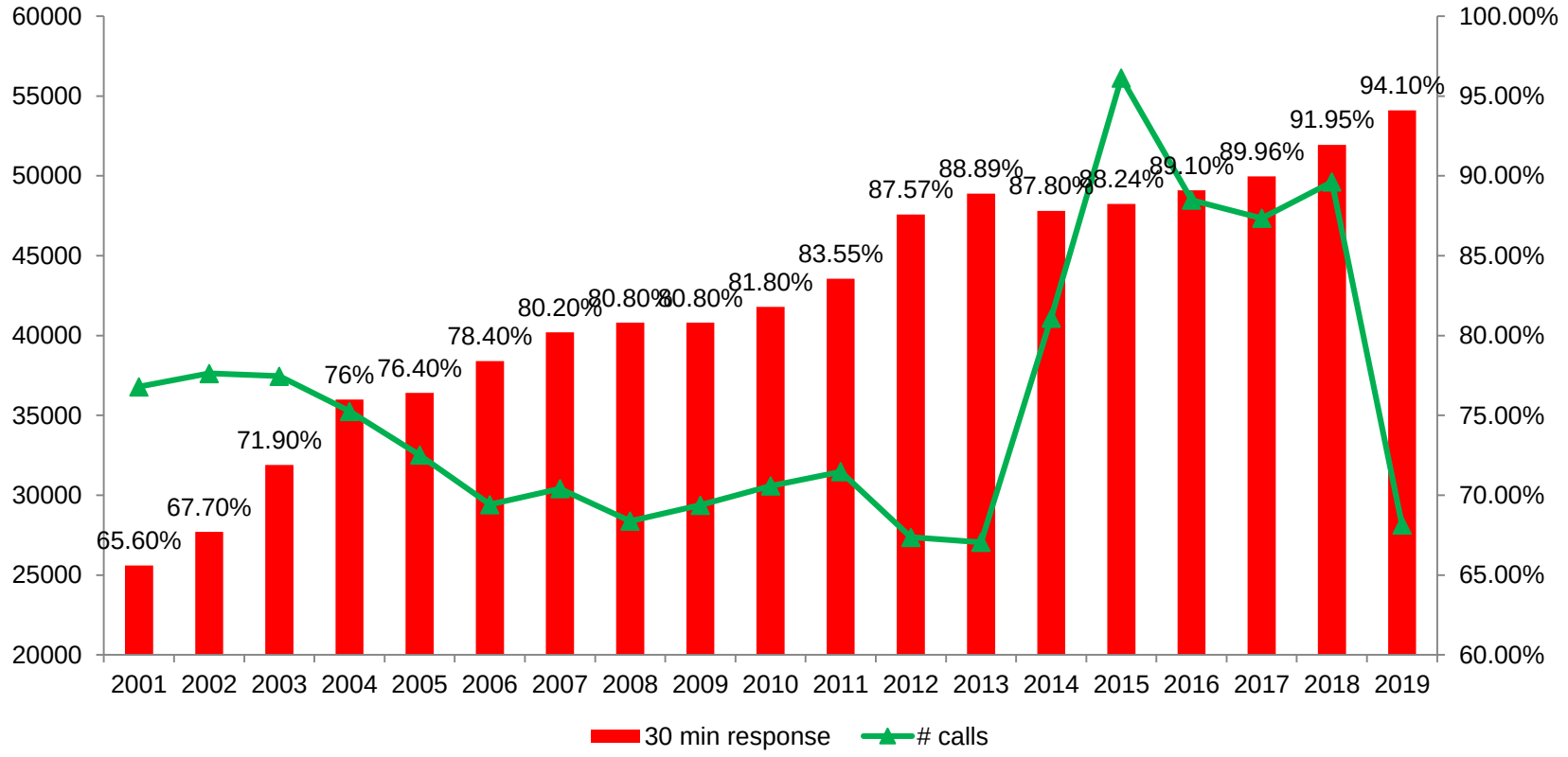
View Online



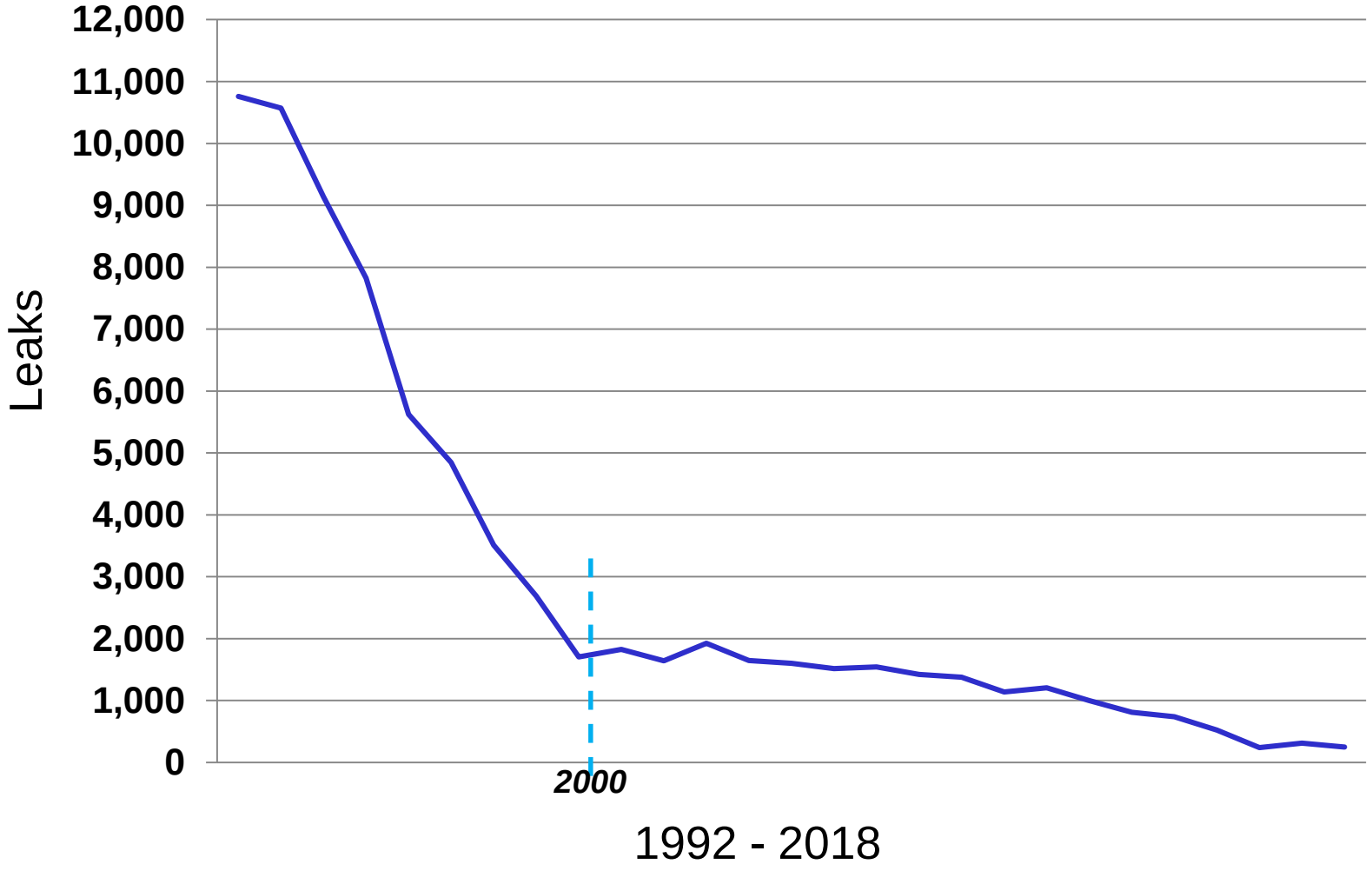
Leak Detection (cont.)



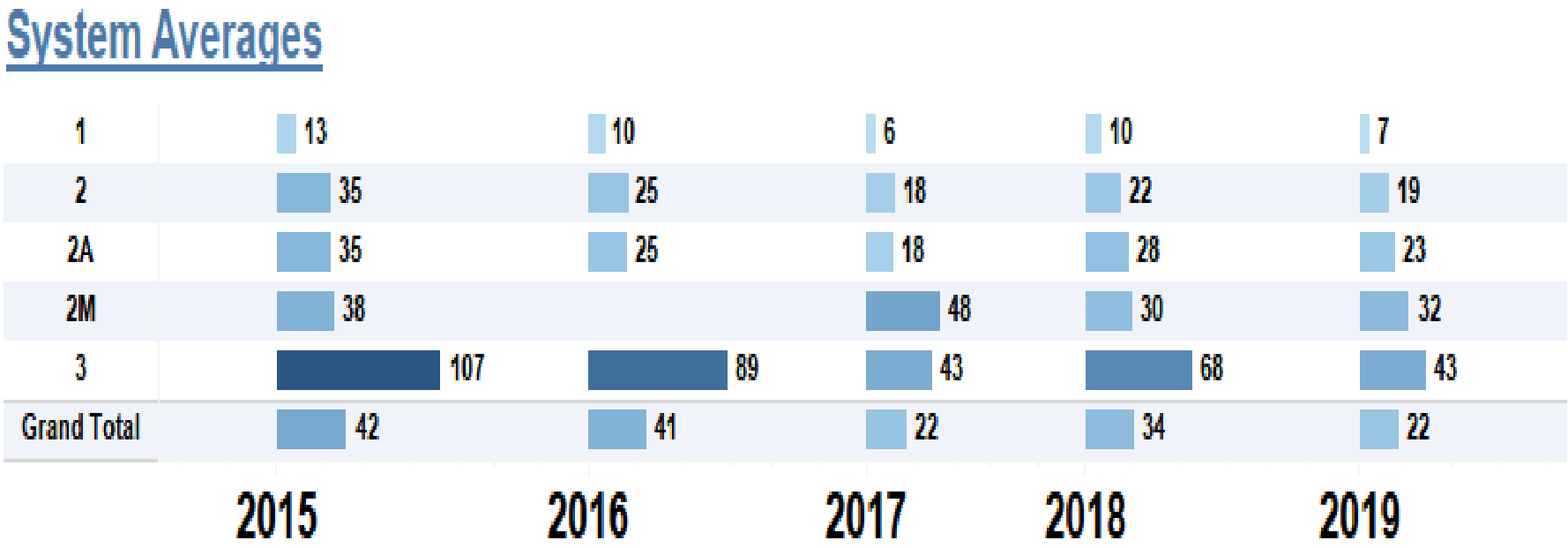
Leak Response Time



Gas Leak Backlog Management



Gas Leak Backlog Management (cont.)
Average time to Repair



Gas Leak Backlog Management (cont.)
Multi-Faceted Approach

Prevention

Efforts:
- Main replacement program leak prone pipe
- One-call, Dig safe
- Training
- Work coordination with city utilities

Detection

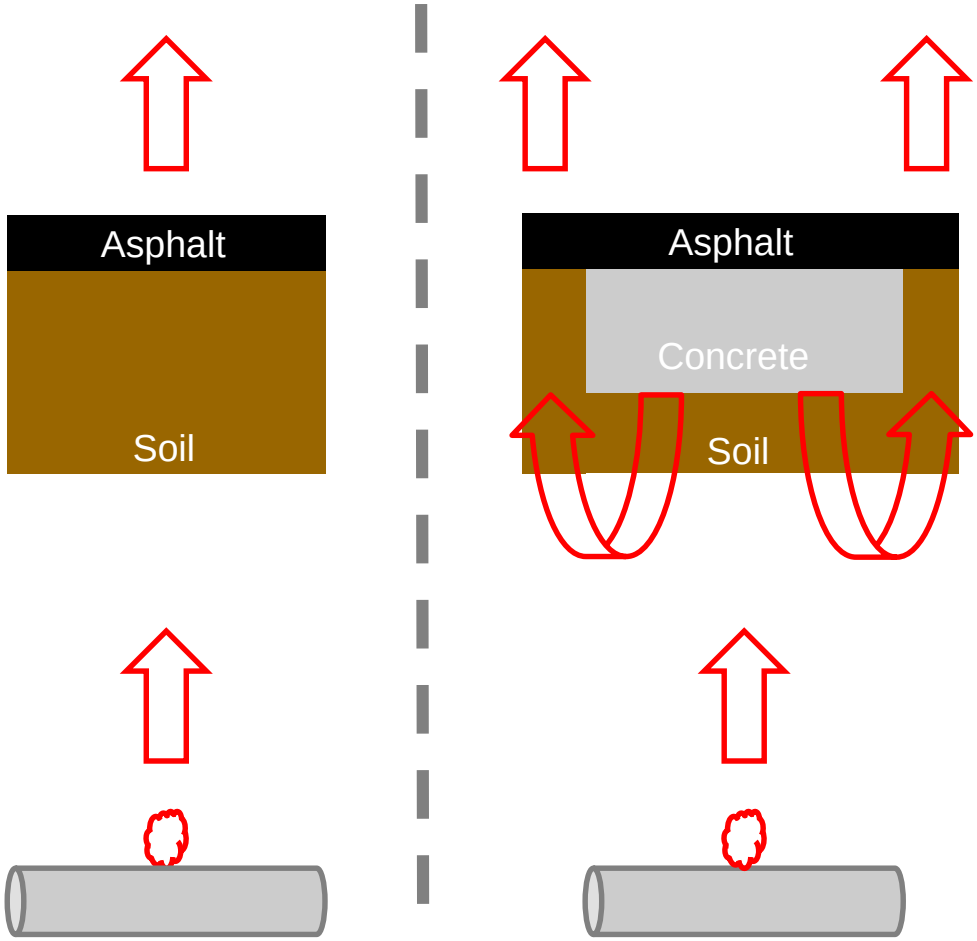
Efforts:
- ***Monthly*** mobile leak survey
- Public awareness campaigns
- Residential methane detectors development and deployment

Response

Efforts:
- Code MuRRE
- Make safe
- Isolation valve installation program
- Repair Type 3 leaks

Leak Pinpointing
Factors to consider to determine leak source

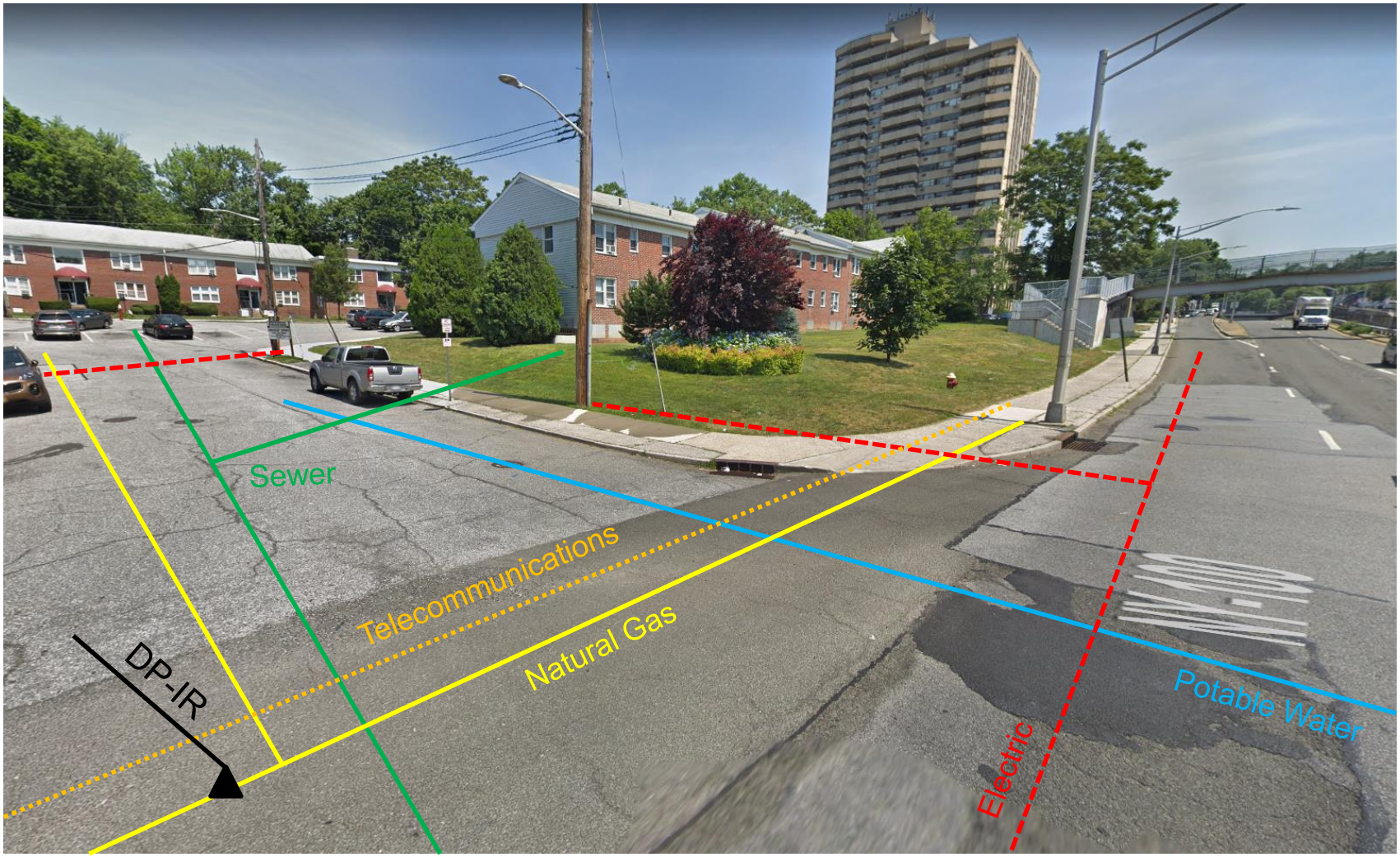
- Road Conditions
  - Road Composition
  - Soil Type & Moisture
  - Existing Utilities/Crossings
  - Grade
  - Unique Features
  - Vegetation
- Pipe
  - Material
  - Existing Repairs
  - Pressure
  - Cover
  - Odor
- Weather
  - Frost



So What's Going on Underground?
Wall St and William St

So What's Going on Underground? (cont.)
Wall St and William St

Type 3 Example



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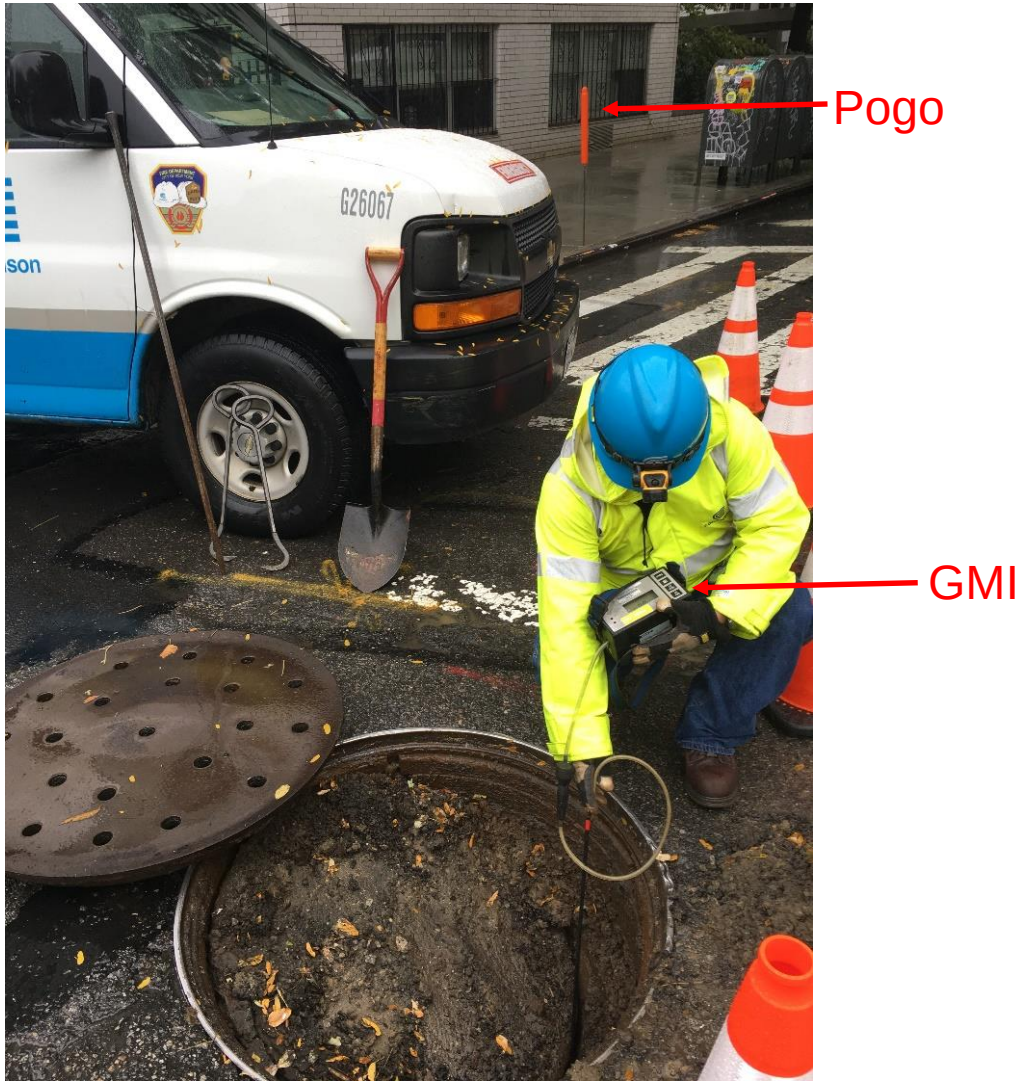
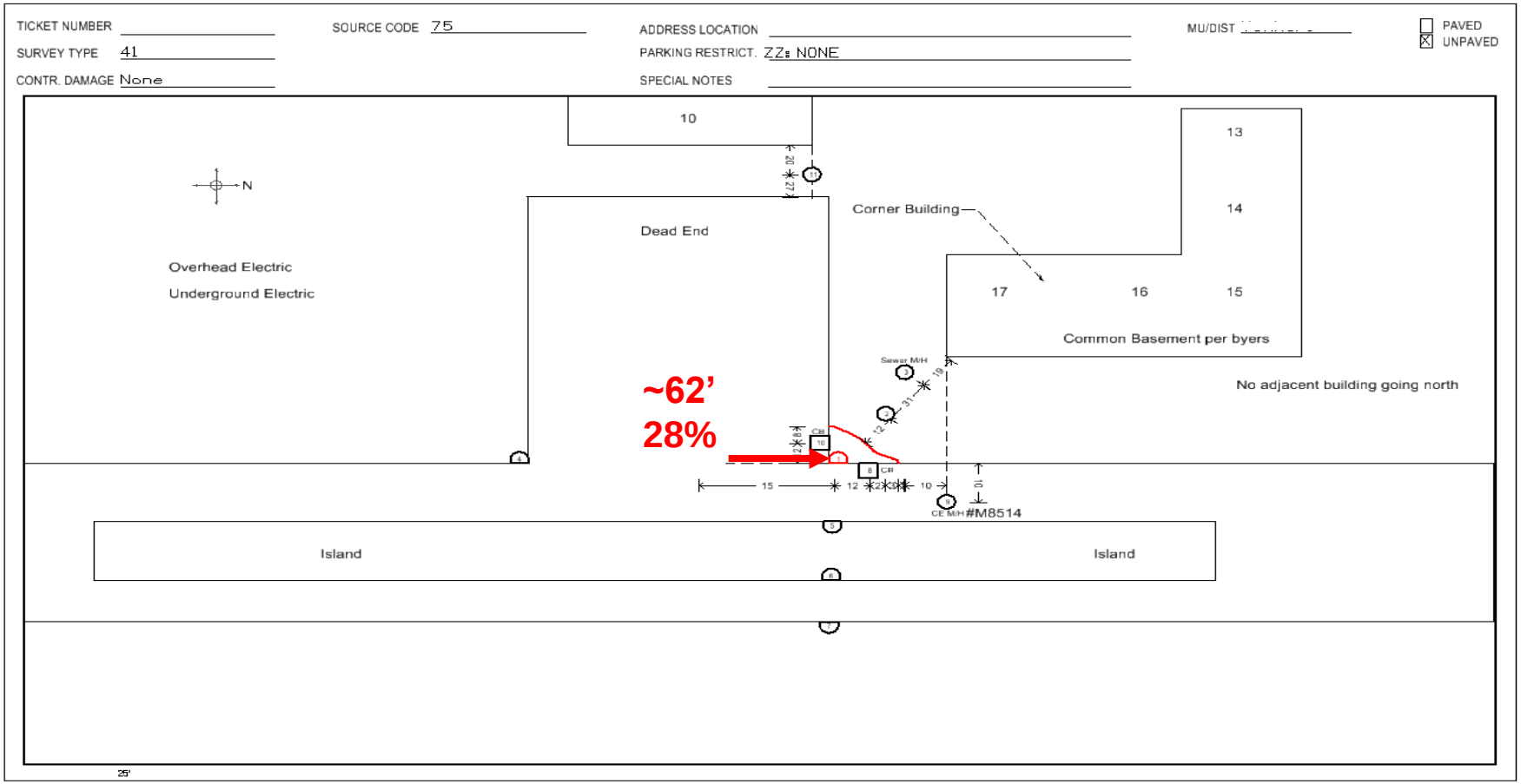
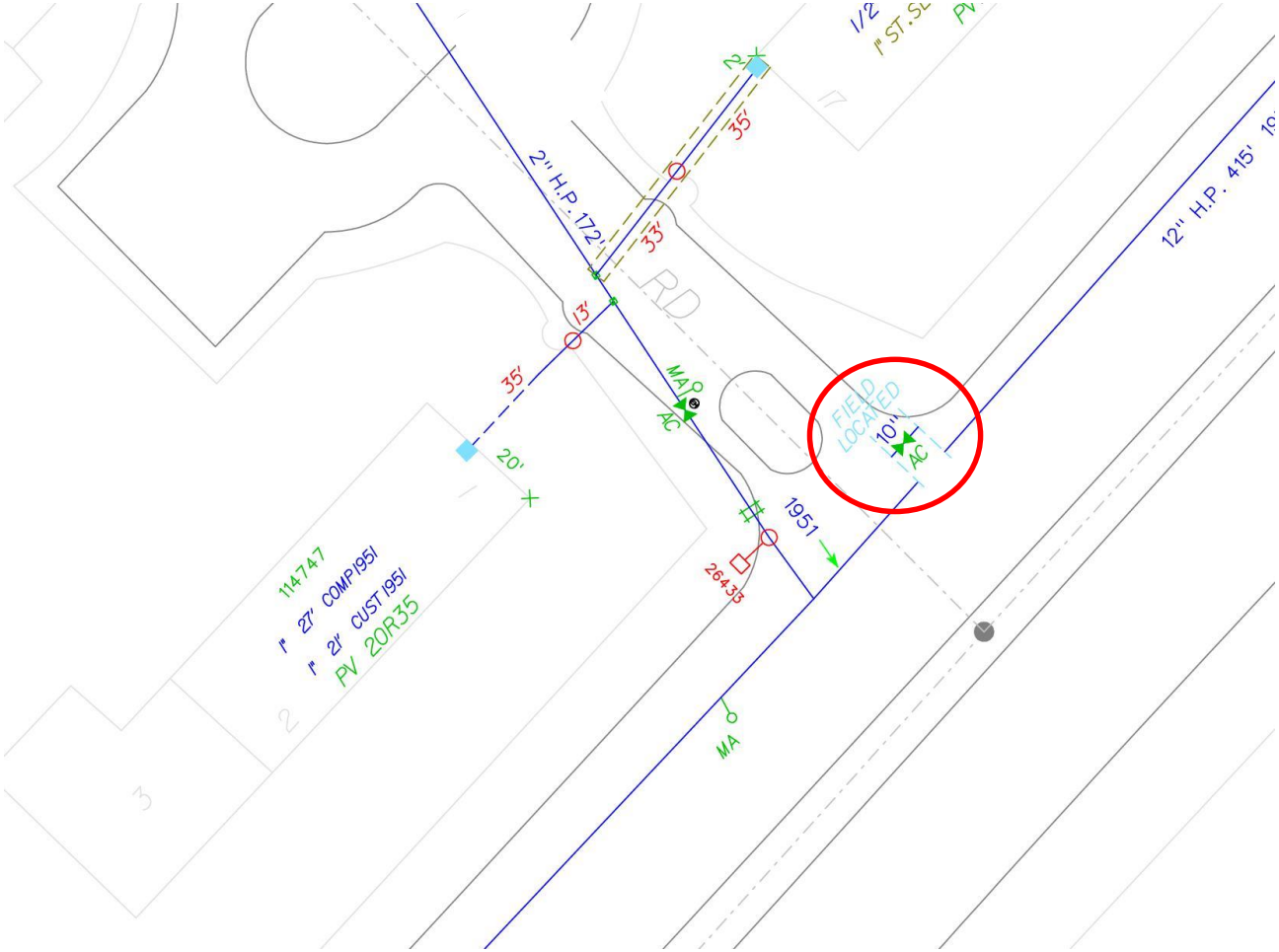


Type 3 Example (cont.)

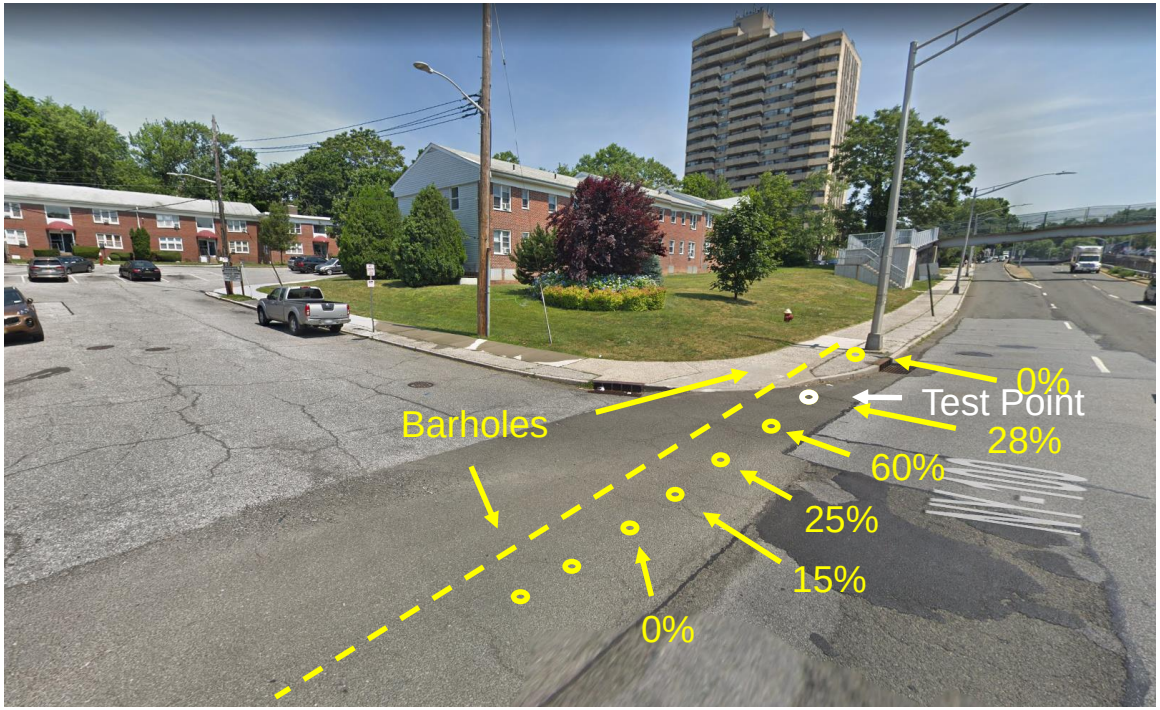


Type 3 Example (cont.)



Type 3 Example (cont.)

- Main:
  - 10” HPST 1971
- Road Makeup:
  - Asphalt
  - Concrete
  - Earth



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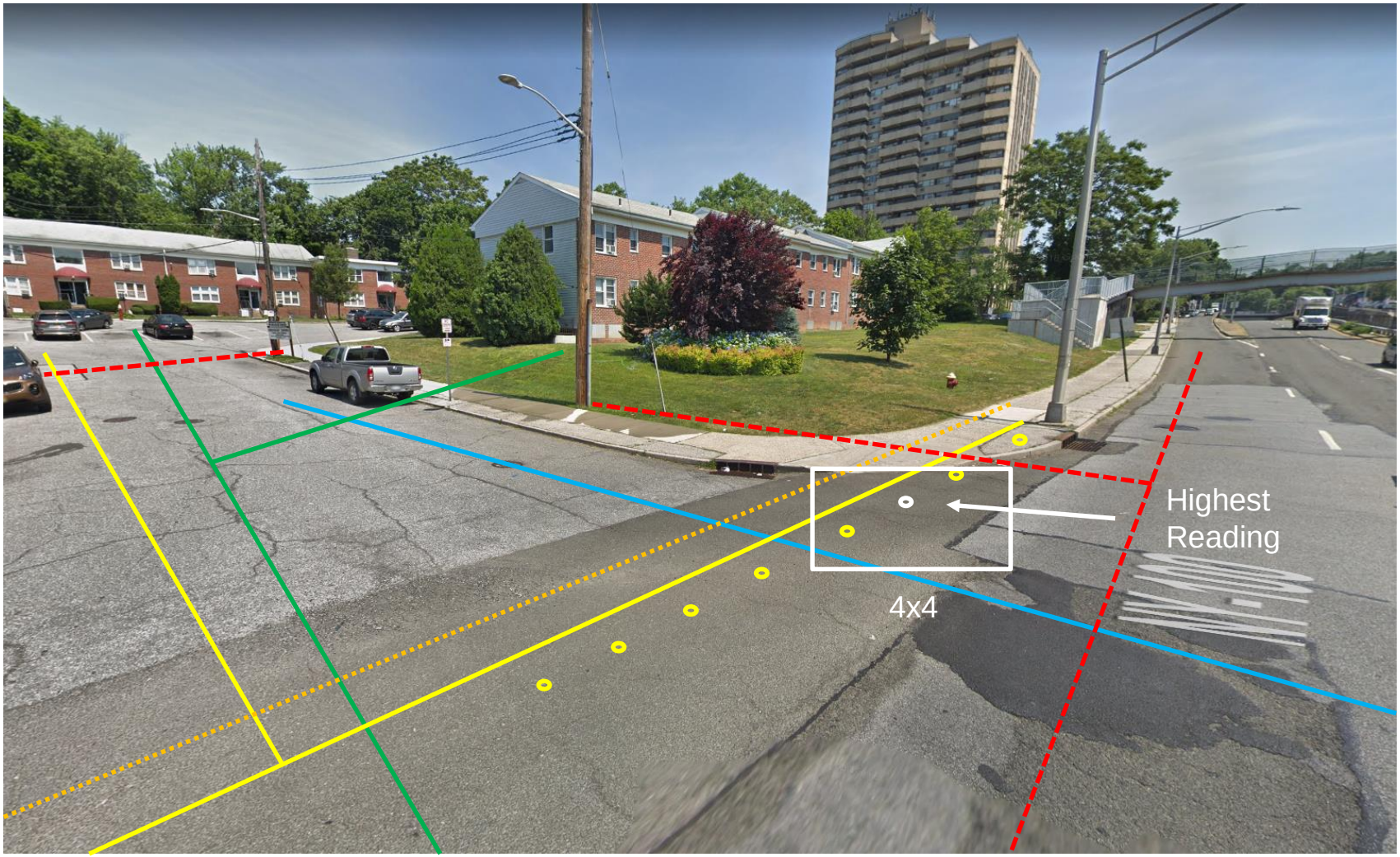
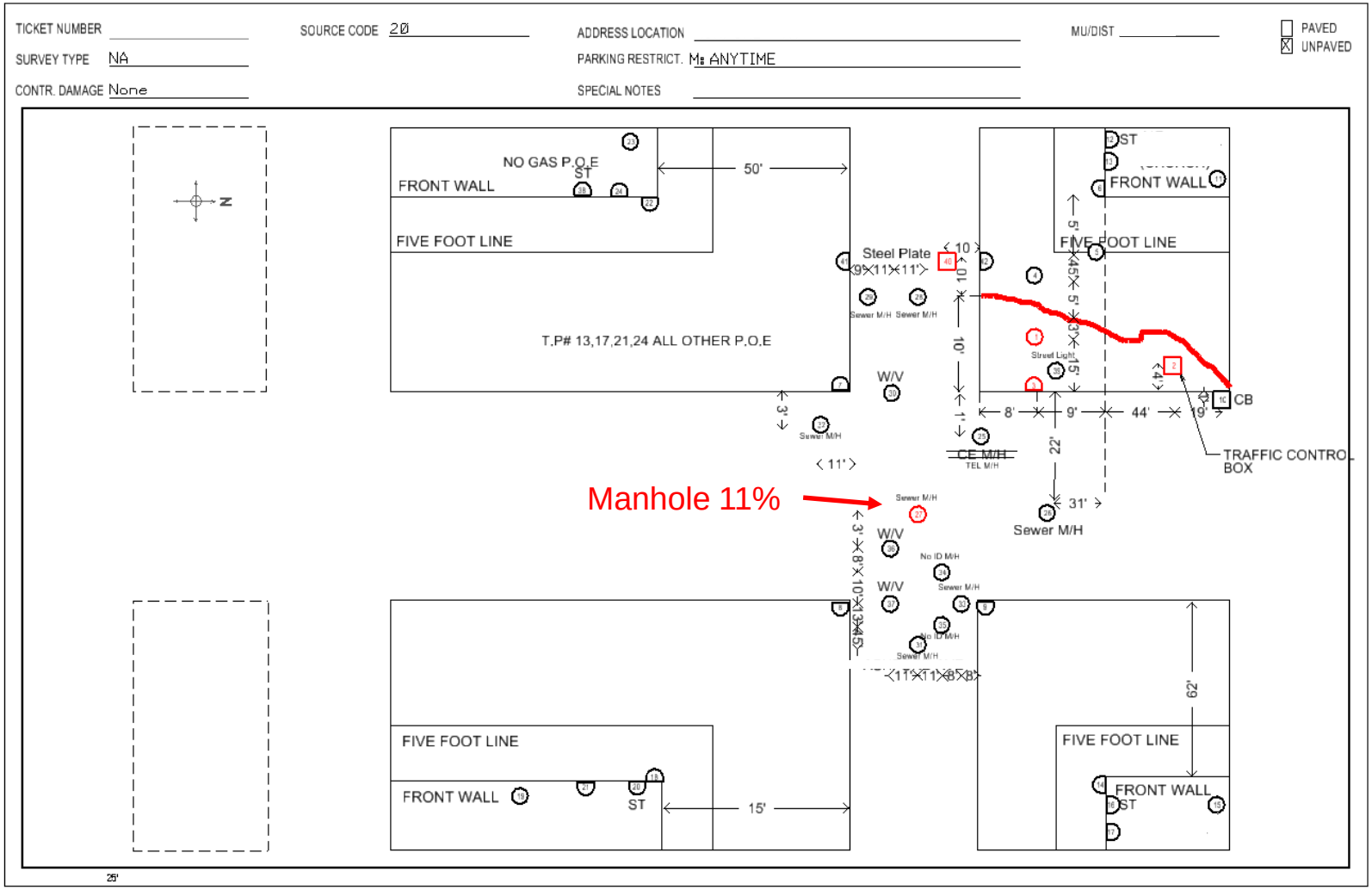


Type 3 Example (cont.)

- Main:
  - 10” HPST 1971
- Road Makeup:
  - Asphalt
  - Concrete
  - Earth
- Reason for Leak:
  - Corrosion
- Repair:
  - Fullseal Clamp

TYPE 1 Example



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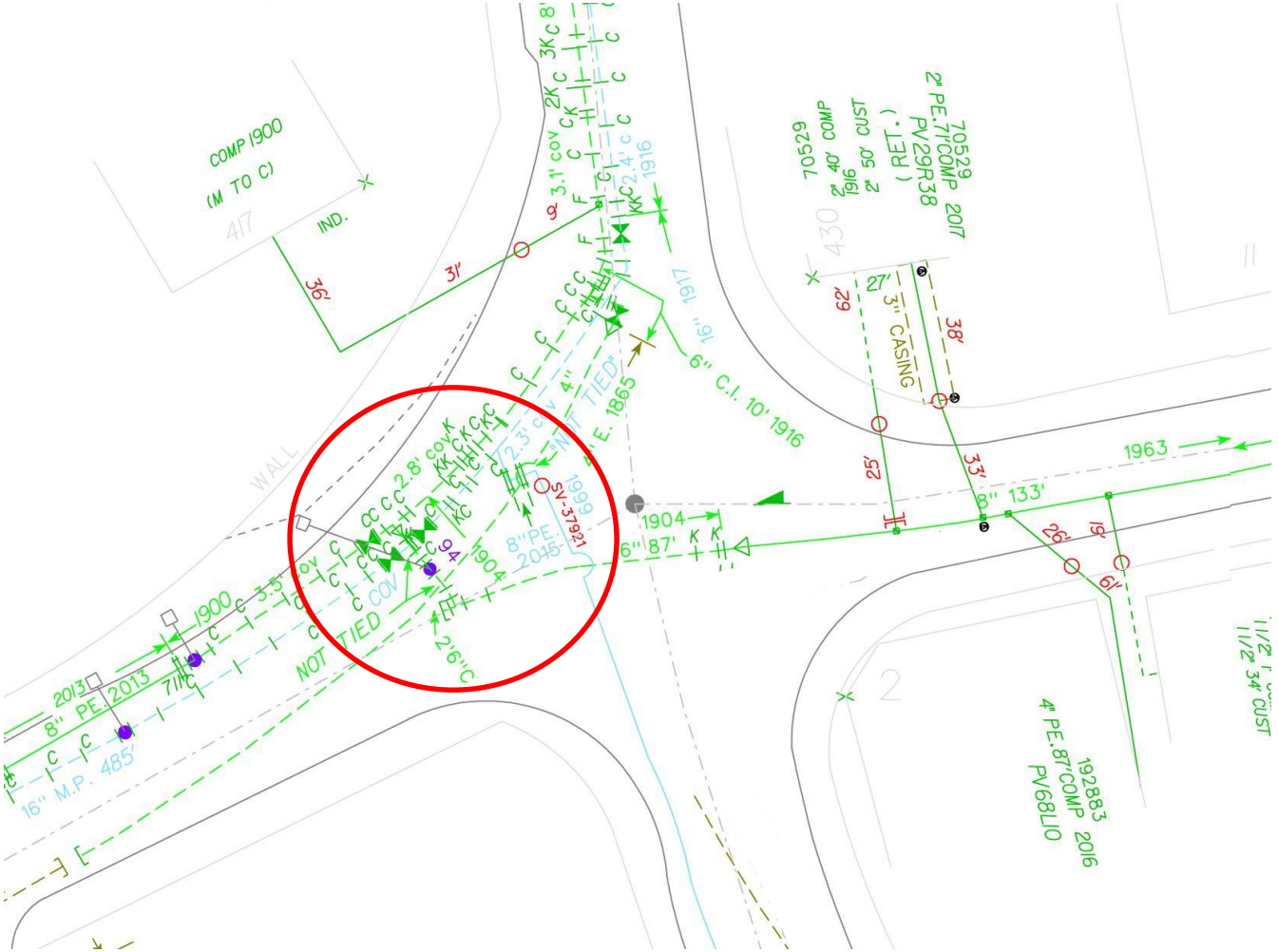
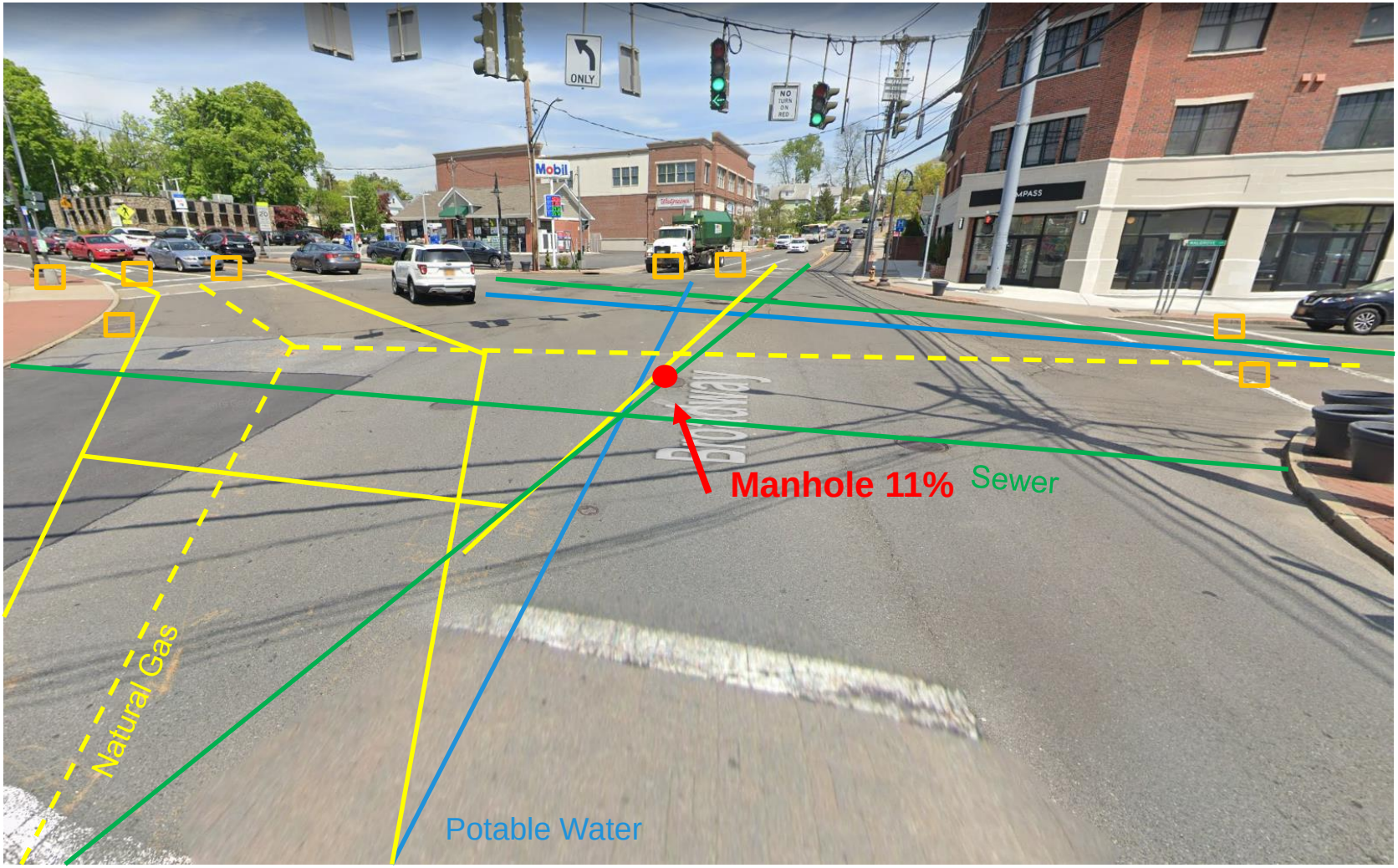
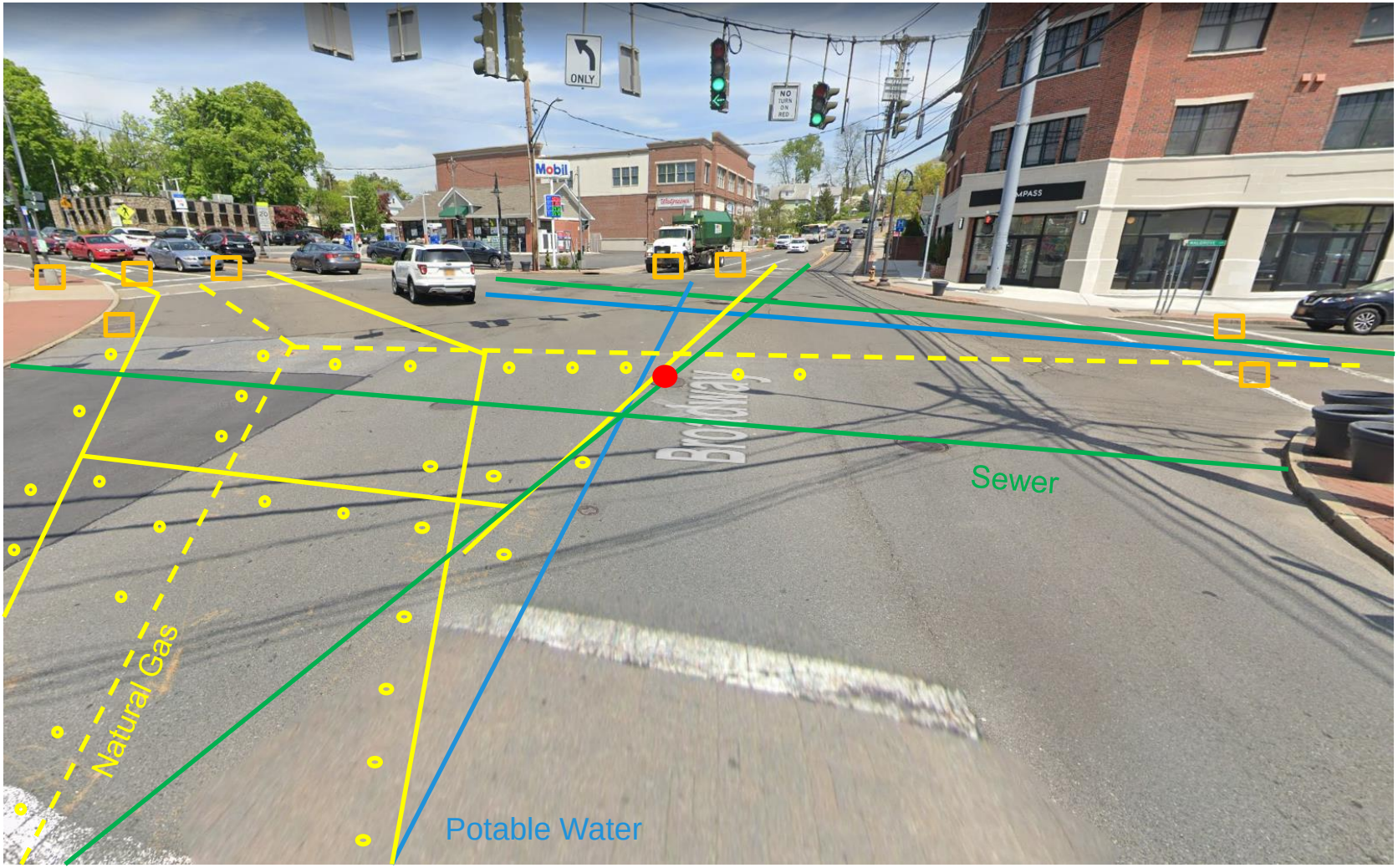


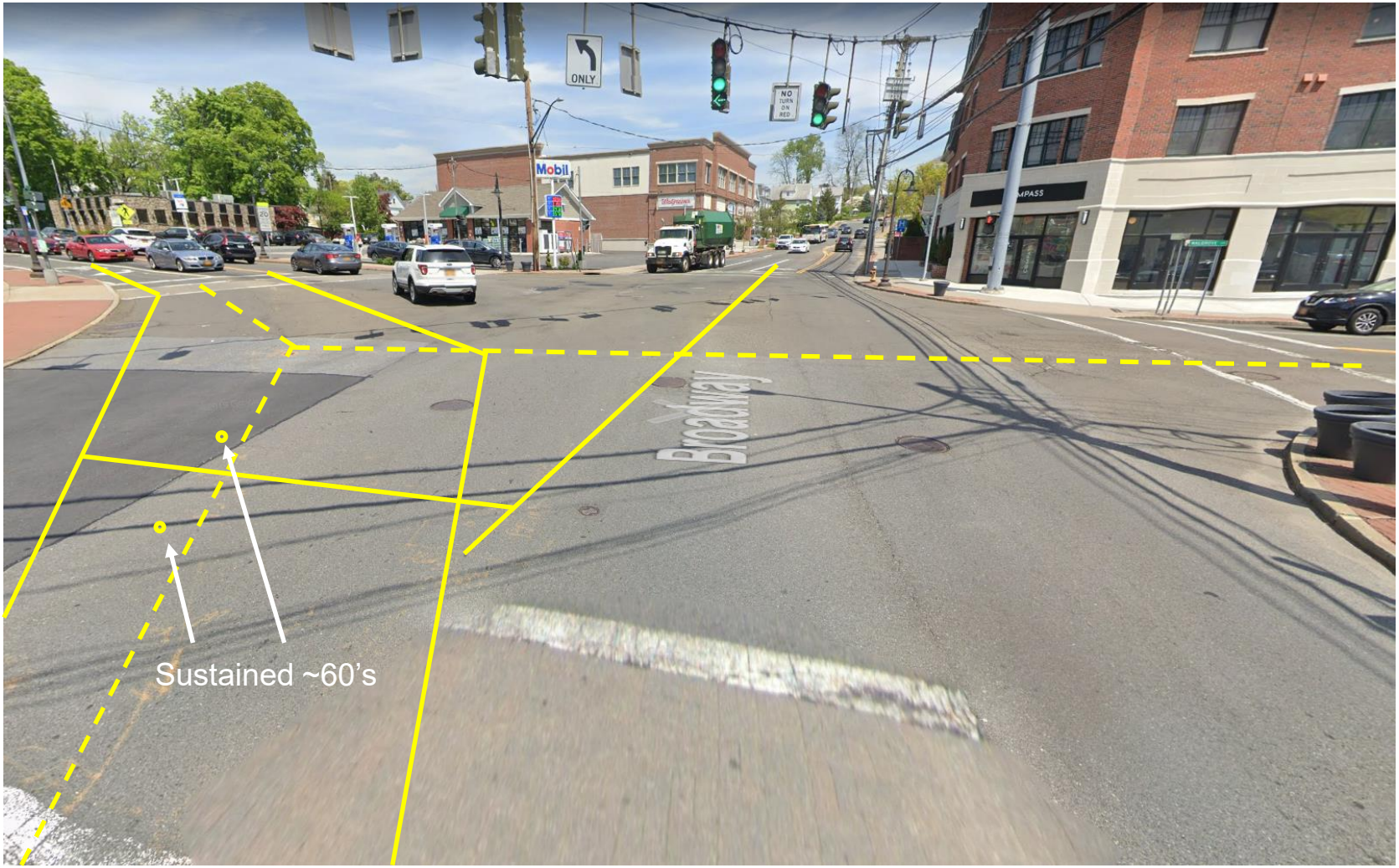
Type 1 Example (cont.)



Type 1 Example (cont.)

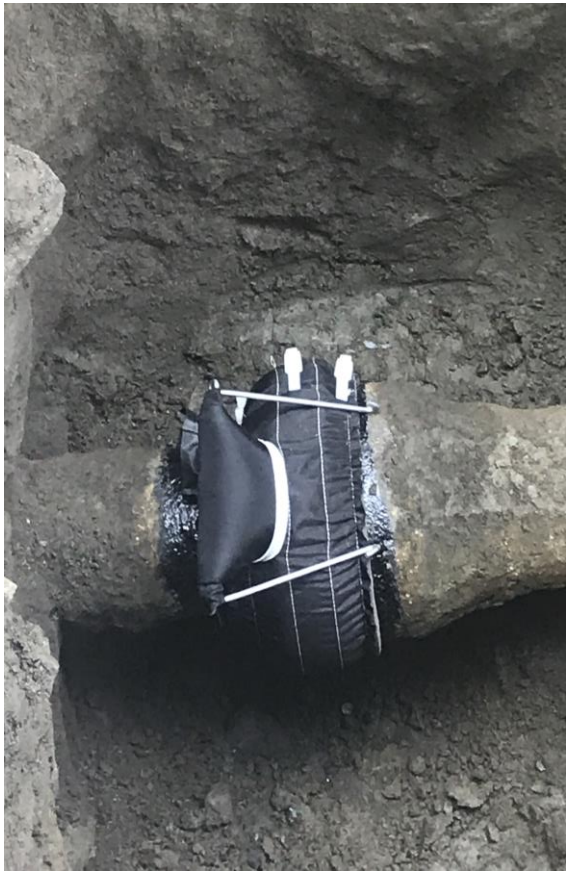


Type 1 Example (cont.)

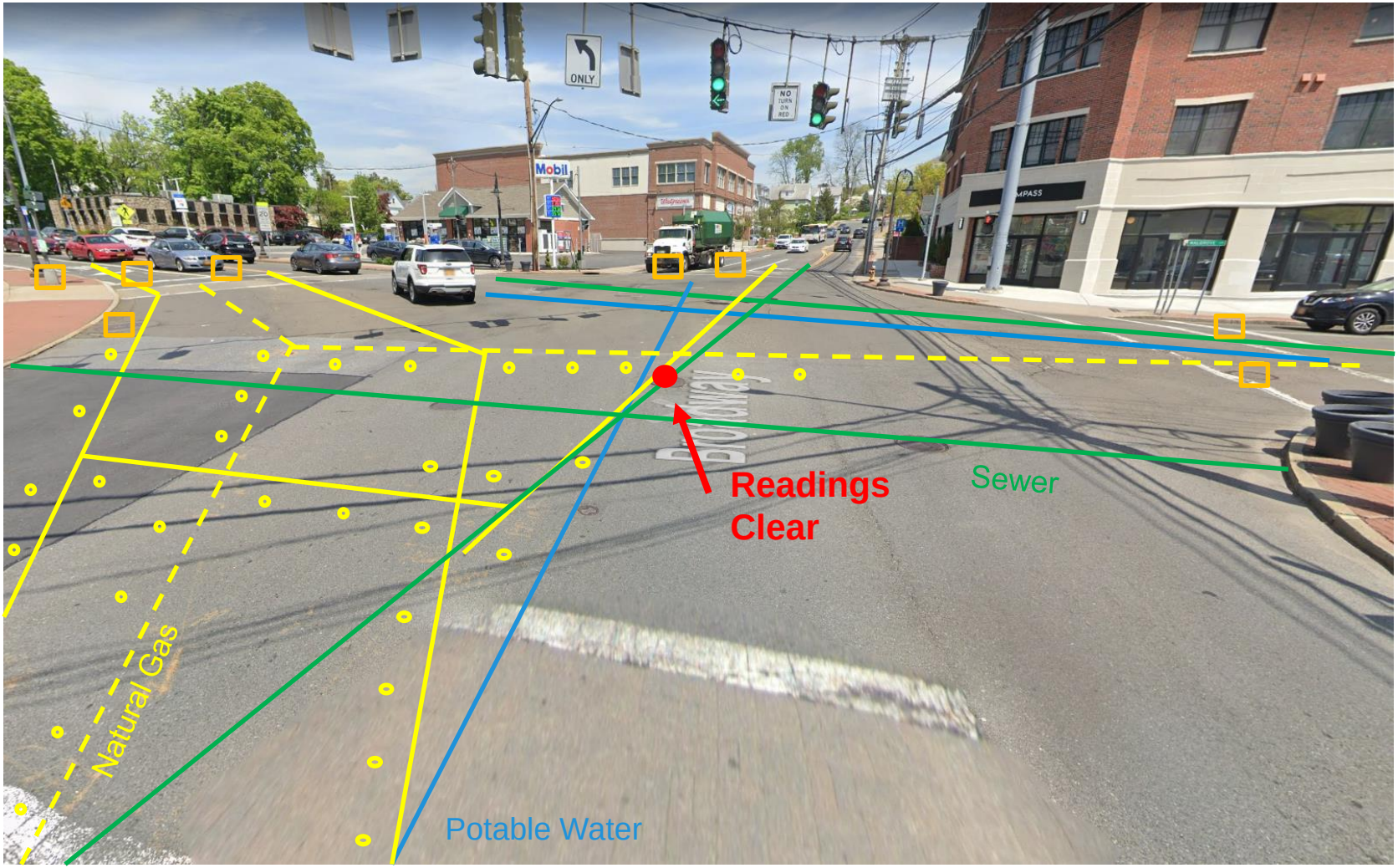


Type 1 Example (cont.)

- Main:
  - 16” MPCI 1917
- Road Makeup:
  - Asphalt
  - Concrete
  - Earth/Rock
- Reason for Leak:
  - Bell & Spigot Joint
- Repair:
  - Encapsulation



Type 1 Example (cont.)



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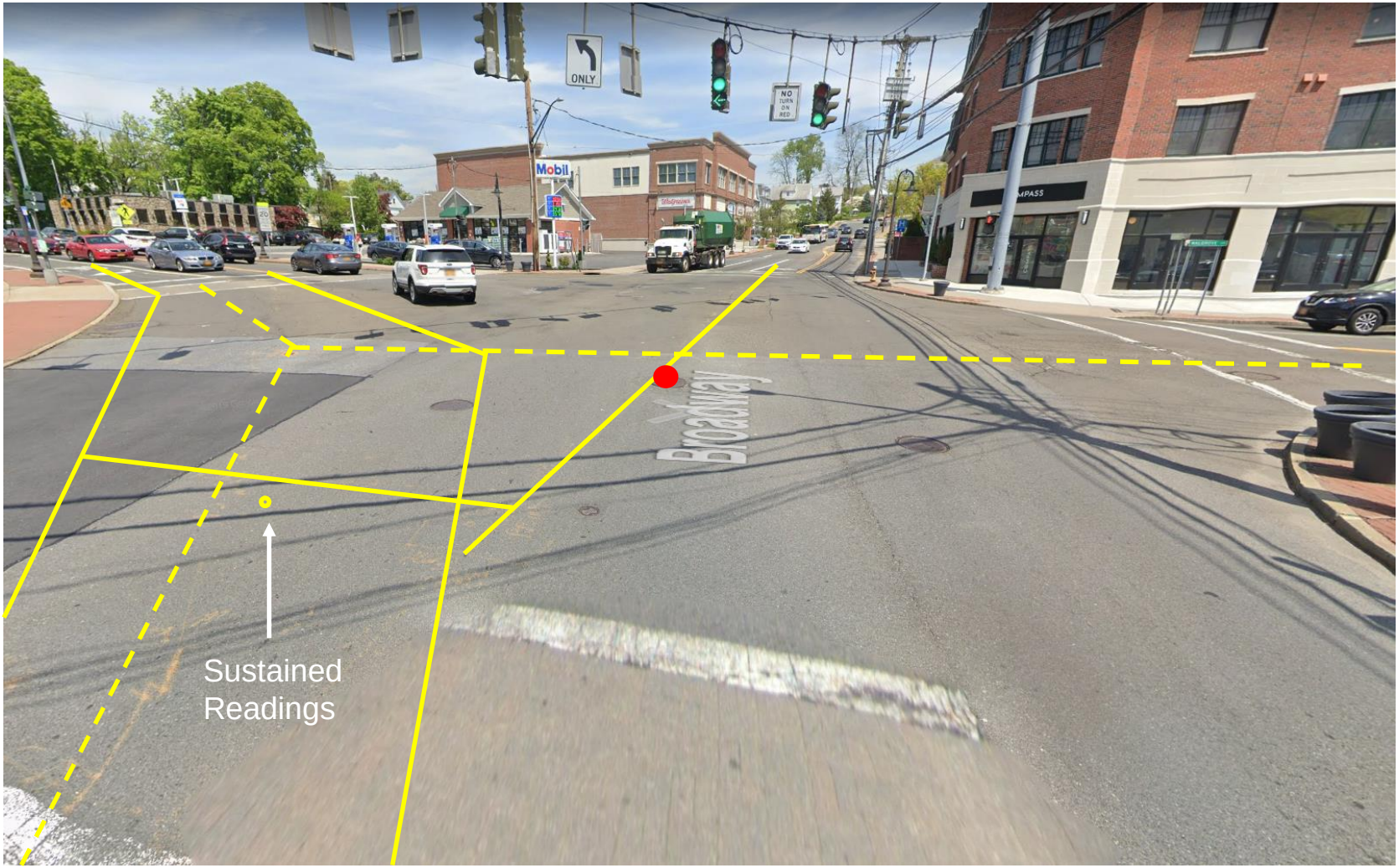
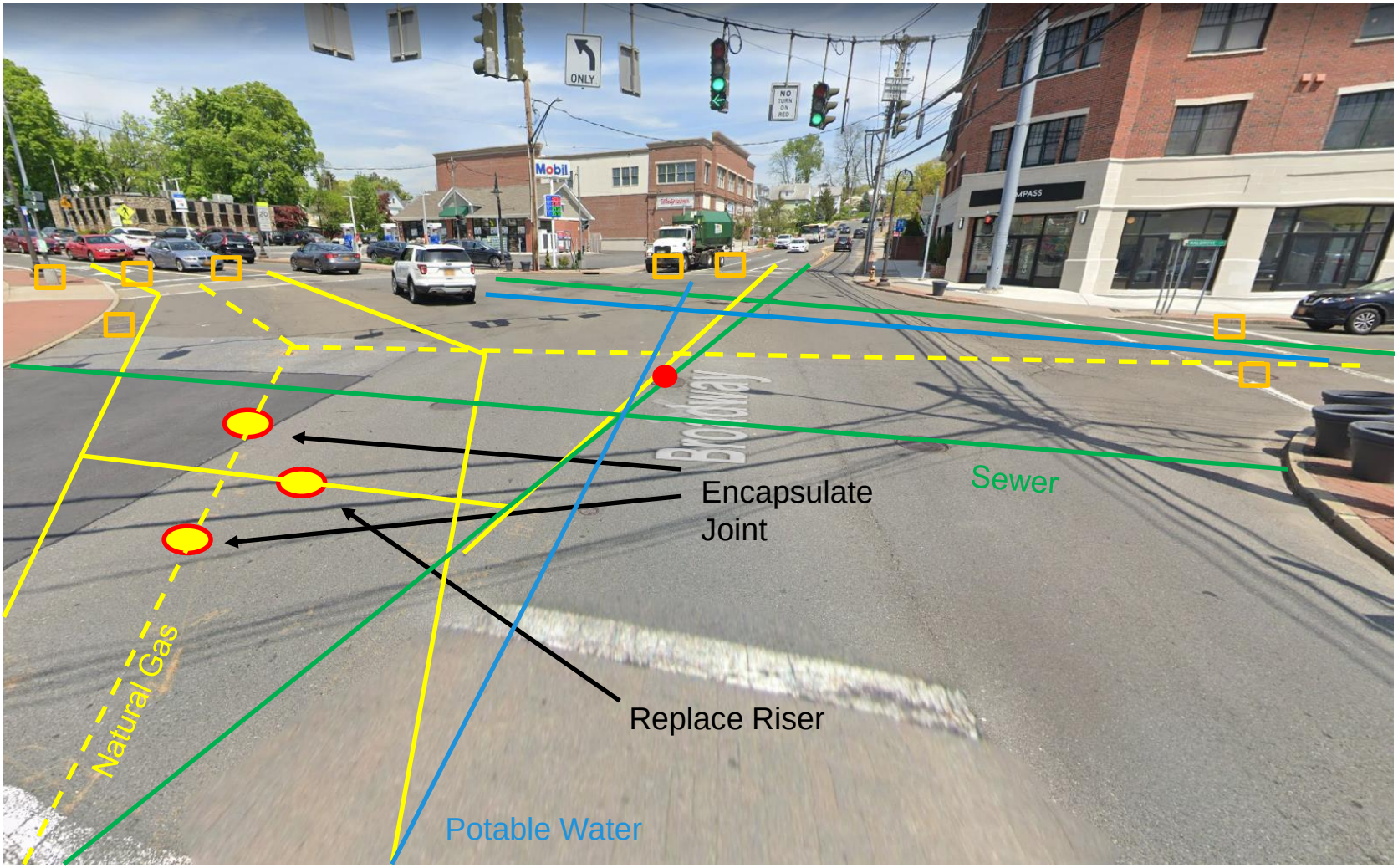


Type 1 Example (cont.)

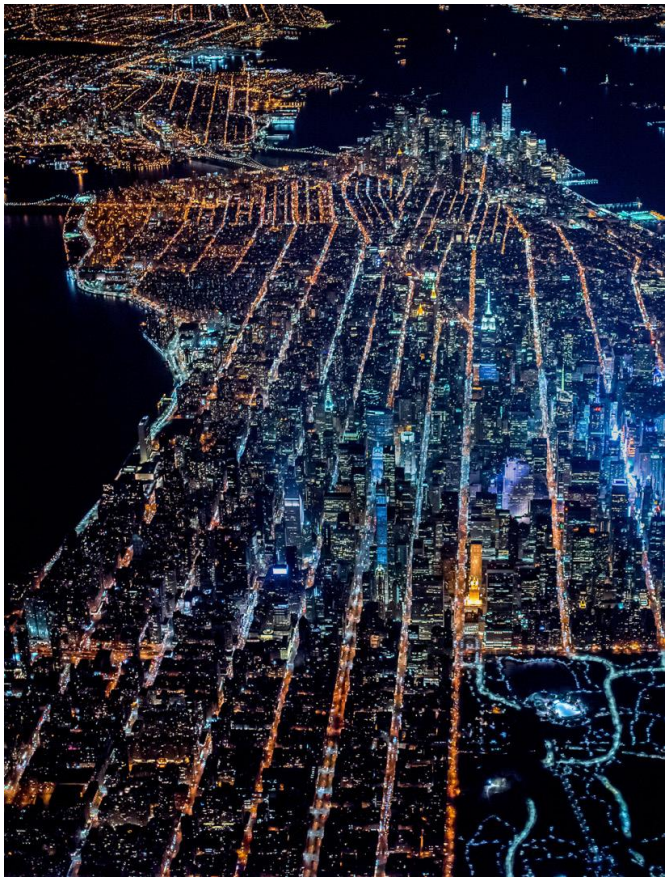
- Main:
  - 6” LPCI 1904
    - 1” Steel Riser
- Road Makeup:
  - Asphalt
  - Concrete
  - Earth/Rock
- Reason for Leak:
  - Corrosion on Riser
- Repair:
  - Replace Riser

Type 1 Example (cont.)



Follow Up

- Type 1, 2A/M, 2's require a recheck of test points
- After 14 days within 30
- GDS does the recheck

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