



FUSS & O'NEILL

5-Year Environmental Review

Springfield Street Schools

February 15, 2012

Why Are We Here?

- School property was formerly used as a dump
- Environmental safeguards were installed during school construction to protect occupants
- RIDEM is conducting a review of these safeguards



Who is Involved?

- RI Department of Environmental Management (RIDEM)
 - Fuss & O'Neill
- City of Providence
 - School Department
 - Arcadis
- Community Members
 - Parent Teacher Organizations
 - Teachers
 - Residents
 - Students/Families
- Environmental Justice League of RI
 - US Environmental Protection Agency
 - Technical Assistance Contractor

The 5-Year Review Process

1. Public Notice
2. 5-Year Review
 - Review of documents
 - Site inspection
 - Interviews
3. Prepare a draft report and distribute for review
4. Public comment period
 - Accept written/verbal comments
 - Public meeting
 - Public Hearing
5. Finalize Report

Environmental Safeguards

The Environmental Safeguards

Excavation and disposal of some waste

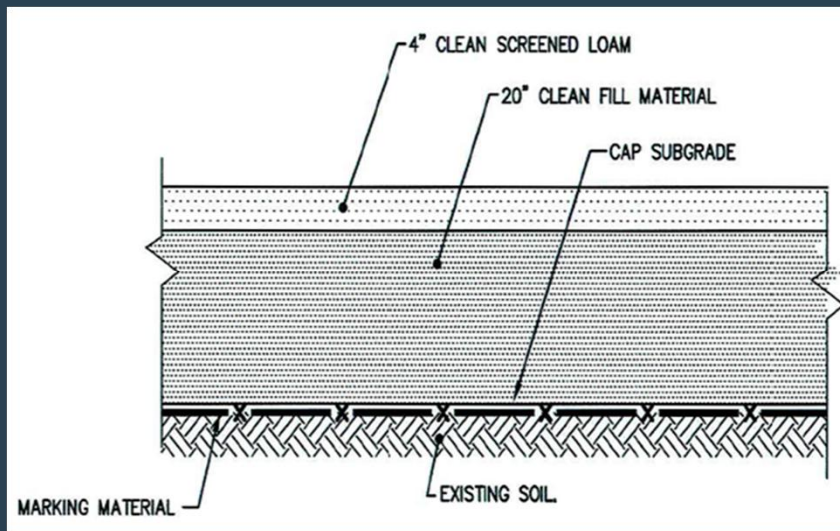
- All waste beneath elementary school
- Some waste beneath Middle School
- Other areas where necessary for grading



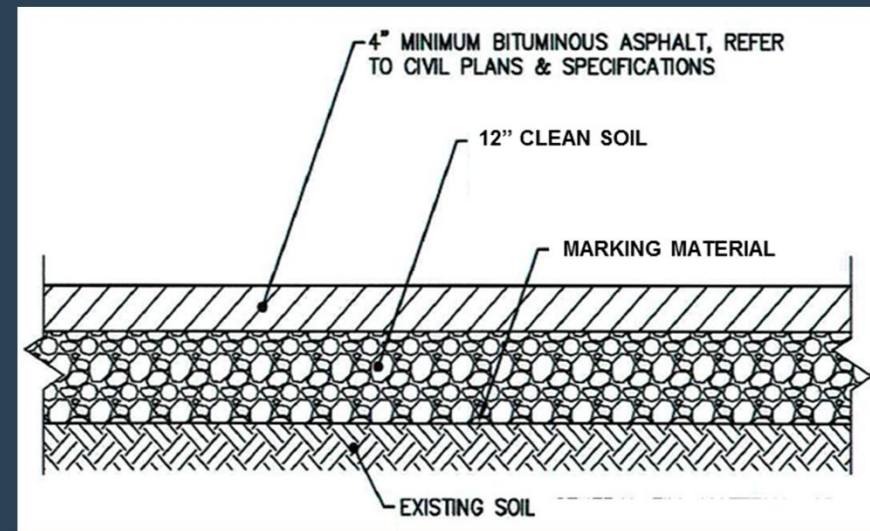
The Environmental Safeguards

Soil Cap

- Covers all existing soil at the property
- Landscaped areas: 2 feet of clean soil over snow fence
- Paved areas: 4 inches of pavement over 1 foot of clean soil



2 foot soil cap at landscaped areas

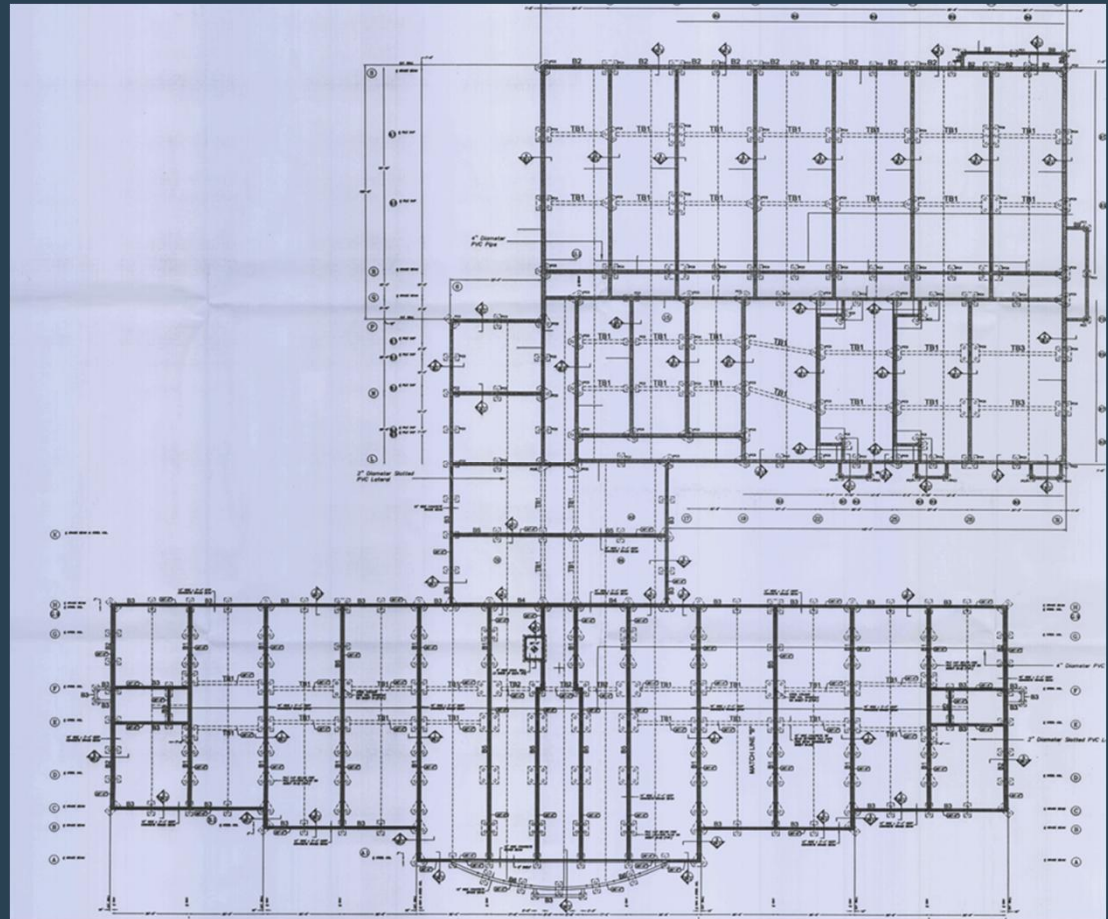


1 foot soil cap at paved areas

The Environmental Safeguards

Sub Slab Ventilation System

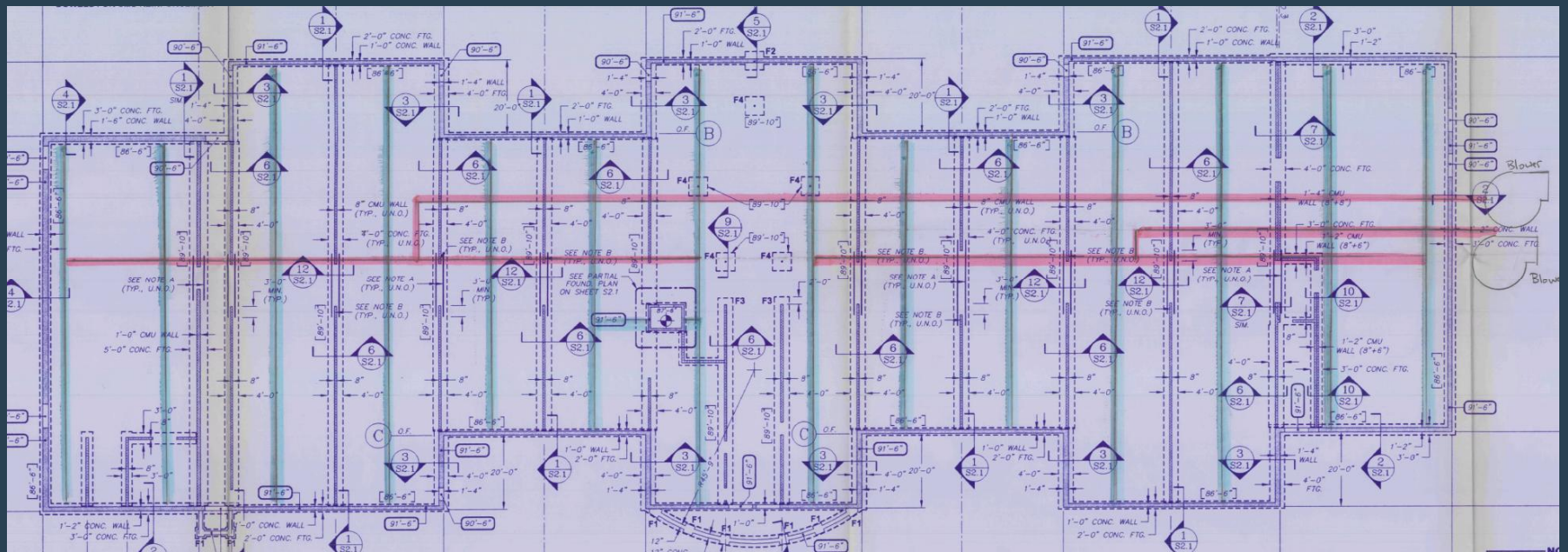
- Horizontal piping under school buildings
- Connected to large fans
- Removes landfill gas before it can enter the buildings



Middle School piping plan

The Environmental Safeguards

Sub Slab Ventilation System (Cont.)



Elementary School piping plan

The Environmental Safeguards

Environmental Monitoring Plan

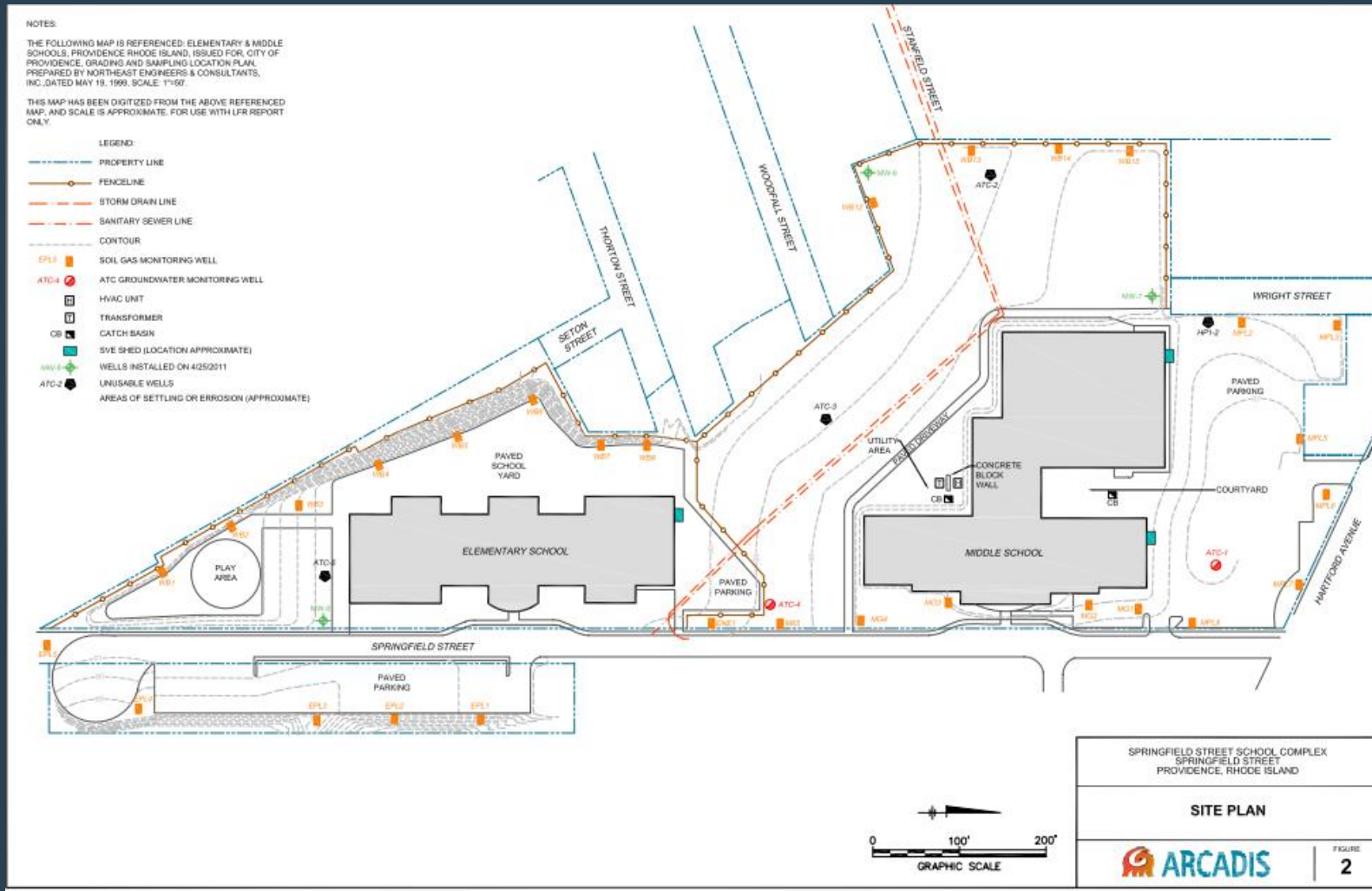
- Conducted continuously
 - Indoor air testing for methane

- Conducted quarterly by City's consultant
 - Indoor air testing 24 locations
 - Sub slab system air testing 7 locations
 - Soil vapor testing 27 perimeter wells
 - Groundwater testing 5 locations
 - Soil cap inspections Throughout property

- Quarterly report to RIDEM

The Environmental Safeguards

Environmental Monitoring Locations



Footer goes here

5 Year Review of Monitoring Results

Review data from 2006-2011

- 20 quarterly reports reviewed

- Is the right data collected?
- Does the data confirm school occupants are protected?

Results

Monitoring Results

Landfill Gas

- Indoor Air:
 - 420 data points showed no concern about landfill contaminants in building air - no further action needed
 - 12 data points required further evaluation - 10 attributed to another source and 2 attributed to instrument malfunction
- Sub slab system:
 - Data confirms landfill gas contaminants collected by vacuum system
- Soil Gas:
 - Data confirm landfill gas contaminants are present in the ground beneath the site cap

Monitoring Results

Groundwater

- No exceedances of thresholds detected – no further action needed

Soil Cap

- Small cavities noted during several inspections 2006-2011
- Repairs made in 2007, 2009, and 2010:
 - Filling cavities/depressions
 - Repairing pavement
 - Repairing stormwater catch basins

Recommendations

Recommendations

- **Monitoring Plan Compliance**
 - Consistent reporting of correct threshold values
 - Repair damaged soil vapor monitoring points
 - Evaluate threshold exceedances beneath cap
- **Soil Cap Maintenance**
 - Increase inspections to every 2 weeks
- **Sub Slab System Operation**
 - Evaluate HVAC system performance to improve indoor air
 - Confirm presence of vacuum underground to confirm system effectiveness
 - Implement measures to eliminate system shutdown

Where Do We Go From Here?

- **Next Steps**

- Public comment period through March 2
- Public hearing on February 27 at 6:00
- Compilation and review of comments
- Finalization of 5 Year Review Report

- **Contacts**

Jeff Crawford, RIDEM
jeff.crawford@dem.ri.gov
222-2797 ext. 7102

Patrick Dowling, Fuss & O'Neill
pdowling@fando.com
861-3070 ext. 4568

- **All Documents Available Online**

www.dem.ri.gov/programs/benviron/waste/springfd.htm