

## TDA as Leachate Drainage Layer



**Courtesy: Tim Landers, Liberty Tire Recycling**

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**Courtesy:** Tim Landers, Liberty Tire Recycling

# TDA in Gas Systems



**Courtesy: Tim Landers, Liberty Tire Recycling**



## TDA in Landfill Capping



**Courtesy: Tim Landers, Liberty Tire Recycling**

TDA compacted with 6-7 passes after each 1-foot lift.



Courtesy: Monte Niemi, CEO, First State Tire Recycling



# Sherburn County 67<sup>th</sup> St.- Santiago Township

## Road crossing peat soils



Courtesy: Monte Niemi, CEO, First State Tire Recycling

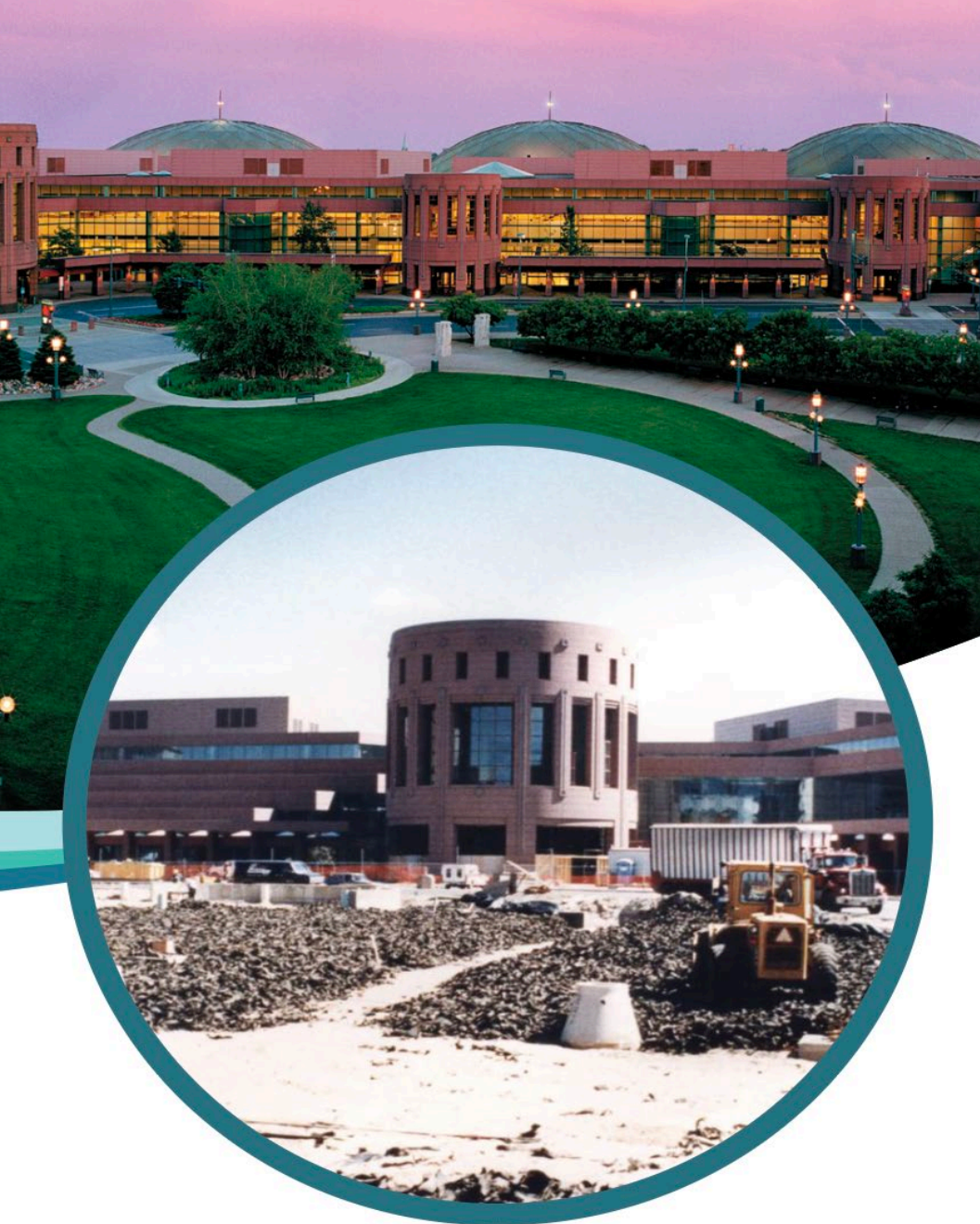


# 2000 Lakeview St Robbinsdale, frost heave, potholes



**Courtesy: Monte Niemi, CEO, First State Tire Recycling**





# 1990

## **Minneapolis Convention Center**

### *Lightweight Property*

Approximately 2,500 cubic yards of TDA (~ 150,000 scrap tires) used in this project.



**Courtesy: Monte Niemi, CEO, First State Tire Recycling**



1989 Old  
Sandy  
Oak –  
Eden  
Prairie



Hennepin County Industrial Park

Building  
over 60  
feet of  
Peat



Hennepin County Industrial Park



Hennepin County Industrial Park



# Sherburn County 67<sup>th</sup> St.- Santiago Township

## Road crossing peat soils





# Frost Heave or Pothole Prevention

- TDA has Proven to prevent these Problems Permanently

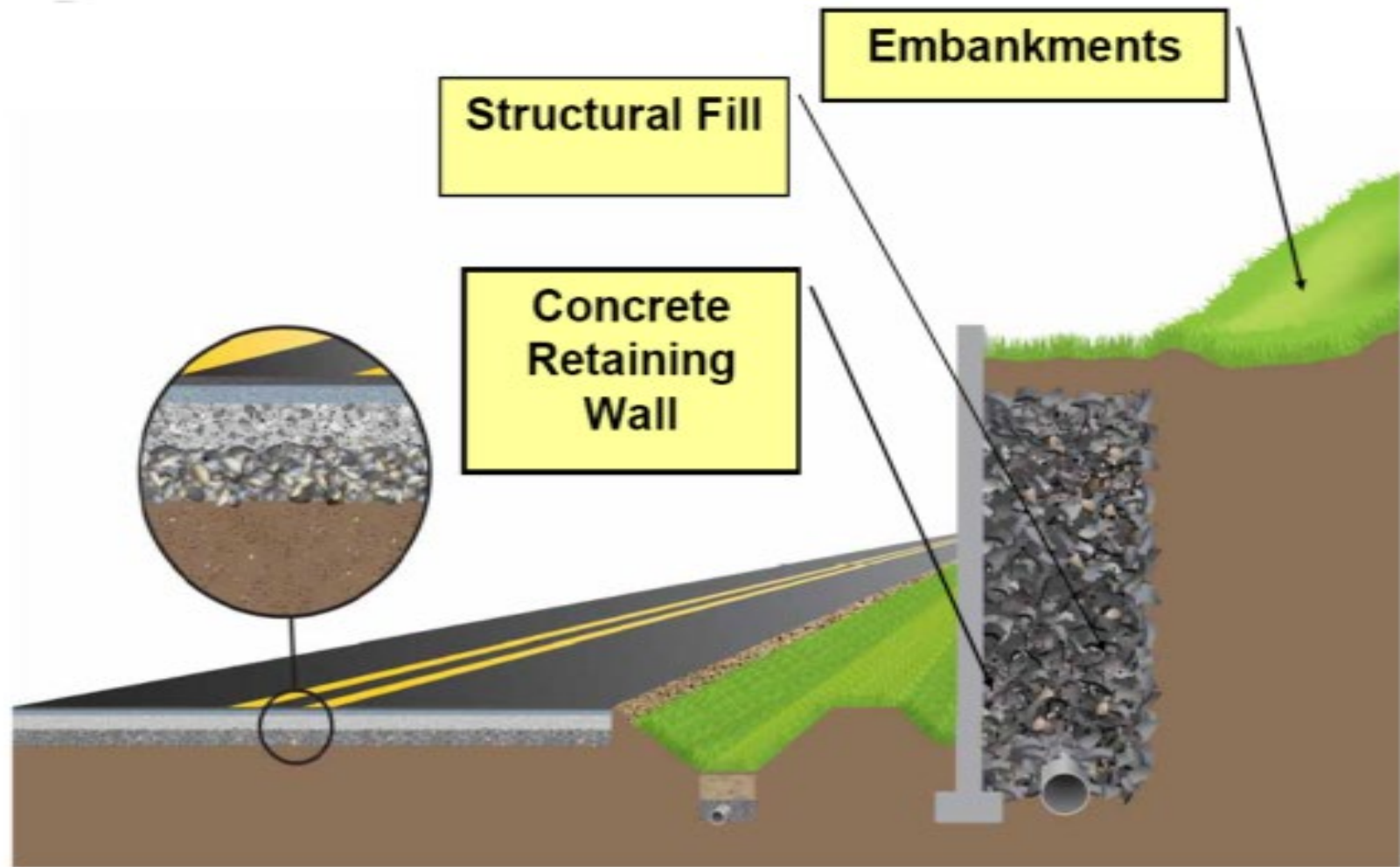
# 2000 Lakeview St Robbinsdale, frost heave, potholes





# TDA as a Wall Backfill Aggregate

# TDA REDUCES LATERAL LOAD ON WALLS OVER **50%**



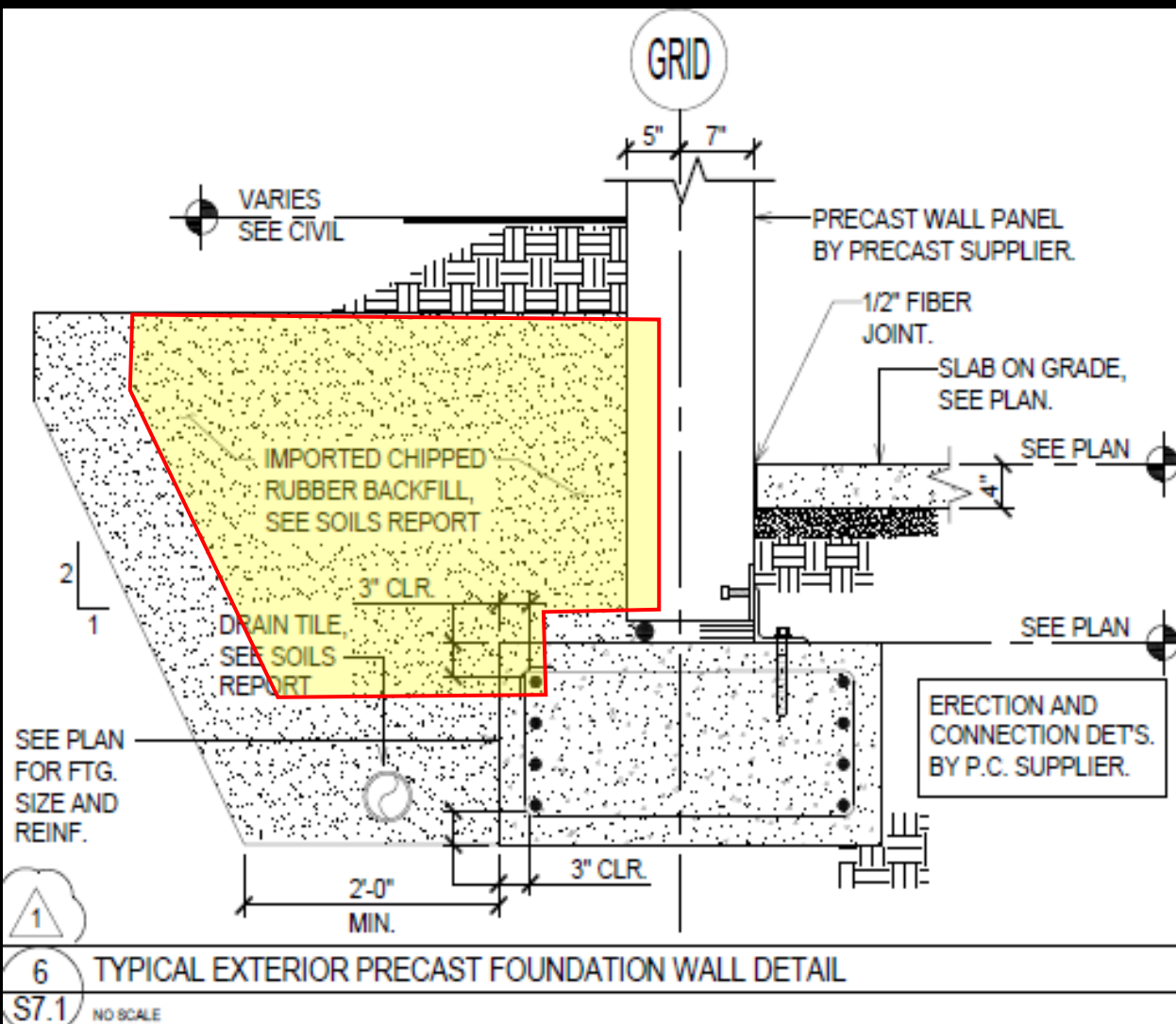
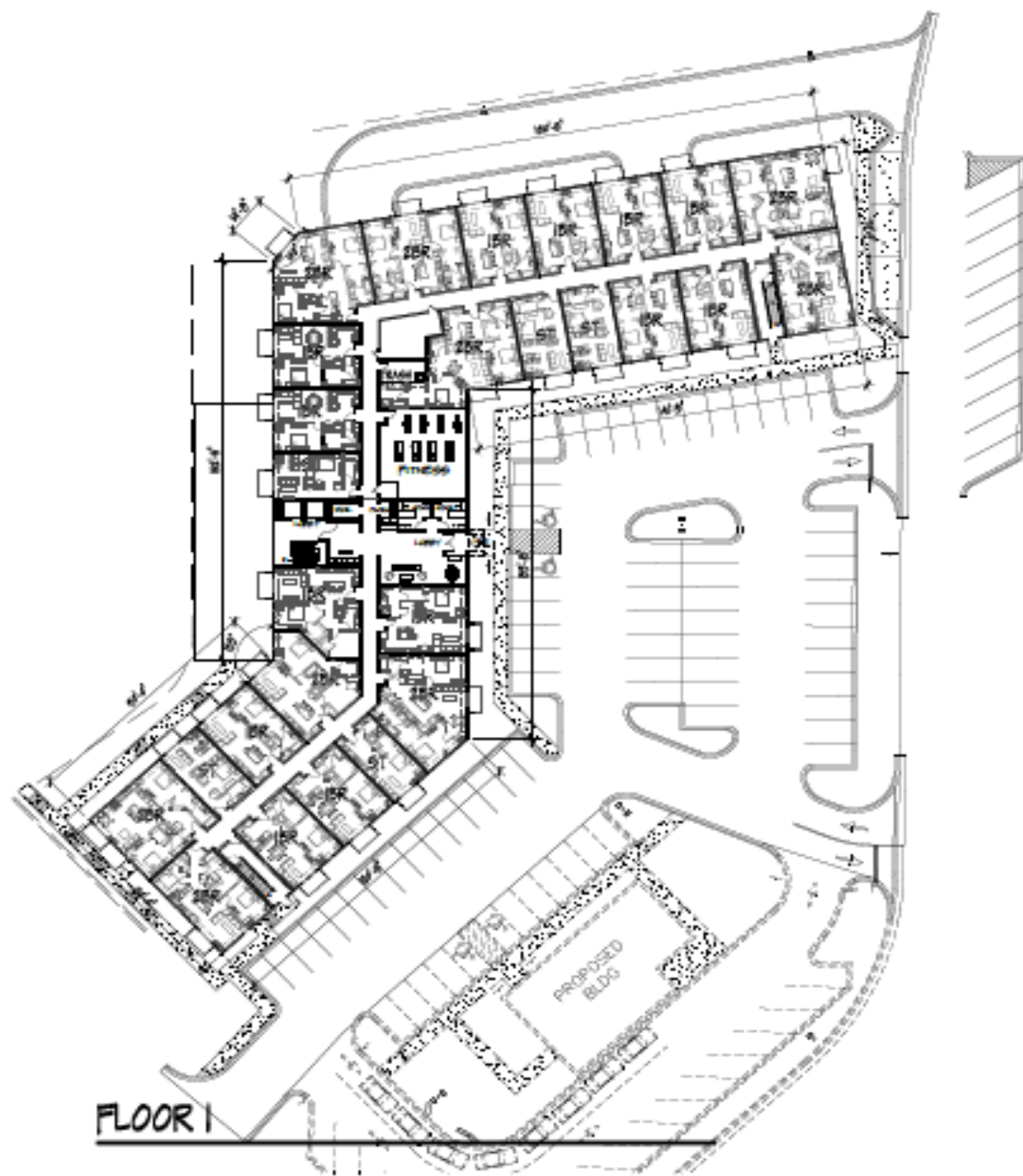
- The reduced lateral load property of TDA ASTM 6270 is being chosen for commercial foundation walls. One of its many benefits is the additional design safety factor. TDA porosity helps keep water draining away from the foundation wall and its insulation properties also reduce heat loss. Home basements and retaining walls have all benefited from TDA.





- TDA was used to **backfill Bridge abutment and wing walls.**

- After the slope failure, soil borings showed a previously undetected 5-20 feet layer of buried peat. Movement of the railroad tracks was confirmed by engineers.





TDA compacted with 6-7 passes after each 1-foot lift.





2018  
Lake Jonathan Flats  
Chaska, MN  
Foundation Wall Backfill  
Reduce Lateral Load  
Property

Engineered by: NTI, Nelson-Rudie & Associates  
Contractor: Lyon Contracting, SpeckTacular Companies





# TDA in Stormwater Infiltration Galleries

**Courtesy: Monte Niemi**, CEO, First State Tire Recycling





# Eco-Development

Photo courtesy of Saint Paul Port Authority

The **St. Paul Port Authority's** Beacon Bluff redevelopment project features a state-of-the-art storm water treatment system.

Rubber tire chips improve water infiltration rates by providing a less dense filling material than gravel or sand.

In **St. Paul**, 163 acres worth of storm water runoff that previously flowed directly into the Mississippi River will now filter through a state-of-the-art treatment system thanks to a collaborative effort organized by the St. Paul Port Authority. The new system is part of Beacon Bluff, a larger Port Authority redevelopment project to economically revitalize the 46-acre parcel of land that once served as 3M's East Side campus.

When construction of a new roadway on the Beacon Bluff property necessitated storm water runoff improvements to meet the city's updated watershed criteria, the Port Authority recognized a larger opportunity to help St. Paul improve outdated systems in an adjacent residential neighborhood by diverting its runoff into a new, supersized system.

A team effort between the Port Authority, the City of St. Paul, the Capitol Region Watershed District, civil engineering firm Loucks Associates and the University of Minnesota has made that system a reality. It features the SAFL Baffle,

a specialized baffle or metal grate named for and engineered by the U of M's St. Anthony Falls Laboratory. The patent-pending innovation traps about 90 percent of sediment from storm water runoff and stores it in a sump, where it can be periodically removed. Because contaminants often attach themselves to sediment, its removal will help prevent those contaminants from entering the river.

The system also can retain more than 1 million gallons of water, greatly reducing the risk of flooding. Ten-foot-wide metal reservoir tanks are surrounded by 7,000 cubic yards of recycled rubber tire chips, creating more void space for the water to infiltrate than traditional fillers like gravel or sand. Real-world infiltration and water quality data also will be tracked to gauge the system's effectiveness — a rarity among U.S. storm water systems. Monte Hilleman, Port Authority vice president of redevelopment, says the data will help fine-tune watershed requirements



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