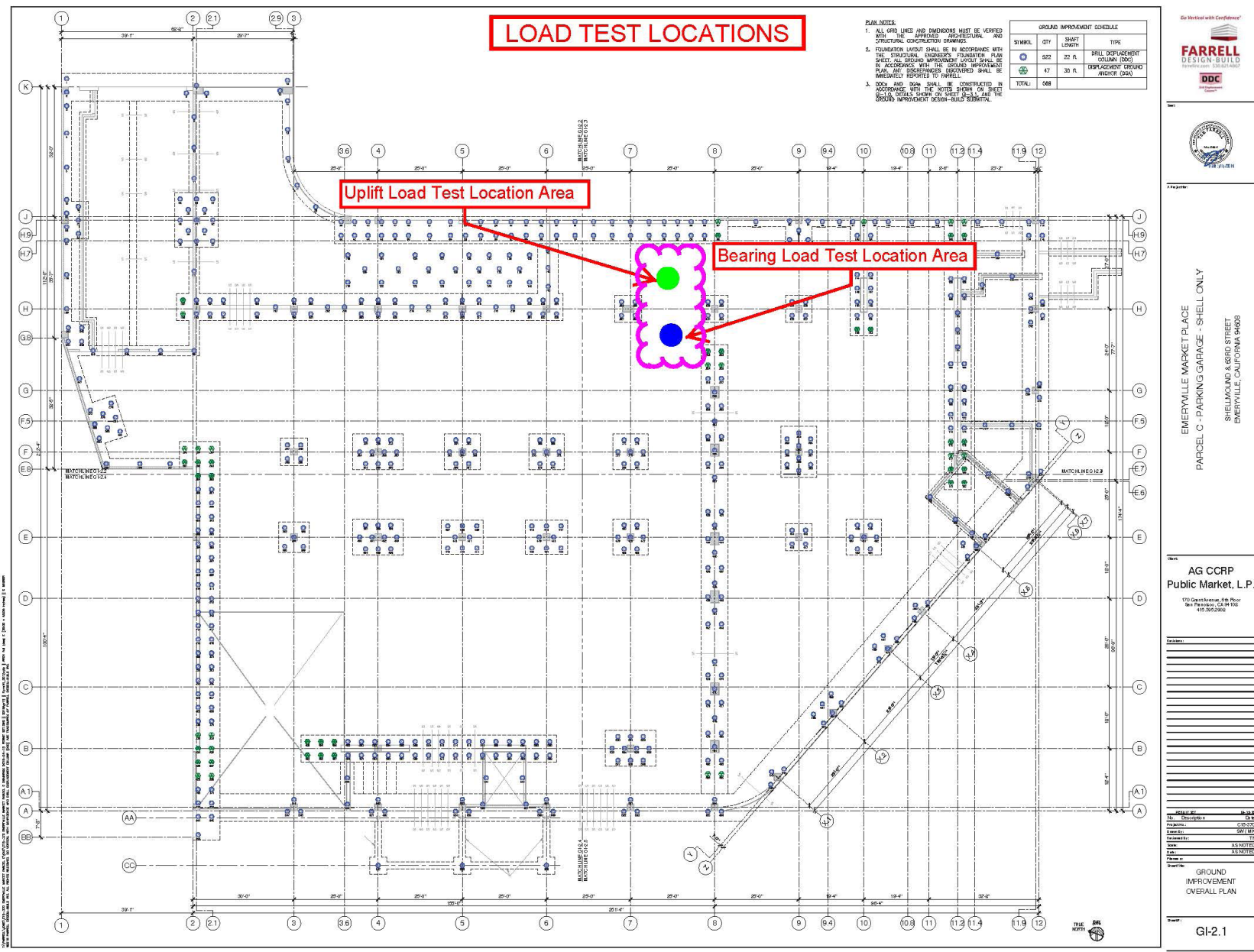


# A Case Study: Farrell DDC Ground Improvement

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The objective of this study is to document the ground improvement techniques employed by Farrell Design-Build Inc. to allow for the construction of the Emeryville Public Market. The market is a mixed use building with the an underlying soils issue. The land specified for construction had a history of being a dumping ground in the early 1900's. All types of contaminants contributed to the degradation of this soil from oil, to benzene, and asbestos. This created a situation in which concrete footings could not be excavated and installed without significant ground improvement. Farrell's patented Drilled Displacement Column system was used to alleviate the soil condition and has the potential to be of use in similar projects. Documenting this process is vital to the constant improvement of the construction industry, and the and the never ending push towards quality construction practice.



367 DDC installed 45' below



**Geologic Hazard Application**

- Soft/Loose Soil
- Liquefaction
- Contaminated Soil
- Lateral Spread
- Slope Stability

**Key Advantages**

- High stiffness & High capacity - Type 2
- No vibration
- Low spoil - DDC
- Uplift-tension hold-down
- Well defined concrete/grout column
- Liquefaction mitigation

**Diameter/Depth**

14, 16, 18, 24 in dia  
10 – 80 ft deep

**Compatible Soils**

Contaminated Soil - DDC  
Sand (SP, SM, SC)  
Silt (ML, MH)  
Clay (CL, CH)  
Undocumented Fill

**Bearing Capacity Range**

4,000 – 14,000 psf

**Key Considerations**

- Impermeable
- Rigid inclusion
- Gravel cushion
- Grout with low spoil
- Concrete cleanup
- Flat stable pad

**Comparable To**

- Rigid inclusions
- Concrete piers
- Driven piles
- Geopier®
- Soil mix columns

