

1299 Beacon Street

geotechnical and environmental considerations



Presented to:

Town of Brookline ZBA

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS



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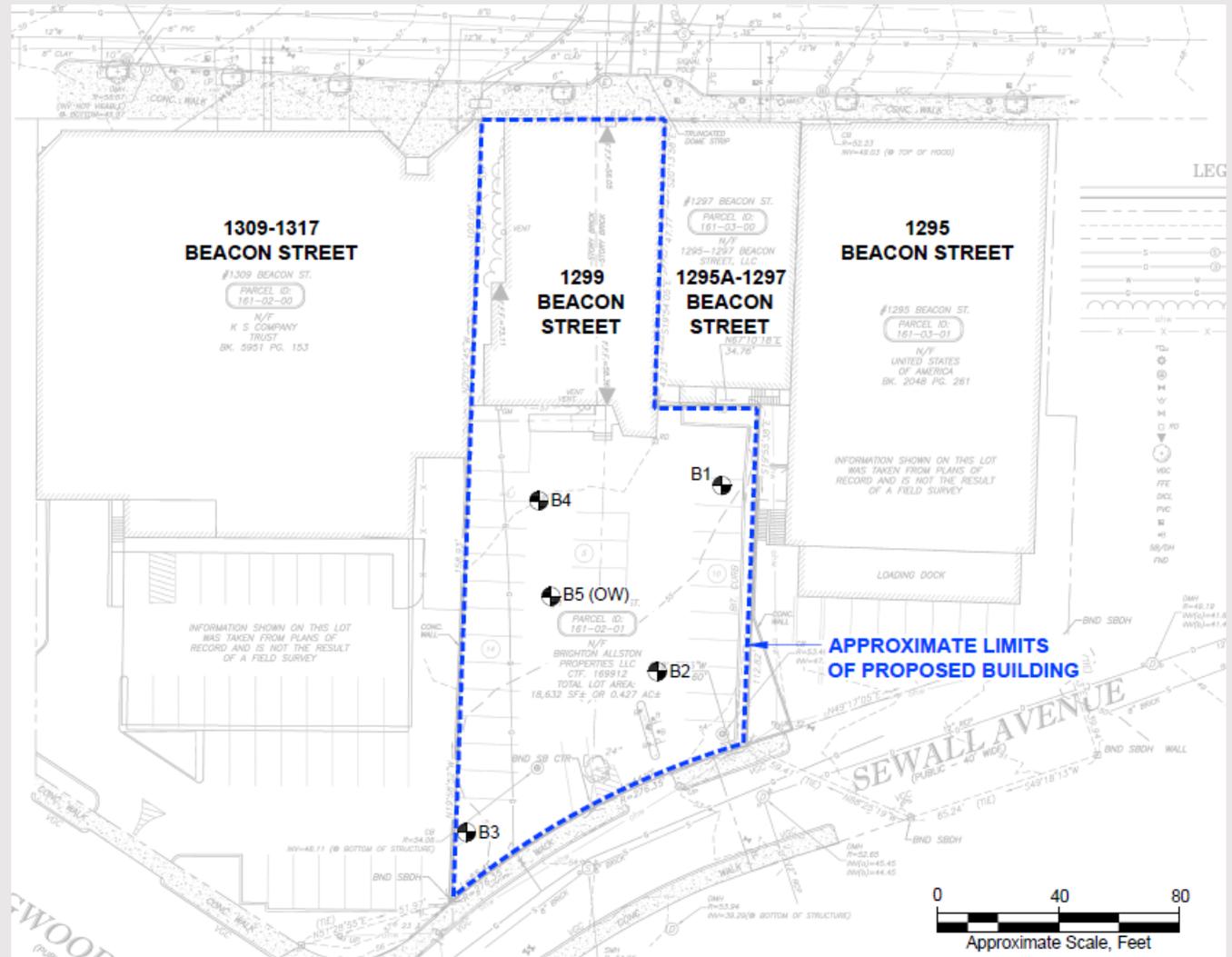
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MAY 1, 2019

Geotechnical explorations

Summary:

- Five (5) Borings
- December 2018
- 51 ft deep (except B5)
- One (1) monitoring well



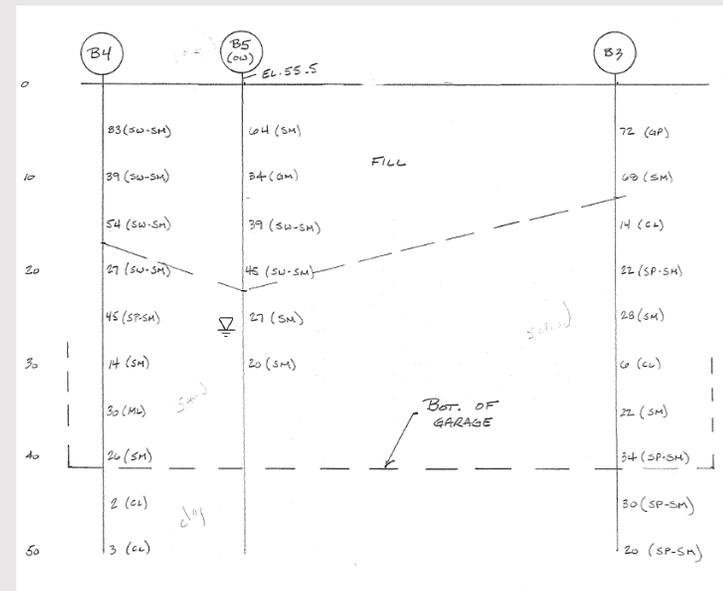
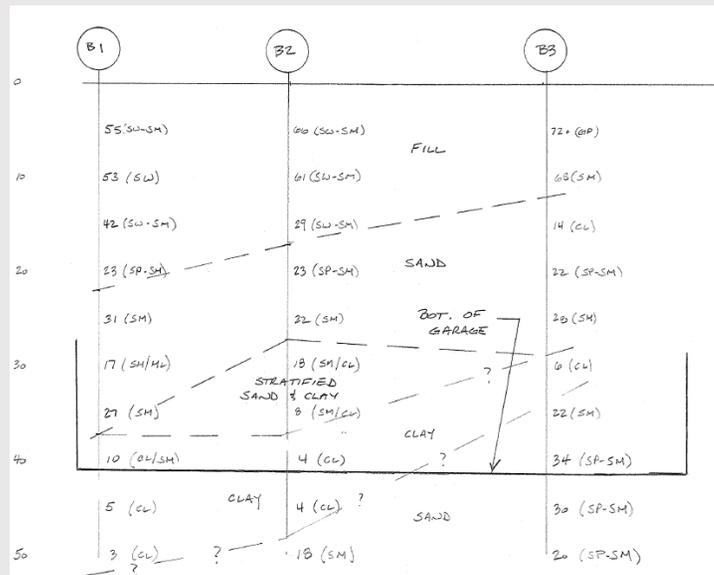
Subsurface conditions

Soil:

- Fill: 12 to 22 feet thick
- Upper Sand: Below Fill, 9 to 25 feet thick
- Stratified Sand and Clay: Only in B2
- Clay: 27 to 42 feet deep. Not penetrated in all borings
- Lower Sand: Encountered below clay where penetrated

Groundwater:

- ~25 feet below ground surface (~El 30 to El 32)



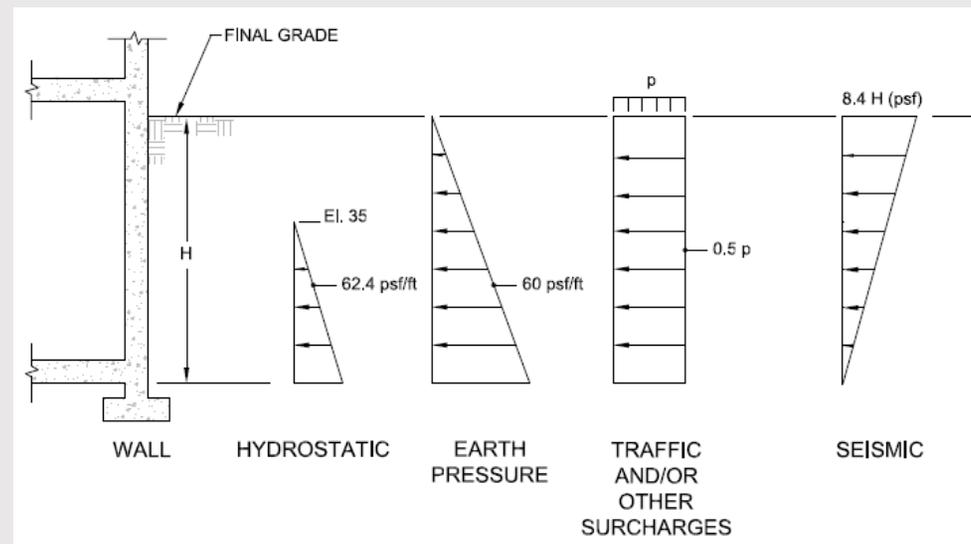
Geotechnical Recommendations

Foundations:

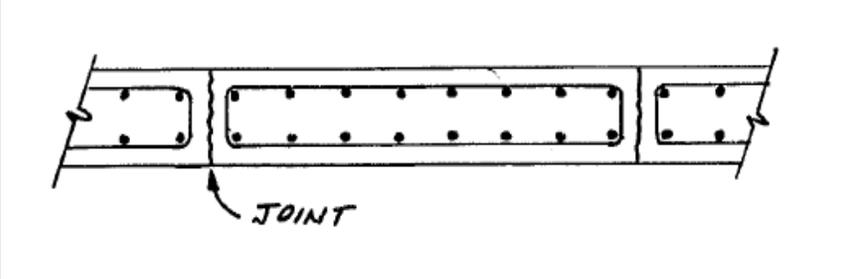
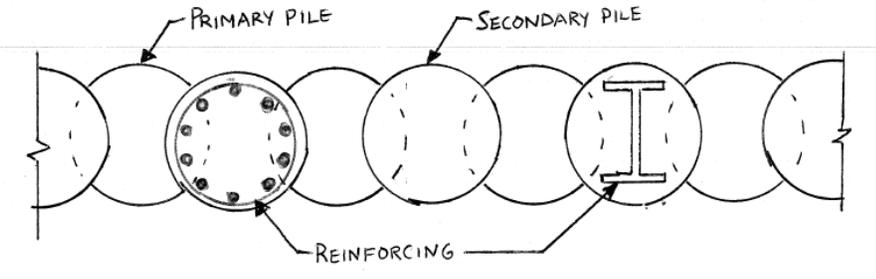
- Mat Foundation
- Spread Footings with Structural Bottom Slab

Exterior Foundation Walls:

- Secant Pile or Diaphragm Wall installed with Slurry Techniques



Secant Piles and Diaphragm Walls

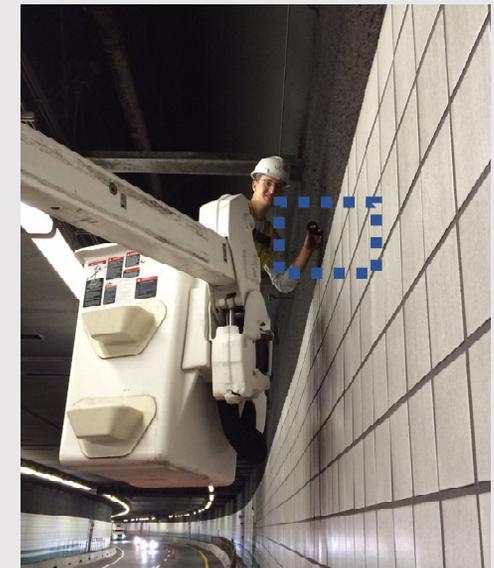
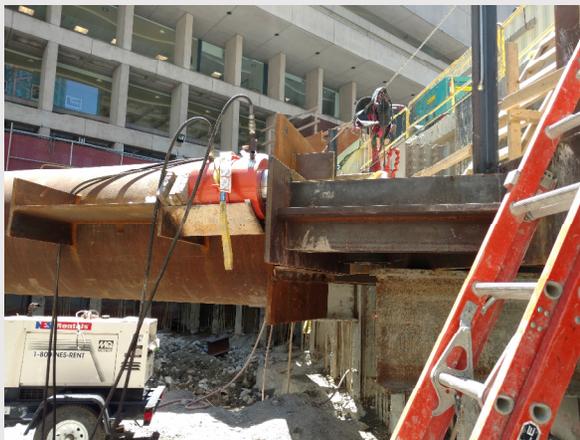
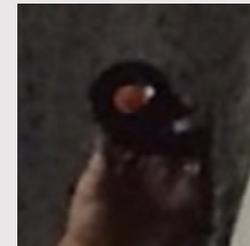
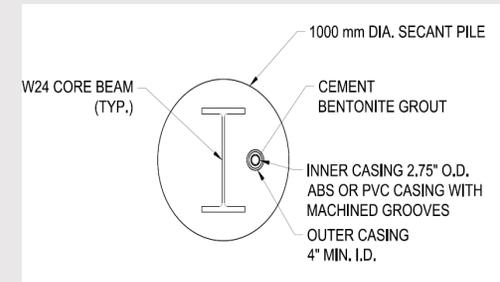


Instrumentation and Monitoring



Protection of Existing Structures / Limit Movement

- Prestress Internal Bracing
- Monitor with Geotechnical Instrumentation
 - Vibration at Existing Structures
 - Movement of the Wall and Structures
 - Groundwater Outside of Excavation
 - Considering Real Time Automated Monitoring



Groundwater Control and Disposal During Construction:

- Use Secant Pile Walls to Limit Groundwater Infiltration (Cutoff Flow)
- Dewatering wells and well points to dewater inside excavation
- Discharge into the storm drain system. Pre-treat and perform chemical testing to comply with EPA permitting (DGP or RGP).

Soil Disposal:

- Direct load onto trucks (stockpiling not reasonable)
- Urban Fill Disposal
- Pre-characterize soil for disposal
 - Testing is generally required every 500 cubic yards
 - Do not perform testing until construction schedule is definite.

Questions and Discussion

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