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A Keller Company

# Micropile Foundation Repair and Underpinning

Arts & Sciences Museum  
University of Puerto Rico, Mayaguez

John R. Wolosick, PE

Peter J. Nufer, PE

Hayward Baker Inc.

Eduardo Bonar

Gabriel Fuentes Jr. Construction Company



# Original Structure



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# Building after Hurricane Georges



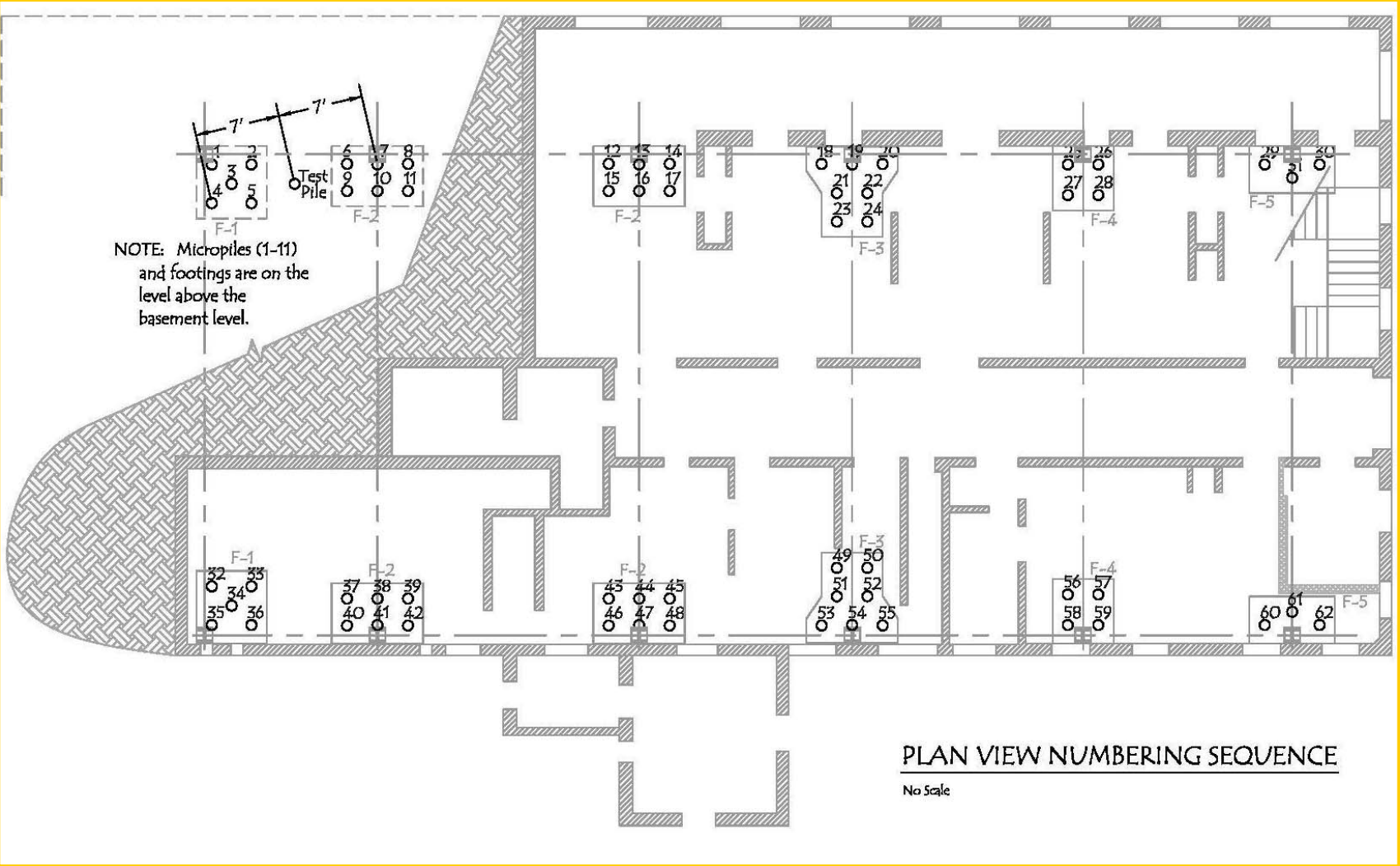
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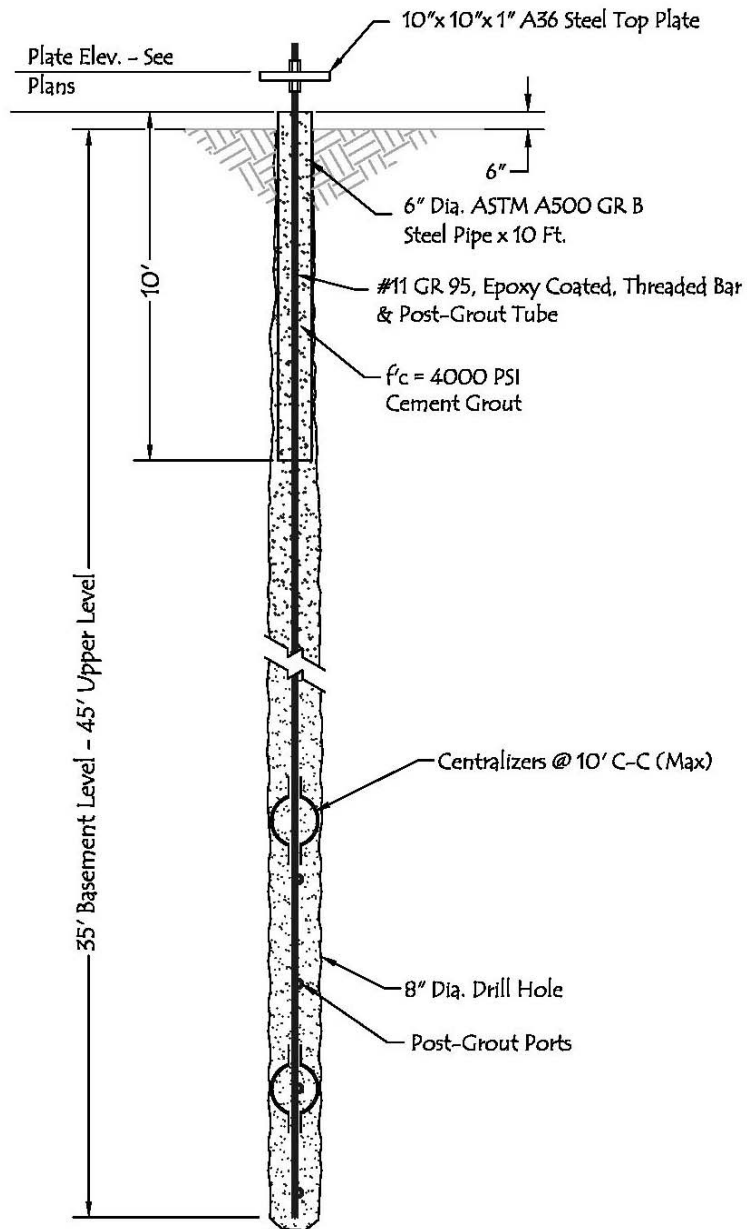


# Roof was Destroyed



# Micropile Locations





TYPICAL 50 kip MICROPILE DETAIL

## Typical 50 kip Micropile Detail

Bond Zone in  
Medium Clay with  
Relatively High  
Moisture  
Contents

## Lifting Drill into Courtyard





# Load Test Reaction Beam





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# Drilling for Load Test Pile



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# Static Load Test



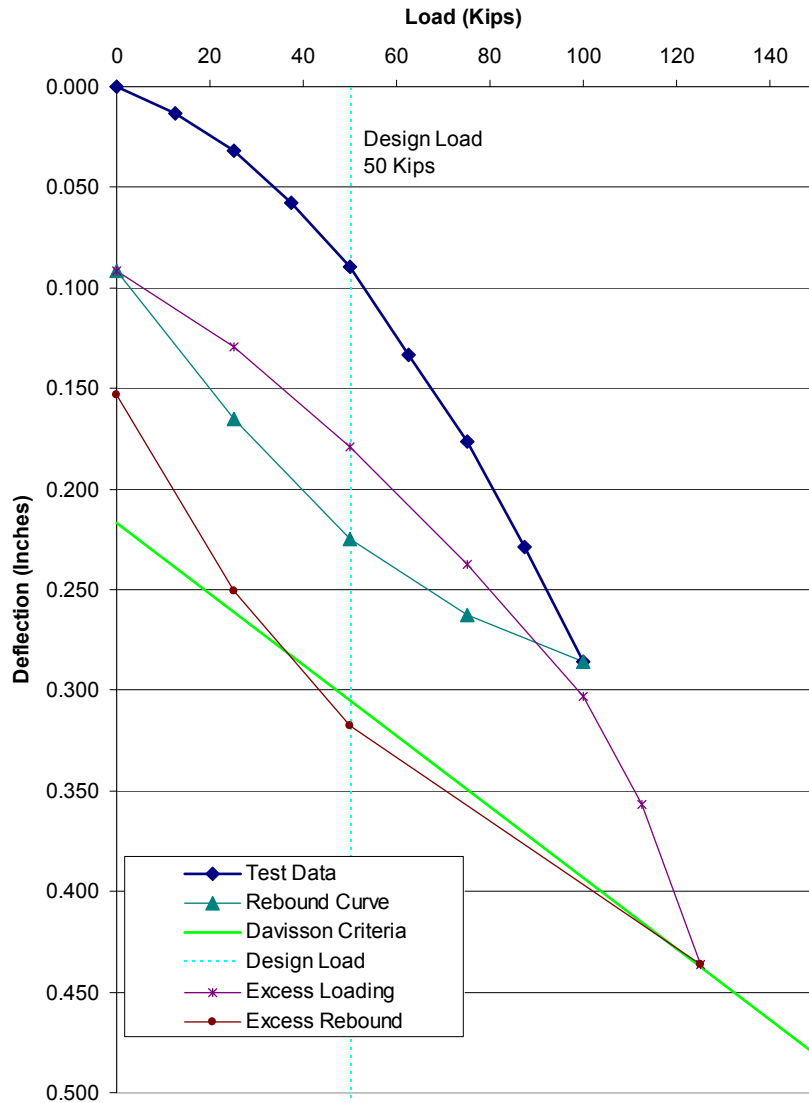
# Load Cell Required by Specifications



11/14/2005



Museum of Arts & Sciences Micropile  
60 Ton Load Test  
Mayaguez, PR



25 Ton Working  
Load with 60 Ton  
Load Test as  
Specified

# Electric Klemm 704 Drill with Retractable Tracks



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# Tight Access



# Remote Drill Control in Low Headroom



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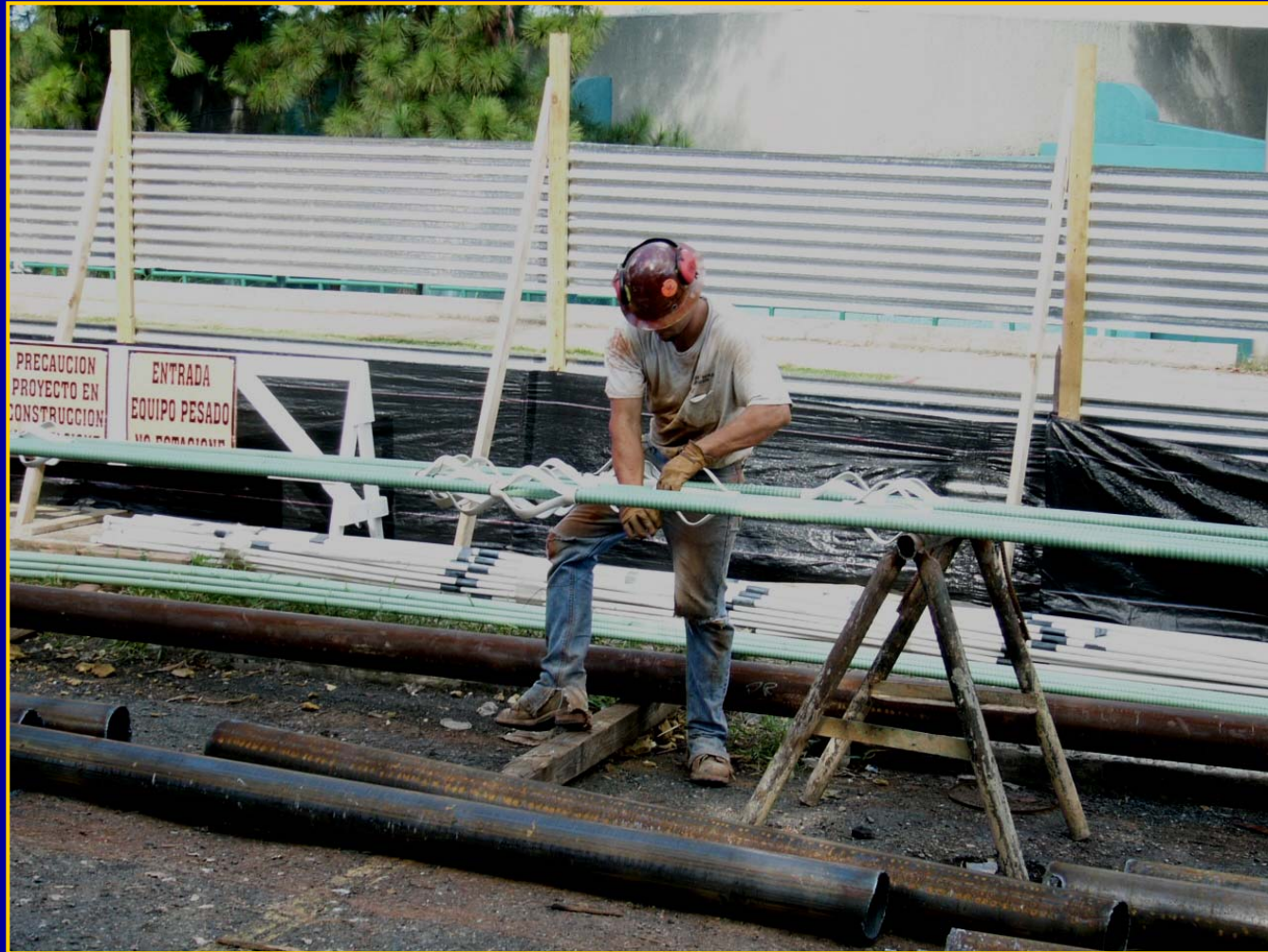
# Drilling Micropiles in Low Headroom Conditions



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# Securing Centralizers on Reinforcing Bars



# Reinforcing Bars with Centralizers



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# Grout Mixing with Coloidal Mixer



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# Tremie Grouting Micropile





## Placing Upper Zone Steel Pipe in Micropile



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# Micropiles under Construction



# Micropile Post-Grouting



# Grout Cubes



# Completed Micropiles with Bearing Plates



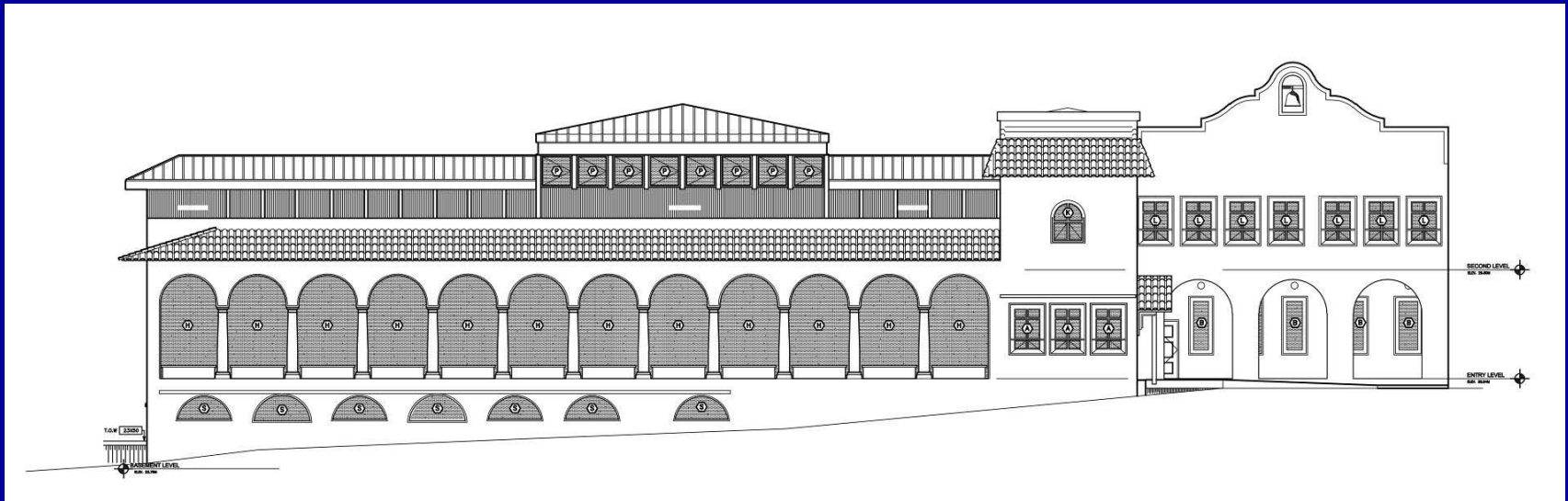
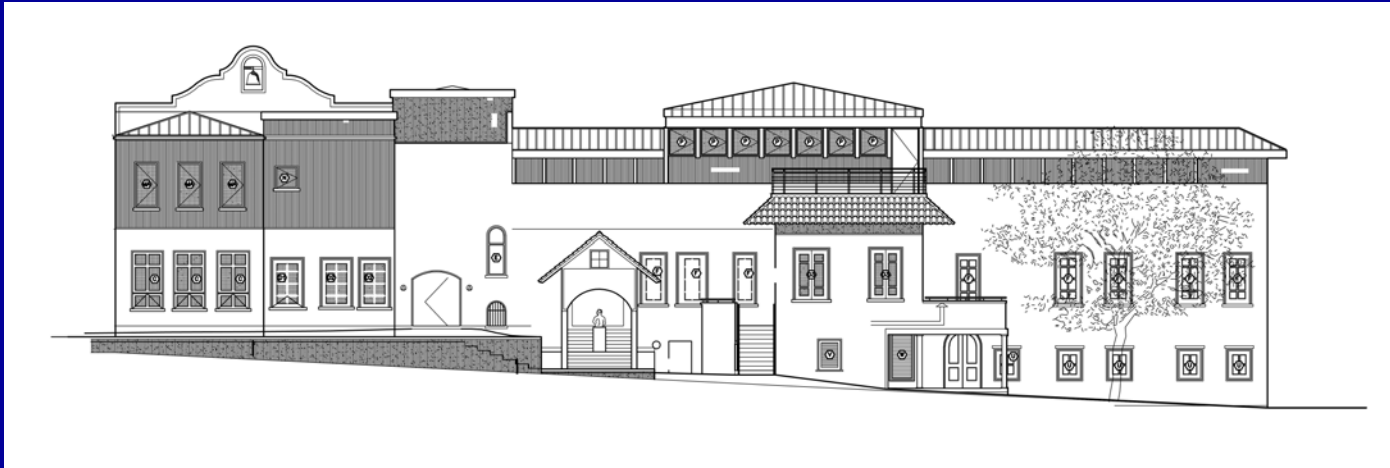
# New Micropile Support Roof Structure



# New Roof Structure



# Architect's Rendering of Completed Structure





# Rendering of Final Structure



# Rendering of Final Structure



**End**

**Thank you**

**[jrwolosick@haywardbaker.com](mailto:jrwolosick@haywardbaker.com)**

