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**Geotechnical Map and Sections  
(Geotechnical Setbacks)  
GMU Geotechnical, Inc.**

February 26, 2013

Gentlemen:

Attached is GMU's updated Geotechnical Map and Sections which illustrate the approximate limits of the geotechnical set-back (15' from the back of the existing seawall) and the "Lateral Spread Mitigation Zone" consisting of 24-inch-diameter rammed aggregate piers at **6' on-center**. This "zone" will need to be **20' wide and between 16' to 20' deep** per the map and sections shown.

I've also attached a typical layout of these 24-inch-diameter rammed aggregate piers for this mitigation zone.

Please notice that this mitigation zone is present under both building No. 6 and No. M-1. In these two cases the design can utilize the rammed aggregate piers for "**double duty**" in forming both the mitigation zone and the foundation support for the building in this areas of each structure.

As far as the placement of the utility line trenches between the existing seawall and the proposed buildings, we recommend that, because of the County concerns regarding the sewer lines and potential differential settlement from spaced support of the aggregate piers, consideration should be given to place the sewer trench between the lateral spread mitigation zone and the planned buildings. Since there is a requirement that the water line trench be at least 10-foot-wide separation from the sewer line trench, we recommend that the water line trench be placed within the lateral spread mitigation zone between the rammed aggregate piers in order to keep it safe any influence of lateral spreading. Trenching for the dry utility lines may be placed wherever it is most beneficial to the project site and does not conflict with the wet utility lines. The rammed aggregate piers can be trenched through at any point as long as the trenches are conventionally backfilled with either backfill soils compacted to at least 90% compaction or a 2-sack sand/cement slurry.

Let me know if I can be of any further assistance,

*Dave*



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Doing California's Groundwork for **40** Years



BY \_\_\_\_\_  
CHK \_\_\_\_\_

DATE \_\_\_\_\_

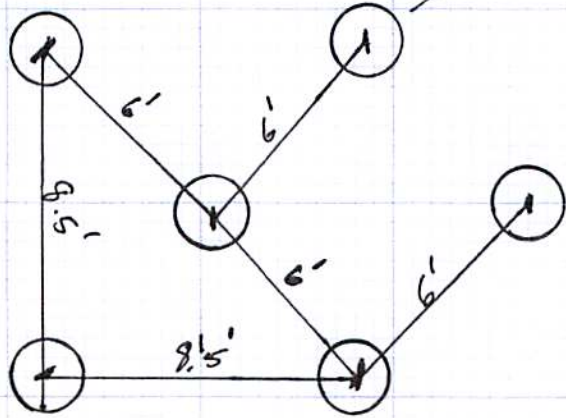
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REVISIONS

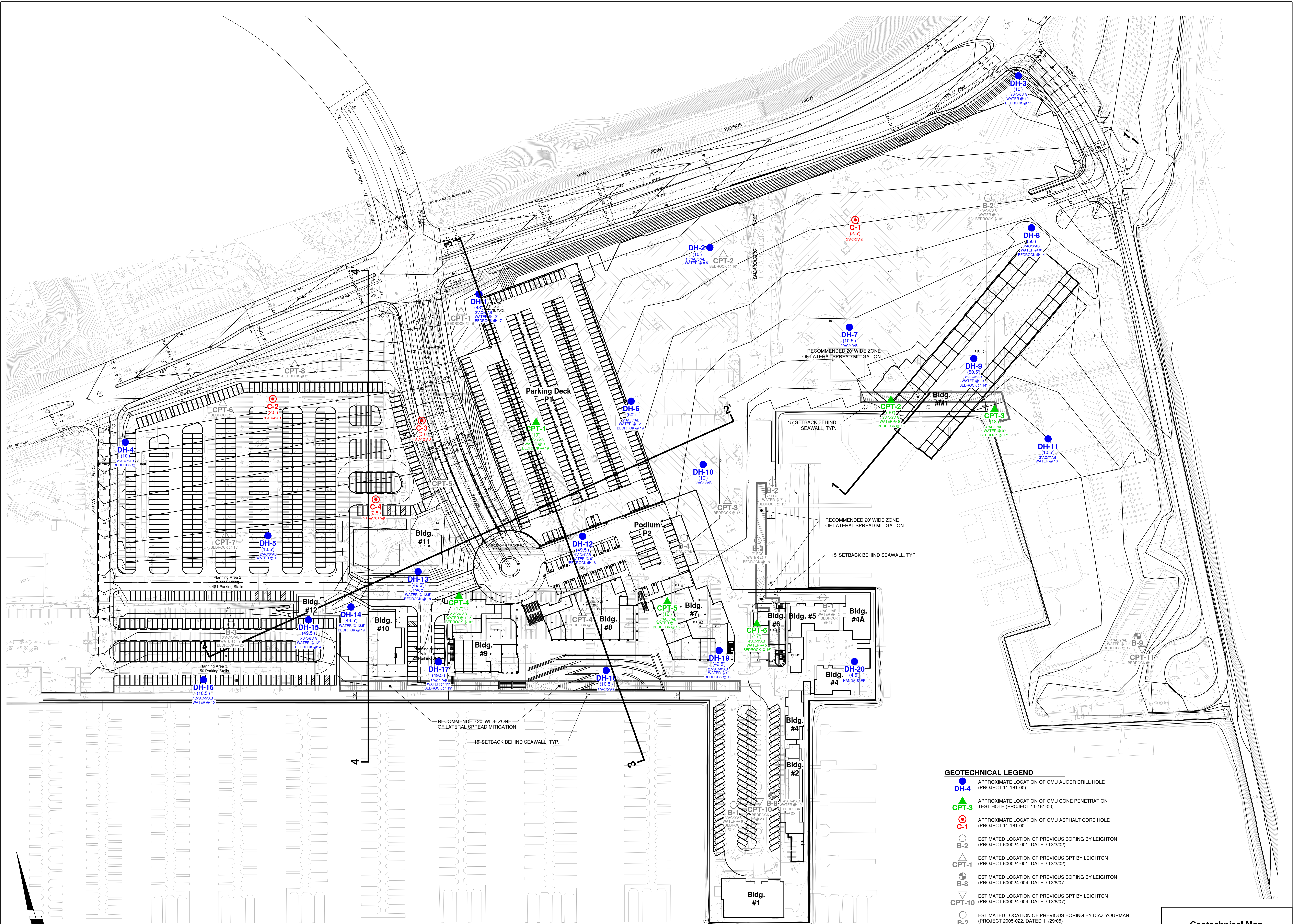
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MITIGATION ZONE



20-24" DIAMETER  
IMPACT  
TYPICAL

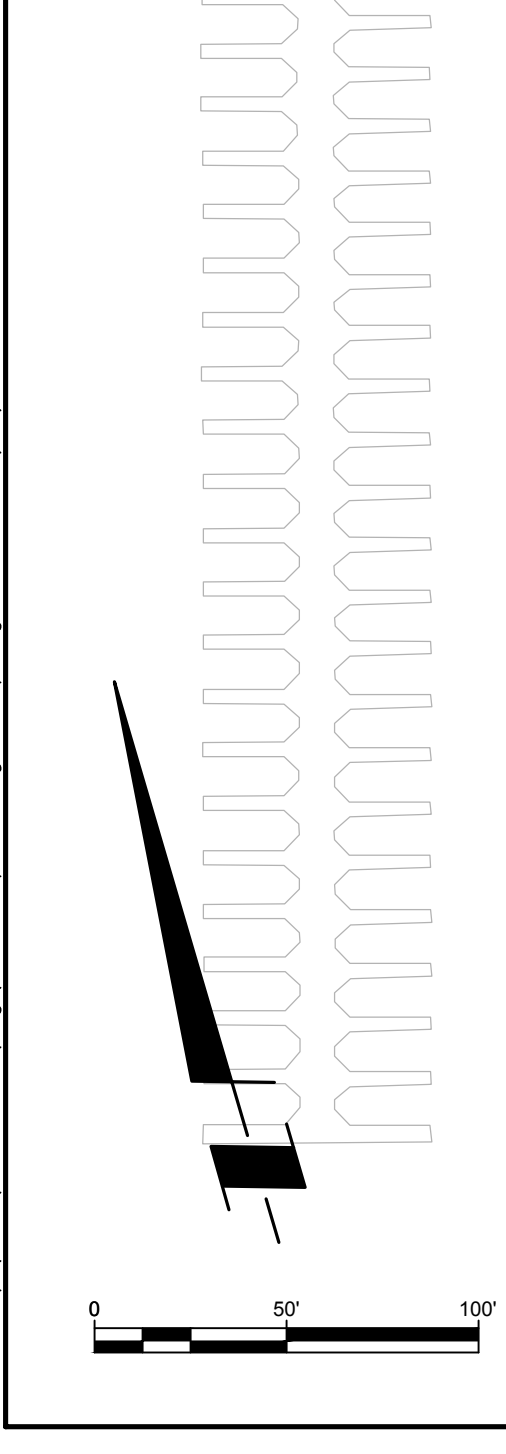


**GEOTECHNICAL LEGEND**

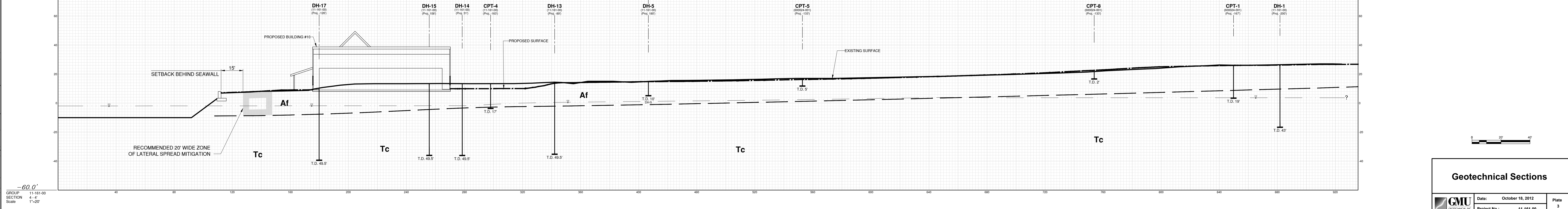
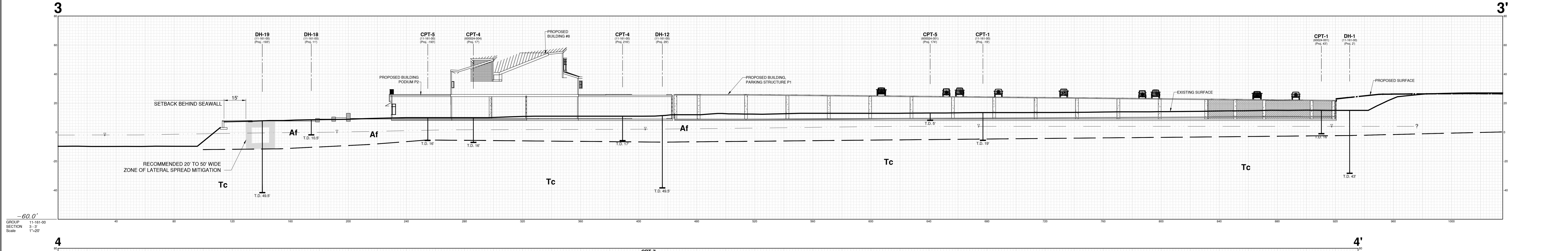
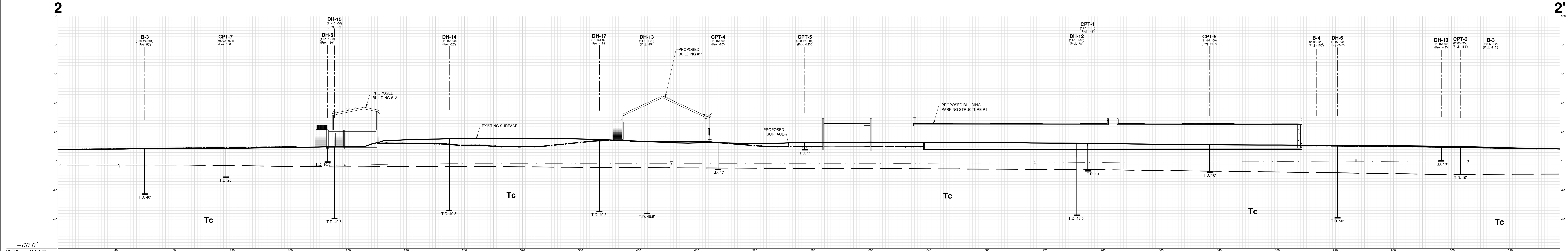
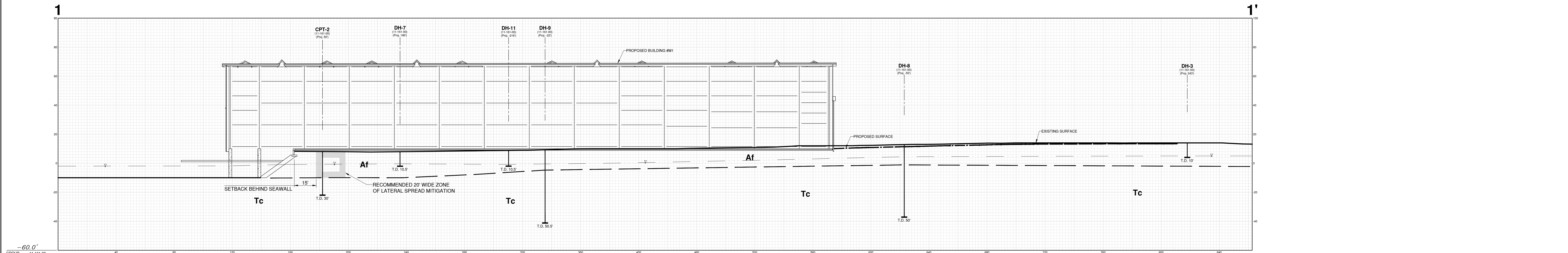
- APPROXIMATE LOCATION OF GMU AUGER DRILL HOLE (PROJECT 11-161-00)
- ▲ APPROXIMATE LOCATION OF GMU CONE PENETRATION TEST HOLE (PROJECT 11-161-00)
- APPROXIMATE LOCATION OF GMU ASPHALT CORE HOLE (PROJECT 11-161-00)
- ESTIMATED LOCATION OF PREVIOUS BORING BY LEIGHTON (PROJECT 600024-001, DATED 12/3/02)
- △ ESTIMATED LOCATION OF PREVIOUS CPT BY LEIGHTON (PROJECT 600024-001, DATED 12/3/02)
- ESTIMATED LOCATION OF PREVIOUS BORING BY LEIGHTON (PROJECT 600024-004, DATED 12/6/07)
- △ ESTIMATED LOCATION OF PREVIOUS CPT BY LEIGHTON (PROJECT 600024-004, DATED 12/6/07)
- ESTIMATED LOCATION OF PREVIOUS BORING BY DIAZ YOURMAN (PROJECT 2005-022, DATED 11/29/05)

**Geotechnical Map**

	Date: October 18, 2012	Plate
	Project No.: 11-161-00	2



DRAWING: 11-161-00-Geotechnical Map - PLOTTED: 10/18/2012 11:04 AM BY: James Mess



GROUP SECTION  
Scale  
1'-1"  
1'-20"

GROUP SECTION  
Scale  
2'-2"  
1'-20"

GROUP SECTION  
Scale  
3'-3"  
1'-20"

GROUP SECTION  
Scale  
4'-4"  
1'-20"