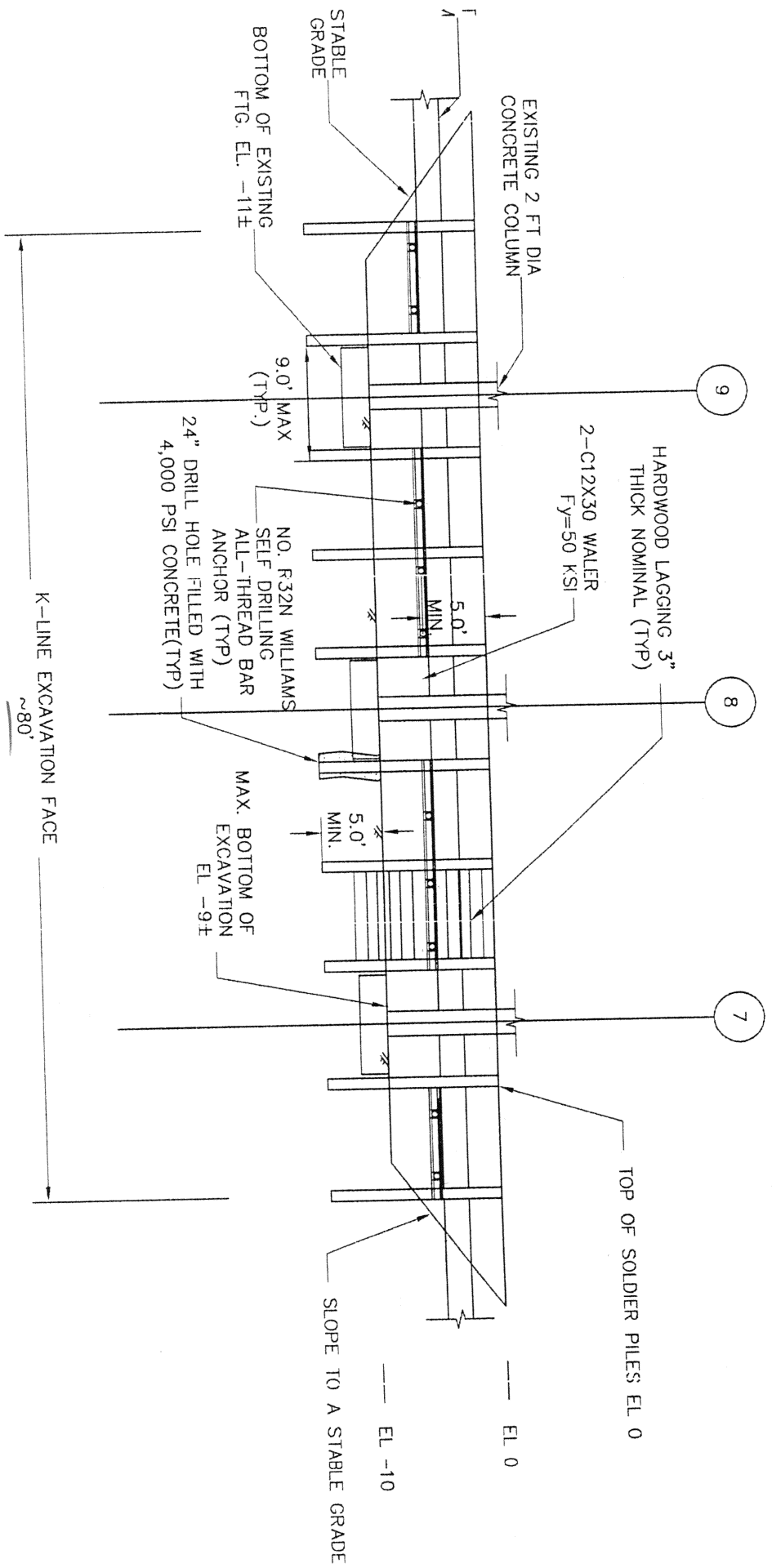
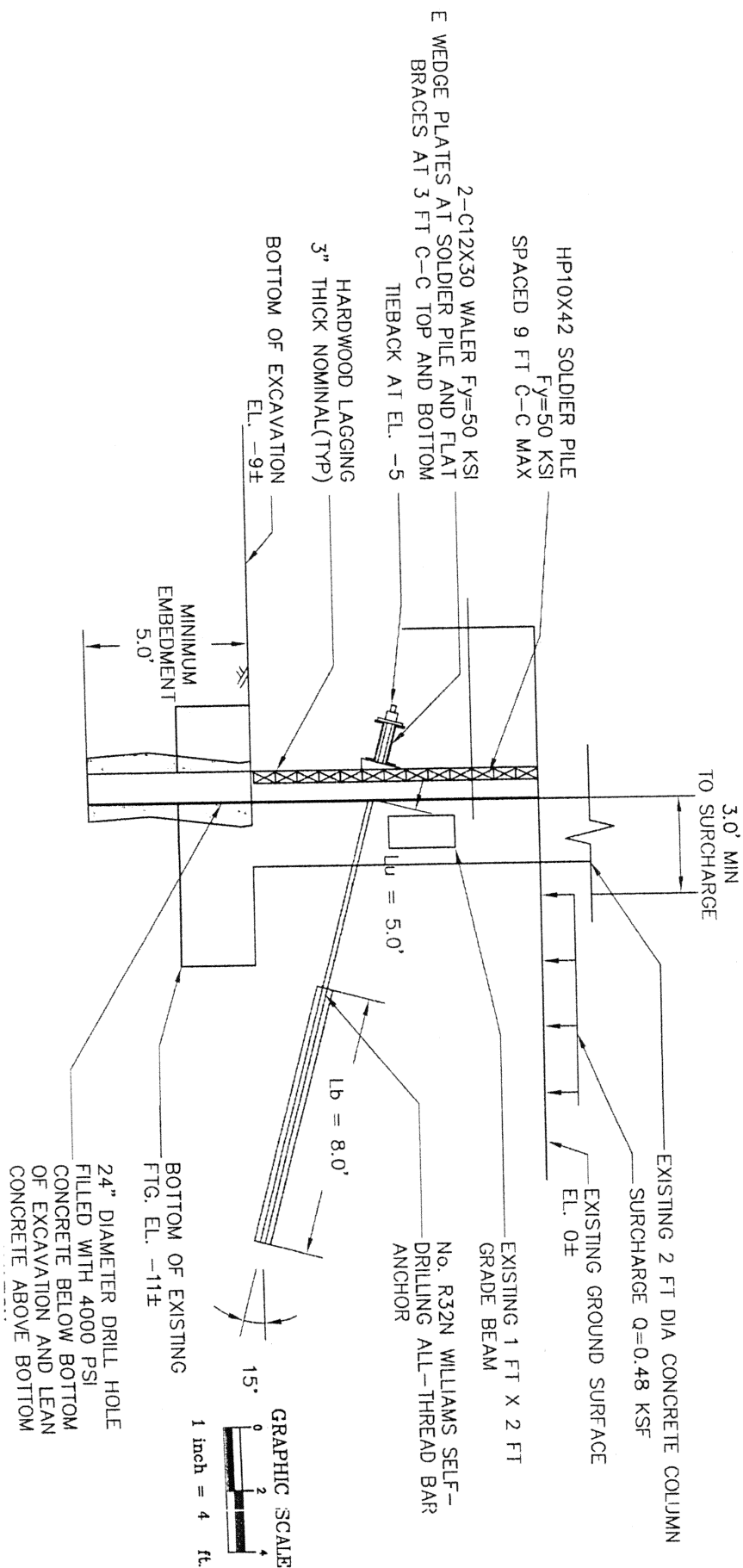




LAST SOLDIER PILE AS SHOWN
IN DESIGN DATED 2/14/06

No. R32N WILLIAMS SELF DRILLING
ALL-THREAD 20 KIP TIEBACK ANCHOR
(TYP.)

K-LINE
CONTINUOUS WALKER
TWO C12X30 (FY=50 KSI)
SEE FIGURE 2

HP 10x42 SOLDIER PILE
FY = 50 ksi
SPACED 11' C-C MAX.
EMBED 5 FT MIN
(TYP)

NOTE:
THIS DESIGN CONSIDERS THAT
THE CONTRACTOR WILL DEWATER
THROUGH CONSTRUCTION
MAINTAINING THE GROUNDWATER
TABLE AT A MAXIMUM EL. -15.
CONTRACTOR SHALL PERFORM
DEWATERING IF NECESSARY.
THIS DESIGN DOES NOT PROVIDE
METHODS OF DEWATERING.

GRAPHIC SCALE



(L.3) (L)

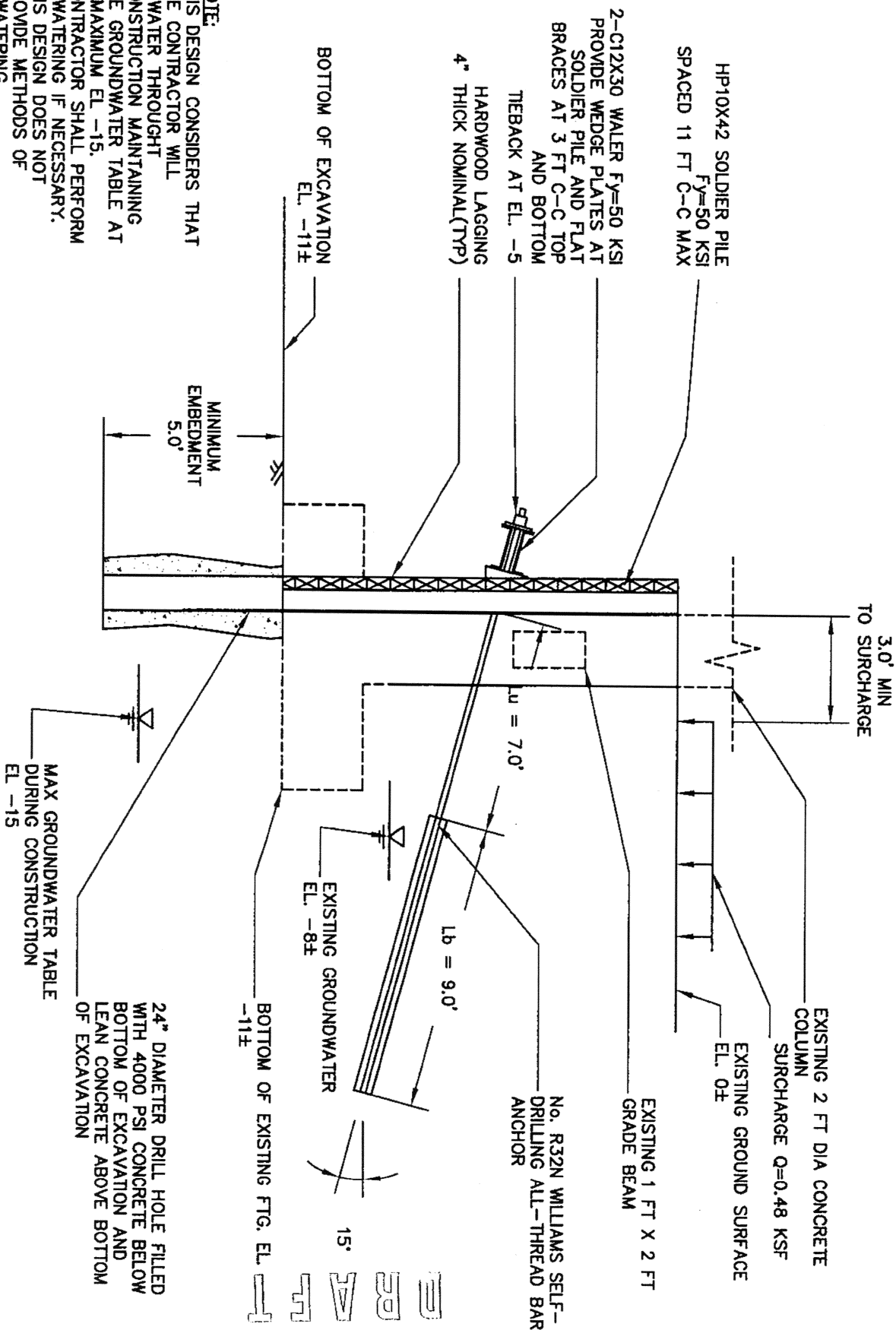
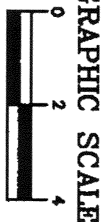
REFERENCE: Granary Associates provided the base plan for this drawing.



TEMP EXCAVATION SUPPORT -
ADDENDUM No 1
ATLANTICARE MEDICAL CENTER
ATLANTIC CITY, NJ

EXTENTS OF SUPPORT
PLAN VIEW
PROJECT NO. 05150103
FIGURE 1

NOTE:
THIS DESIGN CONSIDERS THAT THE CONTRACTOR WILL DEWATER THROUGH THE CONSTRUCTION MAINTAINING THE GROUNDWATER TABLE AT A MAXIMUM EL. -15. CONTRACTOR SHALL PERFORM DEWATERING IF NECESSARY. THIS DESIGN DOES NOT PROVIDE METHODS OF DEWATERING.



Schnabel
Schnabel Engineering

TEMP EXCAVATION SUPPORT -
ADDENDUM No 1
ATLANTICARE MEDICAL CENTER
ATLANTIC CITY, NJ

SECTION VIEW ALONG K-LINE
APPROX COLUMN LINE 5 TO 6
PROJECT NO. 05150103
FIGURE 2

GEO TECH, INC.

DRAWN BY: CMF DATE: 10-27-04
CHECKED BY: MA DATE: 11-22-04

PROJECT: 2641
PLATE: 6

- V - IN-SITU VANE TEST
- M - MECHANICAL ANALYSIS
- U - UNCONFINED COMPRESSION
- S - TRIAXIAL DRAINED
- Q - TRIAXIAL UNDRAINED
- O - ORGANIC CONTENT (%)
- X - WET UNIT WEIGHT (PCF)
- K - PERMEABILITY
- C - CONSOLIDATION
- WL - WATER LEVEL IN CASING
- WT - WATER TABLE IN SOIL
- qc - TRIAXIAL CONSOLIDATED UNDRAINED

- ☒ DISTURBED
- ☒ FAIR
- ☒ GOOD
- ☐ LOST

- ☒ 2" O.D. SPLIT SPOON
- ☒ 3" O.D. THIN WALLED TUBE
- ☒ AUGER SAMPLE
- ☒ ROCK CORE
- ☒ WASH SAMPLE
- ☒ CHUNK SAMPLE

ABBREVIATIONS

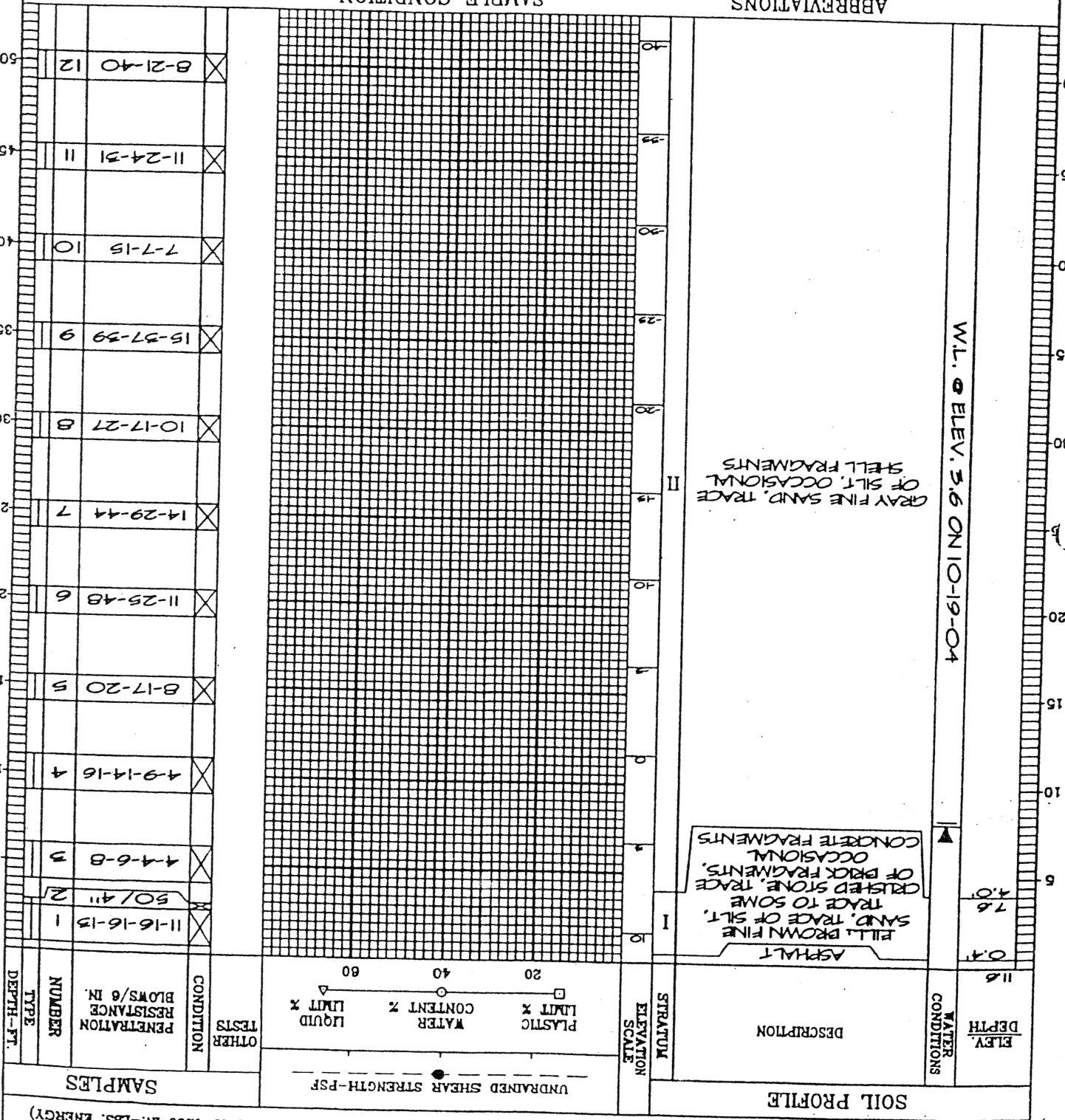
SAMPLE CONDITION

SAMPLE TYPES

GRAY FINE SAND, TRACE
OF SILT, OCCASIONAL
SHELL FRAGMENTS

ELL. BROWN FINE
SAND, TRACE OF SILT,
TRACE TO SOME
CRUSTED STONE, TRACE
OF BRICK FRAGMENTS,
OCCASIONAL
CONCRETE FRAGMENTS

WL. @ ELEV. 5.6 ON 10-19-04



SOIL PROFILE

UNDRAINED SHEAR STRENGTH-PST

SAMPLES

DATE 10-19-04
SAMPLE HAMMER WT 140 LBS. DROP 20 IN. (PENETRATION RESISTANCES CONVERTED TO BLOWS OF 4200 IN.-LBS. ENERGY)
DATE STARTED 10-19-04 DATE COMPLETED 10-19-04

OFFICE REPORT ON SOIL EXPLORATION BORING 7

APPENDIX I

APPENDIX I

OFFICE REPORT ON SOIL EXPLORATION

BORING 7

DATE 10-19-04 DATE STARTED 10-19-04 DATE COMPLETED 10-19-04
 SAMPLER HAMMER WT 140 LBS. DROP 30 IN. (PENETRATION RESISTANCES CONVERTED TO BLOWS OF 4200 IN.-LBS. ENERGY)

SOIL PROFILE

DESCRIPTION

STRATUM
ELEVATION
SCALE

WATER
CONDITIONS

ELEV
DEPTH

GRAY FINE SAND, TRACE
OF SILT, OCCASIONAL
SHELL FRAGMENTS

GRAY FINE TO COARSE
SAND, TRACE TO SOME
GRAVEL, TRACE OF SILT

DARK GRAY SILT,
TRACE OF CLAY, TRACE
OF FINE SAND,
OCCASIONAL
DECOMPOSED
VEGETATION

GRAY FINE TO MEDIUM
SAND, TRACE TO SOME
GRAVEL, TRACE OF SILT

END OF BORING

SEE PLATE 7

UNDRAINED SHEAR STRENGTH-PSF

PLASTIC LIMIT %
WATER CONTENT %
LIQUID LIMIT %

OTHER
TESTS

CONDITION

PENETRATION
RESISTANCE
BLOWS/8 IN.

NUMBER

DEPTH-FT.

SAMPLES

ABBREVIATIONS

SAMPLE CONDITION

SAMPLE TYPES

V - IN-SITU VANE TEST
 M - MECHANICAL ANALYSIS
 U - UNCONSOLIDATED COMPRESSION
 C - CONSOLIDATION
 K - PERMEABILITY
 X - WET UNIT WEIGHT (pcf)
 q_c - TRIAXIAL CONSOLIDATED UNDRAINED
 q_u - TRIAXIAL UNDRAINED
 s - TRIAXIAL DRAINED
 q - ORGANIC CONTENT (%)

W - WATER LEVEL IN CASING
 WL - WATER TABLE IN SOIL
 q_c - TRIAXIAL CONSOLIDATED UNDRAINED
 LOST
 GOOD
 FAIR
 DISTURBED

2" O.D. SPLIT SPOON
 3" O.D. THIN WALLED TUBE
 AUGER SAMPLE
 ROCK CORE
 WASH SAMPLE
 CHUNK SAMPLE

DRAWN BY: CMF DATE: 10-27-04
 CHECKED BY: WA DATE: 11-22-04

PROJECT: 2641
 PLATE: 6A

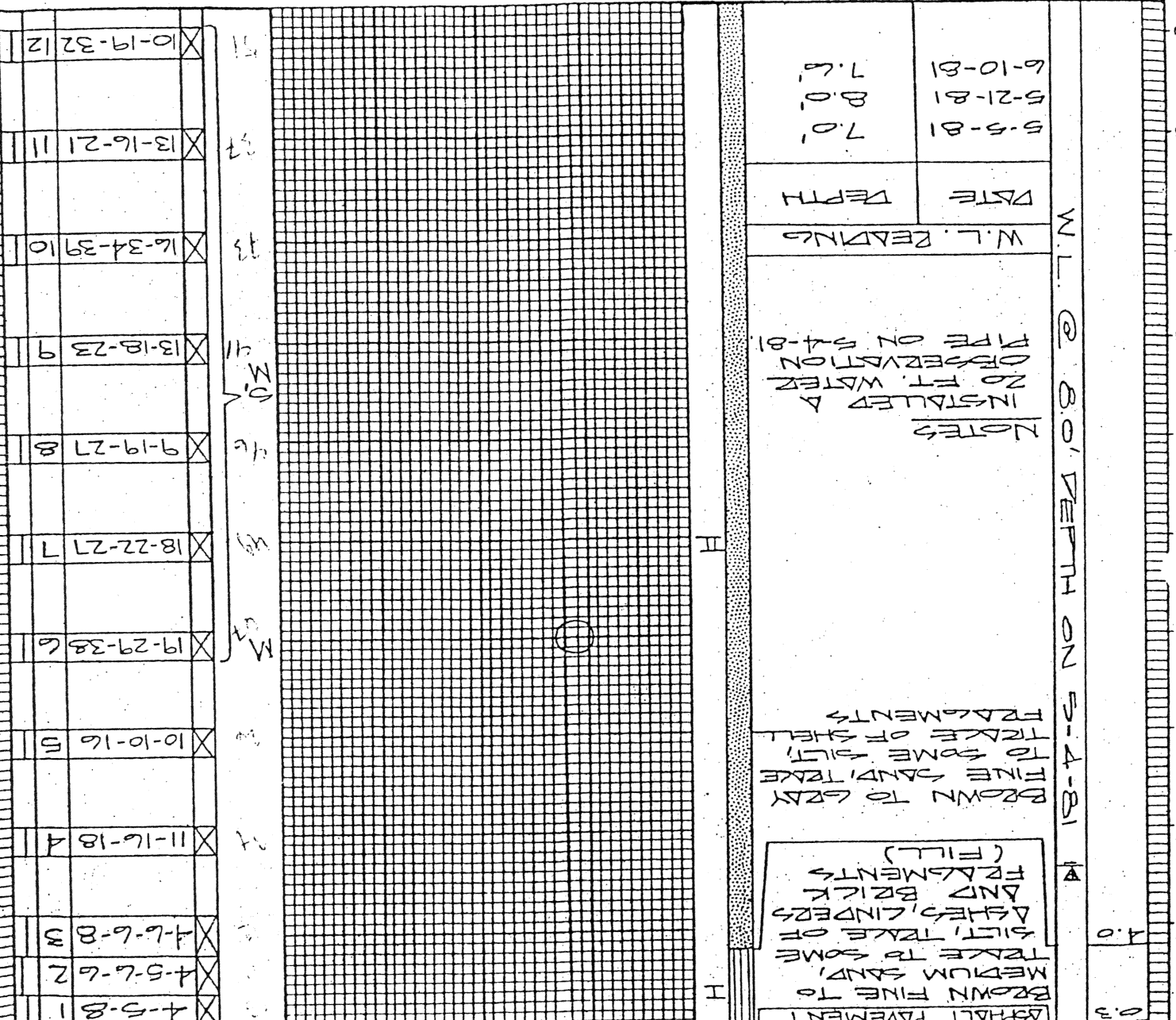
GEOTECH, INC.

APPENDIX III

OFFICE REPORT ON SOIL EXPLORATION - BORING: 18

DATUM GRADE DATE STARTED 5-4-81 DATE COMPLETED 5-5-81
SAMPLER HAMMER WT. 140 LBS. DROP 30 IN. (PENETRATION RESISTANCES CONVERTED TO BLOWS OF 4200 IN.-LBS. ENERGY)

SOIL PROFILE		ELEVATION SCALE	STRATUM	DESCRIPTION
DEPTH ELEV.	WATER CONDITIONS			



SAMPLE TYPES		SAMPLE CONDITION		ABBREVIATIONS	
2" O.D. SPLIT SPOON	2" O.D. THIN WALLED TUBE	AUGER SAMPLE	ROCK CORE	WASH SAMPLE	CHUNK SAMPLE
PROJECT 996		DATE: 6-22-81		DRAWN BY: CB	
PLATE 2		CHECKED BY: HFF/NAI		DATE: 6-22-81	
REVISION: 12-21-81		GEO TECH, INC.			

SAMPLE TYPES

OFFICE REPORT ON SOIL EXPLORATION — BORING 18

APPENDIX III

Table 23. Empirical values for ϕ , D_r and unit weight of granular soils based on the standard penetration number with corrections for depth and for fine saturated sands (from Bowles, 1968)

Description	Relative density D_r	Standard penetra- tion no. N	Approx. angle of internal friction $\phi^{\dagger}$	Approx. range of moist unit weight, (v) pcf
Very loose	0	0.15	25°-30°	70-100 $\ddagger$
Loose	0.35	10	30-35°	90-115
Medium	0.65	30	35-40°	110-130
Dense	0.85	50	38-45°	110-140
Very dense	1.00			130-150

$\dagger$ After Meyerhof [9], $\phi = 25 \div 0.15D_r$, with more than 5 percent fines and $\phi = 30 \div 0.15D_r$, with less than 5 percent fines. Use larger values for granular material with 5 percent or less fine sand and silt.

$\ddagger$ It should be noted that excavated material or material dumped from a truck will weigh 70 to 90 pcf. Material must be quite dense and hard to weigh much over 130 pcf. Values of 105 to 115 pcf for non-saturated soils are common.

Note: As originally proposed, this correlation used the uncorrected SPT blowcount, N . However, hammers delivering 60% of the theoretical energy have been the most commonly used hammers for SPT tests, and it seems likely that the data on which the correlation was based was obtained primarily from tests with such hammers. It therefore seems logical to use N_{60} with this correlation, and it is the recommendation of this report that this be done.

SCHNABEL ENGINEERING

SURCHARGE

Consider Construction Surcharge 3 ft from excavation face

$q := 0.480 \text{ksf}$

AASHTO H15-44 Loading Condition

EXCAVATION SUPPORT

Soldier Pile (See SHORING Output)

Min. Required Section Modulus = 11.2 in^3 ($F_y = 50 \text{ ksi}$)

Max. Excavation = 9.0 ft

Min. Embedment = 1.1 ft

Min. Pile Length = 10.1 ft

Max. Deflection Anticipated = $< 0.5 \text{ in}$

9 ft Center-to-Center Spacing

Consider 24" Min. drill hole

Consider

HP10 X 42 ($S_x = 43.4 \text{ in}^3$, $I_x = 210 \text{ in}^4$, $F_y = 50 \text{ ksi}$)

or pile with equivalent section modulus, moment of inertia, and yield strength.

Tiebacks

Consider 1 Tieback per 9 ft, 5 ft from Top of Excavation, along K-Line
Design Load = 28 kips

Consider No. R32N Williams Self Drilling All-thread Bar Anchor

Consider

$L_u = 4.1 \text{ ft}$

Say 5 ft

$L_p = 5.8 \text{ ft}$

Say 8 ft

(~ 3 ksf allowable bond strength)

Inclination = 15 deg

Waler

Consider

Two C12x30 ($F_y = 50 \text{ ksi}$, $S_x = 27.0 \text{ in}^3$, $I = 162 \text{ in}^4$)

or with equivalent section modulus, moment of inertia, and

yield strength.

2/28 10/27

these assumptions to develop a preliminary estimate of the anchor bond length, it must be verified that for the required excavation height the minimum unbonded length can be developed.

Soil Anchors

For the purposes of preliminary design, the ultimate load transferred from the bond length to the soil may be estimated for a small diameter, straight shaft gravity-grouted anchor from the soil type and density (or SPT blowcount value) (table 6). The maximum allowable anchor design load in soil may be determined by multiplying the bond length by the ultimate transfer load and dividing by a factor of safety of 2.0.

Table 6. Presumptive ultimate values of load transfer for preliminary design of small diameter straight shaft gravity-grouted ground anchors in soil.

Soil type	Relative density/Consistency (SPT range) ⁽¹⁾	Estimated ultimate transfer load (kN/m)
Sand and Gravel	Loose (4-10) Medium dense (11-30) Dense (31-50)	145 220 290
Sand	Loose (4-10) Medium dense (11-30) Dense (31-50)	100 145 190
Sand and Silt	Loose (4-10) Medium dense (11-30) Dense (31-50)	70 100 130
Silt-clay mixture with low plasticity or fine micaceous sand or silt mixtures	Stiff (10-20) Hard (21-40)	30 60

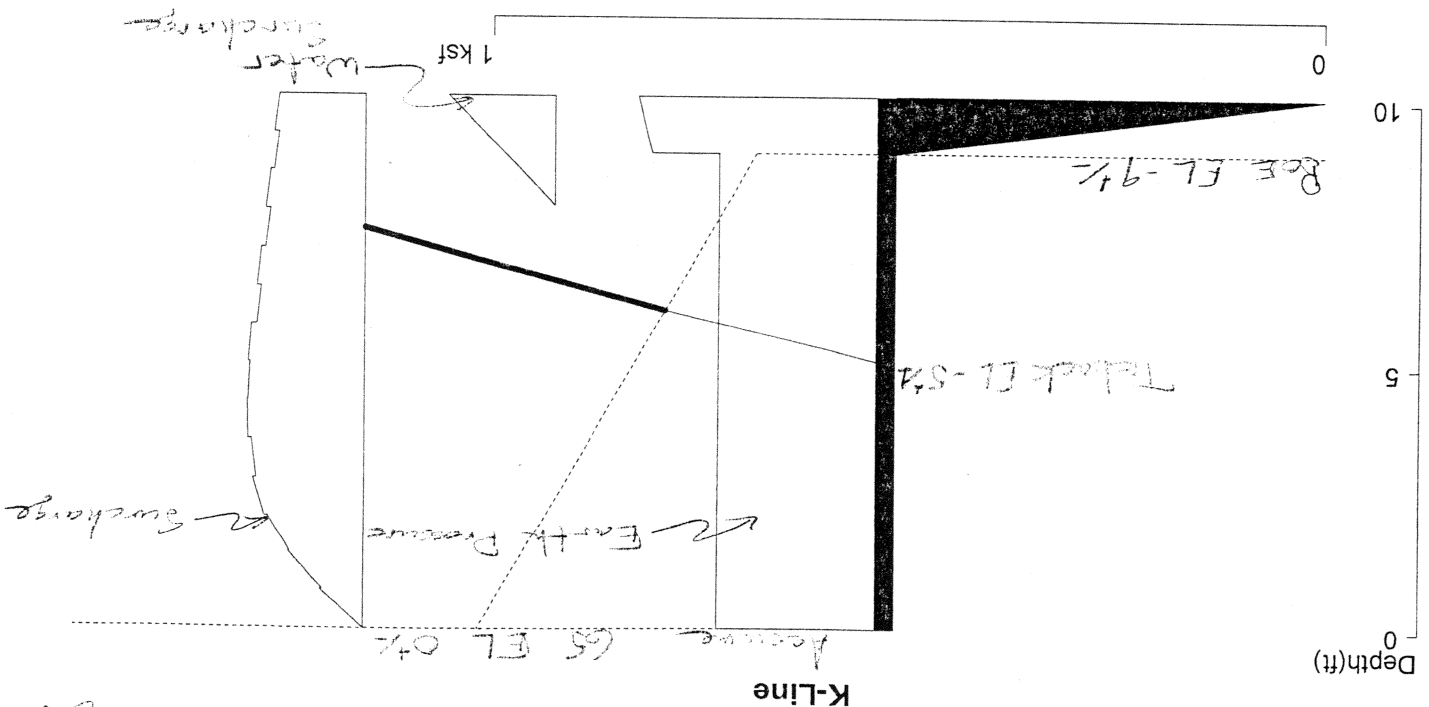
Note: (1) SPT values are corrected for overburden pressure.

Anchor bond lengths for gravity-grouted, pressure-grouted, and post-grouted soil anchors are typically 4.5 to 12 m since significant increases in capacity for bond lengths greater than approximately 12 m cannot be achieved unless specialized methods are used to transfer load from the top of the anchor bond zone towards the end of the anchor. For anchor bond zones that function in tension, initial load increments transferred to the anchor bond zone are resisted by the soil near the top of the anchor bond zone as strains occur in the upper grout body (figure 36). As additional increments of load are transferred to the anchor bond zone, the strains in the top of the anchor bond zone may exceed the peak strain for strain sensitive soils. In that case, the bond stress begins to decrease at the top and the peak strain shifts down the anchor body. In strain sensitive soils, the shape of the stress-strain diagram will determine the actual bond length where significant load is mobilized. Attempts to mobilize larger portions of the bond length will result in small increases in

FIGURE 11-44-215

Atlantic City Medical Center, Atlantic City, NJ

11/23



Licensed to Darrell Wilder, P.E. Schnabel Engineering North, LL

Date: 2/13/2006

File Name: C:\Documents and Settings\dwilder\Desktop\Calcs\excavationsupport_building_9ft 2-

WALL HEIGHT=9.00

PILE LENGTH: Min. Embedment=1.07 (8~10 feet is recommended), Min. Pile Length=10.07

MOMENT IN PILE: Max. Moment=30.74 at Depth of 5.01

PILE SELECTION:

Request Min. Section Modulus = 11.2 in³/pile, Fy = 50 ksi = 345 MPa, Fb/Fy=0.66
 HP10X42 has Section Modulus = 43.4. It is greater than Min. Requirements!, Top Deflection = 0.05(in)

BRACE FORCE: Strut, Tieback, Plate Anchor, and Deadman

No. & Type	Depth	Angle	Total	Horiz.	Vert.	L free	Fixed Length
1. Tieback	5.0	15.0	27.4	26.5	7.1	4.1	5.8

UNITS: Length/Depth - ft, Force - kip, Moment - kip-ft, Pressure - ksf, Pres. Slope - kip/ft³, Deflection - in



11/10/2005 04:21 pm