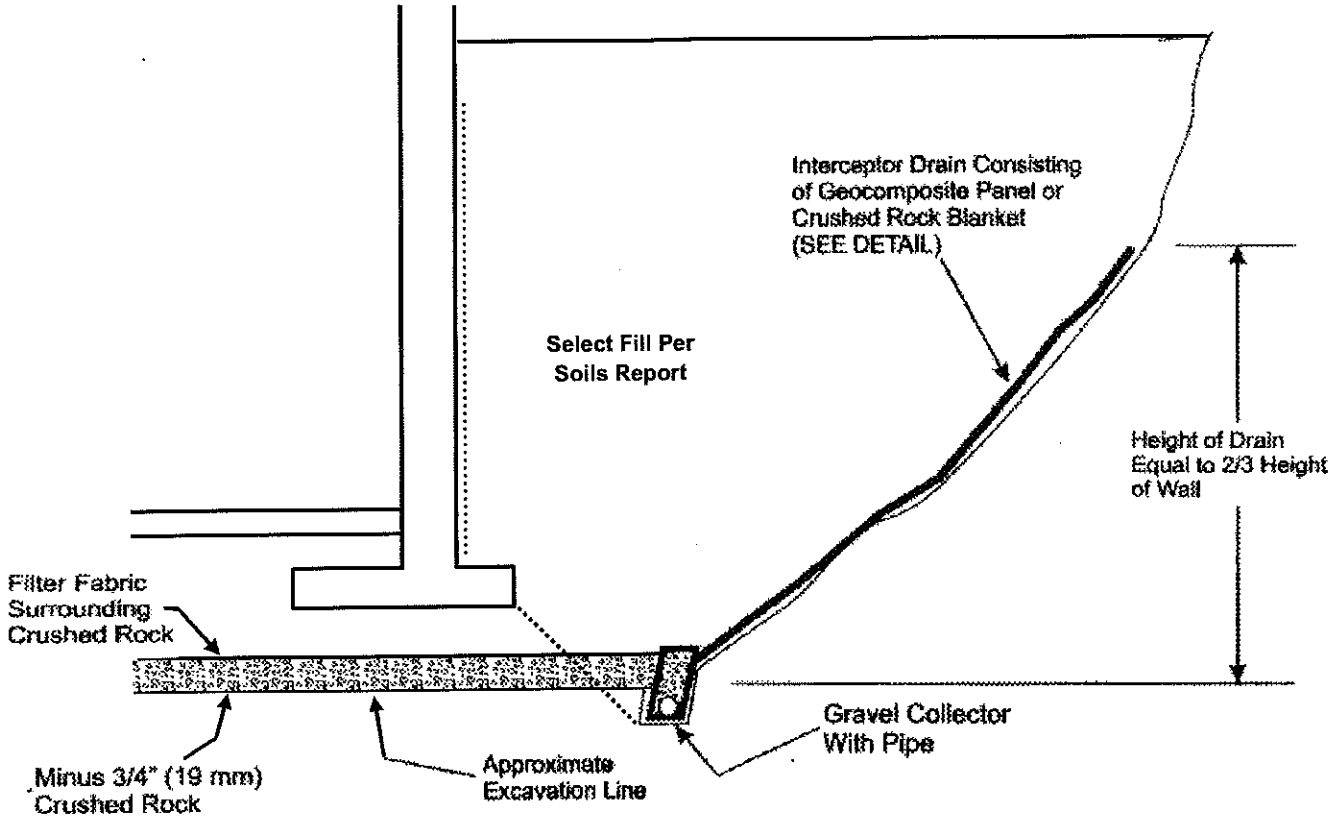
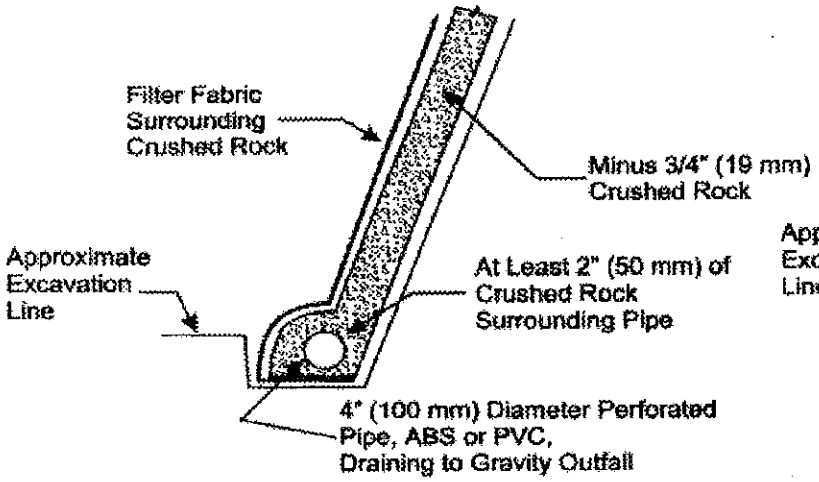
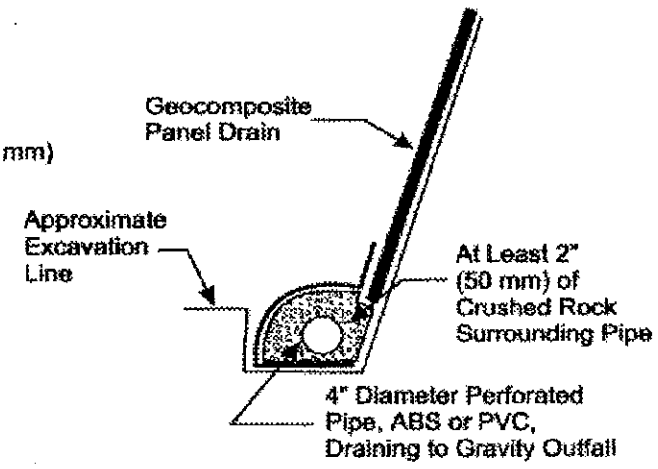
Appendix B

Supporting Information





ROCK BLANKET ALTERNATIVE



GEOCOMPOSITE PANEL ALTERNATIVE

NOTES

1) Geocomposite Panel should consist of Miradrain 6000, J-DRain 400, Supac DS-15 or approved similar product.
2) When back-cut excavation is in competent rock, filter fabric may be eliminated adjacent to rock.
3) Drainage pipes should have a fall of at least 1 percent.
4) Filter fabric should consist of Mirafi 140N, Supac 5NP, Amoco 4599 or similar approved product.

	Advanced Geotechnical Services, Inc.	SUNBELT ENTERPRISES 29515 Canwood St, Agoura Hills
		Client No. 3315 Report No. 7592
		Figure 1

4E

Geotechnical Update Report, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California, Report No. 8154. Advanced Geotechnical Services, Inc. April 8, 2008.

advanced geotechnical services, inc.

FILE
ORIGINAL

April 8, 2008
Client Number 3315
Report Number 8154

John Brock
Sunbelt Enterprises
1801 Solar Drive, Suite 250
Oxnard, CA 93030

Geotechnical Update Report
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

In accordance with your request and authorization, Advanced Geotechnical Services, Inc., (AGS) has prepared this geotechnical update report for the proposed office buildings at the subject site. This letter report supplements our **Geotechnical Engineering and Geolgic Study** report dated May 14, 2004, (Report No. 6583) and our **Response I** and **II** reports dated March 3, 2006 and October 10, 2006, (Report Nos. 7268 and 7592), and unless noted otherwise all recommendations in these reports are still applicable.

Based on the results of our geotechnical update study, it is our opinion that the site is suitable for construction of the proposed improvements, provided recommendations of this report are properly incorporated in the design and implemented during construction.

This opportunity to be of service is sincerely appreciated. If you have any questions, or if we may be of any further assistance, please do *not* hesitate to call. We look forward to being of continued service.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Kenneth J. Palos
President

Brett Wanner, CEG
Principal Engineering Geologist

Jacob Lukiewski, RCE
Principal Engineer

Enclosures: Report No. 8154

cc: (5) Addressee [hard copy, pdf] (1) File Copy

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Report No. 8154
Geotechnical Update Report
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

Scope of Services

Our scope of services included (1) visiting the site to observe the conditions of the site as compared to the conditions at the time of our original study, (2) reviewing the most current *Site Plan* and proposed construction to determine if the proposed project is in conformance with the scope of our original study, (3) evaluating the effects of any changes on the recommendations in our report, and (4) preparing this letter report to document our efforts and conclusions.

Site Description and Proposed Development

The subject site is located at 29541 and 29555 Canwood Street in the city of Agoura Hills, County of Los Angeles, California. The property generally slopes from north to south with natural slope gradients ranging from approximately 4:1 (H:V) to 2:1 (H:V). The property is currently vacant, and the majority is covered with low grasses and a few trees. An existing oak tree will remain in place near the northwest corner of the property.

The proposed development includes a total of two commercial two-level structures, and four parking areas (approximate elevations of 874, 889, 896, and 913 feet). Each structure will consist of a semi-subterrean stepped layout. The south side of each structure will correlate in elevation to the south side parking lot while the second level will correlate in elevation to the north side parking lot. The transition within the building footprint will consist of an approximately 14-foot high retaining wall. An approximately 7-foot high 2:1 (H:V) gradient fill slope will separate the two central parking areas. A 2:1 gradient cut slope with an up to 18-foot tall retaining wall will be located north of the upper most parking area, to minimize disturbance to the existing oak tree. The eastern and western property lines consist of 6-foot high walls with soil retention ranging from 0 to 5 feet. A small detention basin is proposed adjacent to Canwood Street.

Building loads were *not* available at the time of this study, but our reports have been based on maximum wall loads of 3 kips per foot and maximum column loads of 50 kips. The remaining portion of the site will be paved for driveways, landscaped, or covered with concrete flatwork.

Site grading is expected to consist of a typical cut and fill operation to establish grade for the building pads, parking areas, and site drainage. Retaining walls are planned up to 18 feet in height. All cut and fill slopes are also planned to be constructed at 2:1 gradients. Permanent cuts are expected to be up to 21 feet below existing grade, and permanent fill depths are expected to be up to 13 feet above existing grade.

Site Visit and Review of Grading Plan

At the time of our geotechnical study in 2004, the site was vacant in an undeveloped condition with minor amounts of artificial fill present near the southern property line adjacent to Canwood Street. A representative of AGS visited the project location and found that since the time of our original field study, the site has remained unchanged.

Since the time of our original study, the proposed site plan for the subject site has been *revised.* An updated *Geologic Map (Plate 1)* and *Geologic Cross-Sections (Plate 2)* utilizing the *revised* site plan have been included in this report.

Conclusions

Based on our site visit and review of the *Grading Plan*, the geotechnical design recommendations in our original **Geotechnical Engineering and Geolgic Study** report, and in our **Response I** and **Response II** reports (Report Nos. 6583, 7268, 7592) remain applicable, with the following updates and additions.

Seismic Design Criteria

The California Building Code (CBC) is often followed in seismic structural design and is based on the maximum considered earthquake ground motion. The 2007 CBC procedure calls for the following seismic geotechnical parameters. The soil needs to be classified and is dependent on soil parameters such as, shear wave velocity, standard penetration resistance, soil undrained shear strength, and soil profile descriptions. The maximum considered earthquake spectral response accelerations are then adjusted for site class. The remaining seismic parameters used in structural analyses are computed from those shown below by the Structural Engineer.

Site Class	Spectral Accelerations, 0.2 Second Period, S_s	Spectral Accelerations, 1-Second Period, S_1	Site Coefficient, F_a	Site Coefficient, F_v
C	1.645	0.687	1.0	1.3

Conformance to the above criteria for seismic excitation does *not* constitute any kind of guarantee or assurance that significant structural damage or ground failure will *not* occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and *not* to avoid all damage, since such design may be economically prohibitive.

Soil Nail Walls

A proposed retaining wall in the northern portion of the site may consist of a reinforced shotcrete soil nail wall with a sculpted and stained shotcrete finish transitioning to a cast in place shotcrete or non-soil nail retaining wall. A cold/expansion joint should be constructed where the soil nail wall transitions into a cast-in-place shotcrete wall. Specific design details of the soil nail wall system will be designed by the contractor's consultant. Specific analyses, design and construction details should consider US Department of Transportation, Federal Highway Administration, Publication No. FHWA-IF-03-017: Geotechnical Engineering Circular No. 7 Soil Nail Walls, March 2003.

Currently there are no specific criteria that can be used to establish whether a soil exhibits unfavorable creep potential. Creep potential can be directly evaluated during the field testing of individual soil nail load tests. In these tests, a load is applied to the nail in various load increments, and at selected load increments, a creep test is conducted. The creep test consists of holding the load applied to the soil nail during a period of up to an hour and measuring the cumulative nail head displacement at increasingly longer intervals. By relating the increment of nail head displacement over a certain time, a creep rate can be obtained. Creep rates exceeding 2 mm (0.08 in.) in a time period between 6 and 60 minutes in logarithmic scale indicate substantial creep potential. If excessive creep is calculated, it is necessary to modify the design by reducing nail spacing or increasing the nail length. Recommendations for performance monitoring (creep test) and evaluation are included in the US Department of Transportation, Federal Highway Administration, Publication No. FHWA-IF-03-017: Geotechnical Engineering Circular No. 7 Soil Nail Walls, March 2003.

Soil Nail Wall Lateral Pressure

For design the lateral pressure reported in our **Response I and Response II** reports (Report Nos. 7268 and 7592) remain applicable.

Soil Nail Wall Drainage

Surface water runoff and groundwater must be controlled both during and after construction of the soil nail wall. A concrete-lined V-shaped drainage swale should be constructed behind retaining walls with ascending backslopes to intercept runoff and debris. It is our understanding that geocomposite drain strips are to be used to prevent water pressure from developing behind the wall facing. Geocomposite drain strips should be placed from the top of the wall to the bottom of the excavation where the water should be collected and conveyed by a footing drain away from the wall. The footing drain should consist of either a trench at the bottom of the excavation filled with free-draining filter material (such as Caltrans Class 2 permeable material) encapsulated by filter fabric or weep holes. Footing drain pipe material should consist of a minimum 4-inch diameter perforated PVC pipe meeting ASTM D2729 or better. Accordion or similar type pipe is *not* acceptable for footing drain pipe. The drainage geotextile must envelope the footing drain aggregate and pipe, and conform to the dimensions of the trench. If during construction the geocomposite material is damaged or defective it should be replaced or repaired. Horizontal spacing should be no greater than the horizontal spacing of the soil nails. Proper drainage is important to reduce the potential for differential movements and consequent distress in these structural elements. Clogging of drainage devices and a corresponding increase in water pressure will reduce the factor of safety against global stability and/or sliding, and may adversely impact the internal stability by affecting soil/nail interaction.

Soil Nail Design

Soil nails may be used to resist lateral loads provided the recommendations of the report are incorporated into the design and construction of the wall. A slope stability analysis was preformed to locate the potential slip surface with a factor of safety above minimum code requirements of 1.5 for static conditions and 1.1 for pseudo-static conditions. For design purposes, it may be assumed that the active wedge adjacent to the 18-foot high portion of the wall face is defined by a plane drawn at 56 degrees from the vertical through the bottom of the wall at the proposed grade. To provide global stability the soil nails should extend beyond the potential active wedge and to a greater length if necessary to develop the desired capacities.

The capacities of soil nails should be determined by testing of the initial soils nails as outlined in a following section. For design purposes it may be estimated that the ultimate shear strength parameters of the bedrock (Upper Topanga Formation) obtained in our original geotechnical engineering report can be used in the analyses and design of the soil nail wall. These values consisted of cohesion 1004 psf and phi of 30 degrees. Only the tensile resistance developed beyond the active wedge would be effective in resisting lateral loads.

Corrosion is a long-term effect that has to be considered as corrosion can affect the tensile capacity of the soil nails. Corrosion of soil nail bars can lead to excessive deformations and, in an extreme case, can cause the eventual collapse of the system. Due to high concentration of chlorides and sulfides in ground protecting the nail bar and other metallic components is necessary to assure adequate long-term durability. It is the responsibility of the soil nail contractor to select adequate methods for protecting the soil nails from corrosion in accordance Class I Protection (two mechanisms for maximum protection).

Soil Nail Installation

Soil nail walls are constructed in staged lifts using "top-to-bottom" construction completing each lift prior to excavating subsequent lifts. A nail installation sequence is shown on Figure 1. Cuts should be made in accordance with the *Temporary Excavations* section in our original geotechnical engineering report. The soil nails may be installed at angles of 10 to 20 degrees below the horizontal. A cement based-grout placed by gravity or low pressure from the tip out should be used to encase the soil nail after proper installation per the manufactures requirements. Placement of geocomposite strip drains, reinforcement, temporary shotcrete,

connection of the nail to the facing should all be constructed per plan. The excavation is lower and the installation is repeated.

Soil Nail Testing

Testing of each row of soil nails should be performed prior to excavation and installation of the underlying row. Ultimate load tests are conducted to verify the compliance with pullout capacity and bond strengths used in design and resulting from the contractor's installation methods. Verification load tests should be conducted to failure or, as a minimum, to a test load that includes the design bond strength and pullout factor of safety. As a minimum, two verification tests should be conducted in each soil strata that is encountered. Verification tests are performed on "sacrificial" test nails, which are not incorporated into the permanent work.

Proof testing should be performed on 5% of the total number of production soil nails installed. Proof testing should be conducted in increments to 150% of the design load capacity.

Creep tests should be performed at a specified constant test load with displacements recorded at specified time intervals. Creep movement between 1- and 10-minute readings, at maximum test load, must be less than 1 mm (0.04 in.), or the creep movement between 6- and 60-minute readings must be less than 2 mm (0.08 in.) at maximum test load.

The installation of the soil nail wall and the testing of the completed soil nails should be observed by a representative of AGS.

Soldier Pile Walls

A proposed retaining wall in the northern portion of the site may also consist of a reinforced shotcrete soldier pile wall transitioning to a cast in place shotcrete or non-soil nail retaining wall. A cold/expansion joint should be constructed where the soldier pile wall transitions into a cast-in-place shotcrete wall.

Soldier Pile Wall Lateral Pressures

For design the lateral pressure reported in our **Response I** and **Response II** reports (Report Nos. 7268 and 7592) remain applicable.

Soldier Pile Wall Drainage

Surface water runoff and groundwater must be controlled both during and after construction of the soil nail wall. A concrete-lined V-shaped drainage swale should be constructed behind retaining walls with ascending backslopes to intercept runoff and debris. It is our understanding that geocomposite drain strips are to be used to prevent water pressure from developing behind the wall facing. Geocomposite drain strips should be placed from the top of the wall to the bottom of the excavation where the water should be collected and conveyed by a footing drain away from the wall. The footing drain should consist of either a trench at the bottom of the excavation filled with free-draining filter material (such as Caltrans Class 2 permeable material) encapsulated by filter fabric or weep holes. Footing drain pipe material should consist of a minimum 4-inch diameter perforated PVC pipe meeting ASTM D2729 or better. Accordion or similar type pipe is not acceptable for footing drain pipe. The drainage geotextile must envelope the footing drain aggregate and pipe, and conform to the dimensions of the trench. If during construction the geocomposite material is damaged or defective it should be replaced or repaired. Horizontal spacing should be no greater than the horizontal spacing of the solider pile. Proper drainage is important to reduce the potential for differential movements and consequent distress in these structural elements. Clogging of drainage devices and a corresponding increase in water pressure will reduce the factor of safety against global stability and/or sliding.

Soldier Pile Wall Design

Soldier piles spaced at least two diameters on centers may be designed assuming an allowable lateral bearing value (passive value) of the soils below the level of excavation of 600 pounds per square foot at the excavated surface, up to a maximum of 6,000 pounds per square foot. To develop the full lateral value, provisions should be taken to assure firm contact between the soldier piles and the undisturbed soils. Soldier piles should be embedded a minimum of 5 feet into competent soil but not less than the depth required for adequate vertical support and lateral resistance. Soldier piles can be assumed fixed at 2 feet below the bottom of temporary excavation. Structural details, such as size, concrete strength, and amount of reinforcement, should be established by your Structural Engineer.

Soldier Pile Installation

Drill soldier piles per plan. Proceed with making the full depth excavation up to 18 feet, with a backslope ratio of 2:1 (H:V) or less, above the piles. Portions of the excavation that expose top soils or fractured bedrock shall be lagged. Lagging may be omitted in favorable bedding bedrock material, as determined in the field by the project geologist. If wood lagging is used, care should be taken to fill all void spaces between the excavation face and the lagging. All timber lagging must be removed prior to permanent construction unless the timbers are properly treated. Any materials used for backfill behind the excavation walls should be free-draining. Proceed with the placement of geocomposite strip drains, reinforcement and shotcrete.

Soldier Pile Monitoring

Some means of monitoring the performance of the soldier pile wall is recommended. The monitoring should consist of periodic surveying of the lateral and vertical locations of the tops of selected soldier piles. We will be pleased to discuss this further with the design consultants and the contractor when the design of the soldier pile system has been finalized. If it is desired to reduce the deflection, a greater active pressure could be used in the design.

Limits and Liability

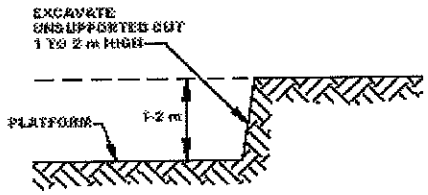
The analysis and recommendations submitted in this letter are based in part on our geotechnical report for the proposed office buildings project (Report Nos. 6583, 7268, 7592, dated May 14, 2004, March 3, 2006, October 10, 2006), and the limitation and liability sections in those reports apply to this letter. We have strived to provide our services in accordance with generally accepted geotechnical engineering practices in this community at this time, but we make no warranty, either express or implied.

Enclosures: Appendices

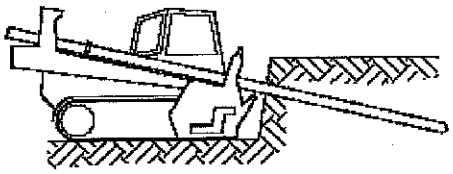
A Report Figures and Plates
Figures 1 through 7
Plates 1 and 2

Appendix A

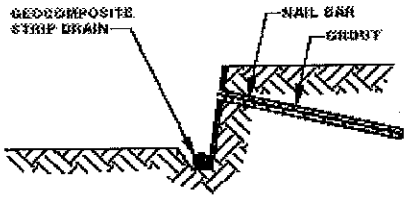
Report Figures and Plates



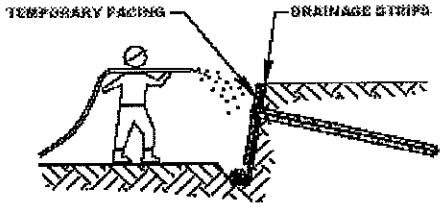
STEP 1. EXCAVATE SMALL CUT



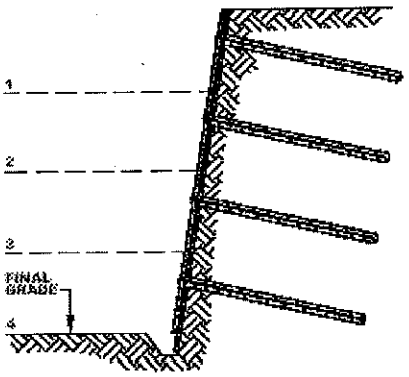
STEP 2. DRILL NAIL HOLE



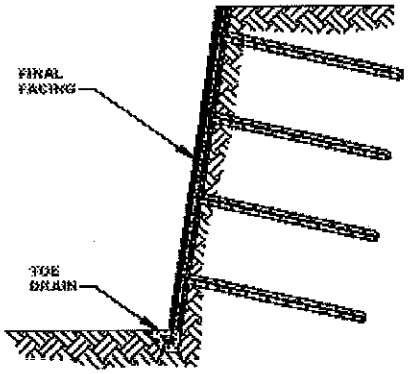
STEP 3. INSTALL AND GROUT NAIL
(INCLUDES STRIP DRAIN INSTALLATION)



STEP 4. PLACE TEMPORARY FACING
(INCLUDES SHOTCRETE,
REINFORCEMENT,
BEARING PLATE, HEX NUT, AND
WASHERS INSTALLATION)



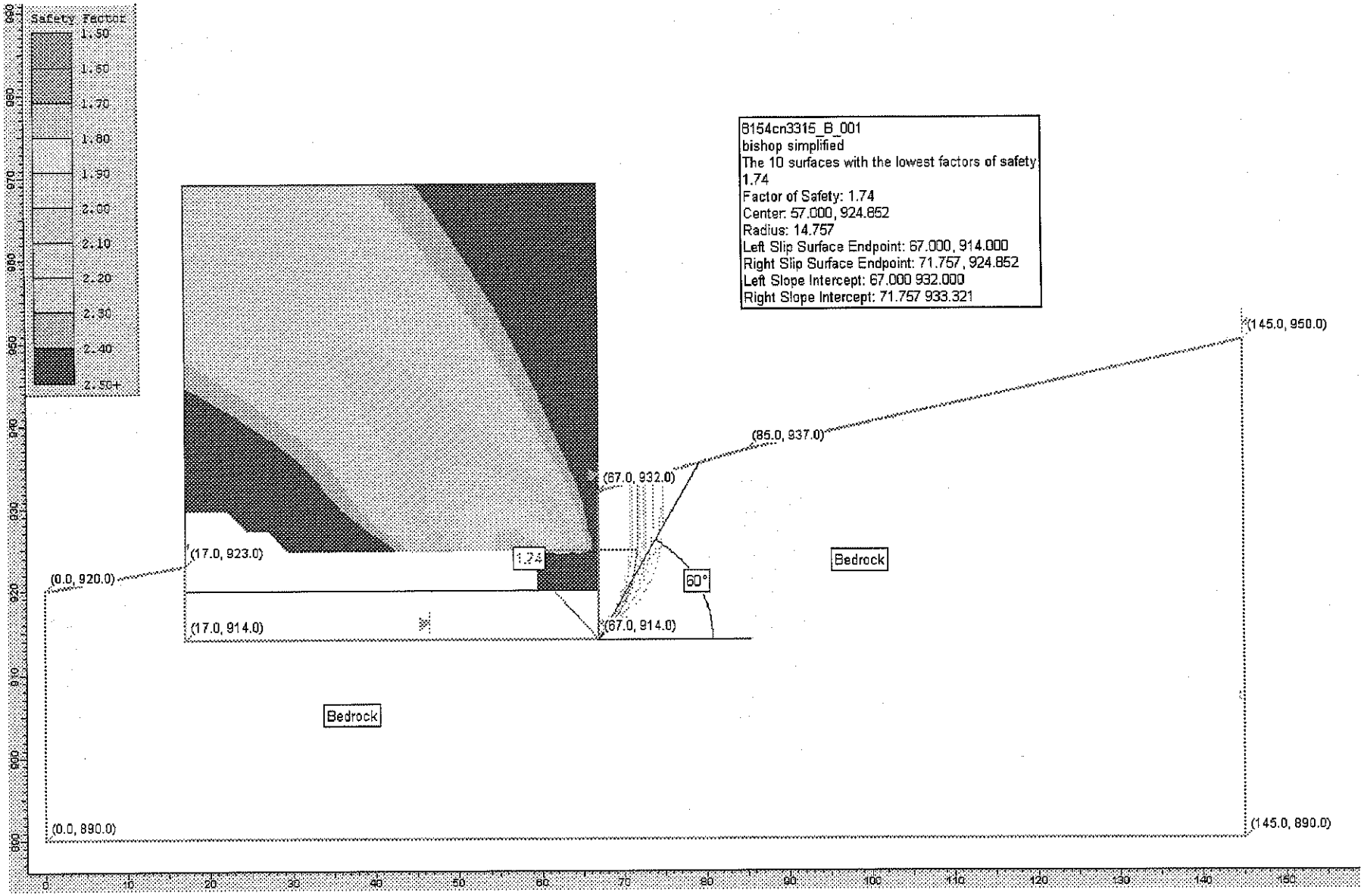
STEP 5. CONSTRUCTION OF
SUBSEQUENT LEVELS



STEP 6. PLACE FINAL FACING
ON PERMANENT WALLS
(INCLUDES BUILDING
OF TOE DRAIN)

Modified after Porterfield et al. (1994).

ags advanced geotechnical services, inc.	**TYPICAL SOIL NAIL WALL CONSTRUCTION SEQUENCE**	SUNBELT - Canwood St, Agoura Hills	
		Client # 3315 Report # 8154	FIGURE 1



File Name: 8154cn3315_B_001
Figure 2

Slide Analysis Information

Document Name

File Name: 8154cn3315_A_001

Project Settings

Project Title: 8154cn3315_B_001
Failure Direction: Right to Left
Units of Measurement: Imperial Units
Pore Fluid Unit Weight: 62.4 lb/ft3
Groundwater Method: Water Surfaces
Data Output: Standard
Calculate Excess Pore Pressure: Off
Allow Ru with Water Surfaces or Grids: Off
Random Numbers: Pseudo-random Seed
Random Number Seed: 10116
Random Number Generation Method: Park and Miller v.3

Analysis Methods

Analysis Methods used:
Bishop simplified

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50

Surface Options

Surface Type: Circular
Search Method: Grid Search
Radius increment: 10
Composite Surfaces: Disabled
Reverse Curvature: Create Tension Crack
Minimum Elevation: Not Defined
Minimum Depth: Not Defined

File Name: 8154cn3315_B_001
Figure 3

Material Properties

Material: Bedrock
Strength Type: Mohr-Coulomb
Unit Weight: 125 lb/ft3
Cohesion: 1004 psf
Friction Angle: 30 degrees
Water Surface: None

Global Minimums

Method: bishop simplified
FS: 1.742440
Center: 57.000, 924.852
Radius: 14.757
Left Slip Surface Endpoint: 67.000, 914.000
Right Slip Surface Endpoint: 71.757, 924.852
Left Slope Intercept: 67.000 932.000
Right Slope Intercept: 71.757 933.321
Resisting Moment=193184 lb-ft
Driving Moment=110870 lb-ft

Valid / Invalid Surfaces

Method: bishop simplified
Number of Valid Surfaces: 3892
Number of Invalid Surfaces: 959
Error Codes:
Error Code -104 reported for 89 surfaces
Error Code -105 reported for 18 surfaces
Error Code -106 reported for 32 surfaces
Error Code -112 reported for 446 surfaces
Error Code -1000 reported for 374 surfaces

Error Codes

The following errors were encountered during the computation:

-104 = Same as -102. Surface / nonslope
intersections also exist, but these points lie outside
the arc defined by the two surface / slope intersections.

-105 = More than two surface / slope intersections with no valid slip surface.

-106 = Average slice width is less than 0.0001 * (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.

-112 = The coefficient M-Alpha = cos(alpha)(1+tan(alpha)tan(phi)/F) < 0.2 for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

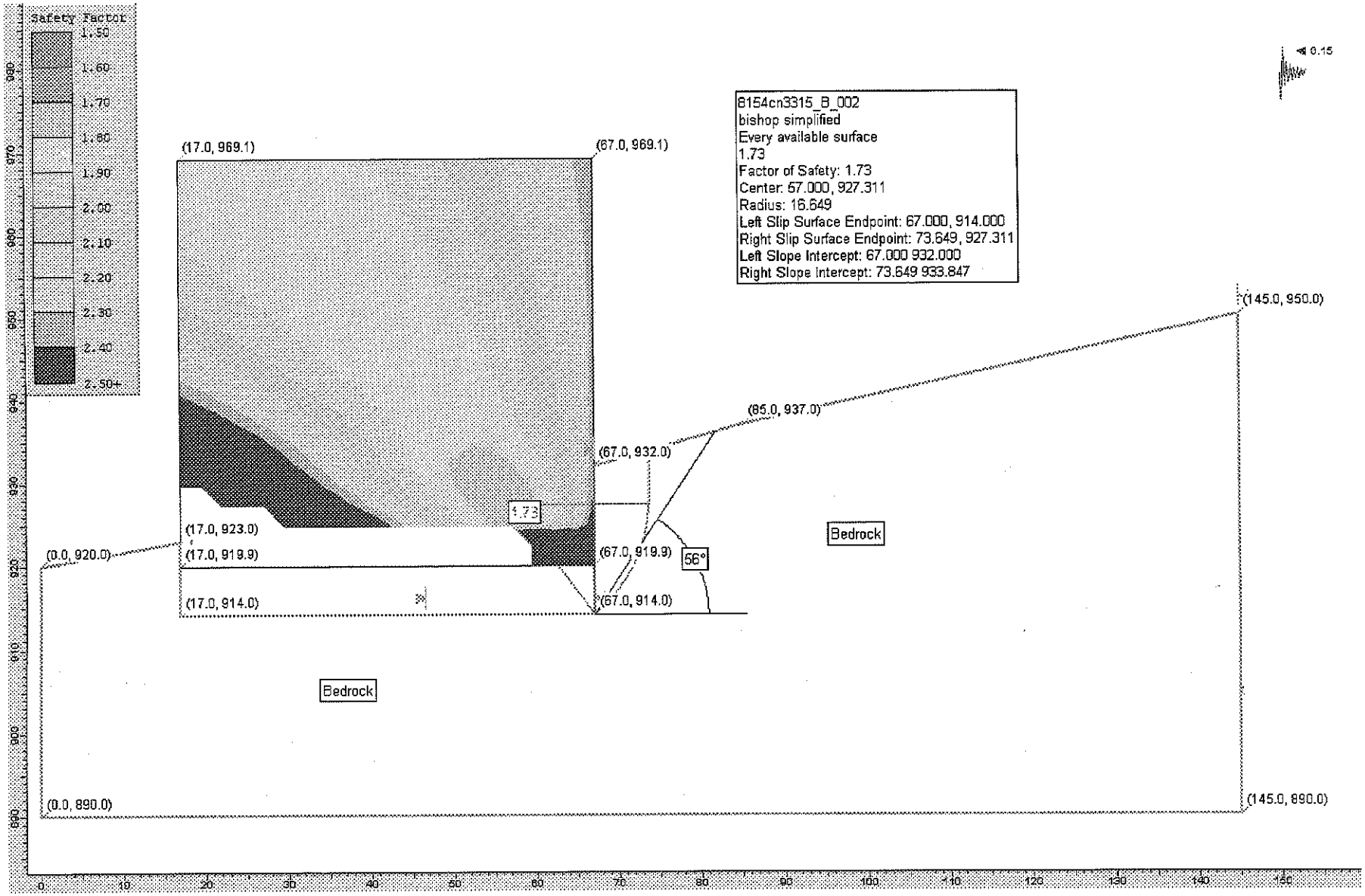
-1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

List of All Coordinates

Search Grid
17.0919.9
67.0919.9
67.0969.1
17.0969.1

External Boundary
145.0 950.0
85.0937.0
67.0932.0
67.0914.0
17.0914.0
17.0923.0
0.0 920.0
0.0 890.0
145.0 890.0

File Name: 8154cn3315_B_001
Figure 4



File Name: 8154cn3315_B_002
Figure 5

Slide Analysis Information

Document Name

File Name: 8154cn3315_A_002

Project Settings

Project Title: 8154cn3315_B_002
Failure Direction: Right to Left
Units of Measurement: Imperial Units
Pore Fluid Unit Weight: 62.4 lb/ft3
Groundwater Method: Water Surfaces
Data Output: Standard
Calculate Excess Pore Pressure: Off
Allow Ru with Water Surfaces or Grids: Off
Random Numbers: Pseudo-random Seed
Random Number Seed: 10116
Random Number Generation Method: Park and Miller v.3

Analysis Methods

Analysis Methods used:
Bishop simplified

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50

Surface Options

Surface Type: Circular
Search Method: Grid Search
Radius increment: 10
Composite Surfaces: Disabled
Reverse Curvature: Create Tension Crack
Minimum Elevation: Not Defined
Minimum Depth: Not Defined

Loading

Seismic Load Coefficient (Horizontal): 0.15

Material Properties

Material: Bedrock
Strength Type: Mohr-Coulomb
Unit Weight: 125 lb/ft3
Cohesion: 1004 psf
Friction Angle: 30 degrees
Water Surface: None

Global Minimums

Method: bishop simplified
FS: 1.727840
Center: 57.000, 927.311
Radius: 16.649
Left Slip Surface Endpoint: 67.000, 914.000
Right Slip Surface Endpoint: 73.649, 927.311
Left Slope Intercept: 67.000 932.000
Right Slope Intercept: 73.649 933.847
Resisting Moment=284996 lb-ft
Driving Moment=164943 lb-ft

Valid / Invalid Surfaces

Method: bishop simplified
Number of Valid Surfaces: 3904
Number of Invalid Surfaces: 947
Error Codes:
Error Code -104 reported for 89 surfaces
Error Code -105 reported for 18 surfaces
Error Code -106 reported for 32 surfaces
Error Code -112 reported for 434 surfaces
Error Code -1000 reported for 374 surfaces

File Name: 8154cn3315_B_002
Figure 6

Error Codes

The following errors were encountered during the computation:

-104 = Same as -102. Surface / nonslope
intersections also exist, but these points lie outside
the arc defined by the two surface / slope intersections.

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intersections with no valid slip surface.

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0.0001 * (maximum horizontal extent of soil region).
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which may result from too many slices, or too
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< 0.2 for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

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at a grid center. Unable to draw a surface.

List of All Coordinates

Search Grid
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67.0919.9
67.0969.1
17.0969.1

External Boundary
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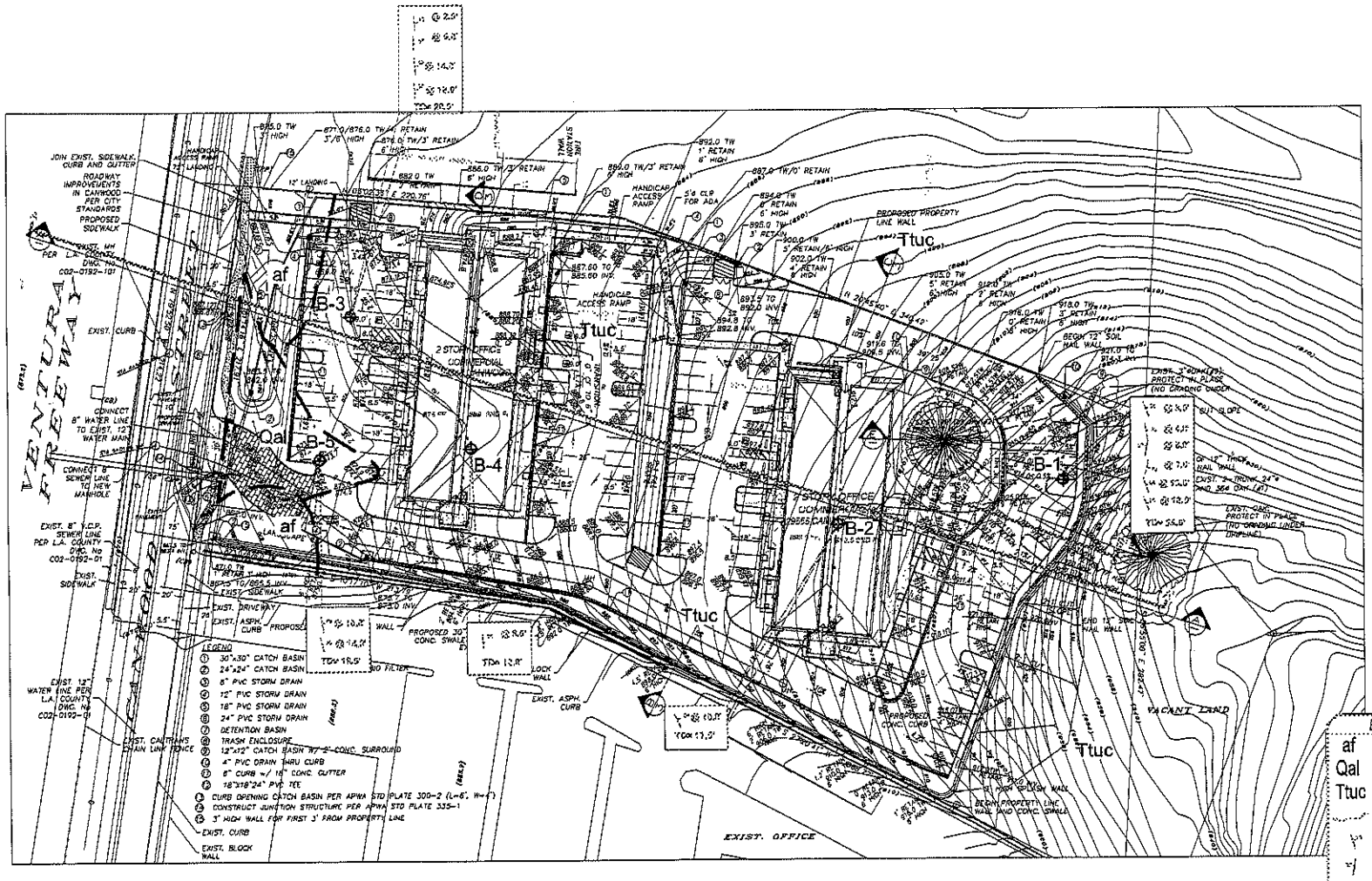
85.0937.0
67.0932.0
67.0914.0
17.0914.0
17.0923.0
0.0 920.0
0.0 890.0
145.0 890.0

File Name: 8154cn3315_B_002
Figure 7



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ags advanced geotechnical services, inc.

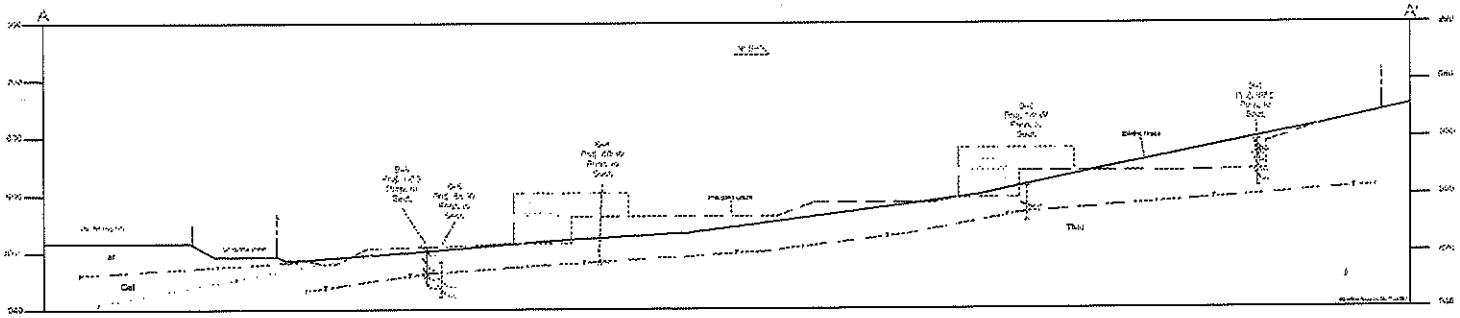
SITE GEOLOGIC MAP

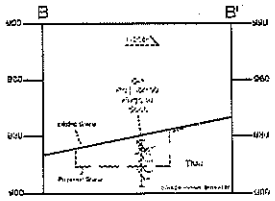
SUNBELT

29541 & 29555 Canwood St.
Agoura Hills, California

PLATE 1

Client No.	3315
Report No.	8154
Scale	1"=30'
Drawing No.	8154cn3315_1





advanced geotechnical services, inc.

SITE GEOLOGIC MAP

SUNBELT

29541 & 29555 Canwood St.
Agoura Hills, California

PLATE 2

Client No.	3315
Report No.	8154
Scale	1"=30'
Drawing No.	8154cn3315_2

4F

Change of Engineer of Record Letter, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California, Report No. 8340. July 1, 2008.

advanced geotechnical services, inc.

FILE
ORIGINAL

July 1, 2008
Client Number 3315
Report Number 8340

Pam Coppedge
Sunbelt Enterprises
1801 Solar Drive, Suite 250
Oxnard, CA 93030

Change of Engineer of Record Letter
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

In accordance with project requirements, the *new* Geotechnical Engineer, Mark Workman, for Advanced Geotechnical Services, Inc., (AGS) has reviewed the most recent **Geotechnical Update Report** dated April 8, 2008 (Report No. 8154) prepared by Brett Wanner, our current Principal Engineering Geologist, and Jacob Lukiewski who is *no* longer available as the Principal Engineer of Record for the proposed office buildings at the subject property.

We appreciate the opportunity to be of service. If we can be of further assistance, or if you should have any additional questions regarding this project, please do *not* hesitate to contact our office. We look forward to being of continued service as this project moves to the final construction phase.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Kenneth J. Palos
President

Brett Wanner, CEG 2450
Principal Engineering Geologist

R. Mark Workman Jr., RCE
Principal Engineer

Enclosures: *Report No. 8340*

cc: (2) Addressee (3) The Wren Group (1) File

PROFESSIONAL GEOLOGIST
BRETT M. WANNER
No. 2450
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
R. MARK WORKMAN JR.
No. 68557
EXP. 09/30/09
CIVIL
STATE OF CALIFORNIA

5251 Verdugo Way, Suite L Camarillo, CA 93012
800.500.3318 805.388.6162 f 805.388.6167
info@advancedgeotechnical.com

Report No. 8340
Change of Engineer of Record Letter
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

Engineer Review

Our Geotechnical Engineer, Mark Workman, concurs with the findings and recommendations given within the **Geotechnical Update Report** dated April 8, 2008 (Report No. 8154), and within our additional project reports listed in Appendix A, and hereby notes as such by wet-signature and wet-stamp.

Submittal Note

AGS is unable to provide a wet-signed and wet-stamped original *Geotechnical Update Report* dated April 8, 2008 (Report No. 8154) in the absence of Jacob Lukiewski from the current AGS staff. Therefore, for submittal purposes to the City of Agoura Hills by *The Wren Group* on behalf of Sunbelt Enterprises, a *copy* of this report has been included herein Appendix B.

Enclosures: Appendices
- A AGS Project Reports
- B Geotechnical Update Report No. 8154

Appendix A

AGS Project Reports

Appendix A
AGS Project Reports

AGS Report No.	AGS Report Date	AGS Report Title
8154	4.8.2008	Geotechnical Update Report Proposed Office Buildings 29541 and 29555 Canwood Street, Agoura Hills, California
7592	10.10.2006	Response II Geotechnical Engineering and Geologic Study City of Agoura Hills – Geotechnical Review Sheet Dated 8/23/06 Planning Case No. 05-CUP-006 & 05-OTP-32 / GDI No. 05.00103.013 Proposed Two Office Buildings 29541 & 29515 Canwood Street, Agoura Hills, California
7268	3.3.2006	Response I Geotechnical Engineering and Geologic Study City of Agoura Hills – Geotechnical Review Sheet Planning Case # 05-CUP-006 & 05-OTP-32 / GDI # 05.00103.013 Proposed Two Office Buildings 29515 Canwood Street, Agoura Hills, California
6909R	2.15.2005	Addendum I Geotechnical Engineering and Geologic Study Proposed Two Office Buildings; 29515 Canwood Street, Agoura Hills, California
6583	5.18.2004	Geotechnical Engineering and Geologic Study Proposed Two Office Buildings; 29515 Canwood Street, Agoura Hills, California

Appendix B

AGS Report No. 8154
Geotechnical Update Report
Dated April 8, 2008

advanced geotechnical services, inc.

FILE
ORIGINAL

April 8, 2008
Client Number 3315
Report Number 8154

John Brock
Sunbelt Enterprises
1801 Solar Drive, Suite 250
Oxnard, CA 93030

Geotechnical Update Report
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

In accordance with your request and authorization, Advanced Geotechnical Services, Inc., (AGS) has prepared this geotechnical update report for the proposed office buildings at the subject site. This letter report supplements our **Geotechnical Engineering and Geolgic Study** report dated May 14, 2004, (Report No. 6583) and our **Response I** and **II** reports dated March 3, 2006 and October 10, 2006, (Report Nos. 7268 and 7592), and unless noted otherwise all recommendations in these reports are still applicable.

Based on the results of our geotechnical update study, it is our opinion that the site is suitable for construction of the proposed improvements, provided recommendations of this report are properly incorporated in the design and implemented during construction.

This opportunity to be of service is sincerely appreciated. If you have any questions, or if we may be of any further assistance, please do *not* hesitate to call. We look forward to being of continued service.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Kenneth J. Palos
President

Brett Wanner, CEG
Principal Engineering Geologist

Jacob Lukiewski, RCE
Principal Engineer

Enclosures: Report No. 8154

cc: (5) Addressee [hard copy, pdf] (1) File Copy

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Report No. 8154
Geotechnical Update Report
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

Scope of Services

Our scope of services included (1) visiting the site to observe the conditions of the site as compared to the conditions at the time of our original study, (2) reviewing the most current *Site Plan* and proposed construction to determine if the proposed project is in conformance with the scope of our original study, (3) evaluating the effects of any changes on the recommendations in our report, and (4) preparing this letter report to document our efforts and conclusions.

Site Description and Proposed Development

The subject site is located at 29541 and 29555 Canwood Street in the city of Agoura Hills, County of Los Angeles, California. The property generally slopes from north to south with natural slope gradients ranging from approximately 4:1 (H:V) to 2:1 (H:V). The property is currently vacant, and the majority is covered with low grasses and a few trees. An existing oak tree will remain in place near the northwest corner of the property.

The proposed development includes a total of two commercial two-level structures, and four parking areas (approximate elevations of 874, 889, 896, and 913 feet). Each structure will consist of a semi-subterrean stepped layout. The south side of each structure will correlate in elevation to the south side parking lot while the second level will correlate in elevation to the north side parking lot. The transition within the building footprint will consist of an approximately 14-foot high retaining wall. An approximately 7-foot high 2:1 (H:V) gradient fill slope will separate the two central parking areas. A 2:1 gradient cut slope with an up to 18-foot tall retaining wall will be located north of the upper most parking area, to minimize disturbance to the existing oak tree. The eastern and western property lines consist of 6-foot high walls with soil retention ranging from 0 to 5 feet. A small detention basin is proposed adjacent to Canwood Street.

Building loads were *not* available at the time of this study, but our reports have been based on maximum wall loads of 3 kips per foot and maximum column loads of 50 kips. The remaining portion of the site will be paved for driveways, landscaped, or covered with concrete flatwork.

Site grading is expected to consist of a typical cut and fill operation to establish grade for the building pads, parking areas, and site drainage. Retaining walls are planned up to 18 feet in height. All cut and fill slopes are also planned to be constructed at 2:1 gradients. Permanent cuts are expected to be up to 21 feet below existing grade, and permanent fill depths are expected to be up to 13 feet above existing grade.

Site Visit and Review of Grading Plan

At the time of our geotechnical study in 2004, the site was vacant in an undeveloped condition with minor amounts of artificial fill present near the southern property line adjacent to Canwood Street. A representative of AGS visited the project location and found that since the time of our original field study, the site has remained unchanged.

Since the time of our original study, the proposed site plan for the subject site has been *revised.* An updated *Geologic Map (Plate 1)* and *Geologic Cross-Sections (Plate 2)* utilizing the *revised* site plan have been included in this report.

Conclusions

Based on our site visit and review of the *Grading Plan*, the geotechnical design recommendations in our original **Geotechnical Engineering and Geolgic Study** report, and in our **Response I** and **Response II** reports (Report Nos. 6583, 7268, 7592) remain applicable, with the following updates and additions.

Seismic Design Criteria

The California Building Code (CBC) is often followed in seismic structural design and is based on the maximum considered earthquake ground motion. The 2007 CBC procedure calls for the following seismic geotechnical parameters. The soil needs to be classified and is dependent on soil parameters such as, shear wave velocity, standard penetration resistance, soil undrained shear strength, and soil profile descriptions. The maximum considered earthquake spectral response accelerations are then adjusted for site class. The remaining seismic parameters used in structural analyses are computed from those shown below by the Structural Engineer.

Site Class	Spectral Accelerations, 0.2 Second Period, S_s	Spectral Accelerations, 1 Second Period, S_1	Site Coefficient, F_a	Site Coefficient, F_v
C	1.645	0.687	1.0	1.3

Conformance to the above criteria for seismic excitation does *not* constitute any kind of guarantee or assurance that significant structural damage or ground failure will *not* occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and *not* to avoid all damage, since such design may be economically prohibitive.

Soil Nail Walls

A proposed retaining wall in the northern portion of the site may consist of a reinforced shotcrete soil nail wall with a sculpted and stained shotcrete finish transitioning to a cast in place shotcrete or non-soil nail retaining wall. A cold/expansion joint should be constructed where the soil nail wall transitions into a cast-in-place shotcrete wall. Specific design details of the soil nail wall system will be designed by the contractor's consultant. Specific analyses, design and construction details should consider US Department of Transportation, Federal Highway Administration, Publication No. FHWA-IF-03-017: Geotechnical Engineering Circular No. 7 Soil Nail Walls, March 2003.

Currently there are no specific criteria that can be used to establish whether a soil exhibits unfavorable creep potential. Creep potential can be directly evaluated during the field testing of individual soil nail load tests. In these tests, a load is applied to the nail in various load increments, and at selected load increments, a creep test is conducted. The creep test consists of holding the load applied to the soil nail during a period of up to an hour and measuring the cumulative nail head displacement at increasingly longer intervals. By relating the increment of nail head displacement over a certain time, a creep rate can be obtained. Creep rates exceeding 2 mm (0.08 in.) in a time period between 6 and 60 minutes in logarithmic scale indicate substantial creep potential. If excessive creep is calculated, it is necessary to modify the design by reducing nail spacing or increasing the nail length. Recommendations for performance monitoring (creep test) and evaluation are included in the US Department of Transportation, Federal Highway Administration, Publication No. FHWA-IF-03-017: Geotechnical Engineering Circular No. 7 Soil Nail Walls, March 2003.

Soil Nail Wall Lateral Pressure

For design the lateral pressure reported in our **Response I** and **Response II** reports (Report Nos. 7268 and 7592) remain applicable.

Soil Nail Wall Drainage

Surface water runoff and groundwater must be controlled both during and after construction of the soil nail wall. A concrete-lined V-shaped drainage swale should be constructed behind retaining walls with ascending backslopes to intercept runoff and debris. It is our understanding that geocomposite drain strips are to be used to prevent water pressure from developing behind the wall facing. Geocomposite drain strips should be placed from the top of the wall to the bottom of the excavation where the water should be collected and conveyed by a footing drain away from the wall. The footing drain should consist of either a trench at the bottom of the excavation filled with free-draining filter material (such as Caltrans Class 2 permeable material) encapsulated by filter fabric or weep holes. Footing drain pipe material should consist of a minimum 4-inch diameter perforated PVC pipe meeting ASTM D2729 or better. Accordion or similar type pipe is *not* acceptable for footing drain pipe. The drainage geotextile must envelope the footing drain aggregate and pipe, and conform to the dimensions of the trench. If during construction the geocomposite material is damaged or defective it should be replaced or repaired. Horizontal spacing should be no greater than the horizontal spacing of the soil nails. Proper drainage is important to reduce the potential for differential movements and consequent distress in these structural elements. Clogging of drainage devices and a corresponding increase in water pressure will reduce the factor of safety against global stability and/or sliding, and may adversely impact the internal stability by affecting soil/nail interaction.

Soil Nail Design

Soil nails may be used to resist lateral loads provided the recommendations of the report are incorporated into the design and construction of the wall. A slope stability analysis was preformed to locate the potential slip surface with a factor of safety above minimum code requirements of 1.5 for static conditions and 1.1 for pseudo-static conditions. For design purposes, it may be assumed that the active wedge adjacent to the 18-foot high portion of the wall face is defined by a plane drawn at 56 degrees from the vertical through the bottom of the wall at the proposed grade. To provide global stability the soil nails should extend beyond the potential active wedge and to a greater length if necessary to develop the desired capacities.

The capacities of soil nails should be determined by testing of the initial soils nails as outlined in a following section. For design purposes it may be estimated that the ultimate shear strength parameters of the bedrock (Upper Topanga Formation) obtained in our original geotechnical engineering report can be used in the analyses and design of the soil nail wall. These values consisted of cohesion 1004 psf and phi of 30 degrees. Only the tensile resistance developed beyond the active wedge would be effective in resisting lateral loads.

Corrosion is a long-term effect that has to be considered as corrosion can affect the tensile capacity of the soil nails. Corrosion of soil nail bars can lead to excessive deformations and, in an extreme case, can cause the eventual collapse of the system. Due to high concentration of chlorides and sulfides in ground protecting the nail bar and other metallic components is necessary to assure adequate long-term durability. It is the responsibility of the soil nail contractor to select adequate methods for protecting the soil nails from corrosion in accordance Class I Protection (two mechanisms for maximum protection).

Soil Nail Installation

Soil nail walls are constructed in staged lifts using "top-to-bottom" construction completing each lift prior to excavating subsequent lifts. A nail installation sequence is shown on Figure 1. Cuts should be made in accordance with the *Temporary Excavations* section in our original geotechnical engineering report. The soil nails may be installed at angles of 10 to 20 degrees below the horizontal. A cement based-grout placed by gravity or low pressure from the tip out should be used to encase the soil nail after proper installation per the manufactures requirements. Placement of geocomposite strip drains, reinforcement, temporary shotcrete,

connection of the nail to the facing should all be constructed per plan. The excavation is lower and the installation is repeated.

Soil Nail Testing

Testing of each row of soil nails should be performed prior to excavation and installation of the underlying row. Ultimate load tests are conducted to verify the compliance with pullout capacity and bond strengths used in design and resulting from the contractor's installation methods. Verification load tests should be conducted to failure or, as a minimum, to a test load that includes the design bond strength and pullout factor of safety. As a minimum, two verification tests should be conducted in each soil strata that is encountered. Verification tests are performed on "sacrificial" test nails, which are not incorporated into the permanent work.

Proof testing should be performed on 5% of the total number of production soil nails installed. Proof testing should be conducted in increments to 150% of the design load capacity.

Creep tests should be performed at a specified constant test load with displacements recorded at specified time intervals. Creep movement between 1- and 10-minute readings, at maximum test load, must be less than 1 mm (0.04 in.), or the creep movement between 6- and 60-minute readings must be less than 2 mm (0.08 in.) at maximum test load.

The installation of the soil nail wall and the testing of the completed soil nails should be observed by a representative of AGS.

Soldier Pile Walls

A proposed retaining wall in the northern portion of the site may also consist of a reinforced shotcrete soldier pile wall transitioning to a cast in place shotcrete or non-soil nail retaining wall. A cold/expansion joint should be constructed where the soldier pile wall transitions into a cast-in-place shotcrete wall.

Soldier Pile Wall Lateral Pressures

For design the lateral pressure reported in our **Response I** and **Response II** reports (Report Nos. 7268 and 7592) remain applicable.

Soldier Pile Wall Drainage

Surface water runoff and groundwater must be controlled both during and after construction of the soil nail wall. A concrete-lined V-shaped drainage swale should be constructed behind retaining walls with ascending backslopes to intercept runoff and debris. It is our understanding that geocomposite drain strips are to be used to prevent water pressure from developing behind the wall facing. Geocomposite drain strips should be placed from the top of the wall to the bottom of the excavation where the water should be collected and conveyed by a footing drain away from the wall. The footing drain should consist of either a trench at the bottom of the excavation filled with free-draining filter material (such as Caltrans Class 2 permeable material) encapsulated by filter fabric or weep holes. Footing drain pipe material should consist of a minimum 4-inch diameter perforated PVC pipe meeting ASTM D2729 or better. Accordion or similar type pipe is not acceptable for footing drain pipe. The drainage geotextile must envelope the footing drain aggregate and pipe, and conform to the dimensions of the trench. If during construction the geocomposite material is damaged or defective it should be replaced or repaired. Horizontal spacing should be no greater than the horizontal spacing of the solider pile. Proper drainage is important to reduce the potential for differential movements and consequent distress in these structural elements. Clogging of drainage devices and a corresponding increase in water pressure will reduce the factor of safety against global stability and/or sliding.

Soldier Pile Wall Design

Soldier piles spaced at least two diameters on centers may be designed assuming an allowable lateral bearing value (passive value) of the soils below the level of excavation of 600 pounds per square foot at the excavated surface, up to a maximum of 6,000 pounds per square foot. To develop the full lateral value, provisions should be taken to assure firm contact between the soldier piles and the undisturbed soils. Soldier piles should be embedded a minimum of 5 feet into competent soil but not less than the depth required for adequate vertical support and lateral resistance. Soldier piles can be assumed fixed at 2 feet below the bottom of temporary excavation. Structural details, such as size, concrete strength, and amount of reinforcement, should be established by your Structural Engineer.

Soldier Pile Installation

Drill soldier piles per plan. Proceed with making the full depth excavation up to 18 feet, with a backslope ratio of 2:1 (H:V) or less, above the piles. Portions of the excavation that expose top soils or fractured bedrock shall be lagged. Lagging may be omitted in favorable bedding bedrock material, as determined in the field by the project geologist. If wood lagging is used, care should be taken to fill all void spaces between the excavation face and the lagging. All timber lagging must be removed prior to permanent construction unless the timbers are properly treated. Any materials used for backfill behind the excavation walls should be free-draining. Proceed with the placement of geocomposite strip drains, reinforcement and shotcrete.

Soldier Pile Monitoring

Some means of monitoring the performance of the soldier pile wall is recommended. The monitoring should consist of periodic surveying of the lateral and vertical locations of the tops of selected soldier piles. We will be pleased to discuss this further with the design consultants and the contractor when the design of the soldier pile system has been finalized. If it is desired to reduce the deflection, a greater active pressure could be used in the design.

Limits and Liability

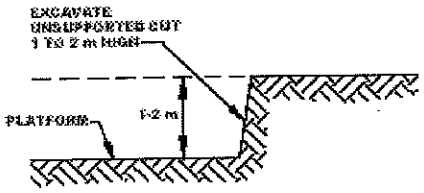
The analysis and recommendations submitted in this letter are based in part on our geotechnical report for the proposed office buildings project (Report Nos. 6583, 7268, 7592, dated May 14, 2004, March 3, 2006, October 10, 2006), and the limitation and liability sections in those reports apply to this letter. We have strived to provide our services in accordance with generally accepted geotechnical engineering practices in this community at this time, but we make no warranty, either express or implied.

Enclosures: Appendices

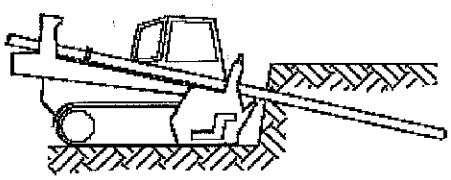
A Report Figures and Plates
Figures 1 through 7
Plates 1 and 2

Appendix A

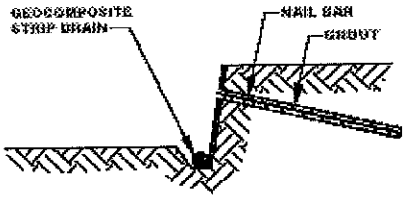
Report Figures and Plates



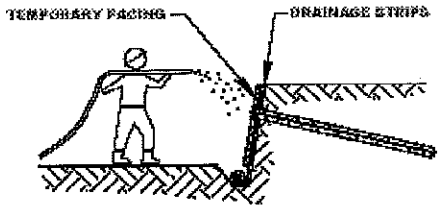
STEP 1. EXCAVATE SMALL CUT



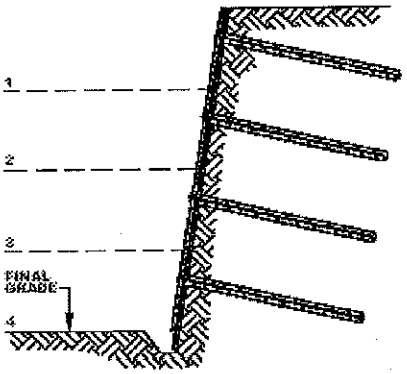
STEP 2. DRILL NAIL HOLE



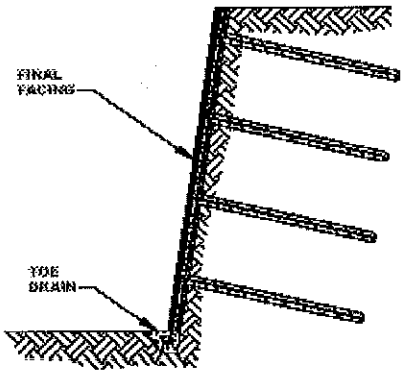
STEP 3. INSTALL AND GROUT NAIL
(INCLUDES STRIP DRAIN INSTALLATION)



STEP 4. PLACE TEMPORARY FACING
(INCLUDES SHOTCRETE,
REINFORCEMENT,
BEARING PLATE, HEX NUT, AND
WASHERS INSTALLATION)



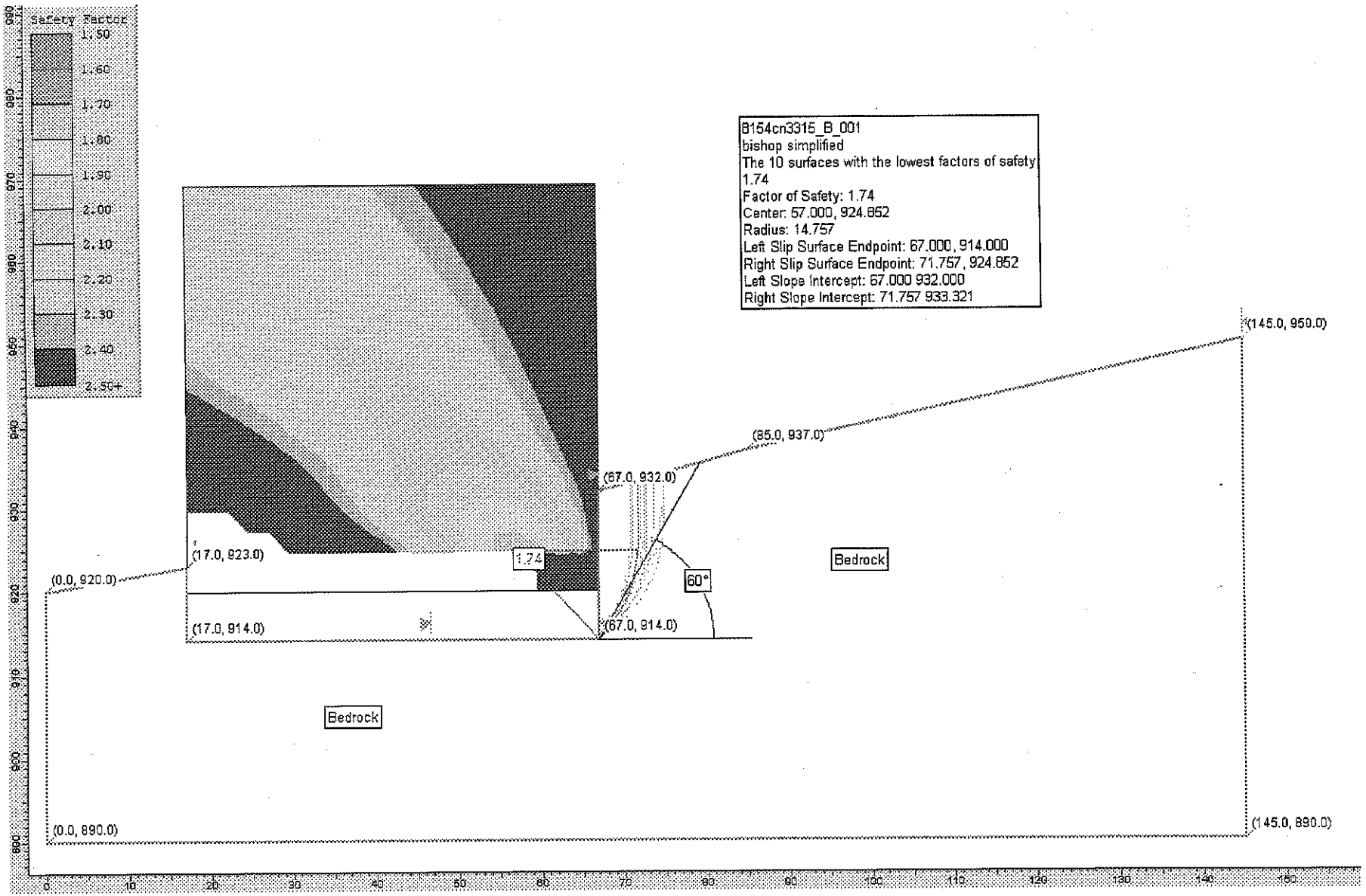
STEP 5. CONSTRUCTION OF
SUBSEQUENT LEVELS



STEP 6. PLACE FINAL FACING
ON PERMANENT WALLS
(INCLUDES BUILDING
OF TOE DRAIN)

Modified after Porterfield et al. (1994).

ags advanced geotechnical services, inc.	**TYPICAL SOIL NAIL WALL CONSTRUCTION SEQUENCE**	SUNBELT - Canwood St, Agoura Hills	
		Client # 3315 Report # 8154	FIGURE 1



File Name: 8154cn3315_B_001
Figure 2

Slide Analysis Information

Document Name

File Name: 8154cn3315_A_001

Project Settings

Project Title: 8154cn3315_B_001
Failure Direction: Right to Left
Units of Measurement: Imperial Units
Pore Fluid Unit Weight: 62.4 lb/ft3
Groundwater Method: Water Surfaces
Data Output: Standard
Calculate Excess Pore Pressure: Off
Allow Ru with Water Surfaces or Grids: Off
Random Numbers: Pseudo-random Seed
Random Number Seed: 10116
Random Number Generation Method: Park and Miller v.3

Analysis Methods

Analysis Methods used:
Bishop simplified

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50

Surface Options

Surface Type: Circular
Search Method: Grid Search
Radius increment: 10
Composite Surfaces: Disabled
Reverse Curvature: Create Tension Crack
Minimum Elevation: Not Defined
Minimum Depth: Not Defined

File Name: 8154cn3315_B_001
Figure 3

Material Properties

Material: Bedrock
Strength Type: Mohr-Coulomb
Unit Weight: 125 lb/ft3
Cohesion: 1004 psf
Friction Angle: 30 degrees
Water Surface: None

Global Minimums

Method: bishop simplified
FS: 1.742440
Center: 57.000, 924.852
Radius: 14.757
Left Slip Surface Endpoint: 67.000, 914.000
Right Slip Surface Endpoint: 71.757, 924.852
Left Slope Intercept: 67.000 932.000
Right Slope Intercept: 71.757 933.321
Resisting Moment=193184 lb-ft
Driving Moment=110870 lb-ft

Valid / Invalid Surfaces

Method: bishop simplified
Number of Valid Surfaces: 3892
Number of Invalid Surfaces: 959
Error Codes:
Error Code -104 reported for 89 surfaces
Error Code -105 reported for 18 surfaces
Error Code -106 reported for 32 surfaces
Error Code -112 reported for 446 surfaces
Error Code -1000 reported for 374 surfaces

Error Codes

The following errors were encountered during the computation:

-104 = Same as -102. Surface / nonslope
intersections also exist, but these points lie outside
the arc defined by the two surface / slope intersections.

-105 = More than two surface / slope
intersections with no valid slip surface.

-106 = Average slice width is less than
0.0001 * (maximum horizontal extent of soil region).
This limitation is imposed to avoid numerical errors
which may result from too many slices, or too
small a slip region.

-112 = The coefficient M-Alpha = cos(alpha)(1+tan(alpha)tan(phi)/F)
< 0.2 for the final iteration of the safety factor calculation. This screens out
some slip surfaces which may not be valid in the context of the analysis,
in
particular, deep seated slip surfaces with many high negative base angle
slices in the passive zone.

-1000 = No valid slip surfaces are generated
at a grid center. Unable to draw a surface.

List of All Coordinates

Search Grid
17.0919.9
67.0919.9
67.0969.1
17.0969.1

External Boundary
145.0 950.0
85.0937.0
67.0932.0
67.0914.0
17.0914.0
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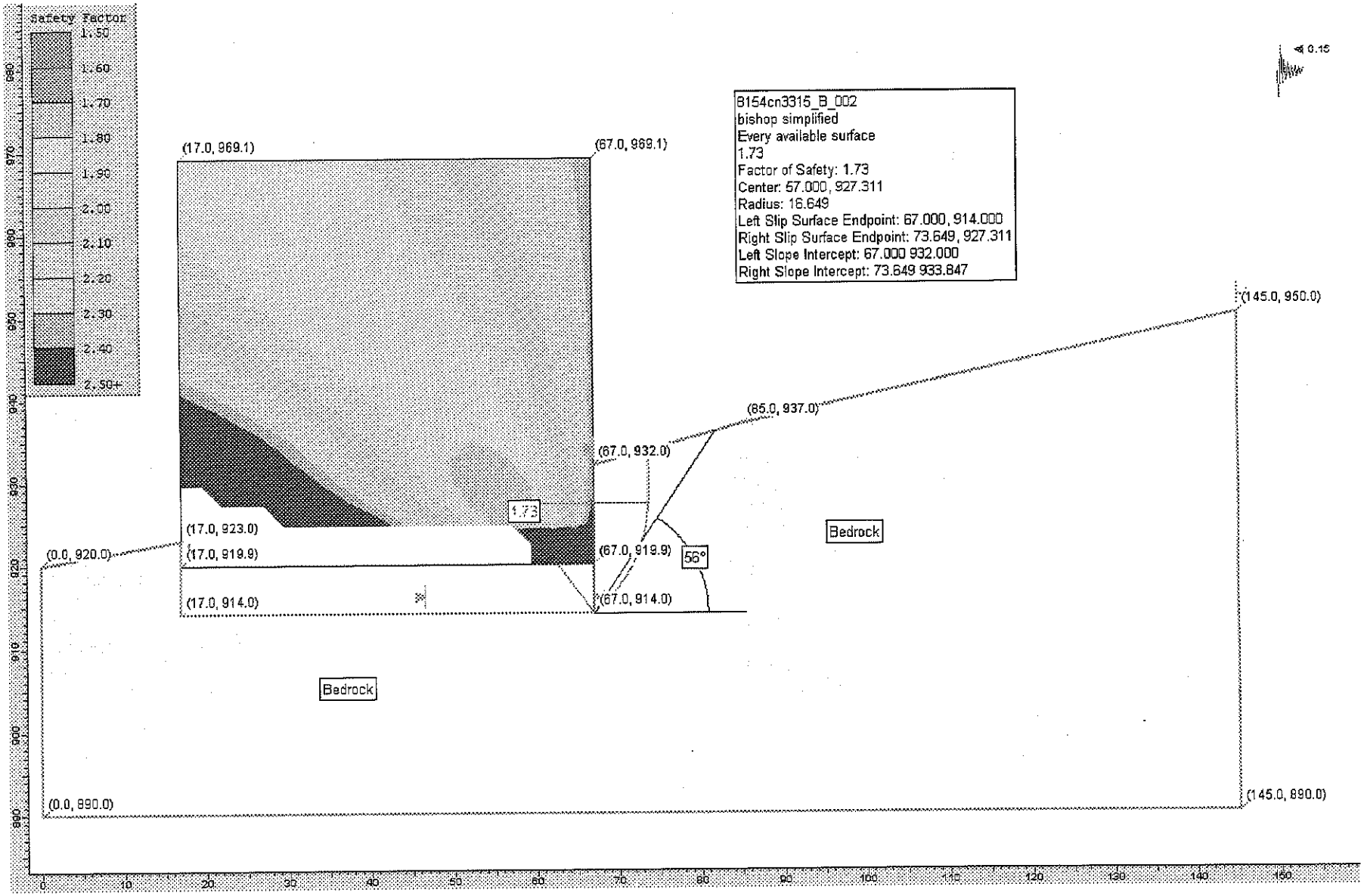
145.0 890.0

File Name: 8154cn3315_B_001
Figure 4



File Name: 8154cn3315_B_002
Figure 5

Slide Analysis Information

Document Name

File Name: 8154cn3315_A_002

Project Settings

Project Title: 8154cn3315_B_002
Failure Direction: Right to Left
Units of Measurement: Imperial Units
Pore Fluid Unit Weight: 62.4 lb/ft3
Groundwater Method: Water Surfaces
Data Output: Standard
Calculate Excess Pore Pressure: Off
Allow Ru with Water Surfaces or Grids: Off
Random Numbers: Pseudo-random Seed
Random Number Seed: 10116
Random Number Generation Method: Park and Miller v.3

Analysis Methods

Analysis Methods used:
Bishop simplified

Number of slices: 25
Tolerance: 0.005
Maximum number of iterations: 50

Surface Options

Surface Type: Circular
Search Method: Grid Search
Radius increment: 10
Composite Surfaces: Disabled
Reverse Curvature: Create Tension Crack
Minimum Elevation: Not Defined
Minimum Depth: Not Defined

Loading

Seismic Load Coefficient (Horizontal): 0.15

Material Properties

Material: Bedrock
Strength Type: Mohr-Coulomb
Unit Weight: 125 lb/ft3
Cohesion: 1004 psf
Friction Angle: 30 degrees
Water Surface: None

Global Minimums

Method: bishop simplified
FS: 1.727840
Center: 57.000, 927.311
Radius: 16.649
Left Slip Surface Endpoint: 67.000, 914.000
Right Slip Surface Endpoint: 73.649, 927.311
Left Slope Intercept: 67.000 932.000
Right Slope Intercept: 73.649 933.847
Resisting Moment=284996 lb-ft
Driving Moment=164943 lb-ft

Valid / Invalid Surfaces

Method: bishop simplified
Number of Valid Surfaces: 3904
Number of Invalid Surfaces: 947
Error Codes:
Error Code -104 reported for 89 surfaces
Error Code -105 reported for 18 surfaces
Error Code -106 reported for 32 surfaces
Error Code -112 reported for 434 surfaces
Error Code -1000 reported for 374 surfaces

File Name: 8154cn3315_B_002
Figure 6

Error Codes

The following errors were encountered during the computation:

-104 = Same as -102. Surface / nonslope
intersections also exist, but these points lie outside
the arc defined by the two surface / slope intersections.

-105 = More than two surface / slope
intersections with no valid slip surface.

-106 = Average slice width is less than
0.0001 * (maximum horizontal extent of soil region).
This limitation is imposed to avoid numerical errors
which may result from too many slices, or too
small a slip region.

-112 = The coefficient M-Alpha = cos(alpha)(1+tan(alpha)tan(phi)/F)
< 0.2 for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in
particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

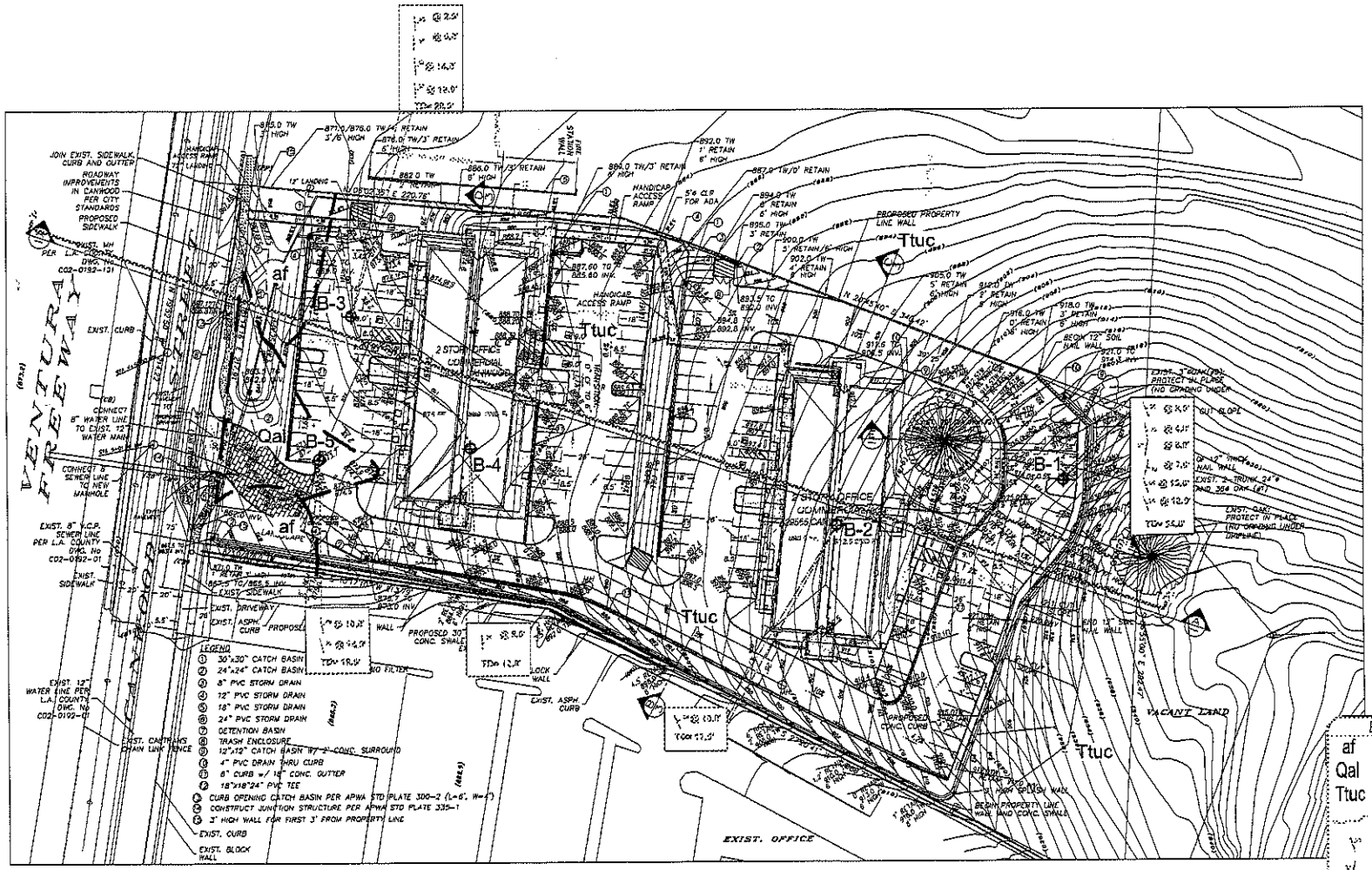
-1000 = No valid slip surfaces are generated
at a grid center. Unable to draw a surface.

List of All Coordinates

Search Grid
17.0919.9
67.0919.9
67.0969.1
17.0969.1

External Boundary
145.0 950.0
85.0937.0
67.0932.0
67.0914.0
17.0914.0
17.0923.0
0.0 920.0
0.0 890.0
145.0 890.0

File Name: 8154cn3315_B_002
Figure 7



PROVIDED BY:

Holmes Enterprises Inc.
Structural and Civil Engineering
200 Wicks Rd. Moorpark, CA. 93021
(805) 532-1571 fax(805) 532-1596

ags advanced geotechnical services, inc.

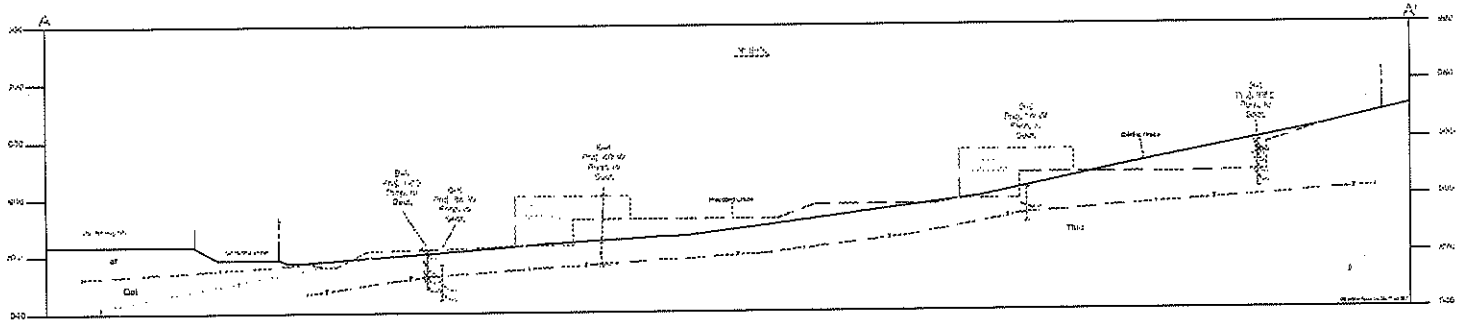
SITE GEOLOGIC MAP

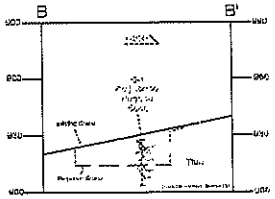
SUNBELT

29541 & 29555 Canwood St.
Agoura Hills, California

PLATE 1

Client No.	3315
Report No.	8154
Scale	1"=30'
Drawing No.	8154cn3315_1





advanced geotechnical services, inc.

SITE GEOLOGIC MAP

SUNBELT

29541 & 29555 Canwood St.
Agoura Hills, California

PLATE 2

Client No.	3315
Report No.	8154
Scale	1"=30'
Drawing No.	8154cn3315

4G

City of Agoura Hills Geotechnical Review Sheet for 05-CUP-006 & 05-OTP-032 (Sunbelt Enterprises). GeoDynamics, Inc. July 7, 2008.

Date: July 7, 2008
GDI #: 05.00103.0136

CITY OF AGOURA HILLS - GEOTECHNICAL REVIEW SHEET

To: Valerie Darbouze

Project Location: 29541 & 29515 Canwood Street, Agoura Hills, California.

Planning Case #: 05-CUP-006 & 05-OTP-032 (Sunbelt Enterprises)

Building & Safety #: None

Geotechnical Reports: Advanced Geotechnical Services, Inc. (2008b), "Change of Engineer of Record Letter, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California", Report Number 8340, dated July 1, 2008.

Advanced Geotechnical Services, Inc. (2008a), "Geotechnical Update Report, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California", Report Number 8154, dated April 8, 2008.

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Advanced Geotechnical Services, Inc. (2006a), "Response I, Geotechnical Engineering and Geologic Study, (Planning Case No. 05-CUP-006 & 05-OTP-32/ GDI No. 05.00103.0136), Proposed Two Office Buildings, 29515 Canwood Street, Agoura Hills, California," Report Number 7268, dated March 3, 2006.

Advanced Geotechnical Services, Inc. (2004), "Geotechnical Engineering and Geologic Study, Proposed Two Office Buildings, 29515 Canwood Street, Agoura Hills, California," Report Number 6583, dated May 14, 2004.

Plans: Holmes Enterprises (2008), "Preliminary Grading Study, 29541 and 29555 Canwood Street, Agoura Hills, California, 91301-1558", Sheets 1-4 of 4, Scale: 1"=30-', dated April 18, 2008.

The Warren Group Inc., (2005), "Architectural and Site Development Plans, Sheets SD-1, A-2, A-2.1, A-2.2, A-2.3, A-3, A-3.1, and A-3.2" Various Scales, dated October 4, 2005.

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Previous Reviews: November 11, 2005, August 23, 2006 and June 5, 2007.

FINDINGS

Planning/Feasibility Issues

☒ Acceptable as Presented

☐ Response Required

Geotechnical Report

☐ Acceptable as Presented

☒ Response Required

REMARKS

GeoDynamics, Inc. (GDI) issued a review letter for this project on June 5, 2007 indicating the project was acceptable both for feasibility and report-level issues. Advanced Geotechnical Services, Inc. (AGS; consultant) provided a Geotechnical Update Report (dated April 8, 2008) to address changes in the proposed design. Changes included high retaining walls proposed at the north end of the project. On July 1, 2008 AGS provided a report to document a change in the Engineer of Record for the project that occurred due to staff changes at AGS. The April 8, 2008 update report is attached to the July 1, 2008 report. The proposed development includes the construction of two 2-story office buildings, parking areas, access roads, retaining walls, cut and fill slopes and landscaping.

The City of Agoura Hills – Planning Department reviewed the referenced reports from a geotechnical perspective for compliance with applicable codes, guidelines, and standards of practice. GeoDynamics, Inc. (GDI) performed the geotechnical review on behalf of the City. Based upon the City's review, the referenced reports remain acceptable as presented with regard to planning and feasibility issues. Planning Commission should consider approval of Case No. 05-CUP-006 & 05-OTP-032 from a geotechnical perspective. The Geotechnical Report Review comments should be addressed by the consultant prior to Building Plan-Check Approval. Plan-Check comments should be addressed in Building & Safety Plan Check, and a separate geotechnical submittal is not required for plan-check comments.

Report Comments

1. The Grading Plan included with the most recent submittal (Holmes Enterprises, 2008) differs from the plan included with the most recent AGS Update Report (April 8, 2008). The consultant should provide a geotechnical update/review of the most current plan and provide additional recommendations as necessary to address changes to the plan.
2. The consultant recommends in previous reports (AGS 2004) that foundations and slabs-on-grade should be supported by a uniform thickness structural fill in order to mitigate the potential for differential settlement. With the proposed changes to the building configuration, it seems that the buildings will be underlain by bedrock and/or fill of variable thickness. The consultant should provide specific recommendations for mitigating the potential for differential settlement of foundations and slabs-on-grade within the proposed building areas.

Plan-Check Comments

1. The name, address, and phone number of the Consultant and a list of all the applicable geotechnical reports shall be included on the building/grading plans.
2. The grading plan should include the limits and depths of overexcavation of the building pad and flatwork areas as recommended by the Consultant.
3. The following note must appear on the grading and foundation plans: "*Tests shall be performed prior to pouring footings and slabs to determine the expansion index of the supporting soils, and foundation and slab plans should be reviewed by the Geotechnical Consultant and revised, if necessary, accordingly.*"
4. The following note must appear on the grading and foundation plans: "*Excavations shall be made in compliance with CAL/OSHA Regulations.*"
5. The following note must appear on the foundation plans: "*All foundation excavations must be observed and approved, in writing, by the Project Geotechnical Consultant prior to placement of reinforcing steel.*"
6. Foundation plans and foundation details shall clearly depict the embedment material and minimum depth of embedment for the foundations.
7. Drainage plans depicting all surface and subsurface non-erosive drainage devices, flow lines, and catch basins shall be included on the building plans.
8. Final grading, drainage, and foundation plans shall be reviewed, signed, and wet stamped by the consultant.

9. Provide a note on the grading and foundation plans that states: *"An as-built report shall be submitted to the City for review. This report prepared by the Geotechnical Consultant must include the results of all compaction tests as well as a map depicting the limits of fill, locations of all density tests, outline and elevations of all removal bottoms, keyway locations and bottom elevations, locations of all subdrains and flow line elevations, and location and elevation of all retaining wall backdrains and outlets. Geologic conditions exposed during grading must be depicted on an as-built geologic map."*

If you have any questions regarding this review letter, please contact GeoDynamics, Inc. at (805) 496-1222.

Respectfully Submitted,

GeoDynamics, INC.

Ali Abdel-Haq
Geotechnical Engineering Reviewer
GE 2308 (exp. 12/31/05)

Christopher J. Sexton
Engineering Geologic Reviewer
CEG 1441 (exp. 11/30/06)

4H
Response I, Geotechnical Update Report, City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008. Advanced Geotechnical Services, Inc. September 23, 2008.

advanced geotechnical services, inc.

FILE
ORIGINAL

September 23, 2008
Client Number 3315
Report Number 8292

John Brock / Pam Coppedge
Sunbelt Enterprises
1801 Solar Drive, Suite 250
Oxnard, CA 93030

Response I
Geotechnical Update Report
City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008
[Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00103.0136]
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

In accordance with the request from Rick Simon of Holmes Enterprise, Inc., Advanced Geotechnical Services, Inc., (AGS) has prepared this response letter report with regards to the City of Agoura Hills *Geotechnical Review Sheet* comments dated July 7, 2008 on the subject property by GeoDynamics, Inc., (Planning Case No. 05-CUP-006 and 05-OTP-032 / GDI No. 05.00103.0136). This letter report supplements our **Geotechnical Update Report** dated April 8, 2008 (Report No. 8154), our **Engineering and Geologic Study** report dated May 14, 2004, (Report No. 6583), and our **Response I** and **II** reports dated March 3, 2006 and October 10, 2006, (Report Nos. 7268 and 7592), and unless noted otherwise all recommendations in these reports are still applicable.

We appreciate the opportunity to be of service. If we can be of further assistance or answer any questions, please do *not* hesitate to call. We are looking forward to being of continued service as this project moves to the final construction phase.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Kenneth J. Palos
President

R. Mark Workman Jr., RCE
Principal Engineer

Brett Wanner, CEG
Principal Engineering Geologist

Enclosures: Report No. 8292

cc: (5) Addressee [hard copy, pdf] (1) File Copy

REGISTERED PROFESSIONAL ENGINEER
R. MARK WORKMAN JR.
No. 68557
EXP. 09/30/09
CIVIL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
BRETT M. WANNER
No. 2450
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

5251 Verdugo Way, Suite L Camarillo, CA 93012
800.500.3318 805.388.6162 f 805.388.6167
info@advancedgeotechnical.com

Report No. 8292
Response I
Geotechnical Update Report
City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008
[Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00103.0136]
Proposed Office Buildings
29541 and 29555 Canwood Street, Agoura Hills, California

Site Description
The subject site is located at 29541 and 29555 Canwood Street in the City of Agoura Hills, County of Los Angeles, California. The property generally slopes from north to south with natural slope gradients ranging from approximately 4:1 (H:V) to 2:1 (H:V). The property is currently vacant with the majority of the site covered with low grasses and several trees. An existing oak tree will remain in place near the northwest corner of the property.

Geotechnical Review Sheet Comments
GDI No. 05.00103.0136
In an effort to facilitate the review process, each review comment is restated and followed by our response. A copy of the review sheet is included in Appendix A, and the Plate that summarizes information contained in the responses can be found in Appendix B.

Report Comments
Comment 1
Review Comment
The Grading Plan included with the most recent submittal (Holmes Enterprises, 2008) differs from the plan included with the most recent AGS Update Report (April 8, 2008). The consultant should provide a geotechnical update/review of the most current plan and provide additional recommendations as necessary to address changes to the plan.

Response
The most recent grading plan prepared by Holmes Enterprises, Inc., has been reviewed by this office. The grading plan was utilized as the base map for our *Site Plan*, which is included as Plate 1 and can be found in Appendix A, to show the locations of our borings in regards to the site grading and development. Based on our review of the most recent grading plan, the parking area located at the northwest corner of the lot has been *revised* to eliminate the need for the previously proposed 10- and 16-foot high retaining walls in the vicinity of the existing oak trees. A stepped retaining wall system with a maximum height of 5 feet and a maximum combined retained height of 10 feet is now proposed. The recommendations provided in our previous reports remain applicable to the proposed construction and grading, as now proposed.

Comment 2
Review Comment
The consultant recommends in previous reports (AGS 2004) that foundations and slabs-on-grade should be supported by a uniform thickness structural fill in order to mitigate the potential for differential settlement. With the proposed changes to the building configuration, it seems that the buildings will be underlain by bedrock and/or fill of variable thickness. The consultant should provide specific recommendations for mitigating the potential for differential settlement of foundations and slabs-on-grade within the proposed building areas.

Response

Based on our review of the most recent grading plan, the previous recommendation to support the foundations and slabs-on-grade with a structural fill of a uniform thickness remains applicable. Removals below the structures should provide a fill blanket with a minimum ratio of 50% (deepest to shallowest) below the bottoms of the proposed footings.

Plan-Check Comments

We acknowledge receipt of these nine plan-check comments, which need to be addressed by the applicant, project Civil Engineer, and/or project Structural Engineer with regards to plan submittal procedures and or specific notations to be added to the plans as required by the City of Agoura. Upon the completion of plans, AGS acknowledges that our Engineer and or Geologist will *review* plans, and once they are found to be in compliance with the recommendations provided in our geotechnical reports, in addition to the responses to these report review comments as provided in this letter, the plans will then be wet-stamped and wet-signed.

Limits and Liability

The analysis and recommendations submitted in this letter are based in part on our geotechnical reports for the proposed office buildings project (Report Nos. 8154, 6583, 7268, 7592), and the limitation and liability sections in those reports apply to this letter. We have strived to provide our services in accordance with generally accepted geotechnical engineering practices in this community at this time, but we make no warranty, either express or implied.

Please be aware that the contract fee for our services to prepare this report does not include additional work that may be required, such as grading observation and testing, footing observations, plan review, or responses to governmental (regulatory) plan reviews associated with you obtaining a building permit. Where additional services are requested or required, you will be billed on an hourly basis for consultation or analysis. AGS requests a minimum of 48 hours be provided for plan reviews. Please anticipate additional time for plan corrections if all of our geotechnical recommendations have not been added to the plans, prior to our approving and stamping the plans.

Enclosures: Appendices
- *A Review Comments*
- *B Supporting Information*
  - *Plate*
  - *1 Site Plan*

Appendix A

Review Comments

CITY OF

AGOURA HILLS

"Gateway to the Santa Monica Mountains National Recreation Area"

August 28, 2008

Pam Coppedge
Sunbelt Enterprises
1801 Solar Drive, Suite 250
Oxnard, CA 93030

SUBJECT: CONDITIONAL USE PERMIT AND OAK TREE PERMIT APPLICATIONS CASE NOS. 05-CUP-006 AND 05-OTP-032

Dear Ms. Coppedge:

Please find enclosed the latest comments from the City Geotechnical/Geological Consultant as a result of the revisions to the Grading Plan. Please have your consultant review the memorandum and respond accordingly. Please submit 4 copies of the response to the Planning Department.

Thank you for your continued cooperation on this project. You can call me at (818) 597-7328 or contact me by email at vdarbouze@ci.agoura-hills.ca.us.

Sincerely,

Valerie Darbouze, Associate Planner
Department of Planning and Community Development

cc: File

Enclosure

30001 Ladyface Court, Agoura Hills, CA 91301-1335 • Telephone (818) 597-7300 • Fax (818) 597-7352
e-mail: ci.agoura-hills.ca.us

Date: July 7, 2008
GDI #: 05.00103.0136

CITY OF AGOURA HILLS - GEOTECHNICAL REVIEW SHEET

To:	Valerie Darbouze
Project Location:	29541 & 29515 Canwood Street, Agoura Hills, California.
Planning Case #:	05-CUP-006 & 05-OTP-032 (Sunbelt Enterprises)
Building & Safety #:	None
Geotechnical Reports:	Advanced Geotechnical Services, Inc. (2008b), "Change of Engineer of Record Letter, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California". Report Number 8340, dated July 1, 2008. Advanced Geotechnical Services, Inc. (2008a), "Geotechnical Update Report, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California", Report Number 8154, dated April 8, 2008. Advanced Geotechnical Services, Inc. (2006b), "Response II, Geotechnical Engineering and Geologic Study, City of Agoura Hill-Geotechnical Review Sheet Dated August 23, 2006, [Planning Case No. 05-CUP-006 & 05-OTP-32/ GDI No. 05.00103.0136], Proposed Two Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California," Report Number 7592, dated October 10, 2006. Advanced Geotechnical Services, Inc. (2006a), "Response I, Geotechnical Engineering and Geologic Study, (Planning Case No. 05-CUP-006 & 05-OTP-32/ GDI No. 05.00103.0136), Proposed Two Office Buildings, 29515 Canwood Street, Agoura Hills, California," Report Number 7268, dated March 3, 2006. Advanced Geotechnical Services, Inc. (2004), "Geotechnical Engineering and Geologic Study, Proposed Two Office Buildings, 29515 Canwood Street, Agoura Hills, California," Report Number 6583, dated May 14, 2004.
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Previous Reviews:	November 11, 2005, August 23, 2006 and June 5, 2007.

FINDINGS

Planning/Feasibility Issues	Geotechnical Report
☒ Acceptable as Presented	☐ Acceptable as Presented
☐ Response Required	☒ Response Required

REMARKS

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Respectfully Submitted,

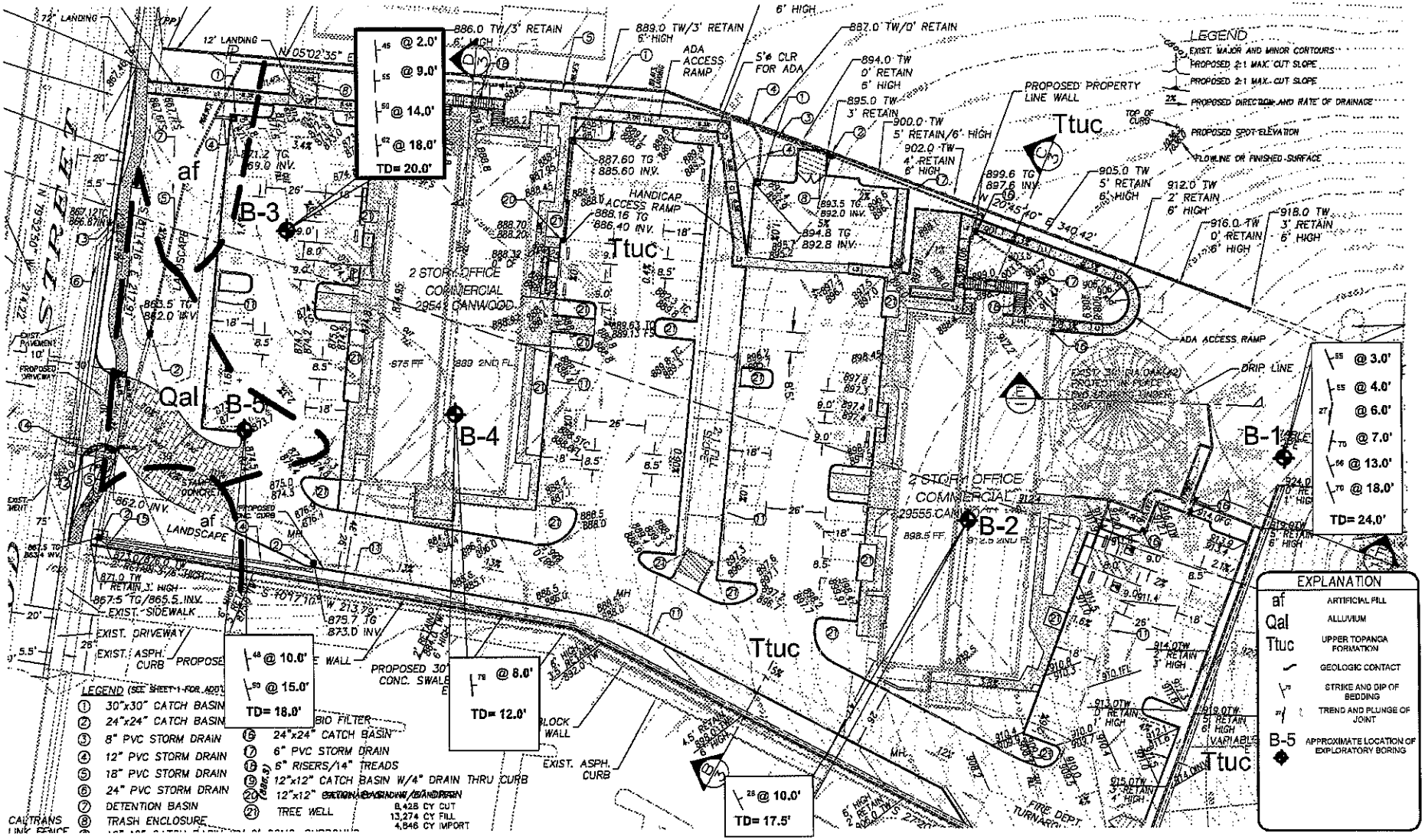
GeoDynamics, INC.

Ali Abdel-Haq
Geotechnical Engineering Reviewer
GE 2308 (exp. 12/31/05)

Christopher J. Sexton
Engineering Geologic Reviewer
CEG 1441 (exp. 11/30/06)

Appendix B

Supporting Information



Advanced Geotechnical Services
5251 Verdugo Way, Suite L
Camarillo, California 93012
Office (805) 388-0102/Fax (805) 388 0107

PROJECT/CLIENT NAME & ADDRESS
Response I
Geotechnical Update Report
City of Agoura Hills Geotechnical Review
Sheet dated July 7, 2008
[Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00100.0136]
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

Client No.	3315	PLATE 1
Report No.	8292	
Date	9/23/08	
Drawing No.	8292cn3315	
APN. NO.		
GP. NO.		

4l

City of Agoura Hills – Geotechnical Review Sheet, October 17, 2008 and Response dated October 17, 2008.

Date: October 17, 2008
GDI #: 05.00103.0136

CITY OF AGOURA HILLS - GEOTECHNICAL REVIEW SHEET

To:	Valerie Darbouze
Project Location:	29541 & 29515 Canwood Street, Agoura Hills, California.
Planning Case #:	05-CUP-006 & 05-OTP-032 (Sunbelt Enterprises)
Building & Safety #:	None
Geotechnical Reports:	Advanced Geotechnical Services, Inc. (2008d), "Clarification Letter Response I, Geotechnical Update report, City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008 [Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00103.0136], Comment #2 Only, Proposed Office Buildings, 29541 and 29555 Canwood Street, Agoura Hills, California", Report Number 8292, dated October 17, 2008 (attached). Advanced Geotechnical Services, Inc. (2008c), "Response I, Geotechnical Update report, City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008 [Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00103.0136], Proposed Office Buildings, 29541 and 29555 Canwood Street, Agoura Hills, California", Report Number 8292, dated September 23, 2008. Advanced Geotechnical Services, Inc. (2008b), "Change of Engineer of Record Letter, Proposed Office Buildings, 29541 and 29555 Canwood Street, Agoura Hills, California", Report Number 8340, dated July 1, 2008. Advanced Geotechnical Services, Inc. (2008a), "Geotechnical Update Report, Proposed Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California", Report Number 8154, dated April 8, 2008. Advanced Geotechnical Services, Inc. (2006b), "Response II, Geotechnical Engineering and Geologic Study, City of Agoura Hill-Geotechnical Review Sheet Dated August 23, 2006, [Planning Case No. 05-CUP-006 & 05-OTP-32/ GDI No. 05.00103.0136], Proposed Two Office Buildings, 29541 and 29515 Canwood Street, Agoura Hills, California," Report Number 7592, dated October 10, 2006. Advanced Geotechnical Services, Inc. (2006a), "Response I, Geotechnical Engineering and Geologic Study, (Planning Case No. 05-CUP-006 & 05-OTP-32/ GDI No. 05.00103.0136), Proposed Two Office Buildings, 29515 Canwood Street, Agoura Hills, California," Report Number 7268, dated March 3, 2006. Advanced Geotechnical Services, Inc. (2004), "Geotechnical Engineering and Geologic Study, Proposed Two Office Buildings, 29515 Canwood Street, Agoura Hills, California," Report Number 6583, dated May 14, 2004.
Plans:	Holmes Enterprises (2008), "Preliminary Grading Study, 299541 and 29555 Canwood Street, Agoura Hills, California, 91301-1558", Sheets 1-4 of 4, Scale: 1"=30-', dated April 18, 2008. The Warren Group Inc., (2005), "Architectural and Site Development Plans, Sheets SD-1, A-2, A-2.1, A-2.2, A-2.3, A-3, A-3.1, and A-3.2" Various Scales, dated October 4, 2005. Holmes Enterprises (2005a), "Preliminary Grading Plan, Canwood Street Offices, Canwood Street, Agoura Hills, California," Scale: 1"=2-', dated October 5, 2005.
Previous Reviews:	November 11, 2005, August 23, 2006, June 5, 2007, and July 7, 2008.

FINDINGS

Planning/Feasibility Issues

☒ Acceptable as Presented

☐ Response Required

Geotechnical Report

☒ Acceptable as Presented

☐ Response Required

REMARKS

Advanced Geotechnical Services, Inc. (AGS; consultant) provided a response (AGS 2008c) to the geotechnical review letter by the City of Agoura hills dated July 7, 2008 regarding the proposed development at site located at 29541 and 29555 Canwood Street, Agoura Hills, California. The proposed development includes the construction of two 2-story office buildings, parking areas, access roads, retaining walls, cut and fill slopes and landscaping.

The City of Agoura Hills – Planning Department reviewed the referenced reports from a geotechnical perspective for compliance with applicable codes, guidelines, and standards of practice. GeoDynamics, Inc. (GDI) performed the geotechnical review on behalf of the City. Based upon the City's review, the response by the consultant to Comment # 2 of the July 7, 2008 review letter requires further clarification. To expedite the review process, the reviewers contacted the consultant on October 10, 2007 and discussed the remaining item. The consultant provided via e-mail a letter dated October 17, 2008 (attached) with the requested clarification. As such, we recommend the Planning Commission consider approval of Case Nos. 05-CUP-006 & 05-OTP-032 (Sunbelt Enterprises) from a geotechnical perspective. Plan-Check comments should be addressed in Building & Safety Plan Check, and a separate geotechnical submittal is not required for plan-check comments.

Plan-Check Comments

1. The name, address, and phone number of the Consultant and a list of all the applicable geotechnical reports shall be included on the building/grading plans.
2. The grading plan should include the limits and depths of overexcavation of the building pad and flatwork areas as recommended by the Consultant.
3. The following note must appear on the grading and foundation plans: "*Tests shall be performed prior to pouring footings and slabs to determine the expansion index of the supporting soils, and foundation and slab plans should be reviewed by the Geotechnical Consultant and revised, if necessary, accordingly.*"
4. The following note must appear on the grading and foundation plans: "*Excavations shall be made in compliance with CAL/OSHA Regulations.*"
5. The following note must appear on the foundation plans: "*All foundation excavations must be observed and approved, in writing, by the Project Geotechnical Consultant prior to placement of reinforcing steel.*"
6. Foundation plans and foundation details shall clearly depict the embedment material and minimum depth of embedment for the foundations.
7. Drainage plans depicting all surface and subsurface non-erosive drainage devices, flow lines, and catch basins shall be included on the building plans.
8. Final grading, drainage, and foundation plans shall be reviewed, signed, and wet stamped by the consultant.
9. Provide a note on the grading and foundation plans that states: "*An as-built report shall be submitted to the City for review. This report prepared by the Geotechnical Consultant must include the results of all compaction tests as well as a map depicting the limits of fill, locations of all density tests, outline and elevations of all removal bottoms, keyway locations and bottom elevations, locations of all subdrains and flow line elevations, and location and elevation of all retaining wall backdrains and outlets. Geologic conditions exposed during grading must be depicted on an as-built geologic map.*"

If you have any questions regarding this review letter, please contact GeoDynamics, Inc. at (805) 496-1222.

Respectfully Submitted,

GeoDynamics, INC.

Ali Abdel-Haq
Geotechnical Engineering Reviewer
GE 2308 (exp. 12/31/05)

Attachments: The October 17, 2008 addendum letter

advanced geotechnical services, Inc.

FILE
ORIGINAL

October 17, 2008
Client Number 3315
Report Number 8329

John Brock / Pam Coppedge
Sunbelt Enterprises
1801 Solar Drive, Suite 250
Oxnard, CA 93030

Clarification Letter
Response I
Geotechnical Update Report
City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008
[Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00103.0136]
Comment 2 Only
Proposed Office Buildings
29541 and 29555 Canwood Street
Agoura Hills, California

As requested by GeoDynamics, Inc., the Geotechnical Reviewer for the City of Agoura Hills, Advanced Geotechnical Services, Inc., (AGS) has prepared this letter to *clarify* our response to Comment 2 of the City of Agoura Hills / GeoDynamics, Inc., *Geotechnical Review Sheet* dated July 7, 2008 for the subject property (Planning Case No. 05-CUP-006 and 05-OTP-032 / GDI No. 05.00103.0136). This letter report supplements our **Response I** report dated September 23, 2008 (Report No. 8292), our **Geotechnical Update Report** dated April 8, 2008 (Report No. 8154), our **Response I** and **II** reports dated March 3, 2006 and October 10, 2006, respectively (Report Nos. 7592 and 7268 respectively), our **Addendum I** report revise dated February 15, 2005 (Report No. 6909), and our **Engineering and Geologic Study** report dated May 14, 2004 (Report No. 6583), and unless noted otherwise all recommendations in these reports *remain* applicable.

We appreciate the opportunity to be of service. If we can be of further assistance or answer any questions, please do *not* hesitate to call. We are looking forward to being of continued service as this project moves to the final construction phase.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Kenneth J. Palos
President

R. Mark Workman Jr., RCE
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
R. MARK WORKMAN JR
No. 68557
EXP 09/30/09
CIVIL
STATE OF CALIFORNIA

cc: (5) Addressee [hard copy, pdf] (1) File Copy

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info@advancedgeotechnical.com

Report No. 8329
Clarification Letter
Response I
Geotechnical Update Report
City of Agoura Hills Geotechnical Review Sheet dated July 7, 2008
[Planning Case No. 05-CUP-006 & 05-OTP-032 / GDI No. 05.00103.0136]
Comment 2 Only
Proposed Office Buildings
29541 and 29555 Canwood Street, Agoura Hills, California

The review comment for clarification purposes is restated below for reference.

Comment 2
Review Comment
The consultant recommends in previous reports (AGS 2004) that foundations and slabs-on-grade should be supported by a uniform thickness structural fill in order to mitigate the potential for differential settlement. With the proposed changes to the building configuration, it seems that the buildings will be underlain by bedrock and/or fill of variable thickness. The consultant should provide specific recommendations for mitigating the potential for differential settlement of foundations and slabs-on-grade within the proposed building areas.

Clarification Response
Based on the grading and building design changes, the proposed structures will now be underlain by variable fill and/or bedrock thicknesses. In order to mitigate the potential for differential settlement, it is recommended that the buildings be supported by a minimum 5-foot thick compacted fill blanket, as measured from below the planned finished pad grade. Additionally, all removals below the structures should provide a fill blanket with a maximum ratio of 50% (deepest to shallowest) below the bottoms of the proposed footings.

Limits and Liability
The analysis and recommendations submitted in this letter are based in part on our geotechnical reports for the proposed office buildings project (Report Nos. 8292, 8154, 7592, 7268, 6909, and 6583), and the limitation and liability sections in these reports apply to this letter. We have strived to provide our services in accordance with generally accepted geotechnical engineering practices in this community at this time, but we make no warranty, either express or implied.

Please be aware that the contract fee for our services to prepare this report does not include additional work that may be required, such as grading observation and testing, footing observations, plan review, or responses to governmental (regulatory) plan reviews associated with you obtaining a building permit. Where additional services are requested or required, you will be billed on an hourly basis for consultation or analysis. AGS requests a minimum of 48 hours be provided for plan reviews. Please anticipate additional time for plan corrections if all of our geotechnical recommendations have not been added to the plans, prior to our approving and stamping the plans.