July 18, 2017 GH17563-G

A and T Development LLC c/o Pacific Crest Consultants 23622 Calabasas Road, #100 Calabasas, California 91302

Subject: Response to City of Los Angeles Review Letter, Proposed Private Street

1437 for Access to 1830 N. Blue Heights Drive; PT NE 1/4 Sec 7, T1S,

R14W (Arb 23); 1830 N. Blue Heights Drive, Los Angeles, California.

Reference: Reports by Grover-Hollingsworth and Associates, Inc.: Geologic and Soils

Engineering Exploration, Proposed Single-Family Dwelling, Swimming Pool and Retaining Walls, dated August 4, 2016; Response to City Correction Letter and Revised Basement Wall Designs, Proposed Residential Development, dated November 15, 2016; and Geologic and Soils Engineering Exploration, Proposed Private Street 1437, dated

April 20, 2017.

City of Los Angeles: Correction Letter, dated September 13, 2016 (Log #94559); Approval Letter, dated December 14, 2016 (Log #94559-01); and

Review Letter, dated May 18, 2017 (Log #97204).

#### Gentlemen:

This letter presents our responses to the above-referenced recent City of Los Angeles Review letter concerning the private street project. These responses follow a meeting with the reviewers on June 22, 2017. We have revised the geologic map and sections to reflect the current civil plan for the soil nail wall above Blue Heights Drive prepared by Obando and Associates, Inc., dated June 8, 2017.

Our responses are provided below on an item-by-item basis.

#### **Engineering Geology**

*Item 1:* Revise the Geotechnical Map(s) to show the proposed soil nail wall. The Geotechnical Map(s) shall be based on the updated Private Street Map.

**Response:** As discussed above, the geologic maps have been revised to reflect the planned soil nail wall.

*Item 2:* Revise the Private Street Map to include all the proposed retaining, slough and soil nail walls.

**Response:** The current Civil Plan for the Private Street depicting the proposed retaining, slough and soil nail walls is attached.

*Item 3:* Justify why a reduced setback is recommended for the retaining wall foundation setback from the descending slopes.

**Response:** The proposed retaining walls along the downslope side of the Private Street are a maximum of 4 feet high. Those walls will be supported by friction piles and will be provided with a grade beam that extends to bedrock. Since the walls will retain a maximum of 6 to 8 feet of earth and the piles will bear in granitic bedrock, it seems unreasonable to require a horizontal foundation setback of up to 40 feet (requiring up to 30-foot-deep piles). We therefore recommended a maximum foundation setback of H/6 to 20 feet. If a greater pile depth is required by the structural engineer to resist the applied loading that greater depth will govern.

*Item 4:* Revise traffic surcharge recommendations in accordance with Information Bulletin *P/BC* 2017-141.

**Response:** We discussed this issue with the principal geotechnical reviewer for the City. We understand that our recommended traffic loading is acceptable, but that it must be applied to the full wall height. Since the full above and below grade wall height is less than 10 feet, our recommended design should be acceptable.

*Item 5:* Provide calculations to support the recommendations for temporary excavations in bedrock. Additionally, provide recommendations for traffic surcharged temporary excavations exposing fill and/or weathered bedrock.

**Response:** The excavations for the retaining walls along the downslope side of the roadway will locally penetrate fill. Weathered bedrock is not anticipated in the area of those walls. The fill should be trimmed to a 1:1 gradient and traffic loadings should not be allowed within 3 feet of the top of the cut. Shoring will not be used in areas of fill since the fill will be removed and recompacted upslope of the wall.

**Item 6:** Provide a geologic map and cross section/s showing the location of the proposed soil nail retaining system. Specify the length of the soil nails on the geologic cross-section(s) and show drainage behind the soil nail wall.

**Response:** The geologic maps and applicable cross sections have been revised to show the location of the soil nail facing. The soil nail lengths and spacing on the sections are in conformance with the analyses provided in our referenced report. The necessity to show drainage on the sections was discussed in our meeting and it was determined that the drainage discussion in the referenced report is sufficient.

Item 7: Provide elevations to show the location of the proposed soil-nails, including the proof and verification nails. The geologic map shall also show the location of "proof" and "verification" soil nails.

**Response:** The locations of the proof and verification nails will be shown on the engineered soil nail wall plans once the use of a soil nail system is conceptually approved. We provided recommendations for the spacing of proof and verification nails in our referenced report.

*Item 8:* Revise recommendations for instrumentation and monitoring program. No less than one inclinometer shall be installed above the soil nail wall.

**Response:** The need for an inclinometer was discussed in our meeting. It is our understanding that inclinometers are required by the City where structures are planned in close proximity to the soil nail wall. Any future residence on the site above the soil nail wall will be located on or near the pad which is situated 40 to 50 feet above the top of the soil nail wall. Due to the height of the descending slope, relative to the descending slope, the downslope side of any future structure will require minimum 30-foot-deep friction piles

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NGNERING

to provide the Code-required foundation setback to the slope face. Therefore, it remains our opinion that a slope inclinometer is not necessary above the planned wall.

**Item 9:** Depict on the geologic map inclinometer location(s) and any areas where not future utility lines/excavations will be recommended without prior soil engineering approval.

**Response:** Utilities should not be placed under the soil nail wall or in the area titled "No Utility Zone" on the enclosed geologic maps.

Respectfully submitted,

ROBERT A. HOLLINGSWORTH

G.E. 2022/E.G. 1/265

RAH:dl

Enc: City of Los Angeles Review Letter (dated May 18, 2017) (2 sheets)

USGS Design Maps Reports (6 sheets)

Geologic Map (pocket)
Geologic Map 2 (pocket)
Sections A thru T (pocket)

Private Street Civil Plan (pocket)

xc: (1) Addressee (c/o Steve Byrne)

(1) Steve Byrne via email

(2) Ameen Ayoub

(1) Ameen Ayoub via email

(2) Pacific Crest Consultants (Attention: Penny Flinn)

#### CITY OF LOS ANGELES

CALIFORNIA



ERIC GARCETTI MAYOR DEPARTMENT OF BUILDING AND SAFETY 201 NORTH FIGUEROA STREET LOS ANGELES, CA 90012

FRANK M. BUSH
GENERAL MANAGER
SUPERINTENDENT OF BUILDING

OSAMA YOUNAN, P.E. EXECUTIVE OFFICER

#### GEOLOGY AND SOILS REPORT REVIEW LETTER

May 18, 2017

BOARD OF

**BUILDING AND SAFETY** 

COMMISSIONERS

VAN AMBATIELOS PRESIDENT

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JOSELYN GEAGA-ROSENTHAL

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JAVIER NUNEZ

LOG # 97204 SOILS/GEOLOGY FILE - 2 LAN

A and T Development LLC 23622 Calabasas Road, #100 Calabasas, CA 91302

PROPOSED LEGAL: PS-1437 (Private Street)

CURRENT LEGAL: NE ¼ SEC 7 T1S R14W Arbs. 22, 23, 24 and 27

LOCATION: 1830 N. Blue Heights Drive (aka 1820, 1849 and 1850 N. Blue Heights Dr.)

CURRENT REFERENCE REPORT/LETTER Geology/Soils Report Oversized Documents	REPORT No. GH17563-G	DATE OF <u>DOCUMENT</u> 04/20/2017	PREPARED BY Grover Hollingsworth
PREVIOUS REFERENCE REPORT/LETTER(S) Dept. Approval Letter Response Report Geology/Soils Report	REPORT <u>No.</u> 94559-01 GH17563-G	DATE OF <u>DOCUMENT</u> 12/14/2016 11/15/2016 08/04/2016	PREPARED BY LADBS Grover Hollingsworth

The Grading Division of the Department of Building and Safety has reviewed the current reference report that provides recommendations for the proposed private street improvements (road widening), retaining walls and soil nail walls for Private Street Map No. 1437 (PS-1437) to support access to a 4+ story single family residence (1830 N. Blue Heights Drive) with ramp/parking structural decks, bowling alley, garage, pool, decks, retaining walls, etc. The proposed private street improvements include fill removal and recompaction grading; slope trimming/scaling to prepare the surface for soil nail walls; retaining walls and slough/impact walls with 5 foot of freeboard. The subject private street is located on several lots with easements that grant access to the subject and adjacent sites that extends from Sunset Plaza Drive to the subject lots.

The earth materials at the subsurface exploration locations consist of up to 23 feet of uncertified fill underlain by up to 5 feet of natural residual soil and granite bedrock. The consultants recommend to support the proposed structures on conventional and/or drilled-pile foundations bearing on competent bedrock.

The review of the subject report cannot be completed at this time and will be continued upon submittal of an addendum to the report which shall include, but not be limited to, the following:

1830 N. Blue Heights Drive

(Note: Numbers in parenthesis () refer to applicable sections of the 2017 City of LA Building Code. P/BC numbers refer the applicable Information Bulletin. Information Bulletins can be accessed on the internet at LADBS.ORG.)

- 1. Revise the Geotechnical Map(s) to show the proposed soil nail wall. The Geotechnical Map(s) shall be based on the updated Private Street Map.
- 2. Revise the Private Street Map to include all the proposed retaining, slough and soil nail walls.
- 3. Justify why a reduced setback is recommended for the retaining wall foundation setback from the descending slopes.
- 4. Revise traffic surcharge recommendations in accordance with Information Bulletin P/BC 2017-141.
- 5. Provide calculations to support the recommendations for temporary excavations in bedrock. Additionally, provide recommendations for traffic surcharged temporary excavations exposing fill and/or weathered bedrock.
- 6. Provide a geologic map and cross section/s showing the location of the proposed soil nail retaining system. Specify the length of the soil nails on the geologic cross-section(s) and show drainage behind the soil nail wall.
- 7. Provide elevations to show the location of the proposed soil-nails, including the proof and verification nails. The geological map shall also show the location of "proof" and "verification" soil nails.
- 8. Revise recommendations for instrumentation and monitoring program. No less than one inclinometer shall be installed above the soil nail wall.
- 9. Depict on the geologic map inclinometer location(s) and any areas where no future utility lines/excavations will be recommended without prior soil engineering approval.

The geologist and soils engineer shall prepare a report containing an itemized response to the review items indicated in this letter. If clarification concerning the review letter is necessary, the report review engineer and/or geologist may be contacted. Two copies of the response report, including one unbound wet-signed original for archiving purposes, a pdf-copy of the complete report in a CD or flash/drive, and the appropriate fees will be required for submittal.

CASEY LEE JENSEN

Engineering Geologist Associate II

DAN L. STOICA

Geotechnical Engineer I

CLJ/DLS:clj/dls Log No. 97204

in D

213-482-0480

cc: Chris Drugan, Applicant

Grover Hollingsworth and Associates, Inc., Project Consultant

LA District Office

#### **Design Maps Summary Report**

#### User-Specified Input

Report Title BLUE HEIGHTS DRIVE

Tue March 8, 2016 18:44:08 UTC

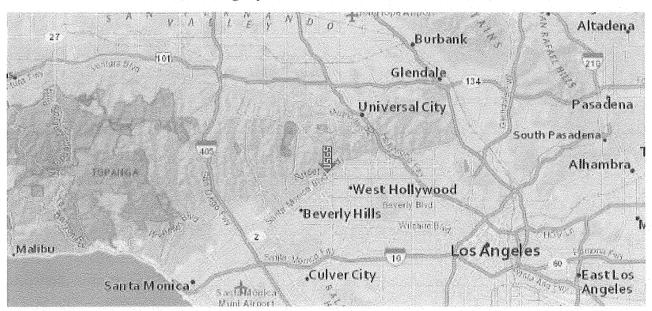
Building Code Reference Document ASCE 7-10 Standard

(which utilizes USGS hazard data available in 2008)

Site Coordinates 34.10304°N, 118.38004°W

Site Soil Classification Site Class C - "Very Dense Soil and Soft Rock"

Risk Category I/II/III



#### **USGS-Provided Output**

$$S_s = 2.513 g$$

$$S_{MS} = 2.513 g$$

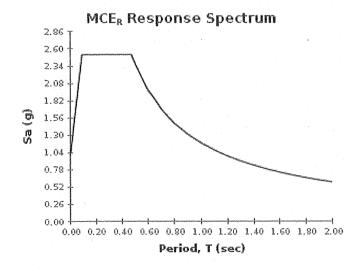
$$S_{DS} = 1.675 g$$

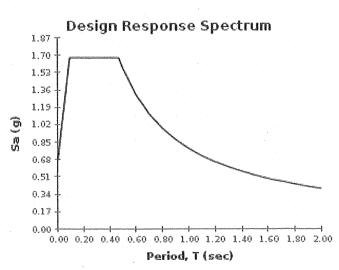
$$S_1 = 0.909 g$$

$$S_{M1} = 1.181 g$$

$$S_{p_1} = 0.788 g$$

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





For PGA<sub>M</sub>,  $T_L$ ,  $C_{RS}$ , and  $C_{R1}$  values, please view the detailed report.

#### **USGS** Design Maps Detailed Report

ASCE 7-10 Standard (34.10304°N, 118.38004°W)

Site Class C - "Very Dense Soil and Soft Rock", Risk Category I/II/III

#### Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S<sub>s</sub>) and 1.3 (to obtain S<sub>1</sub>). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

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 $S_s = 2.513 g$ 

From Figure 22-2 [2]

 $S_1 = 0.909 g$ 

#### Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class C, based on the site soil properties in accordance with Chapter 20.

Table 20.3-1 Site Classification

Site Class	$\overline{V}_{s}$	$\overline{N}$ or $\overline{N}_{ch}$	S <sub>u</sub>
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf

Any profile with more than 10 ft of soil having the characteristics:

- Plasticity index PI > 20,
- Moisture content w ≥ 40%, and
- Undrained shear strength  $s_0 < 500 \text{ psf}$

F. Soils requiring site response analysis in accordance with Section 21.1

See Section 20.3.1

For SI:  $1 \text{ft/s} = 0.3048 \text{ m/s} \ 1 \text{lb/ft}^2 = 0.0479 \text{ kN/m}^2$ 

### Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake $(MCE_R)$ Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient F<sub>a</sub>

Site Class	Mapped MCE <sub>R</sub> Spectral Response Acceleration Parameter at Short Period				
	S <sub>s</sub> ≤ 0.25	$S_s = 0.50$	$S_{s} = 0.75$	$S_s = 1.00$	S <sub>S</sub> ≥ 1.25
A	0.8	0.8	8.0	0.8	0.8
В	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F		See Se	ection 11.4.7 of	ASCE 7	

Note: Use straight-line interpolation for intermediate values of S<sub>s</sub>

For Site Class = C and  $S_s = 2.513 g$ ,  $F_a = 1.000$ 

Table 11.4-2: Site Coefficient F.

Site Class	Mapped MCE R Spectral Response Acceleration Parameter at 1-s Period				
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_i \ge 0.50$
Α	0.8	0.8	0.8	0.8	0.8
В	1.0	1.0	1.0	1.0	1.0
С	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
English	3.5	3.2	2.8	2.4	2.4
F		See Se	ection 11.4.7 of	ASCE 7	

Note: Use straight-line interpolation for intermediate values of S<sub>1</sub>

For Site Class = C and  $S_1 = 0.909 \text{ g}$ ,  $F_v = 1.300 \text{ g}$ 

Equation (11.4-1):

 $S_{MS} = F_a S_S = 1.000 \times 2.513 = 2.513 g$ 

Equation (11.4-2):

 $S_{M1} = F_v S_1 = 1.300 \times 0.909 = 1.181 g$ 

Section 11.4.4 — Design Spectral Acceleration Parameters

Equation (11.4-3):

 $S_{DS} = \frac{1}{3} S_{MS} = \frac{1}{3} \times 2.513 = 1.675 q$ 

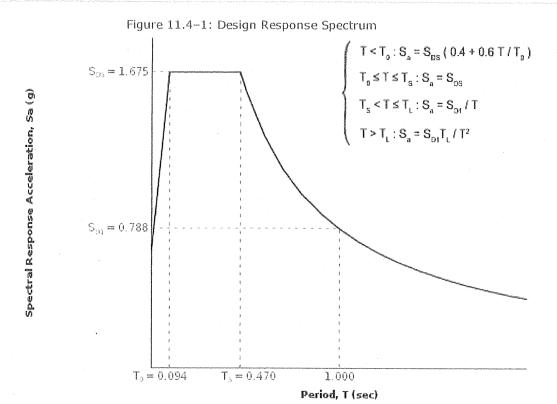
Equation (11.4-4):

 $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 1.181 = 0.788 g$ 

Section 11.4.5 — Design Response Spectrum

From Figure 22-12 [3]

 $T_L = 8$  seconds



#### Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4]

PGA = 0.976

Equation (11.8-1):

 $PGA_{M} = F_{PGA}PGA = 1.000 \times 0.976 = 0.976 g$ 

Table 11.8-1: Site Coefficient F<sub>PGA</sub>

Site	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA					
Class	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50	
Α	0.8	0.8	0.8	0.8	8.0	
В	1.0	1.0	1.0	1.0	1.0	
С	1.2	1.2	1.1	1.0	1.0	
D	1.6	1.4	1.2	1.1	1.0	
goloer Breas Ausen	2.5	1.7	1.2	0.9	0.9	
F		See Se	ction 11.4.7 of	ASCE 7		

Note: Use straight-line interpolation for intermediate values of PGA

For Site Class = C and PGA = 0.976 g,  $F_{PGA} = 1.000$ 

Section 21.2.1.1 — Method 1 (from Chapter 21 - Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5]

 $C_{RS} = 0.939$ 

From Figure 22-18 [6]

 $C_{R_1} = 0.937$ 

#### Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF Sps	RISK CATEGORY				
VALUE OF 3 <sub>DS</sub>	I or II	III	ĩV		
S <sub>ps</sub> < 0.167g	Α	A	Α		
$0.167g \le S_{ps} < 0.33g$	В	В	С		
$0.33g \le S_{DS} < 0.50g$	C	С	D		
0.50g ≤ S <sub>os</sub>	D	D	D .		

For Risk Category = I and  $S_{os}$  = 1.675 g, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF S <sub>p1</sub>	RISK CATEGORY				
VALUE OF S <sub>D1</sub>	I or II III		IV		
S <sub>D1</sub> < 0.067g	Α	А	А		
$0.067g \le S_{D1} < 0.133g$	В	В	С		
$0.133g \le S_{D1} < 0.20g$	С	C	D		
0.20g ≤ S <sub>D1</sub>	D	D	D		

For Risk Category = I and  $S_{D1} = 0.788$  g, Seismic Design Category = D

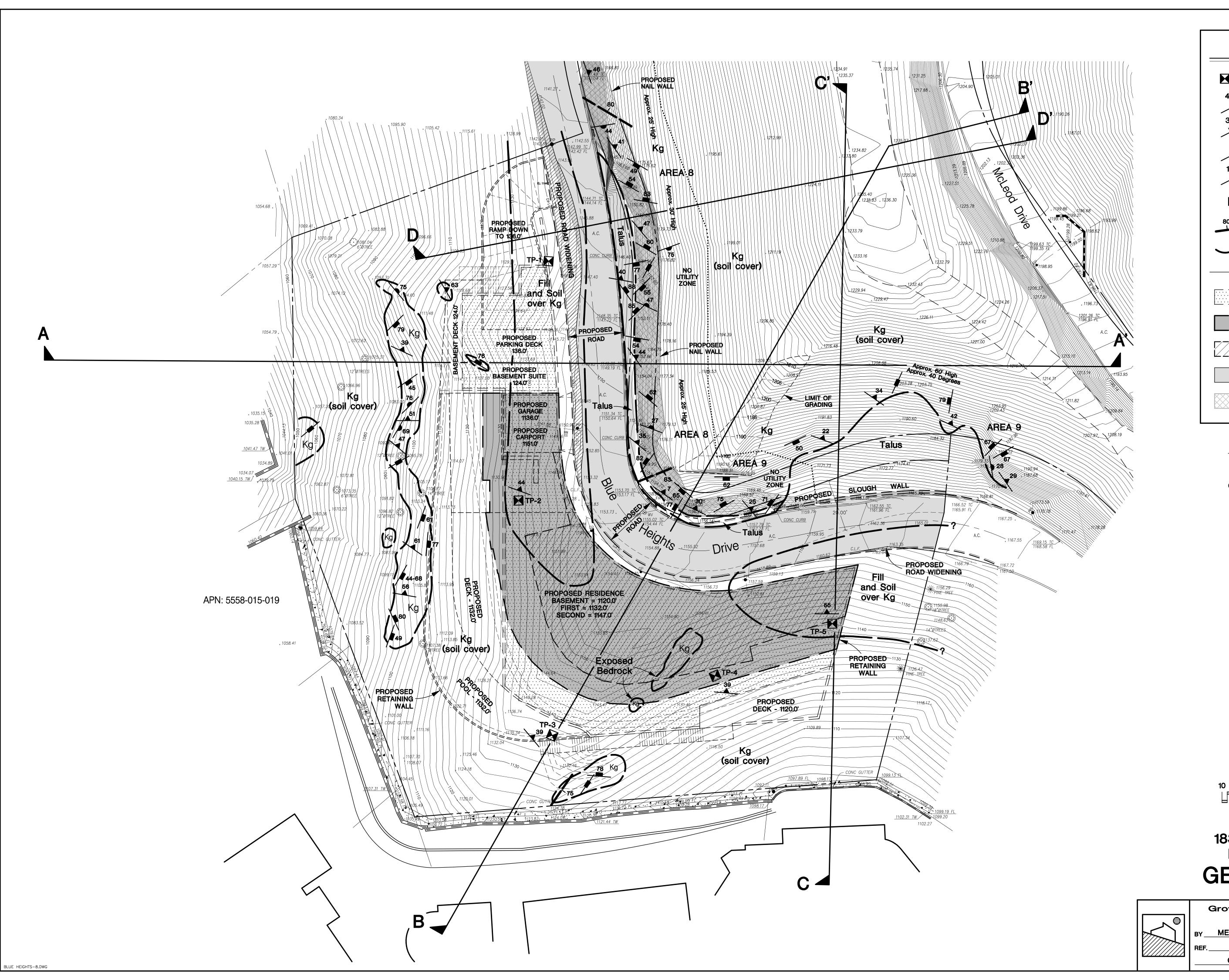
Note: When  $S_1$  is greater than or equal to 0.75g, the Seismic Design Category is  $\mathbf{E}$  for buildings in Risk Categories I, II, and III, and  $\mathbf{F}$  for those in Risk Category IV, irrespective of the above.

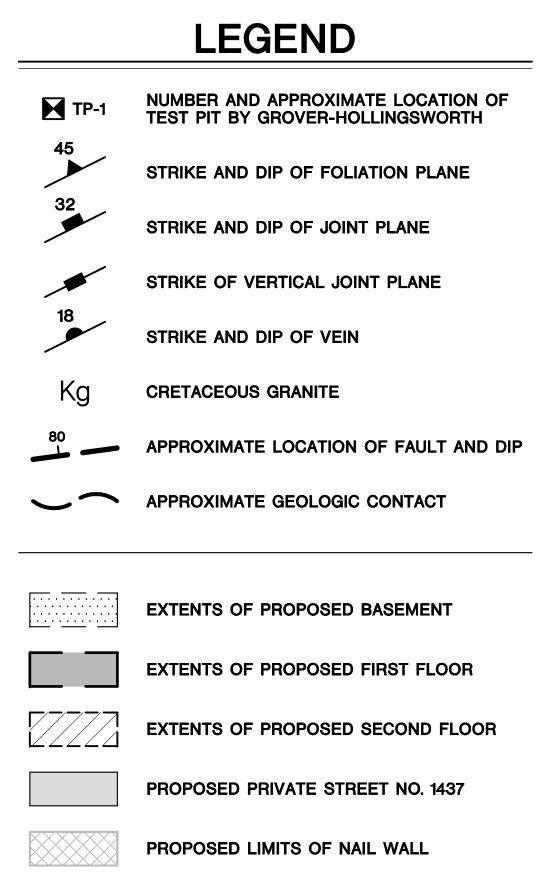
Seismic Design Category  $\equiv$  "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = E

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

#### References

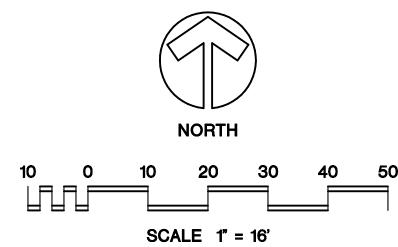
- 1. Figure 22-1: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010\_ASCE-7\_Figure\_22-1.pdf
- 2. Figure 22-2: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010\_ASCE-7\_Figure\_22-2.pdf
- 3. Figure 22-12: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010\_ASCE-7\_Figure\_22-12.pdf
- 4. Figure 22-7: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010\_ASCE-7\_Figure\_22-7.pdf
- 5. Figure 22-17: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010\_ASCE-7\_Figure\_22-17.pdf
- 6. Figure 22-18: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010\_ASCE-7\_Figure\_22-18.pdf





#### NOTE ON TOPOGRAPHY

CONTOURS UPSLOPE OF BLUE HEIGHTS DRIVE ARE DISPLAYED AT 1 FOOT INTERVALS CONTOURS DOWNSLOPE OF BLUE HEIGHTS DRIVE ARE DISPLAYED AT 2 FOOT INTERVALS



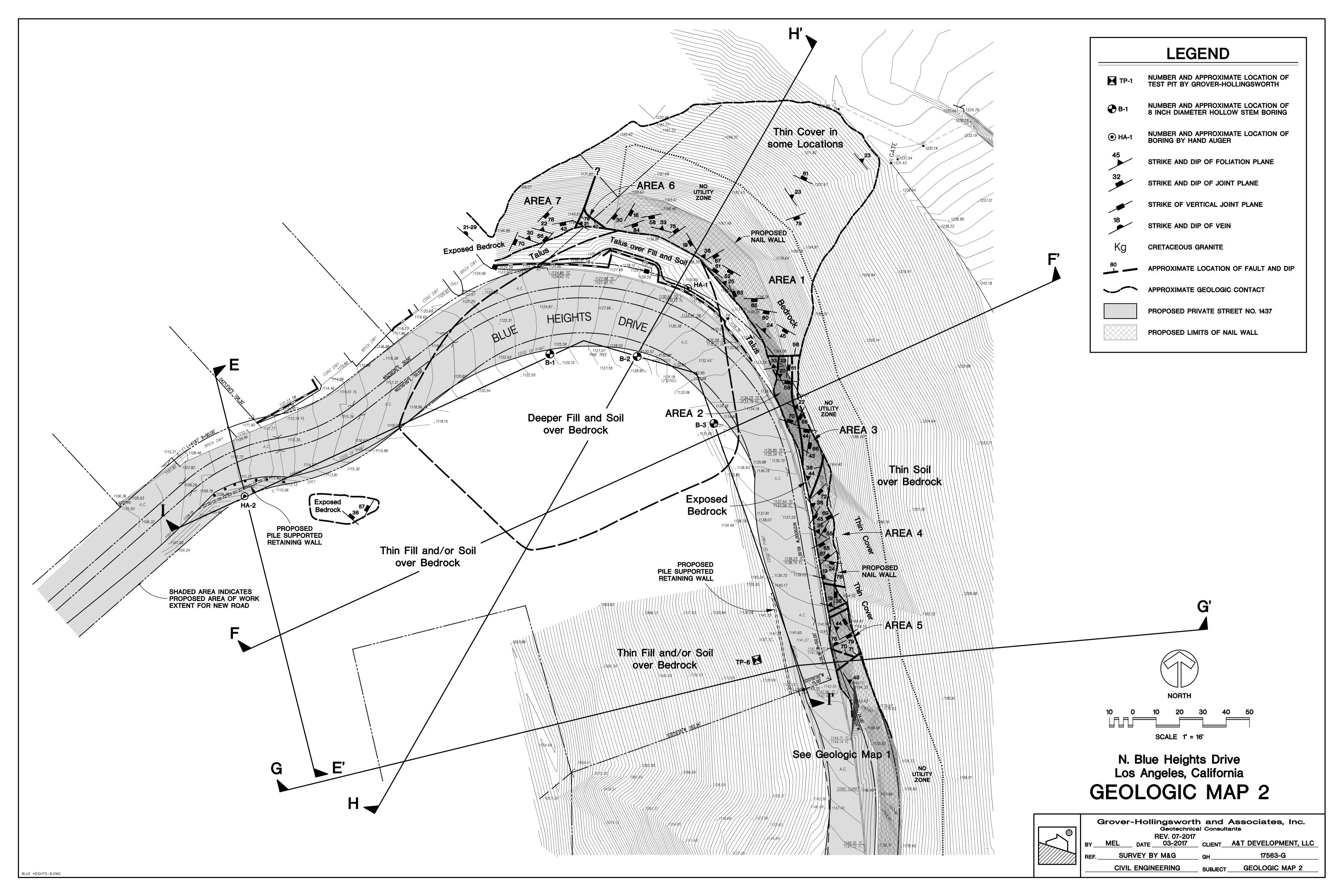
1830 N. Blue Heights Drive Los Angeles, California

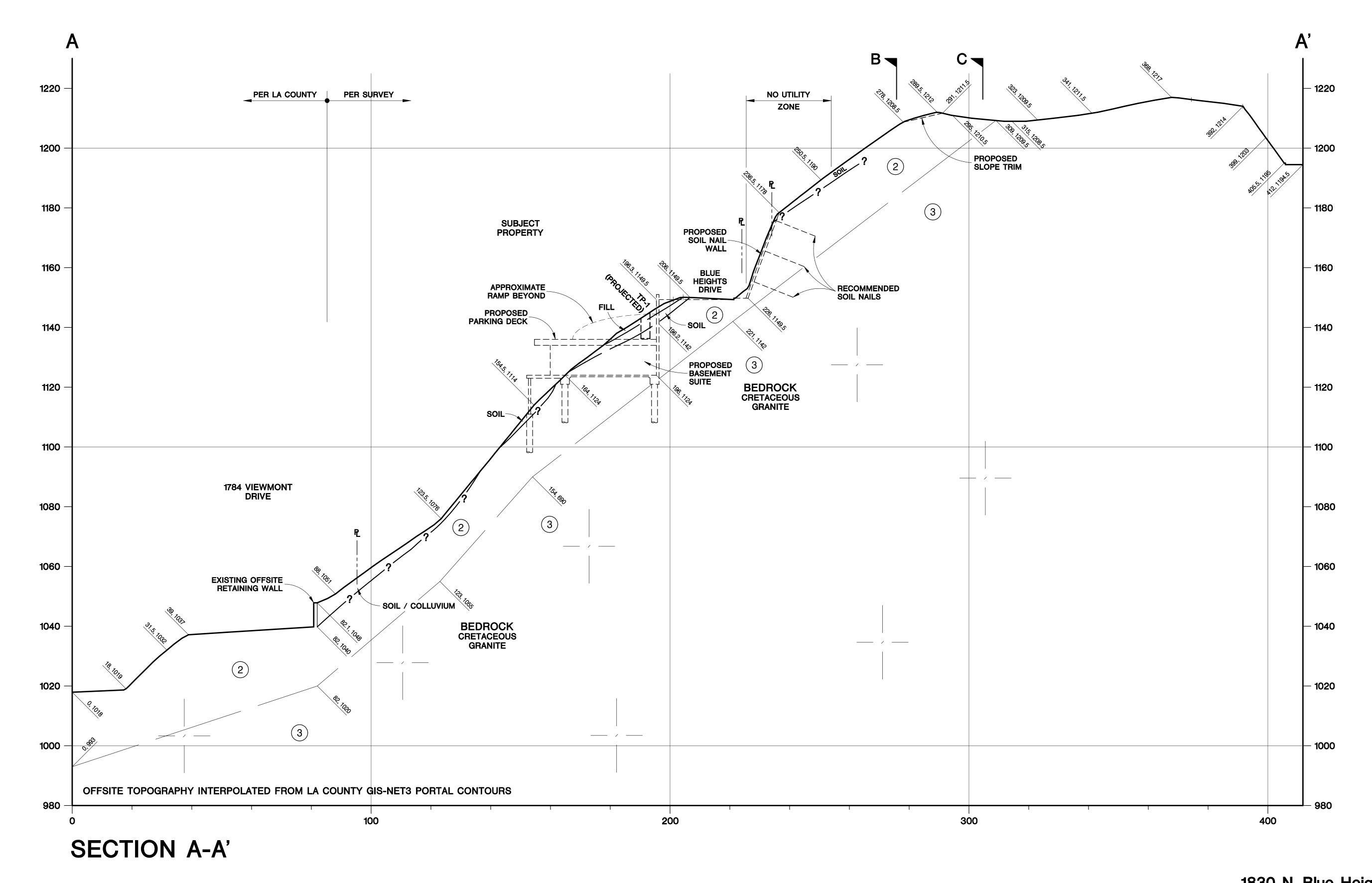
## **GEOLOGIC MAP 1**

(	Grove	r-Holli	ngswort	h and	Associates,	Inc
			Geotechnic	al Consul	tants	
			REV. 07-2017	•		
DV	MFI	DATE	07-2016	OLIENT	A&T DEVELOPM	FNT

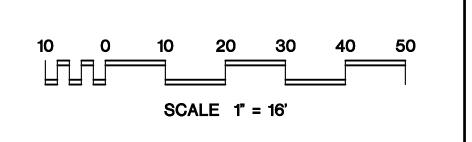
SURVEY BY M&G

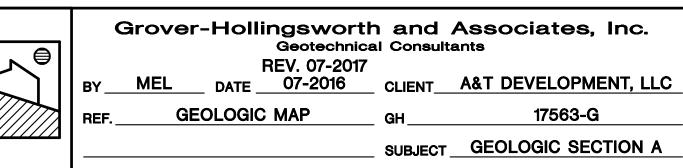
**GEOLOGIC MAP 1 CIVIL ENGINEERING** 

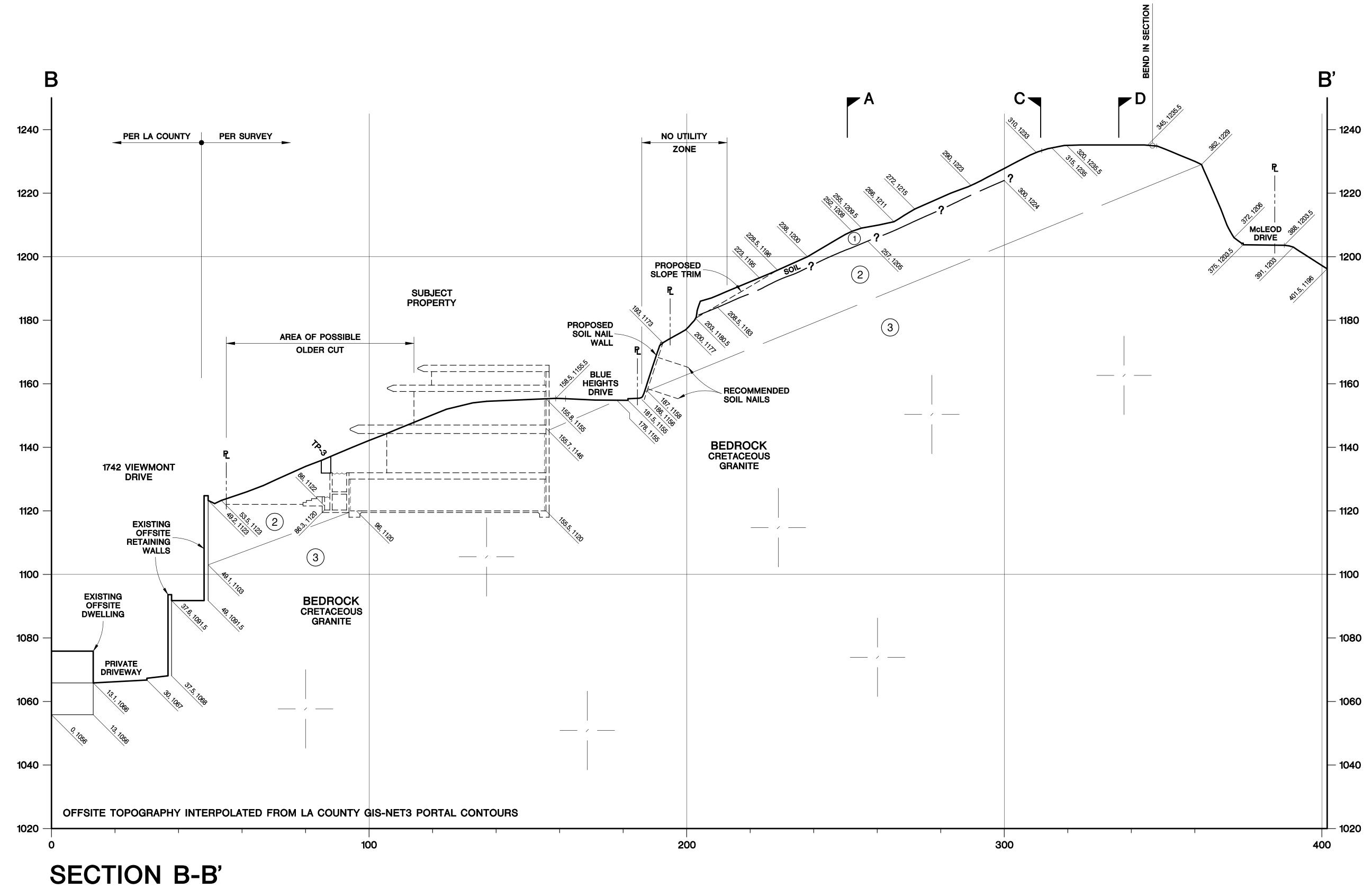




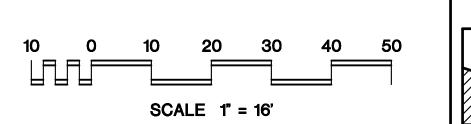
1830 N. Blue Heights Drive
Los Angeles, California
GEOLOGIC SECTION A



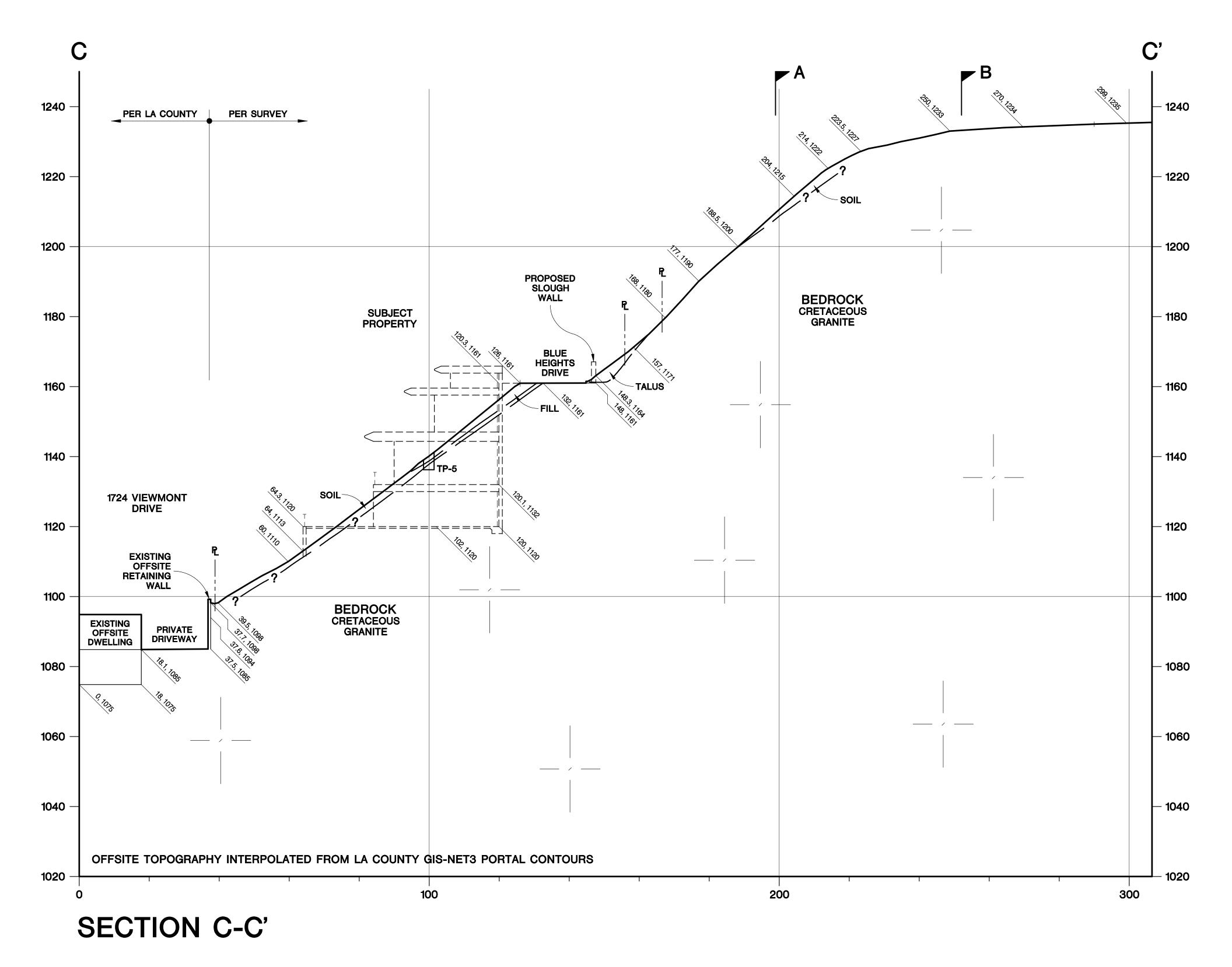




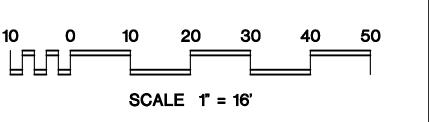
1830 N. Blue Heights Drive Los Angeles, California GEOLOGIC SECTION B



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Grover-Hollingsworth and Associates, Inc.  Geotechnical Consultants						
BY	MEL	_	REV. 07-2017 07-2016	CLIENT	A&T DEVELOPMENT, LLC	
REF	REF. GEOLOGIC MAP		GH	17563-G		
					GEOLOGIC SECTION P	

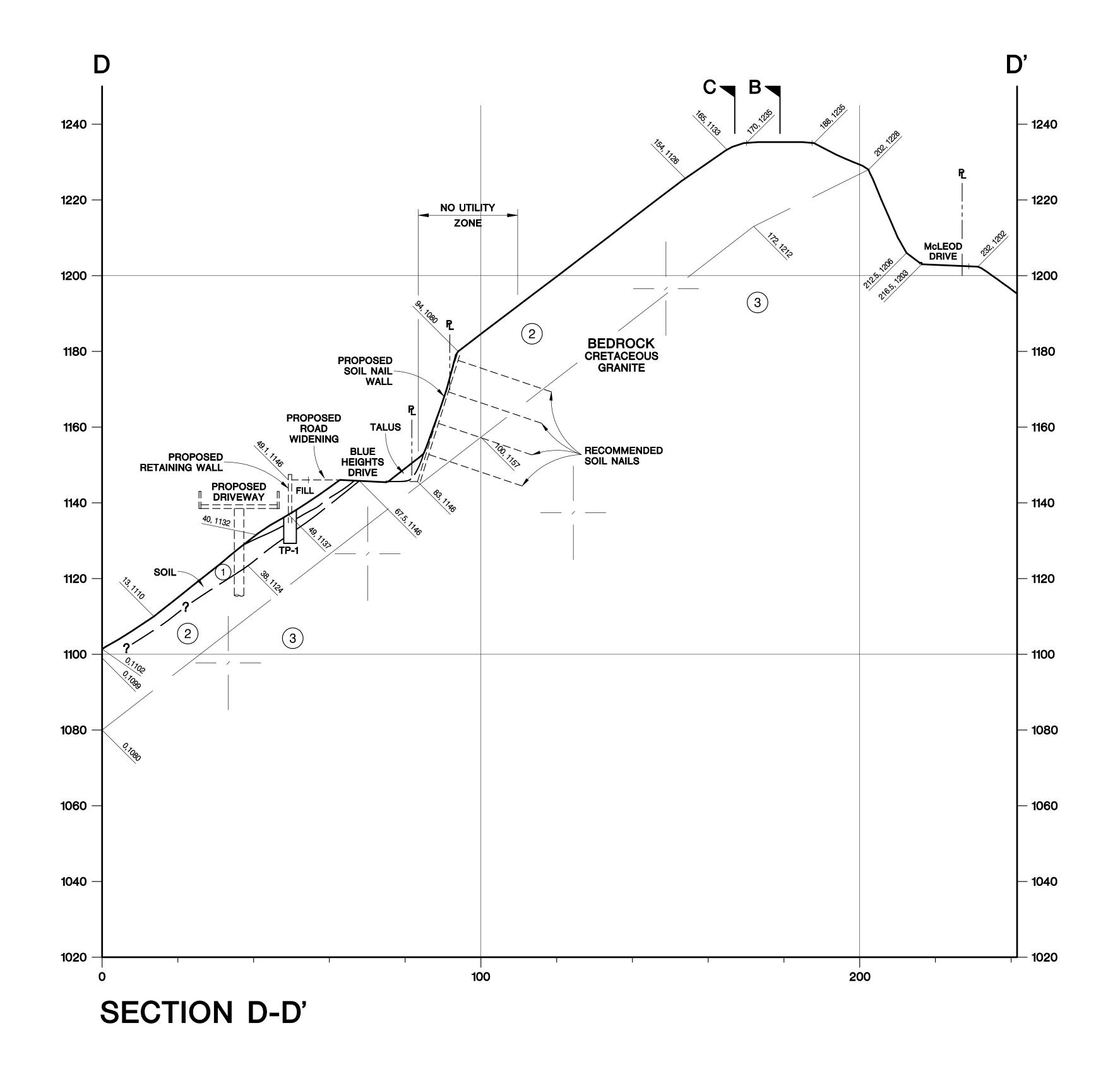


### 1830 N. Blue Heights Drive Los Angeles, California GEOLOGIC SECTION C

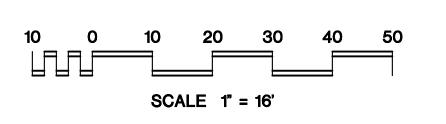


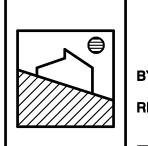
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Grover-Hollingsworth and Associates, Inc.  Geotechnical Consultants						
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					GEOLOGIC SECTION C	

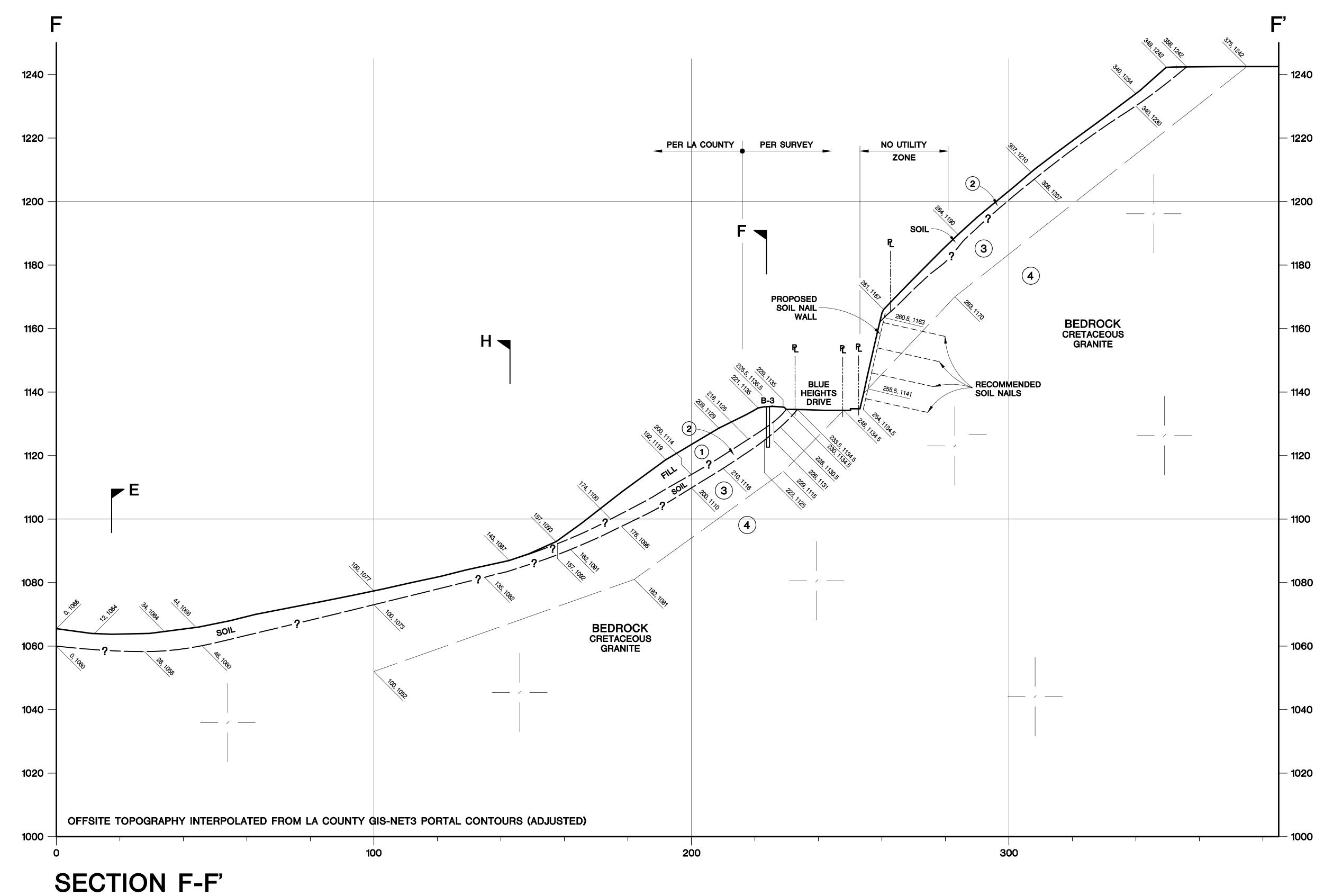


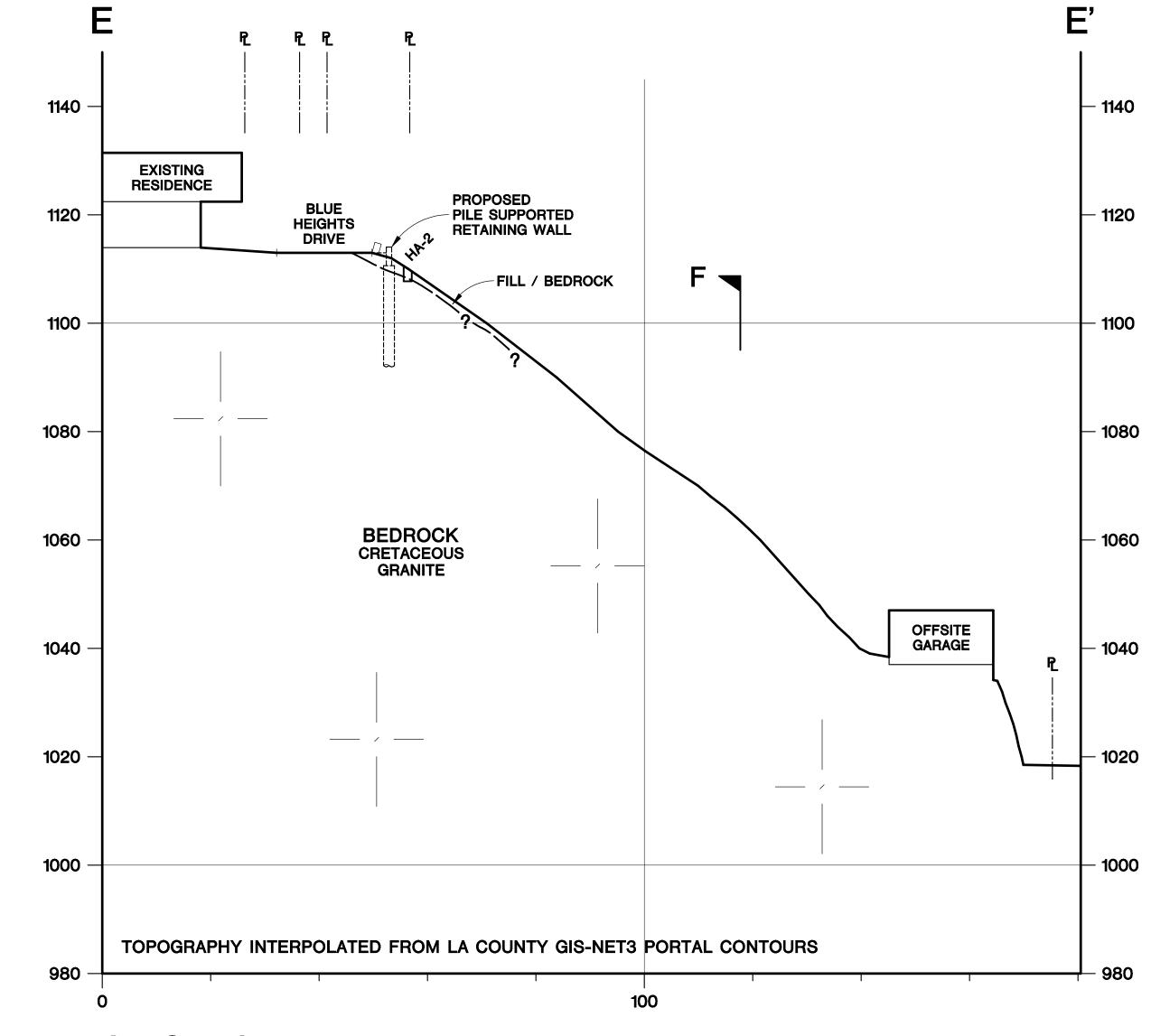
# 1830 N. Blue Heights Drive Los Angeles, California GEOLOGIC SECTION D



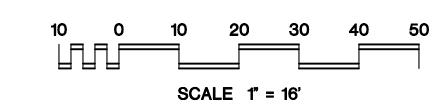


Grover-Hollingsworth and Associates, Inc.  Geotechnical Consultants								
BY_	MEL	_	REV. 07-2017 07-2016	CLIENT	A&T DEVELOPMENT, LLC			
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_					GEOLOGIC SECTION D			



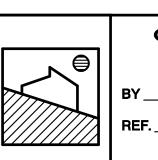


SECTION E-E'



N. Blue Heights Drive Los Angeles, California

GEOLOGIC SECTIONS E, F

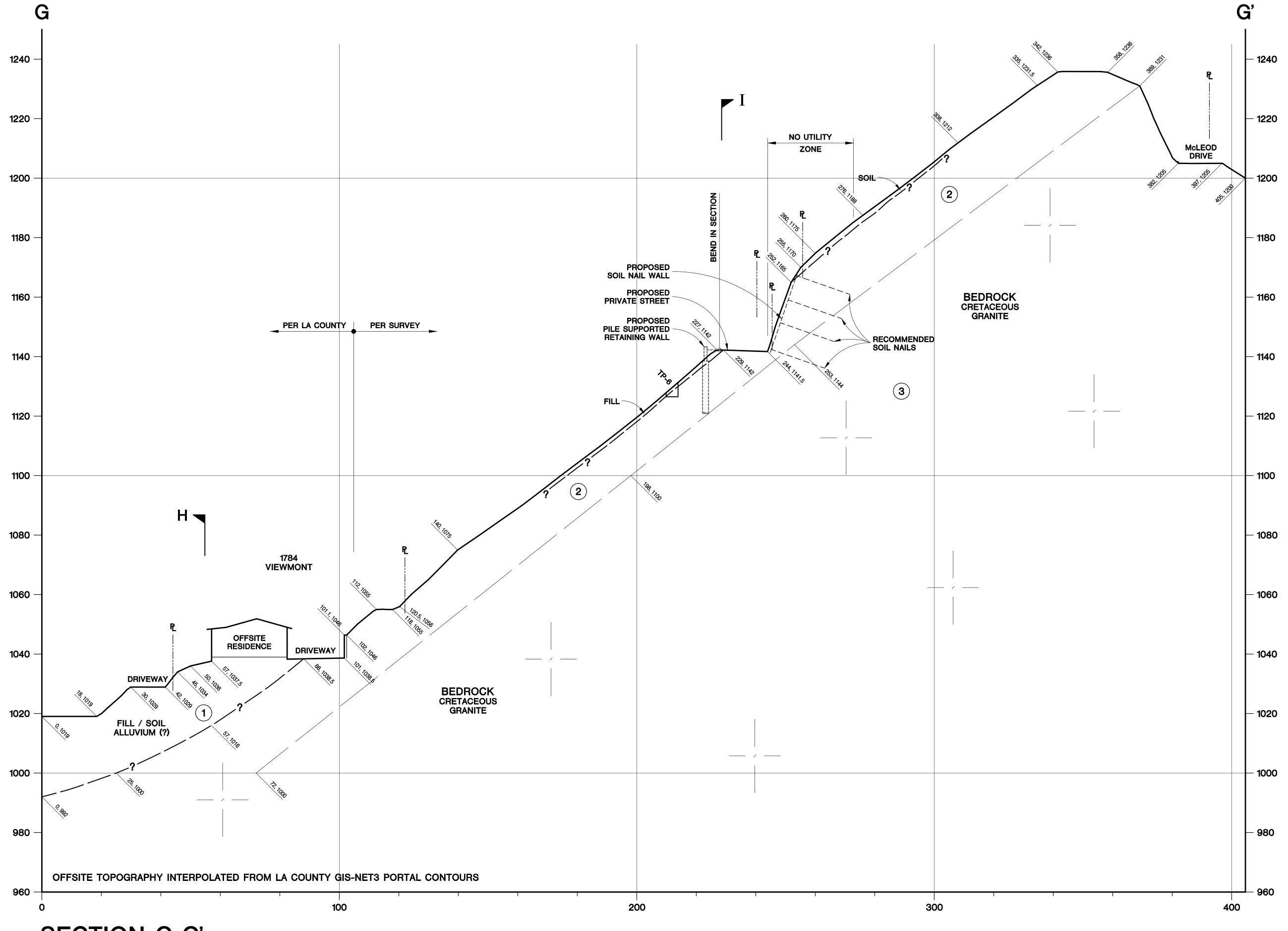


Grover-Hollingsworth and Associates, Inc.

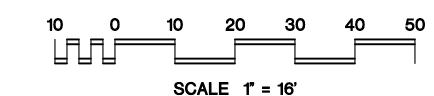
Geotechnical Consultants

REV. 07-2017

BY MEL DATE 03-2017 CLIENT A&T DEVELOPMENT, LLC GEOLOGIC MAP 2 SUBJECT GEOLOGIC SECTIONS E,F



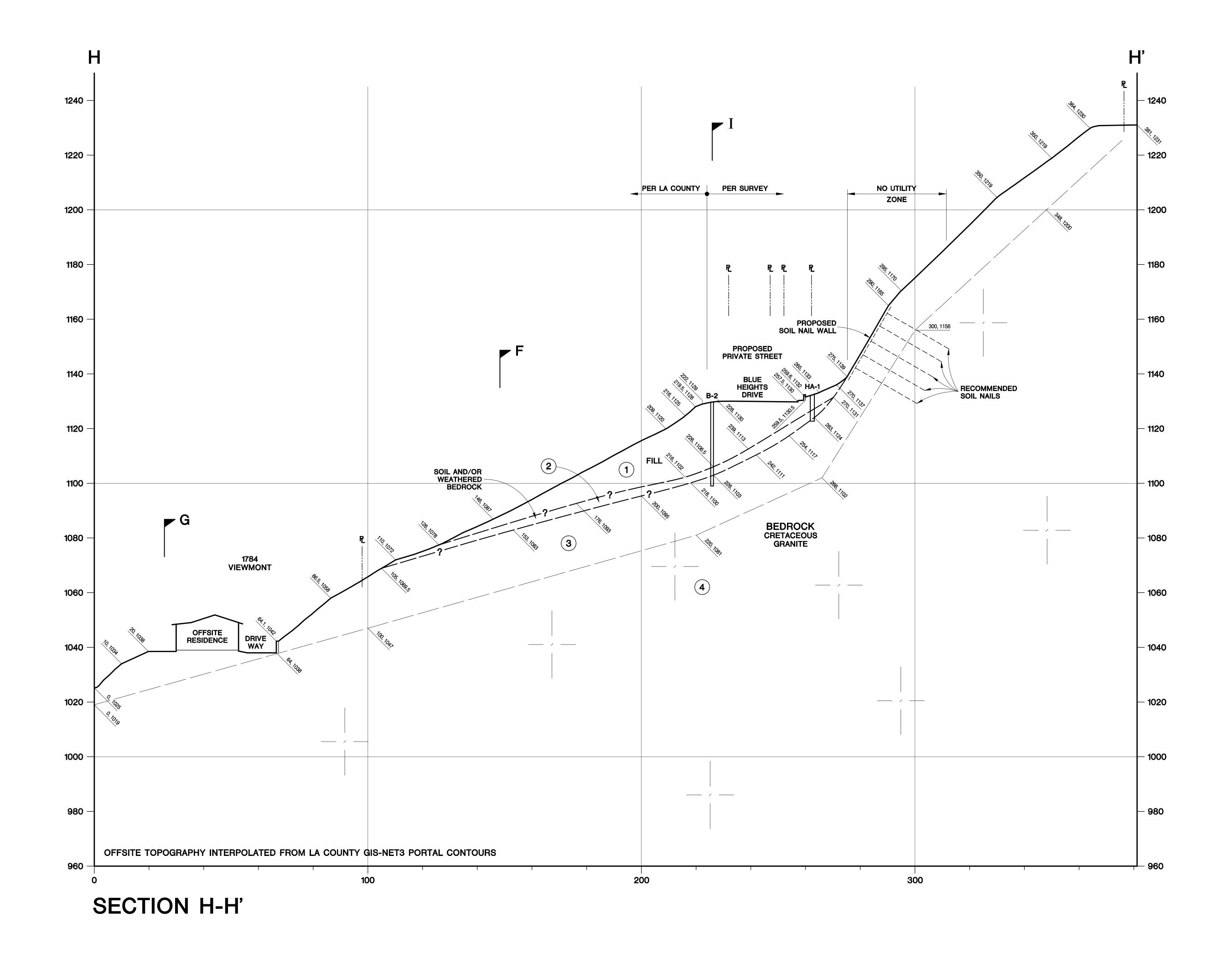
SECTION G-G'



N. Blue Heights Drive Los Angeles, California

## GEOLOGIC SECTION G

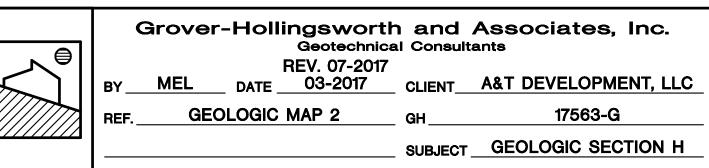
	Grover-Hollingsworth and Associates, Inc.  Geotechnical Consultants							
			REV. 07-201	17				
<b> </b>	BY	MEL DATI	E 03-2017	CLIENT	A&T DEVELOPMENT, LL			
	   REF	GEOLOGI	IC MAP 2	GH	17563-G			
<u>///////</u>				SUBJECT	GEOLOGIC SECTION G			
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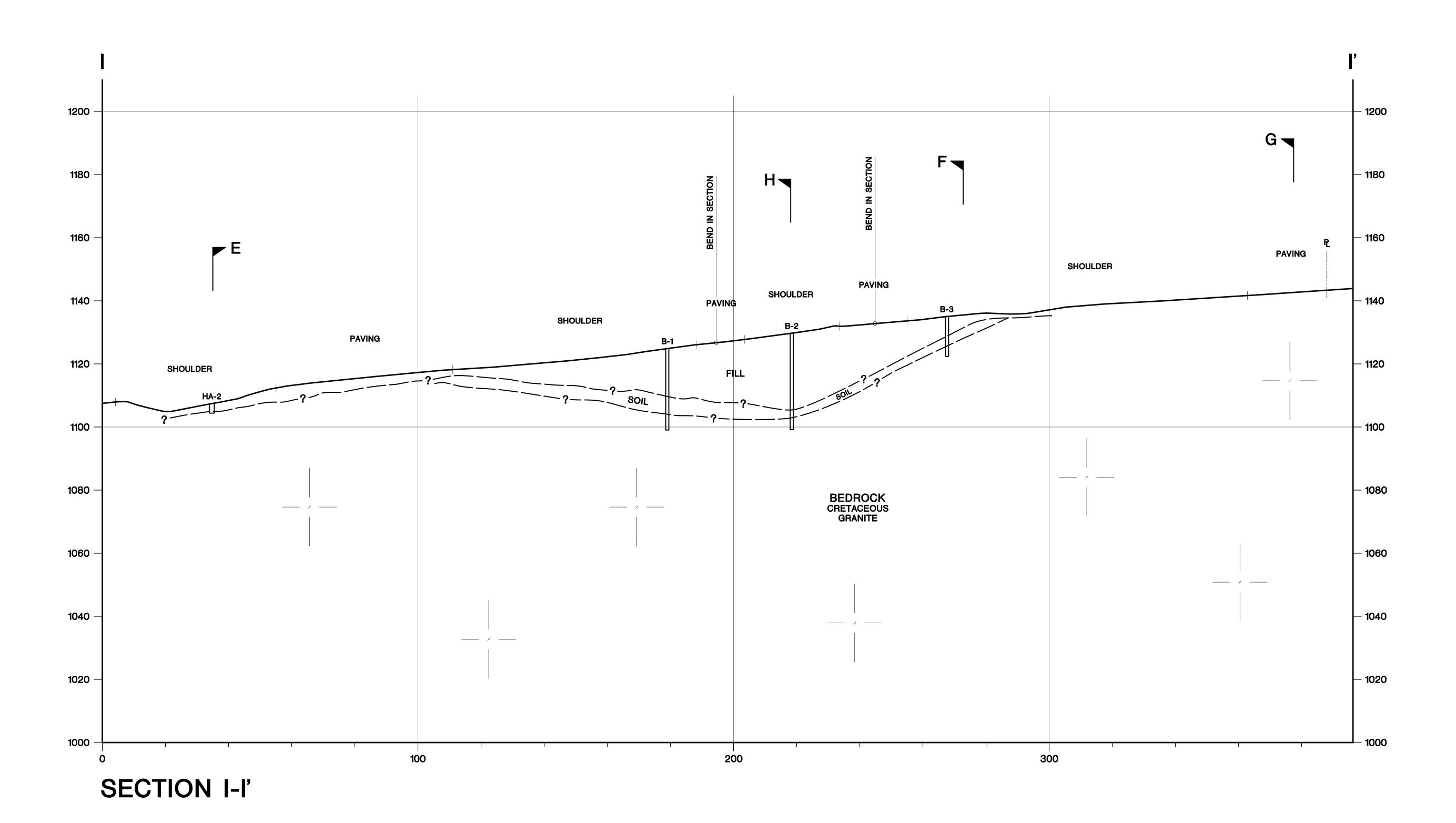


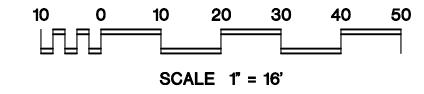
SCALE 1" = 16'

N. Blue Heights Drive Los Angeles, California

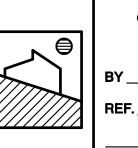
## GEOLOGIC SECTION H







# N. Blue Heights Drive Los Angeles, California GEOLOGIC SECTION I



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BY	MEL		REV. 07- 03-20		JENT	A&T DEVELOPMENT, LLC		
REF	GEO	DLOGIC	MAP 2	GH	<b>-</b> 1	17563-G		
				SL	JBJECT_	GEOLOGIC SECTION I		

