CITY COUNCIL OF MONTEREY PARK
AND THE CITY COUNCIL ACTING ON BEHALF OF THE SUCCESSOR AGENCY OF THE FORMER REDEVELOPMENT AGENCY AND THE MONTEREY PARK FINANCING AUTHORITY

AGENDA

REGULAR CITY COUNCIL MEETING

Wednesday
August 18, 2021
6:30 p.m.

EXECUTIVE ORDER NO. N-29-20

These meetings will be conducted pursuant to Section 3 of Executive Order No. N-29-20 issued by Governor Newsom on March 17, 2020.

Accordingly, Councilmembers will be provided with a meeting login number and conference call number; they will not be physically present at Council Chambers.

Pursuant to the Governor's order, the public may provide public comment utilizing the methods set forth below.

Note that City Hall is currently closed to the public. You will not be admitted to City Hall.

MISSION STATEMENT

The mission of the City of Monterey Park is to provide excellent services to enhance the quality of life for our entire community.

GENERAL INFORMATION

Documents related to an Agenda item are available to the public in the City Clerk's Office located at 320 West Newmark Avenue, Monterey Park, CA 91754, during normal business hours and the City's website at http://www.montereypark.ca.gov/AgendaCenter/City-Council-17.

The public may watch the meeting live on the city's cable channel MPKTV (AT&T U-verse, channel 99 or Charter Communications, channel 182) or by visiting the city's website at http://www.montereypark.ca.gov/133/City-Council-Meeting-Videos.

This Agenda may include items considered by the City Council acting on behalf of the Successor Agency of the former Monterey Park Redevelopment Agency which dissolved February 1, 2012. Successor Agency matters will include the notation of "SA" next to the Agenda Item Number.

PUBLIC PARTICIPATION

In accordance with Executive Order No. N-29-20 and guidance from the California Department of Public Health on gatherings, remote public participation is allowed in the following ways:

Via Email

Public comment will be accepted up to 24 hours before the meeting via email to mpclerk@montereypark.ca.gov and forwarded to the City Council. Written communications WILL NOT BE READ; they will, however filed as part of the City's administrative record.

Via Telephone

Public comment may be submitted via telephone during the meeting, before the close of public comment, by calling **(888) 788-0099 or (877) 853-5247** and entering Zoom Meeting ID: **289 222 5995** then press pound (#). When prompted to enter participation ID number press pound (#) again. If participants would like to make a public comment they will enter "***9**" then the Clerk's office will be notified, and you will be in the rotation to make a public comment. Press "***6**" to unmute yourself when called upon to speak. Participants are encouraged to join the meeting 15 minutes before the start of the meeting. You may speak up to 5 minutes on Agenda item. Speakers will not be allowed to combine time. The Mayor and City Council may change the amount of time allowed for speakers. As part of the virtual meeting protocols, anonymous persons will not be allowed to provide public comment.

Important Disclaimer

When a participant calls in to join the meeting, their name and/or phone number will be visible to all participants. Note that all public meetings will be recorded.

CALL TO ORDER	**Mayor**
FLAG SALUTE	**Mayor**
ROLL CALL	**Peter Chan, Hans Liang, Henry Lo, Fred Sornoso, Yvonne Yiu**

AGENDA ADDITIONS, DELETIONS, CHANGES AND ADOPTIONS

PUBLIC COMMUNICATIONS:

While all comments are welcome, the Brown Act does not allow the City Council to take action on any item not on the agenda. The Council may briefly respond to comments after Public Communications is closed. Persons may, in addition to any other matter within the City Council's subject-matter jurisdiction, comment on Agenda Items at this time. If you provide public comment on a specific Agenda item at this time, however, you cannot later provide comments at the time the Agenda Item is considered.

[1.] PRESENTATION – None.

[2.] OLD BUSINESS

2-A. DISSOLUTION OF THE PERSONNEL BOARD AND EXTENDING TERMS OF APPOINTED OFFICIALS

It is recommended that the City Council consider:

(1) Introducing and waiving first reading of an ordinance amending the Monterey Park Municipal Code to dissolve the personnel board;

(2) If desirable, extending the terms of appointed officials on any remaining commissions; and

(3) Taking such additional, related, action that may be desirable.

[3.] CONSENT CALENDAR ITEMS NOS. 3A-3G

3-A. MINUTES

It is recommended that the City Council (and the City Council acting on behalf of the Successor Agency), and the Financing Authority Board of Directors consider:

(1) Approving the minutes from the regular meeting of July 7, 2021; and

(2) Taking such additional, related, action that may be desirable.

3-B. MONTHLY INVESTMENT REPORT – JULY 2021

It is recommended that the City Council consider:

(1) Receiving and filing the monthly investment report; and

(2) Taking such additional, related, action that may be desirable.

3-C. RECEIVE AND FILE ADMINISTRATIVE USE PERMIT NO.21-02

It is recommended that the City Council consider:

(1) Receiving and filing the AUP-21-02; and

(2) Taking such additional, related, action that may be desirable.

3-D. OFFICE OF TRAFFIC SAFETY (OTS) STEP GRANT FISCAL YEAR 2021/2022

It is recommended that the City Council consider:

(1) Receiving and filing report; and

(2) Taking such additional, related, action that may be desirable.

3-E. AMENDING RECORDS RETENTION SCHEDULE

It is recommended that the City Council consider:

(1) Adopting a Resolution amending the City's Records Retention Schedule for City documents;

(2) Taking such additional, related, action that may be desirable.

3-F. CONSIDERATION OF RESOLUTION APPOINTING REPRESENTATIVES TO THE INDEPENDENT CITIES RISK MANAGEMENT AUTHORITY (ICRMA)

It is recommended that the City Council consider:

(1) Adopting a Resolution appointing Director of Human Resources and Risk Management, Christine Tomikawa as the City's primary representative to the ICRMA Governing Board; appointing Director of Management Services, Martha Garcia and Chief of Police, Kelly Gordon as alternate representatives; and

(2) Taking such additional, related, action that may be desirable.

3-G. BUDGET ADJUSTMENT FOR FIRE STATION 62 DEMOLITION & RECONSTRUCTION PROJECT

It is recommended that the City Council consider:

(1) Authorizing the City Manager to appropriate an additional $120,000 from the General Fund balance for the Fire Station 62 Demolition & Reconstruction project; and

(2) Taking such additional, related, action that may be desirable.

[4.] PUBLIC HEARING

4-A. CONTINUATION OF PUBLIC HEARING REGARDING THE MONTEREY PARK GEOLOGIC HAZARD ABATEMENT DISTRICT ("MPK GHAD")

It is recommended that the City Council consider:

(1) Continuing the public hearing noticed for August 18, 2021 to September 15, 2021; and

(2) Taking such additional, related, action that may be desirable.

4-B. CONTINUATION OF PUBLIC HEARING REGARDING MODIFYING PRECISE PLAN (PP-14-02) CONDITIONS OF APPROVAL FOR A HOTEL LOCATED AT 555 N. ATLANTIC BOULEVARD

It is recommended that the City Council and Monterey Park Financing Authority Board of Directors, consider:

(1) Continuing the public hearing noticed for August 18, 2021 to a future date;

(2) Taking such additional, related, action that may be desirable.

4-C. RESOLUTION MODIFYING CONDITIONAL USE PERMIT (CU-19-13) AS TO BUSINESS HOURS FOR OPERATING A RETAIL EATING ESTABLISHMENT LOCATED AT 1970 SOUTH ATLANTIC BOULEVARD

It is recommended that the City Council and Monterey Park Financing Authority Board of Directors, consider:

(1) Opening the public hearing;

(2) Receiving documentary and testimonial evidence;

(3) Closing the public hearing;

(4) Adopting a Resolution to modify Resolution No. 12194 as to business hours; and

(5) Taking such additional, related, action that may be desirable.

CEQA (California Environmental Quality Act):
The Environmental Assessment set forth in Section 2 of Resolution No. 12194 is incorporated by reference. The proposed modification does not affect that Environmental Assessment.

[5.] NEW BUSINESS

5-A. MONTEREY PARK GEOLOGIC HAZARD ABATEMENT DISTRICT ("MPK GHAD")

It is recommended that the City Council consider:

(1) Adopting a Resolution initiating formation of the Monterey Park Geologic Hazard Abatement District ("MPK GHAD") and scheduling a public hearing regarding such formation;

(2) Continuing the public hearing noticed for August 18, 2021 to September 15, 2021 in accordance with the draft Resolution; and

(3) Taking such additional, related, action that may be desirable.

CEQA (California Environmental Quality Act):
Formation of the proposed MPK GHAD was reviewed pursuant to the California Environmental Quality Act (Public Resources Code §§ 21000, *et seq*.; "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, *et seq*.; the "CEQA Guidelines"). Forming the MPK GHAD is exempt from further environmental review because it establishes rules and procedures for operation of existing facilities; minor temporary use of land; minor alterations in land use; new construction of small structures; and minor structures accessory to existing commercial facilities. This action, therefore, is categorically exempt from further CEQA review under CEQA Guidelines §§ 15301; 15303, 15304(e); 15305; and 15311. Further, forming the MPK GHAD is also exempt from review under CEQA pursuant to CEQA Guidelines § 15061(b)(3) because this Resolution is for establishing a new public entity. It can be seen with certainty that there is no possibility that formation of the MPK GHAD may have a significant effect on the environment. Individual projects considered by the MPK GHAD will each be separately subject to an environmental assessment. Finally, forming the MPK GHAD is exempt from further review pursuant to CEQA Guidelines § 15269(a) because forming the MPK GHAD is an action taken to protect public and private property and necessary to maintain services essential to the public, health and welfare (*see Ca/Beach Advocates v. City of Solana Beach* (2002) 103 Cal.App.4th 529: CEQA findings regarding an anticipated imminent emergency are valid).

[6.] CITY COMMUNICATIONS (CITY COUNCIL)

[7.] FUTURE AGENDA ITEMS

[8.] CLOSED SESSION (IF REQUIRED; CITY ATTORNEY TO ANNOUNCE)

ADJOURN

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Old Business
Agenda Item 2A

TO: The Honorable Mayor and City Council

FROM: Christine Tomikawa, Director of Human Resources & Risk Management

SUBJECT: Dissolution of the Personnel Board and extending terms of appointed officials

RECOMMENDATION:

It is recommended that the City Council consider:

1. Introducing and waiving first reading of an ordinance amending the Monterey Park Municipal Code to dissolve the personnel board;
2. If desirable, extending the terms of appointed officials on any remaining commissions; and
3. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:

Beginning in 2013, the City Council undertook a series of actions to make the City's commissions, boards and committees more efficient (collectively, the "commissions"). Among other things, the City Council significantly reduced the number of commissions and also clarified their responsibilities. Monterey Park Municipal Code ("MPMC") Chapter 2.82 was adopted in 2013 to facilitate the creation of commissions – when the City Council found such action desirable – and also establish uniformity as to membership, terms, and procedures. Most recently, the City Council adopted Ordinance No. 2209 in June 2021 to clarify the terms of persons serving on commissions and the number of commissioners needed to form a quorum.

In 2020, the COVID-19 emergency provided an opportunity for City staff to further evaluate efficiencies. The message championed by the City Council – as exemplified by the 2020 Monterey Park Business Recovery Program – was to "cut through the red tape" and make things easier for businesses, and residents, to obtain City services.

A review of the various commissions suggests that the City may reduce resource expenditures – both staff and money – by further consolidating, revising, and dissolving certain commissions. The City Council may always create ad hoc commissions or establish new standing commissions when the need arises. Maintaining a multitude of standing commissions, however, requires the City to prepare agenda packets; pay for noticing; pay for staffing at commission meetings; recruit for persons to fill vacancies; utilize meeting rooms that could be used for other community events; and engage in other, similar, administrative activities.

Certainly, several commissions are necessary for the ongoing functions of municipal government. The Planning Commission and Library Board, as examples, serve central functions for the City. At least one commission can be dissolved as there are more efficient ways to address matters related to City personnel.

The Personnel Board's responsibility is different than other City commissions and boards. The role for the Personnel Board volunteers is not to provide community input but to evaluate and interpret federal law, state law and City policies and procedures. Since the Personnel Board was established, California law and federal law have changed to provide more personnel processing options and established laws to protect the employee's rights. Staff's recommendation to dissolve the Personnel Board is based on employee rights based in the law, efficiencies of Human Resources processes and procedures that are duplicated with the Personnel Board and confidential personnel issues that are not protected when matters are brought before the Personnel Board. The draft ordinance, if adopted, would dissolve the personnel board. All bargaining units (i.e., the unions) and current Board members were consulted regarding the dissolution and expressed no objection.

BACKGROUND:

Dissolution of the Personnel Board.
The Personnel Board was established in 1949. Its responsibilities include approving personnel classifications; making recommendations regarding personnel rules; and acting as a hearing board to consider certain non-public safety discipline matters and grievances. When it was established, the Personnel Board served an important function in the City's municipal affairs: it helped provide a neutral avenue to consider various personnel matters.

During the 70 years since it was established, however, California and federal law progressed for all employees including those serving the public. In particular, public safety personnel are governed by very specific statutes that supersede most of the functions of the Personnel Board. As a result, the Personnel Board is primarily responsible for considering matters affecting non-sworn personnel and Human Resources' procedural matters.

The most significant parts of the Personnel Board's responsibilities that affect non-sworn personnel are personnel discipline and grievances. For example, when a personnel discipline or grievance matter reaches the Personnel Board, the City has consulted with attorneys and decisions are made at the department level and City Manager level before reaching the Personnel Board. The Personnel Board volunteers are tasked with reviewing all the same material to either support the decision at the City Manager level or oppose the decision at the City Manager level and legal counsel guidance. The added cost is the time for department representatives, Human Resources representatives and legal counsel to present and review the materials for the third time with the Personnel

Board. If the Personnel Board support the City Manager level decision, the employee has the ability to utilize other alternatives to appeal the Personnel Board's decision. The alternative processes would be the same for the employee to appeal the City Manager level decision absent the Personnel Board decision. Currently the Personnel Board hears personnel issues in open session which turns a potentially confidential personnel matter into a public session for the public and other employees to understand the issue(s).

The Personnel Board members are informed about the dissolution of the Personnel Board and support the City's effort to be efficient and cost effective with personnel matters. A few of the Personnel Board members are interested in volunteering their time on other City commissions or boards. After consulting all affected bargaining units, the City Manager was satisfied that dissolving the Personnel Board would help reduce the City's costs,[1] increase efficiencies, and continue to protect employee's interests.

Term Extensions.
Regardless of the City Council's decision regarding dissolution, the City Council should still consider extending the terms of persons on other commissions. In June, the City Council adopted Ordinance No. 2209 which allows the City Council to extend commissioner's terms beyond the baseline of two, 4-year, terms. Currently, there are six commissioners that are termed out.

In accordance with MPMC § 2.82.050, commissioners that have separated from serving on a board or commission because the individual completed their terms cannot be reappointed to the same board or commission for at least 12 consecutive months unless authorized by City Council to extend their term.

Below is a list of commissioners that have served their terms and would require Council's approval to extend their terms.

Fred Sornoso
Guey Lin Jeng (Gene) – Business Improvement District Advisory Committee (BIDAC)

Henry Lo
Johnny Thompson – BIDAC

Peter Chan
Victoria Chavez-Calderon – Community Participation Commission

Hans Liang
Karl Wong – Environmental Commission
Ricky Choi – Planning Commission
Benkin Jong – Traffic Commission

[1] Note that in some instances, Personnel Board meetings can cost the City both staff time and actual, "hard," costs consisting of paying for counsel. This includes paying for the City's labor counsel and the City Attorney's office which advises the Personnel Board during such hearings.

FISCAL IMPACT:

Dissolving Personnel Board as recommended will result in an appreciable reduction in public resource expenditures. While it is difficult to quantify and exact amount, a reasonable estimate is approximately 144 hours of Human Resources staff time and one to three (3) hours of various staff time to prepare staff reports and documents for the Personnel Board amounting to roughly $7,813 and fees for legal counsel at approximately $1,500 per year.

Respectfully submitted by:

Christine Tomikawa,
Director of Human Resources &
Risk Management

Reviewed by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

Attachments:

1. Draft Ordinance and Exhibit A – Municipal Code 2.08.070

ATTACHMENT 1
Draft Ordinance and Exhibit A

ORDINANCE NO.

AN ORDINANCE AMENDING MONTEREY PARK MUNICIPAL CODE § 2.08.070; CHAPTERS 2.28 AND 2.36 TO DISSOLVE THE PERSONNEL BOARD.

THE CITY COUNCIL DOES ORDAIN AS FOLLOWS:

SECTION 1: ***Personnel Board***. The Personnel Board is dissolved. To implement such dissolution, the Monterey Park Municipal Code ("MPMC") is amended as set forth in attached Exhibit "A," which is incorporated by reference. All stricken language, i.e., redlined, is repealed; unless specifically redlined, no other parts of the MPMC are affected by this Section. The City Manager is authorized to promulgate administrative policies and procedures ("AP&P") to, without limitation, regulate probationary employees; adopt disciplinary procedures including appeals before a neutral hearing officer; and, if desirable, engage in nonbinding arbitration. Any such AP&P should be drafted in consultation with affected bargaining units. The City Council intends that any AP&P promulgated by the City Manager, after consultation with affected bargaining units, will take precedence over any conflicting language within the MPMC. Additionally, the City Manager is authorized to execute side letters with affected bargaining units to implement the intent of this Section and reflect any changes to procedures resulting from this action.

SECTION 2: ***Savings Clause***. Repeal of any provision of the MPMC or any other regulation by this Ordinance does not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before, this Ordinance's effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

SECTION 3: ***Severability***. If any part of this Ordinance or its application is deemed invalid by a court of competent jurisdiction, the city council intends that such invalidity will not affect the effectiveness of the remaining provisions or applications and, to this end, the provisions of this Ordinance are severable.

SECTION 4: ***Validity of Previous Code Sections***. If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the MPMC or other regulation by this Ordinance will be rendered void and cause such MPMC provision or other regulation to remain in full force and effect for all purposes.

SECTION 5: ***Effective Date***. This Ordinance becomes effective 30 days after its adoption.

SECTION 6: ***Electronic Signatures***. This Ordinance may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 7: ***Publication.*** The City Clerk must certify as to the adoption of this

ordinance and cause the summary thereof to be published within fifteen calendar (15) days of the adoption and post a certified copy of this ordinance, including the vote for and against the same, in the office of the City Clerk, in accordance with Government Code § 36993, for the City of Monterey Park.

PASSED, APPROVED, AND ADOPTED this ____ day of _____, 2021.

_____
Yvonne Yiu, Mayor

ATTEST:

_____
Vincent D. Chang, City Clerk

APPROVED AS TO FORM:

_____
Karl H. Berger, City Attorney

EXHIBIT A

AMENDMENTS TO MPMC FOR PERSONNEL BOARD DISSOLUTION

"2.08.070 Powers and duties—Designated.

* * *

(2) Control Department Heads. To control, order and give directions to all heads of departments, subordinate officers and employees of the city, except the city clerk, city treasurer and city attorney; and to transfer employees from one department to another; and to consolidate or combine officers, positions, departments or units under this direction~~; provided, however, that nothing contained in this chapter shall be construed to supersede the authority of the city personnel board in the matter of classification of city officers or employees~~;

* * *

~~2.28.020 Personnel board—Creation.~~

~~There is created a personnel board of five members appointed by the city council in accordance with the provisions of Section 2.28.050 of this chapter, and sometimes referred to in this chapter as "the board."~~

~~2.28.040 Personnel board—Vacancies.~~

~~Vacancies of the board shall be filled by appointment by the city council in the same manner as that in which the member being replaced was originally appointed. Each member, except those resigning or removed by the council, shall serve until his or her successor is appointed.~~

~~2.28.050 Personnel board—Appointment.~~

~~(a)The city council shall appoint the members of the personnel board in the following manner: one member from a list of three persons nominated by the personnel of the Monterey Park fire and police departments, one member from a list of three persons nominated by the remaining employees of the city, two members from the community at large, and one member from a list of three persons nominated by a majority of the four previously appointed members. A majority vote of the city council shall be required to appoint a member of the personnel board.~~

~~(b)Nominations as required in subsection (a) of this section shall be made to the council within thirty days following notification by the council that such nominations are required. In the event nominations are not received within the thirty-day period,~~

the council may proceed to fill the vacancies by appointment from the community at large.

2.28.060 Personnel board—Qualifications.

Members of the personnel board shall be qualified electors of the city who are in sympathy with the application of merit principles to public employment. No person shall be appointed to the board who holds any salaried office or employment with the city, nor shall any member, while on the board or for a period of one year after his term has expired, be eligible for appointment to any office of employment of the city.

2.28.070 Personnel board—Organization—Officers.

The election of a chairman shall take place at the first meeting of the board held during the month of January of each year. The board may fill for the unexpired term any vacancy occurring in the office of chairman.

2.28.080 Personnel board—Meetings—Quorum.

The board shall hold a regular meeting at least once a month at times fixed by resolution. Special meetings may be called by the chairman or any three members of the board upon twenty-four hours' notice. The board shall determine the order of business for the conduct of its meetings. Three members of the board shall constitute a quorum for the transaction of business.

2.28.090 Personnel board—Powers—Duties.

The powers and duties of the personnel board shall be the following:

(1)As provided by the personnel system rules and regulations, the hearing of appeals submitted by any person in the competitive service relative to any disciplinary action, dismissal, demotion or alleged violation of this chapter or the personnel rules and the certification of its findings and recommendations as provided in this chapter;

(2)In any investigation or hearing conducted by the board, it shall have the power to examine witnesses under oath and compel their attendance or production of evidence by subpoenas issued in the name of the city and attested by the city clerk. It shall be the duty of the chief of police to cause all such subpoenas to be served and refusal of a person to attend or to testify in answer to such a subpoena shall subject the person to prosecution in the same manner set forth by law for failure to appear before the city council in response to a subpoena issued by the council. Each member of the personnel board shall have the power to administer oaths to witnesses;

~~(3)When requested by the city council or the city manager, the personnel board shall make inquiries and recommendations on any matter of personnel administration, such as standardization of hours of work, attendance and leave regulations, vacations, holidays and working conditions;~~

~~(4)The preparation and adoption by resolution, subject to the approval of the city council, of rules and regulations to supplement this chapter and establishing specific procedures governing such phases of the personnel system as:~~

~~(A) Preparation, installation, revision and maintenance of a position classification plan covering all positions in the competitive service,~~

~~(B) Formulation of standards and qualifications for each class, including residential requirements, if any,~~

~~(C) Public announcement of all tests and the acceptance of applications for employment,~~

~~(D) Preparation and conduct of tests and the establishment, approval and use of resulting employment lists containing names of persons eligible for appointment,~~

~~(E) Certification and appointment of persons from employment lists, and the making of temporary and emergency appointments,~~

~~(F)Evaluation of employees,~~

~~(G) Transfer, promotion, demotion and reinstatement of employees in the competitive service,~~

~~(H) Separation of employees from the city service through layoff, suspension and dismissal,~~

~~(I)Development of employee morale, welfare and training programs,~~

~~(J)Content, maintenance and use of personnel records and forms.~~

~~2.28.095 City council review.~~

~~Any decision, action, or failure to act or consider, by the board regarding or in connection with the establishment, amendment or revision of the classification plan may be reviewed by the city council for final approval. Within ninety days of any such action or inaction by the board, the city council, by majority vote, shall set a time, place and date for hearing and considering the action or inaction by the board. At the time of consideration by the city council, any interested person may appear and be heard. The decision of the city council shall be final.~~

2.28.100 Personnel officer.

The city manager shall appoint a personnel officer~~, after consultation with the personnel board~~. The personnel officer shall perform the following duties:

(1)Administer all provisions of this chapter and the rules established hereunder~~, in accordance with the policies and directives established by the personnel board~~;

~~(2)Attend meetings of and serve as secretary of the personnel board, with such clerical assistance as may be necessary;~~

* * *

(~~4~~3) Accept all notices, requests for hearings, complaints and other official documents ~~which are required to be filed with the personnel board~~;

~~(5)Prepare rules and amendments thereof, for the consideration of the board;~~

(~~6~~4) Prepare a position classification plan, class specifications and revisions thereof~~, for the consideration of the board~~;

* * *

2.28.300 Right to contract for special services.

~~The personnel board shall consider and make recommendations to the city council regarding the extent to which the city should contract for the performance of technical services in connection with the establishment or operation of the personnel system.~~ The city council may contract with any qualified person or agency for the performance of all or any of the following responsibilities and duties imposed by this chapter:

* * *

2.36.060 Performance rating system for employees.

* * *

(b) The performance rating system shall be conducted under the direction and control of the city manager~~, and shall be subject at all times to rules and regulations enacted by the personnel board and approved by the city council~~. Subject only to such rules and regulations, the decision of the city manager with respect to performance rating of any employee shall be final and there shall be no appeal therefrom.

2.36.070 Exceptional service adjustment.

* * *

(6) That neither the making nor revocation of such ESA shall be subject to appeal to ~~either~~ the city council ~~or to the personnel board~~, except as provided for specific officers in the personnel rules; and

* * *”

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Consent Calendar
Agenda Item 3A

TO: The Honorable Mayor and City Council

FROM: Vincent D. Chang, City Clerk

SUBJECT: Minutes

RECOMMENDATION:

It is recommended that the City Council (and the City Council acting on behalf of the Successor Agency) and the Financing Authority Board of Directors consider:

1. Approving the minutes from the regular meeting of July 7, 2021; and
2. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:

None.

BACKGROUND:

None.

FISCAL IMPACT:

None.

Respectfully submitted,

Vincent D. Chang
City Clerk

Prepared by:

Henry Lu
Minutes Clerk

Approved By:

Ron Bow
City Manager

ATTACHMENT(S):

1. Draft Minutes

ATTACHMENT 1
Draft Minutes

MINUTES
MONTEREY PARK CITY COUNCIL
FINANCING AUTHORITY
SUCCESSOR AGENCY (SA)
JULY 7, 2021

The City Council and the Financing Authority of the City of Monterey Park held a Regular Teleconference Meeting via Zoom on Wednesday, July 7, 2021 at 6:30 p.m. The regular meeting was conducted pursuant to Section 3 of Executive Order No. N-29-20 issued on March 17, 2020. Accordingly, Council Members were provided a meeting login number and conference call number and were not physically present at Council Chambers.

The minutes include items considered by the City Council acting on behalf of the Successor Agency of the former Monterey Park Redevelopment Agency, which dissolved February 1, 2012. Successor Agency matters will include the notation of "SA" next to the Agenda Item Number.

PUBLIC PARTICIPATION

In accordance with Executive Order No. N-29-20 and guidance from the California Department of Public Health on gatherings, remote public participation was allowed in the following ways:

Via Email
Public comment were accepted up to 24 hours before the meeting via email to mpclerk@montereypark.ca.gov and, when feasible, read into the record during public comment. Written communications are limited to not more than 50 words.

Via Telephone
Public comment may be submitted via telephone during the meeting, before the close of public comment, by calling (888) 788-0099 or (877) 853-5247 and entering Zoom Meeting ID: **289 222 5995** then press pound (#). When prompted to enter participation ID number press pound (#) again. If participants would like to make a public comment they will enter "***9**" then the Clerk's office will be notified, and you will be in the rotation to make a public comment. Press "***6**" to unmute yourself when called upon to speak. Participants are encouraged to join the meeting 15 minutes before the start of the meeting. You may speak up to 5 minutes on Agenda item. Speakers will not be allowed to combine time. The Mayor and City Council may change the amount of time allowed for speakers. As part of the virtual meeting protocols, anonymous persons will not be allowed to provide public comment.

Important Disclaimer – When a participant calls in to join the meeting, their name and/or phone number will be visible to all participants. Note that all public meetings will be recorded.

CALL TO ORDER:
Mayor Yiu called the meeting to order at 6:30 p.m.

FLAG SALUTE:
Mayor Yiu led the Flag Salute.

ROLL CALL:
City Clerk Vincent Chang called the roll:
Council Members Present: Peter Chan, Hans Liang, Henry Lo, Fred Sornoso, Yvonne Yiu
Council Members Absent: None

ALSO PRESENT: City Manager Ron Bow, City Attorney Karl Berger, City Treasurer Joseph Leon, Assistant City Manager Inez Alvarez, Fire Chief Matt Hallock, City Librarian Diana Garcia, Director of Management Services Martha Garcia, Director of Public Works Frank Lopez, Director of Recreation & Community Services Robert Aguirre, Police Captain Scott Wiese, Economic Development Manager Joseph Torres, Water Utility Manager Richard Gonzales, Community Communications Coordinator Randy Ishino, Deputy City Clerk Cindy Trang, Assistant Deputy City Clerk Helena Cho

AGENDA ADDITIONS, DELETIONS, CHANGES AND ADOPTIONS

City Manager Bow requested that Agenda Item No. 3C be pulled from Consent Calendar for separate discussion and motion.

PUBLIC COMMUNICATIONS

Public Speaker Disclaimer: Meetings are held virtually and the information listed for the speakers may or may not reflect the correct spelling of their respective name.

- Robert Aguirre, Director of Recreation & Community Services, announced that July is Parks Make Life Better Month. He stated that residents can participate in the Parks Makes Life Better Challenge by following any of the city's social media accounts and use #MPKParksChallenge when posting pictures at any of the 13 city parks. He announced that the Recreation & Community Services will be hosting Movies in the Park on July 23, 2021, and August 6, 2021, at Barnes Park. There will also be a Concert in the Park on August 5, 2021, during the Farmers Market at George Elder Park. For more information please visit the city's website or follow any of the city's social media accounts.

- Tammy spoke about Accessory Dwelling Units (ADU). She stated that Monterey Park has been assigned a Regional Housing Needs Allocation (RHNA) goal of 5200+ units. She stated that the State of California allows ADUs to help with reaching the RHNA goal. She conveyed that getting ADU legalized in Monterey Park is difficult. She declared that she is a Planning Commissioner and said that she will recuse herself from any decisions regarding ADU.

1. PRESENTATION

Matters listed under presentation are for informational content and discussion only.

1A. INTRODUCTION OF RECREATION AND COMMUNITY SERVICES DIRECTOR – ROBERT AGUIRRE

City Manager Bow introduced Robert Aguirre, the new Director of Recreation & Community Services. Director of Recreation & Community Services Aguirre introduced himself and provided a brief summary of his work history.

2. OLD BUSINESS

None.

3. CONSENT CALENDAR ITEMS NOS. 3A-3F

Matters listed under consent calendar are considered to be routine, ongoing business and are enacted by one motion unless specified.

Action Taken: Mayor Yiu declared a potential conflict of interest for Agenda Item 3D as she owns a real property within 500 feet of the project site and recused herself from the item. The City Council and the City Council, acting on behalf of the Successor Agency, approved and adopted Agenda Item No. 3A on Consent Calendar, excluding Agenda Items Nos. 3B-3F which were pulled for discussion and separate motion, reading resolutions and ordinances by the title only and waiving further reading thereof.

Motion: Moved by Council Member Chan and seconded by Council Member Liang motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	Yiu, Agenda Item No. 3D
Abstain:	Council Members:	None

3A. MINUTES

Approve the Minutes from the regular and special meetings of May 19, 2021.

Action Taken: The City Council (and the City Council acting on behalf of the Successor Agency) approved the minutes from the regular and special meetings of May 19, 2021 on Consent Calendar.

3B. OPERATIONS AGREEMENT BETWEEN THE CITY OF MONTEREY PARK AND MONTEREY PARK FINANCING AUTHORITY AND RELATED ACTIONS COMPLETING THE ORGANIZATION OF THE MONTEREY PARK FINANCING AUTHORITY

On June 16, 2021, the City Council of the City of Monterey Park ("City") and the Board of Directors of the Housing Authority each adopted resolutions approving a Joint Exercise of Powers Agreement (the "JPA Agreement"). A copy of that staff report is attached to the staff report for reference. The JPA Agreement created the Monterey Park Financing Authority ("Authority").

The Authority was formed primarily for the purpose of issuing bonds (the "2021 Bonds") to assist the City in financing certain public capital improvements, including rehabilitating, constructing, enlarging, improving, and/or equipping City streets, sidewalks, gutters, curbs and ramps, streetlights, and street signs (the "Street Rehabilitation Project"). The 2021 Bonds will be secured by and payable from payments to be made by the City from the City's Measure R, Measure M, and Proposition C Sales Tax Revenues. Before taking action to approve the 2021 Bonds, the Authority must take certain organizational actions as described in the Recommendations above, including entering into the Operations Agreement.

The Operations Agreement dated July 7, 2021 (the "Operations Agreement") by and between the City and the Authority, the form of which is submitted herewith as Attachment 1 to this staff report, provides for the operation of the Authority by the City. The approval of the Operations Agreement, confirmation of the officers of the Board of the Authority, filing of the JPA Agreement, and adoption of certain policies of the City, all as described in the Recommendations above, are necessary to facilitate the operation of the Authority.

Public Speakers:

- Michael Mejia, Lead Underwriter & Senior Vice President at Samuel A. Ramirez & Co., Inc, presented a PowerPoint presentation and was available for questions.

Action Taken: The Monterey Park Financing Authority (MPFA) Board of Directors (1) authorized the Executive Director to execute an Operations Agreement, in a form approved by the General Counsel and substantially in the form set forth in Attachment 1 to the staff report, by and between the City of Monterey Park and the MPFA; (2) confirmed the MPFA officers for the Board and executive staff members as follows: Director of Management Services Martha Garcia as Treasurer; City Clerk Vincent Chang as Secretary; City Attorney Karl Berger as General Counsel; and City Manager Ron Bow as Executive Director; (3) directed the Secretary to file a notice of the Joint Exercise of Powers Agreement with the California Secretary of State pursuant to and in the form required by Government Code § 6503.5; (4) directed the Secretary to file a copy of the Joint Exercise of Powers Agreement with the Los Angeles County Local Agency Formation Commission pursuant to Government Code § 6503.8; and (5) adopted the City's current Debt Management Policy as the Authority's Debt Management Policy.

Motion: Moved by Council Member Chan and seconded by Council Member Liang motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	None
Abstain:	Council Members:	None

3C. WAIVE FURTHER READING AND ADOPT AN ORDINANCE APPROVING A ZONE CHANGE (ZC-21-01) AMENDING THE ZONING MAP TO CHANGE THE ZONING TO 1688 WEST GARVEY SPECIFIC PLAN FOR CONSTRUCTION OF A 16-LOT SINGLE FAMILY RESIDENTIAL DEVELOPMENT PROJECT – 1688 WEST GARVEY AVENUE. WAIVE FURTHER READING AND ADOPT AN ORDINANCE APPROVING A DEVELOPMENT AGREEMENT (DA-21-01) BY AND BETWEEN THE CITY OF MONTEREY PARK AND CENTER INT'L INVESTMENTS, INC. TO DEVELOP 16 SINGLE FAMILY RESIDENTIAL LOTS AT 1688 WEST GARVEY AVENUE

The ordinances were introduced on June 16, 2021. At that meeting, the City Council conducted the first reading of both ordinances. The staff report from the June 16, 2020 meeting is attached to the staff report for reference. Second readings and adoption of these ordinances are recommended; if adopted, the ordinances will take effect in 30 days.

This Project results from a Settlement Agreement between the City and Center Int'l Investments, Inc. (the project applicant) to abate a public nuisance involving an unsafe, unsightly and dangerous condition related to the geologic conditions that exist on the project site. A complete history and context for this Project is attached (Exhibit E to the staff report) for information and background (the "1688 West Garvey Residential Project History and FAQ"). A copy of this attachment was posted on the City's website in April.

The proposed 1688 West Garvey Residential Project includes the development of 16 single-family residences on a 6.22-acre site located at 1688 West Garvey Avenue in the City of Monterey Park. The objectives of the Proposed Project are as follows:

- Provide stabilization for failing slopes.
- Improve the aesthetic quality of the Project Site.
- Provide the maximum amount of housing on the Project Site to assist the City with meeting the housing production goals in the City's Housing Element.

The Project would involve grading and installation of retaining walls and geotechnical improvements (overexcavations and soil removals, recompaction, soil anchors and installation of engineered stabilization products) to stabilize the onsite slopes to facilitate construction of 16 new single-family residences, a private access road, and an open space lot. Two new retaining walls would be installed on the Project site to help stabilize the regraded slopes and would consist of a Lower Site Retaining Wall below the houses along West Garvey Avenue and an Upper Site retaining wall along the west side of the private access road. The proposed vesting tentative map shows that Lots 1 through 16 are the residential lots; Lot A, the private access road; and Lot B would be preserved as open space. The residential lots would range in size from 7,515 square feet to 15,369 square feet in size.

The proposed 1688 West Garvey Avenue Specific Plan consists of a master landscape plan and design and development standards and guidelines for the proposed retaining walls and new residences. Project processing and review procedures are also included in the Specific Plan.

The project parcel common spaces and improvements will be included in a Geologic Hazard Abatement District (GHAD) that will assess and collect fees, maintain and improve the parcel as necessary and determined by the GHAD Board (future agenda item).

<u>CEQA (California Environmental Quality Act):</u>
The City reviewed the Project's environmental impacts under the California Environmental Quality Act (Pub. Res. Code §§ 21000, *et seq*., "CEQA") and the regulations promulgated thereunder (14 Cal. Code of Reg. §§ 15000-15387; the "CEQA Guidelines"). A draft environmental impact report (DEIR) was prepared pursuant to CEQA Guidelines §15151. The DEIR demonstrated that the Project would not have a significant effect on the environment with the implementation of mitigation measures. On July 22, 2020, the City circulated a Notice of Preparation (NOP) with an Initial Study for review and comment by the public, responsible agencies, and reviewing agencies. The 30-day review period for the NOP ended on August 22, 2020. CEQA requires that the City provide the public and agencies the opportunity to review and comment on a Draft EIR. The City released this Draft

EIR for a 45-day period for review and comment from March 11, 2021 to April 26, 2021. Noticing and CEQA compliance were provided in accordance with the CEQA Guidelines. The Draft EIR was distributed to public agencies and other parties, including all interested parties that requested notice and copies of the Draft EIR. A number of agency and public comments were received during public review and response to comments are provided in the Final EIR (attached to Exhibit A in the staff report).

The FEIR includes a discussion and analysis of the following project alternatives:

- Alternative 1: No Project Alternative
- Alternative 2: Multi-Family Development Alternative
- Alternative 3: Alternative Retaining Wall Design
- Alternative 4: Reduced Density Alternative

Pursuant to CEQA Guidelines §15091, “no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects…” The draft Resolution certifying the FEIR includes the findings required by CEQA Guidelines §15091.

This item was heard after Agenda Item No. 3F.

Action Taken: The City Council waived second readings and adopted Ordinance No. 2210 and Ordinance No. 2211.

Motion: Moved by Council Member Liang and seconded by Council Member Chan motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso
Noes:	Council Members:	Lo, Yiu
Absent:	Council Members:	None
Abstain:	Council Members:	None

Ordinance No. 2210, entitled:
AN ORDINANCE AMENDING THE ZONING MAP (ZC-21-01) TO CHANGE THE ZONING FROM R-3 (HIGH DENSITY RESIDENTIAL) TO 1688 WEST GARVEY AVENUE SPECIFIC PLAN TO ALLOW CONSTRUCTION OF A 16-LOT SINGLE FAMILY RESIDENTIAL DEVELOPMENT AT 1688 WEST GARVEY AVENUE

Ordinance No. 2211, entitled:
AN ORDINANCE APPROVING A DEVELOPMENT AGREEMENT BY AND BETWEEN THE CITY OF MONTEREY PARK AND CENTER INT’L INVESTMENTS, INC. TO DEVELOP 16 SINGLE FAMILY RESIDENTIAL LOTS AT 1688 GARVEY AVENUE

3D. NORTHEAST AREA WATER MAIN IMPROVEMENTS PHASE II – AUTHORIZATION TO ADVERTISE

Staff has prepared bid specifications for the City's Northeast Area Water Main Improvements Phase II project and is requesting the City Council's authorization to advertise the project for construction bids.

CEQA (California Environmental Quality Act):
The proposed project is categorically exempt from the requirements of the California Environmental Quality Act (CEQA) pursuant to 14 California Code of Regulations §15301 as a Class 1 categorical exemption (Existing Facilities). The Project results in minor alterations to existing public facilities involving no significant expansion of the existing use. The Project is not anticipated to have any significant impacts with regard to traffic, noise, air quality or water quality.

This item was heard after Agenda Item No. 3B.

Action Taken: Mayor Yiu declared a property-related conflict of interest as she owns a real property within 500 feet of the project site and was placed in the Zoom waiting room and did not participate in discussion. The City Council adopted Resolution No. 12256 approving the design and plans for the Northeast Area Water Main Improvements Phase II Project and authorized staff to advertise the Northeast Area Water Main Improvements Phase II Project.

Motion: Moved by Council Member Chan and seconded by Council Member Sornoso motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo
Noes:	Council Members:	None
Absent:	Council Members:	Yiu
Abstain:	Council Members:	None

Resolution No. 12256, entitled:
A RESOLUTION APPROVING THE DESIGN AND PLANS FOR THE NORTHEAST AREA WATER MAIN IMPROVEMENTS PHASE II PROJECT PURSUANT TO GOVERNMENT CODE § 830.6 AND ESTABLISHING A PROJECT PAYMENT ACCOUNT

3E. 2019-20 STREET REHABILITATION PROJECT – AWARD OF CONTRACT

On May 5, 2021, the City Council adopted a resolution approving the design and specifications for the 2019-20 Street Rehabilitation project and authorized staff to solicit bids. The public bid opening was held on June 7, 2021. Staff has completed its review of bids and recommends that the contract be awarded to Shawnan Corporation, the lowest responsible bidder, in the amount of $4,382,874.

CEQA (California Environmental Quality Act):
Since the proposed work is a minor alteration to an existing public facility, this project is Class 1 Categorically Exempt pursuant to the California Environmental Quality Act (CEQA).

Action Taken: The City Council (1) authorized the City Manager to execute a public works contract, in a form approved by the City Attorney, with Sialic Contractors Corporation dba Shawnan Corporation of Downey, CA in the contract amount of $4,382,874 for the 2019-20 Street Rehabilitation Project; (2) authorized the Director of Public Works to approve change orders and contingency up to $219,150, or 5% of the contract amount; and (3) authorized the City Manager to execute a professional services agreement, in a form approved by the City Attorney, with Converse Consultants of Monrovia, CA up to $80,000 for Geotechnical Observation and Testing Services for a total project cost of $4,682,024.

Motion: Moved by Council Member Sornoso and seconded by Mayor Pro Tem Lo motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	None
Abstain:	Council Members:	None

3F. CONSIDERATION AND POSSIBLE ACTION TO ADOPT A REVISED RESOLUTION AUTHORIZING THE CITY MANAGER, OR DESIGNEE, TO APPLY FOR, RECEIVE AND APPROVE GRANT FUNDS FOR THE STATEWIDE PARK DEVELOPMENT AND COMMUNITY REVITALIZATION PROGRAM (SPP) GRANT REGARDING PROPOSED IMPROVEMENTS TO THE BARNES PARK POOL

The Statewide Park Development and Community Revitalization Program (SPP) grant provides an opportunity for the City to apply for grant funds to design, engineer, and construct a new aquatic facility and a resolution approving an application is a requirement of the SPP grant. On November 4, 2020, the City Council adopted Resolution No. 12210 for the Barnes Park Pool Project. The California Department of Parks and Recreation, Office of Grants and Local Services notified the City that the project's specific name should be added to the Resolution. The application is being reviewed and grants have not been awarded. Staff recommends that the City Council consider adopting the attached draft resolution to the staff report in preparation for potential award of grant funding.

Action Taken: The City Council adopted revised Resolution No. 12257 authorizing the City Manager, or designee, to apply for, receive and approve funds for the Statewide Park Development and Community revitalization Program Grant.

Motion: Moved by Council Member Chan and seconded by Council Member Sornoso motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	None
Abstain:	Council Members:	None

Resolution No. 12257, entitled:
A RESOLUTION AUTHORIZING THE CITY MANAGER, OR DESIGNEE, TO APPLY FOR, RECEIVE AND APPROVE GRANT FUNDS FOR THE STATEWIDE PARK DEVELOPMENT AND COMMUNITY REVITALIZATION PROGRAM

4. PUBLIC HEARING

4A. PUBLIC HEARING TO CONSIDER ADOPTION OF THE 2020 URBAN WATER MANAGEMENT PLAN (UWMP)

The California Urban Water Management Planning Act 1983 requires every urban water supplier to prepare and adopt an Urban Water Management Plan (UWMP) at least once every five years. The City last adopted its Urban Water Management Plan in July 2016 (2015 UWMP).

The primary objective of the Urban Water Management Planning Act is to direct urban water suppliers to evaluate their existing water conservation efforts and to review and implement - to the extent practical - alternative and supplemental water conservation measures.

In addition, Government Code § 65401 requires that cities prepare a coordinated program of proposed public works projects and that they be reviewed for conformity with the City's General Plan.

Stetson Engineers, Inc. prepared the City's 2020 Urban Water Management Plan on the City's behalf. A copy of the entire 2020 UWMP is available for public review in the City Clerk's office and also available online (www.montereypark.ca.gov/1363/2020-Urban-Water-Management-Plan).

CEQA (California Environmental Quality Act):
The proposed project is statutorily exempt from additional environmental review under the California Environmental Quality Act (California Public Resources Code §§ 21000, *et seq*., "CEQA") and CEQA Guidelines (14 California Code of Regulations §§ 15000, *et seq*.) pursuant to Water Code § 10652 (*see also* 14 CCR § 15282(v)).

This item was heard after Agenda Item No. 3C.

Action Taken: The City Council (1) opened the public hearing at 7:51 p.m.; (2) received documentary and testimonial evidence; (3) noted that there were no public speakers, closed the public hearing at 7:55 p.m.; and (4) adopted Resolution No. 12258 adopting the 2020 Urban Water Management Plan and determined that it is consistent with the General Plan as amended by adding "AND WATER SHORTAGE CONTINGENCY PLAN" to the title of the resolution.

Motion: Moved by Mayor Pro Tem Lo and seconded by Council Member Liang motion carried by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	None
Abstain:	Council Members:	None

Resolution No. 12258, entitled:
A RESOLUTION ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

5. NEW BUSINESS

5A. SENATE BILL 970 – ELECTIONS DATE CHANGE

Senate Bill (SB) 970 changes the date of the statewide direct primary to the first Tuesday after the first Monday in June in even-numbered years in which there is no presidential primary to take effect January 1, 2021. The change will affect the terms of office for all elected officials and the City Council mayoral rotation schedule. The effect of the election date and the release of the 2020 Census data will determine the deadline for submittal of the redistrict map to the Los Angeles County.

Public Speakers

- City Clerk Chang received, filed, and read into the record a written communication from Mr. Bill Lam. Mr. Lam urged the City Council to consider holding the General Municipal Elections in conjunction with the State Wide Primary Elections in June.

Recommendation: That the City Council consider: (1) Introducing and waiving first reading of an ordinance amending Monterey Park Municipal Code ("MPMC") § 2.04.050 to change the election date of general municipal elections and requesting consolidation with Los Angeles County pursuant to Elections Code § 1301; (2) Appropriating $12,000 to account no. 1051301-5206 for satisfying the noticing requirement for changing the elections date; (3) Receiving and filing the mayoral rotation schedule or provide direction to be brought back at a future council meeting for consideration; and (4) Taking such additional, related, action that may be desirable.

Action Taken: The City Council introduced and waived first reading of an ordinance amending Monterey Park Municipal Code ("MPMC") § 2.04.050 to change the election date of general municipal elections and requesting consolidation with Los Angeles County pursuant to Elections Code § 1301; (2) appropriated $12,000 to account no. 1051301-5206 for satisfying the noticing requirement for changing the election date; (3) directed staff to bring back the agenda item to discuss mayoral rotational schedule at a future council meeting for consideration.

Motion: Moved by Mayor Pro Tem Lo and seconded by Council Member Sornoso motion carried by the following vote:

Ayes:	Council Members:	Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	None
Abstain:	Council Members:	Chan

Ordinance, 1st Reading, entitled:
AN ORDINANCE AMENDING MONTEREY PARK MUNICIPAL CODE § 2.04.050 TO CHANGE THE ELECTION DATE OF GENERAL MUNICIPAL ELECTIONS AND REQUESTING CONSOLIDATION WITH LOS ANGELES COUNTY PURSUANT TO ELECTIONS CODE § 1301

6. CITY COMMUNICATIONS (CITY COUNCIL)

Council Member Chan reported that he attended the China Town Service Center's Donor Appreciation Reception & 50 Years of Excellence Anniversary. He stated that the Lincoln Hotel has terminated its service for homeless residents and is currently undergoing renovations. He relayed that the San Gabriel Valley Council of Governments meeting was canceled.

Council Member Liang reported that he attended the Joint Chinese University Alumni Association's Marco Polo Bridge Incident Commemoration Ceremony.

Council Member Sornoso requested staff provide updates regarding the Fire Station 62 reconstruction and El Encanto renovation. He asked staff for updates on the Monterey Park Night at Dodger Stadium event and encouraged the community to purchase a ticket for the event.

Mayor Pro Tem Lo stated that on June 30, 2021, he attended a meeting between the League of California Cities LGBTQ (Lesbian, Gay, Bisexual, Transgender, Queer) Caucus and the California's Legislative LGBTQ Caucus to discuss legislation that impacts the LGBTQ community. He announced that he joined the board of the LGBTQ Caucus for the Leagues of California Cities. He reported that on June 24, 2021, he attended the City of El Monte's LGBTQ Pride Festival.

Mayor Yiu reported that she attended the following events: Joint Chinese University Alumni Association's Marco Polo Bridge Incident; Chinese Consolidated Benevolent Association's July 4th Flag Raising Ceremony; the Chinatown Service Center's Donor Appreciation Reception & 50 Years of Excellence Anniversary; and the Pasadena Rose Bowl fireworks event. She stated that she visited the Marriott Hotel and encouraged the community to support the local businesses.

7. FUTURE AGENDA ITEMS
None.

8. CLOSED SESSION (IF REQUIRED; CITY ATTORNEY TO ANNOUNCE)
None.

ADJOURNMENT
There being no further business for consideration, the meeting was adjourned at 8:26 p.m.

_____
Vincent D. Chang
City Clerk

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Consent Calendar
Agenda Item 3B

TO: The Honorable Mayor and City Council

FROM: Joseph Leon, City Treasurer

SUBJECT: Monthly Investment Report – July 2021

RECOMMENDATION:

It is recommended that the City Council consider:

1. Receiving and filing the monthly investment report; and
2. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:

As of July 31, 2021 invested funds for the City of Monterey Park is $89,486,569.03.

BACKGROUND:

In accordance with the City's Investment Policy, a monthly investment report is presented to the City Council showing the types of investments, dates of maturities, amounts of deposits, rates of interest, and the current market values for securities with maturity more than 12 months. The attached monthly investment report includes a summary investment report for the LA County Pooled Investment Fund, which displays the composition by type for the entire pooled investment fund.

Respectfully submitted by:

Joseph Leon
City Treasurer

Prepared by:

Martha Garcia
Director of Management Services

Approved by:

Ron Bow
City Manager

Attachment 1
Monthly Investment Report

CITY OF MONTEREY PARK
INVESTMENT REPORT
JULY 31, 2021

INVESTMENTS PORTFOLIO PROFILE:

TOTAL BALANCE AT 7/31/2021			**$ 89,486,569.03**

INVESTMENT COMPOSITION

(1)	**LA COUNTY POOLED INVESTMENT FUND** *(See Schedule A for LA County Pool Composition)*	ON DEMAND	0.510%	***$ 8,738,626.14***
(2)	**LOCAL AGENCY INVESTMENT FUND**	ON DEMAND	0.220%	***$ 79,762,942.89***

(3)	**CERTIFICATES OF DEPOSIT**	Purchase Date	Maturity Date	Interest Rate	
1	PREFERRED BANK	09/03/20	09/03/21	0.76%	100,000
2	PREFERRED BANK	09/08/20	09/08/21	0.76%	150,000
3	MORGAN STANLEY BANK	02/27/20	02/28/22	1.70%	245,000
4	MORGAN STANLEY PRIVATE BANK	02/27/20	02/28/22	1.70%	245,000
5	AMERICAN FIRST CREDIT UNION	03/06/20	03/07/22	1.60%	245,000
	Total CDs (5)			1.304%	***$ 985,000.00***

OTHER INFORMATION:

BANK BALANCE: [1]	$ 11,436,815.51
AVERAGE MATURITY DAYS	2
AVERAGE INTEREST RATE FOR THE MONTH	0.262%

THE CITY'S INVESTMENT HAS SUFFICIENT LIQUIDITY TO MEET THE CITY'S EXPENDITURE REQUIREMENTS FOR THE NEXT 180 DAYS. THE 180-DAY LIQUIDITY DISCLOSURE IS REQUIRED PER GOVERNMENT CODE 53646.

INTEREST EARNINGS FOR 2020-2021 $826,958

THERE HAVE BEEN NO VARIANCES TO THE INVESTMENT POLICY.

(1) Bank balance is maintained to cover outstanding warrants, payroll checks and on-going operating costs.

POOLED SURPLUS AND SPECIFIC PURPOSE INVESTMENTS
AS OF JUNE 30, 2021

SCHEDULE A

PORTFOLIO PROFILE	Pooled Surplus Investments	Specific Purpose Investments
Inventory Balance at 06/30/21		
At Cost	$ 39,645,549,455	$ 116,873,506
At Market	$ 39,423,114,610	$ 117,677,008
Repurchase Agreements	$ -	$ -
Reverse Repurchase Agreements	$ -	$ -
Composition by Security Type:		
Certificates of Deposit	6.57%	0.00%
United States Government and Agency Obligations	67.91%	62.66%
Bankers Acceptances	0.00%	0.00%
Commercial Paper	25.24%	0.00%
Municipal Obligations	0.07%	2.74%
Corporate and Deposit Notes	0.21%	0.00%
Repurchase Agreements	0.00%	0.00%
Asset-Backed	0.00%	0.00%
Other	0.00%	34.60%
1-60 days	35.05%	0.00%
61 days-1 year	28.29%	34.60%
Over 1 year	36.66%	65.40%
Weighted Average Days to Maturity	1045	

City Council Staff Report

DATE: August 18,2021
AGENDA ITEM NO: Consent Calendar Agenda Item 3C

TO: The Honorable Mayor and City Council

FROM: Frank A. Lopez, Director of Public Works /City Engineer/City Planner

SUBJECT: Receive and file Administrative Use Permit No.21-02

RECOMMENDATION:

It is recommended that the City Council consider:

1. Receiving and filing the AUP-21-02; and
2. Taking such additional, related action that may be desirable.

EXECUTIVE SUMMARY:

On August 4, 2021, the City Planner approved AUP-21-02 in accordance with Monterey Park Municipal Code ("MPMC") § 21.32.200. The AUP authorizes a drive-through as an accessory use to the previously approved Raising Cane's project (CU-19-13). This process was authorized as part of the 2020 Monterey Park Business Recovery Program to help facilitate economic recovery. AUP-21-02 allows a slight reduction in setback requirements and vehicle control in order to accommodate the drive-through as part of CU-19-13.

BACKGROUND:

AUP-21-02 approves a Drive-Through Plan dated June 14, 2021. This process is authorized by MPMC § 21.32.200 and allows full implementation of the Raising Cane's project. Since the City Council approved CU-19-13, it is acting as the City's Planning Agency for purposes of AUP-21-02 pursuant to MPMC § 2.56.020(d).

AUP-21-02 becomes final after the City Council's action to receive and file this item.

LEGAL NOTIFICATION

The legal notice of this action was posted at City Hall August 5, 2021, with affidavits of posting on file.

FISCAL IMPACT:

There is no fiscal impact to receive and file AUP-21-02.

Respectfully submitted by:

Frank A Lopez,
Director of Public Works/City Engineer/City Planner

Prepared by:

Jason Moquin,
Planning Manager

Reviewed by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

Attachment:

1. AUP-21-02 dated August 4, 2021
2. Drive-Through Plan dated June 14, 2021

ATTACHMENT 1
Approval of AUP-21-02

CITY OF MONTEREY PARK
320 West Newmark Avenue • Monterey Park • California 91754-2896
www.MontereyPark.ca.gov

City Council
Yvonne Yiu
Henry Lo
Fred Sornoso
Hans Liang
Peter Chan

City Clerk
Vincent D. Chang

City Treasurer
Joseph Leon

August 4, 2021

Kristin Roberts
Raising Cane's Restaurants, LLC.
6800 Bishop Road
Plano, TX 75024

Re: Administrative Use Permit (AUP21-02) – Drive-through at 1970 South Atlantic Boulevard, City of Monterey Park

Dear Ms. Roberts:

In accordance with Monterey Park Municipal Code ("MPMC") § 21.32.200, the City Planner reviewed your application for a drive through at 1970 South Atlantic Boulevard. Following that review, the City Planner **APPROVED** AUP-21-02 for a drive-through as described below (the "drive-through"). AUP-21-02 incorporates by reference, and approves, the Drive-Through Plan dated June 14, 2021, and stamped by John Pollock, which is on-file with the City's Public Works Department.

ADMINISTRATIVE USE PERMIT – FINDINGS

The following are the findings and facts in support of each finding for this decision in accordance with MPMC § 21.32.200 including the City Engineer's approval of the Drive-Through Plan in accordance with MPMC § 21.32.200(E):

1. There is compatibility of the particular use on the particular site in relationship to other existing and potential uses within the general area in which the use is proposed to be located.

The drive-through is located within the S-C (Shopping Center) zone. The S-C Zone allows the drive-through in accordance with MPMC § 21.10.030 (*see* Table 21.10(A)) and § 21.10.040(I). This drive-through is an accessory use to the restaurant project (Raising Cane's) approved via CU-19-13. It is fully compatible with the zone and surrounding uses.

2. The proposed use is consistent and compatible with the purpose of the zone in which the site is located.

As noted, the drive-through is consistent and compatible with the S-C Zone.

3. The proposed location and use and the conditions under which the use would be operated or maintained will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

When combined with CU-19-13, AUP-21-02 complies with all requirements of the MPMC and other applicable law; it will not be detrimental to the public health, safety or welfare, nor will it materially affect any of the surrounding properties or improvements.

4. Potential impacts that could be generated by the proposed use, such as noise, smoke, dust, fumes, vibration, odors, traffic and hazards have been recognized and mitigated.

All environmental impacts were identified and mitigated via CU-19-13. AUP-21-02 will not create any impacts not already anticipated by CU-19-13. No additional mitigation is required.

DRIVE-THROUGH APPROVALS

The City Engineer approved the Drive-Through Plan which includes a reduced setback to CU-19-13's parking spaces from 25 feet to 5 feet and the drive-through aisle from 25 feet to 15.5 feet along the westerly boundary of the project site adjacent to Atlantic Boulevard. This will accommodate vehicle queuing and help avoid stacking of vehicles onto public right-of-ways. Additionally, the Drive-Through Plan allows parking and aisles to exit directly onto the alleyway situated to the south and east of the project site as identified on the Drive-Through Plan.

Any subsequent modification to the Drive-Through Plan must be provided to the City Planner and City Engineer for approval. All conditions of approval set forth in CU-19-13 are incorporated by reference into AUP-21-02 as if fully set forth.

The Applicant agrees to indemnify and hold the City harmless from and against any claim, action, damages, costs (including, without limitation, attorney's fees), injuries, or liability, arising from the City's approval of Administrative Use Permit No. AUP 21-02. Should the City be named in any suit, or should any claim be brought against it by suit or otherwise, whether the same be groundless or not, arising out of the City approval of AUP 21-02, the Applicant agrees to defend the City (at the City's request and with counsel satisfactory to the City) and will indemnify the City for any judgment rendered against it or any sums paid out in settlement or otherwise. For purposes of this section "the City" includes the City of Monterey Park's elected officials, appointed officials, officers, and employees.

PLANNING AGENCY

Please be advised that this **does not** conclude the review process: AUP-21-02 is scheduled to be received and filed by the City Council, acting as the Monterey Park Planning Agency, at its August 18, 2021 meeting. **AUP-21-02 becomes final after the City Council's action**.

Should you have any questions, please contact Jason Moquin, Planning Manager, at (626) 307-1324.

Sincerely,

Frank A. Lopez,
Public Works Director/City Planner/City Engineer

ATTACHMENT 2
Drive-Through Plan

TITLE REPORT EXCEPTIONS

EASEMENTS ARE PLOTTED HEREON WITH REFERENCE TO SCHEDULE B EXCEPTION NUMBER.

(6) AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING:

GRANTED TO	SOUTHERN CALIFORNIA EDISON COMPANY
FOR	POLE LINES
RECORDED	MARCH 22, 1950 IN BOOK 32644 OF OFFICIAL RECORDS, PAGE 132 AS INSTRUMENT NO. 2558
AFFECTS	THE EASTERLY 6 FEET OF LOTS 191 & 192.

(7) AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING:

GRANTED TO	SOUTHERN CALIFORNIA EDISON COMPANY
FOR	POLES AND CONDUITS
RECORDED	AUGUST 13, 1953 IN BOOK 42456 OF OFFICIAL RECORDS, PAGE 159 AS INSTRUMENT NO. 2769
AFFECTS	AS DESCRIBED THEREIN

SIGN INFORMATION

(K) CMUTCD SIGN R5-1 – "DO NOT ENTER"

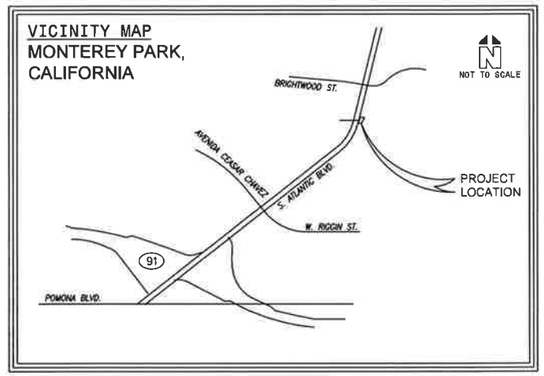
(J) CMUTCD SIGN R1-5A OR R1-5 – "YIELD TO PEDESTRAINS"

SITE KEYNOTES:

1. STANDARD DUTY CONCRETE PAVEMENT
2. CONCRETE CURB
3. STANDARD DUTY ASPHALT CONCRETE PAVEMENT
4. LANDSCAPE/PLANTER AREA
5. HEAVY DUTY CONCRETE PAVEMENT
6. ACCESSIBLE PARKING STALL SIGN IN BOLLARD
7. DIRECTIONAL MARKING PER PLAN
8. ACCESSIBLE RAMP WITH DETECTABLE WARNING (TRUNCATED DOMES)
9. JOIN EXISTING CURB, CURB & GUTTER, SIDEWALK.
10. "CLEAN AIR/VAN POOL/EV" IN 12" HIGH WHITE LETTERS AT THE END OF PARKING STALL
11. ADA PATH OF TRAVEL SIGN
12. PUBLIC CURB AND GUTTER PER CITY OF MONTEREY PARK STANDARDS.
13. PUBLIC SIDEWALK PER CITY OF MONTEREY PARK STANDARDS.
14. PYLON SIGN
15. COVERED TRASH ENCLOSURE AND RECYCLING BIN STORAGE
16. STANDARD 90° PARKING STALL STRIPING
17. BIKE RACK
18. 18" WALK-OFF CURB
19. PREVIEW BOARD
20. ORDER BOARD
21. HEADACHE BAR
22. CONCRETE CURB AND GUTTER
23. PROPRIETARY STORMWATER BIOFILTRATION SYSTEM. PRELIMINARY SIZING SHOWN FOR REFERENCE ONLY.
24. INSTALL WHEELSTOPS FOR PARKING SPACES
25. SITE LIGHTING
26. FUTURE E/V CHARGING STATION. CONDUIT TO BE RAN TO STALL FOR FUTURE CONNECTION
27. PARCEL MERGER SHALL BE COMPLETED FOR THE PROPOSED PROJECT.
28. PARKWAY LANDSCAPING PER CITY OF MONTEREY PARK STANDARDS.
29. COMMERCIAL DRIVEWAY PER CITY OF MONTEREY PARK STANDARDS.
30. HEAVY DUTY ASPHALT CONCRETE PAVEMENT.
31. PATIO TO BE COLORED CONCRETE/ENHANCED PAVERS.
32. PAD MOUNTED TRANSFORMER.
33. SWITCHGEAR CABINET.
34. INSTALL CURB ALONG EXISTING PAVEMENT EDGE. CURB SHALL NOT CROSS ADJACENT PROPERTY LINE.
35. ACCESSIBLE PATH OF TRAVEL STRIPING.

LEGEND:

- CENTER LINE
- PROPERTY LINE
- EASEMENT LINE
- APPROXIMATE LIMIT OF WORK
- W — PROPOSED WATER LINE
- FW — PROPOSED FIRE WATER LINE
- SS — PROPOSED SANITARY SEWER LINE
- GW — PROPOSED GREASE WASTE LINE
- SD — EXISTING STORM DRAIN LINE
- STANDARD DUTY CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- LANDSCAPE/PLANTER AREA
- STANDARD DUTY ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- DETECTABLE WARNING SYSTEM
- COLORED CONCRETE / ENHANCED PAVERS
- ACCESSIBLE ROUTE (LOCATION PURPOSES ONLY, DO NOT PAINT)
- (X) NUMBER OF PARKING SPACES
- ACCESSIBLE PARKING SPACE
- SIGN POST



SITE DATA

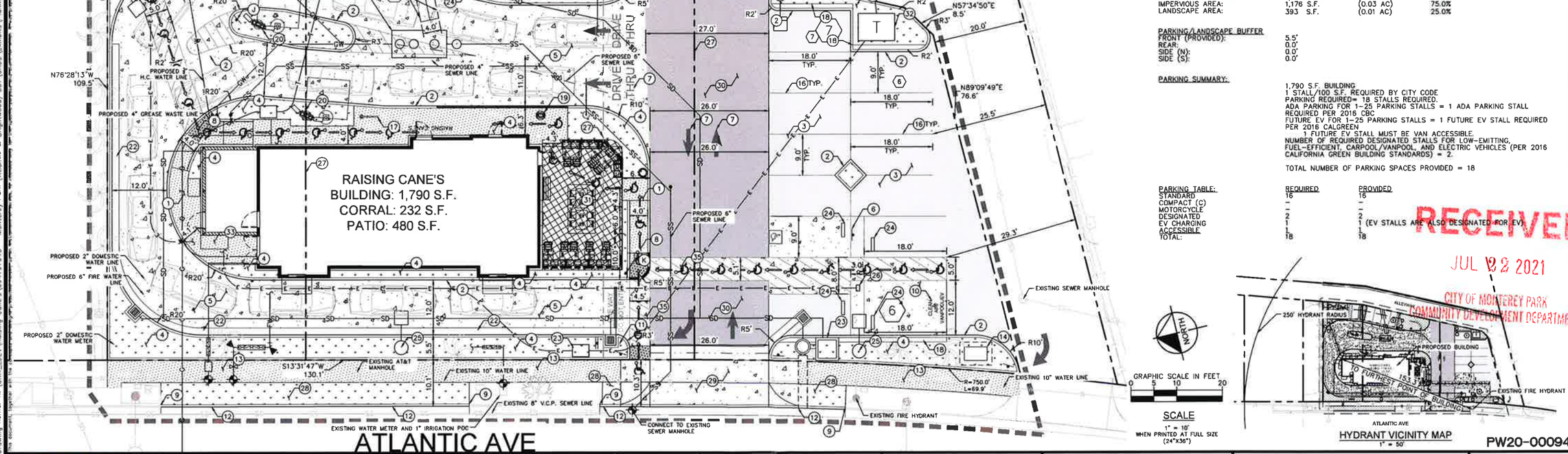
PROJECT DESCRIPTION:	DEMOLITION OF EXISTING FOUNDATION AND SUBSURFACE STRUCTURES AND NEW CONSTRUCTION OF A RAISING CANE'S RESTAURANT		
ADDRESS:	1970 S ATLANTIC BLVD MONTEREY PARK, CA 91754		
ZONING DISTRICT:	S-C		
LAND USE:	SHOPPING CENTER		
FLOOD ZONE:	ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.		
TOTAL DISTURBED AREA:	17,863 S.F.	(0.41 AC)	
TOTAL PAD AREA:	3,635 S.F.	(0.08 AC)	
PROPOSED LEASE AREA:	17,863 S.F.	(0.41 AC)	
LOT COVERAGE			
TOTAL SITE AREA:	17,863 S.F.	(0.41 AC)	100%
BUILDING AREA:	1,800 S.F.	(0.04 AC)	10.1%
IMPERVIOUS AREA:	14,263 S.F.	(0.33 AC)	79.8%
LANDSCAPE AREA:	1,800 S.F.	(0.04 AC)	10.1%*
	*50% (900 S.F.) OF TOTAL LANDSCAPING ALONG S. ATLANTIC BLVD. FRONTAGE		
OFF-SITE COVERAGE			
TOTAL OFF-SITE AREA:	1,568 S.F.	(0.04 AC)	100%
IMPERVIOUS AREA:	1,176 S.F.	(0.03 AC)	75.0%
LANDSCAPE AREA:	393 S.F.	(0.01 AC)	25.0%
PARKING/LANDSCAPE BUFFER			
FRONT (PROVIDED):	5.5'		
REAR:	0.0'		
SIDE (N):	0.0'		
SIDE (S):	0.0'		

PARKING SUMMARY:

1,790 S.F. BUILDING
1 STALL/100 S.F. REQUIRED BY CITY CODE
PARKING REQUIRED= 18 STALLS REQUIRED.
ADA PARKING FOR 1-25 PARKING STALLS = 1 ADA PARKING STALL REQUIRED PER 2016 CBC
FUTURE EV FOR 1-25 PARKING STALLS = 1 FUTURE EV STALL REQUIRED PER 2016 CALGREEN
1 FUTURE EV STALL MUST BE VAN ACCESSIBLE.
NUMBER OF REQUIRED DESIGNATED STALLS FOR LOW-EMITTING, FUEL-EFFICIENT, CARPOOL/VANPOOL, AND ELECTRIC VEHICLES (PER 2016 CALIFORNIA GREEN BUILDING STANDARDS) = 2.

TOTAL NUMBER OF PARKING SPACES PROVIDED = 18

PARKING TABLE:	REQUIRED	PROVIDED
STANDARD	16	16
COMPACT (C)	–	–
MOTORCYCLE	–	–
DESIGNATED	2	2
EV CHARGING	1	1 (EV STALLS ARE ALSO DESIGNATED FOR EV)
ACCESSIBLE	1	1
TOTAL:	18	18



HYDRANT VICINITY MAP
1" = 50'

RECEIVED
JUL 22 2021
CITY OF MONTEREY PARK
COMMUNITY DEVELOPMENT DEPARTMENT

PW20-00094

CONTACT 811 BEFORE YOU DIG — TWO DAYS BEFORE YOU DIG

ISSUE	DATE	DESCRIPTION
	6/14/21	AUP/CUP SUBMITTAL

DRAWN BY: NC
CHECKED BY: JP
RECOMMENDED: TH

ENGINEERS SEAL — REGISTERED PROFESSIONAL ENGINEER JOHN A. POLLOCK No. 86160 CIVIL STATE OF CALIFORNIA

Kimley»Horn
765 THE CITY DRIVE, SUITE 200
ORANGE, CA 92868
(714) 939-1030
PREPARED UNDER THE DIRECT SUPERVISION OF:
JOHN POLLOCK, R.C.E. NO. 86160 DATE: 6/11/2021 EXP. 12/31/2020

CITY OF MONTEREY PARK
APPROVED BY:
ENGINEERING DIVISION — 08/04/2021 DATE

Raising Cane's Chicken Fingers
1970 S ATLANTIC BLVD
MONTEREY PARK, CA 91754

CITY OF MONTEREY PARK
PRELIMINARY SITE PLAN

1 OF 1

Drawing name: K:\ORA_LDEV\Raising Cane's\094797045 - Monterey Park (Atlantic & Brightwood) 387\CADD\Exhibits\Planning\Preliminary Site Plan.dwg Preliminary Site Plan Jun 11, 2021 11:11am by: John.pollock
The documents, together with the data contained therein, are instruments of service prepared by Kimley-Horn and Associates, Inc. and are not to be used, in whole or in part, for any other project without written authorization and adaptation by Kimley-Horn and Associates, Inc.

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Consent Calendar Agenda Item 3D

TO: The Honorable Mayor and City Council

FROM: Kelly Gordon, Chief of Police

SUBJECT: Office of Traffic Safety (OTS) Step Grant Fiscal Year 2021/2022

RECOMMENDATION:

It is recommended that the City Council consider:

1. Receiving and filing report; and
2. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:

The City of Monterey Park Police Department was notified of an award of $114,000.00 Selective Traffic Enforcement Program (STEP) grant from the California Office of Traffic Safety. The police department will utilize the grant to continue its education and enforcement of traffic related laws to reduce injury and fatal traffic collisions.

BACKGROUND:

The Office of Traffic Safety distributes federal funding apportioned to California under the National Highway Traffic Safety Administration (NHTSA). The California Office of Traffic Safety's mission is to effectively and efficiently administer traffic safety grant funds to reduce traffic deaths, injuries, and economic losses. Grants are used to mitigate traffic safety deficiencies, expand ongoing activity, or develop innovative programs.

In 2020, the City of Monterey Park experienced a total of 596 traffic collisions and five fatalities. The STEP grant supports the Police Department's efforts to reduce DUI related traffic collisions and enhances enforcement efforts that concentrate on factors contributing to traffic collisions, such as: alcohol, speed, red light violations and unsafe turning movements.

Some of the programs to be implemented under this grant include:

- DUI directed saturation patrols and DUI checkpoints
- Traffic Enforcement operations for red light, intersection, and speed violations
- Distracted driving enforcement targeting drivers using hand-held cell phones and texting

- Pedestrian and Bicycle Safety Operations
- Community outreach and educational presentations focused on traffic and pedestrian safety

The grant provides funding for the following categories:

• Personnel overtime	$103,300.00
• Training/Travel	$1,500.00
• Equipment/Educational materials	$9,200.00

The Monterey Park Police Department's STEP grant total allocation is $114,000.00.

FISCAL IMPACT:

Since the OTS grant operates through a reimbursement process, there is no direct impact to the City's Operating Budget.

Approved by:

Ron Bow
City Manager

Respectfully submitted by:

Kelly Gordon
Chief of Police

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Consent Calendar
Agenda Item 3E

TO: The Honorable Mayor and City Council

FROM: Vincent D. Chang, City Clerk

SUBJECT: Amending Records Retention Schedule

RECOMMENDATION:

It is recommended that the City Council consider:

1. Adopting a Resolution amending the City's Records Retention Schedule for City documents; or
2. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:

At its November 2, 2011 meeting, the City Council adopted Resolution No. 11443, approving a Records Retention Schedule for City documents. As set forth in Resolution No. 12106, every odd numbered years staff reviews the retention schedule for purposes of practicability and applicable law.

BACKGROUND:

The City Council adopted the retention schedule in 2011 which was revised in 2013, 2015, 2017, 2019. The City Clerk's office, working in collaboration with other City departments identified the need to update the current retention schedule to reflect the current codes and make minor corrections.

Attached Exhibit "A" to the resolution describes the proposed changes. The blue strikethrough texts are to be deleted and the pink unlined texts are to be added. The schedule and the table of content will be amended after the adoption to reflect the updates, moving the divisions to the corresponding departments, and the correct page numbering. The destruction of records procedure as prescribed in the Retention Schedule will remain in effect. The City Attorney reviewed and approved all schedules.

FISCAL IMPACT:

Destroying records in accordance with the Retention Schedule will generally reduce costs associated with records storage and retention. The exact amount is somewhat difficult to quantify.

Respectfully submitted by:

Vincent D. Chang
City Clerk

Prepared by:

Cindy H. Trang
Deputy City Clerk

Reviewed by:

Inez Alvarez
Assistant City Manager

Approved by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

ATTACHMENTS:

1. Draft Resolution and Exhibit A (proposed changes)

ATTACHMENT 1

Draft Resolution and Exhibit A (proposed changes)

RESOLUTION NO.

A RESOLUTION AMENDING THE CITY'S RECORDS RETENTION SCHEDULE FOR CITY DOCUMENTS.

BE IT RESOLVED by the Council of the City of Monterey Park as follows:

SECTION 1: The City Council finds as follows:

A. The City's Retention Schedule was first adopted on November 2, 2011 and was subsequently amended in odd numbered years (the "Schedule"). Keeping and maintaining public records that are unnecessary or duplicative results in the consumption of significant public resources including money, time, and space;

B. Government Code §§ 34090, *et seq.* establish methods by which the City may approve the destruction of unneeded documents; and

C. It is in the public interest to reduce the City's cost for storing documents while, at the same time, ensuring that the City preserves those records that are required to conduct City business.

SECTION 2: Pursuant to Government Code § 34090, the City Council amends the Retention Schedule as shown in attached Exhibit "A," which is incorporated by reference. The City Clerk is authorized to dispose of records according to the time intervals listed in that schedule upon the request of the City Manager, or designee, and the written approval of the City Attorney.

SECTION 3: Nothing in this Resolution is intended to, nor does it, amend the Schedule other than as set forth in Exhibit A. The City Clerk is directed to certify the adoption of this Resolution; record this Resolution in the book of the City's original resolutions; and make a minute of the adoption of the Resolution in the City Council's records and the minutes of this meeting.

SECTION 4: Electronic Signatures. This Resolution may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 5: This Resolution will become effective immediately upon adoption and will remain effective unless repealed or superseded.

PASSED AND ADOPTED this 18th day of August, 2021.

_____
Yvonne Yiu, Mayor

ATTEST:

_____
Vincent D. Chang, City Clerk

APPROVED AS TO FORM:

_____
Karl H. Berger, City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF MONTEREY PARK)

I, VINCENT D. CHANG, City Clerk of the City of Monterey Park, California, do hereby certify that the foregoing Resolution No. was duly adopted and passed at a regular meeting of the Monterey Park City Council on the 18th day of August, 2021 by the following vote:

Ayes:	Council Members:
Noes:	Council Members:
Abstain:	Council Members:
Absent:	Council Members:

Dated this 18th day of August, 2021.

_____
Vincent D. Chang, City Clerk
Monterey Park, California

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
Originating Dept.	RS-113	**Agreements & Contracts:** UNSUCCESSFUL BIDS or RESPONSES to RFPs (Request for Proposals) and/or RFQs (Request for Qualifications) that don't result in a contract	2 years	2 years	Mag, Ppr		The RFP / RFQ and successful proposal becomes part of the agreement or contract (City Clerk is OFR); GC §34090
Staffing Dept.	RS-146	**Recordings - ~~Boards, Commissions, & Committees:~~** AUDIO~~/VIDEO~~ RECORDINGS of Meetings	At least 30 days; after Minutes are Approved	At least 30 days; after Minutes are Approved	Tape (Mag), OD		GC §54953.5
Staffing Dept.	RS-541	**Recordings** - VIDEO RECORDINGS of meetings; Zoom and other plateforms	2 years	2 years	Tape (Mag), OD		GC §54953.5; except for RS-148
City Clerk	RS-144	**Boards, Commissions or Committees -** Applications (Active)	Copies - When No Longer Needed	Originals, Refer to OFR	Mag, Ppr		Department preference (these records do not pose the same liability to the City as other types of volunteers); GC §34090
City Clerk	RS-145	**Boards, Commissions or Committees -** Applications (Inactive / Separated)	Copies - When No Longer Needed	Originals, Refer to OFR	Mag, Ppr		These records do not pose the same liability to the City as other types of volunteers; GC §34090
Staffing Dept.	RS-147	**Boards, Commissions, & Committees:** Citizens Advisory Bodies Formed by CITY COUNCIL Commission on Aging, BIDAC, CPC, DRB, EDAC, Environmental, Recreation & Parks, Traffic, Agenda Packet, Video Recordings	Minimum 2 years	Minimum 2 years	Mag, Ppr		Department Preference; GC §34090
City Clerk	RS-148	**Boards, Commissions, & Committees:** Citizens Advisory Bodies Formed by CITY COUNCIL ~~*Design Review Board*~~ *, Library Board, Personnel Board, and Planning Commission* Resolutions / Minutes / Bylaws / Video Recordings	Copies - When No Longer Needed	Originals, Refer to OFR	Mag, OD, Ppr		GC §34090

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
City Clerk	RS-218	**Deeds, Easements, Encroachments, Real Property, Dedications, Abandonment, Vacations, Rights of Ways, Road Deeds, Final Orders of Condemnations, etc.**	Copies - When No Longer Needed	Originals, Refer to OFR	Mag, OD, Ppr		Send all originals to the City Clerk;GC §34090, GC §34090.7
Originating Dept.	RS-219	**Department Files** Project / Program Working Files	Completion +2 years	Completion +2 years or minimum 5 years	Mag, OD, Ppr	Yes	Department Preference; GC §34090
Originating Dept.	RS-226	**Drafts & Notes:** Drafts that are revised (retain upon approval of final version)	Not More Than 90 Days or Upon Approval of Final	Not More Than 90 Days or Upon Approval of Final	Mag, Ppr		Consult the City Attorney to determine if a record is considered a draft. GC §§34090, 6252, 6254(a)
Originating Dept.	RS-246	**Emails** Active & Inactive (Separated)	2 years	2 years	Mag, Ppr		E-mails that have a material impact on business are saved outside the e-mail system by printing them out and placing them in a file folder, or saving them electronically; e-mail which serve no useful purpose to the City should be deleted from the system. Purge on an ongoing bases E-mails that have met the retention requirements.
Originating Dept.	RS-282	**GIS Database** / Data / Layers (both City-wide and Specialized)	2 years	2 years	Mag, OD		The Lead Department should print out historical documents (or save source data) prior to replacing the data, if they require the data or output for historical purposes; Department Preference (Preliminary documents); GC §34090 et seq.
Originating Dept.	RS-284	**Grants** (UNSUCCESSFUL Applications, Correspondence)	2 years	2 years	Mag, Ppr		GC §34090

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
City Clerk	RS-436	**Resolutions**	Copies - When No Longer Required	Originals, Refer to OFR	Mag, OD, Ppr		Originals maintained by City Clerk Permanently; GC §34090.7
Originating Dept.	RS-446	**Service Requests Work Orders** - NOT entered in CMMS Database (or partial information entered into CMMS Database) (Division providing service retains originals; Division requesting service is considered a copy)	2 years	2 years	Ppr		City preference; CCP §§338 et seq., 340 et seq., 342, GC §§945.6, GC §34090
Originating Dept.	RS-523	**Social Media Postings**	2 years	2 years	Mag, Ppr		GC §34090
Originating Dept.	RS-450	**Speaker Cards** (submitted at public meetings)	When No Longer Needed	When No Longer Needed	Ppr		Transitory records not retained in the ordinary course of business (used to accurately produce minutes); GC §§34090 et seq., 6254(a)
Originating Dept.	RS-542	Special Assessment and Lien for Nuisance Abatement	2 years	Recovery of Cost + 5 years	Mag, OD, Ppr	Yes	City Attorney's Office preference.
Originating Dept.	RS-451	**Special Event / Permits**	Expiration + 2 years	Expiration + 2 years	Mag, OD, Ppr		GC §34090
City Clerk	RS-466	**Subpoenas for Records** -Duces Tecum, Wage Garnishment, Worker's Compensation, Pitchess, Order to Appear	~~Copies – When No Longer Required~~ 2 years	Originals, Refer to OFR	-Ppr		GC §34090; City Clerk's office retains original subpoenas; responsive records retain by responding dept. for minimum 2 years

Office of Record (OFC)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
Human Resources / Risk Mgmt	RS-183	**Claims Against Others** (Damage to City Property, etc.)	2 years	Originals, Refer to OFC 2 years	Mag, OD, Ppr		Risk Management administrates claim; GC §§34090.7, 34090.6
City Clerk	RS-218	**Deeds, Easements, Encroachments, Real Property, Dedications, Abandonment, Vacations, Rights of Ways, Road Deeds, Final Orders of Condemnations, etc.**	2 years	P	Mag, OD, Ppr	Yes	GC §34090, GC §34090.7
City Clerk	RS-228	**Elected Officials:** Individual File	Term Expired + 2 years	P	Mag, OD, Ppr	Yes	Department preference; GC §34090
City Clerk	RS-229	**Election** - Nomination documents and signatures in lieu of fee	Term of office + 4 years	Term of office + 4 years	Mag, Ppr		EC §17100
City Clerk	RS-231	**Elections** - GENERAL, WORKING or ADMINISTRATION Files (Correspondence, Precinct Maps, County Election Services, Candidate Statements to be printed in the Sample Ballot, etc.)	4 years	4 years	Mag, Ppr		Department preference; GC §34090
City Clerk	RS-232	**Elections** - HISTORICAL (Sample ballot, etc.)	2 years	P	Mag, OD, Ppr	Yes	Retained for Historical Value, GC §34090
City Clerk	RS-233	**Elections** - Petitions (Initiative, Recall or Referendum)	Results or Final Examination if No Election + 8 Months	Results or Final Examination if No Election + 8 Months	Ppr		Not accessible to the public; The 8 month retention applies after election results, or final examination if no election, unless there is a legal or FPPC proceeding. EC §§17200, 17400
City Clerk	RS-234	**Elections** - Assessment District Ballots and/or protest letters - Prop. 218 proceedings	2 years	2 years	Ppr		Department preference to be consistent with other types of ballots; Statewide guidelines propose permanent; EC §§ 17302, 17306; CA Constitution Art. XIII
~~City Clerk~~	~~RS-235~~	~~**Elections** - Ballots - After Election Voted, provisional, spoiled, cancelled, and unused~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §§ 14404, 17302~~
~~City Clerk~~	~~RS-236~~	~~**Elections** - Ballots - After Recount~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §17306~~

Office of Record (OFC)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
~~City Clerk~~	~~RS-237~~	~~**Elections** - Challenged & Assisted Voters List~~	~~6 months~~	~~6 months~~	~~Mag, Ppr~~		~~If uncontested, EC §17304~~
~~City Clerk~~	~~RS-238~~	~~**Elections** - Inspector Receipts for Ballots~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §§ 17302, 17306~~
~~City Clerk~~	~~RS-239~~	~~**Elections** - Precinct Officer Appointments~~	~~6 months~~	~~6 months~~	~~Mag, Ppr~~		~~EC §17503~~
City Clerk	RS-240	**Elections** - Roster of Voters	5 years	5 years	Mag, Ppr		EC §17300
~~City Clerk~~	~~RS-241~~	~~**Elections** - Tally Sheets~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §17304~~
~~City Clerk~~	~~RS-242~~	~~**Elections** - Vote-by-Mail / Absentee Applications~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §17505~~
~~City Clerk~~	~~RS-518~~	~~**Elections** - Vote-by-Mail Summary Report (computer generated reports)~~	~~6 months~~	~~6 months~~	~~Mag, Ppr~~		~~Department preference, EC §17304~~
~~City Clerk~~	~~RS-243~~	~~**Elections** - Vote-by-Mail / Absentee Identification Envelopes~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §17302~~
~~City Clerk~~	~~RS-244~~	~~**Elections** - Voter Index Copies used as the Voting Record at Polling Places~~	~~6 months~~	~~6 months~~	~~Ppr~~		~~EC §17304~~
City Clerk	RS-245	**Elections** - Voter Identification / Index Report (Original)	5 years	5 years	Mag, OD, Ppr		EC §§ 2180, 17001
City Clerk	RS-528	**Ethics Training (AB1234)** Certificate of Attendance	2 years	5 years	Mag, OD, Ppr		GC §53235.2
City Clerk	RS-270	**FPPC** - Campaign Statements (FPPC 400 Series Forms): SUCCESSFUL CANDIDATES (Elected Officials)	2 years	P	Mag, OD, Ppr	Yes	Council Members, Controlled Committees of Candidates Elected - Indefinite. Other offices - 7 years. Paper must be retained for at least 2 years; GC §81009(b)(c)(g)
City Clerk	RS-271	**FPPC** - Campaign Statements (FPPC 400 Series Forms): UNSUCCESSFUL CANDIDATES	2 years	Terminated + 5 years	Mag, OD, Ppr	Yes	Paper must be retained for at least 2 years; GC §81009(b)(g)
City Clerk	RS-272	**FPPC** - Campaign Statements (FPPC 400 Series Forms): THOSE NOT REQUIRED TO FILE ORIGINAL WITH CITY CLERK (copies)	2 years	4 years	Mag, OD, Ppr	Yes	Department preference; Paper must be retained for at least 2 years; GC §81009(f)(g)
City Clerk	RS-273	**FPPC** - Campaign Statements (FPPC 400 Series Forms): OTHER COMMITTEES (PACS - not candidate-controlled)	2 years	Terminated + 7 years	Mag, OD, Ppr	Yes	Paper must be retained for at least 2 years; GC §81009(c)(g)

Office of Record (OFC)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
City Clerk	RS-274	**FPPC** - Economic Interest Filings (FPPC 700 Series Forms - Statement of Economic Interests): DESIGNATED EMPLOYEES (specified in the City's Conflict of Interest code)	2 years	7 years	Mag, Ppr	Yes	City maintains original statements; GC §81009(e)(g)
City Clerk	RS-275	**FPPC** - Economic Interest Filings (FPPC 700 Series Forms - Statement of Economic Interests): PUBLIC OFFICIALS (Elected. Includes City Council Members, Planning Commission Members, City Manager, City Treasurer & City Attorney - "87200 filers")	2 years	4 years	Mag, Ppr	Yes	City maintains copies only; original statements are filed with FPPC; GC §81009(f)(g)
City Clerk	RS-276	**FPPC** - Agency Forms (FPPC 800 Series Forms)	2 years	7 years	Mag, Ppr	Yes	Must post on website; 2 CCR 18944.2(c)(3)(G), 18705.5
City Clerk	RS-292	**Historical Records** (e.g. Articles of Incorporation, City Seal, Awards of significant historical interest, etc.)	2 years	P	Mag, OD, Ppr	Yes	City Clerk determines historical significance; records can address a variety of subjects and media; GC §34090
City Clerk	RS-298	**Index of Records** / Legislative History Cards / Database to Records	2 years	P	Mag, OD, Ppr	Yes	Retained for Historical Value, GC §34090
City Clerk	RS-328	**Master Appointment List** / Roster of Elected and Appointed	2 years	P	Mag, OD, Ppr	Yes	Retained for Historical Value, GC §34090
City Clerk	RS-334	**Minutes** All Agencies Except for RS-148	2 years	P	Mag, OD, Ppr	Yes	GC §34090
City Clerk	RS-337	**Municipal Code Supplements** (retain 1 copy of each supplement)	2 years	P	Mag, OD, Ppr	Yes	Department preference; GC §34090
City Clerk	RS-342	**Notice of Reorganization** (City)	2 years	2 years	Mag, Ppr		GC §34090
City Clerk	RS-343	**Notice of Reorganization** (Other Cities)	When No Longer Needed	When No Longer Needed	Mag, Ppr		Non-Records

RECORDS RETENTION SCHEDULE:
COMMUNITY AND ECONOMIC DEVELOPMENT

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
BUILDING							
Community Economic / Building	RS-103	**Accessibility Hardship** Applications, Approvals & Denials, etc.	2 years	P	Mag, OD, Ppr	Yes	Department preference; GC §34090
Community Economic / Building	RS-155	**Building Permits / Building Address Files -** Permanent Documents Applications, Building Permits, Certificate of Occupancy, Modification Requests / Applications for Constructing Permits, Administrative Modification Decisions, Appeals & Appeal Decisions, Inspection Construction Notices / Inspection Notices (correction notices, compliance orders, stop work notices, etc.)	2 years	P	Mag, OD, Ppr	Yes	GC §34090; H&S §19850; CBC §104.7
Community Economic / Building	RS-531	**Building Permits / Building Address Files - Documents** ~~Geotechnical / Geological Investigation Reports,~~ Final Inspection Approval, Special Inspection Reports, Structural Calculations, Energy Calculations, Lab Test Reports, Structural Observation Reports, Property Reports, ~~Soils Reports~~	2 years	2 years	~~Mag, OD, Ppr~~		GC §34090
Community Economic / Building	RS-543	**Geotechnical and Soils Reports Building Division (Only) Projects**	5 years	P	Mag, OD, Ppr	Yes	GC §34090
Community Economic / Building	RS-156	**Building Plan Checks** Commercials / Industrials	2 years	2 years	Mag, Ppr		Preliminary draft not retained in the ordinary course of business; GC §34090 et seq.
Community Economic / Building	RS-529	**Building Plan Checks** Residential	2 years	2 years	Mag, Ppr		CBC requires they be retained for at least completion + 180 days; H&S§19850; CBC §104.7; GC §34090

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
CODE ENFORCEMENT							
Fire / Code Enforce.	RS-535	**Administrative Citations / Notice of Violations** Including Letters, Photos, Digital Case Notes, and Correspondences	Close + 2 years	Close + 2 years	Mag, Ppr		GC §34090
Community Economic / Code Enforce.	RS-185	**Code Enforcement / Abatement Case Files** (Includes appeals and Code Enforcement Complaint Letters)	Minimum Close + 2 years	Minimum Close + 2 years	Mag, OD, Ppr	Yes	Department preference; Case is open until satisfactorily resolved (some cases are not resolved); GC §34090
Community Economic / Code Enforce.	RS-186	**Code Enforcement / Abatement Case Files** Notice of Restrictions, Recorded Liens & Releases	5 years	P	Mag, OD, Ppr	Yes	GC §34090
Fire / Code Enforce.	RS-536	**Home Occupation** Applications, Inspections Notices, Photos, Self Certification Forms	Close + 2 years	Close + 2 years	Mag, Ppr		GC §34090

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
Recreation & Community Services	RS-454	**Recreation Activities** Sports Rosters, Ejection Letters, Trip permits, Fees & Charges, Sign -in Sheets, Injury Reports etc.	2 years	2 years	Mag, Ppr		Statute of limitations for an action for injury caused by the neglect of another is 2 yrs. under CCP § 335.1; GC §34090
Originating Dept.	RS-467	**Surveys / Questionnaires** (that the City issues) If a summary of the data is compiled, the survey forms are considered a draft or transitory record, and can be destroyed as drafts (When No Longer Required)	2 years	2 years	Mag,-Ppr		GC §34090
Recreation & Community Services	RS-537	**Tree Memorial Applications** Applications, Letters of Recommendations	2 years	2 years	Mag, Ppr		GC §34090
Recreation & Community Services	RS-492	**Vehicle and Equipment Safety Checks**	2 years	2 years	Mag, Ppr		GC §34090

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
Public Works / Engineering	RS-195	**Correspondence** - Regulatory Agencies	2 years	2 years	Mag, Ppr		Department preference; Some correspondence from Regulatory Agencies need to be retained for long periods of time; GC §34090
Human Resources / Risk Manage.	RS-198	**Cost Estimates for Damage to City Property** (damaged stop signs, signals)	Copies - When No Longer Needed	Originals, Refer to OFC	Mag, OD, Ppr		All originals go to Human Resources (these are copies); GC §34090.7
Public Works / Engineering	RS-219	**Department Files** Project / Program Working Files	Minimum 5 years	Minimum 5 years	Mag, OD, Ppr	Yes	Department preference; GC §34090
Public Works / Engineering	RS-540	**Department Files - Unsuccessful** Project / Program Working Files	Completion + 2 years	Completion + 2 years	Mag, Ppr		Department preference; GC §34090
Public Works / Engineering	RS-220	**Design & Construction Standards**	5 years	P	Mag, OD, Ppr	Yes	Department preference; GC §34090
Public Works / Engineering	RS-222	**Disadvantaged Business Enterprise (DBE) Files**	2 years	5 years	Mag, OD, Ppr	Yes	Consistent with Grant requirements (see City-wide Schedules); GC §34090
City Clerk	RS-218	**Easements** *Forward Originals to City Clerk's Office*	Copies - When No Longer Needed	Originals, Refer to OFR	Mag, OD, Ppr		Department preference; GC §34090
Public Works / Engineering	RS-539	**Employee Rideshare Transportation Program** Application, Monthly Rideshare Card	2 years	2 years	Mag, Ppr		GC §34090
Public Works / Engineering	RS-251	**Permits** - Permanent Encroachments, Change of Adress	5 years	P	Mag, OD, Ppr	Yes	Department preference; GC §34090
Public Works / Engineering	RS-252	**Permits** - Temporary Encroachments, Concrete, Excavation, Sewer, House Moving, House Sewer Connection, Transportation	2 years	2 years	Mag, Ppr		GC §34090

Office of Record (OFR)	Retention No.	Records Description	Active (in office)	Total Retention	Media Options	Destroy Paper after Imaged & QC'd?	Comments / Reference
Public Works / Engineering	RS-280	**Geotechnical and Soils Reports** Public Works Projects	5 years	P	Mag, OD, Ppr	Yes	~~Department preference;~~ GC §34090
Public Works / Engineering	RS-282	**GIS Database** / Data / Layers (both City-wide and Specialized)	2 years	2 years	Mag, OD		The Lead Department should print out historical documents (or save source data) prior to replacing the data, if they require the data or output for historical purposes; Department Preference (Preliminary documents); GC §34090 et seq.
Public Works / Engineering	RS-283	**Grading Permits & Plans - Approved**	5 years	P	Mag, OD, Ppr	Yes	~~Department preference;~~ GC §34090
Public Works / Engineering	RS-538	**Grading Permits & Plans - Unsuccessful** Not Acquired or Resubmitted	2 years	2 years	Mag, Ppr		GC §34090
Public Works / Engineering	RS-325	**Maps, Plans and Record Drawings** (Capital Improvement Project "As-Builts", Record Drawings, Final Maps, Parcel Maps, Right of way, Tract Maps, etc.)	5 years	P	Mag, OD, Ppr	Yes	Some maps are also retained by Planning; Selected maps are retained in Public Works for administrative purposes; GC §34090, 34090.7
Public Works / Engineering	RS-345	**NPDES Permits - Stormwater**	5 years	Expiration + 5 years	Mag, OD, Ppr	Yes	Department preference; Monitoring records required for 3 years; 40 CFR §§122.21, 122.41; CCP §337 et seq.
Public Works / Engineering	RS-385	**Private Development Projects / Job Files:** Permanent Files Drainage, Driveway, Encroachments, Grading Permits & Plans, Rights of Way, Soils Reports, Stormwater, etc. Copies of Deeds, Dedications, Easements, Abandonments (City Clerk is OFR) *Examples: CUPs, Lot Line Adjustments, Specific Plans, Split Lots, TPMs, TSMs*	5 years	P	Mag, OD, Ppr	Yes	Department preference; retained for disaster preparedness purposes; Statewide guidelines propose Permanent for Infrastructure plans; GC §34090

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Consent Calendar
Agenda Item 3F

TO: The Honorable Mayor and City Council

FROM: Ron Bow, City Manager

SUBJECT: Consideration of Resolution Appointing Representatives to the Independent Cities Risk Management Authority (ICRMA)

RECOMMENDATION:

It is recommended that the City Council consider:

1. Adopting a Resolution appointing Director of Human Resources and Risk Management, Christine Tomikawa as the City's primary representative to the ICRMA Governing Board; appointing Director of Management Services, Martha Garcia and Chief of Police, Kelly Gordon as alternate representatives; and
2. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:

The City of Monterey Park is a member of the Independent Cities Risk Management Authority ("ICRMA"), which is a joint powers authority created pursuant to provisions of the Government Code and was formed to provide Liability, Workers' Compensation and Property Insurance as well as other risk management services.

Pursuant to the ICRMA By-laws and Joint Powers Agreement, the City Council may appoint public officials other than electeds to the ICRMA Governing Board; an alternate for the representative may be a department director (or equivalent); and or full-time risk manager.

BACKGROUND:

Pursuant to Article 7(b) of the ICRMA By-laws, the person(s) designated must have one of the following positions, or their equivalent: 1) elected officials; 2) City Managers; 3) hold positions with authority equivalent to Department Director; or 4) be dedicated (full time) to risk management for the City and approved for appointment by the ICRMA Board.

The Resolution appoints appoint of Human Resources and Risk Management, Christine Tomikawa as the City's primary representative and Director of Management Services, Martha Garcia and Chief of Police, Kelly Gordon as alternative representatives

FISCAL IMPACT:

None

Respectfully submitted by:

Ron Bow
City Manager

Prepared by:

Christine Tomikawa
Director of Human Resources and Risk Management

Reviewed by:

Karl H. Berger
City Attorney

ATTACHMENT(S):

1. Proposed Resolution
2. City Resolution No. 12214

ATTACHMENT 1
Proposed Resolution

RESOLUTION NO. _____

A RESOLUTION APPOINTING REPRESENTATIVES TO THE GOVERNING BOARD OF THE ICRMA

The City Council for the City of Monterey Park does resolve as follows:

SECTION 1: *Recitals.* The City Council finds as follows:

A. Monterey Park is a member of the Independent Cities Risk Management Authority ("ICRMA");

B. Pursuant to the ICRMA By-laws and Joint Powers Agreement, the City Council may appoint a public official other than a councilmember to the ICRMA Governing Board; and

C. Pursuant to Article 7(b) of the ICRMA By-laws, the person(s) designated must have one of the following positions, or their equivalent: 1) elected officials; 2) City Managers; 3) department directors (or equivalent); or 4) be dedicated (full time) to risk management for the City and approved for appointment by the ICRMA Board.

SECTION 2: *Appointments to Governing Board.* The following individuals are appointed as the City's representatives to the ICRMA Governing Board:

A. Director of Human Resources and Risk Management, Christine Tomikawa, is the primary representative;

B. Director of Management Services, Martha Garcia, is appointed as the City's substitute alternative representative; and

C. Chief of Police, Kelly Gordon, is appointed as the City's substitute alternative representative.

SECTION 3: *Authority.* The individuals appointed by this Resolution are authorized to represent the City while acting as ICRMA delegates. Such authority includes the power to vote for the City on matters presented to the ICRMA Governing Board. These representatives are directed to keep the City Council regularly informed regarding ICRMA proceedings.

SECTION 4: *Electronic Signatures*. This Resolution may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 5: *Effective Date.* This Resolution will become effective immediately upon adoption and will remain effective unless repealed or superseded.

SECTION 6: *Recordation.* The City Clerk will certify to the passage and adoption of this Resolution; will enter the same in the book of original Resolutions of said City; and will make a minute of the passage and adoption thereof in the record of proceedings of the City Council of said City, in the minutes of the meeting at which the same is passed and adopted.

PASSED, AND ADOPTED this 18th day of August 2021.

_____
Yvonne Yiu, Mayor

ATTEST:

_____
Vincent D. Chang, City Clerk

Approved as to form:

_____
Karl H. Berger, City Attorney

ATTACHMENT 2
Prior Resolution 12214

RESOLUTION NO. 12214

A RESOLUTION APPOINTING REPRESENTATIVES TO THE GOVERNING BOARD OF THE ICRMA

The City Council for the City of Monterey Park does resolve as follows:

SECTION 1: *Recitals.* The City Council finds as follows:

A. Monterey Park is a member of the Independent Cities Risk Management Authority ("ICRMA").

B. Pursuant to the ICRMA By-laws and Joint Powers Agreement, the City Council may appoint a public official other than a councilmember to the ICRMA Governing Board; an alternate for the representative who may be a City employee; and a substitute alternate who may also be a City employee.

C. Pursuant to Section 5.1 of the ICRMA By-laws, the person(s) designated must have one of the following positions, or their equivalent: City Attorney, Assistant City Attorney, Financial Officer, City Manager, Assistant/Deputy City Manager, Assistant to City Manager, Risk Manager, Human Resources Director/Manager, or Administrative Services Director.

SECTION 2: *Appointments to Governing Board.* The following individuals are appointed as the City's representatives to the ICRMA Governing Board:

A. Management Services Director Martha Garcia is the primary representative;

B. Senior Management Analyst Hank Lu is appointed as the City's substitute alternative representative; and

C. City Attorney Karl H. Berger is appointed as the City's substitute alternative representative.

SECTION 3: *Authority*. The individuals appointed by this Resolution are authorized to represent the City while acting as ICRMA delegates. Such authority includes the power to vote for the City on matters presented to the ICRMA Governing Board. These representatives are directed to keep the City Council regularly informed regarding ICRMA proceedings.

SECTION 4: *Electronic Signatures*. This Resolution may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 5: *Effective Date*. This Resolution will become effective immediately upon adoption and will remain effective unless repealed or superseded.

SECTION 6: *Recordation.* The City Clerk will certify to the passage and adoption of this Resolution; will enter the same in the book of original Resolutions of said City; and will make a minute of the passage and adoption thereof in the record of proceedings of the City Council of said City, in the minutes of the meeting at which the same is passed and adopted.

PASSED, AND ADOPTED this 2nd day of December 2020.

Yvonne Yiu, Mayor

ATTEST:

Vincent D. Chang, City Clerk

Approved as to form:

Karl H. Berger, City Attorney

State of California)
County of Los Angeles) ss.
City of Monterey Park)

I, Vincent D. Chang, City Clerk of the City of Monterey Park, California, do hereby certify that the foregoing Resolution No. 12214 was duly and regularly adopted by the City Council of the City of Monterey Park at a regular meeting held on the 2nd day of December, 2020, by the following vote:

Ayes:	Council Members:	Chan, Liang, Sornoso, Lo, Yiu
Noes:	Council Members:	None
Absent:	Council Members:	None
Abstain:	Council Members:	None

Dated this 2nd day of December, 2020.

Vincent D. Chang, City Clerk
Monterey Park, California

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Consent Calendar Agenda Item 3G

TO: The Honorable Mayor and City Council

FROM: Frank A. Lopez, Director of Public Works/City Engineer

SUBJECT: Budget Adjustment for Fire Station 62 Demolition & Reconstruction Project

RECOMMENDATION:

It is recommended that the City Council consider:

1. Authorizing the City Manager to appropriate an additional $120,000 from the General Fund balance for the Fire Station 62 Demolition & Reconstruction project; and
2. Taking such additional, related action that may be desirable.

EXECUTIVE SUMMARY:

On May 20, 2020, the City Manager was authorized to execute a standard public works contract utilizing informal bidding procedures in MPMC Chapter 3.100 to select a contractor(s) to perform the demolition and reconstruction of Fire Station 62, utilizing the existing budgeted funds for the project which totaled $5,556,100, including change orders and contingency as required and within available funds. On July 13, 2020, the City executed a contract with RC Construction Services, Inc. for the Fire Station 62 Demolition & Reconstruction project. The project is currently budgeted in Fire Suppression Development Impact Fee (DIF), General Fund - Capital Improvement Project (CIP) funds, Measure R funds, and Measure M funds.

Due to unforeseen circumstances such as soil conditions and the COVID pandemic and its impact to material sourcing and costs, staff is requesting approval of a budget appropriation of $120,000 from the General Fund balance to CIP 92002 to cover the remaining expenses for the project. Changes to the storm drain detention system design were necessary due to soil conditions and its ability for infiltration. A much larger storm water detention system became necessary due to slow infiltration and to meet MS4 requirements, which resulted in a much higher cost than the original design anticipated. Other design changes included the replacement of an existing block wall that was failing and the addition of a new fire station alerting system that are necessary improvements but were unexpected. Additionally, costs associated with special inspections and material testing were much higher than anticipated and include soils testing, materials testing, inspection of all welding, and special observations. The proposed appropriation will allow the Fire Station to be completed and certified.

FISCAL IMPACT:

A budget appropriation of $120,000 from the General Fund balance to CIP 92002 is recommended to cover the remaining expenses for the project, thereby increasing the total project budget to $5,676,100.

Respectfully prepared & submitted by:

Frank A. Lopez
Director of Public Works /
City Engineer

Reviewed by:

Martha Garcia
Management Services Director

Reviewed by:

Matt Hallock
Fire Chief

Reviewed by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Public Hearing
Agenda Item 4A

TO: The Honorable Mayor and City Council

FROM: Jon Turner, Acting City Planner

SUBJECT: Continuation of Public Hearing regarding the Monterey Park Geologic Hazard Abatement District ("MPK GHAD")

RECOMMENDATION:

It is recommended that the City Council consider:

1. Continuing the public hearing noticed for August 18, 2021 to September 15, 2021; and
2. Taking such additional, related action that may be desirable.

EXECUTIVE SUMMARY:

Please see Agenda Item No. 5A for additional information.

Respectfully prepared and submitted by:

Jon Turner, PE
Acting City Planner

Approved by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

City Council Staff Report

DATE: August 18, 2021

AGENDA ITEM NO: Public Hearing
Agenda Item 4B

TO: The Honorable Mayor and City Council

FROM: Frank A. Lopez, Director of Public Works /City Engineer/City Planner

SUBJECT: Continuation of Public Hearing regarding Modifying Precise Plan (PP-14-02) Conditions of Approval for a hotel located at 555 N. Atlantic Boulevard.

RECOMMENDATION:
It is recommended that the City Council consider:

1. Continuing the public hearing noticed for August 18, 2021 to a future date;
2. Taking such additional, related, action that may be desirable.

EXECUTIVE SUMMARY:
The Applicant seeks to modify its Precise Plan ("PP-14-02") for the Courtyard at Marriott hotel. Specifically, the application seeks to amend Conditions of Approval Nos. 37 and No. 39 of Planning Commission Resolution No. 06-15. At this time, staff is requesting that the item be continued to a future date. The item will be readvertised with the appropriate public notice at such time a future public hearing is scheduled.

Respectfully submitted by:

Frank A. Lopez,
Director of Public Works /City Engineer/City Planner

Prepared by:

Jason Moquin,
Planning Manager

Reviewed by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: Publice Hearing Agenda Item 4C

TO: The Honorable Mayor and City Council

FROM: Frank A. Lopez, Director of Public Works /City Engineer/City Planner

SUBJECT: Resolution Modifying Conditional Use Permit (CU-19-13) as to Business Hours for Operating a Retail Eating Establishment located at 1970 South Atlantic Boulevard.

RECOMMENDATION:

It is recommended that the City Council consider:

1. Opening the public hearing;
2. Receiving documentary and testimonial evidence;
3. Closing the public hearing;
4. Adopting a Resolution to modify Resolution No. 12194 as to business hours; and
5. Taking such additional, related, action that may be desirable.

CEQA (California Environmental Quality Act):

The Environmental Assessment set forth in Section 2 of Resolution No. 12194 is incorporated by reference. The proposed modification does not affect that Environmental Assessment.

EXECUTIVE SUMMARY:

The Applicant seeks to modify the conditional use permit ("CU-19-13") approved on May 12, 2020, for the operation of a new retail eating establishment with a drive-through. Specifically, the modification seeks to amend Condition of Approval No. 11 of Resolution No. 12194 to change the hours of operation from Monday through Sunday 9:00 a.m. to 10:00 p.m. to Monday through Sunday 9:00 a.m. to 1:00 a.m. There are no other changes proposed with this request.

BACKGROUND AND ANALYSIS:

CU-19-13 was approved on May 12, 2020 and allows for operation of a new retail eating establishment with a drive-through (Raising Cane's restaurant). At the time of approval and in response to public testimony, the City Council only allowed business hours to be Monday through Sunday from 9:00 a.m. to 10:00 p.m. This differed from Raising Cane's original request to be open until 1:00 a.m.

The previous objections by members of the public were resolved by Raising Canes and are now withdrawn. Consequently, the applicant is seeking approval for the originally requested hours of operation, Monday through Sunday 9:00 a.m. to 1:00 a.m. Surrounding uses – all of which are substantially similar to Raising Cane's – operate under similar business hours.

Consequently, it seems appropriate to grant the request and modify CU-19-13.

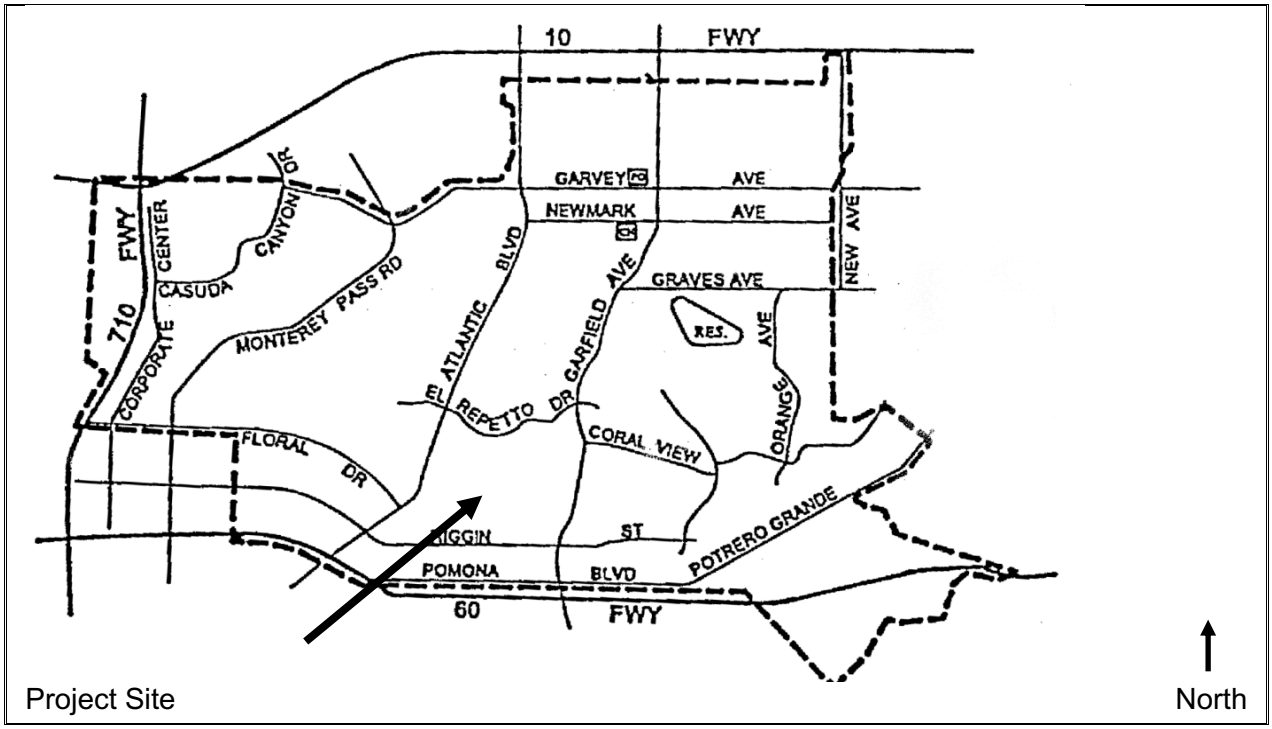
LEGAL NOTIFICATION

The legal notice of this hearing was published in the Monterey Park Progress and posted at City Hall, Monterey Park Bruggemeyer Library, and Langley Center on **August 5, 2021,** with affidavits of posting on file. The legal notice of this hearing was mailed to 104 property owners within a 300 feet radius and current tenants of the property concerned on **August 5, 2021**.

FISCAL IMPACT:

There is no fiscal impact associated with this action.

Vicinity Map



Aerial Map



Respectfully submitted by:

Frank A. Lopez,
Director of Public Works /City Engineer/City Planner

Prepared by:

Jason Moquin,
Planning Manager

Reviewed by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

Attachments:

1. Resolution Modifying Conditional Use Permit (CU-19-13)
2. Resolution 12194 Adopted May 12, 2020, approving CU-19-13
3. Casillas Non-Opposition Letter, dated April 27, 2021

ATTACHMENT 1
Draft Resolution

RESOLUTION NO.

A RESOLUTION MODIFYING CONDITIONAL USE PERMIT (CU-19-13) AS TO BUSINESS HOURS FOR OPERATING A RETAIL EATING ESTABLISHMENT WITH A DRIVE-THROUGH LOCATED AT 1970 SOUTH ATLANTIC BOULEVARD.

The City Council of the City of Monterey Park does resolve as follows:

SECTION 1: The City Council finds and declares that:

A. On July 22, 2020, Kristen Roberts on behalf of Raising Cane's ("Applicant") submitted an application, pursuant to Monterey Park Municipal Code ("MPMC") § 21.32.020 seeking to modify the business hours approved via a conditional use permit (CU-19-13) for a retail eating establishment with a drive-through located at 1970 South Atlantic Boulevard ("Project");

B. The Project was reviewed by the City Planner for, in part, consistency with the General Plan and conformity with the Monterey Park Municipal Code ("MPMC");

C. In addition, the City reviewed the Project's environmental impacts under the California Environmental Quality Act (Public Resources Code §§ 21000, *et seq*., "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, *et seq*., the "CEQA Guidelines");

D. The City Planner completed review and scheduled a public hearing regarding the Project before the City Council for August 18, 2021. Notice of the public hearing was posted and mailed as required by the MPMC;

E. On August 18, 2021, the City Council opened the public hearing to receive public testimony and other evidence regarding the proposed Project including, without limitation, information provided to the City Council by City staff and public testimony, and representatives of the Applicant; and

F. This Resolution and its findings are made based upon the testimony and evidence presented to the Council at its August 18, 2021 public hearing including, without limitation, the staff report submitted by the City Planner.

SECTION 2: *Planning Agency*. Pursuant to MPMC § 2.56.020(D), the City Council will act as the Monterey Park Planning Agency for purposes of this Resolution.

SECTION 3: *Factual Findings and Conclusions.* The factual findings and conclusions set forth in Section 2 of Resolution No. 12194, adopted on September 2, 2020, for CU-19-13 are incorporated by reference.

SECTION 4: *Environmental Assessment.* The Environmental Assessment set forth in Section 2 of Resolution No. 12194 is incorporated by reference. The modification approved by this Resolution does not affect that Environmental Assessment.

SECTION 5: *Conditional Use Permit Findings.* Unless otherwise provided below, the Conditional Use Permit Findings set forth in Section of Resolution No. 12194 are incorporated by reference. For the modification to business hours, the City Council finds as follows:

A. Resolution No. 12194 changed Condition No. 11 of the Conditions of Approval approved by Planning Commission Resolution No. 01-20, as adopted on May 12, 2020 which regulates business hours for the retail restaurant;

B. As noted in the record, the City Council made that modification in response to public testimony that objected to the times of restaurant operations; and

C. The administrative record now demonstrates that all objections were withdrawn. Consequently, the City Council believes it is in the public interest to allow the retail restaurant to operate in accordance with the business hours it originally requested in 2019.

SECTION 6: *Approval.* Section 5(A) of Resolution No. 12194 is repealed. Accordingly, Condition No. 11 for CU-19-13 is modified to read as follows: “The business hours of operation will be Monday through Sunday 9:00 a.m. to 1:00 a.m.” There are no other changes to Resolution No. 12194.

SECTION 7: *Reliance on Record*. Each and every one of the findings and determinations in this Resolution are based on the competent and substantial evidence, both oral and written, contained in the entire record relating to the project. The findings and determinations constitute the independent findings and determinations of the City Council in all respects and are fully and completely supported by substantial evidence in the record as a whole.

SECTION 8: *Limitations*. The City Council’s analysis and evaluation of the project is based on the best information currently available. It is inevitable that in evaluating a project that absolute and perfect knowledge of all possible aspects of the project will not exist. One of the major limitations on analysis of the project is the City Council’s lack of knowledge of future events. In all instances, best efforts have been made to form accurate assumptions. Somewhat related to this are the limitations on the City's ability to solve what are in effect regional, state, and national problems and issues. The City must work within the political framework within which it exists and with the limitations inherent in that framework.

SECTION 9: *Summaries of Information.* All summaries of information in the findings, which precede this section, are based on the substantial evidence in the record. The absence of any particular fact from any such summary is not an indication that a particular finding is not

based in part on that fact.

SECTION 10: *Severability*. If any part of this Resolution or its application is deemed invalid by a court of competent jurisdiction, the City Council intends that such invalidity will not affect the effectiveness of the remaining provision or application and, to this end, the provisions of this Resolution are severable.

SECTION 11: *Electronic Signatures*. This Resolution may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 12: *Recordation.* The Mayor, or presiding officer, is authorized to sign this Resolution signifying its adoption by the City Council of the City of Monterey Park and the City Clerk, or his duly appointed deputy, may attest thereto.

SECTION 13: *Effective Date.* This Resolution will become effective immediately upon adoption and will remain effective unless repealed or superseded.

PASSED AND ADOPTED this 18th day of August, 2021

_____
Yvonne Yiu, Mayor

Attest:

_____
Vincent D. Chang, City Clerk

Approved as to Form:

_____
Karl H. Berger, City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF MONTEREY PARK)

I, VINCENT D. CHANG, City Clerk of the City of Monterey Park, California, do hereby certify that the foregoing Resolution No. _____ was duly adopted by the City Council of the City of Monterey Park at a Regular Meeting held on the 18th day of August 2021, by the following vote of the Council:

AYES:
NOES:
ABSTAIN:
ABSENT:

Dated this 18th day of August 2021

_____
Vincent D. Chang, City Clerk

ATTACHMENT 2
Resolution 12194 Adopting CU-19-13

RESOLUTION NO. 12194

A RESOLUTION DENYING AN APPEAL (AP-20-01) AND UPHOLDING PLANNING COMMISSION RESOLUTION NO. 01-20 APPROVING CONDITIONAL USE PERMIT (CUP-19-13) ALLOWING CONSTRUCTION OF A NEW RETAIL EATING ESTABLISHMENT WITH A DRIVE-THROUGH AT 1970 SOUTH ATLANTIC BOULEVARD.

The City Council of the City of Monterey Park does resolve as follows:

SECTION 1: The City Council finds as follows:

A. On May 12, 2020, the Planning Commission adopted Resolution No. 01-20 (the "PC Resolution") approving a conditional use permit ("CUP") allowing construction of a new retail eating establishment with a drive-through at 1970 South Atlantic Boulevard (the "Project");

B. The Appellants, Mr. Rafael Casillas and Mrs. Gina Casillas (the "Appellants"), timely appealed the PC Resolution to the City Council in accordance with the Monterey Park Municipal Code ("MPMC") on May 22, 2020 (the "Appeal");

C. The Appeal was scheduled for a public hearing on July 1, 2020; it was continued until September 2, 2020; and

D. On September 2, 2020, the City Council opened a public hearing and took testimonial and documentary evidence regarding the Appeal.

SECTION 2: *Incorporation by Reference*. Except as set forth in this Resolution, all of the findings, conclusions, and determinations in the PC Resolution are incorporated by reference including, without limitation, Sections 2, 3, and 4.

SECTION 3: *Additional Factual findings and Conclusions*. Based upon the entire administrative record and the evidence provided during the public hearing, the City Council makes the additional findings and conclusions:

A. The Appeal includes a "Statement of Circumstances" that asserts the PC Resolution was improperly adopted. In brief, the following are the substantive shortcomings alleged by the Appeal:

1. The Project requires additional environmental review under the California Environmental Quality Act ("CEQA"). Specifically, the Appeal alleges that the Project may have a significant impact on traffic, land use, noise, air quality, hazardous substances, cumulative impacts, and water quality.

2. The PC Resolution was adopted during an "illegal" public hearing on May 12, 2020 that was held after an initial public hearing on March 10, 2020.

3. Because the Project does not meet zoning regulations as to set-backs, the PC Resolution should not have been adopted.

B. The administrative record demonstrates that there is substantial evidence supporting:

1. The CEQA determination that the Project is categorically exempt. Among other things, the supplemental evidence submitted into the record since the Appeal was filed shows that the Project will not significantly impact current conditions. As to noise, Condition Nos. 12 and 48 were imposed upon the Project to help protect public health and safety. Nothing in the record demonstrates that these Conditions will be insufficient to protect the public. Also in the record is substantive evidence demonstrating that the alleged hazardous substances on the Project site were mitigated before the Applicant filed an application for a CUP; that the Project location and use is consistent with the existing zoning; and that both air and water quality were properly considered.

2. As for land use, Condition No. 6 of the PC Resolution requires that the Project comply with applicable set-back requirements before the City issues a certificate of occupancy. The 2020 Monterey Park Business Recovery Program authorizes the City Planner to issue administrative use permits ("AUP") that:

> "Approve drive-through plans submitted by applicants where the underlying zoning allows for such uses. Those plans must be prepared by a design professional (e.g., a traffic engineer or architect). **A drive-through plan may provide for setbacks that differ from the underlying zone if needed to accommodate vehicle queuing to help avoid stacking of vehicles onto public roads**." (*see* BRP2AUP.010(E) as adopted by Ordinance Nos. 2184 and 2185; emphasis added).

3. Based upon the 2020 Monterey Park Business Recovery Program, Condition No. 6 of the PC Resolution will be satisfied if the City Planner issues an AUP for the Project.

C. The May 12, 2020 public hearing held by the Planning Commission was proper for all of the reasons set forth in the administrative record. Among other things, as is explained in both the May 12th Planning Commission staff report and the City Council staff report regarding this Appeal, the City Council (via Resolution No. 12164, adopted June 3, 2020) ratified the City

Manager's order to extend deadlines for application review, automatic approvals, and appeal deadlines, for all land use, subdivision and zoning applications effective March 11, 2020. Such action was taken in response to the ongoing COVID-19 Pandemic for the reasons set forth in the record (e.g., cancellation of all public meetings; prohibition on mass gatherings; and closure of all public facilities). Notably, the Appellants participated in the May 12, 2020 Planning Commission public hearing; timely filed the Appeal with the City Council; submitted materials for the scheduled July 1, 2020 public hearing; and participated in the September 2, 2020 public hearing. Their active participation in the City's public hearings waives their allegations regarding improper public hearings and violations of due process.

SECTION 4: *Determination.* Based upon the Findings and Conclusions set forth in Sections 2 and 3, the City Council renders the following determinations:

A. There is no substantive evidence in the record supporting the Appeal. The PC Resolution was properly adopted based upon the evidence before the Planning Commission on May 12, 2020.

B. The City Council denies the Appeal and upholds the PC Resolution for the reasons set forth in this Resolution.

SECTION 5: *Conditions of Approval*.

A. Condition No. 11 of the Conditions of Approval in the PC Resolution is amended to read "The business hours of operation will be from 9:00 a.m. to 10:00 p.m. Monday through Sunday."

B. A new Condition No. 49 is added to the PC Resolution to read as follows: "This CUP must be reviewed by the Planning Commission not later than six months after operations commence at the Project to ensure compliance with the CUP."

SECTION 6: *Reliance on Record*. Each of the findings and determinations in this Resolution are based on the competent and substantial evidence, both oral and written, contained in the entire record relating to the Project. The findings and determinations constitute the independent findings and determinations of the City Council in all respects and are fully and completely supported by substantial evidence in the record as a whole.

SECTION 7: *Summaries of Information*. All summaries of information in the findings which precede this section, are based on the substantial evidence in the record. The absence of any particular fact from any such summary is not an indication that a particular finding, is not based in part on that fact.

SECTION 8: *Notice*. The City Clerk is directed to provide a copy of this Resolution to the Appellant, Applicant, and to any other person requesting a copy.

SECTION 9: *Electronic Signatures*. This Resolution may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 10: *Effective Date*. This Resolution becomes effective immediately upon adoption and memorializes the City Council's final decision made on September 2, 2020. Persons dissatisfied with the City Council's decision may appeal it in accordance with applicable law to the Los Angeles Superior Court within 90 days of the City Council's decision.

PASSED, ADOPTED AND APPROVED this 2nd day of September 2020.

Peter Chan, Mayor

ATTEST:

Vincent D. Chang, City Clerk

APPROVED AS TO FORM:

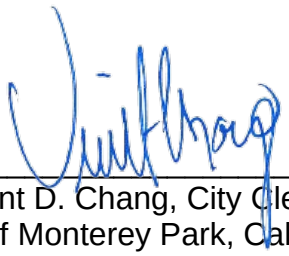
Karl H. Berger, City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) §
CITY OF MONTEREY PARK)

I, Vincent D. Chang, City Clerk of the City of Monterey Park, California, do hereby certify that the foregoing Resolution No. 12194 was duly adopted by the City Council of the City of Monterey Park at a regular meeting held on the 2nd day of September, 2020, by the following vote:

Ayes	Council Members:	Liang, Sornoso, Lo, Yiu, Chan
Noes:	Council Members:	None
Abstain:	Council Members:	None
Absent:	Council Members:	None

Dated this 2nd day of September, 2020.



Vincent D. Chang, City Clerk
City of Monterey Park, California

ATTACHMENT 3
Casillas Non-Opposition Letter

Via E-Mail and U.S. Mail April 27, 2021

Honorable Mayor and Members of the City Council
City of Monterey Park
320 West Newmark Avenue
Monterey Park, CA 91754

Subject: Non-Opposition to Raising Cane's CUP-19-13 Modification to Restore Business Hours of Operation to 9:00 A.M. to 1:00 A.M. Monday through Sunday and for the Administrative Use Permit solely for the drive-through aisles and parking stall setbacks

Dear Honorable Mayor and Members of the City Council,

We are the owners and residents of the property located at 1937 S. Bradshawe Avenue in the City of Monterey Park.

We are advised that Raising Cane's Restaurants, L.L.C. has or shortly will file applications with the City of Monterey Park related to the above-referenced CUP. It is our understanding that Raising Cane's will file: (1) a CUP Modification application to change the business hours of operation, for the restaurant and drive-through at 1970 South Atlantic Boulevard, to 9:00 a.m. to 1:00 a.m. Monday through Sunday and (2) an Administrative Use Permit application to approve the Project's drive-through aisles and parking areas setbacks illustrated on the Project's Site Plan approved by the City on May 12, 2020, as contemplated by Condition of Approval No. 6 for the Project ("AUP Application").

We have no objection to the CUP modification application which will make only one request to modify the Project Approval—as approved by the City Planning Commission on May 12, 2020 and as modified by the City Council on September 2, 2020—and that is to modify the business hours of operation to 9:00 a.m.to 1:00 a.m. Monday through Sunday. We have no objection to the AUP Application which is directed solely to the drive aisle and parking area setbacks, as described above.

Thank you for your attention.

Rafael Casillas, Gina Casillas

Rafael and Gina Casillas

City Council Staff Report

DATE: August 18, 2021
AGENDA ITEM NO: New Business
Agenda Item 5A

TO: The Honorable Mayor and City Council

FROM: Jon Turner, Acting City Planner

SUBJECT: Monterey Park Geologic Hazard Abatement District ("MPK GHAD")

RECOMMENDATION:

It is recommended that the City Council consider:

1. Adopting a Resolution initiating formation of the Monterey Park Geologic Hazard Abatement District ("MPK GHAD") and scheduling a public hearing regarding such formation;
2. Continuing the public hearing noticed for August 18, 2021 to September 15, 2021 in accordance with the draft Resolution; and
3. Taking such additional, related action that may be desirable.

CEQA (California Environmental Quality Act):

Formation of the proposed MPK GHAD was reviewed pursuant to the California Environmental Quality Act (Public Resources Code §§ 21000, *et seq*.; "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, *et seq*.; the "CEQA Guidelines"). Forming the MPK GHAD is exempt from further environmental review because it establishes rules and procedures for operation of existing facilities; minor temporary use of land; minor alterations in land use; new construction of small structures; and minor structures accessory to existing commercial facilities. This action, therefore, is categorically exempt from further CEQA review under CEQA Guidelines §§ 15301; 15303, 15304(e); 15305; and 15311. Further, forming the MPK GHAD is also exempt from review under CEQA pursuant to CEQA Guidelines § 15061(b)(3) because this Resolution is for establishing a new public entity. It can be seen with certainty that there is no possibility that formation of the MPK GHAD may have a significant effect on the environment. Individual projects considered by the MPK GHAD will each be separately subject to an environmental assessment. Finally, forming the MPK GHAD is exempt from further review pursuant to CEQA Guidelines § 15269(a) because forming the MPK GHAD is an action taken to protect public and private property and necessary to maintain services essential to the public, health and welfare (*see Ca/Beach Advocates v. City of Solana Beach* (2002) 103 Cal.App.4th 529: CEQA findings regarding an anticipated imminent emergency are valid).

EXECUTIVE SUMMARY

Formation of the MPK GHAD will help ensure that the hillside improvements required for the Good Views development project are constructed, maintained, and repaired at the cost of property owners located within the MPK GHAD jurisdiction.

BACKGROUND

Geologic Hazard Abatement Districts or GHADS are formed for the purpose of preventing, mitigating, abating or controlling geologic hazards and the structural hazards caused by geologic hazards. A geologic hazard is an actual or threatened landslide, land subsidence, soil erosion, earthquake, fault movement or any other natural or unnatural movement of land or earth. The condition of the hillsides adjacent to Garvey Avenue, and the ongoing efforts by the City to mitigate the dangers associated with those hillsides, is well documented.

Attached to the proposed Resolution is a Plan of Control that was prepared by Geosyntec Consultants and was reviewed by City staff. The Plan describes in detail the geologic hazards, their location, and provides a plan for the prevention, mitigation, abatement and control thereof. The MPK GHAD will also perform maintenance of water control and conveyance facilities in open space areas and may assume other peripherally related responsibilities in GHAD owned areas such as erosion control, retaining wall maintenance, mowing, trail maintenance, etc. The specific duties and responsibilities of the proposed GHAD are explained in greater detail in the attached Plan.

The City Council will serve as the Board of Directors for the proposed MPK GAHD, but the GHAD will be a separate political subdivision of the State of California and not part of the City of Monterey Park. The GHAD will finance the costs of its activities and improvements by assessing the landowners that own property within the MPK GHAD Boundary. The amount of the assessment will not be determined until after the GHAD is formed. The assessment will be recorded against the properties to ensure that future owners are aware of the existence of the GHAD and of the corresponding financial obligation.

In order to form a GHAD, California law requires that the City Council adopt a resolution initiating the formation of the MPK GHAD and setting the date for a public hearing to consider its formation. If the Council adopts the Resolution, notice of the public objection hearing will be sent to each property owner within the proposed MPK GHAD. Any property owner that objects to the formation of the GHAD can submit a written objection to the City Clerk any time before the public hearing and the objections will be presented to the Council at the hearing. If owners from more than 50% of the assessed valuation of the land in the proposed GHAD object to the formation, the City Council may not form the district under California law. If less than 50% submit objections, then the Council can move forward and form the GHAD at that time.

FISCAL IMPACT

There is no fiscal impact for the City. The developer of the Good Views development is required to reimburse the City for all costs associated with forming the MPK GHAD.

Respectfully prepared and submitted by:

Jon Turner, PE
Acting City Planner

Reviewed by:

Martha Garcia
Director of Management Services

Approved by:

Ron Bow
City Manager

Reviewed by:

Karl H. Berger
City Attorney

ATTACHMENT

1. Draft Resolution Initiating Formation of the GHAD

ATTACHMENT 1
Draft Resolution

RESOLUTION NO. ____

A RESOLUTION INITIATING FORMATION OF THE MONTEREY PARK GEOLOGICAL HAZARD ABATEMENT DISTRICT (MPK GHAD) AND SETTING A PUBLIC HEARING TO CONSIDER OBJECTIONS TO FORMATION OF THE MPK GHAD.

The City Council of the City of Monterey Park does resolve as follows:

SECTION 1: The City Council finds and declares as follows:

A. This Resolution is adopted pursuant to Public Resources Code § 26558 for the purpose of establishing the Monterey Park Geological Hazard Abatement District ("MPK GHAD").

B. The City Council was presented with the Plan of Control attached as Exhibit "A," and incorporated by reference (the "Plan"). After reviewing the Plan, the City Council finds that the condition of real property located adjacent to 1688 West Garvey and identified within the Plan as the "Good Views" property (the "MPK GHAD Boundary") requires formation of the MPK GHAD to protect public health, safety, and welfare.

C. The City Council intends to create the MPK GHAD to prevent, mitigate, abate and control geologic hazards including, without limitation landslides, land subsidence, soil erosion and similar geologic hazards within its boundaries.

D. In adopting this Resolution, the City Council takes specific note of the historical geologic instability and public nuisances present on the MPK GHAD Boundary.

SECTION 2: *Intent to Form.* The City Council of the City of Monterey Park reviewed the Plan and intends to form the MPK GHAD to protect public health, safety and welfare. The MPK GHAD's proposed jurisdiction is more specifically identified in attached Exhibit "B," and incorporated by reference, and identified in Section 1 as the "MPK GHAD Boundary."

SECTION 3: *Public Hearing.* A public hearing to consider objections to the formation of the MPK GHAD will be held on Wednesday, September 15, 2021, at 6:30 p.m., or as soon thereafter as possible, at the City Council meeting.

SECTION 4: *Notices.* The City Clerk is directed to mail notice of the hearing to each real property owner within the proposed MPK GHAD Boundary at least 20 days before the hearing in substantially the form attached as Exhibit "C." The notice must include the date, time and place of the hearing, a copy of this

Resolution and must indicate that the Plan may be reviewed or copied at Monterey Park City Hall, City Clerk's Office. The notice must briefly describe the purpose of the objection hearing and indicate that objections to formation of the MPK GHAD may be mailed or otherwise delivered, to the City Clerk up to the time of the hearing.

SECTION 5: *Objections.* Any real property owner within the proposed MPK GHAD Boundary may make a written objection to its formation up to Wednesday, September 15, 2021, at 6:30 p.m., the time set for the public objection hearing. Objections must be in writing, contain a description of the objector's land by lot, tract, and map number, and must be signed by the objector. If the person whose signature appears on the objection is not shown on the assessment roll last equalized by the county as the owner of the subject real property, the written objection must be accompanied by evidence indicating that the objector is the owner of the property.

SECTION 6: *Environmental Assessment.* Formation of the proposed MPK GHAD was reviewed pursuant to the California Environmental Quality Act (Public Resources Code §§ 21000, *et seq*.; "CEQA") and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, et seq.; the "CEQA Guidelines"). Forming the MPK GHAD is exempt from further environmental review because it establishes rules and procedures for operation of existing facilities; minor temporary use of land; minor alterations in land use; new construction of small structures; and minor structures accessory to existing commercial facilities. This action, therefore, is categorically exempt from further CEQA review under CEQA Guidelines §§ 15301; 15303, 15304(e); 15305; and 15311. Further, forming the MPK GHAD is also exempt from review under CEQA pursuant to CEQA Guidelines § 15061(b)(3) because this Resolution is for establishing a new public entity. It can be seen with certainty that there is no possibility that formation of the MPK GHAD may have a significant effect on the environment. Individual projects considered by the MPK GHAD will each be separately subject to an environmental assessment. Finally, forming the MPK GHAD is exempt from further review pursuant to CEQA Guidelines § 15269(a) because forming the MPK GHAD is an action taken to protect public and private property and necessary to maintain services essential to the public, health and welfare (*see Ca/Beach Advocates v. City of Solana Beach (2002) 103 Cal.App.4th 529*: CEQA findings regarding an anticipated imminent emergency are valid).

SECTION 7: *Electronic Signatures.* Pursuant to Monterey Park Municipal Code § 3.95.020, this Resolution may be executed with electronic signatures in accordance with Government Code §16.5. Such electronic signatures will be treated in all respects as having the same effect as an original signature.

SECTION 8: The City Clerk is directed to certify the adoption of this Resolution.

SECTION 9: This Resolution becomes effective immediately upon adoption.

PASSED, APPROVED AND ADOPTED this __ day of ____ 2021.

Yvonne Yiu, Mayor

ATTEST:

Vincent D. Chang, City Clerk

APPROVED AS TO FORM:

Karl H. Berger, City Attorney

EXHIBIT A

Plan of Control

Geosyntec consultants

2355 Northside Drive, Suite 250
San Diego, CA 92108
PH 619-297-1530
www.geosyntec.com

11 August 2021

Mr. Jon Turner
Phoenix Civil Engineering, Inc.
535 E. Main Street
Sant Paula, California 93060

Subject: **Plan of Control**
Monterey Park Geologic Hazard Abatement District
1688 West Garvey Avenue
Monterey Park, California

Dear Mr. Turner:

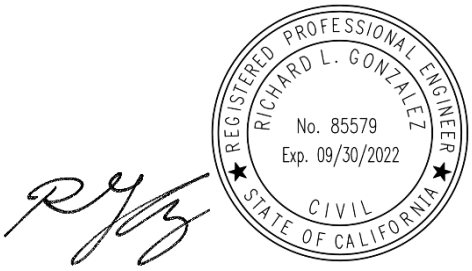
Geosyntec Consultants, Inc. (Geosyntec) respectfully presents this Plan of Control for the Monterey Park Geologic Hazard Abatement District (MPK GHAD). This Plan of Control has been prepared in accordance with Section 26509 of the Public Resources Code.

We appreciate the opportunity to work on this project. Please contact the undersigned at (619) 297-1530 if you have any questions or comments or if you need additional information.

Sincerely,



Dennis A. Kilian, C.E.G. #2672
Engineering Geologist



Richard Gonzalez, P.E. #85579
Civil Engineer

Geosyntec consultants

engineers | scientists | innovators

PLAN OF CONTROL

MONTEREY PARK GEOLOGIC HAZARD ABATEMENT DISTRICT

1688 WEST GARVEY AVENUE
CITY OF MONTEREY PARK, CALIFORNIA

Prepared for

Phoenix Civil Engineering, Inc.
535 E. Main Street
Santa Paula, CA 93060

Prepared by

Geosyntec Consultants, Inc.
2355 Northside Drive, Suite 250
San Diego, California 92108

Project Number: SC0982A

August 11, 2021

TABLE OF CONTENTS

1. AUTHORITY AND SCOPE 1
Property Identification 1
2. BACKGROUND 1
3. PROPOSED DEVELOPMENT 4
Plan B2 Site Slope Restoration 4
Proposed Residential Development 5
Slope Area and Areas Outside the GHAD Boundary 5
4. SITE GEOLOGY 6
Geologic and Geomorphic Setting 6
Geologic Units 7
Surficial Units 7
Bedrock Units 11
Geologic Structure 11
Groundwater 12
5. GEOLOGIC HAZARDS 13
Slope Instability 13
Seismically Induced Landsliding 13
Mass Movement 13
Soil Creep 15
Erosion 15
Expansive Soils 16
Seismic Hazards 16
Surface Fault Rupture 16
6. CRITERIA FOR GHAD RESPONSIBILITY 17
Prevention, Mitigation, Abatement and/or Control of Geologic Hazards 17
Exceptions 17
Isolated or Remote Slope Instability 17
Single Property 17
Geologic Hazards Resulting from Negligence of Property Owner 18
Property Not Accepted 18
Geologic Hazard Which Requires Expenditure in Amount Exceeding the Value of the Threatened or Damaged Improvement 18

7. ACCEPTANCE 19
Activation of Assessment 19
Responsibility for GHAD Activities 19
8. GHAD MAINTENANCE AND MONITORING RESPONSIBILITIES 20
Geotechnical Techniques for Mitigation of Landslide and Erosion Hazards 21
9. PRIORITY OF GHAD EXPENDITURES 22
10. MAINTENANCE AND MONITORING SCHEDULE 23
11. RIGHT OF ENTRY 26
12. MISCELLANEOUS PROVISIONS 26
13. REFERENCES 27

LIST OF FIGURES

Figure 1: Site Location
Figure 2: GHAD Boundary Map
Figure 3: Site Map
Figure 4: Slope Failure Map (AGS, 2020)

LIST OF EXHIBITS

Exhibit A: Legal Parcel Description

LIST OF APPENDICES

Appendix A: Advanced Geotechnical Solutions 2020 Geotechnical Report
Appendix B: Advanced Geotechnical Solutions Response to City of Monterey Park Third Party Review Comments (2020)
Appendix C: CDS Maintenance Guide
Appendix D: Flogard Catch Basin Filter Inspection and Maintenance Guide

1. AUTHORITY AND SCOPE

The Monterey Park Geologic Hazard Abatement District ("MPK GHAD" or "District") is proposed to be formed under authority of Public Resources Code §§ 26500, *et seq.*

Section 26509 of the Public Resources Code requires a Plan of Control, prepared by a State-Certified Engineering Geologist, as a prerequisite to formation of a GHAD. Pursuant to Section 26509, this Plan of Control was prepared by an Engineering Geologist certified pursuant to Section 7822 of the Business and Professions Code and describes, in detail, the geologic hazards, their location, and the areas affected by them. It also provides a plan for the prevention, mitigation, abatement, or control thereof.

As used in this Plan of Control, and as provided in Section 26507, "geologic hazard" means an actual or threatened landslide, land subsidence, soil erosion, earthquake, fault movement, or any other natural or unnatural movement of land or earth.

Property Identification

The MPK GHAD location is shown on Figure 1. The MPK GHAD boundary is shown on Figure 2 and incorporated by reference. The legal parcel description of the land to be included within the MPK GHAD is defined by the Assessor's Parcel Number (APN) and is included in Exhibit A.

2. BACKGROUND

The following section is a summary of the site background as described by Advanced Geotechnical Solutions (AGS) in the 2020 geotechnical report related to the parcel geotechnical remediation recommendations. The initial MPK GHAD jurisdiction includes the property described herein which has been referred to as the "Goodviews" property. The MPK GHAD will provide for the prevention, mitigation, abatement, and control of geologic hazards including earth movements that could impact this development.

The approximately 6-acre site is located in the 1600 block of West Garvey Avenue in Monterey Park, west of Abajo Drive (Figure 1). The site borders the southern side of West Garvey Avenue and continues up the northern slope of an existing ridge. The southerly property line is located mid-slope with the ascending slope continuing to the adjacent residential development off of Sombrero Drive (Tract 24666). Abajo Drive is located east of the site, and a small separate parcel ("triangle" piece) is located between the site and corner of Abajo Drive and West Garvey Avenue (Figure 1). A City of Monterey Park slope easement is located near the southeasterly corner, presumably to allow for the construction of Abajo Drive and the cut slopes and retaining walls that were needed above the roadway.

The site was graded in 1978 to 1979 to accommodate 31 single family residential building pads. 1.5 horizontal to 1 vertical, (1.5H:1V) cut and fill slopes were constructed along with several retaining walls. A private road ("Goodview Drive") was constructed to access the pads, located on both sides of the road. The upper portion of Goodview Drive ends at a cul-de-sac with residential building pads surrounding the road. Numerous retaining walls and foundations were constructed for the residential structures. Two cantilever retaining walls are also present, one adjacent to Goodview Drive near the site entrance, which is up to approximately 8 feet in height, and another along a portion of the eastern property line, starting from West Garvey Avenue and continuing up the slope, straddling the property line. Two approximately 15-foot high crib walls were also constructed, although portions of these walls have since failed. A 5-foot high cantilever retaining wall is also present along West Garvey Avenue, and is located just outside the property line. Another cantilever retaining wall, up to roughly 12 feet high, is located mostly offsite along Abajo Drive, although a small portion is located within the site. A series of 24 piles, starting from 40 feet west of Garvey Avenue and extending to the west for 205 feet, have been constructed immediately behind a portion of this wall to reinforce the wall after slope failures occurred above

this wall circa 2005. A small portion of this wall was raised above the v-gutter, although the raised portion is not retaining soil and may have been an add-on to increase the capacity of the v-gutter at the top of the wall.

The original proposed development was abandoned prior to constructing the above ground portions of the residential structures. Numerous slope failures and settlements have occurred in the interim. The existing asphalt paved Goodview Drive is distressed with abundant cracks and shows signs of significant settlement in addition to lateral slope movement. In an effort to minimize the continued effects of the failing slopes and walls, an impact wall was constructed along a portion of West Garvey Avenue to protect the street from falling debris from the site, including mudflows and crib wall members. Up to roughly 15 feet of debris and soil have accumulated behind this wall. Short batter board walls and concrete v-ditches were constructed on the slope above Abajo Drive. Shotcrete was also placed along a portion of the slope below the easterly property line retaining wall within the offsite "triangle" parcel. Currently, numerous erosion control measures are present onsite, including plastic sheeting covering the slope, straw waddles, sandbags, and stormwater drainage pipes.

Slopes ascending above the site to the west-southwest are heavily vegetated. Above Abajo Drive, the ascending slope is covered with varying amounts of vegetation ranging from moderate growths of chaparral to seasonal grasses. Vegetation is largely devoid in the plastic covered areas of the site above West Garvey Avenue. Some trees and bushes are present onsite along West Garvey Avenue.

Elevations of the site range from roughly 495 feet above mean sea level (msl) near the northeast corner of the site above West Garvey Avenue up to approximately 650 feet msl on the slope above the existing Goodview Drive cul-de-sac. Including the adjacent properties, the slope heights range from roughly 150 feet at the northwesterly end of the property (West Garvey Avenue to the residential pads off Sombrero Drive) to greater

than 220 feet (Intersection of Abajo Drive and West Garvey Avenue up to the residential pads off Sombrero Drive). The existing slope gradient above the pads average around 1.5H:1V to 2H:1V with some locally steeper and flatter areas. Outside the retaining walls, the slopes below the residential pads average around 1.5H:1V with locally steeper 1H:1V sections. Goodview Drive climbs on average of 15 percent before levelling near the cul-de-sac. Flatter portions of the site are limited to the cul-de-sac and residential pads.

3. PROPOSED DEVELOPMENT

Plan B2 Site Slope Restoration

According to the City of Monterey Park Site Slope Restoring Improvement Plan-B2 (2020), the site is anticipated to be stabilized by removing the existing failing retaining walls, vegetation, and loose soil materials; and restoring the site with a new retaining wall, permanent ground anchors, improved drainage system (v-ditches), and grading the remaining slopes to 2:1. Along Garvey Avenue, a soldier beam and lagging, anchored retaining wall ('Wall A') is proposed with a maximum height of approximately 38 feet. A 2H:1V slope is proposed above this wall with a slightly level pad area located at approximately mid- slope. An additional 2H:1V slope is planned above the level pad area that will grade into the ascending slope above. Six-foot wide terraces with a concrete v-gutter drain will be constructed every 30 vertical feet along the slope. Several rows of pressure-grouted permanent ground anchors and anchor reaction pads are proposed along the southeast portion of the site to improve the global stability of the slope. A relatively flat "pad" is proposed in the south portion of the site upslope from the ground anchors.

It is our understanding that the retaining walls within the limits of grading will be removed. This includes the pile impact wall along Garvey Avenue that was previously installed by the City of Monterey Park. Some existing retaining walls that are located

upslope of the grading limits may also need to be removed depending on conditions exposed during grading efforts. Wall B, a short retaining wall, will be constructed between Wall A and the street to retain the offsite soil. The existing Goodview Drive and underlying utilities will be removed and graded with the remainder of the site. Much of the ascending slope above Goodview Drive will remain as will the existing retaining wall located above the entrance road. Portions of the site located within the City of Monterey Park Right-of-Way for Abajo Drive will also be protected in place.

Proposed Residential Development

We understand that the future project development plan includes 16 residential building pads, an access driveway, stormwater controls, and associated improvements including utilities, however, plans for this stage of development have not been provided for review.

Slope Area and Areas Outside the GHAD Boundary

The property outside of the MPK GHAD boundary (Figure 2 and 3) will not be maintained within the structure of the MPK GHAD. However, the sloped areas within the MPK GHAD boundary are an open space amenity that benefits all of the property owners within the development. Therefore, the funding of the maintenance of the open space slope areas will be shared by all current and future property owners within the MPK GHAD's boundaries. Oversight of the actual physical maintenance responsibility for open space slope areas will pass to the MPK GHAD.

The MPK GHAD will assume responsibilities that relate to its position as agreed upon during formation of the MPK GHAD and other duties as a responsible land owner within MPK GHAD-owned open space slope areas as shown in Figure 3. The MPK GHAD is charged with responsibilities that relate to the prevention, mitigation, abatement, or control of geologic hazards, which includes the maintenance of facilities that enhance geologic as well as hydrogeologic stability, such as drainage facilities and

associated improvements. These duties may include the monitoring and maintenance of the retaining walls, ground anchors and reaction pads, and the drainage facilities which, if subject to improper care, could result in decreased slope stability, the prime concern of the MPK GHAD. As currently planned, the drainage facilities to be maintained by the MPK GHAD include catch basins, prefabricated drainage mitigation devices, concrete-lined drainage ditches, and open space storm drain facilities.

The MPK GHAD responsibilities also intend to mitigate or abate landslide or erosion hazards that could directly affect improved, developed, and accepted properties (as defined in Section 7) within the project, in accordance with Section 8. The MPK GHAD will also perform maintenance of stormwater control and conveyance facilities in open space slope areas and may assume other peripherally related open space responsibilities in MPK GHAD-owned open space areas, such as erosion control, retaining wall and ground anchor maintenance, mowing/vegetation control, and other selected maintenance associated with the open space slope areas.

4. SITE GEOLOGY

The following section is a summary of geologic conditions at the site as described by AGS (2020). This report is presented in Appendix A and AGS Response to City of Monterey Park Third Party Review Comments (2020) is attached as Appendix B to provide more detail regarding geologic conditions.

Geologic and Geomorphic Setting

Regionally, the site is located within the outer limits of the San Gabriel Valley. The San Gabriel Valley is bound on the west by the Elysian, Repetto, and San Rafael Hills, on the south by the Puente Hills, on the east by the San Jose Hills, and on the north by the San Gabriel Mountains. Specifically, the site is located within the southern slopes of the Repetto Hills. The Repetto Hills are mostly underlain with Tertiary-aged marine sedimentary bedrock, including the marine and nonmarine sedimentary rocks of the

Fernando Formation which overlie the Puente Formation. Basement rocks include Cretaceous-aged crystalline igneous rock and metamorphic rock (gneiss).

Pliocene-aged Fernando Formation underlies the subject site. Thin surficial deposits of Holocene sediments also mantle portions of the Repetto Hills. The Fernando Formation consists of conglomerate and conglomeratic sandstone, massive soft micaceous fine to medium-grained sandstone, and massive soft micaceous siltstone. Several landslides have been mapped on the steeper slopes of the Repetto Hills, mostly within the Puente Formation and soft siltstone of the Fernando Formation. One small landslide has been and a larger one below Abajo Drive to the southwest of the site have been shown on published mapping (CDMG, 1998). Figure 4, taken from the AGS (2020) report shows the approximate slope failure locations at and adjacent to the site.

No readily available documents that depict faulting within the limits of the site have been published. The nearest known active fault to the site is the Elysian Park Fault, with the surface projection of the poorly located blind thrust approximately 500 feet north of the site. The nearest known active surface fault is the Alhambra Wash fault, located approximately 2.2 miles to the east.

Geologic Units

According to the geotechnical report by AGS the geologic units at the site have been interpreted through a review of multiple geotechnical documents issued by previous consultants. The units are broken down into Surficial Units and Bedrock Units as described below.

Surficial Units

Slope Wash and Shallow Slide Debris (Qsw)

Slope wash and/or slide debris mantle portions of the site. These materials are locally derived and consist of soil mixed with vegetation, construction debris, failed foundation

pieces and crib wall members, sand bags, and/or plastic sheeting. These deposits originated from erosion and shallow surficial slides that occurred during periods of heavy rainfall. The parent materials were generally artificial fill and colluvium on the steep slopes that became saturated. These materials are generally around 1 to 2 feet thick on the slopes and approach a depth of nearly 15 feet behind the impact wall along Garvey Avenue. Generally, these materials have not been mapped owing to their limited thickness.

Artificial Fill, Undocumented (afu)

Minor amounts of undocumented artificial fill (afu) were observed in several places. These materials are locally derived and consist of locally stockpiled soil mixed with debris and vegetation. These are located on a few of the pads onsite and generally are a few feet thick. Owing to their limited thickness and lateral extents, the limits of these deposits have not been shown on the plans.

Artificial Fill, Compacted (af)

Artificial fill covers most of the developed area of the site and consist of moist to wet brown to dark brown silts and clays with fragments of bedrock and trace amounts of sand. Some organic layers and organic debris were also noted in the borings and trenches. Up to 28 feet were encountered in the exploratory excavations. However, up to 45 feet of fill may be present onsite based on the original grading plan and 1980 compaction report. Based on the density test results, this fill was reportedly placed at greater than 90 percent relative compaction (the percentage of in-situ dry density compared to maximum dry density based on ASTM D1557-70), or 95 percent immediately below the crib walls. Moistures at time of the original testing were a few percent above to several percent below optimum moisture content. Based on density testing of collected samples of the fill, Environmental Geotechnical Laboratories, Inc. (EGL, 2015) concluded that the compaction of the existing fill is currently below 90

percent relative compaction and in some cases near the surface is below 70 percent. EGL used a maximum density of 115 pcf to determine the relative compaction, and the maximum densities used to develop the relative compaction during construction varied between 112 and 116 pcf. AGS obtained a maximum density (D1557) of 110 pcf for the mixed sample collected. The densities obtained in the ring samples collected during investigations by previous consultants, indicated that the density of the fill is much lower than the densities reported by Chang (1980) in their original grading report for the site, and the moisture contents are also higher than originally reported. Much of the fill on the slope face and below Goodview Road is creep affected and portions may have moved during previous failures onsite.

Below the crib walls, some cement treated soils were encountered. These were originally placed to increase the bearing capacity of the soils below the crib walls as recommended by Soils International (1978). These have been described as being poorly mixed with chunks of cement and also laterally discontinuous.

Artificial fill is likely present behind the 5-foot tall retaining wall along Garvey Avenue and behind the Garvey Slope Retaining Wall, although documentation of the fill placement could not be located at the City, and test results for this fill were not included in the compaction report for the site.

Artificial fill is also located near the top of the slope above the site and was placed during the construction of the adjacent Tract 24666. Grading for Tract 24666 included filling in swales and constructing of several 1.5H:1V fill slopes near the top of the ridge. Documentation on the placement of this fill could not be located at the City; however, grading plans were located and could be used to identify the lateral extents of the fill placed during construction of Tract 24666.

Topsoil and/or Residual Soil (No Map Symbol)

Topsoil mantles portions of the natural slope onsite and is also buried below some of the compacted artificial fill and colluvium. Up to several feet of topsoil was encountered in the exploratory excavations. It consists of brown to dark brown silts, clayey silts and clays. The upper highly weathered zone of bedrock has been described in some of the logs as residual soil. Owing to its limited thickness, topsoil has not been mapped on the site although a foot to several feet or more mantles the areas that have been mapped as bedrock.

Colluvium (Qcol)

Colluvium mantle most of the site and surrounding slopes that are not currently covered with artificial fill or slope wash. Deeper deposits are located within some of the swales. Although previous grading on the site has reduced the thickness of colluvium on the ridge, colluvium is still present below the compacted fill on the site. Colluvium of various depths is located along the site slope. Locally, this colluvium was encountered to depths of up to 30 feet, underlying the fill. Thicknesses of up to 28 feet were observed. Colluvium was generally not mapped by AGS where its thickness at the surface was anticipated to be less than 5 feet.

The origin of these materials is not known with certainty, and there are differing opinions on the most appropriate geologic nomenclature to assign this unit. Several previous consultants have described these materials as Terrace Deposits (Hu & Associates, 1983), or ancient landslide deposits (EGL, 2015). Whereas some of the field observations may support either of these designations, AGS is of the opinion that these materials are more accurately described as colluvium derived from local materials. Broken pieces of randomly oriented siltstone and silty sandstone are embedded in a silty clay matrix. Secondary weathering of the siltstone/sandstone fragments indicates that some of this colluvium may be pre- Holocene. Potential slide surfaces were not

encountered in the exploratory excavations at the base of the colluvium although the surface and subsurface profile in portions of the site prior to development could be indicative of prior landsliding. Furthermore, the weathered bedrock was located below some of the colluvium deposits. In some cases, a gradual transition between colluvium and bedrock was described, lending further credence to describing the materials as colluvium. In some of the swales, deep colluvium may have accumulated from a series of older mudflows and other surficial failures.

Bedrock Units

Fernando Formation

Sedimentary bedrock of the Pliocene age Fernando Formation underlies the site. The Fernando Formation onsite is associated with the Repetto member, a claystone of marine origin. The bedrock onsite generally consists of thickly bedded to massive siltstone and fine-grained sandstone. Occasional thin claystone beds were locally encountered. Bedrock onsite was observed to be very highly weathered and fractured and very weak near the surface, becoming less fractured and moderately strong at depth. The upper 5 to 10 feet of bedrock was generally observed to be highly weathered, creep affected, and in some cases with an incoherent structure. A high degree of weathering and fracturing was observed in the upper 10 to 20 feet. Below 20 to 40 feet, the bedrock was generally less weathered and fracturing was confined to more limited zones.

Few outcrops were observed on the site or near the site. These outcrops were generally located above Goodview Drive where previous design cuts made during the original 1979 grading exposed some of the less weathered and more coherent bedrock.

Geologic Structure

The site geology, as interpreted from the data obtained during previous and the current investigations, is presented below. The subject site is underlain by the Repetto member of the Fernando Formation. In general, the unit is thickly bedded to massive. Bedding

attitudes within the bedrock were observed to predominantly strike in a northwesterly direction and dip towards the south at moderate to steep inclinations, which is consistent with the regional trends shown on the published geologic maps (Dibblee 1989, Yerkes and Campbell, 1997 and 2005). Thus, bedding was generally observed to dip into the east facing slope. For the southeasterly slopes, the bedding dips were steeper than the slope and generally do not "daylight". Thick deposits of colluvium mantle the slopes and swales.

Groundwater

A static groundwater level was not encountered during the previous and current exploratory work conducted on and near the site. Minor seepage was observed in URS's (2005) boring B-1 that was drilled offsite on Abajo Drive. The seepage was encountered at depths between 12 and 35 feet (elevations of between 466 and 443) although seepage was not encountered below a depth of 35 feet. Several seeps were encountered in EGL's 2014 borings. Boring No. B-3 encountered minor seepage in a fractured zone between 82 to 85 feet (elevation 486 to 483) and also within a fracture at 87 feet (elevation 481). Seepage was encountered in Boring B-4 at 76 feet (elevation 519.5) within a sandstone bed, within joints at 87 feet (elevation 508.5), and heavier seepage at 96 feet (elevation 499.5) along steeply dipping bedding planes in sandstone. Slight seepage was encountered at depths of 83 and 87 feet in AGS's BA-1 and 113 feet in BA-2.

Seepage may be encountered near the bottom of the proposed removals and on the backcuts and should be evaluated during grading. Groundwater is not expected to impact the proposed design. A phreatic surface was not used in the slope stability analysis since groundwater was not encountered and seepage was confined largely to deep bedding planes and fractures.

5. GEOLOGIC HAZARDS

The following geologic hazards were identified for the site in the previous site studies and are expected to remain to some extent after site grading has been completed.

- Slope Instability
- Expansive Soils
- Seismic Hazards

Slope Instability

Slope stability is the MPK GHAD's prime geotechnical concern at this site. Slope instability is an important consideration for hillside projects throughout the Southern California area, and this site has slope-related geotechnical issues as presented in Section 2, above. Future stability depends on numerous factors, including slope repair per the approved project drawings, changes in the occurrence of natural or artificial groundwater, surface water flow, and earthquake ground shaking.

This section describes several types of slope instability which are within the MPK GHAD's responsibility, subject to the provisions of Sections 7 and 8.

Seismically Induced Landsliding

A majority of the site is located within a State of California Seismic Hazard Zone susceptible to earthquake induced landsliding. Upon completion of the prescribed slope repair and remedial grading, the potential for seismically induced landsliding is considered low. Pseudo-static slope stability analyses prepared by AGS (2020) support this conclusion.

Mass Movement

Several relatively shallow mass movements have been observed on the site and shallow slope failures and slumps are present on the site and adjacent slopes. Several shallow slope failures have occurred since the site was graded in 1980. Most of these can be characterized as mudflows that were derived from the upper saturated topsoil,

colluvium, and fill that were triggered by heavy rainfall. Some slightly deeper landslides have occurred on the site. One of these slides occurred on the slope above Abajo Drive in 2005 (although it may have incrementally failed 2003-2007) and extended up to 100 feet vertically from Abajo Drive with a width of up to 60 feet and involved the upper 3 to 7 feet of materials on the slope face. A failure scarp is still present on the slope. URS described the slide materials as soft, very moist clay with numerous claystone fragments (URS 2005). They characterized the slide as occurring within the upper colluvium, residual soils, and upper highly weathered bedrock. The slide plane was described as a very soft, wet, clay with claystone fragments up to 1/2 –inch diameter. The significant portion of the slide failure occurred after abundant rainfall in January 2005. Outside this failure area, the slope above Abajo Drive, which is mostly offsite, is creep affected and characterized by numerous smaller failures that have deposited behind the pipe and board systems, causing most to lean and several to fail.

Failures within the fill were generally shallow, although a deeper failure occurred below proposed Lots 7 and 8. This failure occurred incrementally and has toppled portions of the two crib walls in this area. The fill above this slide is creep affected and has been subject to settlement and lateral extension as evidenced by the numerous extensional and settlement cracks located on Goodview Drive above this area. Some shallow failures within the fill and colluvium have impacted previously constructed retaining wall foundations and v-gutters. Deposits of shallow slump materials and/or colluvium are present in one swale above Goodview Drive near Cross- Sections D-D' and E-E' (AGS, 2020). Some of these deposits appear to be fairly recent and may be related to the failure of the adjacent retaining walls and v-gutters that were constructed as part of the original development.

Evidence of larger landslides or mass movements within the less weathered bedrock was not found although the deep deposits of colluvium (~30-feet deep) have been described by previous consultants as ancient landslide debris. The bedrock onsite appears to be

intact although the upper bedrock is highly weathered, fractured, and creep affected. Mass movements seem to be confined to the upper few feet of the residual/highly weathered bedrock and overlying materials including colluvium and artificial fill.

Mass Wasting and Debris Flows

Due to the remedial grading proposed for the site; including unsuitable soils removals and the construction of anchored retaining walls and soil anchors, it is our opinion that the potential for mass wasting will be mitigated to acceptable levels. Potentially unstable areas may be located above and below the MPK GHAD boundaries. There is a minor potential for debris flows to be generated on the ascending offsite slopes above the development.

Soil Creep

Soil creep is the slow, often imperceptible, deformation of slope materials under low stress levels, which normally affects the shallow portion of the slopes, but can be deep seated where a weak zone of soil or bedrock exists. It results from gravitational and seepage forces, and may be indicative of conditions favorable for landsliding. Creep can be caused by wetting and drying of clays, by solution and crystallization of salts, by the growth of roots, by burrowing animals and by down-slope movement of saturated ground.

Erosion

The MPK GHAD is also concerned with erosion and sedimentation of open space slope areas affecting developed lots or improvements, subject to the provisions of Sections 7 and 8. Erosion is defined as the process by which earth materials are loosened and removed by running water on the ground surface or in the subsurface. Sedimentation is the consequent depositing or settling of soil or rock particles from a state of suspension in a liquid.

Undeveloped hilly terrain either in a natural condition or particularly on cut or fill slopes can be subject to erosion. Landslide deposits, which are sometimes in a loosened condition, are particularly prone to erosion. Earth flow-, debris flow- and mud flow-type landslides typically have an area of deposition or accumulation (sedimentation area) at their base. Graded slopes in the MPK GHAD, particularly those in excess of 20 feet in vertical height and those not sufficiently vegetated, can be subject to erosion and therefore can become a source of transported sediment.

Expansive Soils

According to AGS (2020), near-surface soil and clayey bedrock at the site could exhibit a moderate to high potential for expansion. These potentially expansive soils could impact the planned site development. Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Shrink and swell of expansive soils on slopes contributes to the mechanism of creep, which can result in shallow slope instability.

Seismic Hazards

The site is located in the tectonically active Southern California area, and will therefore likely experience shaking effects from earthquakes. The type and severity of seismic hazards affecting a site are to a large degree dependent upon the distance to the causative fault, the intensity of the seismic event, the direction of propagation of the seismic wave and the underlying soil characteristics. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction (not considered a hazard for this site), seismically induced slope failure (discussed above) or dynamic settlement.

Surface Fault Rupture

Active faults have not been identified onsite and surface fault rupture potential is considered low. The nearby Elysian Park Fault is a blind thrust fault and is not expected to

cause surface rupture. The nearest Earthquake Fault Zone is the Alhambra Wash Fault zone, located roughly 3.1 miles east of the site.

6. CRITERIA FOR GHAD RESPONSIBILITY

Prevention, Mitigation, Abatement and/or Control of Geologic Hazards

Subject to the following exceptions, the primary mission of the MPK GHAD is the prevention, mitigation, abatement and control of geologic hazards within its jurisdictional boundaries that have damaged, or that pose a significant threat of damage to site improvements within developed areas. As used herein, the term "site improvements" means buildings and outbuildings, roads, sidewalks, improved paths, utilities, geologic stabilization features, or similar improvements.

Exceptions

The intent of this Plan of Control is not to extend the MPK GHAD's responsibilities to every potential situation of slope instability. Specifically, the following are excluded from the MPK GHAD's responsibilities.

Isolated or Remote Slope Instability

The MPK GHAD does not have responsibility to monitor, abate, mitigate or control slope instability that does not involve damage (requiring repair) to or pose a significant threat to damage site improvements.

Single Property

The MPK GHAD will not prevent, mitigate, abate or control geologic hazards which are limited in area to a single parcel of property unless the geologic hazard has damaged, or poses a significant threat of damage to site improvements located on other property within the MPK GHAD jurisdictional boundaries. As used herein, the term "site improvements" means buildings, roads, sidewalks, utilities, improved trails, swimming pools, tennis courts, gazebos, cabanas, geologic stabilization features, or

similar improvements. This exception does not apply to geologic hazards existing on open space property within the MPK GHAD-owned property.

Geologic Hazards Resulting from Negligence of Property Owner

The MPK GHAD may decline to prevent, mitigate, abate or control geologic hazards which occurred or resulted from any negligence of the homeowner and/or the homeowner's contractors, agents or employees in developing, investigating, grading, constructing, maintaining or performing or not performing any post-development work on the subject property.

Property Not Accepted

The MPK GHAD does not have responsibility to repair damaged site improvements which are situated on a parcel of real property that the MPK GHAD has not accepted in accordance with Section 7. The MPK GHAD, however, may monitor, abate, mitigate or control slope instability on a parcel of real property which (1) the MPK GHAD has not accepted in accordance with Section 7, below, and (2) that is not excluded from MPK GHAD responsibility by this Section 6, as noted above; provided that MPK GHAD responsibility on such parcel is limited to the extent necessary to address damage or a significant threat to damage site improvements which are within a parcel of real property which the MPK GHAD has accepted in accordance with Section 7.

Geologic Hazard Which Requires Expenditure in Amount Exceeding the Value of the Threatened or Damaged Improvement

The MPK GHAD may elect not to prevent, mitigate, abate or control a geologic hazard where the anticipated expenditure required to be funded by the MPK GHAD to prevent, mitigate, abate or control the geologic hazard will exceed the value of the structure(s) and site improvement(s) threatened with damage or loss

7. ACCEPTANCE

Activation of Assessment

Subject to applicable law, an annual assessment must be promptly implemented on all residential parcels in the MPK GHAD. The assessment will be levied by the MPK GHAD on each individual residential parcel beginning the first fiscal year after the City of Monterey Park issues the building permit for that parcel. Annual assessments will be based on the projected costs incurred from the implementation of the maintenance and repair scope outlined herein. Assessments will also include the estimated annualized cost for an assumed 10-year major repair event. Assuming the site was constructed per plan, the 10-year major repair event may be cause by a severe event related to the geologic hazards listed in Section 5. The assessment amount for this event is assumed to be on the order of 10 percent of the total estimated construction cost for initial site repairs, and the annualized assessment amount will establish a reasonable reserve to account for the cost of the assumed event. The assessments will be calculated in the Engineer's Report created for the MPK GHAD prior to the approval of this document by City Council.

Responsibility for GHAD Activities

The party that, on the date that the Final Map within the boundaries of the MPK GHAD is recorded by the City of Monterey Park, owns the developable parcels shown on that Final Map has the responsibility to perform all the activities of the MPK GHAD on property within that Final Map. Following a period of at least three years after the first residential building permit is issued by the City of Monterey Park, or one year after the completion of the initial mass grading and wall/anchor improvements (as defined by the City-approved grading plans), whichever is later, the suitability of transfer of MPK GHAD maintenance responsibilities shall be determined by the MPK GHAD Executive Director. Public Resources Code Section 26586 allows the MPK GHAD Board of Directors to appoint officers and delegate powers to these officers as appropriate to the

MPK GHAD's circumstances. In virtually all GHADs, the Directors appoint a GHAD Manager or in the case of the MPK GHAD, an Executive Director, with the authority to perform the day-to-day operations of the GHAD (California Association of Geologic Hazard Abatement Districts, 2011).

If determined to be appropriate, maintenance responsibility shall be transferred to the MPK GHAD. This transfer date may be extended at the sole discretion of the project developer provided that the assessments continue to be levied during the extension period and that notice of such extension is delivered to the MPK GHAD Executive Director at least 30 days before the transfer date. The petitioners for formation of the MPK GHAD intend that the approximately four-year period between the levying of the MPK GHAD assessment and the MPK GHAD becoming responsible to perform activities on property within each Final Map will allow the District to accumulate reserve funds without incurring significant expenses. Such reserve funds are needed to address periodic major events which cannot be funded from annual revenues.

8. GHAD MAINTENANCE AND MONITORING RESPONSIBILITIES

The MPK GHAD is responsible for maintaining geologic stabilization features (e.g. drainage ditches, storm drainage structures, retaining walls, ground anchors) in the open space and the unimproved areas including the retaining walls along Garvey Avenue, permanent ground anchors along the slopes, and hillside slope grades outside of the private lot boundaries. The MPK GHAD's maintenance responsibilities include prevention, abatement, vegetation control, and control of landslide and erosion hazards within the subdivision open space and slopes exclusively within the MPK GHAD Boundary, as provided in Section 7. Adjacent slopes, open space, and improvements outside of the MPK GHAD boundary are not maintained by or the responsibility of the MPK GHAD.

General maintenance of the surface drainage improvements in the open space and on the slopes, such as the concrete V-ditches, will be the MPK GHAD's responsibility. The MPK GHAD is also responsible for general maintenance of proposed stormwater improvements, storm drain inlets and outlets, subdrain outlets, storm drainage structures and pipelines, and drainage around the retaining walls and retaining wall drain outlets.

Potential geologic hazards such as landslides and slope erosion within the site are the MPK GHAD's responsibility. The MPK GHAD has the following maintenance responsibilities:

- Inspection and maintenance of stormwater flow system.
- Inspection and maintenance of concrete-lined drainage ditches and splash walls.
- Subdrains.
- Storm drain inlets, outfalls, structures, and pipelines within the MPK GHAD boundary.
- Slopes.
- Vegetation control within the open space.
- Maintenance of retaining walls.
- Maintenance of ground anchors.

Appendix C and Appendix D include maintenance manuals for the onsite CDS unit and Flogard catch basin filter, respectively.

Geotechnical Techniques for Mitigation of Landslide and Erosion Hazards

The techniques which may be employed as necessary by the MPK GHAD to prevent, mitigate, abate, or control geologic hazards include, but are not limited to, the following.

A. Removal of the unstable earth mass.

B. Stabilization (either partial or total) of the landslide by removal and replacement with compacted, drained fill.

C. Construction of structures to retain or divert landslide material or sediment.

D. Construction of erosion control devices such as gabions, riprap, geotextiles, or lined ditches.

E. Placement of properly draining engineered buttress fill.

F. Placement of subsurface drainage devices (e.g. underdrains, or horizontal drilled drains).

G. Slope correction (e.g. gradient change, biotechnical stabilization, slope trimming or contouring).

H. Construction of additional surface ditches and/or detention basins, silt fences, sediment traps, or backfill or erosion channels.

Potential landslide and erosion hazards can often be mitigated best by controlling soil saturation and water runoff and by maintaining the surface and subsurface drainage system. Maintenance shall be provided for lined surface drainage ditches and other drainage elements including outflows and inlets. Maintenance of the slope and retaining wall will be the responsibility of the MPK GHAD. The MPK GHAD also shall monitor the use of the open space area by other entities.

9. PRIORITY OF GHAD EXPENDITURES

Emergency response and scheduled repair expenditures by the MPK GHAD may be prioritized by the Executive Director, based upon available funds and the approved operating budget. When available funds are insufficient to undertake all of the identified remedial and preventive stabilization measures, the expenditures must be prioritized in accordance with the MPK GHAD Board of Director's directions or as follows in descending order of priority:

A. Prevention, mitigation, abatement or control of geologic hazards that have either damaged or pose a significant threat of damage to residences, critical underground utilities or paved streets.

B. Prevention, mitigation, abatement or control of geologic hazards which have either damaged or pose a significant threat of damage to ancillary structures, including but not limited to retaining walls.

C. Prevention, mitigation, abatement or control of geologic hazards which have either damaged or pose a significant threat of damage to open space amenities.

D. Prevention, mitigation, abatement or control of geologic hazards which have either damaged or pose a significant threat of damage limited to loss of landscaping or other similar non-essential amenities.

E. Prevention, mitigation, abatement or control of geologic hazards existing entirely on open space property and which have neither damaged nor pose a significant threat of damage to any site improvements.

10. MAINTENANCE AND MONITORING SCHEDULE

Geologic features and MPK GHAD-maintained facilities should be inspected by the MPK GHAD Executive Director's designees as presented below. MPK GHAD Executive Director should retain an Engineer (Engineer) and/or Engineering Geologist (Geologist) to coordinate performance of inspections as noted herein and provide reports and recommendations to the MPK GHAD based on the observations during inspections. The site inspections should be undertaken at appropriate intervals as determined by the MPK GHAD Executive Director using supporting documents prepared for the site and its improvements. The MPK GHAD budget should provide for four or more inspections in years of heavy rainfall. Generally, the inspections should take place in October, before the first significant rainfall; mid-winter as necessary during heavy rainfall years (cumulative rainfall exceeding the historic average); and in early April at the end of the rainy season. The frequency of the inspections should increase, depending upon the intensity and recurrence of rainfall. Site inspections should increase sufficiently to provide for mitigation of potential hazards. Additionally,

site inspections should be performed following moderate to significant seismic events to evaluate potential damage or displacement to geologic facilities or MPK GHAD-maintained facilities related to ground shaking.

The MPK GHAD should obtain copies of geologic or geotechnical exploration reports related to site development and keep these reports on file in the records of the MPK GHAD. In addition, copies of any earthwork-related testing and observation reports that will be finalized at the completion of grading, when as-built drawings are available, must be provided to the MPK GHAD and maintained as part of the MPK GHAD records.

Following are guidelines for a monitoring plan. The actual timing, scope, frequency and other details regarding such maintenance, inspection and similar activities shall be at the discretion of the MPK GHAD Executive Director. The following Table 1 summarizes the monitoring schedule.

- The Engineer and/or Geologist retained by the MPK GHAD should carry out an inspection of lined surface ditches and associated splash walls at least twice a year. One inspection should be in the fall prior to the onset of winter rains. The inspection shall check for sedimentation and cracking or shifting of the concrete-lined ditches. Repairs and maintenance, as needed, should be undertaken including removal of excess silt, sediment, or debris in ditches and patching or replacement of cracked or broken ditches, prior to the beginning of the next rainy season.

- Subsurface drain outlets and horizontal drilled drain outlets, if any, should be checked. Water flowing from these outlets should be measured and recorded during each inspection. The inspections should take place at least twice annually, preferably in the fall and spring. Any suspicious interruption in flow should signal a need to unplug or clean the affected drain. If included, animal/rodent screens and covers should be checked and replaced as necessary.

- Inlets, outfalls, storm drainage mitigation devices, or trash racks, if used, should be inspected three times annually, and must be kept free of debris and spillways maintained. Maintenance includes cleanup of vegetation and removal of silt would

be in order. Attention should be given to plantings or other obstructions which may interfere with access by equipment.

- Retaining walls should be inspected twice yearly as part of the site monitoring program. Walls should be inspected for plumbness, shotcrete faces should be inspected for cracks, failures, or water seepage, drains should be inspected for clogs or blockage, and wall anchors should be confirmed to be functioning as intended (no pullouts, loosening, or failures). Repairs and maintenance should be performed according to the retaining wall engineers' recommendations. This includes repairs to the shotcrete face of the retaining wall as necessary, proof testing anchors and locking off as necessary, and repairs to drainage systems behind the shotcrete wall face.

- Permanent ground anchors, and reaction pads should be inspected annually as part of the site monitoring program. Reaction pads and shotcrete placed over the anchor heads should be inspected for damage or failure.

- An annual inspection of slopes and vegetative cover shall be made by the Engineer and/or Geologist to assess the effectiveness of the preventive maintenance program and to make recommendations as to which landslide or erosion measures should be undertaken in the next fiscal year. Any appropriate site-specific study of landslide or erosion conditions shall be determined at that time. Consultants, if necessary, will be retained to undertake the needed studies. An annual inspection report to the MPK GHAD shall be prepared by the Engineer and/or Geologist.

Table 1
MONITORING SCHEDULE

MONITORING ACTIVITY	MINIMUM FREQUENCY
Inspect lined ditches and splash walls	Twice annually, to include one visit in the fall after the onset of seasonal rains
Inspect Subsurface drain outlets and horizontal drains	Twice annually
Inspect Inlets, Structures and Outfalls	Three times annually
Inspect Retaining Walls	Twice annually
Inspect Ground Anchors	Annually
Inspect Slopes and Vegetative Cover	Annually

11. RIGHT OF ENTRY

MPK GHAD officers, employees, consultants, contractors, agents, and representatives shall have the right to enter upon all lands within the MPK GHAD's jurisdiction, as shown on Figure 2, which is incorporated by reference, for the purpose of performing the activities described in this Plan of Control. Such activities include, without limitation: (1) the inspection, maintenance and monitoring of site improvements including stormwater conveyance systems, retaining walls, drainage ditches, storm drains, outfalls and pipelines; (2) the monitoring, maintenance and repair of slopes, including repaired or partially repaired landslides; and (3) the management of erosion and geologic hazards within the open space and slope areas shown on Figure 3. Should the MPK GHAD need to access private residential lots to fulfill its duties under the Plan of Control, the MPK GHAD endeavors to provide the affected landowner and/or resident with 72 hours advanced notice unless, in the reasonable judgment of the MPK GHAD, an emergency situation exists which makes immediate access necessary to protect the public health and safety, in which case no advance notice is required, but the MPK GHAD must inform the landowner and/or resident as soon as reasonably possible.

The foregoing right-of-entry and indemnity provision must be recorded in the chain of title for all residential parcels and common area lots, and it shall be included in all Covenants, Conditions and Restrictions (CC&Rs) and homebuyer disclosure statements prepared for parcels within the District boundary.

12. MISCELLANEOUS PROVISIONS

The MPK GHAD may, in accordance with applicable law, expand its jurisdictional boundaries as depicted in attached Exhibit A, which is incorporated by reference, to include other real property that requires geologic hazard abatement. Nothing in this Plan is intended to, nor will it, limit the MPK GHAD's ability to take such action either upon request by a developer or upon the motion of the Board of Directors.

13. REFERENCES

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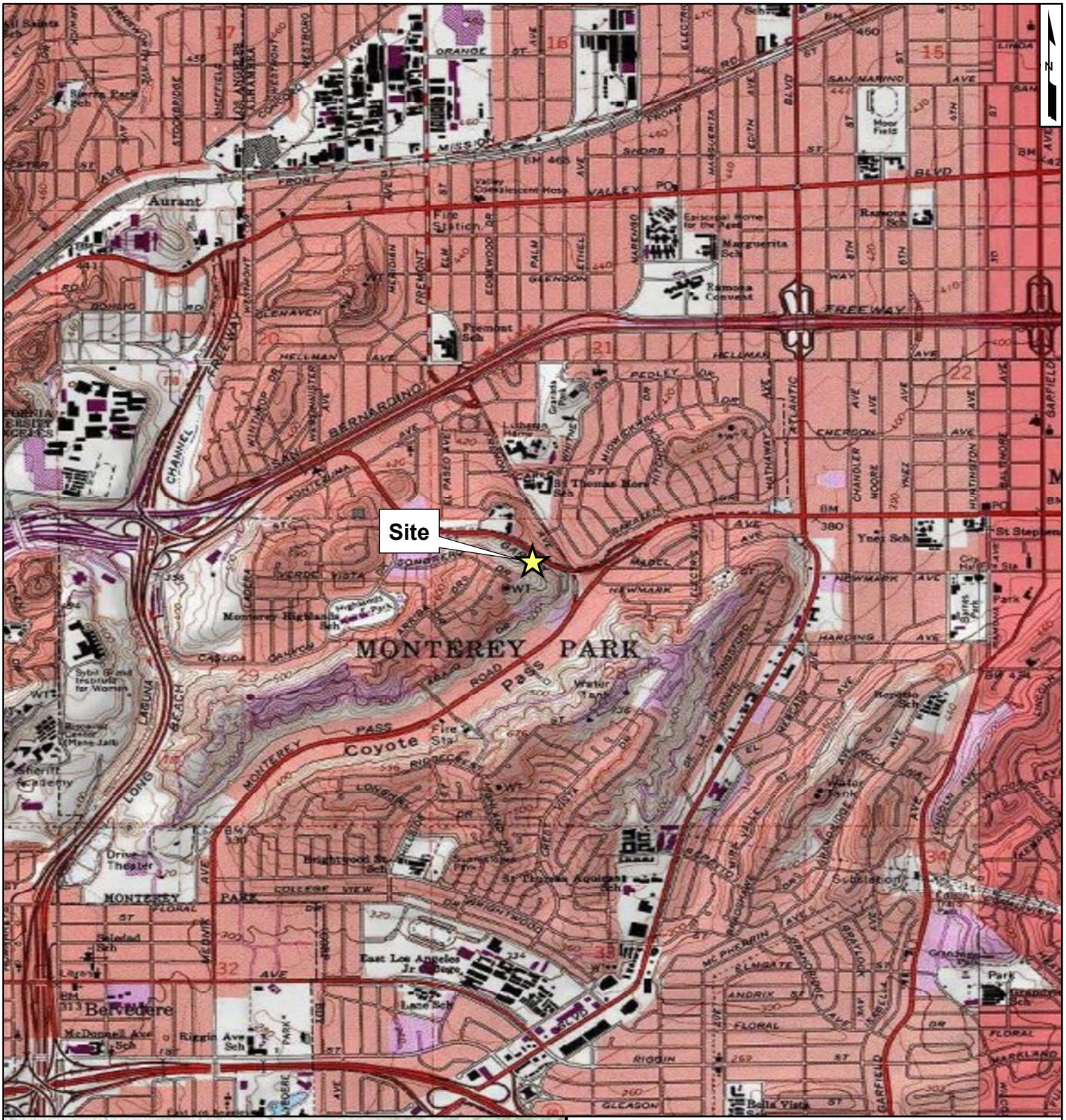
Geosyntec consultants

EXHIBIT A

Monterey Park GHAD
Legal Parcel Description:

APN 5254-002-031

FIGURES

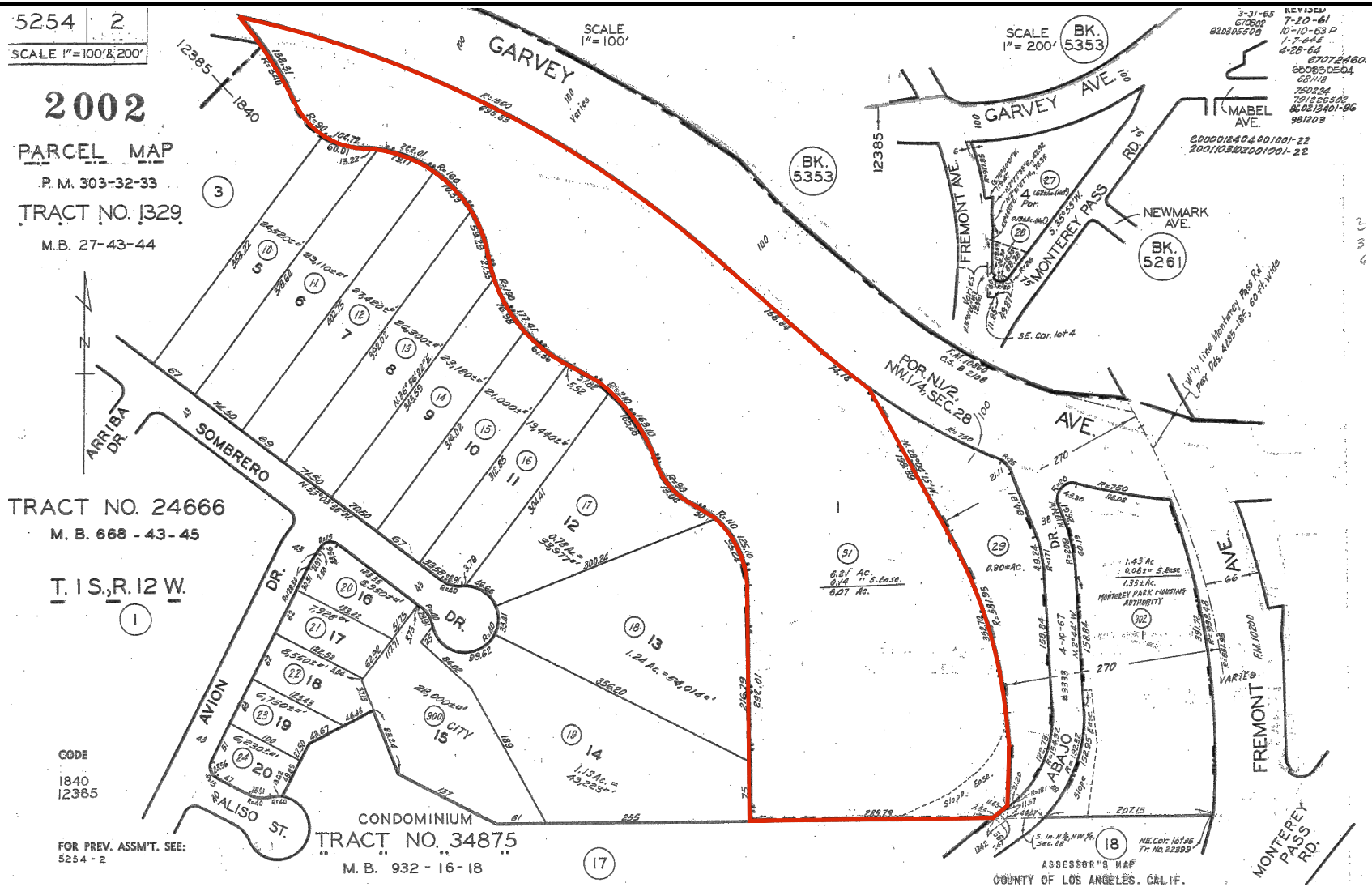


Site Location

GHAD Boundary
Goodviews
Monterey Park, CA 91754

Geosyntec consultants

SC0982A	August 2021	Figure 1



LEGEND

GHAD BOUNDARY

GHAD BOUNDARY MAP
GOODVIEWS
MONTEREY PARK, CALIFORNIA

Geosyntec consultants

FIGURE 2

PROJECT NO: SC0982A | AUGUST 2021

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GARVEY AVE

FREMONT AVE

Site

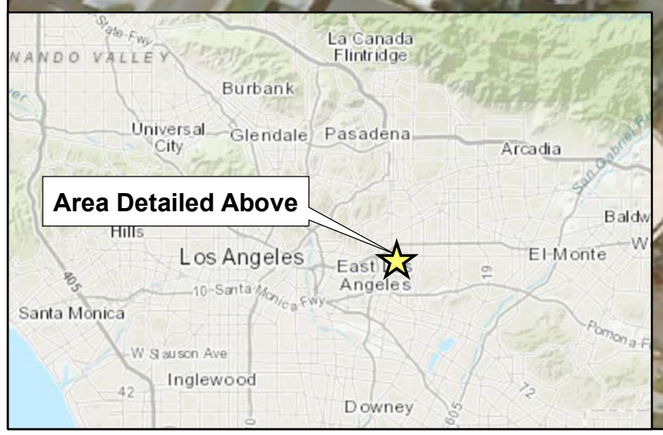
SOMBRERO DR

AVION DR

ABAJO DR

GARVEY AVE

FREMONT AVE



100 50 0 100 Feet

Site Map

Approximate GHAD Boundary
Goodviews
Monterey Park, CA 91754

Geosyntec consultants

Figure 3

SC0982A

August 2021



FIGURE 4
From: AGS, 2020

LIMITS OF PREVIOUS FAILURES 1980-Current

SCALE: 1 in. = 100 ft.

POST GRADING SLOPE FAILURE MAP
1688 WEST GARVEY AVENUE
MONTEREY PARK

AGS ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Ste B, Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287
P/W 1605-04 Report No. 1605-04-B-11

Geosyntec
consultants

APPENDIX A

Advanced Geotechnical Solutions 2020 Geotechnical Report

P

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287

GEOTECHNICAL REPORT
REVIEW OF SITE SLOPING RESTORING IMPROVEMENT B2 PLAN
1688 WEST GARVEY AVENUE, MONTEREY PARK, CALIFORNIA

Prepared for:
Center Int'l Investments, Inc.
846 East Garvey Avenue, Suite D
Monterey Park, California 91756

Prepared by:
Advanced Geotechnical Solutions, Inc.
485 Corporate Drive, Suite B
Escondido, California 92029

December 9, 2019, Revised April 7, 2020
Report No. 1605-04-B-11R
P/W 1605-04

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287

Center Int'l Investments, Inc.
846 East Garvey Avenue, Suite D
Monterey Park, California 91756

December 9, 2019, Revised April 7, 2020
P/W 1605-04
Report No. 1605-04-B-11R

Attention: **Ms. Karrie On**

Subject: ***Geotechnical Report, Review of Site Slope Restoring Improvement B2 Plan, 1688 West Garvey Avenue, Monterey Park, California***

References: See Appendix A

Ms. Karrie On:

Advanced Geotechnical Solutions, Inc., (AGS) has prepared this revised geotechnical report addressing the revised rough grading plan for the proposed site slope restoring improvement project located at 1688 West Garvey Avenue in Monterey Park, California. Revisions incorporated into this report versus the original December 9, 2019, report include adding additional clarification to Table 6.5 and the discussion in Section 6.5. Additional discussion on the changes between AGS's May 13, 2019, report and this report has been provided below. The previously proposed Site Slope Restoring Plan ("Plan B") and associated remedial grading recommendations (presented in AGS's May 13, 2019, report) have been revised in order to stabilize the site and permit future residential development of the site. Recommendations for stabilizing the existing slopes have been provided herein. The proposed remedial design is presented on the plans included in this report and illustrated on the included cross sections. As detailed herein, AGS proposes a multi-prong approach to enhance the stability of the site:

- The existing crib wall and failed surficial soils will be removed from the slopes;
- Pile and ground anchor walls will be constructed along Garvey Avenue. A geogrid-reinforced soil slope (RSS) will be constructed above portions of this wall;
- Above Abajo Drive, permanent ground anchors (pressure grouted) will be installed to increase the global stability of the site so that a minimum slope stability factor of safety of 1.5 can be achieved.

The more significant differences between AGS's previous slope restoring report (May 13, 2019) and the current report include the following:

1. Remedial grading recommendations have been revised to permit future development of the site, as described herein.
2. Nine additional geologic sections have been drafted, and the cross-sections have been updated to reflect the revised design and a newer topographic survey.

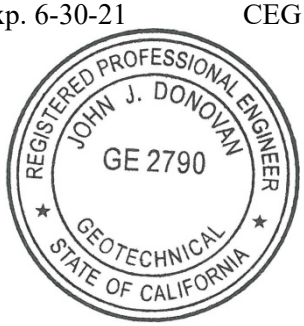
3. The boundaries between the highly weathered bedrock, weathered and unweathered bedrock have been shown on the geologic cross-sections. In some cases, minor revisions have been made to the geology model shown on the original cross-sections presented in the May 13, 2019, report.
4. The slope stability analyses have been updated to reflect the latest geology model, design profile, and remedial grading design shown on the cross-sections. Analyses are shown only for the proposed conditions shown on the grading plan and not for the current (existing) conditions.

Numerous studies have been completed on the site by several consultants, including several subsurface explorations. This report has utilized the information from the previous studies as well as recent exploratory work and laboratory testing completed by AGS to formulate the recommendations presented herein. The report herein addresses the proposed design presented on the Site Slope Restoring Improvement Plan prepared by Focus Engineering, Inc.

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.

JOHN J. DONOVAN
RCE 65051, RGE 2790, Reg. Exp. 6-30-21

PAUL J. DERISI, Vice President
CEG 2536, Reg. Exp. 5-31-21





Distribution: (1) Addressee (pdf)
(1) KCM Group (pdf)
(1) Focus Engineering (pdf)
(1) SLSD Inc. (pdf)
(1) DRS Engineering (pdf)

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1. Scope of Work 1
1.2. Geotechnical Study Limitations 2
2.0 SITE DESCRIPTION AND HISTORY 2
2.1. Site Description 2
2.2. Site History 4
2.2.1. Prior to 1978 Development 4
2.2.2. 1978 Development and Later 5
3.0 PROPOSED DEVELOPMENT 7
4.0 FIELD AND LABORATORY INVESTIGATION 7
4.1. Previous Studies 7
4.1.1. Thomas Clements Associates Consulting Geologists (1978) 7
4.1.2. Chang & Associates (1978a and 1978b) 8
4.1.3. Soils International (1978) 8
4.1.4. Soils International (1979) 8
4.1.5. Chang & Associates (1980) 9
4.1.6. Leighton and Associates (1982) 9
4.1.7. Leighton and Associates (1983a) 9
4.1.8. Hu and Associates (1983a and 1983b) 10
4.1.9. Leighton and Associates (1983c) 11
4.1.10. Leighton and Associates (1984) 11
4.1.11. Leighton and Associates (1985a and 1985b) 11
4.1.12. Hu and Associates (1986) 12
4.1.13. Leighton and Associates (1988a and 1988b) 12
4.1.14. Bing Yen & Associates (1988 and 1993) 12
4.1.15. Leighton and Associates (1991a and 1991b) 13
4.1.16. URS Corporation (2002) 13
4.1.17. URS Corporation (2005) 13
4.1.18. Environmental Geotechnology Laboratory, Inc. (2014) 14
4.2. AGS Field Investigation 14
5.0 ENGINEERING GEOLOGY 15
5.1. Geologic Analysis 15
5.1.1. Literature Review 15
5.1.2. Aerial Photograph and Historic U.S.G.S. Map Review 15
5.1.3. Field Mapping 15
5.2. Geologic and Geomorphic Setting 15
5.3. Stratigraphy 16
5.3.1. Surficial Units 16
5.3.1.1. Slope Wash and Shallow Slide Debris (Qsw) 16
5.3.1.2. Artificial Fill, Undocumented (afu) 16
5.3.1.3. Artificial Fill, Compacted (af) 16
5.3.1.4. Topsoil and/or Residual Soil (No map symbol) 17
5.3.1.5. Colluvium (Qcol) 18
5.3.2. Bedrock Units 18

5.3.2.1. Fernando Formation 18
5.4. Geologic Structure 19
5.5. Mass Movements 19
5.6. Groundwater 20
5.7. Non-seismic Geologic Hazards 20
5.7.1. Mass Wasting and Debris Flows 20
5.7.2. Flooding 21
5.7.3. Subsidence and Ground Fissuring 21
5.8. Seismic Hazards 21
5.8.1. Surface Fault Rupture 21
5.8.2. Seismic Ground Motion 21
5.8.3. Liquefaction/Dynamic Settlement 22
5.8.4. Lateral Spreading 22
5.8.5. Seismically Induced Landsliding 23
5.8.6. Earthquake Induced Flooding 23
6.0 MATERIAL PROPERTIES 23
6.1. Excavation Characteristics 23
6.2. Compressibility 23
6.3. Collapse Potential/Hydro-Consolidation 23
6.4. Expansion Potential 24
6.5. Shear Strength 24
6.5.1. Fill Strength 25
6.5.1.1. Existing Fill 25
6.5.1.2. Proposed Fill- Native Soils 25
6.5.2. Colluvium Strength 26
6.5.3. Bedrock Strength 26
6.6. Chemical and Resistivity Test Results 30
6.7. Earthwork Adjustments 30
6.8. Pavement Support Characteristics 31
7.0 FINDINGS AND GENERAL CONCLUSIONS 31
8.0 Earthwork Conclusions and Recommendations 32
8.1. Site Preparation and Removals/Overexcavation 33
8.1.1. Site Preparation 33
8.1.2. Removals 34
8.1.3. Overexcavation (Below Future Improvements) 34
8.1.4. Removals Along Grading Limits and Property Lines 34
8.2. Slope Stability and Remediation 35
8.2.1. Landslide and Project Stabilization 35
8.2.2. Cut Slopes 36
8.2.3. Fill Slopes 36
8.2.4. Skin Cut and Skin Fill Slopes 37
8.2.5. Permanent Slope Anchors 37
8.2.6. Natural Slopes 37
8.2.7. Pile and Anchor Walls 38
8.2.8. Surficial Stability 38

8.2.9. Temporary Backcut Stability 38
8.2.10. Geologic Observation During Grading 39
8.3. Survey Control During Grading 39
8.4. Subsurface Drainage 39
8.4.1. Canyon Subdrains 39
8.4.2. Backdrains 40
8.5. Seepage 40
8.6. Earthwork Considerations 40
8.6.1. Compaction Standards 40
8.6.2. Benching 40
8.6.3. Mixing and Moisture Control 41
8.6.4. Haul Roads 41
8.6.5. Import Soils 41
8.6.6. Oversize Rock 41
8.6.7. Fill Slope Construction 41
8.6.7.1. Overbuilding Fill Slopes 42
8.6.7.2. Compacting the Slope Face 42
8.6.8. Utility Trench Excavation and Backfill 42
9.0 DESIGN RECOMMENDATIONS 42
9.1. Retaining Wall Design Recommendations 43
9.1.1. Foundation Design 43
9.1.1.1. Caisson Axial Capacity 43
9.1.1.2. Caisson Lateral Capacity 43
9.1.1.3. Deepened Footings and Setbacks 44
9.1.2. Earth Pressure 44
9.2. Permanent Ground Anchor Design Recommendations 48
9.3. Soil Nail Design Recommendations 49
9.4. Civil Design Recommendations 49
9.4.1. Infiltration Devices 49
9.4.2. Site Drainage 49
9.4.3. Rear and Side Yard Walls and Fences 49
9.4.3.1. Top of Slope Walls and Fences 50
9.5. Concrete Design 50
9.6. Corrosion 50
10.0 SLOPE AND LOT MAINTENANCE 50
10.1. Slope Planting 51
10.2. Lot Drainage 51
10.3. Slope Irrigation 51
10.4. Burrowing Animals 51
11.0 FUTURE STUDY NEEDS 51
11.1. Future Geotechnical Studies 51
11.2. In-Grading Observation 51
12.0 CLOSURE 52
12.1. Geotechnical Review 52
12.2. Limitations 52

ATTACHMENTS:

FIGURES

FIGURE 1- U.S.G.S. SITE MAP
FIGURE 2- AERIAL SITE PLAN
FIGURE 3- POST GRADING SLOPE FAILURE MAP
FIGURE 4- REGIONAL GEOLOGIC MAP
FIGURE 5- FAULT MAP
FIGURE 6- AXIAL PILE CAPACITY- FILL
FIGURE 7- AXIAL PILE CAPACITY- BEDROCK

APPENDICES

APPENDIX A- REFERENCES
APPENDIX B- PHOTOGRAPHS OF SITE
APPENDIX C- SUBSURFACE INVESTIGATION- AGS
APPENDIX D- LABORATORY TEST RESULTS- AGS
APPENDIX E- BORING AND TRENCH LOGS AND LABORATORY TESTING BY OTHERS
APPENDIX F- SHEAR STRENGTH CALCULATIONS
APPENDIX G- SLOPE STABILITY ANALYSIS
APPENDIX H- EARTHWORK SPECIFICATIONS AND GRADING DETAILS
APPENDIX I- HOMEOWNERS MAINTENANCE GUIDELINES

ENCLOSURES

PLATE 1 – GEOLOGIC MAP- 40-SCALE
PLATE 2 – REMEDIAL MAP- 40-SCALE
PLATE 3 – COMPOSITE MAP- 40-SCALE
PLATES 4 AND 5 – GEOLOGIC CROSS SECTIONS

GEOTECHNICAL REPORT
REVIEW OF SITE SLOPE RESTORING IMPROVEMENT B2 PLAN
1688 WEST GARVEY AVENUE, MONTEREY PARK, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of Advanced Geotechnical Solutions, Inc., (AGS's) geotechnical review of the revised 20-scale Site Slope Restoring Improvement Plan located at 1688 West Garvey Avenue in Monterey Park, California. The plan was prepared by Focus Engineering Inc. (Focus) and was received on December 5, 2019. The intent of the rough grading design shown on the plans is to stabilize the existing failing slopes and allow for possible future residential development of the site. The proposed grading design includes the use of retaining walls and 2:1 cut and fill slopes.

The City of Monterey Park has requested that the current nuisance and hazard that is created by the potential for failing retaining wall members, trees, and mudslides to impact Garvey Avenue and the telephone and powerlines be abated. The proposed grading efforts will mitigate the current hazards on the site but will not necessarily mitigate the hazards of the adjacent sites.

Numerous geotechnical studies have been completed on the site. Data developed and presented in the referenced reports and subsurface work and laboratory testing by AGS form the basis for this review. Supporting geologic data, including previous boring logs, trench logs, and laboratory data have also been included herein.

Attached to this report are the Geologic Map, which presents geologic information and locations of exploratory excavations, as well as the Remedial Grading Map, which presents remedial grading recommendations. In order to show the entire site on one sheet and show surrounding properties, both plans have been presented at a 1 inch equals 40 feet scale and use the design plans prepared by Focus as a base.

1.1. Scope of Work

The scope of our current study consists of the following:

- Reviewing information available at the City of Monterey Park, including numerous referenced geotechnical studies prepared for the site, old grading plans for the site and adjacent sites, field notes, inspection records, letters, itemized receipts, and photographs of the site.
- Reviewing referenced regional geologic maps and reports, historic aerial photographs and topographic maps for the site.
- Compiling previously collected data and transferring geologic information generated from previous investigations onto the included Geologic Map (Plate 1).
- Presenting the remedial grading information on one sheet at a reduced 1 inch equals 40 feet scale on the Remedial Grading Map (Plate 2). A composite map presenting geologic and remedial grading is presented on Plate 3.

- Preparing 40-scale geologic/geotechnical cross-sections as necessary to reflect the rough grading plan design, included as Plates 4 and 5.
- Conducting a subsurface investigation that included: excavating and sampling ten shallow exploratory borings using a hand auger (HA-1 through HA-10) and two deep large diameter bucket auger borings (BA-1 and BA-2).
- Conducting laboratory testing on the collected samples, including gradation, Atterberg limits, maximum dry density and optimum moisture content determinations, and direct shear testing.
- Field mapping around the site and the offsite properties.
- Presenting retaining wall recommendations.
- Evaluating the rough grading plan and providing remedial grading recommendations.
- Preparing and publishing this report which consolidates previously submitted data and presents geotechnical recommendations pertinent to the accompanying Site Slope Restoring Plan.

1.2. Geotechnical Study Limitations

The conclusions and recommendations in this report are professional opinions based on the data developed during the current and previous investigations. The conclusions presented herein are based upon the current design as reflected on the slope restoring plan. Changes to the plan would necessitate further review.

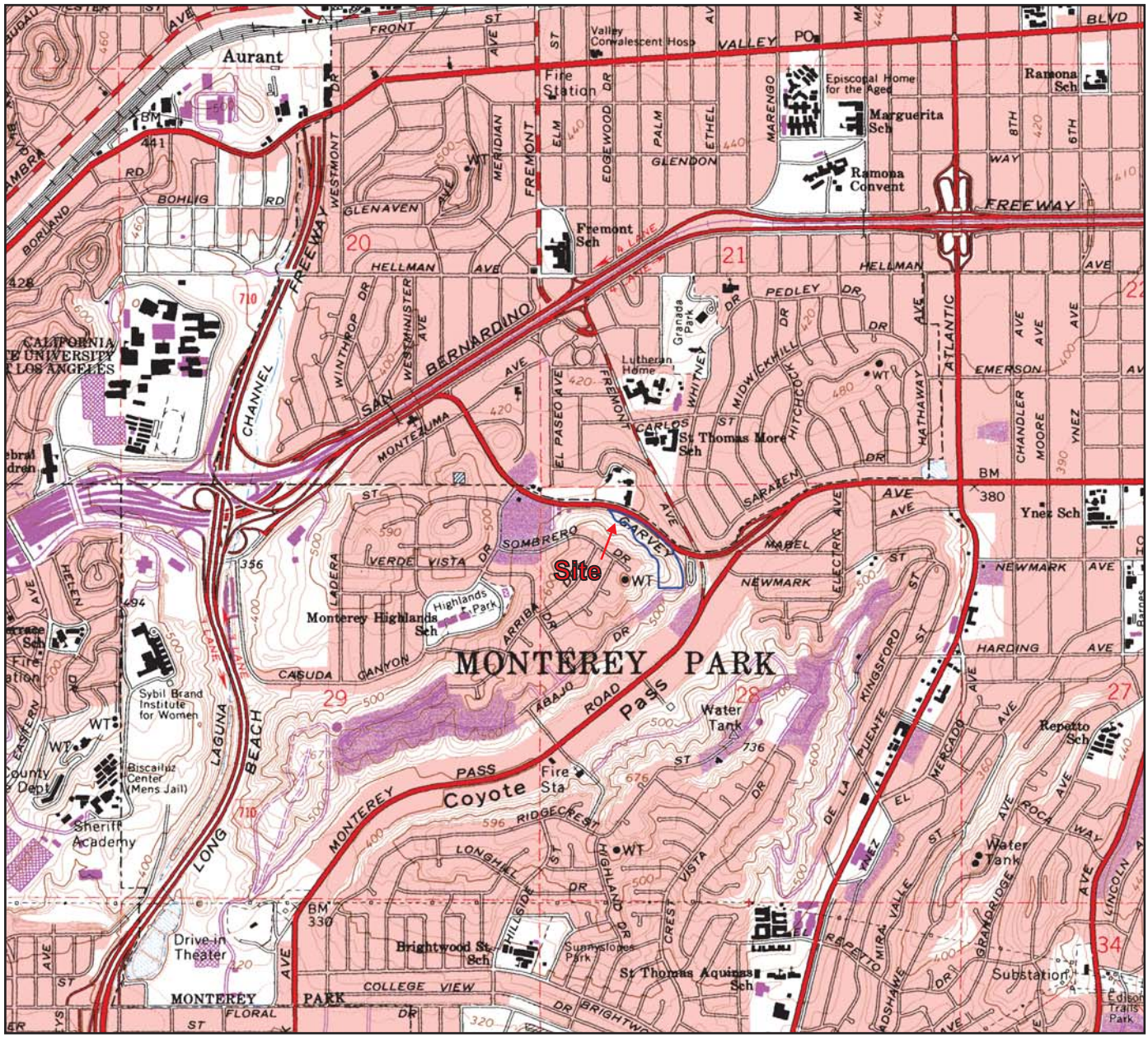
The materials immediately adjacent to or beneath those observed and sampled may have different characteristics than those observed and sampled. No representations are made as to the quality or extent of materials not observed nor subjected to laboratory testing. Any evaluation regarding the presence or absence of hazardous material is beyond the scope of this firm's services.

2.0 SITE DESCRIPTION AND HISTORY

2.1. Site Description

The approximately 7 acre site is located in the 1600 block of West Garvey Avenue in Monterey Park, west of Abajo Drive (Figure 1, Site Location Map). The site borders the south side of West Garvey Avenue and continues up a ridgeline. The southerly property line is located mid-slope with the ascending slope continuing to the adjacent residential development off of Sombrero Drive (Tract 24666). Abajo Drive is located east of the site, and a small separate parcel ("triangle" piece) is located between the site and corner of Abajo Drive and West Garvey Avenue (See Figure 2, Aerial Imagery). A City of Monterey Park slope easement is located near the southeasterly corner, presumably to allow for the construction of Abajo Drive and the cuts slopes and retaining walls that were needed above the roadway.

The site was graded in 1978-1979 to accommodate 31 single family residential pads. 1.5:1 (H:V) cut and fill slopes were built along with several retaining walls. A private road ("Goodview Drive") was constructed to access the pads, located on both sides of the road. The upper portion



SCALE: 1 in. = 2000 ft.

U.S.G.S. SITE LOCATION MAP
1688 WEST GARVEY AVENUE
MONTEREY PARK, CALIFORNIA

Latitude: 34.0601° N
Longitude: -118.1469° W

FIGURE 1

SOURCE MAP(S): Los Angeles U.S.G.S. 7.5-minute Quadrangle

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485 Corporate Drive, Ste B, Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287
P/W 1605-04 **Report No. 1605-04-B-11**



FIGURE 2

N

SCALE: 1 in. = 100 ft.

AERIAL IMAGERY
1688 WEST GARVEY AVENUE
MONTEREY PARK

AGS
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of Goodview Drive ends on a cul-de-sac with residential pads surrounding the road. Numerous retaining walls and foundations were constructed for the residential structures. Two other cantilever retaining walls are also present, one adjacent to Goodview Drive near the entrance (Pictures 1 and 2- Appendix B), which is up to roughly 8 feet in height, and one along a portion of the easterly property line, starting from West Garvey Avenue and continuing up the slope, straddling the property line ("Garvey Slope Retaining Wall"). Two roughly 15-foot high crib walls were also constructed, although portions of these walls have since failed. A 5-foot high cantilever retaining wall is also present along West Garvey Avenue, and is located just outside the property line (Picture 1). Another cantilever retaining wall, up to roughly 12 feet high, is located mostly offsite along Abajo Drive ("Abajo Drive Retaining Wall"), although a small portion is located within the site. A series of 24 piles, starting from 40 feet west of Garvey Avenue and extending to the west for 205 feet, have been constructed immediately behind a portion of this wall, presumably to reinforce the wall after slope failures occurred above this wall circa 2005 (Picture 3). A small portion of this wall was raised above the v-gutter, although the raised portion is not retaining soil and may have been an add-on to increase the capacity of the v-gutter at the top of the wall. Receipts of this wall construction were reviewed but the City could not find any other information associated with this effort.

The original development was abandoned prior to constructing the above ground portions of the residential structures. Numerous slope failures and settlement has occurred in the interim. The existing asphalt paved Goodview Drive is distressed with abundant alligator cracks, and shows signs of significant settlement in areas in addition to lateral slope movement (Pictures 4 and 5). An impact wall was constructed along a portion of West Garvey Avenue to protect the street from falling debris from the site, including mudflows and crib wall members. Up to roughly 15 feet of debris and soil have accumulated behind this wall (Pictures 6 and 7). Short batter board walls and concrete v-ditches were constructed on the slope above Abajo Drive (Pictures 8 and 9). Shotcrete was also placed along a portion of the slope below the easterly property line retaining wall within the offsite "triangle" parcel (Pictures 10 and 11). Currently, numerous erosion control measures are present onsite, including plastic covered slope, straw wattles, sand bags, and drainage pipes. Above the site, the slopes are heavily vegetated. Above Abajo Drive, the slope is covered with varying amounts of vegetation ranging from moderate growths of chaparral to seasonal grasses. Vegetation is largely devoid in the plastic covered areas of the site above West Garvey Avenue. Some trees and bushes are present onsite along West Garvey Avenue.

Elevations of the site range from roughly 495 feet mls near the northeast corner of the site above West Garvey Avenue up to roughly 650 feet on the slope above the existing cul-de-sac. Including the adjacent properties, the slope heights range from roughly 150 feet at the northwesterly end of the property (West Garvey Avenue to the residential pads off Sombrero Drive) up to slightly more than 220 feet (Intersection of Abajo Drive and West Garvey Avenue up to the residential pads off Sombrero Drive). The existing slope gradient above the pads average around 1.5:1 (H:V) to 2:1 with some locally steeper and shallower portions. Outside the retaining walls, the slopes below the residential pads average around 1.5:1 with locally steeper 1:1 sections. Goodview Drive climbs on average of 15 percent before flattening near the cul-de-sac. Flatter portions of the site are limited to the cul-de-sac and residential pads.

2.2. Site History

In order to develop a site history, AGS reviewed the following: reports provided by the City of Monterey Park (see references); historic aerial photographs and imagery (See Section 4.1); historic newspaper articles; and various files and photographs in the City's archives, including grading plans for the original development and 1961 development at the top of the ridgeline (Tract 24666), itemized receipts, inspection notes and reports, letters by the City Engineer, and legal documents. It should be noted that there are some discrepancies between information and dates presented in some of the documents and reports at the City and resolving these discrepancies was not part of AGS's scope. Also, not all reports, letters, and plans related to the site could be located by the City and therefore were not reviewed by AGS. Since being graded in 1978-1980, several slope failures have occurred on the site. The limits of these are shown on Figure 3, Post Grading Slope Failure Map.

2.2.1. Prior to 1978 Development

Garvey Avenue was constructed prior to 1948, and Monterey Pass Road is also seen on aerial photographs from 1948. The subject site is largely cleared of vegetation aside from brush and trees along Garvey Avenue and within a couple of drainages onsite. A graded area is seen to the southeast of the present day intersection of Abajo Drive and Garvey Avenue and extends roughly 300 feet to the south of Garvey Avenue. The expansive Midwick Country Club is located to the north of Garvey Avenue and east of Fremont Avenue.

Whereas most of the slopes are gradual above Garvey Avenue, a prominent draw is seen in the 1952 photograph. This draw is also seen on the grading plans for Tract 24666. It is up to roughly 30 feet in depth and more pronounced on the lower third of the slope.

In 1952, dirt roads are present along the ridgelines southwest of the site. Two cut slopes are present to the east of the site in the footprint of the graded area that was seen in 1948. The cut slopes are separated by a narrow flat area and/or roadway that is located on the present day alignment of Abajo Drive. A short cut slope is seen above the aforementioned flat area/roadway with a taller one located below. Below the cut slopes, a pad is seen with small structures, storage containers, and/or large vehicles. Access to this pad was provided via a dirt driveway off Garvey Avenue. Above the second cut slope, a "feature" is seen above future Abajo Drive that possibly could be a drainage, two parallel lines of vegetation, or a failure scarp. A slope failure occurred within the same area as this "feature" in 2003-2005. In 1953, shadows in the photographs possibly indicate a line of trees that border the north side of the aforementioned "feature". Offsite and to the northeast, a large residential development was constructed on the former Midwick Country Club between 1948 and 1952. The church across Garvey Avenue was also constructed during this timeframe.

The single-family residential development above the site (Tract 24666) was constructed starting in 1961. Based on the grading plans, grading above the subject site included daylight cuts and 1.5:1 (H:V) cut and fill slopes. Drainage swales were provided in the middle of fill and cut slopes. The Sombrero Reservoir, located to the southwest of the

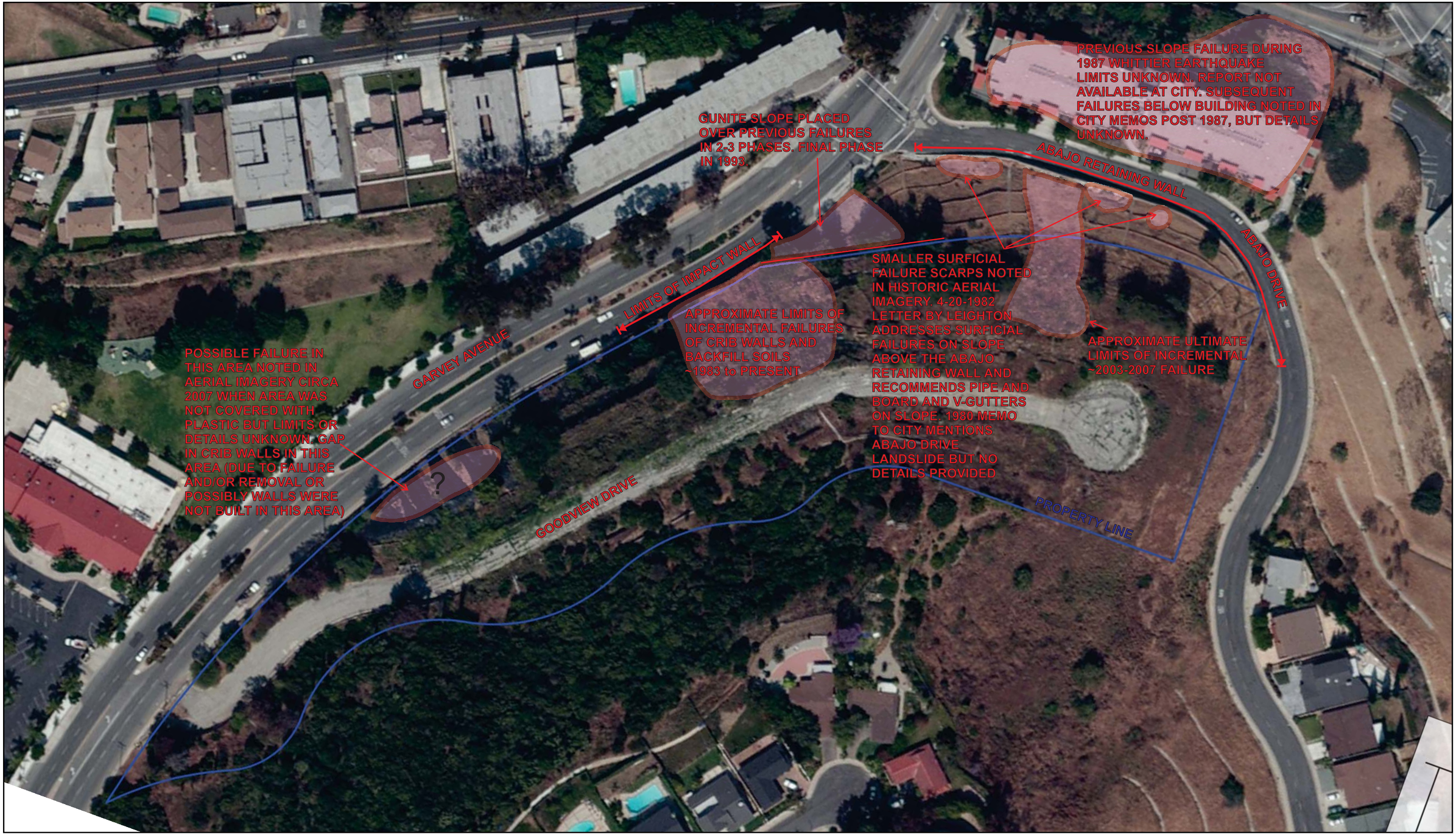


FIGURE 3

N

SCALE: 1 in. = 100 ft.

LIMITS OF PREVIOUS FAILURES 1980-Current

POST GRADING SLOPE FAILURE MAP
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MONTEREY PARK

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P/W 1605-04 Report No. 1605-04-B-11

site at the top of the ridge, was constructed between 1961 and 1964. This reservoir was replaced circa 1990 after it was reported to be damaged during the 1987 Whittier Earthquake (Lowney Associates 1999).

Whereas most of the slopes appear uniform above Garvey Avenue prior to the initial rough grading of the site in 1978, a prominent draw is seen in the 1952 photograph and also later photographs. This draw is also seen on the grading plans for Tract 24666. It is up to roughly 30 feet in depth and more pronounced on the lower third of the slope.

By 1964, Abajo Drive is under construction as well are Tract 24666 and adjacent tracts. The subject site appears to be covered with vegetation and some access roads have been constructed onsite. Cut slopes are seen along Abajo Drive to the west of the site. By 1972, the site is covered by vegetation. Offsite, the tracts above the site have been completed. The extension of Abajo Drive has also been completed and several homes are seen along Abajo Drive to the southwest of the site. The apartment buildings across Garvey Avenue have been constructed.

2.2.2. 1978 Development and Later

Prior to development of the site in late 1978, disturbance of the site was related to the clearing of vegetation (the site appears to be mostly cleared of vegetation in the 1948 photographs), and construction of access roads. Prior to rough grading, the 5-foot retaining wall along Garvey Avenue had been constructed. Rough grading of the site commenced in 1978 in order to provide 31 single-family residential pads. The mid-slope retaining wall ("Garvey Slope Retaining Wall") appears in photographs dated November 30, 1978, taken shortly after rough grading was started (Picture 12). It is unclear when the mid-slope retaining wall was constructed. Details for this wall are shown in the rough grading plans for the site dated October 16, 1978. However, density tests are not shown behind this wall, and the first density tests for the development were taken on November 2, 1978 (Chang & Associates 1980), and the first density tests for the crib walls were taken on October 20, 1978 (Soils International 1979). The plans indicate that a triangular portion of the an offsite slope located below this wall was to be covered with gunite with a 12-inch key at perimeter. The limits of this gunite are shown on Plate 1.

Rough grading of the site was completed by the end of 1979 and construction of utilities, Goodview Drive, and foundations and retaining walls for the proposed residential homes was completed. However, surficial failures and settlement of the private roadway began to impact the site starting circa 1980, possibly during a series of intense storms that brought nearly 16 inches of rain over a 9-day period in February 1980 (CGS 1982). In 1980, debris flows damaged numerous homes along Abajo Drive to the south and southwest of the site. Hu and Associates (HA 1983a) noted that some of the retaining walls for the partially constructed residential structures along the southerly property line began to fail in 1983. The development was halted, and by 1982, a portion of the crib wall and slope had failed, blocked a portion of Garvey Avenue, and led to the evacuation of the apartment complex on the opposite side of Garvey Avenue (Leighton 1982).

Subsequent failures in the lower crib wall occurred on or around March 2, 1983 and April 1983 (HA 1983a). In April 1983, the area above the failure was lowered by 20 feet.

In 1984 the impact wall along Garvey Avenue was constructed (Leighton 1988b). The impact wall consisted of steel H-beams, which were embedded into the ground and extended about 22 feet above the street level, spaced 8.3 feet on center with railroad ties installed as lagging between the beams. In early 1985, a portion of the upper crib wall failed. Leighton (1985a) noted that surficial failures on the adjacent site had undermined the existing Garvey Slope Retaining Wall, and provided a detail to repair the wall and steep slope below the wall. This wall was subsequently repaired and shotcrete was applied to the offsite slope below this wall in April 1985 (See Picture 13). The limits of shotcrete are shown as Phase 2 on the appended Plate 1. A concurrent grading effort included trimming the slope above Abajo Drive. Per the grading plan by Wildan and Associates, 1 to 10 feet of surficial materials were to be removed (URS 2005). Roughly 6,700 cubic yards of material was hauled offsite (City receipts). Pipe and boards were installed in the slope offsite with some pipe and board systems installed on the subject site. Concrete swales and down drains were also installed.

Photographs in 1985 show that the condominiums across Abajo Drive were under construction. These condominiums were damaged in the 1987 Whittier earthquake, which occurred shortly after construction had finished, and were subsequently demolished. They were ultimately replaced by the current senior housing apartments. The City could find very little information on this offsite property.

In January 1993, additional failure occurred in the steep offsite slope below the offsite shotcrete slope that was installed in 1985 and to the east of the offsite shotcrete slope installed in 1979. Three portions of the pipe and board diversion walls were destroyed. This portion of the offsite slope was restored and covered with reinforced shotcrete in November to December 1993 (Limits of shotcrete shown as Phase 3 on plans). Drains were installed behind the shotcrete section.

In late 2004, a progressive failure occurred in the slope above Abajo Drive, sending debris onto Abajo Drive. In aerial imagery in early 2003, an arcuate anomaly can be seen offsite in the lower part of this slope area although the slope is covered with vegetation. This failure first started offsite, was left unrepaired, and migrated up the slope during the winters of 2004-2005, 2005-2006 and possibly 2006-2007 before stabilizing circa 2007. By 2007, the limits extended from the retaining wall up to the top of the slope below Goodview Drive and involved the upper 7± feet of surficial soil. This resulted in the temporary closure of Abajo Drive. Soldier piles were subsequently installed behind the existing retaining wall to enhance its stability, and the slope was cleaned and covered with jute mesh or a similar product. The failure scarp remains although vegetation has regrown within its limits.

Minor failures have occurred in the last decade. Most of these involved smaller mudflows, erosions, toppled trees, and sliding of failed crib wall members. Some of

these have caused closures along Garvey Avenue. In the last several years, large portions of the site have been covered with plastic.

3.0 PROPOSED DEVELOPMENT

It is proposed to improve the stability of the existing slope by removing the existing failing retaining walls, vegetation, failed materials, and existing fill and restoring the site with retaining walls and 2:1 cut and fill slopes. The design may later support residential development of the site in future phases of construction. Along Garvey Avenue, a pile and anchor wall is proposed with heights of up to roughly 38 feet. A 2:1 slope is proposed above this wall with the several level pad areas located above this slope. An additional 2:1 slope is planned above the level pad areas that will daylight onto the ascending slope above. Six-foot wide terraces with a concrete v-gutter drain will be constructed every 30 vertical feet along the slope. Several rows of pressure-grouted permanent ground anchors are proposed to improve the global stability of the slope.

It is our understanding that the "Garvey Slope Retaining Wall" will remain since portions of the wall are located offsite and may be integrated with the offsite shotcrete slope that was constructed in 1985. Design grades may be lowered behind this wall to allow for drainage. The other retaining walls within the limits of grading will be removed. Some existing retaining walls that are located upslope of the grading limits and may also need to be removed depending on conditions exposed during grading efforts. Portions of the impact wall located offsite will also be removed as well as the built up debris to expose the previous gunite slope, which will be protected in-place. A short retaining wall will be constructed between the anchor wall and the street to retain the offsite soil. Much of the slope ascending slope above Goodview Drive will remain as will the existing retaining wall located above the entrance road. Portions of the site located within the City of Monterey Park Right-of-Way for Abajo Drive will also be protected in place.

4.0 FIELD AND LABORATORY INVESTIGATION

4.1. Previous Studies

The site has been subject of numerous geotechnical field studies as detailed below. The locations of the exploratory excavations completed as part of these investigations are shown on the Geologic Map. Logs of some the excavations and associated laboratory data are presented in Appendix E and are summarized on Plate 1. Due to restrictions on making copies of some of the reviewed reports, AGS has not included all the logs and associated laboratory data from the referenced reports in Appendix E.

Site mapping was also conducted by previous consultants. Notable surficial geologic features that were identified by others have been included in the Geologic Map.

4.1.1. Thomas Clements Associates Consulting Geologists (1978)

Thomas Clements Associates Consulting Geologists conducted a geologic evaluation of the site in 1978 that included excavating four test pits. They did note in their report that the heavy rains in February and March of 1978 caused a few surficial mudslides along the slope above Garvey Avenue. They described the 1:1 slope along Garvey Avenue as

being a cut and mentioned that there may have been past grading on the property that has since been obscured by heavy vegetation. Their Test Pit No. 3 was excavated off an old existing road and encountered soils to the maximum depth explored (10 feet).

4.1.2. Chang & Associates (1978a and 1978b)

Chang & Associates conducted the geotechnical investigation for the original 30-lot subdivision. Eight test pits were excavated and bulk samples were collected for laboratory testing as part of their study. Up to 9.5 feet of fill was encountered in their Test Pit No. 1, which they described as being a localized condition. They recommended that cut slopes and fill slopes be constructed no steeper than 1.5:1 (H:V) and that fill slopes be benched into bedrock. A supplemental letter was prepared that provided revised allowable bearing values that were based on additional direct shear testing conducted on bedrock samples. The laboratory test results were not provided; instead an average re-sheared strength was provided.

4.1.3. Soils International (1978)

Soils International performed a study in 1978 in order to determine allowable soil bearing values for the proposed crib walls. Both bulk and undisturbed bedrock samples were collected from backhoe-dug test pits. Laboratory testing of the collected materials include maximum dry density and optimum moisture content, and direct shear testing of undisturbed and remolded samples (95 percent relative compaction). Direct shear testing was also conducted on samples that were mixed with 5, 7, and 10 percent cement by dry weight. Bearing recommendations were provided for bedrock and compacted fill (95 percent relative compaction) mixed with 7 percent cement by weight. They recommended that the crib walls be supported on a least 5 feet of cement treated soils (minimum 7 percent cement by weight).

4.1.4. Soils International (1979)

Soils International performed observation and testing during construction of the crib walls between October 1978 and May 1979, including placement of cement treated soils below the foundations. Their report stated that existing surficial soils were removed to expose competent bedrock and that fill was brought up in layers and benched into the existing bedrock. Where the crib walls were supported on fill, a minimum of 5 feet of cement treated soils were placed below the base of the wall. Test results were also provided; however, the relative compaction for the cement treated soils was determined using the maximum dry density on untreated soils. Based on a review of the test results, the moisture content at the time of testing was greater than the optimum moisture content for a majority of the tests taken in the non-treated soils. A few test results did show moisture contents that were up to roughly 5 percent below the optimum moisture content. Their report concluded that the placed soils met the minimum requirements for compaction (relative compaction of 95% below walls and 90% for backfill). However, some unreasonable test results were noted where the reported density was not feasible for the reported moisture content.

4.1.5. Chang & Associates (1980)

Chang & Associates performed observation and testing during the rough grading of the original subdivision between November 1978 and June 1979 and in December 1979. They indicated that the site was graded with onsite and imported soils. No description on the imported soils was provided and the relative compaction of the test results was determined using two maximum dry densities. The limits of the fill were denoted on the provided plan. They noted that they did not provide testing of the retaining wall along Garvey Avenue, likely since the retaining wall was already constructed prior to grading. A review of the test results indicates that the reported moisture for a substantial portion of tests was below the optimum moisture content and in some cases over 5 percent below optimum.

4.1.6. Leighton and Associates (1982)

Leighton and Associates, Inc. (Leighton) conducted a study in 1982 addressing surficial failures that occurred above the 2 to 14-foot high retaining wall along Abajo Drive within the offsite "triangle" parcel. At the time of their observations, they noted that the retaining wall along Abajo Drive was experiencing distress and that the v-gutter behind the wall had been filled in with slope debris. They indicated that the upper part of the wall above the buried ditch may not have been designed to retain soils, yet the drainage ditch behind the wall was filled in with soil and a thin apron of concrete was placed over the soil. The concrete lined drainage ditches on the slope were also filled in. They noted cracks within some of the v-gutters and within the asphalt road at the top of the slope (the road was constructed in 1979-1980). Several existing and impending surficial failures were noted on the slope. They noted that the sidewalk, gutters, and pavement along Abajo Drive did not show signs of distress. Based on their review of prior reports, Leighton noted that the bedding orientations and observed joint and fractures in the bedrock on the slope was favorably oriented for the slope. They attributed the slope distress to be caused by surficial soil failures. They provided the following recommendations: removal of upper surficial flow debris; construction of a v-ditch behind the existing wall; construction of berm at the top of slope to control runoff; construction of pipe and board devices or concrete v-gutters on the slope face; and that the slope be planted.

4.1.7. Leighton and Associates (1983a)

Leighton provided an assessment of a slope failure that occurred in 1983 involving a portion of the crib wall and slope. Surficial failures were also observed on the slopes above Garvey Avenue and Abajo Drive, and a portion of the crib wall near the entrance to the site was observed to be buckling. Fractures within the private road above the slope were also observed. Leighton concluded that the observed failures were caused by the extreme rainfall and that the slope could possess a factor of safety against deep seated failures of less than 1.0. They recommended that certain measures be implemented, including: installing jersey barriers in the median, installing a secondary barrier in front of the apartment complex, monitoring the slope and crib walls, and that a more detailed

geotechnical investigation be conducted to evaluate the risk of slope failure and provide recommendations on mitigating the hazard.

4.1.8. Hu and Associates (1983a and 1983b)

Hu and Associates (HA) performed an initial investigation to in 1983 to evaluate the existing slope conditions and provide recommendations for stabilizing the existing slopes and development. Their investigation included excavating four bucket auger borings to depths of up to 32 feet and seventeen backhoe dug trenches. Direct shear testing was completed on undisturbed samples of topsoil, fill and bedrock at both field moisture and saturated conditions. They noted that the crib wall members had hairline cracks in areas that had not failed. Measurements of the crib walls plumbness were taken between March and May of 1993 and indicated that the walls continued to move. Also noted were the extensive cracking in the pavement on Goodview Drive.

They concluded the there was no evidence that the terrace deposits or underlying bedrock was unstable, and that the there was no evidence that the site was geologically unstable prior to development. They concluded that the soil failures could be attributed to the soils becoming saturated. They also noted that crib wall distress could be caused by hydrostatic pressure build up behind the walls, soils expansion pressures, and [inadequate] structural integrity of the walls. They also noted that the pavement distress did not appear to be related to the slope failures. Instead, they attributed the pavement distress to loose soil backfill of utility lines and building retaining walls, expansive soils, and long term settlement of fill. They concluded that the building wall failures were related to inadequate lateral support since the walls failed before the floor slabs could be built. They recommended that stabilization of the site can be accomplished by controlling moisture since the bedrock and fill had adequate factors of safety if they do not become saturated and to restore the site to previous conditions adhering to the recommendations in previous reports. However, they noted that the surficial stability of the 1.5:1 fill slopes was marginal and subject to future maintenance. They recommended that fill slope below Lots 11 to 18 be regraded to ensure a proper key excavation into the bedrock is made. They also recommended that the crib wall integrity be evaluated by a structural engineer and that differential fill settlement be minimized below structures by overexcavating 5 feet below building pads and 3 feet below Goodview Drive.

HA provided a supplemental report (HA 1983b) in response to city review comments (Leighton 1983b). Additional field samples were collected and laboratory testing was conducted, including direct shear testing of materials at the field moisture conditions and consolidation testing of previously collected fill materials. They concluded that the existing fill slopes would have adequate factors of safety if their previous recommendations are followed and that the site can be repaired and development restored. Revised recommendations included using pier foundations for Lots 6 and 7.

Leighton's (1983d) review of their HA's supplemental report questioned the use of shear strengths based on field moisture conditions, which Leighton stated should be based on saturated conditions, as is prevalent in the industry. Leighton also thought the near peak

shear strengths used by HA were too high to evaluate potential creep failures. Leighton concluded that the overall stability of the site could not be assured by following the HA's recommendations.

4.1.9. Leighton and Associates (1983c)

Based on additional information from HA (1983a), Leighton provided an updated assessment of the slope conditions that supplemented their earlier assessment (Leighton 1983a). Leighton concluded that the stability of the fill slope does not meet accepted standards and that the presence of topsoil beneath the fill mass is detrimental to the stability. They recommended that the proposed slope stabilizing measures incorporate the following: slopes in field should not exceed a ratio of 2:1 (H:V) and 1:1 in bedrock; brow ditches berms or other measures at the tops of slope; terrace drains and v-ditches on the slopes at vertical intervals of less than 30 or 15 feet, respectively; and utilities be properly abandoned in Goodview Drive.

4.1.10. Leighton and Associates (1984)

Leighton provided a slope assessment in 1984 in order to present design parameters for the slope repair and to suggest repair concepts. Their assessment included incorporating a crib wall evaluation by a crib wall designer (Criblock 1984). As part of their study, Leighton excavated two bucket auger borings. Laboratory testing was completed. Leighton recommended that fill on Pads 11 through 18 be removed and replaced and that buildings on Pads 8 through 10 not be constructed. Leighton also recommended that the failed crib walls and slopes be restored and shoring be used to protect the upper crib wall during construction. Granular backfill was recommended behind the crib walls, not the fine-grained soils that had been used, and that an impermeable blanket of fill be placed over the crib wall and building pads. Even with the implementation of those measures, Leighton raised concerns over the gross stability of Pads 2 through 10 and suggested two alternatives to allow for Pads 2 through 7 to be constructed- construct a caisson/tieback wall between the upper and lower crib walls and reconstruct the lower crib wall; and design and reconstruct the lower crib wall to support the upper crib wall and fill mass. Also recommended was the installation of terrace drains, subdrains behind the existing crib walls, and overexcavation for several building pads and Goodview Drive to reduce differential settlement potential.

4.1.11. Leighton and Associates (1985a and 1985b)

Leighton (1985a) provided an assessment of the "Garvey Slope Retaining Wall". Distress in the existing wall was noted, and loss of support below the wall and footings was caused by surficial failures of the slope below the wall. Distress cracks were noted in the wall and the wall was tilting outward. Leighton recommended that the unsupported section of wall be temporarily supported and that a reinforced shotcrete slope be constructed below the wall. They recommended that the shotcrete be benched into the existing bedrock. The soils above the wall should also be compacted to reduce potential water infiltration. This wall and slope were repaired in accordance with

Leighton's recommendations. Leighton provided the observation during the work and issued a final report documenting their field observations (Leighton 1985b). Pipe and board systems were also installed in the existing slope above Abajo Drive at 15-foot intervals along with concrete down drains.

4.1.12. Hu and Associates (1986)

HA provided recommendations for the repair of the failed wall and slope in 1986. HA proposed that a pile-supported retaining wall be placed at the toe of the slope along Garvey Avenue and that a large mass of compacted soil-cement be placed behind the wall, extending up to the top of the first crib wall (prior to its failure). A keyway with a minimum width of 12 feet was proposed and several concerns were raised, but HA did not respond to their comments.

4.1.13. Leighton and Associates (1988a and 1988b)

Leighton conducted a geotechnical investigation for the repair of the proposed residential development. Their study included the excavation of eight bucket auger borings and nine backhoe trenches. Laboratory testing was also completed. They concluded that the existing crib walls and fill slopes are unstable. They concluded that the cut slope above Abajo Drive, which had been improved by removing the upper loose soils and vegetation and installing pipe and boards, exposed massive to poorly bedded bedrock with steeply dipping beds and joints and fractures that were observed to be favorably oriented and thus was considered grossly and surficially stable. They also noted that the existing retaining walls for the partially constructed structures were designed using active pressures instead of at-rest pressures, which contributed to their failures. Leighton recommended that the site be regraded using geogrid reinforced 1:1 slopes to heights of up to 100 feet in lieu of retaining walls. Because topsoil and colluvium was left in-place below the fill, Leighton recommended that the existing fill, topsoil, colluvium, and upper 10 feet of weathered bedrock be removed and that new fill be benched into the bedrock. Deeper deposits of colluvium could be left in place within the pre-existing deep swale. They also noted the potential for debris flows to be generated above the site within an existing swale in the central portion of the site.

4.1.14. Bing Yen & Associates (1988 and 1993)

Bing Yen and Associates provided an evaluation of the capacity of the impact wall. They concluded that the impact wall, which at the time was had an accumulation of debris behind the wall, could not withstand additional impacts of crib wall members nor accumulation of additional debris behind the wall. They recommended measures to enhance the capacity of the system. A subsequent study in 1993 described the additional accumulation of debris behind the wall yet noted that additional significant failures of the crib wall had not occurred since their previous study. The 1993 report reiterated the need to enhance the capacity of the impact wall.

4.1.15. Leighton and Associates (1991a and 1991b)

Leighton conducted a study in 1991 to provide alternative conceptual slope remedial designs for the site. Their study included excavating nine backhoe test pits, two hand dug test pits, and conducting laboratory testing, including Atterberg limits and grain size distribution. The intent of the study was to evaluate the feasibility of the previously proposed retaining wall with soil-cement design versus the reinforced fill slope design. They did not believe that the use of soil cement was a feasible alternative for the site. Instead of using the soil cement or their previously proposed 1:1 reinforced soil slope, they proposed the use of a modular block wall reinforced with geogrid and 1.5:1 to 2:1 reinforced soil slopes.

Dames & Moore reviewed the 1991a Leighton report and prepared comments (Dames & Moore 1991). Leighton prepared a response for their comments (199b), including a summary of direct shear test results and additional justification for parameters used for Leighton's previous shear strengths used and seismic stability analysis.

4.1.16. URS Corporation (2002)

URS provided an evaluation of the site conditions in 2002 which involved a site reconnaissance and review of previous reports for the site. No additional subsurface work or laboratory testing was conducted. They concluded that significant failure of the crib wall had not occurred since 1983 and attributed this to the reduction of winterization efforts employed which resulted in the reduction of water intrusion. Likewise, they found only a minor increase in the accumulation of failed soil mass behind the impact wall when compared with the condition in 1988. URS recommended that the existing crib wall members be removed, and that the slope be laid back to a gradient no steeper than 1.5:1. (H:V). They also indicated that their recommended measures would enhance the stability of the slope but indicated that the restored slope would likely not have factors of safety in excess of 1.5 unless that entire fill slope was removed and re-engineered.

4.1.17. URS Corporation (2005)

URS Corporation conducted an investigation for the surficial failure that occurred above Abajo Drive in 2003-2005. The 2003-2005 Abajo Drive failure extended from Abajo Drive up the slope roughly 110 feet vertically to near Goodview Drive. URS indicated that the width of the failure varied from roughly 15 feet at the headscarp and up to roughly 35 feet in the lower sections. AGS estimates the width to be up to 60 feet based on the current scarp. Up to roughly 3 to 7 feet of surficial soils were part of the failure. As part of their investigation, URS excavated one bucket auger boring on Abajo Drive to a depth of 46.5 feet. About 2 feet of artificial fill was encountered over intact Fernando Formation. Two test pits were also hand excavated. They described the failure as a surficial slump that was mainly derived from the colluvium/residual soil that became saturated and failed after heavy rainfall in January 2005. They also mentioned that portions of the retaining wall immediately below the slide area failed and that adjacent

areas of the retaining wall were experiencing distress such as cracking and tilting. They recommended that a row of large diameter soldier piles be installed behind the existing retaining wall at the toe of the slope to provide temporary support during construction as well as permanent structural support. They recommended that the slide mass and weathered bedrock be removed. Additionally, they recommended that the slope be rebuilt using engineered fill mixed with cement and benched into the bedrock. Based on current observations, it appears that only some of these measures were followed, including the installation of soldier piles behind the existing retaining wall and removal of some of the slide mass. The slope has not yet been restored since the slide scarp is still visible.

4.1.18. Environmental Geotechnology Laboratory, Inc. (2014)

Environmental Geotechnology Laboratory, Inc., (EGL) conducted a subsurface investigation at the site in 2013 which included excavating four deep bucket auger borings and five hand dug test pits. Laboratory testing was completed on collected samples. Copies of their logs and laboratory data is presented in Appendix E. Also presented in Appendix E are copies of boring and trench logs from Leighton and Associates that were included in their report. EGL's study addressed a prior proposed 16-lot development on the site.

4.2. AGS Field Investigation

Site geologic reconnaissance mapping and a subsurface investigation were performed in September and November 2016. The subsurface work consisted of excavating ten shallow borings with a hand auger and/or shovel. Bulk samples were collected from each of the borings. Laboratory testing was conducted on the collected samples, including gradation, Atterberg limits, maximum dry density and optimum moisture content determinations, and direct shear testing. Samples were then combined, mixed with cement at various ratios, and subjected to testing, including maximum dry density and optimum moisture determinations, unconfined compression, direct shear testing, and triaxial testing.

In November 2017, two large diameter borings were excavated, sampled, and down hole logged by representatives of Leighton and Associates, Inc., (Leighton) and AGS. Leighton was hired by the property owner to also provide an independent study that was completed in conjunction with AGS's field and laboratory investigation. Collected samples were subjected to laboratory testing independently by Leighton and AGS. Laboratory testing by AGS included gradation, Atterberg limits, maximum dry density and optimum moisture content determinations, and direct shear testing.

The approximate locations of AGS's exploratory borings are shown on Plate 1. The Logs of Borings are presented in Appendix C. The test results are presented in Appendix D.

5.0 ENGINEERING GEOLOGY

5.1. Geologic Analysis

5.1.1. Literature Review

AGS has reviewed the referenced geologic documents in preparing this study. Where deemed appropriate, this information has been included with this document.

5.1.2. Aerial Photograph and Historic U.S.G.S. Map Review

AGS has reviewed aerial photographs available online and in our library as well as historic U.S.G.S. quadrangle maps. The aerial photographs taken on the following dates were reviewed: 7-10-1948 (20,000 scale), 7-30-1952 (23,600 scale), 3-14-1973 (32,000 scale), 7-2-1973 (32,501 scale), 6-23-1976 (80,000 scale), 10-31-1979 (80,000 scale), and 10-20-1980 (24,000 scale). Stereo photographs were reviewed from the following dates: 11-19-1953, 4-3-1960, 1-30-1970, 11-7-1976, 5-12-1979, 1-27-1986, 7-7-1988 (26,000 scale), 5-25-1990, 5-13-1993 (24,000 scale), 7-11-1995 (24,000 scale), and 10-18-1998 (24,000 scale).

Aerial photographs from years 1953, 1964, 1972, 1980, and 1994 were also reviewed as well as satellite imagery dating from 1996 to 2018.

5.1.3. Field Mapping

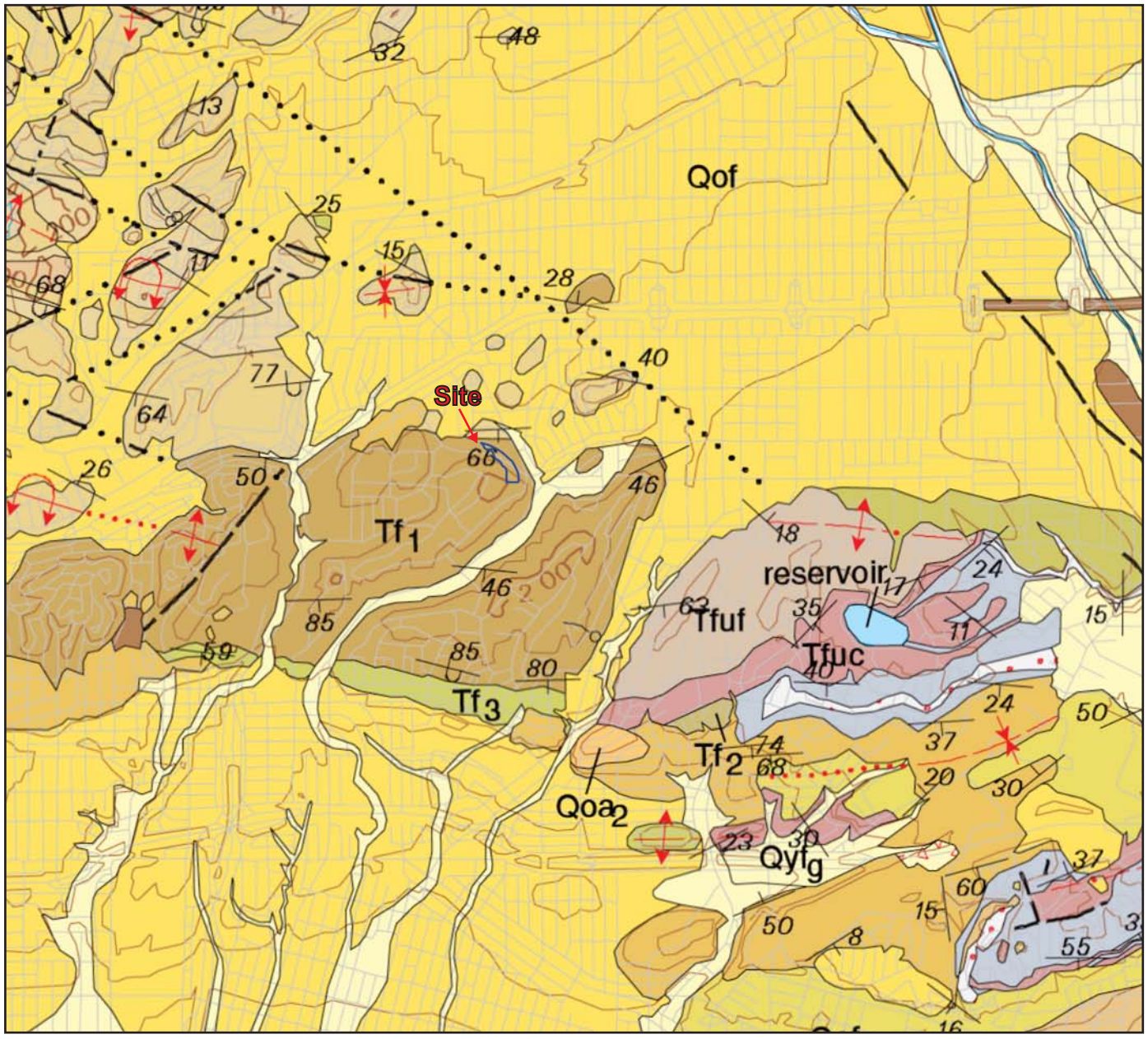
A site reconnaissance(s) was conducted at the site and its immediate vicinity.

5.2. Geologic and Geomorphic Setting

Regionally, the site is located on the outer limits of the San Gabriel Valley. The San Gabriel Valley is bound on the west by the Elysian, Repetto, and San Rafael Hills, on the south by the Puente Hills, on the east by the San Jose Hills, and on the north by the San Gabriel Mountains. The Elysian, Repetto, and San Rafael hills were formed primarily during folding and uplift during the late Quaternary period. Specifically, the site is located within the southern slopes of the Repetto Hills. The Repetto Hills are mostly underlain with Tertiary-aged marine sedimentary bedrock, including the marine and nonmarine sedimentary rocks of the Fernando Formation which overlie the Puente Formation. Basement rocks include Cretaceous-aged crystalline igneous rock and metamorphic rock (gneiss).

Pliocene-aged Fernando Formation underlies the subject site (See Figure 4, Regional Geologic Map). Thin surficial deposits of Holocene sediments also mantle portions of the Repetto Hills. The Fernando Formation consists of conglomerate and conglomeratic sandstone, massive soft micaceous fine to medium-grained sandstone, and massive soft micaceous siltstone. Several landslides have been mapped on the steeper slopes of the Repetto Hills, mostly within the Puente Formation and soft siltstone of the Fernando Formation. One small landslide has been mapped onsite and a larger one below Abajo Drive to the southwest of the site (CGS 1998).

No readily available documents that depict faulting within the limits of the site have been published. The nearest known active fault to the site is the Elysian Park Fault, with the surface



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SCALE: 1 in. = 4000 ft.

REGIONAL GEOLOGIC MAP
1688 WEST GARVEY AVENUE
MONTEREY PARK, CALIFORNIA

FIGURE 4

SOURCE MAP(S): Yerkes and Campbell 1997, Preliminary Geologic Map of the 30'x60' Los Angeles Quadrangle

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Ste B, Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287

P/W 1605-04 Report No. 1605-04-B-11

projection of the poorly located blind thrust located roughly 500 feet north of the site. The nearest known active fault at the surface is the Alhambra Wash fault, located roughly 2.2 miles to the east (Figure 5, Fault Map).

5.3. Stratigraphy

The underlying bedrock has been described as the Fernando Formation. The overlying surficial units are described below. Several previous consultants have not identified geologic units in their exploratory trench and boring logs. For instance, HA, Chang, and TCA used a soil description (i.e. Silt, Clay, etc.) to describe the surficial units and only specifically differentiated the fill. Also, several have used differing terminology when identifying the units described below. AGS has reviewed the trench and boring logs and have categorized geologic units based on the descriptions in the logs and nearby logs and location of the exploratory trenches and borings. On the abbreviated boring and test pit logs on Plate 1, AGS has generally kept the original consultant's interpretation of the geologic units. However, the geologic units shown on the geologic map reflect AGS's interpretation.

5.3.1. Surficial Units

5.3.1.1. Slope Wash and Shallow Slide Debris (Qsw)

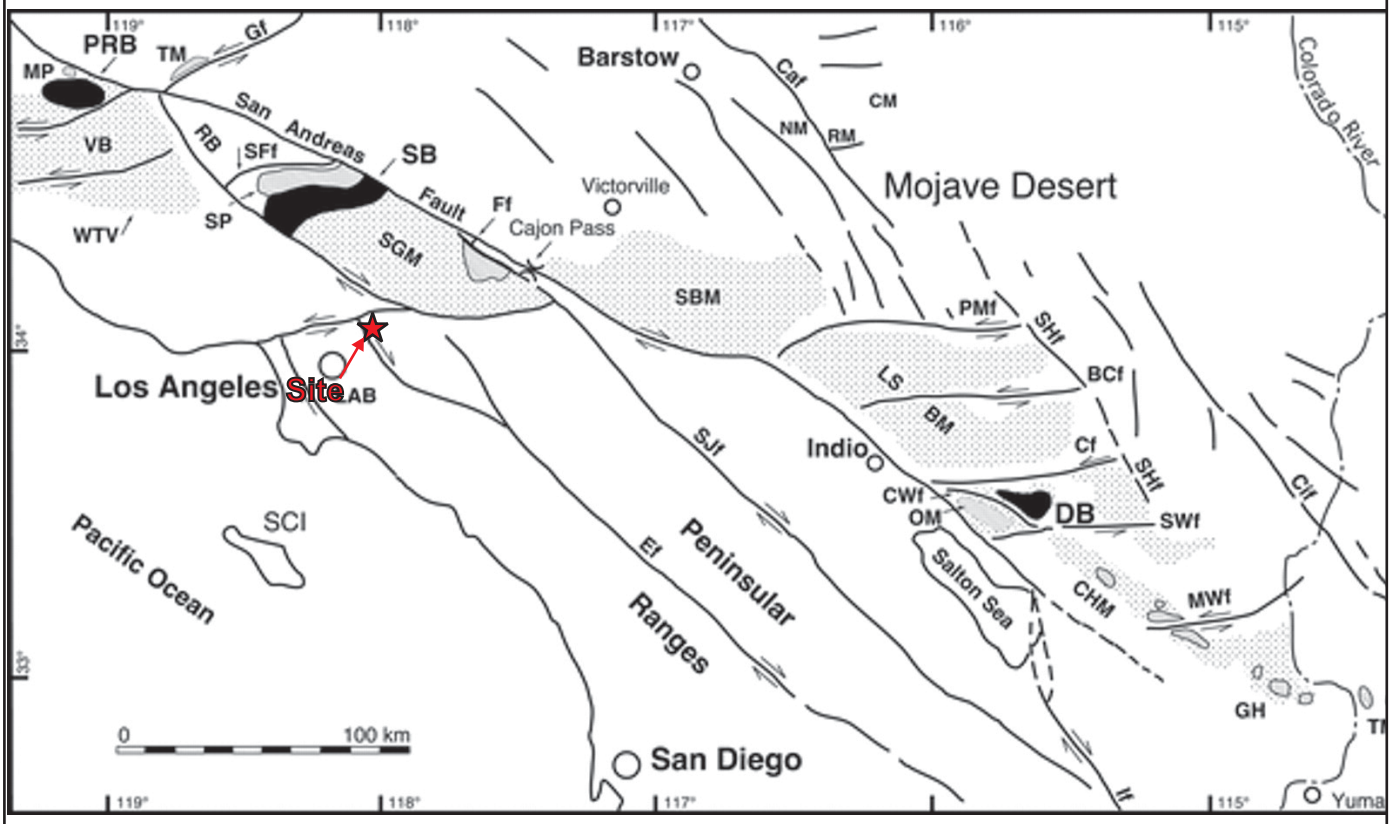
Slope wash and/or slide debris mantle portions of the site. These materials are locally derived and consist of soil mixed with vegetation, construction debris, failed foundation pieces and crib wall members, sand bags, and/or plastic sheeting. These deposits originated from erosion and shallow surficial slides that occurred during periods of heavy rainfall. The parent materials were generally artificial fill and colluvium on the steep slopes that became saturated. These materials are generally around 1 to 2 feet thick on the slopes and approach a depth of nearly 15 feet behind the impact wall along Garvey Avenue. Generally, these materials have not been mapped owing to their limited thickness.

5.3.1.2. Artificial Fill, Undocumented (afu)

Minor amounts of undocumented artificial fill (afu) were observed in several places. These materials are locally derived and consist of locally stockpiled soil mixed with debris and vegetation. These are located on a few of the pads onsite and generally are a few feet thick. Owing to their limited thickness and lateral extents, the limits of these deposits have not been shown on the plans.

5.3.1.3. Artificial Fill, Compacted (af)

Artificial fill covers most of the developed area of the site and consist of moist to wet brown to dark brown silts and clays with fragments of bedrock and trace amounts of sand. Some organic layers and organic debris were also noted in the borings and trenches. Up to 28 feet were encountered in the exploratory excavations. However, up to 45 feet of fill may be present onsite based on the original grading plan and 1980 compaction report. Based on the density test



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FAULT MAP
TTM 75003
1688 WEST GARVEY AVENUE
MONTEREY PARK, CALIFORNIA

FIGURE 4

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Telephone: (619) 867-0487 Fax: (714) 409-3287

results, this fill was reportedly placed at greater than 90 percent relative compaction (based on ASTM D1557-70), or 95 percent immediately below the crib walls. Moistures at time of the original testing were a few percent above to several percent below optimum moisture content. Based on density testing of collected samples of the fill, EGL (2015) concluded that the compaction of the existing fill is currently below 90 percent relative compaction and in some cases near the surface is below 70 percent. EGL used a maximum density of 115 pcf to determine the relative compaction, and the maximum densities used to develop the relative compaction during construction varied between 112 and 116 pcf. AGS obtained a maximum density (D1557) of 110 pcf for the mixed sample collected. The densities obtained in the ring samples collected during investigations by Leighton, EGL, and HU, indicated that the density of the fill is much lower than the densities reported by Chang (1980) in their original grading report for the site, and the moisture contents are also higher than originally reported. Much of the fill on the slope face and below Goodview Road is creep affected and portions may have moved during previous failures onsite.

Below the crib walls, some cement treated soils were encountered. These were originally placed to increase the bearing capacity of the soils below the crib walls as recommended by Soils International (1978). These have been described as being poorly mixed with chunks of cement and also laterally discontinuous.

Artificial fill is likely present behind the 5-foot retaining wall along Garvey Avenue and behind the Garvey Slope Retaining Wall, although documentation of the fill placement could not be located at the City, and test results for this fill were not included in the compaction report for the site.

Artificial fill is also located near the top of the slope above the site and was placed during the construction of the adjacent Tract 24666. Grading for Tract 24666 included filling in swales and constructing of several 1.5:1 fill slopes near the top of the ridge. Documentation on the placement of this fill could not be located at the City; however, grading plans were located and could be used to identify the lateral extents of the fill placed during construction of Tract 24666.

5.3.1.4. Topsoil and/or Residual Soil (No map symbol)

Topsoil mantles portions of the natural slope onsite and is also buried below some of the compacted artificial fill and colluvium. Up to several feet of topsoil was encountered in the exploratory excavations. It consists of brown to dark brown silts, clayey silts and clays. The upper highly weathered zone of bedrock has been described in some of the logs as residual soil. Owing to its limited thickness, topsoil has not been mapped on the site although a foot to several feet or more mantles the areas that have been mapped as bedrock.

5.3.1.5. Colluvium (Qcol)

Colluvium/soil mantle most of the site and surrounding slopes that are not currently covered with artificial fill or slope wash. Deeper deposits are located within some of the swales. Although previous grading on the site has reduced the thickness of colluvium on the ridge, colluvium is still present below the compacted fill on the site. Colluvium of various depths is located on the side of the slope. Locally, this colluvium was encountered to depths of up to 30 feet, although fill was overlying the colluvium. Thicknesses of up to 28 feet were observed. AGS has generally not mapped colluvium where its thickness at the surface is believed to be less than 5 feet.

The origin of these materials is not known with certainty, and there are differing opinions on the most appropriate geologic nomenclature to assign this unit. Several previous consultants have described these materials as Terrace Deposits (HA 1983a), or ancient landslide deposits (EGL 2015). Whereas some of the field observations may support either of these designations, AGS is of the opinion that these materials are more accurately described as colluvium derived from local materials. Broken pieces of randomly oriented siltstone and silty sandstone are embedded in a silty clay matrix. Secondary weathering of the siltstone/sandstone fragments indicates that some of this colluvium may be pre-Holocene. Potential slide surfaces were not encountered in the exploratory excavations at the base of the colluvium although the surface and subsurface profile in portions of the site prior to development could be indicative of prior landsliding. Furthermore, the weathered bedrock was located below some of the colluvium deposits. In some cases, a gradual transition between colluvium and bedrock was described, lending further credence to describing the materials as colluvium. In some of the swales, deep colluvium may have accumulated from a series of older mudflows and other surficial failures.

5.3.2. Bedrock Units

5.3.2.1. Fernando Formation

Sedimentary bedrock of the Pliocene age Fernando Formation underlies the site. The Fernando Formation onsite is associated with the Repetto member, a claystone of marine origin. Based on our review of available subsurface logs, the bedrock onsite generally consists thickly bedded to massive siltstone and fine-grained sandstone. Occasional thin claystone beds were locally encountered. Bedrock onsite was observed to be very highly weathered and fractured and very weak near the surface, becoming less fractured and moderately strong at depth. The upper 5 to 10 feet of bedrock was generally observed to be highly weathered, creep affected, and in some cases with an incoherent structure. A high degree of weathering and fracturing was observed in the upper 10 to 20 feet. Below 20 to 40 feet, the bedrock was generally less weathered and fracturing was confined to more limited zones.

The upper 20 feet of bedrock in BA-1 and 30 feet in BA-2 was observed to be weathered. Discontinuous fracturing and random jointing was observed in the upper 30 to 35 feet of BA-1. A transition from oxidized to unoxidized bedrock was observed at around 56 to 58 feet in depth in BA-1 and around 67 feet in BA-2. The bedrock was observed to be thickly bedded to massive. A clay bed was observed at a depth of 47 feet in BA-1.

Few outcrops were observed on the site or near the site. These outcrops were generally located above Goodview Drive where previous design cuts made during the original 1979 grading exposed some of the less weathered and more coherent bedrock.

5.4. Geologic Structure

The site geology, as interpreted from the data obtained during previous and the current investigations, is presented below. The subject site is underlain by the Repetto member of the Fernando Formation. In general the unit is thickly bedded to massive. Bedding attitudes within the bedrock were observed to predominantly strike in a northwesterly direction and dip towards the south at moderate to steep inclinations, which is consistent with the regional trends shown on the published geologic maps (Dibblee 1989, Yerkes and Campbell, 1997 and 2005). Thus, bedding was generally observed to dip into the east facing slope. For the southeasterly slopes, the bedding dips were steeper than the slope and generally do not "daylight". Thick deposits of colluvium mantle the slopes and swales.

5.5. Mass Movements

Several relatively shallow mass movements have been observed on the site and shallow slope failures and slumps are present on the site and adjacent slopes. Several shallow slope failures have occurred since the site was graded in 1980 (See Figure 3, Post Grading Slope Failure Map). Most of these can be characterized as mudflows that were derived from the upper saturated topsoil, colluvium, and fill that were triggered by heavy rainfall. Some slightly deeper landslides have occurred on the site. One of these slides occurred on the slope above Abajo Drive in 2005 (although it may have incrementally failed 2003-2007) and extended up to 100 feet vertically from Abajo Drive with a width of up to 60 feet and involved the upper 3 to 7 feet of materials on the slope face. A failure scarp is still present on the slope. URS described the slide materials as soft, very moist clay with numerous claystone fragments (URS 2005). They characterized the slide as occurring within the upper colluvium, residual soils, and upper highly weathered bedrock. The slide plane was described as a very soft, wet, clay with claystone fragments up to 1/2 –inch diameter. The significant portion of the slide failure occurred after abundant rainfall in January 2005. Outside this failure area, the slope above Abajo Drive, which is mostly offsite, is creep affected and characterized by numerous smaller failures that have deposited behind the pipe and board systems, causing most to lean and several to fail.

Failures within the fill were generally shallow, although a deeper failure occurred below proposed Lots 7 and 8. This failure occurred incrementally and has toppled portions of the two crib walls in this area. The fill above this slide is creep affected and has been subject to settlement and

lateral extension as evidenced by the numerous extensional and settlement cracks located on Goodview Drive above this area. Some shallow failures within the fill and colluvium have impacted previously constructed retaining wall foundations and v-gutters. Deposits of shallow slump materials and/or colluvium are present in one swale above Goodview Drive near Cross-Sections D-D' and E-E'. Some of these deposits appear to be fairly recent and may be related to the failure of the adjacent retaining walls and v-gutters that were constructed as part of the original development.

Evidence of larger landslides or mass movements within the less weathered bedrock was not found although the deep deposits of colluvium (~30-feet deep) have been described by previous consultants as ancient landslide debris. The bedrock onsite appears to be intact although the upper bedrock is highly weathered, fractured and creep affected. Mass movements seem to be confined to the upper few feet of the residual/highly weathered bedrock and overlying materials including colluvium and artificial fill.

5.6. Groundwater

A static groundwater level was not encountered during the previous and current exploratory work conducted on and near the site. Minor seepage was observed in URS's boring B-1 (URS 1985) that was drilled offsite on Abajo Drive. The seepage was encountered at depths between 12 and 35 feet (elevations of between 466 and 443) although seepage was not encountered below a depth of 35 feet. Several seeps were encountered in EGL's borings. Boring No. B-3 encountered minor seepage in a fractured zone between 82 to 85 feet (elevation 486 to 483) and also within a fracture at 87 feet (elevation 481). Seepage was encountered in Boring B-4 at 76 feet (elevation 519.5) within a sandstone bed), within joints at 87 feet (508.5), and heavier seepage at 96 feet (elevation 499.5) along steeply dipping bedding planes in sandstone. Slight seepage was encountered at depths of 83 and 87 feet in AGS's BA-1 and 113 feet in BA-2.

Seepage may be encountered near the bottom of the proposed removals and on the backcuts and should be evaluated during grading. Groundwater is not expected to impact the proposed design. A phreatic surface was not used in the slope stability analysis since groundwater was not encountered and seepage was confined largely to deep bedding planes and fractures.

5.7. Non-seismic Geologic Hazards

5.7.1. Mass Wasting and Debris Flows

Due to the remedial grading proposed for the site; including unsuitable soils removals and the construction of stabilization keyways and walls, it is our opinion that the potential for mass wasting will be mitigated to acceptable levels on the site. Potentially unstable areas are located above and below the site. There is a minor potential for debris flows to be generated on the ascending offsite slopes above the development. Catchment areas and diversion walls should be included as part of the future development to mitigate this risk to acceptable levels.

5.7.2. Flooding

The site is not located within a County of Los Angeles flood plain. Hydrology studies should be provided by the Civil Engineer.

5.7.3. Subsidence and Ground Fissuring

Due to the presence of dense bedrock below the planned removal depths, the potential for subsidence and ground fissuring due to settlement of the underlying earth materials is unlikely.

5.8. Seismic Hazards

The site is located in the tectonically active Southern California area, and will therefore likely experience shaking effects from earthquakes. The type and severity of seismic hazards affecting the site are to a large degree dependent upon the distance to the causative fault, the intensity of the seismic event, the direction of propagation of the seismic wave and the underlying soil characteristics. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction, seismically induced slope failure or dynamic settlement. The following is a site-specific discussion of ground motion parameters, earthquake-induced landslide hazards, settlement, and liquefaction. The purpose of this analysis is to identify potential seismic hazards and propose mitigations, if necessary, to reduce the hazard to an acceptable level of risk. The following seismic hazards discussion is guided by the California Building Code (2016), ASCE 7-10, CDMG (2008), and Martin and Lew (1998).

5.8.1. Surface Fault Rupture

Active faults have not been identified onsite and surface fault rupture potential is considered low. The nearby Elysian Park Fault is a blind thrust fault and is not expected to cause surface rupture. The nearest AP fault zone is the Alhambra Wash Fault zone, located roughly 3.1 miles east of the site.

5.8.2. Seismic Ground Motion

The following seismic design parameters are presented to be code compliant to the California Building Code (2016). Upon completion of grading, the lots will be underlain with varying depths of fill over bedrock. The Site Class of C has been designated for the site. Depending on the amount of fill placed onsite, Site Class D may apply to some of the finished pads. The final rough grade compaction report should present a site class on a lot be lot basis.

Using the computer program Seismic Hazard Curves, Response Parameters and Design Parameters, provided by the United States Geological Survey, and 2010 ASCE 7 criterion, the seismic design category for 0.20 second (Ss) and 1.0 second (S1) period response accelerations have been determined (2016 CBC, Section 1613.5.1) along with the design spectral response accelerations (2016 CBC, Sections 1613.5.3 and 1613.5.4). A Seismic Design Category of E was determined based on 1613.5.6 of the 2016 CBC, assuming buildings are in Risk Categories I, II, or III. The mapped acceleration

parameters are provided for Site Class "B". Adjustments for other Site Classes are made, as needed, by utilizing Site Coefficients F_a and F_v for determination of MCE_R spectral response acceleration parameters S_{MS} for short periods and S_{M1} for 1.0 second period (CBC, 2016 1613.3.3). Five-percent damped design spectral response acceleration parameters S_{DS} for short periods and S_{D1} for 1.0 second period can be determined from the equations in CBC 2016, Section 1613.3.4. A site location of Latitude 34.0601°N and Longitude 118.1469°W was utilized. Results are presented in Table 5.8.2, below. Using the United States Geological Survey (USGS) web-based ground motion calculator, the site class modified PGA_M (F_{PGA}*PGA) was determined to be 0.987g. This value does not include near-source factors that may be applicable to the design of structures on site.

TABLE 5.8.2
Seismic Design Parameters

Site Class	Seismic Design Category	Mapped Spectral Response Values		Design Spectral Response Accelerations		Spectral Response Accelerations	
		S_s (g) at 0.2 s	S_1 (g) at 1.0 s	S_{DS} (g) at 0.2 s	S_{D1} (g) at 1.0 s	S_{MS} (g) at 0.2 s	S_{M1} (g) at 1.0 s
C (Very Dense Soil and Soft Rock)	E	2.588	0.896	1.725	0.777	2.588	1.165

5.8.3. Liquefaction/Dynamic Settlement

Liquefaction is the phenomenon in which the buildup of excess pore pressures, in saturated granular soils due to seismic agitation, results in a temporary "quick" or "liquefied" condition. Dynamic settlement includes reduction of volume of dry soils during earthquakes.

The State of California has mandated that the California Geological Survey identify areas that may be susceptible to liquefaction, provide quadrangle maps showing those zones, establish procedures for investigating same, and ensure that local agencies require such studies prior to project approval. The study site is not in a State liquefaction susceptibility zone.

Due to the lack of shallow groundwater and presence of bedrock, the potential for liquefaction and/or dynamic settlement to adversely affect the development is considered low.

5.8.4. Lateral Spreading

Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore pressure build-up or liquefaction in a shallow underlying deposit during an earthquake. Due to the lack of shallow groundwater and presence of bedrock, the potential for lateral spreading is low.

5.8.5. Seismically Induced Landsliding

A majority of the site is located within a State of California Seismic Hazard Zone susceptible to earthquake induced landsliding. Upon completion of remedial grading, the potential for seismically induced landsliding is considered low. Pseudo-static slope stability analyses presented in Appendix G support this conclusion.

5.8.6. Earthquake Induced Flooding

Earthquake induced flooding can be caused by tsunamis, dam failures, or seiches. Also, earthquakes can cause landslides that dam rivers and streams, and flooding can occur upstream above the dam and also downstream when these dams are breached. A seiche is a free or standing-wave oscillation on the surface of water in an enclosed or semi-enclosed basin. The wave can be initiated by an earthquake and can vary in height from several centimeters to a few meters. Due to the lack of a freestanding body of water nearby, the potential for a seiche impacting the site is considered to be non-existent.

Considering the lack of any dams or permanent water sources upstream, earthquake induced flooding caused by a dam failure is considered to be non-existent.

Considering the distance of the site from the coastline, the potential for flooding due to tsunamis is extremely low.

6.0 MATERIAL PROPERTIES

The properties of the materials onsite have been described in the referenced reports and are briefly summarized below.

6.1. Excavation Characteristics

Based upon the subsurface data developed on the site, it is concluded that the site can be excavated with conventional earthwork equipment. Crib walls members and retaining walls should be wasted offsite or crushed into small sizes and mixed into fill materials.

6.2. Compressibility

Colluvium, existing artificial fill materials, weathered bedrock, and shallow landslide deposits are expected to be highly compressible. Compressible soils will be removed during site grading operations and are not expected to impact future improvements onsite.

6.3. Collapse Potential/Hydro-Consolidation

The hydro-consolidation process is a response to the introduction of water into collapse prone colluvial soils or landslide materials. Upon initial wetting, the soils structure and apparent strength are altered and a virtually immediate settlement response occurs. Given that colluvial materials will be removed within the project limits and replaced as compacted fill as discussed in Section 8.1, it is AGS's opinion that hydro collapse will not significantly affect the subject site.

6.4. Expansion Potential

According to the results of tests from previous studies and AGS, the expansion potential of the onsite materials varies from "medium" to "high" when classified in accordance with ASTM D 4829. It is our anticipation that the majority of the fills derived primarily from onsite materials will produce a "medium" to "high" expansion potential.

Further testing and geologic mapping should be conducted during and upon completion of the grading operations to provide design recommendations for future development of the site.

6.5. Shear Strength

AGS has evaluated the shear strength of materials onsite. AGS reviewed the laboratory data provided in the referenced reports. Recent direct shear, triaxial, and Atterberg limits testing by AGS has also been considered in this analysis along with observations of the bedrock as noted in the exploratory borings by others. Back calculation of existing fill slopes has also been considered to bracket the shear strength of the fill. A summary of the fill strengths used by AGS for slope stability design are presented in Table 6.5 and a discussion on how these parameters were obtained are provided below.

TABLE 6.5
SHEAR STRENGTHS RECOMMENDED FOR SLOPE STABILITY EVALUATION

Soil No.	Material	Moist Unit Weight (pcf)	Saturated Unit Weight (pcf)	Strength (Static Analysis)		Peak Strength (Seismic Analysis)	
				Cohesion (psf)	Friction Angle (degrees)	Cohesion (psf)	Friction Angle (degrees)
1	Existing Fill (af)	120	125	300	24	350	30
2	Engineered Fill- Native Materials (afe)[1]	120	125	250	22	100	28
3	Colluvium	122	130	250	27	450	36
4	Highly Weathered Bedrock (variable depth)- Fernando Formation	122	130	50[2]	29	500[3] 700[4]	32[3] 33[4]
5	Weathered Bedrock (upper ~50 feet)- Fernando Formation	127	135	300	31		
6	Deep Bedrock (below ~50 feet)- Fernando Formation	127	135	500[3]	32[3]		
7	Discontinuity- Fernando Formation- Along Siltstone/Sandstone Bedding[5]	127	135	230	19	230	19

Notes: [1] Strengths should be re-evaluated during grading by testing of compacted fill

[2]Cohesion neglected when evaluating surficial stability of highly weathered surficial soils

[3]A reduced peak strength was used for seismic analysis of bedrock; a reduced peak strength was also used for static analysis of deep bedrock

[4]Unajusted peak strength to be used in stability program to "search" for critical failure surfaces. Unadjusted peak strength represents strength of bedrock prior to softening and weathering and is not the same as the current strength.

[5]Assuming a planar contact between beds with no irregularities

6.5.1. Fill Strength

6.5.1.1. Existing Fill

AGS evaluated the strength of existing fill using direct shear results obtained from testing undisturbed samples of the existing fill materials by previous consultants. AGS has compiled and plotted the direct shear results completed by HA, Leighton, and Chang (See Figure F-9).

6.5.1.2. Proposed Fill- Native Soils

AGS evaluated the strength of proposed fill materials using direct shear results obtained from testing remolded samples. AGS has compiled and plotted the direct shear results completed by HA, Leighton, and EGL (See Figure F-10). Also provided are the results of AGS's multi-pass direct shear testing of one remolded sample (Appendix C). However, AGS has recommended that additional testing be completed during grading to evaluate the shear strength of

compacted fill, which may include collecting undisturbed and bulk samples of fill for direct shear testing. The stability of fill slopes should be re-evaluated based on the results of testing completed during grading.

6.5.2. Colluvium Strength

AGS evaluated the strength of colluvium using direct shear results obtained from testing undisturbed samples of the colluvium materials by previous consultants. AGS has compiled and plotted the direct shear results completed by HA, Leighton, and Chang (See Figure F-11).

6.5.3. Bedrock Strength

AGS has evaluated the strength of the bedrock using published studies addressing clayey bedrock materials. Guidelines presented in *Recommended Procedure for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Landslide Hazards in California* (Blake, Hollingsworth, and Stewart 2002) were utilized. The procedures presented in this study have been used extensively in California and are considered applicable to use at the subject site. Regulatory agencies have used this document to develop guidelines for reviewing geotechnical reports that address slope stability hazards and mitigation. The guidelines presented in the 2002 manual outline methods to evaluate bedrock strength using laboratory test results. AGS has adopted these methods and has evaluated the strength of the clayey bedrock materials, first by determining the plasticity index and gradation of the bedrock. Samples were de-aggregated, moisture conditioned to near the liquid limit, remolded, normally consolidated, and subjected to direct shear testing to determine the fully softened shear strength. Studies have shown that the mobilized strength of fissured clay at failure in first time slides is approximately equal to the fully softened strength as measured in a laboratory (Stark and Eid 1997). The peak strength of the bedrock was estimated by using direct shear test results of relatively undisturbed bedrock samples. The residual strength was estimated both by using the results of multiple pass direct shear tests of undisturbed samples as well as using published correlations between the index properties of the bedrock and peak and/or fully softened strengths. As recommended in the 2002 manual, the strength of the clayey bedrock was estimated by comparing the different strengths (peak, residual, and fully-softened) with the liquid limit of the bedrock materials.

Important considerations for determining the strength of materials include geologic history, including history of failures and presence of failure planes, geologic conditions, including bedding conditions and weathering profile, and type of material, including plasticity.

Continuous discontinuities that were adversely bedded were not observed in the bedrock. Weak along-bedding conditions exist, yet the bedding was observed to be favorably oriented in relation to the natural and proposed slopes. As such, potential failures within the bedrock are not expected to be controlled by discontinuities; instead potential failures

are anticipated across-bedding. As such, determining the across-bedding shear strength of the bedrock was essential to evaluating the slope stability. Although a few failures have occurred on the site, these failures were located within the existing fill or upper several feet of colluvium and/or highly weathered bedrock. Evidence of deep seated failures was not observed. Potential failures would be considered first time landslides. The 2002 manual (Blake, Hollingsworth, and Stewart 2002) presents criteria for determining the strength of bedrock not subject to prior landsliding.

The guidelines presented on pages 32 to 34 apply to selecting strength parameters in materials subject to strain softening during long-term, drained conditions. The following criteria outlined in the manual on page 33 were used and have been copied below:

- Criterion 3: "Peak strengths can be used for fine-grained, low plasticity materials (LL<40) that have not experienced significant previous shear deformations, and are unlikely to be subject to significant weathering over the life of the project."
- Criterion 4: "The strength of fine-grained, low-plasticity materials (LL<40) that are likely to be subject to significant weathering should be measured using a mechanically de-aggregated sample to simulate the physical weathering process of the in situ soil. The peak strength from that test should be used."
- Criterion 5: "Stiff clay and clayey bedrock materials (e.g., claystone, shale) of high plasticity (LL>60) fail at shear stresses that are typically intermediate between the fully softened and residual strength (provided they have not been subject to significant previous shear deformations)."
- Criterion 6: "For stiff clay and clayey bedrock materials with LL = 40-60, strengths should be interpolated between the unadjusted peak value (corresponding to LL = 40) and the reduced value for stain softening effects.

The criteria were developed using observations made on previous first-time failures, some of which are described in Stark and Eid (1997). The paper described that for stiff fissured clays, mobilized strengths can be approximated by the fully softened strength (Criterion 4), but may be as low as the average between the residual strength and fully softened strength (hence, Criterion 5). The mobilized shear strength in low plasticity stiff clays can be equal to the peak intact strength (hence, Criterion 6). The 2002 manual indicates that ground conditions at sites with older bedrock, such as the subject site, may not be directly comparable to the clayey soils described by Stark and Eid (1997); however, the recommendations in the manual, as noted by the publishing committee, represent the best approach currently available. Accordingly, AGS has adopted these guidelines and considered the criteria most closely matching the bedrock conditions observed.

To use the criteria listed above, AGS needed to first determine the liquid limit. The liquid limit of the tested bedrock ranged from 44 to 56 with the average and mode of 49. A slight trend of decreasing liquid limit with increasing depth (See Figure F-5) could be identified and would be expected as the upper materials are more weathered than the

lower bedrock. However, the liquid limit range was fairly narrow throughout the entire profile tested. Hydrometer testing was also completed in order to determine the percent of fine clay (material smaller than 0.002mm) in the bedrock. Published correlations comparing the liquid limit and percent of fine clay with the shear strength were used by AGS (Stark and Eid 1997; Stark, Choi, and McCone 2005).

Thus, per the liquid limit of the materials, Criterion 6 would apply. The strength would be interpolated between the unadjusted peak value (corresponding to liquid limit of 40, per Criteria 3 and 4) and the reduced value for strain softening effects (corresponding to liquid limit greater than 60, per Criterion 5). Stark and Eid (1997) indicate that the reduced "interpolated" value (per Criterion 5) should be the average between the fully softened and residual strengths. Thus the strength per Criterion 6 would be interpolated between the above average value (residual and fully softened) and the unadjusted peak strength (intact peak per Criterion 3 or fully softened per Criterion 4). Determining whether Criteria 3 or 4 apply depends on the level of weathering and degree of deaggragation possible over the life of the project. Additional weathering of the bedrock on the ascending natural slopes is expected to be negligible over the lifetime of this project since the materials have been slowly weathering for millennia. Some weathering of cut slopes may occur over time. A high degree of weathering in the upper bedrock has occurred, but deaggregation is limited to immediately around fractures and the uppermost bedrock (residual horizon). Based on review of test pit logs and borings, AGS has assumed that Criterion 4 would apply to the upper bedrock, where fractures are most continuous and water infiltration is possible. The upper bedrock depth is shown on the cross-sections and is based on review of nearby test pit logs and borings. Below this depth, the peak strength was determined per Criterion 3 (intact bedrock).

At depth, the bedrock is unoxidized with no signs of deformation in the across-bedding condition. Based on the boring logs, the transition between the unoxidized bedrock and oxidized bedrock varied, and the transition was not always distinct. Based on the descriptions, an average depth of around 50 feet was inferred, with the recent Boring BA-2 having one of the deepest transitions. It is AGS's opinion that using peak strengths to model the bedrock strength at depth is appropriate, especially within the unoxidized zones. As such, AGS has used the strength in Criterion 3 to estimate the strength of the deep bedrock. AGS has used a depth of around 50 feet to model the deep bedrock, which varied locally depending on the information obtained from nearby borings. A lower bound peak strength line was used. This value was further reduced in the slope stability analyses. The cross sections illustrate the limits of the different bedrock domains used in the slope stability models and these depths have been based on a review of nearby borings and test pit logs.

To convert the various shear stress values to a comparable value so that the average values between the residual, peak, and fully softened shear stress could be determined, each shear point (normal stress versus shear stress) was normalized by "converting" to a secant friction angle. This secant friction angle was then used when calculating the interpolated and average shear stress values that are needed with using the 2002

guidelines. The resulting interpolated secant values were converted to shear stress values so that a best fit line could be drawn. The interpolated secant phi values are shown on Figures F-1 and F-2 and AGS has selected appropriate Mohr-Coulomb envelopes as shown on the graphs. The drained bedrock strength used for the slope stability evaluation is represented by this Mohr-Coulomb envelope. AGS's step by step procedures and calculations are presented on Figure F-7. The strength of the uppermost bedrock is represented by the fully softened strength (blue line), with the upper ±10 to ±50 feet represented by the interpolated strength (red line) and the deep bedrock represented by the lower bound peak strength line (blue line for upper ±10 feet of bedrock, dashed magenta line).

When laboratory test results are used to evaluate the shear strength of the materials, the 2002 manual notes that if the number of tests is limited, appropriate conservatism should be used to select shear-strength values for slope stability. However, the manual always allows for averaging the results from a number of tests. The manual does not mention that a lower bound average needs to be used.

To determine the peak strength of the bedrock, AGS conducted direct shear testing of undisturbed bedrock samples. The results from previous consultants were also considered. The results of the peak strengths are plotted on Figures F-1, F-3, and F-4. A relatively lower bound Mohr-Coulomb line was conservatively selected to estimate the peak strength of the bedrock. The peak strengths increased with increasing depth as can be seen when the normalized secant friction angles are plotted versus depth (See Figures F-8 and F-8A). Similar trends were noted for the ultimate and residual strengths as well. However, the trends were gradual with some scatter and there was not a distinct depth where an abrupt change was noted. The test results show that the bedrock strength does gradually increase with depth and using a higher Mohr Coulomb strength envelope for deeper bedrock is appropriate.

To evaluate the fully softened peak strength of a de-aggregated sample, which as noted above is numerically equivalent to the mobilized shear strength of first time slides in stiff fissured clays, AGS remolded representative samples of bedrock at their liquid limit as described in Appendix D and subject to a simple direct shear test. The fully softened shear strengths have been plotted on Figures F-1 through F-3 and a best fit line has been plotted (blue line). This line represents the lower bound strength of bedrock that is allowed to absorb water. It should be noted that the bedrock at depth is nearly saturated (saturation >80 percent) and likely cannot absorb much, if any additional water at the current overburden pressures. Also, the clayey bedrock at depth is not considered fissured. As such, this strength is considered a lower bound strength estimate. The fully softened curve was used to estimate the strength of the uppermost bedrock.

To evaluate the residual strength of the bedrock, AGS used both published relationships comparing index properties and the results of direct shear tests where multiple passes were performed. Published correlations have compared the residual strength of stiff clayey bedrock versus liquid limit and clay fraction (Stark and Eid 1997; Stark, Choi, and McCone 2005). Correlations were also presented in those studies comparing the fully

softened strength with the residual strength, where a relationship between the difference and liquid limit was presented. AGS used this relationship shown on Figure 6 in Stark, Choi, and McCone (2005) to estimate the residual strength of the bedrock using the fully softened strength as determined above and the liquid limit (with a "ball-milled" correction applied). The results of the direct shear testing indicated that the residual strength of the bedrock (best fit line phi=28° and c=240psf) may be closer to the fully softened strength (phi=29° and c=150psf). Stark, Choi, and McCone (2001) note that at clay fractions less than 25 percent (which is the case for most of the tested samples), the difference between the residual and fully softened is smaller. From the test results, it was not clear if the residual strength was reached on some of the tested samples. Also, the 2002 manual indicates that the direct shear test may provide unconservative estimates of the residual strength. As such, AGS has used the published correlation to estimate the residual strength, which provides more conservative residual strength estimates, especially within samples with a lower clay fraction. The fully softened strength, peak, and residual strengths estimated from the direct shear tests are compared on Figure F-3.

The along bedding strength was estimated by using the results of multiple cycle direct shear tests on bedrock. The results are shown on Figure F-12.

6.6. Chemical and Resistivity Test Results

The test results from previous investigations (EGL 2015) indicate that sulfate concentration for two samples tested were 0.01 percent by weight, which corresponds to a "very low" (S0) sulfate exposure class when classified in accordance with ACI 318. Testing by AGS also corresponded to an S0 sulfate exposure class. The pH of representative samples ranged from 6.9 to 8. The test results indicated that the tested onsite materials are corrosive to ferrous metals. Additional testing should be completed during grading to verify whether the soils tested produce similar test results.

6.7. Earthwork Adjustments

The following average earthwork adjustment factors are presented for use in evaluating earthwork quantities. These numbers are considered approximate and should be refined during grading when actual conditions are better defined. Contingencies should be made to adjust the earthwork balance during grading if these numbers are adjusted.

Soil loss during brushing and off-site disposal of vegetation should be accounted for in an earthwork estimate.

TABLE 6.7 Earthwork Adjustments	
Geologic Unit	**Approximate Range**
Existing Fill	5 to 20 percent shrinkage
Slope Wash	15 to 30 percent shrinkage
Colluvium (Qcol)	5 to 15 percent shrinkage
Fernando Formation	5 to 15 percent bulk

6.8. Pavement Support Characteristics

Compacted fill derived from onsite soils is expected to possess poor pavement support characteristics. Testing should be completed once subgrade elevations are reached for the onsite roadways.

7.0 FINDINGS AND GENERAL CONCLUSIONS

Finding No. 1: Based on the density test results (1979), the fill placed in 1979 was generally compacted below the optimum moisture content and in some cases well below the optimum moisture. This can lead to volume changes within the fill upon addition of moisture. The addition of water in highly expansive materials can lead to a significant decrease in the dry density, especially near the slope surface, and lead to surficial instability. Mitigation: The existing fill will be removed and replaced with newly compacted fill within the limits of grading.

Finding No. 2: The density of the compacted fill materials, as determined from the ring samples collected, is less than original densities reported by Chang (1980). Whereas it is possible that the calculated dry densities are incorrect, it is considered more likely that the density of the fill materials has decreased since it was placed. The effects of creep and introduction of moisture into the expansive fill materials can cause the density to decrease. Mitigation: It is recommended that all existing fill materials be removed within the grading limits and replaced with compacted fill.

Finding No. 3: Due to the low strength of the onsite materials, soil cement (7 percent cement by weight) was placed below the crib walls in order to increase the bearing capacity. However, based on subsequent exploratory trenches by EGL and Leighton, the soil cement materials were found to be poorly mixed. The poorly mixed materials may have bearing values that are lower than the bearing values that the retaining wall was designed to support. Bearing failures and/or excessive settlement may have contributed to the rotation and failure of some of the crib walls onsite. Also, the maximum density and optimum moisture content of the soil-cement mixture was not determined. Chang compared the density of the tests for the soil cement to the maximum density for the soil to evaluate the relative compaction. However, the maximum density and optimum moisture content of the cement treated soil is likely different than the soil. Mitigation: The proposed remedial grading will remove the failing crib wall members. Settlement and/or bearing failure will not be a concern since the walls will be removed.

Finding No. 4: The existing fill materials were placed on Colluvium and Topsoil in some areas of the site. Also, the fill may not have been benched into the native deposits. Based on the exploratory trenches by HA and Leighton, a relatively smooth sloped contact was observed between the fill and native soils and in

some cases had an out of slope component. This contact can be a potential weak surface that is adversely oriented with the slope face. Also, the underlying topsoil and colluvium are more prone to settlement. If these materials become saturated, they are more prone to failures. Benching fill into bedrock was recommended in the original soils report (Chang and Associates 1978) but appears was not accomplished. Mitigation: The proposed grading will include removal of fill, topsoil, colluvium, and weathered bedrock. New fill will be benched into competent bedrock.

Finding No. 5: The 1.5:1 (H:V) fill slopes and colluvium covered slopes are prone to surficial failures. Most of the 1.5:1 slopes onsite show signs of creep and/or surficial failures. Some of the steeper heavily vegetated slopes above the site appear to be performing better than the less vegetated areas below. Mitigation: The proposed grading will include replacing the current slopes with retaining walls and proposed 2:1 cut and fill slopes constructed using reinforcement.

Finding No. 6: The fill materials derived from onsite materials have low strengths when saturated. The surficial stability of 1.5:1 fill slopes derived from onsite materials is marginal when saturated. The introduction of water further reduces the surficial stability of these slopes and likely caused previous failures on the site. Mitigation: Drainage is critical to maintain stability of the onsite slopes. The proposed remedial grading will include replacing the current 1.5:1 slopes with proposed 2:1 fill slopes constructed using compacted fill with geogrid reinforcement or 2:1 slopes cut into more competent bedrock. Additionally, the construction of numerous v-gutters and down drains are proposed to promote drainage.

8.0 EARTHWORK CONCLUSIONS AND RECOMMENDATIONS

Based on our review and the analyses presented herein, the proposed development of the subject site is considered feasible from a geotechnical point of view, provided that the recommendations presented herein are incorporated into the design and implemented during the construction of the project.

The onsite slopes are considered marginally stable with some currently failing. Whereas the bedrock is generally favorably bedded, thick deposits of creep affected soils are present on the slopes. Onsite slopes will generally need to be stabilized prior to development. Fill derived from onsite materials is generally low strength and will not be able to support the steep slopes necessary to restore grades without reinforcement or walls. The use of walls and slopes with geogrid reinforcement are currently proposed. The walls will be constructed with piles and permanent post-grouted ground. The slopes will be constructed using Mirafi Miragrid uniaxial reinforcement (or equivalent). Permanent ground anchors will be installed on some of the steeper slopes. The permanent ground anchors (permanent tieback) include drilling 6 to 8 inch diameter holes at a shallow inclined angle to lengths of around 70 to 105 feet. High strength steel strands and grout tubes will be placed in the holes. The holes will be grouted and subsequently post pressure grouted to increase their capacity. The strands will be stressed and anchored to the slope face using reinforced concrete thrust blocks or grade beams.

In order to increase the stability of the site to allow for development, it is proposed to remove existing fill, colluvium, and creep affected/weathered bedrock and construct pile and anchor reinforced walls or anchor reinforcement along most of the downslope perimeter of the project. The pile and ground anchor walls will be constructed in both cut and fill conditions, as shown on the geologic cross sections. Design 2:1

(H:V) fill slopes greater than about 10 feet are to be reinforced. Permanent ground anchors are planned for the top of natural slopes and on 2:1 (H:V) design cut slopes in bedrock.

The offsite descending slopes above Abajo Drive are not considered surficially stable. Also, portions of these steeper offsite slopes do not have an adequate global stability factor of safety. The construction of the remedial grading measures discussed herein is expected to provide adequate stability for the onsite improvements. Additional discussion is provided in Section 8.2.

Based on 1) our review provided herein, 2) the referenced reports by AGS others, and 3) the geological/geotechnical data and analyses presented herein and in the referenced reports, the proposed development will be free from landslide, or slippage hazards, and will not have an adverse geotechnical effect on the adjacent properties provided 1) the geotechnical remedial recommendations provided herein are verified based on conditions exposed during grading, and 2) these recommendations are implemented in the project design and construction and followed throughout the life of the project.

8.1. Site Preparation and Removals/Overexcavation

All grading shall be accomplished under the observation and testing of the project Geotechnical Consultant in accordance with the recommendations contained herein, the current codes practiced by the City of Monterey Park and this firm's Earthwork Specifications (Appendix H).

Loose, compressible residual soil, undocumented artificial fill, partially saturated colluvium/alluvium, landslide debris, and weathered bedrock should be removed from fill areas prior to placement of fill and should be removed from shallow cut areas where exposed at finish grades. Guidelines to determine the depth of removals are presented below; however, the exact extent of the removals must be determined in the field during grading, when observation and evaluation of greater detail afforded by those exposures can be performed by the Geotechnical Consultant. In general, removed soils will be suitable for reuse as compacted fill when free of deleterious materials and after moisture conditioning.

Proposed remedial grading geometries are shown on the attached cross-sections and the approximate depths of removals are shown on the attached Remedial Grading Map. The recommended backcut ratios vary depending on the proposed slope design and are indicated on selected cross-sections. The bottoms of all removal areas should be observed, mapped, and approved by the Geotechnical Consultant and City representatives (as required) prior to fill placement.

8.1.1. Site Preparation

Existing vegetation, trash, debris, and other deleterious materials should be removed and wasted from the site prior to commencing removal of unsuitable soils and placement of compacted fill materials. The existing retaining walls on the slope should be removed and wasted offsite. Some existing walls are shown upslope of the grading limits. If these walls are not removed, their stability should be analyzed on a case by case basis. Some of these walls may require removal or special stabilization efforts such as installing drilled anchors.

8.1.2. Removals

Within the limits of grading, all surficial soils should be removed until competent bedrock is encountered. The surficial units to be removed in their entirety include: topsoil, compacted artificial fill, undocumented artificial fill, colluvium, and slope wash/landslide deposits. In general, the artificial fill and colluvium are suitable to be reused as compacted fill within certain areas of the site provided deleterious materials are removed. The topsoil and slope wash may contain too great of concentration of debris and vegetation to be feasibly reused. Removals depths approaching 45 feet are anticipated in some of the deeper swales onsite.

The upper weathered bedrock should be removed to expose the underlying competent bedrock materials prior to placement of compacted fill and when exposed in shallow cut areas. An average removal depth of 5 feet is anticipated for removal of topsoil and weathered bedrock.

8.1.3. Overexcavation (Below Future Improvements)

Although not needed during this phase of site restoration, overexcavation of cut areas and/or shallow fill areas and replacement with compacted blanket fill (Cap) will be required in areas where future building pads are proposed. It may be more economical to perform the overexcavation at this time to avoid having to remove compacted fill to accomplish the overexcavation in the future. The owner should make the determination as to when to conduct the overexcavation. The depth of overexcavation will depend on the presence of the following conditions:

- Cut/fill transition.
- Steep fill transition.
- Bedrock cut exposing dissimilar materials.
- Bedrock cut exposing highly over-consolidated, expansive material.
- Bedrock exposing faults, clay lined fractures and shears.

Alternatively, supporting the structures on piles founded in bedrock can be used in lieu of overexcavating the building pads.

Overexcavation should be conducted to provide a minimum of 2 feet of newly compacted fill below future pavement areas. Extending the overexcavation to the deepest utility line may facilitate construction of utility trenches. The fractured/faulted bedrock may result in unstable trench sidewalls without shoring or laying back the excavation. Although not necessary at this time, it may be more economical to conduct overexcavation during this phase versus future phases. The owner should make the determination as to when to conduct the overexcavation.

8.1.4. Removals Along Grading Limits and Property Lines

Removals of unsuitable soils will be required prior to fill placement along the grading limit. A 1:1 projection, from toe of slope or grading limit, outward to competent materials should be established, when possible. Where removals are not possible due to

grading limits, property line or easement restrictions, removals should be initiated at the grading boundary (property line, easement, grading limit or outside the improvement) at a 1:1 ratio inward to competent materials. This reduced removal criteria should not be implemented prior to review by the Geotechnical Consultant and approval by the Owner. Where this reduced removal criteria is implemented, special maintenance zones may be necessary. These areas, if present, will need to be identified during grading. Alternatively, grading limits can be initiated offsite.

8.2. Slope Stability and Remediation

AGS evaluated the global stability of the slopes shown on the geologic cross sections using Slide2. Based on the results of the analysis, proposed cut slope, fill slopes, and fill slopes combined with anchored retaining walls are expected to be grossly stable in both static conditions within the grading limits (slope stability Factor of Safety greater than 1.5) and seismic conditions (pseudo-static slope stability Factor of Safety greater than 1.1). The results of the analyses are provided in Appendix G. Additional discussions on the conditions analyzed are provided below and in Table G-1.

8.2.1. Landslide and Project Stabilization

The surficial landslides, weak surficial soils, creep affected bedrock, and creep affected colluvium/fill soils that underlie the project will require stabilization. Also, the failing crib walls will require removal. Stabilization of the site will be accomplished through a combination of the following measures:

- Total removal of the existing walls, fill, colluvium, and upper creep affected bedrock.
- Construction of pile and grouted anchor supported walls along Garvey Avenue. Where necessary, the anchors will be deepened as needed to enhance the global stability.
- Permanent ground anchors will be constructed at the top of the natural slopes and on some of the proposed cut slopes in bedrock.
- Geogrid reinforcement will be used on the fill slopes taller than 10 feet.

The locations of the proposed stabilization measures are shown on the geotechnical maps and cross-sections. Specific analyses of the cross-sections are summarized in Table G-1.

There are some areas where grading limit constraints (slope easement and property line above Abajo Drive) preclude the stabilization of descending natural slopes that have been modeled as unstable (slope stability factors of safety of less than 1.5). AGS has designed remedial grading intended to support the proposed improvements. However, there are some areas onsite that are considered potentially unstable. Improvements should not be constructed in these areas without mitigation.

If the potentially unstable areas fail and are left unrepaired, potential failures could negatively impact the proposed development. While not all offsite failures will

necessarily impact the site, there is a possibility that, if left unabated, the failures may potentially regress into the site and/or affect drainages, thereby negatively impacting the onsite improvements. In the event that such future offsite landslide failures do occur, corrective action sufficient to protect the project improvements will be required. A mechanism to provide funds for evaluation and repair, if necessary, should be established. The mechanism should provide not only funding sources but independent review and action authority. Coordination between the developer and property owners will be required to establish the mechanism. This is outside the contracted responsibility and authority of AGS.

8.2.2. Cut Slopes

Cut slopes have been designed at a slope ratio of 2:1 (H:V) or shallower. Due to the planned removals, many of the design cut slopes will be rendered fill slopes. Cut slopes of up to around 65 feet are anticipated along Cross-Sections J-J' and K-K'. Cut slopes exposing the deeper competent bedrock that is neutral to favorably bedded are expected to be stable at ratios of 2:1 (H:V) or shallower. Cut slopes exposing variable, fractured, and highly weathered should be replaced with drained stabilization fills. AGS recommends a minimum keyway width corresponding to one half the height of the slope, but not less than 15 feet. Cut slopes exposing daylighted bedding conditions, faults, or other discontinuities that are adversely oriented should be replaced with a buttress whose size is determined based on the results of the slope stability evaluation. General corrective grading requirements for cut slopes are shown on the enclosed Remedial Grading Map and on the cross-sections.

Cut slopes exposing existing fill or colluvium are not anticipated since these soils will be removed as recommended in Section 8.1.2.

8.2.3. Fill Slopes

Fill slopes on the project are designed at 2:1 ratios (H:V) or shallower. Although most of the slope onsite are designed as cut slopes, many will be constructed as fill slopes due to the planned removals. The highest anticipated fill slope is approximately 35 feet high. It is recommended that fill slopes higher than 10 feet be reinforced with geogrid. The reinforcement can include placing minimum 10-foot layers of Mirafi Miragrid 10XT (or approved equivalent) every 4 feet vertically. The geogrid should extend to the backcut. Fill slopes will be subject to surficial erosion and should be landscaped as quickly as possible.

The geogrid should be oriented so that the primary strength is perpendicular to the slope face. Splices in the primary direction should be avoided. If absolutely necessary, the splice location should be approved by the geotechnical engineer and should be made in accordance with the manufacture's installation guidelines. Splicing or overlapping rolls is not necessary.

Keys should be constructed at the toe of all fill slopes "toeing" on existing or cut grade. Fill keys should have a minimum width equal to one-half the height of ascending slope.

Unsuitable soil removals below the toe of proposed fill slopes should extend from the catch point of the design toe outward at a minimum 1:1 projection into approved material to establish the location of the key. Backcuts to establish that removal geometry should be cut no steeper than 1:1 or as recommended by the Geotechnical Consultant. Anticipated fill keys are shown on the Geotechnical Maps and the cross-sections. Due to the recommended removals and construction of the anchor wall, construction of a separate keyway is not anticipated for most of the fill slopes along Garvey Avenue.

8.2.4. Skin Cut and Skin Fill Slopes

Skin cut/skin fill slope conditions have been identified but will be generally eliminated once the proposed unsuitable soil removals are conducted. One area that may have a skin fill condition is shown on Cross Section F-F'. Once removals are conducted, skin fill/cut conditions may also be created on the upper slopes shown on Cross-Sections D-D', E-E', G-G', and H-H'; as such, keyways have been shown. If skin fill conditions are identified in the field or are created by remedial grading, it is recommended that a backcut and keyway be established such that a minimum fill thickness equal to one-half (1/2) the remaining slope height [not less than fifteen (15) feet] is provided for all skin fill conditions. This criterion should be implemented for the entire slope height. Drains are required at the heel of skin fills and will be designed based upon exposed conditions.

Where the design cut is insufficient to remove all unsuitable materials, overexcavation and replacement with a stabilization fill will be required, as shown on Grading Detail 6 in Appendix H.

8.2.5. Permanent Slope Anchors

In order to provide a global slope stability factor of safety of 1.5 for some of the permanent slopes, the installation of deep permanent slope anchors is proposed. Pressure grouted permanent anchors should be anchored into the underlying deep bedrock. Anchor capacity is dependent on the drilling and grouting methods and should be estimated by the specialty contractor. Anchor testing should be conducted during construction.

The ground anchor systems will be designed by DRS Engineering Inc. and utilize the design information provided by AGS. It is anticipated that the ground anchors will be supported by a reinforced shotcrete anchor block.

AGS evaluated the global stability of the slopes shown on the geologic cross sections using Slide2 from Rocscience. Based on the results of the slope stability analysis, the unbonded length of the ground anchors was determined. The program utilizes the bond strength of the anchors to determine the resisting load that is provided for failure surfaces that intercept the anchor.

8.2.6. Natural Slopes

Descending natural slopes are located below the site along Abajo Drive. Portions of these slopes shows signs of surficial instability and are creep affected. In order to

mitigate the potential for slope instability and slope creep on the natural slopes from impacting the improvements located above these slopes, it is proposed to construct a line of permanent slope anchors above portions of the slope. One to three rows of permanent anchors are shown between Cross-Sections J-J' and Q-Q'.

8.2.7. Pile and Anchor Walls

A pile and anchor wall system is proposed along Garvey Avenue. This wall will be constructed in both cut and fill conditions. Soldier piles will first be drilled and installed. Post grouted anchors will be attached to the piles and stressed. The grouted anchors have been used to enhance the global stability and are shown as supports in the slope stability analysis. The depth, strength, and spacing of these supports that are illustrated on the cross sections are considered preliminary. The wall system will be designed by DRS Engineering and the spacing, depths, strength, and orientation of the supports may be adjusted. AGS should evaluate the global stability of the final wall design.

8.2.8. Surficial Stability

The natural slopes above the site are characterized by moderate slopes and heavy vegetation growth. Localized areas of surficial instability may exist, especially within areas mantled with thick deposits of colluvium. Swales have been designed at the top of the proposed cut slopes on the site to collect offsite runoff. Maintenance of the drains should include removing accumulated debris to restore drainage and increase capacity for future accumulations of debris/runoff.

The surficial stability of 2:1 fill slopes, constructed using native materials, has been analyzed, and the analysis presented in Appendix G indicates a factor-of-safety in excess of 1.5. When fill slopes are properly constructed and maintained, satisfactory performance can be anticipated although slopes will be subject to erosion, particularly before landscaping is fully established. The surficial stability of 2:1 slope cut into competent bedrock has been analyzed, and the analysis presented in Appendix G indicates a factor-of-safety in excess of 1.5.

8.2.9. Temporary Backcut Stability

During grading operations, temporary backcuts will be required to accomplish removals of fill, weathered bedrock, slope wash, and colluvium, to construct buttress/stabilization fill keys. Care should be taken during backcut construction and backfill should be placed expeditiously in order to minimize risk of failure. Complete removal of the failed materials will be required should failure occur.

Backcuts exposing favorably-bedded bedrock should be made no steeper than 1:1 to heights of up to 40 feet. Backcuts that are higher than 40 feet or where backcuts are located below existing sensitive improvements such as structures, it is recommended that they be excavated no steeper than 1½:1 (H:V) provided favorable bedding conditions are exposed. Shallower backcuts or the use of shoring will be necessary if highly fractured bedrock is encountered or if unsupported bedding planes or fractures are encountered.

Owing to the size of the backcuts proposed, local instabilities will likely be encountered. Close geologic mapping of the stabilization and buttress key backcuts should be provided to document the exposed conditions. Revised recommendations may be necessary should areas of instability be encountered.

Temporary backcuts up to roughly 100 feet are needed in order to remove some of the unsuitable materials. One of the higher backcuts is shown on Cross-Section H-H' and is shown at a ratio of roughly 1.5:1 or shallower. The slope stability analysis indicates that the stability of this backcut has an adequate factor of safety (1.2 for temporary conditions).

In consideration of the inherent instability created by temporary construction of backcuts, it is imperative that grading schedules be coordinated to minimize the unsupported exposure time of these excavations. Once started these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, extending work days, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

Prior to starting the work, the contractors, owner, and consultants should prepare a work plan. Contingencies should be outlined in this plan should exposed conditions be found to be different than anticipated or if movement of the backcut occurs.

8.2.10. Geologic Observation During Grading

All temporary slope excavations, including front, side and backcuts, and all cut slopes should be mapped to verify the geologic conditions that were modeled prior to grading. It is possible that slope stability analyses and designed keyways may have to be modified based on conditions exposed during grading. Keys have typically been designed based on modeled localized geologic conditions and may need to be modified based on the actual localized conditions exposed during grading.

8.3. Survey Control During Grading

Removal bottoms, fill keys, stabilization fill keys, and backdrains should be surveyed by the Civil Engineer prior to final observation and approval by the geotechnical engineer/engineering geologist in order to verify locations and gradients.

8.4. Subsurface Drainage

8.4.1. Canyon Subdrains

Canyon subdrains (6-inch and 8-inch), will be required on this project. Where possible, the drains should be placed along the lowest alignment of canyon and alluvium/colluvium removal areas to intercept, transport and dispose of infiltrating water. The upper ends of

the subdrains should be extended to within roughly 15 feet of the finished grade. Final determination of drain locations will be made in the field, based on exposed conditions. Subdrains may be placed at a gradient as flat as 1 percent to maximize the deepest available drain outlet location. Fills placed below subdrains will require minimum relative compaction of 93 percent as discussed in Section 8.8.1 of this report. Outletting of subdrain systems will require coordination with the project Civil Engineer in determining suitable facilities to accept the drain water. All drains should be constructed in accordance with the details shown on Grading Detail 2 in Appendix H. Outletting should be at the lowest available location.

8.4.2. Backdrains

Backdrains will be required in all fill keys toeing on natural ground, stabilization fills, buttress fills, and skin-fill/skin-cut remediations. Backdrains should be constructed in accordance with the details shown on Grading Detail 2 in Appendix H. Possible drain locations are shown on Plate 2, but the actual locations should be determined during grading.

8.5. Seepage

Seepage, if encountered during grading, should be evaluated by the Geotechnical Consultant. If seepage is excessive, remedial measures such as horizontal drains or under drains may need to be installed.

8.6. Earthwork Considerations

8.6.1. Compaction Standards

All fills should be compacted at least 90 percent of the maximum dry density as determined by ASTM D1557. Fills below 50 feet from the finish grade and fills that exist below canyon subdrains should be compacted at least 93 percent of the maximum dry density (ASTM D1557). All loose and or deleterious soils should be removed to expose firm native soils or bedrock. Prior to the placement of fill, the upper 6 to 8 inches of suitable material should be ripped, moisture conditioned to optimum moisture or slightly above optimum, and compacted to a minimum of 90 percent of the maximum dry density (ASTM D1557). Fill should be placed in thin (6 to 8-inch) lifts, moisture conditioned to optimum moisture or slightly above, and compacted to at least 90 percent (or 93 percent in deep fills) of the maximum dry density (ASTM D1557) until the desired grade is achieved.

8.6.2. Benching

Where the natural slope is steeper than 5-horizontal to 1-vertical and where determined by the Geotechnical Consultant, compacted fill material shall be keyed and benched into competent materials.

8.6.3. Mixing and Moisture Control

In order to prevent layering of different soil types and/or different moisture contents, mixing and moisture control of materials will be necessary. The preparation of the earth materials through mixing and moisture control should be accomplished prior to and as part of the compaction of each fill lift. Water trucks or other water delivery means may be necessary for moisture control. Discing may be required when either excessively dry or wet materials are encountered.

8.6.4. Haul Roads

All haul roads, ramp fills, and tailing areas shall be removed prior to engineered fill placement.

8.6.5. Import Soils

Import soils, if required, should consist of clean, structural quality, compactable materials similar to the on-site soils and should be free of trash, debris or other objectionable materials. Import soils should be tested and approved by the Geotechnical Consultant prior to importing. At least three working days should be allowed in order for the geotechnical consultant to sample and test the potential import material.

8.6.6. Oversize Rock

Oversize rocks may be incorporated into the compacted fill section to within 10 feet of finish grade or within 2 feet of the deepest utility (if utility is greater than 10 feet). Oversize rock should be kept minimally 5 feet outside and below proposed culverts, pipes, etc.

Rocks more than 8 inches in maximum dimension may be placed within deeper fills, providing all rock fills are handled as discussed below and the methods and rock disposal areas are approved by the Geotechnical Consultant, Owner and governing agency.

8.6.7. Fill Slope Construction

Fill slopes may be constructed by preferably overbuilding and cutting back to the compacted core or by back-rolling and compacting the slope face. The following recommendations should be incorporated into construction of the proposed fill slopes.

Care should be taken to avoid spillage of loose materials down the face of any slopes during grading. Spill fill will require complete removal before compaction, shaping and grid rolling.

Seeding and planting of the slopes should follow as soon as practical to inhibit erosion and deterioration of the slope surfaces. Proper moisture control will enhance the long-term stability of the finish slope surface.

8.6.7.1. Overbuilding Fill Slopes

Fill slopes should be overfilled to an extent determined by the contractor, but not less than 2 feet measured perpendicular to the slope face, so that when trimmed back to the compacted core, the compaction of the slope face meets the minimum project requirements for compaction.

Compaction of each lift should extend out to the temporary slope face. The sloped should be back-rolled at fill intervals not exceeding 4 feet in height unless a more extensive overfilling is undertaken.

8.6.7.2. Compacting the Slope Face

As an alternative to overbuilding the fill slopes, the slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Back-rolling at more frequent intervals may be required. Compaction of each fill should extend to the face of the slope. Upon completion, the slopes should be watered, shaped, and track-walked with a D-8 bulldozer or similar equipment until the compaction of the slope face meets the minimum project requirements. Multiple passes may be required.

8.6.8. Utility Trench Excavation and Backfill

All utility trenches should be shored or laid back in accordance with applicable OSHA standards. Excavations in bedrock areas should be made in consideration of underlying geologic structure. The geotechnical consultant should be consulted on these issues during construction.

Trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D 1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill, provided oversized materials are removed. No surcharge loads should be imposed above excavations. This includes spoil piles, lumber, concrete trucks or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils.

Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

To reduce moisture penetration beneath the slab-on-grade areas, shallow utility trenches should be backfilled with lean concrete or concrete slurry where they intercept the foundation perimeter. As an alternative, such excavations can be backfilled with native soils, moisture-conditioned to over optimum, and compacted to a minimum of 90 percent relative compaction.

9.0 DESIGN RECOMMENDATIONS

From a geotechnical perspective, the proposed development is feasible provided the following recommendations are incorporated into the design and construction. Preliminary design

recommendations are presented herein and are based on some of the general soils conditions encountered during the recent investigation and described in the referenced geotechnical investigations. As such, recommendations provided herein are considered preliminary and subject to change based on the results of additional observation and testing that will occur during grading operations. Final design recommendations should be provided in a final rough/precise grading report.

9.1. Retaining Wall Design Recommendations

A pile and anchor wall is proposed along Garvey Avenue. Soil nail walls may also be used in cut conditions. Cantilever type walls may also be used.

Retaining walls with natural slopes located above the wall should be designed in consideration of the upslope drainage conditions, including presence of natural swales, previous drains, vegetation, etc., and should accommodate offsite drainage and the possible accumulation of minor amounts of debris.

9.1.1. Foundation Design

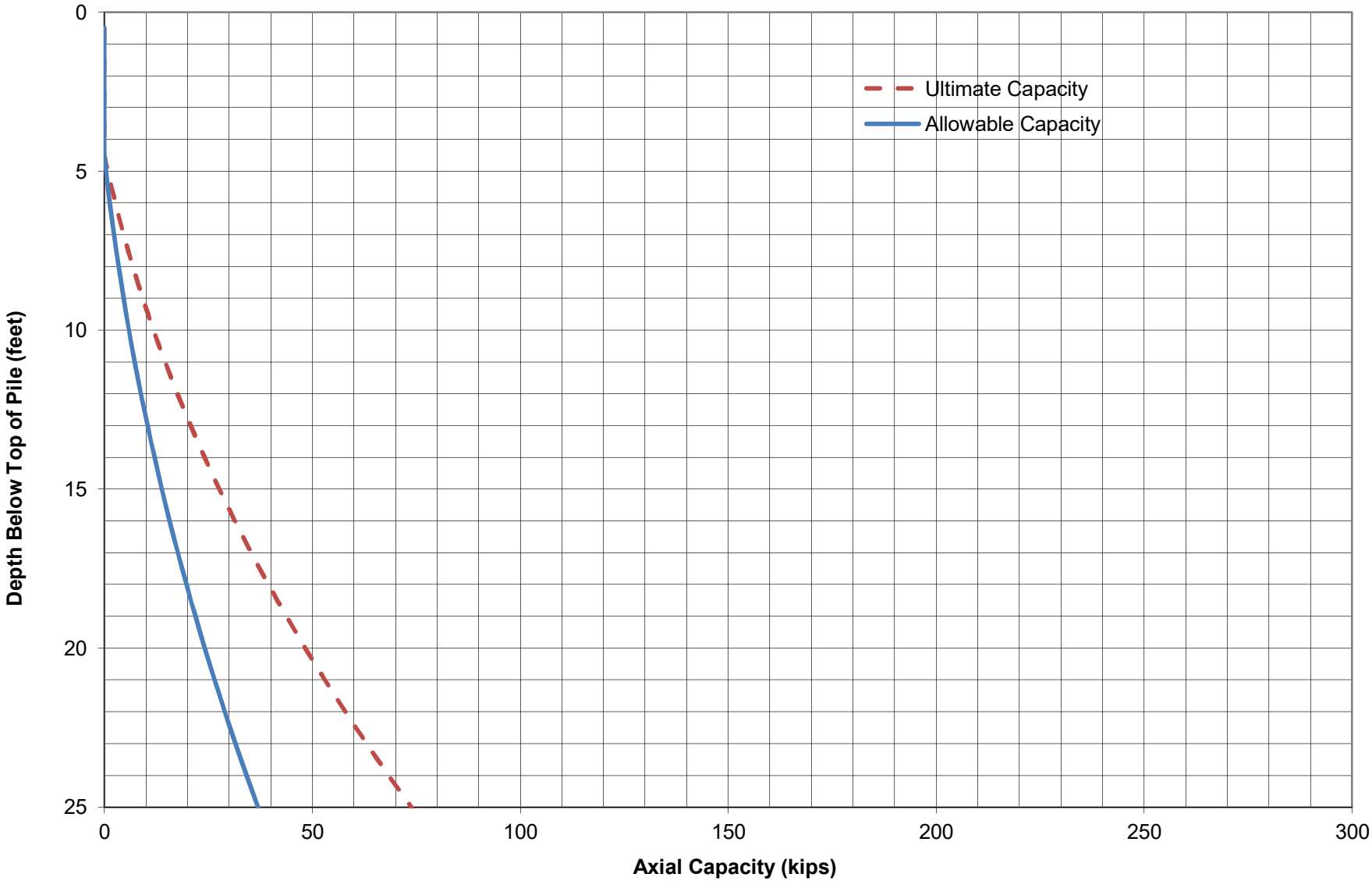
9.1.1.1. Caisson Axial Capacity

Recommendations are provided for the use of 24-inch drilled caissons. Recommendations for the use of alternative piles can be provided upon request.

Axial capacity of the caissons may be developed through skin friction within the compacted fill and bedrock. The skin friction of piles extending through fill subject to lateral fill extension should be ignored. Ultimate and allowable axial capacities of 24-inch caissons are shown in Figures 6 and 7, which assumes that the piles are supported in fill and bedrock, respectively. As reflected in the figure, the axial capacity in at least the upper 5 feet of the pile should be ignored. The allowable capacities are derived from the ultimate capacity using a Factor of Safety of 2.5 and are appropriate to use when evaluating loading conditions that limit pile foundation displacements to serviceable limits. The capacities were derived using the methods outlined by Reese and O'Neill (1999) and are based on a center-to-center spacing of 4 diameters. A reduced capacity should be used for caissons spaced closer than 4 diameters. Caissons should be spaced no closer than 2½ diameters on center. A pile group efficiency factor of 0.65 can be used to develop the capacities for piles with a center to center spacing of 2½ diameters and a group efficiency factor of 1.0 can be used for piles with a center to center spacing of 4 diameters (Section 10.8.3.6.3, AASHTO 2014). Linear interpolation may be used to calculate capacities for center to center pile spacings between 2½ and 4 diameters.

9.1.1.2. Caisson Lateral Capacity

The ultimate lateral capacity of pile supported in bedrock was estimated using Broms Method for determining the lateral capacity of piles in cohesionless soils. The following bedrock parameters were used to estimate the lateral capacity:

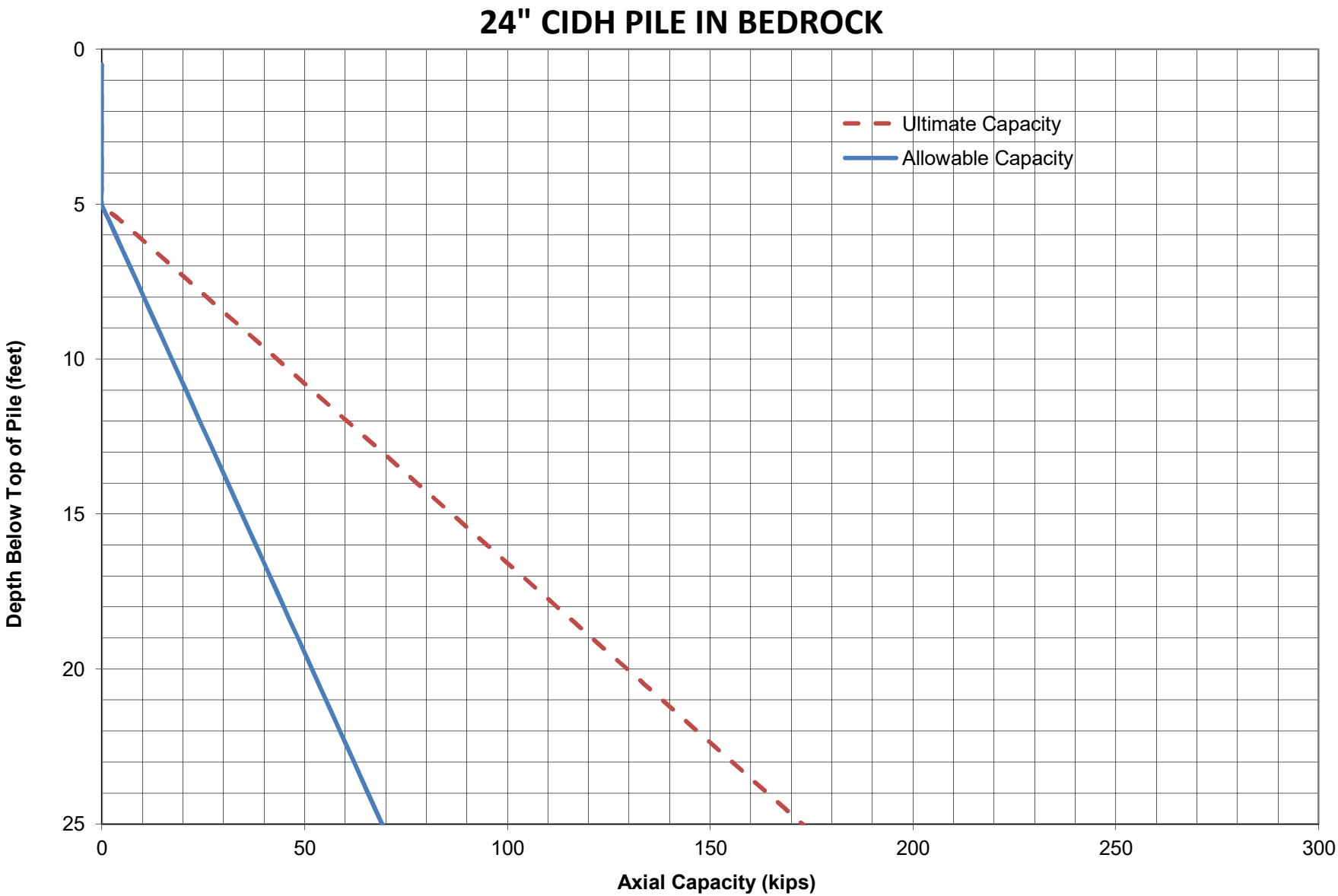


AXIAL CAPACITY

Developed by Skin Friction

Factor of Safety = 2, CTC Spacing = 4 Diameters

FIGURE 6



AXIAL CAPACITY

Developed by Skin Friction

Factor of Safety = 2.5, CTC Spacing = 4 Diameters

FIGURE 7

- Friction Angle = 33 degrees (no cohesion)
- Moist Density = 127 pcf
- Soil Arching Factor = 3

An ultimate lateral capacity of 1,190 pcf per foot of depth (equivalent fluid density) for level conditions and 760 pcf per foot of depth for a descending 2:1 slope may be used. This is considered an ultimate value and an appropriate factor of safety should be applied to estimate the allowable capacity. Broms method cannot be used to estimate the amount of deflection experienced at the allowable lateral loads. A more rigorous analysis, utilized in lateral load-pile deflection software, should be conducted for piles that are sensitive to deflection.

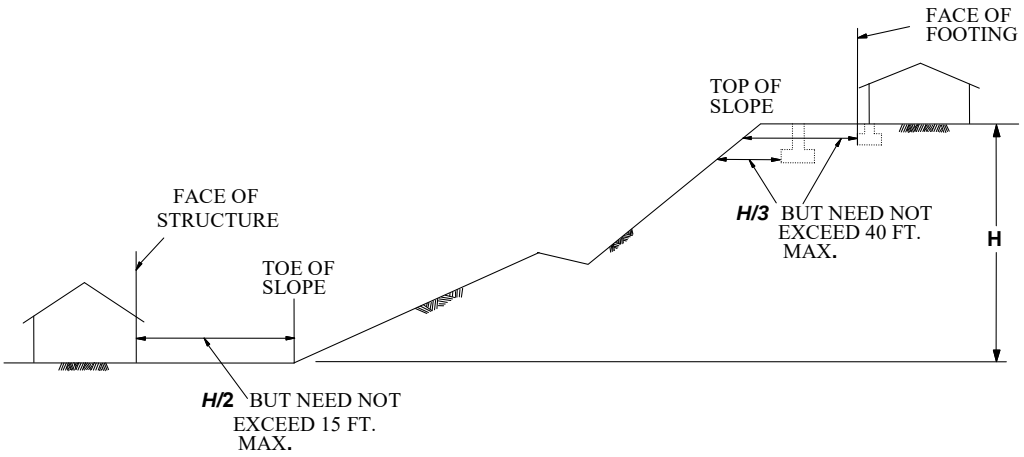
9.1.1.3. Deepened Footings and Setbacks

Improvements constructed in proximity to natural slopes or properly constructed, manufactured slopes can, over a period of time, be affected by natural processes including gravity forces, weathering of surficial soils and long-term (secondary) settlement. Most building codes, including the California Building Code, require that structures be set back or footings deepened where subject to the influence of these natural processes.

For the subject site, where foundations for walls are to exist in proximity to slopes, the footings should be embedded to satisfy the requirements presented in the following figure.

FIGURE 9.1.1.3

Setback Dimensions (CBC 2016)



9.1.2. Earth Pressure

Retaining walls should be designed to resist earth pressures presented in the Tables 9.1.2A (conventional retaining wall) and 9.1.2B (soldier pile wall). The values in Table

9.1.2A assume that the retaining walls will be backfilled with select materials as shown in Detail RTW-A or native soils as shown in Detail RTW-B.

Soils with an expansion index greater than 50 should not be used as backfill. Most of the onsite materials are not expected to be suitable for use as backfill materials ("native"). Materials meeting the "select" criteria are not expected to be encountered onsite and will likely need to be imported. The type of backfill ("select" or "native") should be specified by the wall designer and shown on the plans. Retaining walls should be designed to resist additional loads such as construction loads, temporary loads, and other surcharges as evaluated by the structural engineer.

Retaining walls should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces as shown in Details RTW-A and RTW-B. Otherwise, the retaining walls should be designed to resist hydrostatic forces. Proper drainage devices should be installed along the top of the wall backfill and should be properly sloped to prevent surface water ponding adjacent to the wall. In addition to the wall drainage system, for building perimeter walls extending below the finished grade, the wall should be waterproofed and/or damp-proofed to effectively seal the wall from moisture infiltration through the wall section to the interior wall face. Gravel backfill should be considered behind all basement walls.

If backfill is needed behind the walls, it should consist of gravel or granular soils placed in loose lifts no greater than 8-inches thick, at or near optimum moisture content, and mechanically compacted to a minimum 90 percent of the maximum dry density as determined by ASTM D1557. The geotechnical consultant should observe the retaining wall footings/caisson excavations, back drain installation, and be present during placement of the wall backfill to confirm that the walls are properly backfilled and compacted.

TABLE 9.1.2A
RETAINING WALL EARTH PRESSURES

Native Backfill Materials (γ=120pcf, EI<50)

	Level Backfill	Sloping (2:1) Backfill		
	Rankine Coefficients	**Equivalent Fluid Pressure (psf / lineal foot)**	**Rankine Coefficients**	**Equivalent Fluid Pressure (psf / lineal foot)**
Active Pressure	$K_a = 0.36$	43	$K_a = 0.58$	70
Passive Pressure	$K_p = 2.77$	332	$K_p = 1.72$	206
At Rest Pressure	$K_o = 0.53$	64	$K_o = 0.77$	92

"Select"* Backfill Materials (γ=120pcf, EI≤20, SE≥20)

	Level Backfill	Sloping (2:1) Backfill		
	Rankine Coefficients	**Equivalent Fluid Pressure (psf / lineal foot)**	**Rankine Coefficients**	**Equivalent Fluid Pressure (psf / lineal foot)**
Active Pressure	$K_a = 0.28$	34	$K_a = 0.36$	44
Passive Pressure	$K_p = 3.54$	420	$K_p = 2.75$	330
At Rest Pressure	$K_o = 0.44$	53	$K_o = 0.64$	77

Notes: "Select" backfill materials should be granular, structural quality backfill with a Sand Equivalent of 20 or better and an Expansion Index of 20 or less. The "select" backfill must be placed within the entire active zone behind the wall (can be assumed to be either a plane bound by the heel of the footing and extending at a 1:1 slope up to the surface or within a zone extending a minimum distance of H/2 behind the wall, where H is the height of the wall as measured from the footing bottom, as shown on Detail RTW-A); otherwise, the values presented in the "Native" backfill materials columns must be used for the design. The upper one-foot of backfill should be comprised of native on-site soils.

TABLE 9.1.2B
SOLDIER PILE RETAINING WALL EARTH PRESSURES

Colluvium/Weathered Bedrock (γ=130pcf, friction angle = 27°)

	Level Backfill		Sloping Backfill	
	Rankine Coefficients	**Equivalent Fluid Pressure (psf / lineal foot)**	**Rankine Coefficients**	**Equivalent Fluid Pressure (psf / lineal foot)**
Active Pressure	$K_a = 0.47$	49	$K_a = 0.68$	88
Passive Pressure	$K_p = 2.66$	346	$K_p = 1.48$	192
At Rest Pressure	$K_a = 0.54$	71	$K_a = 0.79$	103

In addition to the above static pressures, unrestrained retaining walls located should be designed to resist seismic loading as required by the 2016 CBC. The seismic load can be modeled as a thrust load applied at a point 0.6H above the base of the wall, where H is equal to the height of the wall. This seismic load (in pounds per lineal foot of wall) is represented by the following equation:

$$Pe = \tfrac{3}{8} * \gamma * H^2 * k_h$$

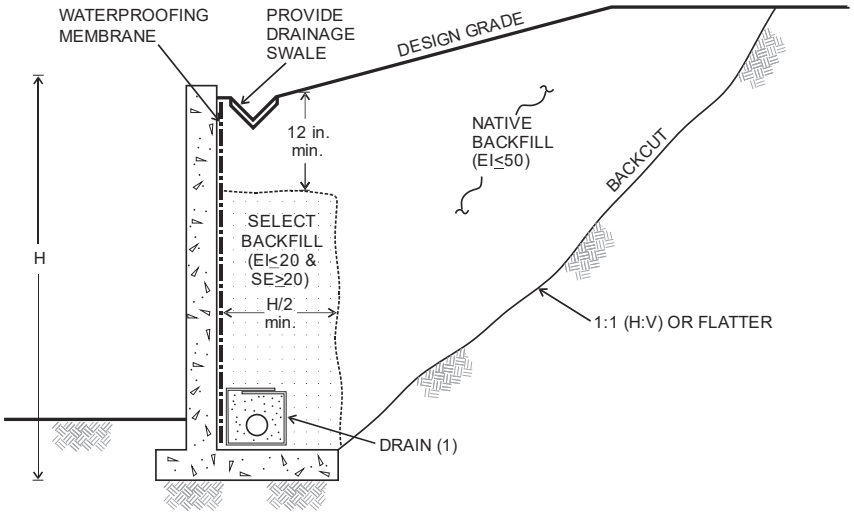
Where: Pe = Seismic thrust load

H = Height of the wall (feet)

γ = soil density (pcf)

k_h = seismic pseudostatic coefficient = 0.5 * peak horizontal ground acceleration (0.987 g) = 0.49g

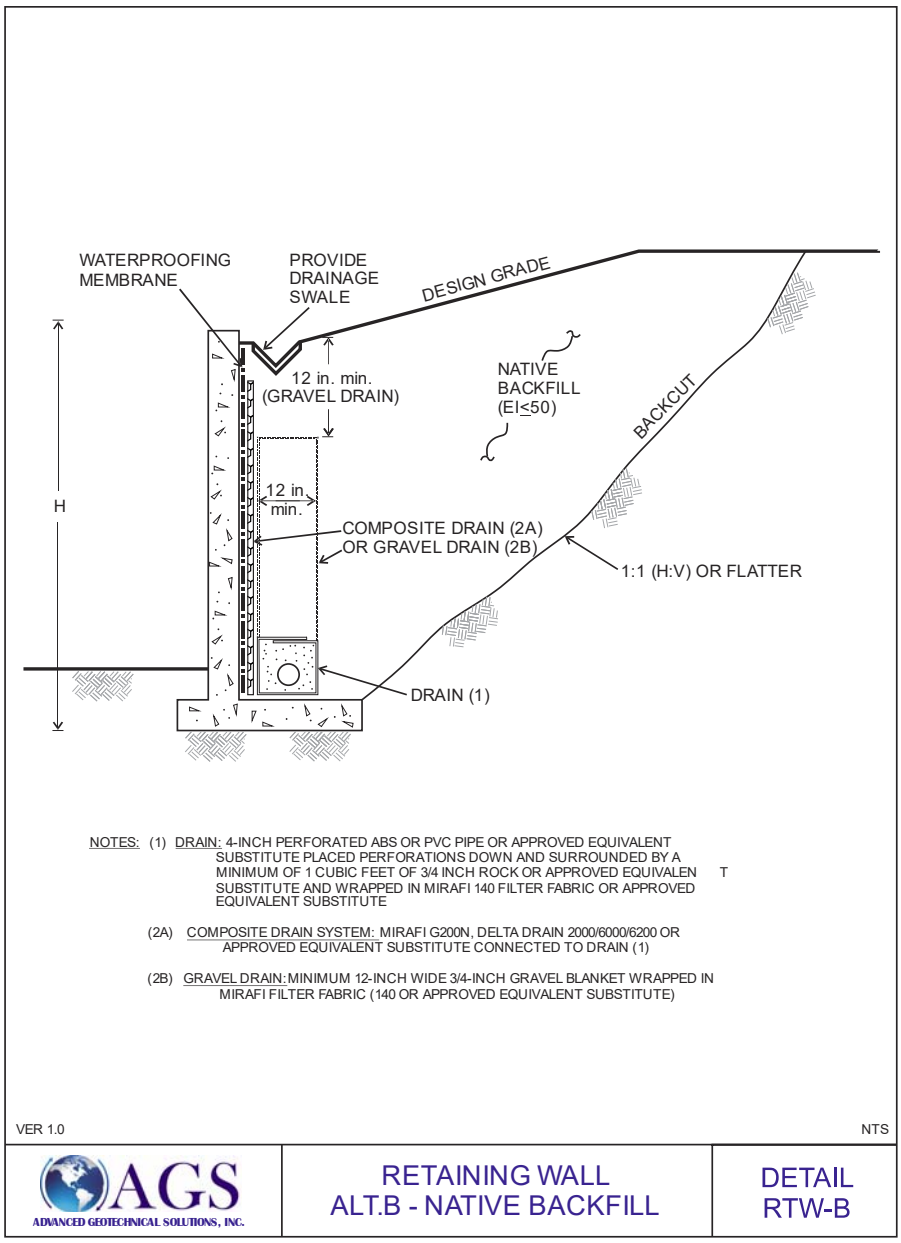
Walls should be designed to resist the combined effects of static pressures and the above seismic thrust load.



NOTES: (1) DRAIN: 4-INCH PERFORATED ABS OR PVC PIPE OR APPROVED EQUIVALENT SUBSTITUTE PLACED PERFORATIONS DOWN AND SURROUNDED BY A MINIMUM OF 1 CUBIC FEET OF 3/4 INCH ROCK OR APPROVED EQUIVALEN T SUBSTITUTE AND WRAPPED IN MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT SUBSTITUTE

VER 1.0 NTS

AGS ADVANCED GEOTECHNICAL SOLUTIONS, INC.	RETAINING WALL ALT. A - SELECT BACKFILL	DETAIL RTW-A



9.2. Permanent Ground Anchor Design Recommendations

Anchor capacity is dependent on the drilling and grouting methods and should be estimated by the specialty contractor. Anchor testing should be conducted during construction to determine the bond resistance than can be achieved. For preliminary estimating purposes, ultimate anchor capacities in the siltstone/claystone can be assumed to be 4,000 for the weathered bedrock to 8,000 pounds per square foot for unweathered bedrock (pressure grouted). Since the above anchor friction capacities are considered ultimate, an appropriate factor of safety should be incorporated into the design.

Corrosion protection should be provided for the anchors assuming a design life of 50 years. Field performance testing should be provided, and the design may need to be adjusted based on the results of the testing. The first three anchors should be tested to a minimum of 133% of the design capacity and should include loading and unloading incrementally as well as creep testing. Proof testing should be conducted on each ground anchor and should include loading to a minimum of 133% of the design load.

The ground anchors should be anchored to a reinforced concrete or shotcrete block. Bearing capacity will be dependent on the depth, size, and materials encountered. The blocks can be placed on the backcut surface and should be deepened as necessary so that they bear in firm and competent soils as determined by the geotechnical engineer during excavation. For blocks founded near current grades, a bearing resistance of 4,000 psf may be used to size the required anchor block. For blocks founded below existing grades on cut slopes, a bearing resistance of 6,000 psf may be used to size the required anchor block.

9.3. Soil Nail Design Recommendations

The soil nail capacity is dependent on the drilling and grouting methods and should be estimated by the specialty contractor. Testing should be conducted during construction. For preliminary estimating purposes, ultimate anchor capacities in the siltstone/claystone can be assumed to be 4,300 pounds per square foot (30 psi). Since the above friction capacities are considered ultimate, an appropriate factor of safety should be incorporated into the design.

9.4. Civil Design Recommendations

9.4.1. Infiltration Devices

It is not recommended to use infiltration devices onsite. The introduction of water into the sub-surface soils has the potential to create future problems both onsite and to adjacent properties. The water may migrate beneath existing structures onsite or those that neighbor the site, causing a nuisance or even localized settlement or heaving of expansive soils. The introduced water may daylight on downslope faces and could potentially destabilize slopes. Storm water should be entirely conveyed to an approved offsite disposal location to prevent water from migrating beneath any existing improvements, engineered fills, or slopes.

9.4.2. Site Drainage

Final site grading should assure positive drainage away from structures. Planter areas should be provided with area drains to transmit irrigation and rain water away from structures. The use of gutters and down spouts to carry roof drainage well away from structures is recommended. Raised planters should be provided with a positive means to remove water through the face of the containment wall.

9.4.3. Rear and Side Yard Walls and Fences

Block wall footings should be founded a minimum of 24-inches below the lowest adjacent grade. To reduce the potential for uncontrolled, unsightly cracks, it is

recommended that a construction joint be incorporated at regular intervals. Spacing of the joints should be between 10 and 20 feet. Side yard walls should be structurally separated from the rear yard wall.

9.4.3.1. Top of Slope Walls and Fences

Due to the potential for slope creep on slopes exceeding roughly 10 feet in height, some settlement and tilting of walls and fences constructed on the tops of slopes should be expected. To mitigate some of the tilting and separation that may occur, the footings for top of slope walls should be embedded in accordance with the CBC. Considerations should be given to supporting the top of slope improvements on a grade beam and caisson foundation. The caissons should be a minimum of 12 inches in diameter, placed at a maximum spacing of 6 feet on center, and embedded a minimum of 7 feet below the bottom of the grade beam.

9.5. Concrete Design

Preliminary testing on samples collected during previous investigations indicated the onsite soils have a negligible (S0) sulfate exposure class when classified in accordance with ACI 318. Accordingly, sulfate resistance concrete is not required by Code. Additional testing should be completed during grading to verify the sulfate exposure class. It should be recognized that some fertilizers have been known to leach water-soluble sulfate compounds into soils containing "negligible" sulfate concentrations and increase the sulfate concentrations to potentially detrimental levels. Accordingly, it is suggested that the homeowners be advised of their responsibility to maintain existing conditions.

9.6. Corrosion

Resistivity and pH tests should be conducted during grading to evaluate the corrosivity of fill to buried metallic materials. Preliminary testing by AGS and previous consultants indicates that some of the onsite soils are severely corrosive to ferrous metals. AGS recommends minimally that the current standard of care be employed for protection of metallic construction materials in contact with onsite soils or that consultation with an engineer specializing in corrosion to determine specifications for protection of the construction materials.

10.0 SLOPE AND LOT MAINTENANCE

Maintenance of improvements is essential to the long-term performance of structures and slopes. Although the design and construction during mass grading created slopes that are considered both grossly and surficially stable, certain factors are beyond the control of the soil engineer and geologist. The homeowners must implement certain maintenance procedures.

Drainage is considered critical in maintaining the stability of the slopes onsite. Maintenance of the site is necessary to restore the proposed drainage improvements should they become blocked.

10.1. Slope Planting

Slope planting should consist of ground cover, shrubs and trees that possess deep, dense root structures and require a minimum of irrigation. The owner/resident should be advised of their responsibility to maintain such planting.

10.2. Lot Drainage

Roof, pad and lot drainage should be collected and directed away from structures and slopes and toward approved disposal areas. Design fine-grade elevations should be maintained through the life of the structure, or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water away from structures and slopes. Owners/residents should be made aware that they are responsible for maintenance and cleaning of all drainage terraces, downdrains, and other devices that have been installed to promote structure and slope stability.

10.3. Slope Irrigation

The resident, homeowner and Homeowner Association should be advised of their responsibility to maintain irrigation systems. Leaks should be repaired immediately. Sprinklers should be adjusted to provide maximum uniform coverage with a minimum of water usage and overlap. Overwatering with consequent wasteful run-off and ground saturation should be avoided. If automatic sprinkler systems are installed, their use must be adjusted to account for natural rainfall conditions.

10.4. Burrowing Animals

Residents or homeowners should undertake a program for the elimination of burrowing animals. This should be an ongoing program in order to maintain slope stability.

11.0 FUTURE STUDY NEEDS

11.1. Future Geotechnical Studies

When available, the Geotechnical Consultant of Record should review detailed construction plans. The following plans should be reviewed:

- Retaining wall plans and calculations;
- Final Rough Grading Plans (signed and stamped by Geotechnical Engineer of Record);
- Precise Grading Plans.

11.2. In-Grading Observation

Geologic exposures afforded during remedial and rough grading operations provide the best opportunity to evaluate the site geologic structure. Continuous geologic and geotechnical observations, testing, and mapping should be provided throughout site development. Additional near-surface samples should be collected by the geotechnical consultant during grading and

subjected to laboratory testing. Final design recommendations should be provided in a grading report based on the observation and test results collected during grading.

12.0 CLOSURE

12.1. Geotechnical Review

As is the case in any grading project, multiple working hypotheses are established utilizing the available data, and the most probable model is used for the analysis. Information collected during the grading and construction operations is intended to evaluate the hypotheses, and some of the assumptions summarized herein may need to be changed as more information becomes available. Some modification of the grading and construction recommendations may become necessary should the conditions encountered in the field differ significantly than those hypothesized to exist.

AGS should review the pertinent plans and sections of the project specifications, to evaluate conformance with the intent of the recommendations contained in this report.

If the project description or final design varies from that described in this report, AGS must be consulted regarding the applicability of, and the necessity for, any revisions to the recommendations presented herein. AGS accepts no liability for any use of its recommendations if the project description or final design varies and AGS is not consulted regarding the changes.

12.2. Limitations

This report has been prepared for the exclusive use of Center Int'l Investments, Inc., and their designated project team members. This report is not intended for other parties, and it may not contain sufficient information for other purposes.

Services performed by AGS have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members on the profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

This report is based on the project as described and the information obtained from referenced reports and exploratory excavations at the locations indicated on the plans. The findings are based on the review of the field and laboratory data combined with an interpolation and extrapolation of conditions between and beyond the exploratory excavations. The results reflect an interpretation of the direct evidence obtained. Services performed by AGS have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by geotechnical engineers and engineering geologists who are familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report. AGS

should be notified of any pertinent changes in the project plans or if subsurface conditions are found to vary from those described herein. Such changes or variations may require a re-evaluation of the recommendations contained in this report.

The data, opinions, and recommendations of this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location, and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of AGS.

AGS has no responsibility for construction means, methods, techniques, sequences, or procedures, or for safety precautions or programs in connection with the construction, for the acts or omissions of the CONTRACTOR, or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

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APPENDIX B

PHOTOGRAPHS OF SITE

APPENDIX B- SITE PHOTOGRAPHS

PICTURE 1 (below)- Start of Goodview Road looking from Garvey Avenue



PICTURE 2 (below)- Retaining Wall at start of Goodview Road (looking from Goodview)



PICTURE 3 (below)- Abajo Retaining Wall



PICTURES 4 and 5 (below)- Goodview Drive Distress

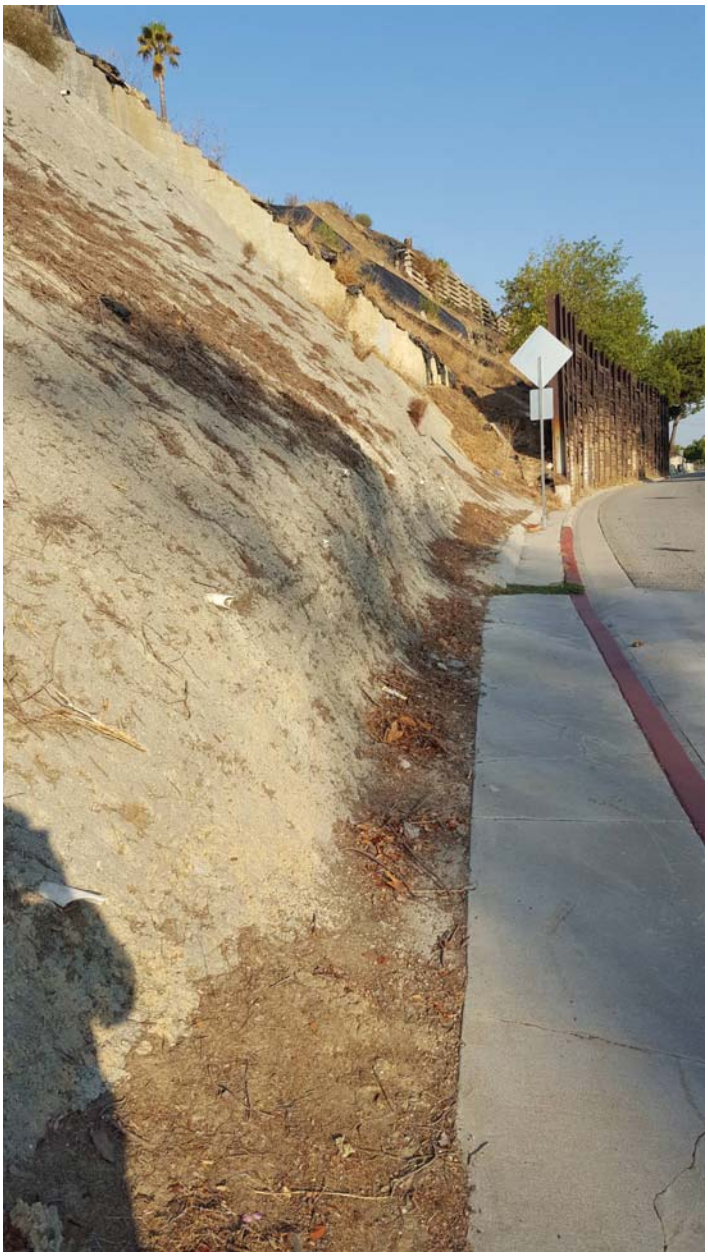




PICTURE 6 (below)- Impact Wall Looking from Above

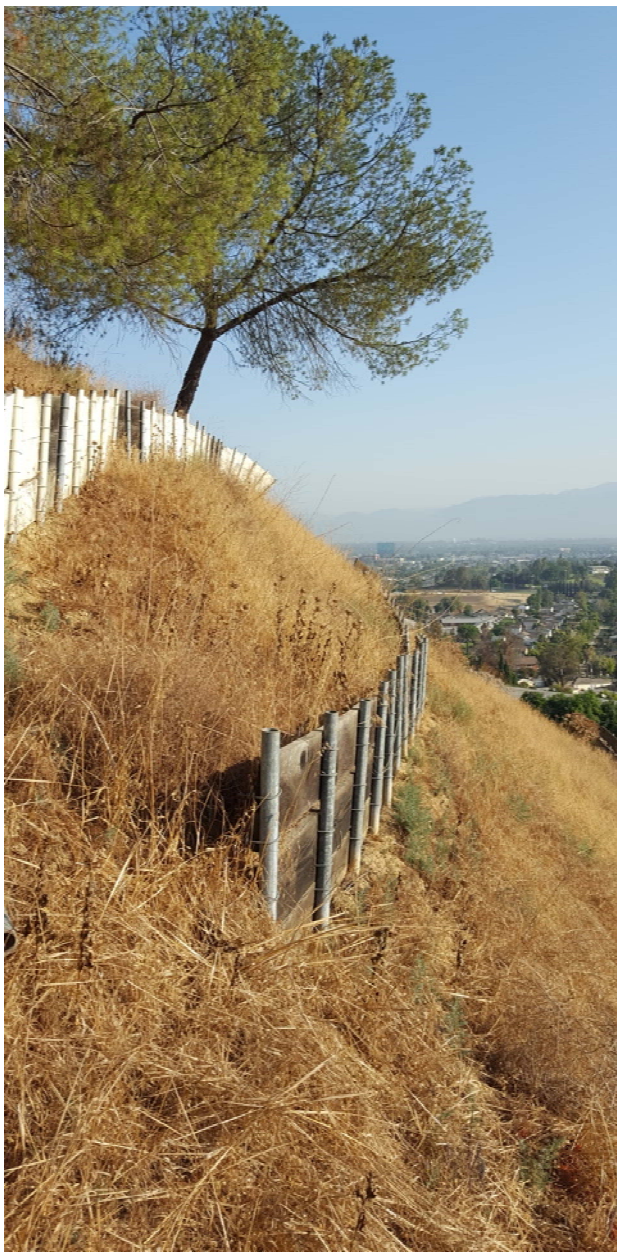


PICTURE 7 (below)- Impact Wall Looking West on Garvey Avenue, Offsite Shotcrete Slope to Left



PICTURES 8 and 9 (below)- Abajo Slope with Batter Boards





PICTURES 10 and 11 (below)- Abajo Retaining Wall with Shotcrete Slope Below





PICTURE 12 (below)- Start of Grading in 1978 with Garvey Slope Retaining Wall Visible on Left



PICTURE 13 (Below)- First Repair of Garvey Slope Retaining Wall and Slope- 1985



APPENDIX C

SUBSURFACE EXPLORATION- AGS

APPENDIX C

SUBSURFACE EXPLORATION

Ten hand-dug borings/test pits were excavated using a hand auger and/or shovels. Two bucket auger borings were excavated, sampled, and down-hole logged by an engineering geologist. The locations of these excavations are shown on the Geologic Map and the logs are attached. Bulk samples were collected from these pits and both undisturbed and bulk samples were collected from the bucket auger borings.

The bulk samples were transported to AGS's laboratory or GMU Geotechnical, Inc.'s, laboratories for testing. Laboratory testing procedures and test results are presented in Appendix D of this report.

Dated Excavated: October -27, 2016

Logged By: SD

LOG OF HAND DUG BORINGS/ HAND AUGERS

HA-1

Depth (feet)	Description
0 – 5	**ARTIFICIAL FILL (af):** SANDY SILT, some clay slightly mottled, tan, olive brown, moist, soft.
	@ 1 ft. – soft to firm.
	@ 4 ft. – firm to stiff, pieces of SILTSTONE
	Total Depth 5.0 feet. No water. Bulk Sample @ 0.5-3 feet.

HA-2

Depth (feet)	Description
0 – 3.0	**COLLUVIUM (Qcol):** SANDY SILT, sand is fine-grained, slightly moist, tan, soft.
3.0 – 7.5	**FERNANDO FORMATION (Tf):** SILTSTONE, slightly mottled, tan, calcium carbonates along fractures, slightly moist, very soft to soft.
	@ 4 ft. – harder drilling. Soft to medium hard, slightly mottled, tan with orange brown stringers, some clay.
	Total Depth 7.5 feet. No water. Bulk Sample @ 1-7 feet.

HA-3

Depth (feet)	Description
0 – 1.5	**COLLUVIUM (Qcol):** SILT, trace sand, pieces of SILTSTONE, tan, slightly moist, soft.
1.5 – 5.0	**FERNANDO FORMATION (Tf):** SILTSTONE, slightly mottled, tan, light olive grey, slightly moist, soft. @ 4.5 ft. – more carbonates, light tan.

Total Depth 5.0 feet.
No water.
Bulk Sample @ 0.5-3.5 feet.

HA-4

Depth (feet)	Description
0 – 0.5	**SLOPE WASH (Qsw):** CLAYEY SILT with debris, plastic roots, vegetation, soft.
0.5 – 5.0	**ARTIFICIAL FILL (af):** CLAYEY SILT, olive brown to tan, moist, soft. @ 4 ft. – less clay, less moisture.

Total Depth 5.0 feet.
No water.
Bulk Sample @ 1-4 feet.

HA-5

Depth (feet)	Description
0 – 0.5	**SLOPE WASH (Qsw):** SANDY SILT, with roots and debris, dry, porous, loose/soft.
0.5 – 2.0	**ARTIFICIAL FILL (af):** SANDY SILT, some clay, olive brown, slightly moist, soft, porous.

Total Depth 2.0 feet.
No water.
Bulk Sample @ 0.5-2 feet.

HA-6

Depth (feet)	Description
0 – 2.0	**SLOPE WASH (Qsw):** SANDY SILT, with vegetation, soft, porous, dry to slightly moist. @ 2 ft. – plastic barrier.
2.0 – 5.5	**ARTIFICIAL FILL (af):** CLAYEY SILT, trace fine-grained sand, slightly mottled, tan and yellow brown, moist, firm. @ 5 ft. – CLAY, dark yellow brown, moist, firm @ 5.5 ft. – SILTY CLAY, yellow brown, moist, firm. Total Depth 5.5 feet. No water. Bulk Sample @ 2-4 and 5 feet.

HA-7

Depth (feet)	Description
0 – 1.5	**SLOPE WASH (Qsw):** SANDY SILT with vegetation, dry to slightly moist, porous, loose/soft.
1.5 – 2.0	**ARTIFICIAL FILL (af):** SILTY CLAY, yellow brown, moist, soft. Total Depth 2.0 feet. No water. Bulk Sample @ 0.5-1.5 feet.

HA-8

Depth (feet)	Description
0 – 0.5	**COLLUVIUM (Qcol):** SILTY CLAY, light brown, dry, apparent hardness, dessicated, cracks to ½ inch extending to depths of 1 foot.
	@ 1 ft.- slightly moist to moist.
	@ 3 ft. – moist.
	@ 4 ft. – mottled, olive brown, tan, pinhole size porosity.
	@ 9 ft. – small pieces of SILTSTONE
	@ 9.5 ft. – pieces of SILTSTONE
	Total Depth 9.5 feet. No water. Bulk Sample @ 0-4 feet.

HA-9

Depth (feet)	Description
0 – 1.0	**ARTIFICIAL FILL (af):** SILTY CLAY, brown, blocky, dry, soft, some roots.
	Total Depth 1.0 feet. No water. Bulk Sample @ 0-1.0 feet.

HA-10

Depth (feet)	Description
0 – 1.5	**ARTIFICIAL FILL (af):** SILTY CLAY with some sand, debris, roots, vegetation, loose, plastic at 0.5 feet.
	Total Depth 1.5 feet. No water. Bulk Sample @ 0-1.5 feet.

BORING NUMBER BA-1

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Center Int'l Investments, Inc.
PROJECT NAME Tr. 75033
PROJECT NUMBER 1605-04
PROJECT LOCATION 1688 West Garvey Avenue, Monterey Park
DATE STARTED 11/6/17 **COMPLETED** 11/7/17
GROUND ELEVATION 570 ft **HOLE SIZE** 30
DRILLING CONTRACTOR Al Roy Drilling
GROUND WATER LEVELS:
DRILLING METHOD EZ Bore BA
AT TIME OF DRILLING ---
LOGGED BY SDH **CHECKED BY** PJD
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		ML	4" AC **Utility Trench Backfill, (af):** SANDY to CLAYEY SILT, light brown, moist, soft; few angular gravel clasts 2" PVC Gas line @ 4.0 ft., 6" PVC Sewer pipe										
5			**Pliocene Fernando Formation, (Tf):** SILTY CLAYSTONE, olive grey brown - rust orange, moist, soft; highly weathered; mottled; oxidized; common random closed jointing with iron oxide and manganese staining @ 8.0 ft., J: N50W 35S	MC	0-1	99	19.1	74					
10				MC	0	102	16.2	67					
15			@ 12.0 ft., SILTY CLAYSTONE, weathered; common manganese coated closed joints; few discontinous fractures with sand in-fill (creep) @ 14.0 ft., J: N50W 54S	MC	0	86	15.6	44					
20			@ 17.0 ft., B: N52W 58S, 1/2" very fine SAND bed, interbedded in CLAYEY SILTSTONE; finely laminated; oxidized orange brown; bedding pinches out in lenses; random jointing with surfaces coated with iron oxide and manganese; will not break-out along joint surfaces; weathered	BU					FS, RS, Max DS	51	27	24	97
				MC	1-1	108	15.7	75		52	25	27	98
25			@ 21.0 ft., Cemented SILTSTONE concretion (6") within bedding @ 22.0 ft., B: N58W 56S 1/4" very fine SAND bed, dark rusty orange, finely laminated, well defined										
30			@ 25.0 ft., B: N63W 56S 1/4" to 1/2" SAND interbedded; orange; finely laminated with calcareous nodules @ 25 - 27 ft., Random gypsum filled joints; discontinuous	MC	0-1	104	18.1	79					
			@ 29.0 ft., B: N73W 48S 1/4" SAND interbed; orange; lense pinches out										
35			@ 30.0 ft., CLAYEY SILTSTONE to SILTY CLAYSTONE, mottled light brown orange, moist, soft; weathered, oxidized @ 33.0 ft., B: N65W 45S, 1/4" to 1/2" SAND interbedded; orange oxidized; well defined; jointing bisects bed; well defined	MC	1-2	106	18.8	86					

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AGS BORING LOG V2 - GINT STD US LAB.GDT - 1/5/18 14:55 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\1605-04 GARVEY AVENUE - MONTEREY PARK.GPJ

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Center Int'l Investments, Inc. **PROJECT NAME** Tr. 75033

PROJECT NUMBER 1605-04 **PROJECT LOCATION** 1688 West Garvey Avenue, Monterey Park

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35			@ 35.0 ft., CLAYEY to SANDY SILTSTONE, mottled light brown to orange, moist, soft to moderately hard; common random jointing @ 35.0 - 38.0 ft., gypsum filled jointing; 1/8" infill 12" long, discontinuous	MC	1-3	110	15.4	78	DS	44	26	18	95
40			@ 40.0 ft., B: N68W 55S 1/4" SAND interbed; heavy orange oxidation; pinches out in upper boring diameter @ 42.0 - 45.0 ft., Common lenses of fine SAND interbeds; thinly laminated; iron oxide and manganese staining	MC	1-2	105	18.3	81					
45				MC	1-3	113	15.3	85					
50			@ 48.0 - 49.0 ft., Concretion, well cemented, heavy manganese staining on concretion faces; discontinuous in boring										
55			@ 50.0 ft., CLAYEY SILTSTONE, olive brown, moist, moderately hard; oxidized; less weathered; common concretions that are friable with heavily oxidized joint surfaces @ 54.0 ft., B: N85W 59S 1/4" to 1/2" SAND interbed	MC	3-3	114	12.6	70					
60			@ 56.0 - 58.0 ft., Gradational transition/contact (oxidized - unoxidized) CLAYEY SILTSTONE, dark gray, moist, moderately hard; massive; common 1/16" bioturbation with white mineralization @ 59.0 ft., B: N69W 56S SAND, interbed; orange oxidized; lense pinches out @ 60.0 ft., CLAYEY SILTSTONE, unoxidized	MC	2-2	110	16.5	83	DS	49	26	23	97
65				MC	3-4	109	17.0	85					
70			@ 67.0 ft., B: N60W 57S 4" SAND interbed, orange oxidized, finely laminated; slow seepage at lowest exposure at 67'	MC	4-8	113	15.2	83					
75			@ 70.0 ft, CLAYEY SILTSTONE to SILTY CLAYSTONE, unoxidized, becomes harder, massive	MC	4-8	115	14.9	86	FS				

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CLIENT Center Int'l Investments, Inc. **PROJECT NAME** Tr. 75033

PROJECT NUMBER 1605-04 **PROJECT LOCATION** 1688 West Garvey Avenue, Monterey Park

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
75				MC	6-13	116	13.1	78	DS, FS	47	25	22	98
				BU					RS, Max	49	28	21	97
			@ 78.0 - 85.0 ft., Coring required to advance boring; concretion zone; random; sub-rounded to 2.5 ft in diameter										
80													
			@ 83.0 ft., Slow seepage around concretion										
85				MC	5-8	116	14.2	86					
			@ 87.0 ft., J: N23E 78N Joint with slow seepage, small irregular concretions to 89'										
90			@ 90.0 ft., SILTSTONE to CLAYSTONE, unoxidized, dark grey, moist, hard; massive	MC	9-21	116	14.0	83	DS	48	25	23	99
95				MC	12-22	114	14.8	84					

Total Depth = 96.0 feet
Boring downhole logged seepage at 83 feet and 87 feet
Backfilled with soil cuttings

Attitudes:
B = Bedding
J = Jointing

Kelly Bar Weight:
0-29' = 4,800 lbs
30-58' = 3,3350 lbs
59-86' = 2,045 lbs
87-96' = 1,200 lbs

Other Tests:
DS = Direct Shear - Undisturbed Sample
RS = Direct Shear - Remolded Sample
FS = Direct Shear - Fully Softened - Deaggregated Sample
Max = Maximum Dry Density and Optimum Moisture Content

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BORING NUMBER BA-2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Center Int'l Investments, Inc. **PROJECT NAME** Tr. 75033

PROJECT NUMBER 1605-04 **PROJECT LOCATION** 1688 West Garvey Avenue, Monterey Park

DATE STARTED 11/7/17 **COMPLETED** 11/8/17 **GROUND ELEVATION** 596 ft **HOLE SIZE** 30

DRILLING CONTRACTOR Al Roy Drilling **GROUND WATER LEVELS:**

DRILLING METHOD EZ Bore BA **AT TIME OF DRILLING** ---

LOGGED BY SDH **CHECKED BY** PJD **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0			3-inches of AC/ 6-inches of AB										
		SC	**Utility Trench backfill. (af):** CLAYEY SAND and CLAYEY SILT, light brown, moist, soft; common roots and rootlets Covers 3/4 diameter of boring; formational materials exposed at 9" in remainder of boring (west side). Samples at 5', 10', 15' are fill. @ 4.0 ft., 2" PVC Gas line @ 17.5 ft., 6" PCV Sewer pipe with SAND and GRAVEL shading, moist, loose, common roots @ 18.0 ft., End of trench backfill										
5				MC	0	107	16.4	76					
			Pliocene Fernando Formation, (Tf): SILTY CLAYSTONE, oxidized, light olive brown with rusty orange oxidation, moist, soft; highly weathered; mottled; common jointing; with heavy iron oxide and manganese oxidation on joint faces; @ 7.0 ft., J: N65E 73S @ 10.0 ft., Faint bedding dipping 48°S maked by iron oxidation; common carbonate mineralization										
10				MC	0	99	17.9	69					
15				MC	0	98	20.1	75					
20			@ 20.0 ft., CLAYEY SILTSTONE, light olive brown, moist, soft; oxidized; friable along random jointing; weathered, white carbonate mineralization common @ 21.0 ft., J: N64E 84S Discontinuous joint; manganese coated surface; 1/8" partially open void	MC	0-1	107	17.1	80	DS	56	23	33	97
25			@ 25.0 ft., CLAYSTONE clast within SILTSTONE, light gray 5"x8" with heavy oxidation on face, common random jointing marked by iron oxidation; joints do not pick clean	MC	1-2	115	14.8	87	FS	48	22	26	
30			@ 30.0 ft., Continuous SILTY CLAYSTONE, oxidized, light olive to gray brown with heavy orange oxidation, moist, soft; weathered; massive; random discontinuous joints @ 32.0 ft., B: N58W 53S 1/4" SAND bed/lens, bright orange oxidation; poorly defined approximate bedding	MC	1-2	105	22.3	99	DS	49	21	28	95
35													

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AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Center Int'l Investments, Inc. **PROJECT NAME** Tr. 75033

PROJECT NUMBER 1605-04 **PROJECT LOCATION** 1688 West Garvey Avenue, Monterey Park

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35				MC	1-2	110	17.3	87					
40			@ 40.0 ft., Less weathered, moist, moderately hard; common iron oxide and manganese staining; random jointing @ 41.0 ft., J: N55W 77S	MC	1-2	108	17.0	82					
45				MC	1-2	106	18.4	84					
50			@ 49.0 FT., B: N58W 52S 1/4" SAND interbed, fine grained, orange, finely laminated										
			@ 50.0 - 52.0 ft., CLAYEY SILTSTONE, oxidized, olive gray to brown, moist, moderately hard; massive; mottled	MC	1-2	107	17.4	81	FS	50	22	28	98
				BU					RS, Max	50	27	23	96
55			@ 53.0 ft., Steeply dipping lenticular shaped pocket of SILTY CLAY; clast-like/not beds	MC	1-2	109	16.6	81					
60				MC	2-4	106	18.6	86					
			@ 61.0 ft., Increased density/hardness @ 61.5 ft., J: N35W 33S Manganese stained joint surface @ 63.0 - 65.0 ft., Slightly cementation @ 64.0 ft., Irregular unoxidized zone within an oxidized CLAYSTONE										
65				MC	3-7	108	17.2	83					
70			@ 67.0 ft., Gradational Transition to an unoxidized SILTY CLAYSTONE, dark gray, moist, moderately hard; massive, few 1/16" bioturbation with white mineralization	MC	4-7	112	15.7	83					
75				BU					FS, RS,	52	28	24	98

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Center Int'l Investments, Inc. **PROJECT NAME** Tr. 75033

PROJECT NUMBER 1605-04 **PROJECT LOCATION** 1688 West Garvey Avenue, Monterey Park

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
75			@ 75.0 ft., J: N78W 60S Manganese oxide stained joint with slight cementation; very slight seepage/moisture on surface; discontinuous around boring	MC	4-8	114	13.6	76	Max				
80				MC	3-7	113	12.3	68	DS	47	25	22	94
			@ 81.0 ft., Increased density/hardness										
85			@ 85.0 ft., SILTY CLAYSTONE to CLAYEY SILTSTONE, continuous, dark gray, moist, moderately hard to hard; massive	MC	4-7	112	15.3	81					
90			@ 90.0 ft., Increased density/hardness	MC	6-15								
95													
100			@ 99.0 ft., Very slight seepage along joint surface, discontinuous and irregular orientation @ 100.0 ft., Zone of 1/16" bioturbation marked by white mineralization	MC	7-20	106	14.4	66		45	25	20	92
105			@ 105.0 ft., Slight cementation	MC	8-20								
110				MC	8-14								
			@ 111.0 - 115.0 ft., Concretions, irregular within unoxidized SILTY CLAYSTONE										
115			@ 113.0 ft., Slight seepage around concretion										

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ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Center Int'l Investments, Inc. **PROJECT NAME** Tr. 75033

PROJECT NUMBER 1605-04 **PROJECT LOCATION** 1688 West Garvey Avenue, Monterey Park

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)

Total depth = 115.0 feet
Boring downhole logged seepage at 113 feet
Backfilled with soil cuttings

Attitudes:
B = Bedding
J = Jointing

Kelly Bar Weight:
0-29' = 4,800 lbs
30-58' = 3,3350 lbs
59-86' = 2,045 lbs
87-115' = 1,200 lbs

Other Tests:
DS = Direct Shear - Undisturbed Sample
RS = Direct Shear - Remolded Sample
FS = Direct Shear - Fully Softened - Deaggregated Sample
Max = Maximum Dry Density and Optimum Moisture Content

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APPENDIX D

LABORATORY TEST RESULTS- AGS

APPENDIX D

LABORATORY TEST RESULTS- AGS

The results of laboratory testing performed during this study are enclosed within this Appendix. AGS's laboratory and GMU Geotechnical, Inc., performed the laboratory testing for the recent investigation. Descriptions of the testing procedures are presented below. Table D-1 presents a summary of the test results and includes a description of the tested materials.

Classification

Soils were classified with respect to the Unified Soil Classification System (USCS) in accordance with ASTM D2487 and D2488.

Maximum Dry Density and Moisture Content

The maximum dry densities and optimum moisture contents of representative bulk samples were evaluated in accordance with ASTM D-1557/Method A. The results of these tests are appended.

Direct Shear Tests- Single and Multiple Cycle

Both single cycle and multiple cycle direct shear tests were performed on undisturbed and remolded samples (90 percent of the maximum dry density- ASTM D1557). Samples were saturated in a confined condition prior to testing. The apparatus used is in conformance with the requirements outlined in ASTM Test Method: D3080. The test specimens (1-inch in height and 2.42-inches in diameter) were subjected to simple shear along a plane at mid-height.

The samples were sheared under various normal loads, a different specimen being used for each normal load. The specimens were sheared until the sample deformation had reached approximately 0.25 inches. For multiple cycle shears, the shearing was then reversed, and a total of 5 cycles was performed. The shearing strain rate was based on the type of material being sheared and generally was 0.0025 to 0.0008 inches per minute.

The shear stress values obtained from the tests (peak, ultimate, and additionally residual for the multiple pass tests) were plotted versus the applied normal pressures. An appropriate straight line was drawn through the plotted points to obtain the shear strength envelope.

In order to determine the fully softened strength, several samples were also remolded at around their liquid limit, normally consolidated, and subjected to direct shear testing. The samples were generally prepared in accordance with ASTM D7608 except that the samples were remolded into a ring and sheared in a direct shear machine instead of a Bromhead ring shear machine. Materials were used from the bulk samples as well as the ring samples. For the ring samples, different depths were sometimes combined to produce enough material for testing. Samples were screened and broken down using a mortar and pestle. The samples were remolded to near the liquid limit and allowed to "cure" for a day. The samples were remolded into a 2.42-inch diameter ring and placed in a consolidometer. Loads were incrementally applied until the test normal load was reached and the sample was allowed to normally consolidate at each increment. The samples were kept moist throughout the test procedure. The samples were placed in a direct shear machine and sheared at a rate of 0.0008 inches per minute until a deformation of roughly

0.25 inches was reached. The peak shear strength (which occurred generally at the end of shearing) was determined and plotted versus normal load. The direct shear test results are appended.

Direct Shear Tests- Remolded with Cement

Direct shear tests were performed on undisturbed and remolded samples that were mixed with cement (2.5% by weight). Samples were cured for 7 days and saturated prior to testing. The apparatus used is in conformance with the requirements outlined in ASTM Test Method: D3080. The test specimens (1-inch in height and 2.42-inches in diameter) were subjected to simple shear along a plane at mid-height.

The samples were sheared under various normal loads, a different specimen being used for each normal load. The specimens were sheared until the sample deformation had reached approximately 0.25 to 0.36 inches.

The shear stress values obtained from the tests were plotted versus the applied normal pressures. An appropriate straight line was drawn through the plotted points to obtain the shear strength envelope. The cohesion and angle of internal friction of the soil materials were evaluated from the shear strength envelopes. The direct shear test results are appended.

Particle Size Analyses

Number 200 washes were performed on selected samples in accordance with ASTM D1140. Additionally, grain size distributions were obtained on selected samples in accordance with ASTM D422. The results of the particle size analyses are appended. The clay size fraction (<0.002 mm) versus depth is shown on Figure F-6.

Atterberg Limits

The plastic limit and liquid limit were evaluated on representative soil samples in general accordance with ASTM Test Method: D-4318. The results are appended. Figure F-5 presents the liquid limit of the tested samples versus depth.

Chemical Analyses

Selected chemical (sulfate, chloride, etc.) and corrosion tests (Resistivity, pH, and Electrical conductivity) were performed by Anaheim Test Laboratory.

TABLE D-1
SUMMARY OF LABORATORY DATA

Boring	Depth (ft)	Sample Type	Formation	Description	Atterberg Limits LL	PL	PI	Class.	-200 (%)	>0.002um (%)	Max. (pcf)	Opt. Moist. (%)	Direct Shear Type	Normal Load (psf)	Shear Fully Softened c' (psf)	Φfs' (deg)	Shear Peak c' (psf)	Φp' (deg)	Shear End of Shearing c' (psf)	Φ' (deg)	Shear Residual c' (psf)	Φr' (deg)
BA-1	19-20	Bulk	Bedrock	Claystone	51	27	24	CH	97	27	110.0	18.0	Fully Softened	1000	696	180	27							
													Remolded 49%	2000	1200								
														4000	2232									
	19-20												Remolded	1000			881	350	27	675	150	28		
													at 90% RC	2000			1379			1145				
														3000			2935			2935				
BA-1&2	20	Ring (Combined)	Bedrock	Silty Claystone									Fully Softened	1000	588	55	28							
													Remolded 53%	2000	1080									
														4000	2148									
BA-1	20	Ring	Bedrock	Silty Claystone	52	25	27	CH	98	22			Undisturbed	1000			1308	-240	55	756	335	28	744	145	28
														2000			2400			1548			1104		
														4000			5496			2388			2304		
BA-2	20	Ring	Bedrock	Claystone	56	23	33	CH	97	24			Undisturbed	1000			1452	865	32	696	170	27	660	145	25
														2000			2172			1176			1080		
														4000			3348			2232			1992		
BA-2	25	Ring	Bedrock	Silty Claystone	48	22	26	CL	98	32			Fully Softened	2000	1152	145	26							
													Remolded 48%	4000	2052									
														8000	4068									
BA-2	30	Ring	Bedrock	Silty Claystone	49	21	28	CL	95	19			Undisturbed	1000			1788	1240	28	732	270	28			
														2000			2316			1452					
														4000			3408			2376					
BA-1	35	Ring	Bedrock	Silty Claystone	44	26	18	CL	95	16			Undisturbed	2000			2808	1805	35	1848	905	26	1380	150	27
														4000			5148			2940			1848		
														10000			8687			5832			5232		
BA-2	50	Ring	Bedrock	Silty Claystone	50	22	28	CL/CH	98	26			Undisturbed	2000			2664	1310	31	1380	320	27			
														4000			3504			2316					
														8000			6216			4440					
BA-2	50-52	Bulk	Bedrock	Claystone	50	27	23	CL/CH	96	28	110.5	17.0	Remolded	1000			939	350	30	822	300	30			
													at 90% RC	2000			1614			1526					
														3000			3229			3140					
BA-1	55	Ring	Bedrock	Silty Claystone	49	26	23	CL	97	14			Undisturbed	2000			3276	2560	24	1248	-55	33			
														4000			4668			2616					
														8000			6096			5220					
BA-1	70 & 75	Ring	Bedrock	Claystone/Siltstone									Fully Softened	2000	1272	165	29							
													Remolded 48%	4000	2376									
														10000	5700									
BA-2	73-75	Bulk	Bedrock	Claystone/Siltstone	52	28	24	CH	98	22			Fully Softened	2000	720	0	28							
													Remolded 52%	4000	2376									
														8000	4476									
	73-75										105.0	17.0	Remolded	1000			881	425	25	763	300	26			
													at 90% RC	2000			1409			1321					
														3000			2700			2700					
BA-1	75	Ring	Bedrock	Silty Claystone	47	25	22	CL	98	15			Undisturbed	2000			4896	5385	22	1356	-310	38	1272	-35	33
														4000			8759			2592			2496		
														10000			9035			7416			6384		

TABLE D-1
SUMMARY OF LABORATORY DATA

Boring	Depth (ft)	Sample Type	Formation	Description	Atterberg Limits				-200	>0.002um	Max.	Opt. Moist.	Direct Shear Type		Shear Fully Softened			Shear Peak			Shear End of Shearing			Shear Residual		
					LL	PL	PI	Class.	(%)	(%)	(pcf)	(%)		Normal Load (psf)	(psf)	c' (psf)	Φfs' (deg)	(psf)	c' (psf)	Φp' (deg)	(psf)	c' (psf)	Φ' (deg)	(psf)	c' (psf)	Φr' (deg)
BA-1	76-78	Bulk	Bedrock	Siltstone	49	28	21	ML/CL	97	27	109.0	17.5	Remolded	1000				969	425	28	881	300	29			
													at 90% RC	2000				1468			1379					
														3000				3082			3081					
BA-2	80	Ring	Bedrock	Claystone	47	25	22	CL	94	8			Undisturbed	2000				3864	2905	27	1704	755	24	1608	880	19
														4000				5040			2520			2256		
														10000				8004			5316			4404		
BA-1	90	Ring	Bedrock	Silty Claystone	48	25	23	CL	99	20			Undisturbed	2000				4404	3760	30	1440	595	30	1247	560	29
														4000				6732			3300			3456		
														10000				9347			6240			5904		
BA-2	100	Ring	Bedrock	Silty Claystone	45	25	23	CL	92	15			n/a													

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 11/26/2017

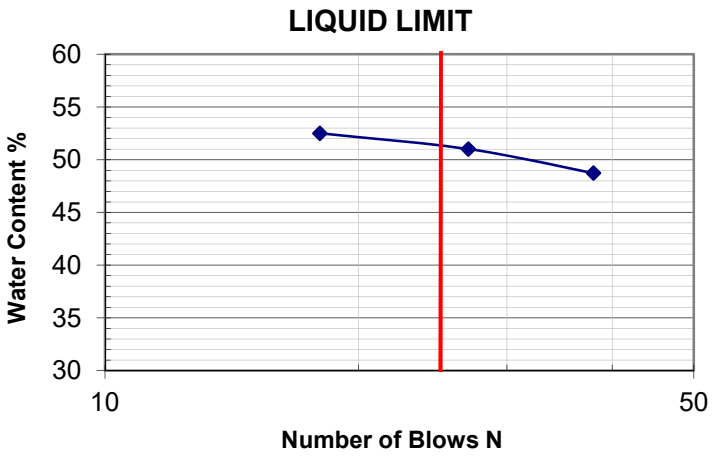
Excavation: BA-1
Depth: 19-20 ft
Description: Claystone
By: HM

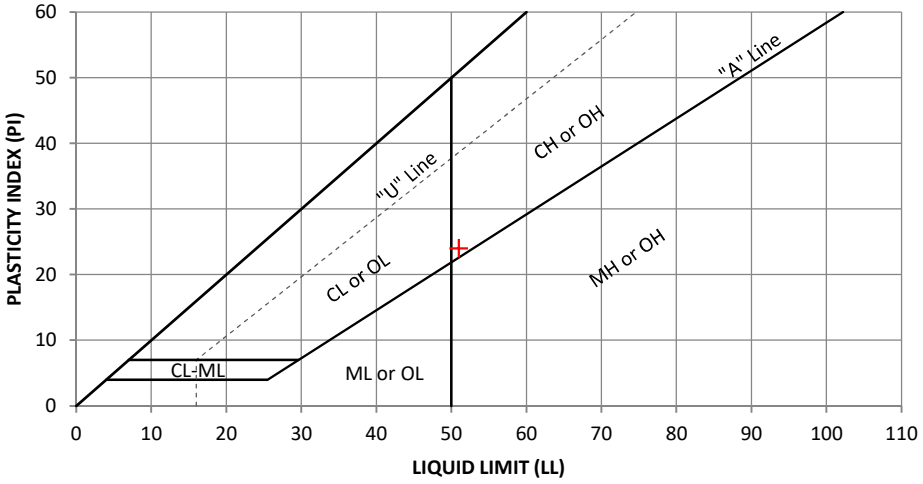
LIQUID LIMIT

Can No.	20	19	15
Wt. wet soil+can (g)	46.82	46.91	47.49
Wt. dry soil+can (g)	41.46	41.36	41.60
Wt. can (g)	30.46	30.48	30.38
Wt. mosture (g)	5.36	5.55	5.89
Wt. dry soil (g)	11.00	10.88	11.22
Water Content %	48.73	51.01	52.50
No. of Blows	38	27	18

PLASTIC LIMIT

74	79
17.93	16.93
16.40	15.61
10.83	10.74
1.53	1.32
5.57	4.87
27.47	27.10





Liquid Limit (LL) 51 Plastic Limit (PL) 27 Plasticity Index (PI) 24

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/1/2017

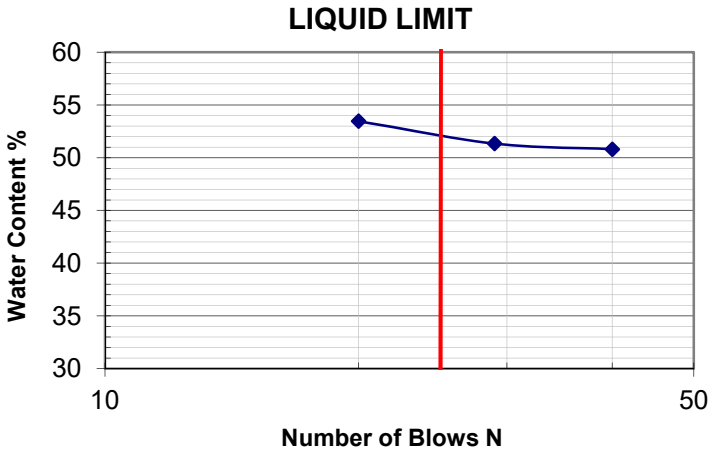
Excavation: BA-1
Depth: 20 ft
Description: Silty Claystone
By: FV

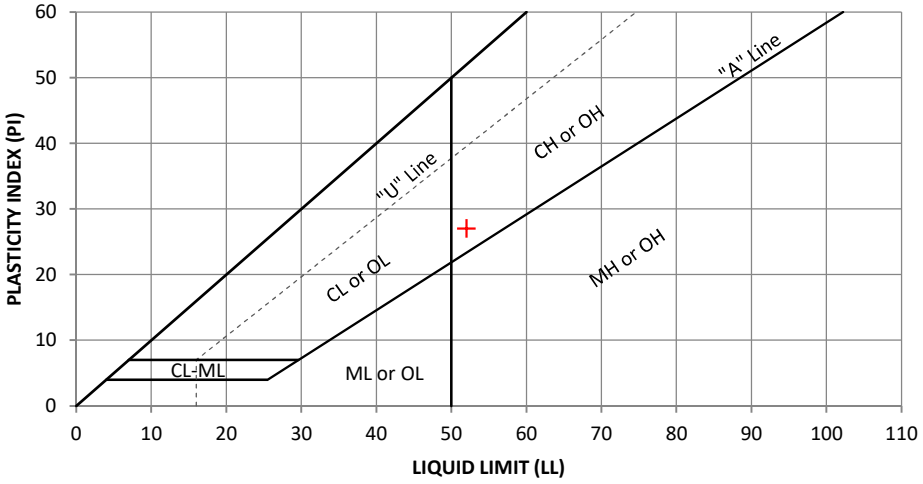
LIQUID LIMIT

Can No.	3	15	4
Wt. wet soil+can (g)	19.21	18.08	18.61
Wt. dry soil+can (g)	16.43	15.77	16.08
Wt. can (g)	11.23	11.27	11.10
Wt. mosture (g)	2.78	2.31	2.53
Wt. dry soil (g)	5.20	4.50	4.98
Water Content %	53.46	51.33	50.80
No. of Blows	20	29	40

PLASTIC LIMIT

13.11	13.65
12.76	13.11
11.27	11.14
0.35	0.54
1.49	1.97
23.49	27.41





Liquid Limit (LL) 52 Plastic Limit (PL) 25 Plasticity Index (PI) 27

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/12/17

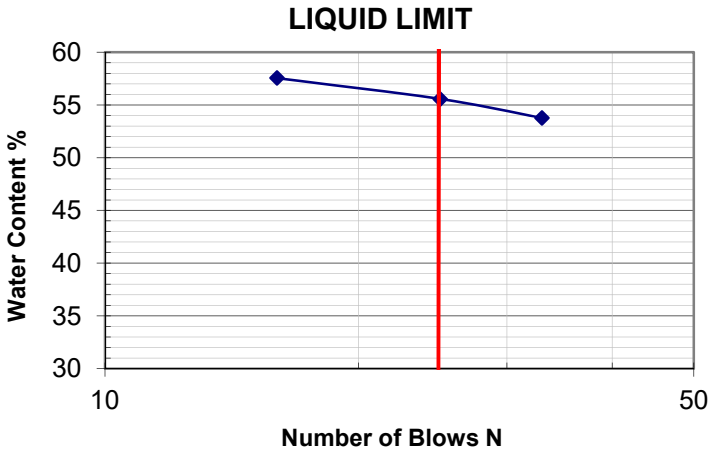
Excavation: BA-2
Depth: 20 ft
Description: Claystone
By: FV

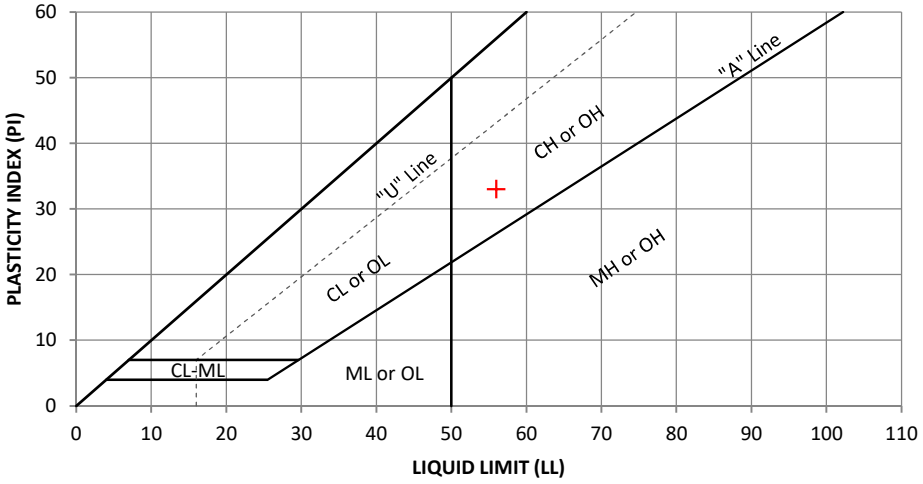
LIQUID LIMIT

Can No.	3	4	16
Wt. wet soil+can (g)	19.99	22.00	19.96
Wt. dry soil+can (g)	16.93	18.11	16.76
Wt. can (g)	11.24	11.11	11.20
Wt. mosture (g)	3.06	3.89	3.20
Wt. dry soil (g)	5.69	7.00	5.56
Water Content %	53.78	55.57	57.55
No. of Blows	33	25	16

PLASTIC LIMIT

14	10
14.90	14.28
14.22	13.70
11.27	11.16
0.68	0.58
2.95	2.54
23.05	22.83





Liquid Limit (LL) 56 Plastic Limit (PL) 23 Plasticity Index (PI) 33

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/29/2017

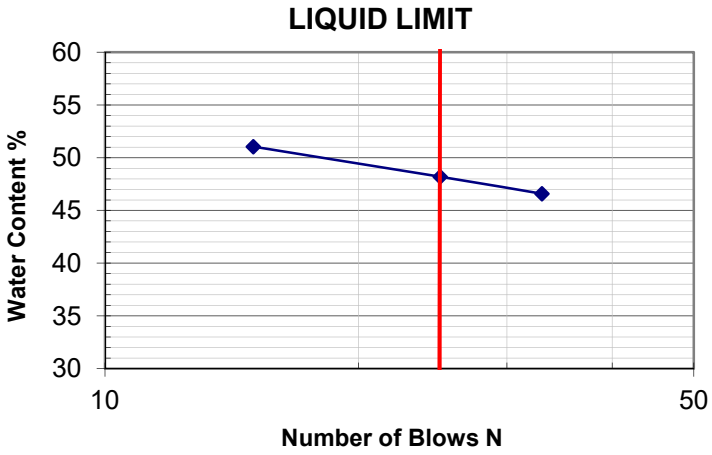
Excavation: BA-2
Depth: 25 ft
Description: Silty Claystone
By: FV

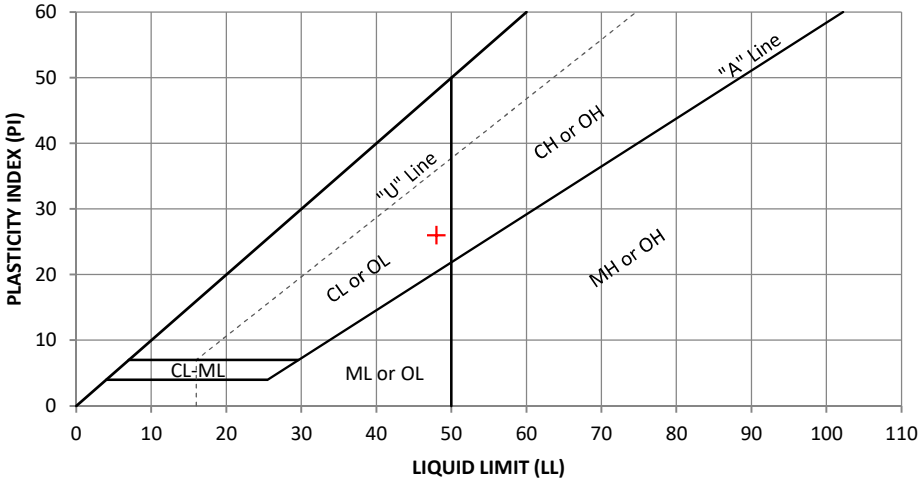
LIQUID LIMIT

Can No.	5	11	2
Wt. wet soil+can (g)	25.09	22.78	26.52
Wt. dry soil+can (g)	20.43	19.03	21.63
Wt. can (g)	11.30	11.25	11.13
Wt. mosture (g)	4.66	3.75	4.89
Wt. dry soil (g)	9.13	7.78	10.50
Water Content %	51.04	48.20	46.57
No. of Blows	15	25	33

PLASTIC LIMIT

15	16
12.69	12.10
12.44	11.93
11.27	11.20
0.25	0.17
1.17	0.73
21.37	23.29





Liquid Limit (LL) 48 Plastic Limit (PL) 22 Plasticity Index (PI) 26

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/20/2017

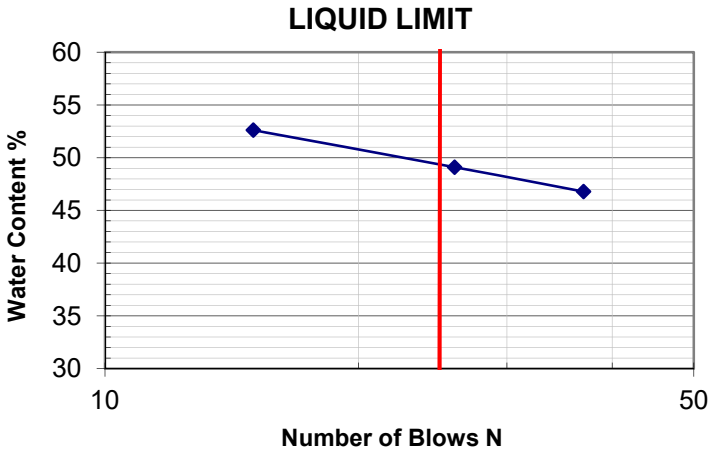
Excavation: BA-2
Depth: 30 ft
Description: Silty Claystone
By: FV

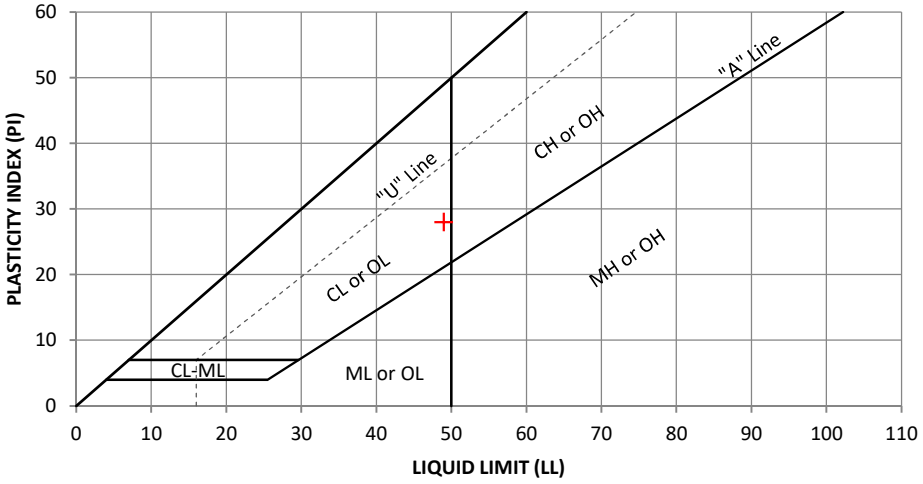
LIQUID LIMIT

Can No.	11	4	16
Wt. wet soil+can (g)	26.12	26.96	25.13
Wt. dry soil+can (g)	20.99	21.74	20.69
Wt. can (g)	11.24	11.11	11.20
Wt. mosture (g)	5.13	5.22	4.44
Wt. dry soil (g)	9.75	10.63	9.49
Water Content %	52.62	49.11	46.79
No. of Blows	15	26	37

PLASTIC LIMIT

15	2
12.70	12.98
12.43	12.68
11.27	11.15
0.27	0.30
1.16	1.53
23.28	19.61





Liquid Limit (LL) 49 Plastic Limit (PL) 21 Plasticity Index (PI) 28

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/7/17

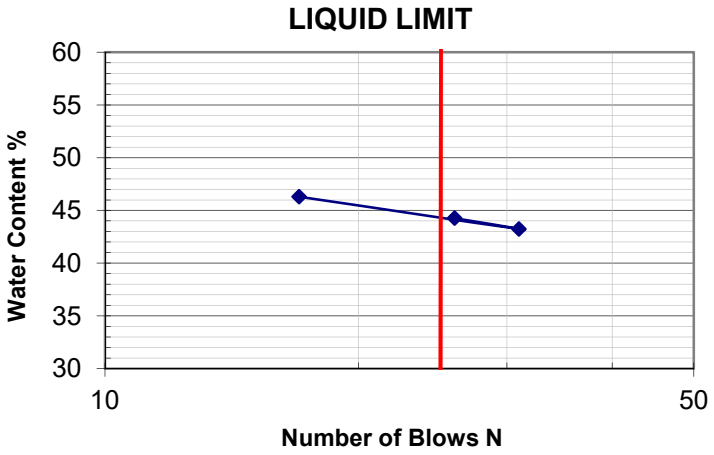
Excavation: BA-1
Depth: 35 ft
Description: Silty Claystone
By: DC

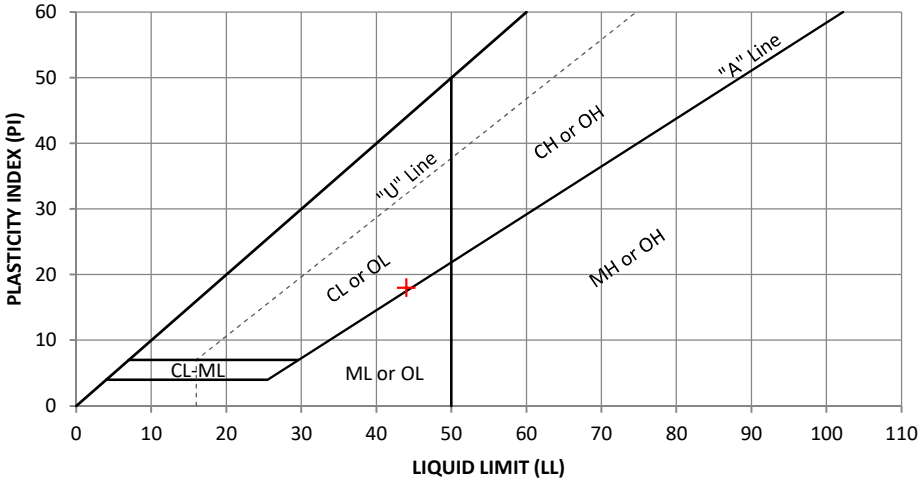
LIQUID LIMIT

Can No.	4	14	16
Wt. wet soil+can (g)	19.60	20.18	20.13
Wt. dry soil+can (g)	16.91	17.50	17.39
Wt. can (g)	11.10	11.30	11.20
Wt. mosture (g)	2.69	2.68	2.74
Wt. dry soil (g)	5.81	6.20	6.19
Water Content %	46.30	43.23	44.26
No. of Blows	17	31	26

PLASTIC LIMIT

3	10
15.68	16.25
14.77	15.22
11.24	11.16
0.91	1.03
3.53	4.06
25.78	25.37





Liquid Limit (LL) 44 Plastic Limit (PL) 26 Plasticity Index (PI) 18

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/19/2017

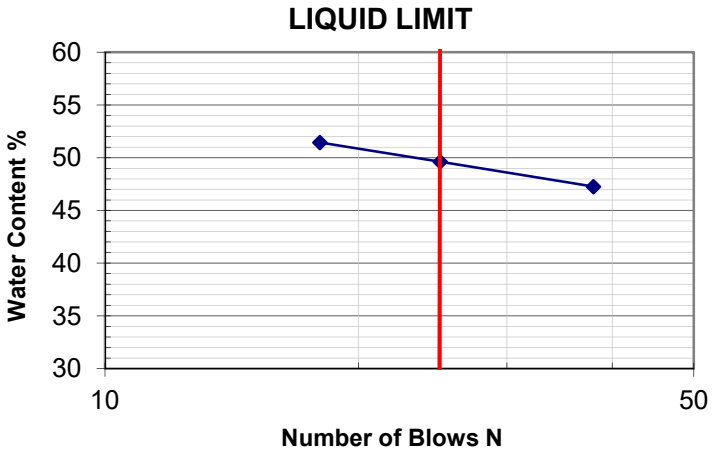
Excavation: BA-2
Depth: 50 ft
Description: Silty Claystone
By: FV

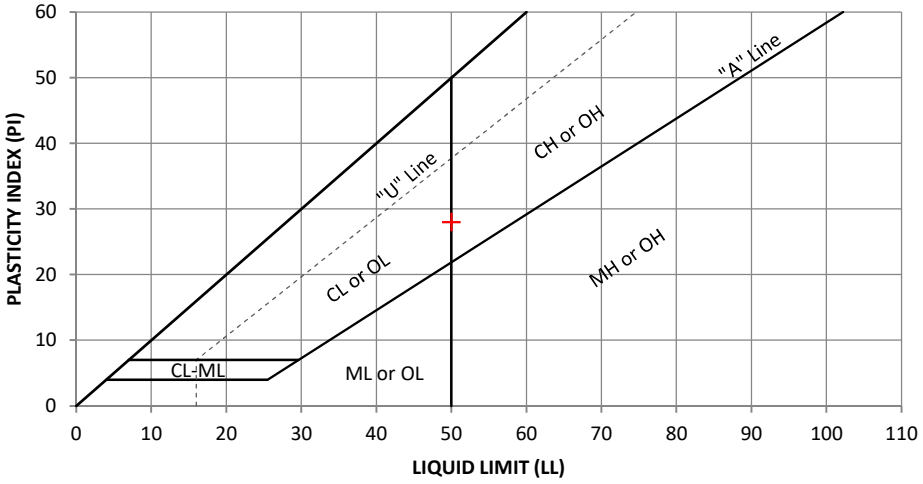
LIQUID LIMIT

Can No.	3	14	6
Wt. wet soil+can (g)	27.02	26.85	26.30
Wt. dry soil+can (g)	21.66	21.68	21.47
Wt. can (g)	11.24	11.26	11.25
Wt. mosture (g)	5.36	5.17	4.83
Wt. dry soil (g)	10.42	10.42	10.22
Water Content %	51.44	49.62	47.26
No. of Blows	18	25	38

PLASTIC LIMIT

5	2
13.15	12.82
12.80	12.53
11.28	11.12
0.35	0.29
1.52	1.41
23.03	20.57





Liquid Limit (LL) 50 Plastic Limit (PL) 22 Plasticity Index (PI) 28

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 11/26/2017

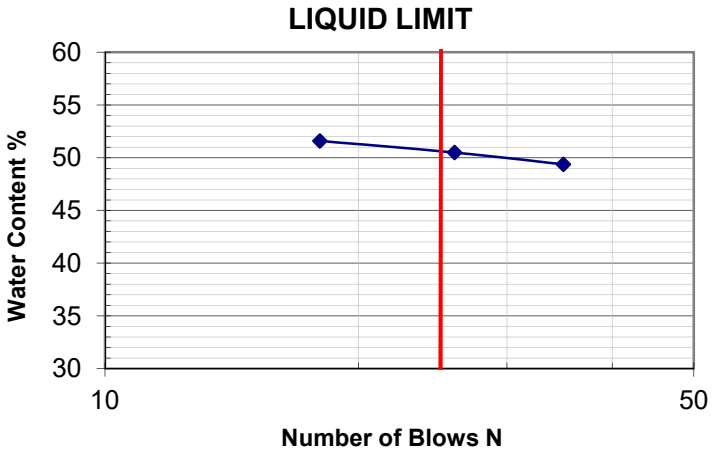
Excavation: BA-2
Depth: 50-52 ft
Description: Claystone
By: HM

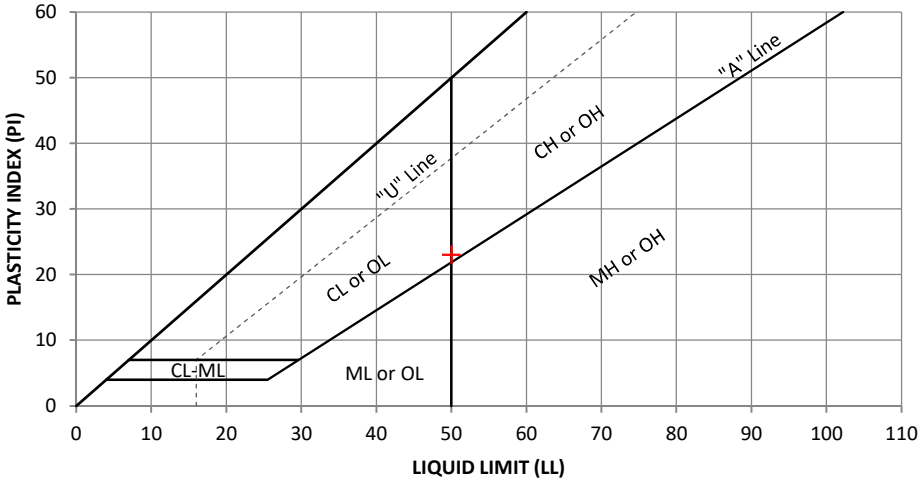
LIQUID LIMIT

Can No.	14	16	55
Wt. wet soil+can (g)	47.18	47.30	47.85
Wt. dry soil+can (g)	41.64	41.62	41.87
Wt. can (g)	30.42	30.37	30.28
Wt. mosture (g)	5.54	5.68	5.98
Wt. dry soil (g)	11.22	11.25	11.59
Water Content %	49.38	50.49	51.60
No. of Blows	35	26	18

PLASTIC LIMIT

66	63
18.14	16.80
16.58	15.52
10.82	10.71
1.56	1.28
5.76	4.81
27.08	26.61





Liquid Limit (LL) 50 Plastic Limit (PL) 27 Plasticity Index (PI) 23

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/4/2017

Excavation: BA-1
Depth: 55 ft
Description: Silty Claystone
By: FV/DC

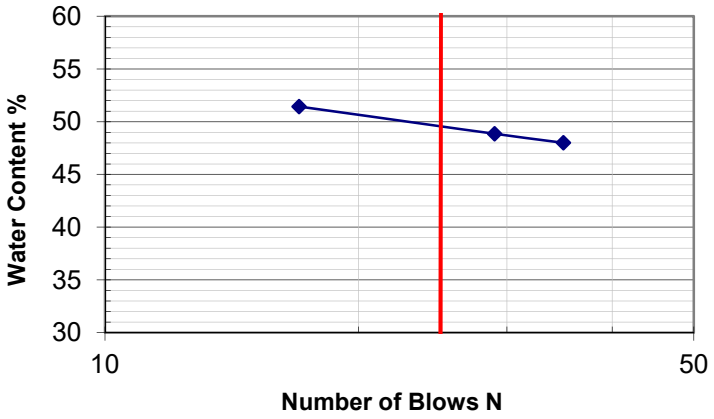
LIQUID LIMIT

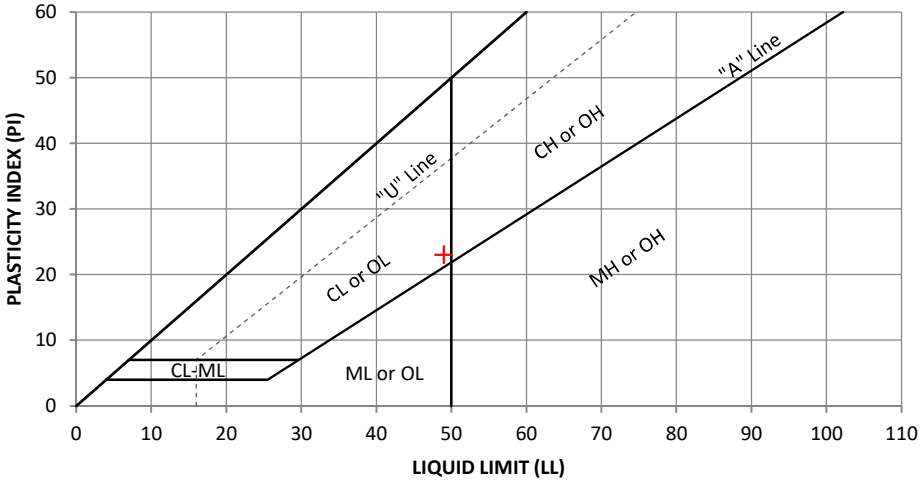
Can No.	1	5	2
Wt. wet soil+can (g)	21.22	19.10	20.08
Wt. dry soil+can (g)	17.84	16.54	17.18
Wt. can (g)	11.27	11.30	11.14
Wt. mosture (g)	3.38	2.56	2.90
Wt. dry soil (g)	6.57	5.24	6.04
Water Content %	51.45	48.85	48.01
No. of Blows	17	29	35

PLASTIC LIMIT

11	6
14.63	13.37
13.90	12.95
11.21	11.27
0.73	0.42
2.69	1.68
27.14	25.00

LIQUID LIMIT





Liquid Limit (LL) 49 Plastic Limit (PL) 26 Plasticity Index (PI) 23

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 11/26/2017

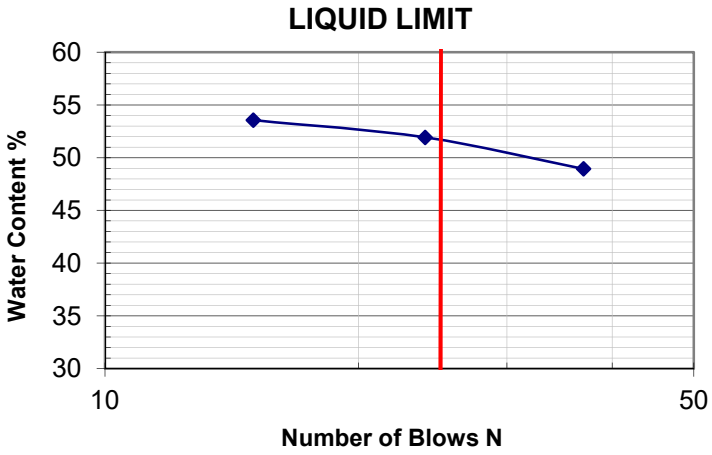
Excavation: BA-2
Depth: 73-75 ft
Description: Claystone/Siltstone
By: HM

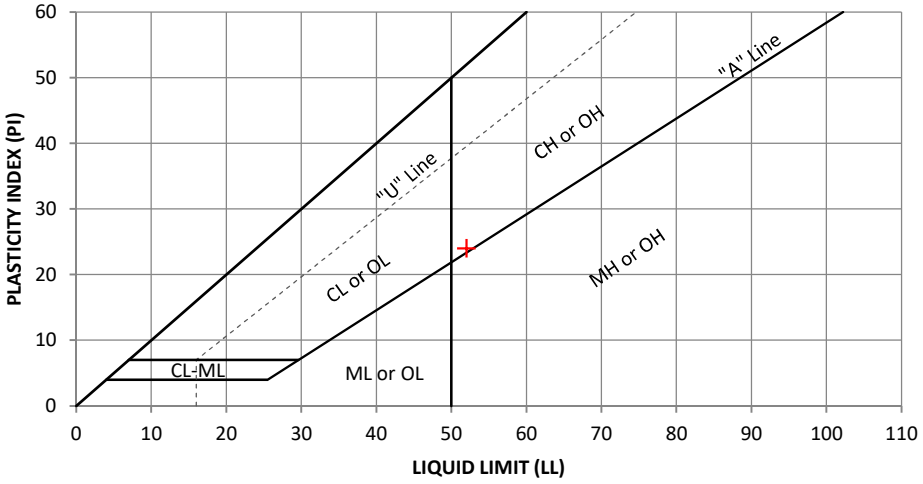
LIQUID LIMIT

Can No.	33	61	56
Wt. wet soil+can (g)	47.25	46.43	48.77
Wt. dry soil+can (g)	41.71	40.91	42.45
Wt. can (g)	30.39	30.28	30.65
Wt. mosture (g)	5.54	5.52	6.32
Wt. dry soil (g)	11.32	10.63	11.80
Water Content %	48.94	51.93	53.56
No. of Blows	37	24	15

PLASTIC LIMIT

64	83
17.23	16.66
15.82	15.34
10.82	10.71
1.41	1.32
5.00	4.63
28.20	28.51





Liquid Limit (LL) 52 Plastic Limit (PL) 28 Plasticity Index (PI) 24

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/2/2017

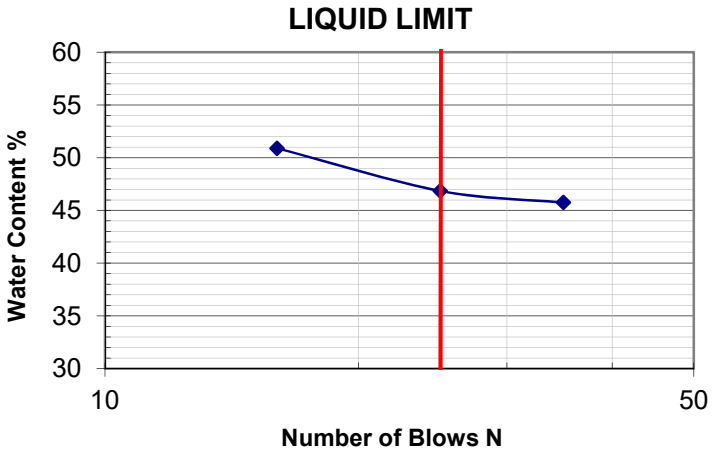
Excavation: BA-1
Depth: 75 ft
Description: Silty Claystone
By: FV

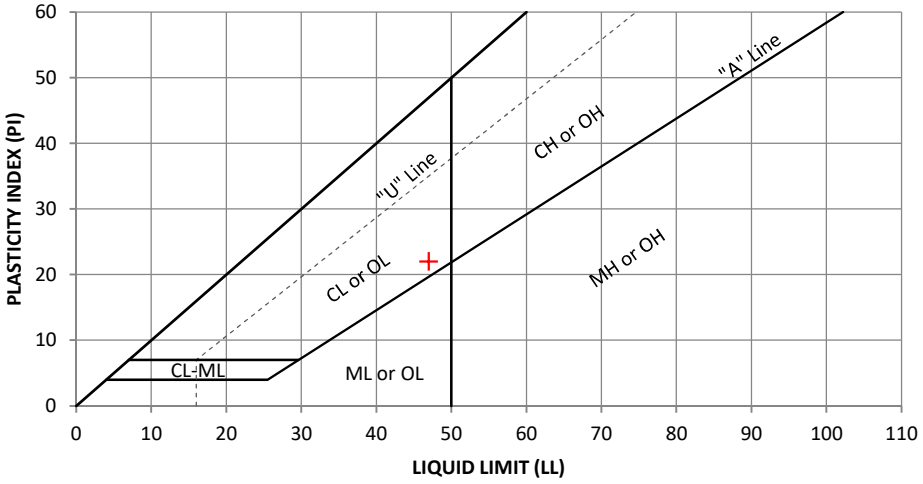
LIQUID LIMIT

Can No.	4	6	15
Wt. wet soil+can (g)	22.01	20.34	21.72
Wt. dry soil+can (g)	18.33	17.44	18.44
Wt. can (g)	11.10	11.25	11.27
Wt. mosture (g)	3.68	2.90	3.28
Wt. dry soil (g)	7.23	6.19	7.17
Water Content %	50.90	46.85	45.75
No. of Blows	16	25	35

PLASTIC LIMIT

2	3
13.98	13.78
13.43	13.27
11.14	11.24
0.55	0.51
2.29	2.03
24.02	25.12





Liquid Limit (LL) 47 Plastic Limit (PL) 25 Plasticity Index (PI) 22

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 11/26/2017

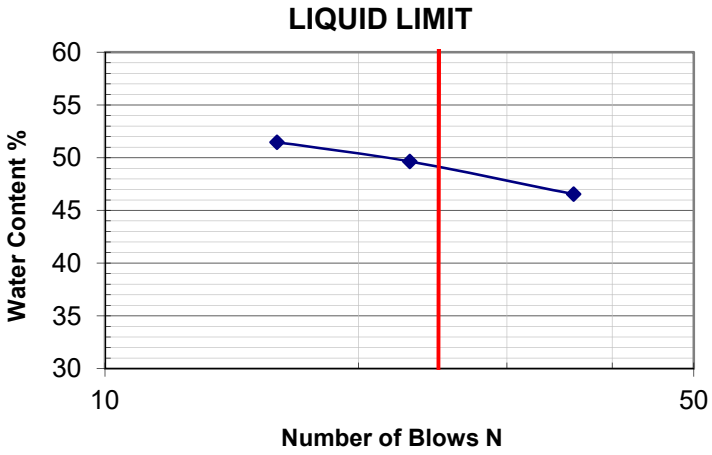
Excavation: BA-1
Depth: 76-78 feet
Description: Siltstone
By: HM

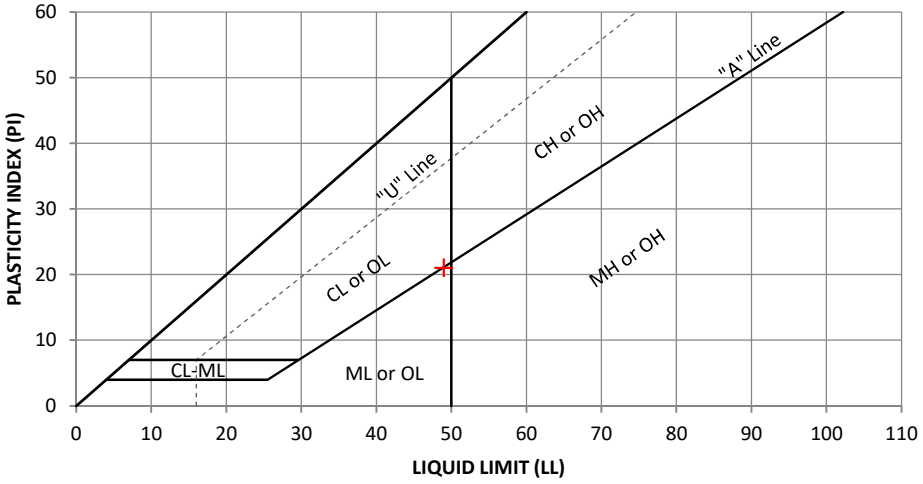
LIQUID LIMIT

Can No.	17	21	63
Wt. wet soil+can (g)	46.78	47.25	48.26
Wt. dry soil+can (g)	41.54	41.65	42.15
Wt. can (g)	30.28	30.37	30.28
Wt. mosture (g)	5.24	5.60	6.11
Wt. dry soil (g)	11.26	11.28	11.87
Water Content %	46.54	49.65	51.47
No. of Blows	36	23	16

PLASTIC LIMIT

84	73
16.57	20.09
15.33	18.08
10.85	10.86
1.24	2.01
4.48	7.22
27.68	27.84





Liquid Limit (LL) 49 Plastic Limit (PL) 28 Plasticity Index (PI) 21

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/5/2017

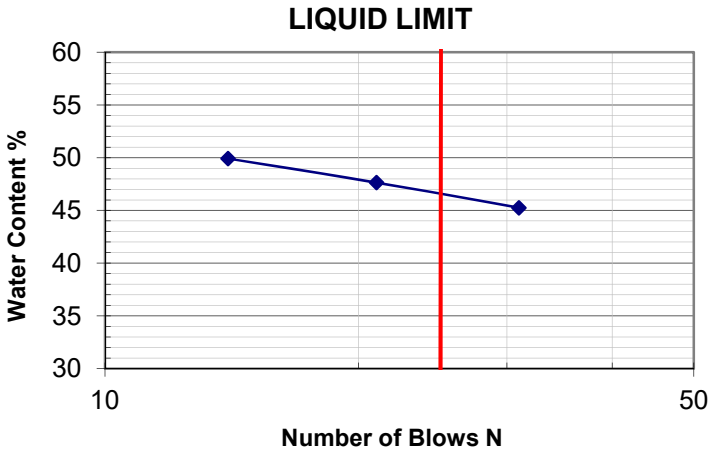
Excavation: BA-2
Depth: 80 ft
Description: Claystone
By: FV

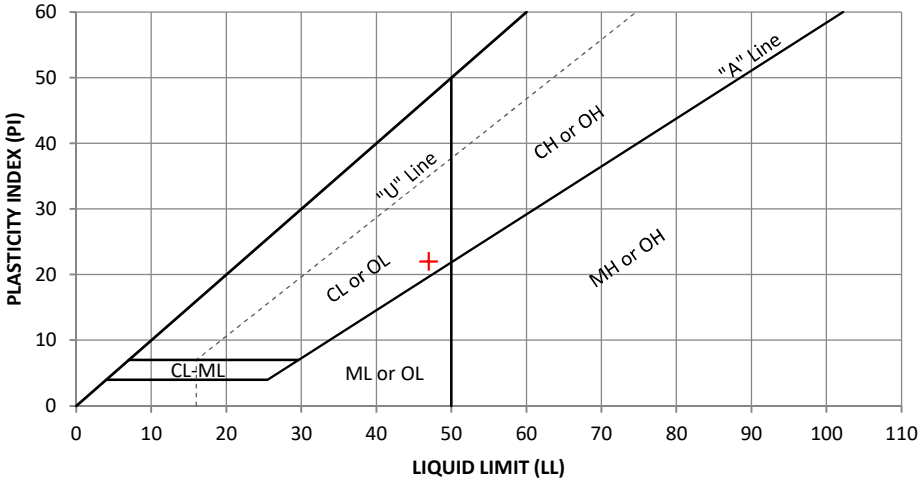
LIQUID LIMIT

Can No.	14	11	3
Wt. wet soil+can (g)	20.15	21.30	20.41
Wt. dry soil+can (g)	17.19	18.06	17.55
Wt. can (g)	11.26	11.26	11.23
Wt. mosture (g)	2.96	3.24	2.86
Wt. dry soil (g)	5.93	6.80	6.32
Water Content %	49.92	47.65	45.25
No. of Blows	14	21	31

PLASTIC LIMIT

6	15
14.26	15.78
13.64	14.88
11.26	11.27
0.62	0.90
2.38	3.61
26.05	24.93





Liquid Limit (LL) 47 Plastic Limit (PL) 25 Plasticity Index (PI) 22

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/6/2017

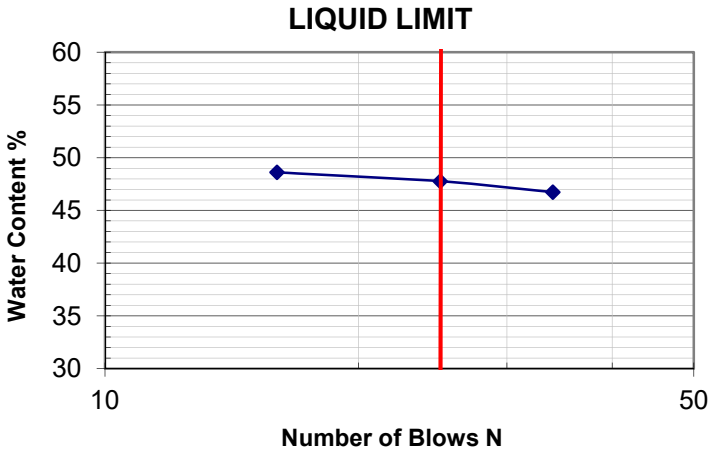
Excavation: BA-1
Depth: 90 ft
Description: Silty Claystone
By: DC/FV

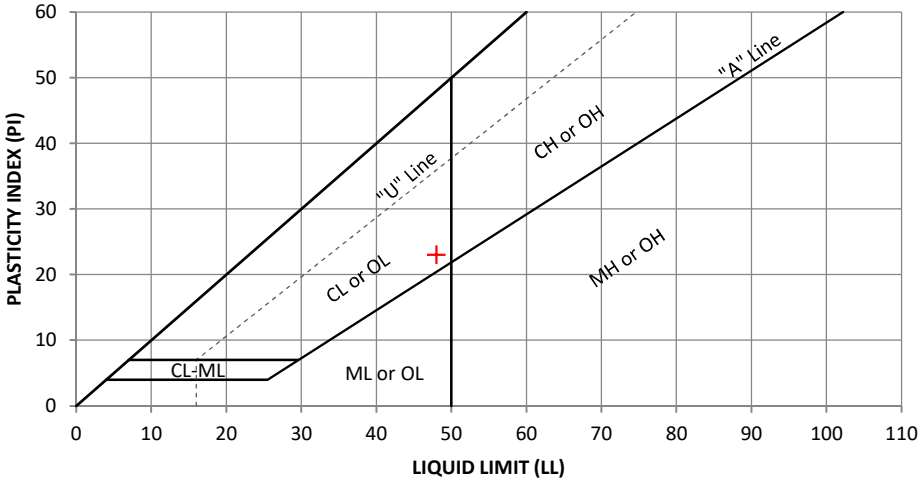
LIQUID LIMIT

Can No.	14	3	11
Wt. wet soil+can (g)	19.25	18.84	19.55
Wt. dry soil+can (g)	16.64	16.38	16.91
Wt. can (g)	11.27	11.23	11.26
Wt. mosture (g)	2.61	2.46	2.64
Wt. dry soil (g)	5.37	5.15	5.65
Water Content %	48.60	47.77	46.73
No. of Blows	16	25	34

PLASTIC LIMIT

15	6
12.99	13.63
12.65	13.15
11.27	11.27
0.34	0.48
1.38	1.88
24.64	25.53





Liquid Limit (LL) 48 Plastic Limit (PL) 25 Plasticity Index (PI) 23

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No: 1605-04
Date: 12/22/2017

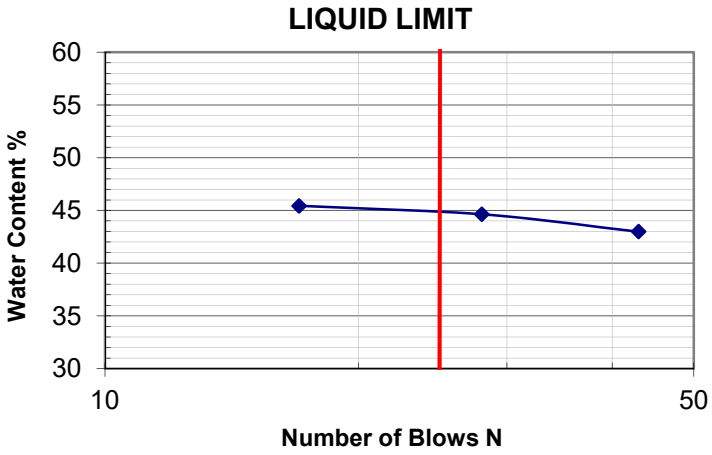
Excavation: BA-2
Depth: 100 ft
Description: Silty Claystone
By: FV

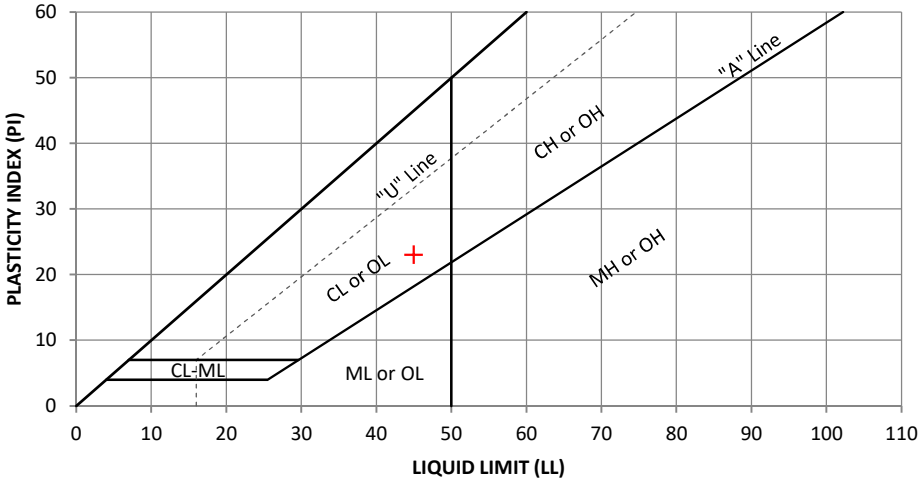
LIQUID LIMIT

Can No.	15	4	2
Wt. wet soil+can (g)	24.95	27.15	26.83
Wt. dry soil+can (g)	20.67	22.20	22.11
Wt. can (g)	11.25	11.11	11.13
Wt. mosture (g)	4.28	4.95	4.72
Wt. dry soil (g)	9.42	11.09	10.98
Water Content %	45.44	44.63	42.99
No. of Blows	17	28	43

PLASTIC LIMIT

1	5
13.06	12.73
12.75	12.46
11.28	11.30
0.31	0.27
1.47	1.16
21.09	23.28





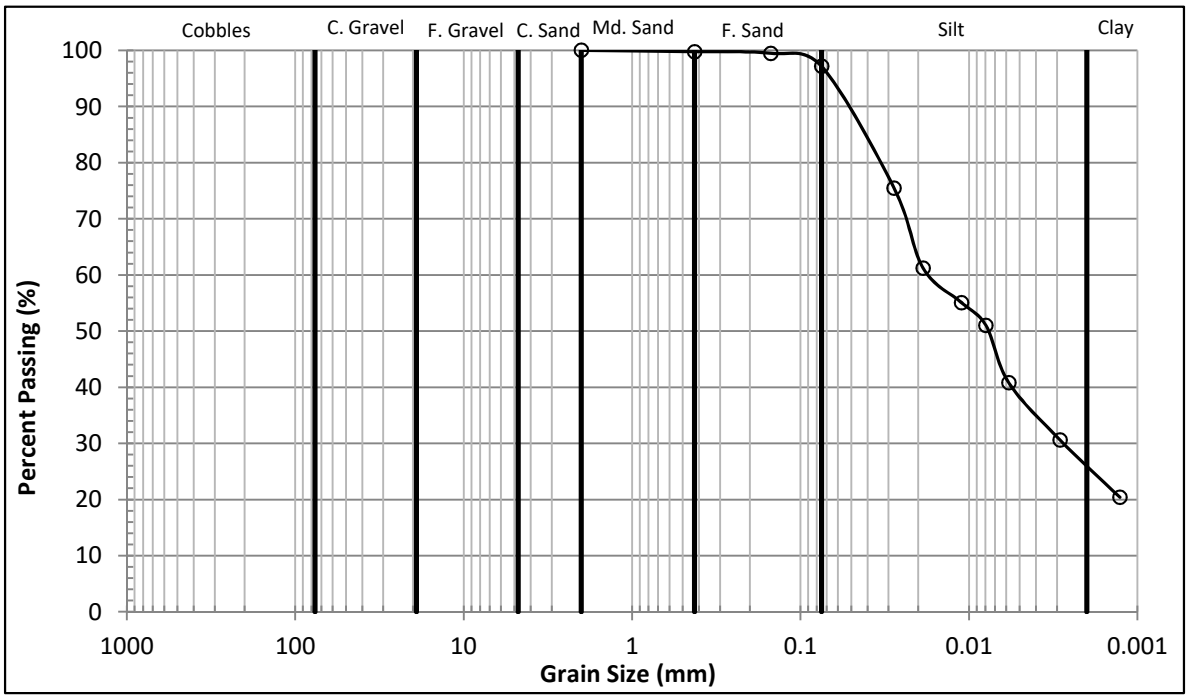
Liquid Limit (LL) 45 Plastic Limit (PL) 22 Plasticity Index (PI) 23

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/24/17

Excavation: BA-1
Depth: 19-20 '
By: H-M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	99.77
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	99.48
# 200	0.075	97.16
Hydro	0.0278	75.47
Hydro	0.0187	61.19
Hydro	0.0111	55.07
Hydro	0.0079	50.99
Hydro	0.0058	40.79
Hydro	0.0029	30.59
Hydro	0.0013	20.40

Summary	
% Gravel =	0.0
% Sand =	2.8
% Silt =	68.7
% Clay =	28.5
Sum =	100.0

LL= 51
PL= 27
PI= 24

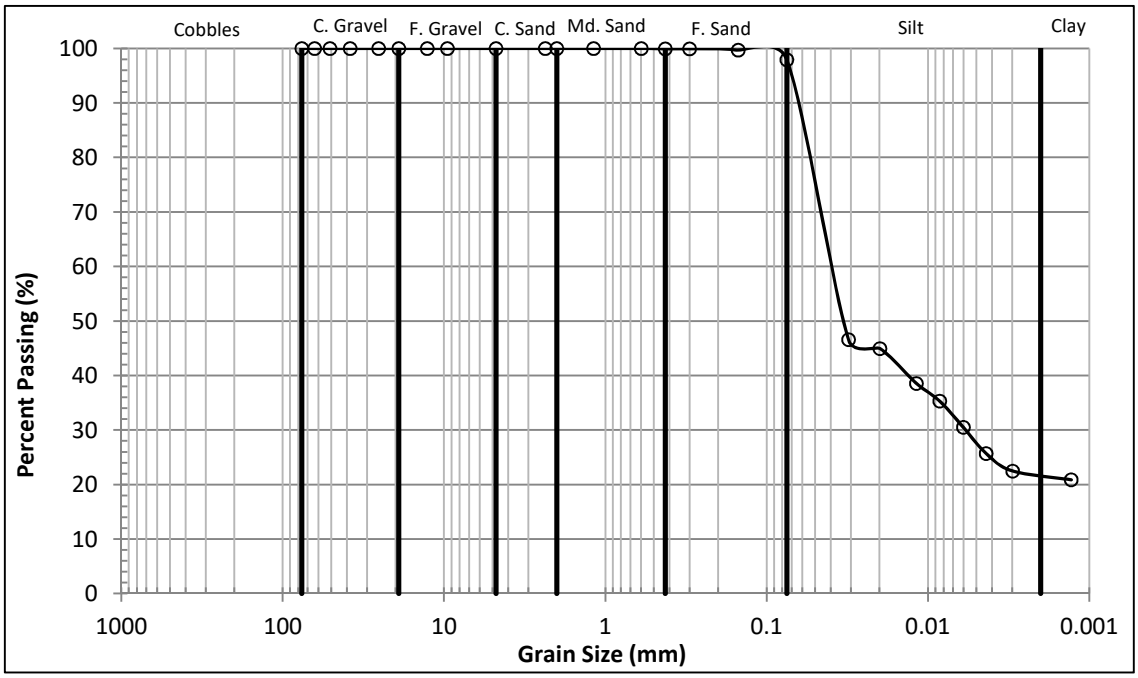
Soil Type: CH
Bedrock- Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/30/2017

Excavation: BA-1
Depth: 20 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	100.00
# 30	0.60	100.00
# 40	0.425	99.90
# 50	0.30	99.90
# 100	0.15	99.71
# 200	0.075	97.94
Hydro	0.0311	46.56
Hydro	0.0198	44.96
Hydro	0.0118	38.53
Hydro	0.0085	35.32
Hydro	0.0060	30.51
Hydro	0.0044	25.69
Hydro	0.0030	22.48
Hydro	0.0013	20.87

Summary	
% Gravel =	0.0
% Sand =	2.1
% Fines =	97.9
Sum =	100.0

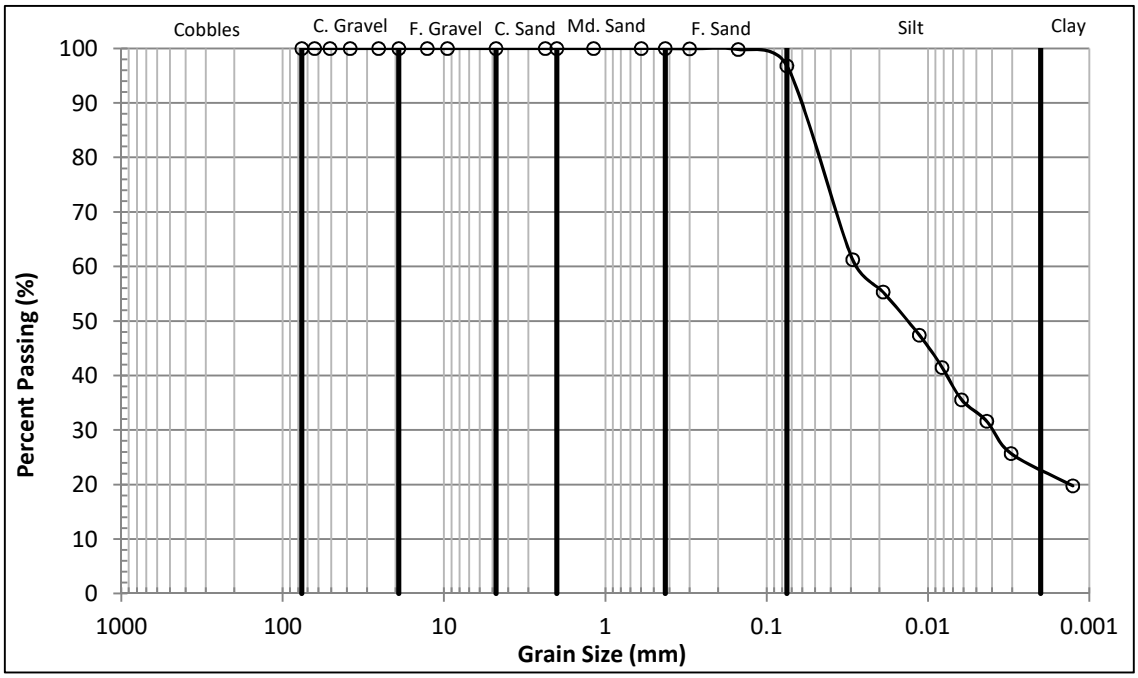
LL= 52
PL= 25
PI= 27

Soil Type: CH
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name:	1688 West Garvey Avenue	Excavation:	BA-2
Location:	Monterey Park	Depth:	20 ft
Project No.:	1605-04	By:	FV
Date:	12/9/2017	Checked By:	



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	100.00
# 30	0.60	100.00
# 40	0.425	100.00
# 50	0.30	99.92
# 100	0.15	99.80
# 200	0.075	96.83
Hydro	0.0293	61.26
Hydro	0.0190	55.33
Hydro	0.0113	47.43
Hydro	0.0082	41.50
Hydro	0.0062	35.57
Hydro	0.0043	31.62
Hydro	0.0031	25.69
Hydro	0.0013	19.76

Summary	
% Gravel =	0.0
% Sand =	3.2
% Fines =	96.8
Sum =	100.0

LL=	56
PL=	23
PI=	33

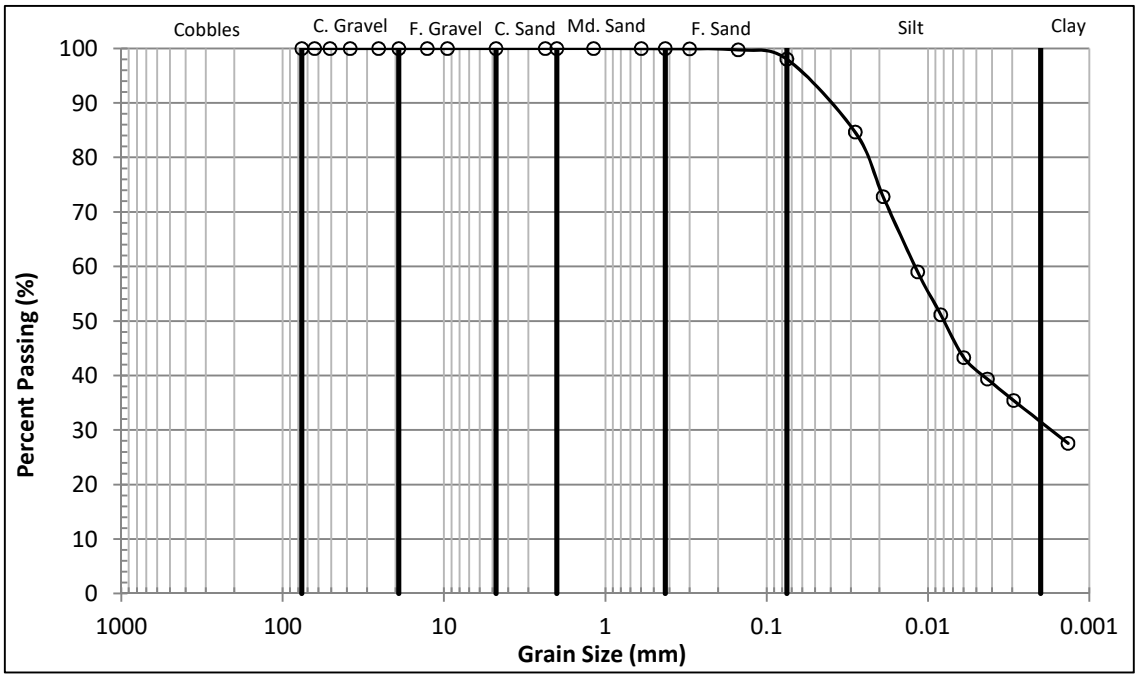
Soil Type: CH
Bedrock- Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 1/5/2017

Excavation: BA-2
Depth: 25 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	99.96
# 30	0.60	99.96
# 40	0.425	99.96
# 50	0.30	99.90
# 100	0.15	99.71
# 200	0.075	98.03
Hydro	0.0282	84.63
Hydro	0.0190	72.82
Hydro	0.0116	59.05
Hydro	0.0083	51.17
Hydro	0.0060	43.30
Hydro	0.0043	39.36
Hydro	0.0029	35.43
Hydro	0.0014	27.55

Summary	
% Gravel =	0.0
% Sand =	2.0
% Fines =	98.0
Sum =	100.0

LL= 48
PL= 22
PI= 26

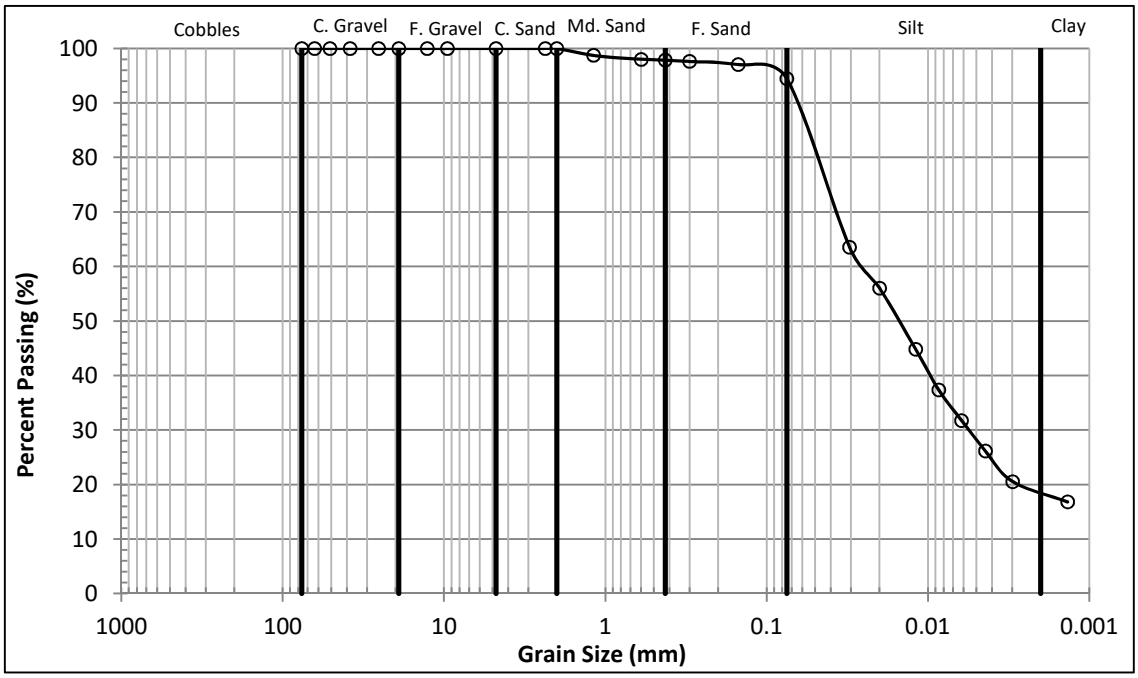
Soil Type: CL

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/4/2017

Excavation: BA-2
Depth: 30 ft
By: DC/FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	98.72
# 30	0.60	98.00
# 40	0.425	97.85
# 50	0.30	97.60
# 100	0.15	97.02
# 200	0.075	94.45
Hydro	0.0306	63.51
Hydro	0.0199	56.03
Hydro	0.0119	44.82
Hydro	0.0086	37.35
Hydro	0.0062	31.75
Hydro	0.0044	26.15
Hydro	0.0030	20.54
Hydro	0.0014	16.81

Summary	
% Gravel =	0.0
% Sand =	5.5
% Fines =	94.5
Sum =	100.0

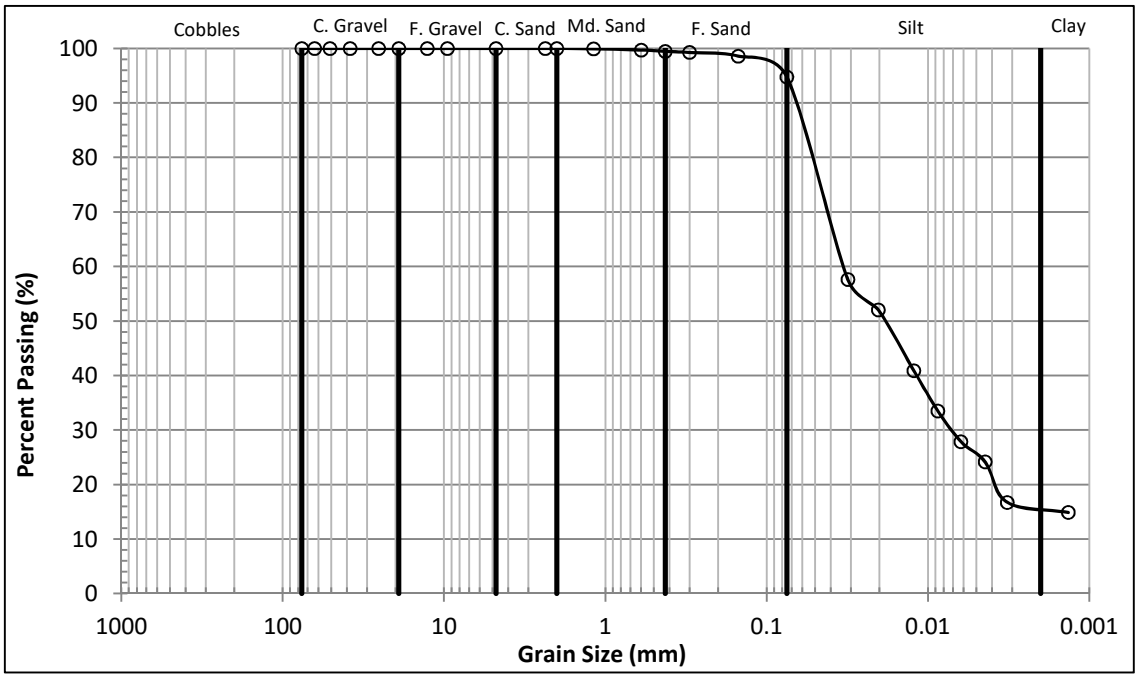
LL= 49
PL= 21
PI= 28

Soil Type: CL
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name:	1688 West Garvey Avenue	Excavation:	BA-1
Location:	Monterey Park	Depth:	35 ft
Project No.:	1605-04	By:	DC/FV
Date:	12/4/2017	Checked By:	



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	99.92
# 30	0.60	99.70
# 40	0.425	99.46
# 50	0.30	99.25
# 100	0.15	98.59
# 200	0.075	94.78
Hydro	0.0314	57.63
Hydro	0.0203	52.06
Hydro	0.0122	40.90
Hydro	0.0087	33.46
Hydro	0.0063	27.89
Hydro	0.0044	24.17
Hydro	0.0032	16.73
Hydro	0.0013	14.87

Summary	
% Gravel =	0.0
% Sand =	5.2
% Fines =	94.8
Sum =	100.0

LL=	44
PL=	26
PI=	18

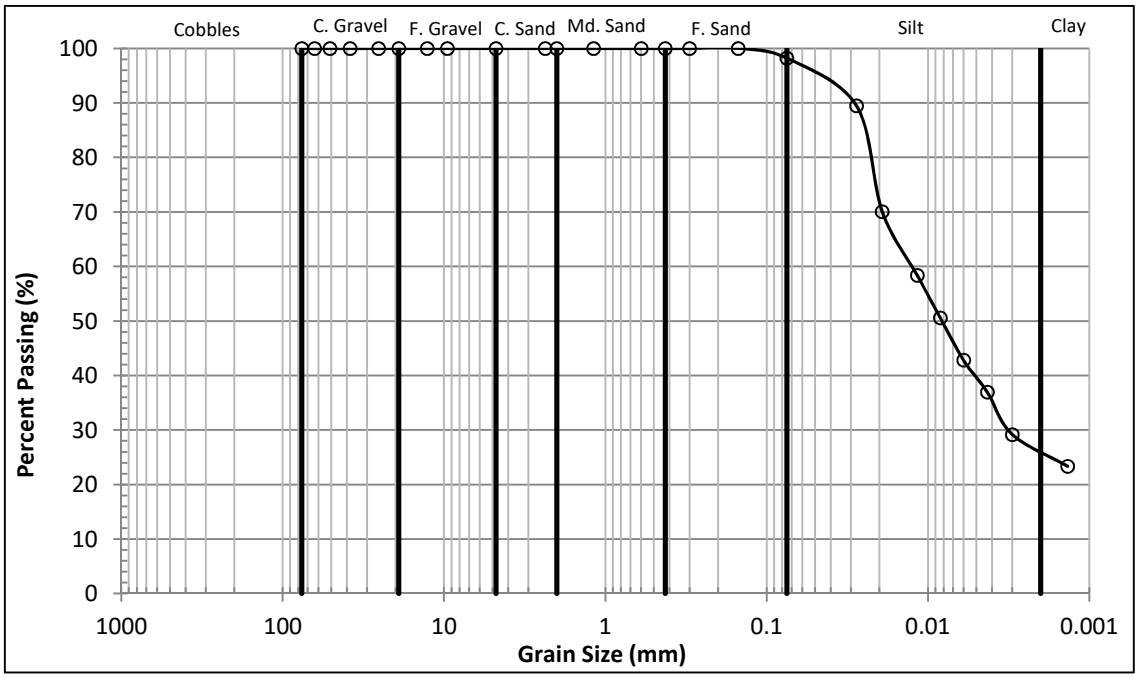
Soil Type: CL
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/16/2017

Excavation: BA-2
Depth: 50 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	100.00
# 30	0.60	100.00
# 40	0.425	100.00
# 50	0.30	100.00
# 100	0.15	100.00
# 200	0.075	98.21
Hydro	0.0277	89.49
Hydro	0.0192	70.03
Hydro	0.0116	58.36
Hydro	0.0084	50.58
Hydro	0.0060	42.80
Hydro	0.0043	36.96
Hydro	0.0030	29.18
Hydro	0.0014	23.34

Summary	
% Gravel =	0.0
% Sand =	1.8
% Fines =	98.2
Sum =	100.0

LL= 50
PL= 22
PI= 28

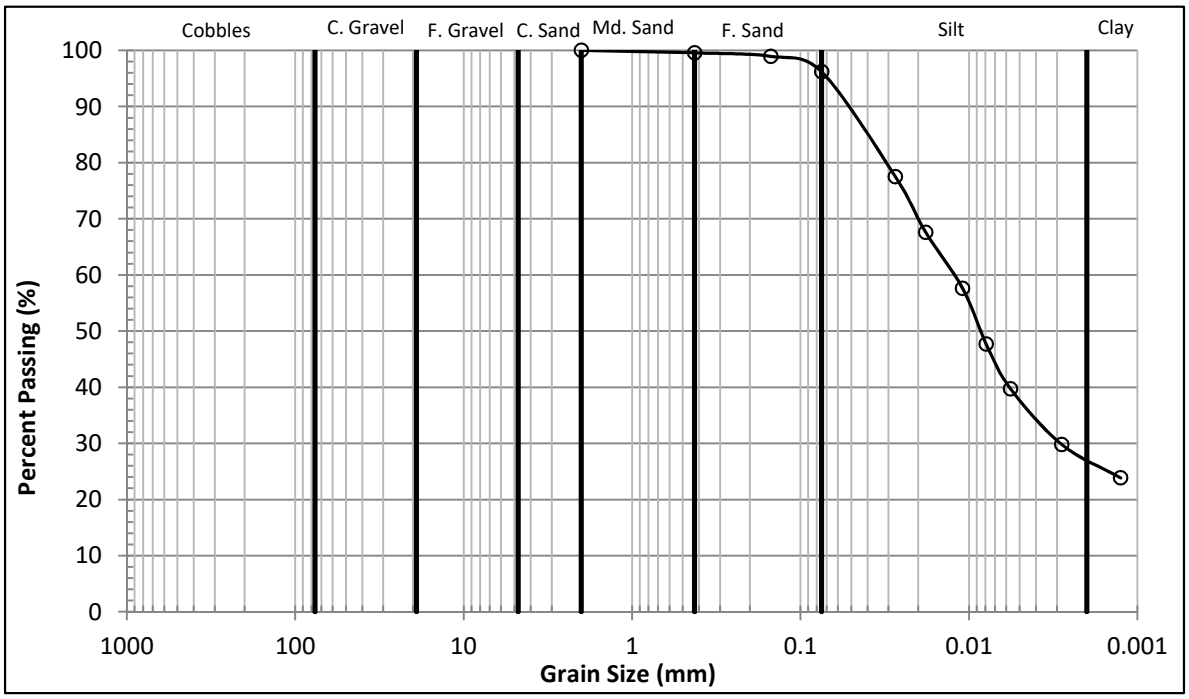
Soil Type: CL/CH
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/24/17

Excavation: BA-2
Depth: 50-52 '
By: H-M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	99.56
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	98.94
# 200	0.075	96.19
Hydro	0.0274	77.50
Hydro	0.0181	67.57
Hydro	0.0109	57.63
Hydro	0.0079	47.69
Hydro	0.0057	39.74
Hydro	0.0028	29.81
Hydro	0.0013	23.85

Summary	
% Gravel =	0.0
% Sand =	3.8
% Silt =	68.2
% Clay =	28.0
Sum =	100.0

LL= 50
PL= 27
PI= 23

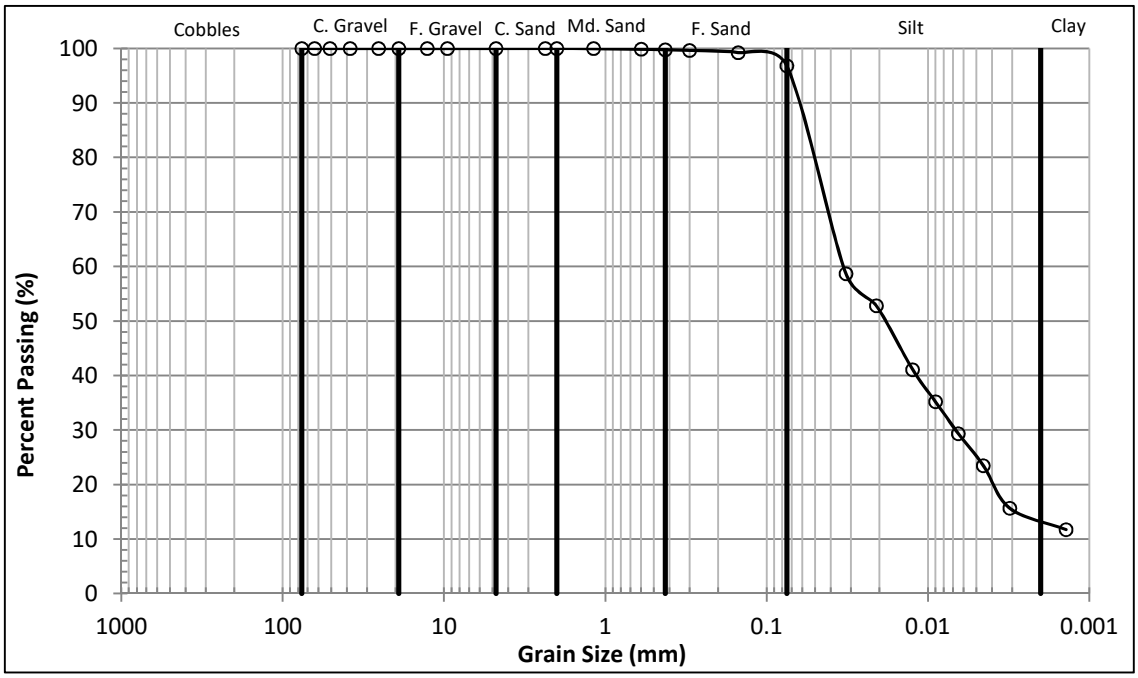
Soil Type: CH
Bedrock- Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/5/2017

Excavation: BA-1
Depth: 55 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	99.98
# 30	0.60	99.86
# 40	0.425	99.76
# 50	0.30	99.62
# 100	0.15	99.23
# 200	0.075	96.80
Hydro	0.0322	58.68
Hydro	0.0209	52.82
Hydro	0.0124	41.08
Hydro	0.0090	35.21
Hydro	0.0065	29.34
Hydro	0.0045	23.47
Hydro	0.0031	15.65
Hydro	0.0014	11.74

Summary	
% Gravel =	0.0
% Sand =	3.2
% Fines =	96.8
Sum =	100.0

LL= 49
PL= 26
PI= 23

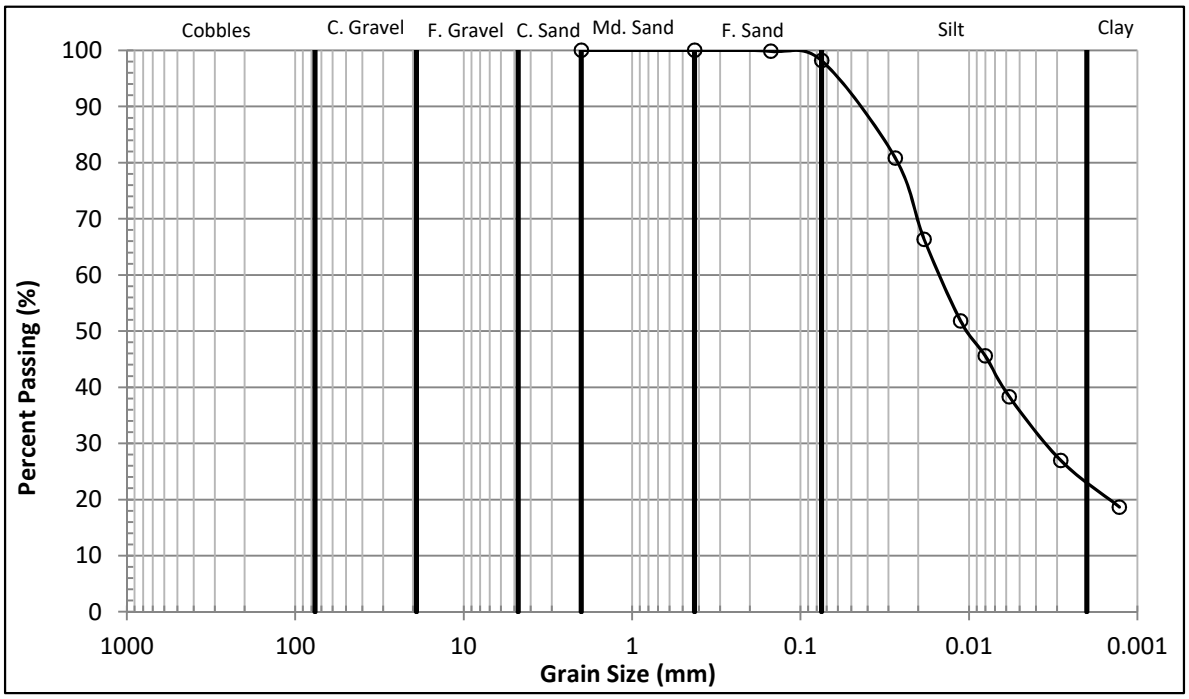
Soil Type: CL
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/24/17

Excavation: BA-2
Depth: 73-75 '
By: H-M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	100.00
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	99.83
# 200	0.075	98.18
Hydro	0.0274	80.84
Hydro	0.0184	66.33
Hydro	0.0112	51.82
Hydro	0.0080	45.60
Hydro	0.0058	38.31
Hydro	0.0028	26.95
Hydro	0.0013	18.65

Summary	
% Gravel =	0.0
% Sand =	1.8
% Silt =	76.2
% Clay =	22.0
Sum =	100.0

LL= 52
PL= 28
PI= 24

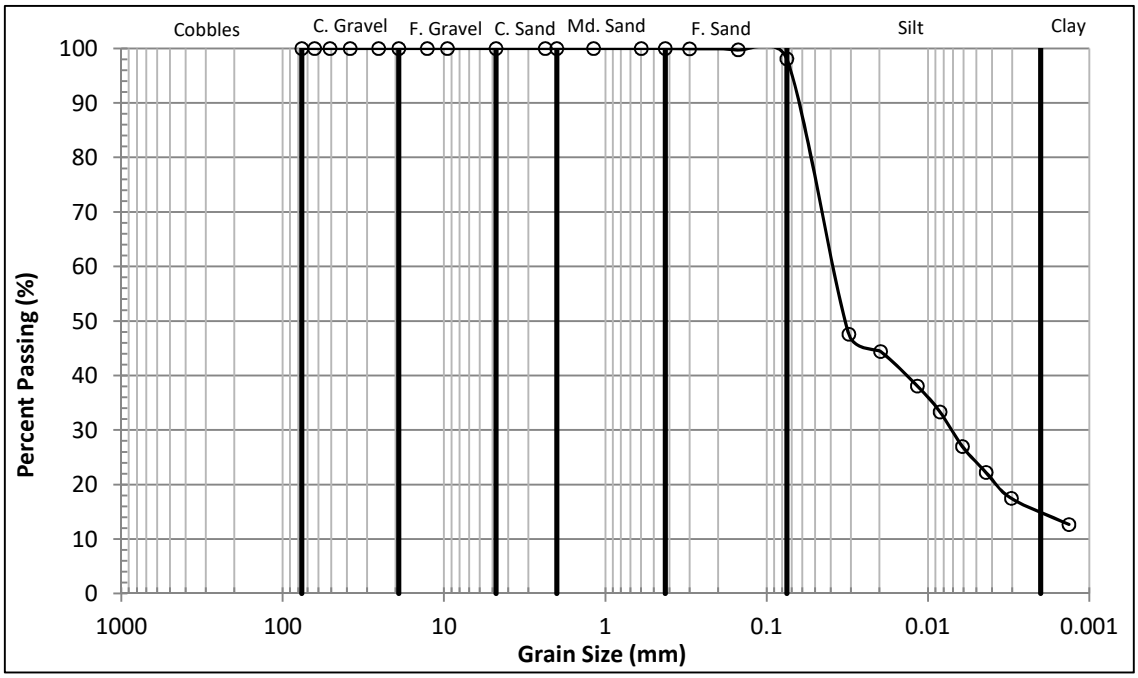
Soil Type: CH
Bedrock- Claystone/Siltstone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/1/2017

Excavation: BA-1
Depth: 75 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	100.00
# 30	0.60	100.00
# 40	0.425	100.00
# 50	0.30	99.92
# 100	0.15	99.71
# 200	0.075	98.09
Hydro	0.0309	47.58
Hydro	0.0197	44.41
Hydro	0.0116	38.06
Hydro	0.0084	33.31
Hydro	0.0061	26.96
Hydro	0.0044	22.20
Hydro	0.0030	17.45
Hydro	0.0013	12.69

Summary	
% Gravel =	0.0
% Sand =	1.9
% Fines =	98.1
Sum =	100.0

LL= 47
PL= 25
PI= 22

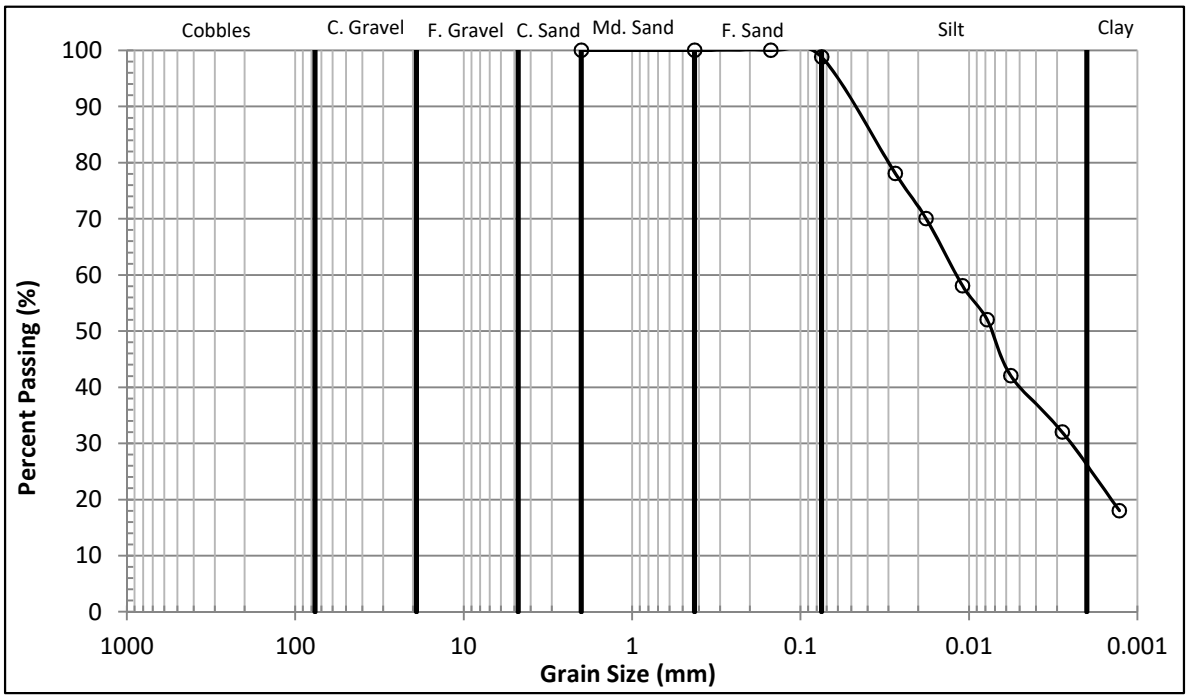
Soil Type: CL
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/24/17

Excavation: BA-1
Depth: 76-78 '
By: H-M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	100.00
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	100.00
# 200	0.075	98.81
Hydro	0.0274	78.07
Hydro	0.0180	70.06
Hydro	0.0109	58.05
Hydro	0.0078	52.05
Hydro	0.0056	42.04
Hydro	0.0028	32.03
Hydro	0.0013	18.02

Summary	
% Gravel =	0.0
% Sand =	2.8
% Silt =	68.7
% Clay =	28.5
Sum =	100.0

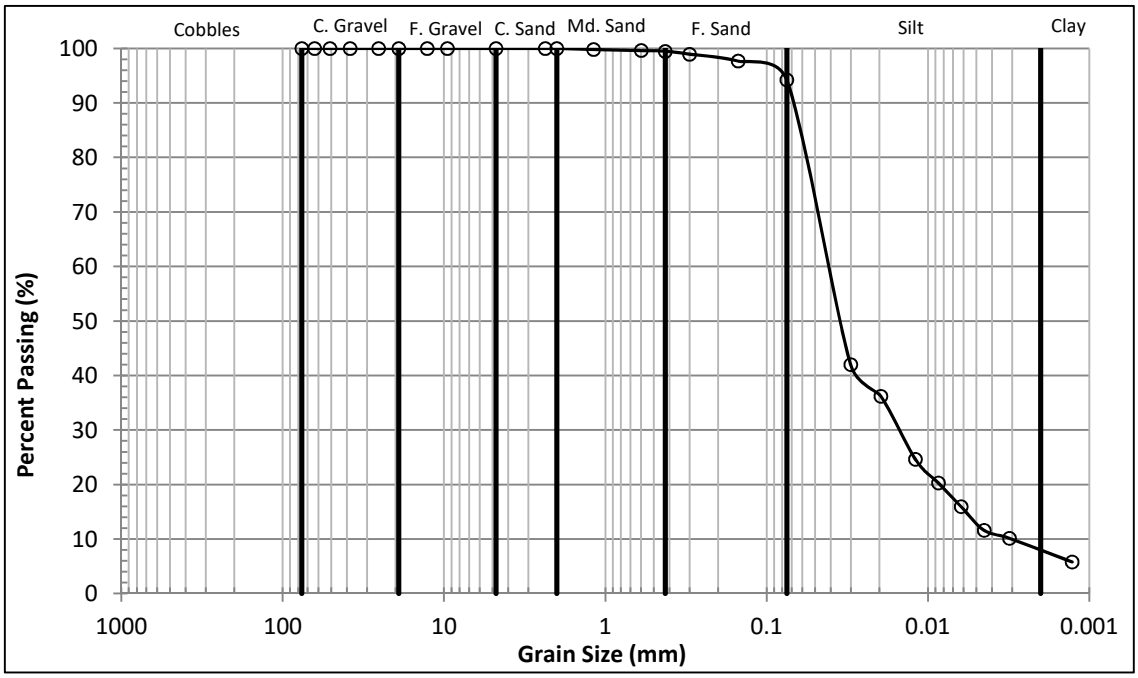
LL= 49
PL= 28
PI= 21

Soil Type: ML/CL
Bedrock- Siltstone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name:	1688 West Garvey Avenue	Excavation:	BA-2
Location:	Monterey Park	Depth:	80 ft
Project No.:	1605-04	By:	FV
Date:	12/2/2017	Checked By:	



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	99.78
# 30	0.60	99.60
# 40	0.425	99.47
# 50	0.30	98.95
# 100	0.15	97.66
# 200	0.075	94.21
Hydro	0.0301	42.00
Hydro	0.0196	36.21
Hydro	0.0119	24.62
Hydro	0.0086	20.28
Hydro	0.0062	15.93
Hydro	0.0045	11.59
Hydro	0.0031	10.14
Hydro	0.0013	5.79

Summary	
% Gravel =	0.0
% Sand =	5.8
% Fines =	94.2
Sum =	100.0

LL=	47
PL=	25
PI=	22

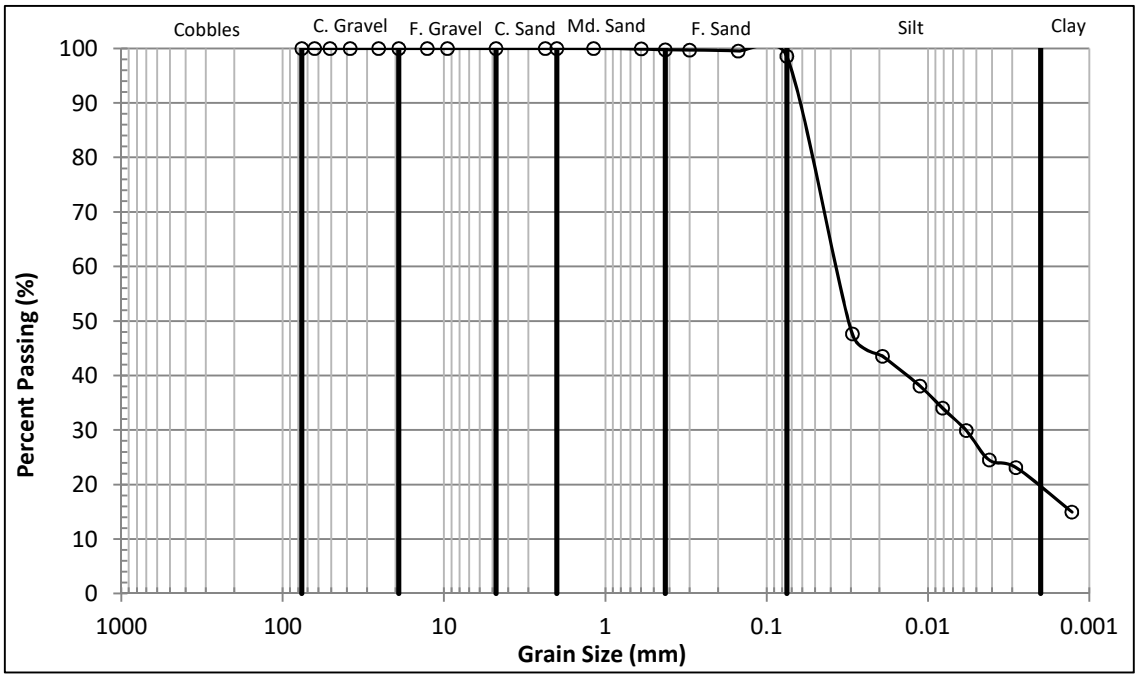
Soil Type: CL
Bedrock- Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/4/2017

Excavation: BA-1
Depth: 90 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	100.00
# 30	0.60	99.89
# 40	0.425	99.75
# 50	0.30	99.70
# 100	0.15	99.52
# 200	0.075	98.54
Hydro	0.0294	47.62
Hydro	0.0191	43.53
Hydro	0.0112	38.09
Hydro	0.0081	34.01
Hydro	0.0058	29.93
Hydro	0.0042	24.49
Hydro	0.0028	23.13
Hydro	0.0013	14.96

Summary	
% Gravel =	0.0
% Sand =	1.5
% Fines =	98.5
Sum =	100.0

LL= 48
PL= 25
PI= 23

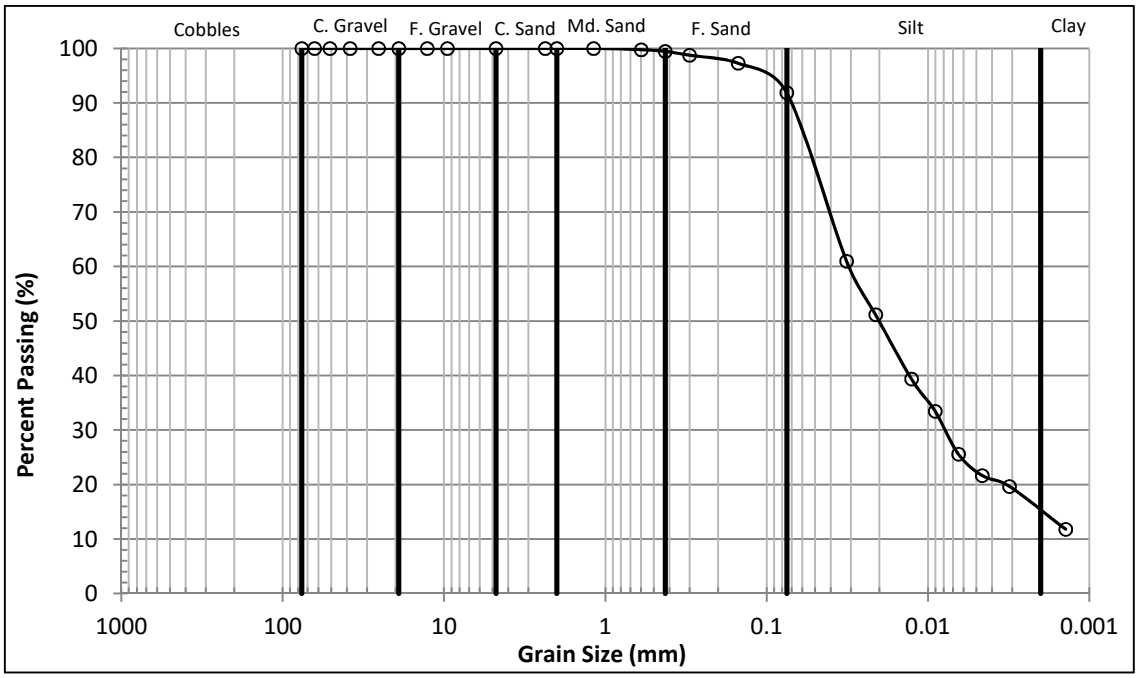
Soil Type: CL
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/19/2017

Excavation: BA-2
Depth: 100 ft
By: FV
Checked By:



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	76.20	100.00
2 1/2 "	63.50	100.00
2 "	50.80	100.00
1 1/2 "	38.10	100.00
1 "	25.40	100.00
3/4 "	19.05	100.00
1/2 "	12.70	100.00
3/8 "	9.53	100.00
# 4	4.75	100.00
# 8	2.36	100.00
#10	2.00	100.00
#16	1.18	100.00
# 30	0.60	99.76
# 40	0.425	99.46
# 50	0.30	98.73
# 100	0.15	97.26
# 200	0.075	91.86
Hydro	0.0319	60.97
Hydro	0.0211	51.13
Hydro	0.0126	39.33
Hydro	0.0090	33.43
Hydro	0.0065	25.57
Hydro	0.0046	21.63
Hydro	0.0031	19.67
Hydro	0.0014	11.80

Summary	
% Gravel =	0.0
% Sand =	8.1
% Fines =	91.9
Sum =	100.0

LL= 45
PL= 22
PI= 23

Soil Type: CL
Bedrock- Silty Claystone

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

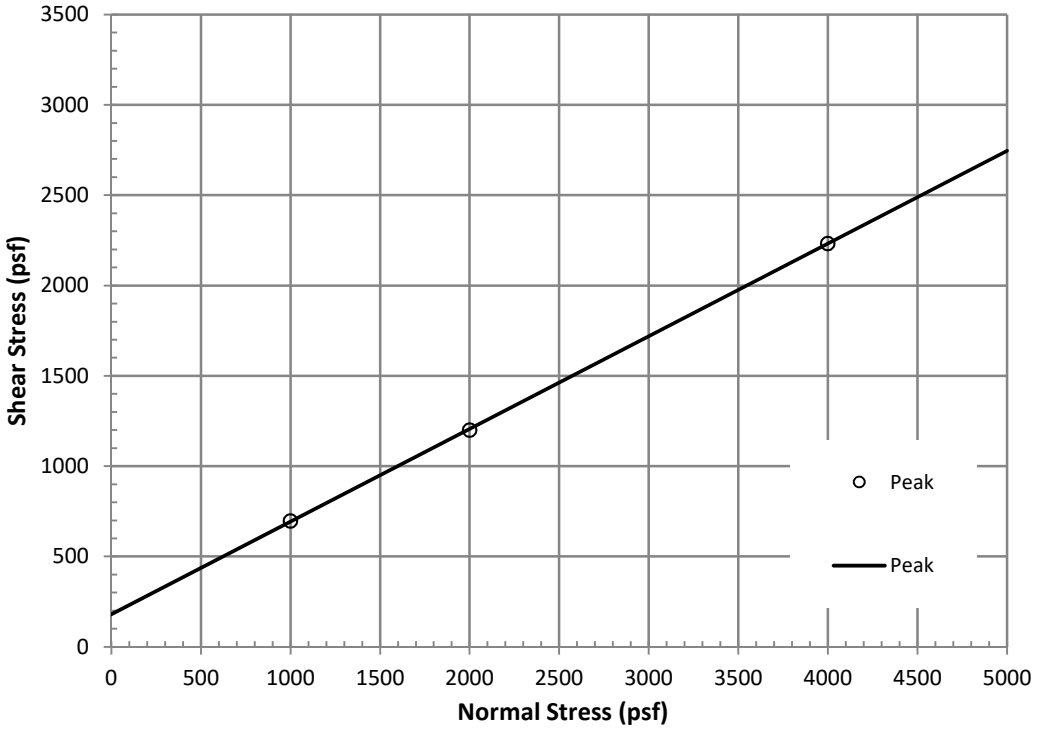
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/21/17

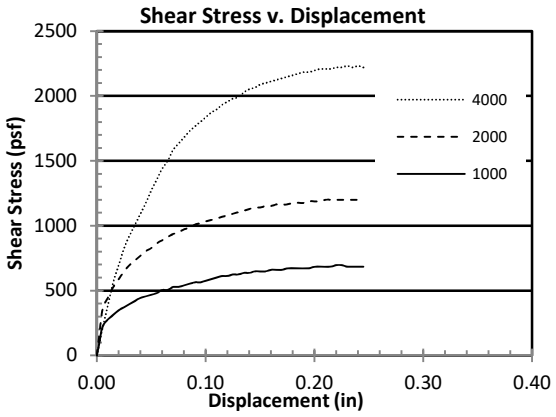
Excavation: BA-1
Depth: 19-20 ft
Sample Type: Fully Softened (LL=49)
By: FV

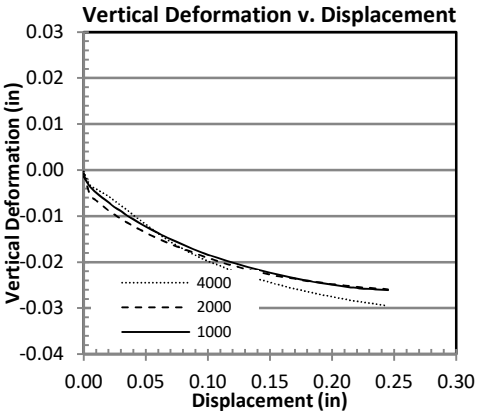
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	696	1200	2232
Ultimate Shear Stress (psf)			
Initial Moisture Content (%)			
Initial Dry Density (pcf)			

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0008

	Peak
Friction Angle, phi (deg)	27
Cohesion (psf)	180







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

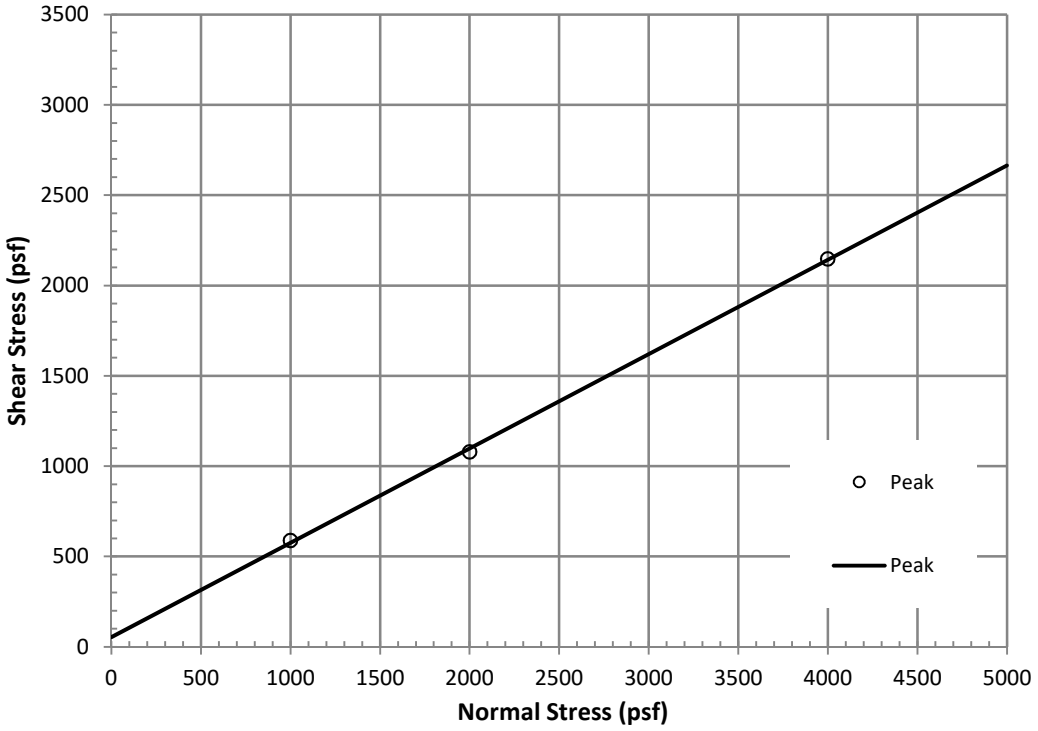
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/18/17

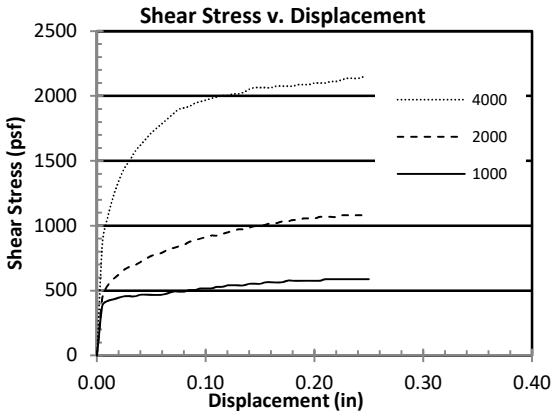
Excavation: BA-1-BA-2
Depth: 20 ft
Sample Type: Fully Softened (LL=53)
By: FV

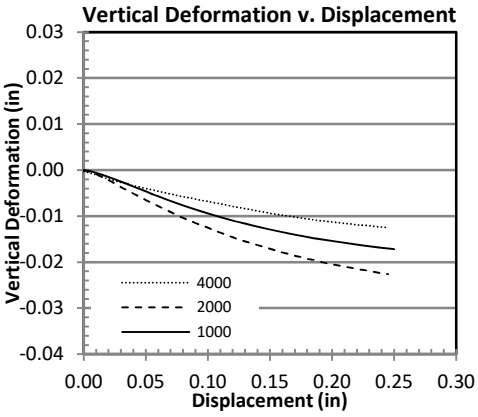
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	588	1080	2148
Ultimate Shear Stress (psf)			
Initial Moisture Content (%)			
Initial Dry Density (pcf)			

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.01

	Peak
Friction Angle, phi (deg)	28
Cohesion (psf)	55







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

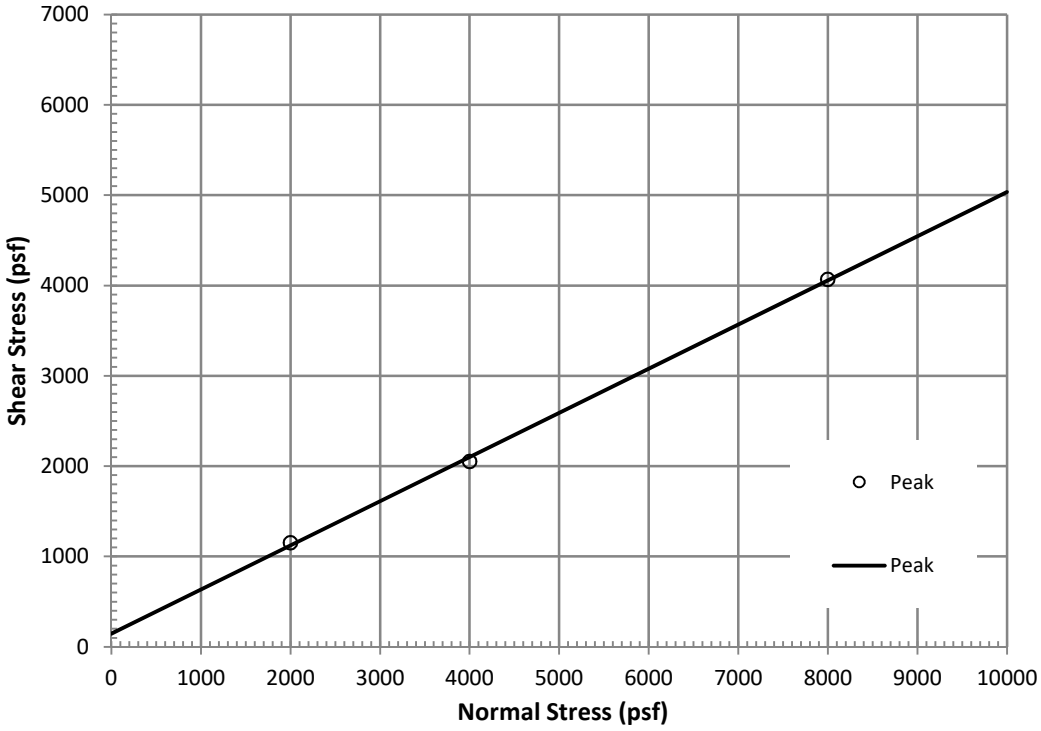
Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 1/2/18

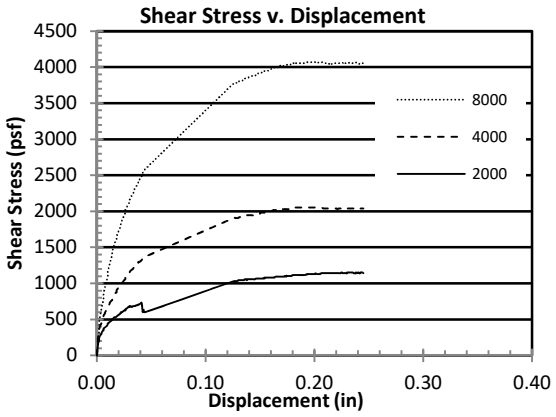
Excavation: BA-2
Depth: 25 ft
Sample Type: Fully Softened (LL=48)
By: FV

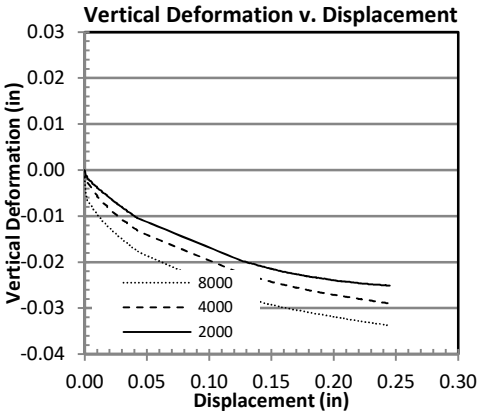
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	8000
Maximum Shear Stress (psf)	1152	2052	4068
Ultimate Shear Stress (psf)			
Initial Moisture Content (%)			
Initial Dry Density (pcf)			

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0008

	Peak
Friction Angle, phi (deg)	26
Cohesion (psf)	145







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

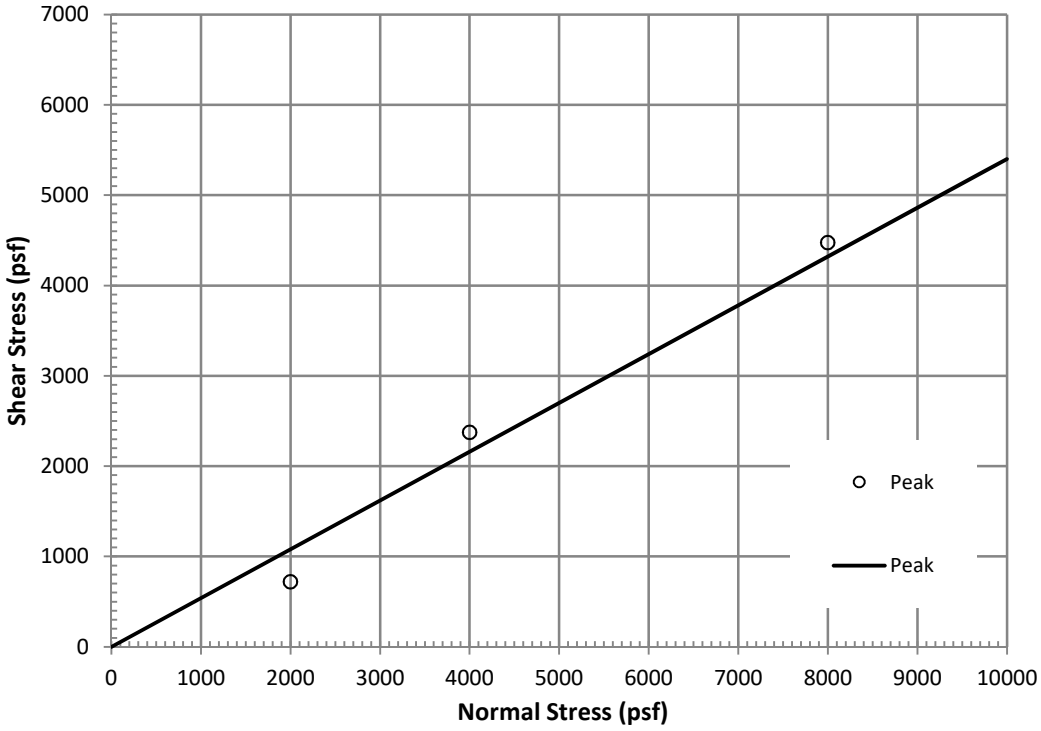
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/28/17

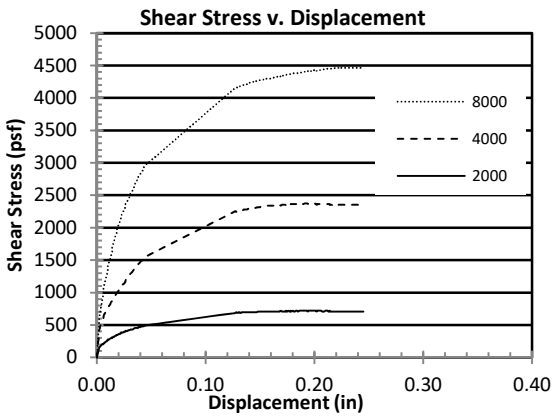
Excavation: BA-2
Depth: 73-75 ft
Sample Type: Fully Softened (LL=52)
By: FV

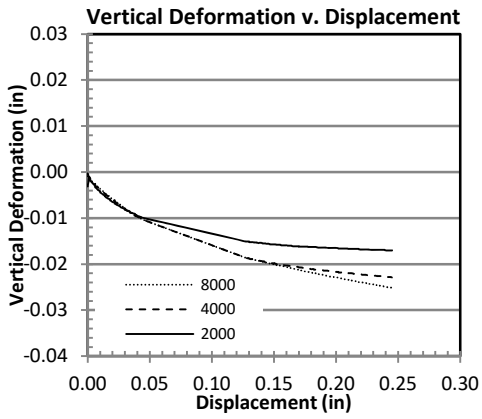
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	8000
Maximum Shear Stress (psf)	720	2376	4476
Ultimate Shear Stress (psf)			
Initial Moisture Content (%)			
Initial Dry Density (pcf)			

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0008

	Peak
Friction Angle, phi (deg)	28
Cohesion (psf)	0







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

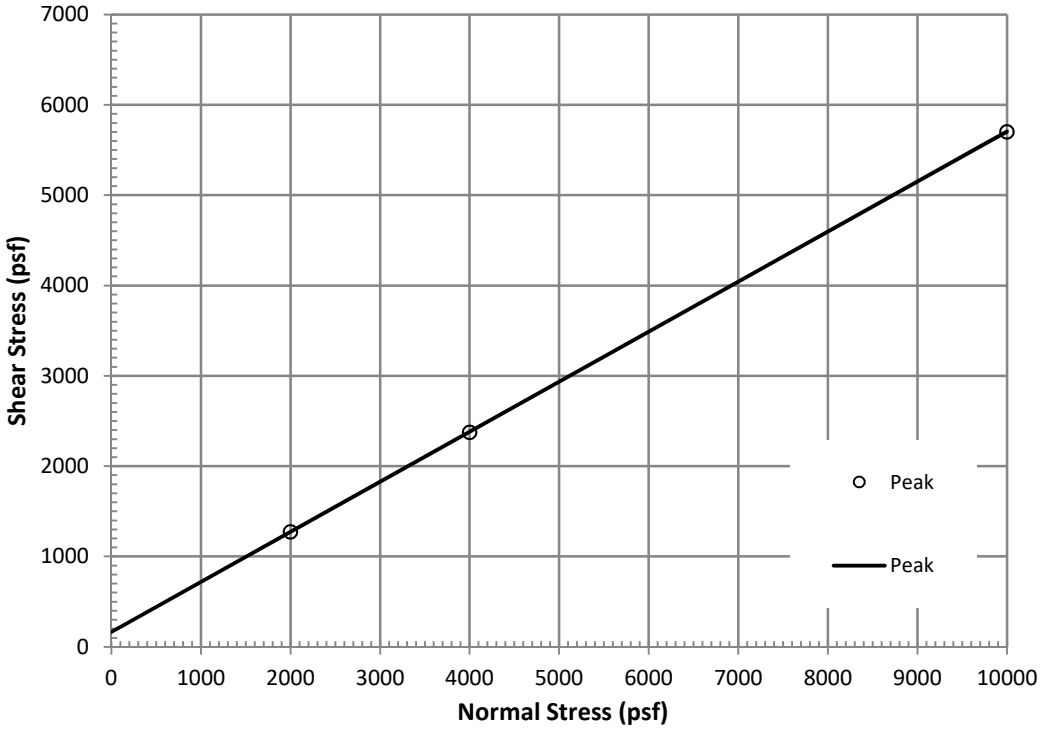
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/9/17

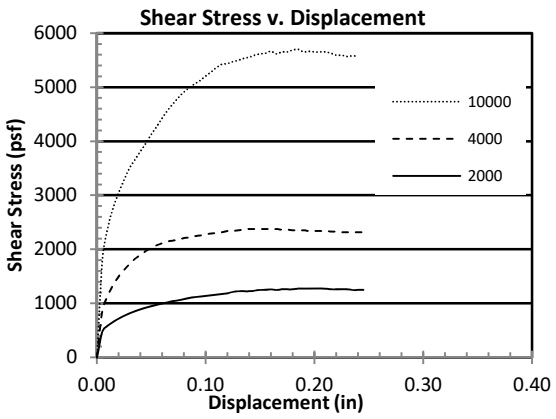
Excavation: BA-1
Depth: 70-75 ft
Sample Type: Fully Softened (LL=48)
By: FV

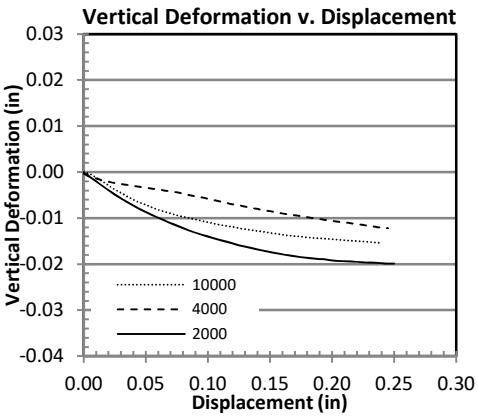
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	10000
Maximum Shear Stress (psf)	1272	2376	5700
Ultimate Shear Stress (psf)			
Initial Moisture Content (%)			
Initial Dry Density (pcf)			

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0008

	Peak
Friction Angle, phi (deg)	29
Cohesion (psf)	165







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080 - MULTIPLE PASSES

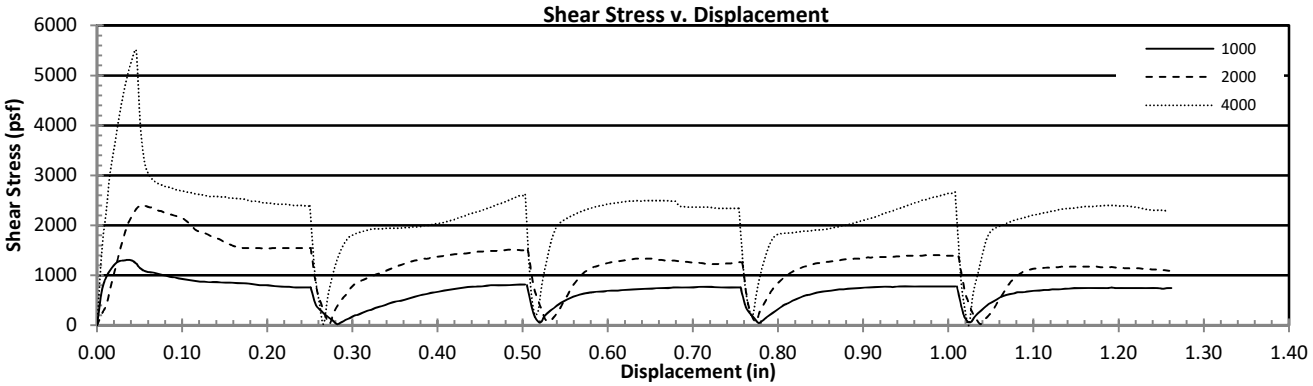
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/22/17

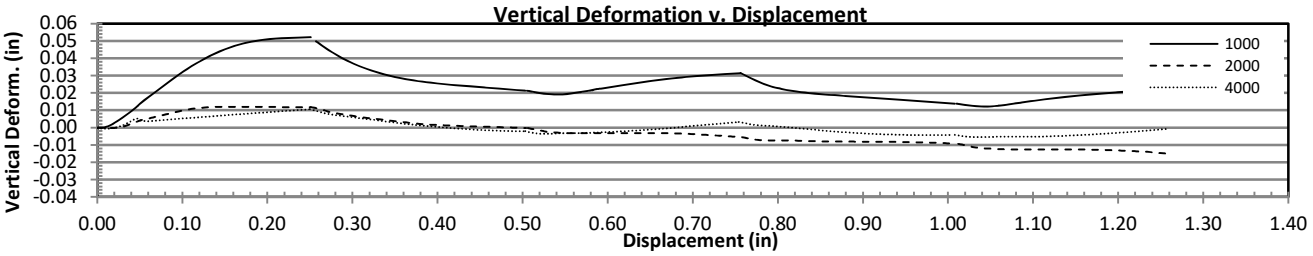
Excavation: BA-1
Depth: 20
Sample Type: Undisturbed
By: SD

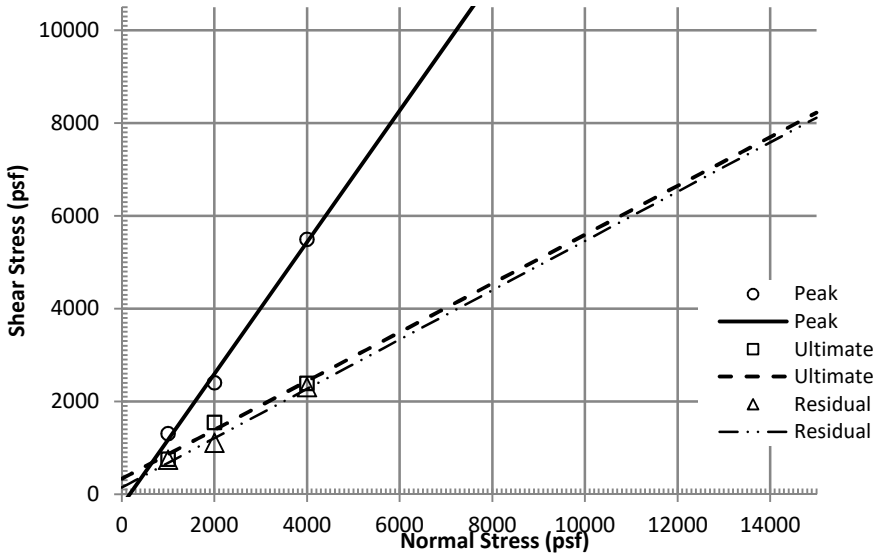
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1308	2400	5496
Ultimate Shear Stress (psf)	756	1548	2388
Residual Shear Stress (psf)	744	1104	2304
Initial Moisture Content (%)	15.7	15.7	15.7
Initial Dry Density (pcf)	106.8	108.3	108.3

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.01

Peak	Ultimate	Residual	
55°	28°	28°	Friction Angle
-240	335	145	Cohesion (psf)







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080 - MULTIPLE PASSES

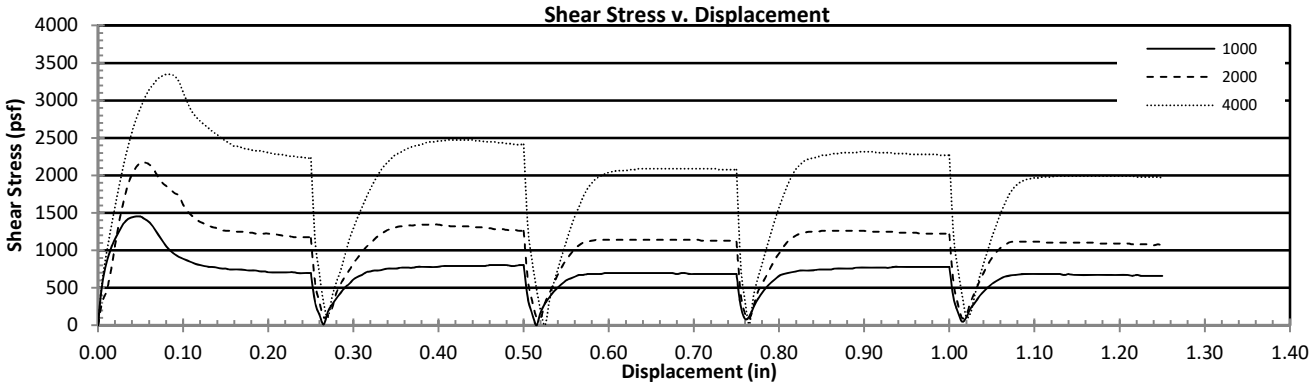
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/5/17

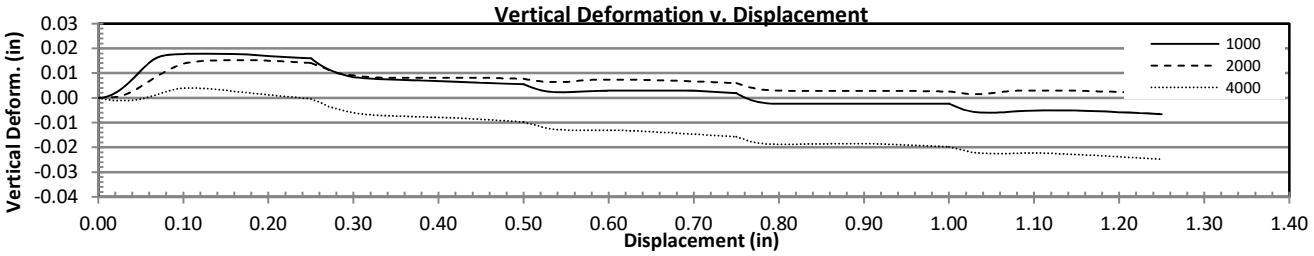
Excavation: BA-2
Depth: 20
Sample Type: Undisturbed
By: FV

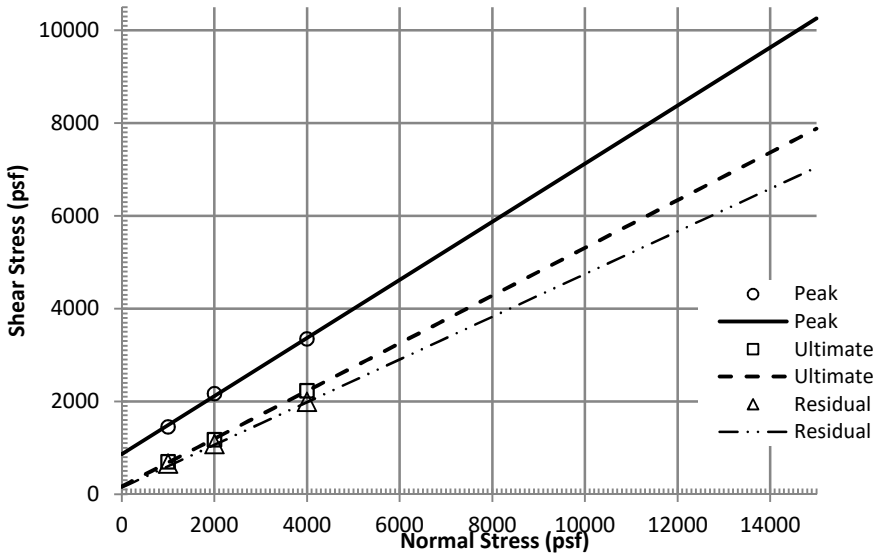
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1452	2172	3348
Ultimate Shear Stress (psf)	696	1176	2232
Residual Shear Stress (psf)	660	1080	1992
Initial Moisture Content (%)	17.1	17.1	17.1
Initial Dry Density (pcf)	106.1	106.3	107.5

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0025

Peak	Ultimate	Residual	
32°	27°	25°	Friction Angle
865	170	145	Cohesion (psf)







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

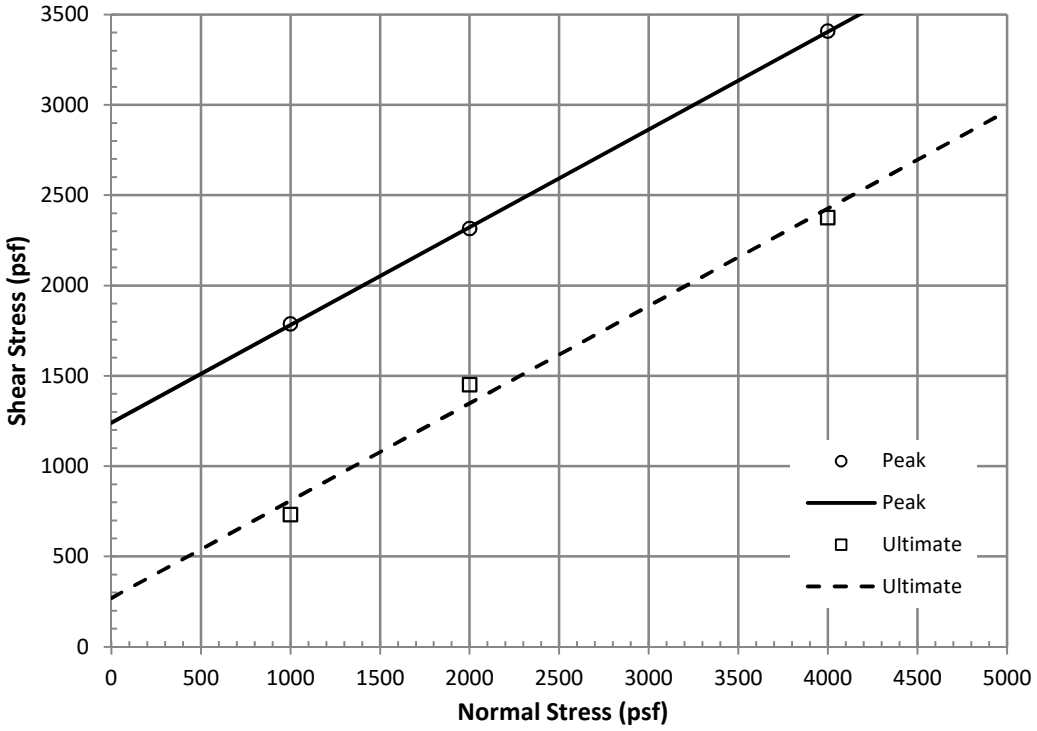
DIRECT SHEAR - ASTM D3080

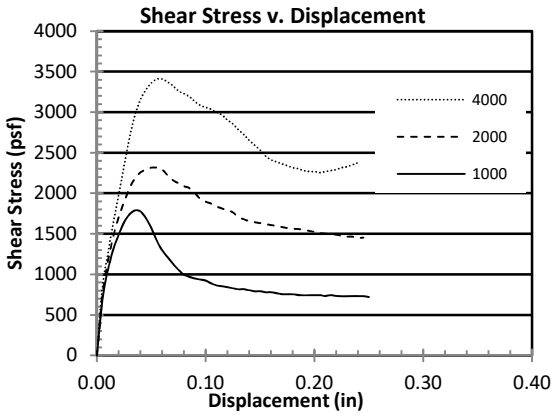
Project Name:	1688 Garvey Avenue	Excavation:	BA-2
Location:	Monterey Park	Depth:	30 ft
Project No.:	1605-04	Sample Type:	Undisturbed
Date:	11/29/17	By:	FV

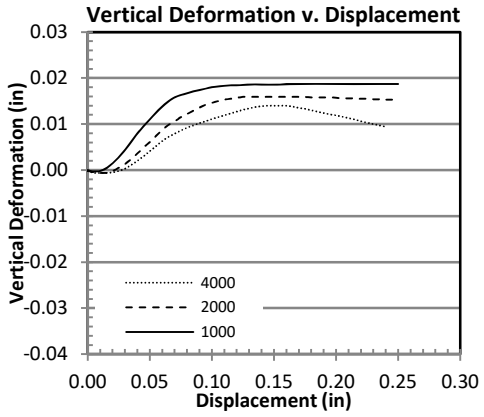
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	4000
Maximum Shear Stress (psf)	1788	2316	3408
Ultimate Shear Stress (psf)	732	1452	2376
Initial Moisture Content (%)	22.4	22.4	22.4
Initial Dry Density (pcf)	104.5	103.4	103.6

	Method:	Drained
	Consolidation:	Yes
	Saturation:	Yes
	Shearing Rate (in/min):	0.05

	Peak	Ultimate
Friction Angle, phi (deg)	28	28
Cohesion (psf)	1240	270







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

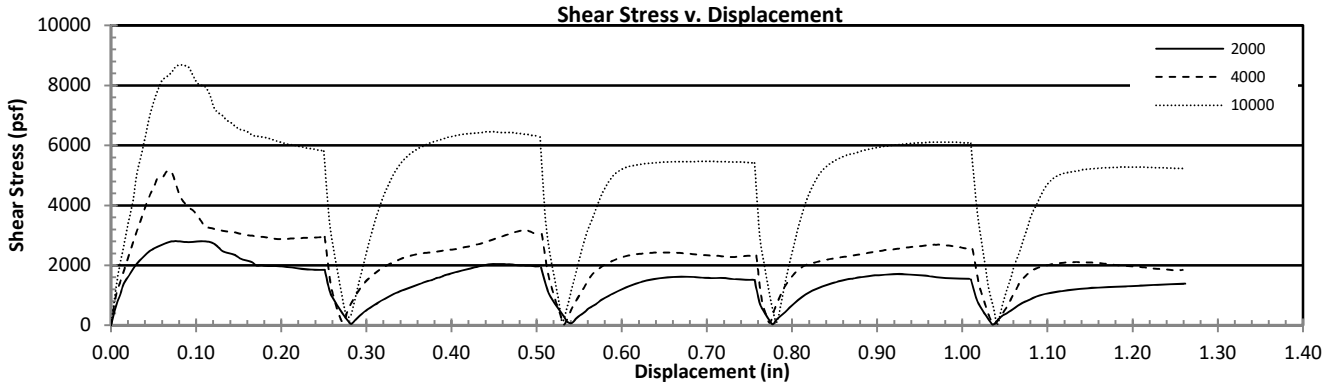
DIRECT SHEAR - ASTM D3080 - MULTIPLE PASSES

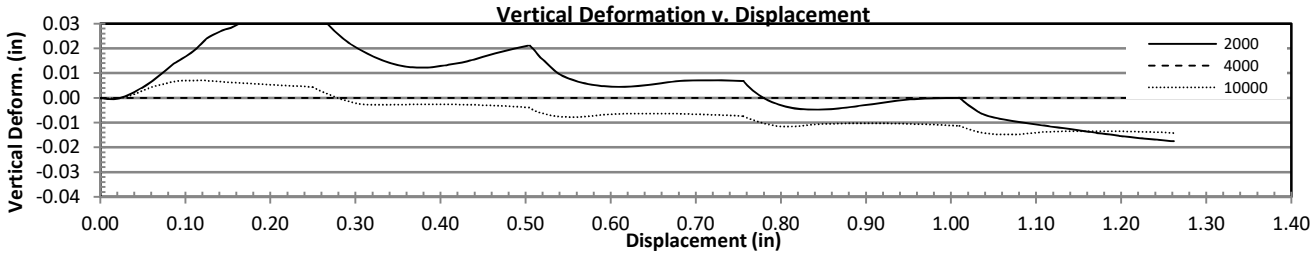
Project Name:	1688 Garvey Avenue	Excavation:	BA-1
Location:	Monterey Park	Depth:	35
Project No.:	1605-04	Sample Type:	Undisturbed
Date:	11/21/17	By:	SD

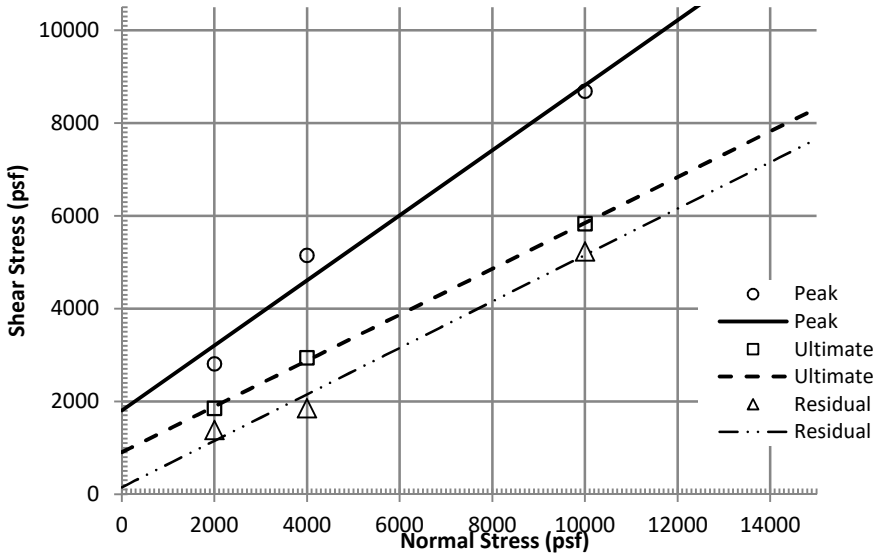
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	10000
Maximum Shear Stress (psf)	2808	5148	8687
Ultimate Shear Stress (psf)	1848	2940	5832
Residual Shear Stress (psf)	1380	1848	5232
Initial Moisture Content (%)	15.4	15.4	15.4
Initial Dry Density (pcf)	108.6	110.1	111.1

Method:	Drained
Consolidation:	Yes
Saturation:	Yes
Shearing Rate (in/min):	0.01

Peak	Ultimate	Residual	
35°	26°	27°	Friction Angle
1805	905	150	Cohesion (psf)







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

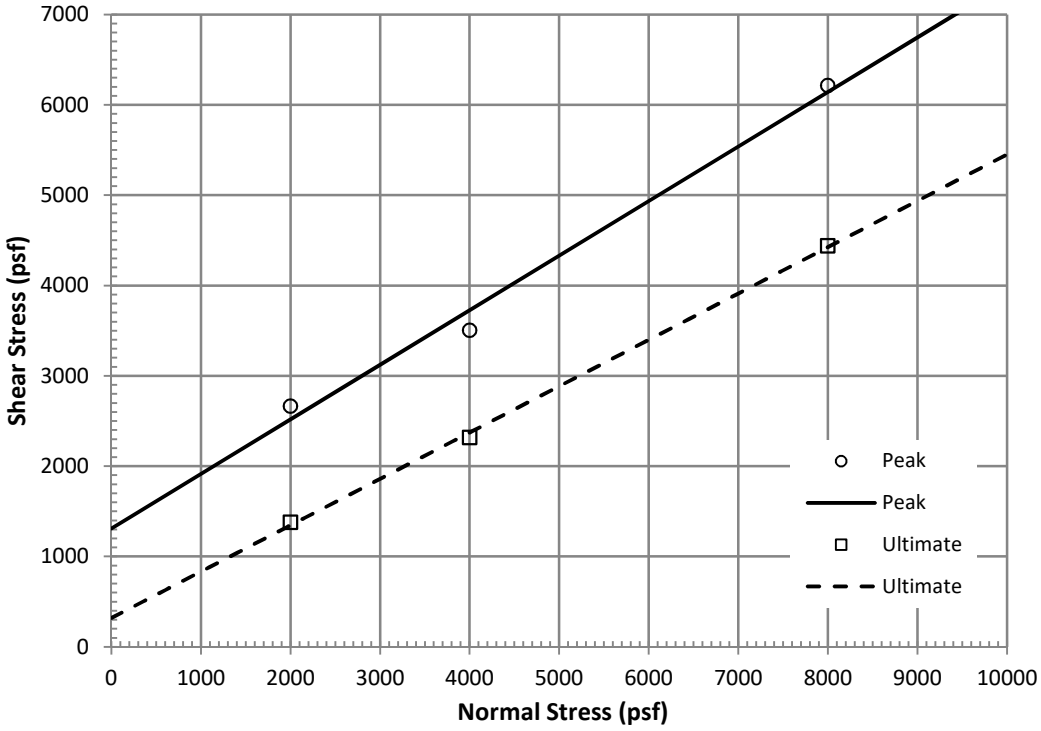
DIRECT SHEAR - ASTM D3080

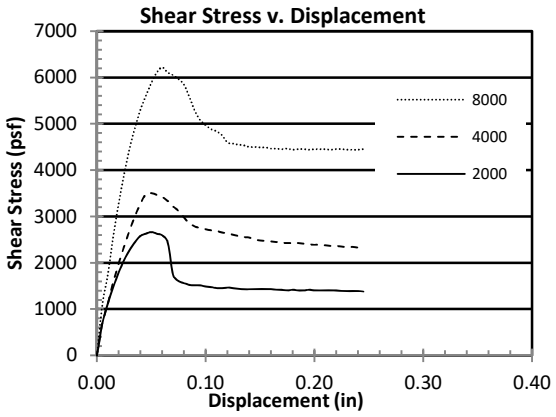
Project Name:	1688 Garvey Avenue	Excavation:	BA-2
Location:	Monterey Park	Depth:	50 ft
Project No.:	1605-04	Sample Type:	Undisturbed
Date:	12/4/17	By:	FV

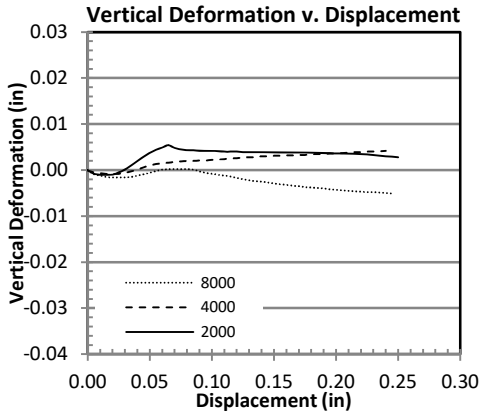
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	8000
Maximum Shear Stress (psf)	2664	3504	6216
Ultimate Shear Stress (psf)	1380	2316	4440
Initial Moisture Content (%)	17.4	17.4	17.4
Initial Dry Density (pcf)	104.3	105.4	105.7

	Method:	Drained
	Consolidation:	Yes
	Saturation:	Yes
	Shearing Rate (in/min):	0.0025

	Peak	Ultimate
Friction Angle, phi (deg)	31	27
Cohesion (psf)	1310	320







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

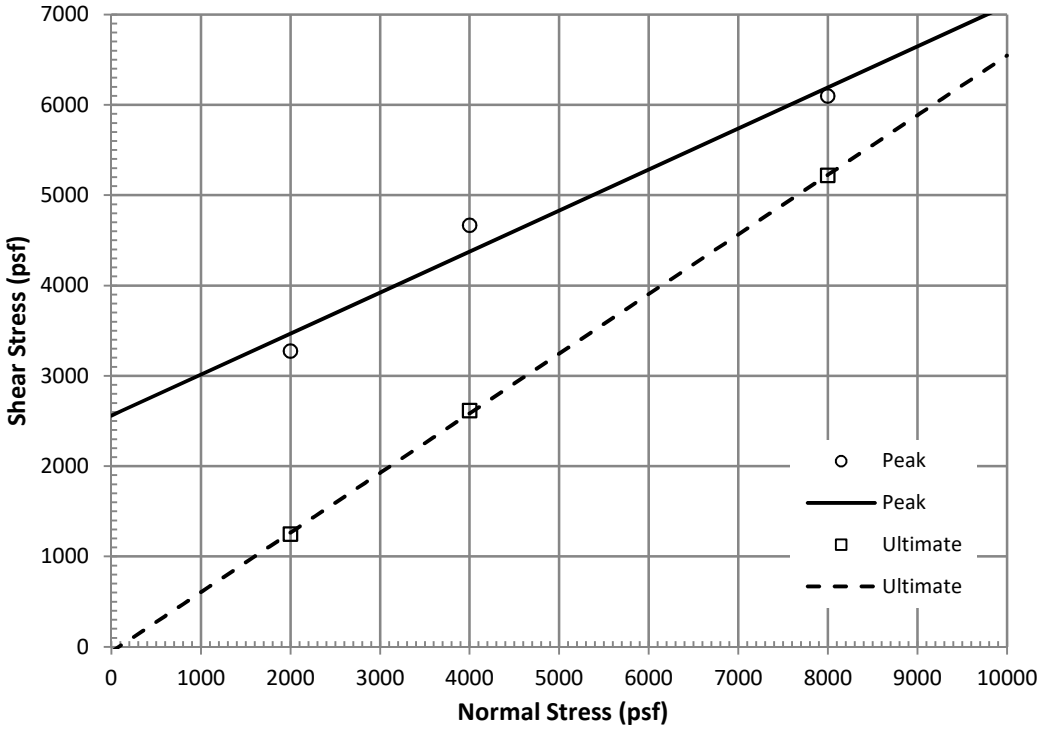
Project Name: 1688 Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 12/1/17

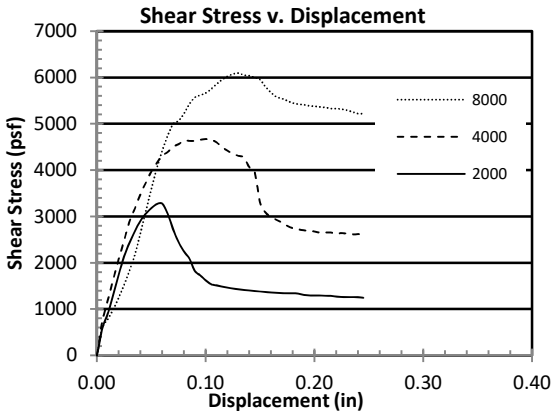
Excavation: BA-1
Depth: 55 ft
Sample Type: Undisturbed
By: FV

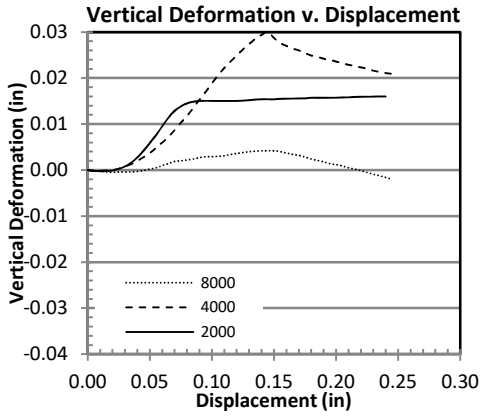
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	8000
Maximum Shear Stress (psf)	3276	4668	6096
Ultimate Shear Stress (psf)	1248	2616	5220
Initial Moisture Content (%)	16.6	16.6	16.6
Initial Dry Density (pcf)	107.2	107.8	106.9

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0025

	Peak	Ultimate
Friction Angle, phi (deg)	24	33
Cohesion (psf)	2560	-55







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

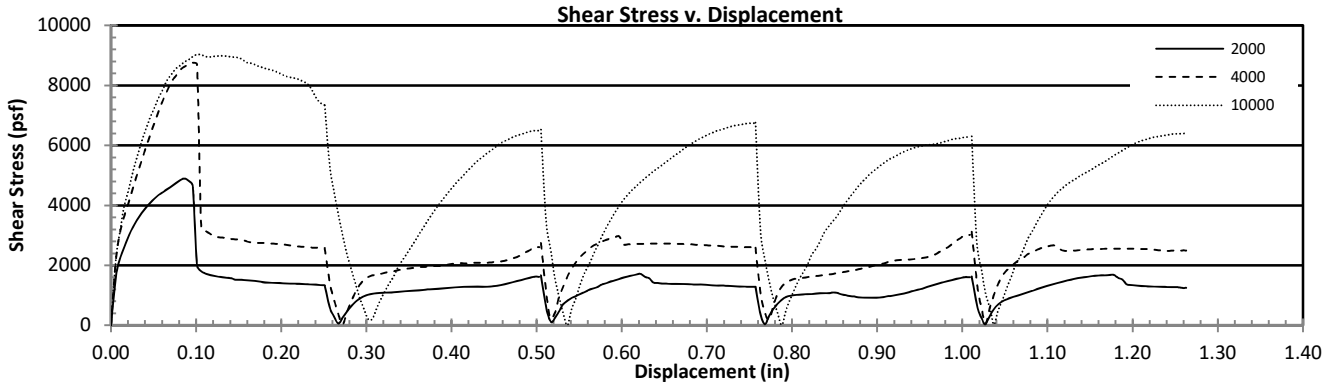
DIRECT SHEAR - ASTM D3080 - MULTIPLE PASSES

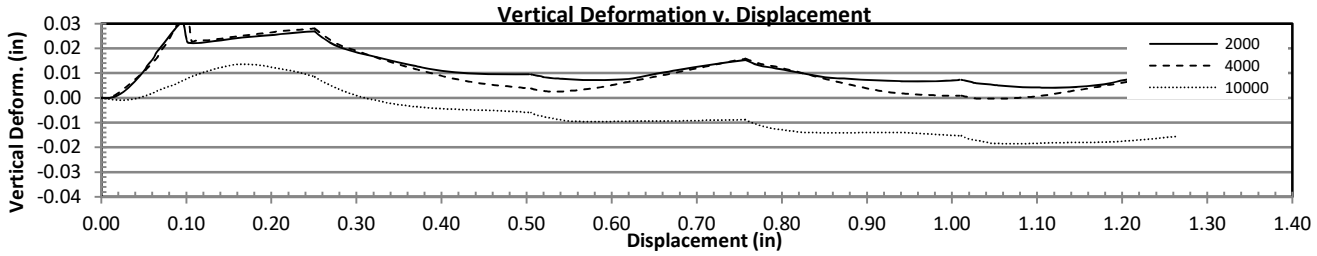
Project Name:	1688 Garvey Avenue	Excavation:	BA-1
Location:	Monterey Park	Depth:	75
Project No.:	1605-04	Sample Type:	Undisturbed
Date:	11/20/17	By:	SD

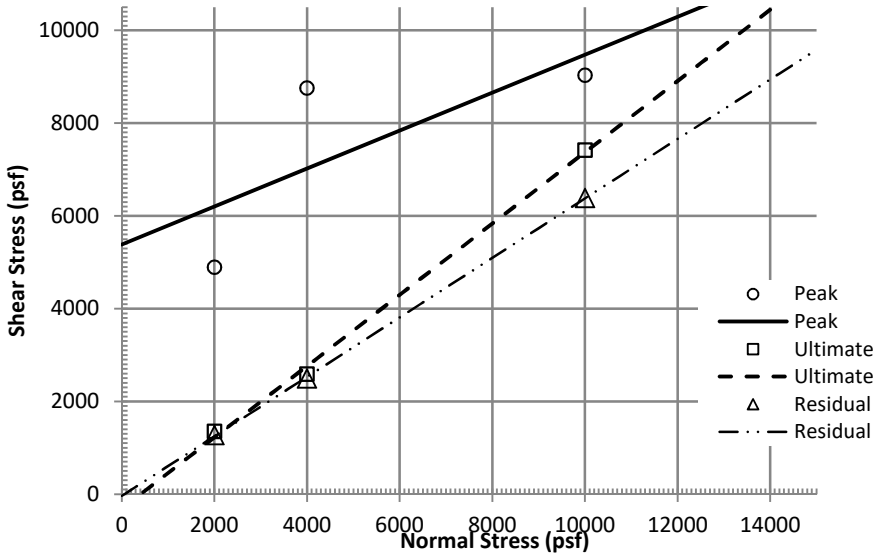
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	10000
Maximum Shear Stress (psf)	4896	8759	9035
Ultimate Shear Stress (psf)	1356	2592	7416
Residual Shear Stress (psf)	1272	2496	6384
Initial Moisture Content (%)	13.1	13.1	13.1
Initial Dry Density (pcf)	115.5	116.7	115.6

Method:	Drained
Consolidation:	Yes
Saturation:	Yes
Shearing Rate (in/min):	0.01

Peak	Ultimate	Residual	
22°	38°	33°	Friction Angle
5385	-310	-35	Cohesion (psf)







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080 - MULTIPLE PASSES

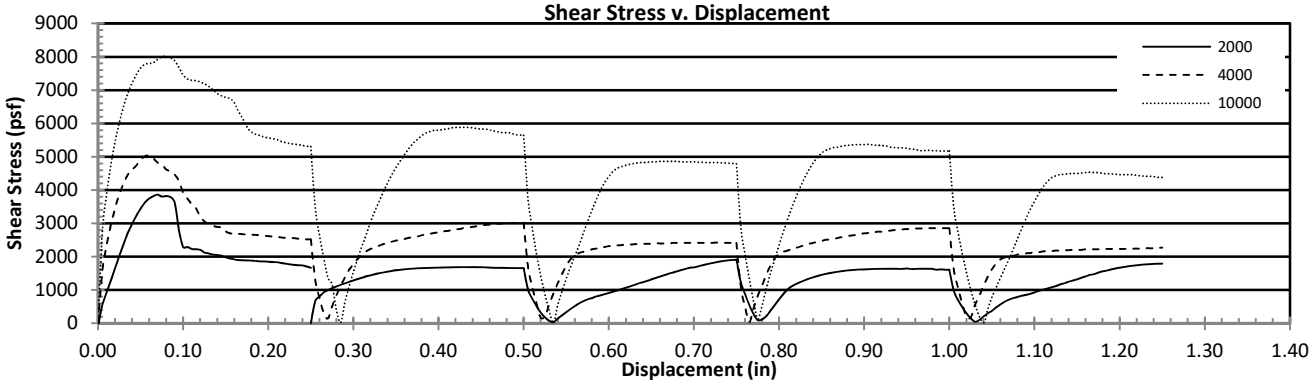
Project Name: 1688 Garvey Avenu
Location: Monterey Park
Project No.: 1605-04
Date: 11/28/17

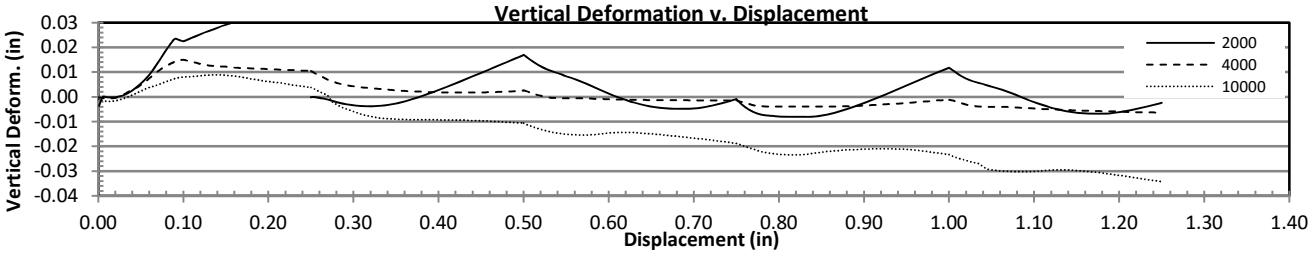
Excavation: BA-2
Depth: 80 ft
Sample Type: Undisturbed
By: FV

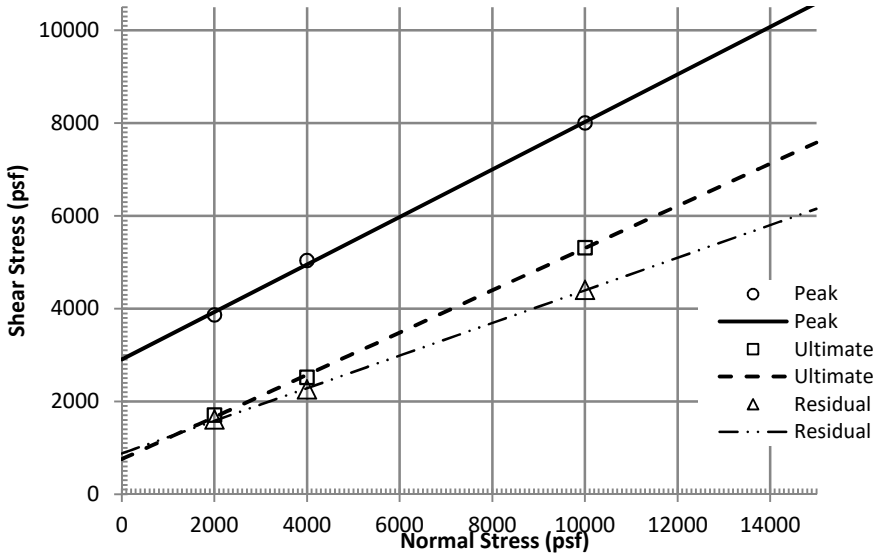
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	10000
Maximum Shear Stress (psf)	3864	5040	8004
Ultimate Shear Stress (psf)	1704	2520	5316
Residual Shear Stress (psf)	1608	2256	4404
Initial Moisture Content (%)	12.3	12.3	12.3
Initial Dry Density (pcf)	113.3	113.5	113.1

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.0025

Peak	Ultimate	Residual	
27°	24°	19°	Friction Angle
2905	755	880	Cohesion (psf)







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

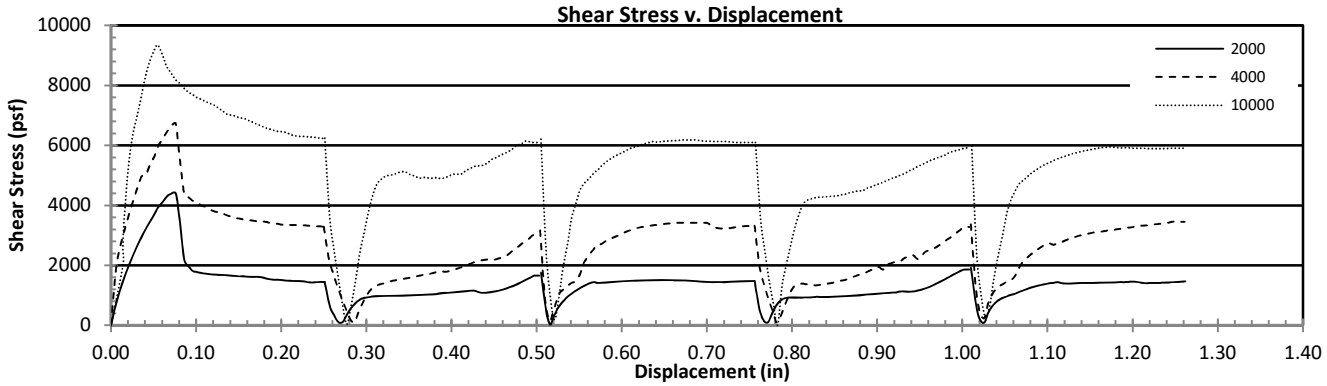
DIRECT SHEAR - ASTM D3080 - MULTIPLE PASSES

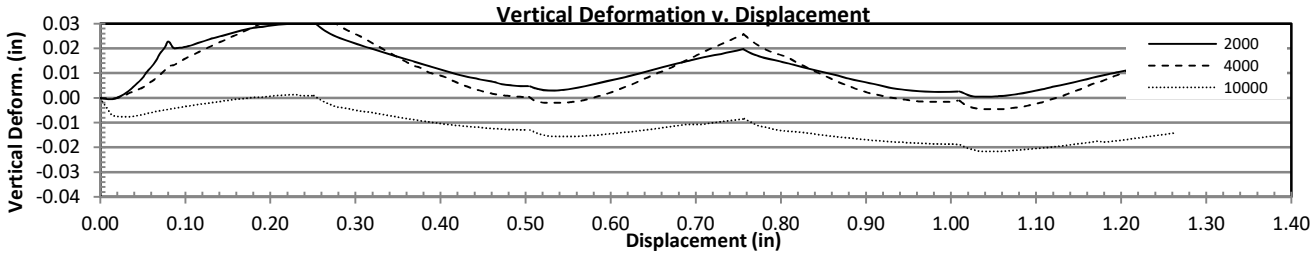
Project Name:	1688 Garvey Avenue	Excavation:	BA-1
Location:	Monterey Park	Depth:	90
Project No.:	1605-04	Sample Type:	Undisturbed
Date:	11/17/17	By:	SD

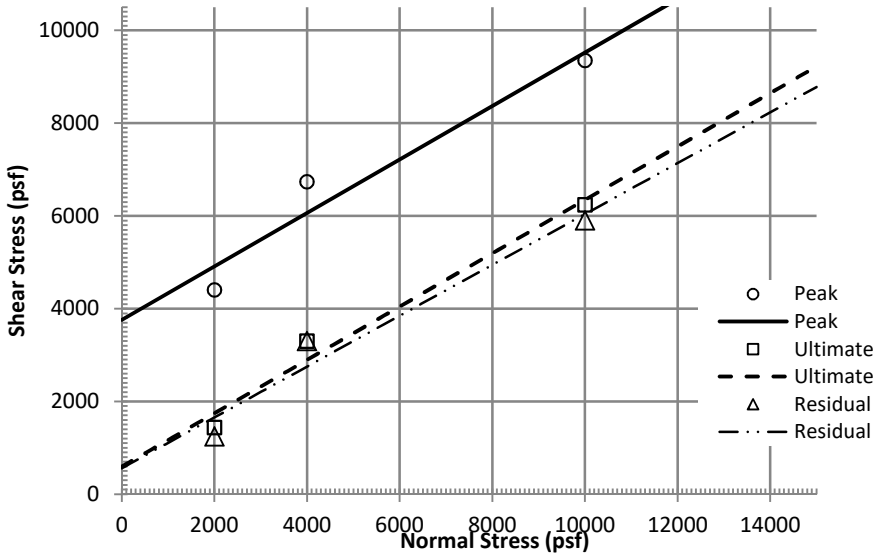
Samples Tested	1	2	3
Normal Stress (psf)	2000	4000	10000
Maximum Shear Stress (psf)	4404	6732	9347
Ultimate Shear Stress (psf)	1440	3300	6240
Residual Shear Stress (psf)	1247	3300	5904
Initial Moisture Content (%)	14.0	14.0	14.0
Initial Dry Density (pcf)	114.3	116.8	115.9

Method:	Drained
Consolidation:	Yes
Saturation:	Yes
Shearing Rate (in/min):	0.01

Peak	Ultimate	Residual	
30°	30°	29°	Friction Angle
3760	595	560	Cohesion (psf)







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

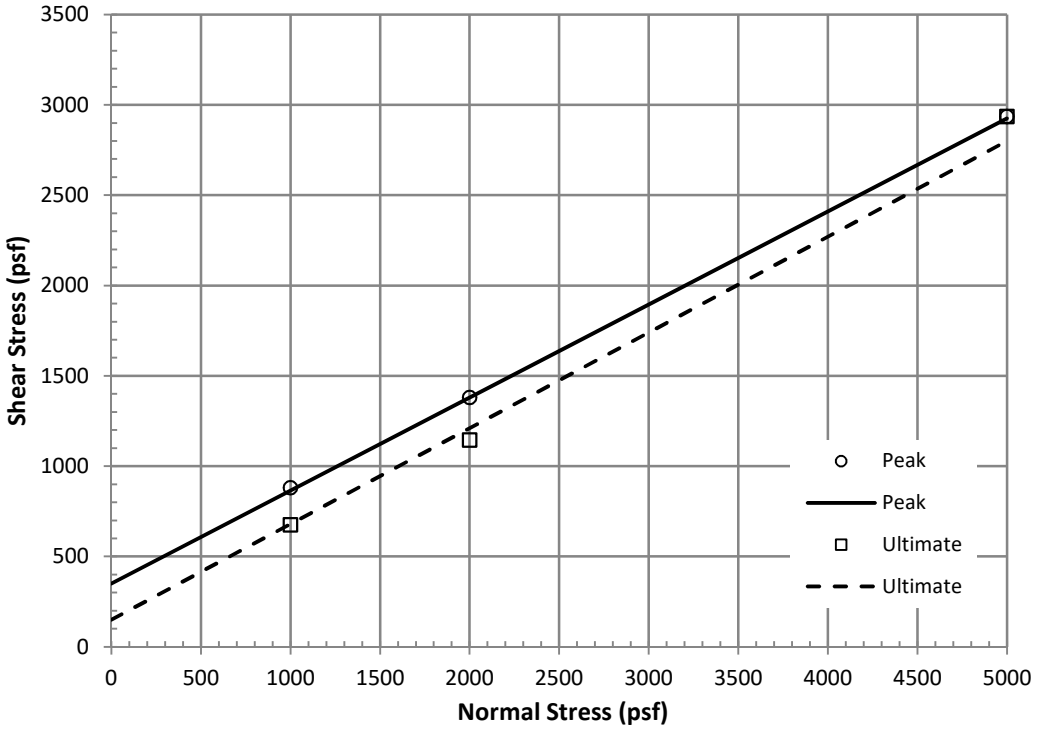
Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/27/17

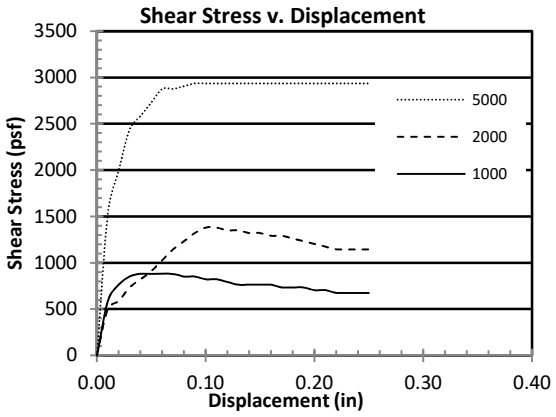
Excavation: BA-1
Depth: 19-20 ft
Sample Type: Remolded 90%
By: HM

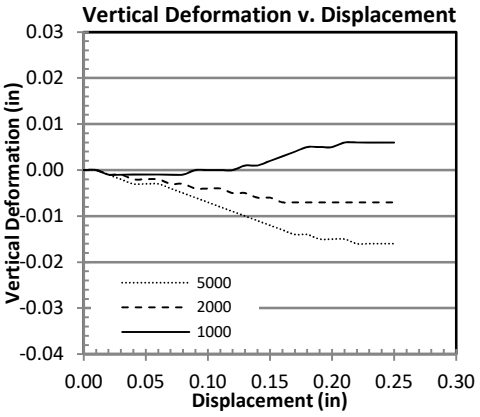
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	5000
Maximum Shear Stress (psf)	881	1379	2935
Ultimate Shear Stress (psf)	675	1145	2935
Initial Moisture Content (%)	18.0	18.0	18.0
Initial Dry Density (pcf)	99.0	99.0	99.0

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.001

	Peak	Ultimate
Friction Angle, phi (deg)	27	28
Cohesion (psf)	350	150







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

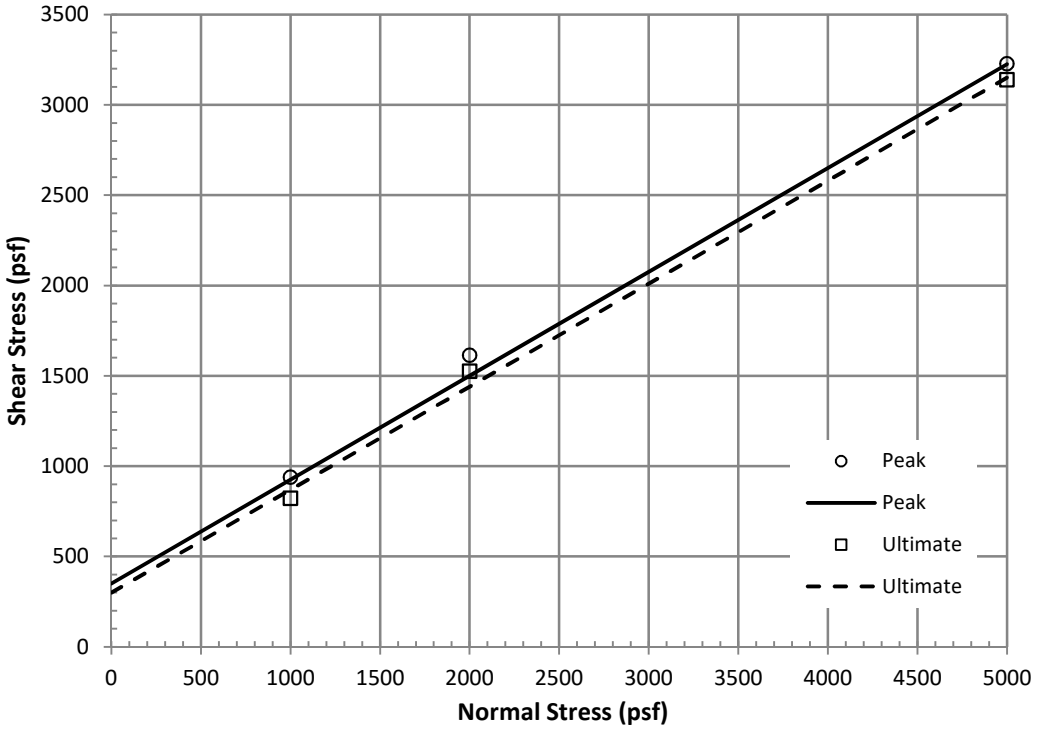
Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/27/17

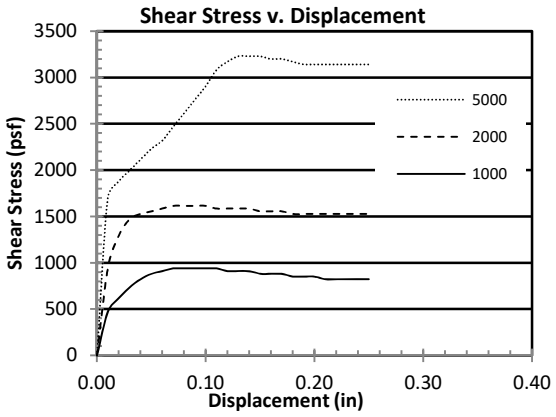
Excavation: BA-2
Depth: 50-52 ft
Sample Type: Remolded 90%
By: HM

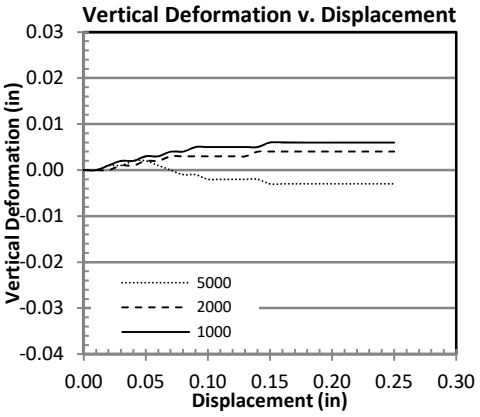
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	5000
Maximum Shear Stress (psf)	939	1614	3229
Ultimate Shear Stress (psf)	822	1526	3140
Initial Moisture Content (%)	17.0	17.0	17.0
Initial Dry Density (pcf)	99.0	99.0	99.0

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.001

	Peak	Ultimate
Friction Angle, phi (deg)	30	30
Cohesion (psf)	350	300







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

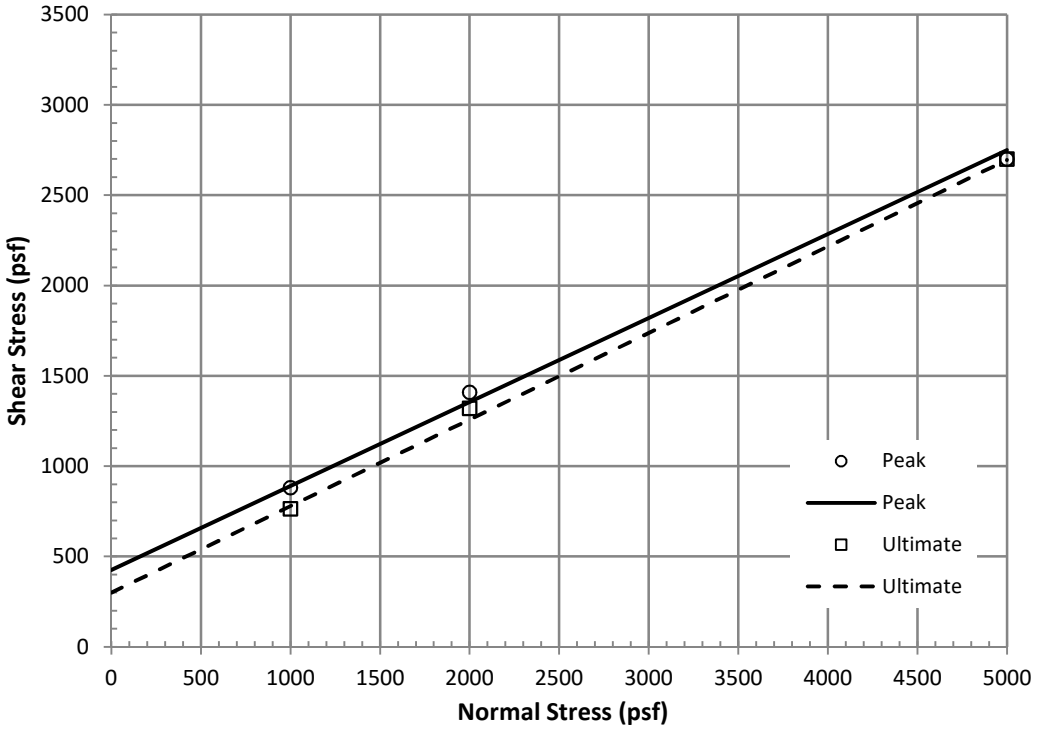
Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/29/17

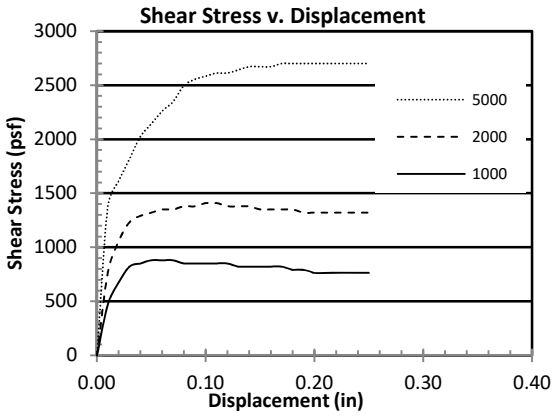
Excavation: BA-2
Depth: 73-75 ft
Sample Type: Remolded 90%
By: HM

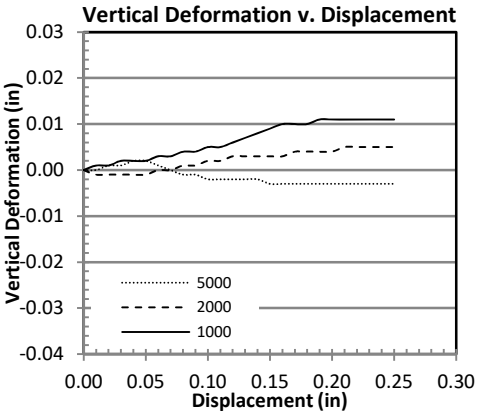
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	5000
Maximum Shear Stress (psf)	881	1409	2700
Ultimate Shear Stress (psf)	763	1321	2700
Initial Moisture Content (%)	17.0	17.0	17.0
Initial Dry Density (pcf)	94.5	94.5	94.5

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.001

	Peak	Ultimate
Friction Angle, phi (deg)	25	26
Cohesion (psf)	425	300







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

DIRECT SHEAR - ASTM D3080

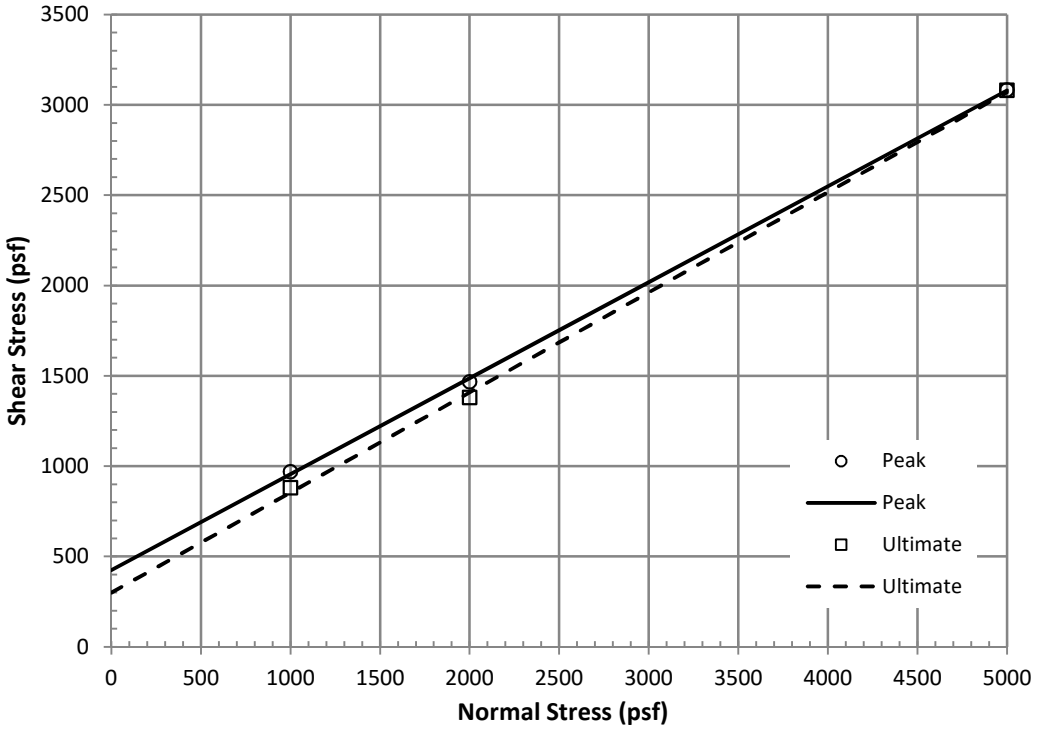
Project Name: 1688 West Garvey Avenue
Location: Monterey Park
Project No.: 1605-04
Date: 11/28/17

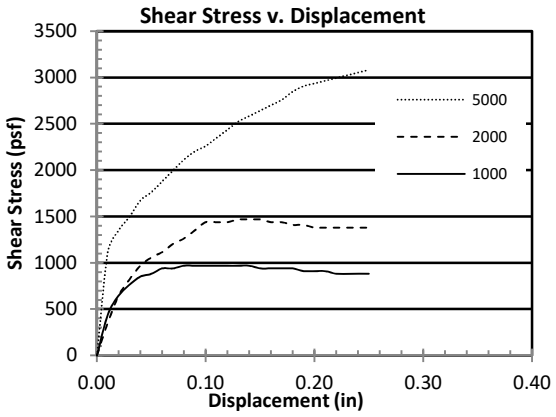
Excavation: BA-1
Depth: 76-78 ft
Sample Type: Remolded 90%
By: HM

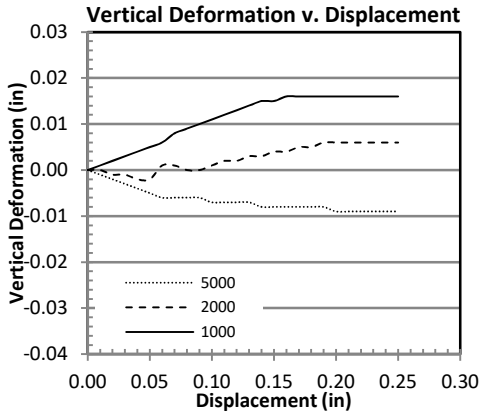
Samples Tested	1	2	3
Normal Stress (psf)	1000	2000	5000
Maximum Shear Stress (psf)	969	1468	3082
Ultimate Shear Stress (psf)	881	1379	3081
Initial Moisture Content (%)	17.5	17.5	17.5
Initial Dry Density (pcf)	98.1	98.1	98.1

Method: Drained
Consolidation: Yes
Saturation: Yes
Shearing Rate (in/min): 0.001

	Peak	Ultimate
Friction Angle, phi (deg)	28	29
Cohesion (psf)	425	300







ADVANCED GEOTECHNICAL SOLUTIONS, INC.

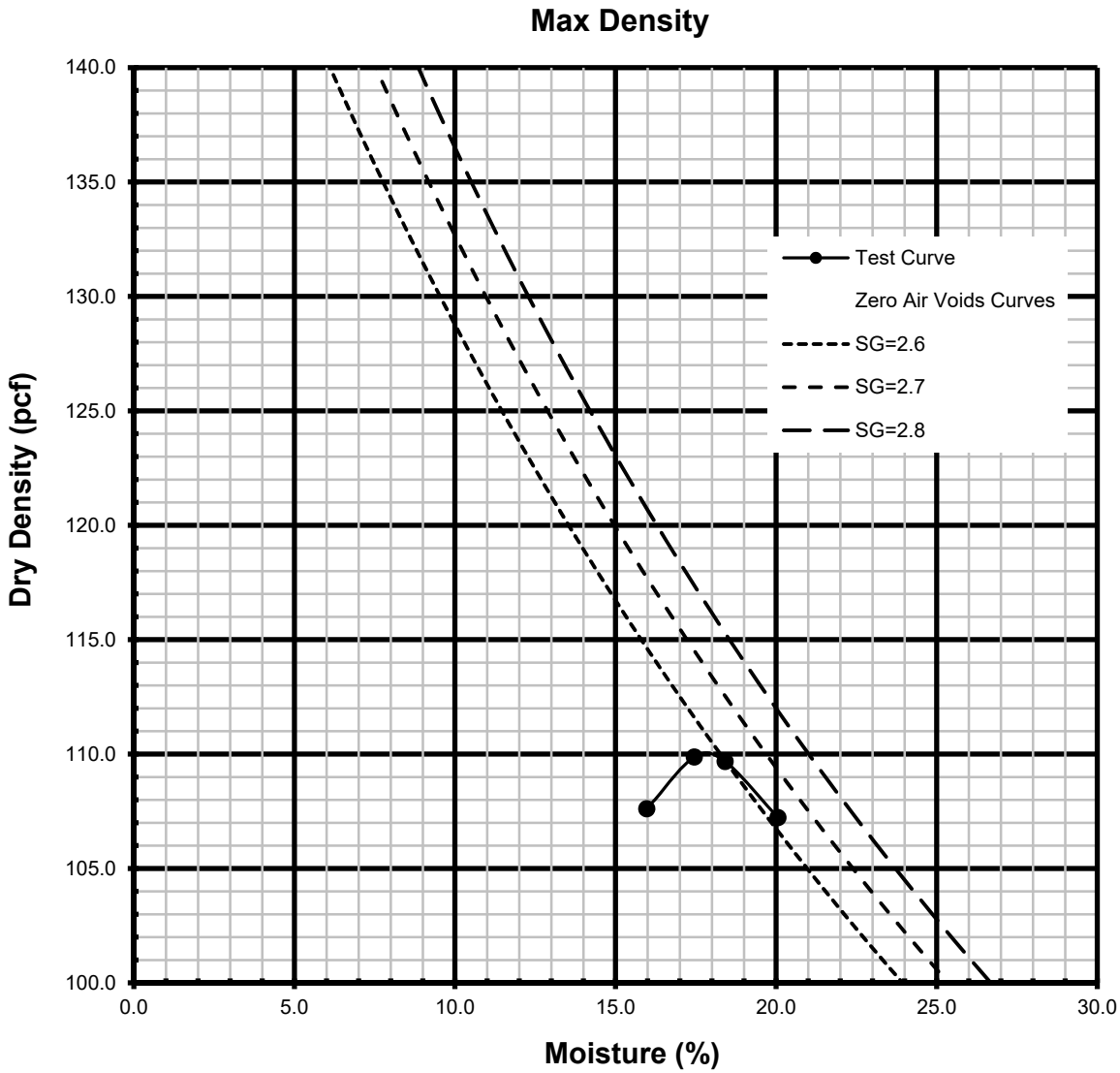
MAXIMUM DENSITY - ASTM D1557

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
P/W No.: 1605-04
Date: 11/19/2017

Excavation: BA-1
Depth: 19-20 ft
Description: Claystone
Project Manager
By: HM

Method: A
Oversize Retained: 0 %

Test Number	1	2	3	4
Dry Density (pcf)	107.6	109.9	109.7	107.2
Moisture Content (%)	16.0	17.4	18.4	20.1



Corrected Maximum Density **110.0** pcf
Maximum Density **110.0** pcf

Corrected Moisture **18.0** %
Optimum Moisture **18.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

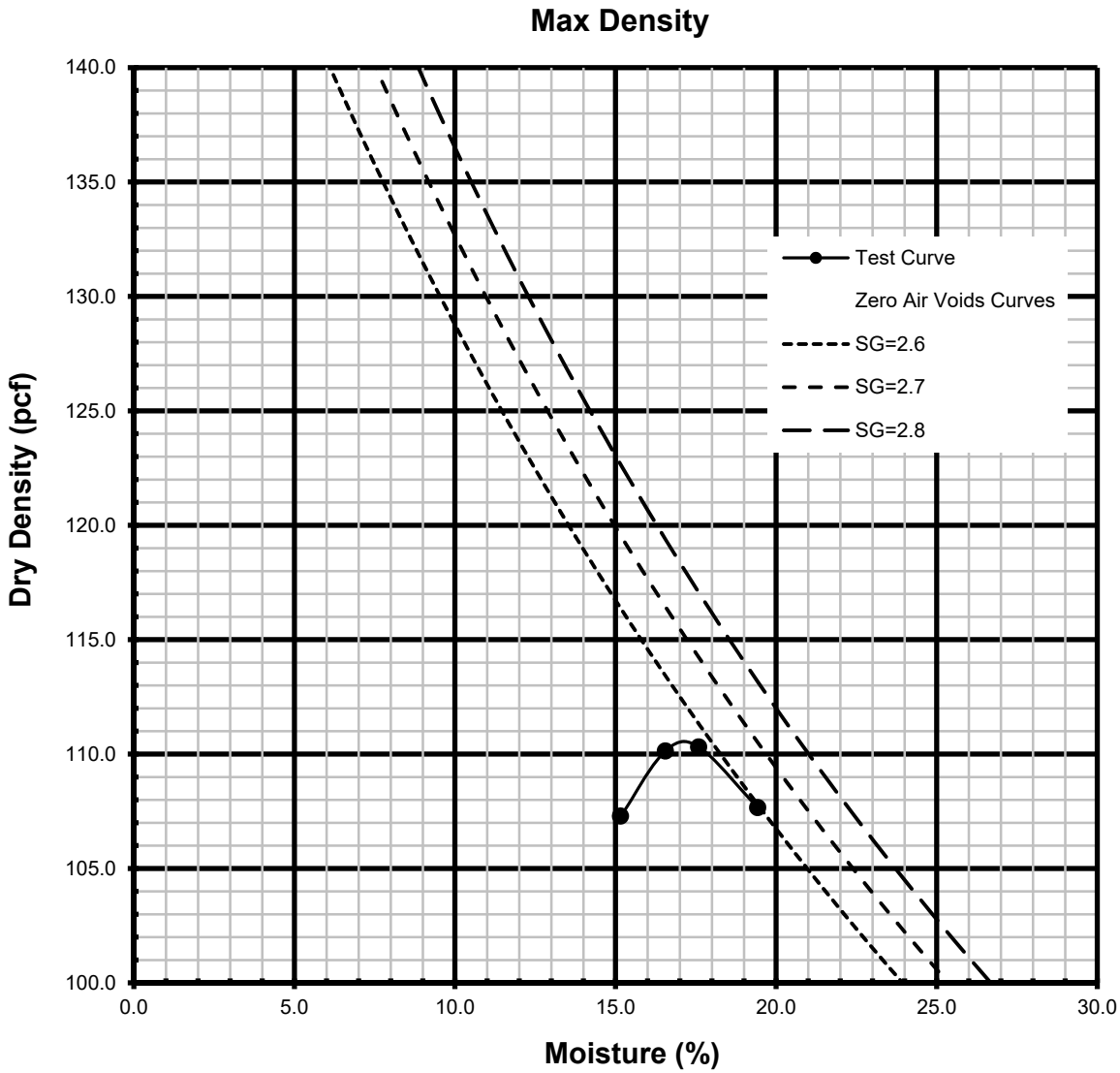
MAXIMUM DENSITY - ASTM D1557

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
P/W No.: 1605-04
Date: 11/20/2017

Excavation: BA-2
Depth: 50-52 ft
Description: Claystone
Project Manager
By: HM

Method: A
Oversize Retained: 0 %

Test Number	1	2	3	4
Dry Density (pcf)	107.3	110.1	110.3	107.7
Moisture Content (%)	15.2	16.5	17.6	19.4



Corrected Maximum Density **110.5** pcf
Maximum Density **110.5** pcf

Corrected Moisture **17.0** %
Optimum Moisture **17.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

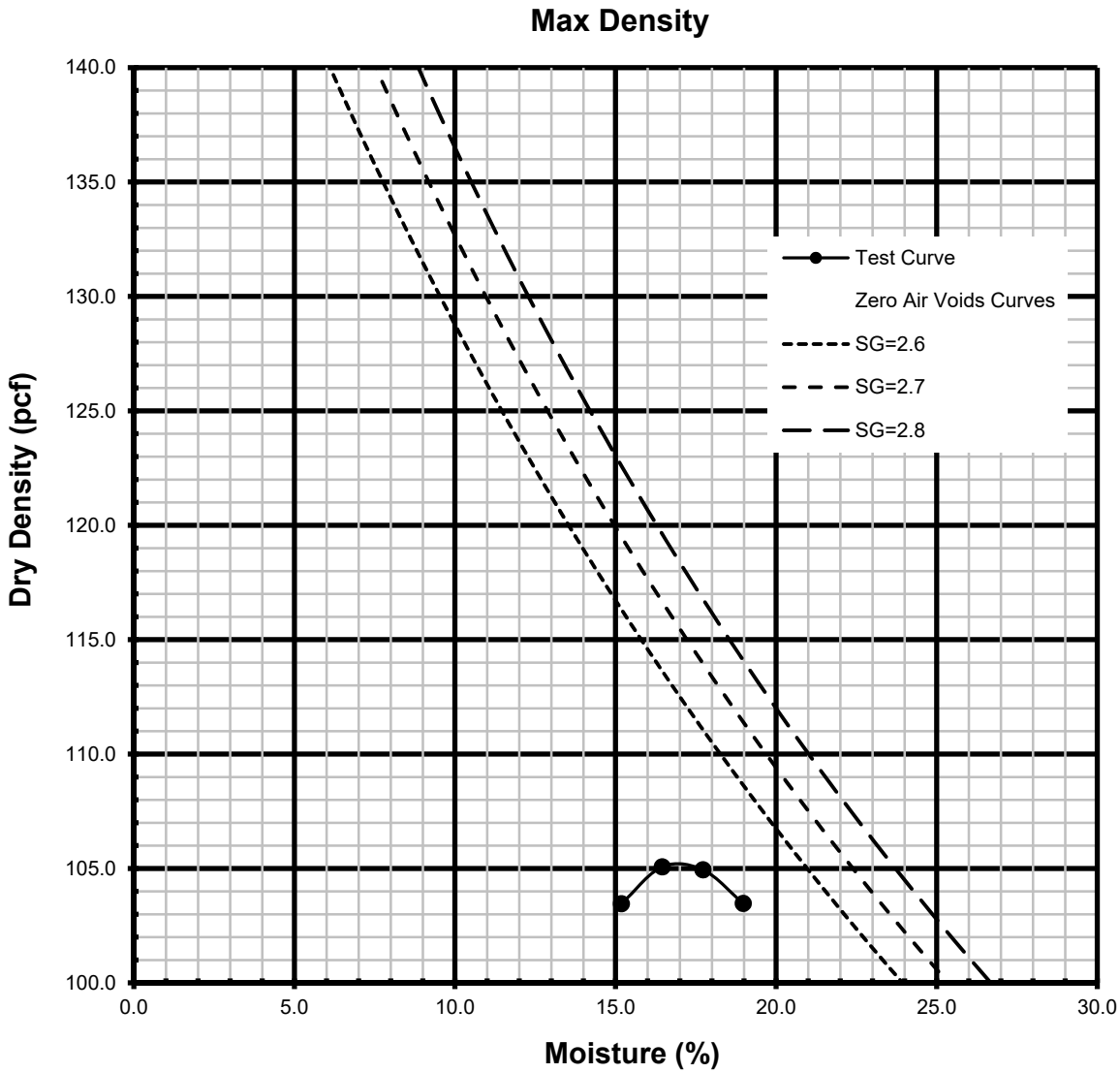
MAXIMUM DENSITY - ASTM D1557

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
P/W No.: 1605-04
Date: 11/21/2017

Excavation: BA-2
Depth: 73-75 ft
Description: Claystone/Siltstone
Project Manager
By: HM

Method: A
Oversize Retained: 0 %

Test Number	1	2	3	4
Dry Density (pcf)	103.5	105.1	104.9	103.5
Moisture Content (%)	15.2	16.5	17.7	19.0



Corrected Maximum Density **105.0** pcf
Maximum Density **105.0** pcf

Corrected Moisture **17.0** %
Optimum Moisture **17.0** %

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

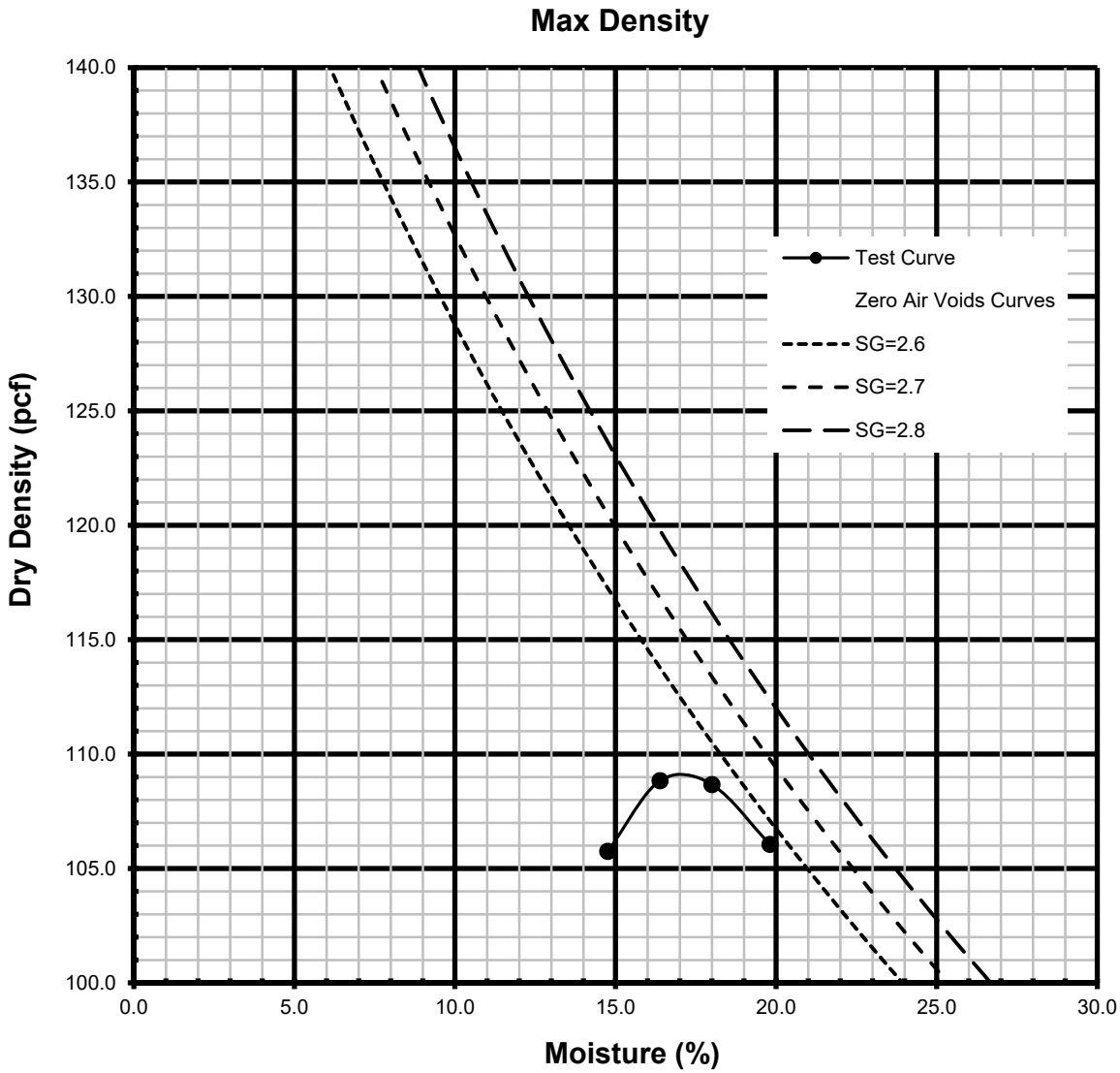
MAXIMUM DENSITY - ASTM D1557

Project Name: 1688 West Garvey Avenue
Location: Monterey Park
P/W No.: 1605-04
Date: 11/19/2017

Excavation: BA-1
Depth: 76-78 ft
Description: Siltstone
Project Manager
By: HM

Method: A
Oversize Retained: 0 %

Test Number	1	2	3	4
Dry Density (pcf)	105.7	108.8	108.7	106.1
Moisture Content (%)	14.8	16.4	18.0	19.8



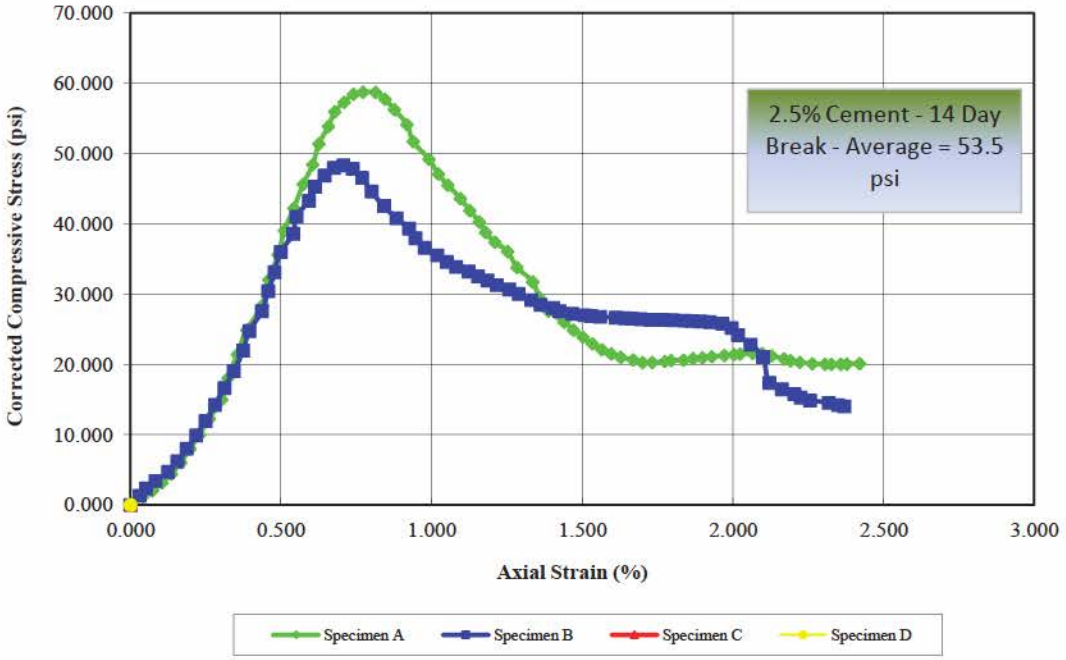
Corrected Maximum Density **109.0** pcf
Maximum Density **109.0** pcf

Corrected Moisture **17.5** %
Optimum Moisture **17.5** %

Unconfined Compression Test Report (ASTM D 1633)

GMU GEOTECHNICAL, INC.
23241 Arroyo Vista
Rancho Santa Margarita, CA 92688

Compressive Stress Axial Strain Curve



Before Test	Specimen A	Specimen B	Specimen C	Specimen D
Water Content (%)	22.18	21.79		
Dry Density (pcf)	98.779	98.700		
Saturation (%)	87.10	85.51		
Void Ratio	0.67	0.68		
Diameter (in)	2.800	2.800		
Height (in)	5.680	5.700		
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	58.745	48.323		
Undrained Shear Strength (tsf)	2.115	1.740		
Undrained Shear Strength (psi)	29.372	24.162		
Rate of Strain (in/min)	0.056800	0.057000		
Strain at Failure (%)	0.77	0.71		
Description				

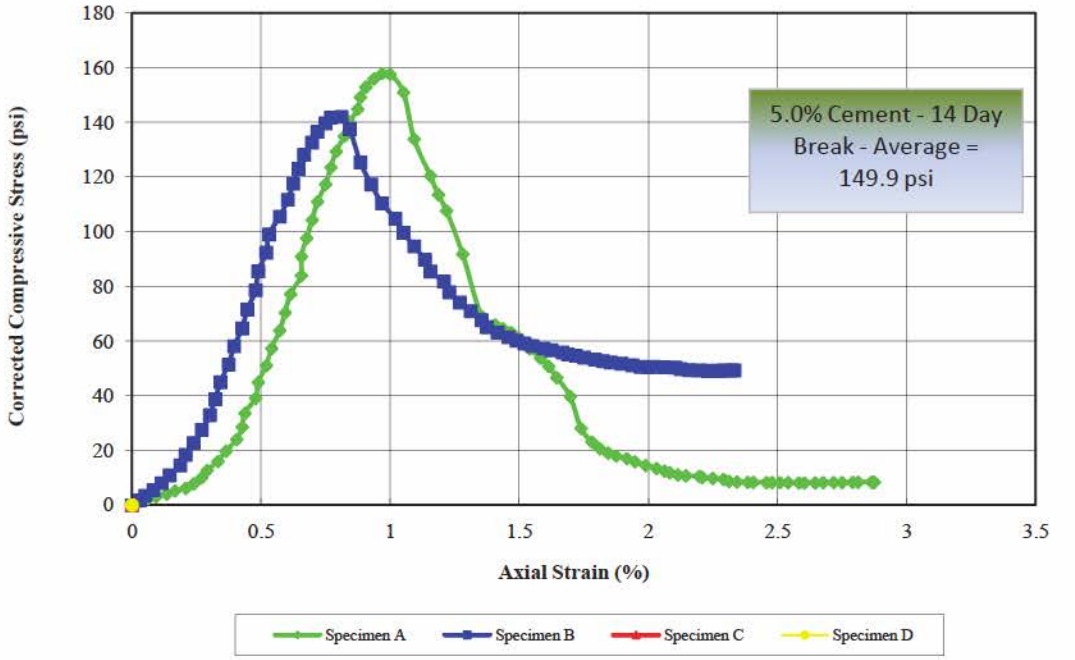
Project Information		Specimen Description	
Project Num	L-161104	Specimen A	L-161104, CL + 2.5 % Cement. # 3
Project	1600 West Garvey Ave.	Specimen B	L-161104, CL + 2.5 % Cement. # 4
Sampling Date		Specimen C	
Sample #	2.5 % Cement, # 3/# 4	Specimen D	
Client	AGS Advanced Geotechnical Solutions, Inc.	**Test Variables**	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

Unconfined Compression Test Report (ASTM D 1633)

GMU GEOTECHNICAL, INC.
23241 Arroyo Vista
Rancho Santa Margarita, CA 92688

Compressive Stress Axial Strain Curve



Before Test	Specimen A	Specimen B	Specimen C	Specimen D
Water Content (%)	23.04	22.77		
Dry Density (pcf)	98.200	98.400		
Saturation (%)	89.12	88.55		
Void Ratio	0.69	0.68		
Diameter (in)	2.800	2.800		
Height (in)	5.690	5.690		
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	157.837	142.033		
Undrained Shear Strength (tsf)	5.682	5.113		
Undrained Shear Strength (psi)	78.919	71.017		
Rate of Strain (in/min)	0.056900	0.056900		
Strain at Failure (%)	0.97	0.81		
Description				

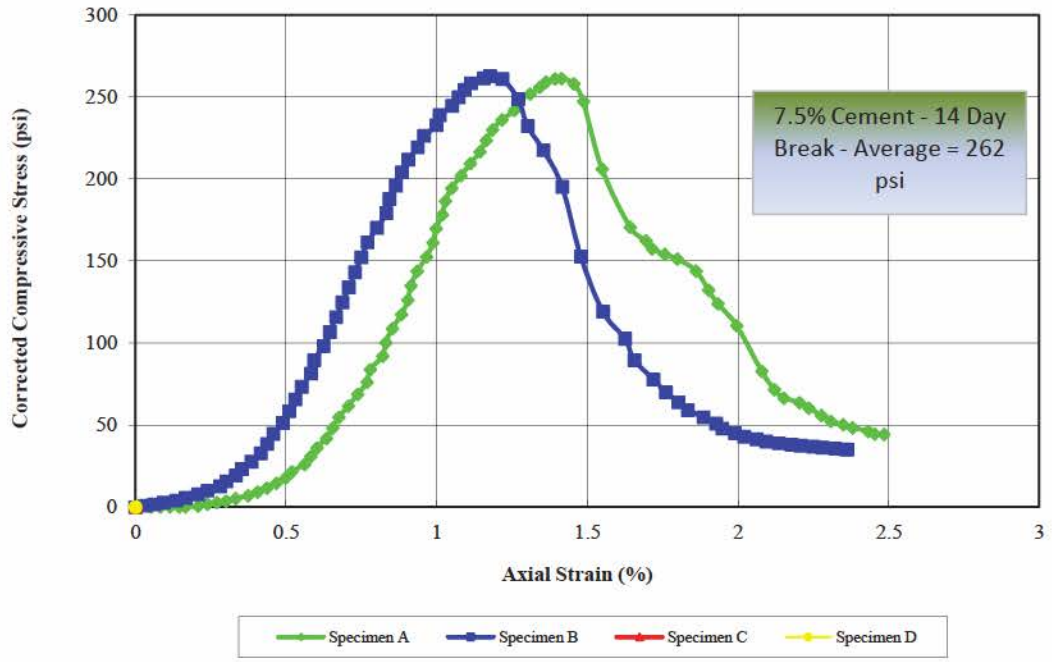
Project Information		Specimen Description	
Project Num	L-161104	Specimen A	L-161104, CL + 5.0 % Cement. # 1
Project	1600 West Garvey Ave.	Specimen B	L-161104, CL + 5.0 % Cement. # 2
Sampling Date		Specimen C	
Sample #	5.0 % Cement, # 1/# 2	Specimen D	
Client	AGS Advanced Geotechnical Solutions, Inc.	**Test Variables**	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

Unconfined Compression Test Report (ASTM D 1633)

GMU GEOTECHNICAL, INC.
23241 Arroyo Vista
Rancho Santa Margarita, CA 92688

Compressive Stress Axial Strain Curve



Before Test	Specimen A	Specimen B	Specimen C	Specimen D
Water Content (%)	23.87	23.72		
Dry Density (pcf)	97.887	98.336		
Saturation (%)	91.67	92.12		
Void Ratio	0.69	0.68		
Diameter (in)	2.800	2.800		
Height (in)	5.700	5.690		
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	261.246	262.782		
Undrained Shear Strength (tsf)	9.405	9.460		
Undrained Shear Strength (psi)	130.623	131.391		
Rate of Strain (in/min)	0.057600	0.057600		
Strain at Failure (%)	1.41	1.18		
Description				

Project Information		Specimen Description	
Project Num	L-161104	Specimen A	L-161104, CL + 7.5 % Cement. # 1
Project	1600 West Garvey Ave.	Specimen B	L-161104, CL + 7.5 % Cement. # 2
Sampling Date		Specimen C	
Sample #	7.5 % Cement, # 1/# 2	Specimen D	
Client	AGS Advanced Geotechnical Solutions, Inc.	**Test Variables**	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

GMU Geotechnical

Unconfined Compression Test Report (ASTM D2166)

Date: 12/29/16

Checked By MF

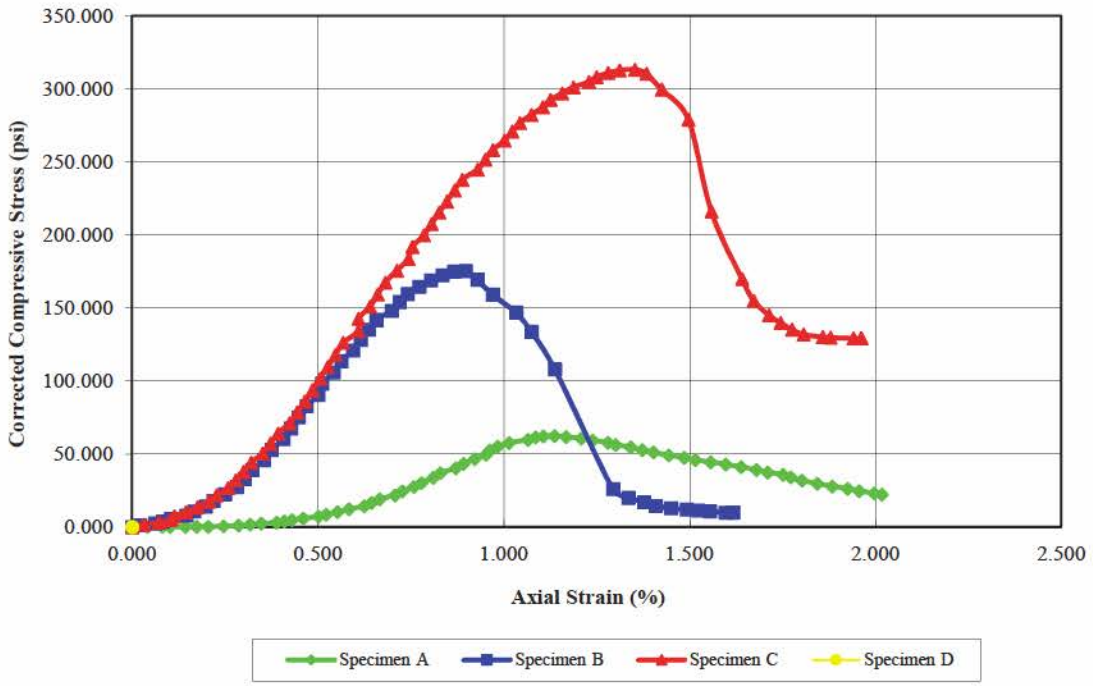
Date: 12/29/16

Computed By MF

Date: 12/29/16

Tested By: MF/CD

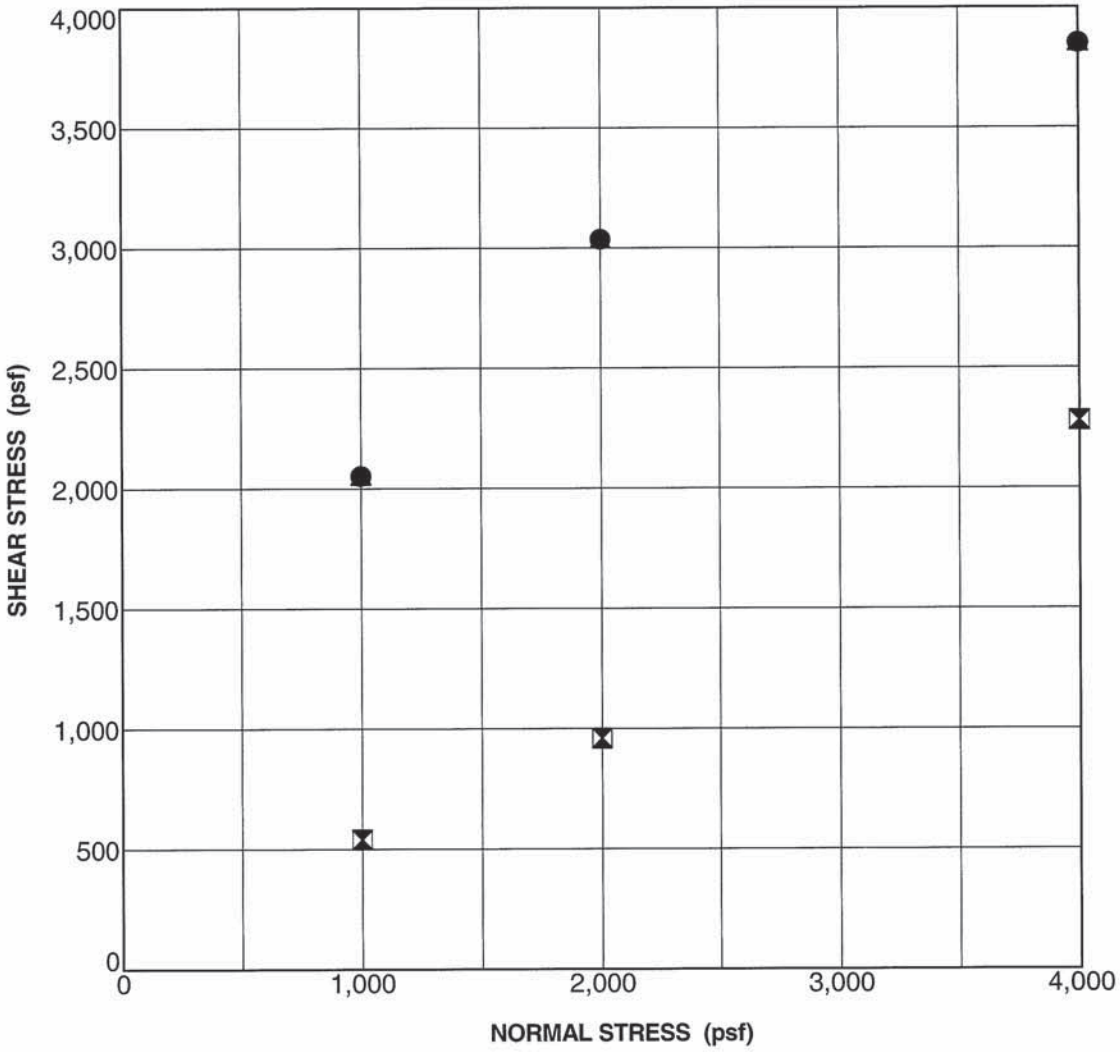
Compressive Stress Axial Strain Curve



Before Test	Specimen A	B	C	D
Water Content (%)	22.14	22.58	23.59	
Dry Density (pcf)	97.412	98.600	96.584	
Saturation (%)	84.02	88.34	87.70	
Void Ratio	0.70	0.68	0.71	
Diameter (in)	2.800	2.800	2.800	
Height (in)	5.786	5.680	5.740	
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	62.306	175.254	313.256	
Undrained Shear Strength (tsf)	2.243	6.309	11.277	
Undrained Shear Strength (psi)	31.153	87.627	156.628	
Rate of Strain (in/min)	0.057800	0.057800	0.057800	
Strain at Failure (%)	1.46	0.90	1.35	
Description				

Project Information		Specimen Description	
Project Num	L-161104	Specimen A	2.5% Cement, 28 Day Break
Project	1600 West Garvey Ave.	Specimen B	5.0% Cement, 28 Day Break
Sampling Date		Specimen C	7.5% Cement, 28 Day Break
Sample #		Specimen D	
Client	AGS Advanced Geotechnical Solutions, Inc.	**Test Variables**	
		Specific Gravity	2.65 (assumed)
		Liquid Limit:	
		Plastic Limit:	

Remarks



SAMPLE AND TEST DESCRIPTION		
Cement Added: 2.5 %		**Classification:** Lean Clay + 2.5% Cement (CL)
Strain Rate (in/min): 0.005	**Sample Preparation:** Remolded	**Notes:** 90% Compaction at Optimum

STRENGTH PARAMETERS		
STRENGTH TYPE	**COHESION (psf)**	**FRICTION ANGLE (degrees)**
● Peak Strength	1644	30.0
⊠ Ultimate Strength	0	29.0

SHEAR TEST DATA

Project: AGS

Project No. L-161104

GMU GEOTECHNICAL, INC.

GMU_DIRECT_SHEAR L-161104.GPJ GM&U.GDT 2/6/17

GMU GEOTECHNICAL, INC.

CONSOLIDATED UNDRAINED TRIAXIAL TEST

ASTM D 4767

Project Name:	1600 West Garvey Avenue	Sample Type:	Remold	Date:	01/24/17
Project No:	L-161104			Date:	01/31/17
Boring No.:	N/A				
Sample No.:	1				
Depth (ft.):	N/A				
Soil Description	Soil-cement				

Diameter (in)	2.810	2.810	2.810	Avg. =	2.810
Height (in)	5.668	5.667	5.667	Avg. =	5.667

	Before Saturation	Pre-Consol.	Post Consol.	Post Test
Area (in²)	6.202	6.217	6.209	
Moisture Content (%)	22.30			27.99
Wt. Wet Sample + Cont. (g)	N/A			1208.50
Wt. Dry Sample + Cont. (g)	N/A			960.90
Wt. Container (g)	N/A			76.30
Density and Saturation				
Wt. Wet Sample + Cont. (g)	1077.50			Calculated from initial dry weight and final moisture content
Wt. Container (g)	0.00			
Wet Density (pcf)	116.8			122.0
Dry Density (pcf)	95.5			95.3
Void Ratio	0.764			0.768
% Saturation	78.8			98.5

Specific Gravity (assumed) = 2.70

Back Pressure Saturation

Burette Area (sq. in.)=	0.408
Initial Burette Ht.(cm)=	25.5
Final Burette Ht.(cm)=	2.5
Volume of water during saturation (cc):	60.5
Change in Height (in)=	-0.007

B Value (%) = 84

Consolidation

Cell Pressure (psi) =	88.95	Burette Area (sq. in.)=	0.4080
Back Pressure(psi) =	81.45	Initial Burette Ht.(cm)=	5.2
Eff. Consol. Stress (psi) =	7.50	Final Burette Ht.(cm)=	5.6
Change in Height (in) =	0.0030	Final Height (in)=	5.671

Shear

		At Failure	
Rate of Deformation (in/min)=	0.0024	Deviator Stress (psi) =	68.5
Time to 50% primary Consolidation =	0.25 min	Eff. Minor Principal stress (psi) =	6.4
Failure Criterion:		Eff. Major Principal stress (psi) =	74.8
Condition at which maximum deviator stress occurs		Axial Strain (%) =	1.2

GMU GEOTECHNICAL, INC.

CONSOLIDATED UNDRAINED TRIAXIAL TEST

ASTM D 4767

Project Name:	1600 West Garvey Avenue	Sample Type:	Remold	Date:	01/19/17
Project No:	L-161104			Date:	01/31/17
Boring No.:	N/A				
Sample No.:	2				
Depth (ft.):	N/A				
Soil Description	Soil-cement				

Diameter (in)	2.810	2.810	2.810	Avg. =	2.810
Height (in)	5.668	5.669	5.670	Avg. =	5.669

	Before Saturation	Pre-Consol.	Post Consol.	Post Test
Area (in²)	6.202	6.210	6.203	
Moisture Content (%)	22.40			28.46
Wt. Wet Sample + Cont. (g)	N/A			1245.10
Wt. Dry Sample + Cont. (g)	N/A			993.10
Wt. Container (g)	N/A			107.80
Density and Saturation				
Wt. Wet Sample + Cont. (g)	1076.90			Calculated from initial dry weight and final moisture content
Wt. Container (g)	0.00			
Wet Density (pcf)	116.7			122.5
Dry Density (pcf)	95.3			95.3
Void Ratio	0.767			0.767
% Saturation	78.8			100.0

Specific Gravity (assumed) = 2.70

Back Pressure Saturation

Burette Area (sq. in.)=	0.357
Initial Burette Ht.(cm)=	43.3
Final Burette Ht.(cm)=	16.0
Volume of water during saturation (cc):	62.9
Change in Height (in)=	-0.004

B Value (%) = 82

Consolidation

Cell Pressure (psi) =	96.60	Burette Area (sq. in.)=	0.3570
Back Pressure(psi) =	81.57	Initial Burette Ht.(cm)=	4.0
Eff. Consol. Stress (psi) =	15.03	Final Burette Ht.(cm)=	4.5
Change in Height (in) =	0.0050	Final Height (in)=	5.668

Shear

		At Failure	
Rate of Deformation (in/min)=	0.0024	Deviator Stress (psi) =	73.2
Time to 50% primary Consolidation =	0.25 min	Eff. Minor Principal stress (psi) =	10.3
Failure Criterion:		Eff. Major Principal stress (psi) =	83.5
Condition at which maximum deviator stress occurs		Axial Strain (%) =	1.4

GMU GEOTECHNICAL, INC.

CONSOLIDATED UNDRAINED TRIAXIAL TEST

ASTM D 4767

Project Name:	1600 West Garvey Avenue	Sample Type:	Remold	Date:	01/19/17
Project No:	L-161104			Date:	01/31/17
Boring No.:	N/A				
Sample No.:	3				
Depth (ft.):	N/A				
Soil Description	Soil-cement				

Diameter (in)	2.810	2.810	2.810	Avg. =	2.810
Height (in)	5.662	5.663	5.663	Avg. =	5.663

	Before Saturation	Pre-Consol.	Post Consol.	Post Test
Area (in²)	6.202	6.213	6.195	
Moisture Content (%)	22.40			27.74
Wt. Wet Sample + Cont. (g)	N/A			1242.00
Wt. Dry Sample + Cont. (g)	N/A			996.00
Wt. Container (g)	N/A			109.10
Density and Saturation				
Wt. Wet Sample + Cont. (g)	1077.20			Calculated from initial dry weight and final moisture content
Wt. Container (g)	0.00			
Wet Density (pcf)	116.9			122.0
Dry Density (pcf)	95.5			95.5
Void Ratio	0.765			0.764
% Saturation	79.1			98.0

Specific Gravity (assumed) = 2.70

Back Pressure Saturation

Burette Area (sq. in.)=	0.397
Initial Burette Ht.(cm)=	47.0
Final Burette Ht.(cm)=	18.0
Volume of water during saturation (cc):	74.3
Change in Height (in)=	-0.005

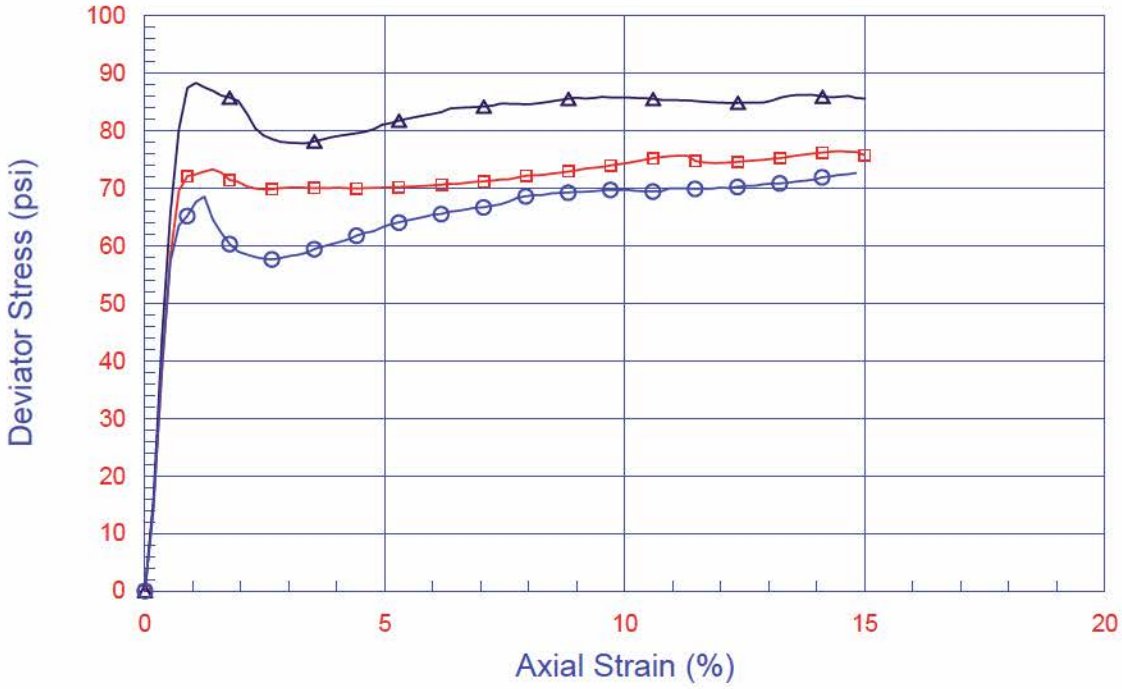
B Value (%) = 78

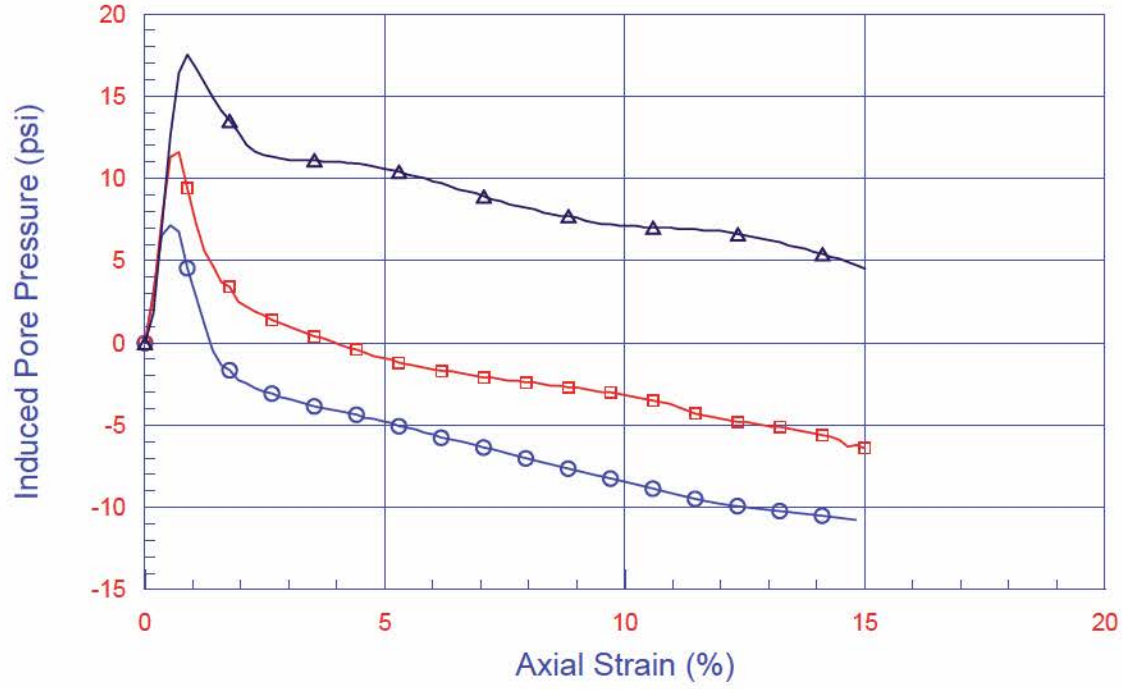
Consolidation

Cell Pressure (psi) =	111.28	Burette Area (sq. in.)=	0.4080
Back Pressure(psi) =	81.28	Initial Burette Ht.(cm)=	5.3
Eff. Consol. Stress (psi) =	30.00	Final Burette Ht.(cm)=	6.0
Change in Height (in) =	0.0010	Final Height (in)=	5.667

Shear

		At Failure	
Rate of Deformation (in/min)=	0.0024	Deviator Stress (psi) =	88.2
Time to 50% primary Consolidation =	0.25 min	Eff. Minor Principal stress (psi) =	13.3
Failure Criterion:		Eff. Major Principal stress (psi) =	101.5
Condition at which maximum deviator stress occurs		Axial Strain (%) =	1.1





	Boring No.	Sample No.	Depth (ft.)	Eff. Conf. Pressure (psi)	Max. Dev. Stress (psi)
○	N/A	1	N/A	7.5	68.5
□	N/A	2	N/A	15.0	73.2
△	N/A	3	N/A	30.0	88.2

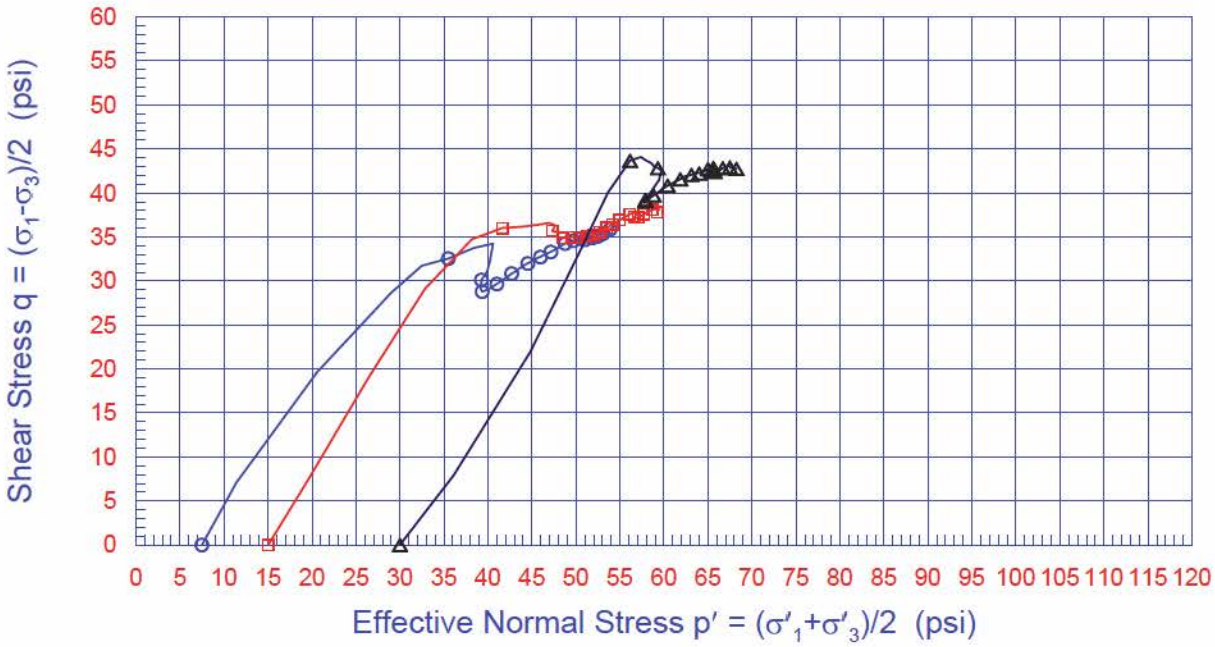
GMU GEOTECHNICAL, INC.

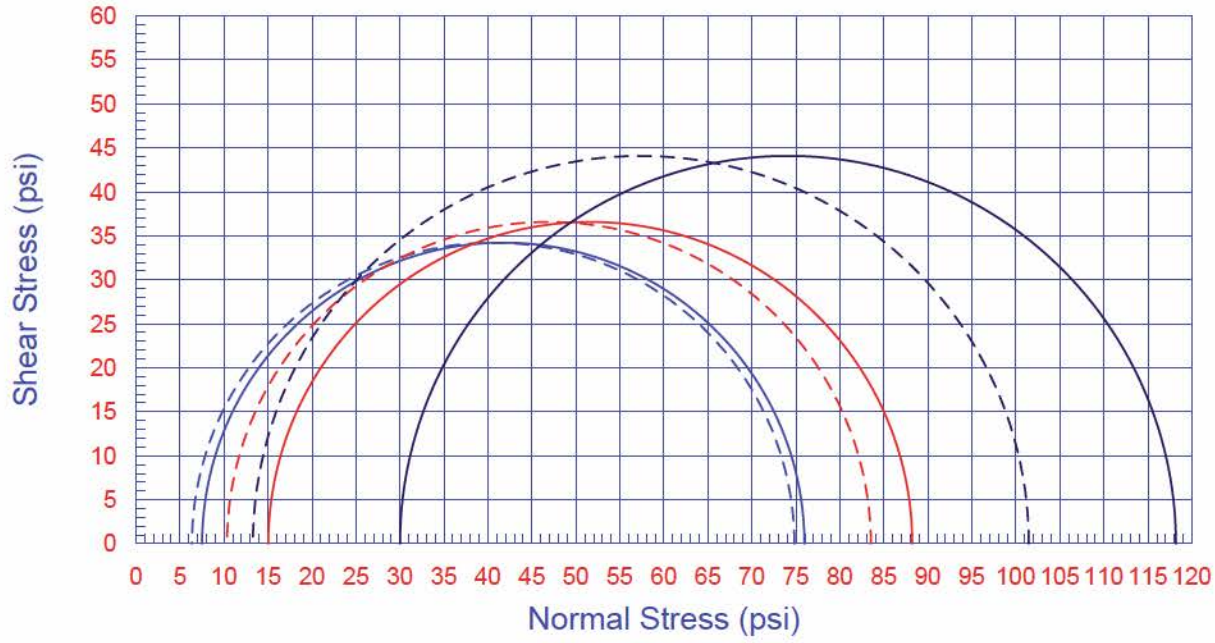
Project No.: L-161104

1600 West Garvey Avenue

Consolidated Undrained
Triaxial Compression Test
ASTM D 4767

01-17





	Boring No.	Sample No.	Depth (ft.)	Eff. Conf. Pressure (psi)	Max. Dev. Stress (psi)
○	N/A	1	N/A	7.5	68.5
□	N/A	2	N/A	15.0	73.2
△	N/A	3	N/A	30.0	88.2

——— Mohr Circle based on Total Stress
– – – – – – Mohr Circle based on Effective Stress

GMU GEOTECHNICAL, INC.

Project No.: L-161104

1600 West Garvey Avenue

Consolidated Undrained
Triaxial Compression Test
ASTM D 4767

01-17

CONSOLIDATED UNDRAINED TRIAXIAL TEST
ASTM D 4767

Project Name:	1600 West Garvey Avenue	Date:	01/24/17
Project No:	L-161104	Date:	02/01/17
Boring No.:	N/A		
Sample No.:	1, 2, 3		
Depth (ft.):	N/A		
Sample Type:	Remold		



7.5 psi



15.0 psi



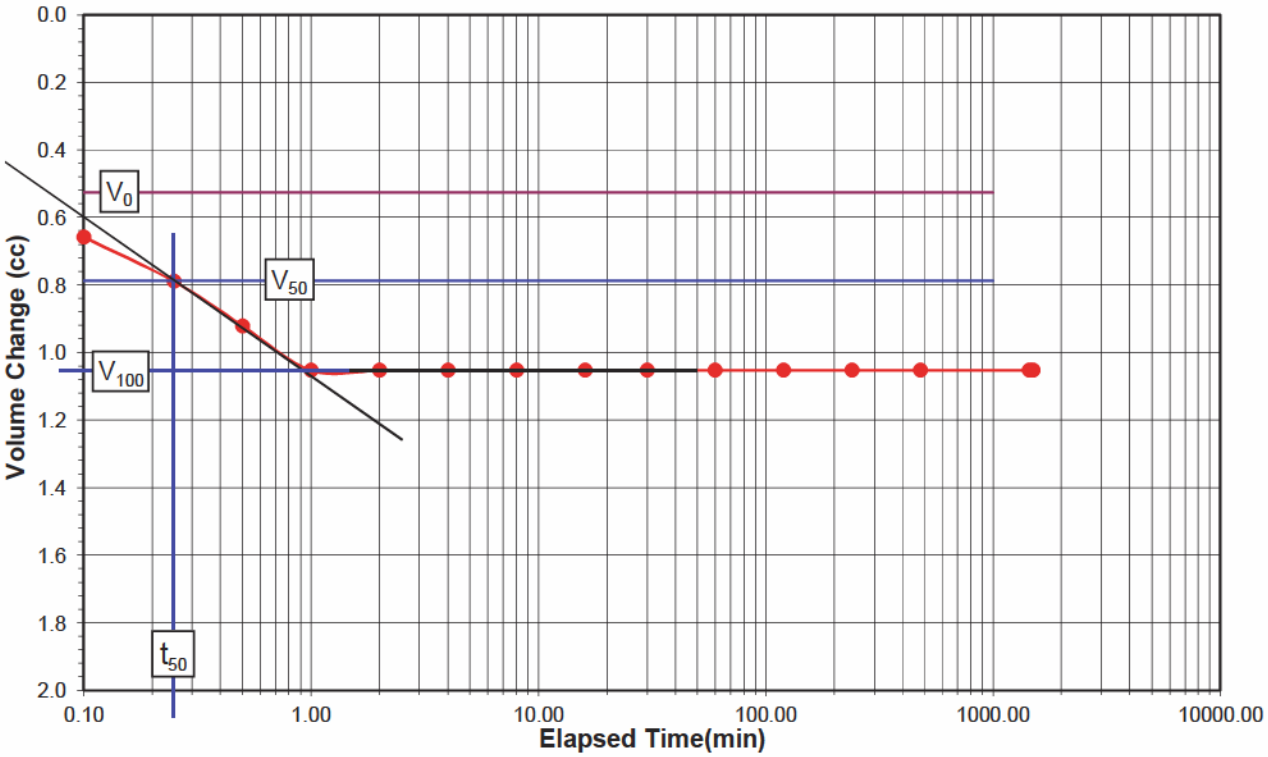
30.0 psi

CU TRIAXIAL TEST CONSOLIDATION CURVE

Project Name: 1600 West Garvey Avenue
Project No.: L-161104
Boring No.: N/A
Sample No.: 1

Depth (ft.) : N/A
Eff. Stress (psi): 7.50
Burette Area: 0.408 in^2

Date	Time	Elapsed Time (min)	Square Root Time (min½)	Dial Rdgs (in.)	Burette Rdgs (cm.)	Volume Change (cc)
01/24/17	8:00:00			Initial Burette	5.20	
01/24/17	8:00:06	0.10	0.32		5.45	0.7
01/24/17	8:00:15	0.25	0.50		5.50	0.8
01/24/17	8:00:30	0.50	0.71		5.55	0.9
01/24/17	8:01:00	1.00	1.00		5.60	1.1
01/24/17	8:02:00	2.00	1.41		5.60	1.1
01/24/17	8:04:00	4.00	2.00		5.60	1.1
01/24/17	8:08:00	8.00	2.83		5.60	1.1
01/24/17	8:16:00	16.00	4.00		5.60	1.1
01/24/17	8:30:00	30.00	5.48		5.60	1.1
01/24/17	9:00:00	60.00	7.75		5.60	1.1
01/24/17	10:00:00	120.00	10.95		5.60	1.1
01/24/17	12:00:00	240.00	15.49		5.60	1.1
01/24/17	16:00:00	480.00	21.91		5.60	1.1
01/25/17	8:00:00	1440.00	37.95		5.60	1.1
01/25/17	9:00:00	1500.00	38.73		5.60	1.1



V_0	(cc)	0.53
V_{100}	(cc)	1.05
V_{50}	(cc)	0.79
t_{50}	(min)	0.25
Height After Consolidation (in)		5.671
Strain Rate	(in/min)	**0.0907**
Duration of Test*	(hr)	0.2

*Based on a total strain of 15%

Height (ft)	5.668
	5.667
	5.667
Average	5.667

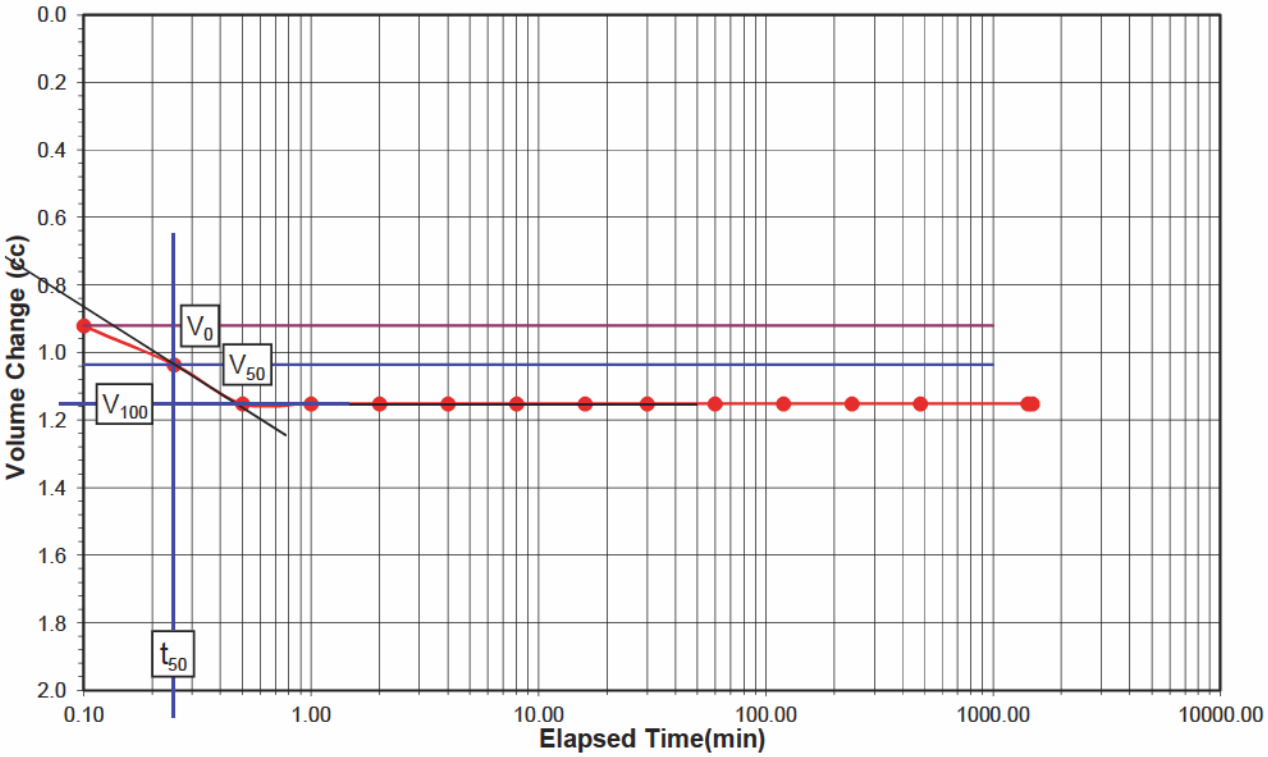
Dial Readings	Saturation	Consolidation
Initial Rdg. (in)	0.1630	0.1570
Final Rdg. (in)	0.1560	0.1600

CU TRIAXIAL TEST CONSOLIDATION CURVE

Project Name: 1600 West Garvey Avenue
Project No.: L-161104
Boring No.: N/A
Sample No.: 2

Depth (ft.) : N/A
Eff. Stress (psi): 15.00
Burette Area: 0.357 in^2

Date	Time	Elapsed Time (min)	Square Root Time (min½)	Dial Rdgs (in.)	Burette Rdgs (cm.)	Volume Change (cc)
01/24/17	8:15:00			Initial Burette	4.00	
01/24/17	8:15:06	0.10	0.32		4.40	0.9
01/24/17	8:15:15	0.25	0.50		4.45	1.0
01/24/17	8:15:30	0.50	0.71		4.50	1.2
01/24/17	8:16:00	1.00	1.00		4.50	1.2
01/24/17	8:17:00	2.00	1.41		4.50	1.2
01/24/17	8:19:00	4.00	2.00		4.50	1.2
01/24/17	8:23:00	8.00	2.83		4.50	1.2
01/24/17	8:31:00	16.00	4.00		4.50	1.2
01/24/17	8:45:00	30.00	5.48		4.50	1.2
01/24/17	9:15:00	60.00	7.75		4.50	1.2
01/24/17	10:15:00	120.00	10.95		4.50	1.2
01/24/17	12:15:00	240.00	15.49		4.50	1.2
01/24/17	16:15:00	480.00	21.91		4.50	1.2
01/25/17	8:00:00	1425.00	37.75		4.50	1.2
01/25/17	9:00:00	1485.00	38.54		4.50	1.2



V_0	(cc)	0.92
V_{100}	(cc)	1.15
V_{50}	(cc)	1.04
t_{50}	(min)	0.25
Height After Consolidation (in)		5.668
Strain Rate	(in/min)	**0.0907**
Duration of Test*	(hr)	0.2

*Based on a total strain of 15%

Height (ft)	
	5.668
	5.669
	5.670
Average	5.669

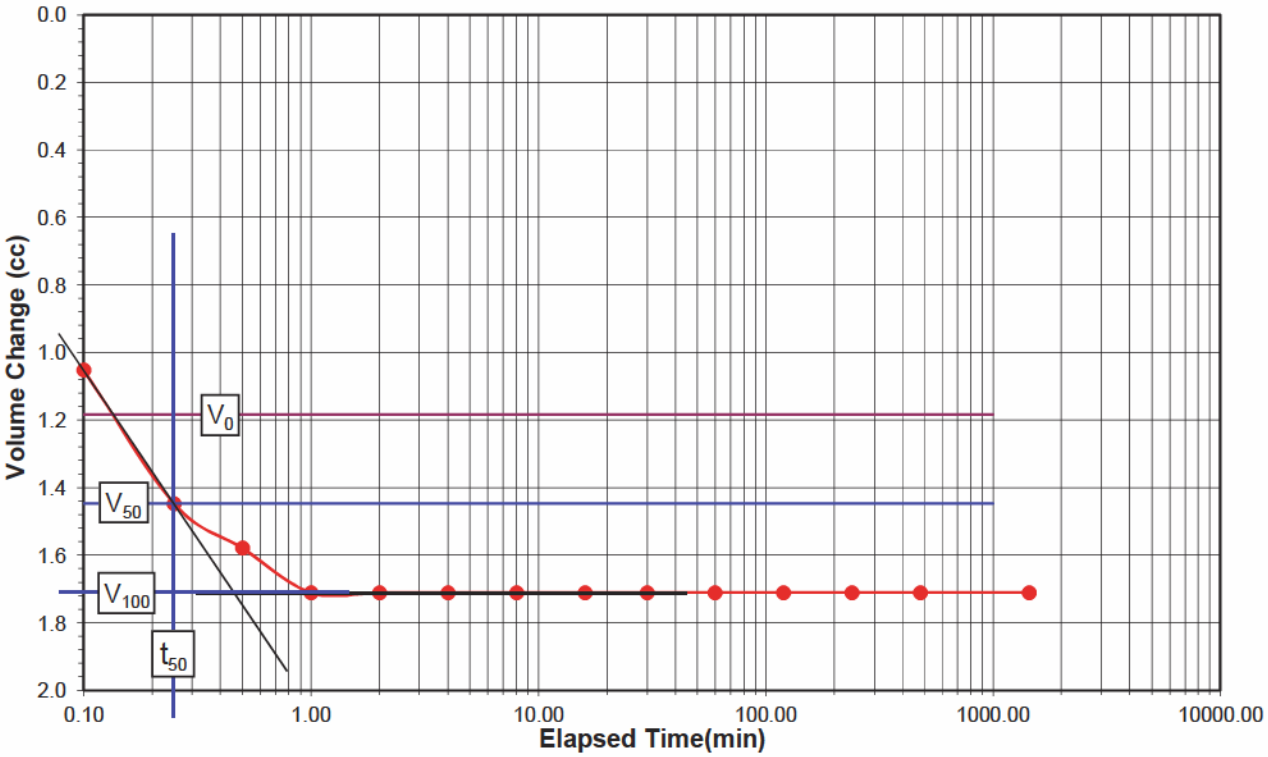
Dial Readings	Saturation	Consolidation
Initial Rdg. (in)	0.1830	0.1790
Final Rdg. (in)	0.1790	0.1840

CU TRIAXIAL TEST CONSOLIDATION CURVE

Project Name: 1600 West Garvey Avenue
Project No.: L-161104
Boring No.: N/A
Sample No.: 3

Depth (ft.) : N/A
Eff. Stress (psi): 30.00
Burette Area: 0.408 in^2

Date	Time	Elapsed Time (min)	Square Root Time (min½)	Dial Rdgs (in.)	Burette Rdgs (cm.)	Volume Change (cc)
01/25/17	8:25:00			Initial Burette	5.30	
01/25/17	8:25:06	0.10	0.32		5.70	1.1
01/25/17	8:25:15	0.25	0.50		5.85	1.4
01/25/17	8:25:30	0.50	0.71		5.90	1.6
01/25/17	8:26:00	1.00	1.00		5.95	1.7
01/25/17	8:27:00	2.00	1.41		5.95	1.7
01/25/17	8:29:00	4.00	2.00		5.95	1.7
01/25/17	8:33:00	8.00	2.83		5.95	1.7
01/25/17	8:41:00	16.00	4.00		5.95	1.7
01/25/17	8:55:00	30.00	5.48		5.95	1.7
01/25/17	9:25:00	60.00	7.75		5.95	1.7
01/25/17	10:25:00	120.00	10.95		5.95	1.7
01/25/17	12:25:00	240.00	15.49		5.95	1.7
01/25/17	16:25:00	480.00	21.91		5.95	1.7
01/26/17	8:25:00	1440.00	37.95		5.95	1.7



V_0	(cc)	1.18
V_{100}	(cc)	1.71
V_{50}	(cc)	1.45
t_{50}	(min)	0.25
Height After Consolidation (in)		5.667
Strain Rate	(in/min)	**0.0907**
Duration of Test*	(hr)	0.2

*Based on a total strain of 15%

Height (ft)	5.662
	5.663
	5.663
Average	5.663

Dial Readings	Saturation	Consolidation
Initial Rdg. (in)	0.1400	0.1330
Final Rdg. (in)	0.1350	0.1340

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/5/16

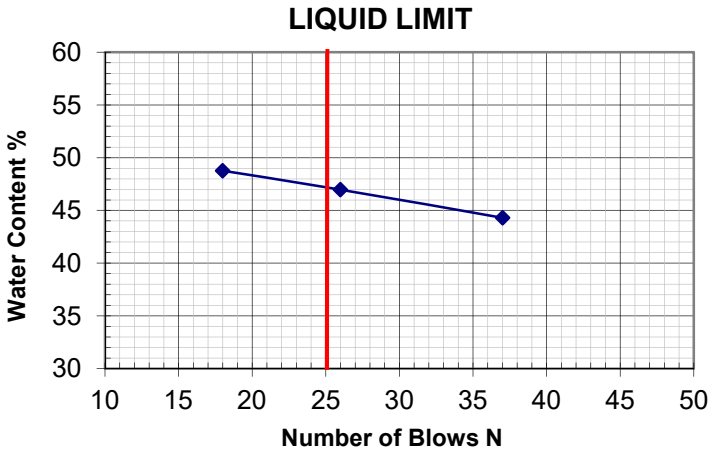
Excavation: HA-1
Depth: 0.5-3 '
Description: Artificial Fill: Silt
By: HM

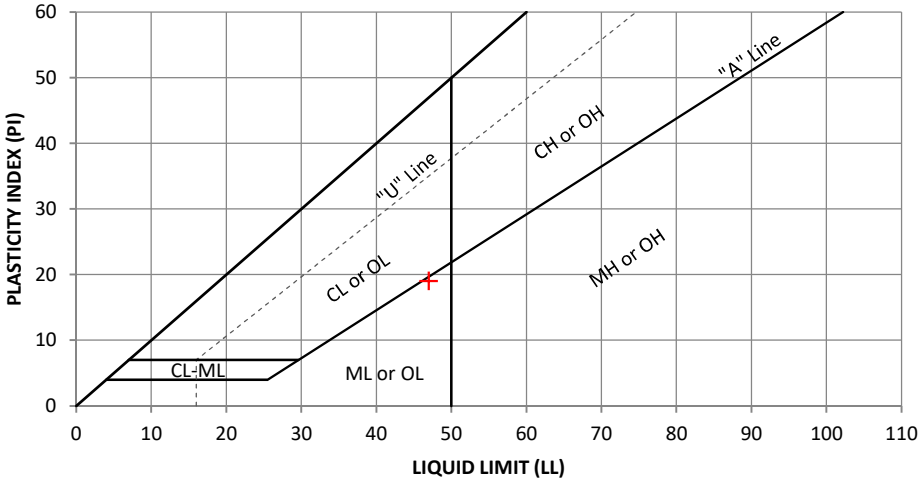
LIQUID LIMIT

Can No.	37	8	15
Wt. wet soil+can (g)	40.53	42.11	44.23
Wt. dry soil+can (g)	37.42	38.31	39.70
Wt. can (g)	30.40	30.22	30.41
Wt. mosture (g)	3.11	3.80	4.53
Wt. dry soil (g)	7.02	8.09	9.29
Water Content %	44.30	46.97	48.76
No. of Blows	37	26	18

PLASTIC LIMIT

52	43
17.41	18.26
15.92	16.62
10.68	10.81
1.49	1.64
5.24	5.81
28.44	28.23





Liquid Limit (LL) 47 Plastic Limit (PL) 28 Plasticity Index (PI) 19

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/5/16

Excavation: HA-2 & HA-3
Depth: 1-7' & 0.5-3.5'
Description: Fernando Formation: Siltstone
By: HM

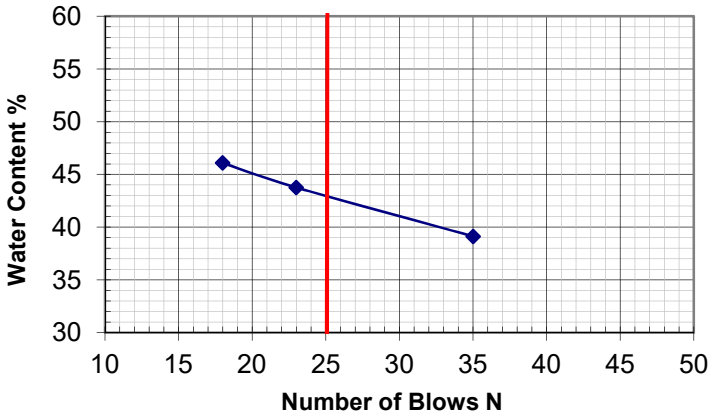
LIQUID LIMIT

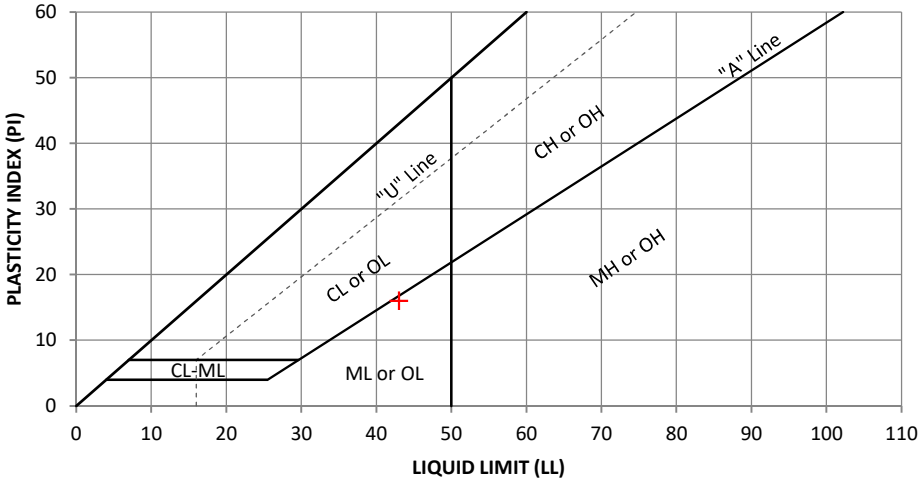
Can No.	11	20	12
Wt. wet soil+can (g)	48.33	49.96	47.63
Wt. dry soil+can (g)	43.31	44.03	42.28
Wt. can (g)	30.48	30.48	30.67
Wt. mosture (g)	5.02	5.93	5.35
Wt. dry soil (g)	12.83	13.55	11.61
Water Content %	39.13	43.76	46.08
No. of Blows	35	23	18

PLASTIC LIMIT

64	74
17.69	18.02
16.18	16.47
10.68	10.80
1.51	1.55
5.50	5.67
27.45	27.34

LIQUID LIMIT





Liquid Limit (LL) 43 Plastic Limit (PL) 27 Plasticity Index (PI) 16

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/4/16

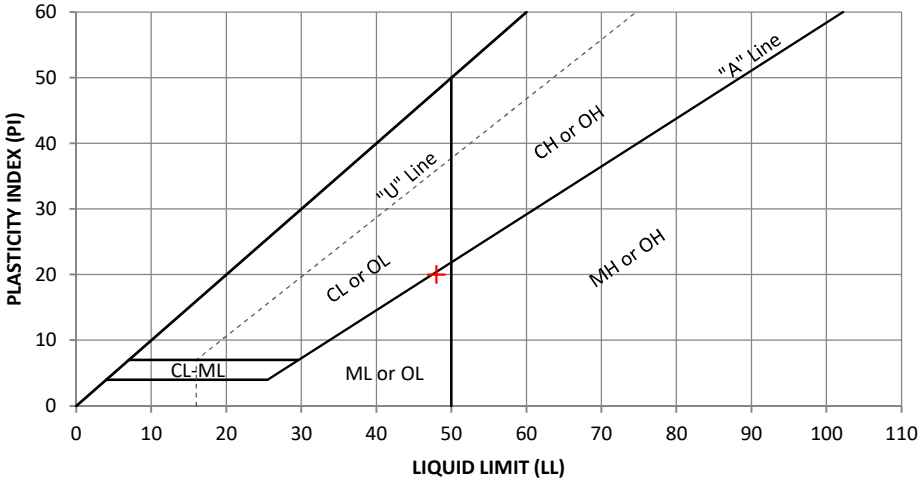
Excavation: HA-4 & HA-9
Depth: 1-4' & 0-1'
Description: Fill: Silt (ML)
By: HM

	LIQUID LIMIT		
Can No.	36	14	25
Wt. wet soil+can (g)	43.56	42.75	41.63
Wt. dry soil+can (g)	39.46	38.70	37.84
Wt. can (g)	30.36	30.28	30.41
Wt. mosture (g)	4.10	4.05	3.79
Wt. dry soil (g)	9.10	8.42	7.43
Water Content %	45.05	48.10	51.01
No. of Blows	38	27	18

PLASTIC LIMIT	
32	42
17.42	16.26
15.95	15.04
10.67	10.69
1.47	1.22
5.28	4.35
27.84	28.05

LIQUID LIMIT





Liquid Limit (LL) 48 Plastic Limit (PL) 28 Plasticity Index (PI) 20

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/5/16

Excavation: HA-5 & HA-10
Depth: 0.5-2' & 0-1.5'
Description: Debris/Fill: Sandy Clay (OL)
By: HM

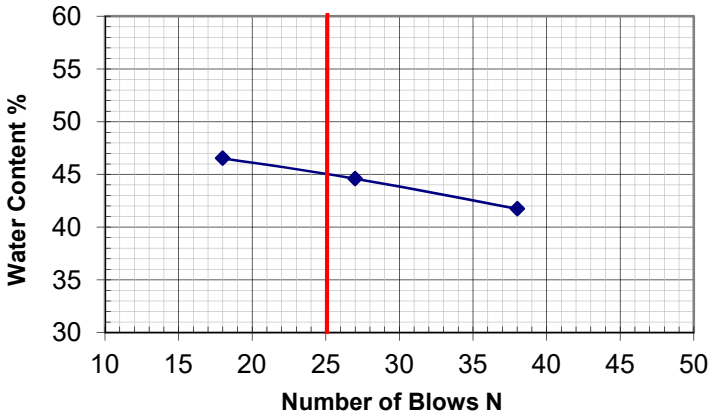
LIQUID LIMIT

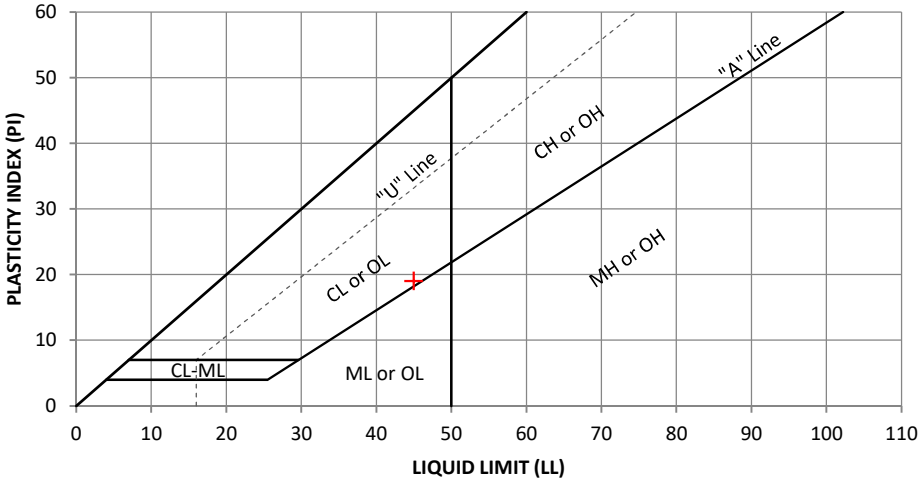
Can No.	4	16	24
Wt. wet soil+can (g)	49.44	49.64	47.92
Wt. dry soil+can (g)	43.85	43.73	42.35
Wt. can (g)	30.46	30.48	30.38
Wt. mosture (g)	5.59	5.91	5.57
Wt. dry soil (g)	13.39	13.25	11.97
Water Content %	41.75	44.60	46.53
No. of Blows	38	27	18

PLASTIC LIMIT

83	63
18.19	19.37
16.67	17.60
10.76	10.71
1.52	1.77
5.91	6.89
25.72	25.69

LIQUID LIMIT





Liquid Limit (LL) 45 Plastic Limit (PL) 26 Plasticity Index (PI) 19

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/5/16

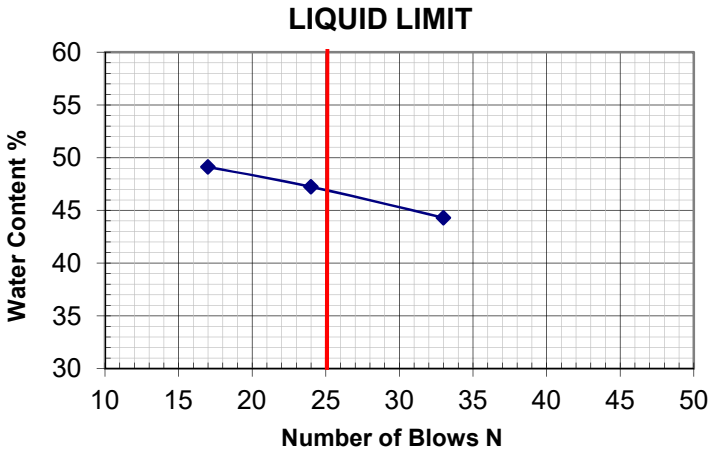
Excavation: HA-6
Depth: 2-4'
Description: Fill: Clay (CL)
By: HM

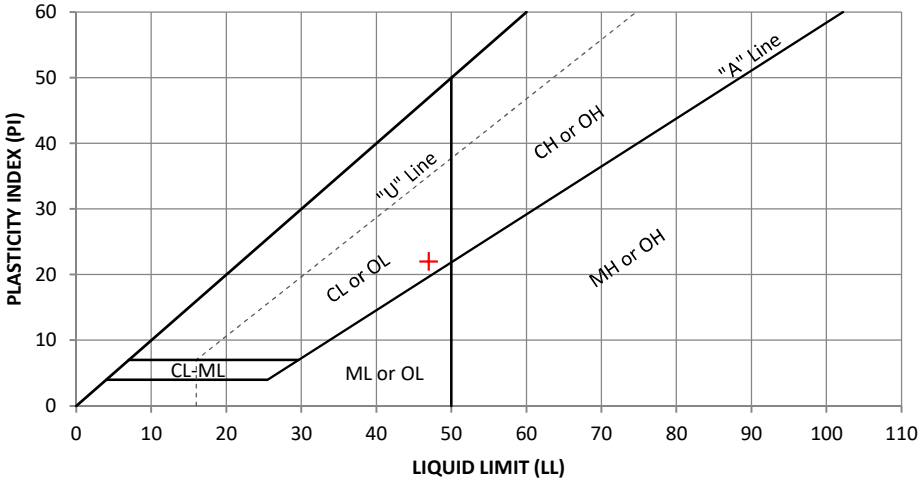
LIQUID LIMIT

Can No.	14	1	36
Wt. wet soil+can (g)	48.53	49.81	48.11
Wt. dry soil+can (g)	42.97	43.63	42.29
Wt. can (g)	30.42	30.55	30.44
Wt. mosture (g)	5.56	6.18	5.82
Wt. dry soil (g)	12.55	13.08	11.85
Water Content %	44.30	47.25	49.11
No. of Blows	33	24	17

PLASTIC LIMIT

66	79
17.06	17.69
15.71	16.29
10.78	10.68
1.35	1.40
4.93	5.61
27.38	24.96





Liquid Limit (LL) 47 Plastic Limit (PL) 25 Plasticity Index (PI) 22

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

ATTERBERG LIMITS - ASTM D4318

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/5/16

Excavation: HA-7
Depth: 0.5-1.5'
Description: Fill: Clay (CL)
By: HM

LIQUID LIMIT

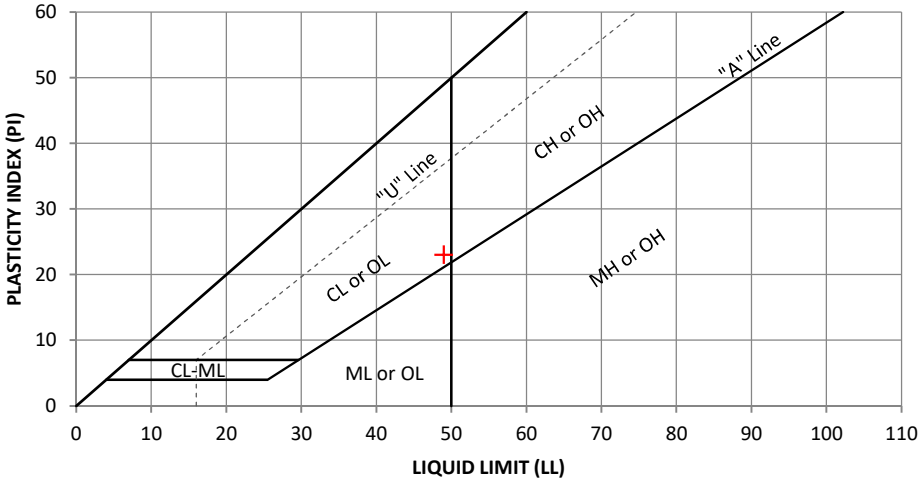
Can No.	24	18	41
Wt. wet soil+can (g)	43.44	46.42	42.28
Wt. dry soil+can (g)	39.34	41.22	38.24
Wt. can (g)	30.38	30.42	30.38
Wt. mosture (g)	4.10	5.20	4.04
Wt. dry soil (g)	8.96	10.80	7.86
Water Content %	45.76	48.15	51.40
No. of Blows	38	28	19

PLASTIC LIMIT

15	31
18.23	17.64
16.61	16.16
10.41	10.62
1.62	1.48
6.20	5.54
26.13	26.71

LIQUID LIMIT





Liquid Limit (LL) 49 Plastic Limit (PL) 26 Plasticity Index (PI) 23

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

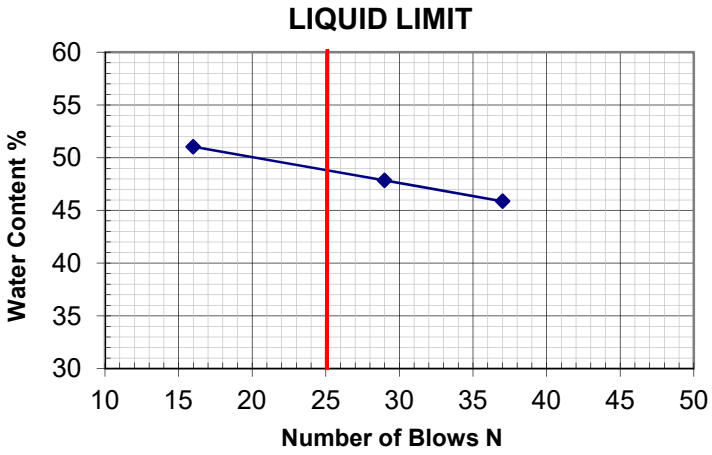
ATTERBERG LIMITS - ASTM D4318

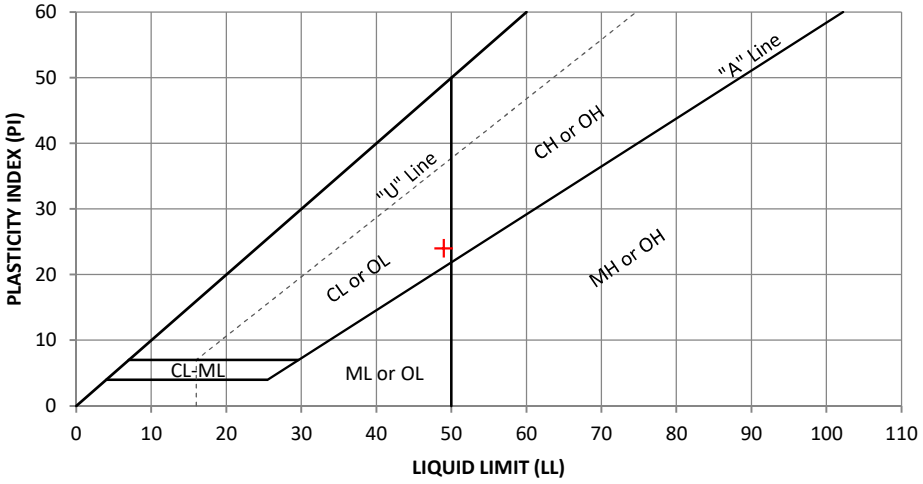
Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No: 1605-04
Date: 11/5/16

Excavation: HA-8
Depth: 0-4'
Description: Colluvium: Clay (CL)
By: HM

LIQUID LIMIT			
Can No.	13	17	25
Wt. wet soil+can (g)	48.64	49.43	49.23
Wt. dry soil+can (g)	42.91	43.32	42.88
Wt. can (g)	30.42	30.55	30.44
Wt. mosture (g)	5.73	6.11	6.35
Wt. dry soil (g)	12.49	12.77	12.44
Water Content %	45.88	47.85	51.05
No. of Blows	37	29	16

PLASTIC LIMIT	
73	84
17.80	18.78
16.41	17.19
10.85	10.77
1.39	1.59
5.56	6.42
25.00	24.77





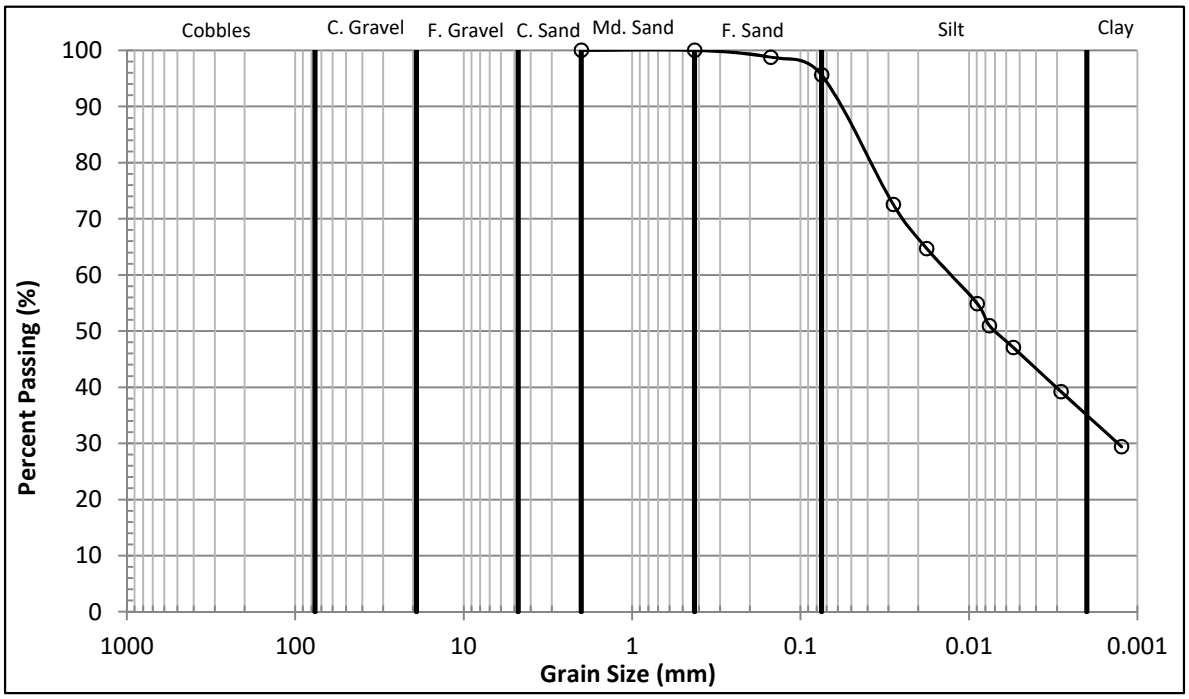
Liquid Limit (LL) 49 Plastic Limit (PL) 25 Plasticity Index (PI) 24

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/3/16

Excavation: HA-1
Depth: 0.5-3.0 '
By: HM



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	100.00
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	98.77
# 200	0.075	95.65
Hydro	0.0281	72.55
Hydro	0.0178	64.71
Hydro	0.0089	54.90
Hydro	0.0076	50.98
Hydro	0.0054	47.06
Hydro	0.0028	39.22
Hydro	0.0012	29.41

Summary	
% Gravel =	0.0
% Sand =	4.4
% Silt =	61.3
% Clay =	34.3
Sum =	100.0

LL= 47
PL= 28
PI= 19

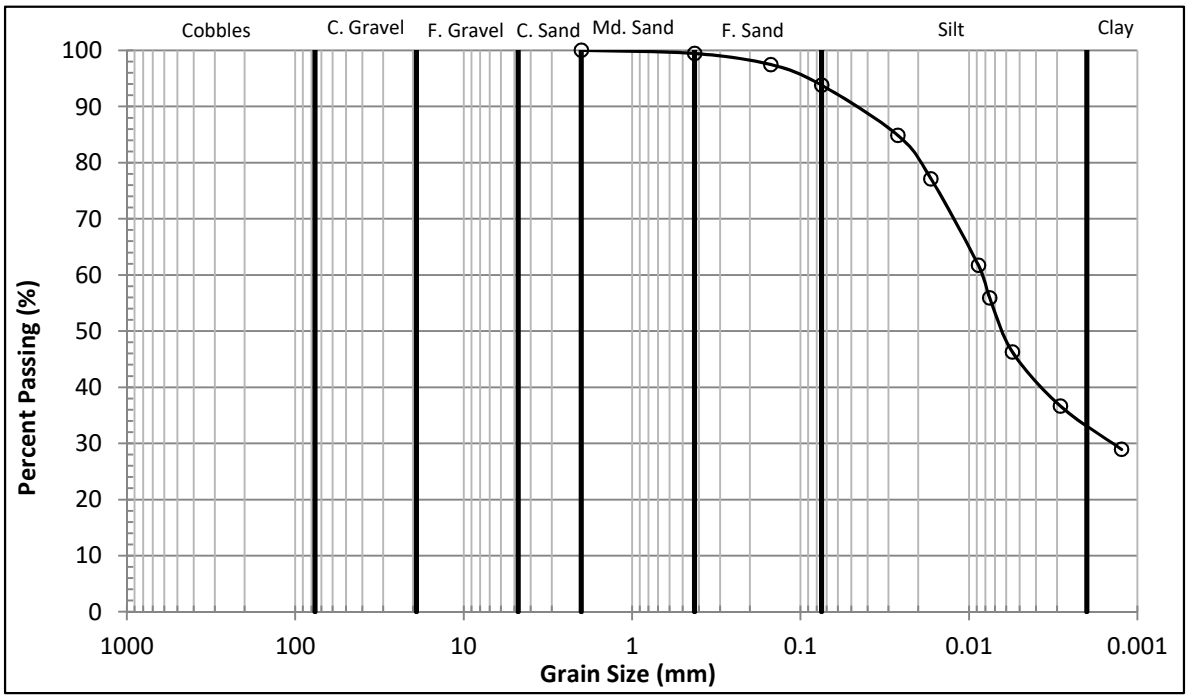
Description: Artificial Fill, Silt
Soil Type: ML

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/3/16

Excavation: HA-2+HA-3
Depth: 1-7'+0.5-3.5'
By: HM



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	99.45
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	97.47
# 200	0.075	93.80
Hydro	0.0264	84.86
Hydro	0.0168	77.14
Hydro	0.0088	61.72
Hydro	0.0075	55.93
Hydro	0.0055	46.29
Hydro	0.0029	36.64
Hydro	0.0012	28.93

Summary	
% Gravel =	0.0
% Sand =	6.2
% Silt =	60.9
% Clay =	32.9
Sum =	100.0

LL= 43
PL= 27
PI= 16

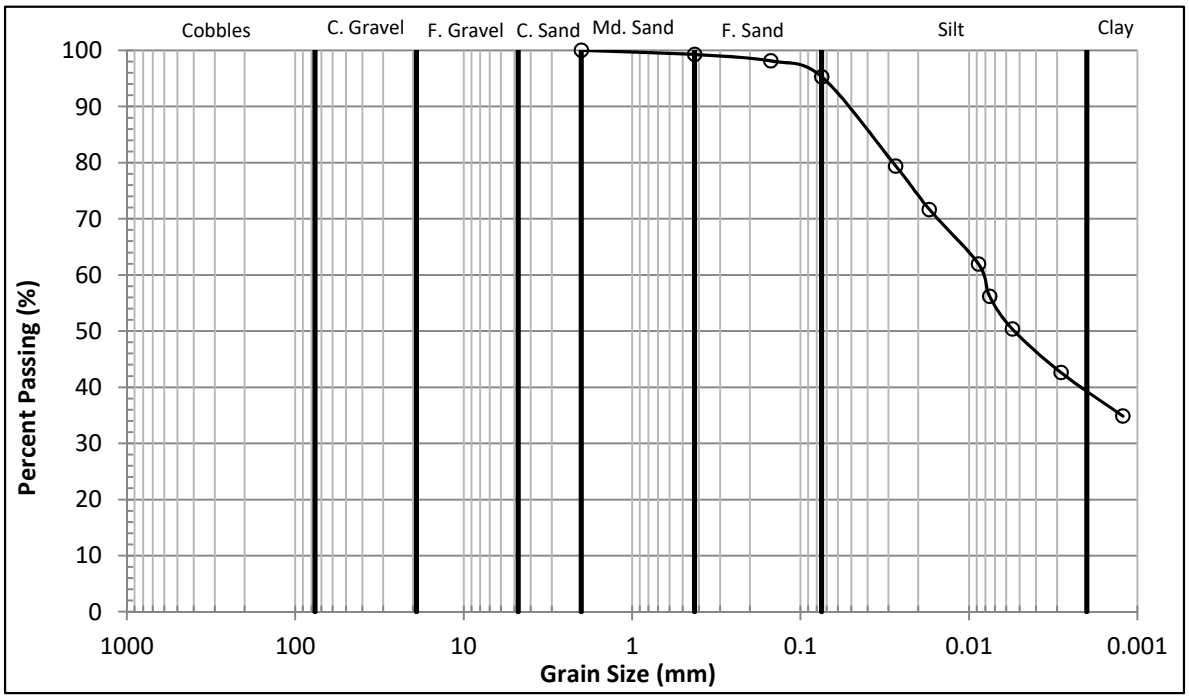
Description: Fernando Formation: Siltstone
Soil Type: ML

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/3/16

Excavation: HA-4+HA-9
Depth: 1-4' + 0-1'
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	99.26
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	98.12
# 200	0.075	95.32
Hydro	0.0272	79.41
Hydro	0.0172	71.67
Hydro	0.0088	61.98
Hydro	0.0075	56.17
Hydro	0.0055	50.36
Hydro	0.0028	42.61
Hydro	0.0012	34.86

71.67

Summary	
% Gravel =	0.0
% Sand =	4.7
% Silt =	56.6
% Clay =	38.7
Sum =	100.0

LL= 48
PL= 28
PI= 20

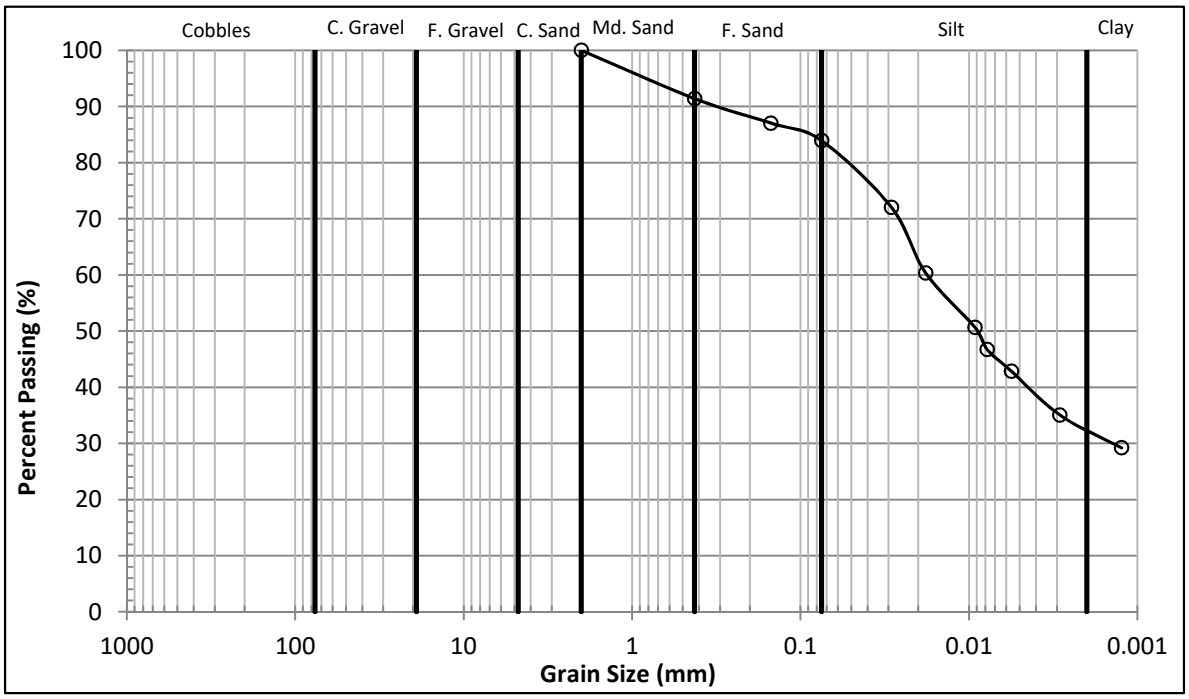
Description: Artificial Fill, Silt
Soil Type: ML

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/4/16

Excavation: HA-5+HA-10
Depth: 0.5-2'+0-1.5'
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	91.40
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	87.05
# 200	0.075	83.93
Hydro	0.0289	72.06
Hydro	0.0181	60.38
Hydro	0.0092	50.64
Hydro	0.0078	46.74
Hydro	0.0056	42.85
Hydro	0.0029	35.06
Hydro	0.0012	29.21

Summary	
% Gravel =	0.0
% Sand =	16.1
% Silt =	51.8
% Clay =	32.1
Sum =	100.0

LL= 45
PL= 26
PI= 19

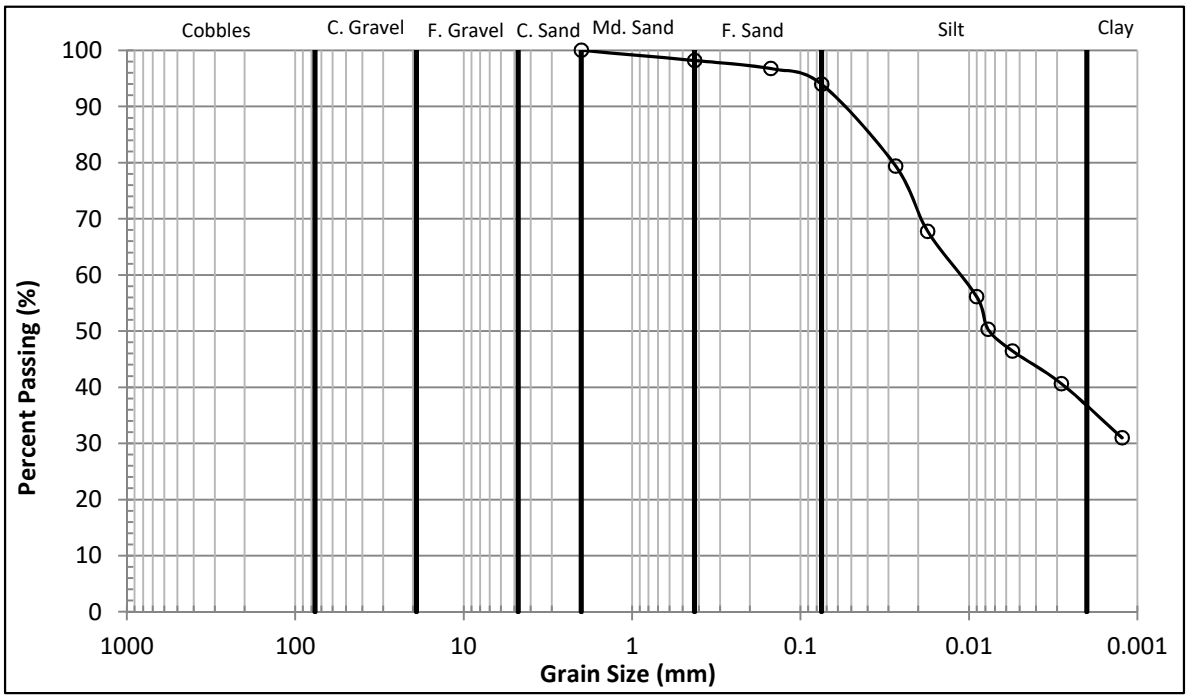
Description: Slope Debris/Artificial Fill, Sandy Organic Clay
Soil Type: OL

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Gavey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/4/16

Excavation: HA-6
Depth: 2-4 '
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	98.20
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	96.75
# 200	0.075	93.98
Hydro	0.0272	79.38
Hydro	0.0176	67.77
Hydro	0.0090	56.15
Hydro	0.0077	50.34
Hydro	0.0055	46.47
Hydro	0.0028	40.66
Hydro	0.0012	30.98

Summary	
% Gravel =	0.0
% Sand =	6.0
% Silt =	58.2
% Clay =	35.8
Sum =	100.0

LL= 47
PL= 25
PI= 22

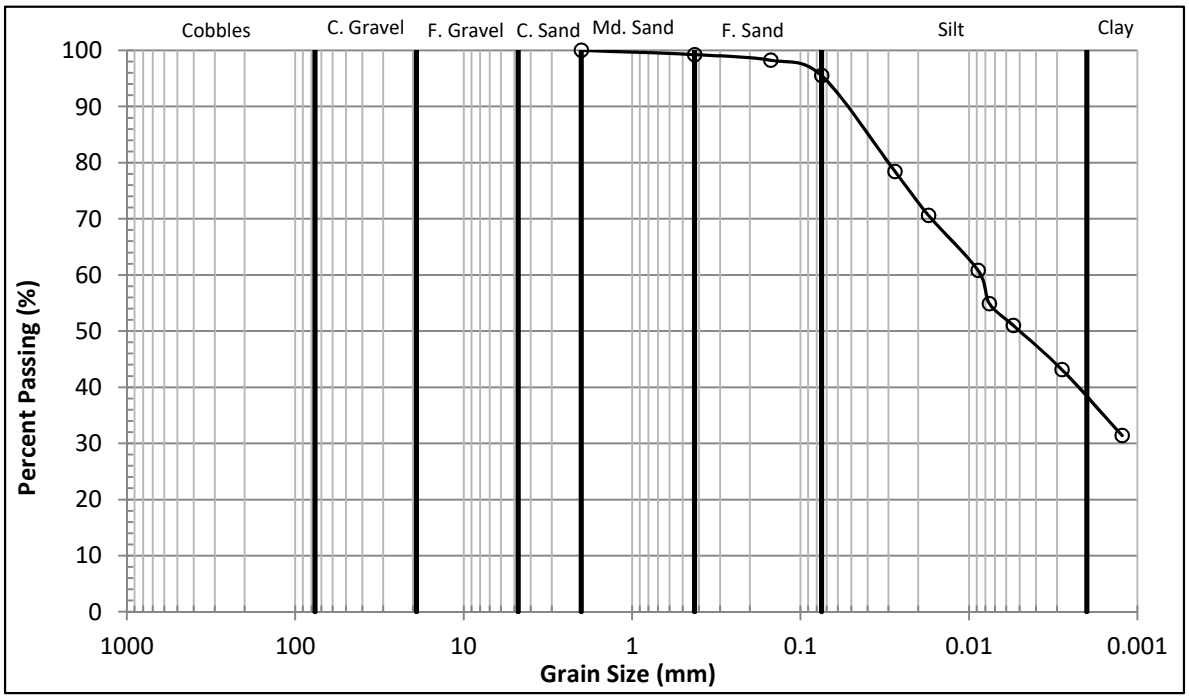
Description: Artificial Fill, Silt
Soil Type: ML

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/4/16

Excavation: HA-7
Depth: 0.5-1.5'
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	99.25
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	98.24
# 200	0.075	95.50
Hydro	0.0275	78.45
Hydro	0.0174	70.60
Hydro	0.0088	60.80
Hydro	0.0076	54.91
Hydro	0.0054	50.99
Hydro	0.0028	43.15
Hydro	0.0012	31.38

Summary	
% Gravel =	0.0
% Sand =	4.5
% Silt =	58.2
% Clay =	37.3
Sum =	100.0

LL= 49
PL= 26
PI= 23

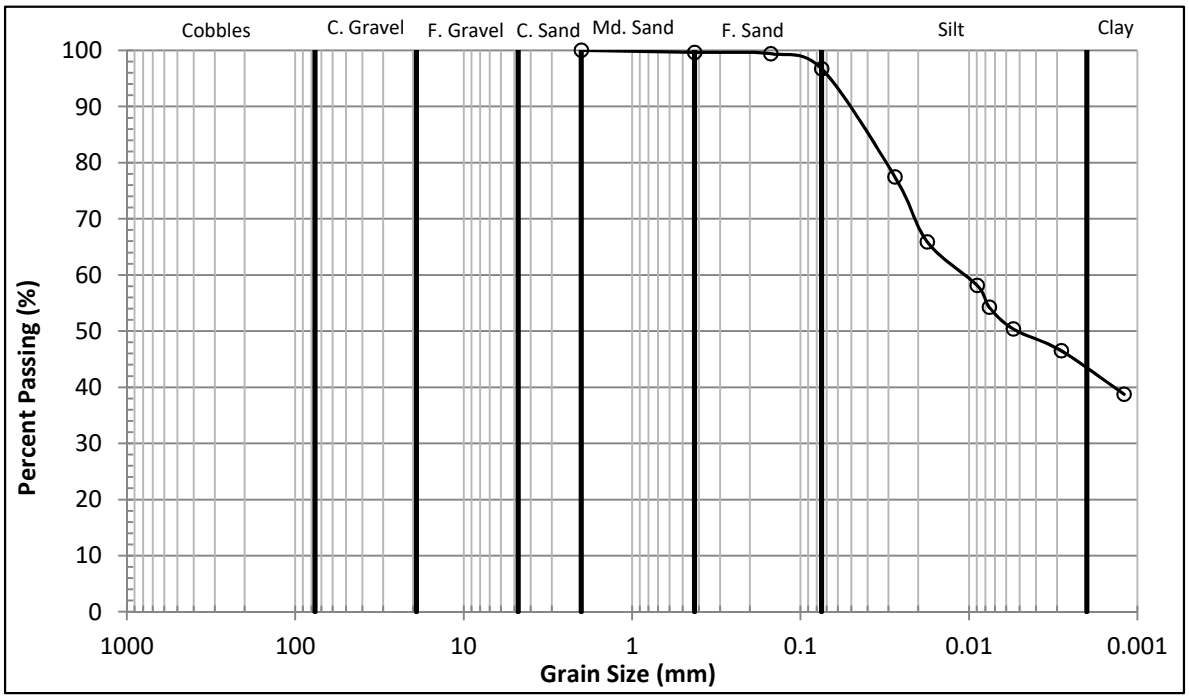
Description: Artificial Fill, Clay
Soil Type: CL

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

PARTICLE SIZE ANALYSIS - ASTM D422

Project Name: 1600 West Garvey Ave.
Location: Monterey Park
Project No.: 1605-04
Date: 11/4/16

Excavation: HA-8
Depth: 0-4 '
By: H M



Grain Size (in/#)	Grain Size (mm)	Amount Passing (%)
3 "	75.00	
2 1/2 "	63.00	
2 "	50.00	
1 1/2 "	37.50	
1 "	25.00	
3/4 "	19.05	
1/2 "	12.70	
3/8 "	9.53	
# 4	4.75	
# 10	2.00	100.00
# 20	0.85	#N/A
# 30	0.60	#N/A
# 40	0.425	99.65
# 50	0.30	#N/A
# 60	0.212	#N/A
# 100	0.15	99.41
# 200	0.075	96.73
Hydro	0.0275	77.48
Hydro	0.0176	65.86
Hydro	0.0089	58.11
Hydro	0.0076	54.24
Hydro	0.0054	50.36
Hydro	0.0028	46.49
Hydro	0.0012	38.74

Summary	
% Gravel =	0.0
% Sand =	3.3
% Silt =	54.1
% Clay =	42.6
Sum =	100.0

LL= 49
PL= 25
PI= 24

Description: Colluvium: Clay
Soil Type: CL

ANAHEIM TEST LAB, INC

3008 ORANGE AVENUE
SANTA ANA, CALIFORNIA 92707
PHONE (714) 549-7267

Advanced Geotechnical Solutions, Inc
485 Corporate Ave., Suite B
Escondido, CA 92029

DATE: 11/07/16

P.O. NO.: Chain of Custody

LAB NO.: B-9902 1-5

SPECIFICATION: CA-417

MATERIAL: Soil

J.N.: 1605-04
Project: 1600 West Garvey Ave.
Monterey Park, CA
Date sampled: 10/27/16

ANALYTICAL REPORT

SOLUBLE SULFATES
per CA. 417
ppm

1) HA-1 @ 0.5'-3'	53
2) HA-5 @ 0.5-2' & HA-10 @ 0-1.5'	91
3) HA-6 @ 2-4'	218
4) HA-7 @ 0.5-1.5'	45
5) HA-8 @ 0-4'	181

RESPECTFULLY SUBMITTED

WES BRIDGER CHEMIST

ANAHEIM TEST LAB, INC

3008 ORANGE AVENUE
SANTA ANA, CALIFORNIA 92707
PHONE (714) 549-7267

Advanced Geotechnical Solutions, Inc
485 Corporate Ave., Suite B
Escondido, CA 92029

DATE: 11/07/16

P.O. NO.: Chain of Custody

LAB NO.: B-9901 1-2

SPECIFICATION: CA-417/422/643

MATERIAL: Soil

J.N.: 1605-04
Project: 1600 West Garvey Ave.
Monterey Park, CA
Date sampled: 10/27/16

ANALYTICAL REPORT

SUMMARY OF DATA

	pH	SOLUBLE SULFATES per CA. 417 ppm	SOLUBLE CHLORIDES per CA. 422 ppm	MIN. RESISTIVITY per CA. 643 ohm-cm
1) HA-2 @ 1'-7' & HA-3 @ 0.5'-3.5'	6.9	169	45	1,900
2) HA-4 @ 1'-4' & HA-9 @ 0-1'	7.0	136	37	1,800

RESPECTFULLY SUBMITTED

WES BRIDGER CHEMIST

APPENDIX E

BORING AND TEST PIT LOGS AND

LABORATORY TEST RESULTS FROM OTHERS

EGL

BORING LOG: B-1

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/25/2013
DATE LOGGED:	07/25/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	508.0'
LOGGED BY:	BS/RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0							Artificial Fill (Af, 0.0' - 1.0'): 5-inch thick asphalt pavement; with 7-inches misc gravel base, crushed concrete, brick and asphalt fragments
2		R	6		108.0	14.9	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 1.0' - 40.0'): @ 1.0' clean cut at contact. Very fine sandy clayey siltstone, pale yellowish brown, moist, dense and hard
4							
6		R	5		113.0	7.2	@ 4.5' concretion on boring northside, parallel to bedding
8							@ 7.0' N40E 65S-b siltstone concretion, 6"-long and thick, dense and hard
10		R	5		92.2	11.8	@ 10.0' concretional siltstone interbeds
12							
14							
16							
18							
20		R	4		105.3	21.2	@ 19.5' N60W 79S-b sand lenses in poorly bedded sandy siltstone; manganese oxides coated on joints
22							
24							
26							@ 26.5' sand streaks in siltstone
28							
30		R	7		100.7	23.8	@ 29.2' N40W 70S-b sand lens, laminae to 1/4"-thick, fine-grained, white; in light brown and grey siltstone strata; with calcareous nodules
32							
34		R	10		109.8	19.9	@ 33.0' color changes to dark grey with white sand lenses, laminae thickness @ 34.3' contact of oxygenated and anaerobic condition. @ 35.0' N57W 55S-b boring northside
36							@ 39.4' Bottom of boring
38							
40							Total Depth 39.4 feet; No Caving; No Groundwater; Boring backfilled and tamped Hammer Driving Height = 12 inches Kelly Bar Weights = 5,952 lbs. for 0.0' - 30.0'; 3,921 lbs for 30.0' - 57.0';

EGL

BORING LOG: B-2

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California
PROJECT NO: 13-114-013EG

DRILLING SERVICE: Tri-Valley
DATE DRILLED: 07/25/2013
DATE LOGGED: 07/26/2013
EXCAVATION METHOD: 24"-Bucket Auger
SAMPLE METHOD: Split-Tube
ELEVATION: 543.5'
LOGGED BY: BS/RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0							Previous Compacted Fill (CAf, 0.0' - 3.0'):
2	B	R	5		76.3	17.0	clayey silt and silty clay mixture, mottled light brown and brown, moist, porous, moderately firm; with crushed siltstone bedrock and reworked natural soils; 35° inclined slope contact with Qs
4							Alluvial Terrace Deposits (Qt, 3.0' - 14.0'): silty clay and clayey silt mixture, dark
		R	1		102.5	18.0	brown, moist, very stiff and highly expansive; with vertical irregular joints
6							@ 3.5' orchard grains; burnt sandstone fragments; in well consolidated mass
8							
10		R	2		103.3	20.6	@ 10.0' color lightens to mootled yellowish brown with caliche stringers; gradation color changes deepened to dark reddish brown, 6-inches thick zone
12							
14							Bedrock, Upper Pliocene Fernando Formation (Tfsl, 14.0' - 75.0'):
		R	3		103.8	22.1	@ 14.0' weathered bedrock zone, gradational changes to light yellowish brown
16							@ 15.0' highly to severely fragmentated and nearly incoherent bedrock, yellowish brown to mottled yellowish brown, very moist and friable.
18							@ 19.0' clay-filled expansion crack, nearly vertical, continuous from above, mottled dark brown and grey, moist
20		R	1		100.0	25.1	@ 21.0' N55E 72S-b clay, thin, 1/2-inch thick, brown and moist; continuous, mid boring
22							
24							
		R	1		100.2	23.7	@ 26.2' N47E 22N-b clay layer; in highly fragmentated bedrock
26							@ 26.5' bedrock, structurally in very poor quality
28							@ 28.5' rust brown sandstone interfingering in light brown siltstone
30		R	3		102.9	22.8	
							@ 31.5' sandstone lenses, pale brown, interlayered in clayey siltstone, pale grey;
32		R	4		94.3	27.1	internally sheared
34							@ 31.8' N56E 30S, N68E 22S shears in sandstone bed, internally sheared; not continuous
36							@ 36.0' silty claystone, light brown, interlayered in clayey siltstone, pale grey; sand lenses mimic bedding; highly fragmented.
38							@ 36.5' N20W 38S-b sandstone concretion, 1/8-inch thick, not continuous
							@ 37.5' N20W 58S-b concretional vein, not continuous; mottled brown with dark
40		R	5		95.3	28.6	brown granular grains along undulatory interbeds

EGL

BORING LOG: B-2 (continue)

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/25/2013
DATE LOGGED:	07/26/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	543.5'
LOGGED BY:	BS/RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
40							Bedrock, Upper Pliocene Fernando Formation (Tfsl, 14.0' - 75.0'):
42							
44							@ 44' N8W 44S-j healed fracture with sand-streaked siltstone
46							@ 44' N34E 36N-j N85W 78S-b sand streaked siltstone; yellowish brown sandstone bed, not continuous
48							@ 48.5' highly fractured-brecciated siltstone bedrock with undulatory joints; with water films along joint surfaces, N33W 42N-b
50		R	5		99.2	24.9	@ 49.0' N65W 60S-b clay gouge, light olive brown with water film.
52							
54							@ 53' wetter condition persists; N75W 70S-b sand-streaked siltstone on boring west side
56							
58							@ 57.0' sand-streaked siltstone with chicken wire-meshed structure
60		R	5		103.1	22.2	@ 60.0' sand-streaked siltstone, grey, with platy structure
62							
64							
66							@ 66.0' N60W 40N-b healed sandstone bed in fractured siltstone strata; N70W 53S-j with water film along joint surface
68							
70							
75							
							Total Depth 75.0 feet. No Caving. No Groundwater Boring backfilled and tamped Hammer Driving Height = 12 inches Kelly Bar Weights = 5,952 lbs for 0 0' - 30 0', 3,921 lbs for 30 0' - 57 0', 2 53 ' lbs for 57 0' - 86.0', 1,407 lbs for 86.0' - 116.0', 600 lbs for 116.0' to 150.0'

EGL

BORING LOG: B-3

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California
PROJECT NO: 13-114-013EG

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/26/2013
DATE LOGGED:	07/26/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	568.0'
LOGGED BY:	BS/RY

S Standard Penetration Test B Bulk Sample R Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0							Previous Compacted Fill (CAf, 0.0' - 21.0'):
2		R	1		95.5	16.9	@ 0.0' clayey silt and silty clay mixture, mottled brown and light brown, moist, moderately stiff to moderately firm; with krotovina
4							@ 4.0' comprised mostly of crushed siltstone bedrock with minor natural soils
		R	1		100.3	17.2	
6							
8							
10		R	2		101.0	18.8	
12							@ 11.0' clayey silt-silty clay, mottled brown, moist, moderately firm; with clumps of natural soils, 4"-thick
14							
		R	1		102.0	19.8	
16							@ 16.0' comprised mostly of crushed siltstone bedrock, brown with high clay natural soils; increase in moisture content
18							@ 18.5' comprised mixture of crushed bedrock, reworked natural soils and terrace deposits, mottled brown and dark brown, moist, moderately firm
20		R	1		100.1	21.6	
22							Alluvial Terrace Deposits (Qt, 21.0' - 28.0'): @ 21.0' horizontal contact; firm and dense
24							@ 25.9' silty clay, mottled dark brown and brown, moist, porous, expansive, firm;
		R	1		103.9	20.5	with highly fragmented silstone bedrock chips
26							@ 27.5' high clay terrace deposits with dark brown clay clumps and siltstone chips,
		R	2		101.6	22.7	dark brown and light brown, moist and stiff
28							Bedrock, Upper Pliocene Fernando Formation (Tfsl, 28.0' - 90.0'):
30		R	3		99.4	24.5	@ 31.5' N55E 48N-b siltstone and sandstone strata, pale grey, moist, brecciated; not continuous, 3"-long and 1/2"-thick
32							
34							
		R	5		103.2	22.5	@ 35.0' N30W 71S-b clay veinlet, grey; with calcareous grains and sand lenses;
36							with iron oxide staining along undulatory jointed surfaces, N50E 64S-j
38							
40		R	5		104.2	21.2	

EGL

BORING LOG: B-3 (continue)

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/26/2013
DATE LOGGED:	07/26/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	568.0'
LOGGED BY:	BS/RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Earth Material Descriptions
40		R	5		104.2	21.2	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 28.0' - 90.0'): @ 41.0' sandy silty siltstone, pale grey, undulatory bedding
42							
44							
46							
48							@ 48.0' calcareous grains in soft and very moist clay gouge; grains mimic bedding @ 49.0' N55E 71S-b in clay; N60W 58S-j stained rust brown, continuous, with
50		R	5		105.8	20.6	calcareous grains in clayey matrix; with orage brown sand lenses
52							@ 52.0' clay gouge continuous with calcareous grains
54							@ 54.0' stiff clay gouge nearly vertical splay in bi-directions in mid-boring; bedrock highly fractured and south dipping.
56							@ 55.0' N55W 90-b clay gouge, 3"-wide with discontinuous rootlets @ 57.0' flakey bedrock
58							@ 58.0' brecciated and fractured siltstone with overturned beds; gradual color changes from light brown to grey
60		R	7		105.1	21.0	@ 59.0' soft sediment deformation; uneven load structures
62							@ 60.0' grey siltstone @ 62.0' petroliferous odor present; concoidal fractures
64							@ 62.5' weathering rim contact within anaerobic-oxidized zone; gradtional @ 64.0' N5E 60S-b sand lenses, pale grey in grey siltstone bed
66							@ 65.2' N55E 66N-b siltstone, light brown and grey @ 65.9' N42W 64N-b laminae sand streaks in grey siltstone beds
68							
70		R	12		107.8	18.7	
72							
74							
76							
78							@ 76.0' N45W 64S-b oxidized and leached sand lens in grey siltstone. 1-1/2"-thick
80		R	15		110.4	18.3	@ 80.5' N65W 64S-b oxidized and leached sand lens in grey siltstone, 2"-thick

EGL

BORING LOG: B-3 (continue)

DRILLING SERVICE: Tri-Valley
DATE DRILLED: 07/26/2013
DATE LOGGED: 07/26/2013
EXCAVATION METHOD: 24"-Bucket Auger
SAMPLE METHOD: Split-Tube
ELEVATION: 568.0'
LOGGED BY: BS/RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California
PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Earth Material Descriptions
80		R	15		110.4	18.3	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 28.0' - 90.0'):
82							@ 82.0' to 85.0' multiple steep fractured zone with minor seepage; N22E 88S-b N68E 76S-j
84							
86							
88							@ 87.0' N15E 69N-b sand lens, pale grey, in dark grey siltstone; steeply dipped fracture with seepage; with thin shelled bivalved paralle to bedding; sand lenses irregular-bottom shaped
90		R	26		112.0	17.3	
92							Total Depth 90.0 feet
94							No Caving; Minor flaking at 57 feet Hammer Driving Height = 12 inches
96							Seepages at 82 to 85 feet and 87 feet
98							Boring backfilled and tamped
100							Kelly Bar Weights = 5,952 lbs. for 0.0' - 30.0'; 3,921 lbs for 30.0' - 57.0'; 2,531 lbs for 57.0' - 86.0'; 1,407 lbs for 86.0' - 116.0'; 600 lbs for 116.0' to 150.0'
102							
104							
106							
108							
110							
112							
114							
116							
118							
120							

EGL

BORING LOG: B-4

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/29/2013
DATE LOGGED:	07/29/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	595.5'
LOGGED BY:	BS/RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Earth Material Descriptions
0							Previous Compacted Fill (CAf, 0.0' - 9.5'):
2		R	1		99.3	11.5	@ 0.0' clayey silt with gravels, comprised entirely of crushed siltstone and sandstone mixture with silty clayey matrix, light yellowish brown, mottled, slightly moist, very firm
4		R	1		100.2	12.7	
6							
8							@ 9.5' bench cut along bedrock contact; over brecciated siltstone bedrock
10		R	4		101.1	15.3	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 9.5' - 150.0'): @ 9.5' severly brecciated and fractured siltstone and sandstone zone, highly incoherent
12							@ 13.0' N28W 63S-b calcareous nodule, highly stained; with vertical veinlets
14		R	3		104.6	14.8	@ 15.0' vertical joints propagate upward into incoherent brecciated bedrock
16							@ 17.0' N68W 10N-b thin sandstone bed, stained rust brown
18							@ 17.5' N40E 75S-b siltstone, pale brown; with dark browish grey clay film along joints; with some offset
20		R	3		104.7	15.6	@ 20.0' decrease in moisture content in siltstone beds
22							
24		R	1		103.5	16.0	@ 24.5' N42E 46N shear plane but no clay gouge; highly irregular plane steeply inclined plunge to 27'
26							@ 27.0' highly fragmented and brecciated zone with soft and coherent blocks
28							
30		R	4		105.0	19.7	
32							
34		R	5		105.1	18.6	@ 34.0' becomes more coherent with increasing moisture content; with hard calcareous nodules
36							@ 35.0' rust brown stains along highly fragmented joints
38							@ 36.5' N81W 43S-b sandstone lens, with tapered ends over rippled surface @ 38.0' to 39.0' decrease in moisture
40		R	6		108.6	14.8	

EGL

BORING LOG: B-4 (continue)

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/29/2013
DATE LOGGED:	07/29/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	595.5'
LOGGED BY:	BS/RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R. Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
40		R	6		114.6	13.2	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 9.5' - 150.0'):
42							
44							@ 44.0' calcareous concretional bed with inclined dips along sandstone bed to 50'
46							
48							@ 47.0' dolomitic calcareous bed with thick sandstone bed and dewater structures @ 49.8' N80E 45S-b sandstone, 1"-thick
50		R	8		114.6	13.2	@ 50.0' staining parallel to bedding
52							
54							@ 54.2' N86E 63S-b concretional bed interbedded with silty sandstone bed with joints perpendicular joints; highly stained with manganese oxides. @ 54.7' calcareous bed, highly cemented
56							@ 54.9' overturned bedrock to vertically dipped
58							
60		R	7		108.6	18.5	@ 60.0' color changes from olive brown to grey
62							
64							
66							
68							@ 68.0' N76W 64S-b sandstone, 1/4"- to 1/2"-thick, dense, hard and highly cemented, rust brown; interbedded siltstone, 2" to 3"-thick
70		R	10		104.5	21.6	
72							@ 72.0' nodular sandstone in pale grey siltstone bed
74							@ 75.0' N65W 67S-b top of sandstone; undulatory thickness, pinched out in clay gouge, with bentonitic like clay gouge, white, 2"-thick, highly undulatory, cross bedded in sandstone
76							@ 76.0' seepage with visible flow in highly saturated sandstone bed; in boring southeasterly side
78							
80							

EGL

BORING LOG: B-4 (continue)

DRILLING SERVICE: Tri-Valley
DATE DRILLED: 07/29/2013
DATE LOGGED: 07/29/2013
EXCAVATION METHOD: 24"-Bucket Auger
SAMPLE METHOD: Split-Tube
ELEVATION: 595.5'
LOGGED BY: BS/RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California
PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
80							Bedrock, Upper Pliocene Fernando Formation (Tfsl, 9.5' - 150.0'):
							@ 81.4' N25W 58S-j siltstone, rust brown
82							@ 82.0' curved joints, no seepage along fractured and sheared joints
84							
86							
							@ 87.0' seepage along fractured and sheared joints
88							
90		R	10		105.4	20.8	
92							
							@ 93.8' N86E 66S-b clayey siltstone and sandstone interbed, 1/4"-thick; with undulatory shear
94							@ 94.0' triple conjugated joints, N55E 76N-j, N60W 77S-j and N88W 86N-j
96							@ 96.0' heavy seepage, 1.5 gallons per minute, along bedding planes in sandstone bed, 8"-thick, N80W 60S-b top of sandstone bed; N62W 77S-b bottom of sandstone bed
98							@ 97.0' very moist with visible water film on bucket
100							**Logging ends at 99.0 feet due to heavy seepage and caving**
102							@ 100.0' bedrock becomes harder, unable to sample at 100.0'
104							
106							
		R	10		103.2	20.2	@ 107.0' grey siltstone and light grey sandstone interbeds
108							
110							
112							
114							
116							
118							
120		R	11		107.1	21.0	@ 120.0' dark olive grey siltstone

EGL

BORING LOG: B-4 (continue)

DRILLING SERVICE:	Tri-Valley
DATE DRILLED:	07/29/2013
DATE LOGGED:	07/29/2013
EXCAVATION METHOD:	24"-Bucket Auger
SAMPLE METHOD:	Split-Tube
ELEVATION:	595.5'
LOGGED BY:	BS/RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Earth Material Descriptions
120		R	11		107.1	21.0	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 9.5' - 150.0'):
122							
124							
126							
128							
130							@ 130.0' grey siltstone and light grey sandstone interbeds, petroliferous, dense and tough
132							
134							
136							
138							
140		R	14		109.6	18.9	@ 140.0' grey siltstone and light grey sandstone interbeds
142							
144							
146							
148							
150							@ 150.0' hard, dense and tough bedrock, unable to sample
152							Total Depth 150.0 feet
154							Logged to 100 feet Seepages at 76, 86, and 96 feet Hammer Driving Height = 12 inches
156							Heavy Caving at 99 feet; Groundwater at 99 feet Boring backfilled and tamped
158							Kelly Bar Weights = 5,952 lbs. for 0.0' - 30.0'; 3,921 lbs for 30.0' - 57.0'; 2,531 lbs for 57.0' - 86.0'; 1,407 lbs for 86.0' - 116.0'; 600 lbs for 116.0' to 150.0'
160							

EGL

TEST PIT LOG: TP-1

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

EXCAVATED SERVICE:	Mike Howell
DATE EXCAVATED:	12/18/2013
DATE LOGGED:	12/19/2013
EXCAVATION METHOD:	Hand Tools
SAMPLE METHOD:	Split-Tube
ELEVATION:	512.0'
LOGGED BY:	RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 4		R	240		100.8	18.9	Previous Compacted Fill (CAf, 0.0' - 4.5'): clayey silt and silty clay, mottled light olive brown, moist, moderately firm; with alternating soils cemented layers at 12-inches vertical spacing. @ 1.6' soil cemented layer, 4"-thick, inclined dip upslope; with half-filled PVC pipe, 1-1/2"-O.D. downslope; with wire-mesh below soils cement layer @ 2.6' soil cemented layer, 4"-thick, inclined dip upslope @ 3.6' N20W 19S-b soil cemented layer, 4"-thick, inclined dip upslope; not continuous @ 4.0' soils cement nearly absent and/or poorly mixed @ 4.5' 6"-high bench cut down cut southerly, nearly horizontal
5 - 12		R	240		104.4	20.8	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 4.5' - 120.0'): @ 4.5' closed spaced jointed siltstone, moderately hard, blocky, bedding poor @ 6.0' N85W 65S-j, N16E 27N-j, N81W 57S-j, N25W 35N-j joints, blocky siltstone; 1"- to 2"-spacing @ 8.0' N15W 60N-j, N6E 90-j, N60W 40N-j joints, in blocky siltstone @ 9.0' N42W 78S-j, N45W 47N-j, N72W 86N-j, N80W 68SN-j, N30W 60N-j conjugated joints, blocky siltstone @ 9.0' N85W 65S-b thin sand laminae in light brown fine sandy siltstone @ 10.0' N85W 65S-j, N16E 27N-j, N81W 57S-j, N25W 35N-j joints, blocky siltstone; N70W 78S-b thin sand laminae, continuous; jointing spacing increased with increasing depths and less concentrated; 5"- to 8"- spacing
13 - 19							Heavy winter storm occurred on 12-19-2013 end logging at 2PM Total Depth 12.0 feet; No Caving; No Groundwater Test pit later backfilled and tamped Hammer Driving Weight = 20 lbs. Hammer Driving Height = 24 inches

EGL

TEST PIT LOG: TP-2

DRILLING SERVICE:	Mike Howell
DATE DRILLED:	12/18/2013
DATE LOGGED:	12/20/2013
EXCAVATION METHOD:	Hand Tools
SAMPLE METHOD:	Split-Tube
ELEVATION:	543.0'
LOGGED BY:	RY

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

S: Standard Penetration Test B: Bulk Sample R Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0							Previous Compacted Fill (CAf, 0.0' - 27.0'): clayey silt-silty clay mixture with crushed siltstone bedrock fragments, mottled light olive brown, moist, firm; with poorly mixed soils cements; black plastic sheet overlain compacted fill
2							@ 0.5' neat concrete, 3"-thick, not continuous, in upslope side
4		R	220		92.8	18.0	@ 2.3' neat concrete wedge, 8"-upslope, tapered downslope, not continuous
6							@ 3.6' neat concrete layer, 4"-thick, inclined upslope
8		R	260		102.5	20.6	
10							
12		R	196		98.0	21.6	
14							
16		R	190		102.9	22.6	
18							@ 17.0' N18E 88N-j tension crack, hairline to 1/8"-wide; upslope portion
20		R	118		95.7	19.0	@ 19.0' N40W 18N-b, N40W 3S-b bottom of soils cement zone, sharp contact @20.0' increasing in moisture
22							
24		R	108		96.3	25.9	
26							@ 25.0' top of clean-washed gravel, pea-sized to 3/4"-sized, 6"-thick; horizontal @ 25.5' N74E 80N-j tension crack, 1/8"-wide, propagate through soils cement
28		R	120		95.9	27.3	zone and upward surficially
30							Heavy winter storm occurred on 12-19-2013 end excavating at 2PM
32							Total Depth 27.0 feet; No Caving; No Groundwater Test pit backfilled and tamped
34							Hammer Driving Weight = 20 lbs. Hammer Driving Height = 24 inches
36							
38							
40							

EGL

TEST PIT LOG: TP-3

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

DRILLING SERVICE:	Mike Howell
DATE DRILLED:	12/18/2013
DATE LOGGED:	12/20/2013
EXCAVATION METHOD:	Hand Tools
SAMPLE METHOD:	Split-Tube
ELEVATION:	535.0'
LOGGED BY:	RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	Earth Material Descriptions
0							Slopewash (Qsw, 0.0' - 1.5'): clayey silt-silty clay, mottled brown, very moist, moderately firm; commonly with thin rootlets; overlain black plastic sheeting
2							Previous Compacted Fill (CAf, 1.5' - 22.5'): clayey silt-silty clay mixture with crushed siltstone rock fragments, light olive brown and brown, moist, firm
4							@ 1.9' gravelly clayey silt-silty clay mixture, mottled olive brown and dark brown, moist, moderately firm
6							@ 2.7' N25W 20N-b bottom of mottled light brown and dark brown CAf contact
8		R	60		94.1	21.3	@ 6.5' soil cement fragment, 16"-long, 10"-thick and 8"-wide; isolated in compacted fill
10							@ 8.0' compacted fill becomes denser
12							@ 9.0' bottom of soils cement zone; sparsely mixed to nearly absent; N88E 84N and N40W 90 hairline tension cracks, undulatory, with flatened root hairs
14							
16		R	60		96.7	22.8	
18							
20		R	82		100.8	22.7	@ 21.0' gravel layer, 2"- to 2-1/2"-sized subrounded, with some fines, moderately loose; unable to advance
22							@ 21.5' concrete lateral beam, trends N50W, dips 4° upslope and 10"-thick; exposed at downslope portion, 8"-into test pit; encased in gravel layer
24							
26							Excavated to refusal at 22.5 feet
28							Total Depth 22.5 feet; No Caving; No Groundwater
30							Test pit backfilled and tamped
32							Hammer Driving Weight = 20 lbs.
34							Hammer Driving Height = 24 inches
36							Heavy winter storm occurred on 12-19-2013 end excavation at 2PM, covered for rain and for safety, logged 12-20-2013
38							
40							

EGL

TEST PIT LOG: TP-4

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

DRILLING SERVICE:	Mike Howell
DATE DRILLED:	12/20/2013
DATE LOGGED:	12/21/2013
EXCAVATION METHOD:	Hand Tools
SAMPLE METHOD:	Split-Tube
ELEVATION:	594.8'
LOGGED BY:	RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0							Alluvial Terrace Deposits (Qt, 0.0' - 3.8'):
1							@ 0.0' silty clay, mottled light brown, moist, expansive and moderately firm; with caliche stringers, with prismatic jointing; darkens gradationally with depth
2		R	120		98.7	15.2	@ 2.0' clay, dark brown, moist, expansive and moderately firm; with caliche stringers, with well defined prismatic jointing
3							
4		R	100		89.8	17.8	@ 3.8' top of severely weathered bedrock zone, undulatory contact
		R	180		95.6	13.8	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 3.8' - 6.3'):
5							@ 3.8' severely weathered bedrock, highly fragmented, incoherent, mottled dark greyish brown and olive brown, moist, moderately firm; 2.5' thick
6		R	156		94.4	17.3	
7							Bedrock, Upper Pliocene Fernando Formation (Tfsl, 6.3' - 9.5'):
8		R	156		95.1	15.8	@ 6.3' highly weathered bedrock, fragmented, more coherent, olive brown, moist, moderately hard; with limonite mineralized layer, N81W 38N-b
9							@ 8.5' N38W 87N-j tension crack
10							Total Depth 9.5 feet; No Caving; No Groundwater
11							Test pit backfilled and tamped
12							Hammer Driving Weight = 20 lbs.
13							Hammer Driving Height = 24 inches
14							
15							
16							
17							
18							
19							

EGL

TEST PIT LOG: TP-5

PROJECT LOCATION: Garvey Avenue - Abajo Drive, Monterey Park, California
PROJECT NO: 13-114-013EG

DRILLING SERVICE:	Mike Howell
DATE DRILLED:	12/20/2013
DATE LOGGED:	12/21/2013
EXCAVATION METHOD:	Hand Tools
SAMPLE METHOD:	Split-Tube
ELEVATION:	~622.0'
LOGGED BY:	RY

S Standard Penetration Test B Bulk Sample R Ring Sample

Depth (ft)	Sample: Bulk	Sample: Undisturbed	Sample: Blows Counts; ft	USCS Symbol	Dry Unit Wt. (pcf)	Moisture (%)	*Earth Material Descriptions*
0 - 4		R	116		98.4	24.1	Bedrock, Upper Pliocene Fernando Formation (Tfsl, 0.0' - 4.0'): siltstone dominated strata; very fine sandy clayey siltstone, light olive brown, moist, friable and soft; severely fragmentated and jointed, 1/4"- to maximum 3/4"-spacing; steep southeasterly inclined contact with sandstone strata; bedding poor @ 4.0' Bottom of siltstone bed; northwesterly portion @ 6.5' Bottom of siltstone bed, southeasterly portion
4 - 8		R	156		102.6	5.7	Sandstone dominated strata (Tfsl, 4.0' - 7.5'):sandstone, pale brown, weakly cemented, slightly moist, moderately dense; with small cobbles and gravel lags; well defined undulatory beds; with siltstone rip-up-clast @ 4.5' N88W 77S-b sandstone, northwesterly facing @ 5.0' N74E 53S-b sandstone interbed, westerly facing @ 5.0' N77W 67S-b sandstone interbed, northwesterly facing @ 7.0' N75E 55S-b limonite sand above siltstone strata; northeasterly facing
8 - 10		R	156		100.4	22.7	Siltstone Dominated Beds (Tfsl, 7.5' - 10.0'): light olive brown, more coherent, moist and moderately hard; with joint spacing 3"- to 4"-wide @ 7.5' N85W 68S-b siltstone, northwesterly facing @ 9.0' N86W 61S-b siltstone interbed with thin sandstone, northwesterly facing @ 9.0' N18W 55N-j, N5E 19N-j, N12W 89S-j joints in siltstone interbed, northwesterly facing
10 - 19							Total Depth 9.5 feet; No Caving; No Groundwater Test pit backfilled and tamped Hammer Driving Weight = 20 lbs. Hammer Driving Height = 24 inches

EGL

OUTCROP LOG

PROJECT LOCATION: Lot 17, Garvey Avenue - Abajo Drive, Monterey Park, California

PROJECT NO: 13-114-013EG

EXCAVATION SERVICE:	Tri-County Backhoe
DATE EXCAVATED:	07/25/2013
DATE LOGGED:	07/26/2013
EXCAVATION METHOD:	--------
SAMPLE METHOD:	--------
ELEVATION:	575.0'
LOGGED BY:	RY

S: Standard Penetration Test B: Bulk Sample R: Ring Sample

Location	*Earth Material Descriptions*
Cut pad on southerly lot located adjacent to Existing asphalt-paved interior street	Bedrock, Upper Pliocene Fernando Formation (Tfsl): highly weathered zone, highly jointed, olive yellowish brown, moist, moderately hard; interbedded with dark yellowish brown sand laminae Bedding Attitudes: @ 0.0' N72W 43S-b sand laminae @ 0.0' N61W 27N-j, N60W 20N-j, N35W 37N-j joints

APPENDIX B

LABORATORY TESTING

During the subsurface exploration, EGL's personnel collected relatively undisturbed ring samples and bulk samples. Following tests were performed on selected soil samples:

Moisture-Density

Moisture content and dry unit weight were determined for each relatively undisturbed soil sample obtained in the test borings in accordance with ASTM D2937 standard. Results of these tests are shown on the boring and test pit logs in Appendix A.

Shear Tests

Shear tests were performed in a direct shear machine of strain-control type in accordance with ASTM D3080 standard. The rate of deformation was 0.0125 inch per minute. Selected samples were sheared under varying confining loads in order to determine the Coulomb shear strength parameters: internal friction angle and cohesion. During the direct shear test, shear stress increases with the horizontal displacement up to a peak value then decreases until a near constant value is obtained. Shear strength at peak was utilized for the peak strength and that at the constant value was used as ultimate strength. Residual value was determined based on six (6) reshears on the same samples, which yield similar value. Shear test results are presented in the attached plates.

Atterberg Limits

The Atterberg Limits was determined for the typical site material encountered in the borings. The laboratory standard used was ASTM D-4318 and the test results are as follows:

Sample Location	Liquid Limit	Plastic Limit	Plastic Index	USCS Group Symbols
Alluvial Terrace Deposits (Bulk, 0.0')	45	19	26	CL
TP-2 @ 12, 20, 24 and 27' (CAf_1)	53	21	32	CH

Expansion Index

Expansion Index, ASTM D-4829-95, was determined for the previously placed compacted fills and onsite soils materials encountered in the borings and test pits and results are presented.

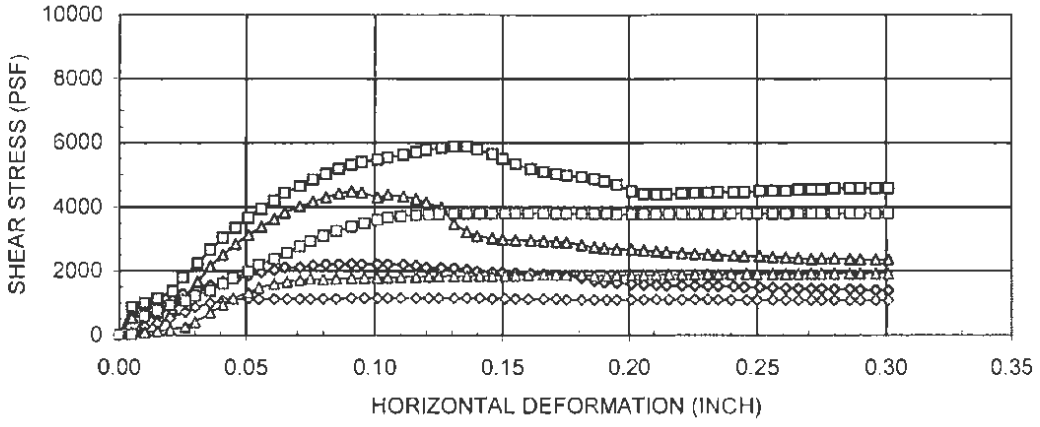
Sample Location and Depth	Expansion Index (EI)	UBC Classification
Alluvial Terrace Deposits (Bulk, 0.0')	128	High

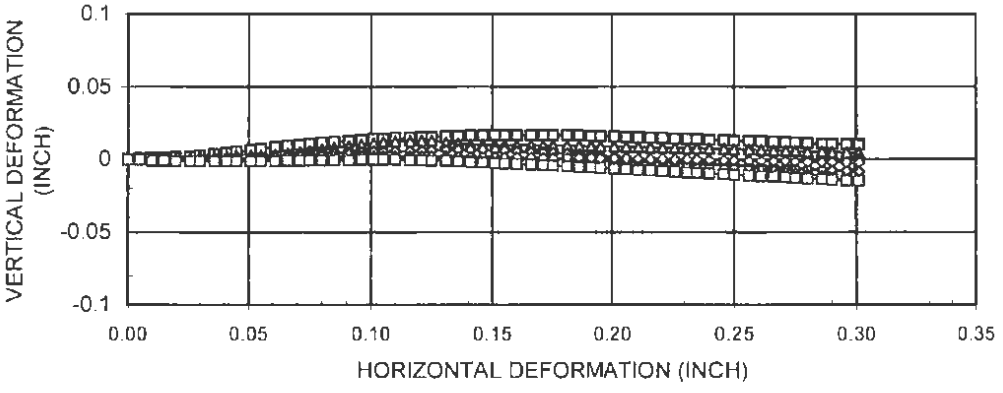
Sample Location and Depth	Expansion Index (EI)	UBC Classification
TP-2 @ 12, 20, 24 and 27' (CAf_1)	79	Medium

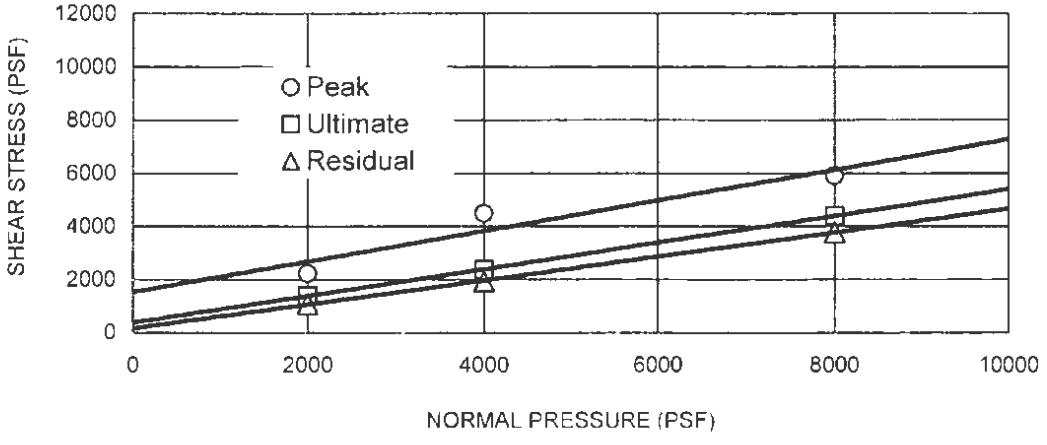
Corrosion Potential

Chemical laboratory tests were conducted on the existing onsite near surface materials sampled during EGL's field investigation to aid in evaluation of soil corrosion potential and the attack on concrete by sulfate soils. These tests are performed in accordance with California Test Methods 417, 422 and 643 and testing results are presented below:

Sample Location	pH	Chloride (ppm)	Sulfate (% by weight)	Min. Resistivity (ohm-cm)
Bulk, B-2 @ 0.0' – 5.0'	7.96	146	0.01	1,000
Bulk, B-4 @ 10.0'	7.97	123	0.01	1,100







Exploration	B-1	Init. Moisture	23.8%		
Depth, feet	30.0	Init. Dry Density	100.7 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	1518	378	156
Soil Type	Tfl	Friction Angle	30	27	25

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	2000	23.8%	29.9%	101.0	100.0
△	4000	23.8%	28.9%	99.9	100.0
□	8000	23.8%	28.7%	98.8	100.0

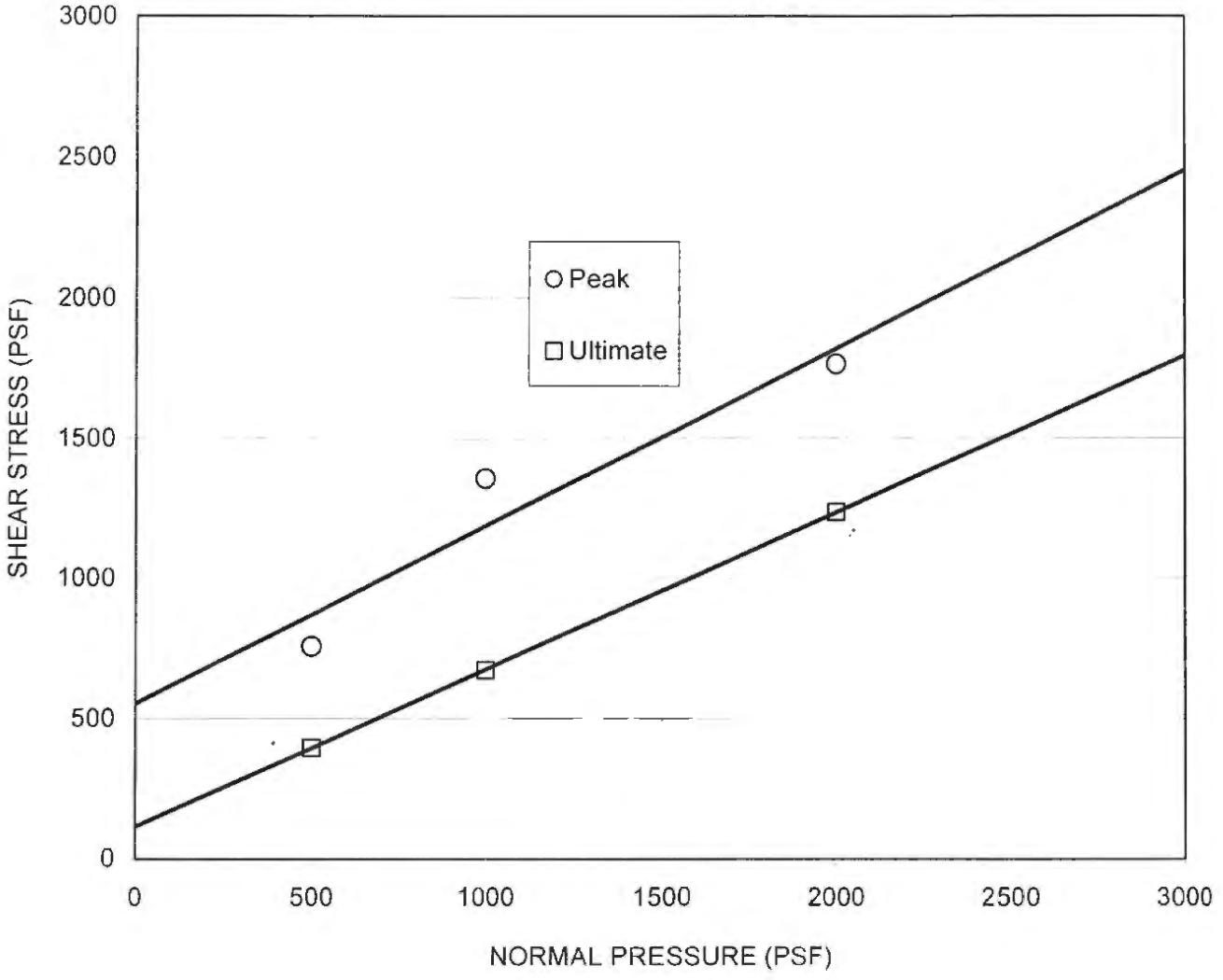
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DIRECT SHEAR

07/14 (ASTM D3080) Figure

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Boring No.:	Sample No.	Depth (ft)	Sample Type	Soil Type	Symbol	Cohesion (PSF)	Friction Angle
B-2	3	10.0	Ring	CL	○	552	32
					□	114	29

Normal Stress (psf)	Initial Moisture (%)	Final Moisture (%)	γ_d (pcf)	S (%)
500	20.6	25.1	105.7	100.0
1000	20.6	24.9	105.5	100.0
2000	20.6	24.3	102.3	100.0

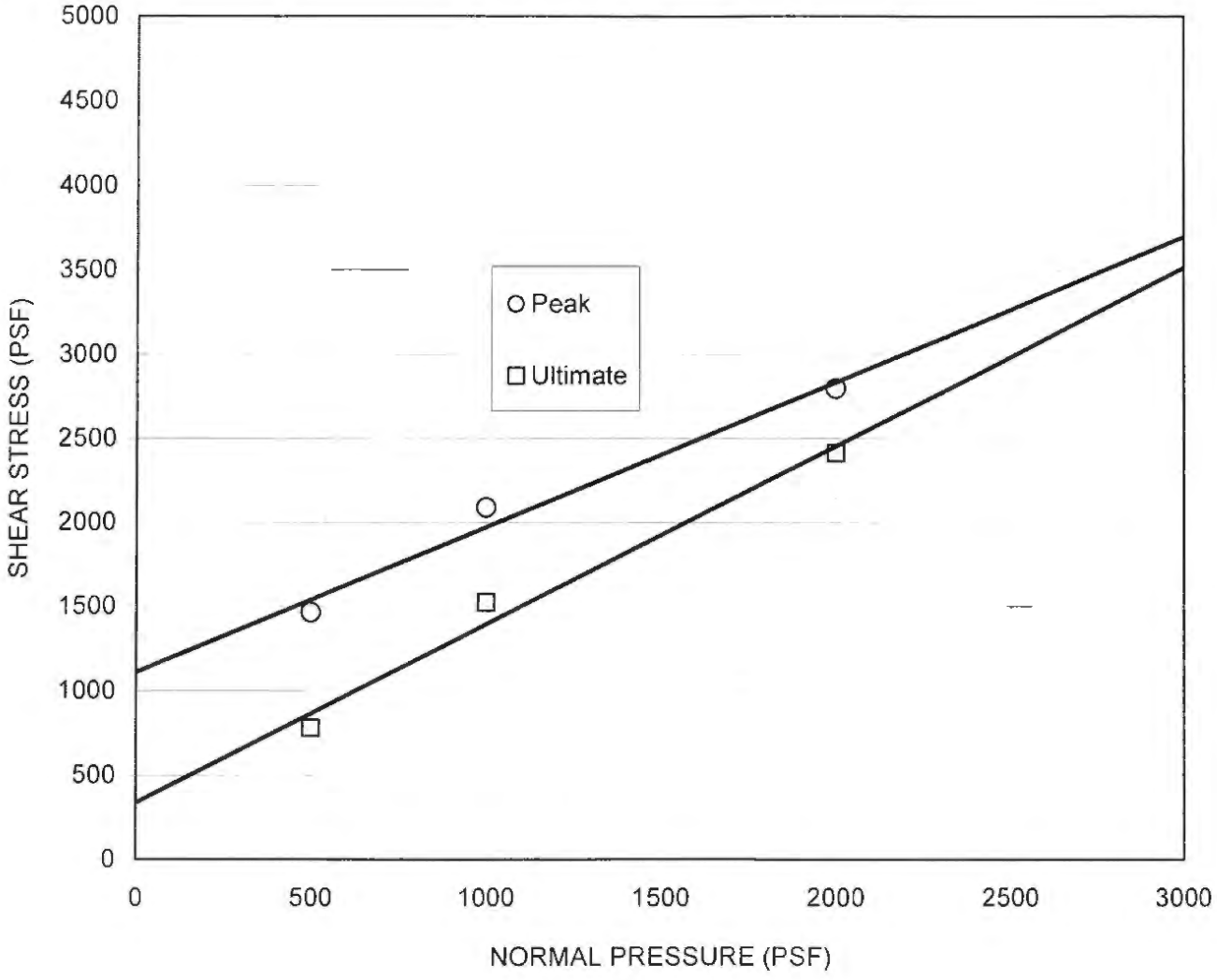
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DIRECT SHEAR

07/14 (ASTM D3080) Figure

11819 Goldring Road, Unit A, Arcadia, California 91006; Phone (626) 263-3588; Fax (626) 263-3599



Boring No.:	Sample No.	Depth (ft)	Sample Type	Soil Type	Symbol	Cohesion (PSF)	Friction Angle
B-3	4	15.0	Ring	CL	○	1110	41
					□	336	47

Normal Stress (psf)	Initial Moisture (%)	Final Moisture (%)	γ_d (pcf)	S (%)
500	19.8	26.2	104.1	100.0
1000	19.8	25.5	103.2	100.0
2000	19.8	25.8	101.2	100.0

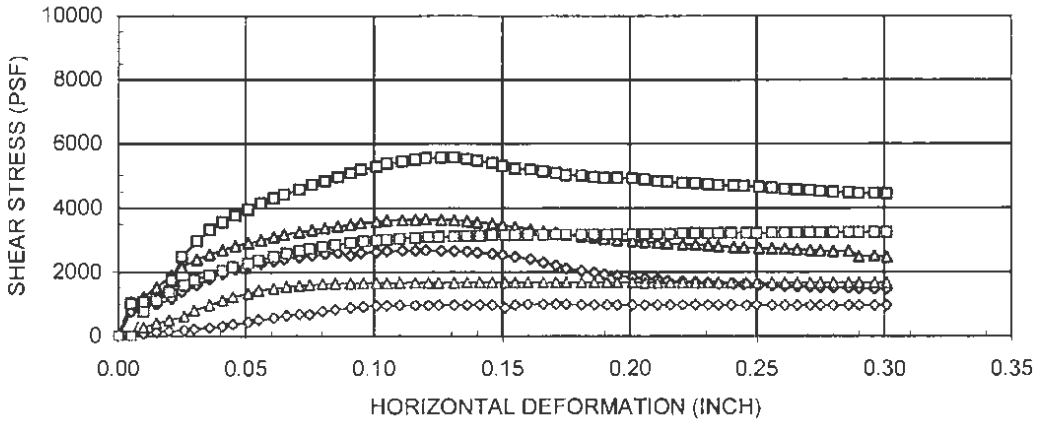
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

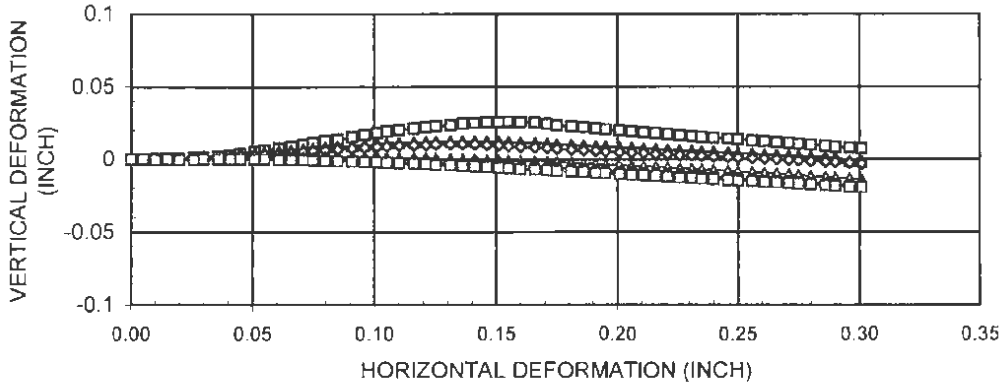
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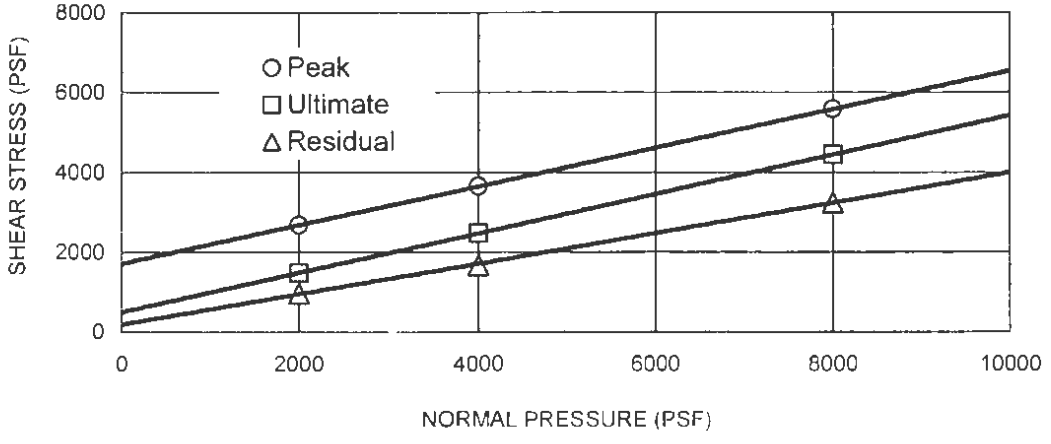
DIRECT SHEAR

05/14 (ASTM D3080) Figure

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Exploration	B-3	Init. Moisture	22.5%		
Depth, feet	35.0	Init Dry Density	103.2 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	1710	492	174
Soil Type	Tfl	Friction Angle	26	26	21

Symbol	σ	Init Moisture	Final Moisture	γ_d	S (%)
◇	2000	22.5%	28.7%	104.1	100.0
△	4000	22.5%	27.2%	102.6	100.0
□	8000	22.5%	27.3%	101.2	100.0

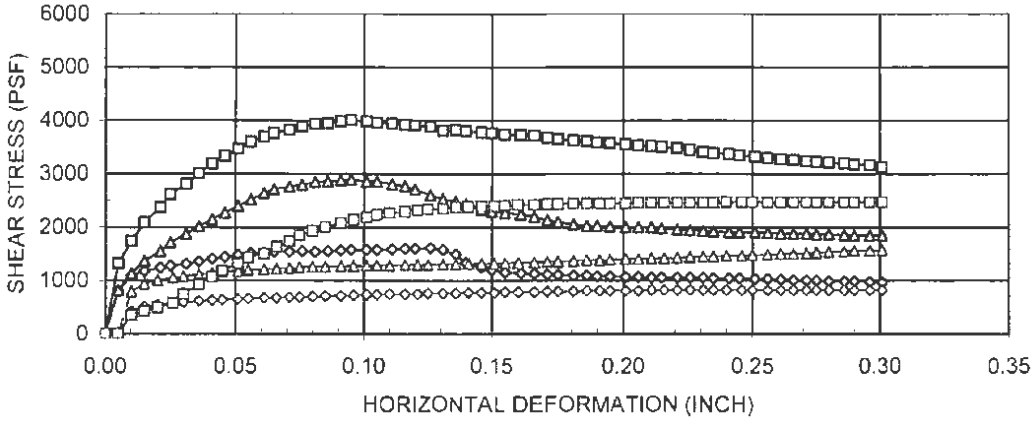
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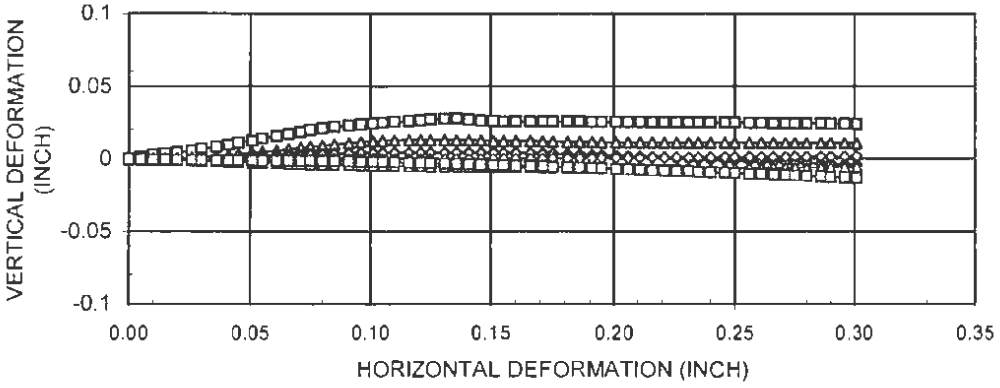
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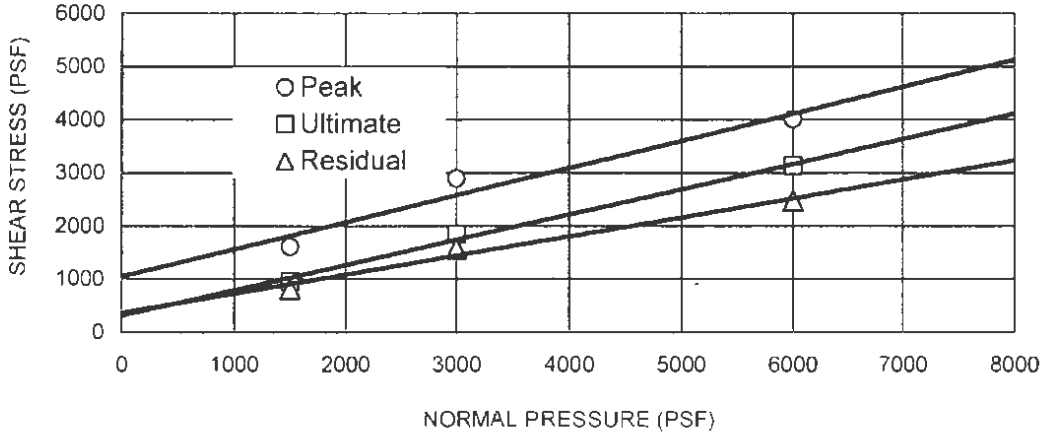
DIRECT SHEAR

07/14 (ASTM D3080) Figure

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Exploration	B-4	Init. Moisture	16.0%		
Depth, feet	25.0	Init. Dry Density	103.5 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	1050	318	366
Soil Type	Tfl	Friction Angle	27	25	20

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	1500	16.0%	28.3%	107.8	100.0
△	3000	16.0%	27.0%	104.9	100.0
□	6000	16.0%	26.2%	102.2	100.0

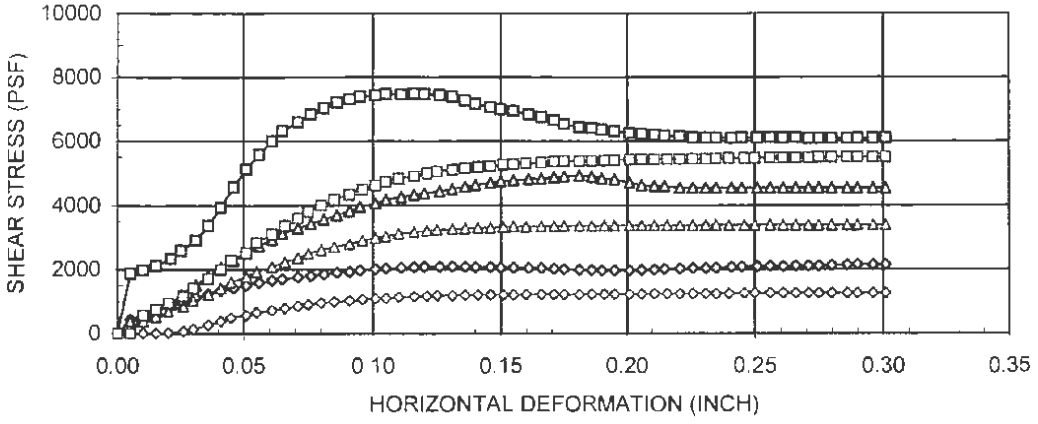
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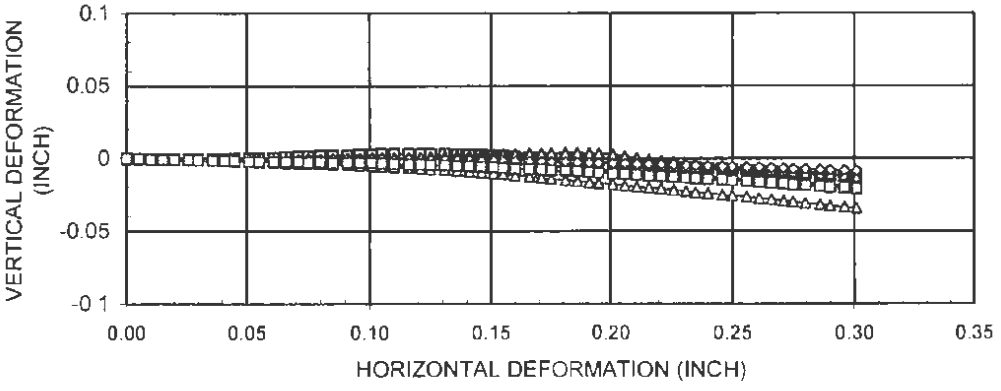
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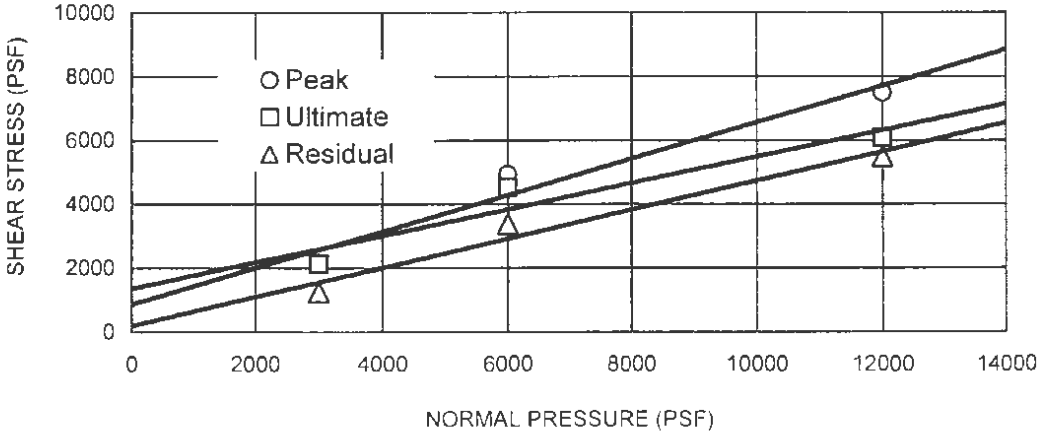
DIRECT SHEAR

07/14 (ASTM D3080) Figure

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Exploration	B-4	Init. Moisture	21.6%		
Depth, feet	75.0	Init. Dry Density	104.5 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	870	1362	192
Soil Type	Tfl	Friction Angle	30	22	25

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	3000	21.6%	23.8%	103.1	100.0
△	6000	21.6%	23.7%	101.3	100.0
□	12000	21.6%	21.4%	98.5	81.3

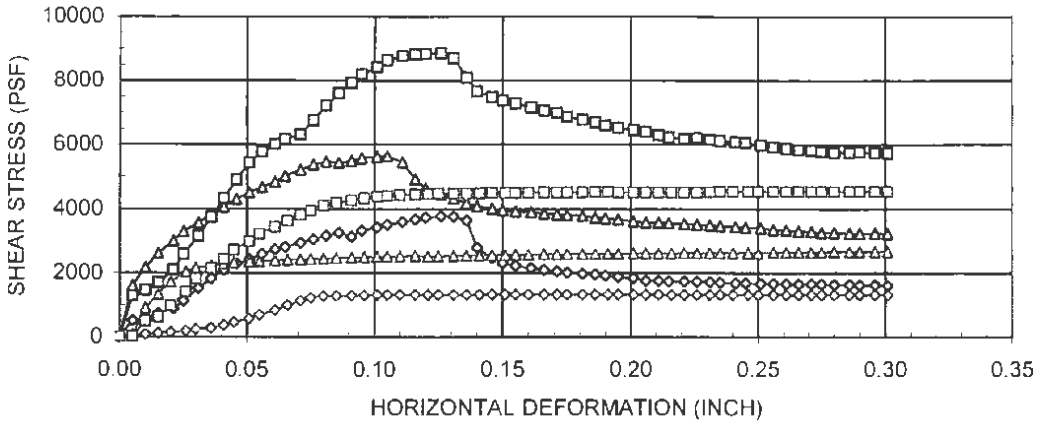
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

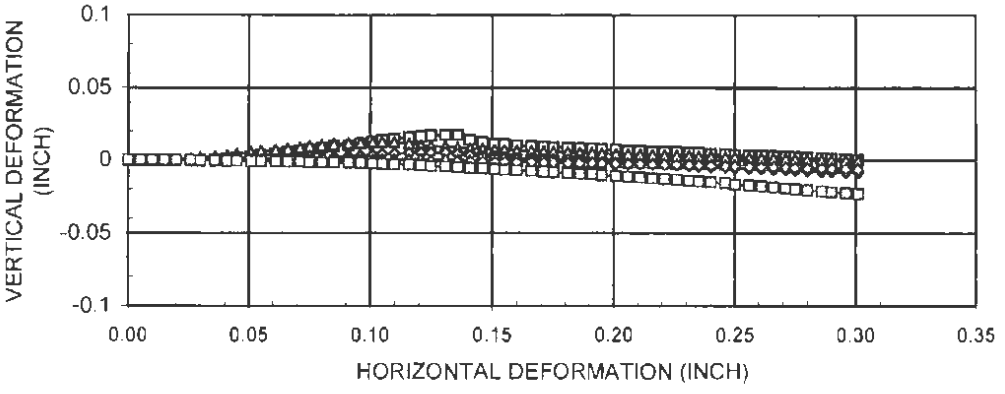
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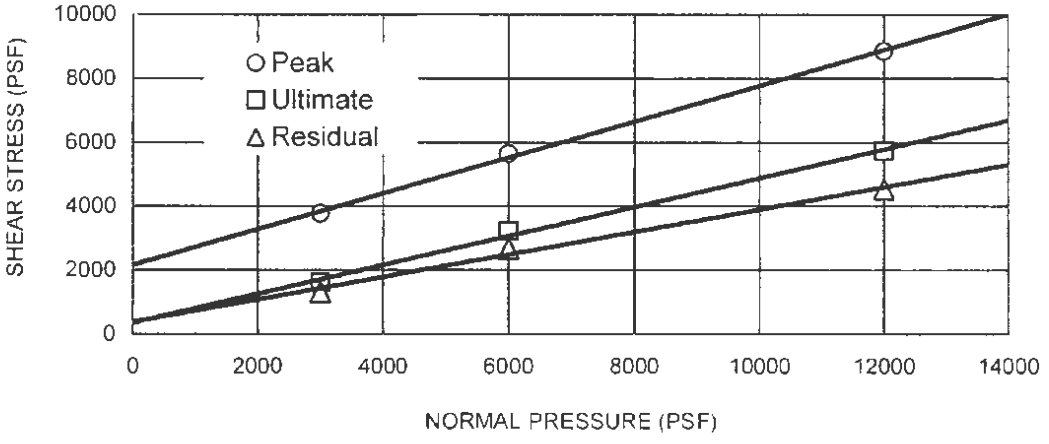
DIRECT SHEAR

07/14 (ASTM D3080) Figure

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Exploration	B-4	Init. Moisture	20.8%		
Depth, feet	90.0	Init Dry Density	105 4 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	2160.5	354	372
Soil Type	Tfl	Friction Angle	29	24	20

Symbol	σ	Init Moisture	Final Moisture	γd	S (%)
◇	3000	20.8%	29.4%	104.9	100 0
△	6000	20.8%	26.8%	104.5	100 0
□	12000	20.8%	29.2%	103.5	100.0

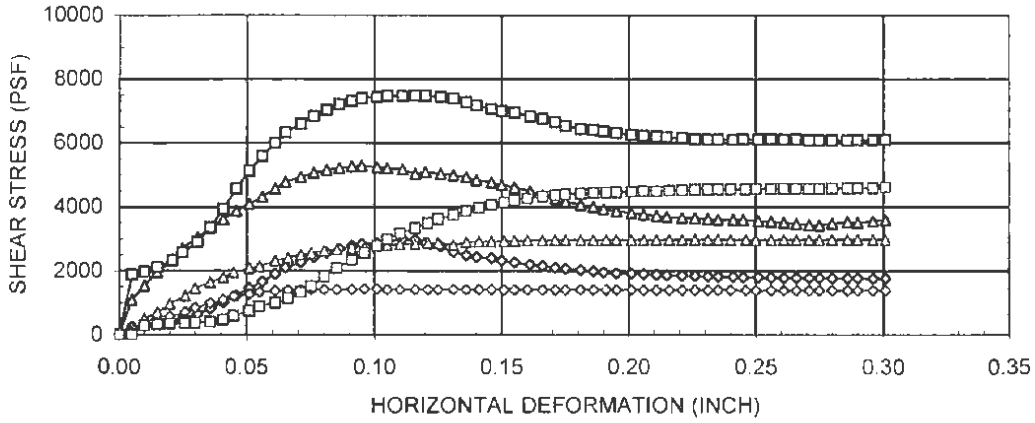
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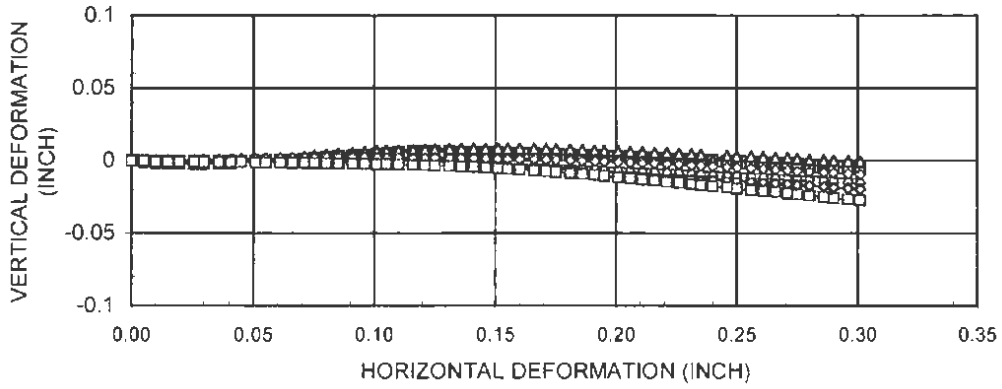
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Garvey Avenue & Abajo Drive
Monterey Park, California

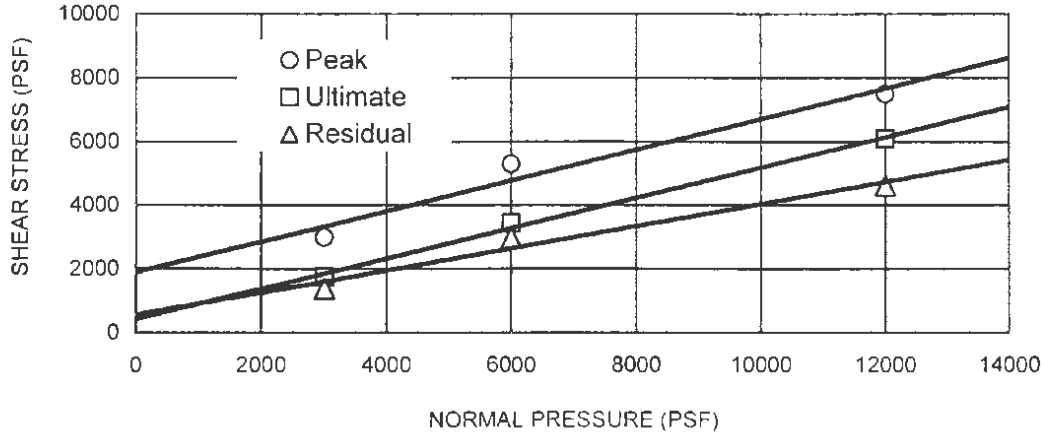
DIRECT SHEAR

09/14 (ASTM D3080) Figure

11819 Goldring Road, Suite A. Arcadia, CA 91006. (626) 263-3588 (Office). (626) 263-3599 (Fax)







Exploration	B-4	Init. Moisture	21.0%		
Depth, feet	120.0	Init. Dry Density	107.1 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	1890	426	552
Soil Type	Tfl	Friction Angle	26	25	20

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	3000	21.0%	27.1%	105.7	100.0
△	6000	21.0%	25.5%	105.4	100.0
□	12000	21.0%	28.3%	105.4	100.0

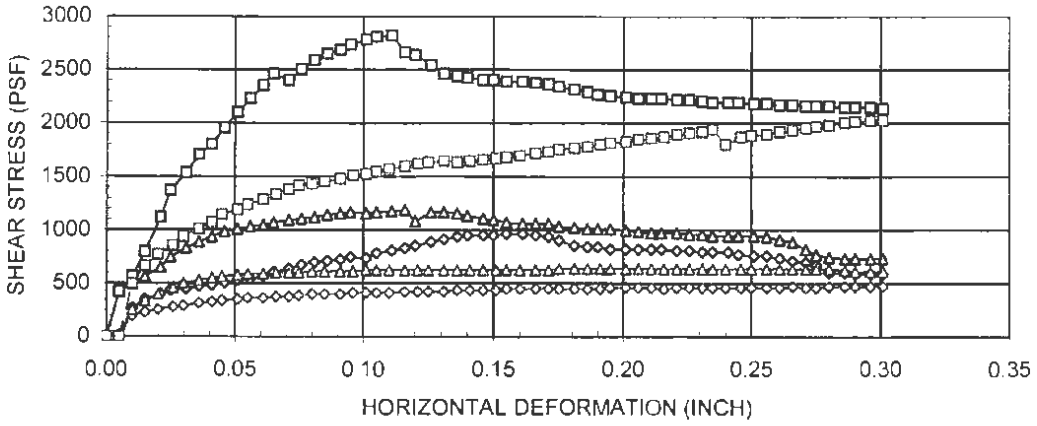
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

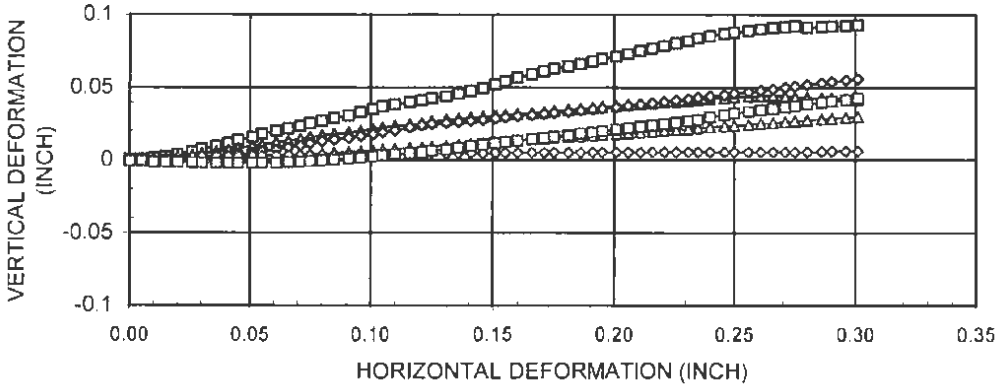
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Garvey Avenue & Abajo Drive
Monterey Park, California

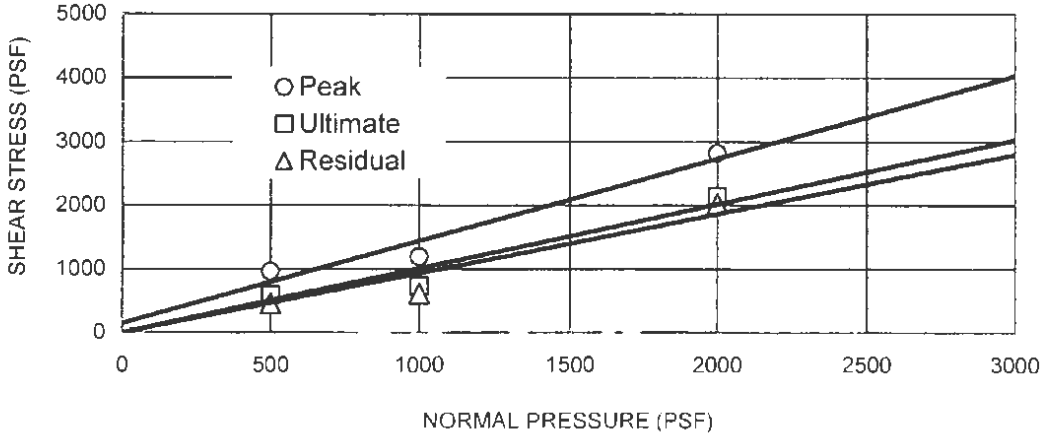
DIRECT SHEAR

09/14 (ASTM D3080) Figure

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Exploration	TP-1	Init. Moisture	20.8%		
Depth, feet	12.0	Init. Dry Density	104.4 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	144	0	0
Soil Type	Tfsl	Friction Angle	52 3	45 3	43.0

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	500	20.8%	28.7%	105.5	100.0
△	1000	20.8%	27 2%	104.0	100.0
□	2000	20.8%	27 3%	102.6	100.0

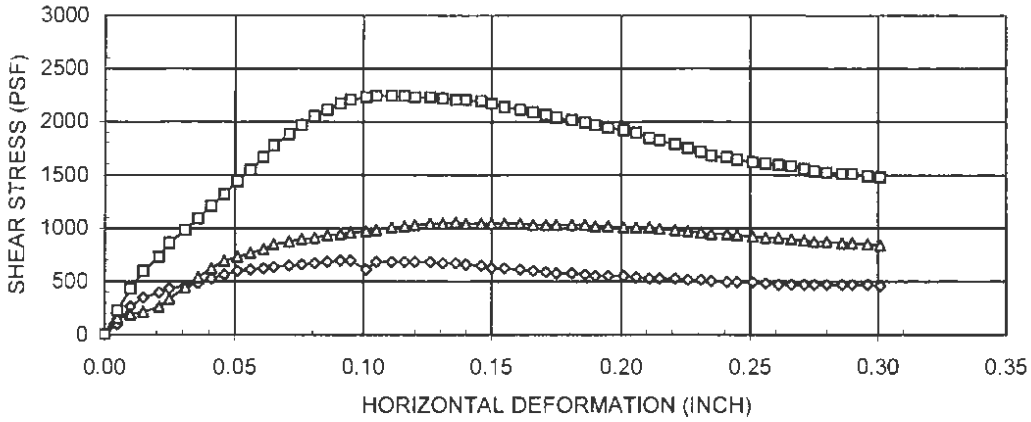
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GEOTECHNOLOGY
LABORATORY

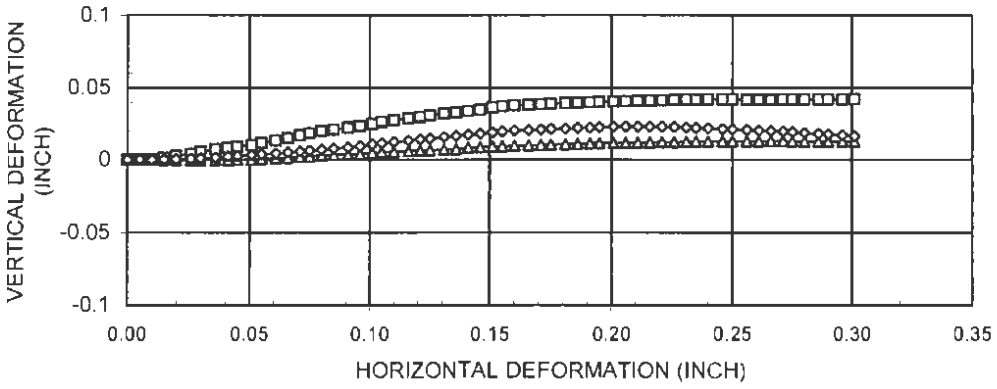
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Garvey Avenue & Abajo Drive
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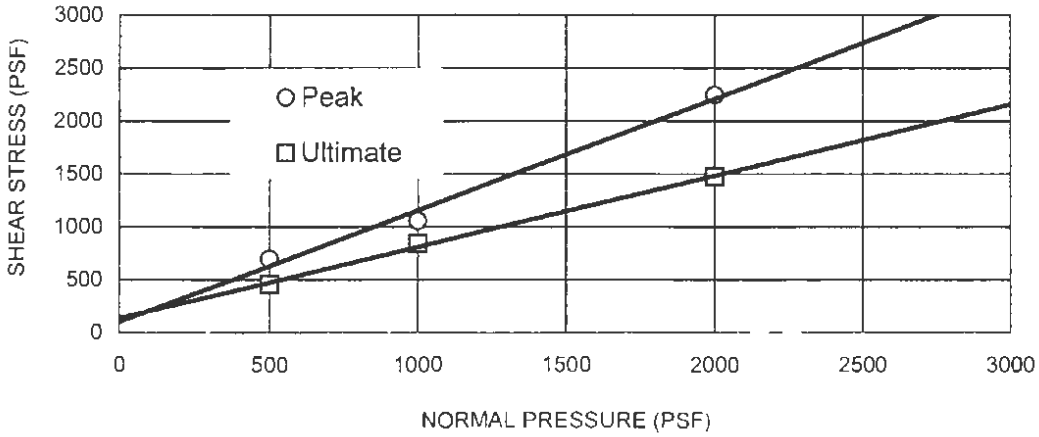
DIRECT SHEAR

08/14 (ASTM D3080) Figure

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Exploration	TP-2	Init. Moisture	18.0%		
Depth, feet	4.0	Init. Dry Density	92.8 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	102	138	0
Soil Type	CAf	Friction Angle	47	34	0

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	500	18.0%	32.0%	94.0	100.0
△	1000	18.0%	30.4%	92.2	100.0
□	2000	18.0%	34.6%	89.9	100.0

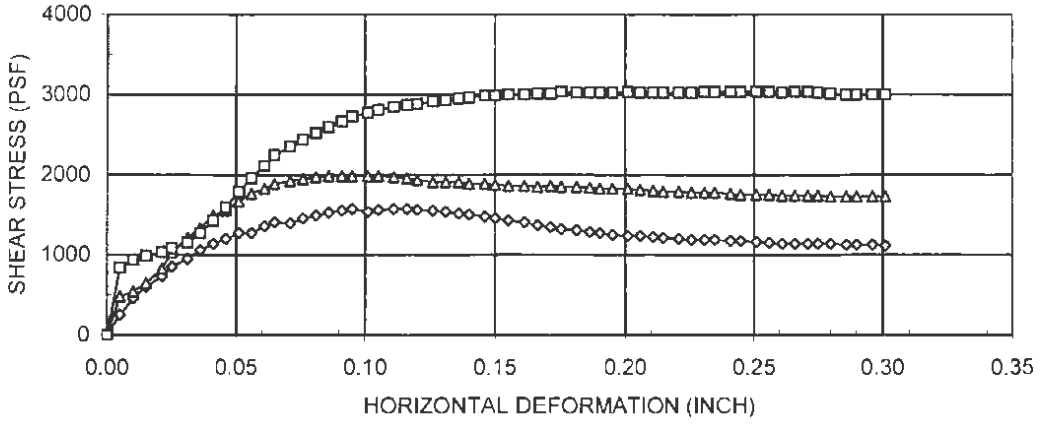
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

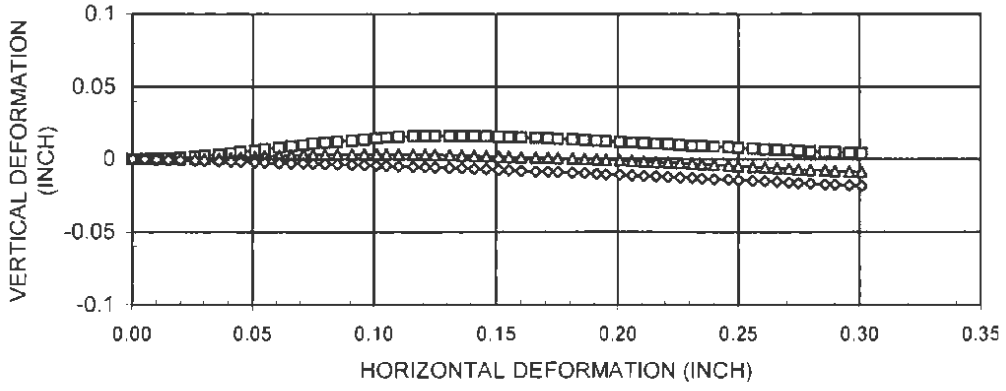
Project Address:
Garvey Avenue & Abajo Drive
Monterey Park, California

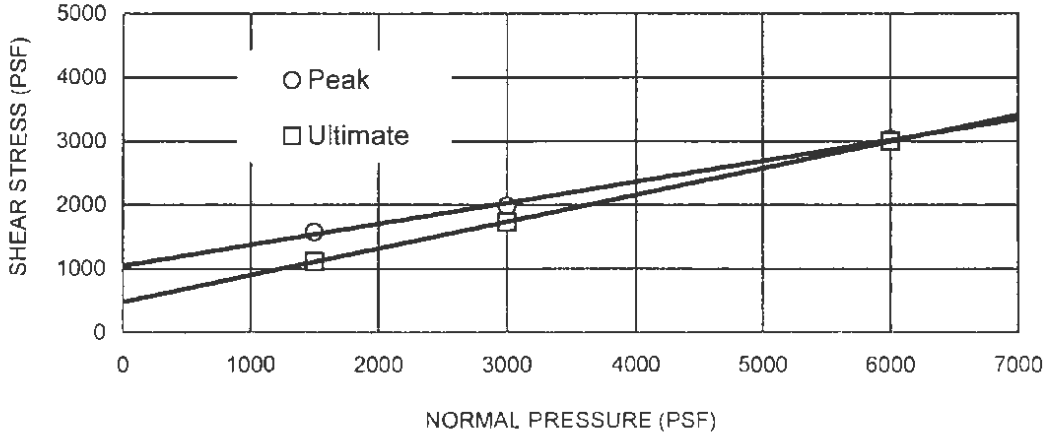
DIRECT SHEAR

08/14 (ASTM D3080) Figure

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Exploration	TP-2	Init. Moisture	25.9%		
Depth, feet	24.0	Init. Dry Density	96.3 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	1044	480	----
Soil Type	CAf	Friction Angle	18	23	----

Symbol	σ	Init. Moisture	Final Moisture	γd	S (%)
◇	1500	25.9%	29.4%	96.8	100.0
△	3000	25.9%	29.2%	94.9	100.0
□	6000	25.9%	29.1%	94.8	100.0

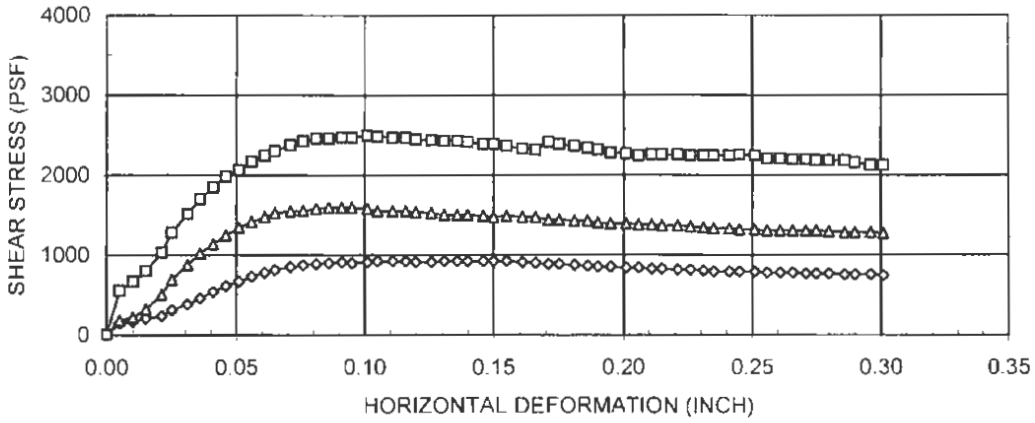
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

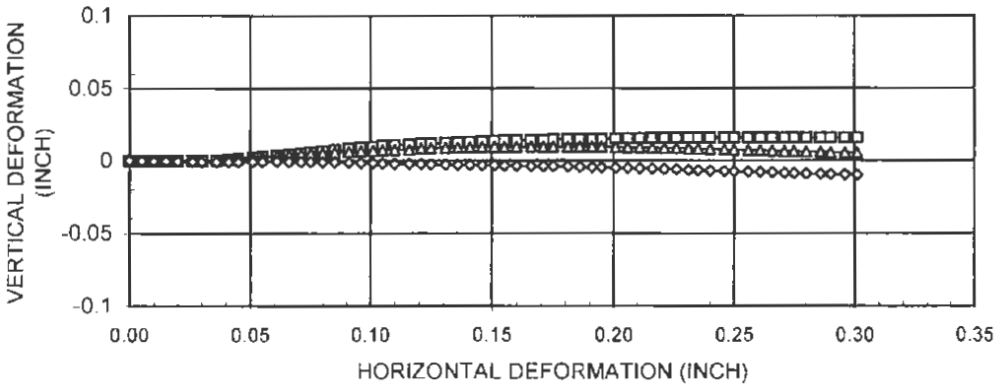
Project Address:
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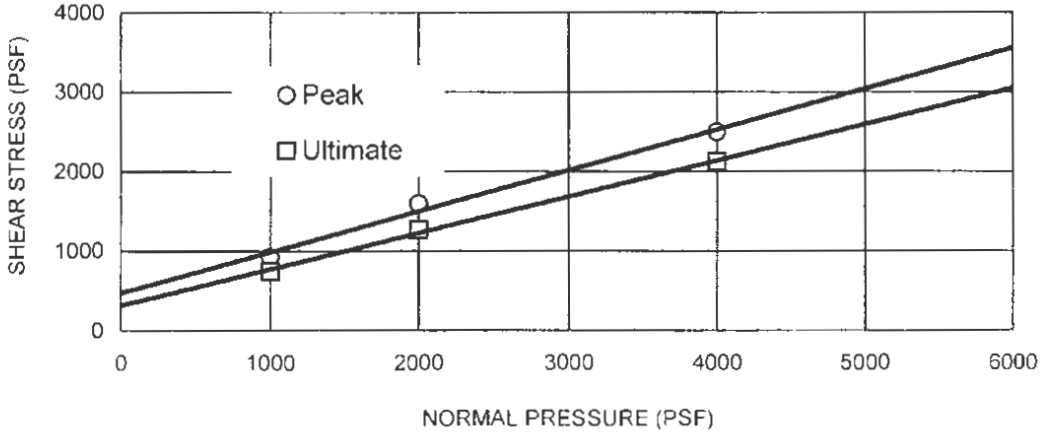
DIRECT SHEAR

07/14 (ASTM D3080) Figure

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Exploration	TP-3	Init. Moisture	22.8%		
Depth, feet	16.0	Init. Dry Density	96.7 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	474	318	---
Soil Type	CAf	Friction Angle	27	24	---

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	1000	22.8%	32.1%	98.4	100.0
△	2000	22.8%	30.2%	94.7	100.0
□	4000	22.8%	28.6%	92.8	94.7

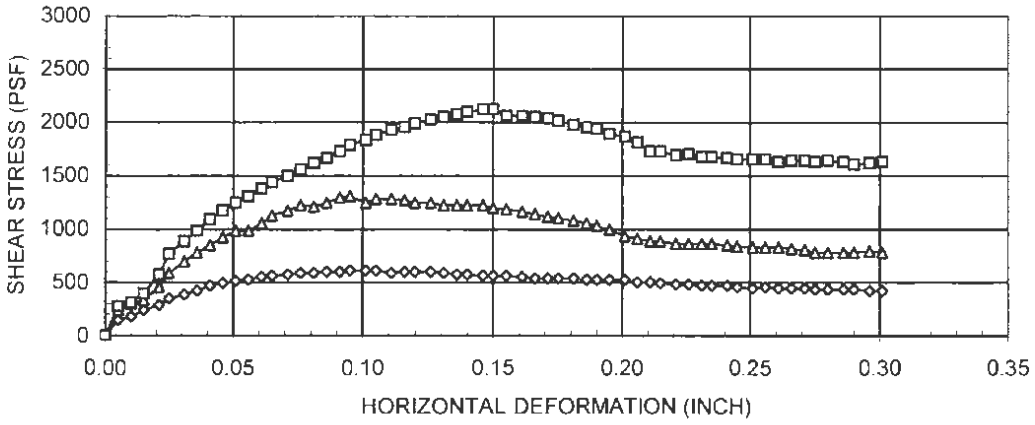
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

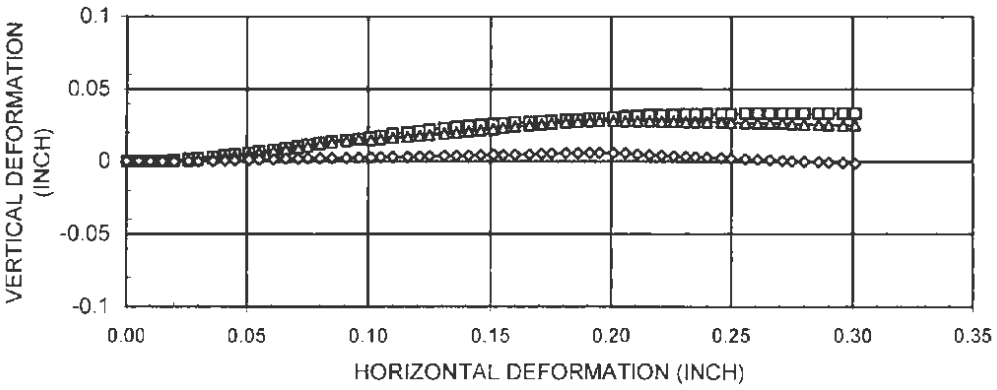
Project Address:
Garvey Avenue & Abajo Drive
Monterey Park, California

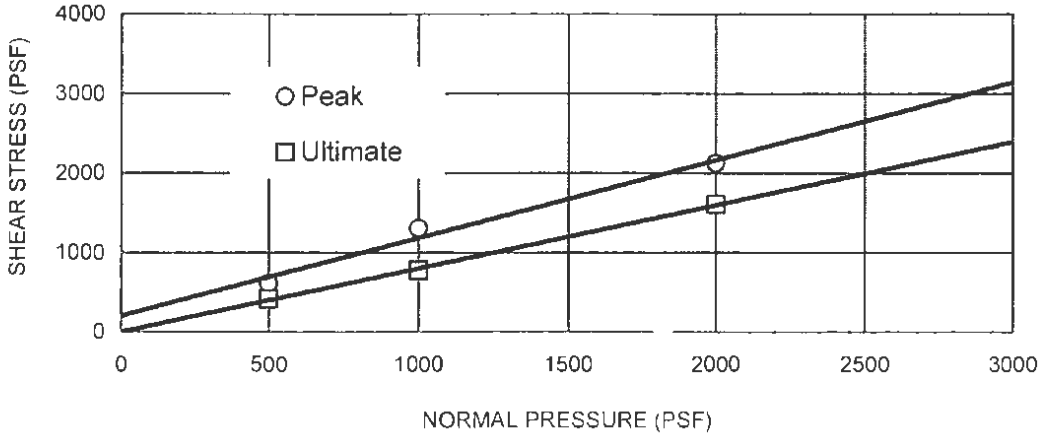
DIRECT SHEAR

05/14 (ASTM D3080) Figure

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Exploration	TP-4	Init. Moisture	17.3%		
Depth, feet	6.0	Init. Dry Density	94.4 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	204	6	----
Soil Type	Qt	Friction Angle	44	39	----

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	500	17.3%	36.2%	96.7	100.0
△	1000	17.3%	33.9%	95.2	100.0
□	2000	17.3%	31.7%	91.5	100.0

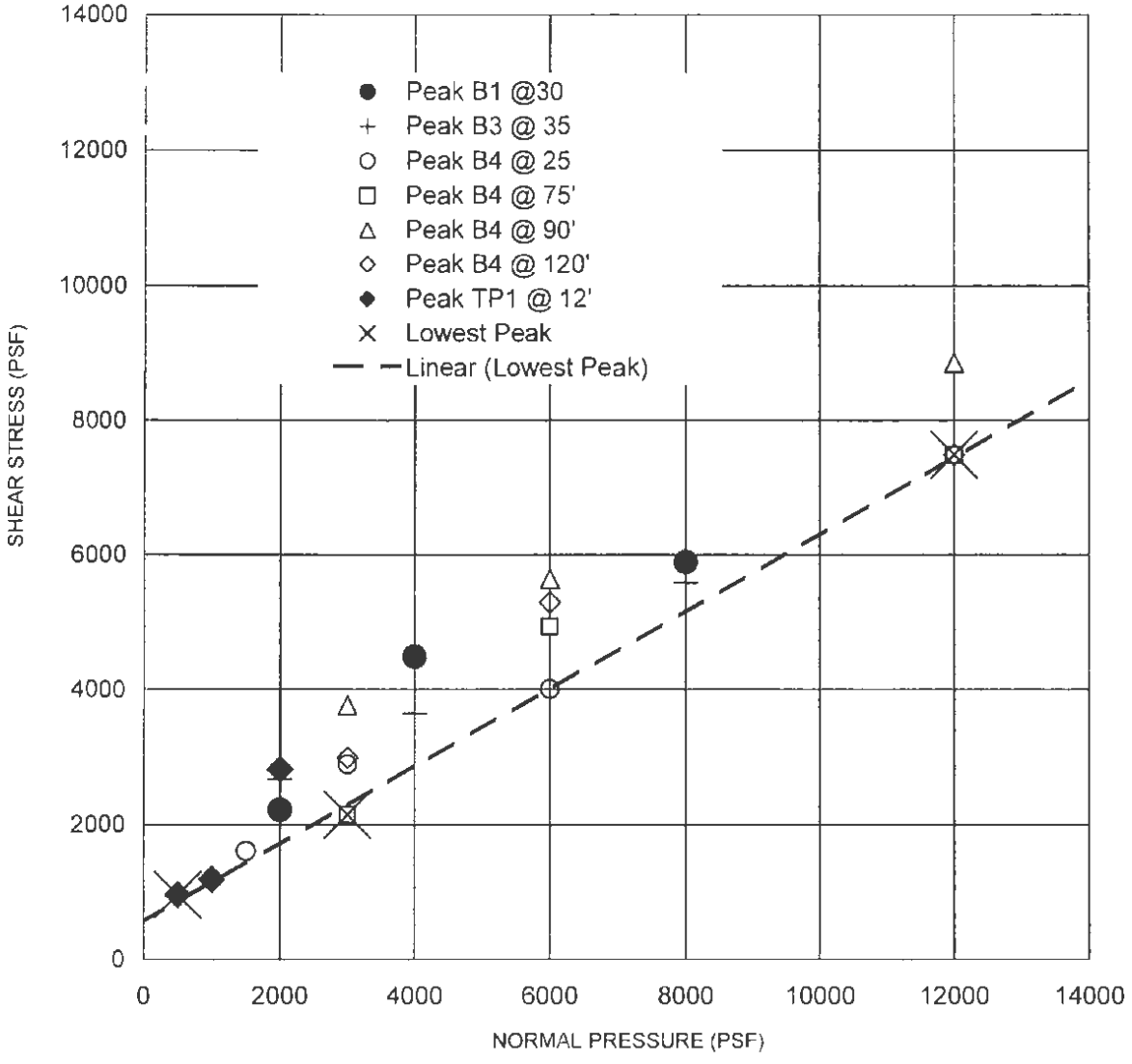
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

Project Address:
Garvey Avenue & Abajo Drive
Monterey Park, California

DIRECT SHEAR

05/14 (ASTM D3080) Figure

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Composite Peak Shear Values

Exploration	See Legend	Init. Moisture	See Legend
Depth, feet		Init. Dry Density	
		Shear Result	Lowest Peak
Sample Type	Ring	Cohesion (psf)	564
Soil Type	Siltstone	Friction Angle	29.9

Symbol	σ	Init. Moisture	Final Moisture	γ_D	S (%)
◇	1500	See Legend			
△	6000				
□	0				

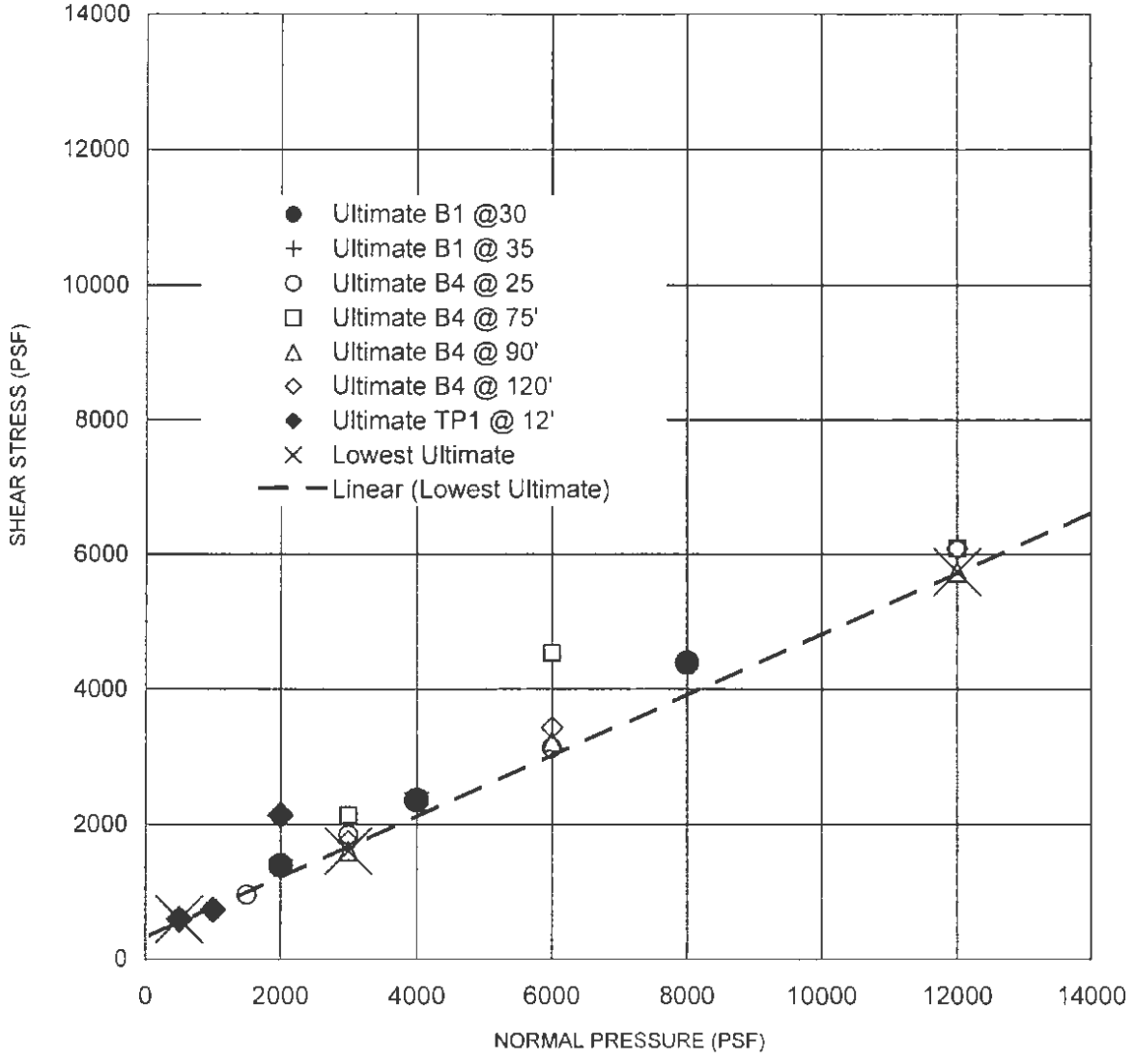
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

Project Address: Abajo Dr. and Garvey Ave, Monterey Park, California

DIRECT SHEAR

08/14 (ASTM D3080) Figure

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Exploration	See Legend	Init. Moisture	See Legend
Depth, feet		Init. Dry Density	
		Shear Result	Lowest Ultimate
Sample Type	Ring	Cohesion (psf)	316
Soil Type	Siltstone	Friction Angle	24.3

Composite Ultimate Shear Values

Symbol	σ	Init. Moisture	Final Moisture	γd	S (%)
◇	1500	See Legend			
△	6000				
□	12000				

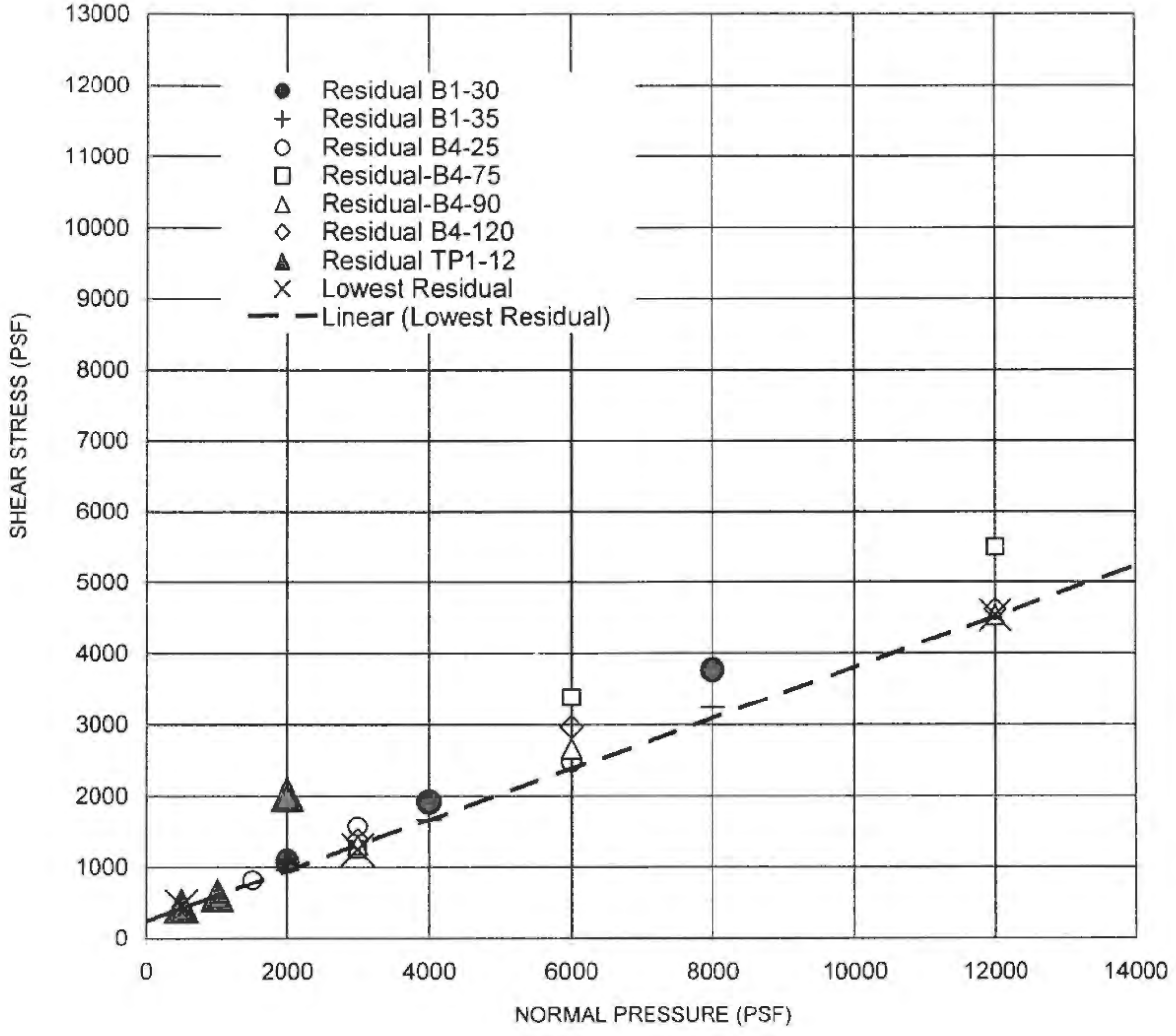
ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

Project Address: Abajo Dr. and Garvey Ave Monterey Park, California

DIRECT SHEAR

08/14 (ASTM D3080) Figure

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Exploration	See Legend	Init. Moisture	See Legend
Depth, feet		Init. Dry Density	
		Shear Result	Lowest Residual
Sample Type	Ring	Cohesion (psf)	232
Soil Type	Siltstone	Friction Angle	19.7

Composite Residual Shear Values

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	3000	See Legend			
△	6000				
□	12000				

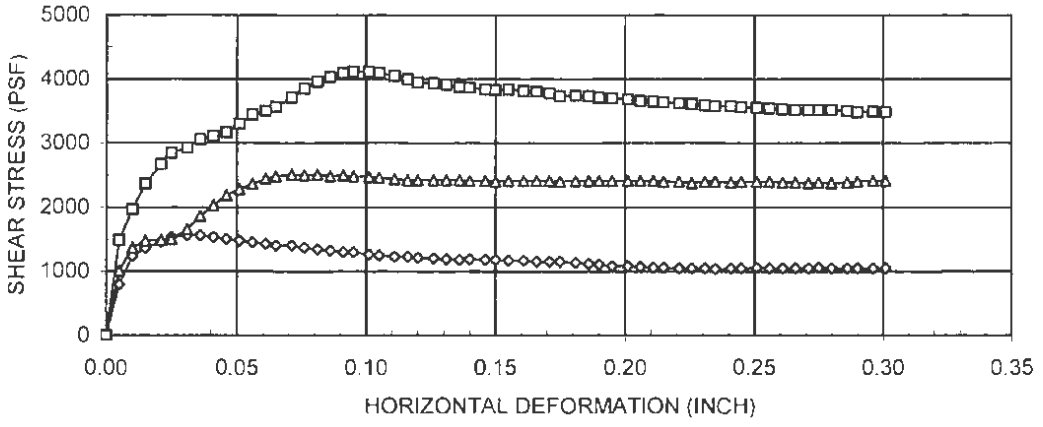
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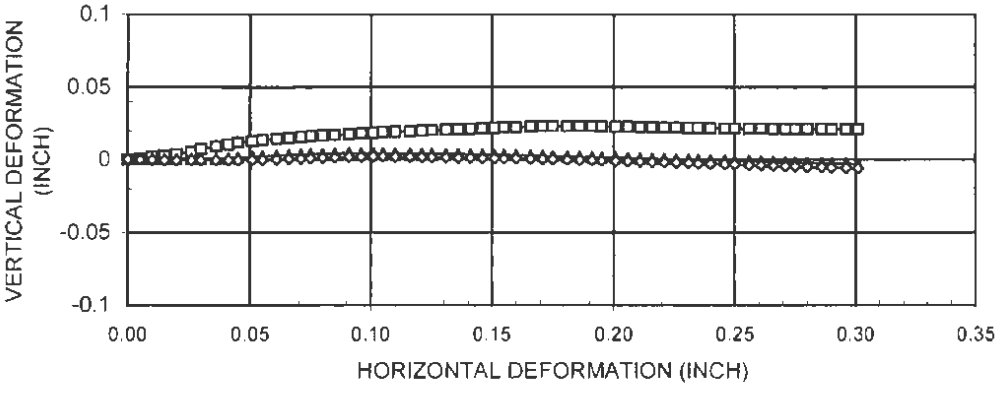
Project Address: Abajo Dr. and Garvey Ave Monterey Park, California

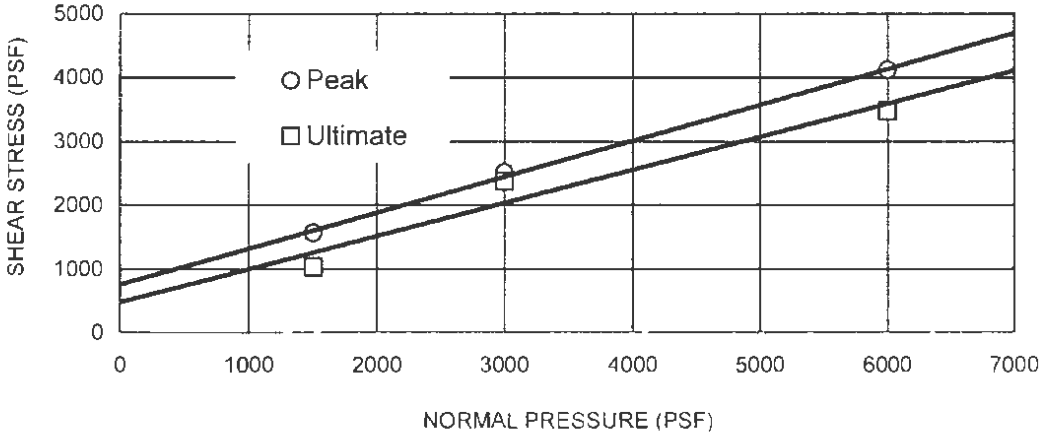
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09/14 (ASTM D3080) Figure

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Exploration	TP-2	Init. Moisture	16.0%		
Depth feet	12, 20, 24 and 27	Init. Dry Density	112.1 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	756	480	----
Soil Type	CAf	Friction Angle	29.4	27.4	----

Composite samples from 12, 20, 24 and 27 feet; Remoded to 95%

Symbol	σ	Init. Moisture	Final Moisture	γ_d	S (%)
◇	1500	16.0%	33.6%	115.5	100.0
△	3000	16.0%	34.6%	111.0	100.0
□	6000	16.0%	35.2%	110.7	100.0

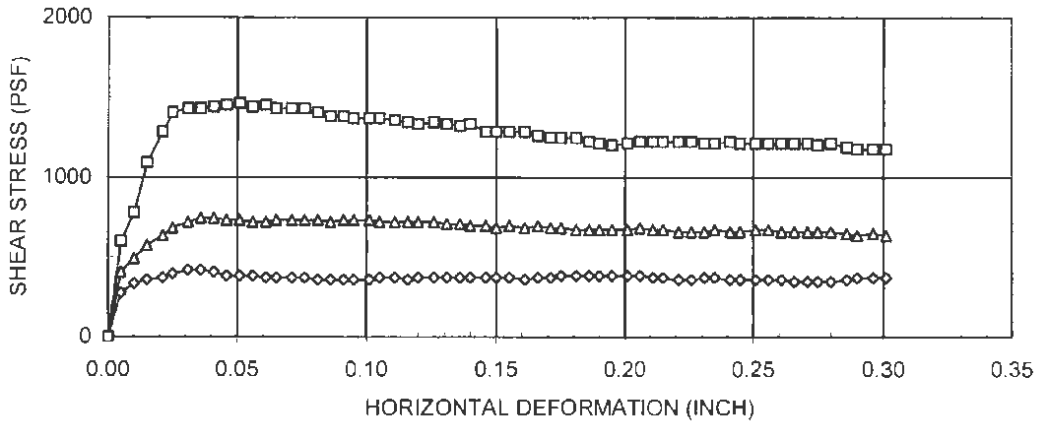
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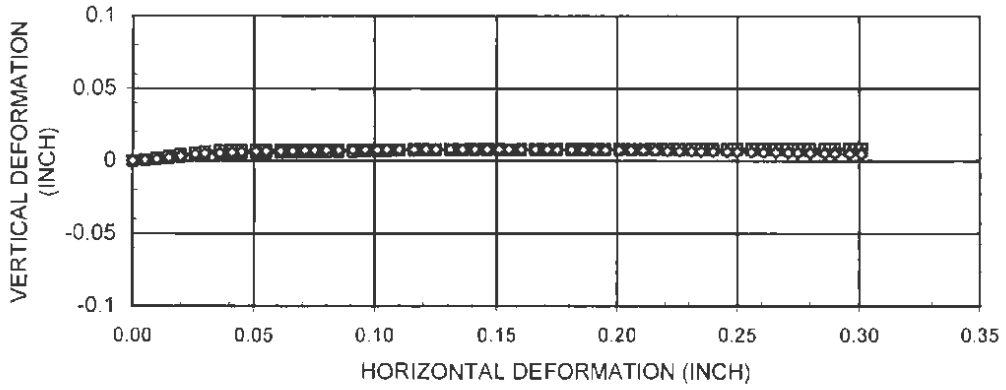
Project Address: Garvey Avenue & Abajo Drive Monterey Park, California

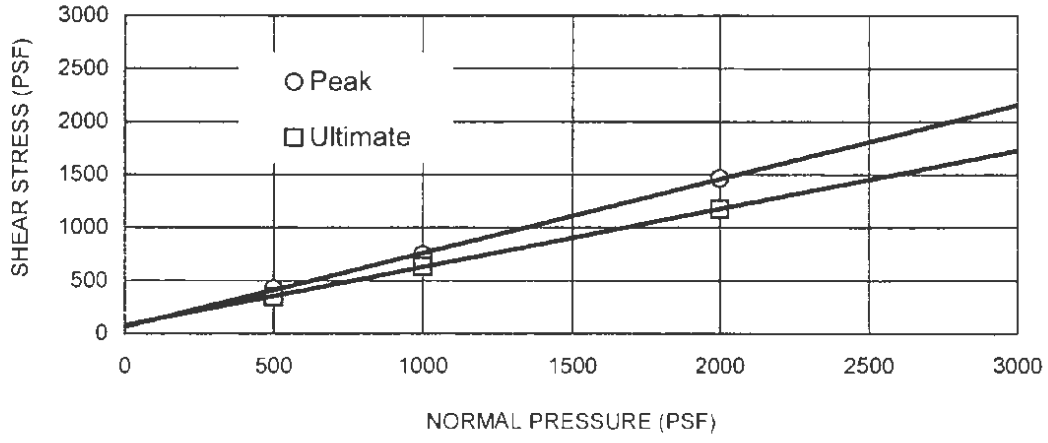
DIRECT SHEAR

08/14 (ASTM D3080) Figure

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Exploration	Bulk	Init. Moisture	14.0%		
Depth, feet	0.0	Init. Dry Density	109.3 pcf		
		Shear Result	Peak	Ultimate	Residual
Sample Type	Ring	Cohesion (psf)	60	78	----
Soil Type	Qt	Friction Angle	35 0	28 8	----

Symbol	σ	Init Moisture	Final Moisture	γ_d	S (%)
◇	500	14.0%	34.9%	112 6	100.0
△	1000	14.0%	36.1%	108 2	100.0
□	2000	14.0%	36.6%	107 9	100 0

Remoded to 95%
Maximum Dry Density 115 pcf
Optimum Moisture Content, 14%

ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

Project Address:
Garvey Avenue & Abajo Drive
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DIRECT SHEAR

08/14 (ASTM D3080) Figure

11819 Goldring Road, Suite A, Arcadia, CA 91006; (626) 263-3588 (Office); (626) 263-3599 (Fax)

GEOTECHNICAL BORING LOG

DATE 10-30-87 DRILL HOLE NO. B-1 SHEET 1 OF 3

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. Dond W Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 0-23' 3100 lbs, 24-46', 4000 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 599'± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density PCF	Moisture Content, %	Soil Class. (U.S.C.S.)
0							
5		@9.5' CONTACT N78E 35SE	① 1	3	92.3	12.5	
		@10' J: E-W 90° J: N30E 65NW ? B: N65E 40NW	2	4	95.7	15.9	
10		@11' J: N-S 70° J: N70E 70NW	3	5	106.4	21.0	
15		@13' clay seam N25E 60NW @17.5' B: N70W 45SW J: N30E 45SE					
20			② 4	11	106.1	21.1	
25		@24' J: N75W 08NE J: N30E 70NW @28' J: N10E 75NW					
30							

Artificial Fill

@ Surface: silty clay, soft, moist, lt brn rooty, porous, compound of BR fragments

@ 2': clayey silt, firm, damp, lt brn, appears compact.

@ 5': silty clay, firm, damp-moist, med brn, appears compact.

@ 5.5': clayey silt, firm, locally soft, damp, mottled med and dk brn mix of BR and soil derived fill.

@ 9': Increasing clay and soil derived material in fill.

@ 9.5': CONTACT BETWEEN fill and BR. CONTACT is undulatory with thin broken pockets of dk brn silty clay along CONTACT, BR appears to have been prepared and processed for fill placement, fill is generally compact with local soft pockets.

Clayey SILTSTONE & SANDSTONE Bedrock

@ 10' clayey silt damp-moist, dense, med brn gry, massive - sl. laminated, occ thin SS lenses, mod fractured with tight Fe-stained joints.

@ 13' ½" thk gry clay, firm, moist

@ 15', BR sl-mod. fracture. fractures appear locally sl. open.

@ 17.5': clayey silt, damp, dense, brn gry, massive, with occ thin clay & silty SS lenses and interbeds. BR is sl. fractured.

@ 20' clayey silt, moist, mod dense-dense, brn gry, generally massive,

@ 26' fracture is clay lined, cemented silt to 6" diameter on NE wall only

Artificial Fill

Bedrock

505A(11/77) LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 10-30-87 DRILL HOLE NO. B-1 SHEET 2 OF 3

PROJECT Hoodview Monterey Park PROJECT NO. 283015O-04

DRILLING CO. D and H Drilling & Excavating TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 24-46' 1900 lbs, 47-68', 8000 lbs DROP 12" IN.

ELEVATION TOP OF HOLE 599'± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30		@31' clay seam N20W 40SW						@31' DK gry brn clay seam ¼" thk, firm. appears offset 2" by small clay lined fault/ft. Fault/ft is tight
		@31.5 F: N65E 80SE						
35		@34' F: N65E 90°	5	14	103.6	16.7		@34': clayey silts, damp, dense, brn gry, mod fractured. Small plum continuous- near vertical, occ small ss pockets or lenses, BR locally crumbly.
		@39' F: N45E 80NW						@39': fault/ft leaves boring on NW wall, coated with DK brn clay to ¼" thk, firm, plastic, damp. BR below fault is less fractured than above BR is clayey silt, damp, dense, brn gry, massive, sl. - mod. fractured
40		@41.5' J: N10W 90						@41.5' Predominate fracture orientation
		@44' J: N45W 70SW						@44' Tight clay lined fracture
45								Bedrock
								@47 BR becomes dense, sl. fractured, appears less fractured than above.
50		@50.5 J: N20W B3SW	6	37	108.0	15.0		@50' clayey silts, damp dense, gry brn, massive, moderately fractured occ. per-stained ss lenses fractures generally tight
		@52.5 J: EW 40N						
55		@57' B: N70W 53SW						@57' thin clay laminations.
60								

505A(11/77) LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 10-30-87 DRILL HOLE NO. B-1 SHEET 3 OF 3

PROJECT Goodview monterey Park PROJECT NO. 2830150-04

DRILLING CO. Dand H Drilling and excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 47-68' 800 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 599'± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
60		@61.5' S: N10E 85SE	7	36	110.1	18.5		@60: clayey silts, damp-moist, dense, med gry, sl. fractured, difficult drilling, massive.
								@61.5': Fe-stained fractures, ±2" x-bedded ss bed
65		@64' B: N75W 52SW						
		@66.5 S: NS 66W						@67' clayey silts, damp, dense, gry, massive w/occ thin ss and clay interbeds. sl. fractured. fractures are tight, Fe-stained
70		@71: clay seam N80W 53SW						Bedrock
								@71' thin gry clay seam along lt gry ss. wcb.
75		@74 clay seam N85W 53SW						@74' Thin, gry firm clay seam
		@79' B: N75W 65SW						@79 BR is clayey silts, damp, dense, gry massive, sl. fractured w/occ thin clay seam or ss interbed.
80								TD 82' Downhole logged to 79' AF to 9.5' Backfilled 11-2-87

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-2-87 DRILL HOLE NO. B-2 SHEET 1 OF 4

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. D and H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 0-23' 31001bs, 24-46' 4001bs. DROP 12 IN.

ELEVATION TOP OF HOLE 599'± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET S	GRAPHIC LOG	ATTITUDES N	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)
0			1	3	95.7	15.2	
5			① 2	6	96.3	15.4	
10		@12.9' CONTACT: N15E 15-20SE	3	4	98.0	17.4	
			② 4	4	89.4	16.4	
15		@15.2' CONTACT N60W 22NE @15.7': B: N80E 83SE @18' B: N75E 46SE					
20		@21.5' T: N80E 74SE J: N40E 53NW @22.3' J: N23E 90° @25.5' B: N60W 50SW @27.5' J: N55W 81SW	5	5	100.7	17.4	
25							
30							

GEOTECHNICAL DESCRIPTION

Artificial Fill:

@ surface: clayey silt, firm, moist, lt-med brn, composed largely of BR fragments. Generally compact with local soft pockets.

@ 2': clayey silt, firm, damp, med brn, approx compact.

@ 5': clayey silt, firm, damp, med brn

@ 7': AF is sl. sandier, sandy clayey silt sandy pocket to ½'

@ 7.5': piece of wood, grass in AF

@ 10': silty clay, firm, damp med brn, generally compact.

@ 12.9' silty clay, firm, locally soft, dk brn, organics, wood, twigs, grass, organic smell CONTACT with med brn AF above & sharp. sl. caving on N wall.

@ 13.8': silty clay, firm, locally soft, med-dk brn, decrease in organics, minor amounts of BR derived material.

Topsoil:

@ 15.2' silty clay, firm, locally soft, damp, dk brn in sharp contact with AF above, and BR below.

Siltstone & Sandstone Bedrock.

@ 15.8': clayey silts, mod. dense, damp, lt brn/gry, highly fractured, Fe stained locally sl. open fractures, fractures generally NOT continuous, sl. bedded to massive.

@ 20': clayey silts, mod dense, damp, lt brn & gry, highly fractured occ. fractures appear clay lined.

@ 21.5': Highly fractured with several predominate orientations.

@ 25': clayey silts, mod dense-dense, damp lt gry, massive-sl. bedded with occ. thin sandy lenses or beds Cemented silt rubble to 6" dia on N wall. Numerous fractures occ. clay lined, Fe-stained

@ 27.5' Many Fe-staining in fractures

Artificial Fill

Topsoil

Bedrock

GEOTECHNICAL BORING LOG

DATE 11-2-87 DRILL HOLE NO. B-2 SHEET 2 OF 4

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. Dand H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 24-46' 1900lbs 47-68' 8001bs DROP 12 IN.

ELEVATION TOP OF HOLE 597'± REF. OR DATUM See Plan

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
S		N						LOGGED BY PB SAMPLED BY PB
30		@32 J: N85W 81SW	6	16	105.2	13.6		@32' clayey silts, dense, damp, brn gry, massive - sl. bedded, mod fractured. Several small fractures converge and parallel a larger pronounced Fe stained clay lined fracture
35								@35': Blocky spoils, root hairs.
40		@39' B: N75E 55SE @42 F: N75E 43NW B: N80W 60SW						@40': clayey silts, dense, damp gry sl. - mod fractured, massive to sl. bedded.
45		@45 C: N80W 50SW						Bedrock @42': 6" thk SS lense, continuous around ½ the boring on South wall. SS lense is offset by small clay lined faultlet. Apperent offset is 1" North wall down. SS bed is heavily Fe-stained, 6" thk. Faultlet is continuous around ½ the boring. Clay lining is moist, brn, and swells to 6" max thickness. @45': BR is clayey silts, mod dense, damp, lt gry, highly fractured, fractures are Fe-stained, clay lined. BR is locally blocky and crumbly, paper thin clay seam provides bedding in massive to sl. bedded BR. @49': rBRy BR is mod dense, highly fractured
50		@49 J: N80E 30SE J: N10W 85SW @51' J: N75E 90° @52' B: N85W 46SW						@51': clayey silt, dense, damp sli-mod fractured on South wall but on North wall across an 8" wide zone of intense fracturing. Fracture zone continuous around boring. @53': Fracture left boring on S wall.
55		@56' B: N85E 49SE						@55': clayey silts, dense, damp. lt gry, mod fractured occ blocky spoils, massive to sl. bedded with occ clayey termination and thin SS lenses @56.5' ½" thk brn SS unit. Bed is broken but zone of SS is cont. around the boring @58' BR is sl. fractured silts with 1" thk SS lenses continuous around boring
60								

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GEOTECHNICAL BORING LOG

DATE 11-2-87 DRILL HOLE NO. B-2 SHEET 3 OF 4

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. D and H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT ____ DROP 12 IN.

ELEVATION TOP OF HOLE 597'± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET S	GRAPHIC LOG	ATTITUDES N	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
60		@60 J: N10E 78NW						@61' BR is clayey silts, dense, damp lt gry + occ thin SS beds or lenses
		@61 J: N40E 90°						@61.5' ½" thk SS bed, brn, continuous, fine sand.
		@61.5' B: N40W 23SW						@63' Heavy Fe-staining along silty clay seam.
65		@63' C: N70W 21SW						@65': org brn fi SS bed 4" thk, continuous
		@65' B: N65W 93SW						@67': BR is clayey silts, dense, damp sl.- mod. fractured. several predominate fract orientations.
		@67' J: N65W 85NE						@68' grey brn cross-bedded SS and lt grey silts. contacts are Fe-stained. BR is dense, damp sl. fractured
		@68' B: N70W 65SW						
70								
		@74' B: N70W 55SW						@74' LT BRN cemented SS, hard, sl. fractured. Leveled boring on S wall @ 75'.
75								
		@79.5' B: N70W 56SW						
80		@81' J: N25E 90°						@81': clayey silts, dense, damp lt grey, massive with occ thin SS and clay beds, mod fractured with Fe-stained occ open fractures.
		J: N40E 63SE						@82': fracture, open to ¼".
		@84' B: N75W 56SW						@85': SS beds decrease in quantity
85								
		@88' B N80W 38SW						
90								Bedrock

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-2-87 DRILL HOLE NO. B-2 SHEET 4 OF 4

PROJECT Goodview / Monterey Polk PROJECT NO. 2830450-04

DRILLING CO. Dave H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT _____ DROP 12 IN.

ELEVATION TOP OF HOLE 597'± REF. OR DATUM see plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
90								
95		@95' B: N70W 87SW						Bedrock
100								@95' clayey silts, dense, damp LT red gray; V. fractured w/n occ fiss beds to 5" thk. ss are red brn, dense, damp
								TD 101'
								Downhole logged to 96' AF to 15.2'
								Backfilled 11-4-87

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-4-87 DRILL HOLE NO. B-3 SHEET 1 OF 2

PROJECT Goodview / Monterey log PROJECT NO. 2830150-04

DRILLING CO. D and H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 0-23', 3100lbs, 24-46', 1900lbs DROP 12 IN.

ELEVATION TOP OF HOLE 574± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)
0			① 1	Push + hold	93.5	28.9	
5			2	Push + Top Top ring Driven	92.6	23.9	
			②				
10			3	1	94.1	26.3	
15			4	1 Sample Bulking up in Sample Barrel	94.6	26.9	
20			5	1 Sample Bulking up in Sample Barrel	98.4	25.6	
25		@29.5' CONTACT N25W 37NE	6	5	94.4	24.1	
30							

GEOTECHNICAL DESCRIPTION

Artificial Fill.

@ Surface: clayey silt, SOFT-firm, moist, locally wet, mottled med and dark brn Artificial fill with cemented BR fragments and soil derived material.

@2' clayey silt, SOFT-firm, moist-wet, dk brn, AF.

@5': silty clay, SOFT, moist-wet, dk brn, AF.

@6' AF decreases in moisture, becomes firm.

@10': silty clay, firm, moist, mottled med and dk brn AF

@12' large pockets of dk brn, soil derived AF.

@15': silty clay, firm, moist, mottled med brn and dk brn, mix of BR and soil derived materials.

@18': wood and other organics in AF.

@20': clayey silt, SOFT-firm, moist-wet, mottled dk-med brn, AF appears above optimum moisture

@23': organic debris in AF continues with increased depth

@25': clayey silt, SOFT-firm, moist, mottled dk-med brn, organics continue soil derived material increases with depth

@28.5' TRANSITION ZONE BR and soil derived fill mix w/ BR processed local zones where soil appears in place but compacted, organic material in small quantity present some areas of soil and BR appear unprocessed AF is generally clayey silt, FIRM, moist, wet, and locally SOFT (moist soil around ½ of bore to 4" TRL

Artificial Fill

Fill (Unknown)

GEOTECHNICAL BORING LOG

DATE 11-4-87 DRILL HOLE NO. B-3 SHEET 2 OF 2

PROJECT Woodview Monterey Park PROJECT NO. 2830150-04

DRILLING CO. David H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 24-46', 1900 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 597'± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30		@30.5 J: N45W 55NE	7	10	102.9	17.5		S. ITSTONE + Sandstone Bedrock @30' clayey silt + occ thin SS beds or lenses, damp, mod dense, brn/gry, mod-highly fractured. Fractures are occ open, Fe-stained, root lined.
		@32 J: N45E 80SE						
35		@33' B N60E 63SE						
		@35' J N35W 83NE J N45W 82NE	8	8	98.2	24.2		@35: clayey silt + occ thin SS lg, dense, damp LT gry + LT brn, mod fractured fractures occ Fe-stained, root lined, sl. open
		@38' J: NSE 64NW						Bedrock
40		@41.5' J: N35W 30NE						@41': silty SS bed, med brn, BR is clayey silts, dense, damp, mod brn, gry, mod fractured Fe-stained fractures and occ SS beds
45			9	21	104.5	20.2		TD 45' Downhole logged to 43' AF to 30' Backfilled 11-5-87

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-5-87 DRILL HOLE NO. B-4 SHEET 1 OF 1

PROJECT Goodview Monterey Park PROJECT NO. 283015A-04

DRILLING CO. D and H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 0-23, 310 lbs, 24-46, 800 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 556± REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

Depth Feet	Graphic Log	Attitudes N S	Tube Sample No.	Blows Per Foot	Dry Density PCF	Moisture Content, %	Soil Class. (U.S.C.S.)
0			1 ①	3	101.1	17.9	
5		26.5' CONTACT: N5W ZONE	2 ②	4	106.1	20.3	
10		@9' CONTACT: N65E 33NW	3	8	108.2	20.7	
15			4	5	96.3	23.2	
20		@19' J: N15E 71NW J: N45W 15NE @22' J: N20W 28NE @22.5' J: N35E 61NW	5	9	101.3	25.1	
25		@27' J: N15W 26NE B: N80W 73SW					
30							

Artificial Fill

@Surface: silty clay, firm, moist, mod brn, AF derived from BR and soil materials

@2.5': silty clay firm, moist mottled med brn & dk brn, pockets of dk brn clay, piece of copper pipe and valve in AF.

@4': orng brn ½" thk sandy lift in AF.

Colluvium

@4.5': Below sandy lift is clayey silty, med gry brn, damp, firm, v. rooty & v. mod porous, continuous around the bore. undulatory contact with AF above

@6½': med-gry brn clayey silt in sharp contact with dk brn silty clay, firm, damp, sl. porous, root hairs grades to:

@7': med-dk brn silty clay, firm, damp-moist, desiccation cracks and clay sheen, carbonate stringers, root hairs

@9': Gradational contact to Dk brn, organic silty clay, firm, moist, sl. porous & thk, appears as buried soil within colluvium grades back to med-dk brn silty clay

@11': Red Brn silty clay, moist, firm-stiff, + locally soft pockets

@14': sandy clayey silt, firm, moist, med gry brn, carbonate stringers, root hairs locally soft clay pockets.

@16 increase in BR fragments grading to BR, v. weathered zone Fe-staining

Siltstone + Sandstone Bedrock

@18': Weathered BR, clayey silts, mod dense, moist, gry brn, massive + occ thin ss lenses. mod-highly fractured root lined, Fe-stained, sl. open

@20': prominate fracture enters bore on East wall exits on West @28', appears Fe-stained, clay lined

@27': clayey silts, mod dense, moist, lt brn gry, locally Fe stained w/ sl. laminations, mod fractured.

Artificial Fill

Colluvium

Bedrock

TD 30'

Downhole logged to 27.5'
AF to 4.5'
Col to 18'
Backfilled 11-6-87

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 12-6-87 DRILL HOLE NO. B-5 SHEET 1 OF 2

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. D and H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT D-23, 3100 lbs, 24-46, 1900 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 550± REF. OR DATUM see Plan

LOGGED BY PB

SAMPLED BY PB

Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density PCF	Moisture Content, %	Soil Class. (U.S.C.S.)
0							
5			1	Push + Tap	94.4	26.2	
			①				
			2	Push + Tap	92.7	27.1	
10			② 3	3	102.7	20.1	
15		E15 CONTACT N55E 25NW	4	4	98.4	22.6	
			③				
20			5	4	98.3	24.8	
25			6	12	101.5	23.8	
30							

Artificial Fill

@ Surface: silty clay, soft, moist-wet, mod brn, AF composed of BR derived materials

@ 1': sharp contact with silty clay, soft, moist-wet, dk gry brn AF.

@ 2': silty clay, soft, moist-wet, mottled dk gry brn and med brn AF with BR & sod, mix.

@ 4.5': silty clay, soft, moist, mod gry brn, cohesive becomes firm with depth.

@ 7': silty clay, firm, damp-moist, med gry brn + pockets of moist, soft dk gry brn clay

Colluvium:

@ 9': silty clay, firm, damp, dk gry brn in broken contact with above, root hairs, BR and cemented silts fragments.

@ 10': clayey silt, firm-stiff, moist, dk gry brn appears as col.

@ 13' clayey silt, firm, damp, dk brn, sl. porous, carbonate stringers, root hairs, occ. BR frags

@ 15': Broken contact between, dk brn clayey silt above and mod. brn clayey silt, firm, damp, below. Contact is broken but generally planar. dk brn silty clay pockets in med brn silt decrease with depth, clay sheen on exposed surfaces sl. porous

@ 18': clayey silt, firm, damp, med brn, sl.-non porous, clay sheen and BR fragments increase with depth. grades to:

@ 20.5': clayey silt, firm, damp, med-dk gry. increased BR frags. grades to:

@ 23.5': clayey silt, firm, damp lt-med brn, fewer BR frags.

@ 25.2': sharp contact between lt-med brn clayey silt above and dk red brn silty clay below. (locally very clayey; cohesive, firm, damp TO 4" thk continuous around Bore.

Below is:

Siltstone + Sandstone

@ 25.6: Deeply weathered siltstone, firm, damp, red brn.

@ 29.5': clayey silts, mod dense, moist, weathering recreases, massive, Fe-stained fractures.

Bedrock

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-6-87 DRILL HOLE NO. B-5 SHEET 2 OF 2

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. D and H Drilling and Excavation TYPE OF RIG Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 23-46' 1900 lbs, 47-68' 8000 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 550's REF. OR DATUM See Plan

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
30			④ 7	10	97.5	26.3		@30': clayey silts, deeply weathered BR, mod dense, moist, red brn.
								@34': weathering of BR continues to decrease.
35		@35' B: N25E 23SE	B	12	94.5	27.1		@35': clayey silts, mod dense, moist, lt gry, occ red brn SS lenses or beds, highly fractured
		@37' J: N60W 23NE B: N65W 75SW						@37': clayey silts, mod dense, moist lt brn, gry, mod fractured.
40		40' J: N20E 84SE 41' J: N70W 83SW						@40': continuous clay lined fracture.
		@42' B: N80W 60SW						@41': predominate fracture orientations
								@42': thin SS to 1" thk
45			9	20	103.3	21.1		@44.5' thin SS bed
		@48': J: N10W 75NE						@45': clayey silts, mod dense-dense, damp, mot brn + occ thin SS lenses or beds, mod fractured
50								@50': clayey silts, mod dense-dense, damp, brn gry, mod fractured, + occ thin SS lenses or beds.
55								TD 55'

Bedrock

Down hole logged to 6' AF to 9' COI to 25.5'

Backfilled on 11-6-87

505A(11/77) LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-12-87 DRILL HOLE NO. B-6 SHEET 1 OF 2

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. August Drilling and Construction TYPE OF RIG Hillside Bucket

HOLE DIAMETER 24" DRIVE WEIGHT 0-14': 30016s, 14-18': 175 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 535'± REF. OR DATUM See Plan

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SAMPLED BY PB

Depth Feet	Graphic Log	Attitudes N / S	Tube Sample No.	Blows Per Foot	Dry Density PCF	Moisture Content, %	Soil Class. (U.S.C.S.)
0			1	33	94.2	28.6	
			①				
5			2	25/18"	95.8	20	
10		@10.5 Clayey Layer N30E 25SE	②				
15		@14.6 Contact N65W 20NE	3	40/18"	101.5	22.7	
		21.7 Clay N58W 65SW					
		@15 J: N25W 45NE					
		@16 B: N50W 58SW					
20		@17 J: N30E 45NW					
		@18 J: N15W 45NE					
		@20 J: N15W 40NE					
25		@21.5 B: N70W 56SW					
		@23 B: N30W 55SW J: N10E 60SE					
30		@26 B: N25W 56SE J: N15E 35SE					

GEOTECHNICAL DESCRIPTION

Artificial Fill

@ Surface: silty clay, soft-firm, moist-wet, mottled dk and med brn

@ 2': silty clay, soft, moist, med brn cohesive.

@ 4': silty clay, firm, damp, mottled med-dk brn, increased organics in AF.

@ 4.5': clayey silt, firm, damp med-dk brn, root hairs

@ 6' clayey silt, firm, damp, moisture decreasing, dk-med brn root hairs Locally soft

@ 8': Sandy clayey silt, firm, locally soft, damp, cemented silt cobble.

@ 10': silty clay, firm, damp-moist, mottled med-dk brn, root hairs BR frags

@ 10.5 dk brn clayey AF moisture increasing

@ 11.5': silty clay, firm, locally soft, moist, dk brn, occ rounded gravel.

@ 12.2': sharp contact with gravel filter material of subdrain (gravel to ½", rounded, with trace sands. Gravel present on E wall and in pockets on W wall. Remaining zones present as silty clay with gravel.

@ 12.6': 6" diameter white PVC pipe (sked 40) connector w/ black 6" dia perforated pipe in pieces. Within gravel filter material. Pipe is bent and silted with gravel material. Pipe is NOT continuous orientation on connector outlets N30E & S60E. Plastic membrane present between PVC pipe, caving

@ 12.8- silty clay firm, locally soft, moist, dk brn + rounded gravel

@ 13.6': silty clay with cemented angular cobbles in continuous broken zone around hole. Cobbles appear dark cement with soft soil held in place within a cobble, but surrounded by matrix of silty clay firm locally soft AF. Soil cement is not mixed equally throughout the zone.

@ 14', silty clay, firm, locally soft, moist, dk brn.

Artificial Fill

Bedrock

Siltstone + Sandstone

@ 14.5': undulatory broken contact with clayey silts BR, mod dense-dense, damp, med gry brn, mod fractured with occ thin gy clasts and clay laminations. Fe-staining on fractures and badday content

@ 14.7 Fat, gray clay, firm, moist, first ± to ½" continuous except where cut by fill pipe.

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LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-12-87 DRILL HOLE NO. B-6 SHEET 2 OF 2

PROJECT Goodview Monterey Park PROJECT NO. 2 830150-04

DRILLING CO. August Drilling and Construction TYPE OF RIG Hillside Bucket Rig

HOLE DIAMETER 24" DRIVE WEIGHT 19-26', 250lbs, 27-32', 325lbs DROP 12 IN.

ELEVATION TOP OF HOLE 535'± REF. OR DATUM See Plan

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)
30			4	40	99.8	24.2	
35							

GEOTECHNICAL DESCRIPTION

LOGGED BY PB

SAMPLED BY PB

@ 16': 1" thk mod brn fi SS bed - continuous

@ 17' 4" thk cemented slt bed on SW wall

BR is clayey silts, dense, damp gry + occ thin SS beds, mod fractured. fractures are generally tight Fe-stained. Bedding contacts are Fe-haloed.

@ 18 Predominate fracture pattern, fractures occ sl. open.

@ 20 cemented slt bed on S wall. fractures generally continuous

@ 21.5' 1/2" thk brn SS bed, continuous, Fe-stained.

@ 23' 7/8" thk brn fiss bed within clayey slts predominate clay lined fracture. BR east of fracture generally more disturbed, fractured than that to the west.

@ 26.5 SS bed from 23' exits bore on S wall. Numerous clay lined fractures within clayey silts, dense, damp lt gry + occ brn fi SS beds, mod fractured.

Bedrock

TD 31'

Downhole logged to 29'
AF to 14.5'
Backfilled 11-16-87

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-16-87 DRILL HOLE NO. B-7 SHEET 1 OF 2

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. August Drilling and Construction TYPE OF RIG Hillside bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 0-14' 300 lbs; 14-18' 175 lbs DROP 12 IN.

ELEVATION TOP OF HOLE 534'± REF. OR DATUM 19-26' 250 lbs, 27-32' 325 lbs SEE PLAN

LOGGED BY PB

SAMPLED BY PB

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)
0			1	10/18" Stopped driving	82.8	25.7	
5			2	25/18" Samples 1, 2 and 3 appear to have balled up within sampler	92.0	25.1	
10		@8.5 CONTACT N60W 10NE	2	45/18" top ring disturbed	94.9	21.7	
15		@15 Jointing in col N70W 55SW	3	65/18"	99.0	19.7	
20		@18.5 CONTACT N75W 12NE	3				
			4	60	101.8	17.0	
25							
30			4				
			5	70	96.2	17.3	

GEOTECHNICAL DESCRIPTION

Artificial Fill

Artificial Fill

@ Surface: silty clay, soft-firm, moist, med brn AF derived of BR materials

@ 3': silty clay, soft, moist, med-dk brn, pockets of dk brn soft clay

@ 8': increased dk gry clay pockets, soft, moist.

Colluvium

Colluvium

@ 8.5': sharp planer contact with AF above and dk brn undisturbed silty clay below, soft, moist, sl porous, minor organics

@ 11': sandy silty clay, firm, moist, med-dk gry, sl porous, locally soft, porous zones. color lightens with depth

@ 12.5': root hairs, BR fragments

@ 14': clayey sandy silt, firm, moist, med-dk red brn, root hairs non-sl porous locally mod porous

@ 15': clayey sand silty, stiff, damp red brn clay sheen along fracture noticeable orientation of fractures in colluvium

@ 17': continues to lighten in color with depth, med gry brn silty clay, stiff, damp appears as deeply weathered BRN BR

@ 18.5': sharp contact between med gry brn silty clay above and stiff dk brn silty clay below, material below is damp with roots to ¼" dia across to contact, root hairs, carbon flecks, NO BR material

@ 20.5': grades to med brn silty clay. Increased BR fragments, clayey sheen

@ 22': increased BR frags, heavy weathering, roots to ⅛" dia mottled dk brn & lt-md brn clay infilling along fractures.

@ 25' grades to clayey silt, damp firm-stiff, roots heavy clay sheen

@ 26' Deeply weathered BRN BR. lightens to red brn

@ 29' Deeply weathered BRN BR, stiff damp red brn, clay sheen & mottling clay lining for staining along BRN BR fines

505A(11/77) LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-16-87 DRILL HOLE NO. B-7 SHEET 2 OF 2

PROJECT Goodview / Monterey Park PROJECT NO. 2830150-04

DRILLING CO. August Drilling and Construction TYPE OF RIG Hillside Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT ____ DROP 12 IN.

ELEVATION TOP OF HOLE 534'± REF. OR DATUM See Plan

DEPTH FEET	GRAPHIC LOG	ATTITUDES	TUBE SAMPLE NO.	BLOWS PER FOOT	DRY DENSITY PCF	MOISTURE CONTENT, %	SOIL CLASS. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
S / N								LOGGED BY PB SAMPLED BY PB
30								@30' silty clay, grades to:
		@32' J: N40W 5NE						Bedrock: Siltstone + Sandstone. @31': Deeply weathered brkn BR, remnant fractures & bedding, clayey silts @32': becomes less brkn, Prominate fracture orientation @33.6': deeply weathered heavy Fe-stained BR, damp, firm, mod-reddish brn, clayey silts. highly fractured @34': clayey silts, firm, damp, gry heavy Fe-stained, weathered @35': weathering, fracturing, generally decreases with depth.
35								
								TD 37.5' Downhole Logged TO 36.5' AF TO 8.5' Colluvium TO 31' Backfilled 11-17-87
40'								

505A(11/77) LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG

DATE 11-17-87 DRILL HOLE NO. B-8 SHEET 1 OF 1

PROJECT Goodview Monterey Park PROJECT NO. 283050-04

DRILLING CO. August Drilling and Construction TYPE OF RIG Hillside Bucket Auger

HOLE DIAMETER 24" DRIVE WEIGHT 0-14', 300lbs, 14-18' 175lbs DROP 12 IN.

ELEVATION TOP OF HOLE 552'± REF. OR DATUM 19-26', 250lbs See Plan

LOGGED BY PB

SAMPLED BY PB

Depth Feet	Graphic Log	Attitudes N	Tube Sample No.	Blows Per Foot	Dry Density PCF	Moisture Content, %	Soil Class. (U.S.C.S.)	GEOTECHNICAL DESCRIPTION
0								Artificial Fill
								@ surface: clayey silt, moist-wet, soft-firm, occ organics, BR derived AF, moisture decreases with depth occ dk brn clay pockets, non-sl porous appears compact.
5			1	37/18"	94.3	14.5		@5': Becomes silty clay, firm, damp moisture decreases, med-dk brn, non-sl porous, increased dk brn clay pockets locally soft.
								@7': Increased clay, firms with depth, 6" dia cemented silt cobble on SE wall
10			2	57/18"	101.3	21.1		@8': Becomes less clayey, less moist, firm, Increase in BR derived material in AF
								@9': silty clay, firm, damp-moist, lt-med brn with pockets of dk brn clay, locally soft.
								@10': moisture increases
								@12': root to ½" dia.
								@13': cemented SS cobble to 4"
15		@16' contact: N45W 68NE						@14.5': on SW wall, sharp contact between fill and undisturbed BR. Down dip on contact between fill & BR, thin soil zone is present thickening down dip to NE. Soil zone 1' thk on NE wall within this zone is a 2x4 x 6' piece of wood on NE wall soil appears as silty clay, firm locally soft, moist, red brn. Local pockets of firm, dk brn gry clay present on NE wall soil zone appears sl. processed as fill. sl. compacted.
		@19' J: N20E 65NW S: N30W 45NE SB: N60W 48SW						Siltstone + Sandstone
20								@15': BR appears undisturbed, clayey silts, mod dense-dense, damp, gry brn, with occ thin fissile lenses or beds, mod fractured.
			3	55	102.4	24		TD 23'
25								Downhole logged to 21.5' AF to 15' Backfilled 11-18-87

505A(11/77) LEIGHTON & ASSOCIATES

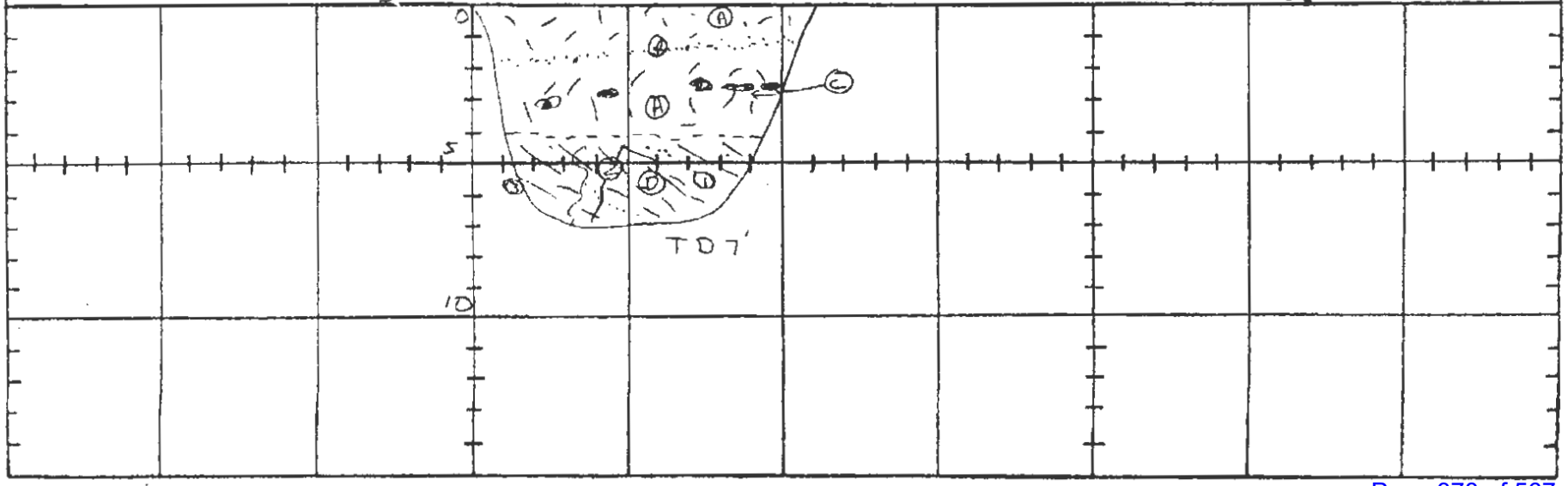
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-04 Elevation: TRENCH NO. T-1

Equipment: JD 450 + backhoe Location: See plan

GEOLOGIC ATTITUDES	DATE: 12-10-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① B: N75W 65SW ② J: N-S 81E ③ J: N10W 37NE	(A) Artificial fill: sandy silty dry-damp, mod dense mod brn, friable, rooty porosity at surface decreases with depth	AF	CL			
	(B) Gravelly Sand, damp, mod dense, orng brn, discontinuous. Appears as an isolated lift within the fill	AF	CL			
	(C) Pockets of dk gry to dk blue clay, firm, moist, organic	AF	CL			
	(D) Siltstone. damp, firm lt brn gry, massive with occ thin ss beds (contact with AF is nearly horizontal, mod-highly fractured, heavy Fe staining along fracture and contacts.	silt (TF1)	CH			

GRAPHIC REPRESENTATION SE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N55E



LOG OF TRENCH NO: T-1

Project Name: Goodview Monterey Park Logged By: PB.

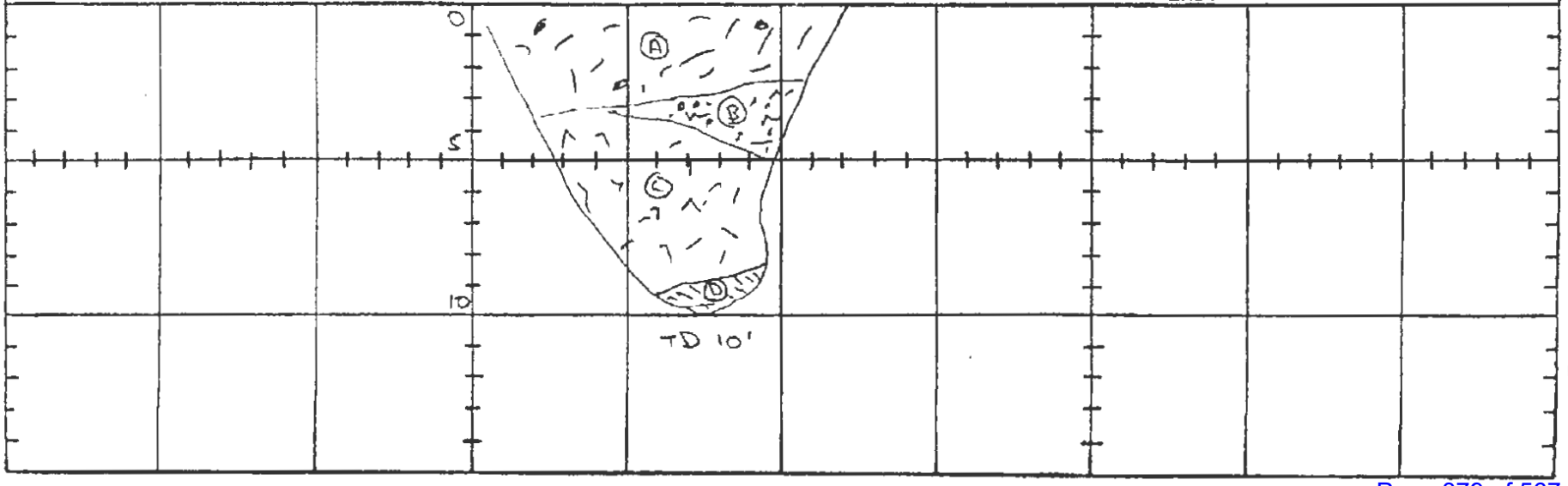
Project Number: 23-0150-04 Elevation:

Equipment: JD 450 + backhoe Location: See Plan

TRENCH NO. T-2

GEOLOGIC ATTITUDES	DATE: 12-10-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	(A) Artificial fill: silty clay, wet, firm, med brn, plastic	AF	CL			
	(B) Soil: silty clay, wet, firm, dk brn to blk, organics, porous	Topsoil	CL			
	(C) Colluvium: silty clay, moist, firm, med brn, rooty, carbonate stringers & BR materials	col	CL			
	(D) Siltstone: Deeply weathered, moist, med dense, med gry brn, highly fractured	slt (TFI)	CH			

GRAPHIC REPRESENTATION NE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N45W



LOG OF TRENCH NO: T-2

SOIL-5 - (2/77)

Feinbrunn & Associates

Project Name: Goodview Monterey Park Logged By: PB

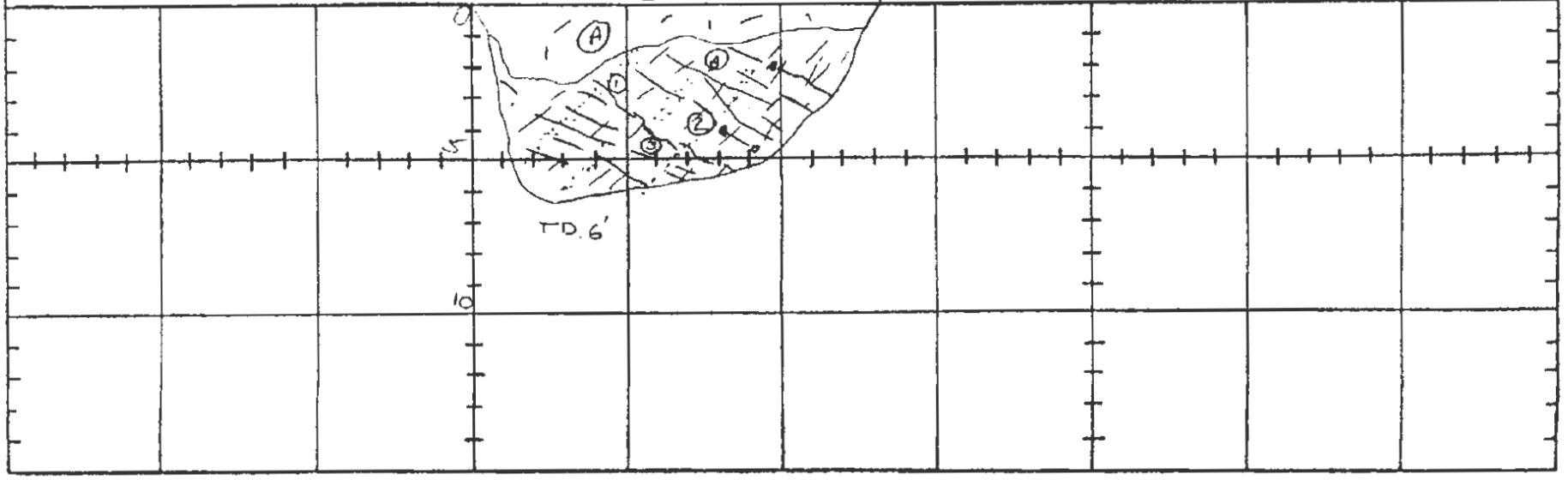
Project Number: 2830150-04 Elevation:

Equipment: JD 450 + backhoe Location: See Plan

TRENCH NO. T-3

GEOLOGIC ATTITUDES	DATE: 12-10-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① Br. N60W 58SW ② J: N85W 40NE ③ J: N35W 26NE	(A) Artificial fill and surficial slump debris, sandy silt, moist- wet, soft, porous, rooty	Af	CL			
	(B) Bedrock, clayey siltstone with occ thin ss lenses or pockets slt generally massive, moist, dense, dry brn. Attitudes ② and ③ are predominate. Carbonate and fe-staining along generally tight fractures. Fracture appears perpendicular to bedding	slt+ss (TFI)	CH			

GRAPHIC REPRESENTATION E/W SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N45E



LOG OF TRENCH NO: T-3

501-A - 12/77

Leighton & Associates

501-A - (3/77)

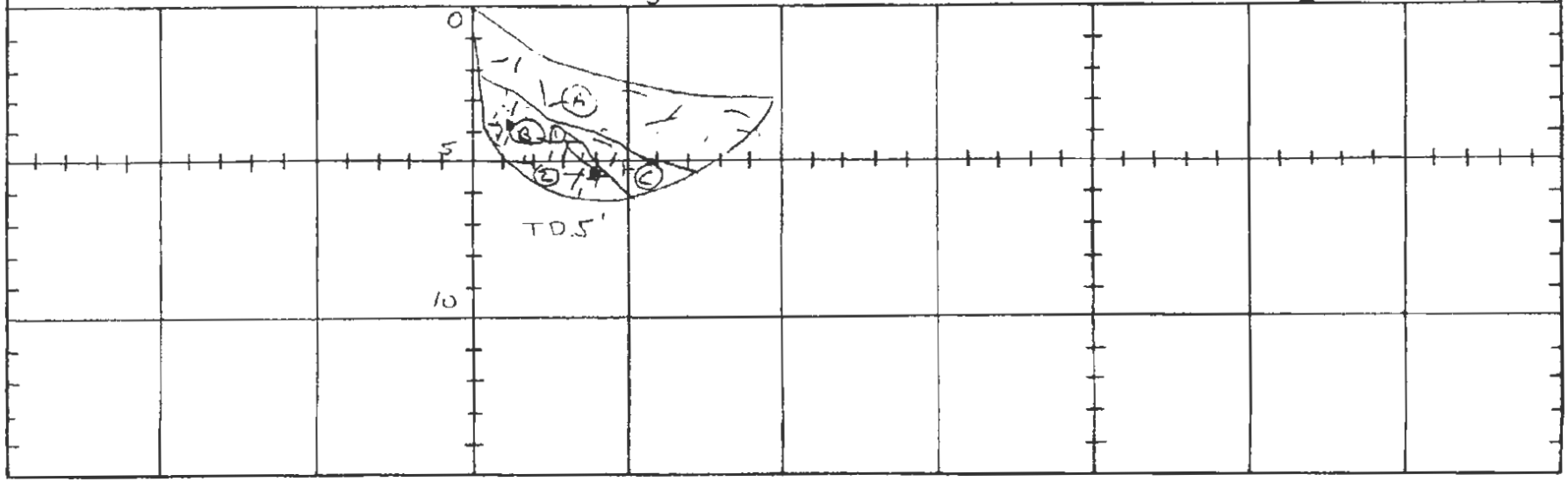
Project Name: Woodview Monterey Park Logged By: PB

Project Number: 2830150-04 Elevation: TRENCH NO. T-4

Equipment: JD 450 + backhoe Location:

GEOLOGIC ATTITUDES	DATE: 12-10-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① J: N20W 39NE ② J: N50W 30NE	(A) Artificial Fill: clayey silt, moist, soft-firm, med-dk brn, rooty, porous	Af	CL			
	(B) Bedrock: massive sandy clayey silt, moist med dense, med gry brn, highly fractured ① and ② are predominate orientations fractures are fe-stained and occ carbonate lined generally tight but locally sl. open	Slt (TR1)	CH			
	(C) Bedrock: Deeply weathered, highly broken zone - moist.	Slt (TR1)	CH			

GRAPHIC REPRESENTATION NW SCALE: 1" = 5' SURFACE SLOPE: 8° TREND: N45E



LOG OF TRENCH NO: T-4

Leighton & Associates

501-A - (3/77)

Project Name: Goodview Monterey Park Logged By: PB

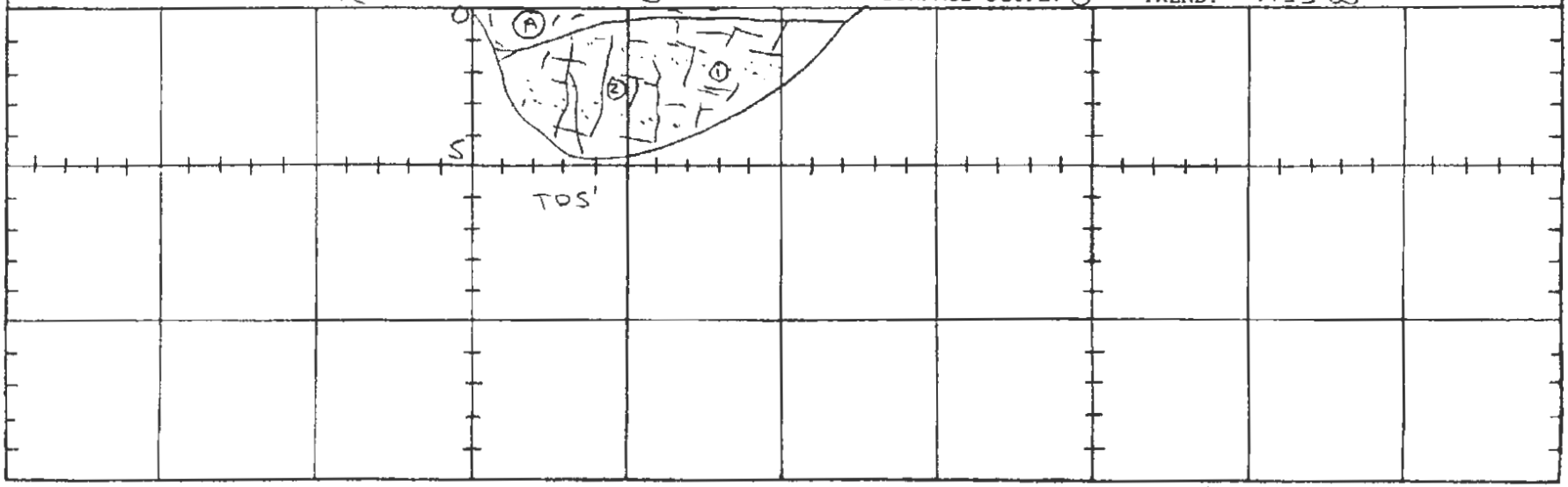
Project Number: 2830150-04 Elevation:

Equipment: JD 450 + backhoe Location: See plan

TRENCH NO. T-5

GEOLOGIC ATTITUDES	DATE: 12-10-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① B: N60W 45SW ② J: N45W 90°	(A) Surficial slump debris: Sandy clayey silt, wet, loose mod hrd, porous roots	slump	CL			
	(B) Bedrock: clayey silt, moist, dense, med gry brn, massive with occ thin ss lenses or pockets	Slt (TA)	CH			

GRAPHIC REPRESENTATION NE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N53W



LOG OF TRENCH NO: T-5

Leighton & Associates

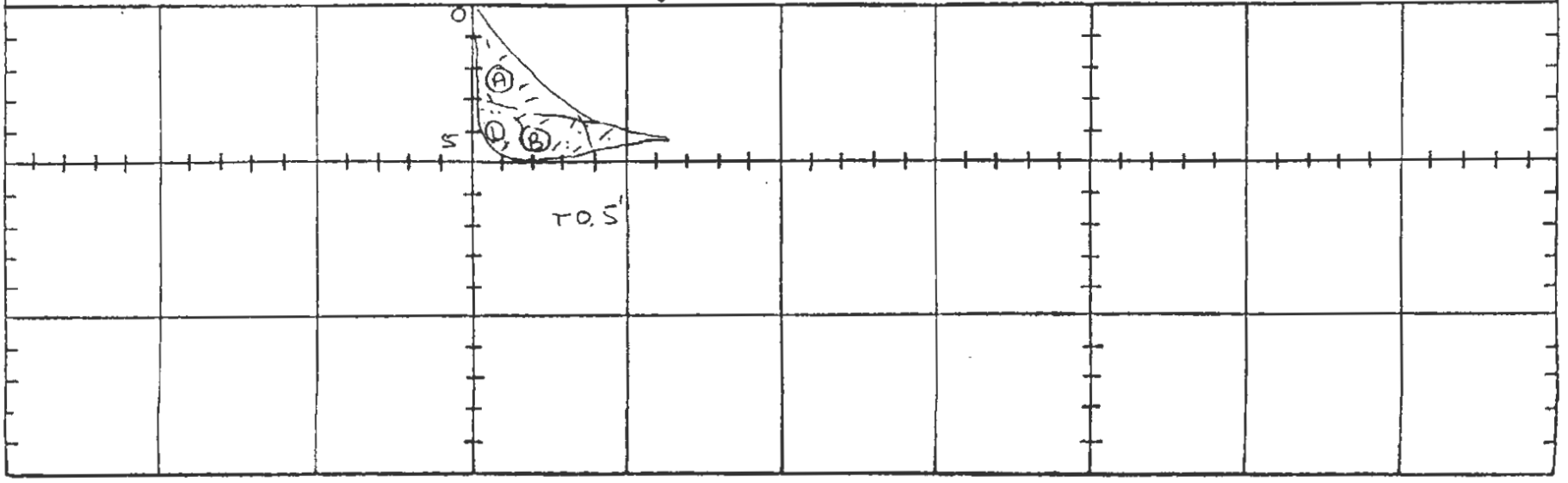
Project Name: Goodview Monterey Park Logged By: RB

Project Number: 2830150-04 Elevation: TRENCH NO. T-6

Equipment: JD 450 + backhoe Location: see plan

GEOLOGIC ATTITUDES	DATE: 10-12-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① B: N80W 58SW	(A) Artificial fill; clayey silt, moist, firm, mod brn, mod porous	AF	CL			
	(B) Bedrock, clayey silt + occ thin SS beds, moist, dense, gry brn, sl-mod fractured	Slt+SS (TF1)	CH			

GRAPHIC REPRESENTATION SE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N75E



LOG OF TRENCH NO: T-6

SCI-A - (3/77) Leighton & Associates

Project Name: Goodview Monterey Park Logged By: PB

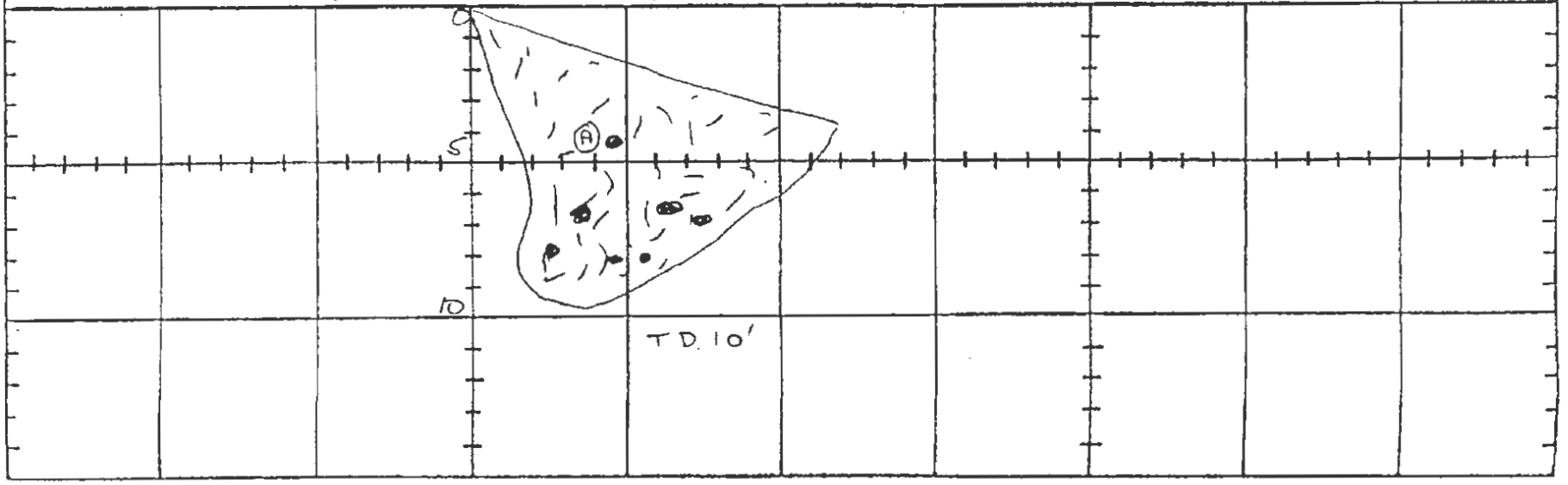
Project Number: 283050-04 Elevation:

Equipment: JD 450 + backhoe Location: See Plan

TRENCH NO. T-7

GEOLOGIC ATTITUDES	DATE: 12-10-87 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	(A) Artificial fill: clayey silt, damp, firm, mottled med and dk brn, local clayey pockets, generally appears compact rooty, porous near surface.	AF	CL			

GRAPHIC REPRESENTATION NE SCALE: 1" = 5' SURFACE SLOPE: 12° TREND: SE



LOG OF TRENCH NO: T-7

501-A - (3/77)

Leighton & Associates

Project Name: Brookview Monterey Park Logged By: PB

Project Number: 2830150-04 Elevation: TRENCH NO. T-8

Equipment: JD 450 - backhoe Location: See plan

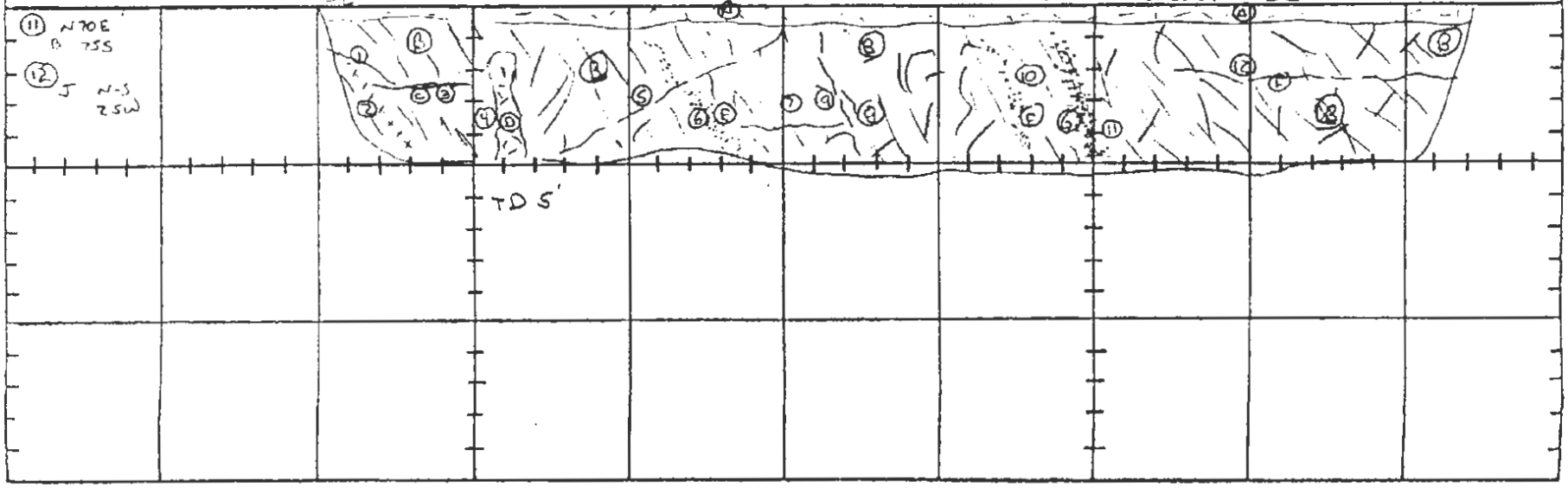
DATE: 12-15-87

GEOLOGIC ATTITUDES		DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① J: N55E 45SE	Ⓐ	Topsoil, loose, rooty porous clayey silt, moist.	Topsoil	CL			
② B: N80W 50SW	Ⓒ	Bedrock: massive silt + occ thin SS lenses, damp-moist, dense, lt gry brn, mod-highly fractured locally heavy Fe staining along fractures and SS beds, occ thin clay seams or laminations					
③ J: N5E 36NW							
④ J: N60E 90°							
⑤ J: N10W 70NE	Ⓒ	Carbonate lined fracture, continuous.	Silt+SS (TF1)	CH			
⑥ B: N85W 62SW	Ⓓ	Highly fractured, broken zone, continuous					
⑦ J: N-S 65-W	Ⓔ	SS bed, 3-4" thk, damp mod dense, lt brn fi SS, generally clean Fe stained contacts					
⑧ J: N15E 90°	Ⓕ	SS bed, 2" thk, damp, mod dense, lt brn fi SS, clean, friable					
⑨ B: N80E 75SW	Ⓖ	FiSS, to 6" thk, damp, mod dense, lt brn friable, generally clean cross-bedded.					
⑩ B: E-W 60S	Ⓘ	Fracture heavily Fe stained continuous along 6' of trench wall.					
	Ⓙ	Cemented SS bed					

GRAPHIC REPRESENTATION SE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N15E

⑪ N70E 8 75S

⑫ J: N-S 75W



501-A - (3/77)

Leighton & Associates

LOG OF TRENCH NO: T-8

501-A - (3/77)

Project Name: Goodview Monterey Park Logged By: DB

Project Number: 2830150-04 Elevation:

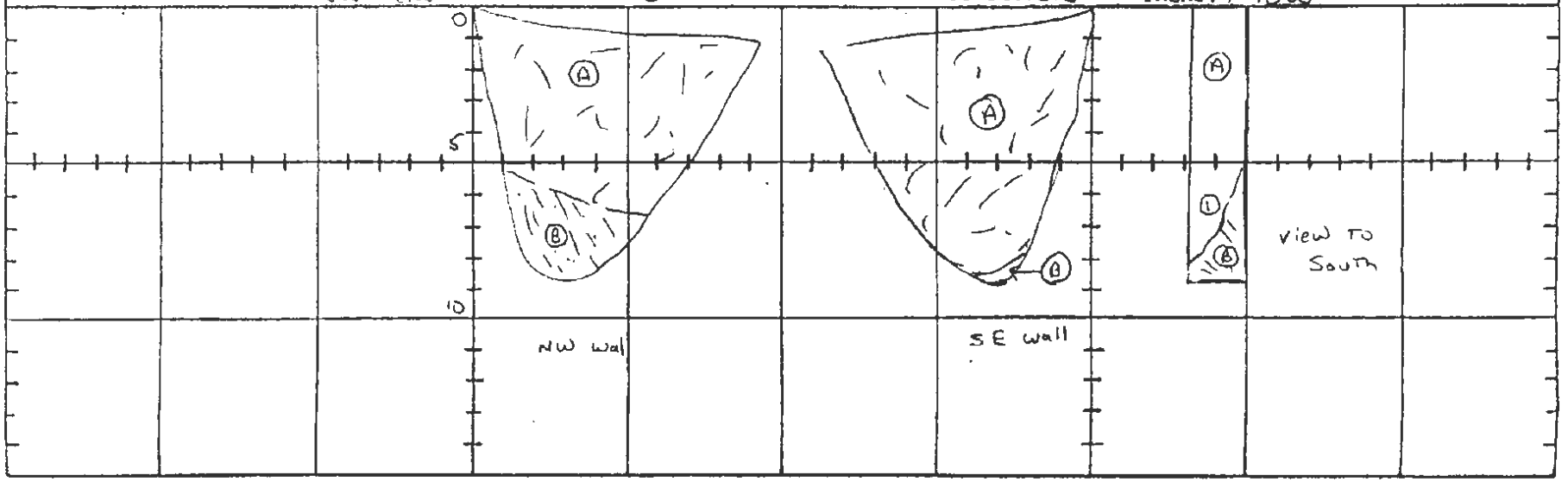
Equipment: JD 450 + backhoe Location: See Plan

TRENCH NO. T-9

GEOLOGIC ATTITUDES	DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
① Estimated BR/Fill contact N30W 55°NE	(A) Artificial fill, clayey silt, moist, firm, locally soft, mottled med brn and dk brn, porous near surface.	AF	CL			
	(B) Bedrock: clayey silt, damp- moist, mod dense, fractured, lt gry brn	silt (TF1)	CH			

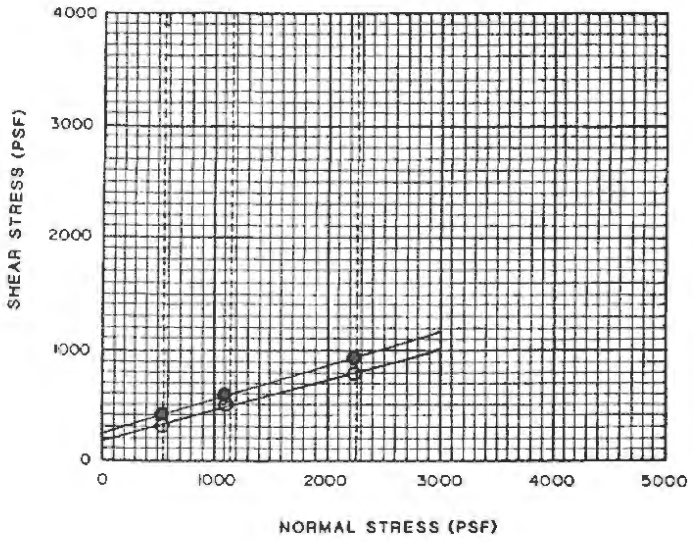
DATE: 12-15-87

GRAPHIC REPRESENTATION see below SCALE: 1" = 5' SURFACE SLOPE: 5° TREND: N 10 W



LOG OF TRENCH NO: T-9

Leighton & Associates

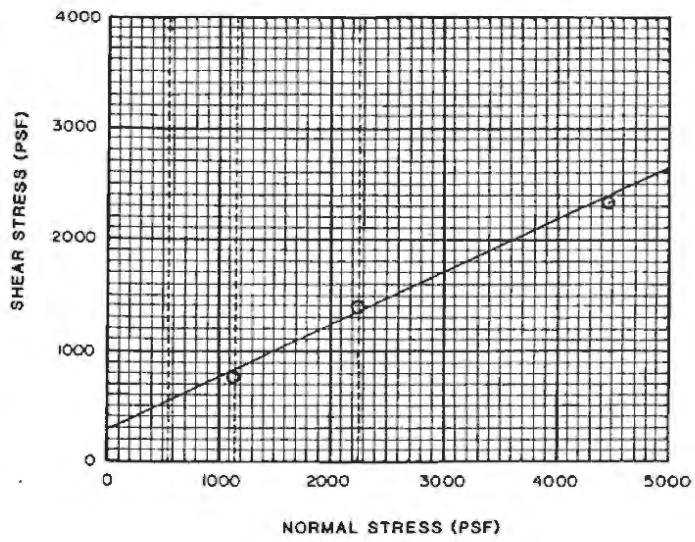


Remolded to 90%

DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	●	5	1	4	240	17	MH
Relaxed	○				180	15	-

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST RESULTS

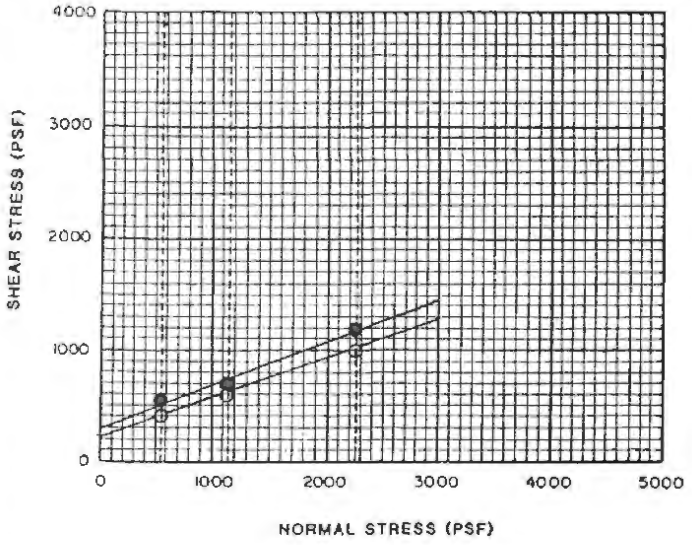


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DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	○	5	3	19	290	25	MH

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST RESULTS

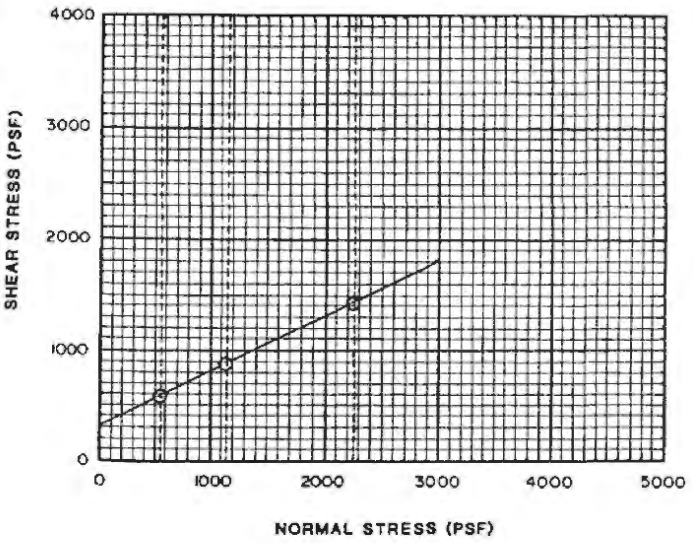


Remolded to 90%

DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	●	5	4	30	300	20	CH
Relaxed	O				210	18	

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST
RESULTS



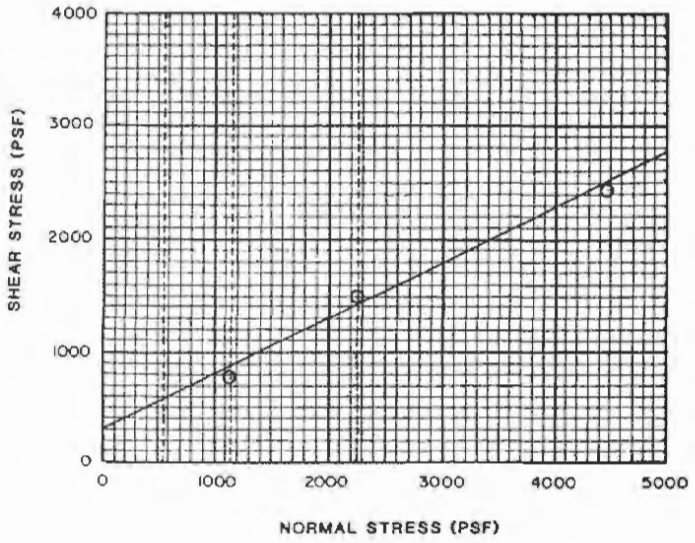
0.005 in/min. Strain Rate

Remolded to 90 percent

DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	O	5	4	30	300	26.5	CH

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST
RESULTS



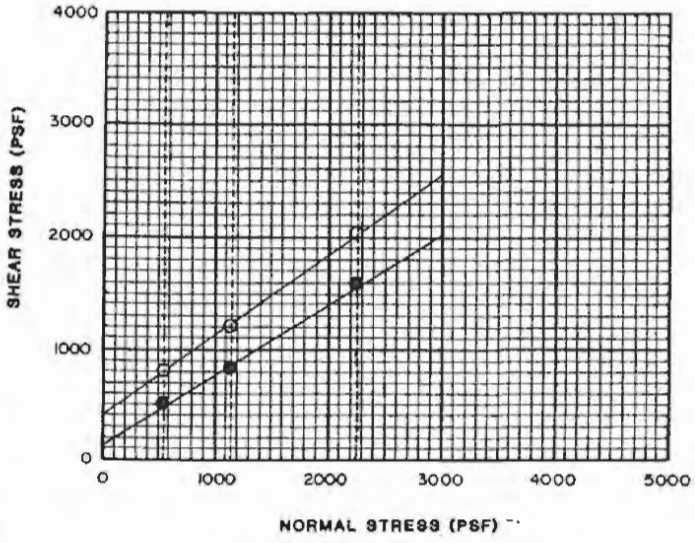
0.005 in/min. Strain Rate — Remolded to 90 percent

DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	O	5	4	30	300	26	CH

L&A

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST RESULTS

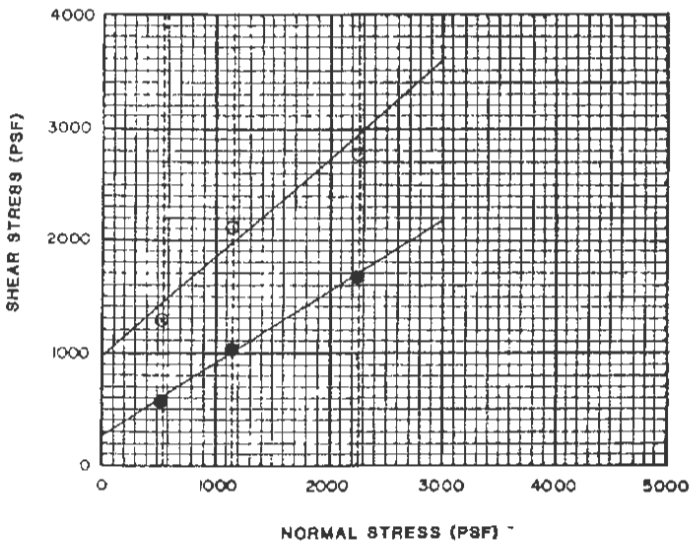


DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	O	3	4	15	400	36	CL
Relaxed	●				150	32	

L&A

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST RESULTS

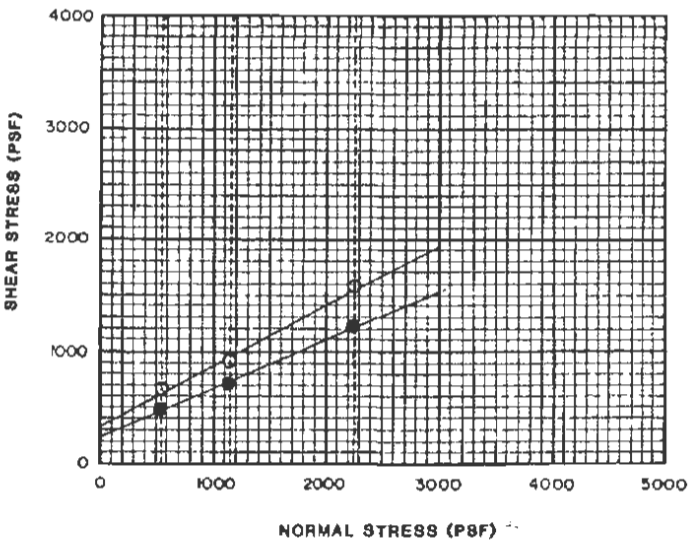


DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	○	4	3	10.5	990	41.5	CL
Relaxed	●				275	32.5	

L&A

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST RESULTS

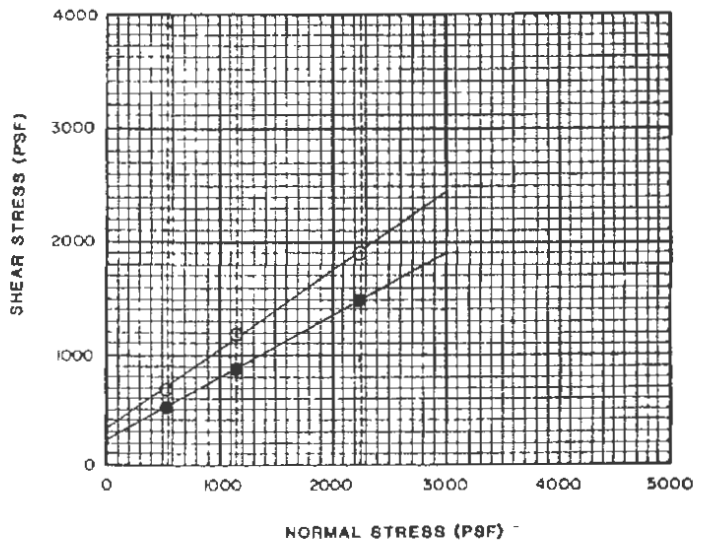


DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	○	6	1	3	350	28.0	CL
Relaxed	●				250	23.5	

L&A

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST RESULTS



DESCRIPTION	SYMBOL	BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	COHESION (PSF)	FRICTION ANGLE	SOIL TYPE
Peak	○	6	2	6	350	35.0	CL
Relaxed	●				240	28.5	

PROJECT NUMBER
2830150-04

DIRECT SHEAR TEST
RESULTS

501-A - (3/77)

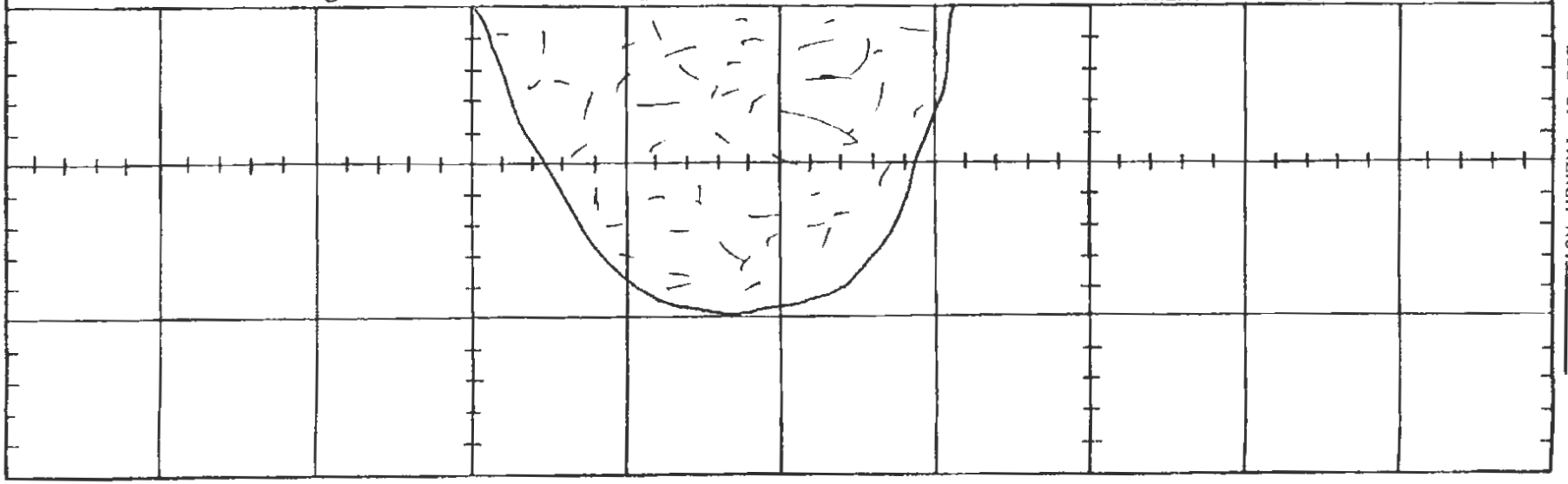
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-07 Elevation: 592'± TRENCH NO. LT-1

Equipment: Ford Backhoe Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	Artificial Fill: Silty Clay, light yellow-brown, dry, damp with depth, soft to firm. Desicated at surface	AF		Bag #1 @ 3'		
	TD 10'					

GRAPHIC REPRESENTATION SW SCALE: 1" = 5 SURFACE SLOPE: 0 TREND: N13W ←



LOG OF TRENCH NO: LT-1

Leighton & Associates

501-A - (3/77)

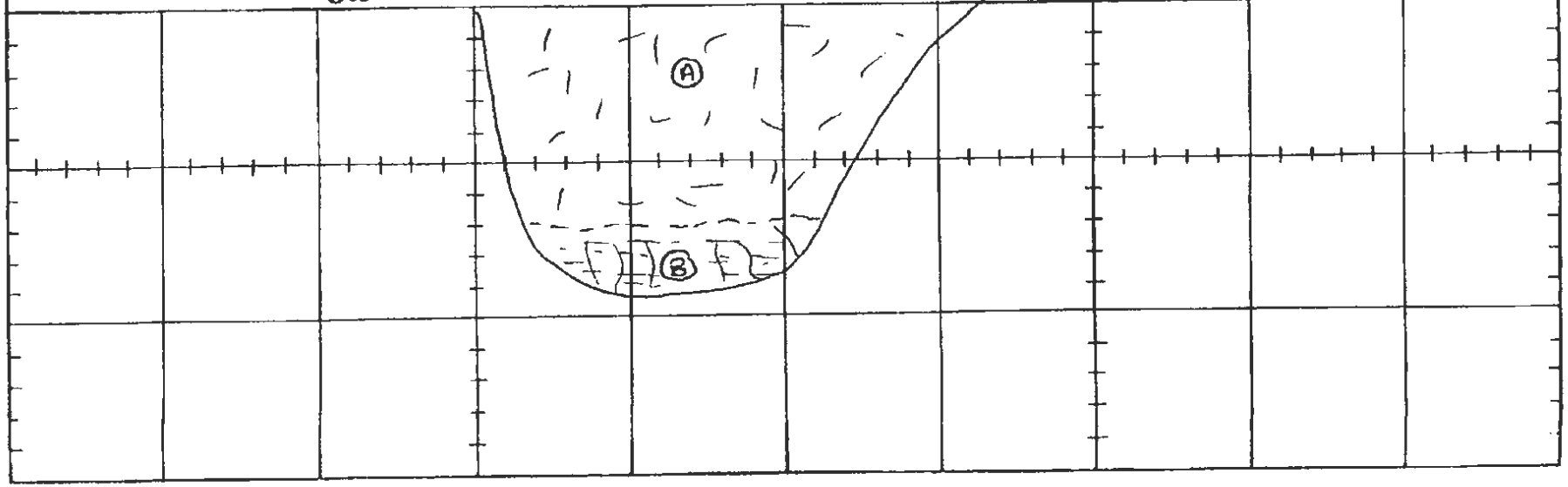
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-07 Elevation: 598'± TRENCH NO. LT-2

Equipment: Ford Backhoe Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	(A) Artificial Fill; Silty clay, mottled medium and yellow brown, damp to moist, firm	AL		Bag #2 @ 3'		
	(B) Bedrock: clayey siltstone, gray brown, moist, firm, mod fractured, carbonate lined.	Tsl		Bag #3 @ 8'		
	TD 9'					

GRAPHIC REPRESENTATION SW SCALE: 1" = 5 SURFACE SLOPE: 0 TREND: N20W ←



LOG OF TRENCH NO: LT-2

Leighton & Associates

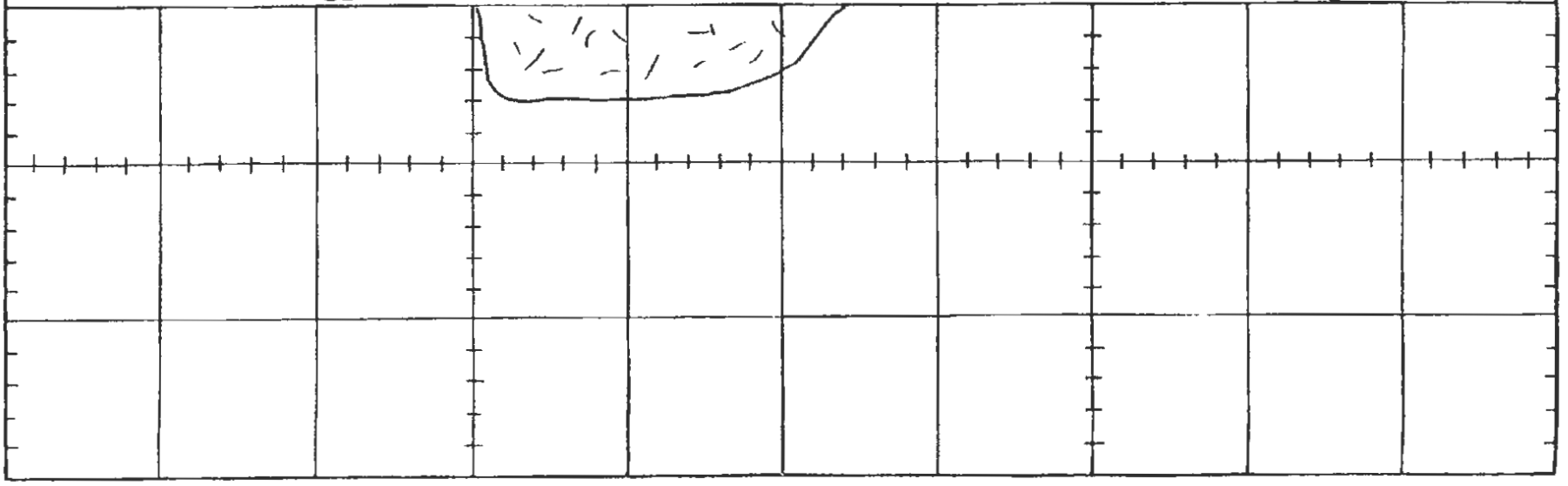
Project Name: Goodview Monterey Park | Logged By: PB

Project Number: 2830150-07 | Elevation: 580'± | TRENCH NO. LT-3

Equipment: Ford Backhoe | Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	Artificial Fill: Silty clay, medium brown, soft-firm, damp rooty in upper portion	Af		Bag #4 @ 3'		
	TD 3'					

GRAPHIC REPRESENTATION SE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N 40 E ←



LOG OF TRENCH NO: LT-3

SOI-A - (3/77)

Leighton & Associates

501-A - (3/77)

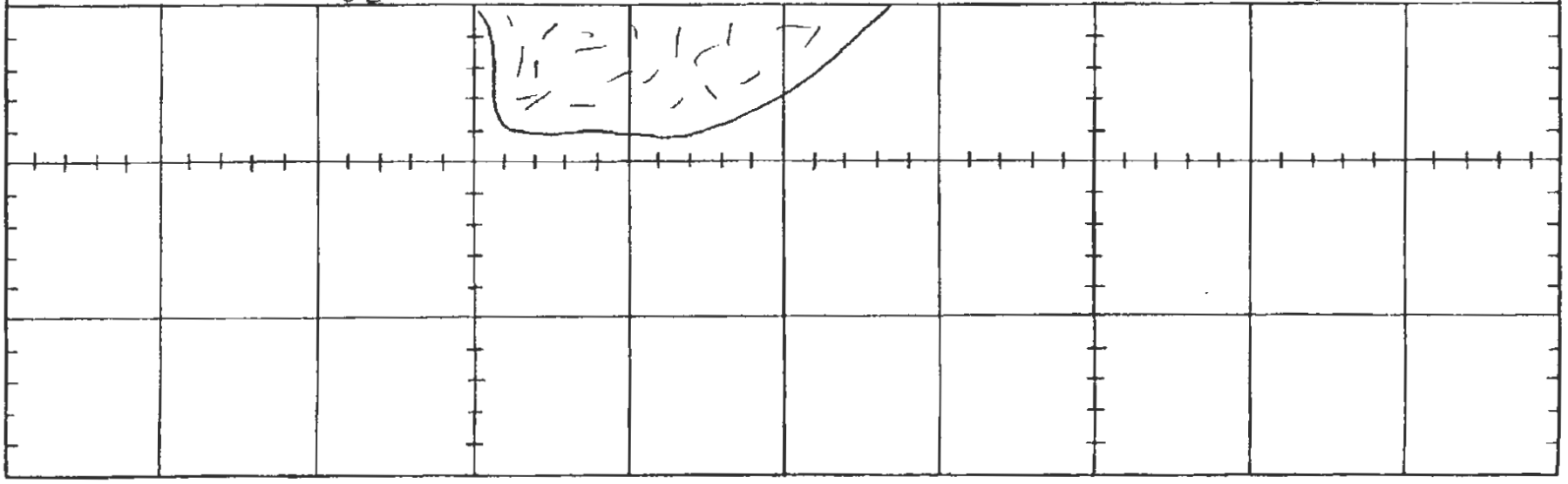
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-07 Elevation: 567'± TRENCH NO. LT-4

Equipment: Ford Backhoe Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	Artificial fill: Silty clay, dark brown, and medium brown mottled, moist, Soft - Firm	AF		Bag #5 @ 4'		
	TD 4'					

GRAPHIC REPRESENTATION SE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N80E ←



LOG OF TRENCH NO: LT-4

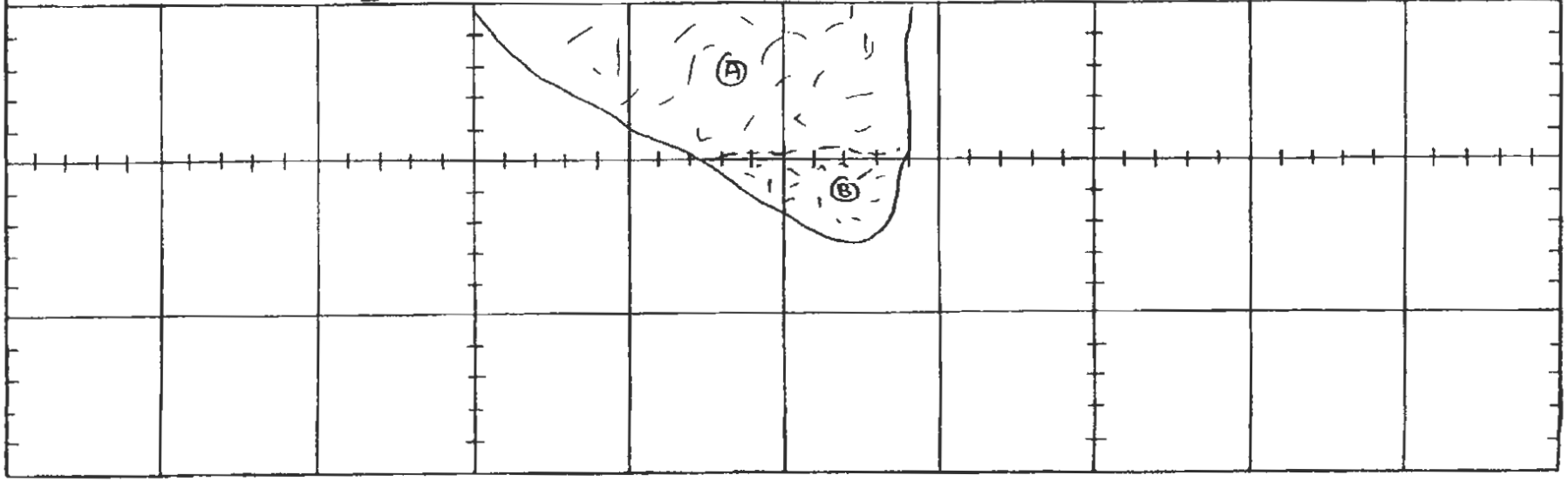
Leighton & Associates

501-A - (3/77)

Project Name: Goodview Monterey Park | Logged By: PB
Project Number: 2830150-07 | Elevation: 555'± | TRENCH NO. LT-5
Equipment: Ford Backhoe | Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	(A) Artificial fill: Silty clay, mottled LT and medium brown, damp-moist soft-firm, locally crumbly, dry. Animal borrows.	AF		Bag #6 @ 3' Bag #7 @ 6'		
	(B) Colluvium: Clayey Silt-Silty clay, dark brown, damp, firm, slightly to moderately porous.	Col				
	TD 7'					

GRAPHIC REPRESENTATION NE SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N80W ←



LOG OF TRENCH NO: LT-5

Leighton & Associates

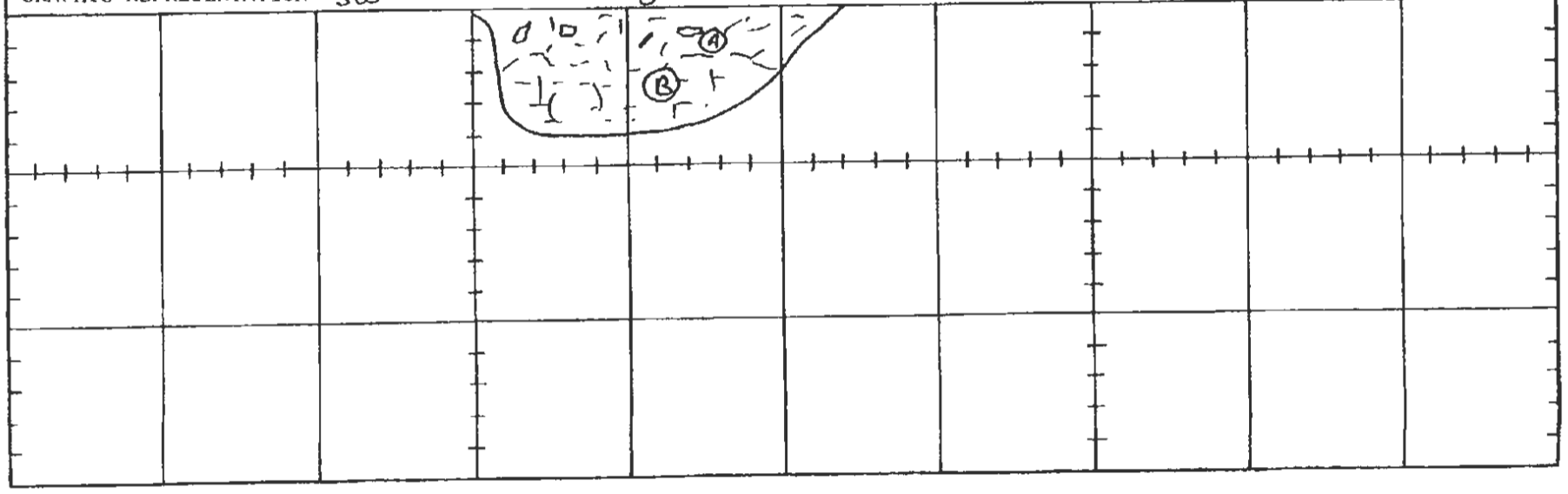
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-07 Elevation: 536'± TRENCH NO. LT-6

Equipment: Ford Backhoe Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	(A) Artificial Fill Silty clay, dark-medium brown, damp, soft, trash, bottles, plastic, cans etc. buried in upper 2'	AFU		Bag #8 @ 4'		
	(B) Bedrock: clayey siltstone, LT gray brown, damp, firm, mod fractured.	TF1				
	TD 4'					

GRAPHIC REPRESENTATION SW SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N75W →



501-A - (3/77)

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LOG OF TRENCH NO: LT-6

501-A - (3/77)

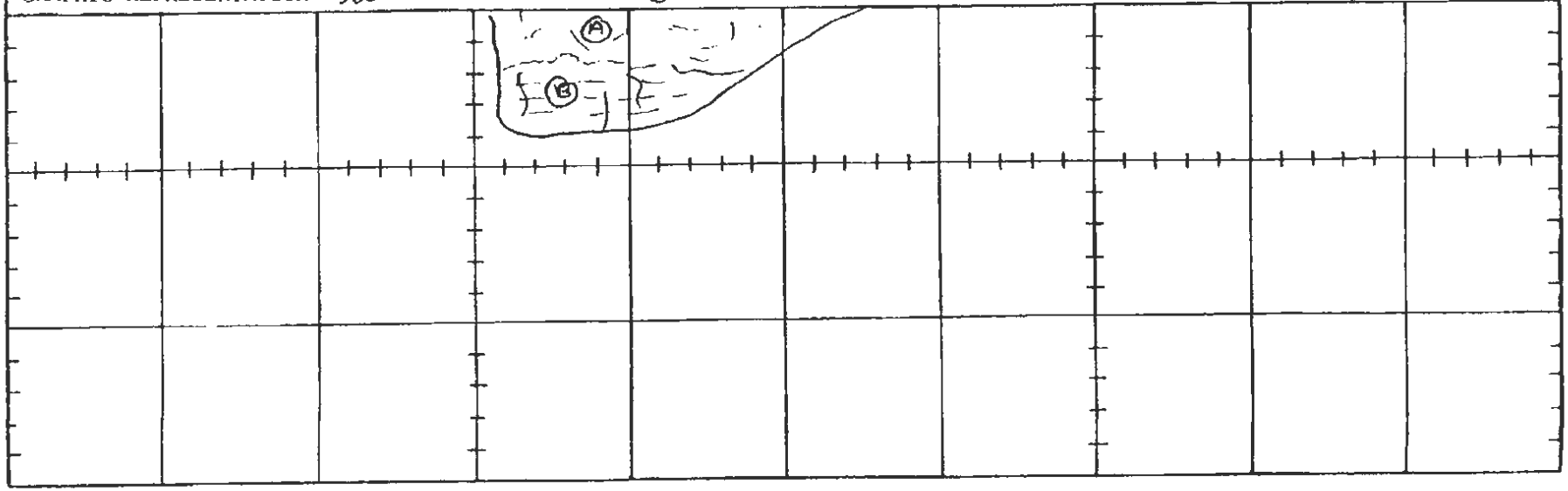
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-07 Elevation: 581'± TRENCH NO. LT-7

Equipment: Ford Backhoe Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES: U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	(A) Debris from wall failure, slough.					
	(B) Bedrock: clayey siltstone, medium gray brown, damp, firm, mod fractured, carbonate lined	Tfl				
	TD 4'					

GRAPHIC REPRESENTATION SW SCALE: 1" = 5' SURFACE SLOPE: 0 TREND: N14W →



LOG OF TRENCH NO: LT-7

Leighton & Associates

501-A - (3/77)

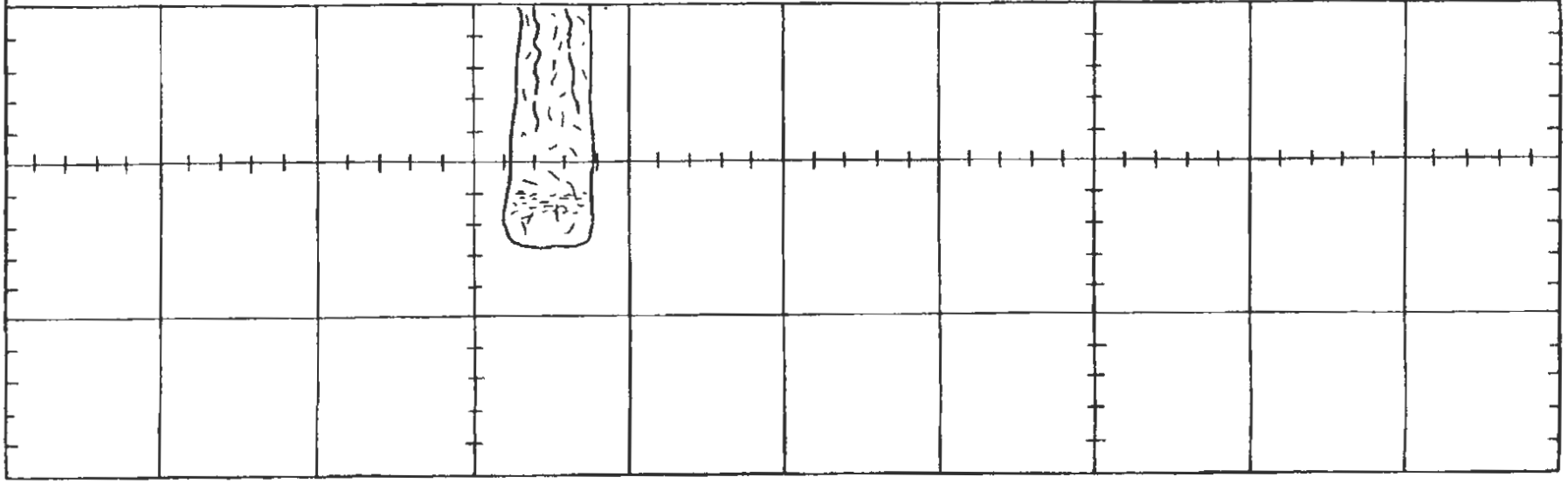
Project Name: Goodview Monterey Park Logged By: PB

Project Number: 2830150-07 Elevation: 603 ± TRENCH NO. LT-8

Equipment: Hand Excavated Location:

GEOLOGIC ATTITUDES	DATE: 12-20-90 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	Colluvium: silty clay, dark brown, dry at surface damp with depth. Firm. Animal burrows. Desciccation cracks To 5'. Carbonate Linings at 6-7' moderately Porous To 4' T.D. 8'	Col		Bag #9 @ 7'		

GRAPHIC REPRESENTATION NW SCALE: 1" = 5' SURFACE SLOPE: 24° TREND: square



LOG OF TRENCH NO: LT-8

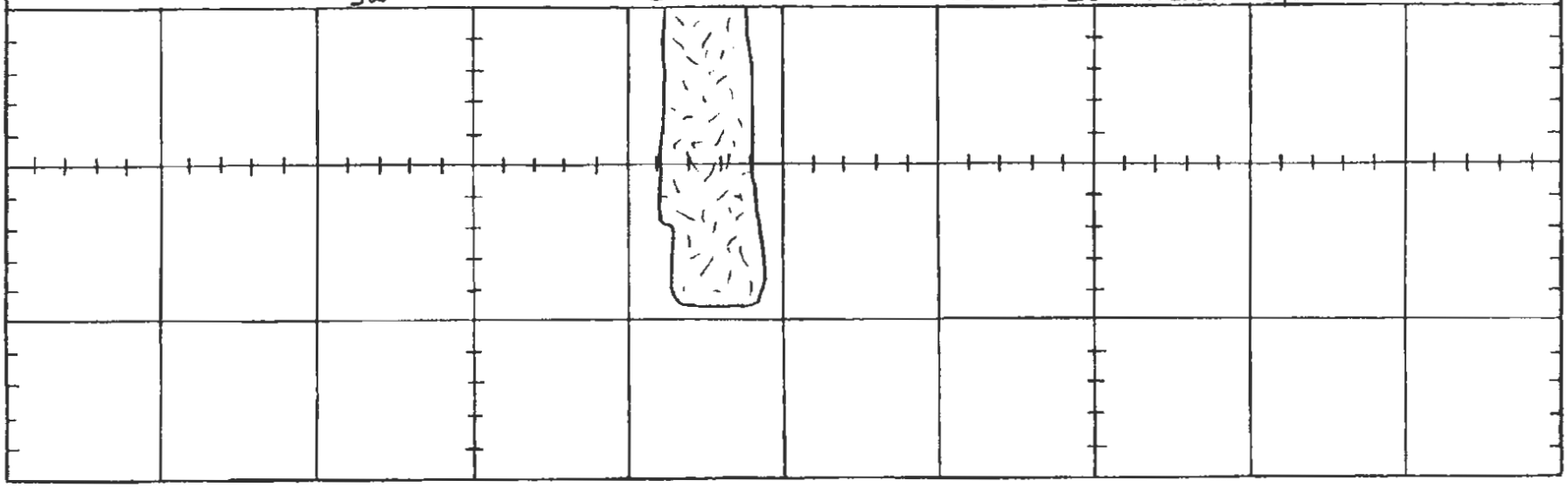
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501-A - (3/77)

Project Name: Goodview Monterey
Project Number: 2830150-07
Equipment: Hand Excavated
Logged By: PB
Elevation: 627'±
Location:
TRENCH NO. LT-9

GEOLOGIC ATTITUDES	DATE: 12-2090 DESCRIPTION:	GEOLOGIC UNIT	ENGINEERING PROPERTIES U.S.C.S.	Sample No.	Moisture (%)	Density (pcf)
	Colluvium: silty clay, dark brown, locally medium red brown, dry, damp @ 7', firm-stiff, soil filled animal burrows desicated at surface. TD 9.5'	col				

GRAPHIC REPRESENTATION SW SCALE: 1" = 5' SURFACE SLOPE: 26° TREND: square



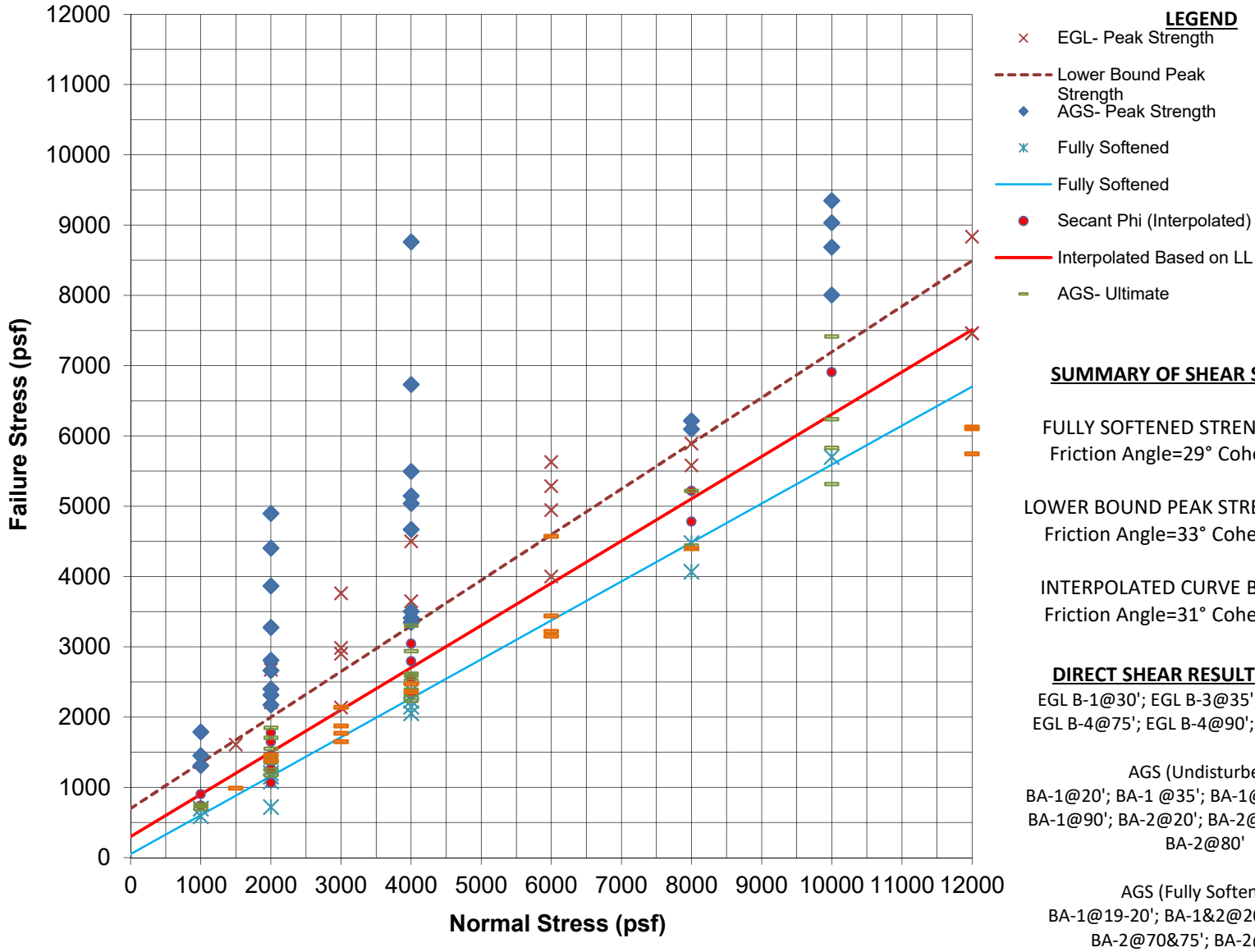
LOG OF TRENCH NO: LT-9

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APPENDIX F

SHEAR STRENGTH CALCULATIONS

Summary of Direct Shear Results (Composite Graph)
FERNANDO FORMATION



SUMMARY OF SHEAR STRENGTHS

FULLY SOFTENED STRENGTH CURVE:
Friction Angle=29° Cohesion=50psf

LOWER BOUND PEAK STRENGTH CURVE:
Friction Angle=33° Cohesion=700psf

INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

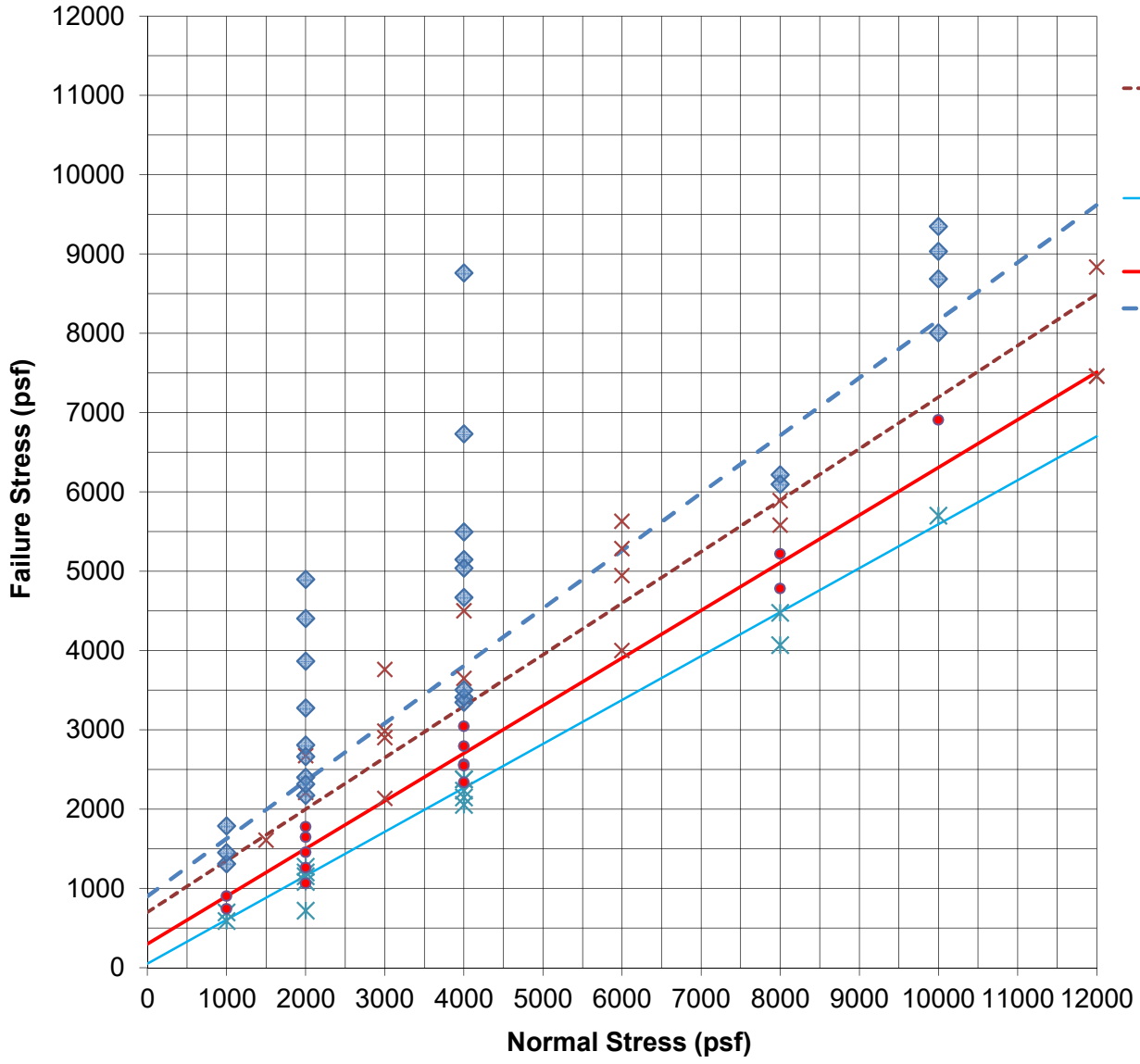
DIRECT SHEAR RESULTS PLOTTED:

EGL B-1@30'; EGL B-3@35'; EGL B-4@25';
EGL B-4@75'; EGL B-4@90'; EGL B-4@120';

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@55'; BA-1@75';
BA-1@90'; BA-2@20'; BA-2@30'; BA-2@50';
BA-2@80'

AGS (Fully Softened):
BA-1@19-20'; BA-1&2@20'; BA-2@25';
BA-2@70&75'; BA-2@73-75'

Summary of Direct Shear Results (Peak and Fully Softened)
FERNANDO FORMATION



LEGEND

- EGL- Peak Strength
- Lower Bound Peak Strength
- AGS- Peak Strength
- Fully Softened
- Fully Softened
- Secant Phi (Interpolated)
- Interpolated Based on LL
- Peak Strength

SUMMARY OF SHEAR STRENGTHS

FULLY SOFTENED STRENGTH CURVE:
Friction Angle=29° Cohesion=50psf

LOWER BOUND PEAK STRENGTH CURVE:
Friction Angle=33° Cohesion=700psf

PEAK STRENGTH CURVE:
Friction Angle=36° Cohesion=900psf

INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

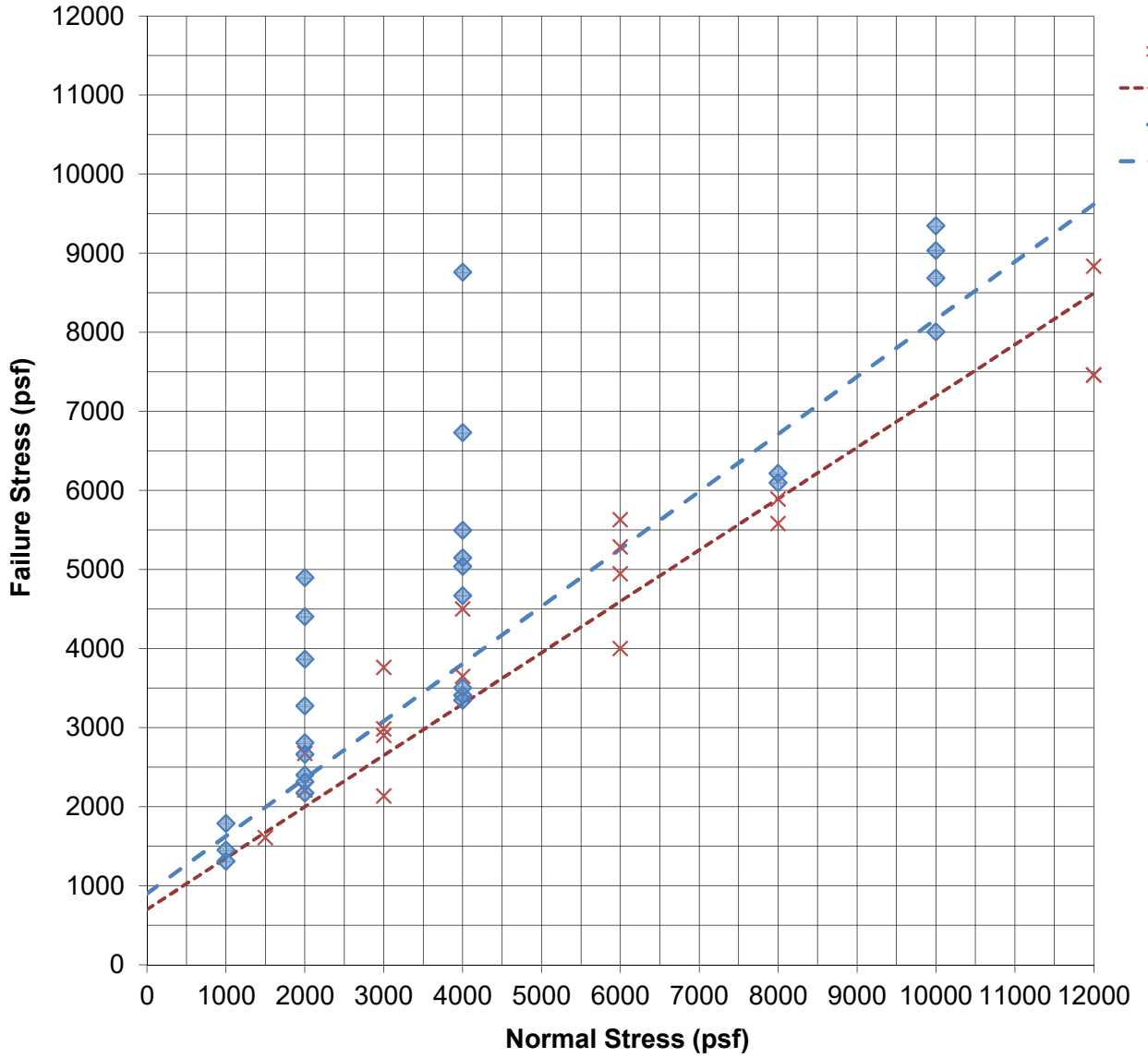
DIRECT SHEAR RESULTS PLOTTED:

EGL B-1@30'; EGL B-3@35'; EGL B-4@25';
EGL B-4@75'; EGL B-4@90'; EGL B-4@120';

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@55'; BA-1@75';
BA-1@90'; BA-2@20'; BA-2@30'; BA-2@50';
BA-2@80'

AGS (Fully Softened):
BA-1@19-20'; BA-1&2@20'; BA-2@25';
BA-2@70&75'; BA-2@73-75'

Summary of Direct Shear Results (Peak)
FERNANDO FORMATION



LEGEND

- EGL- Peak Strength
- Lower Bound Peak Strength
- AGS- Peak Strength
- Peak Strength

SUMMARY OF SHEAR STRENGTHS

LOWER BOUND PEAK STRENGTH CURVE:
Friction Angle=33° Cohesion=700psf

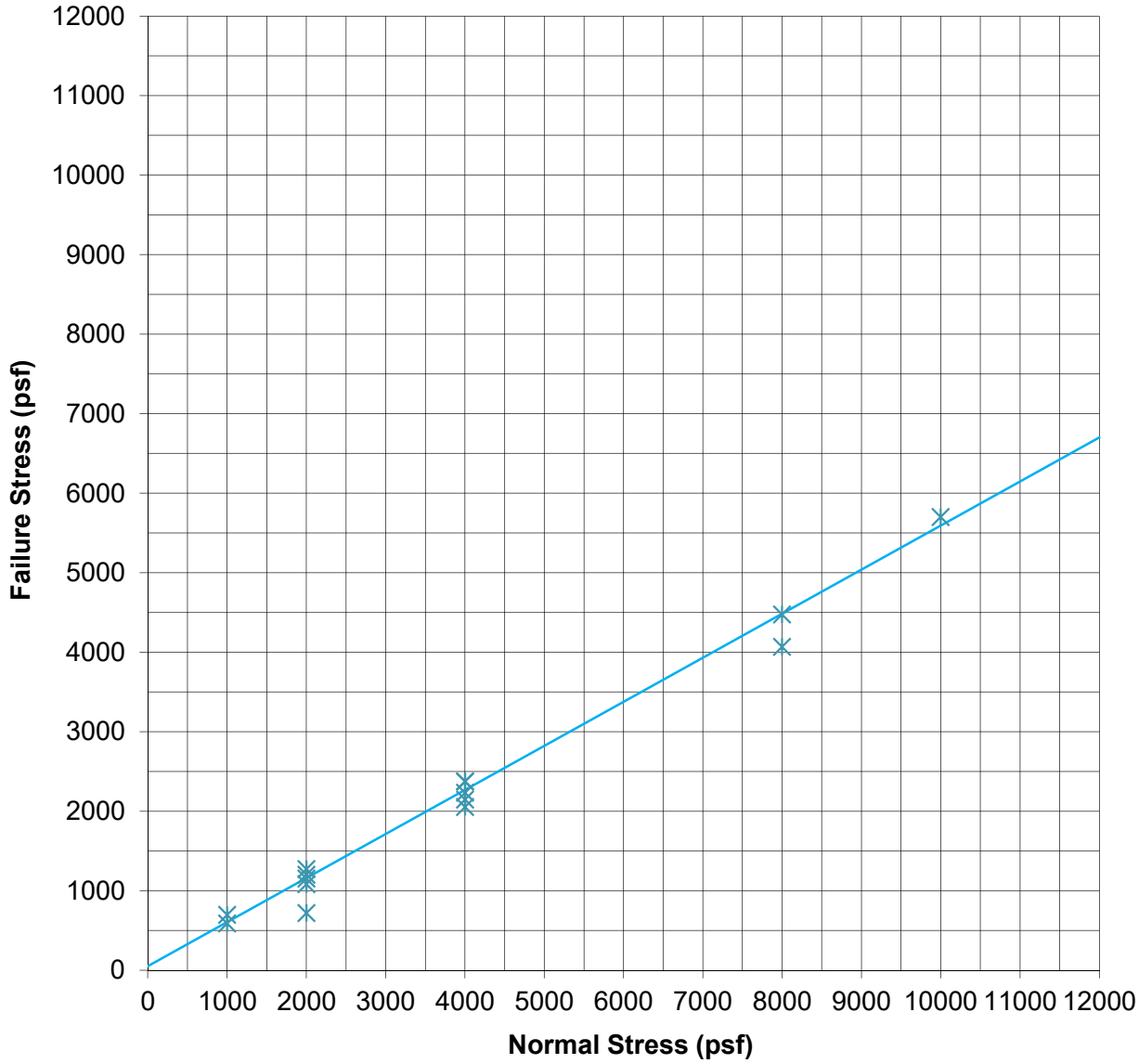
PEAK STRENGTH CURVE:
Friction Angle=36° Cohesion=900psf

DIRECT SHEAR RESULTS PLOTTED:

EGL B-1@30'; EGL B-3@35'; EGL B-4@25';
EGL B-4@75'; EGL B-4@90'; EGL B-4@120';

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@55'; BA-1@75';
BA-1@90'; BA-2@20'; BA-2@30'; BA-2@50';
BA-2@80'

Summary of Direct Shear Results (Fully Softened)
FERNANDO FORMATION



LEGEND

Fully Softened

Fully Softened

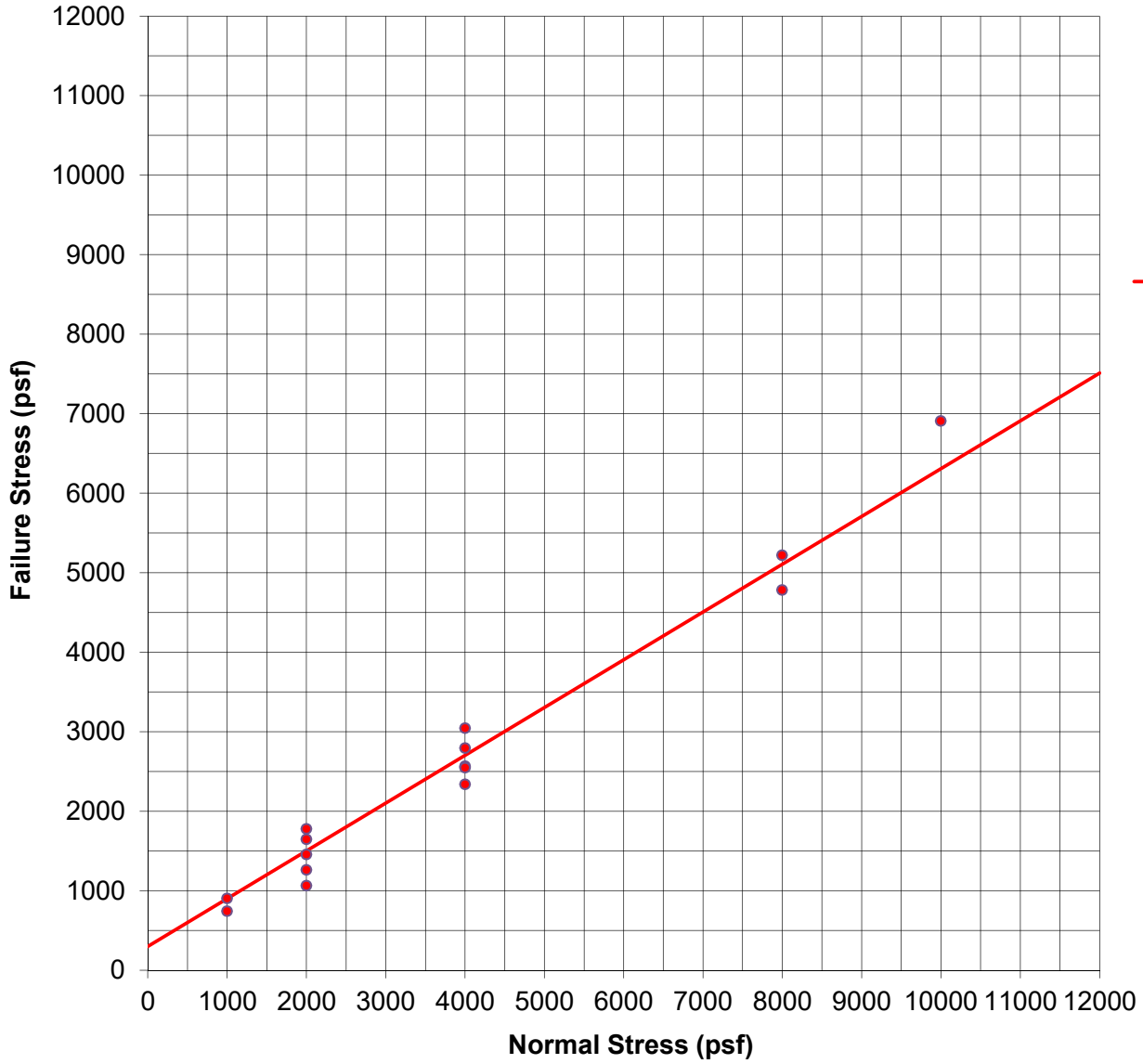
SUMMARY OF SHEAR STRENGTHS

FULLY SOFTENED STRENGTH CURVE:
Friction Angle=29° Cohesion=50psf

DIRECT SHEAR RESULTS PLOTTED:

AGS (Fully Softened):
BA-1@19-20'; BA-1&2@20'; BA-2@25';
BA-2@70&75'; BA-2@73-75'

Summary of Direct Shear Results (Interpolated Strength)
FERNANDO FORMATION



LEGEND

Secant Phi (Interpolated)

Interpolated Based on LL

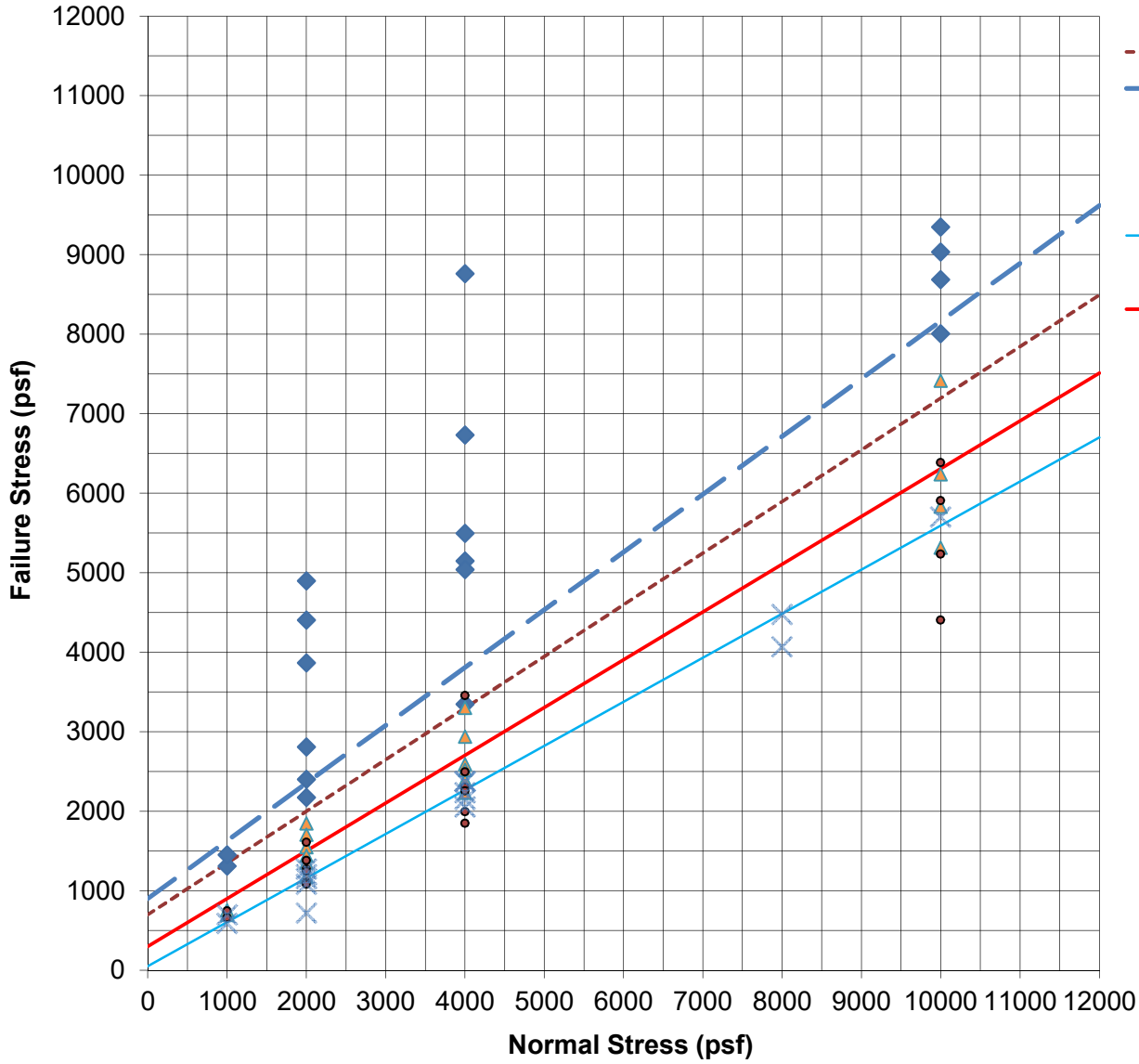
SUMMARY OF SHEAR STRENGTHS

INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

DIRECT SHEAR RESULTS PLOTTED:

AGS (Fully Softened- Interpolated Points):
BA-1@19-20'; BA-1&2@20'; BA-2@25';
BA-2@70&75'; BA-2@73-75'

Comparison of Direct Shear Results (Peak, Ultimate, FS, and Residual)
FERNANDO FORMATION



LEGEND

- Lower Bound Peak Strength
- Peak Strength
- AGS- Peak Strength
- AGS Ultimate Strength
- AGS Residual Strength
- Fully Softened
- Fully Softened
- Interpolated Based on LL

SUMMARY OF SHEAR STRENGTHS

FULLY SOFTENED STRENGTH CURVE:
Friction Angle=29° Cohesion=50psf

PEAK STRENGTH CURVE:
Friction Angle=36° Cohesion=900psf

LOWER BOUND PEAK STRENGTH CURVE:
Friction Angle=33° Cohesion=700psf

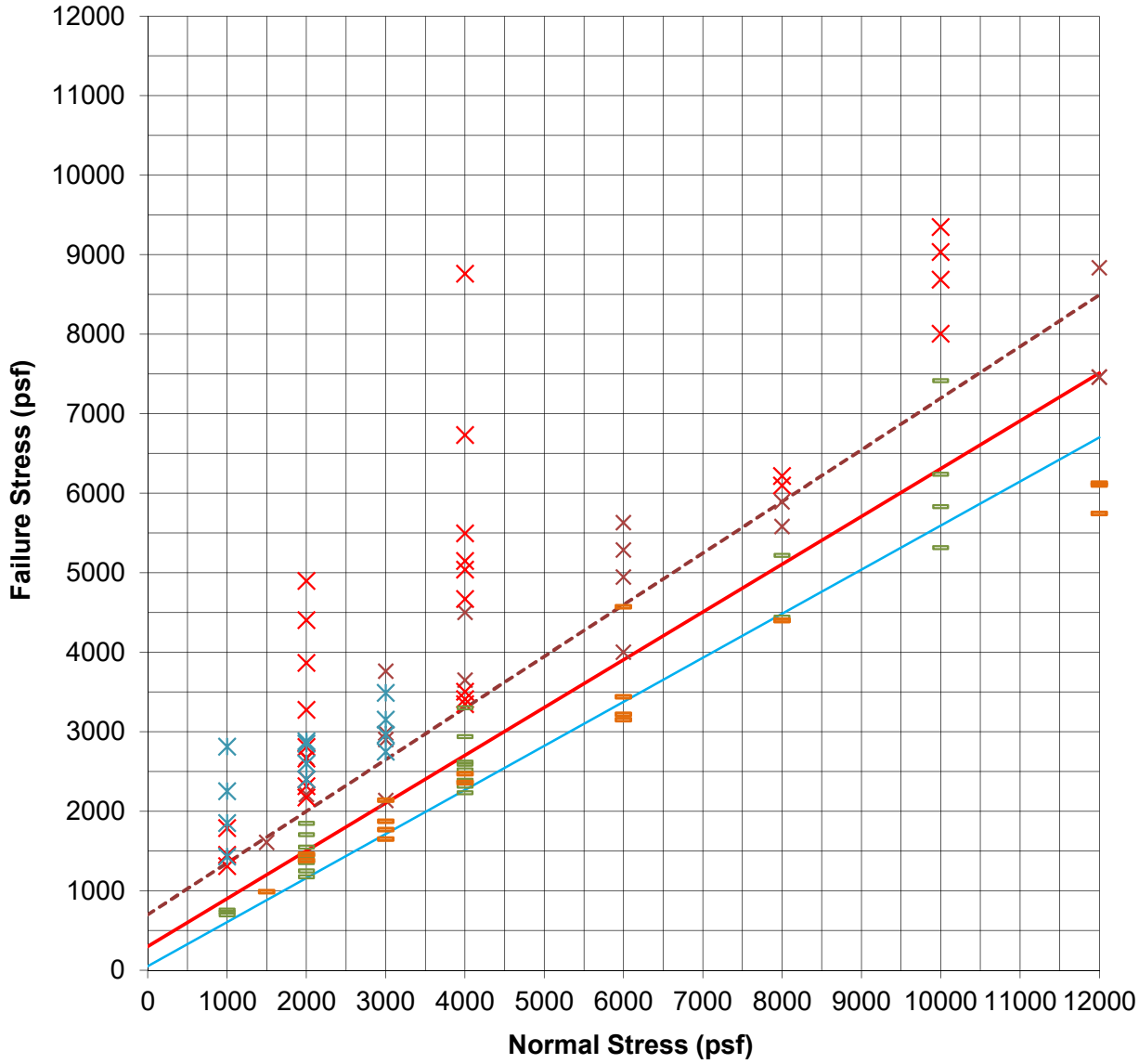
INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

DIRECT SHEAR RESULTS PLOTTED:

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@75';
BA-1@90'; BA-2@20';
BA-2@80'

AGS (Fully Softened):
BA-1@19-20'; BA-1&2@20'; BA-2@25';
BA-2@70&75'; BA-2@73-75'

Summary of all Undisturbed Direct Shear Results
FERNANDO FORMATION



LEGEND

- EGL- Peak Strength
- Lower Bound Peak Strength
- AGS- Peak Strength
- Hu and Assoiciates- Peak?
- Fully Softened
- Interpolated Based on LL
- AGS- Ultimate
- EGL- Ultimate

SUMMARY OF SHEAR STRENGTHS

FULLY SOFTENED STRENGTH CURVE:
Friction Angle=29° Cohesion=50psf

LOWER BOUND PEAK STRENGTH CURVE:
Friction Angle=33° Cohesion=700psf

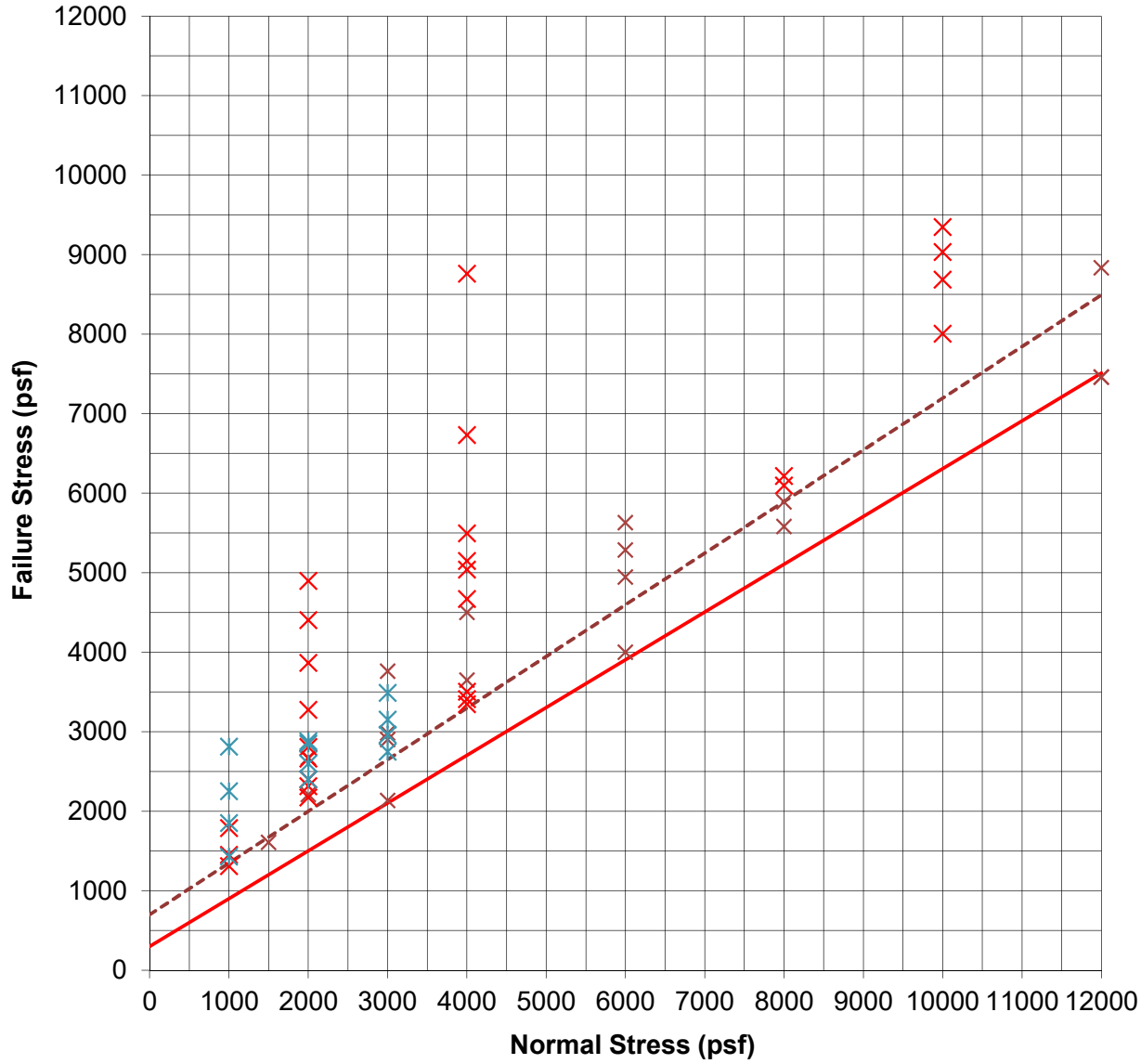
INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

DIRECT SHEAR RESULTS PLOTTED:

EGL B-1@30'; EGL B-3@35'; EGL B-4@25'; EGL B-4@75'; EGL B-4@90'; EGL B-4@120';HA B-1@12'; HA B-1@17'; HA B-2@28'; HA B-3@30'

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@55'; BA-1@75'; BA-1@90'; BA-2@20'; BA-2@30'; BA-2@50'; BA-2@80'

Summary of all Undisturbed Direct Shear Results (Peak Only)
FERNANDO FORMATION



LEGEND

- EGL- Peak Strength
- Lower Bound Peak Strength
- AGS- Peak Strength
- Hu and Assoiciates- Peak?
- Interpolated Based on LL

SUMMARY OF SHEAR STRENGTHS

FULLY SOFTENED STRENGTH CURVE:
Friction Angle=29° Cohesion=50psf

LOWER BOUND PEAK STRENGTH CURVE:
Friction Angle=33° Cohesion=700psf

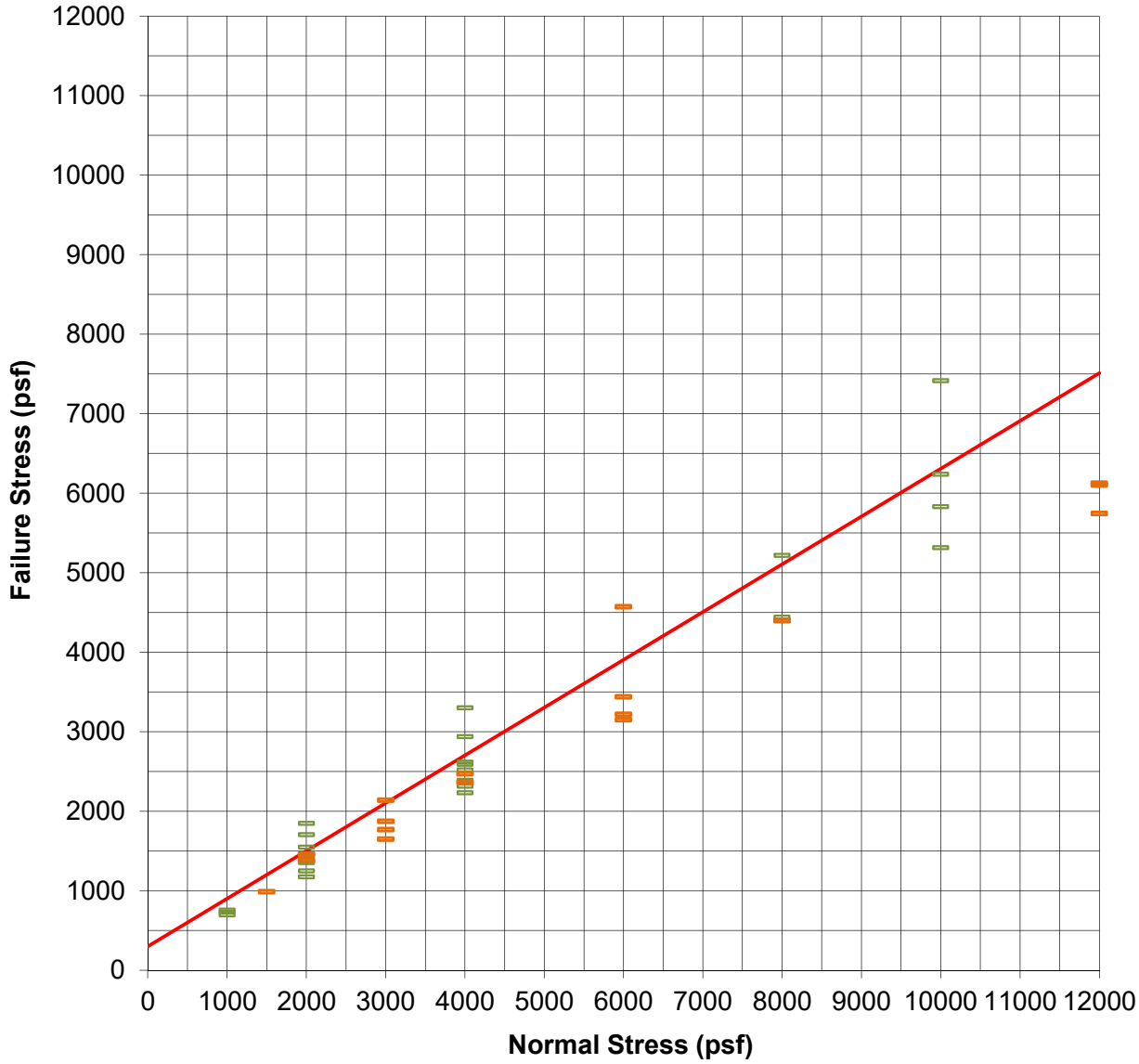
INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

DIRECT SHEAR RESULTS PLOTTED:

EGL B-1@30'; EGL B-3@35'; EGL B-4@25'; EGL B-4@75'; EGL B-4@90'; EGL B-4@120';HA B-1@12'; HA B-1@17'; HA B-2@28'; HA B-3@30'

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@55'; BA-1@75'; BA-1@90'; BA-2@20'; BA-2@30'; BA-2@50'; BA-2@80'

Summary of all Undisturbed Direct Shear Results (Ultimate)
FERNANDO FORMATION



LEGEND

Interpolated Based on LL

AGS- Ultimate

EGL- Ultimate

SUMMARY OF SHEAR STRENGTHS

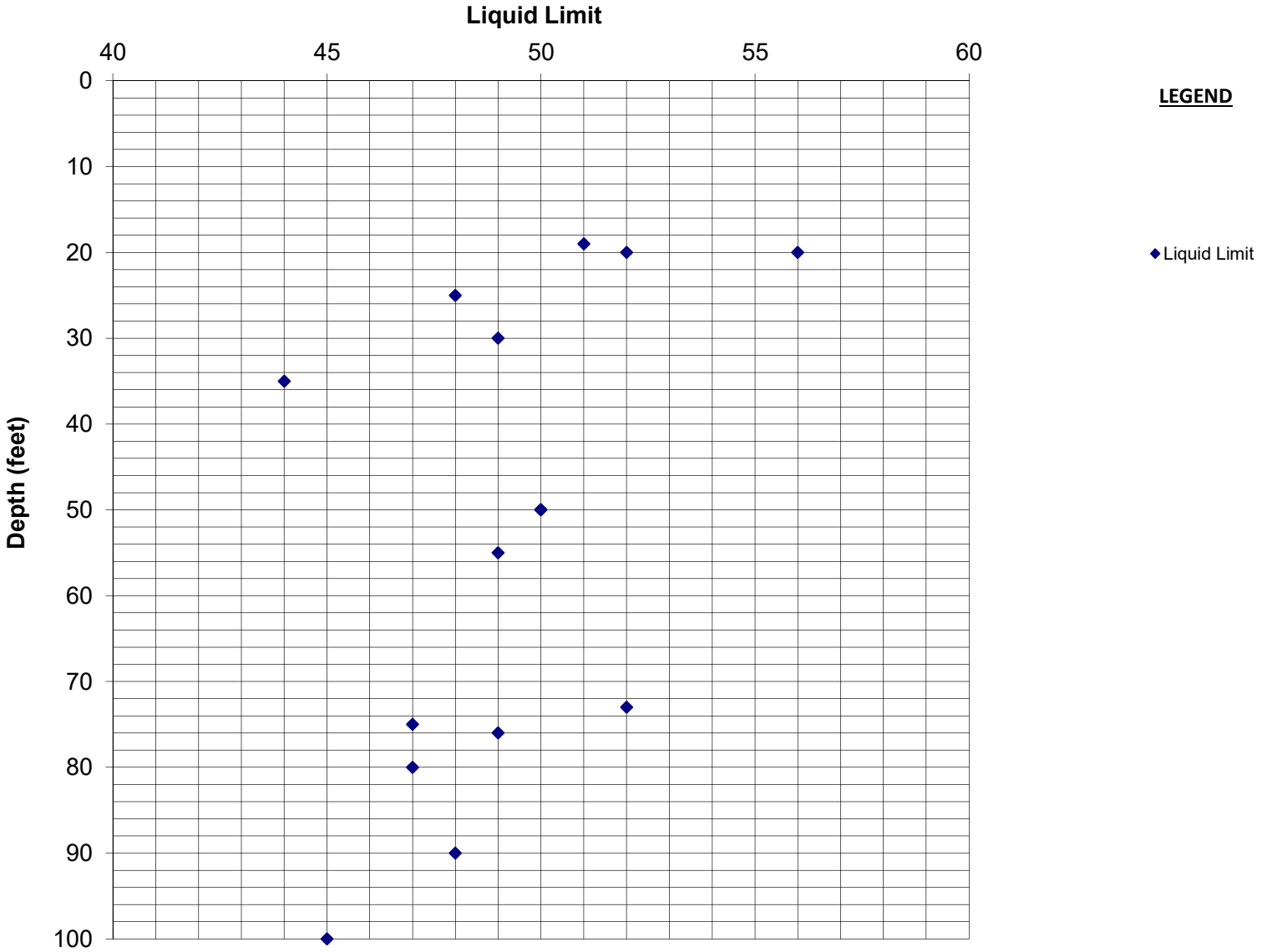
INTERPOLATED CURVE BASED ON LL:
Friction Angle=31° Cohesion=300psf

DIRECT SHEAR RESULTS PLOTTED:

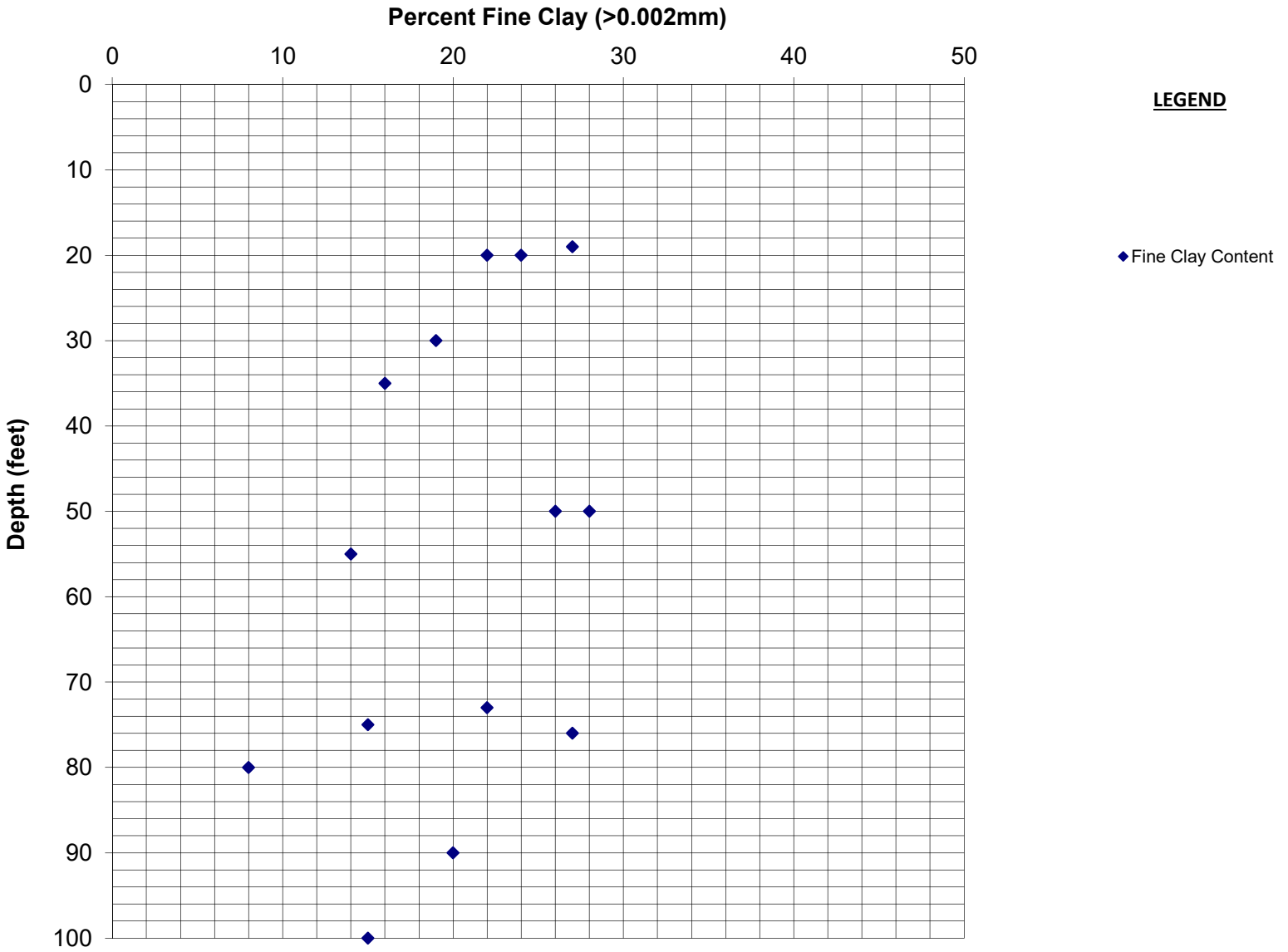
EGL B-1@30'; EGL B-3@35'; EGL B-4@25'; EGL B-4@75'; EGL B-4@90'; EGL B-4@120';HA B-1@12'; HA B-1@17'; HA B-2@28'; HA B-3@30'

AGS (Undisturbed):
BA-1@20'; BA-1 @35'; BA-1@55'; BA-1@75'; BA-1@90'; BA-2@20'; BA-2@30'; BA-2@50'; BA-2@80'

Liquid Limit versus Depth



Percent Fine Clay versus Depth



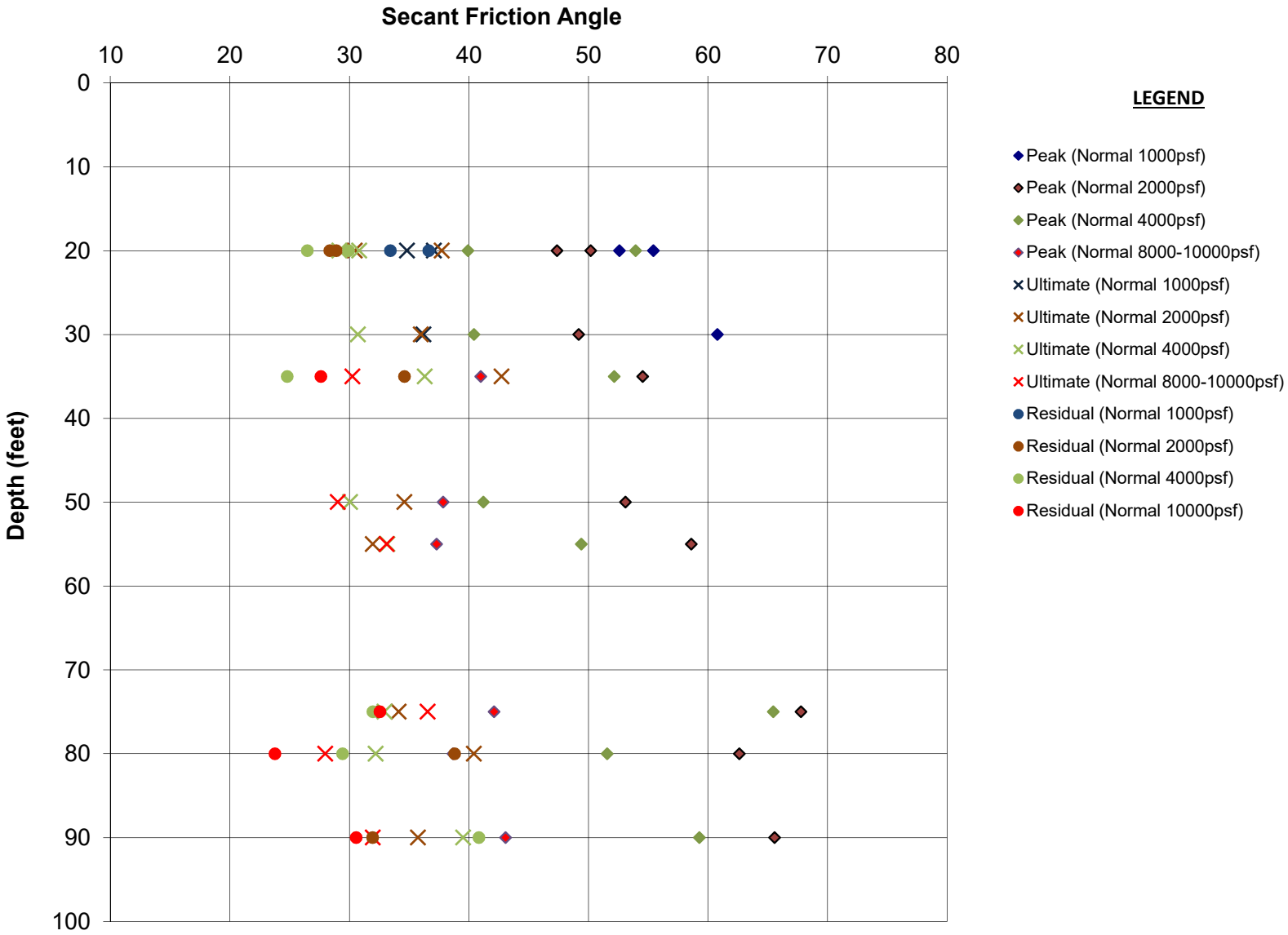
Boring	Depth	Liquid Limit (Lab)	Liquid Limit (Ball Mill Correlation per Stark Eq 2)	Normal Load	Normal Load	Fully Softened Shear	Secant Phi Φfs'	Secant Difference-Fully Softened Φfs' and Residual Φr'	Secant Residual Φr'	Average= (Φfs'+Φr')/2	Secant Peak	Secant Phi Peak Φp'	Interpolated Secant Phi	Interpolated Shear
				(psf)	(kPa)	(psf)	(°)		(°)	(°)	(psf)	(°)	(°)	(psf)
								(Note 1)			(Note 2)		(Note 3)	
					50.0			12.5						
BA-1	19-20'	51	70.5	1000	47.9	696	34.84	12.5	22.3	28.6	1627	58.4	42.00	901
		51	70.5	2000	95.8	1200	30.96	12.0	19.0	25.0	2353	49.6	36.07	1457
		51	70.5	4000	191.5	2232	29.16	10.9	18.3	23.7	3806	43.6	32.66	2564
					400.0			8.5						
					50.0			12.9						
BA-1&	20'	52.7	73.2	1000	47.9	588	30.46	12.9	17.5	24.0	1627	58.4	36.56	742
BA-2		52.7	73.2	2000	95.8	1080	28.37	12.4	16.0	22.2	2353	49.6	32.21	1260
		52.7	73.2	4000	191.5	2148	28.24	11.2	17.0	22.6	3806	43.6	30.28	2335
					400.0			8.7						
					50.0			11.8						
BA-1	70&75'	47	64.4	2000	95.8	1272	32.46	11.3	21.2	26.8	2353	49.6	41.65	1779
		47	64.4	4000	191.5	2376	30.71	10.3	20.4	25.6	3806	43.6	37.28	3045
		47	64.4	10000	478.8	5700	29.68	7.1	22.5	26.1	8165	39.2	34.64	6909
					400.0			8						
					50.0			12.9						
BA-2	73-75'	52	72.1	2000	95.8	720	19.80	12.4	7.4	13.6	2353	49.6	28.03	1065
		52	72.1	4000	191.5	2376	30.71	11.2	19.5	25.1	3806	43.6	32.50	2548
		52	72.1	8000	383.0	4476	29.23	8.9	20.3	24.8	6712	40.0	30.86	4781
					400.0			8.7						
					50.0			12						
BA-2	25'	48	66.0	2000	95.8	1152	29.94	11.5	18.4	24.2	2353	49.6	39.46	1646
		48	66.0	4000	191.5	2052	27.16	10.4	16.7	21.9	3806	43.6	34.92	2793
		48	66.0	8000	383.0	4068	26.95	8.3	18.7	22.8	6712	40.0	33.12	5219
					400.0			8.1						

Note 1 Interpolated based on Figure 6 in Stark, Choi and McCone (For LL=70.5, Φfs'-Φr'=12.5 at 50kPa and 8.5 at 400kPa)

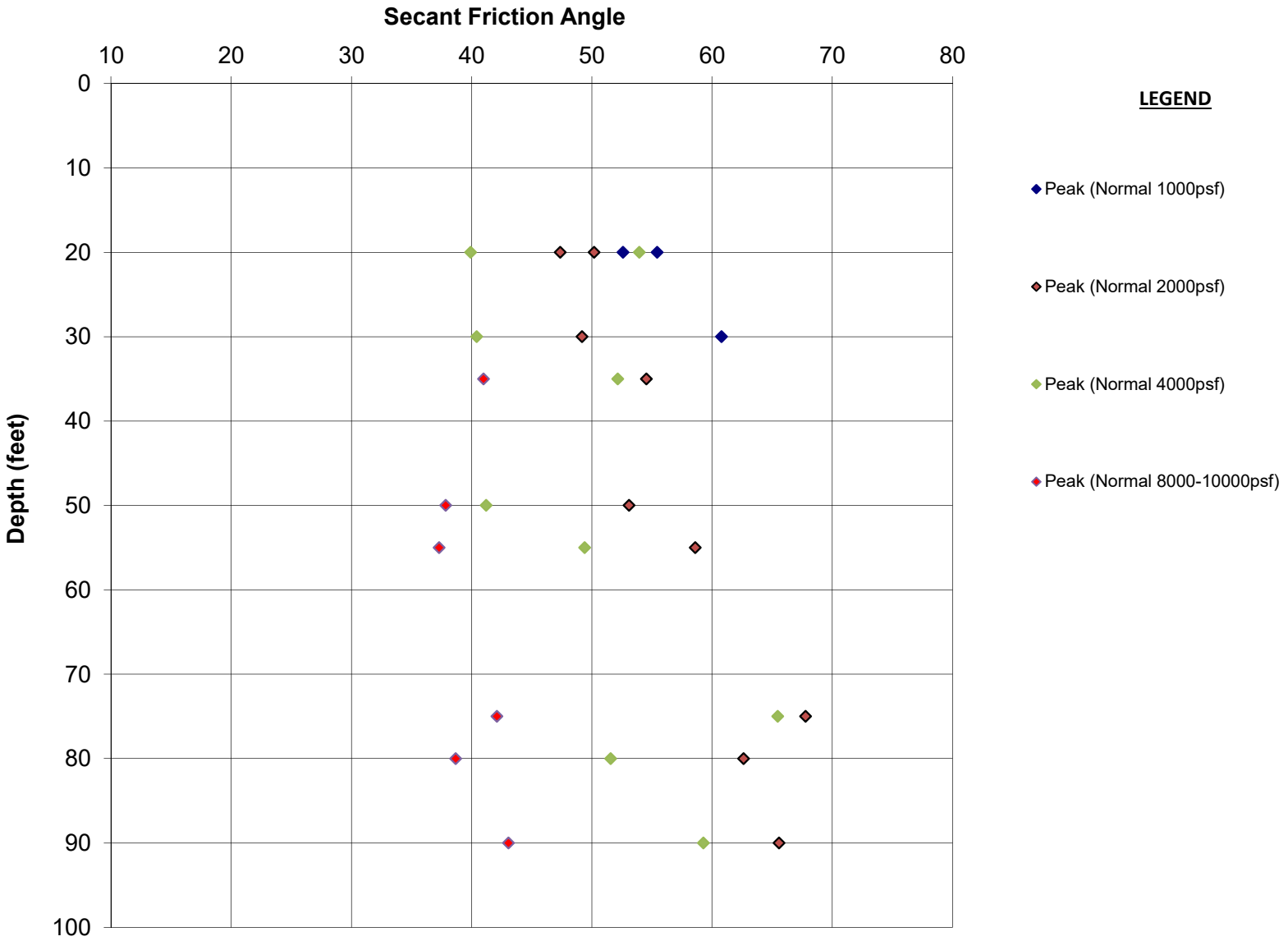
Note 2 Based on Lab Peak Shear Strength 36 =Φp 900 =c

Note 3 Interpolated based on LL between Φr', Φfs' , and Φpeak' per SCEC 2002 pg. 33 assuming at LL=40, Φfs=Φpeak' and at LL=60, Φ=Ave. Φfs'&Φr'

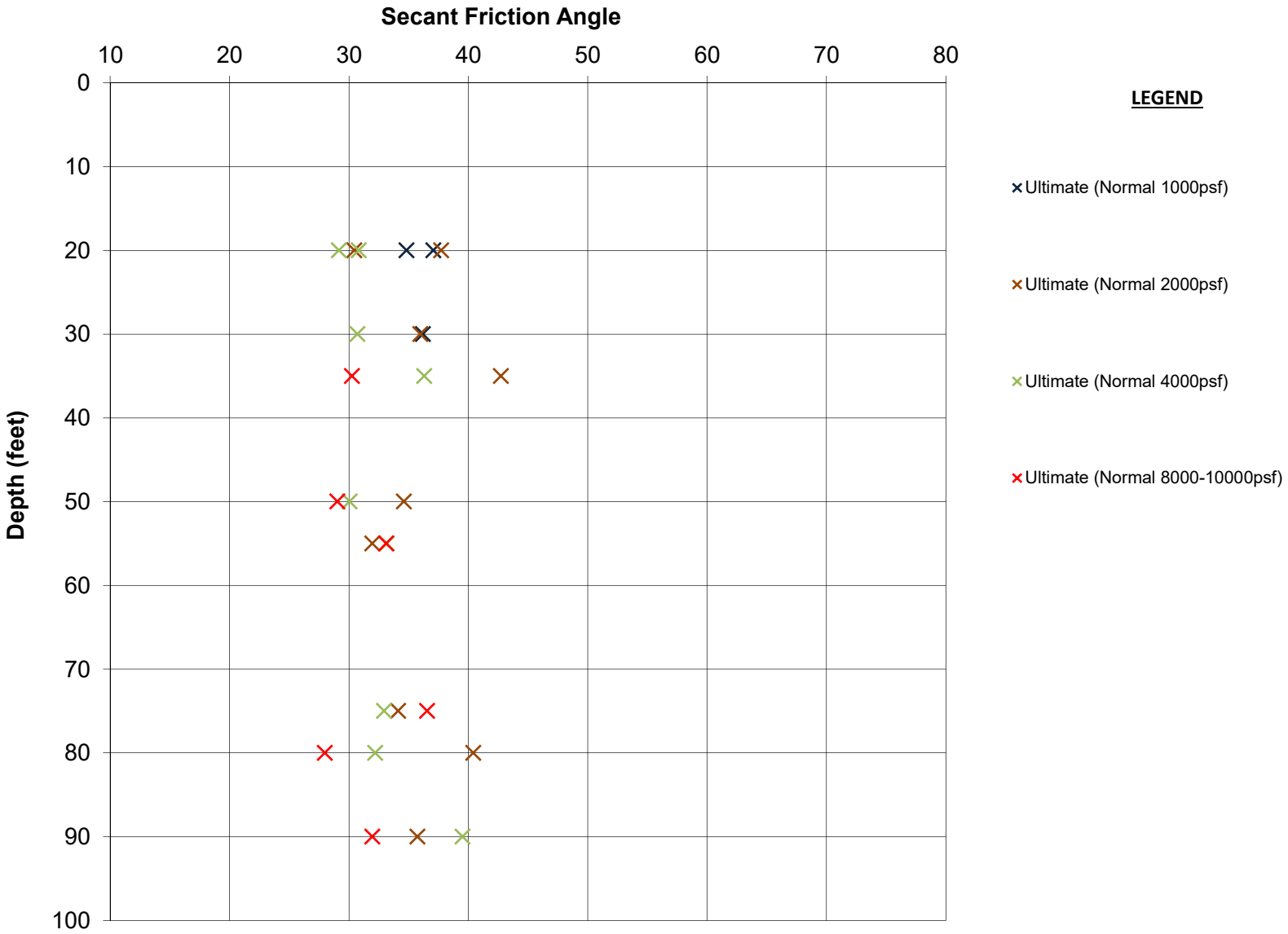
Secant Friction Angle versus Depth (Composite)



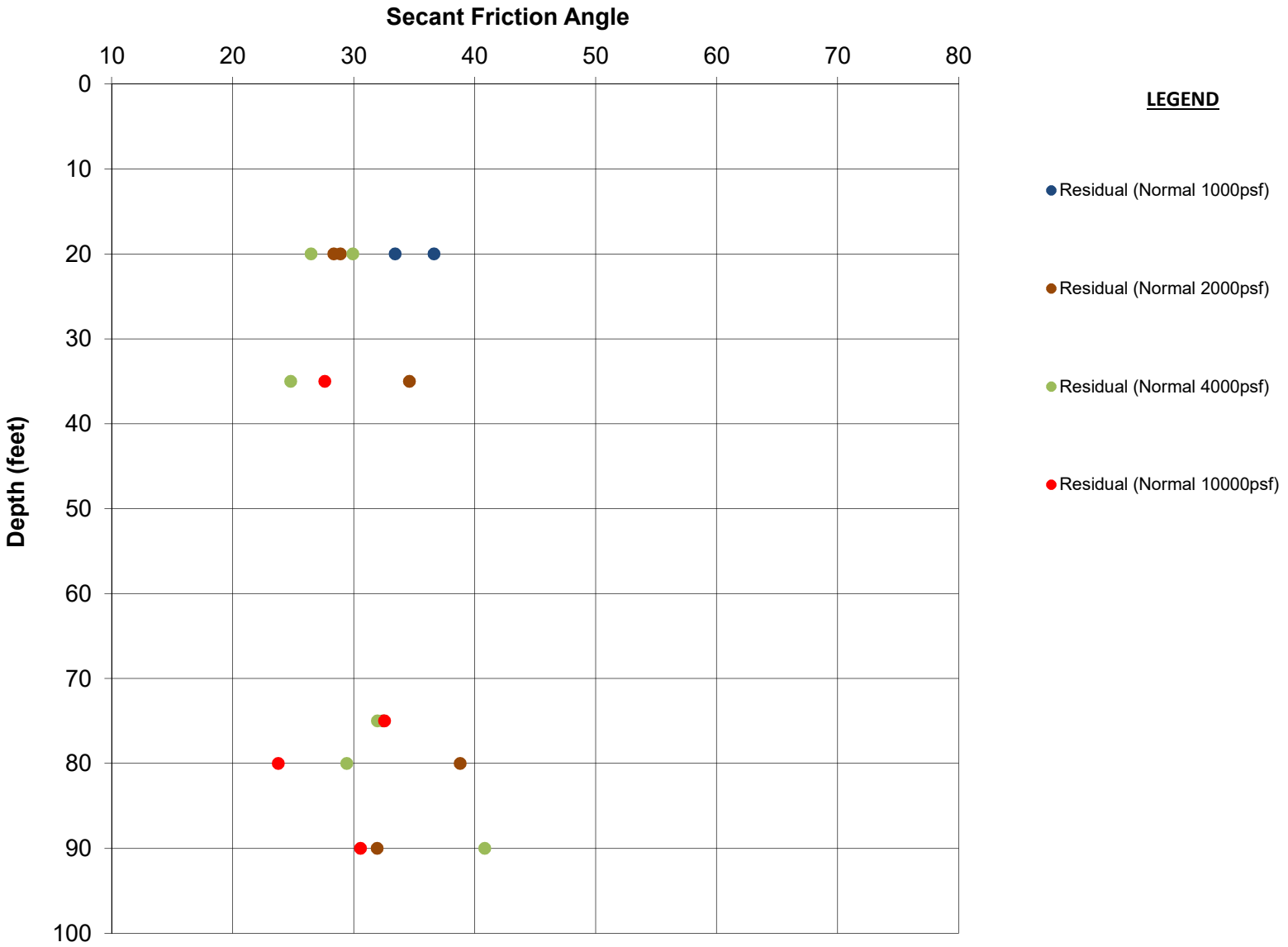
Secant Friction Angle versus Depth (Peak)



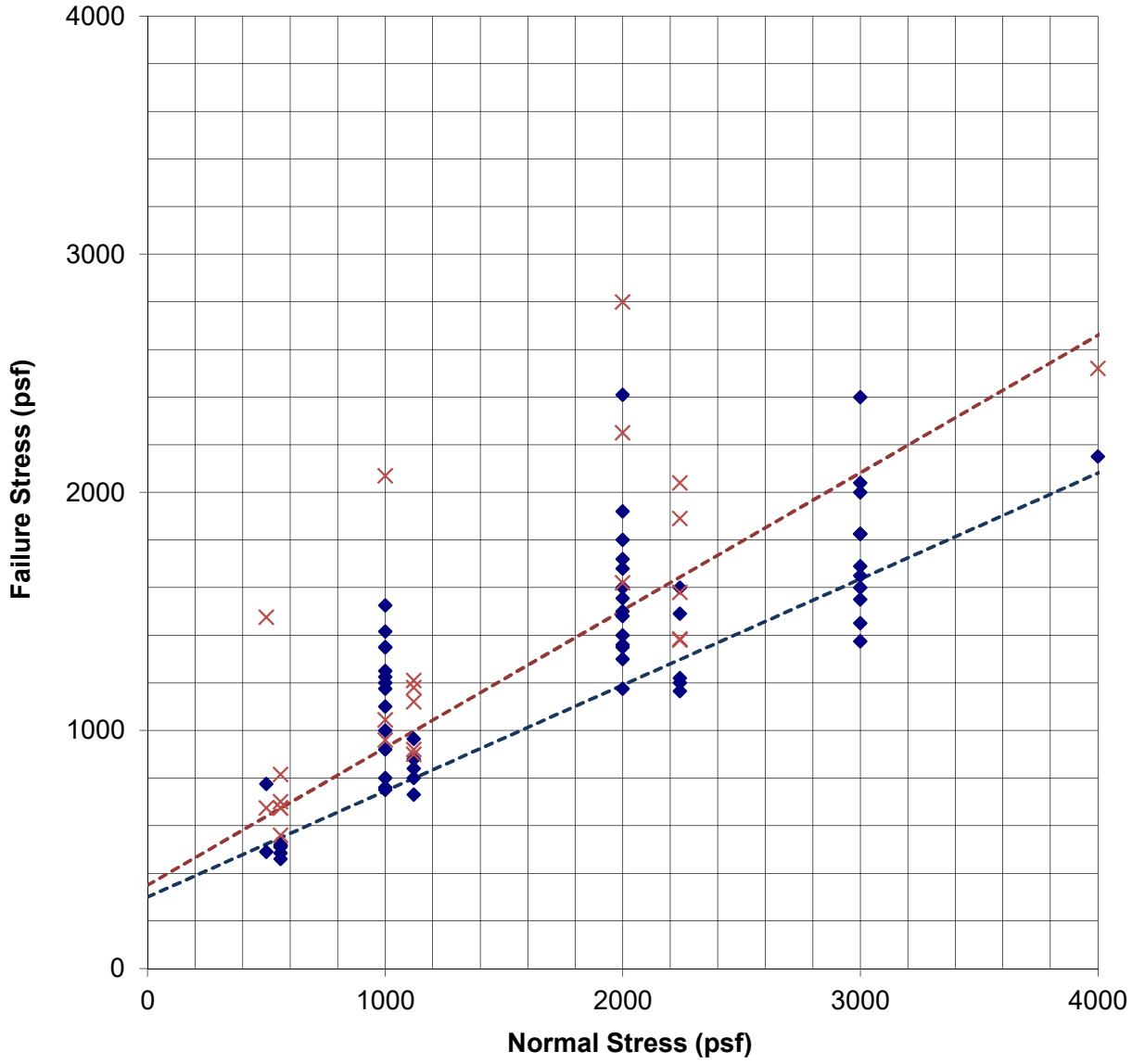
Secant Friction Angle versus Depth (Ultimate)



Secant Friction Angle versus Depth (Residual)



Summary of Direct Shear Results
EXISTING FILL- UNDISTURBED



LEGEND

- Existing Fill- Ultimate/Residual Strength
- Existing Fill- Peak Strength
- Curve used for Stability Analysis (PEAK)
- Curve used for Stability Analysis

SUMMARY OF SHEAR STRENGTHS

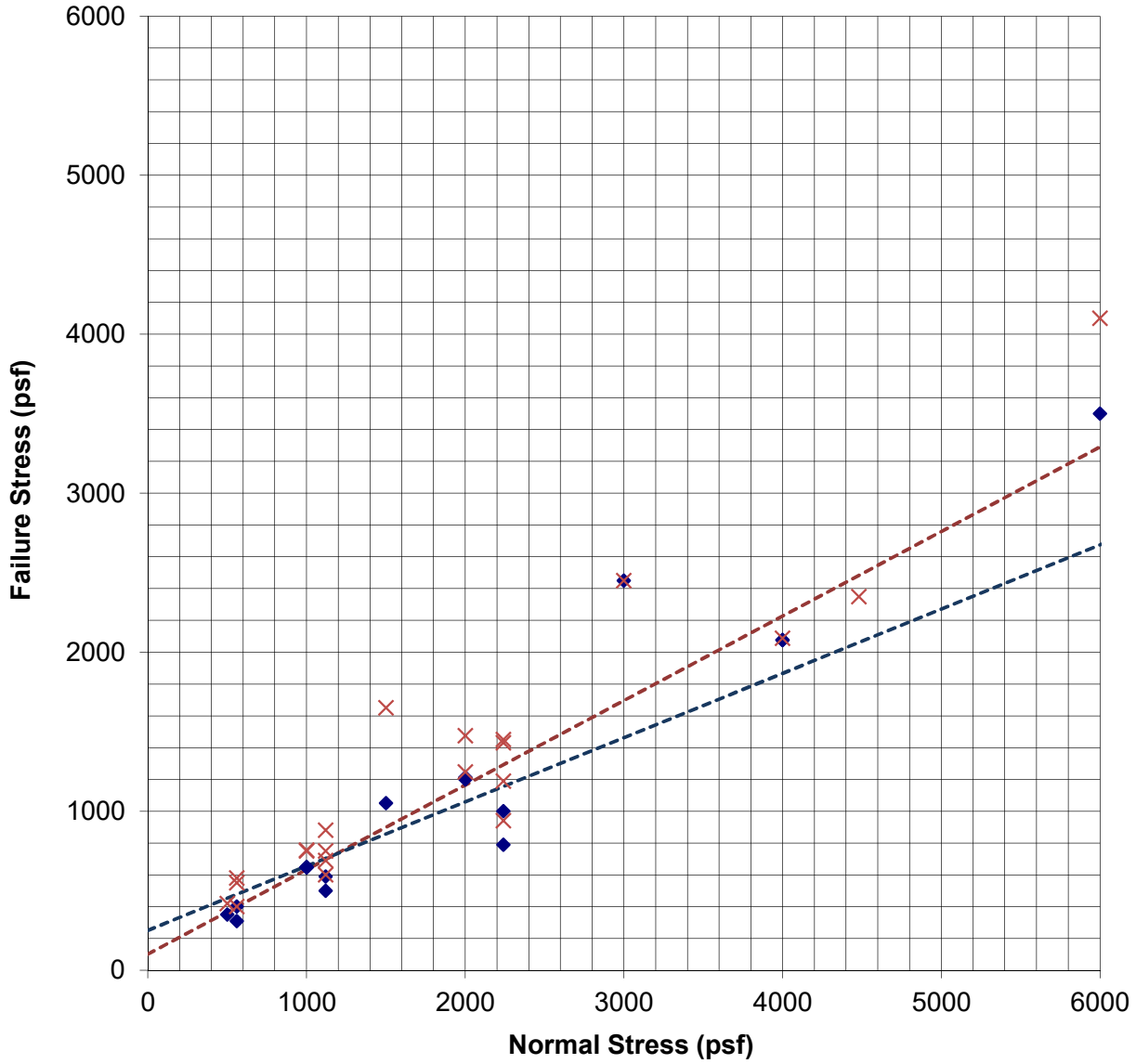
ULTIMATE/RESIDUAL STRENGTH CURVE:
Friction Angle=24° Cohesion=300psf

PEAK STRENGTH CURVE:
Friction Angle=30° Cohesion=350psf

DIRECT SHEAR RESULTS PLOTTED:

HA B-1@2' HA B-1@4'; HA B-2@4';
HA B-2@6'; HA B-2@15'; HA B-3@5';
HA B-3@7'; HA B-3@10'; HA B-3@25';
HA B-4@5'; HA B-4@7'; LA FBL-1@15',
LA FBL-1@25';LA B-3@15'; LA B-6@3';
LA B-6@6'; EGL B-3@15'; EGL TP-2@4';
EGL TP-3@16'

Summary of Direct Shear Results
FILL- REMOLDED TO 90&95% R.C.



LEGEND

- Fill- Ultimate Strength
- Fill- Peak Strength
- Curve used for Stability Analysis (PEAK)
- Curve used for Stability Analysis

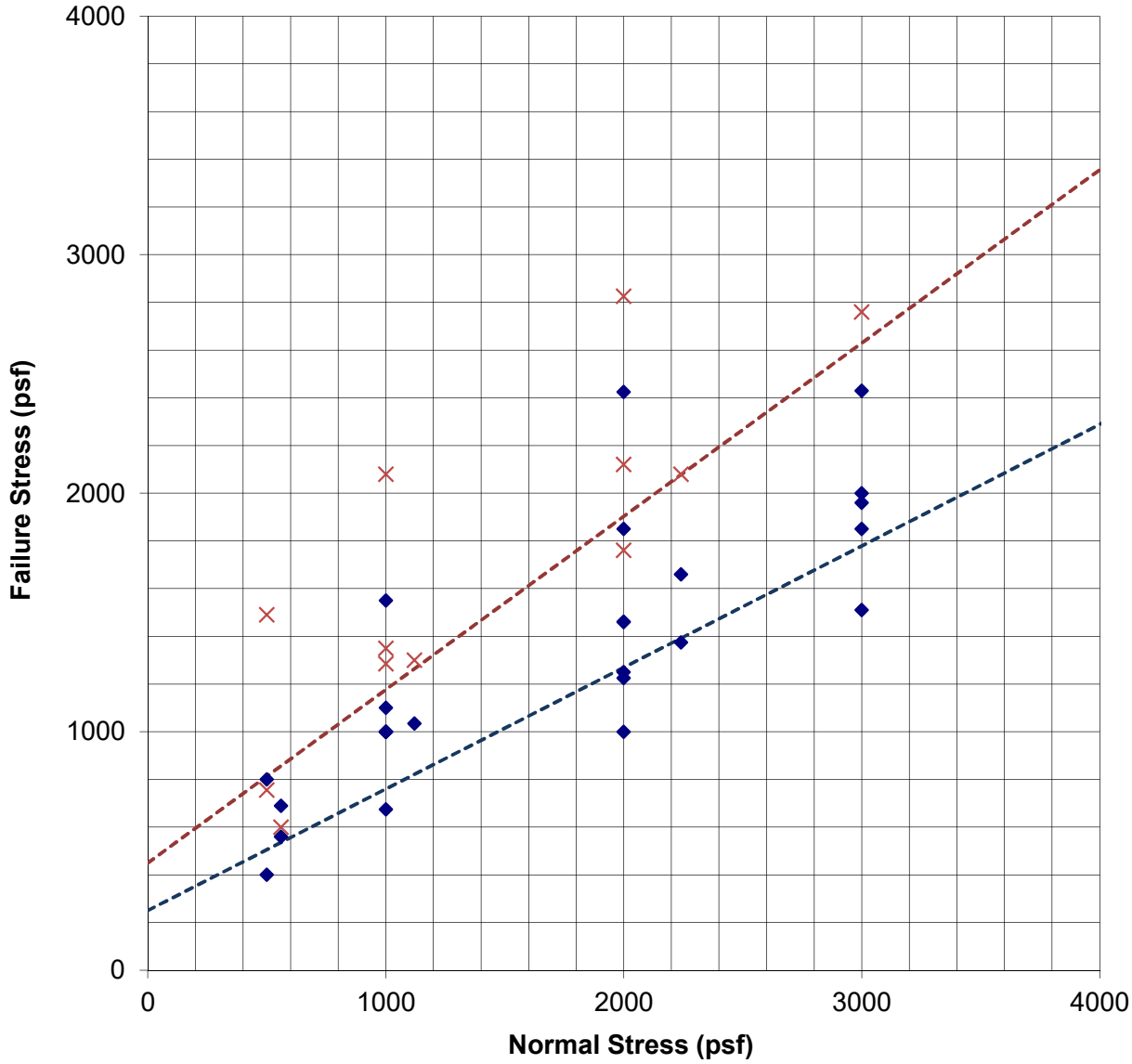
SUMMARY OF SHEAR STRENGTHS

ULTIMATE/RESIDUAL STRENGTH CURVE:
Friction Angle=22° Cohesion=250psf

PEAK STRENGTH CURVE:
Friction Angle=28° Cohesion=100psf

DIRECT SHEAR RESULTS PLOTTED:
LA B-5@4'; LA B-5@30';
EGL TP-2@12,20,24,27'; EGL Bulk@0'
AGS Mixed Sample

Summary of Direct Shear Results
UNDISTURBED COLLUVIUM



LEGEND

- Colluvium- Ultimate/Residual Strength
- Colluvium- Peak Strength
- Curve used for Stability Analysis (PEAK)
- Curve used for Stability Analysis

SUMMARY OF SHEAR STRENGTHS

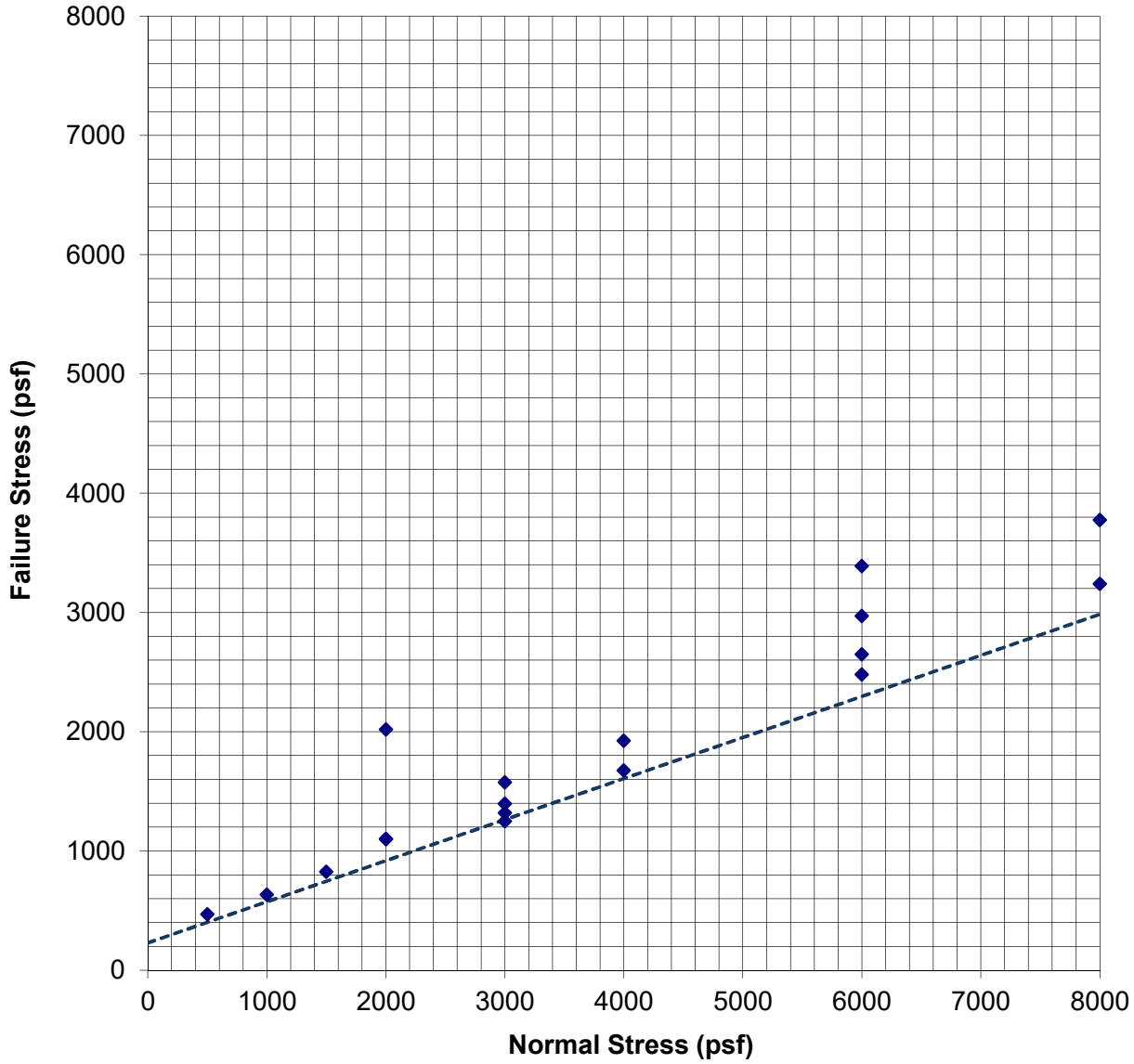
ULTIMATE/RESIDUAL STRENGTH CURVE:
Friction Angle=27° Cohesion=250psf

PEAK STRENGTH CURVE:
Friction Angle=36° Cohesion=450psf

DIRECT SHEAR RESULTS PLOTTED:

EGL B-2@10'; EGL B-3@15'; LA B-4@10.5';
LA FBL-1@29'; HA B-3@28'; HA B-4@15';
HA B-4@20'; HA B-4@25'; HA B-4@30'

Summary of Direct Shear Results
UNDISTURBED BEDROCK- ALONG BEDDING (estimated based on multiple cycles)



LEGEND

◆ Bedrock- Residual Strength

- - - - - Curve used for Stability Analysis

SUMMARY OF SHEAR STRENGTHS

ULTIMATE/RESIDUAL STRENGTH CURVE:
Friction Angle=19° Cohesion=230psf

PEAK STRENGTH CURVE:
Friction Angle=---° Cohesion=---psf

DIRECT SHEAR RESULTS PLOTTED:
EGL B-1@30'; EGL B-3@35'; EGL B-4@25';
EGL B-4@75'; EGL B-4@90';
EGL B-4@120'; EGL TP-1@12'

APPENDIX G

SLOPE STABILITY ANALYSIS

APPENDIX G

SLOPE STABILITY ANALYSIS

Scope of Analyses

Slope stability analyses were performed and/or revised for several cross-sections as described in Table G-1. The analyses considered slope stability for static and pseudo-static conditions.

Design Strength Parameters

Shear strength parameters that were used in the analyses are summarized in Table 6.2 in the text of this report.

Method of Analyses

Limit equilibrium slope stability analyses were compiled using Rocscience Slide2. To search for critical failure surfaces, a path type search was generally utilized coupled with optimization techniques. The path type search randomly generates a discrete number of potential non-circular surfaces (generally 5,000 to 50,000 potential failure surfaces). This method was deemed most appropriate for analyzing the conditions that included the use of stabilizing measures (anchors/tiebacks, soil nails, geogrid, and piles) so that more complex failure patterns could be analyzed. A block type search was used where weak bedding conditions were modeled. Circular searches were considered for more uniform conditions. The bedrock strength was represented by using three Mohr-Coulomb strength envelopes which are largely dependent on depth or local conditions, one curve for the upper completely weathered bedrock (5-10 feet unless noted on nearby excavations), one for the intermediate bedrock subject to strain softening (above around 50 feet but varies based on nearby excavations) and the third for deep bedrock (deeper than about 50 feet but varies based on nearby excavations). The cross sections show the delineation of the modeled layers. Groundwater was not observed in the recently drilled borings though minor seepage was noted at depth. Groundwater was encountered during previous studies in one boring at a depth which is below the toe of the slope. As such, groundwater was not added to the slope stability model since potential failure surfaces would pass well above the groundwater level.

Vertical tension cracks were not observed within the recently drilled borings (BA-1 and BA-2). Some vertical tension cracks were noted in some of the prior borings and test pits. However, AGS used the fully softened strength to model the upper bedrock. This lower strength is based on the observed mobilized strength of first time slides in fissured clays and takes into account the presence of fractures. To further reduce this average mobilized strength was not deemed necessary since the lower strength that occurs along the fissures has already been considered in the back calculations used to determine the mobilized strength.

To determine to critical failure surface, searches were first conducted using the peak strength of the materials. Stark and Eid (1997) recommend this approach since first time slides in stiff fissured clay slopes occur progressively, where peak strengths are mobilized at the initiation of the failure that occurs in an overstressed zone. As the failure progresses, the shear strength decreases along the failure plane.

As mentioned above, searches were first conducted using the peak strength of the bedrock. The critical failure surface was then imported and the factor of safety was determined using a reduced bedrock strength. The same surface was used to evaluate the seismic stability. A pseudo-static analysis was

performed to evaluate the seismic stability. Peak shear strengths were used and a destabilization coefficient (kh) of 0.20 was selected for the site. Factors of safety for all failures were determined using Spencer's method.

Summary of Analyses

A discussion of the geologic conditions assumed for each analysis is included in Table G-1. The results of the global slope stability analyses are summarized in Table G-1. Legends for the output files, which include the strengths of the supports used (soil nails, geogrid, anchors) and materials strengths, are shown on Figures G-3 through G-5 for initial search parameters, static parameters, and pseudo-static parameters, respectively.

TABLE G-1
SUMMARY OF STABILITY ANALYSES

Cross-Section	General Anticipated Geologic Conditions* and Grading Remarks	Slope Stability Remarks	Factor of Safety		Figure Numbers
			Static	Seismic Kh=0.2	
n/a	Design 2:1 Fill Slope using Native Materials	Surficial Stability (Infinite slope method) of fill- geogrid ignored	1.65	n/a	G-1
n/a	Design 2:1 Cut Slope in Competent Bedrocks	Surficial Stability (Infinite slope method) of bedrock (Soil type 5)	1.80	n/a	G-2
C-C'	Natural slope with thin layer of weathered bedrock. Fill near top of slope.	Stability of the entire slope with soil nail wall near toe. Surface with lowest factor of safety near toe of cut slope above.	1.796	1.368	G-6, 7, 8
D-D'	Natural slope with thin layer of weathered bedrock. Anchor wall at toe. Fill near top of slope.	Stability of the entire slope. Surface with lowest factor of safety at toe of upslope geogrid reinforced fill slope. Geogrid reinforcement ignored.	1.579	1.149	G-9, 10, 11
E-E'	Natural slope above development with colluvium. Geogrid reinforced fill slopes above anchor wall at toe supporting fill. Fill near top of slope.	Stability of the entire slope with geogrid reinforced fill slope below natural. Surface with lowest factor of safety at toe of upper fill slope.	1.624	1.173	G-12, 13, 14
F-F'	Natural slope above development with thin layer of weathered bedrock. 2:1 cut slope in bedrock below natural slope. Anchor wall at toe supporting reinforced fill slope.	Stability of the entire slope with anchor wall with one 150-kip tieback at toe. Surface with lowest factor of safety at toe of 2:1 cut slope.	1.510	1.127	G-15, 16, 17
G-G'	Natural slope above development. 2:1 reinforced fill slope below natural slope. Anchor wall at toe supporting reinforced fill slope.	Stability of the entire slope with 2:1 fill slope and anchor wall at toe with two 150 kip anchors. Pile for anchor wall ignored. Lower search limits confined to toe of slope and upper limits confined to top of the slope. Surface with lowest factor of safety through anchor wall.	1.616	1.125	G-18, 19, 20
G-G'		Stability of the entire slope with 2:1 cut slope and anchor wall at toe with two 150 kip anchors. Pile for anchor wall ignored. Lower search limits expanded and upper limits confined to top of the slope. Surface with lowest factor of safety at toe of upper fill slope.	1.523	1.135	G-21, 22, 23
G-G'		Stability of natural slope above the upper fill slope.	1.543	1.242	G-24, 25, 26
H-H'	Natural slope above development with thin layer of weathered bedrock. Anchor wall at toe supporting reinforced fill slope.	Stability of the entire slope with anchor wall at toe with three 150 kip anchors. Pile for anchor wall ignored. Upper search limits confined to toe of slope and upper limits at top of the slope.	1.587	1.139	G-27, 28, 29
H-H'		Stability of the lower anchor wall and reinforced fill slope. Upper search limits expanded to include area between anchor wall and toe of natural slope. Surface with lowest factor of safety passes through fill and anchor wall.	1.570	1.242	G-30, 31, 32
H-H'		Stability of the upper natural slope.	1.641	1.283	G-33, 34, 35
H-H'		Stability of the reinforced fill slope and natural slope. Surface with lowest factor of safety passes through lower fill slope.	1.595	1.148	G-36, 37, 38
H-H'	Temporary Backcut to remove unsuitable materials (slide debris, fill, colluvium) exposing competent bedrock	Stability of temporary backcut in bedrock. One of tallest expected backcuts at site.	1.429	n/a	G-40

* Bedrock assumed to dip into slope unless noted otherwise.

TABLE G-1
SUMMARY OF STABILITY ANALYSES

Cross-Section	General Anticipated Geologic Conditions* and Grading Remarks	Slope Stability Remarks	Factor of Safety		Figure Numbers
			Static	Seismic Kh=0.2	
I-I'	Natural slope above development with thin layer of weathered bedrock. 2:1 cut slope between lower anchor wall and natural slope. Anchor wall above offsite gunite covered descending slope. Anchor wall supports reinforced fill slope. Offsite impact wall removed.	Stability of the entire slope with anchor wall at toe with two 150 kip anchors and pile for wall. Lower search limits confined to toe of slope and upper limits confined to top of the slope.	1.531	1.132	G-41, 42, 43
I-I'		Stability of the lower anchor wall and reinforced fill slope. Upper search limits confined to reinforced fiil slope and upper 2:1 cut slope. Surface with lowest factor of safety passes below anchor wall.	1.585	1.275	G-44, 45, 46
I-I'		Stability of the upper 2:1 cut slope and natural slope. Surface with lowest factor of safety through toe of cut slope.	1.634	1.232	G-47, 48, 49
J-J'	Natural slope above development with thin layer of weathered bedrock. 2:1 cut slope in bedrock with anchor reinforcement on lower portion of slope. Offsite shotcrete slope below.	Stability of the entire slope with three 150 kip anchors. Lower search limits confined to toe of slope and upper limits confined to top of the slope. Surface with lowest factor of safety passes below reinforcements.	1.530	1.104	G-50, 51, 52
J-J'		Stability of the cut slope with anchors and offsite shotcrete slope. Upper search limits confined to cut slope. Surface with lowest factor of safety passes through anchors.	1.553	1.224	G-53, 54, 55
J-J'		Stability of the natural slope above grading limits.	1.526	1.182	G-56, 57, 58
K-K'	Natural slope and existing cut slope above development with thin layer of weathered bedrock. 2:1 cut slope in bedrock with two 150-kip anchors. Offsite 2:1 slope below.	Stability of the entire slope with one anchor. Second anchor ignored. Lower search limits confined to toe of slope and upper limits confined to top of the slope.	1.531	1.097	G-59, 60, 61
K-K'		Stability of the lower cut slope and offsite slope with 2 150-kip anchors. Search limits confined to 2:1 cut slope.	1.512	1.249	G-62, 63, 64
L-L'	Natural slope above development with thin layer of weathered bedrock. 2:1 cut slope in bedrock. Offsite 2:1 or shallower slope below.	Stability of the entire slope. Anchor reinforcement ignored. Surface with lowest factor of safety on lower portion of the slope.	1.570	1.223	G-65, 66, 67
M-M'	Daylight cut pad with steep descending slope. Existing CMU wall with piles at toe. Two ground anchors at top of descending slope.	Stability of the entire slope and wall. Two 150-kip anchors on slope. Pile support added to lower wall. Lower search limits confined to toe of slope and upper limits confined to pad area.	1.512	1.278	G-68, 69, 70
N-N'	Daylight cut pad with steep descending existing cut slope. Existing CMU wall at toe of slope. CMU wall is not reinforced with piles at this section.	Stability of the pad. Three 250-kip anchors added to upper portion of the slope to provide stability for site. Passive resistance added for existing lower wall corresponding to an equivalent fluid weight of 45pcf, although wall is likely capable of providing additional resistance. Upper search limits confined to area above anchors.	1.508	1.260	G-71, 72, 73
O-O'	Daylight cut pad with steep descending existing cut slope. CMU wall at toe of slope. CMU wall is not reinforced with piles at this section.	Stability of the pad. Two 250-kip anchors added to upper portion of the slope to provide stability for site. Passive resistance added for existing lower wall corresponding to an equivalent fluid weight of 45pcf, although wall is likely capable of providing additional resistance. Upper search limits confined to pad area.	1.512	1.312	G-74, 75, 76

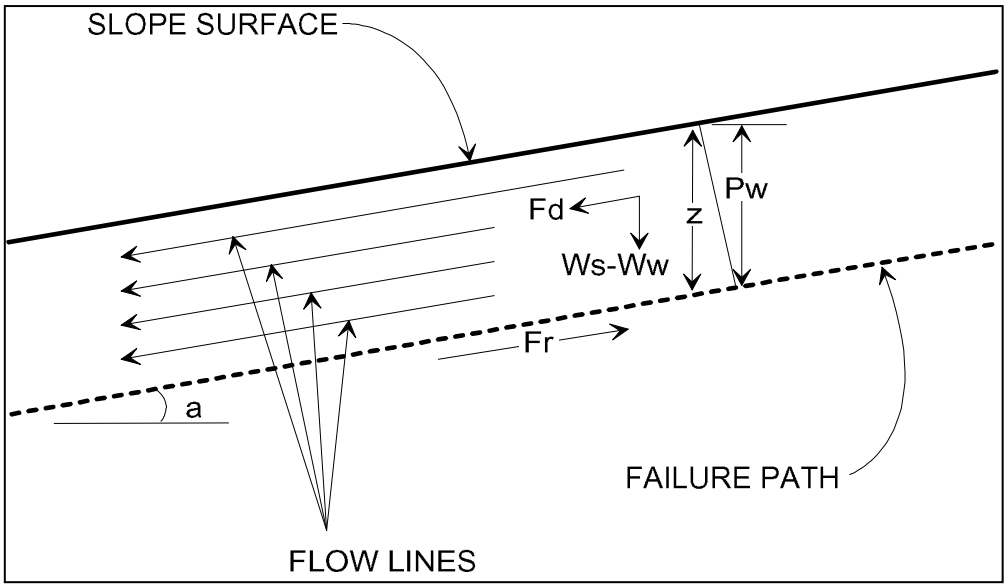
* Bedrock assumed to dip into slope unless noted otherwise.

TABLE G-1
SUMMARY OF STABILITY ANALYSES

Cross-Section	General Anticipated Geologic Conditions* and Grading Remarks	Slope Stability Remarks	Factor of Safety		Figure Numbers
			Static	Seismic Kh=0.2	
P-P'	Daylight cut pad with steep descending existing cut slope. CMU wall at toe of slope. CMU wall is not reinforced with piles at this section.	Stability of the pad. One 250-kip anchors added to upper portion of the slope to provide stability for site. Passive resistance added for existing lower wall corresponding to an equivalent fluid weight of 45pcf, although wall is likely capable of providing additional resistance. Upper search limits confined to pad area.	1.562	1.294	G-77, 78, 79

* Bedrock assumed to dip into slope unless noted otherwise.

SURFICIAL STABILITY ANALYSIS



Assume: (1) Saturation To Slope Surface
(2) Sufficient Permeability To Establish Water Flow

Pw = Water Pressure Head=(z)(cos^2(a))
Ws = Saturated Soil Unit Weight
Ww = Unit Weight of Water (62.4 lb/cu.ft.)
u = Pore Water Pressure=(Ww)(z)(cos^2(a))
z = Layer Thickness
a = Angle of Slope
phi = Angle of Friction
c = Cohesion
Fd = (0.5)(z)(Ws)(sin(2a))
Fr = (z)(Ws-Ww)(cos^2(a))(tan(phi)) + c
Factor of Safety (FS) = Fr/Fd

2:1 COMPACTED FILL SLOPE (NATIVE FILL)

Given:

Ws (pcf)	z (ft)	a (degrees)	(radians)	phi (degrees)	(radians)	c (psf)
125	4	26.7	0.466003	22	0.383972	250

Calculations:

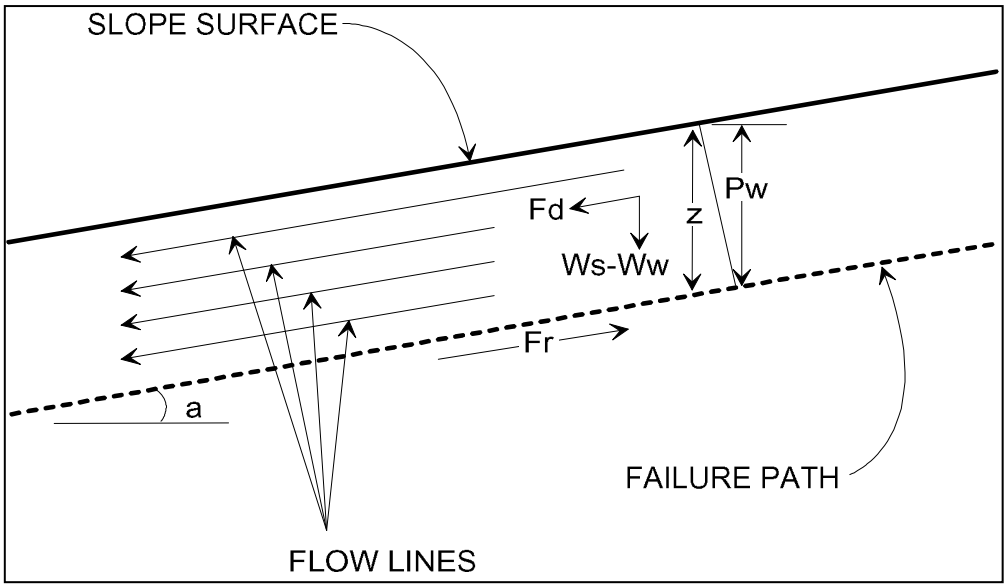
Pw	u	Fd	Fr	**FS**
3.19	199.21	200.70	330.74	**1.65**

Special Cases:

Saturated Sand: FS = (Ww/Ws)(tan(phi')/tan(a))
FS = 0.621424

Moist Clay FS = (c/Ws*z)(1/(cos^2(a)*tan(a))
FS = 1.245613

SURFICIAL STABILITY ANALYSIS



Assume: (1) Saturation To Slope Surface
(2) Sufficient Permeability To Establish Water Flow

Pw = Water Pressure Head=(z)(cos^2(a))
Ws = Saturated Soil Unit Weight
Ww = Unit Weight of Water (62.4 lb/cu.ft.)
u = Pore Water Pressure=(Ww)(z)(cos^2(a))
z = Layer Thickness
a = Angle of Slope
phi = Angle of Friction
c = Cohesion
Fd = (0.5)(z)(Ws)(sin(2a))
Fr = (z)(Ws-Ww)(cos^2(a))(tan(phi)) + c
Factor of Safety (FS) = Fr/Fd

2:1 CUT SLOPE IN BEDROCK

Given:

Ws (pcf)	z (ft)	a (degrees)	(radians)	phi (degrees)	(radians)	c* (psf)
135	4	26.7	0.466003	31	0.541052	250

* reduced c

Calculations:

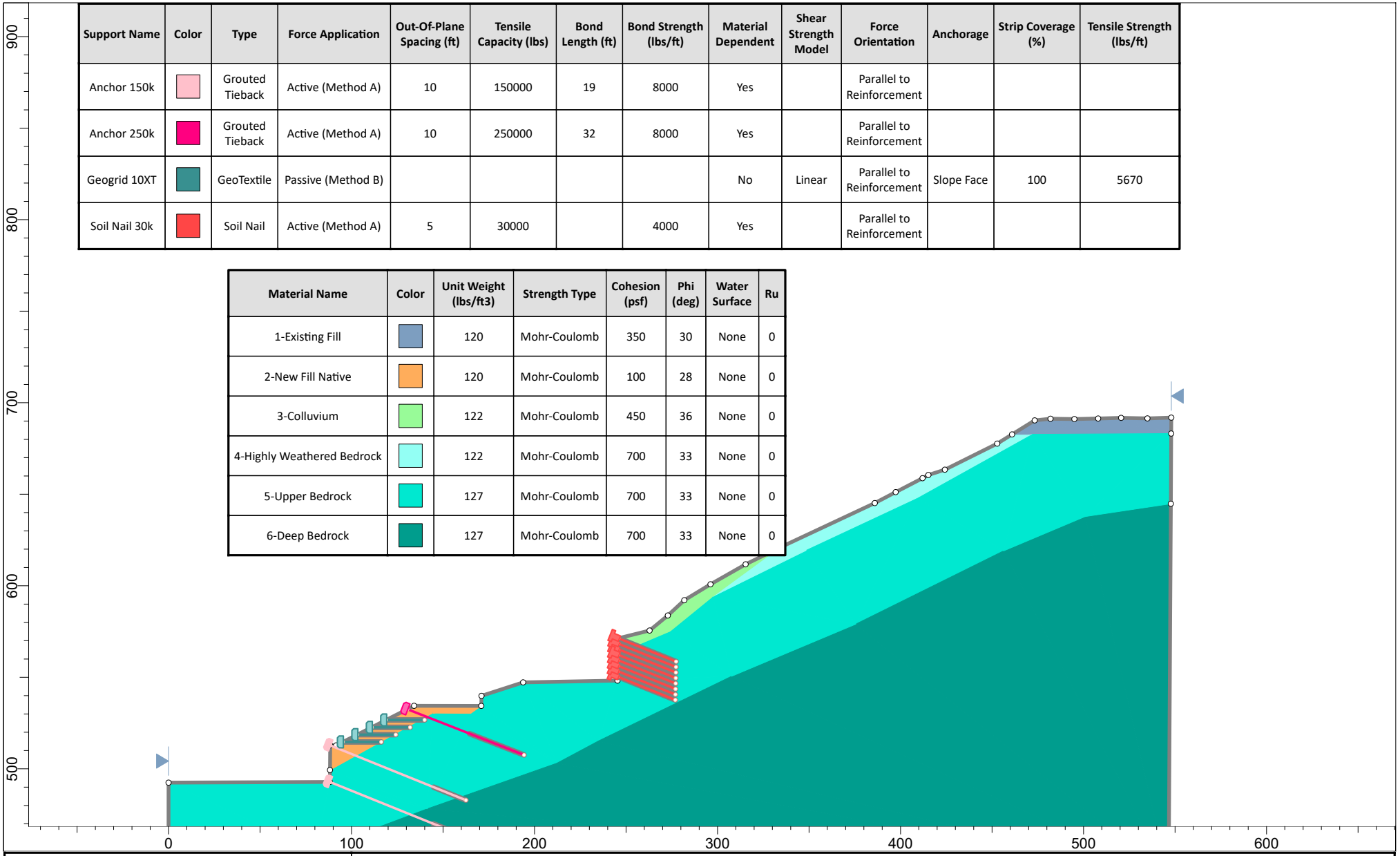
Pw	u	Fd	Fr	**FS**
3.19	199.21	216.76	389.26	**1.80**

Special Cases:

Saturated Sand: FS = (Ww/Ws)(tan(phi')/tan(a))
FS = 0.386901
Moist Clay FS = (c/Ws*z)(1/(cos^2(a)*tan(a))
FS = 1.153346

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (ft)	Tensile Capacity (lbs)	Bond Length (ft)	Bond Strength (lbs/ft)	Material Dependent	Shear Strength Model	Force Orientation	Anchorage	Strip Coverage (%)	Tensile Strength (lbs/ft)
Anchor 150k		Grouted Tieback	Active (Method A)	10	150000	19	8000	Yes		Parallel to Reinforcement			
Anchor 250k		Grouted Tieback	Active (Method A)	10	250000	32	8000	Yes		Parallel to Reinforcement			
Geogrid 10XT		GeoTextile	Passive (Method B)					No	Linear	Parallel to Reinforcement	Slope Face	100	5670
Soil Nail 30k		Soil Nail	Active (Method A)	5	30000		4000	Yes		Parallel to Reinforcement			

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0



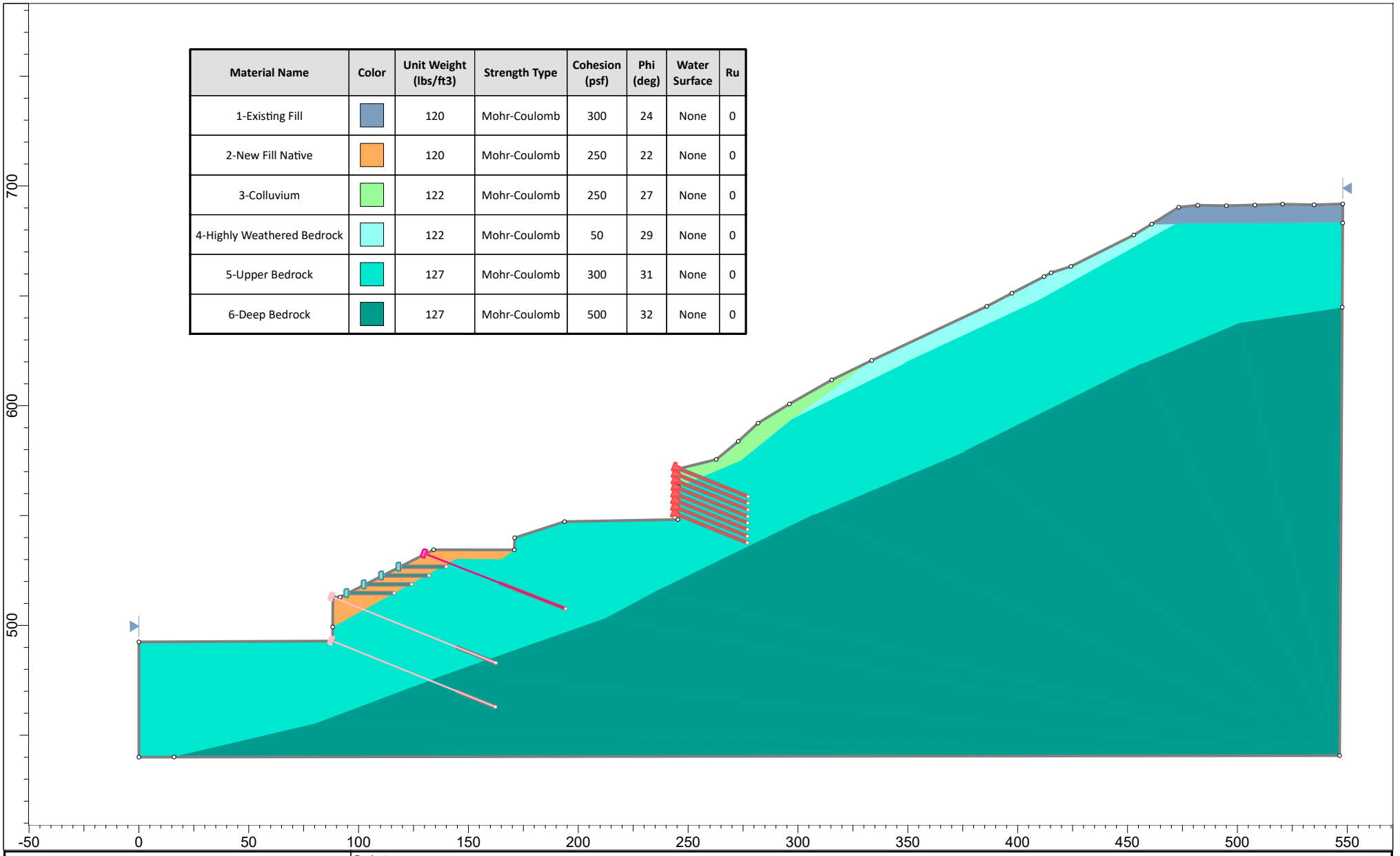
rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Sample Section- Material and Support Properties- Initial		
Drawn By	SD	Scale 1:870	Company AGS
Date	10-24-19		File Name Legend- initial search.slim

Figure G-3

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	300	24	None	0
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0



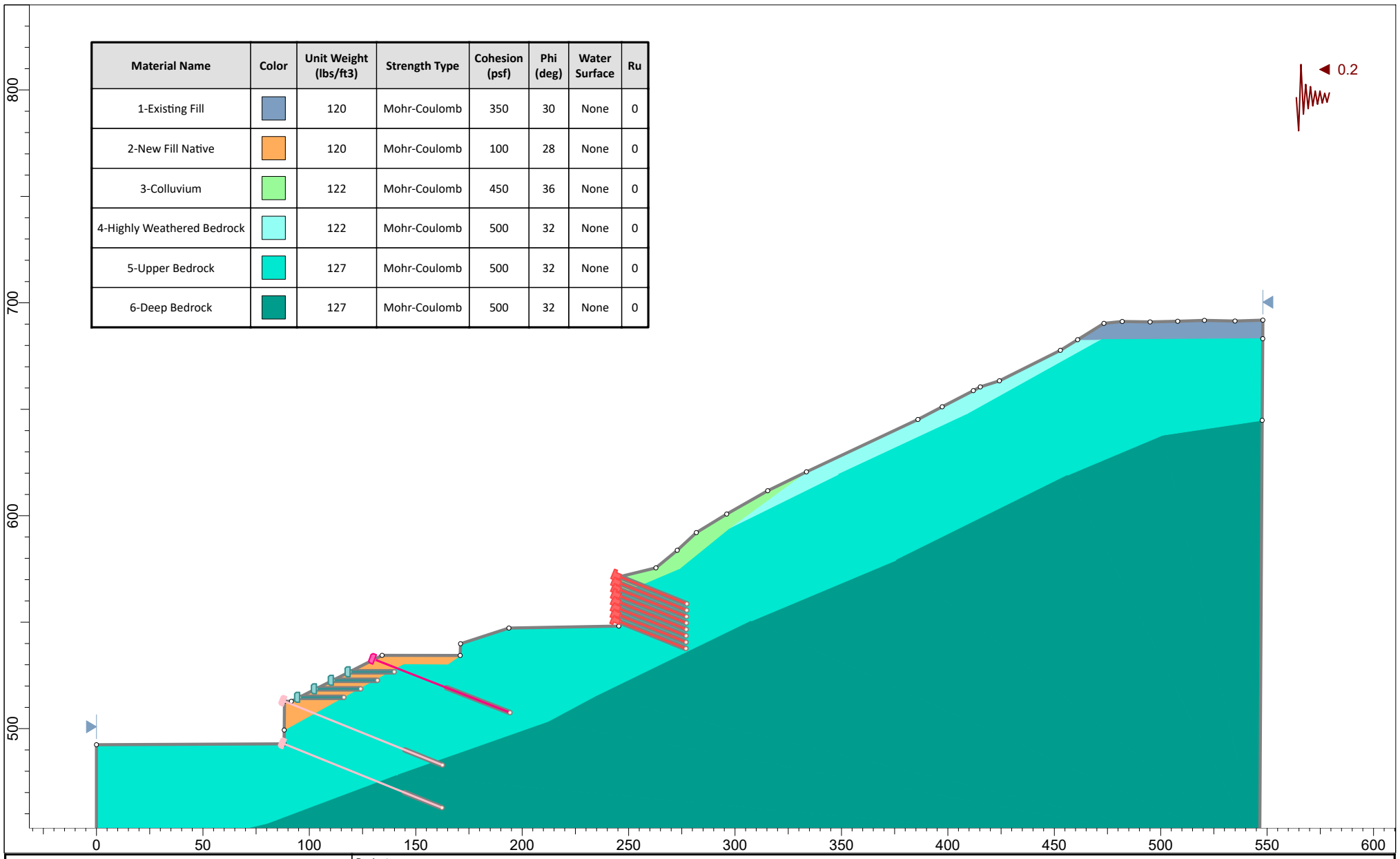
rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Sample Section- Material and Support Properties- Static		
Drawn By	SD	Scale 1:723	Company AGS
Date	10-24-19		File Name Legend.slim

Figure G-4

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0



rocscience

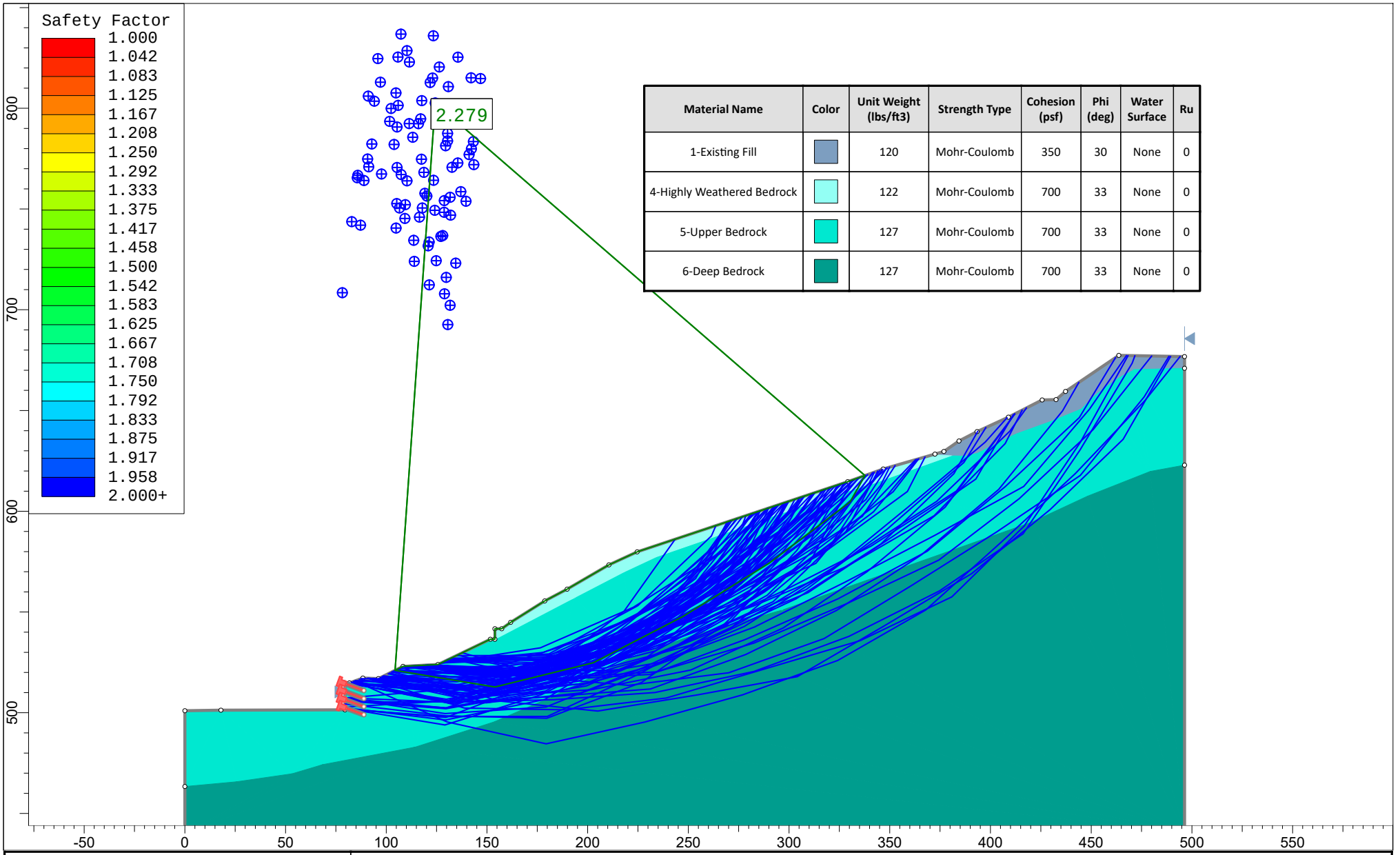
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Sample Section- Material and Support Properties- Pseudo-Static		
Drawn By	SD	Scale 1:747	Company AGS
Date	10-24-19		File Name Legend seismic.slim

Figure G-5

C-C'

Slope Stability Output Files



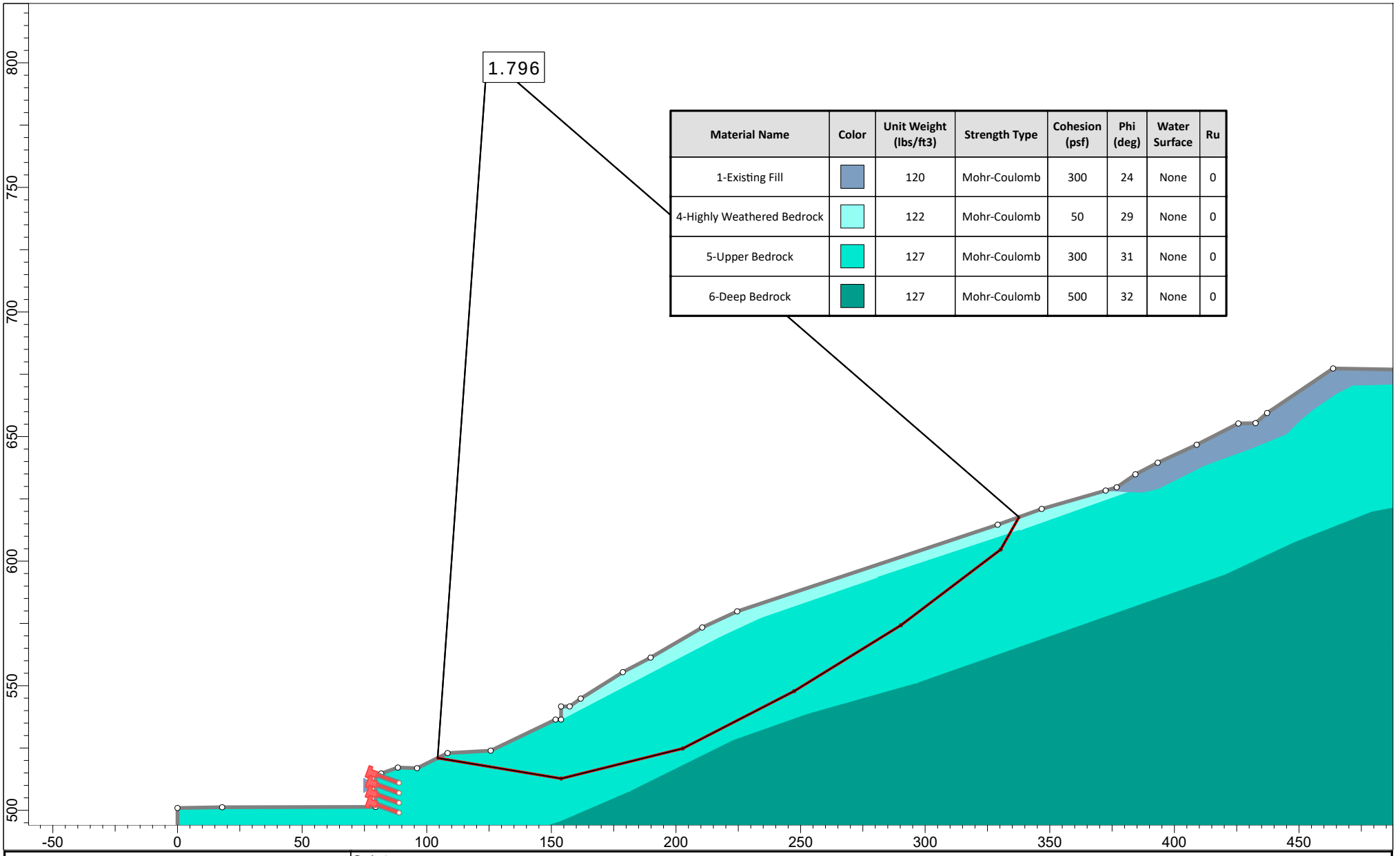
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section C-C', Natural Slope, Initial Search		
Drawn By	SD	*Scale* 1:789	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* cc-12042019, initial search.slim

Figure G-6

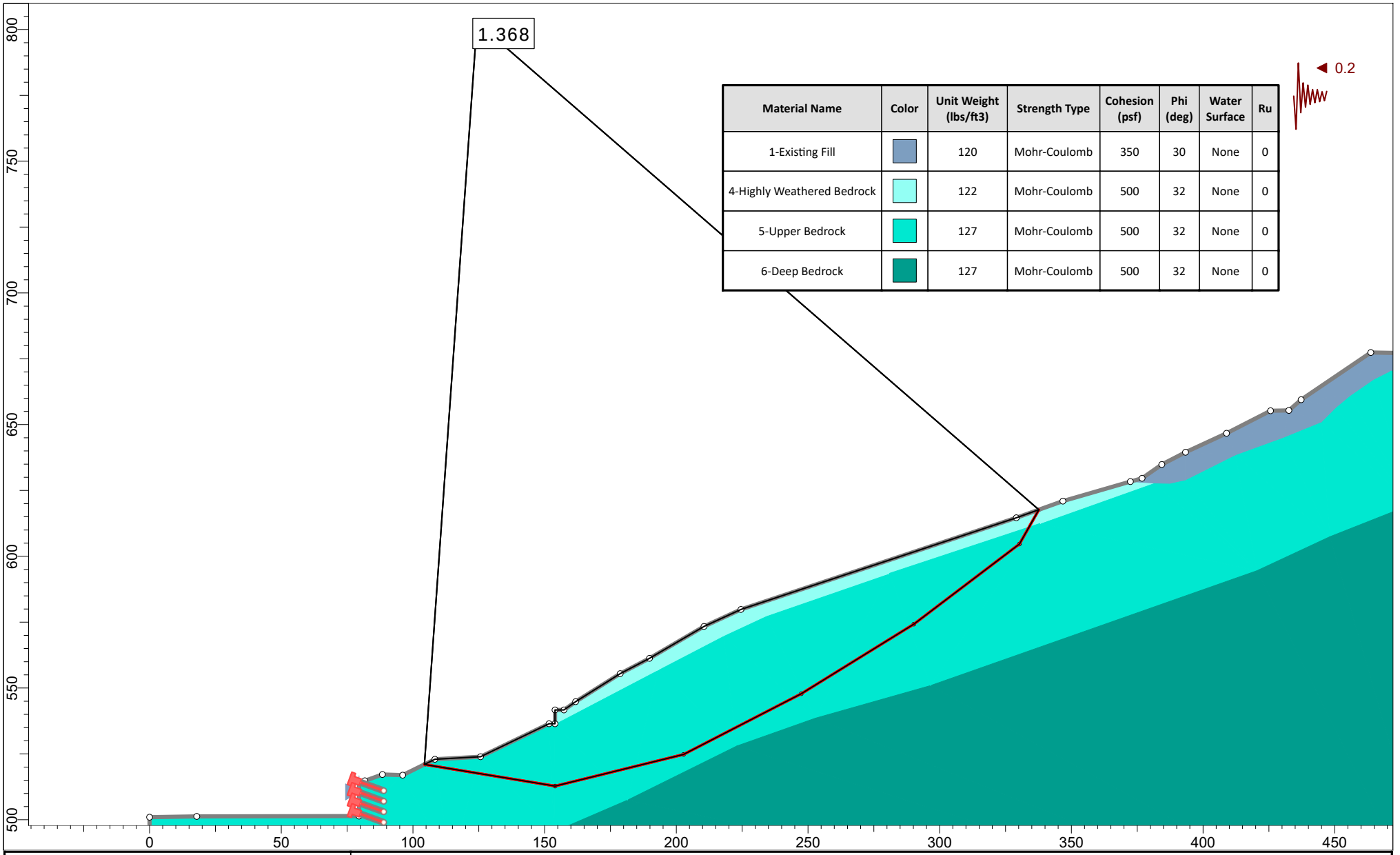


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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section C-C', Natural Slope		
Drawn By	SD	Scale 1:637	Company AGS
Date	B2 Design 12-04-2019		File Name cc-12042019.slim

Figure G-7



rocscience

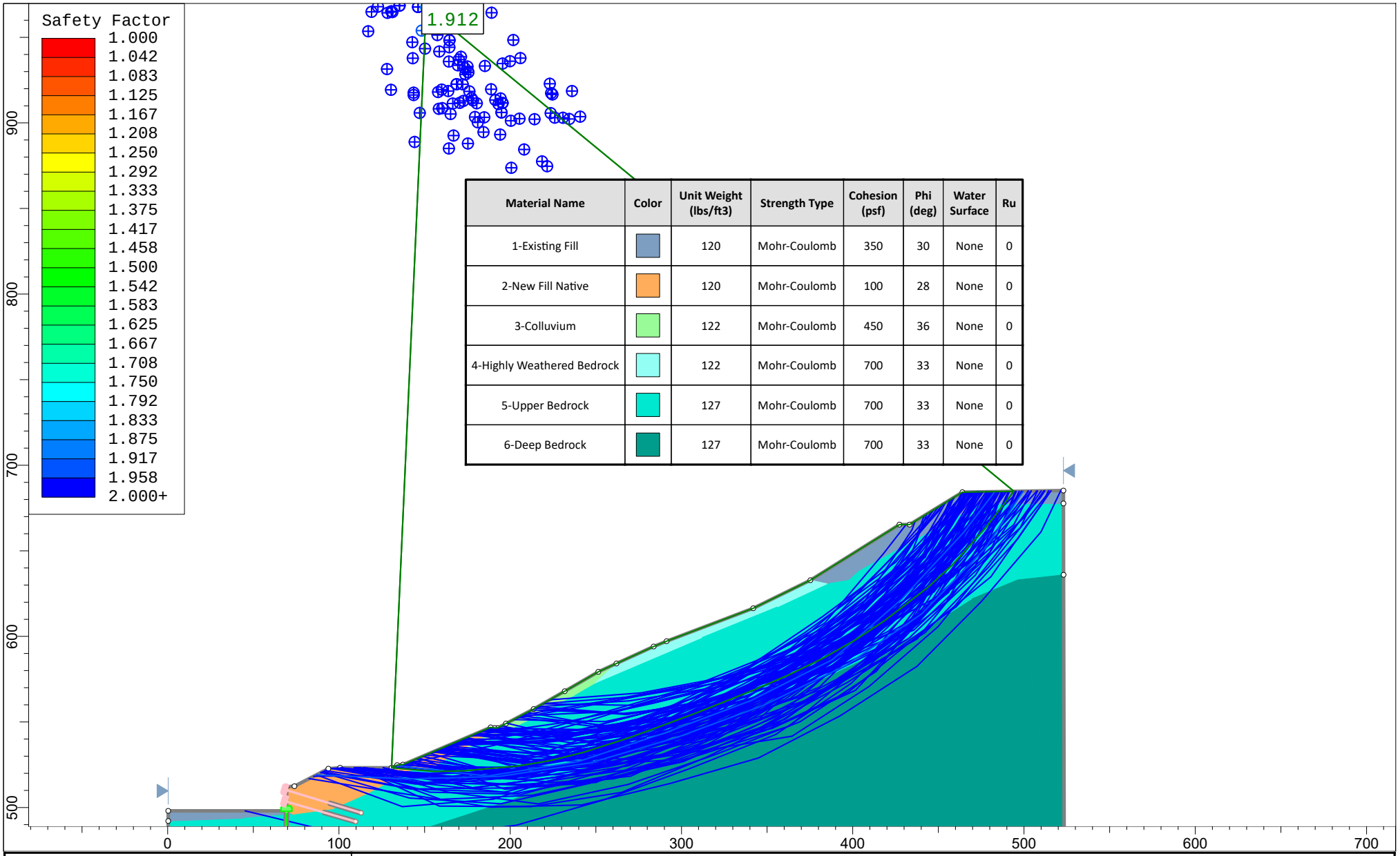
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section C-C', Natural Slope, Seismic		
Drawn By	SD	Scale 1:603	Company AGS
Date	B2 Design 12-04-2019		File Name cc-12042019, seismic.slim

Figure G-8

D-D'

Slope Stability Output Files



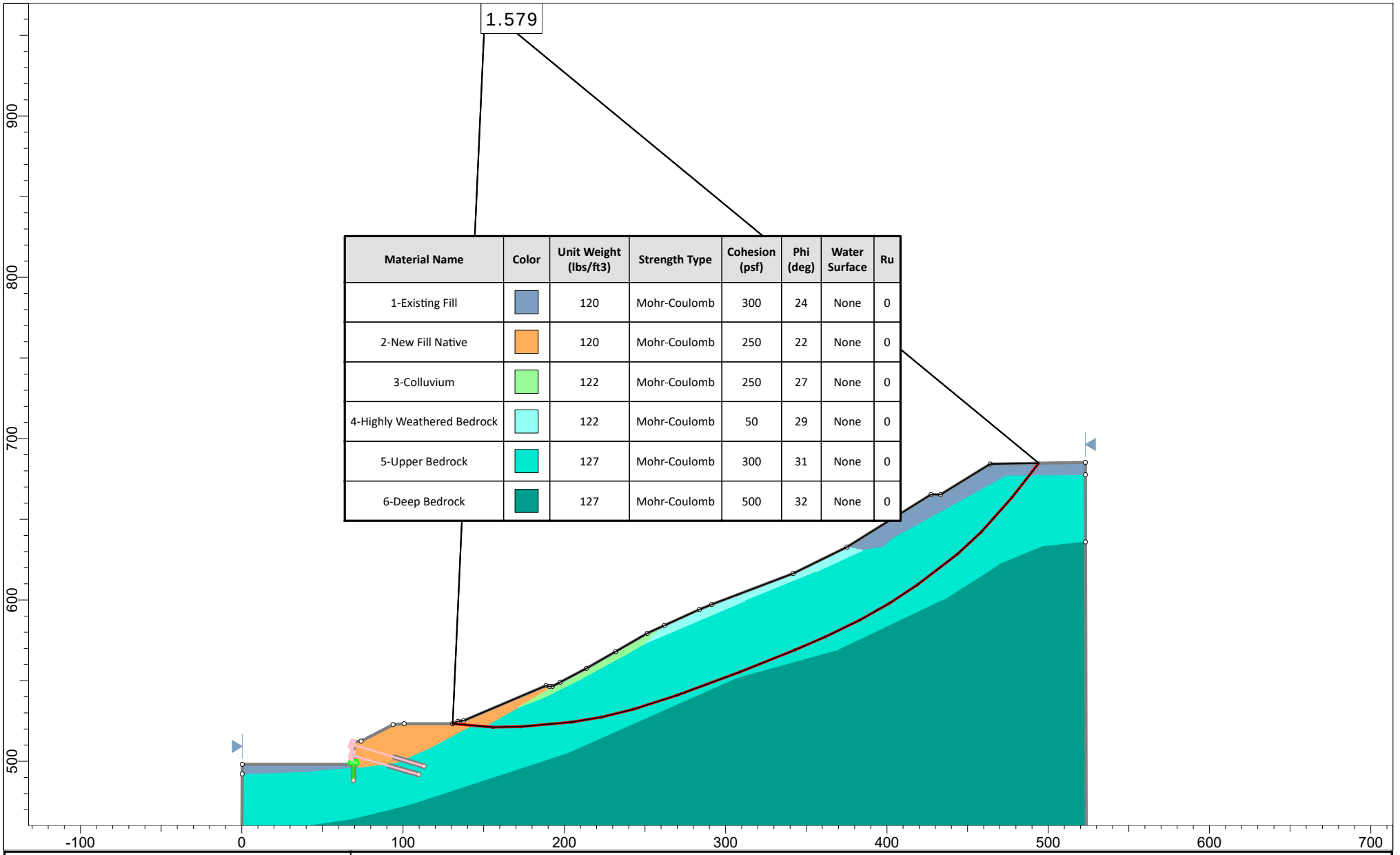
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section D-D', Entire Slope, Initial Search		
Drawn By	SD	Scale 1:929	Company AGS
Date	B2 12-04-2019 Design		File Name dd-12042019 initial search.slim

Figure G-9



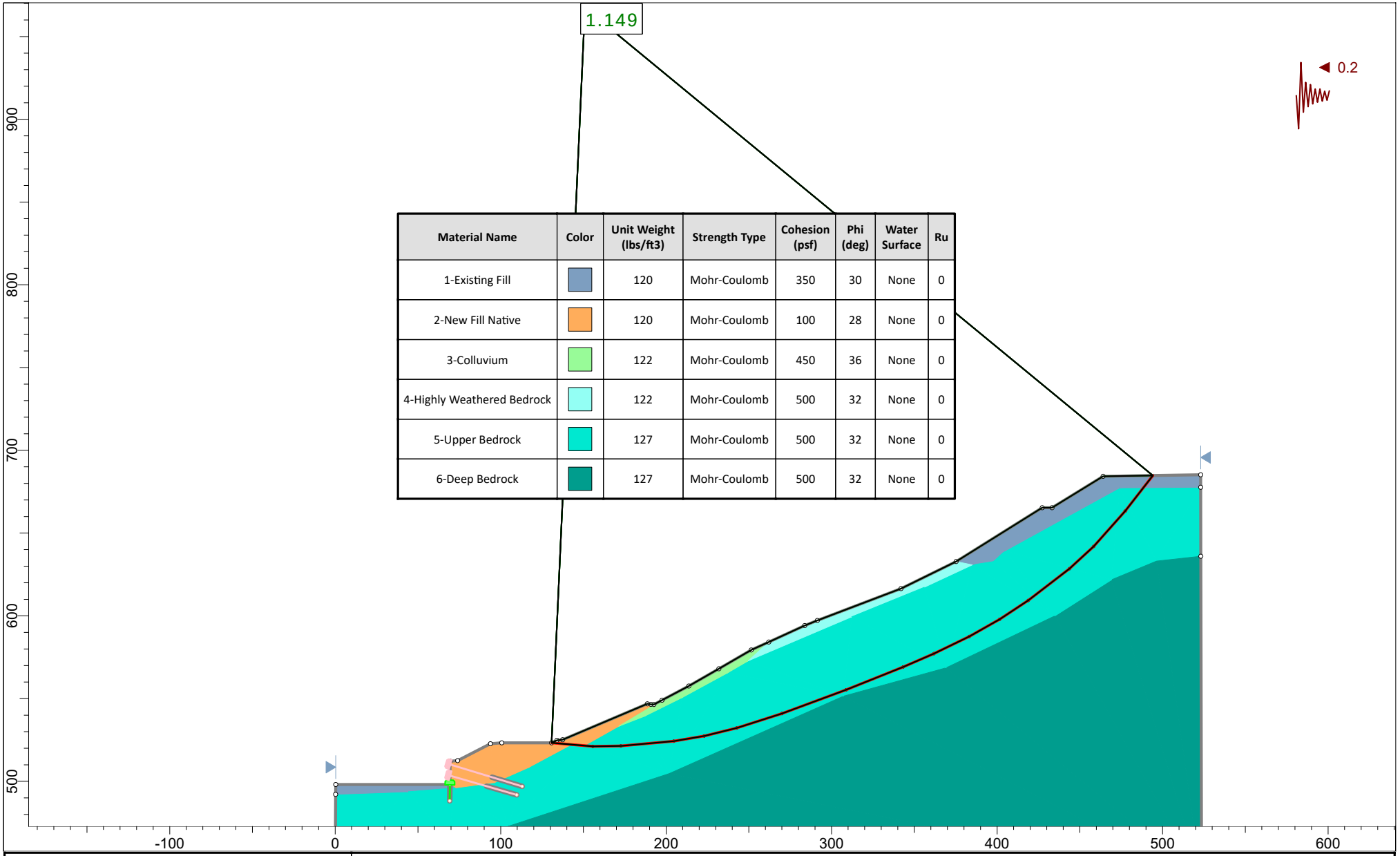
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	300	24	None	0
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section D-D', Entire Slope		
Drawn By	SD	*Scale* 1:985	*Company* AGS
Date	B2 12-04-2019 Design		*File Name* dd-12042019.slim

Figure G-10



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

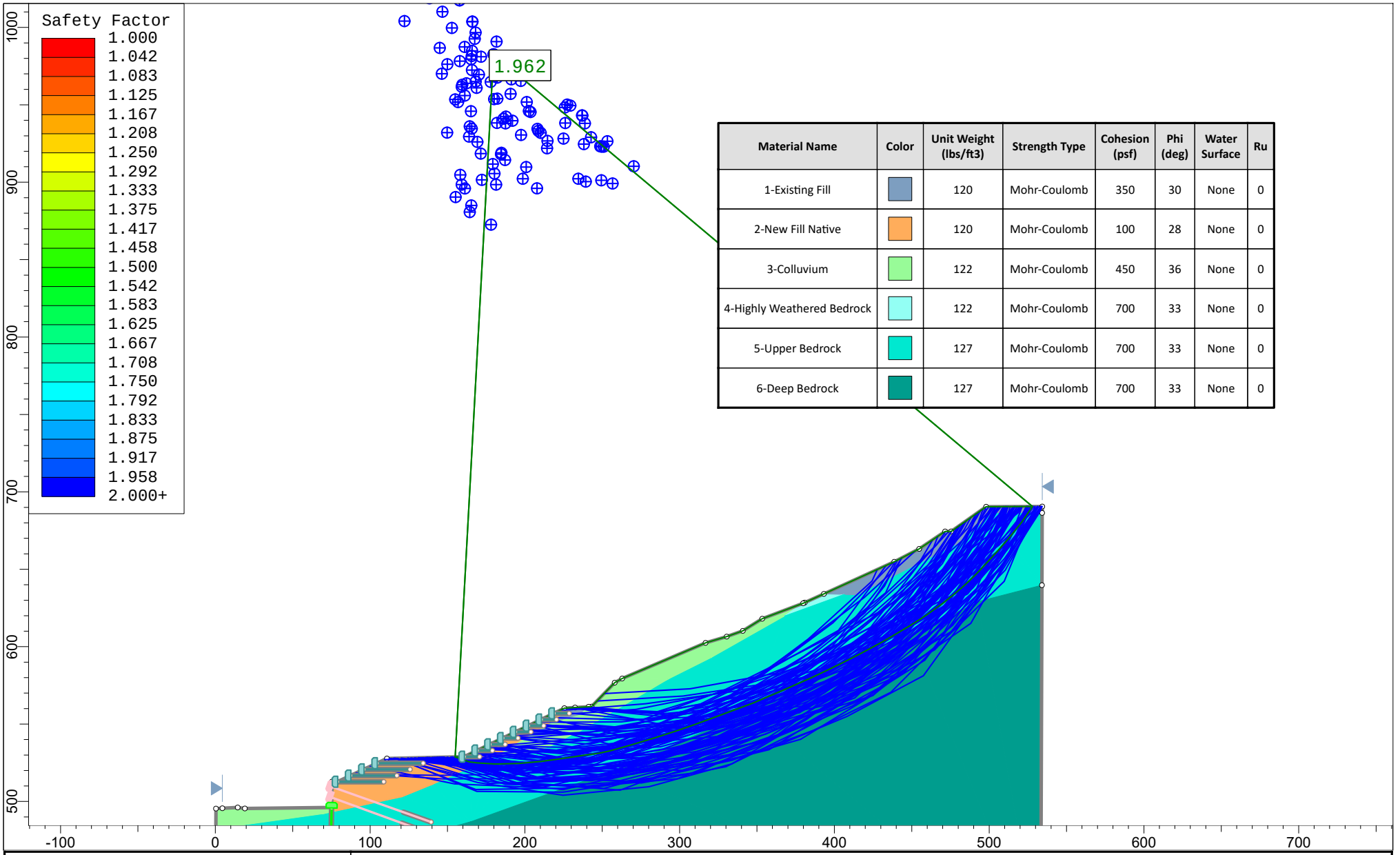
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section D-D', Entire Slope, Seismic		
Drawn By	SD	Scale 1:962	Company AGS
Date	B2 12-04-2019 Design		File Name dd-12042019, seismic.slim

Figure G-11

E-E'

Slope Stability Output Files



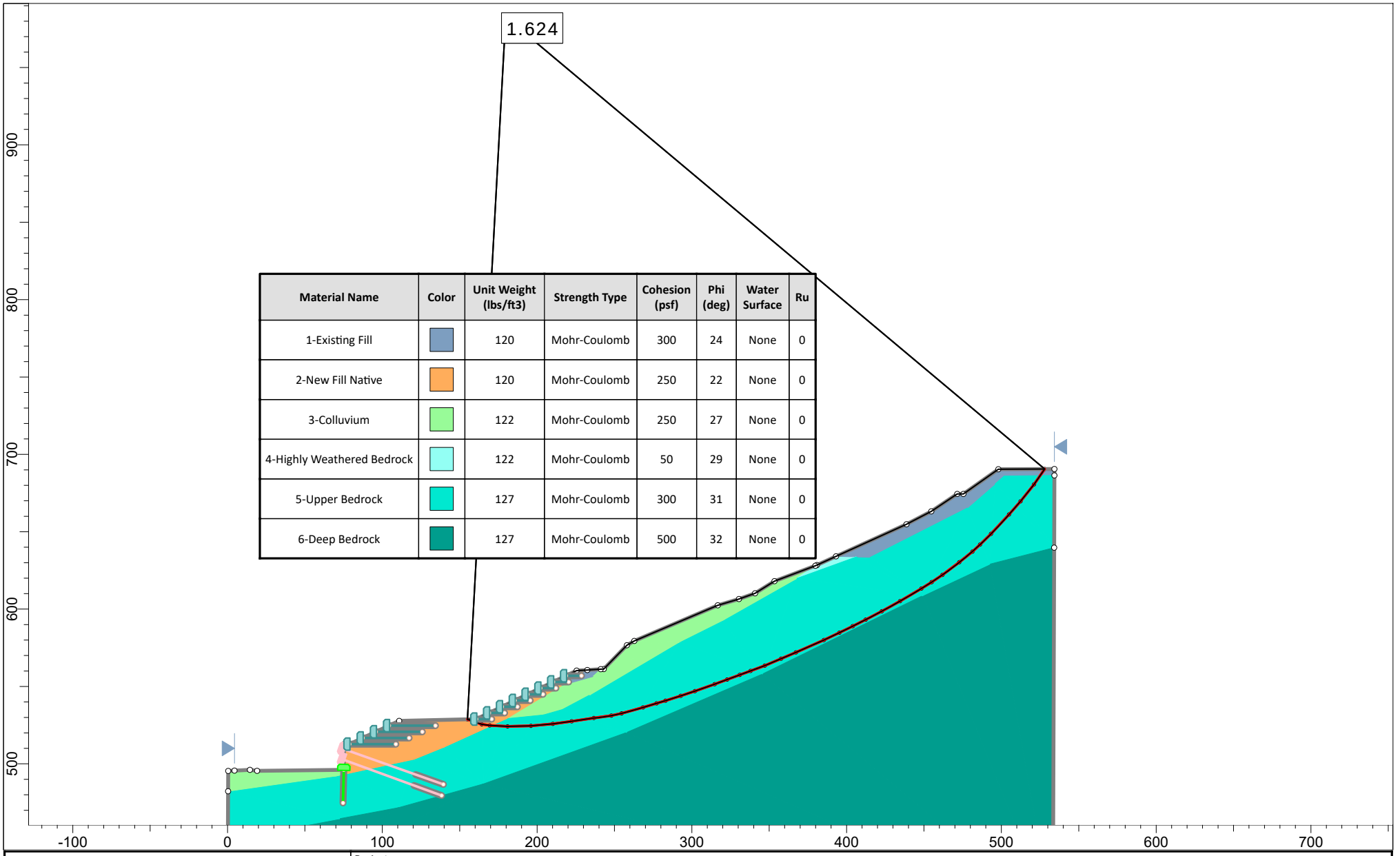
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section E-E', Entire Slope, Initial Search		
Drawn By	SD	Scale 1:1026	Company AGS
Date	B2 Design 12-04-2019		File Name ee-12042019, initial search.slim

Figure G-12



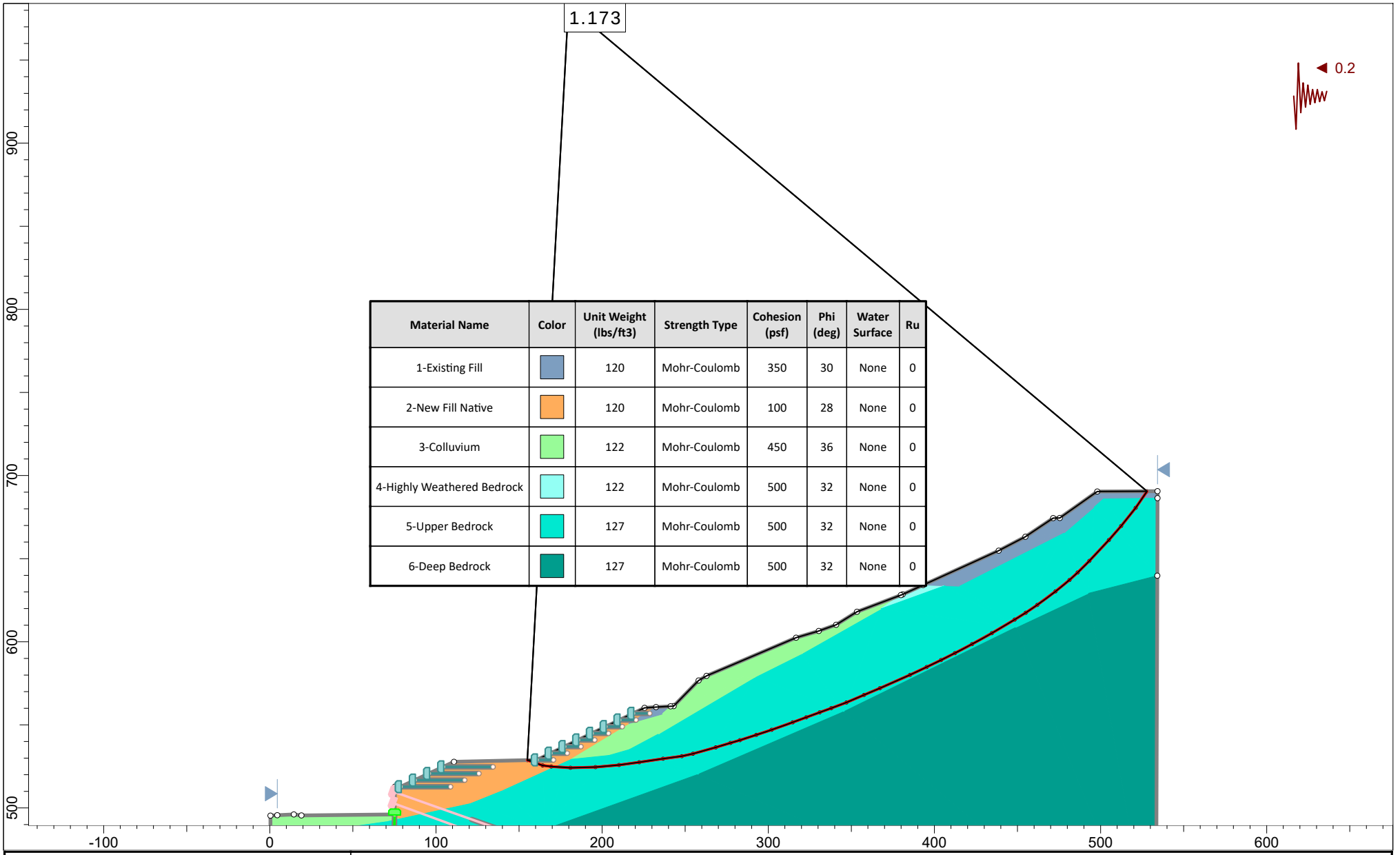
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	300	24	None	0
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section E-E', Entire Slope		
Drawn By	SD	Scale 1:1026	Company AGS
Date	B2 Design 12-04-2019		File Name ee-12042019.slim

Figure G-13



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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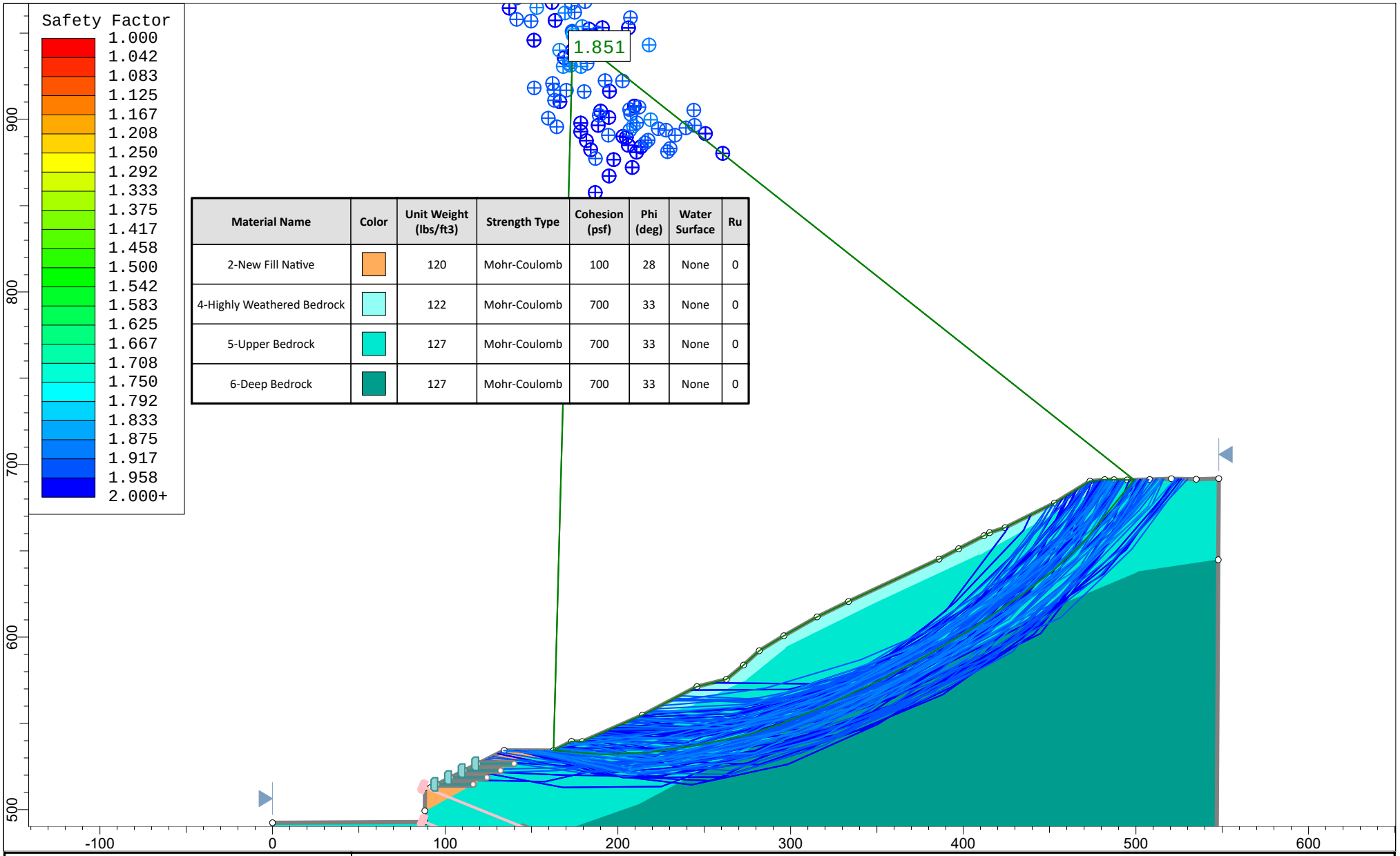
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section E-E', Entire Slope, Seismic		
Drawn By	SD	*Scale* 1:956	*Company* AGS
Date	B2 Design 12-04-2019	*File Name*	ee-12042019, seismic.slim

Figure G-14

F-F'

Slope Stability Output Files



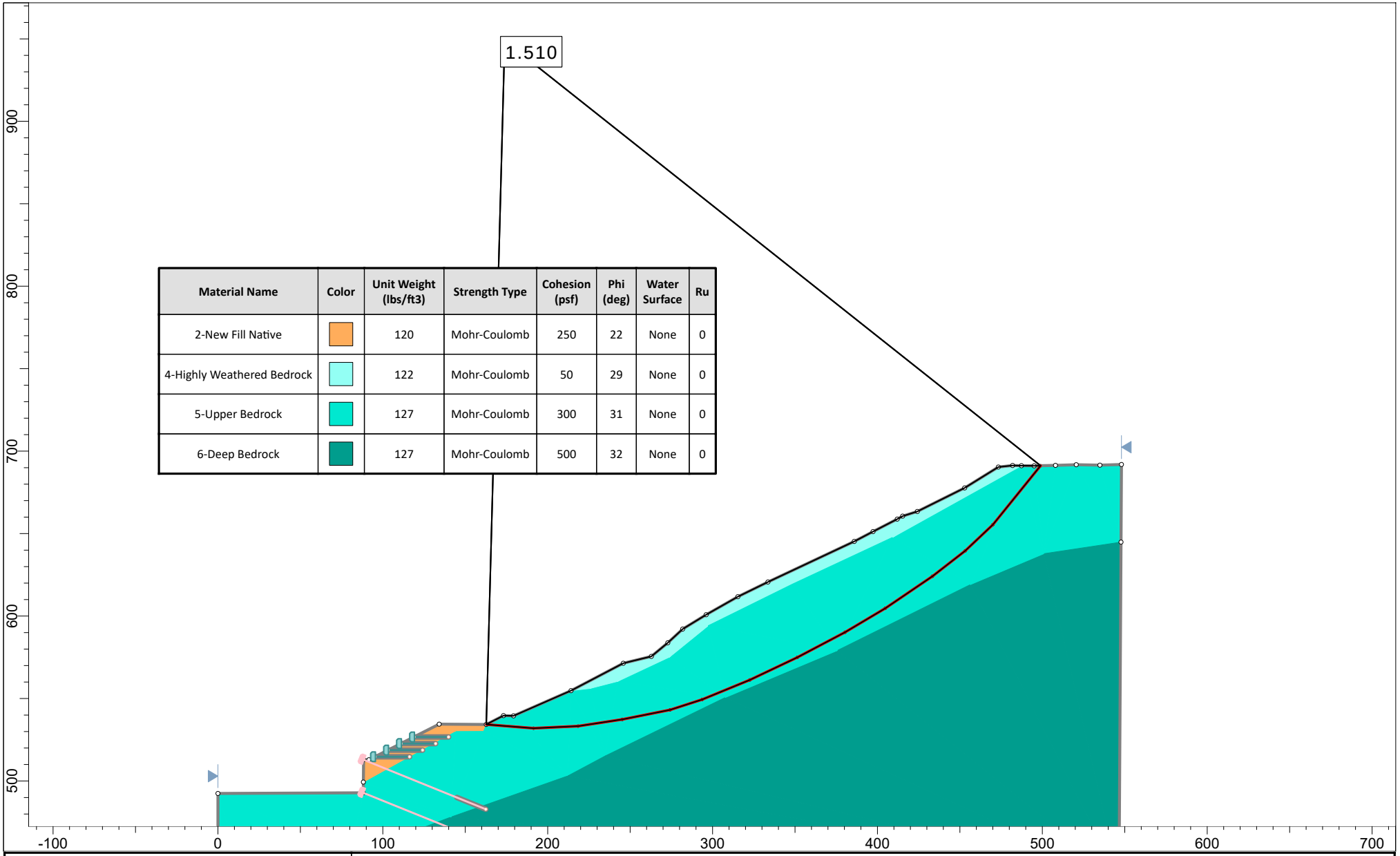
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section F-F', Entire Slope, Initial Search		
Drawn By	SD	*Scale* 1:922	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* ff-12042019 initial search.slim

Figure G-15



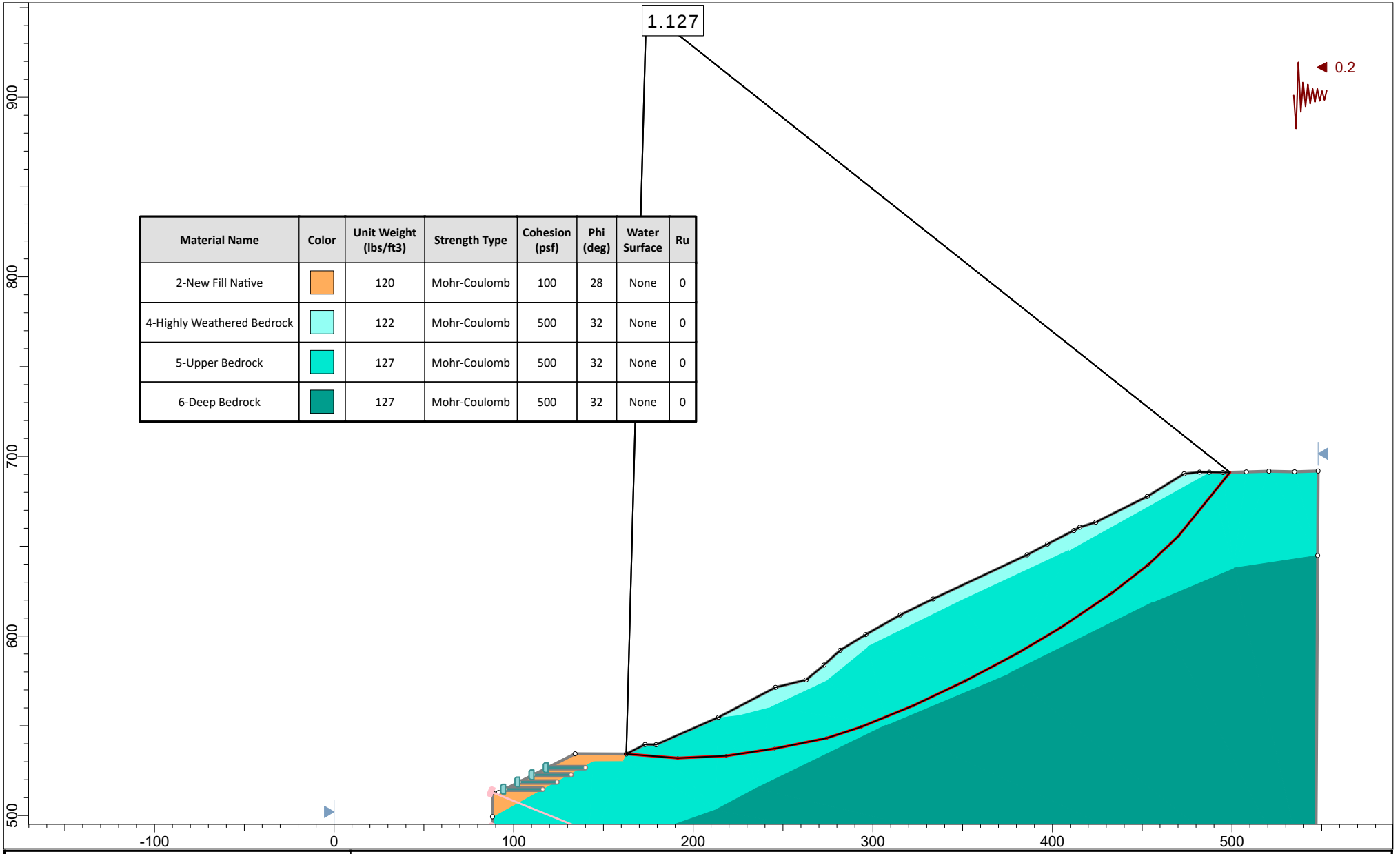
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section F-F', Entire Slope		
Drawn By	SD	*Scale* 1:965	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* ff-12042019.slim

Figure G-16



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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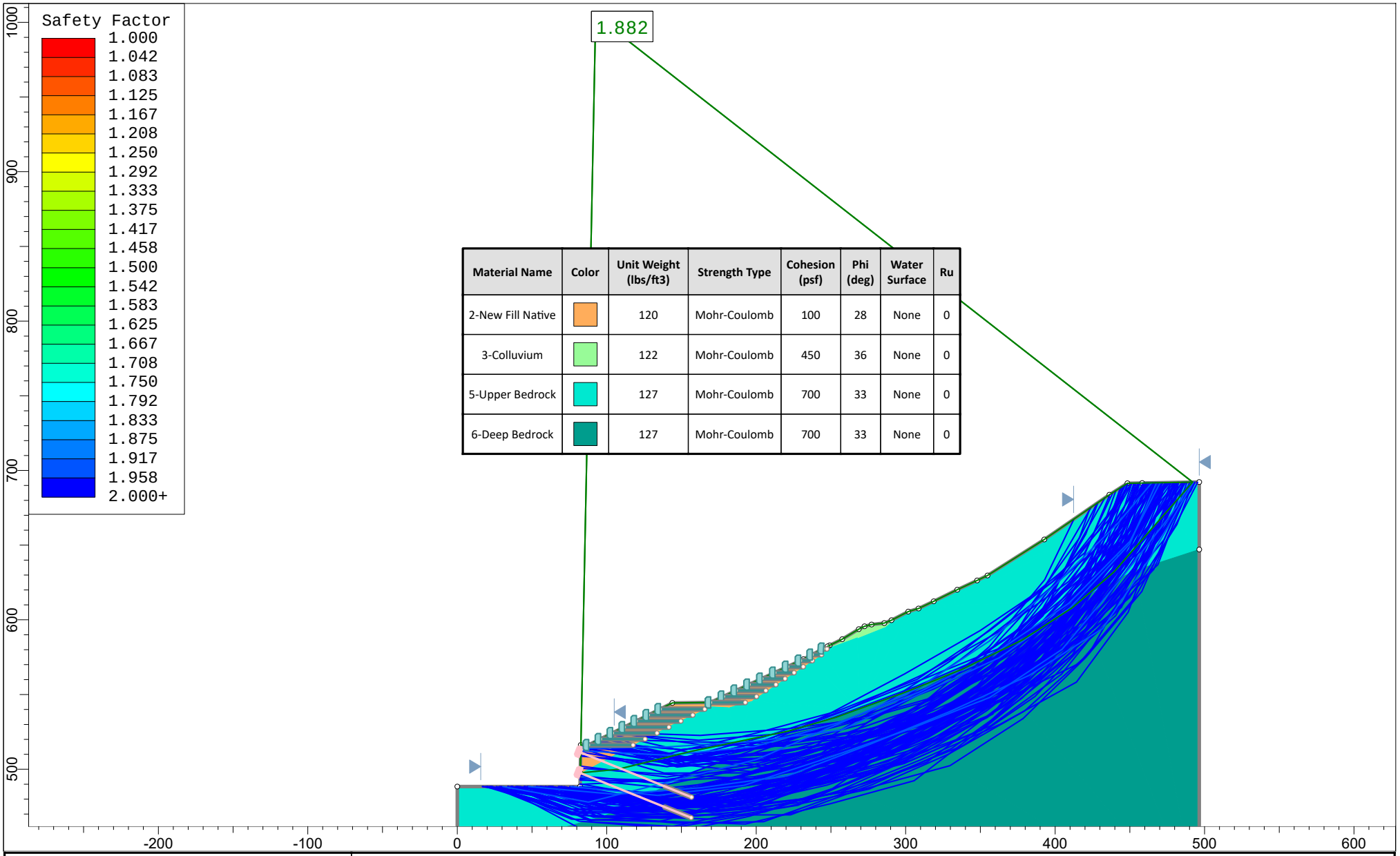
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section F-F', Entire Slope, Seismic		
Drawn By	SD	*Scale* 1:884	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* ff-12042019, seismic.slim

Figure G-17

G-G’

Slope Stability Output Files



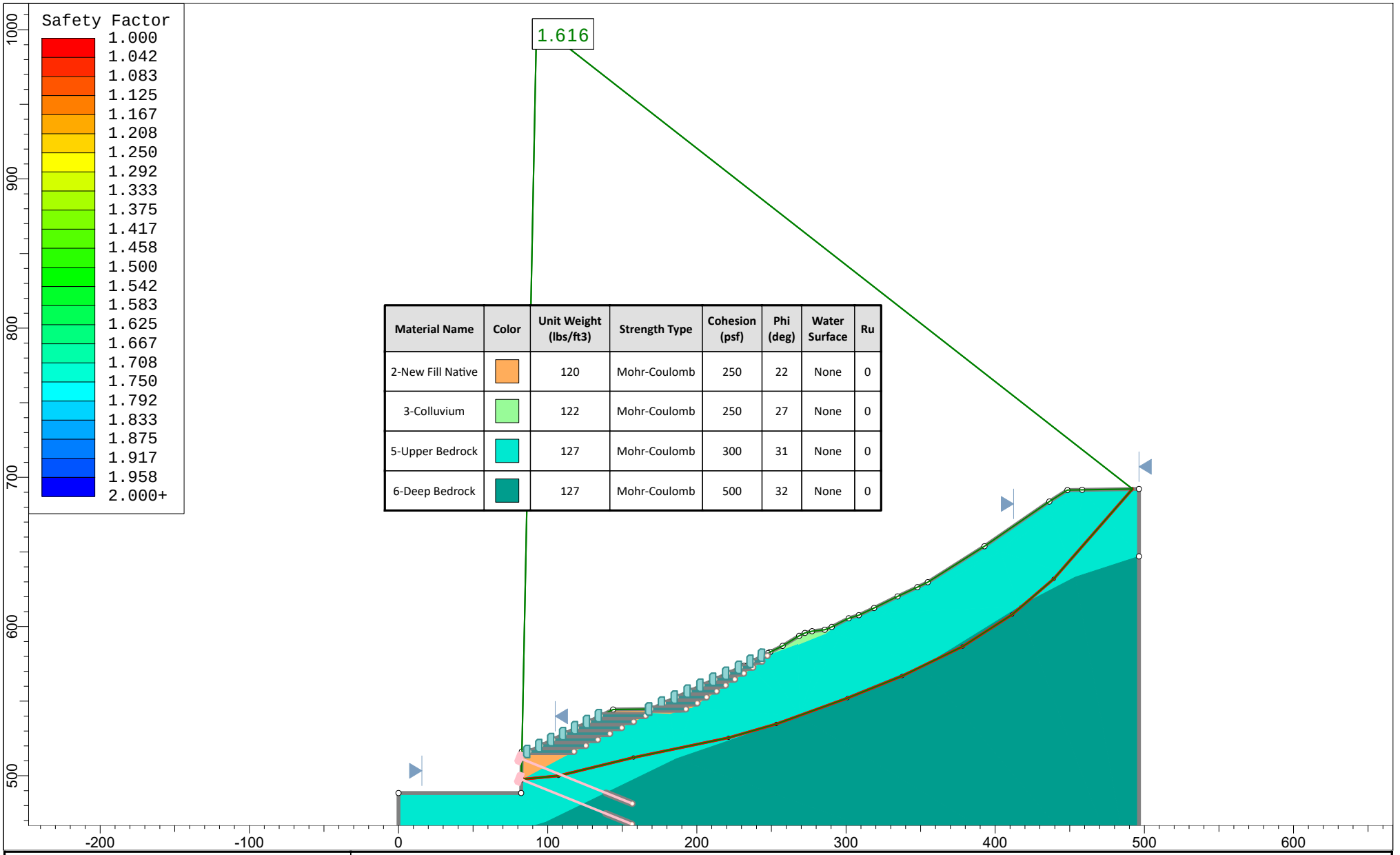
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Entire Slope, Initial Search		
Drawn By	SD	Scale 1:1065	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 entire slope initial.slim

Figure G-18



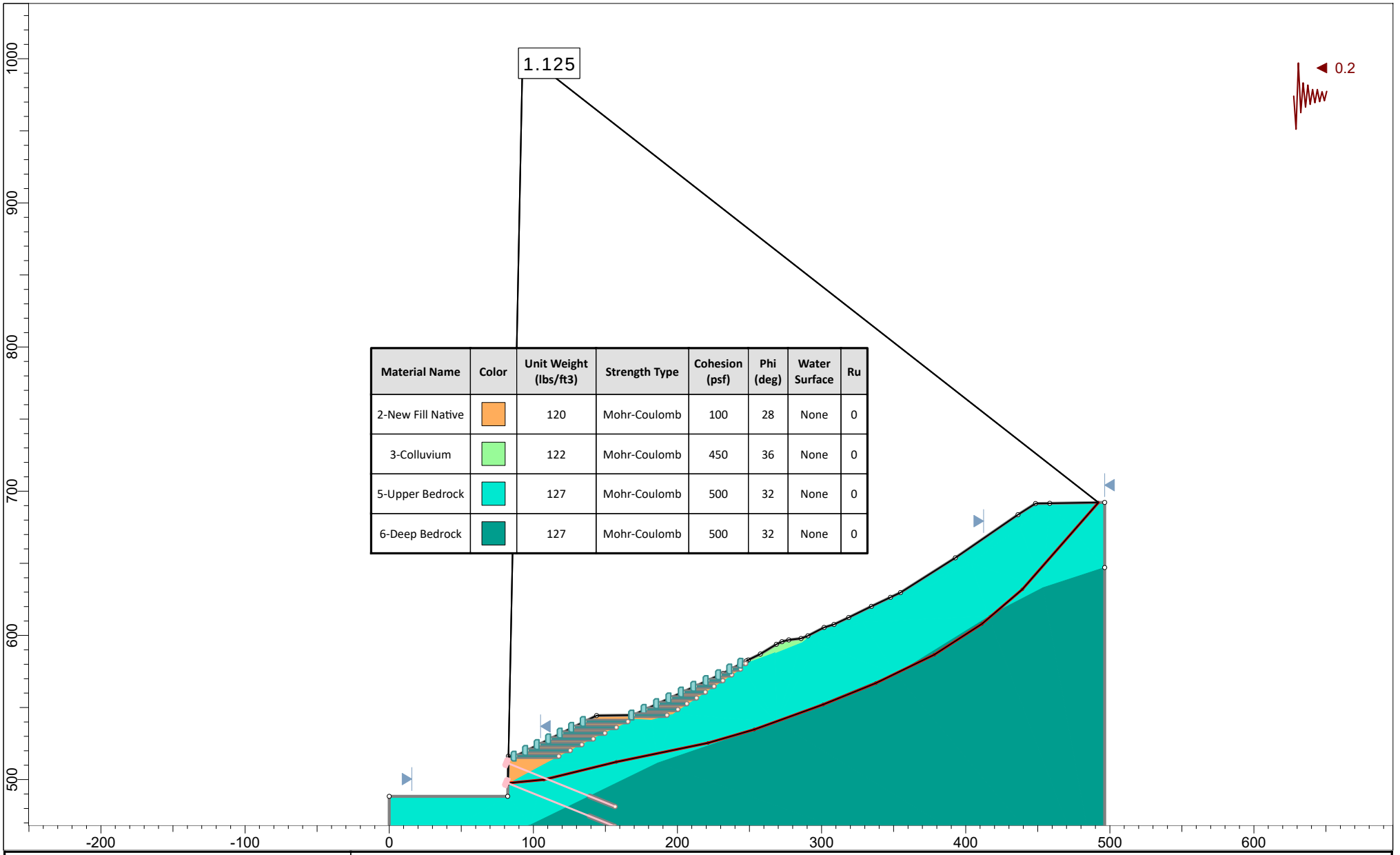
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Entire Slope		
Drawn By	SD	Scale 1:1065	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 entire slope.slim

Figure G-19



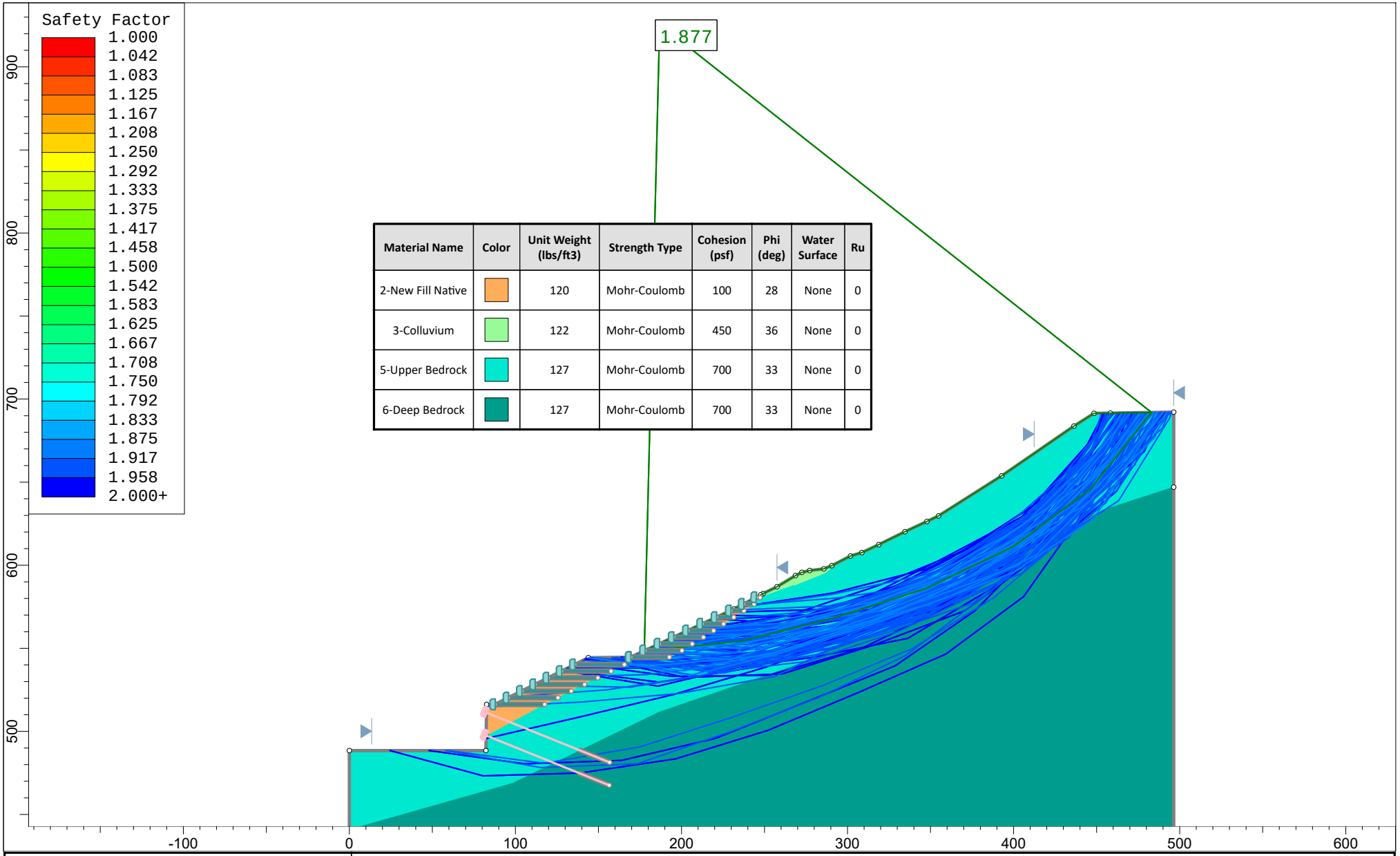
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Entire Slope, Seismic		
Drawn By	SD	Scale 1:1102	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 entire slope, seismic.slim

Figure G-20



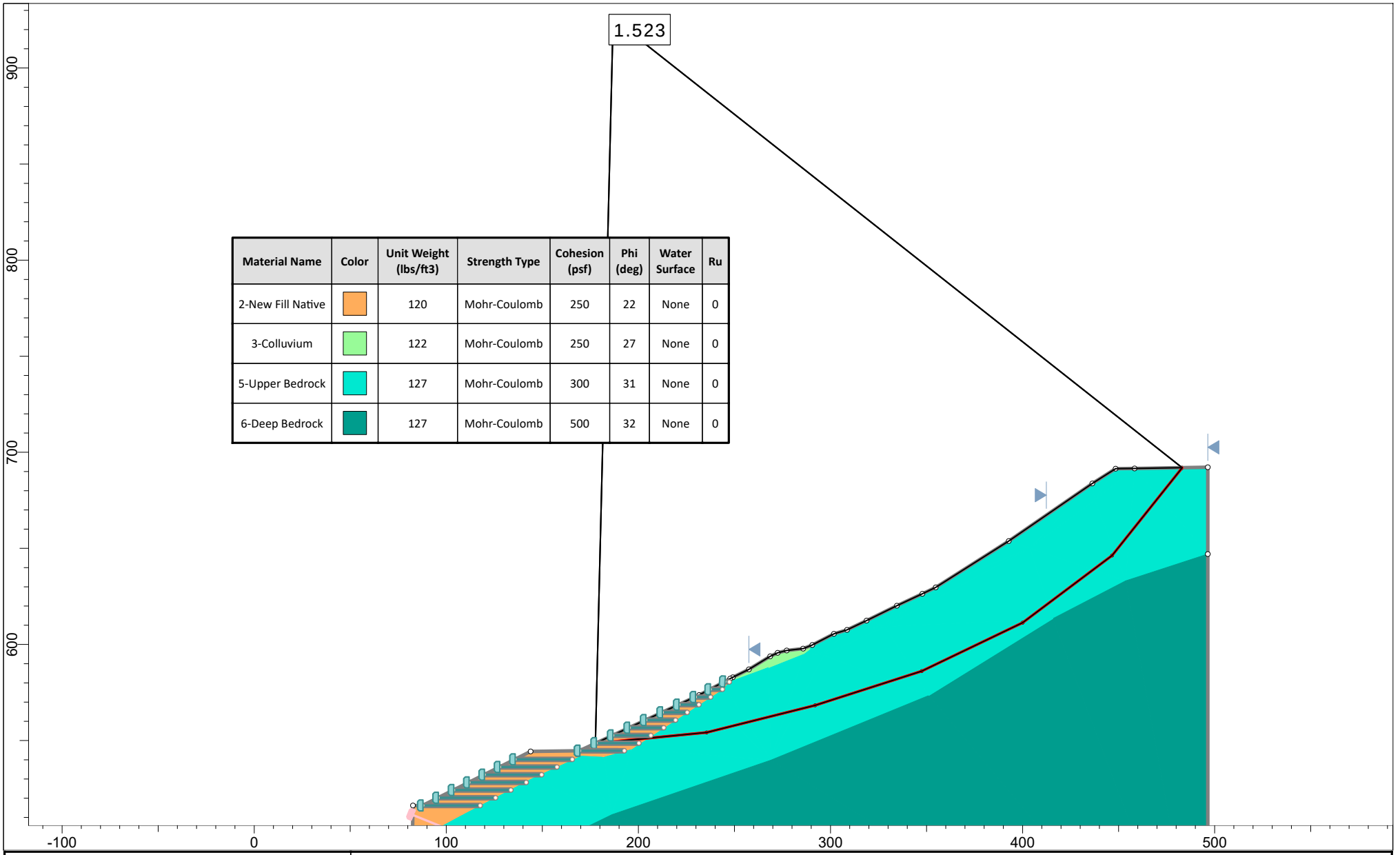
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Upper Natural and Fill Slopes, Initial Search		
Drawn By	SD	Scale 1:958	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 upper fill slope initial.slim

Figure G-21



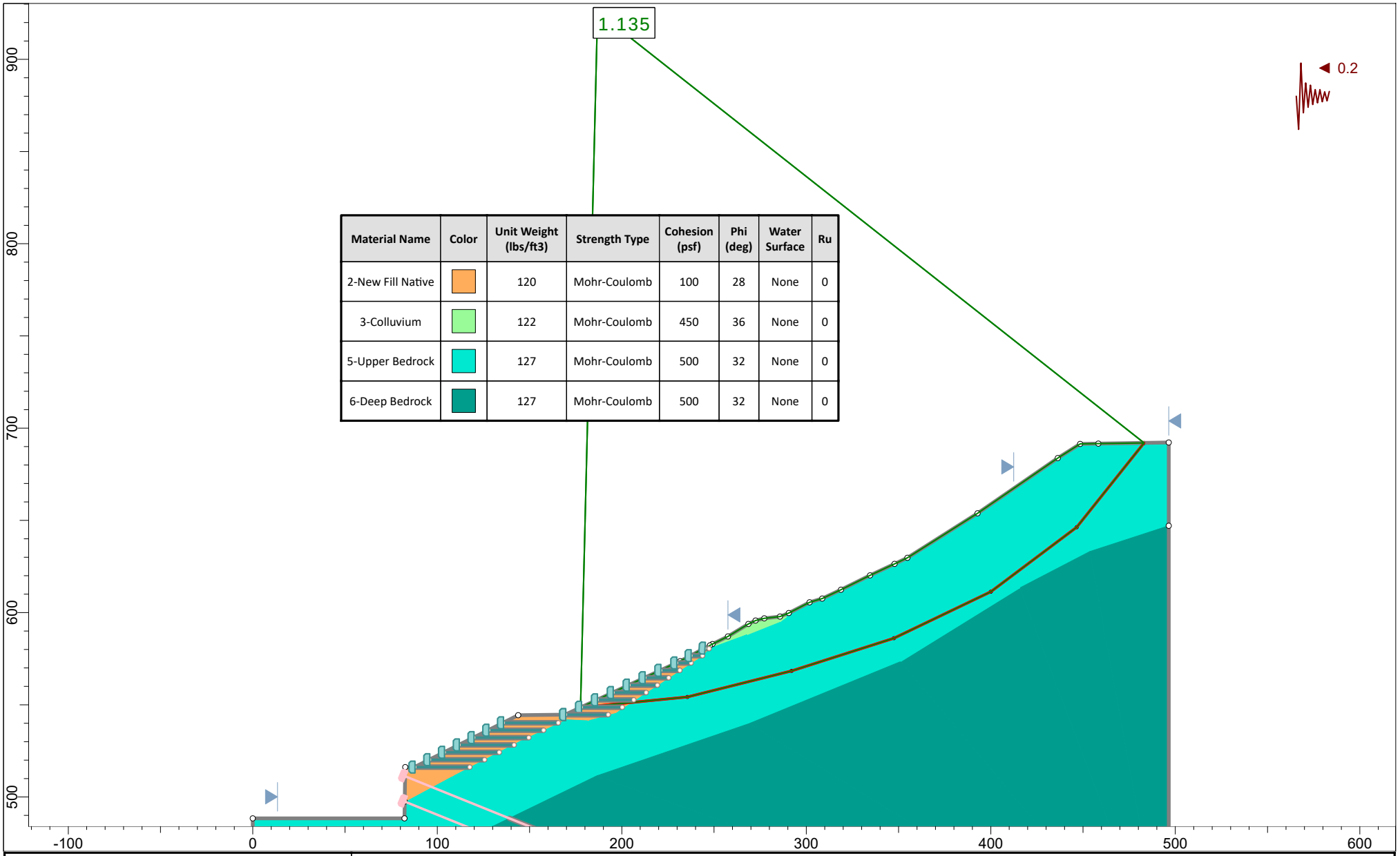
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Upper Natural and Fill Slopes		
Drawn By	SD	Scale 1:827	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 upper fill slope.slim

Figure G-22



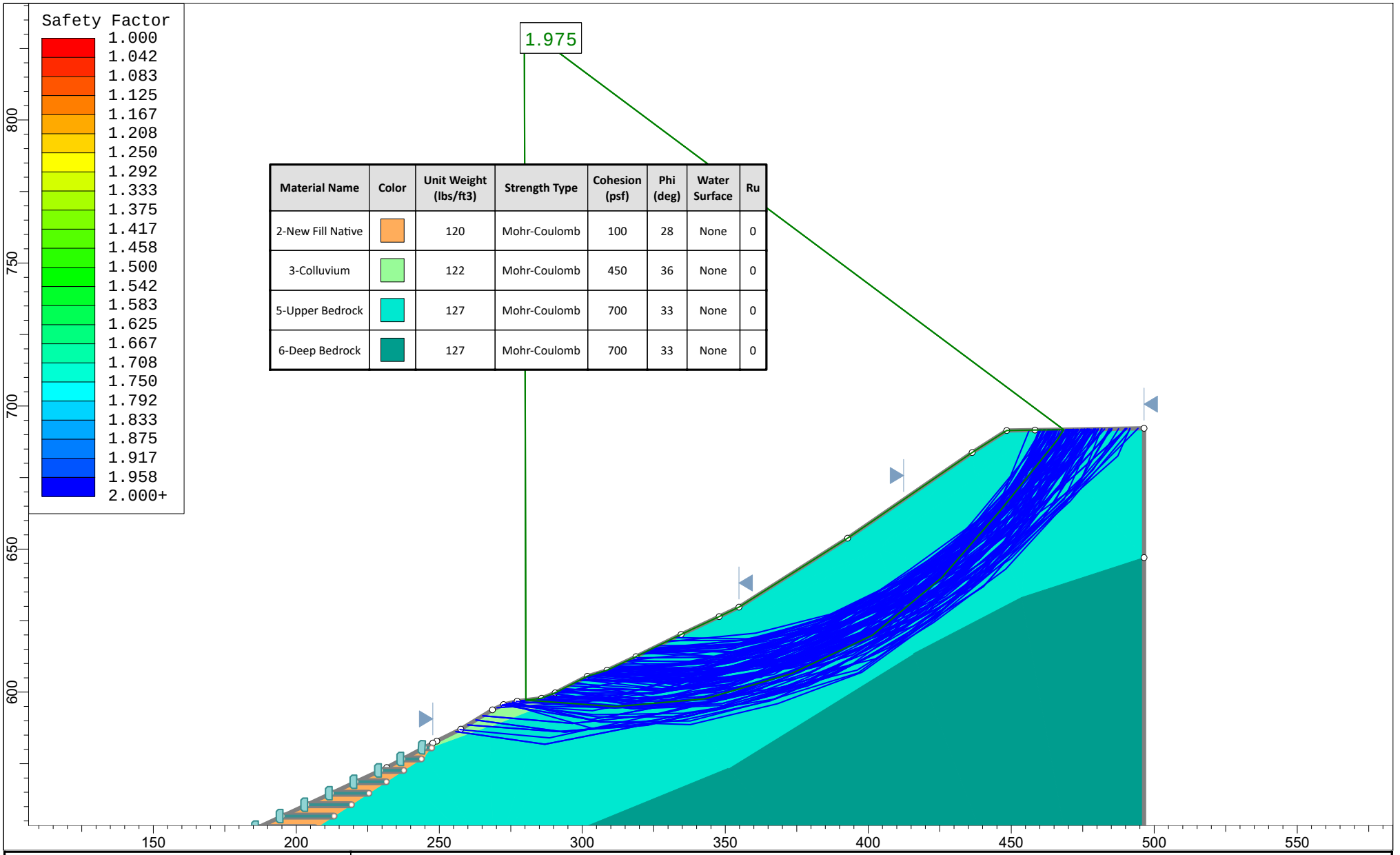
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Upper Natural and Fill Slopes, Seismic		
Drawn By	SD	Scale 1:862	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 upper fill slope, seismic.slim

Figure G-23

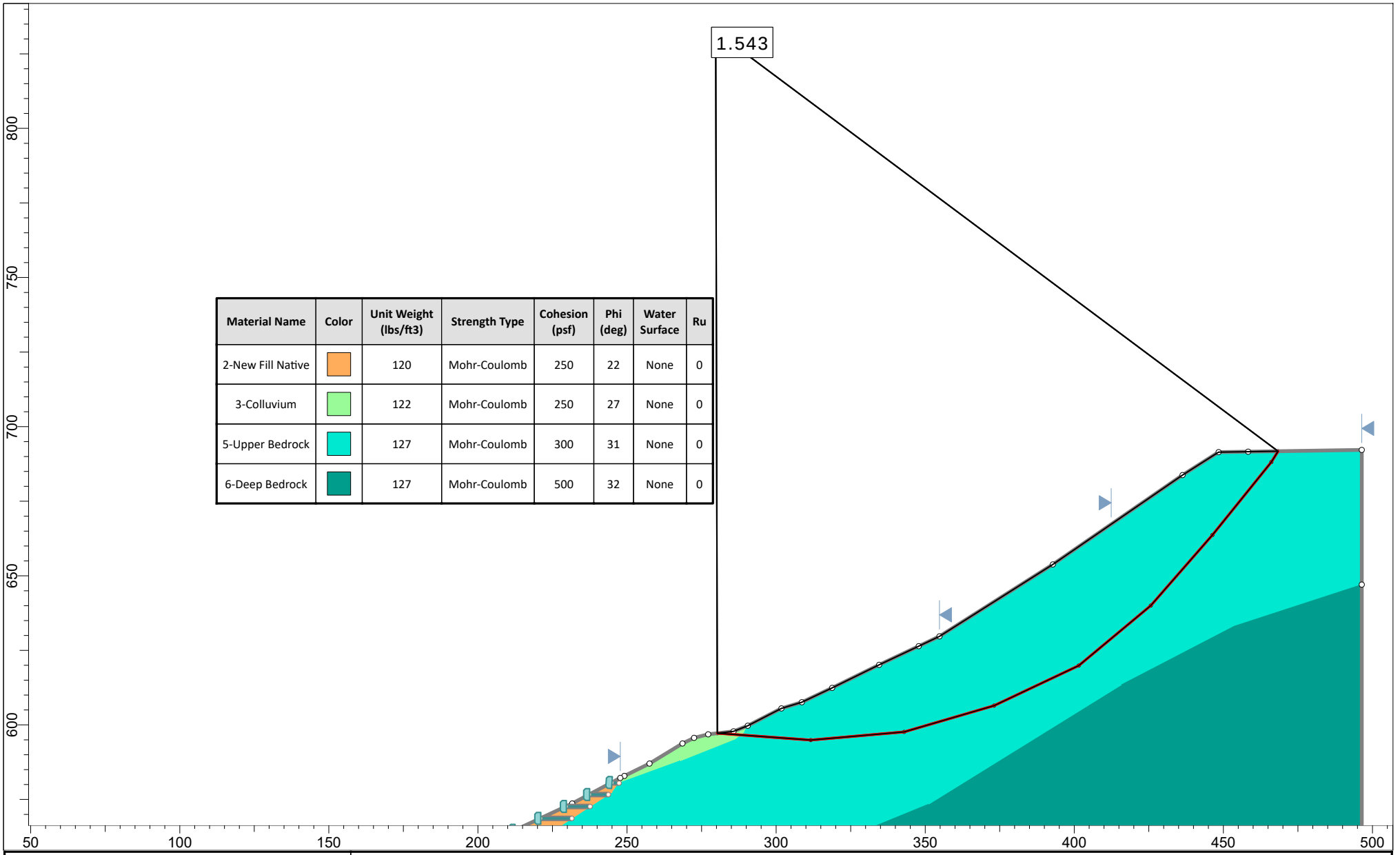


rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Upper Natural Slope, Initial Search		
Drawn By	SD	Scale 1:555	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 upper natural slope initial.slim

Figure G-24



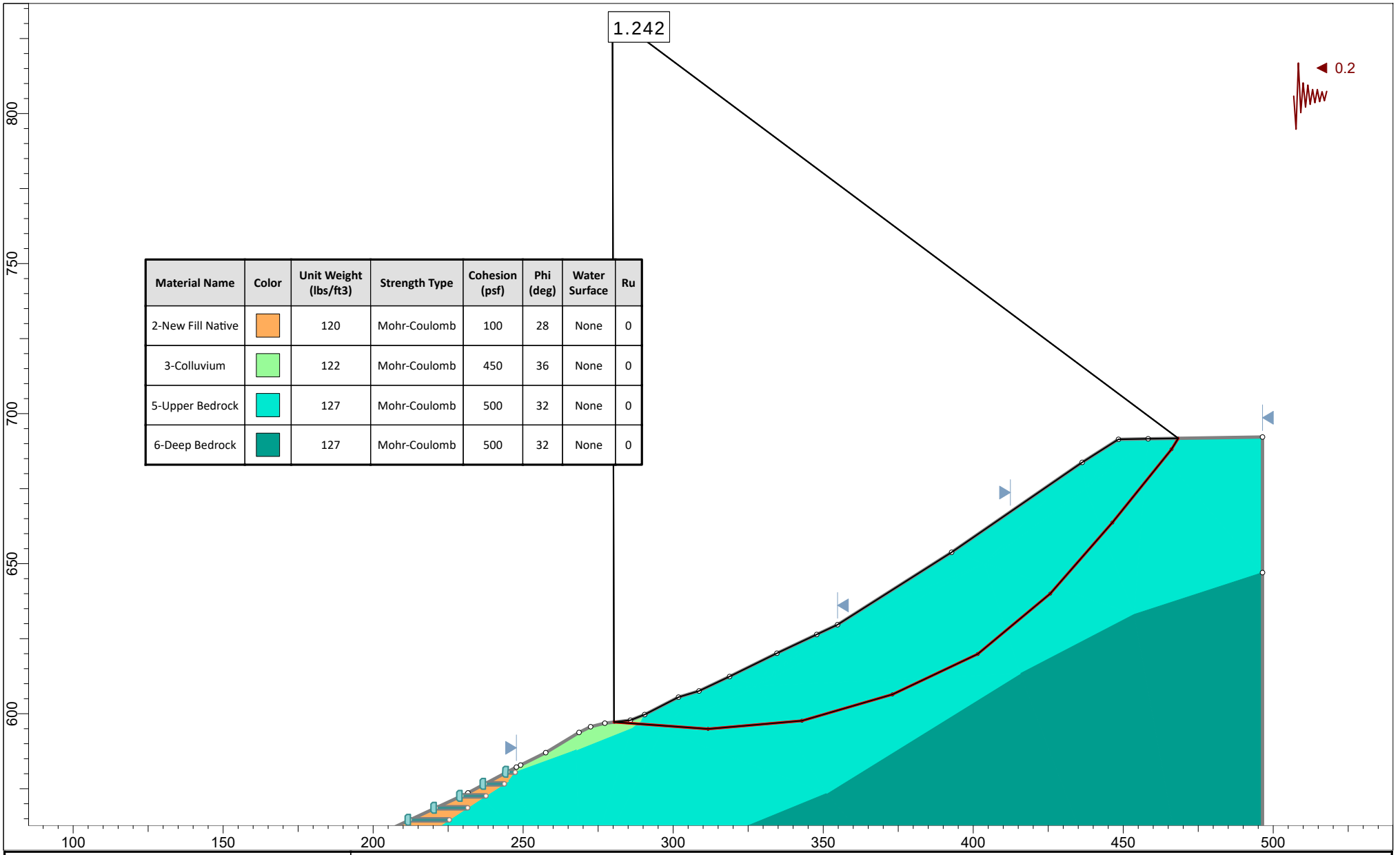
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Upper Natural Slope		
Drawn By	SD	Scale 1:533	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 upper natural slope.slim

Figure G-25



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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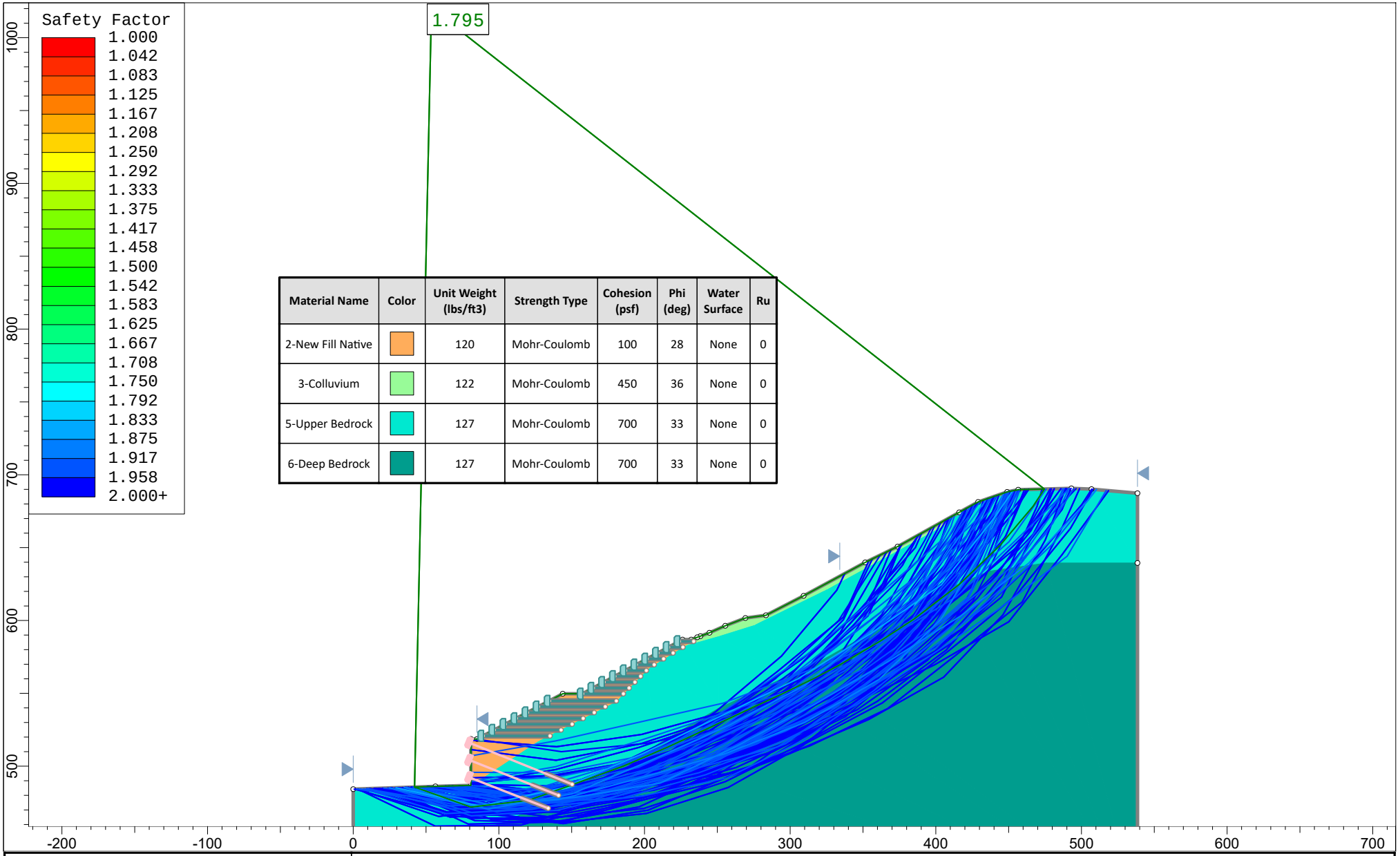
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section G-G', Upper Natural Slope, Seismic		
Drawn By	SD	Scale 1:529	Company AGS
Date	B2 Design 12-04-2019		File Name gg-12042019 upper natural slope, seismic.slim

Figure G-26

H-H'

Slope Stability Output Files



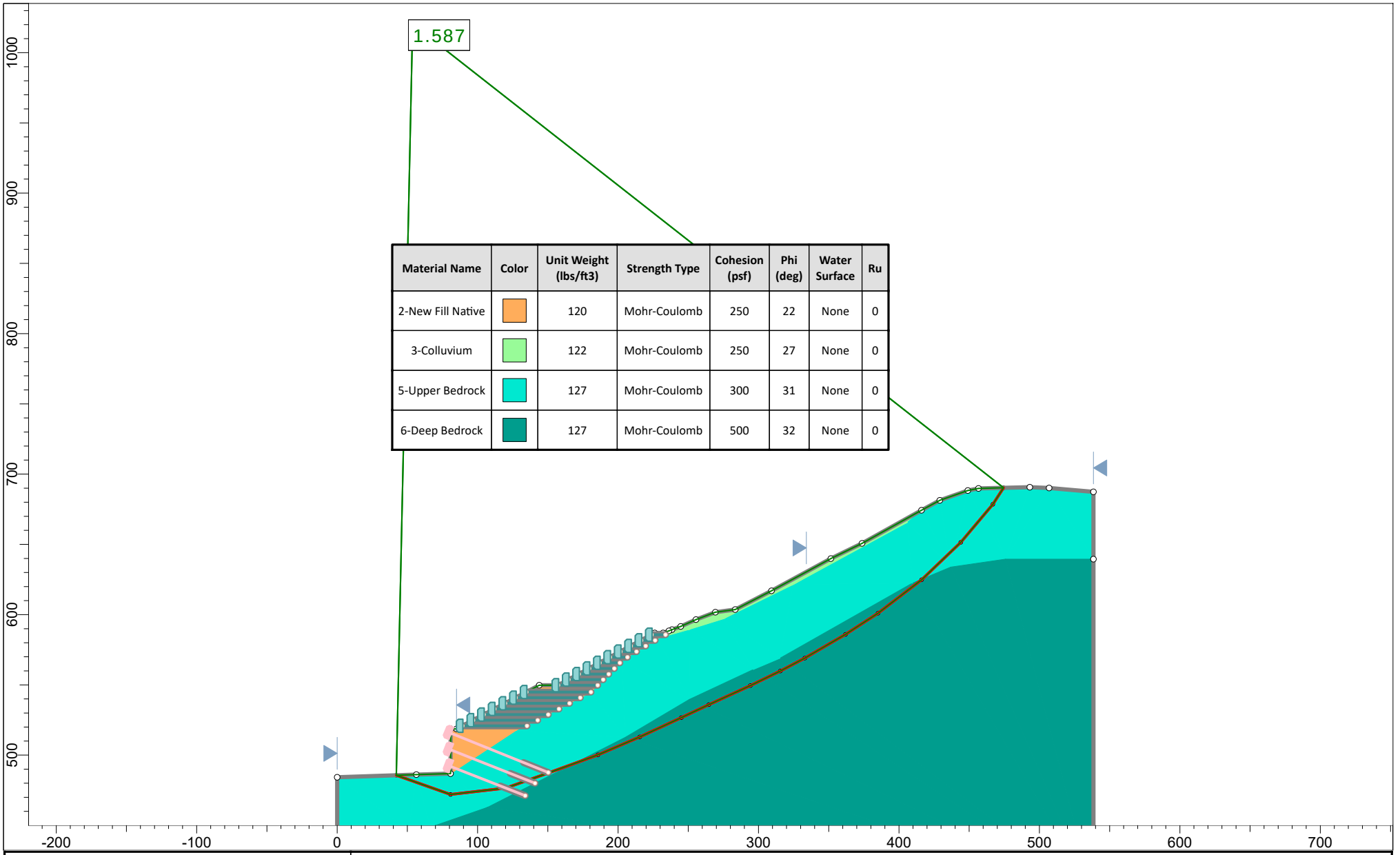
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Entire Slope, Initial Search		
Drawn By	SD	Scale 1:1093	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, entire slope initial.slim

Figure G-27



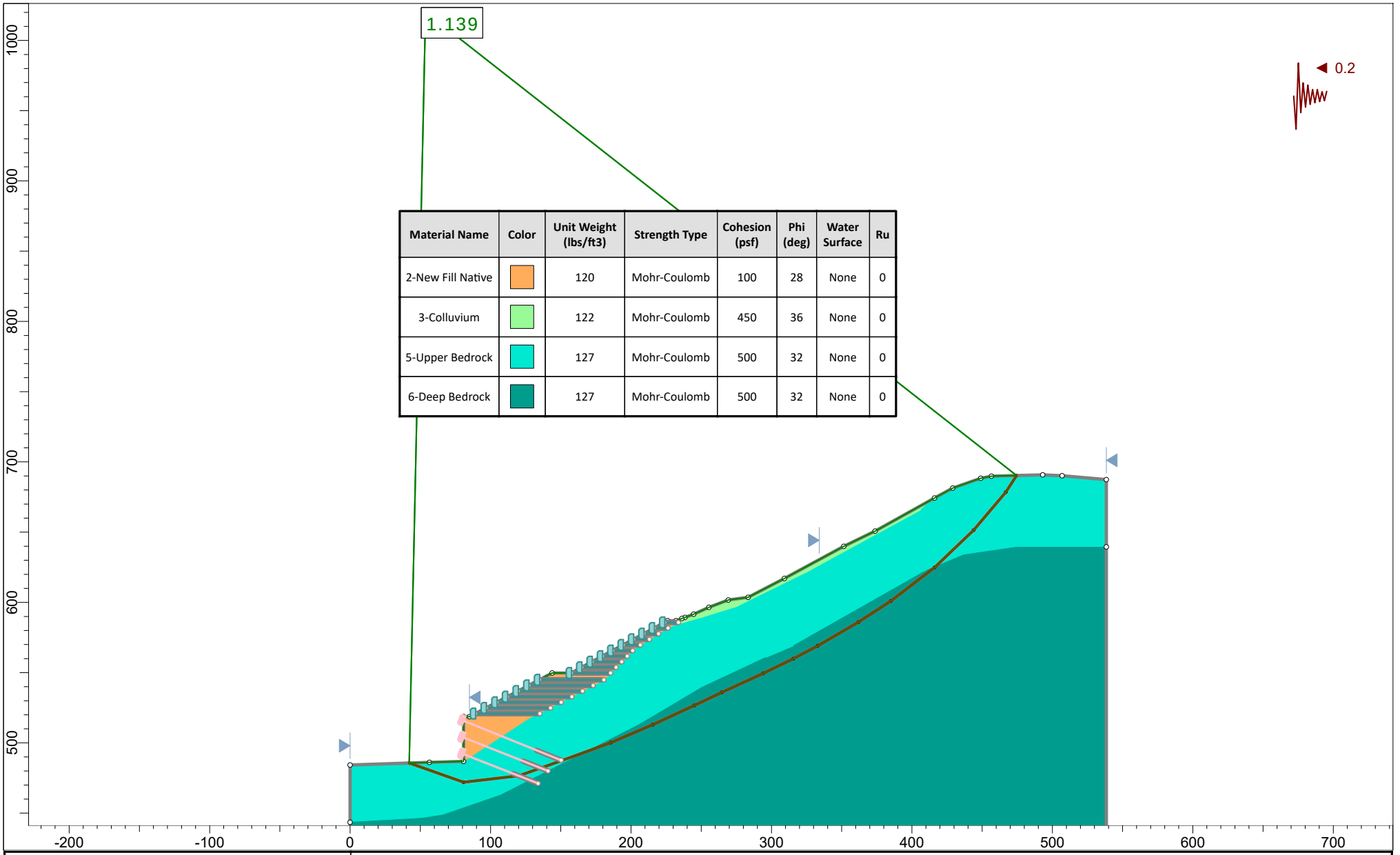
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Entire Slope		
Drawn By	SD	Scale 1:1131	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, entire slope.slim

Figure G-28



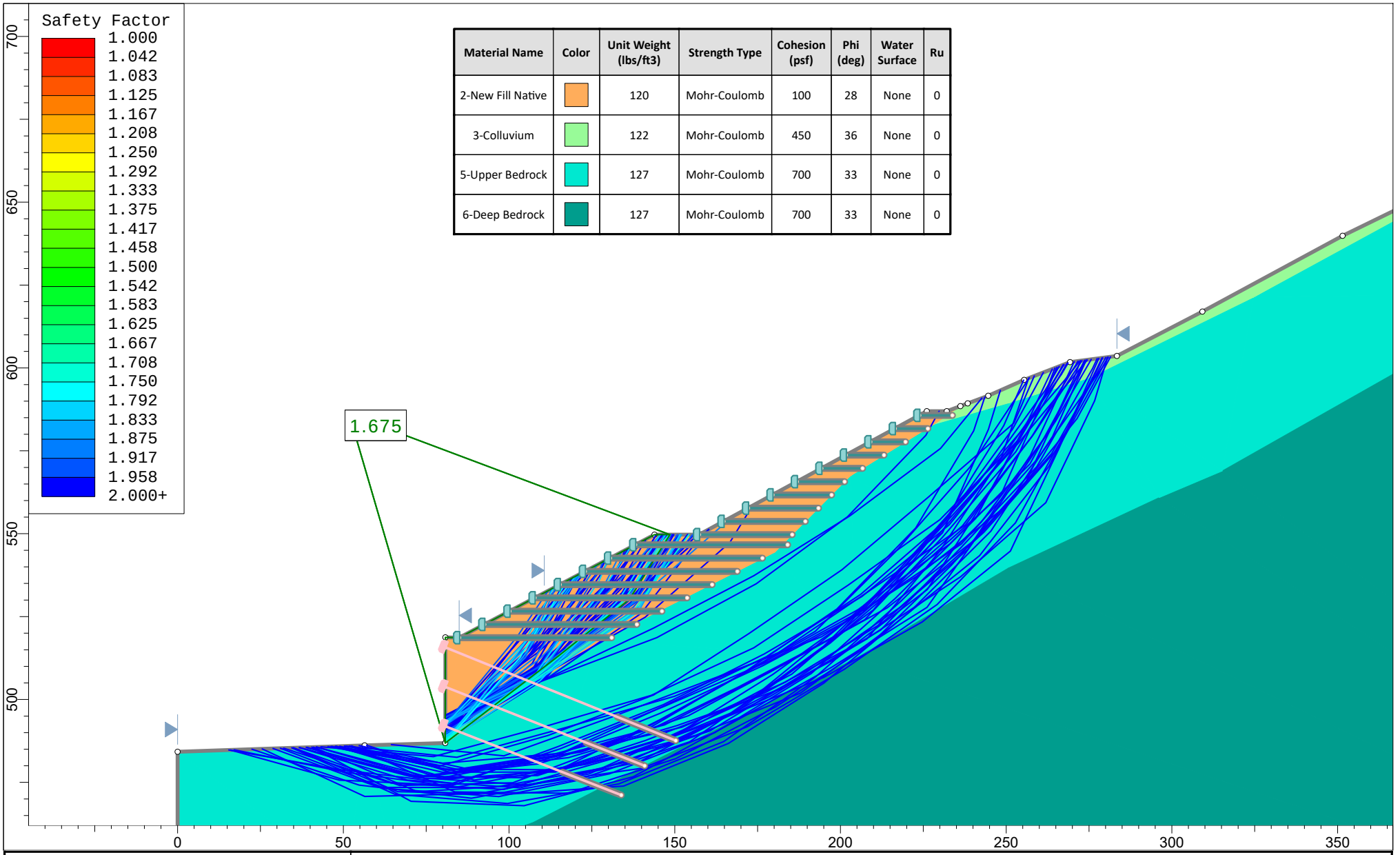
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Entire Slope, Seismic		
Drawn By	SD	Scale 1:1131	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, entire slope, seismic.slim

Figure G-29



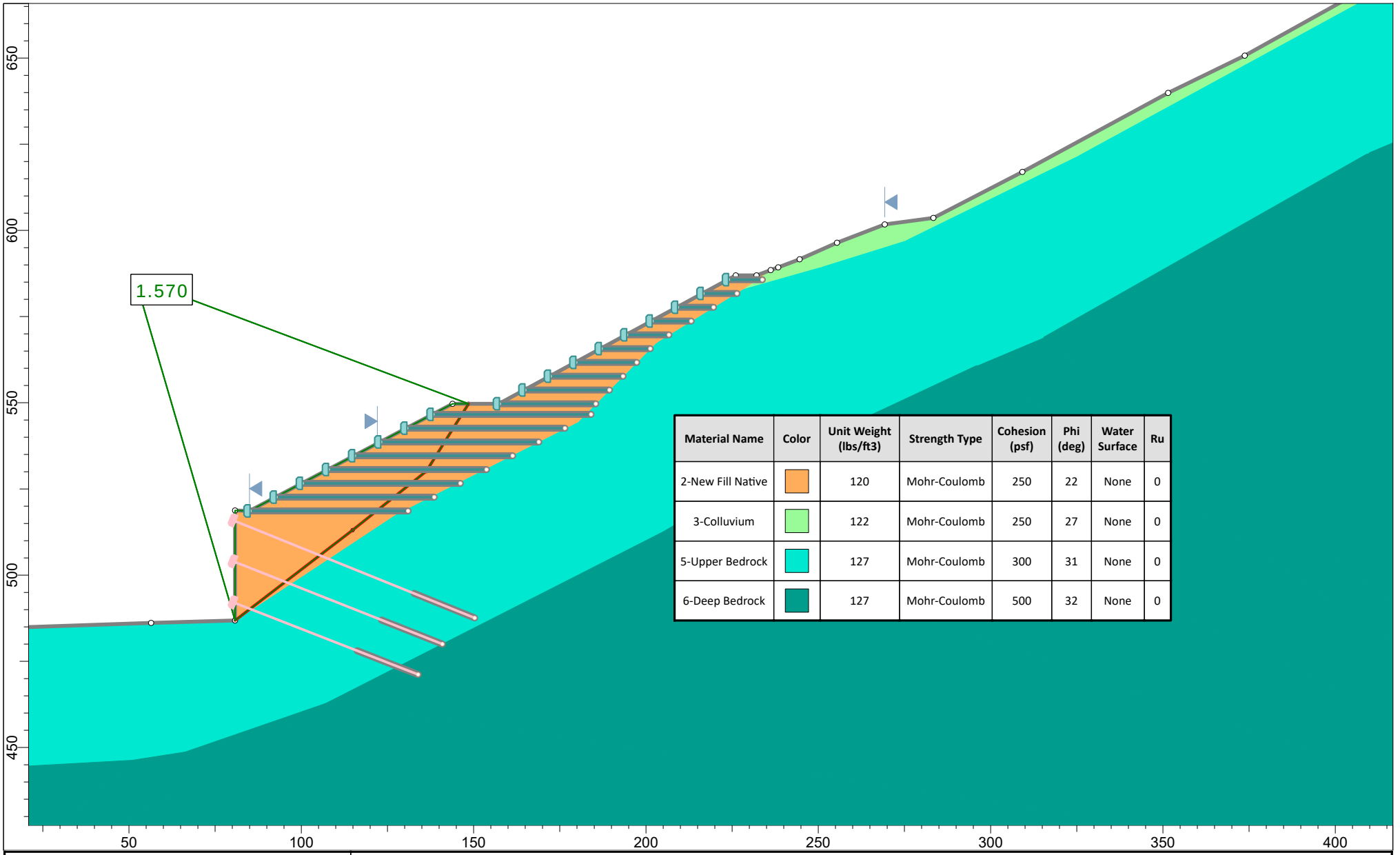
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Lower Wall and Slope, Initial Search		
Drawn By	SD	Scale 1:479	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, lower wall initial.slim

Figure G-30



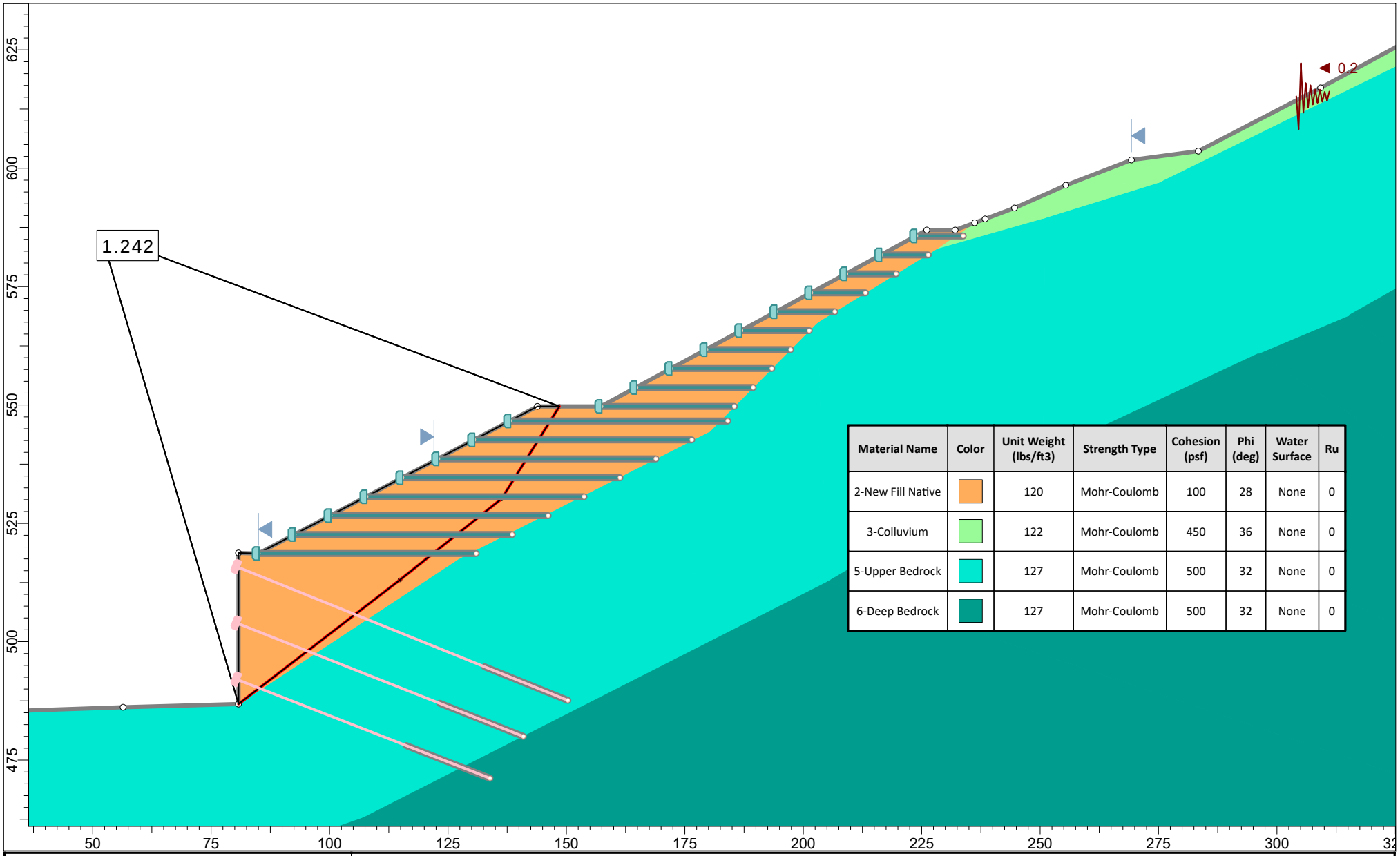
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Lower Wall and Slope		
Drawn By	SD	Scale 1:461	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, lower wall.slim

Figure G-31



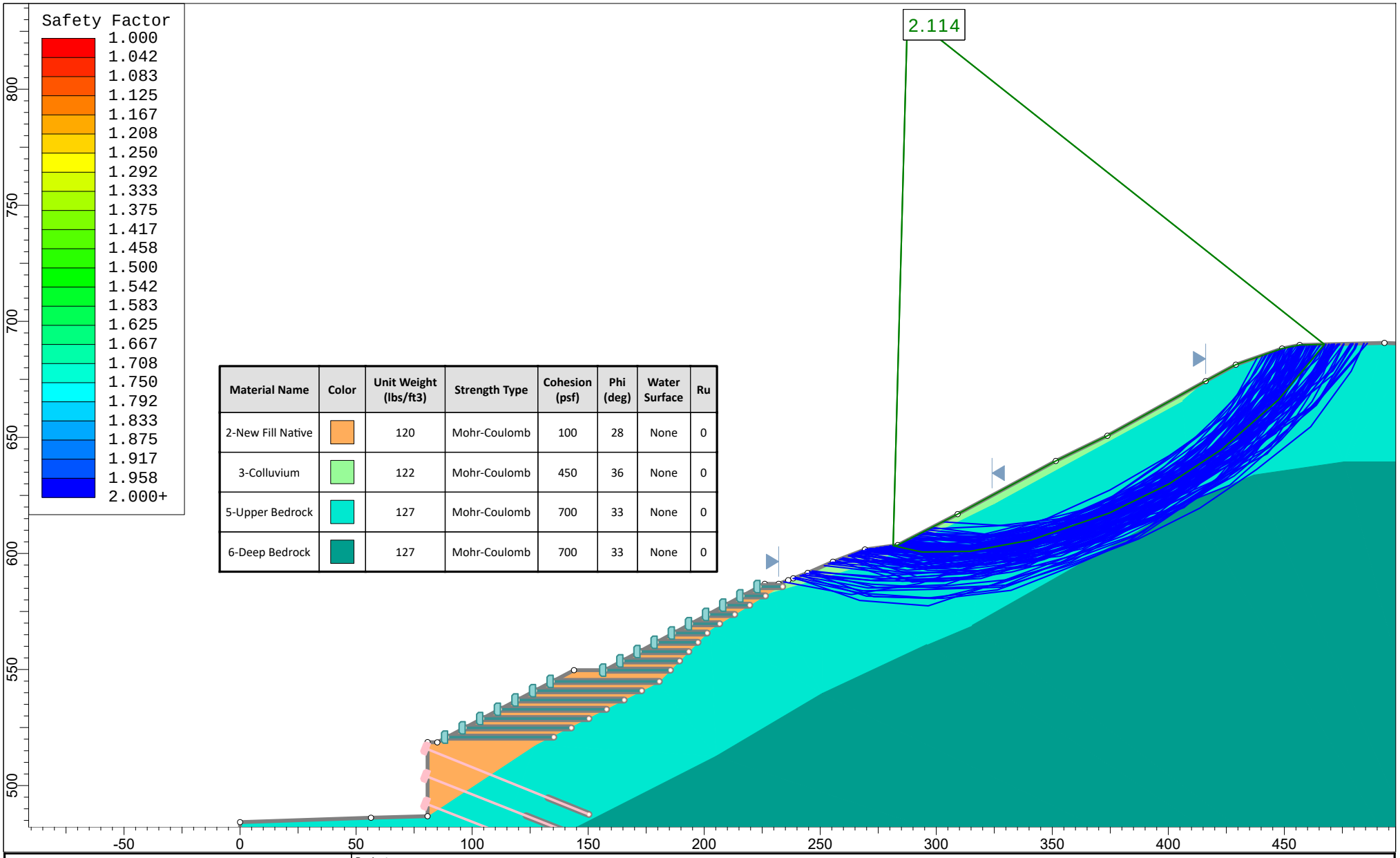
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Lower Wall and Slope, Seismic		
Drawn By	SD	Scale 1:336	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, lower wall, seismic.slim

Figure G-32



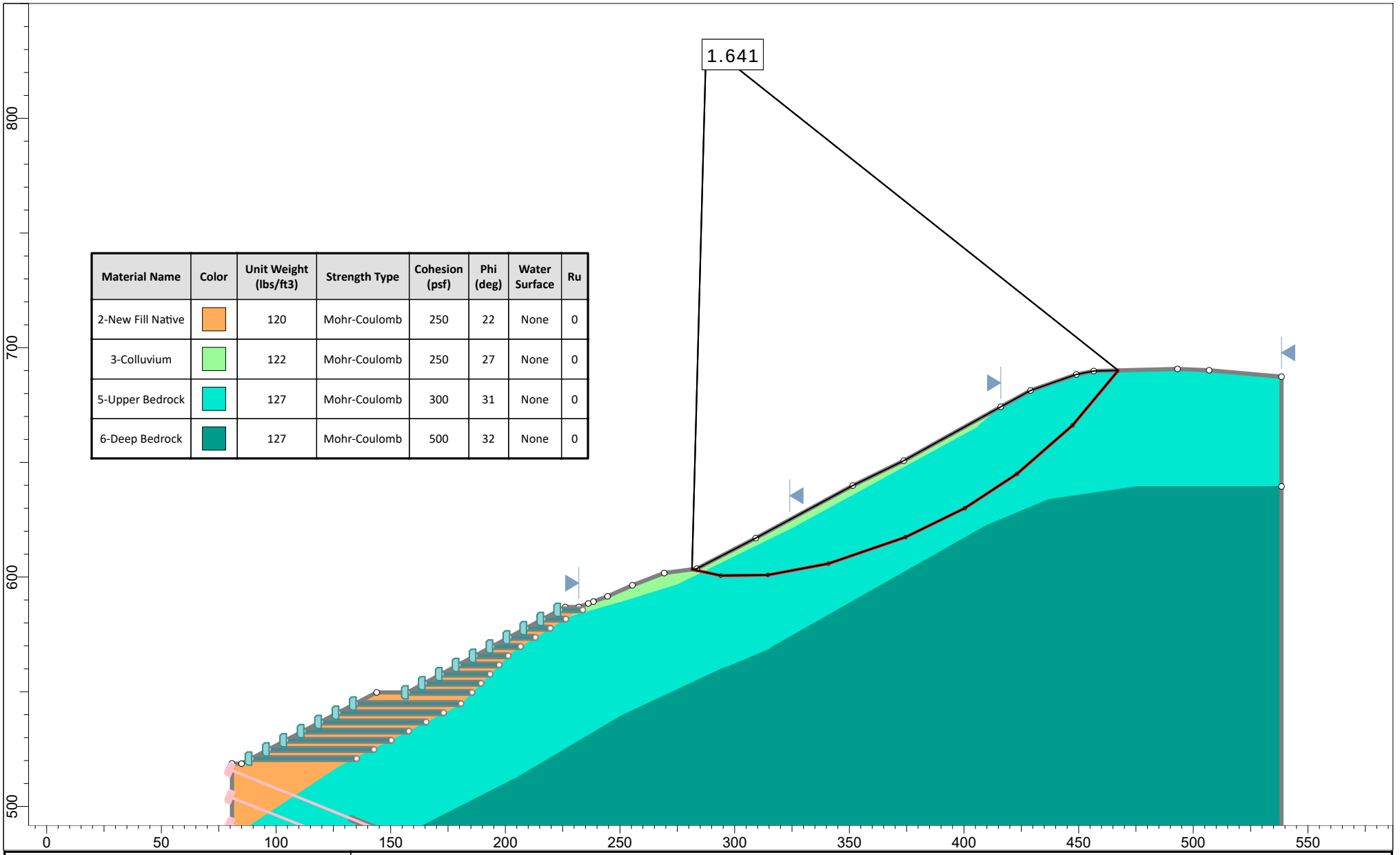
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Upper Natural Slope, Initial Search		
Drawn By	SD	Scale 1:686	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, natural slope initial.slim

Figure G-33



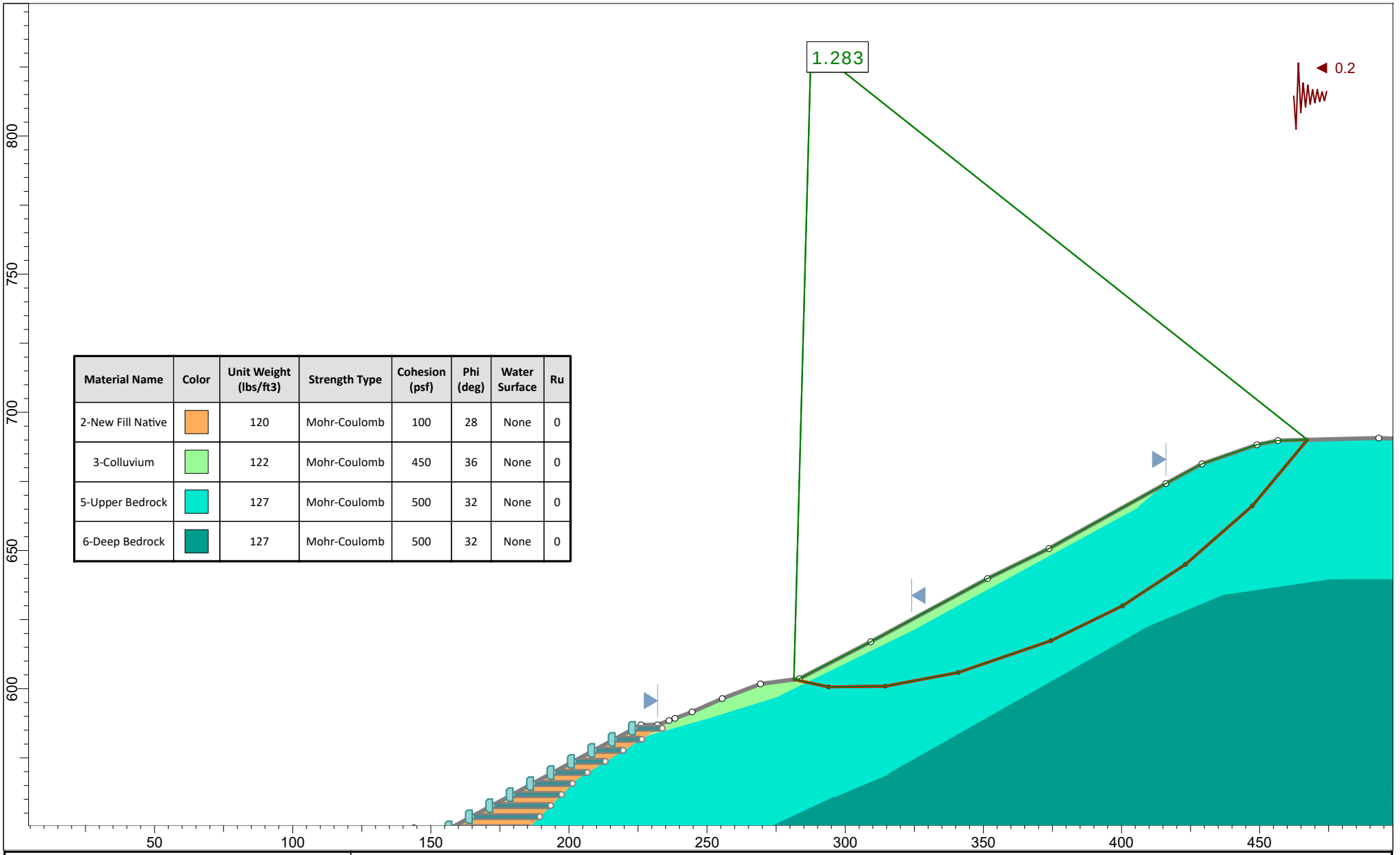
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Upper Natural Slope		
Drawn By	SD	*Scale* 1:693	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* hh-anchor wall-12042019, natural slope.slim

Figure G-34



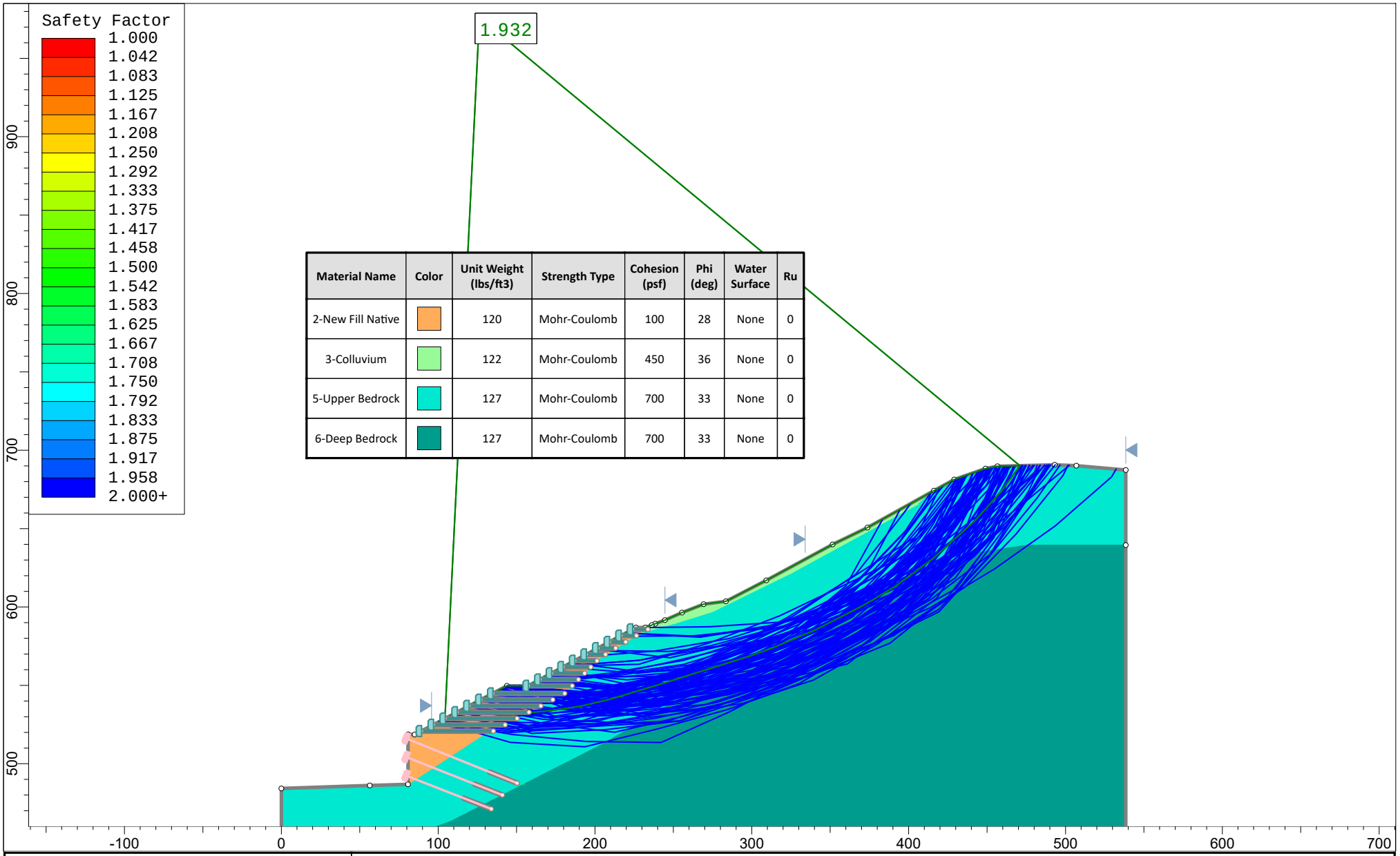
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Upper Natural Slope, Seismic		
Drawn By	SD	Scale 1:575	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, natural slope, seismic.slim

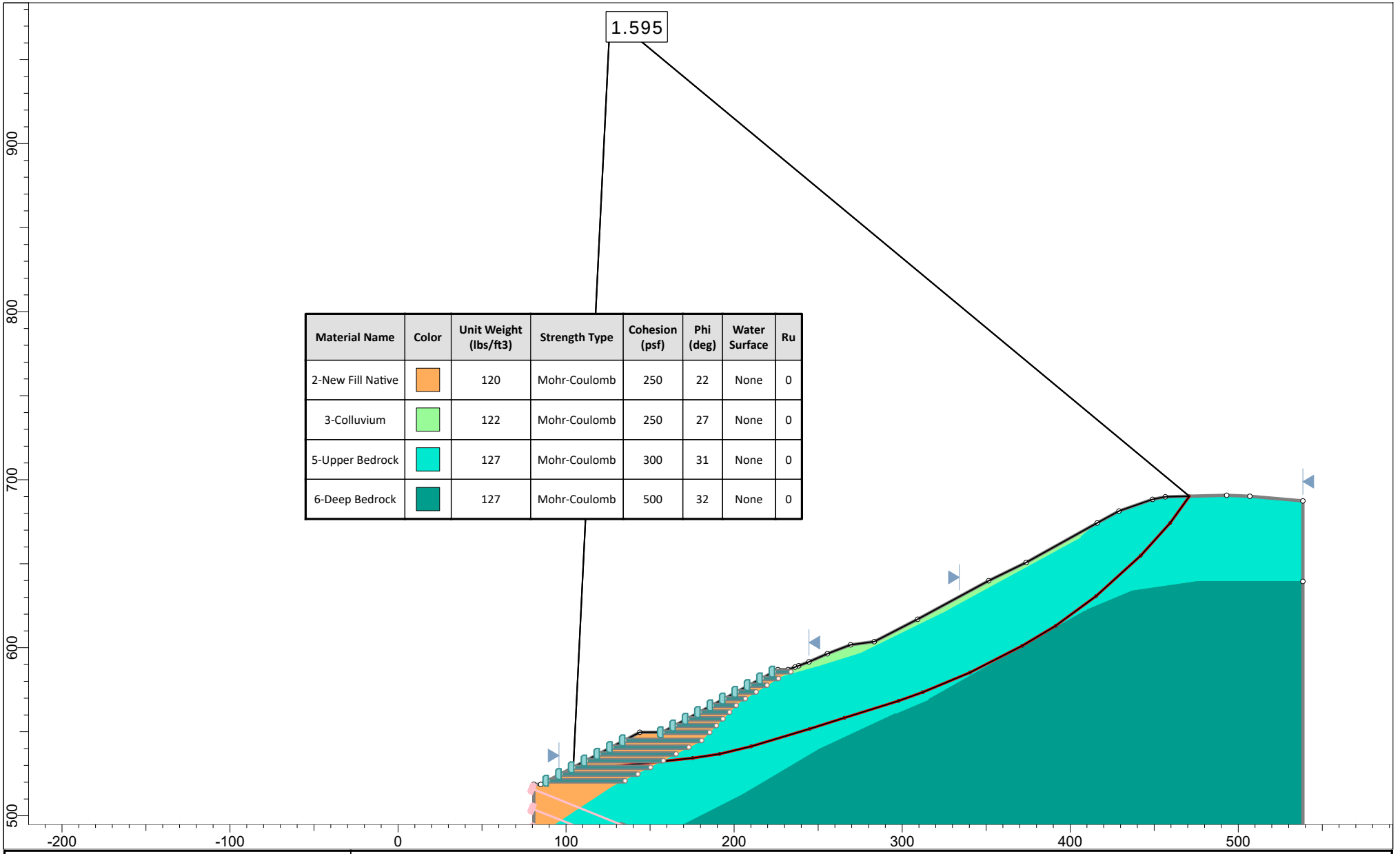
Figure G-35



rocscience	Project: 1688 Garvey Avenue		
	Analysis Description: Section H-H'- Upper Slope, Initial Search		
	Drawn By: SD	Scale: 1:1015	Company: AGS
	Date: B2 Design 12-04-2019		File Name: hh-anchor wall-12042019, upper slope initial.slim

SLIDEINTERPRET 8.029

Figure G-36



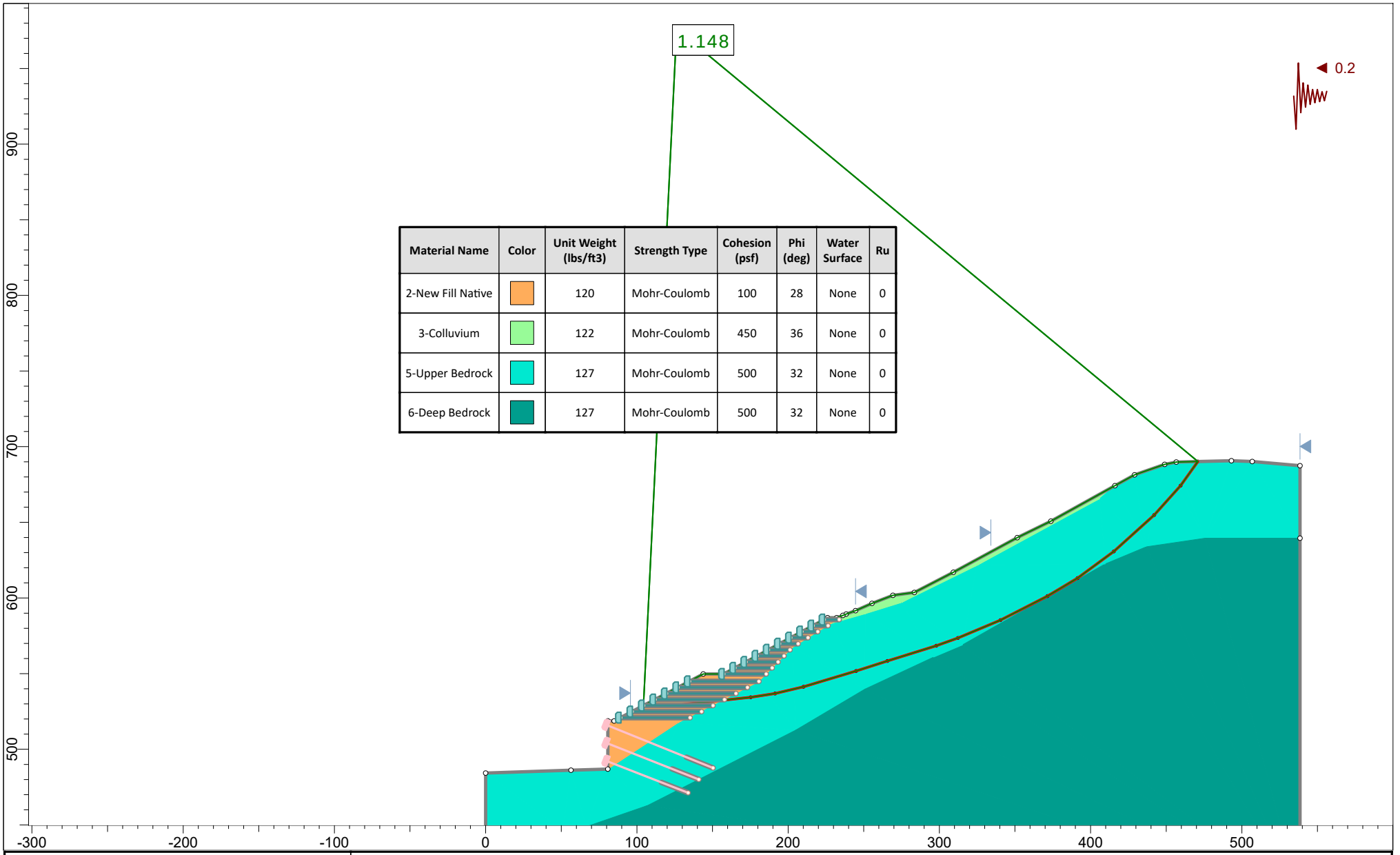
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Upper Slope		
Drawn By	SD	*Scale* 1:945	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* hh-anchor wall-12042019, upper slope.slim

Figure G-37



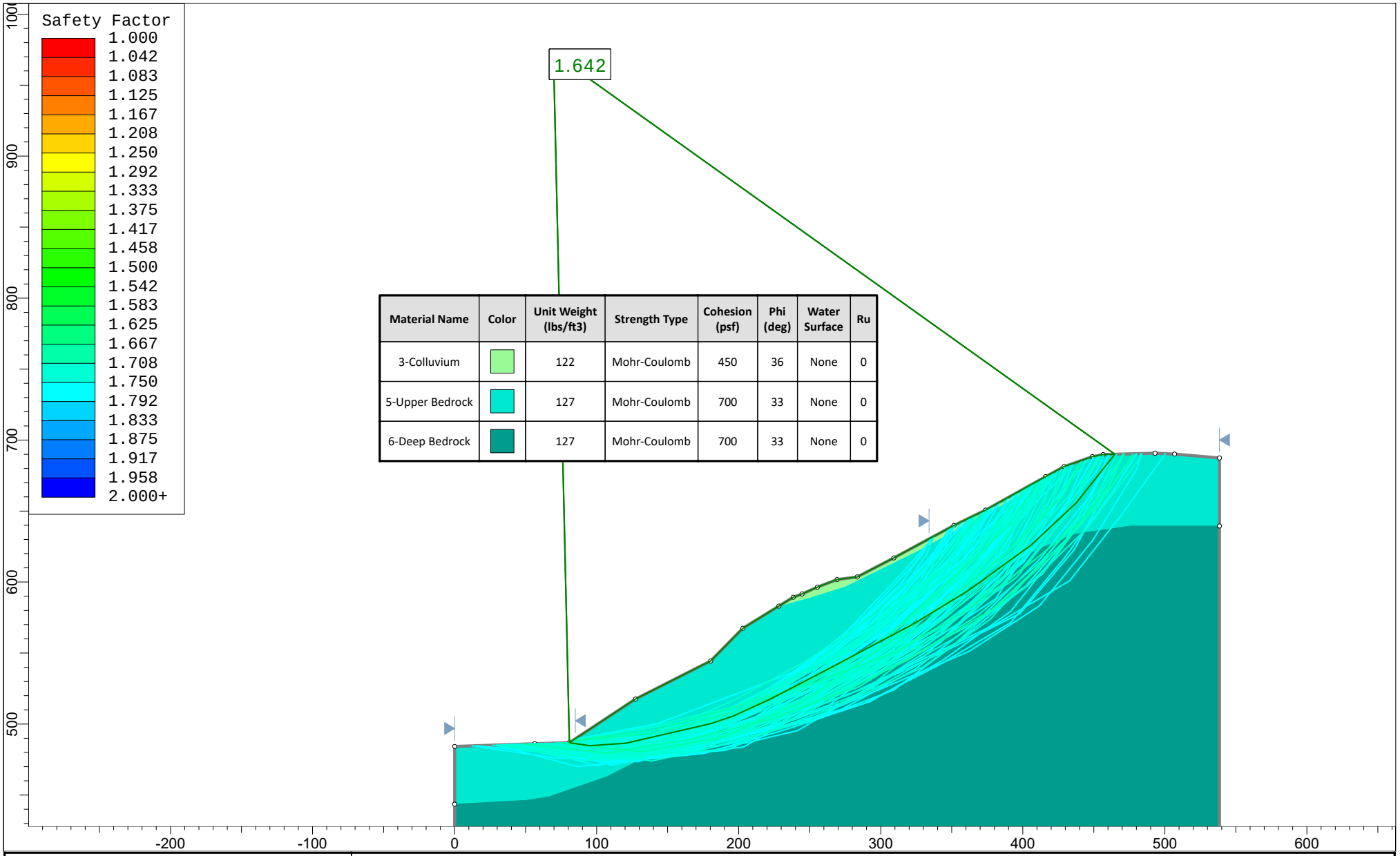
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
3-Colluvium		122	Mohr-Coulomb	450	36	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Upper Slope, Seismic		
Drawn By	SD	Scale 1:1050	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, upper slope, seismic.slim

Figure G-38

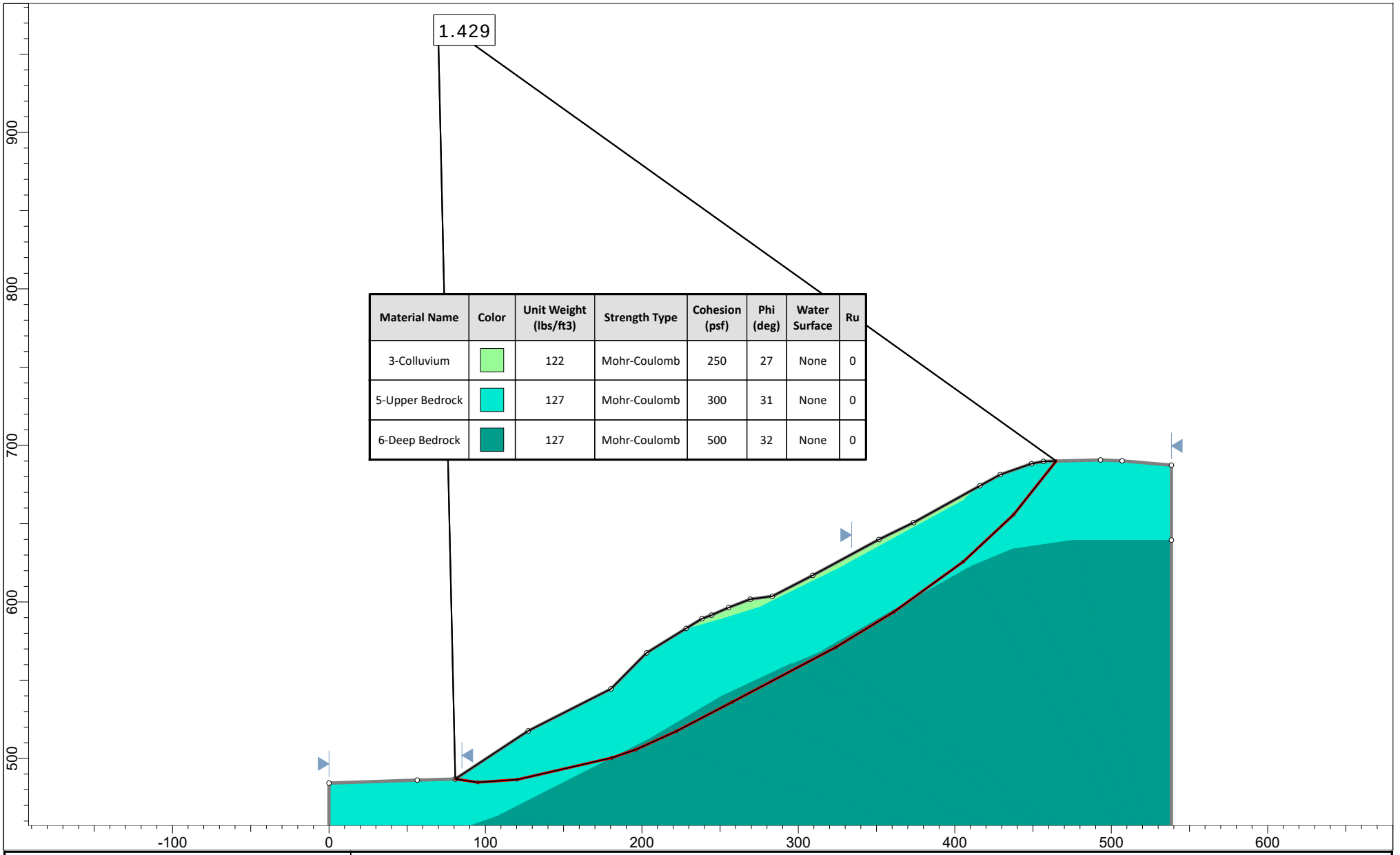


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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Temp backcut, Initial Search		
Drawn By	SD	Scale 1:1120	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, backcut initial.slim

Figure G-39



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
3-Colluvium		122	Mohr-Coulomb	250	27	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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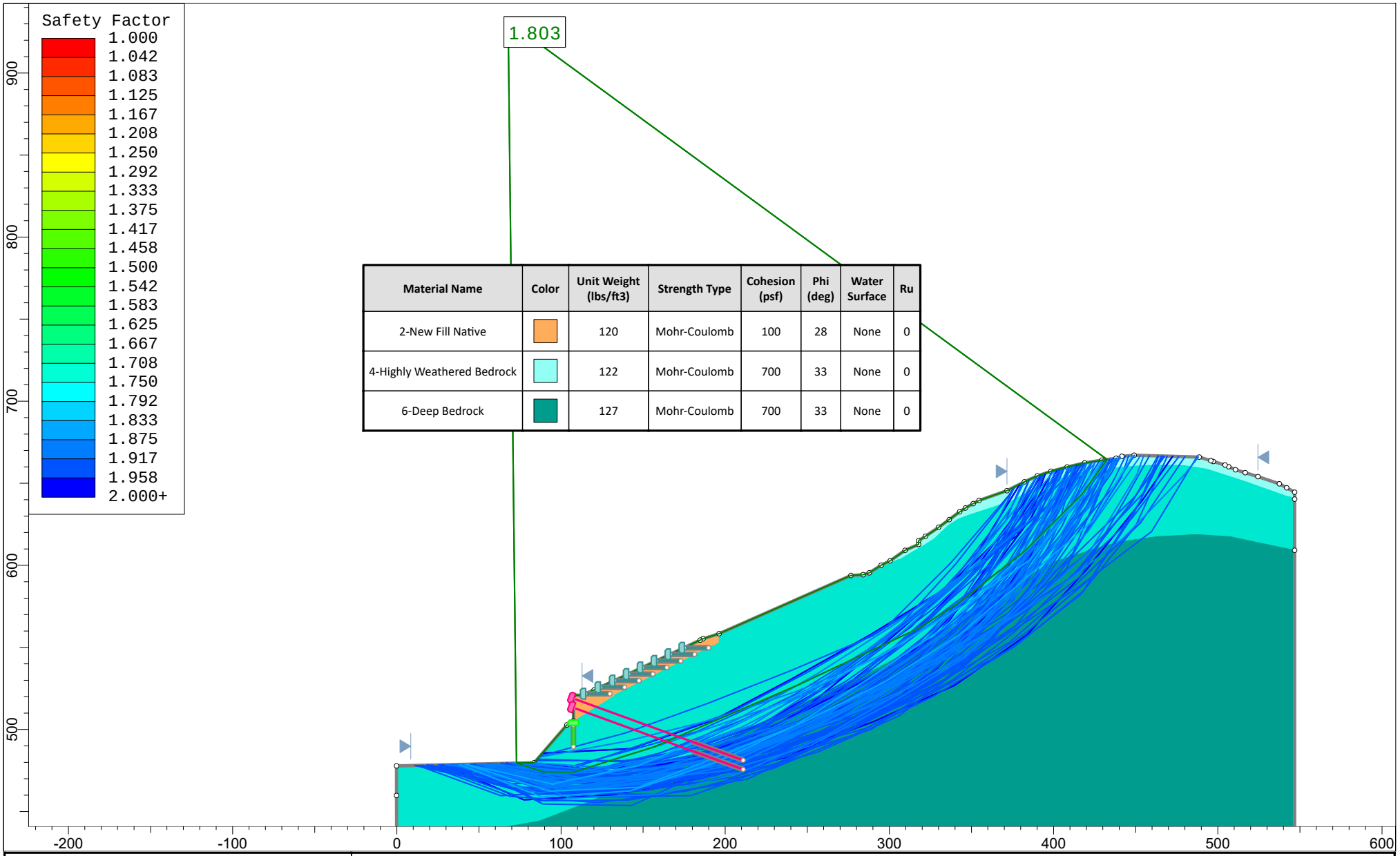
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section H-H'- Temp backcut		
Drawn By	SD	Scale 1:1015	Company AGS
Date	B2 Design 12-04-2019		File Name hh-anchor wall-12042019, backcut.slim

Figure G-40

I–I'

Slope Stability Output Files



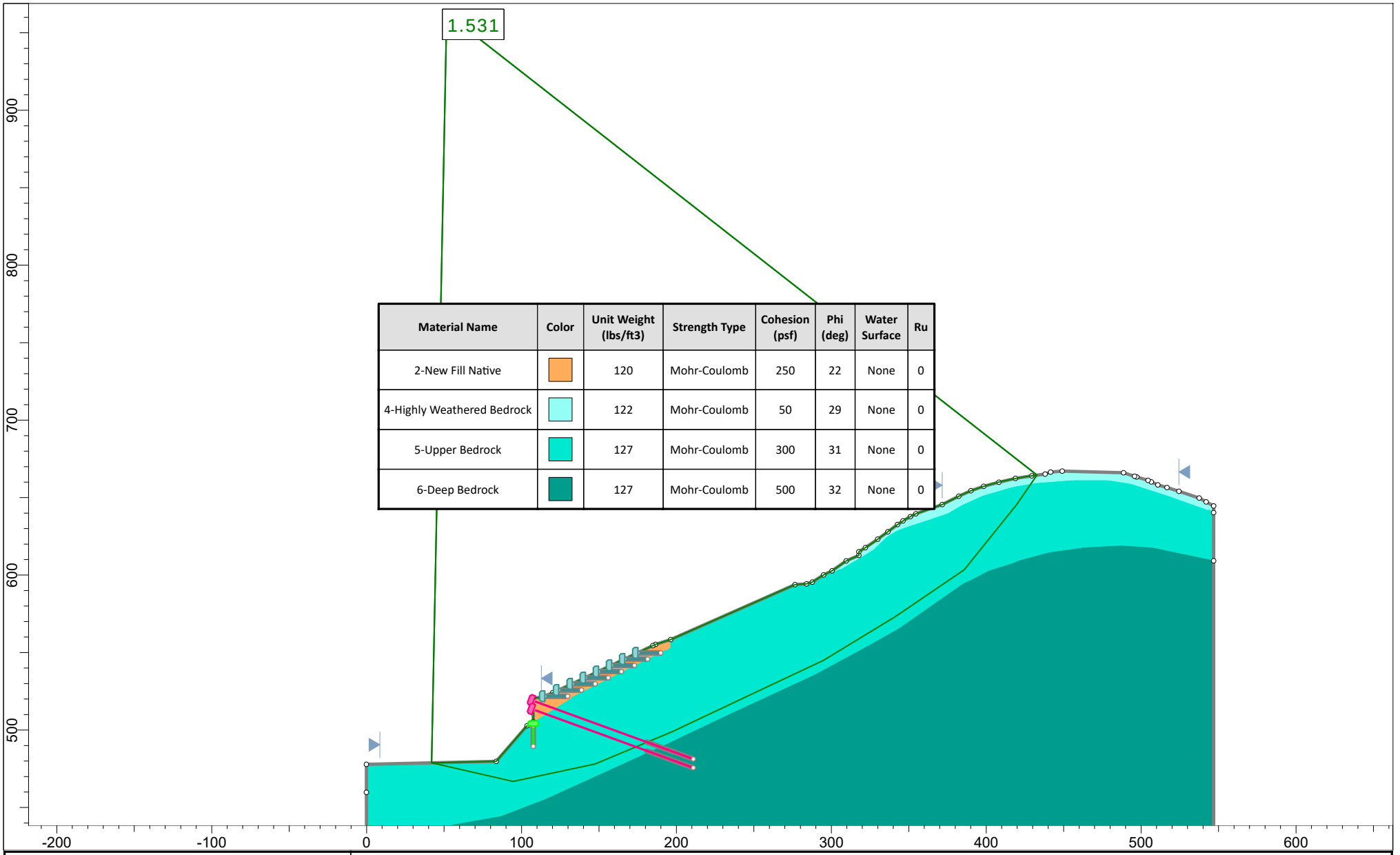
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Anchor Wall, Entire Slope, Initial Search		
Drawn By	SD	Scale 1:969	Company AGS
Date	B2 Design 12-04-2019		File Name ii-anchor wall-12042019, entire slope, initial.slim

Figure G-41



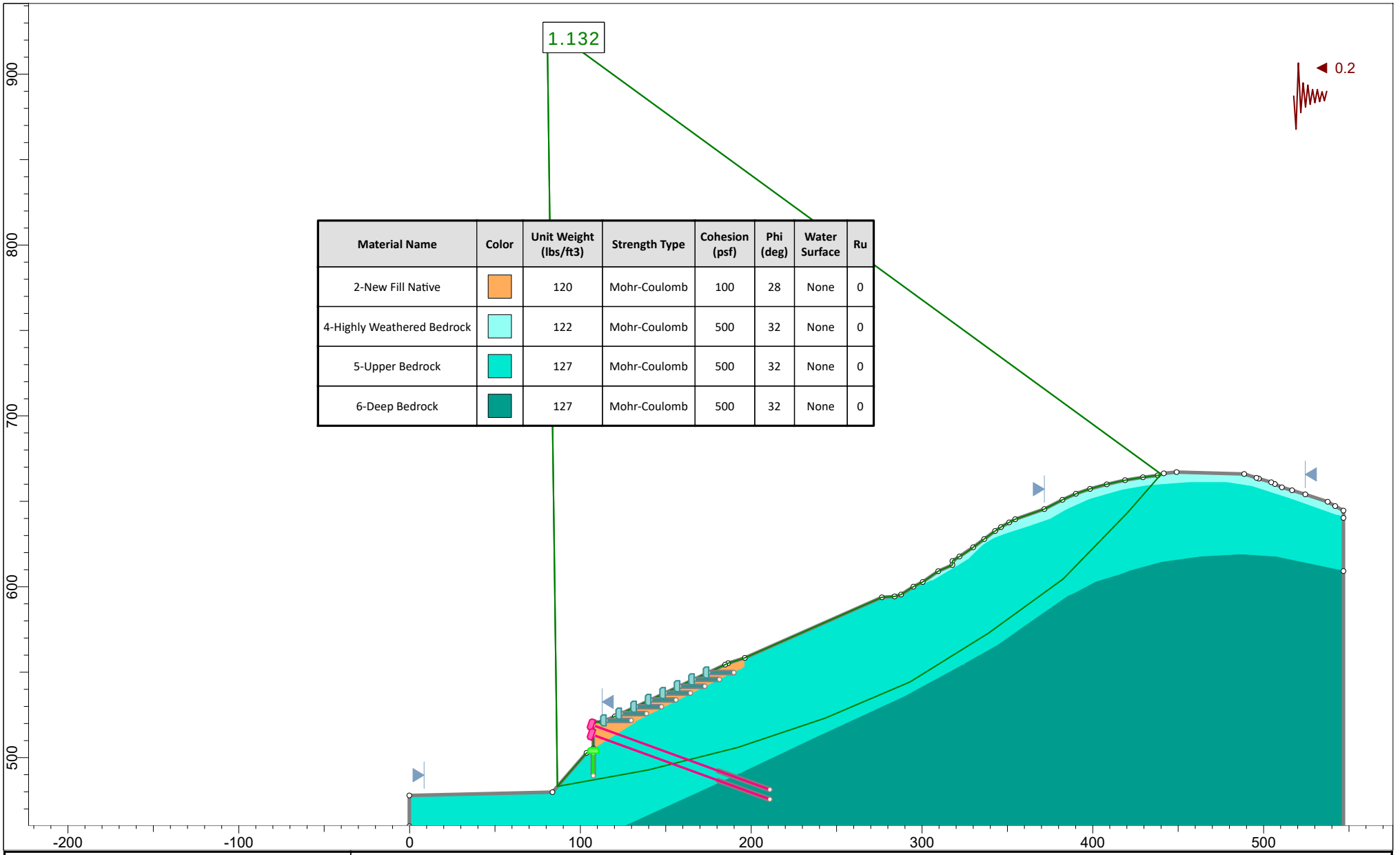
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Anchor Wall, Entire Slope		
Drawn By	SD	*Scale* 1:1025	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* ii-anchor wall-12042019, entire slope.slim

Figure G-42



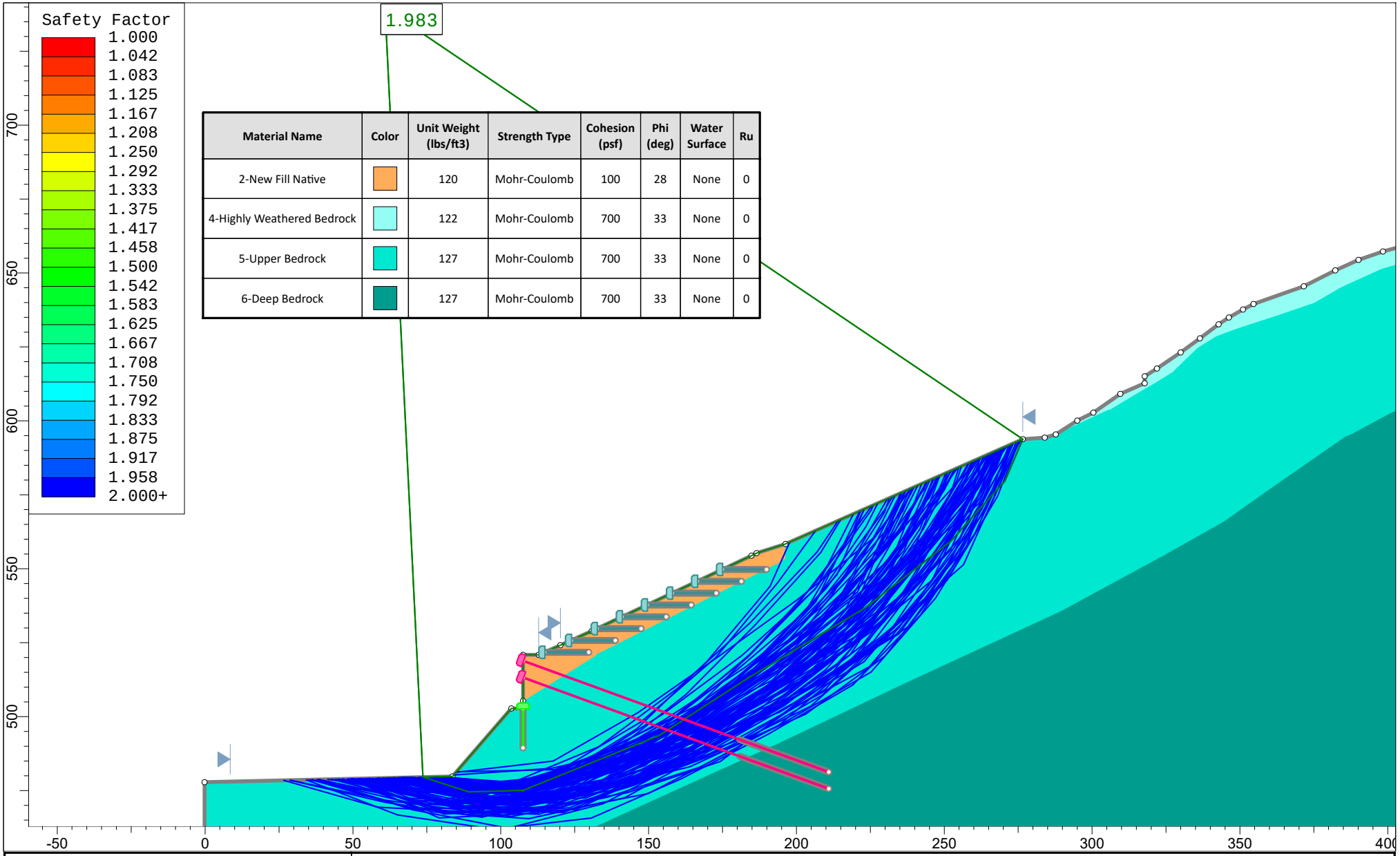
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Anchor Wall, Entire Slope, Seismic		
Drawn By	SD	*Scale* 1:930	*Company* AGS
Date	B2 Design 12-04-2019	*File Name*	ii-anchor wall-12042019, entire slope, seismic.slim

Figure G-43

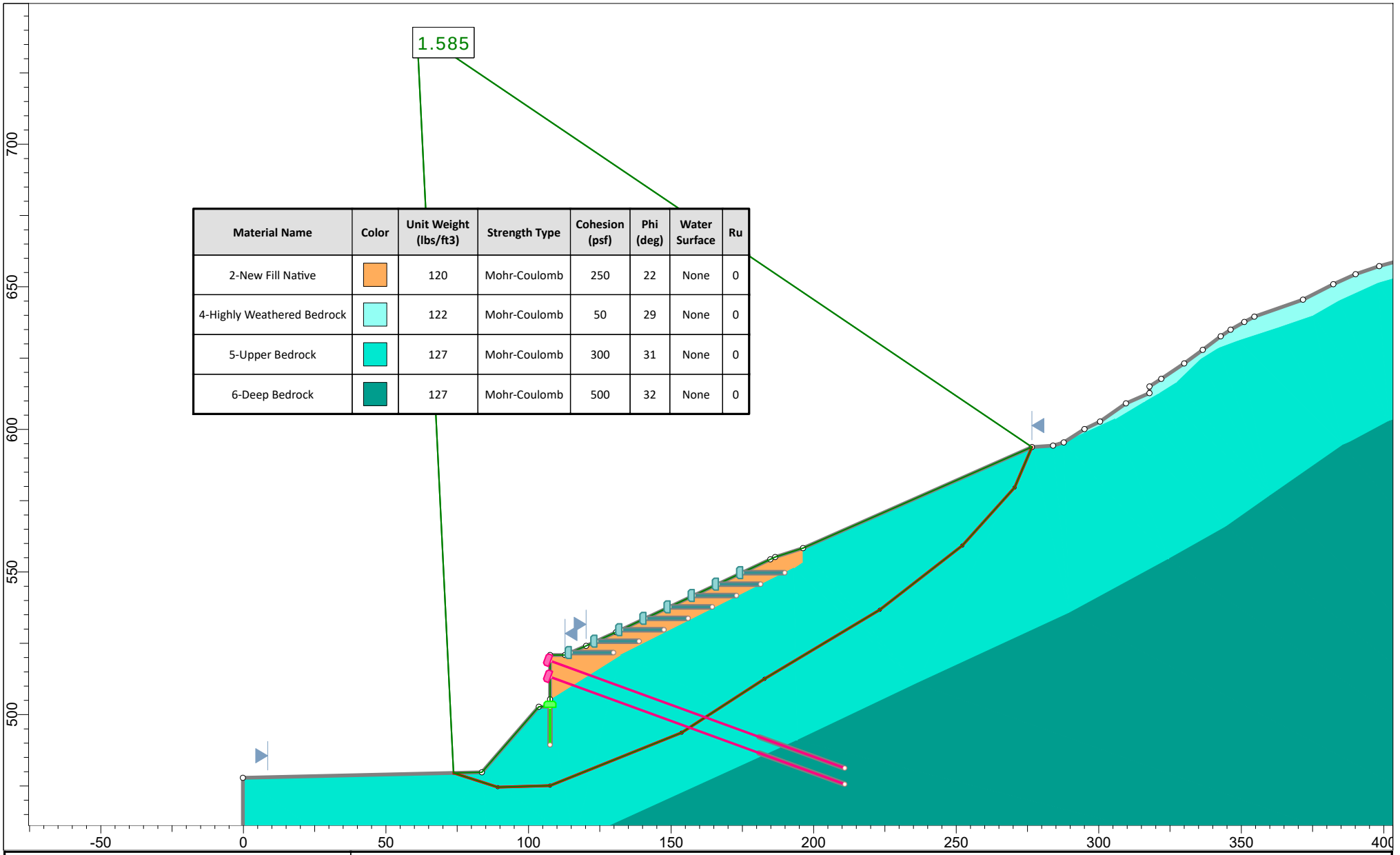


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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Anchor Wall and Lower Slope, Initial Search		
Drawn By	SD	Scale 1:538	Company AGS
Date	B2 Design 12-04-2019		File Name ii-anchor wall-12042019, lower slope, initial.slim

Figure G-44

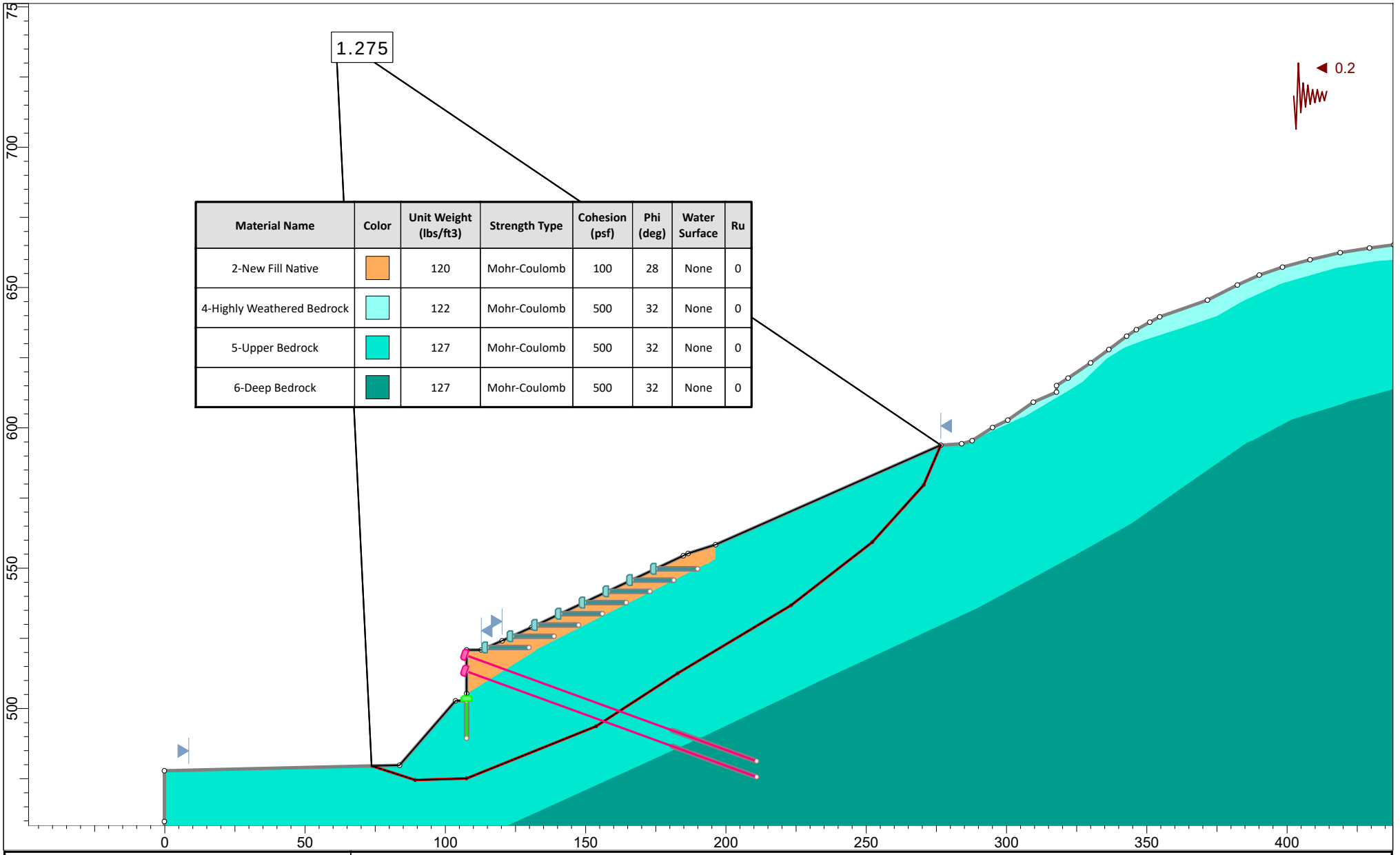


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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Anchor Wall and Lower Slope		
Drawn By	SD	Scale 1:557	Company AGS
Date	B2 Design 12-04-2019		File Name ii-anchor wall-12042019, lower slope.slim

Figure G-45



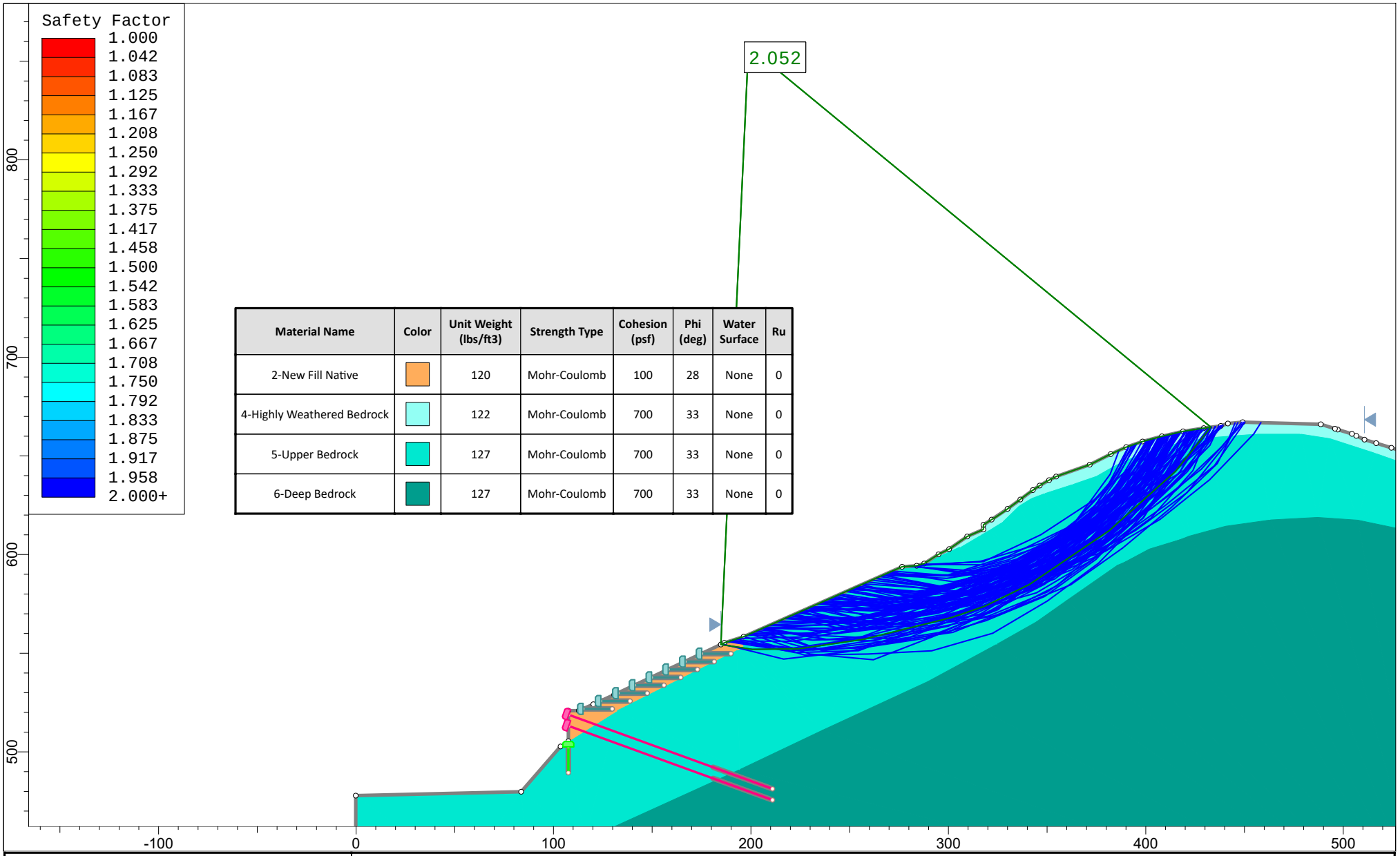
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Anchor Wall and Lower Slope, Seismic		
Drawn By	SD	Scale 1:566	Company AGS
Date	B2 Design 12-04-2019		File Name ii-anchor wall-12042019, lower slope, seismic.slim

Figure G-46



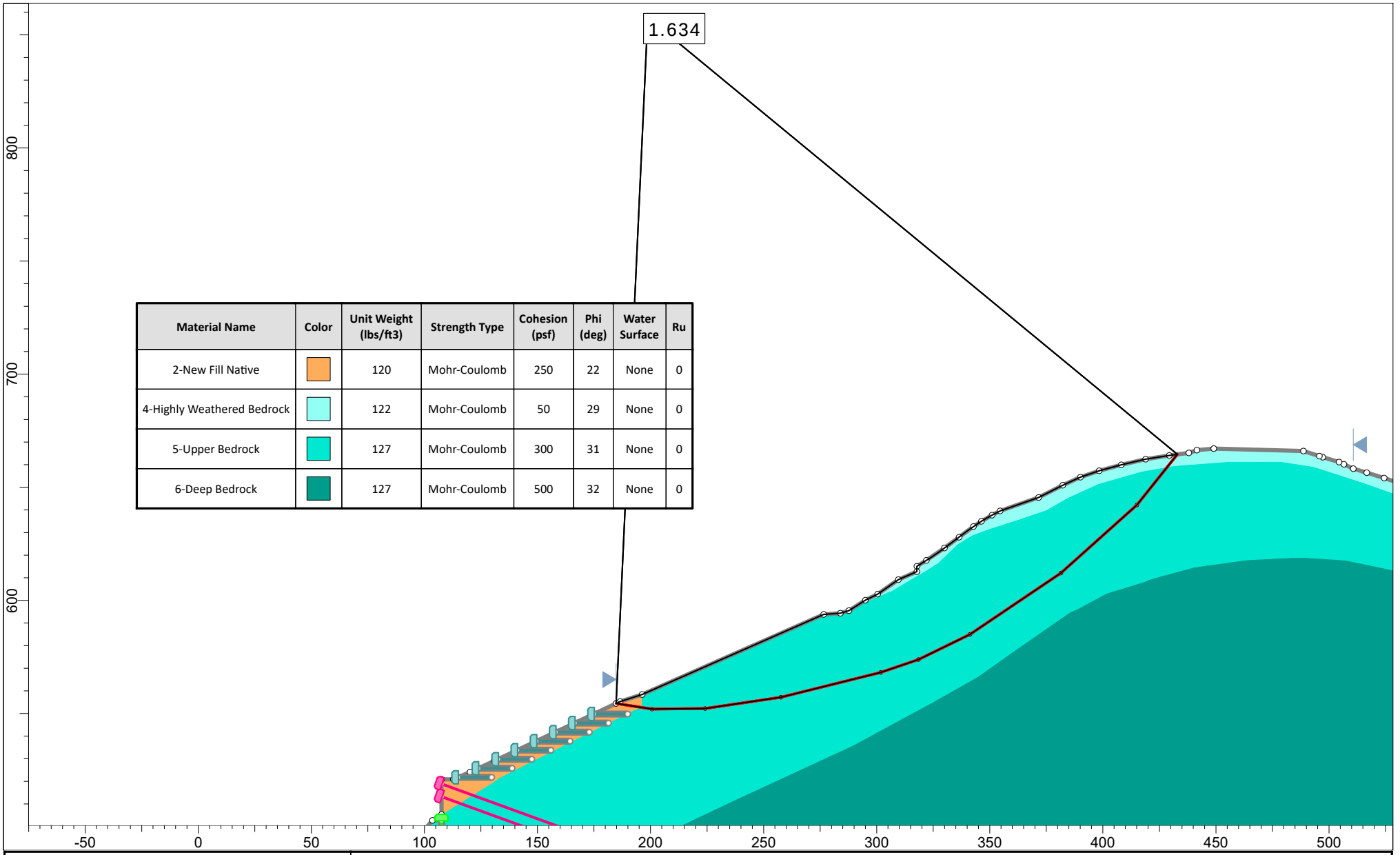
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Upper Slope, Initial Search		
Drawn By	SD	*Scale* 1:806	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* ii-anchor wall-12042019, upper slope, initial.slim

Figure G-47



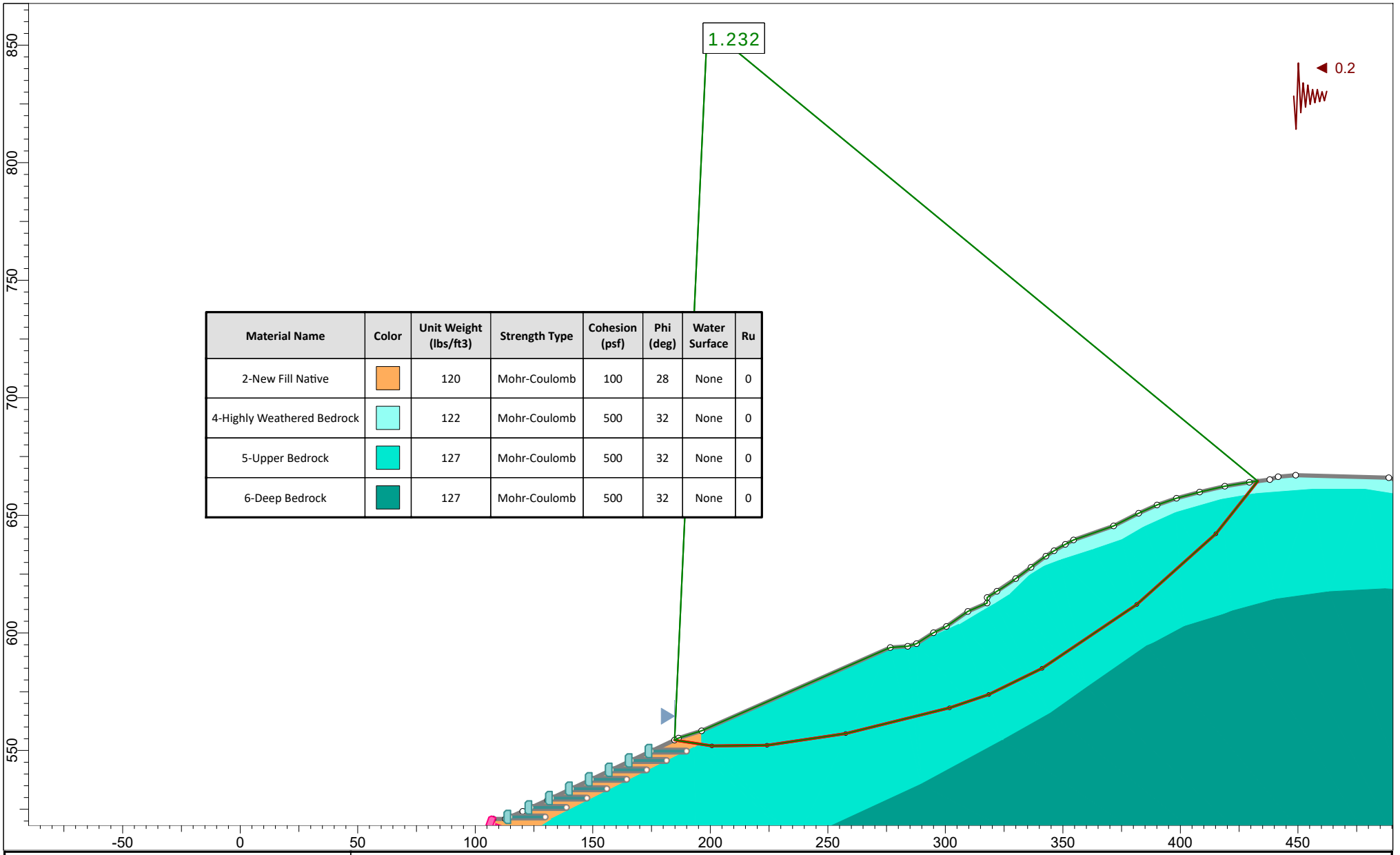
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Upper Slope		
Drawn By	SD	*Scale* 1:702	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* ii-anchor wall-12042019, upper slope.slim

Figure G-48



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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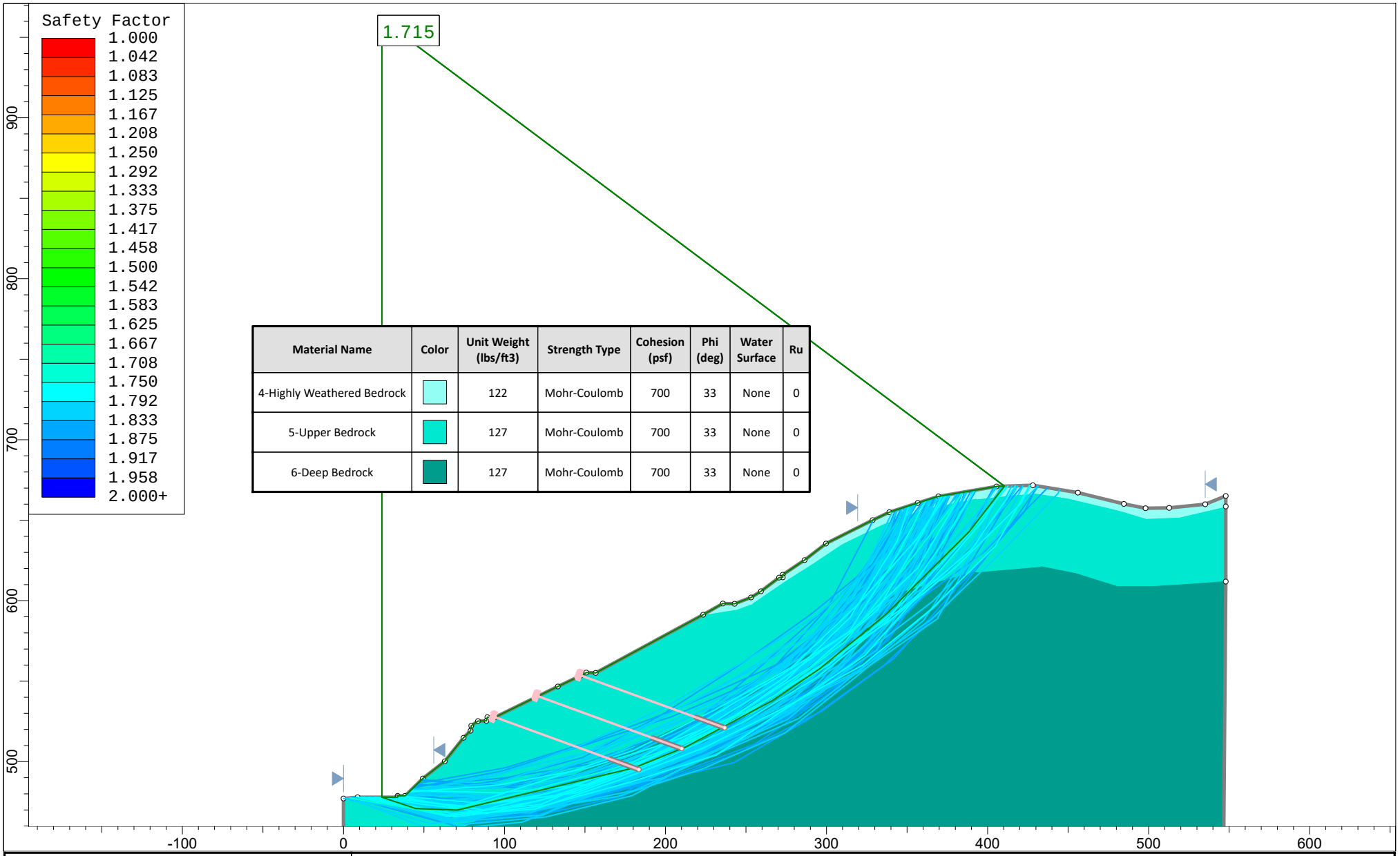
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section I-I', Upper Slope, Seismic		
Drawn By	SD	Scale 1:676	Company AGS
Date	B2 Design 12-04-2019		File Name ii-anchor wall-12042019, upper slope, seismic.slim

Figure G-49

J-J'

Slope Stability Output Files



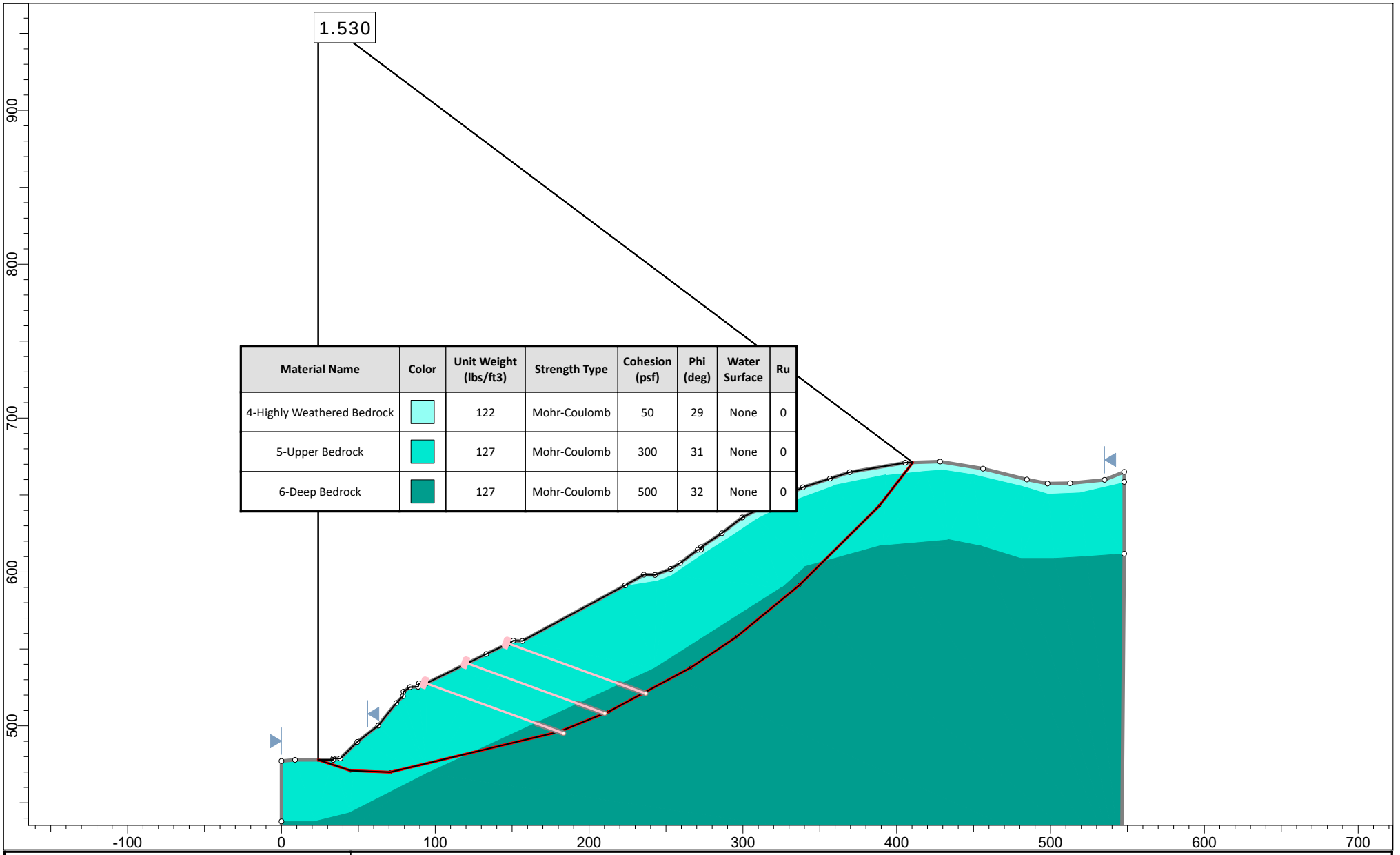
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Anchor on 2:1 slope, Entire Slope, Initial Search		
Drawn By	SD	Scale 1:988	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 entire initial.slim

Figure G-50



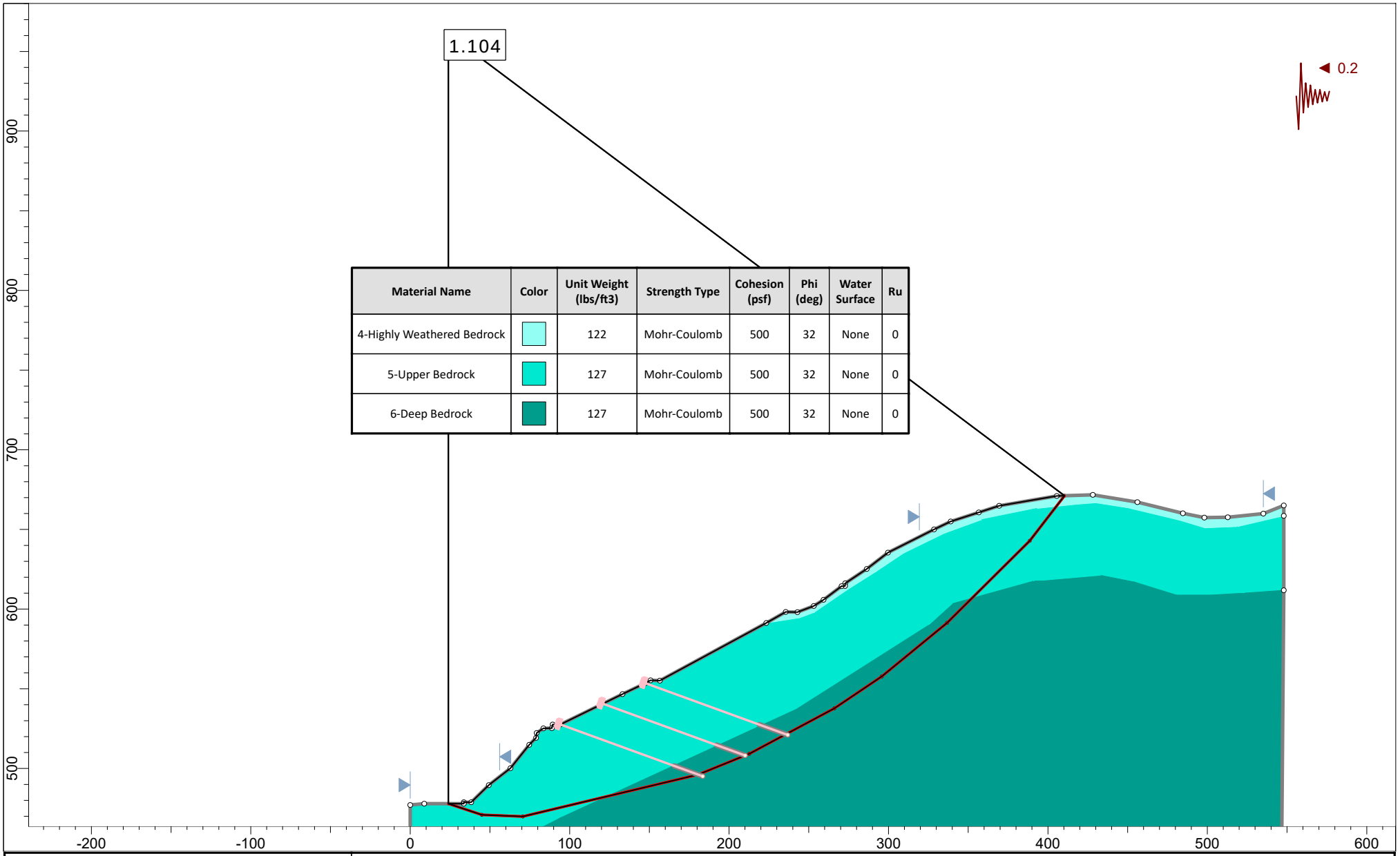
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Anchor on 2:1 slope, Entire Slope		
Drawn By	SD	Scale 1:1033	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 entire.slim

Figure G-51



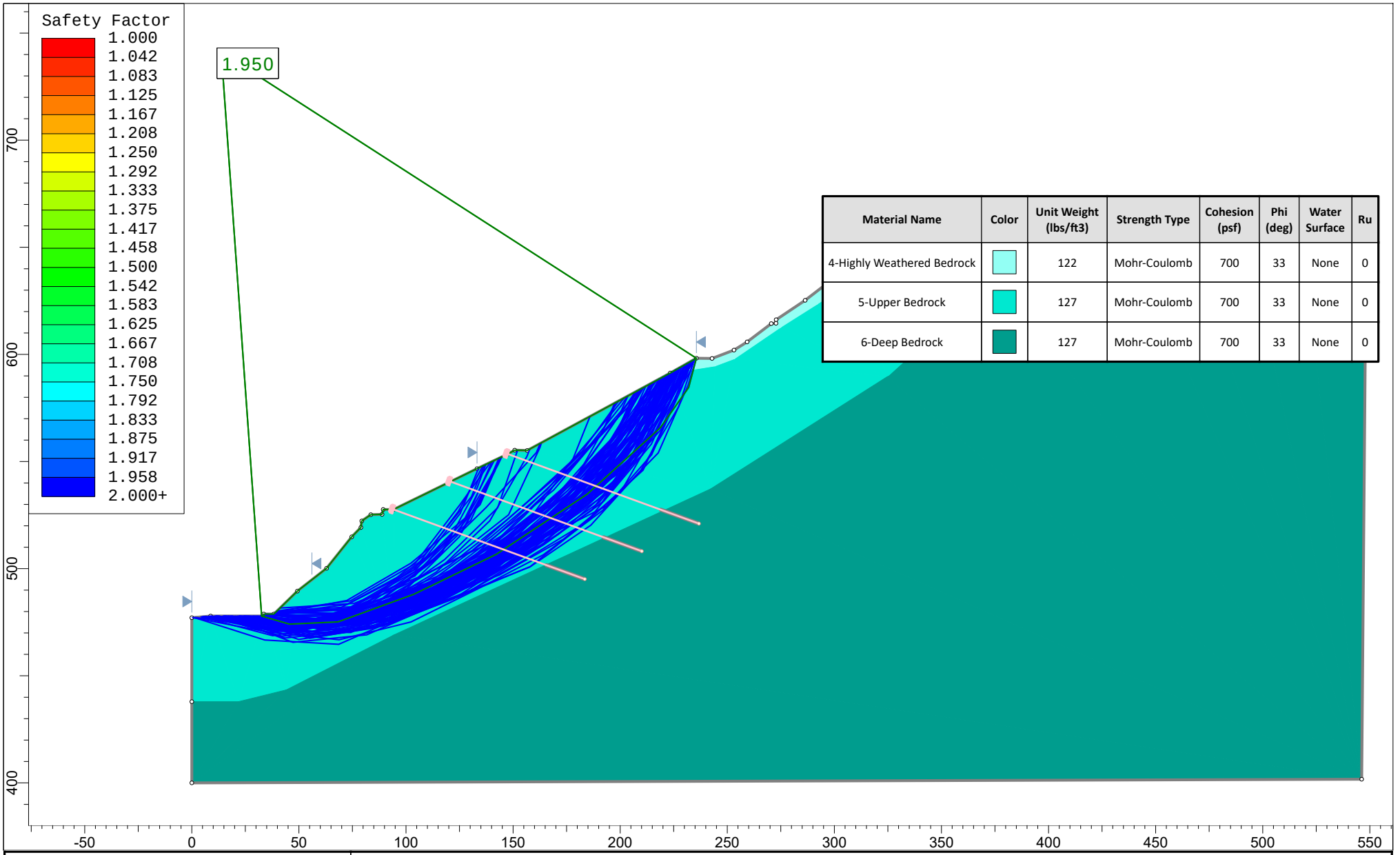
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Anchor on 2:1 slope, Entire Slope, Seismic		
Drawn By	SD	Scale 1:998	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 entire, seismic.slim

Figure G-52



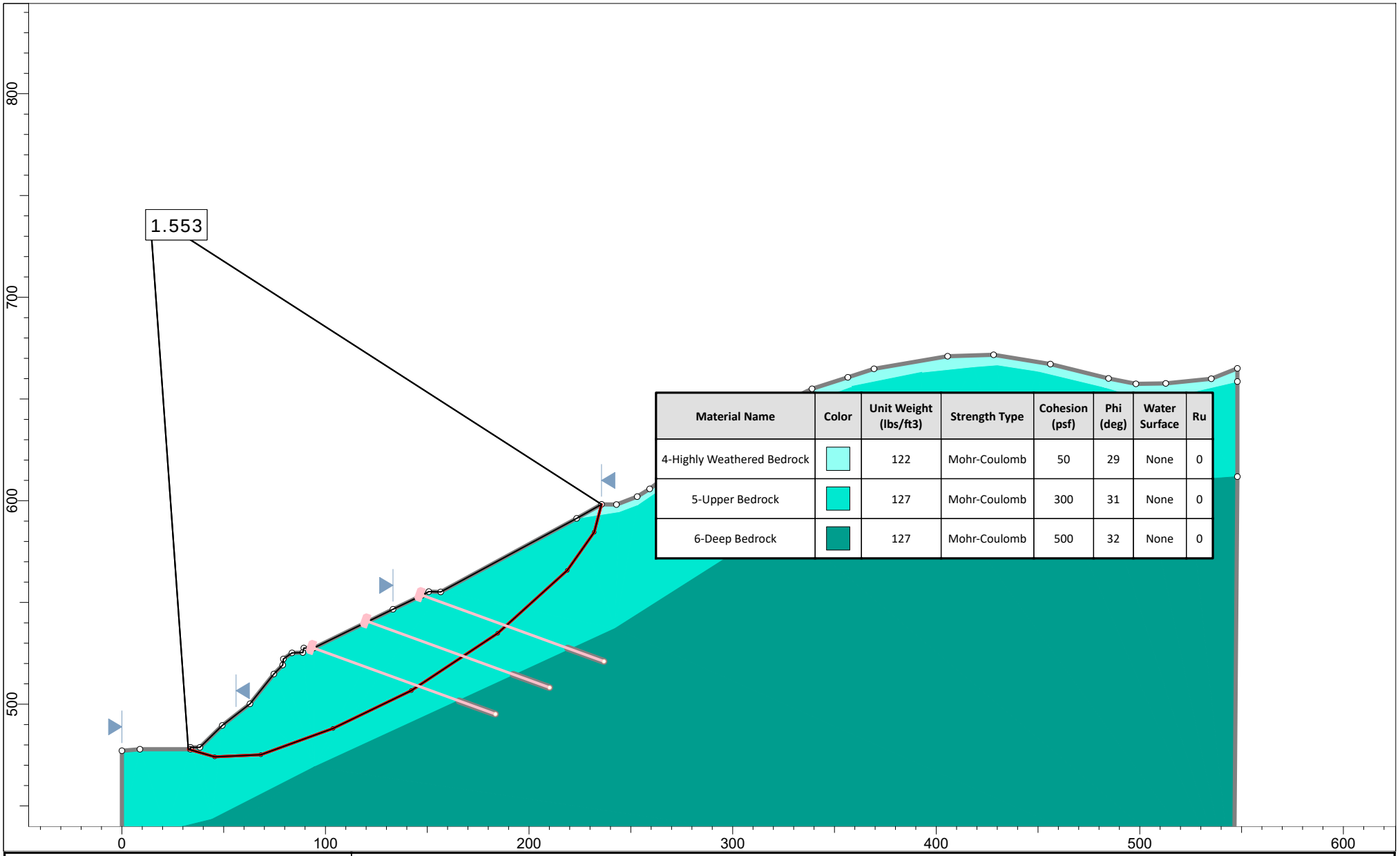
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Anchor on 2:1 slope, Lower Slope, Initial Search		
Drawn By	SD	Scale 1:741	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 lower initial.slim

Figure G-53



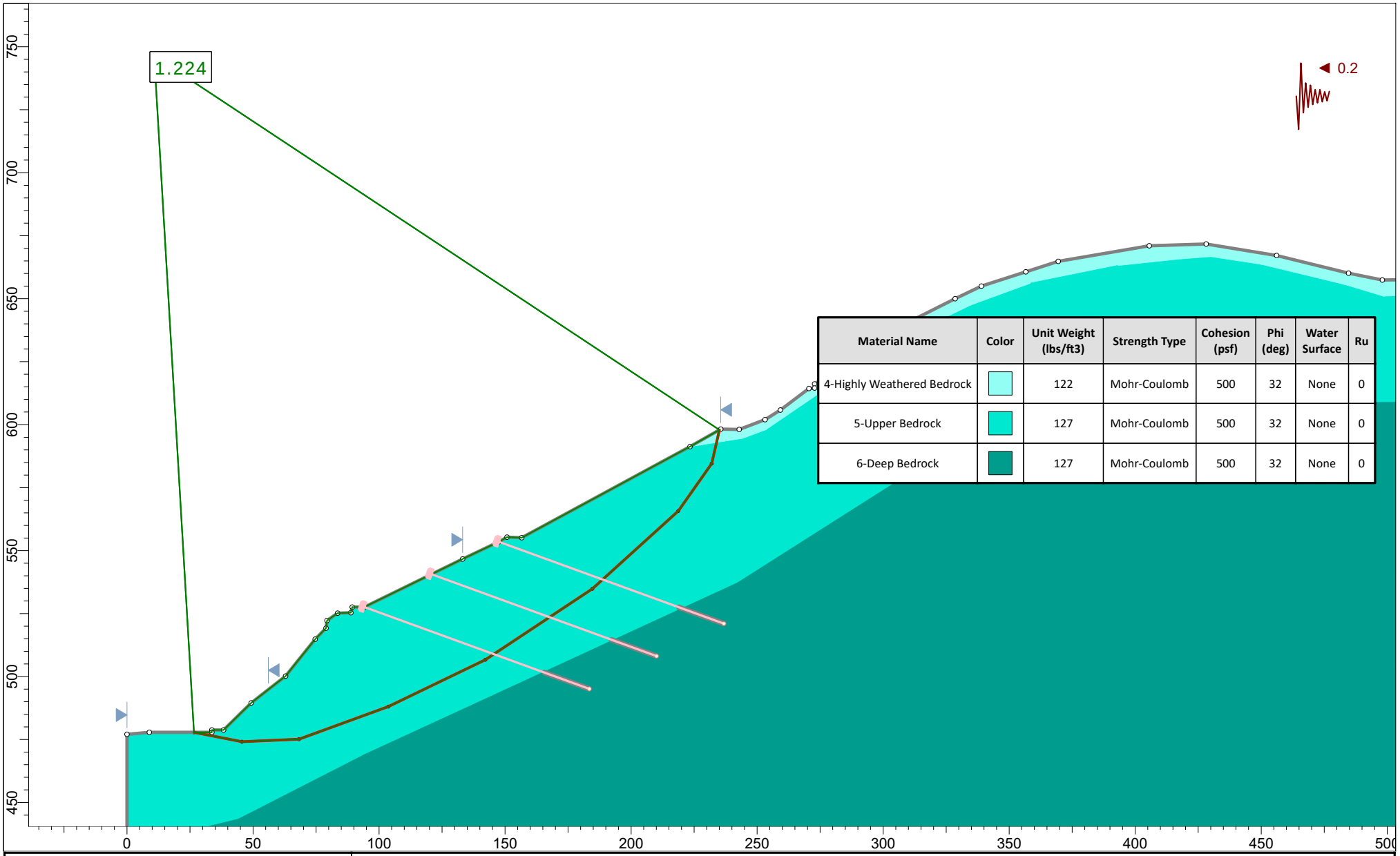
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Anchor on 2:1 slope, Lower Slope		
Drawn By	SD	Scale 1:782	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 lower.slim

Figure G-54



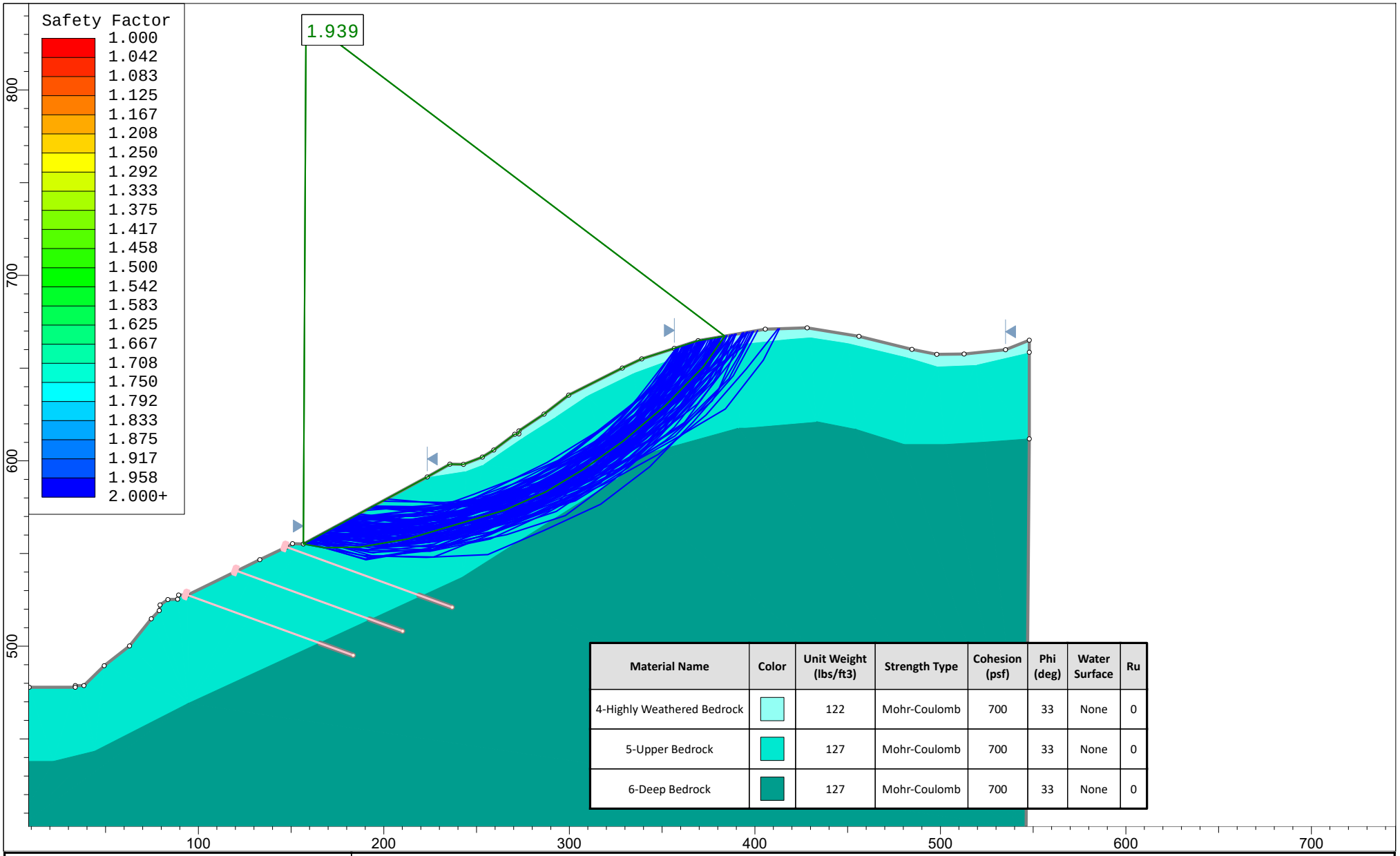
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Anchor on 2:1 slope, Lower Slope, Seismic		
Drawn By	SD	Scale 1:631	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 lower, seismic.slim

Figure G-55



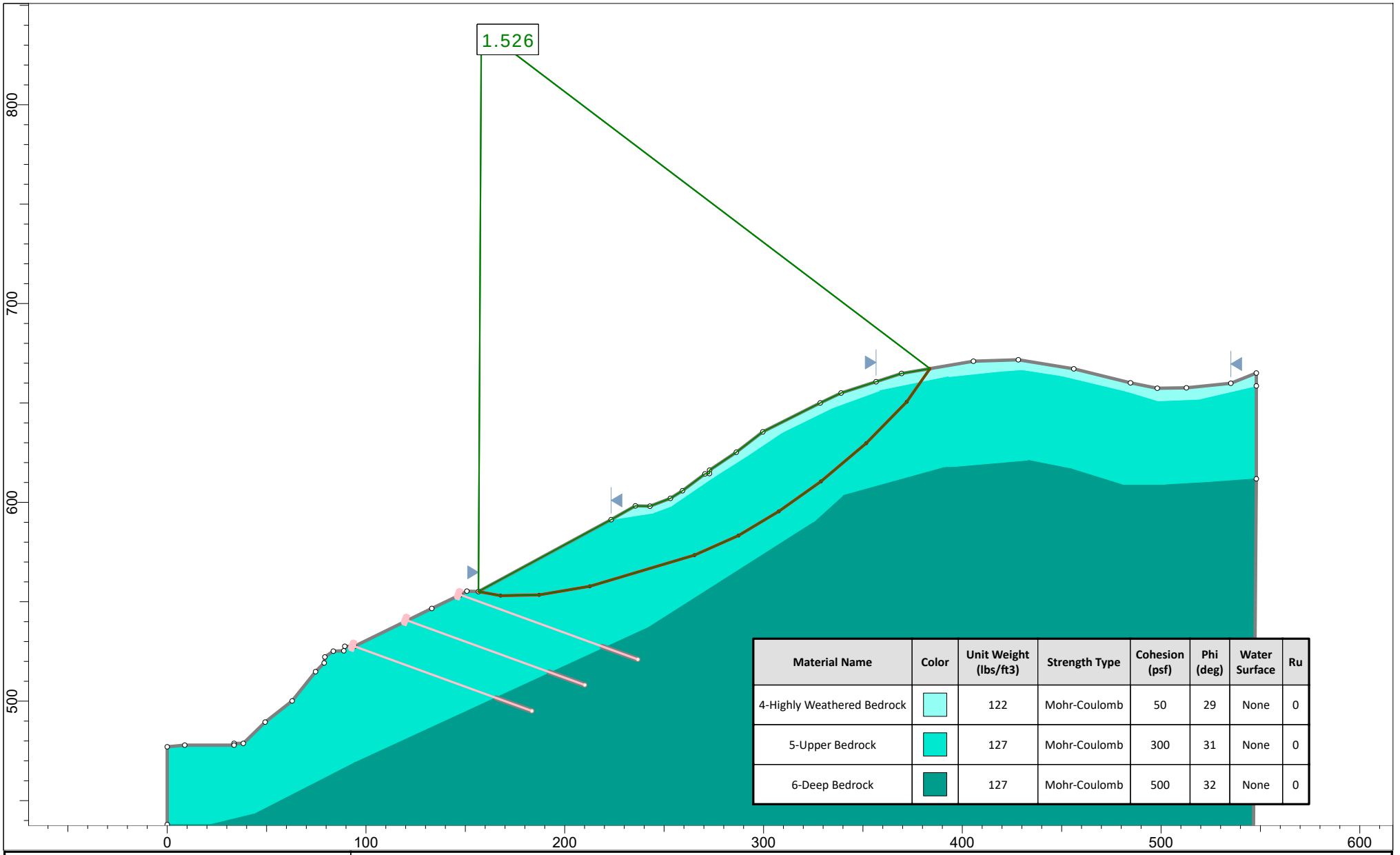
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Upper 2:1 Cut Slope, Initial Search		
Drawn By	SD	Scale 1:858	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 upper cut slope initial.slim

Figure G-56



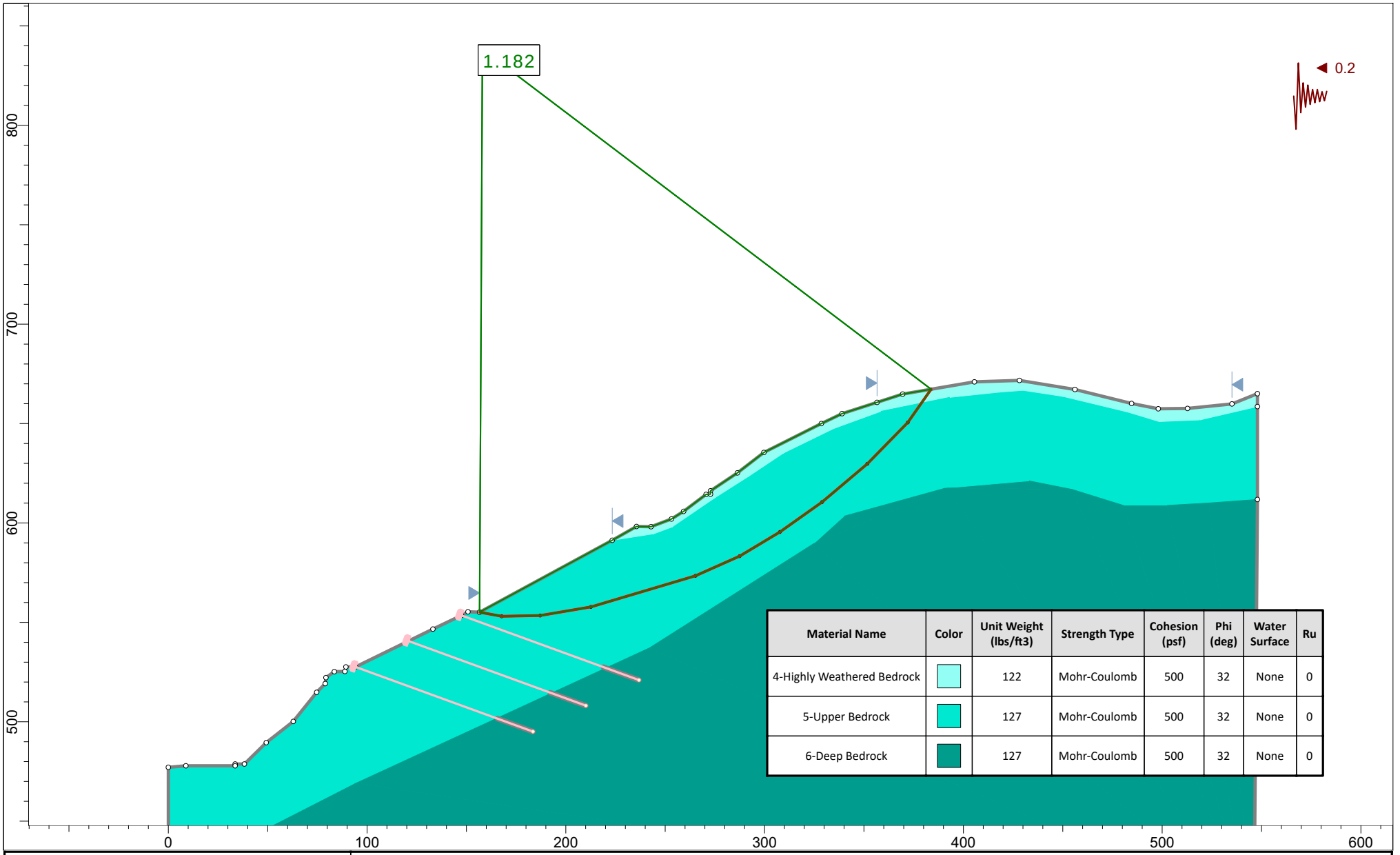
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Upper 2:1 Cut Slope		
Drawn By	SD	Scale 1:799	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 upper cut slope.slim

Figure G-57



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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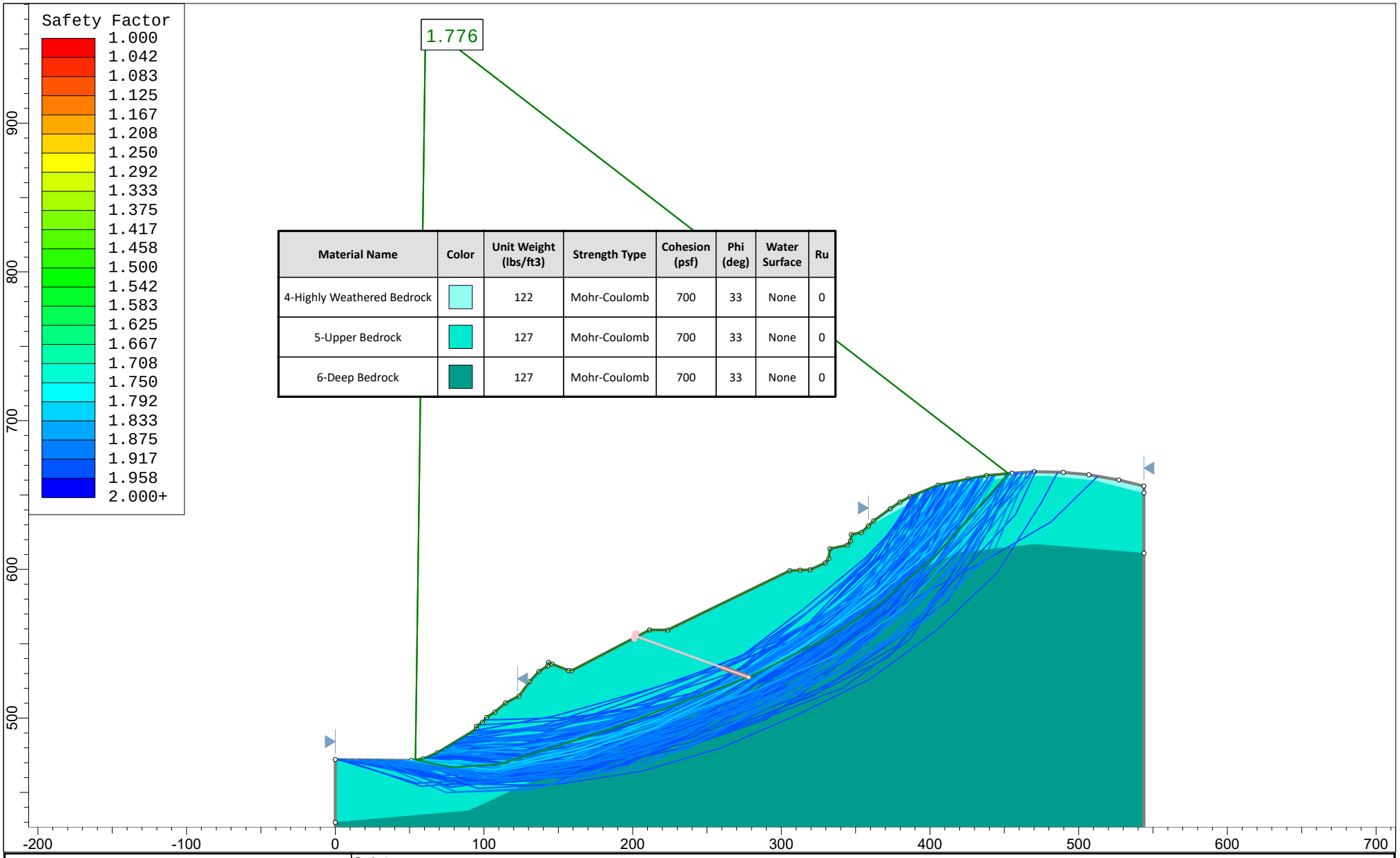
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section J-J', Upper 2:1 Cut Slope, Seismic		
Drawn By	SD	Scale 1:799	Company AGS
Date	B2 Design 12-04-2019		File Name jj-anchor slope-12042019 upper cut slope, seismic.slim

Figure G-58

K-K'

Slope Stability Output Files

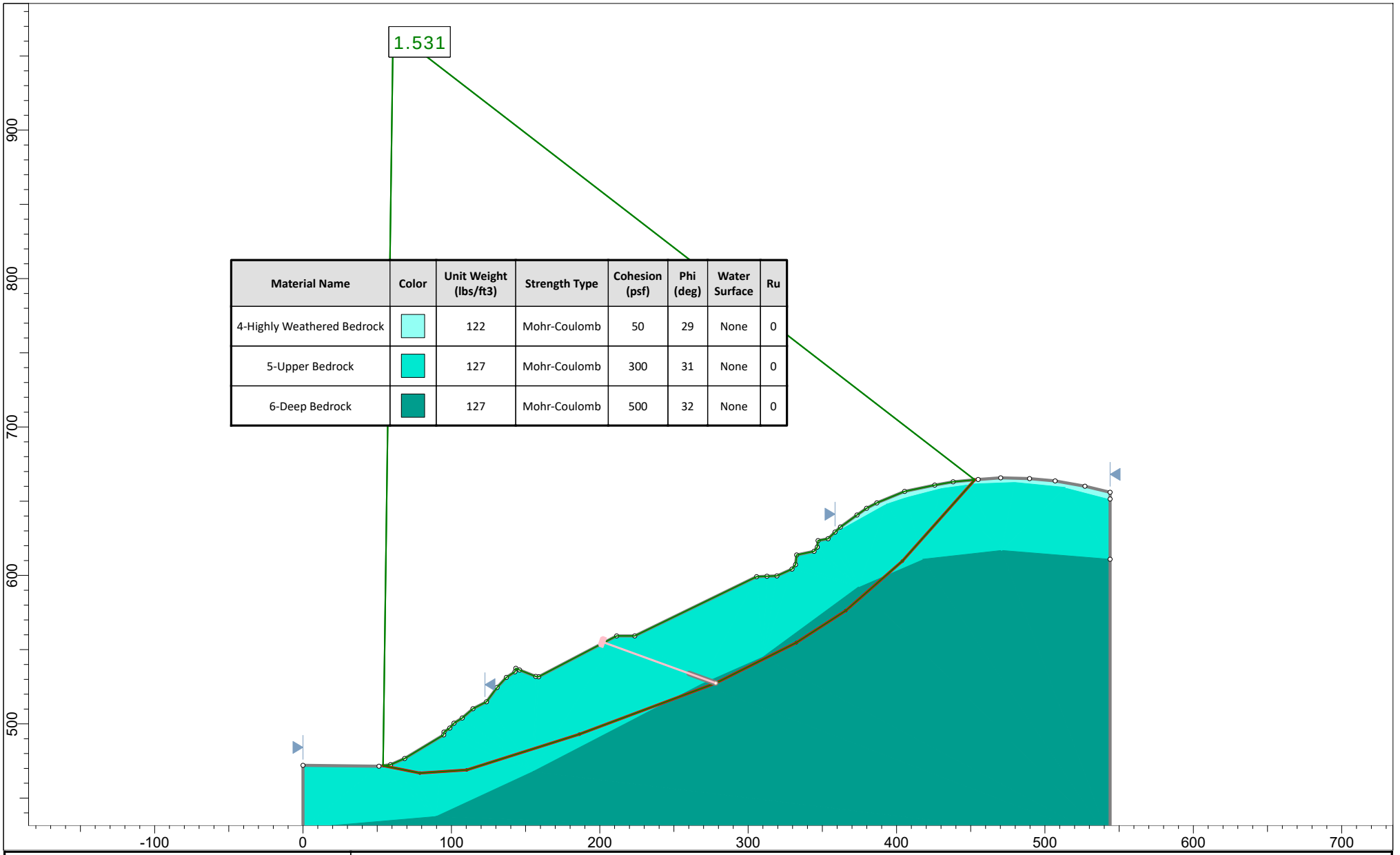


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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section K-K', Entire Slope, Initial Search		
Drawn By	SD	Scale 1:1070	Company AGS
Date	B2 Design 12-04-2019		File Name kk-12042019, entire slope, initial.slim

Figure G-59



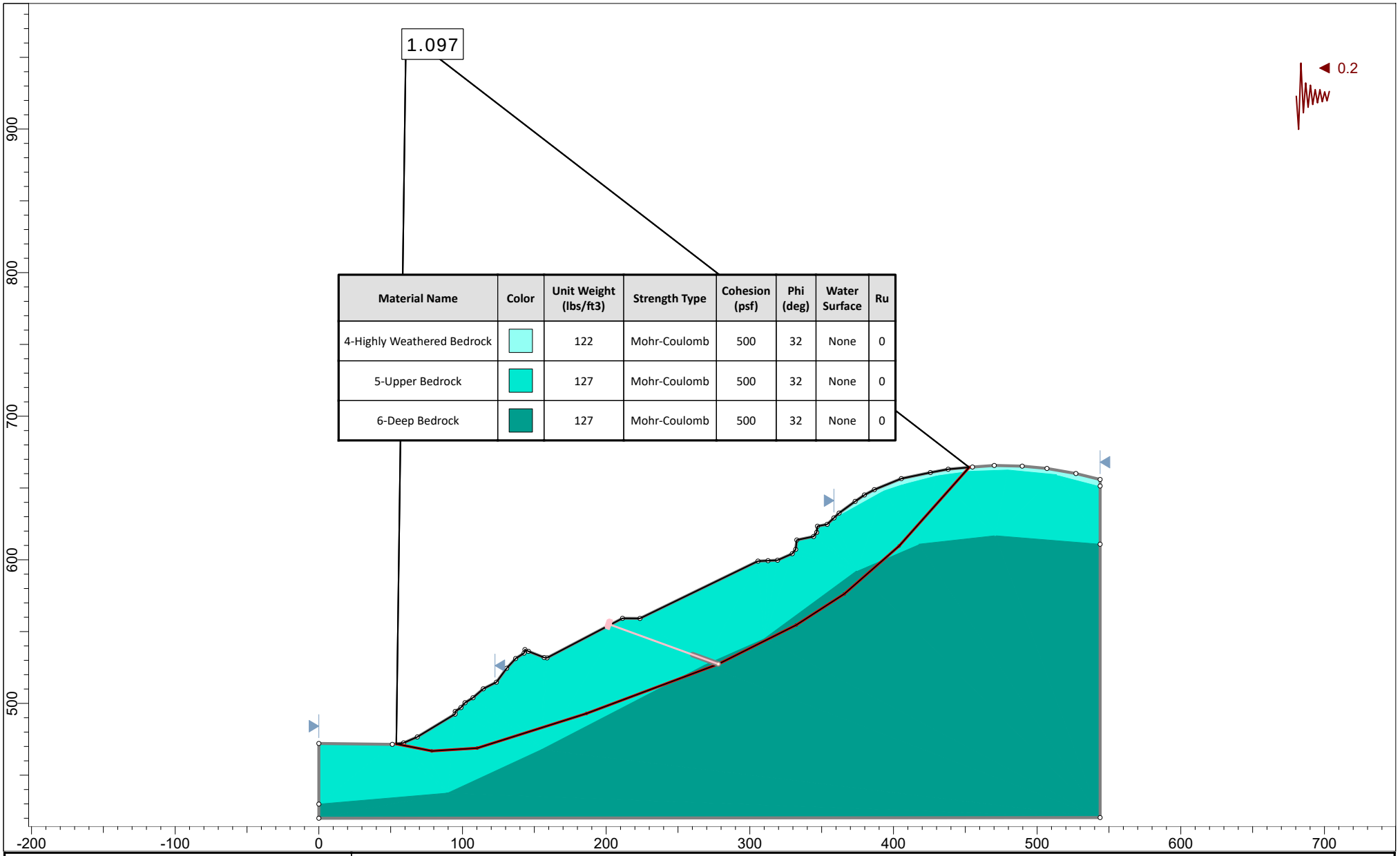
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section K-K', Entire Slope		
Drawn By	SD	Scale 1:1070	Company AGS
Date	B2 Design 12-04-2019		File Name kk-12042019, entire slope.slim

Figure G-60



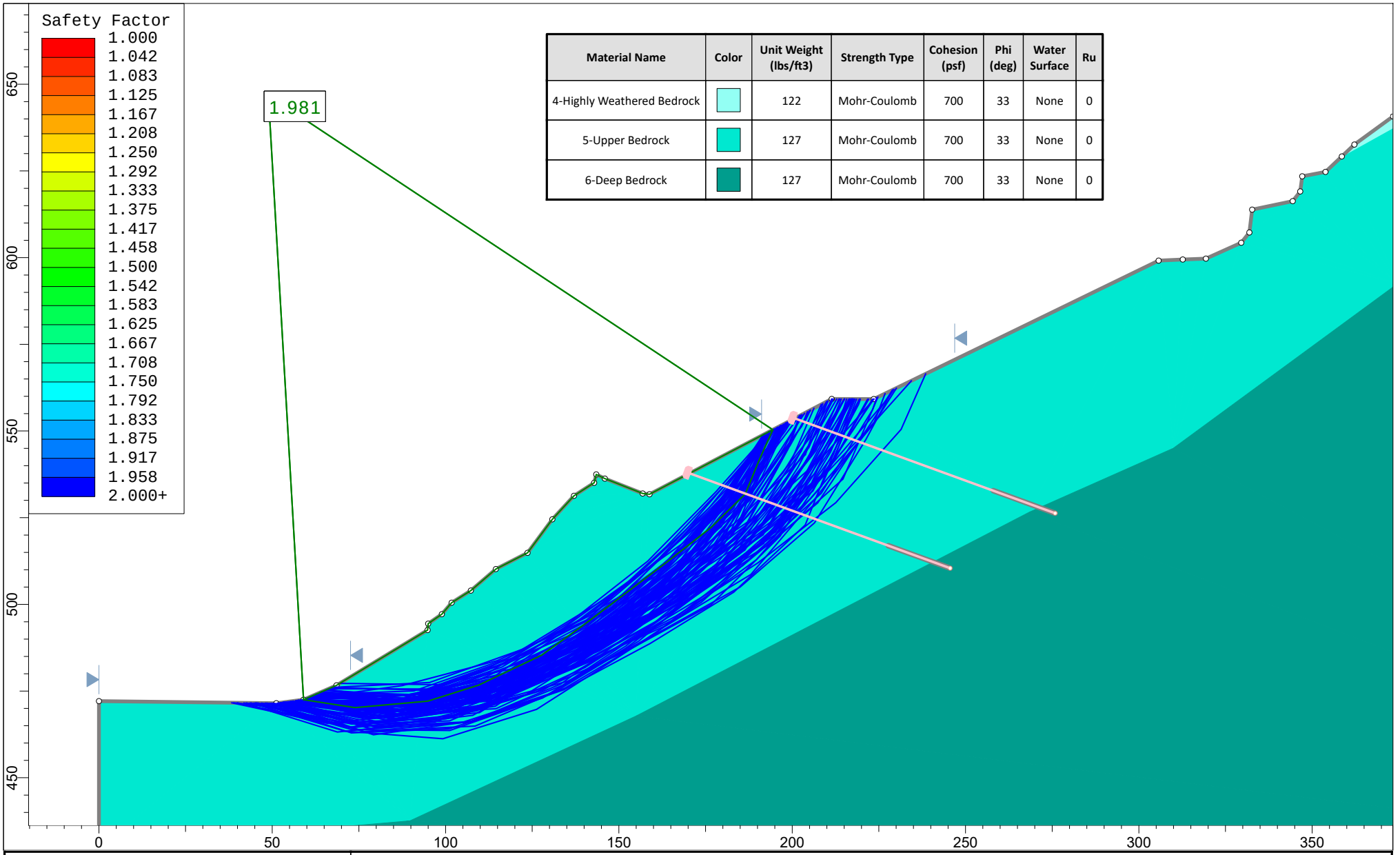
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section K-K', Entire Slope, Seismic		
Drawn By	SD	Scale 1:1108	Company AGS
Date	B2 Design 12-04-2019		File Name kk-12042019, entire slope, seismic.slim

Figure G-61



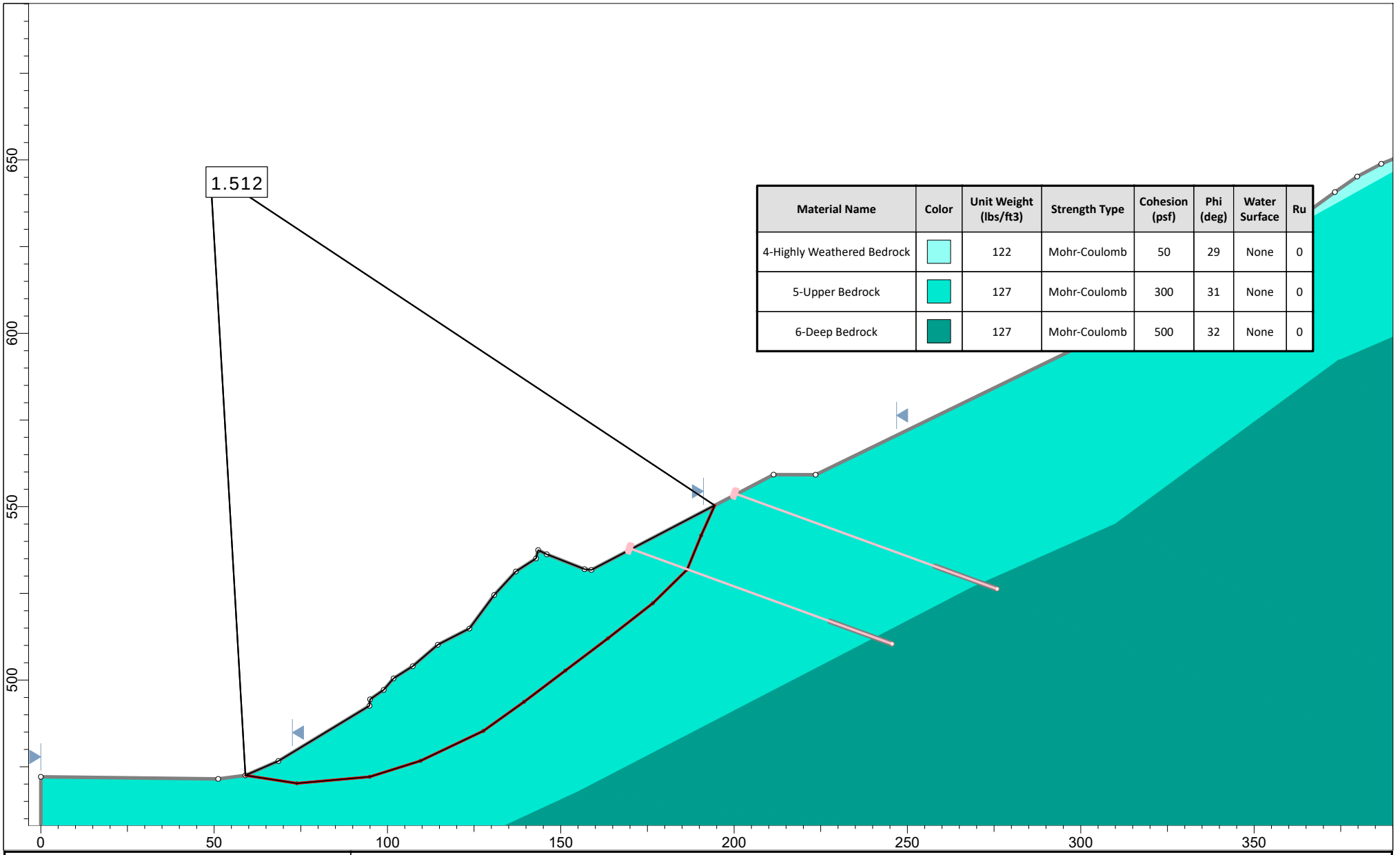
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section K-K', Lower Slope, Initial Search		
Drawn By	SD	Scale 1:458	Company AGS
Date	B2 Design 12-04-2019		File Name kk-12042019, lower slope, initial.slim

Figure G-62



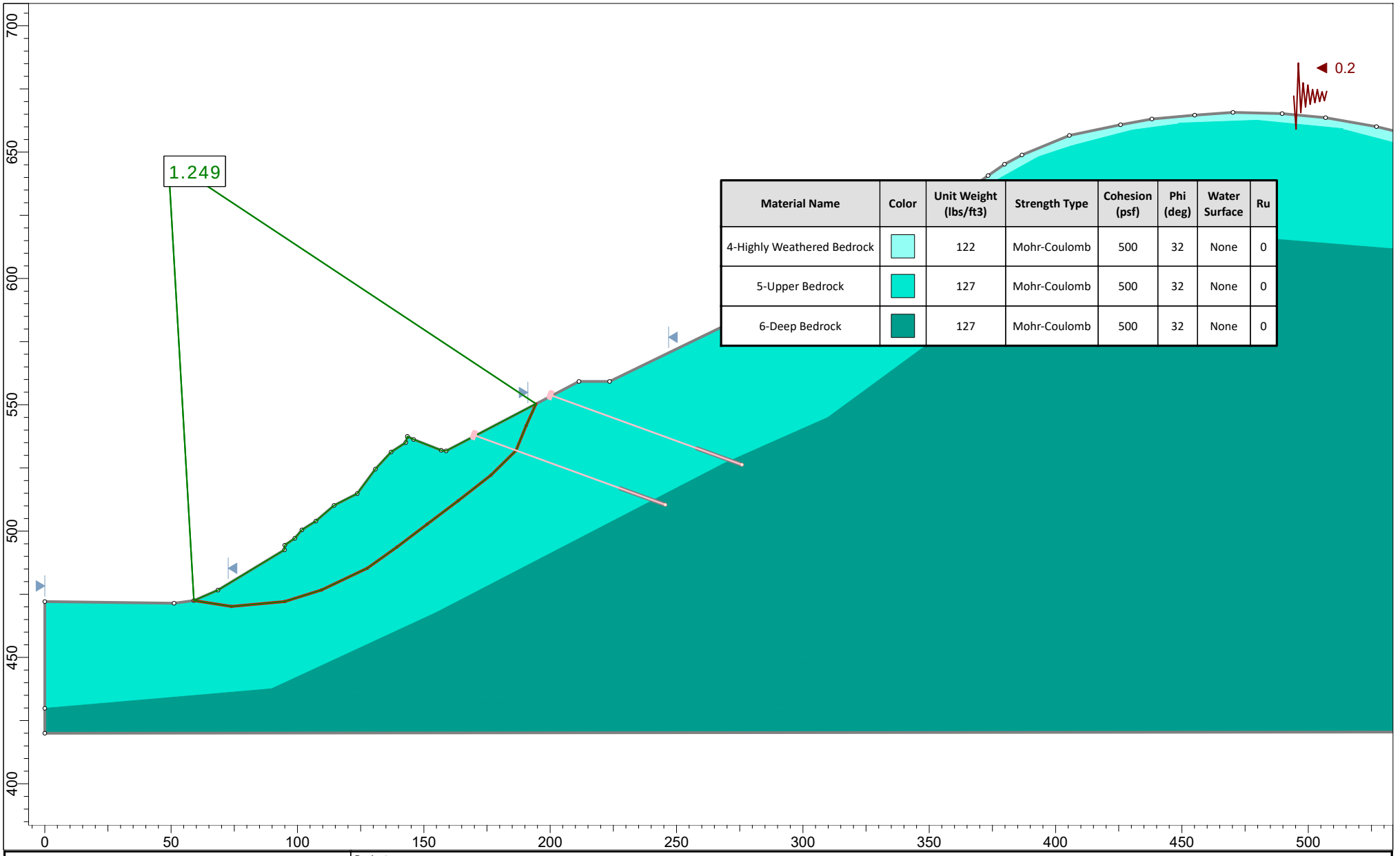
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section K-K', Lower Slope		
Drawn By	SD	Scale 1:458	Company AGS
Date	B2 Design 12-04-2019		File Name kk-12042019, lower slope.slim

Figure G-63



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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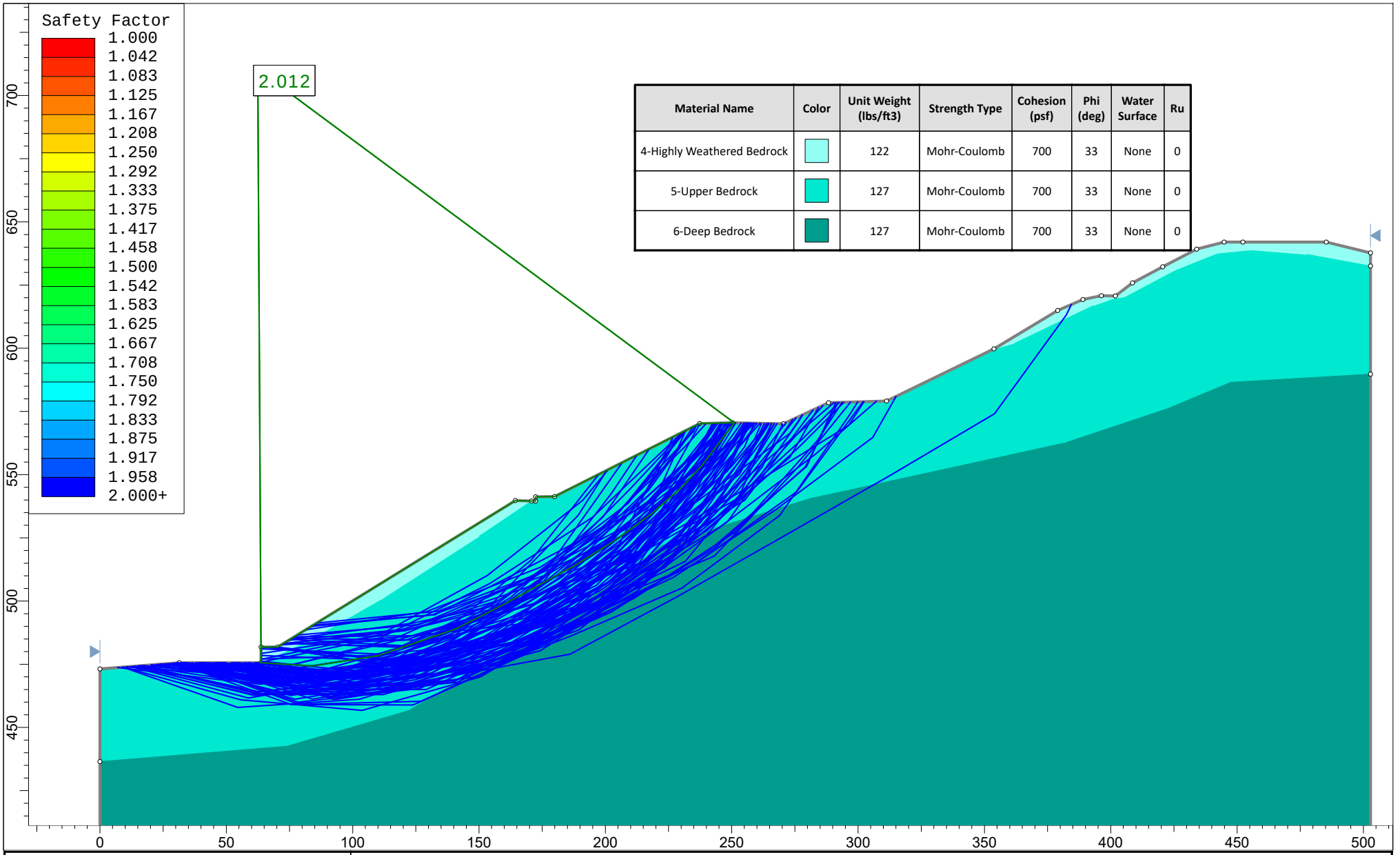
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section K-K', Lower Slope, Seismic		
Drawn By	SD	Scale 1:628	Company AGS
Date	B2 Design 12-04-2019		File Name kk-12042019, lower slope, seismic.slim

Figure G-64

L-L'

Slope Stability Output Files

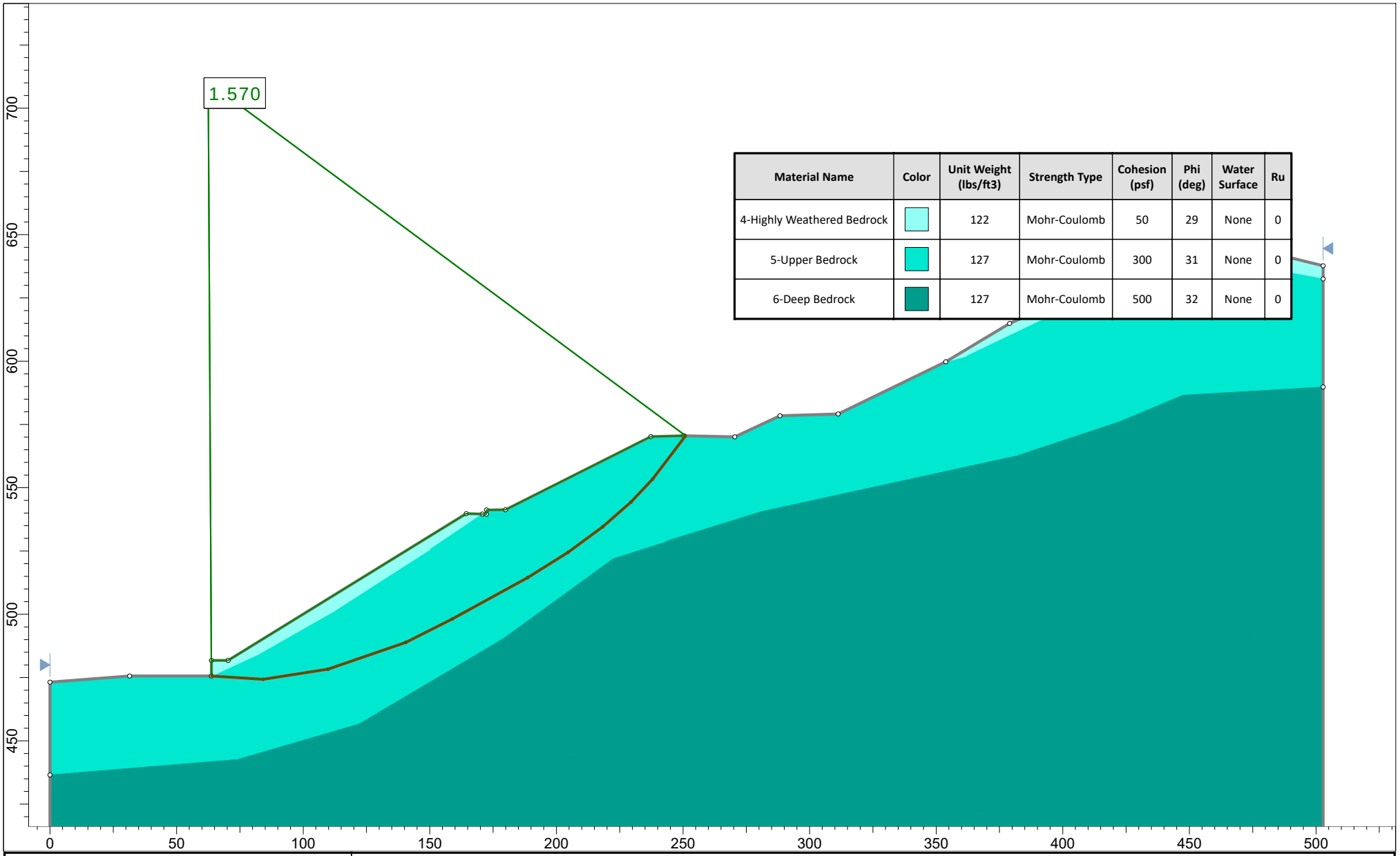


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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section L-L', Entire Slope, Initial Search		
Drawn By	SD	Scale 1:628	Company AGS
Date	B2 Design 12-04-2019		File Name ll-12042019, initial search.slim

Figure G-65



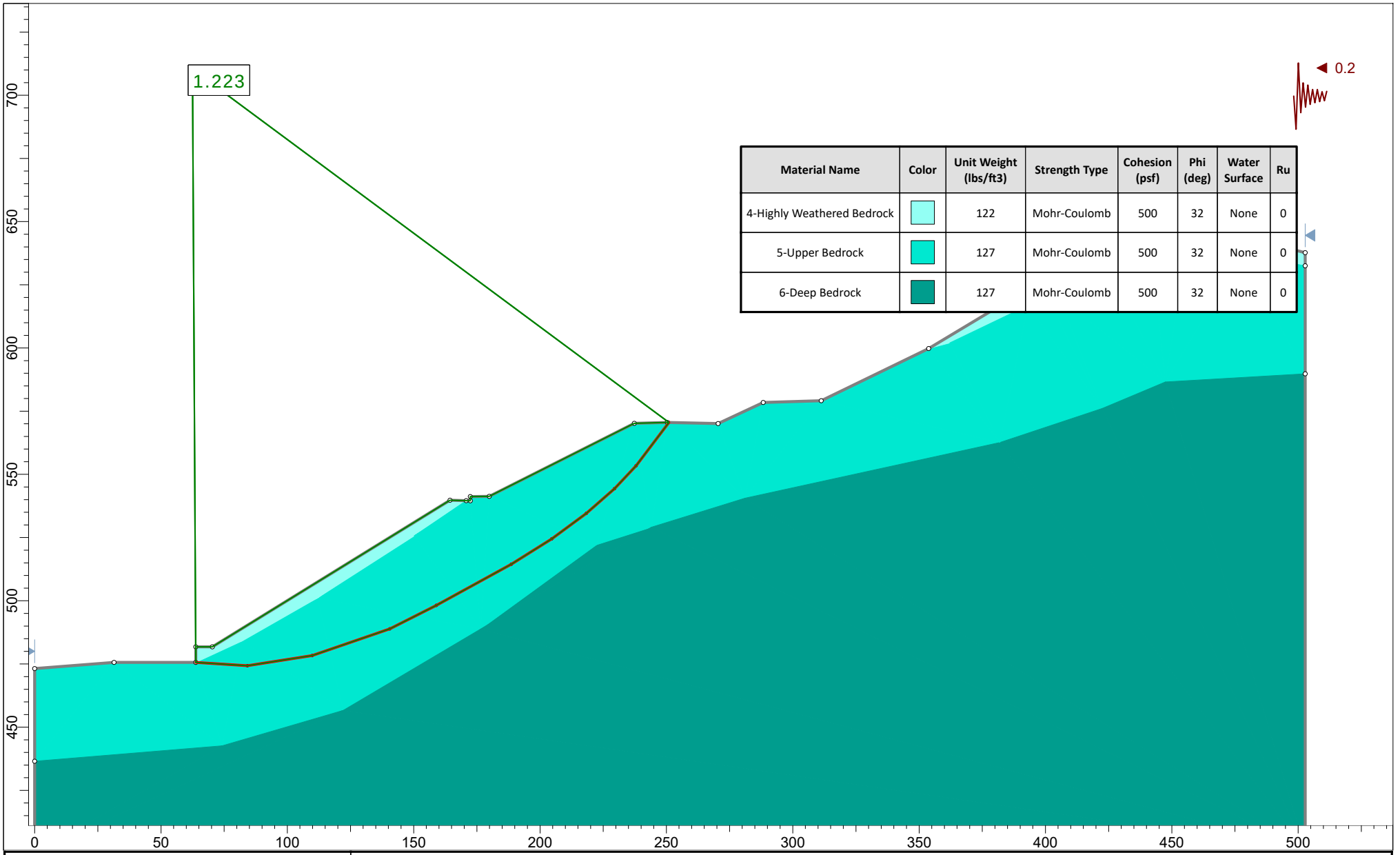
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section L-L', Entire Slope		
Drawn By	SD	Scale 1:628	Company AGS
Date	B2 Design 12-04-2019		File Name ll-12042019, entire slope.slim

Figure G-66



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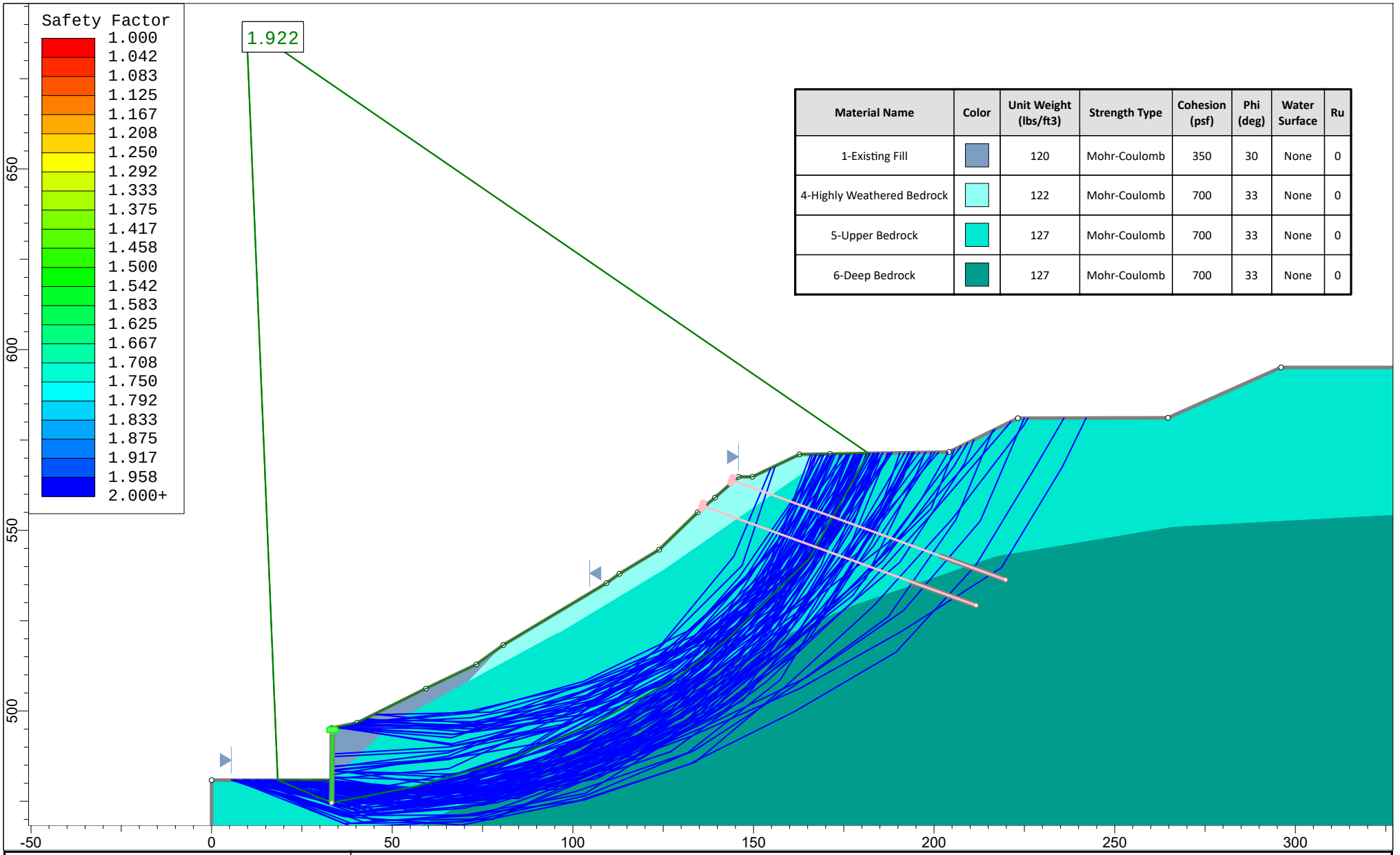
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section L-L', Entire Slope		
Drawn By	SD	Scale 1:628	Company AGS
Date	B2 Design 12-04-2019		File Name ll-12042019, entire slope, seismic.slim

Figure G-67

M-M'

Slope Stability Output Files



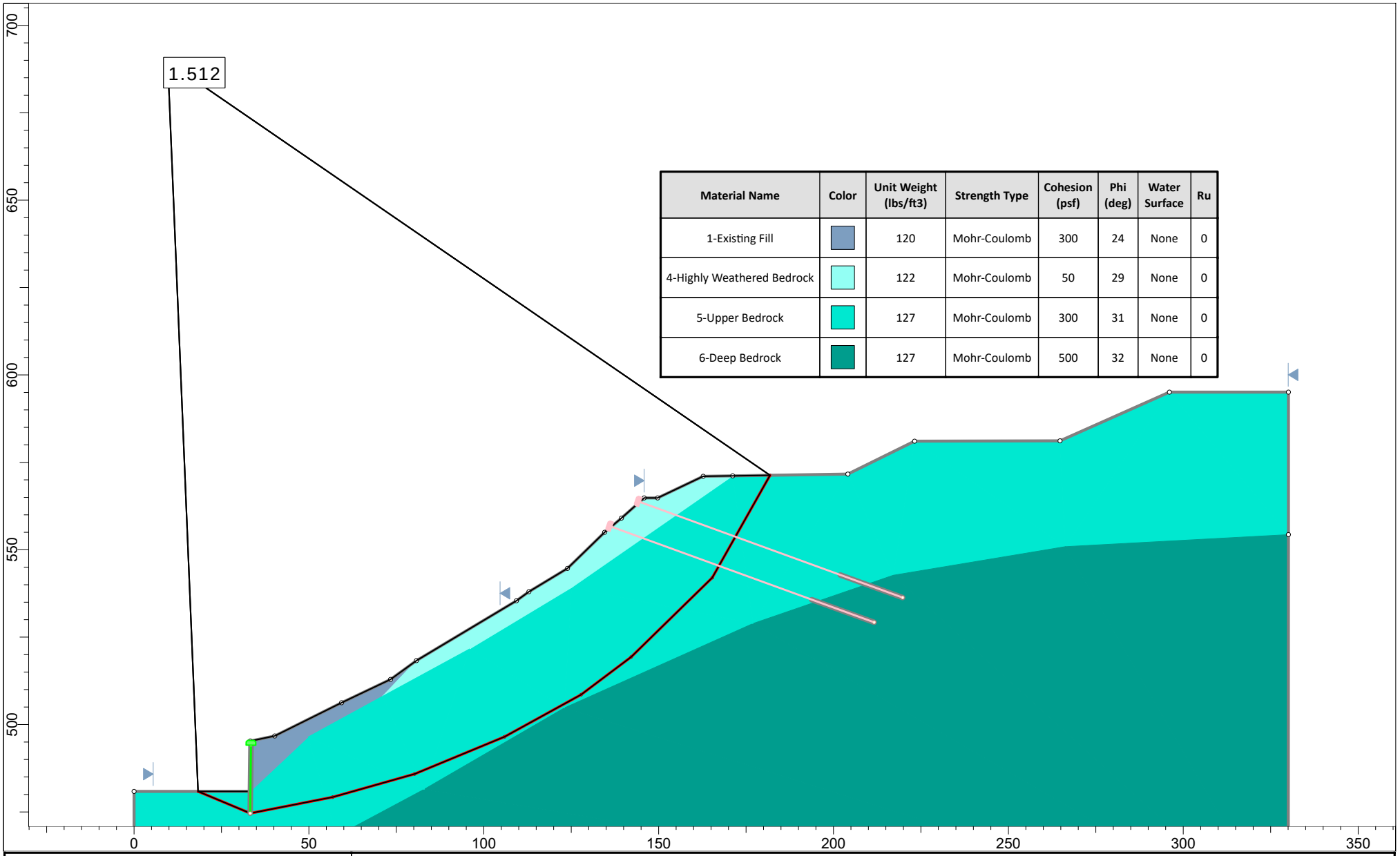
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section M-M', 2:1 slope above daylight, Entire Slope, Initial		
Drawn By	SD	Scale 1:440	Company AGS
Date	B2 Design 12-04-2019		File Name mm-12042019 initial.slim

Figure G-68



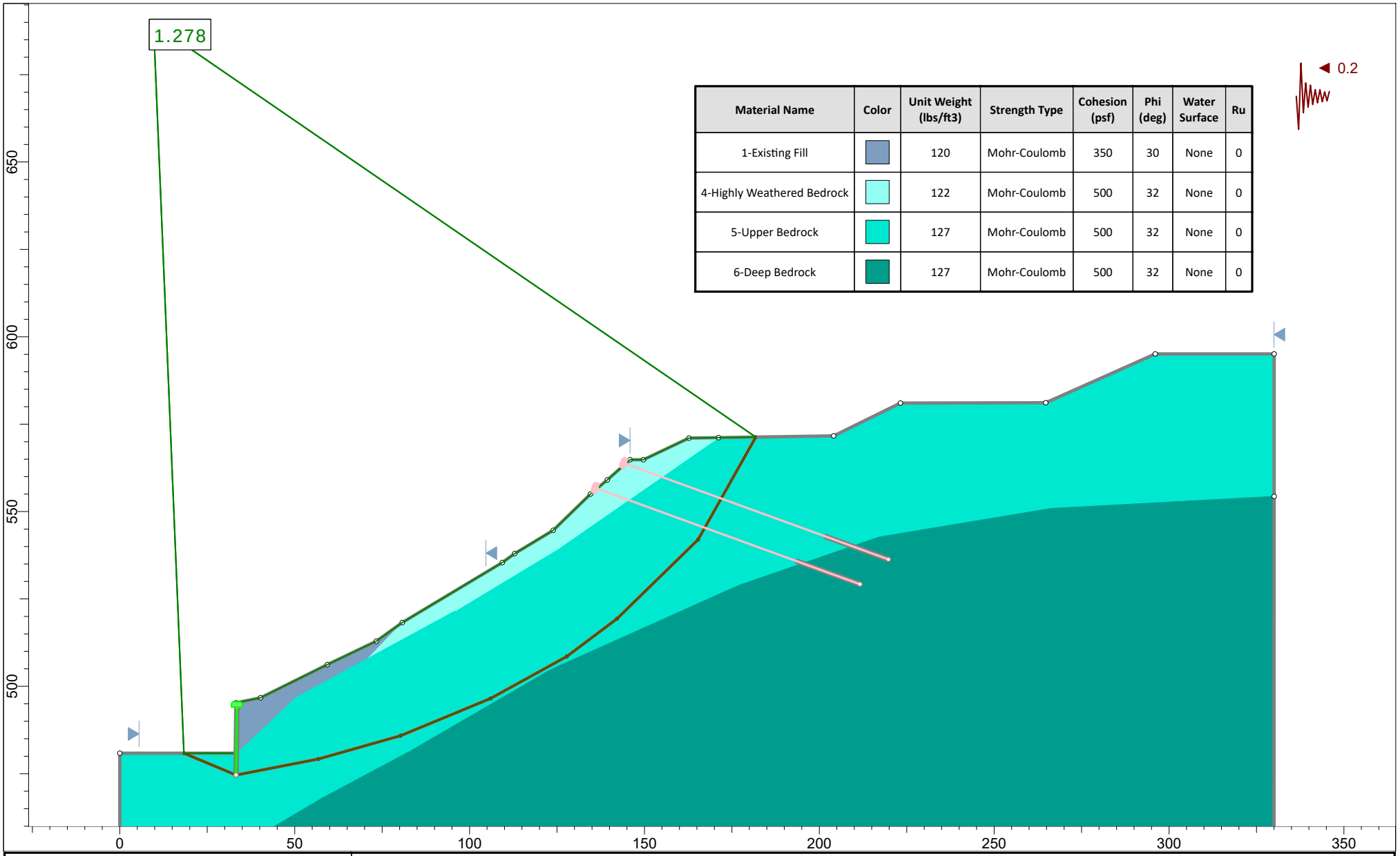
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	300	24	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section M-M', 2:1 slope above daylight, Entire Slope		
Drawn By	SD	*Scale* 1:455	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* mm-12042019.slim

Figure G-69



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

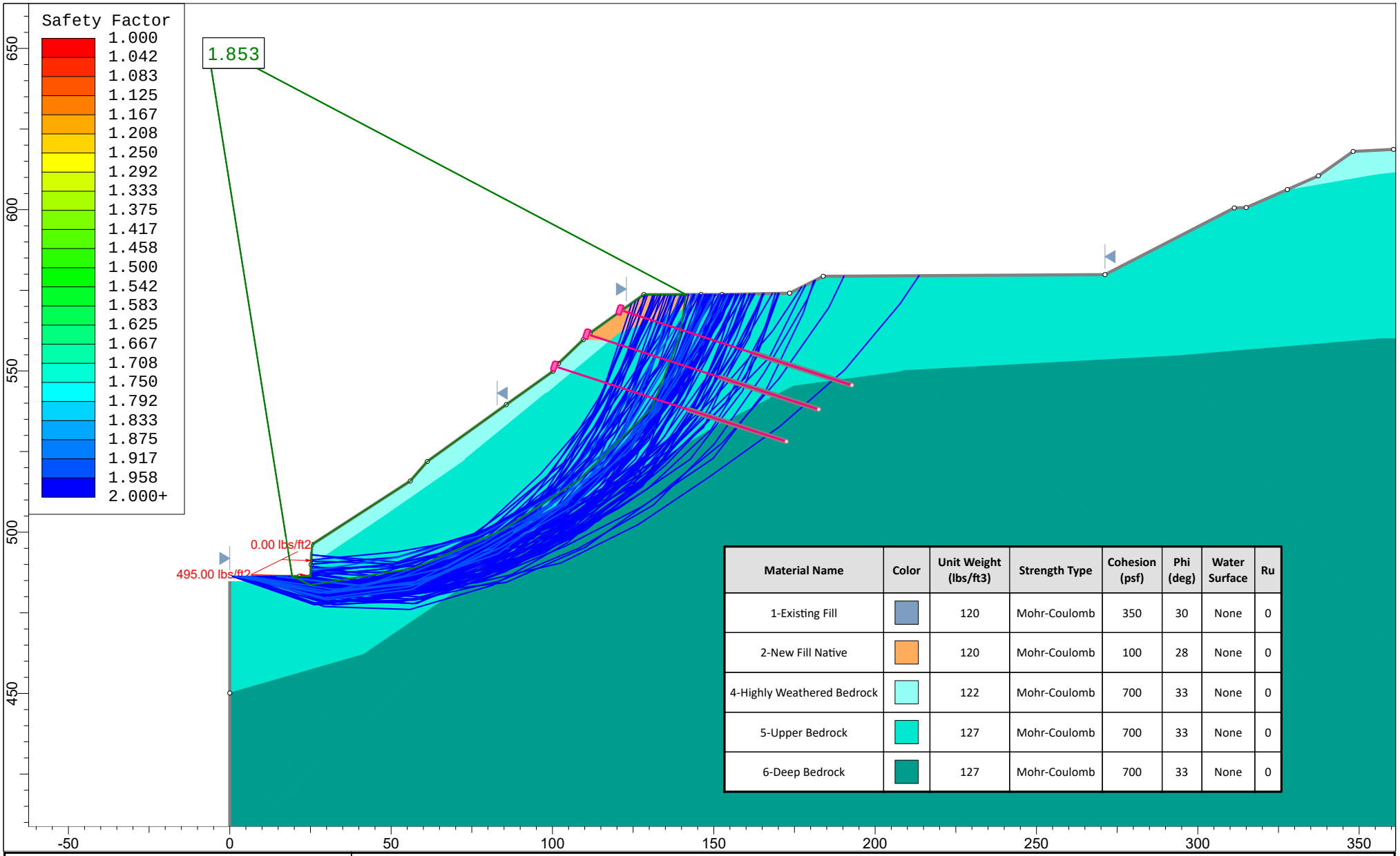
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section M-M', 2:1 slope above daylight, Entire Slope, Seismic		
Drawn By	SD	Scale 1:455	Company AGS
Date	B2 Design 12-04-2019		File Name mm-12042019, seismic.slim

Figure G-70

N-N'

Slope Stability Output Files



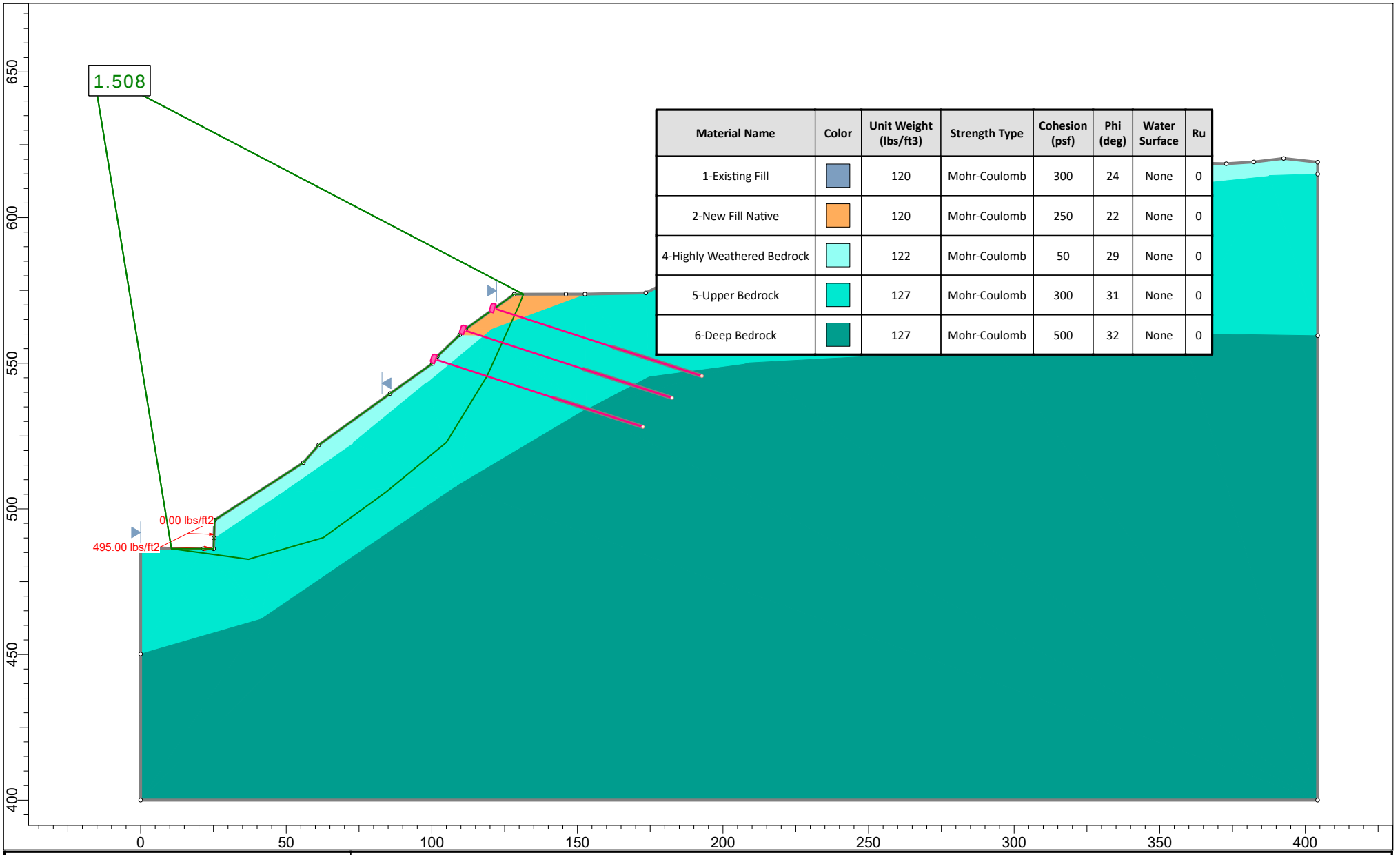
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section N-N', Daylight Cut- Natural with Anchors, Initial Search		
Drawn By	SD	Scale 1:493	Company AGS
Date	B2 Design 12-04-2019		File Name nn-daylight-12042019, initial.slim

Figure G-71



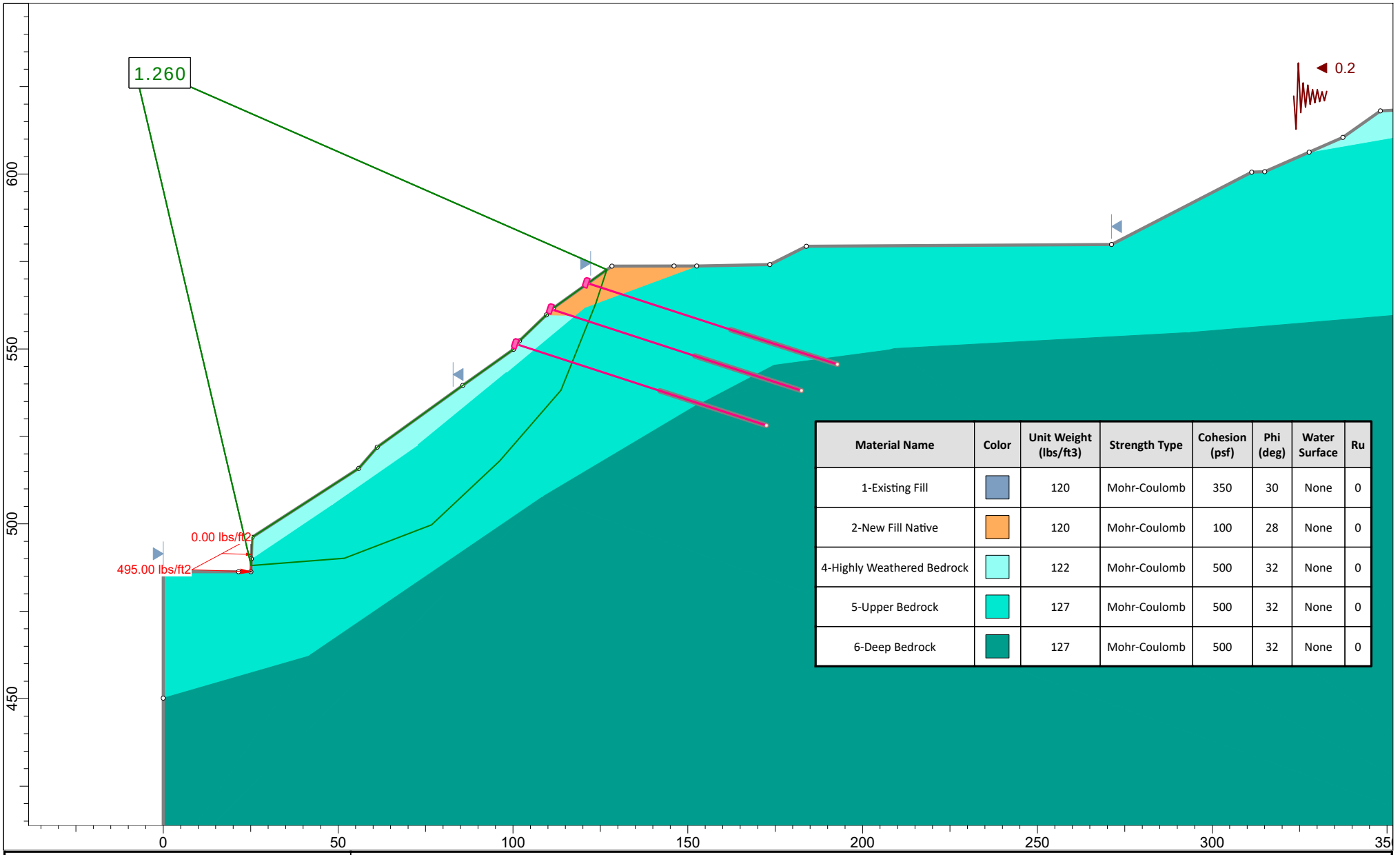
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	300	24	None	0
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

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SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section N-N', Daylight Cut- Natural with Anchors		
Drawn By	SD	*Scale* 1:545	*Company* AGS
Date	B2 Design 12-04-2019	*File Name*	nn-daylight-12042019.slim

Figure G-72



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
1-Existing Fill		120	Mohr-Coulomb	350	30	None	0
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

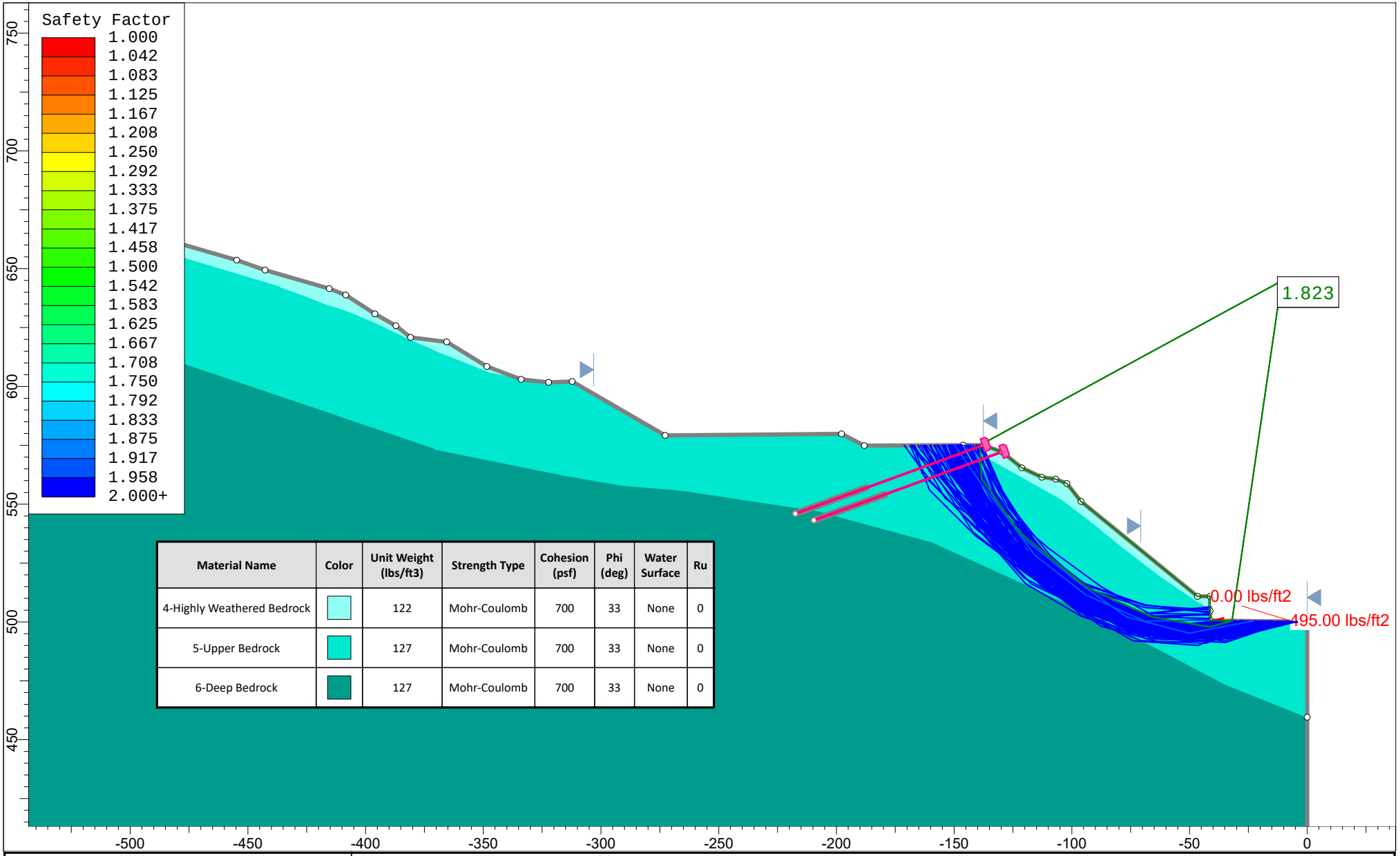
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section N-N', Daylight Cut- Natural with Anchors, Seismic		
Drawn By	SD	Scale 1:454	Company AGS
Date	B2 Design 12-04-2019		File Name nn-daylight-12042019, seismic.slim

Figure G-73

O-O'

Slope Stability Output Files



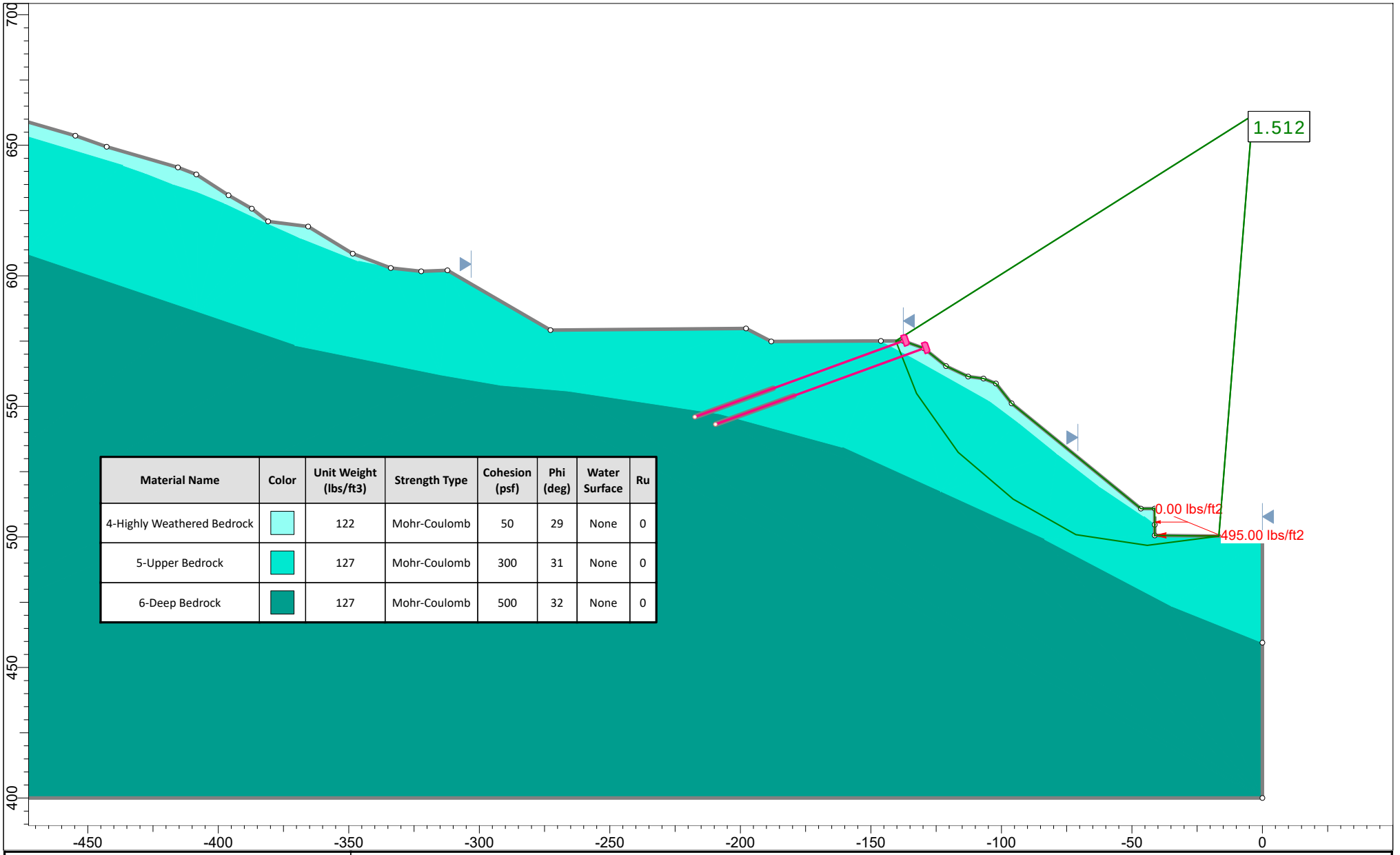
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section O-O', Daylight Cut with 2 anchors to Pad, Initial		
Drawn By	SD	Scale 1:676	Company AGS
Date	B2 Design 12-04-2019		File Name oo-12042019, lower slope, initial.slim

Figure G-74



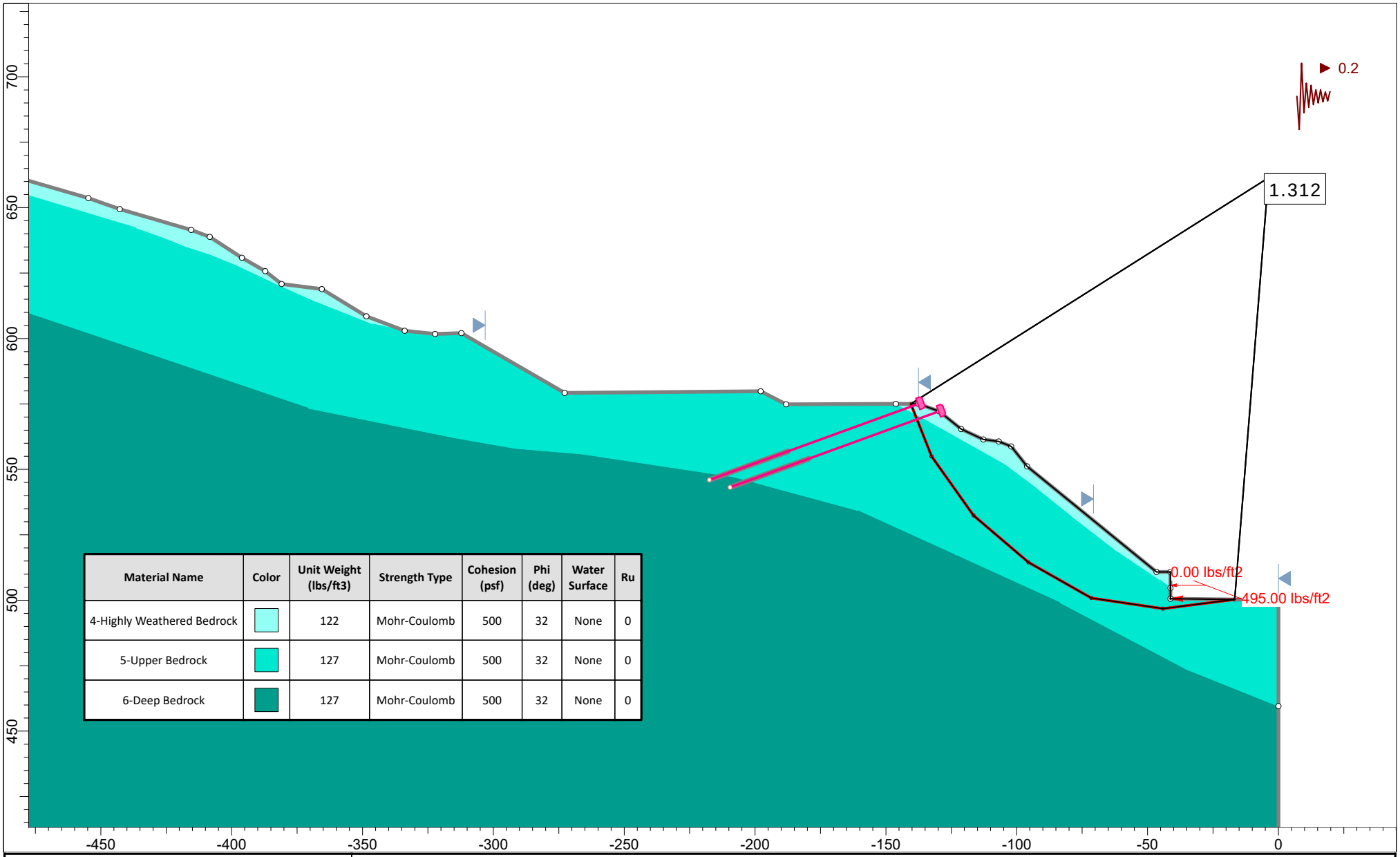
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section O-O', Daylight Cut with 2 anchors to Pad		
Drawn By	SD	Scale 1:608	Company AGS
Date	B2 Design 12-04-2019		File Name oo-12042019, lower slope.slim

Figure G-75



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

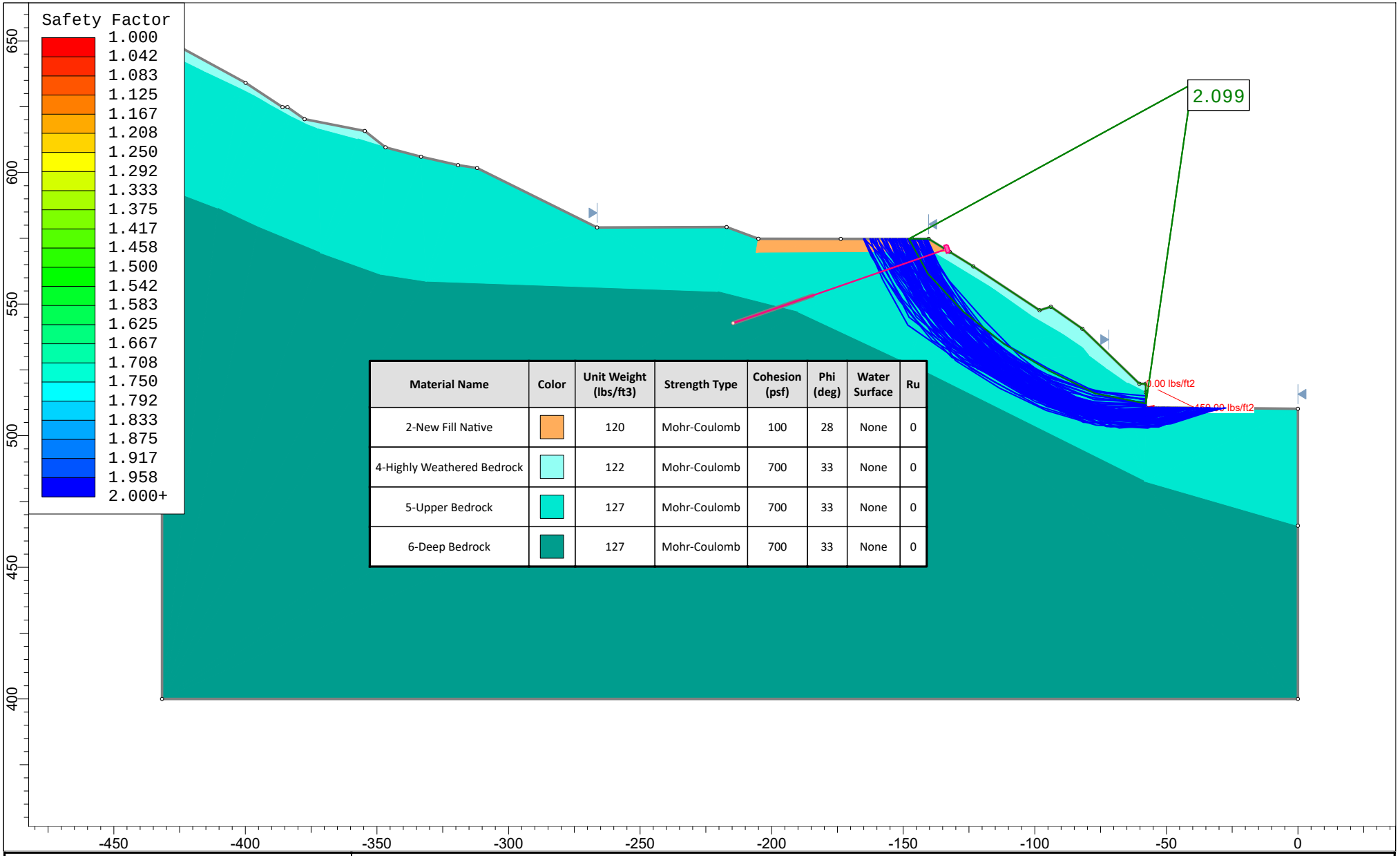
SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section O-O', Daylight Cut with 2 anchors to Pad, Seismic		
Drawn By	SD	Scale 1:608	Company AGS
Date	B2 Design 12-04-2019		File Name oo-12042019, lower slope, seismic.slim

Figure G-76

P-P'

Slope Stability Output Files



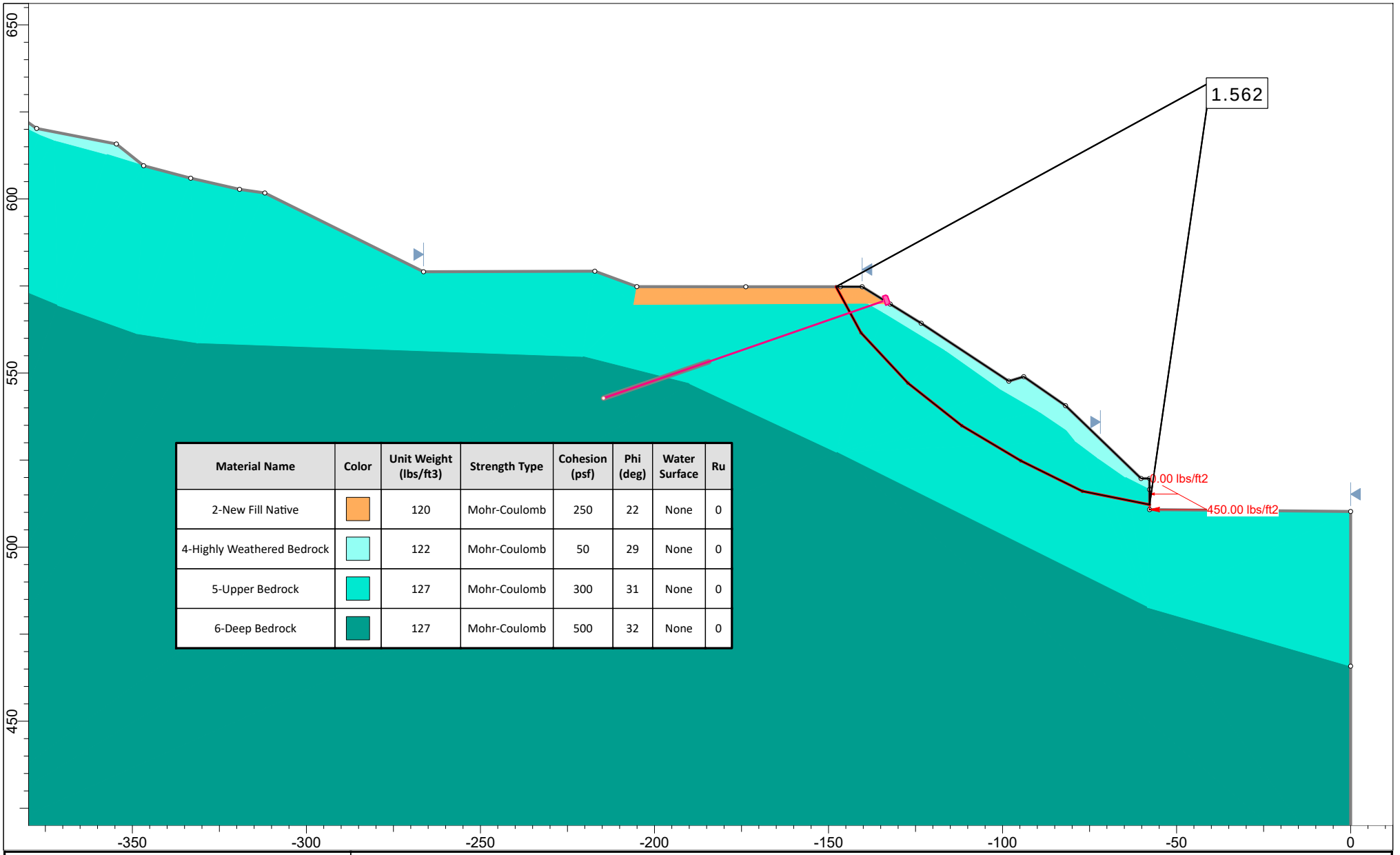
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	700	33	None	0
5-Upper Bedrock		127	Mohr-Coulomb	700	33	None	0
6-Deep Bedrock		127	Mohr-Coulomb	700	33	None	0

rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section P-P', Daylight cut with 1 anchor, Initial Search		
Drawn By	SD	Scale 1:605	Company AGS
Date	B2 Design 12-04-2019		File Name pp-12042019, initial.slim

Figure G-77



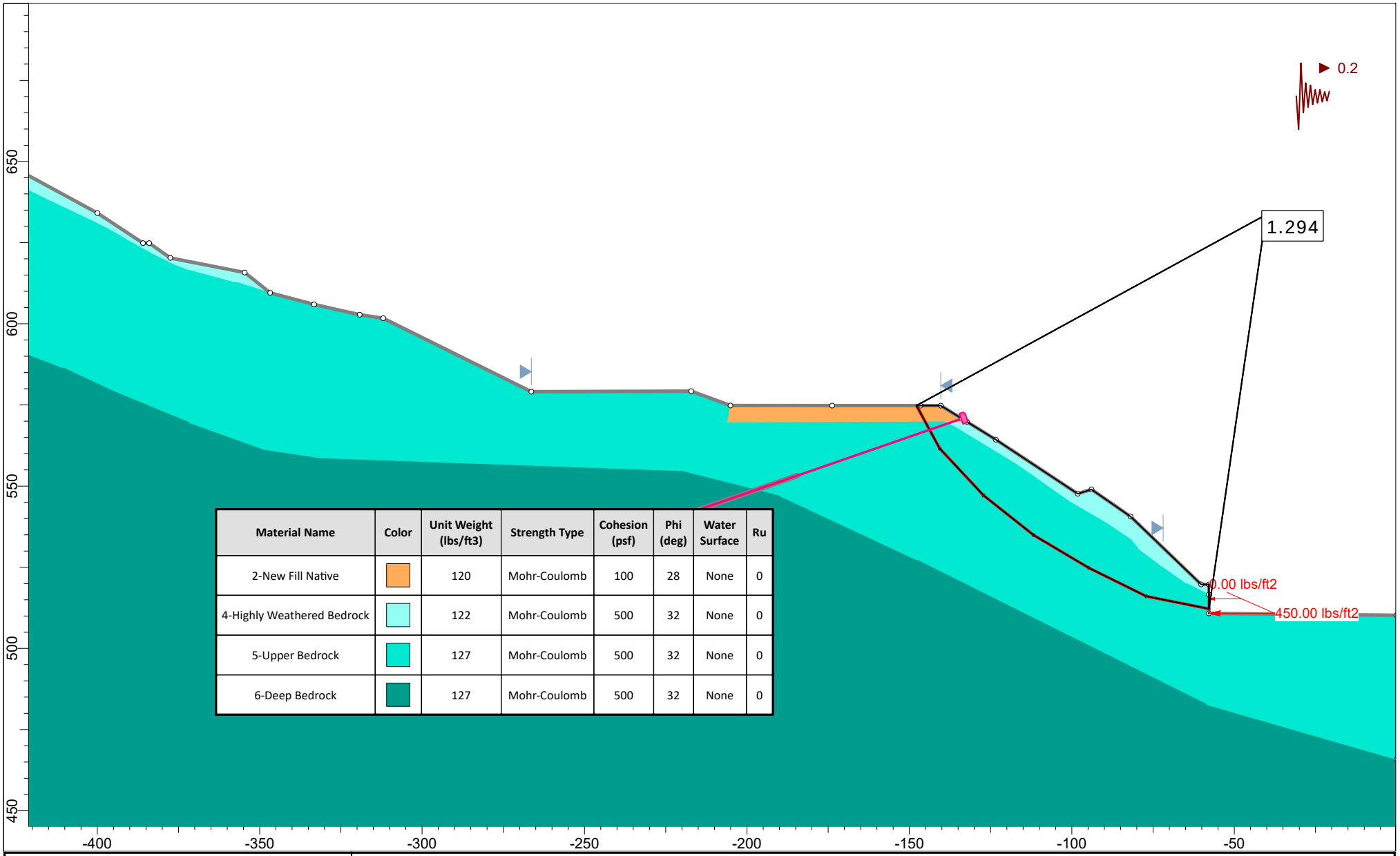
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	250	22	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	50	29	None	0
5-Upper Bedrock		127	Mohr-Coulomb	300	31	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section P-P', Daylight cut with 1 anchor		
Drawn By	SD	*Scale* 1:456	*Company* AGS
Date	B2 Design 12-04-2019		*File Name* pp-12042019.slim

Figure G-78



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
2-New Fill Native		120	Mohr-Coulomb	100	28	None	0
4-Highly Weathered Bedrock		122	Mohr-Coulomb	500	32	None	0
5-Upper Bedrock		127	Mohr-Coulomb	500	32	None	0
6-Deep Bedrock		127	Mohr-Coulomb	500	32	None	0

rocscience

SLIDEINTERPRET 8.029

Project	1688 Garvey Avenue		
Analysis Description	Section P-P', Daylight cut with 1 anchor, Seismic		
Drawn By	SD	Scale 1:490	Company AGS
Date	B2 Design 12-04-2019		File Name pp-12042019, seismic.slim

Figure G-79

APPENDIX H

GENERAL EARTHWORK SPECIFICATIONS AND GRADING DETAILS

GENERAL EARTHWORK SPECIFICATIONS

I. General

A. General procedures and requirements for earthwork and grading are presented herein. The earthwork and grading recommendations provided in the geotechnical report are considered part of these specifications, and where the general specifications provided herein conflict with those provided in the geotechnical report, the recommendations in the geotechnical report shall govern. Recommendations provided herein and in the geotechnical report may need to be modified depending on the conditions encountered during grading.

B. The contractor is responsible for the satisfactory completion of all earthwork in accordance with the project plans, specifications, applicable building codes, and local governing agency requirements. Where these requirements conflict, the stricter requirements shall govern.

C. It is the contractor's responsibility to read and understand the guidelines presented herein and in the geotechnical report as well as the project plans and specifications. Information presented in the geotechnical report is subject to verification during grading. The information presented on the exploration logs depict conditions at the particular time of excavation and at the location of the excavation. Subsurface conditions present at other locations may differ, and the passage of time may result in different subsurface conditions being encountered at the locations of the exploratory excavations. The contractor shall perform an independent investigation and evaluate the nature of the surface and subsurface conditions to be encountered and the procedures and equipment to be used in performing his work.

D. The contractor shall have the responsibility to provide adequate equipment and procedures to accomplish the earthwork in accordance with applicable requirements. When the quality of work is less than that required, the Geotechnical Consultant may reject the work and may recommend that the operations be suspended until the conditions are corrected.

E. Prior to the start of grading, a qualified Geotechnical Consultant should be employed to observe grading procedures and provide testing of the fills for conformance with the project specifications, approved grading plan, and guidelines presented herein. All clearing and grubbing, remedial removals, clean-outs, removal bottoms, keyways, and subdrain installations should be observed and documented by the Geotechnical Consultant prior to placing fill. It is the contractor's responsibility to apprise the Geotechnical Consultant of their schedules and notify the Geotechnical Consultant when those areas are ready for observation.

F. The contractor is responsible for providing a safe environment for the Geotechnical Consultant to observe grading and conduct tests.

II. Site Preparation

A. Clearing and Grubbing: Excessive vegetation and other deleterious material shall be sufficiently removed as required by the Geotechnical Consultant, and such materials shall be

properly disposed of offsite in a method acceptable to the owner and governing agencies. Where applicable, the contractor may obtain permission from the Geotechnical Consultant, owner, and governing agencies to dispose of vegetation and other deleterious materials in designated areas onsite.

B. Unsuitable Soils Removals: Earth materials that are deemed unsuitable for the support of fill shall be removed as necessary to the satisfaction of the Geotechnical Consultant.

C. Any underground structures such as cesspoles, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines, other utilities, or other structures located within the limits of grading shall be removed and/or abandoned in accordance with the requirements of the governing agency and to the satisfaction of the Geotechnical Consultant. Environmental evaluation of existing conditions is not the responsibility of the Geotechnical Consultant.

D. Preparation of Areas to Receive Fill: After removals are completed, the exposed surfaces shall be processed or scarified to a depth of approximately 8 inches, watered or dried, as needed, to achieve a generally uniform moisture content that is at or near optimum moisture content. The scarified materials shall then be compacted to the project requirements and tested as specified.

E. All areas receiving fill shall be observed and approved by the Geotechnical Consultant prior to the placement of fill. A licensed surveyor shall provide survey control for determining elevations of processed areas and keyways.

III. Placement of Fill

A. Suitability of fill materials: Any materials, derived onsite or imported, may be utilized as fill provided that the materials have been determined to be suitable by the Geotechnical Consultant. Such materials shall be essentially free of organic matter and other deleterious materials, and be of a gradation, expansion potential, and/or strength that is acceptable to the Geotechnical Consultant. Fill materials shall be tested in a laboratory approved by the Geotechnical Consultant, and import materials shall be tested and approved prior to being imported.

B. Generally, different fill materials shall be thoroughly mixed to provide a relatively uniform blend of materials and prevent abrupt changes in material type. Fill materials derived from benching should be dispersed throughout the fill area instead of placing the materials within only an equipment-width from the cut/fill contact.

C. Oversize Materials: Rocks greater than 12 inches in largest dimension shall be disposed of offsite or be placed in accordance with the recommendations by the Geotechnical Consultant in the areas that are designated as suitable for oversize rock placement. Rocks that are smaller than 8 inches in largest dimension may be utilized in the fill provided that they are not nested and are their quantity and distribution are acceptable to the Geotechnical Consultant and do not inhibit the ability to properly compact fill materials.

D. The fill materials shall be placed in thin, horizontal layers such that, when compacted, shall not exceed 6 inches. Each layer shall be spread evenly and shall be thoroughly mixed to obtain a near uniform moisture content and uniform blend of materials.

E. Moisture Content: Fill materials shall be placed at or above the optimum moisture content or as recommended by the geotechnical report. Where the moisture content of the engineered fill is less than recommended, water shall be added, and the fill materials shall be blended so that a near uniform moisture content is achieved. If the moisture content is above the limits specified by the Geotechnical Consultant, the fill materials shall be aerated by discing, blading, or other methods until the moisture content is acceptable.

F. Each layer of fill shall be compacted to the project standards in accordance to the project specifications and recommendations of the Geotechnical Consultant. Unless otherwise specified by the Geotechnical Consultant, the fill shall be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM Test Method: D1557.

G. Benching: Where placing fill on a slope exceeding a ratio of 5 to 1 (horizontal to vertical), the ground should be keyed or benched. The keyways and benches shall extend through all unsuitable materials into suitable materials such as firm materials or sound bedrock or as recommended by the Geotechnical Consultant. The minimum keyway width shall be 15 feet and extend into suitable materials, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. The minimum keyway width for fill over cut slopes is also 15 feet, or as recommended by the geotechnical report and approved by the Geotechnical Consultant. As a general rule, unless otherwise recommended by the Geotechnical Consultant, the minimum width of the keyway shall be equal to ½ the height of the fill slope.

H. Slope Face: The specified minimum relative compaction shall be maintained out to the finish face of fill and stabilization fill slopes. Generally, this may be achieved by overbuilding the slope and cutting back to the compacted core. The actual amount of overbuilding may vary as field conditions dictate. Alternately, this may be achieved by backrolling the slope face with suitable equipment or other methods that produce the designated result. Loose soil should not be allowed to build up on the slope face. If present, loose soils shall be trimmed to expose the compacted slope face.

I. Slope Ratio: Unless otherwise approved by the Geotechnical Consultant and governing agencies, permanent fill slopes shall be designed and constructed no steeper than 2 to 1 (horizontal to vertical).

J. Natural Ground and Cut Areas: Design grades that are in natural ground or in cuts should be evaluated by the Geotechnical Consultant to determine whether scarification and processing of the ground and/or overexcavation is needed.

K. Fill materials shall not be placed, spread, or compacted during unfavorable weather conditions. When grading is interrupted by rain, filing operations shall not resume until the Geotechnical Consultant approves the moisture and density of the previously placed compacted fill.

IV. Cut Slopes

A. The Geotechnical Consultant shall observe all cut slopes, including fill over cut slopes, and shall be notified by the contractor when cut slopes are started.

B. If adverse or potentially adverse conditions are encountered during grading, the Geotechnical Consultant shall investigate, evaluate, and make recommendations to mitigate the adverse conditions.

C. Unless otherwise stated in the geotechnical report, cut slopes shall not be excavated higher or steeper than the requirements of the local governing agencies. Short-term stability of the cut slopes and other excavations is the contractor's responsibility.

V. Drainage

A. Backdrains and Subdrains: Backdrains and subdrains shall be provided in fill as recommended by the Geotechnical Consultant and shall be constructed in accordance with the governing agency and/or recommendations of the Geotechnical Consultant. The location of subdrains, especially outlets, shall be surveyed and recorded by the Civil Engineer.

B. Top-of-slope Drainage: Positive drainage shall be established away from the top of slope. Site drainage shall not be permitted to flow over the tops of slopes.

C. Drainage terraces shall be constructed in compliance with the governing agency requirements and/or in accordance with the recommendations of the Civil Engineer.

D. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the prevailing drainage.

VI. Erosion Control

A. All finish cut and fill slopes shall be protected from erosion and/or planted in accordance with the project specifications and/or landscape architect's recommendations. Such measures to protect the slope face shall be undertaken as soon as practical after completion of grading.

B. During construction, the contractor shall maintain proper drainage and prevent the ponding of water. The contractor shall take remedial measures to prevent the erosion of graded areas until permanent drainage and erosion control measures have been installed.

VII. Trench Excavation and Backfill

A. Safety: The contractor shall follow all OSHA requirements for safety of trench excavations. Knowing and following these requirements is the contractor's responsibility. All trench excavations or open cuts in excess of 5 feet in depth shall be shored or laid back. Trench excavations and open cuts exposing adverse geologic conditions may require further evaluation

by the Geotechnical Consultant. If a contractor fails to provide safe access for compaction testing, backfill not tested due to safety concerns may be subject to removal.

B. Bedding: Bedding materials shall be non-expansive and have a Sand Equivalent greater than 30. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting.

C. Backfill: Jetting of backfill materials to achieve compaction is generally not acceptable. Where permitted by the Geotechnical Consultant, the bedding materials can be densified by jetting provided the backfill materials are granular, free-draining and have a Sand Equivalent greater than 30.

VIII. Geotechnical Observation and Testing During Grading

A. Compaction Testing: Fill will be tested and evaluated by the Geotechnical Consultant for evaluation of general compliance with the recommended compaction and moisture conditions. The tests shall be taken in the compacted soils beneath the surface if the surficial materials are disturbed. The contractor shall assist the Geotechnical Consultant by excavating suitable test pits for testing of compacted fill.

B. Where tests indicate that the density of a layer of fill is less than required, or the moisture content is not within specifications, the Geotechnical Consultant shall notify the contractor of the unsatisfactory conditions of the fill. The portions of the fill that are not within specifications shall be reworked until the required density and/or moisture content has been attained. No additional fill shall be placed until the last lift of fill is tested and found to meet the project specifications and approved by the Geotechnical Consultant.

C. If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as adverse weather, excessive rock or deleterious materials being placed in the fill, insufficient equipment, excessive rate of fill placement, results in a quality of work that is unacceptable, the consultant shall notify the contractor, and the contractor shall rectify the conditions, and if necessary, stop work until conditions are satisfactory.

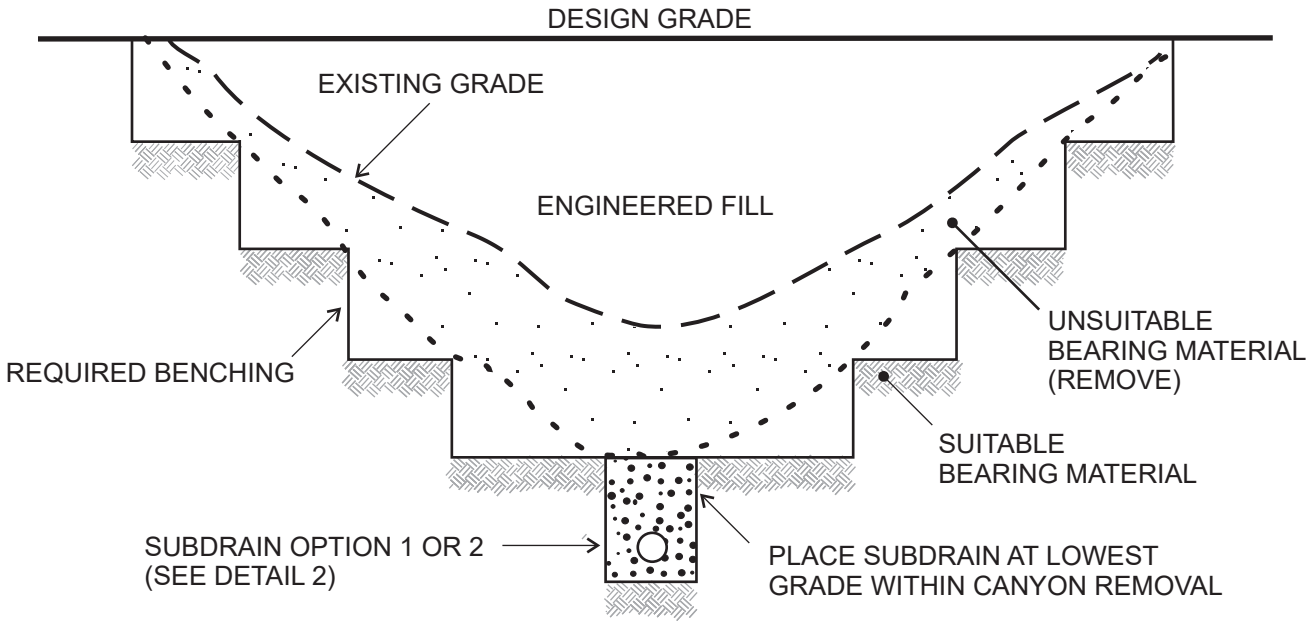
D. Frequency of Compaction Testing: The location and frequency of tests shall be at the Geotechnical Consultant's discretion. Generally, compaction tests shall be taken at intervals approximately two feet in fill height.

E. Compaction Test Locations: The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of the compaction test locations. The contractor shall coordinate with the surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations. Alternately, the test locations can be surveyed and the results provided to the Geotechnical Consultant.

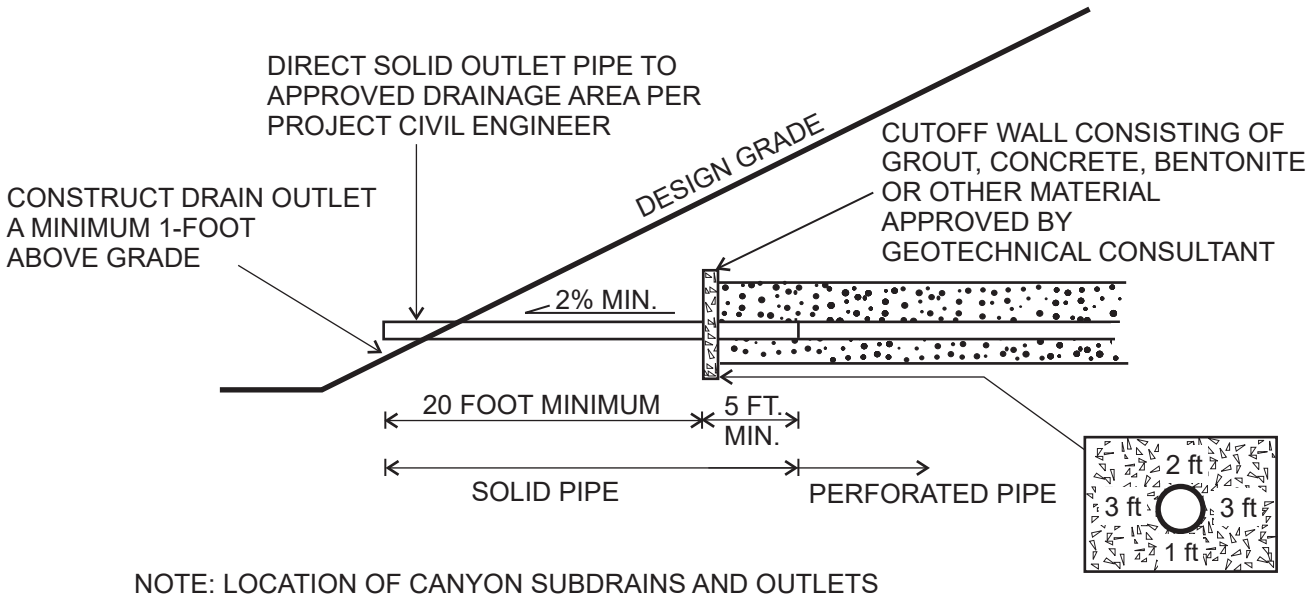
F. Areas of fill that have not been observed or tested by the Geotechnical Consultant may have to be removed and recompacted at the contractor's expense. The depth and extent of removals will be determined by the Geotechnical Consultant.

G. Observation and testing by the Geotechnical Consultant shall be conducted during grading in order for the Geotechnical Consultant to state that, in his opinion, grading has been completed in accordance with the approved geotechnical report and project specifications.

H. Reporting of Test Results: After completion of grading operations, the Geotechnical Consultant shall submit reports documenting their observations during construction and test results. These reports may be subject to review by the local governing agencies.



CANYON SUBDRAIN PROFILE



NOTE: LOCATION OF CANYON SUBDRAINS AND OUTLETS SHOULD BE DOCUMENTED BY PROJECT CIVIL ENGINEER. OUTLETS MUST BE KEPT UNOBSTRUCTED AT ALL TIMES.

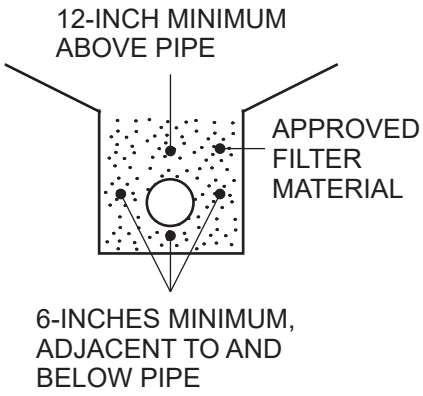
CUTOFF WALL DIMENSIONS

CANYON SUBDRAIN TERMINUS

VER 1.0

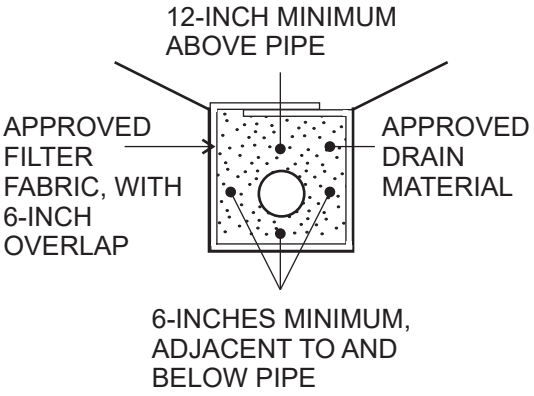
NTS

AGS ADVANCED GEOTECHNICAL SOLUTIONS	CANYON SUBDRAIN	DETAIL 1



OPTION 1

FILTER MATERIAL: MINIMUM VOLUME OF 9 CUBIC FEET PER LINEAL FOOT OF CALTRANS CLASS 2 PERMEABLE MATERIAL



OPTION 2

DRAIN MATERIAL: MINIMUM VOLUME OF 9 CUBIC FEET PER LINEAL FOOT OF 3/4-INCH MAX ROCK OR APPROVED EQUIVALENT SUBSTITUTE

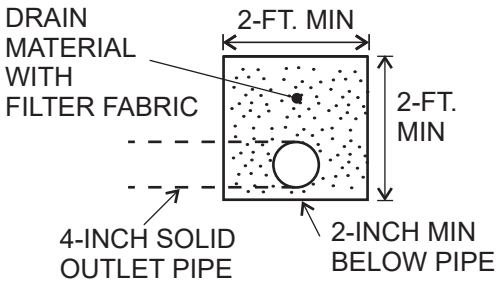
FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT SUBSTITUTE

PIPE: 6 OR 8-INCH ABS OR PVC PIPE OR APPROVED SUBSTITUTE WITH A MINIMUM OF 8 PERFORATIONS (1/4-INCH DIAMETER) PER LINEAL FOOT IN BOTTOM HALF OF PIPE

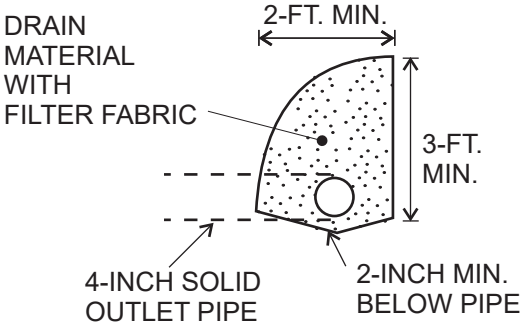
(ASTM D2751, SDR-35 OR ASTM D3034, SDR-35
ASTM D1527, SCHD. 40 OR ASTM D1785, SCHD. 40)

NOTE: CONTINUOUS RUN IN EXCESS OF 5OO FEET REQUIRES 8-INCH DIAMETER PIPE (ASTM D3034, SDR-35, OR ASTM D1785, SCHD. 40)

CANYON SUBDRAIN



OPTION 1



OPTION 2

DRAIN MATERIAL: GRAVEL TRENCH TO BE FILLED WITH 3/4-INCH MAX ROCK OR APPROVED EQUIVALENT SUBSTITUTE

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR EQUIVALENT SUBSTITUTE WITH A MINIMUM 6-INCH OVERLAP

PIPE: 4-INCH ABS OR PVC PIPE OR APPROVED EQUIVALENT SUBSTITUTE WITH A MINIMUM OF 8 PERFORATIONS (1/4-INCH DIAMETER) PER LINEAL FOOT IN BOTTOM HALF OF PIPE

(ASTM D2751, SDR-35 OR ASTM D3034, SDR-35
ASTM D1527, SCHD. 40 OR ASTM D1785, SCHD. 40)

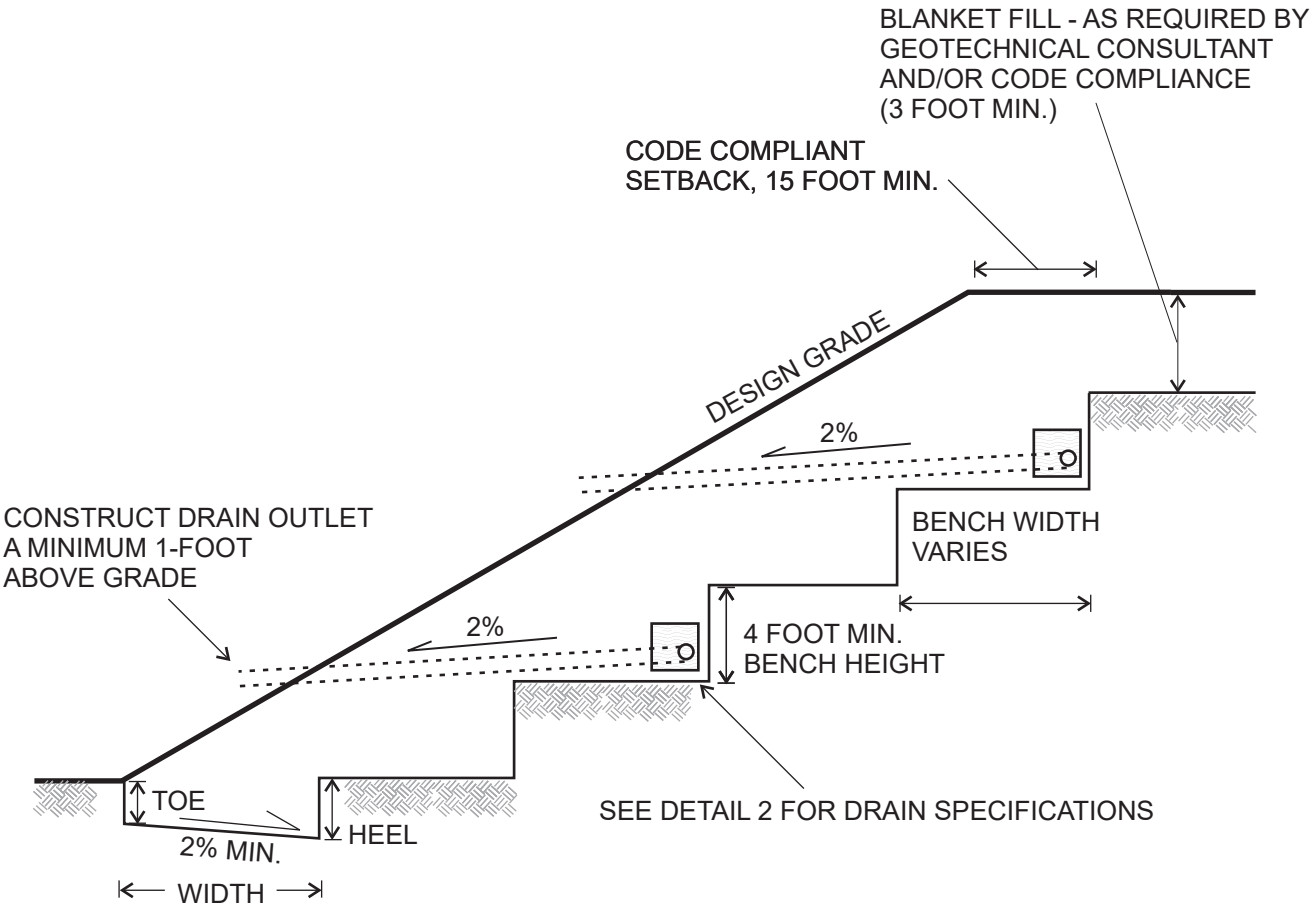
BUTTRESS/STABILIZATION DRAIN

VER 1.0 NTS

AGS
ADVANCED GEOTECHNICAL SOLUTIONS

DRAIN SPECIFICATIONS

DETAIL 2



CODE COMPLIANT KEYWAY WITH MINIMUM DIMENSIONS:

TOE 2 FOOT MIN.
HEEL 3 FOOT MIN.
WIDTH 15 FOOT MIN.

NOTES:

1. DRAIN OUTLETS TO BE PROVIDED EVERY 100 FEET CONNECT TO PERFORATED DRAIN PIPE BY “L” OR “T” AT A MINIMUM 2% GRADIENT.
2. THE NECESSITY AND LOCATION OF ADDITIONAL DRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL CONSULTANT. UPPER STAGE OUTLETS SHOULD BE EMPTIED ONTO CONCRETE TERRACE DRAINS.
3. DRAIN PIPE TO EXTEND FULL LENGTH OF STABILIZATION/BUTTRESS WITH A MINIMUM GRADIENT OF 2% TO SOLID OUTLET PIPES.
4. LOCATION OF DRAINS AND OUTLETS SHOULD BE DOCUMENTED BY PROJECT CIVIL ENGINEER. OUTLETS MUST BE KEPT UNOBSTRUCTED AT ALL TIMES.

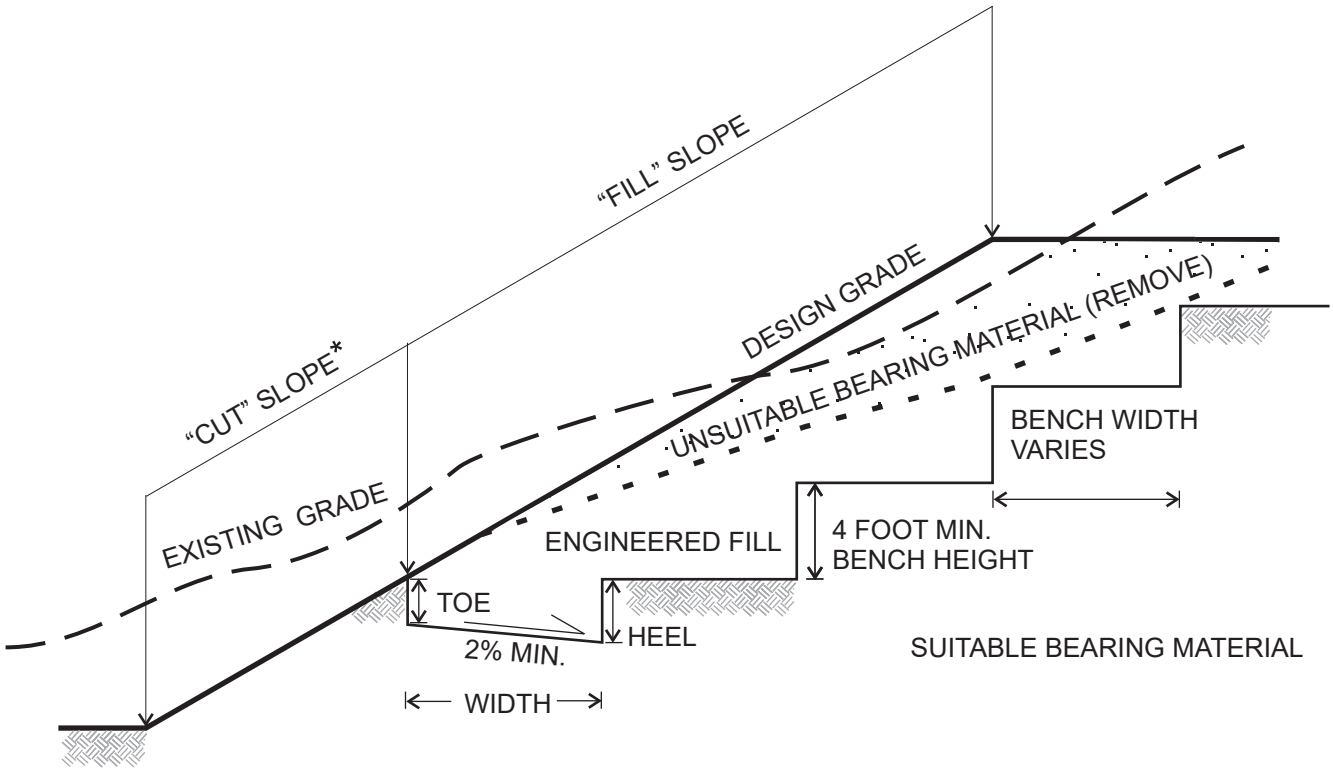
VER 1.0 NTS

AGS
ADVANCED GEOTECHNICAL SOLUTIONS

STABILIZATION/BUTTRESS FILL

DETAIL 3

* THE “CUT” PORTION OF THE SLOPE SHALL BE EXCAVATED AND EVALUATED BY THE GEOTECHNICAL CONSULTANT PRIOR TO CONSTRUCTING THE “FILL” PORTION



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE: 2 FOOT MIN.
HEEL: 3 FOOT MIN.
WIDTH: 15 FOOT MIN.

NOTES:

1. THE NECESSITY AND LOCATION OF DRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL CONSULTANT

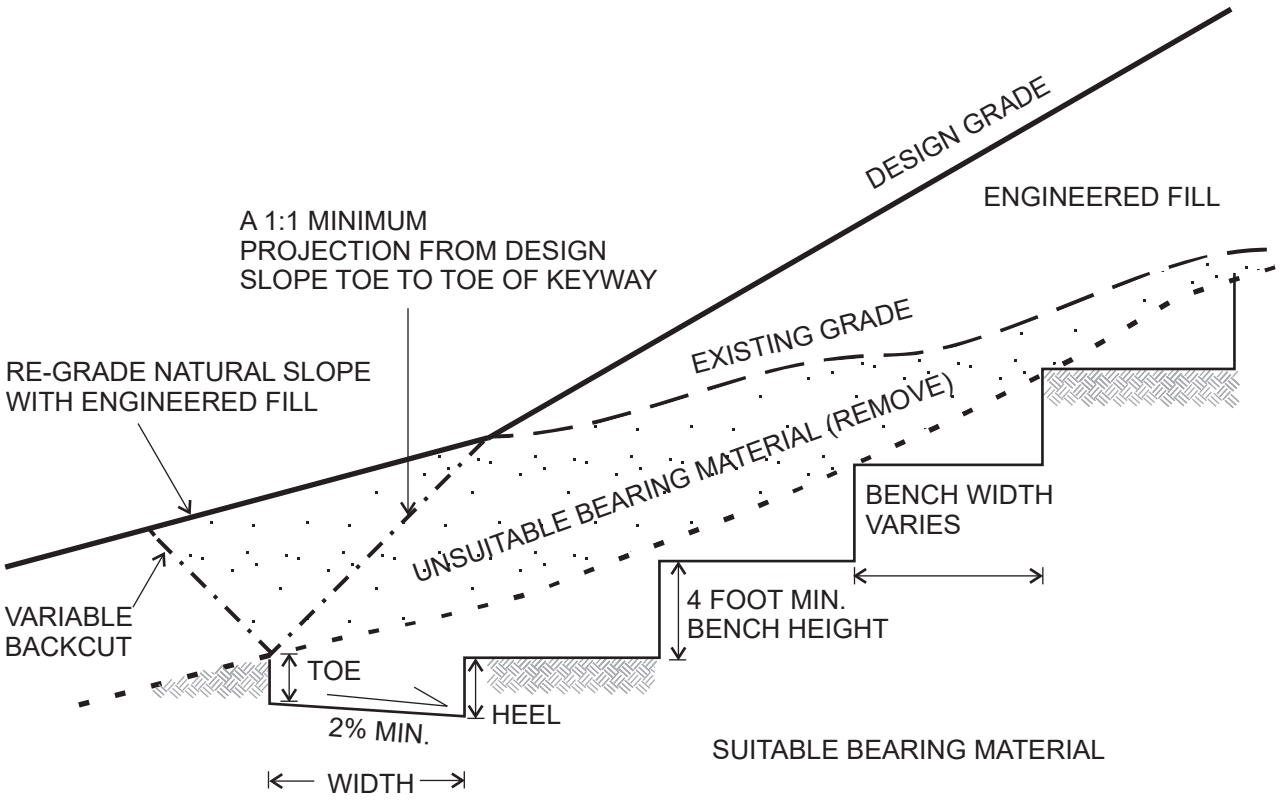
2. SEE DETAIL 2 FOR DRAIN SPECIFICATIONS

VER 1.0 NTS

AGS
ADVANCED GEOTECHNICAL SOLUTIONS

FILL OVER CUT SLOPE

DETAIL 4



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE: 2 FOOT MIN.
HEEL: 3 FOOT MIN.
WIDTH: 15 FOOT MIN.

NOTES:

1. WHEN THE NATURAL SLOPE APPROACHES OR EXCEEDS THE DESIGN GRADE SLOPE RATIO, SPECIAL RECOMMENDATIONS ARE NECESSARY BY THE GEOTECHNICAL CONSULTANT

2. THE GEOTECHNICAL CONSULTANT WILL DETERMINE THE REQUIREMENT FOR AND LOCATION OF SUBSURFACE DRAINAGE SYSTEMS.

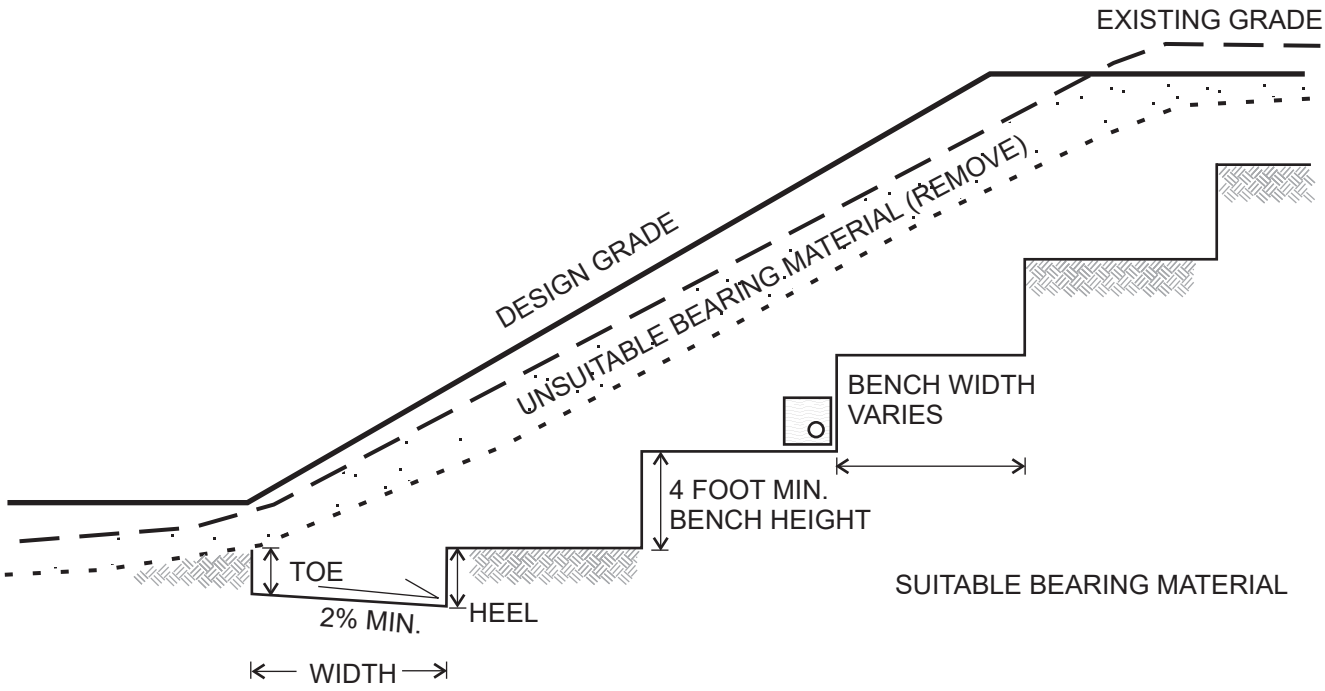
3. MAINTAIN MINIMUM 15 FOOT HORIZONTAL WIDTH FROM FACE OF SLOPE TO BENCH/BACKCUT

VER 1.0 NTS

AGS
ADVANCED GEOTECHNICAL SOLUTIONS

FILL OVER NATURAL SLOPE

DETAIL 5



CODE COMPLIANT KEYWAY
WITH MINIMUM DIMENSIONS:

TOE: 2 FOOT MIN.
HEEL: 3 FOOT MIN.
WIDTH: 15 FOOT MIN.

NOTES:

1. MAINTAIN MINIMUM 15 FOOT HORIZONTAL WIDTH FROM FACE OF SLOPE TO BENCH/BACKCUT

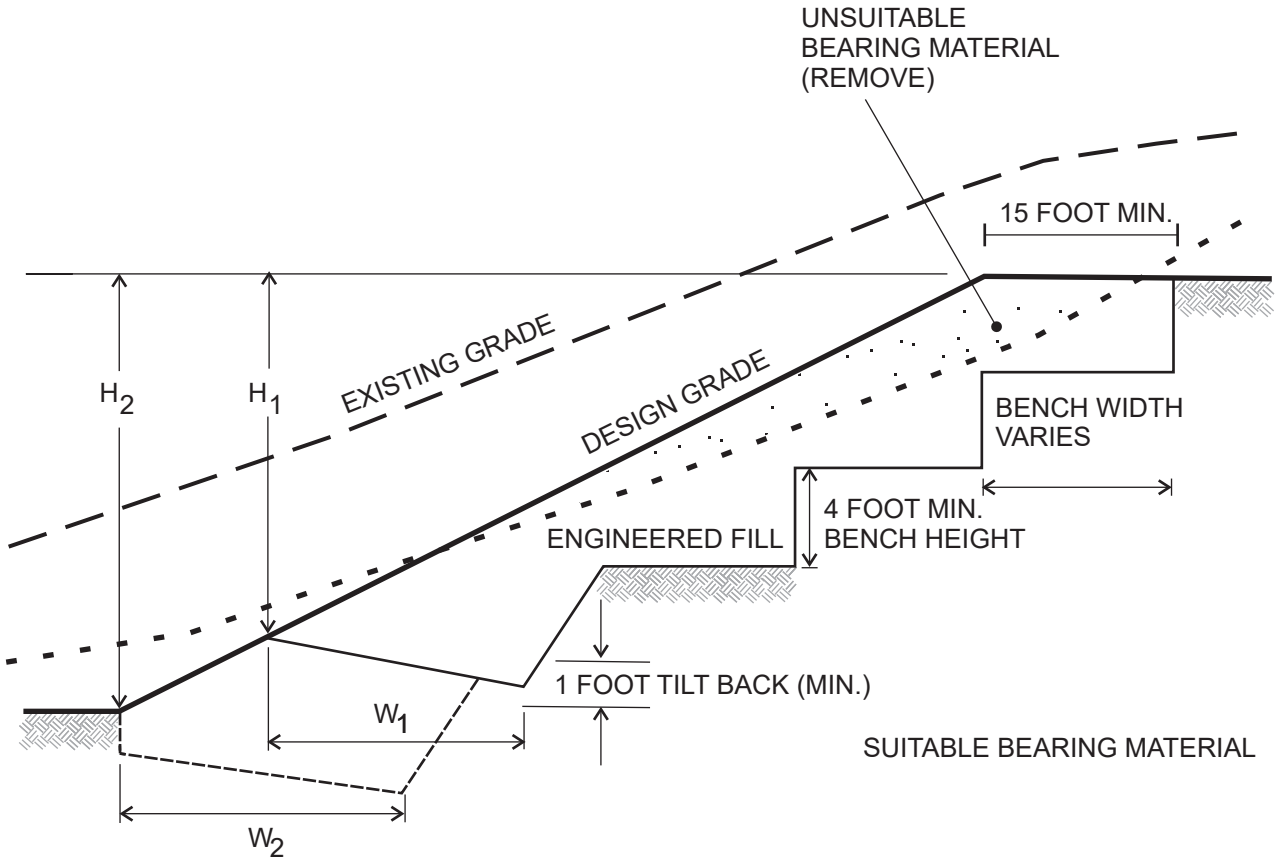
2. SEE DETAIL 2 FOR DRAIN SPECIFICATIONS

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SKIN FILL CONDITION

DETAIL 6



NOTES:

1. IF RECOMMENDED BY THE GEOTECHNICAL CONSULTANT, THE REMAINING CUT PORTION OF THE SLOPE MAY REQUIRE REMOVAL AND REPLACEMENT WITH AN ENGINEERED FILL

2. "W" SHALL BE EQUIPMENT WIDTH (15 FEET) FOR SLOPE HEIGHT LESS THAN 25 FEET. FOR SLOPES GREATER THAN 25 FEET, "W" SHALL BE DETERMINED BY THE GEOTECHNICAL CONSULTANT. AT NO TIME SHALL "W" BE LESS THAN H/2

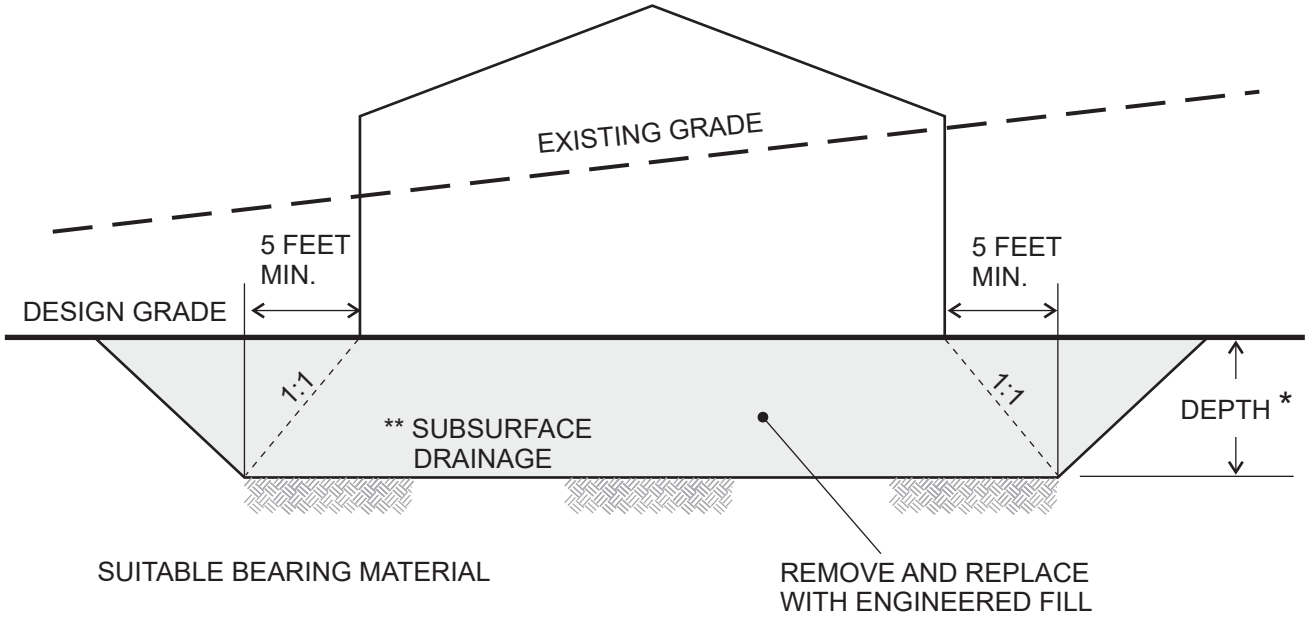
3. DRAINS WILL BE REQUIRED (SEE DETAIL 2)

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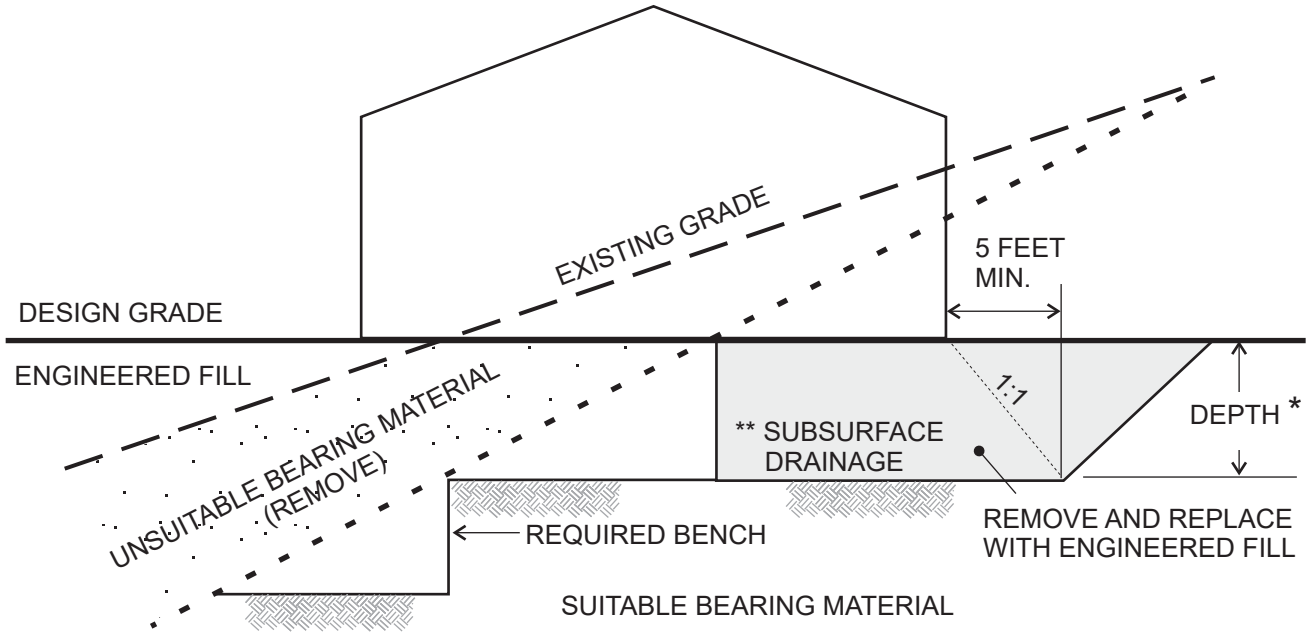
AGS
ADVANCED GEOTECHNICAL SOLUTIONS

PARTIAL CUT SLOPE STABILIZATION

DETAIL 7



CUT LOT OVEREXCAVATION



CUT-FILL LOT OVEREXCAVATION

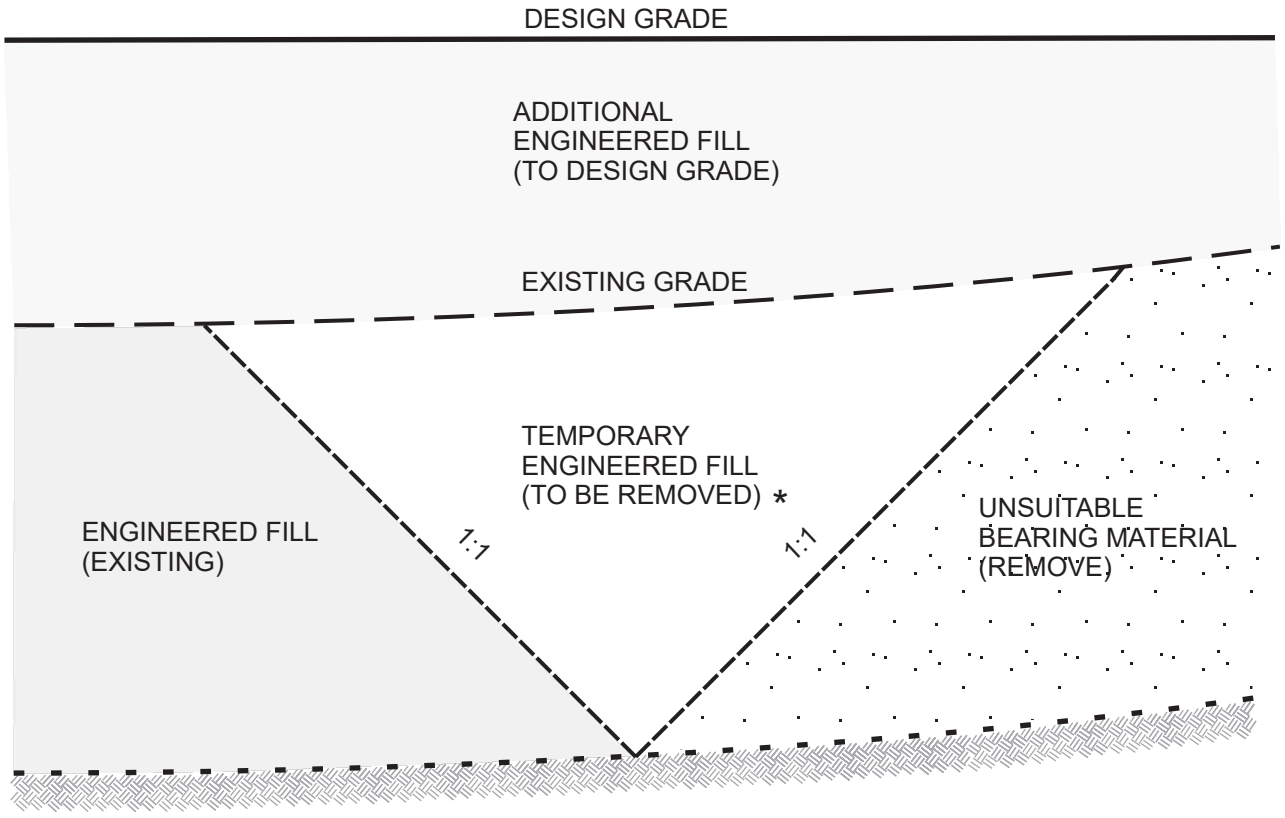
NOTES:

* SEE REPORT FOR RECOMMENDED DEPTHS, DEEPER OVEREXCAVATION MAY BE REQUIRED BY THE GEOTECHNICAL CONSULTANT BASED ON EXPOSED FIELD CONDITIONS

** CONSTRUCT EXCAVATION TO PROVIDE FOR POSITIVE DRAINAGE TOWARDS STREETS, DEEPER FILL AREAS OR APPROVED DRAINAGE DEVICES BASED ON FIELD CONDITIONS

VER 1.0 NTS

AGS ADVANCED GEOTECHNICAL SOLUTIONS	CUT & CUT-FILL LOT OVEREXCAVATION	DETAIL 8



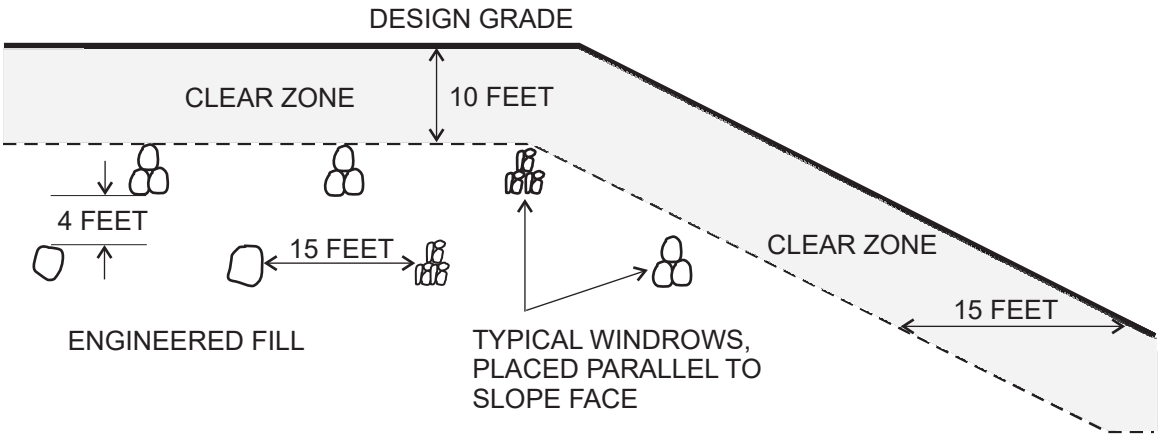
* REMOVE BEFORE PLACING ADDITIONAL ENGINEERED FILL

TYPICAL UP-CANYON PROFILE

VER 1.0

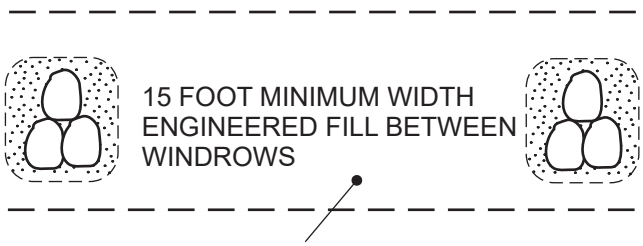
NTS

AGS ADVANCED GEOTECHNICAL SOLUTIONS	REMOVAL ADJACENT TO EXISTING FILL	DETAIL 9



CLEAR ZONE DIMENSIONS FOR REFERENCE ONLY, ACTUAL DEPTH, WIDTH, WINDROW LENGTH, ETC. TO BE BASED ON ELEVATIONS OF FOUNDATIONS, UTILITIES OR OTHER STRUCTURES PER THE GEOTECHNICAL CONSULTANT OR GOVERNING AGENCY APPROVAL

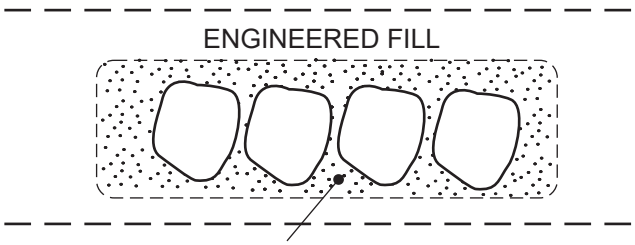
OVERSIZED MATERIAL DISPOSAL PROFILE



HORIZONTALLY PLACED ENGINEERED FILL, FREE OF OVERSIZED MATERIALS AND COMPACTED TO MINIMUM PROJECT STANDARDS

COMPACT ENGINEERED FILL ABOVE OVERSIZED MATERIALS TO FACILITATE "TRENCH" CONDITION PRIOR TO FLOODING GRANULAR MATERIALS

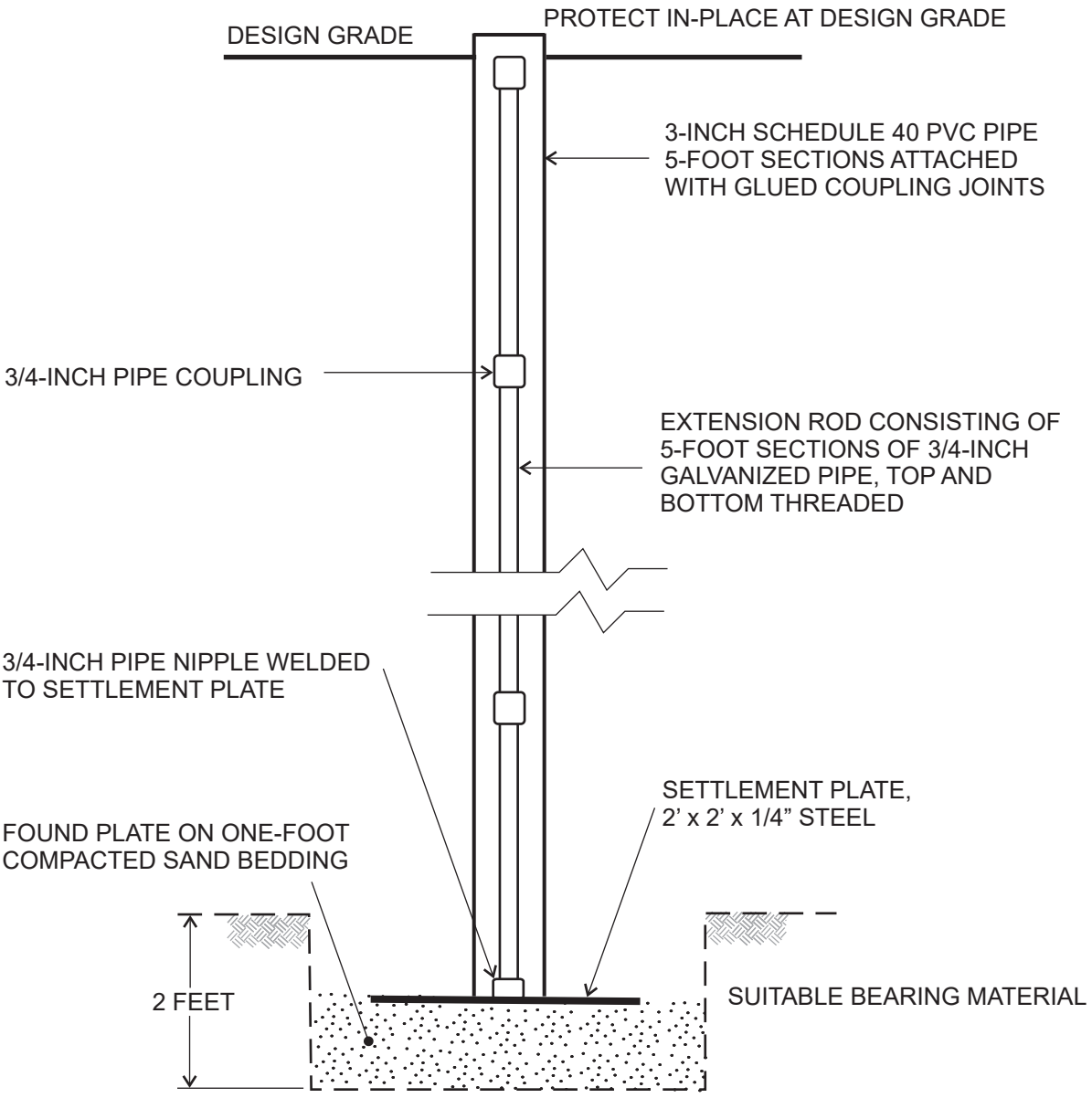
WINDROW CROSS-SECTION



WINDROW PROFILE

VER 1.0

NTS



NOTES:

1. SETTLEMENT PLATE LOCATIONS SHALL BE SUFFICIENTLY IDENTIFIED BY THE CONTRACTOR AND BE READILY VISIBLE TO EQUIPMENT OPERATORS.

2. CONTRACTOR SHALL MAINTAIN ADEQUATE HORIZONTAL CLEARANCE FOR EQUIPMENT OPERATION AND SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO SETTLEMENT PLATE DURING SITE CONSTRUCTION.

3. A MINIMUM 5-FOOT ZONE ADJACENT TO SETTLEMENT PLATE/EXTENSION RODS SHALL BE ESTABLISHED FOR HAND-HELD MECHANICAL COMPACTION OF ENGINEERED FILL. ENGINEERED FILL SHALL BE COMPACTED TO MINIMUM PROJECT STANDARD.

4. ELEVATIONS OF SETTLEMENT PLATE AND ALL EXTENSION ROD PLACEMENT SHALL BE DOCUMENTED BY PROJECT CIVIL ENGINEER OR SURVEYOR.

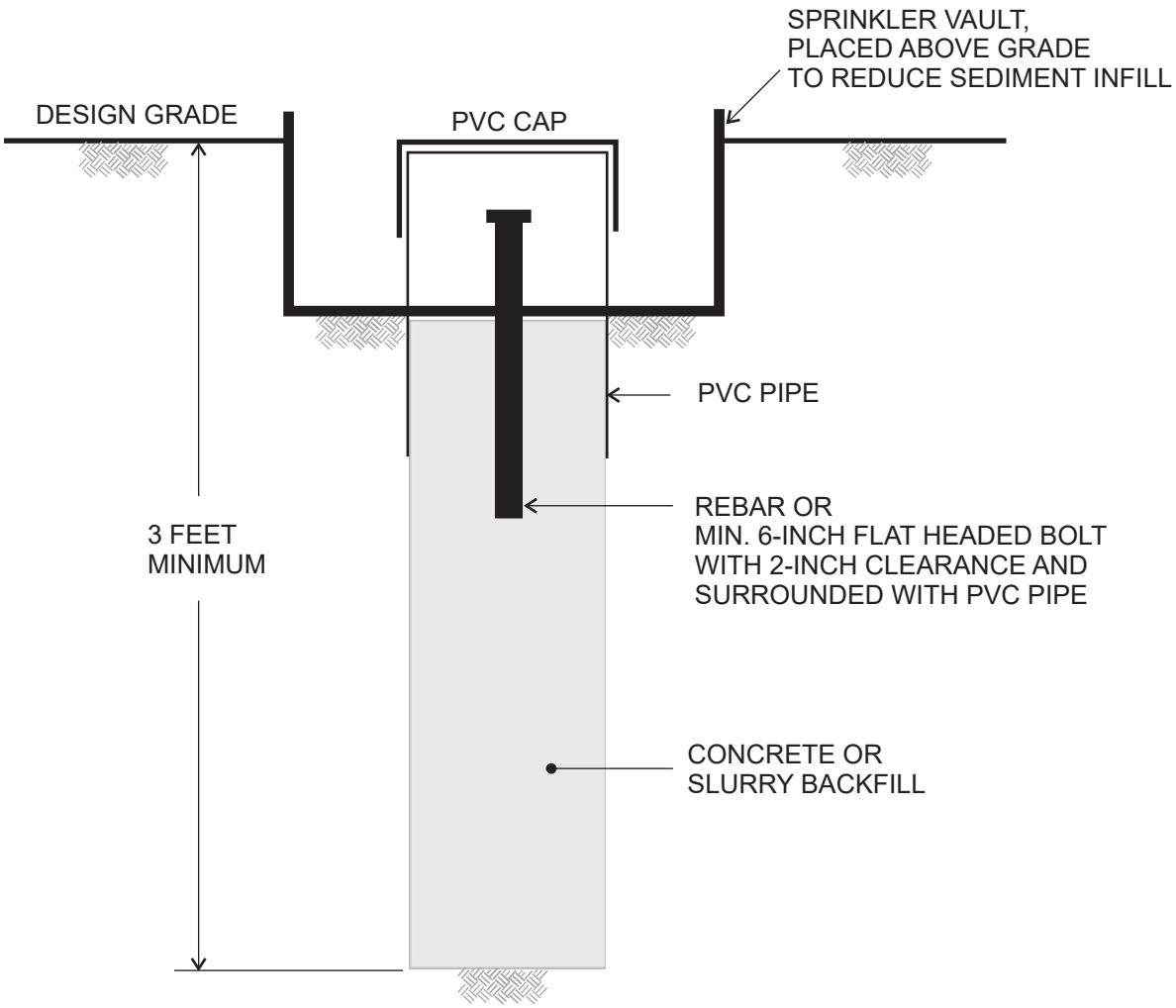
VER 1.0

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ADVANCED GEOTECHNICAL SOLUTIONS

SETTLEMENT PLATE

DETAIL 11



NOTES:

1. SETTLEMENT MONUMENT LOCATIONS SHALL BE SUFFICIENTLY IDENTIFIED AND BE READILY VISIBLE TO EQUIPMENT OPERATORS.

2. ELEVATIONS OF SURFACE MONUMENTS SHALL BE DOCUMENTED BY PROJECT CIVIL ENGINEER OR SURVEYOR.

APPENDIX I

HOMEOWNERS MAINTENANCE GUIDELINES

HOMEOWNERS MAINTENANCE GUIDELINES

Homeowners are accustomed to maintaining their homes. They expect to paint their houses periodically, replace wiring, clean out clogged plumbing, and repair roofs. Maintenance of the home site, particularly on hillsides, should be considered on the same basis, or even on a more serious basis because neglect can result in serious consequences. In most cases, lot and site maintenance can be taken care of along with landscaping, and can be carried out more economically than repair after neglect.

Most slope and hillside lot problems are associated with water. Uncontrolled water from a broken pipe, cesspool, or wet weather causes most damage. Wet weather is the largest cause of slope problems, particularly in California where rain is intermittent, but may be torrential. Therefore, drainage and erosion control are the most important aspects of home site stability; these provisions must not be altered without competent professional advice. Further, maintenance must be carried out to assure their continued operation.

As geotechnical engineers concerned with the problems of building sites in hillside developments, we offer the following list of recommended home protection measures as a guide to homeowners.

Expansive Soils

Some of the earth materials on site have been identified as being expansive in nature. As such, these materials are susceptible to volume changes with variations in their moisture content. These soils will swell upon the introduction of water and shrink upon drying. The forces associated with these volume changes can have significant negative impacts (in the form of differential movement) on foundations, walkways, patios, and other lot improvements. In recognition of this, the project developer has constructed homes on these lots on post-tensioned or mat slabs with pier and grade beam foundation systems, intended to help reduce the potential adverse effects of these expansive materials on the residential structures within the project. Such foundation systems are not intended to offset the forces (and associated movement) related to expansive soil, but are intended to help soften their effects on the structures constructed thereon.

Homeowners purchasing property and living in an area containing expansive soils must assume a certain degree of responsibility for homeowner improvements as well as for maintaining conditions around their home. Provisions should be incorporated into the design and construction of homeowner improvements to account for the expansive nature of the onsite soils material. Lot maintenance and landscaping should also be conducted in consideration of the expansive soil characteristics. Of primary importance is minimizing the moisture variation below all lot improvements. Such design, construction and homeowner maintenance provisions should include:

- Employing contractors for homeowner improvements who design and build in recognition of local building code and site specific soils conditions.
- Establishing and maintaining positive drainage away from all foundations, walkways, driveways, patios, and other hardscape improvements.

- Avoiding the construction of planters adjacent to structural improvements. Alternatively, planter sides/bottoms can be sealed with an impermeable membrane and drained away from the improvements via subdrains into approved disposal areas.
- Sealing and maintaining construction/control joints within concrete slabs and walkways to reduce the potential for moisture infiltration into the subgrade soils.
- Utilizing landscaping schemes with vegetation that requires minimal watering. Alternatively, watering should be done in a uniform manner as equally as possible on all sides of the foundation, keeping the soil "moist" but not allowing the soil to become saturated.
- Maintaining positive drainage away from structures and providing roof gutters on all structures with downspouts installed to carry roof runoff directly into area drains or discharged well away from the structures.
- Avoiding the placement of trees closer to the proposed structures than a distance of one-half the mature height of the tree.
- Observation of the soil conditions around the perimeter of the structure during extremely hot/dry or unusually wet weather conditions so that modifications can be made in irrigation programs to maintain relatively constant moisture conditions.

Sulfates

On site soils were tested for the presence of soluble sulfates. Based on the results of that testing, the soluble sulfate exposure level was determined to be “negligible” (exposure class S0) when classified in accordance with the ACI 318-11. Concrete mixes should be designed based on Code standards.

Homeowners should be cautioned against the import and use of certain fertilizers, soil amendments, and/or other soils from offsite sources in the absence of specific information relating to their chemical composition. Some fertilizers have been known to leach sulfate compounds into soils otherwise containing “negligible” sulfate concentrations and increase the sulfate concentrations in near-surface soils to “moderate” or “severe” levels. In some cases, concrete improvements constructed in soils containing high levels of soluble sulfates may be affected by deterioration and loss of strength.

Water - Natural and Man Induced

Water in concert with the reaction of various natural and man-made elements, can cause detrimental effects to your structure and surrounding property. Rain water and flowing water erodes and saturates the ground and changes the engineering characteristics of the underlying earth materials upon saturation. Excessive irrigation in concert with a rainy period is commonly associated with shallow slope failures and deep seated landslides, saturation of near structure soils, local ponding of water, and transportation of water soluble substances that are deleterious to building materials including concrete, steel, wood, and stucco.

Water interacting with the near surface and subsurface soils can initiate several other potentially detrimental phenomena other than slope stability issues. These may include

expansion/contraction cycles, liquefaction potential increase, hydro-collapse of soils, ground surface settlement, earth material consolidation, and introduction of deleterious substances.

The homeowners should be made aware of the potential problems which may develop when drainage is altered through construction of retaining walls, swimming pools, paved walkways and patios. Ponded water, drainage over the slope face, leaking irrigation systems, over-watering or other conditions which could lead to ground saturation must be avoided.

- Before the rainy season arrives, check and clear roof drains, gutters and down spouts of all accumulated debris. Roof gutters are an important element in your arsenal against rain damage. If you do not have roof gutters and down spouts, you may elect to install them. Roofs, with their, wide, flat area can shed tremendous quantities of water. Without gutters or other adequate drainage, water falling from the eaves collects against foundation and basement walls.
- Make sure to clear surface and terrace drainage ditches, and check them frequently during the rainy season. This task is a community responsibility.
- Test all drainage ditches for functioning outlet drains. This should be tested with a hose and done before the rainy season. All blockages should be removed.
- Check all drains at top of slopes to be sure they are clear and that water will not overflow the slope itself, causing erosion.
- Keep subsurface drain openings (weep-holes) clear of debris and other material which could block them in a storm.
- Check for loose fill above and below your property if you live on a slope or terrace.
- Monitor hoses and sprinklers. During the rainy season, little, if any, irrigation is required. Oversaturation of the ground is unnecessary, increases watering costs, and can cause subsurface drainage.
- Watch for water backup of drains inside the house and toilets during the rainy season, as this may indicate drain or sewer blockage.
- Never block terrace drains and brow ditches on slopes or at the tops of cut or fill slopes. These are designed to carry away runoff to a place where it can be safely distributed.
- Maintain the ground surface upslope of lined ditches to ensure that surface water is collected in the ditch and is not permitted to be trapped behind or under the lining.
- Do not permit water to collect or pond on your home site. Water gathering here will tend to either seep into the ground (loosening or expanding fill or natural ground), or will overflow into the slope and begin erosion. Once erosion is started, it is difficult to control and severe damage may result rather quickly.
- Never connect roof drains, gutters, or down spouts to subsurface drains. Rather, arrange them so that water either flows off your property in a specially designed pipe or flows out into a paved driveway or street. The water then may be dissipated over a wide surface or, preferably, may be carried away in a paved gutter or storm drain. Subdrains are constructed to take care of ordinary subsurface water and cannot handle the overload from roofs during a heavy rain.

- Never permit water to spill over slopes, even where this may seem to be a good way to prevent ponding. This tends to cause erosion and, in the case of fill slopes, can eat away carefully designed and constructed sites.
- Do not cast loose soil or debris over slopes. Loose soil soaks up water more readily than compacted fill. It is not compacted to the same strength as the slope itself and will tend to slide when laden with water; this may even affect the soil beneath the loose soil. The sliding may clog terrace drains below or may cause additional damage in weakening the slope. If you live below a slope, try to be sure that loose fill is not dumped above your property.
- Never discharge water into subsurface blanket drains close to slopes. Trench drains are sometimes used to get rid of excess water when other means of disposing of water are not readily available. Overloading these drains saturates the ground and, if located close to slopes, may cause slope failure in their vicinity.
- Do not discharge surface water into septic tanks or leaching fields. Not only are septic tanks constructed for a different purpose, but they will tend, because of their construction, to naturally accumulate additional water from the ground during a heavy rain. Overloading them artificially during the rainy season is bad for the same reason as subsurface subdrains, and is doubly dangerous since their overflow can pose a serious health hazard. In many areas, the use of septic tanks should be discontinued as soon as sewers are made available.
- Practice responsible irrigation practices and do not over-irrigate slopes. Naturally, ground cover of ice plant and other vegetation will require some moisture during the hot summer months, but during the wet season, irrigation can cause ice plant and other heavy ground cover to pull loose. This not only destroys the cover, but also starts serious erosion. In some areas, ice plant and other heavy cover can cause surface sloughing when saturated due to the increase in weight and weakening of the near-surface soil. Planted slopes should be planned where possible to acquire sufficient moisture when it rains.
- Do not let water gather against foundations, retaining walls, and basement walls. These walls are built to withstand the ordinary moisture in the ground and are, where necessary, accompanied by subdrains to carry off the excess. If water is permitted to pond against them, it may seep through the wall, causing dampness and leakage inside the basement. Further, it may cause the foundation to swell up, or the water pressure could cause structural damage to walls.
- Do not try to compact soil behind walls or in trenches by flooding with water. Not only is flooding the least efficient way of compacting fine-grained soil, but it could damage the wall foundation or saturate the subsoil.
- Never leave a hose and sprinkler running on or near a slope, particularly during the rainy season. This will enhance ground saturation which may cause damage.
- Never block ditches which have been graded around your house or the lot pad. These shallow ditches have been put there for the purpose of quickly removing water toward the driveway, street or other positive outlet. By all means, do not let water become ponded above slopes by blocked ditches.

- Seeding and planting of the slopes should be planned to achieve, as rapidly as possible, a well-established and deep-rooted vegetal cover requiring minimal watering.
- It should be the responsibility of the landscape architect to provide such plants initially and of the residents to maintain such planting. Alteration of such a planting scheme is at the resident's risk.
- The resident is responsible for proper irrigation and for maintenance and repair of properly installed irrigation systems. Leaks should be fixed immediately. Residents must undertake a program to eliminate burrowing animals. This must be an ongoing program in order to promote slope stability. The burrowing animal control program should be conducted by a licensed exterminator and/or landscape professional with expertise in hill side maintenance.

Geotechnical Review

Due to the presence of expansive soils on site and the fact that soil types may vary with depth, it is recommended that plans for the construction of rear yard improvements (swimming pools, spas, barbecue pits, patios, etc.), be reviewed by a geotechnical engineer who is familiar with local conditions and the current standard of practice in the vicinity of your home.

In conclusion, your neighbor's slope, above or below your property, is as important to you as the slope that is within your property lines. For this reason, it is desirable to develop a cooperative attitude regarding hillside maintenance, and we recommend developing a "good neighbor" policy. Should conditions develop off your property, which are undesirable from indications given above, necessary action should be taken by you to insure that prompt remedial measures are taken. Landscaping of your property is important to enhance slope and foundation stability and to prevent erosion of the near surface soils. In addition, landscape improvements should provide for efficient drainage to a controlled discharge location downhill of residential improvements and soil slopes.

Additionally, recommendations contained in the Geotechnical Engineering Study report apply to all future residential site improvements, and we advise that you include consultation with a qualified professional in planning, design, and construction of any improvements. Such improvements include patios, swimming pools, decks, etc., as well as building structures and all changes in the site configuration requiring earth cut or fill construction.

EGL B-1
0-1.0' Af
1.0-39.4' Tfsl
@ 7.0'
@ 19.5'
@ 29.2'
@ 35.0'
TD=39.4'

EGL B-2
0-3.0' caf
3.0-14.0' Qt
14.0-75.0' Tfsl
@ 21.0'
@ 26.2'
@ 31.8'
@ 33.3'
@ 36.5'
@ 37.5'
@ 44.0'
@ 48.5'
@ 49.0'
@ 53.0'
@ 66.0'
TD=75.0'

EGL B-3
0-21.0' caf
21.0-28.0' Qt
28.0-90.0' Tfsl
@ 31.5'
@ 35.0'
@ 35.0'
@ 49.0'
@ 49.0'
@ 55.0'
@ 64.0'
@ 65.2'
@ 65.9'
@ 76.0'
@ 80.5'
@ 82.0'
@ 82.0'
@ 87.0'
TD=90.0'

EGL B-4
0-9.5' caf
9.5-150.0' Tfsl
@ 13.0'
@ 17.0'
@ 17.5'
@ 24.5'
@ 36.5'
@ 49.8'
@ 54.2'
@ 68.0'
@ 75.0'
@ 81.4'
@ 93.8'
@ 94.0'
@ 96.0'
TD=150.0'

EGL TP-1
0-4.5' caf
4.5-12.0' Tfsl
@ 6.0'
@ 8.0'
@ 9.0'
@ 9.0'
@ 10.0'
TD=12.0'

EGL TP-2
0-27.0' caf
@ 17.0'
@ 19.0'
@ 25.5'
TD=27.0'

EGL TP-3
0-1.5' Qsw
1.5-22.5' caf
@ 2.7'
@ 9.0'
@ 9.0'
TD=22.5

EGL TP-4
0-3.8' Qt
3.8-9.5 Tfsl
@ 6.3'
@ 8.5'
TD=9.5'

EGL TP-5
0-9.5' Tfsl
@ 4.5'
@ 5.0'
@ 5.0'
@ 7.0'
@ 7.5'
@ 9.0'
@ 9.0'
TD=9.5'

LA B-1
0-10.0' af
10.0-82.0' Tf
@ 9.5'
@ 10.0'
@ 11.0'
@ 13.0'
@ 17.5'
@ 24.0'
@ 28.0'
@ 31.0'
@ 31.5'
@ 34.0'
@ 39.0'
@ 41.5'
@ 44.0'
@ 50.5'
@ 52.5'
@ 57.0'
@ 61.5'
@ 64.0
@ 66.5'
@ 71.0'
@ 74.0'
@ 79.0'
TD=82.0'

LA B-2
0-15.2' af
15.2-15.7' Topsoil
15.7-101.0' Tf
@ 12.9'
@ 15.2'
@ 15.7'
@ 18.0'
@ 21.5'
@ 23.0'
@ 25.5'
@ 27.5'
@ 32.0'
@ 39.0'
@ 42.0'
@ 45.0'
@ 49.0'
@ 51.0'
@ 52.0'
@ 56.0'
@ 60.0'
@ 61.0
@ 61.5'
@ 63.0'
@ 65.0'
@ 67.0'
@ 68.0'
@ 74.0'
@ 79.5'
@ 81.0'
@ 84.0'
@ 88.0'
@ 95.0'
TD=101.0'

LA B-3
0-28.5' af
28.5-30.0' Qcol
30.0-45.0' Tf
@ 29.5'
@ 30.5'
@ 32.0'
@ 33.0'
@ 35.0'
@ 38.0'
@ 41.5'
TD=45.0'

LA B-4
0-4.5' af
4.5-18.0' Qcol
18.0-30.0' Tf
@ 6.5'
@ 9.0'
@ 19.0'
@ 21.0'
@ 22.5'
@ 27.0'
TD=30.0'

LA B-5
0-9.0' af
9.0-25.2' Qcol
25.2-55.0' Tf
@ 15.0'
@ 35.0'
@ 37.0'
@ 37.0'
@ 40.0'
@ 41.0'
@ 43.0'
@ 48.0'
TD=55.0'

LA B-6
0-14.6' af
14.6-31.0' Tf
@ 10.5'
@ 14.5'
@ 14.6'
@ 15.0'
@ 16.0'
@ 17.0'
@ 18.0'
@ 20.0'
@ 21.5'
@ 23.0'
@ 26.0'
@ 26.0'
TD=31.0'

LA B-7
0-8.5' af
8.5-31.0' Qcol
31.0-37.5' Tf
@ 8.5'
@ 15.0'
@ 18.5'
@ 32.0'
TD=37.5'

LA B-8
0-15.5' af
15.5-23.0' Tf
@ 16.0'
@ 19.0'
TD=23.0'

LA T-1
0-5.0' af
5.0-7.0' Tf
@ 5.5'
N-S @ 5.0'
@ 6.0'
TD=7.0'

LA T-2
0-3.0' af
3.0-4.0' Topsoil
4.0'-8.0' Qcol
8.0'-10.0 Tf
TD=10.0'

LA T-3
0-2.0' af
2.0-6.0' Tf
@ 2.5'
@ 3.5'
@ 4.5'
TD=6.0'

LA T-4
0-3.0' af
3.0-5.0' Tf
@ 4.0'
@ 5.5'
TD=5.0'

LA T-5
0-1.0' af
1.0-5.0' Tf
@ 2.0'
@ 2.5'
TD=5.0'

LA T-6
@ 5.0'
TD=5.0'

LA T-7
0-10.0' af
TD=10.0'

LA T-8
0-0.5' Topsoil
0.5'-5.5' Tf
@ 1.5'
N-S @ 1.8'
@ 2.1'
@ 2.8'
@ 2.8'
@ 3.0'
@ 3.0'
@ 3.5'
@ 3.5'
@ 3.5'
@ 3.5'
@ 4.0'
TD=5.5'

LA T-9
@ 6.5'
TD=9.0'

HA B-1
0-10.0' af
10.0'-20.0' Tf
TD=20.0'

HA B-2
0-26.0' af
26.0-30.0' Tf
TD=30.0'

HA B-3
0-26.0' af
26.0-28.0' Topsoil
28.0'-32.0' Tf
TD=32.0'

HA B-4
0-8.0' af
8.0-30.0' Qcol
30.0'-35.0' Tf
TD=35.0'

HA T-1
0-9.0' af
9.0-11.0' Topsoil
11.0'-13.0' Tf
TD=13.0'

HA T-2
0-4.0' Qls
4.0-13.0' Qcol
TD=13.0'

HA T-3
0-7.0' af
7.0-11.0' Qcol
11.0-13.0' Tf
@ 11'
TD=13.0'

HA T-4
0-8.0' af
8.0-12.0' Qcol
TD=12.0'

HA T-5
0-7.0' af
7.0-12.0' Qcol
12.0'-14.0' Tf
TD=14.0'

HA T-6
0-6.0' af
6.0-13.0' Qcol
TD=13.0'

HA T-7
0-4.0' af
4.0-10.0' Tf
TD=10.0'

HA T-8
0-2.0' af
2.0-4.0' Topsoil
4.0'-5.5' Tf
TD=5.5'

HA T-9
0-4.0' af
4.0-9.0' Tf
@ 5'
TD=9.0'

HA T-10
0-3.0' Tf
@ 2'
TD=3.0'

HA T-11
0-7.0' af
7.0-12.0' Qcol
TD=12.0'

HA T-12
0-4.0' Qls
4.0-6.0' Tf
@ 4'
TD=6.0'

HA T-13
0-6.0' af
6.0-9.0' Tf
@ 6'
@ 7'
TD=9.0'

HA T-14
0-6.0' Tf
@ 2'
TD=6.0'

HA T-15
0-14.0' Qcol
14.0-16.0' Tf
TD=16.0'

HA T-16
0-4.0' af?
4.0-8.0' Tf
TD=8.0'

HA T-17
0-10.0' af
10.0-11.0' Topsoil
11.0'-12.5' Tf
TD=12.5'

TCA T-2
@ 10.0'

TCA T-5
@ 11.0'

TCA T-8
@ 7.0'

FBL-1
0-28.0' af
28.0-29.0' Topsoil
29.0'-45.0' Tf
TD=45.0'

FBL-2
0-4.0' af
4.0-15.0' Tf
TD=15.0'

URS B-1
0-2.0' af
2.0'-46.5' Tf
@ 4.0'
@ 8.5'
@ 9.5'
@ 12.0'
@ 14.5'
@ 19.5'
@ 20.0'
@ 26.0'
@ 30.0'
@ 32.0'
@ 35.0'
TD=46.5'

BA-1
0-5.0' af
5.0-96.0' Tf
@ 8.0'
@ 14.0'
@ 17.0'
@ 22.0'
@ 25.0'
@ 29.0'
@ 40.0'
@ 54.0'
@ 59.0'
@ 59.0'
@ 67.0'
@ 87.0'
TD=96.0'

BA-2
0-1.0' af
1.0-115.0' Tf
@ 21.0'
@ 32.0'
@ 41.0'
@ 49.0'
@ 61.5'
@ 75.0'
TD=115.0'

0 40 80
SCALE: 1"=40'

LEGEND:

* LOCATIONS OF EXPLORATORY EXCAVATIONS ARE APPROXIMATE

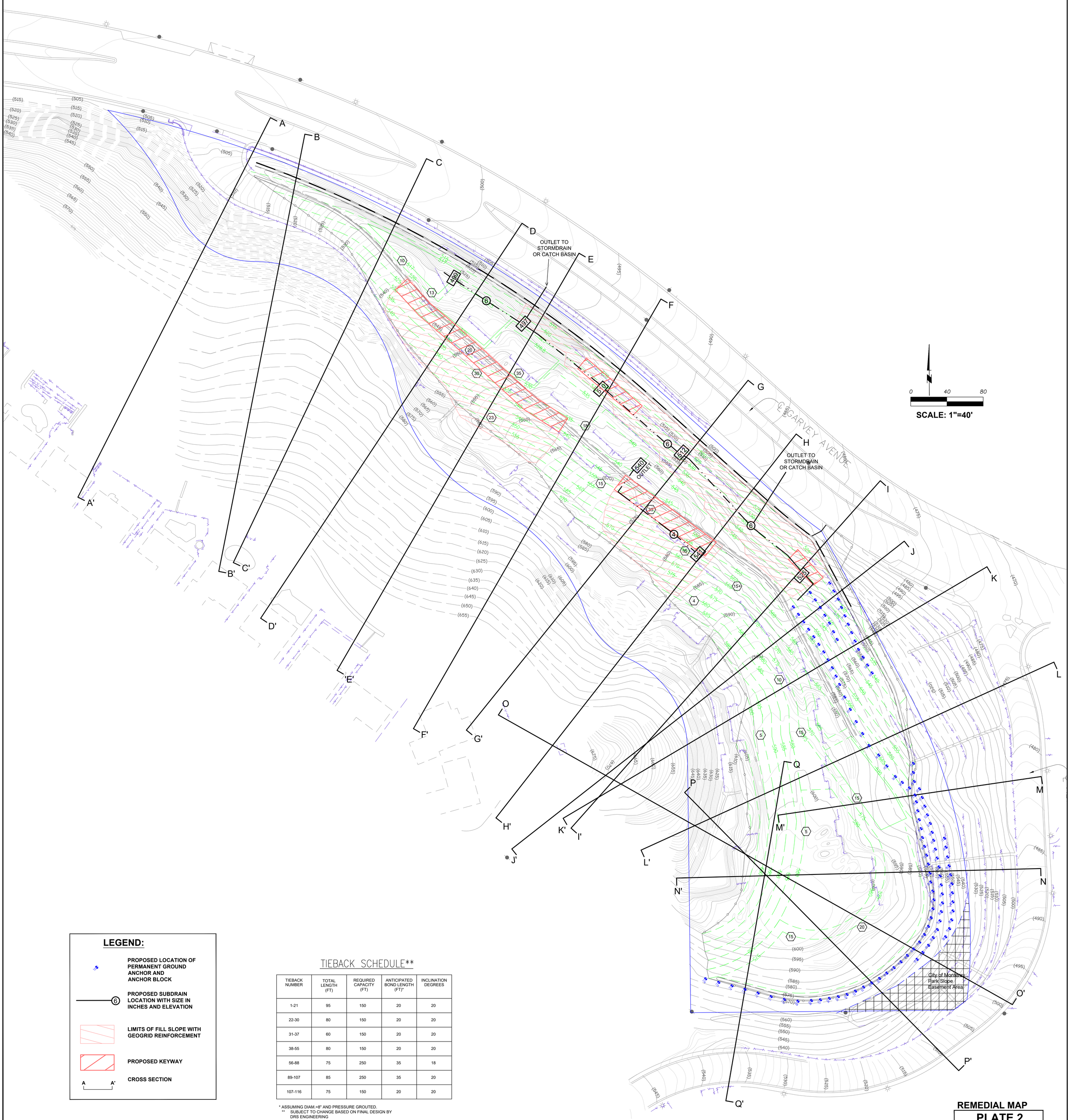
af	EXISTING COMPACTED FILL
Qcol	COLLUVIUM/SHALLOW LANDSLIDE DEPOSITS
Qsw	SLOPE WASH/SHALLOW SLUMP DEBRIS
Tf	PLIOCENE FERNANDO FORMATION
HA-1	HAND AUGER BORING (AGS, 2017)
BA-1	BUCKET AUGER BORING (AGS, CURRENT STUDY)
B-4 (EG)	BUCKET AUGER BORING (EGL 2013)
TP-5 (EG)	HAND-DUG TEST PIT (EGL 2013)
URS B-1 (IRS)	BUCKET AUGER BORING (URS 2005)
LA B-4 (LA)	BUCKET AUGER BORING (LEIGHTON 1987)
LA T-9 (LA)	BACKHOE TRENCH (LEIGHTON 1987)
HA B-8 (HA)	BUCKET AUGER BORING (HU ASSOCIATES 1983)
HA T-18 (HA)	TEST PIT (HU ASSOCIATES 1983)
FBL B-2 (FBL)	BORING (F. BEACH LEIGHTON 1982)
TCA T-8 (TCA)	BACKHOE TEST PITS (THOMAS CLEMENTS ASSOCIATES 1978)
20	BEDDING STRIKE AND DIP
82	JOINT STRIKE AND DIP
80	FAULT
	VERTICAL FAULT
	PALEOSHEAR
	SHEARED SURFACE
	SHALLOW SURFICIAL FAILURE
A A'	GEOLOGIC CROSS SECTIONS
	GEOLOGIC CONTACT, DASHED WHERE APPROXIMATE DOTTED WHERE CONCEALED, QUERIED WHERE UNCERTAIN

CUT SLOPE
Phase 1
Phase 2
Phase 3
Shotcrete
2005 Failure Limits
CARVEY AVENUE

GEOLOGY MAP
PLATE 1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1605-04	1605-04-B-11	12-9-2019



LEGEND:

- PROPOSED LOCATION OF PERMANENT GROUND ANCHOR AND ANCHOR BLOCK
- 6 — PROPOSED SUBDRAIN LOCATION WITH SIZE IN INCHES AND ELEVATION
- LIMITS OF FILL SLOPE WITH GEOGRID REINFORCEMENT
- PROPOSED KEYWAY
- A — A' CROSS SECTION

TIEBACK SCHEDULE**

TIEBACK NUMBER	TOTAL LENGTH (FT)	REQUIRED CAPACITY (FT)	ANTICIPATED BOND LENGTH (FT)*	INCLINATION DEGREES
1-21	95	150	20	20
22-30	80	150	20	20
31-37	60	150	20	20
38-55	80	150	20	20
56-88	75	250	35	18
89-107	85	250	35	20
107-116	75	150	20	20

* ASSUMING DIAM.=8" AND PRESSURE GROUTED.
** SUBJECT TO CHANGE BASED ON FINAL DESIGN BY DRS ENGINEERING

REMEDIAL MAP
PLATE 2

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1605-04	1605-04-B-11	12-9-2019

EGL B-1
0-1.0' Af
1.0-39.4' Tfsl
@ 7.0'
@ 19.5'
@ 29.2'
@ 35.0'
TD=39.4'

EGL B-2
0-3.0' caf
3.0-14.0' Qt
14.0-75.0' Tfsl
@ 21.0'
@ 26.2'
@ 31.8'
@ 33.3'
@ 36.5'
@ 37.5'
@ 44.0'
@ 48.5'
@ 49.0'
@ 53.0'
@ 66.0'
TD=75.0'

EGL B-3
0-21.0' caf
21.0-28.0' Qt
28.0-90.0' Tfsl
@ 31.5'
@ 35.0'
@ 35.0'
@ 49.0'
@ 49.0'
@ 55.0'
@ 64.0'
@ 65.2'
@ 65.9'
@ 76.0'
@ 80.5'
@ 82.0'
@ 82.0'
@ 87.0'
TD=90.0'

EGL B-4
0-9.5' caf
9.5-150.0' Tfsl
@ 13.0'
@ 17.0'
@ 17.5'
@ 24.5'
@ 36.5'
@ 49.8'
@ 54.2'
@ 68.0'
@ 75.0'
@ 81.4'
@ 93.8'
@ 94.0'
@ 96.0'
TD=150.0'

EGL TP-1
0-4.5' caf
4.5-12.0' Tfsl
@ 6.0'
@ 8.0'
@ 9.0'
@ 9.0'
@ 10.0'
TD=12.0'

EGL TP-2
0-27.0' caf
@ 17.0'
@ 19.0'
@ 25.5'
TD=27.0'

EGL TP-3
0-1.5' Qsw
1.5-22.5' caf
@ 2.7'
@ 9.0'
@ 9.0'
TD=22.5

EGL TP-4
0-3.8' Qt
3.8-9.5 Tfsl
@ 6.3'
@ 8.5'
TD=9.5'

EGL TP-5
0-9.5' Tfsl
@ 4.5'
@ 5.0'
@ 5.0'
@ 7.0'
@ 7.5'
@ 9.0'
@ 9.0'
TD=9.5'

LA B-1
0-10.0' af
10.0-82.0' Tf
@ 9.5'
@ 10.0'
@ 11.0'
@ 13.0'
@ 17.5'
@ 24.0'
@ 28.0'
@ 31.0'
@ 31.5'
@ 34.0'
@ 39.0'
@ 41.5'
@ 44.0'
@ 50.5'
@ 52.5'
@ 57.0'
@ 61.5'
@ 64.0
@ 66.5'
@ 71.0'
@ 74.0'
@ 79.0'
TD=82.0'

LA B-2
0-15.2' af
15.2-15.7' Topsoil
15.7-101.0' Tf
@ 12.9'
@ 15.2'
@ 15.7'
@ 18.0'
@ 21.5'
@ 23.0'
@ 25.5'
@ 27.5'
@ 32.0'
@ 39.0'
@ 42.0'
@ 45.0'
@ 49.0'
@ 51.0'
@ 52.0'
@ 56.0'
@ 60.0'
@ 61.0
@ 61.5'
@ 63.0'
@ 65.0'
@ 67.0'
@ 68.0'
@ 74.0'
@ 79.5'
@ 81.0'
@ 84.0'
@ 88.0'
@ 95.0'
TD=101.0'

LA B-3
0-28.5' af
28.5-30.0' Qcol
30.0-45.0' Tf
@ 29.5'
@ 30.5'
@ 32.0'
@ 33.0'
@ 35.0'
@ 38.0'
@ 41.5'
TD=45.0'

LA B-4
0-4.5' af
4.5-18.0' Qcol
18.0-30.0' Tf
@ 6.5'
@ 9.0'
@ 19.0'
@ 21.0'
@ 22.5'
@ 27.0'
TD=30.0'

LA B-5
0-9.0' af
9.0-25.2' Qcol
25.2-55.0' Tf
@ 15.0'
@ 35.0'
@ 37.0'
@ 37.0'
@ 40.0'
@ 41.0'
@ 43.0'
@ 48.0'
TD=55.0'

LA B-6
0-14.6' af
14.6-31.0' Tf
@ 10.5'
@ 14.5'
@ 14.6'
@ 15.0'
@ 16.0'
@ 17.0'
@ 18.0'
@ 20.0'
@ 21.5'
@ 23.0'
@ 26.0'
@ 26.0'
TD=31.0'

LA B-7
0-8.5' af
8.5-31.0' Qcol
31.0-37.5' Tf
@ 8.5'
@ 15.0'
@ 18.5'
@ 32.0'
TD=37.5'

LA B-8
0-15.5' af
15.5-23.0' Tf
@ 16.0'
@ 19.0'
TD=23.0'

LA T-1
0-5.0' af
5.0-7.0' Tf
@ 5.5'
N-S @ 5.0'
@ 6.0'
TD=7.0'

LA T-2
0-3.0' af
3.0-4.0' Topsoil
4.0'-8.0' Qcol
8.0'-10.0 Tf
TD=10.0'

LA T-3
0-2.0' af
2.0-6.0' Tf
@ 2.5'
@ 3.5'
@ 4.5'
TD=6.0'

LA T-4
0-3.0' af
3.0-5.0' Tf
@ 4.0'
@ 5.5'
TD=5.0'

LA T-5
0-1.0' af
1.0-5.0' Tf
@ 2.0'
@ 2.5'
TD=5.0'

LA T-6
@ 5.0'
TD=5.0'

LA T-7
0-10.0' af
TD=10.0'

LA T-8
0-0.5' Topsoil
0.5'-5.5' Tf
@ 1.5'
N-S @ 1.8'
@ 2.1'
@ 2.8'
@ 2.8'
@ 3.0'
@ 3.0'
@ 3.5'
@ 3.5'
@ 3.5'
@ 3.5'
@ 4.0'
TD=5.5'

LA T-9
0-6.5' af
@ 6.5'
TD=9.0'

HA B-1
0-10.0' af
10.0'-20.0' Tf
TD=20.0'

HA B-2
0-26.0' af
26.0-30.0' Tf
TD=30.0'

HA B-3
0-26.0' af
26.0-28.0' Topsoil
28.0'-32.0' Tf
TD=32.0'

HA B-4
0-8.0' af
8.0-30.0' Qcol
30.0'-35.0' Tf
TD=35.0'

HA T-1
0-9.0' af
9.0-11.0' Topsoil
11.0'-13.0' Tf
TD=13.0'

HA T-2
0-4.0' Qls
4.0-13.0' Qcol
TD=13.0'

HA T-3
0-7.0' af
7.0-11.0' Qcol
11.0-13.0' Tf
@ 11'
TD=13.0'

HA T-4
0-8.0' af
8.0-12.0' Qcol
TD=12.0'

HA T-5
0-7.0' af
7.0-12.0' Qcol
12.0'-14.0' Tf
TD=14.0'

HA T-6
0-6.0' af
6.0-13.0' Qcol
TD=13.0'

HA T-7
0-4.0' af
4.0-10.0' Tf
TD=10.0'

HA T-8
0-2.0' af
2.0-4.0' Topsoil
4.0'-5.5' Tf
TD=5.5'

HA T-9
0-4.0' af
4.0-9.0' Tf
@ 5'
TD=9.0'

HA T-10
0-3.0' Tf
@ 2'
TD=3.0'

HA T-11
0-7.0' af
7.0-12.0' Qcol
TD=12.0'

HA T-12
0-4.0' Qls
4.0-6.0' Tf
@ 4'
TD=6.0'

HA T-13
0-6.0' af
6.0-9.0' Tf
@ 6'
@ 7'
TD=9.0'

HA T-14
0-6.0' Tf
@ 2'
TD=6.0'

HA T-15
0-14.0' Qcol
14.0-16.0' Tf
TD=16.0'

HA T-16
0-4.0' af?
4.0-8.0' Tf
TD=8.0'

HA T-17
0-10.0' af
10.0-11.0' Topsoil
11.0'-12.5' Tf
TD=12.5'

TCA T-2
@ 10.0'

TCA T-5
@ 11.0'

TCA T-8
@ 7.0'

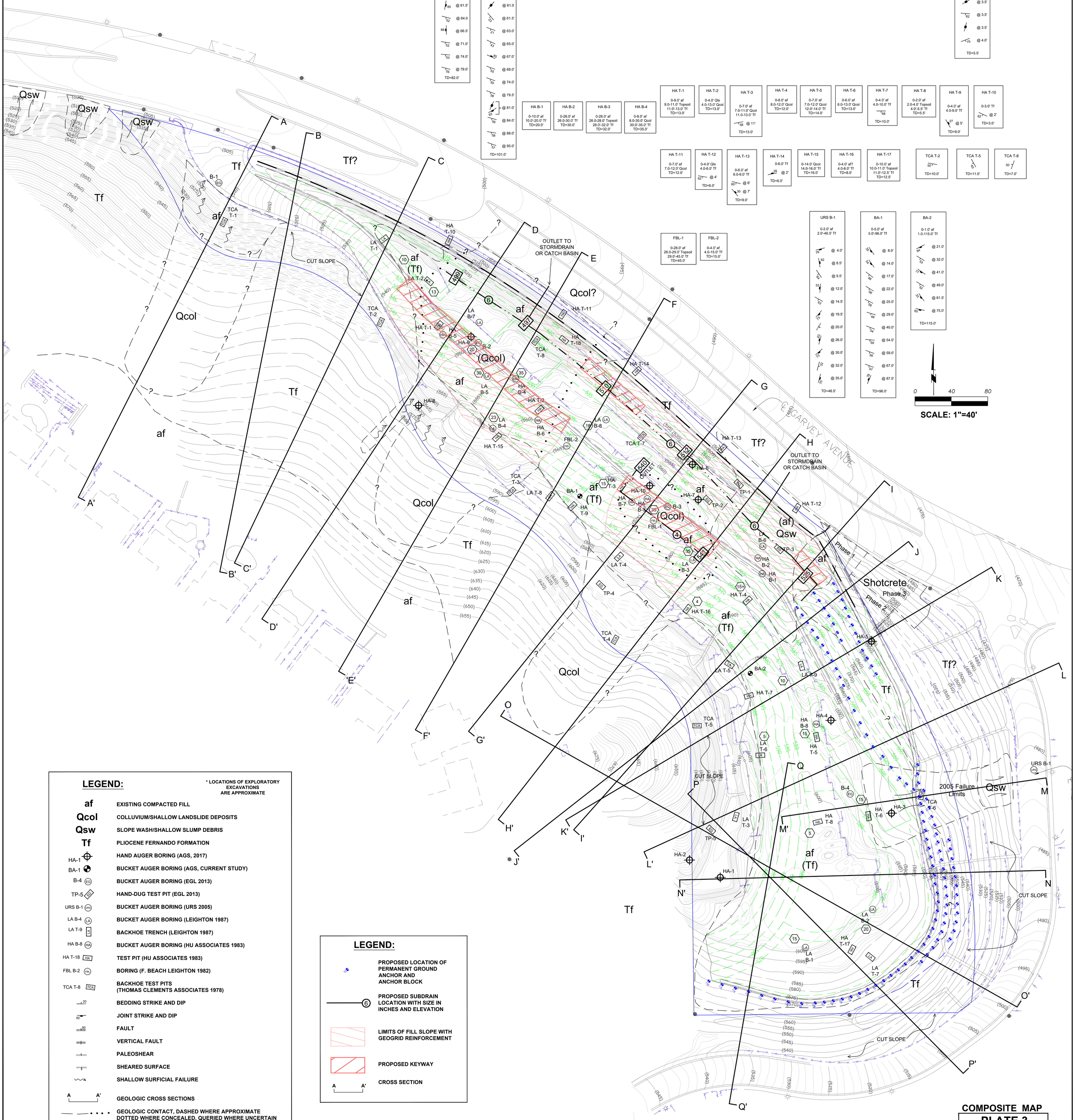
FBL-1
0-28.0' af
28.0-29.0' Topsoil
29.0'-45.0' Tf
TD=45.0'

FBL-2
0-4.0' af
4.0-15.0' Tf
TD=15.0'

URS B-1
0-2.0' af
2.0'-46.5' Tf
@ 4.0'
@ 8.5'
@ 9.5'
@ 12.0'
@ 14.5'
@ 19.5'
@ 20.0'
@ 26.0'
@ 30.0'
@ 32.0'
@ 35.0'
TD=46.5'

BA-1
0-5.0' af
5.0'-96.0' Tf
@ 8.0'
@ 14.0'
@ 17.0'
@ 22.0'
@ 25.0'
@ 29.0'
@ 40.0'
@ 54.0'
@ 59.0'
@ 59.0'
@ 67.0'
@ 87.0'
TD=96.0'

BA-2
0-1.0' af
1.0'-115.0' Tf
@ 21.0'
@ 32.0'
@ 41.0'
@ 49.0'
@ 61.5'
@ 75.0'
TD=115.0'



LEGEND:

* LOCATIONS OF EXPLORATORY EXCAVATIONS ARE APPROXIMATE

af	EXISTING COMPACTED FILL
Qcol	COLLUVIUM/SHALLOW LANDSLIDE DEPOSITS
Qsw	SLOPE WASH/SHALLOW SLUMP DEBRIS
Tf	PLIOCENE FERNANDO FORMATION
HA-1	HAND AUGER BORING (AGS, 2017)
BA-1	BUCKET AUGER BORING (AGS, CURRENT STUDY)
B-4 (EG)	BUCKET AUGER BORING (EGL 2013)
TP-5 (EG)	HAND-DUG TEST PIT (EGL 2013)
URS B-1 (IRS)	BUCKET AUGER BORING (URS 2005)
LA B-4 (LA)	BUCKET AUGER BORING (LEIGHTON 1987)
LA T-9 (LA)	BACKHOE TRENCH (LEIGHTON 1987)
HA B-8 (HA)	BUCKET AUGER BORING (HU ASSOCIATES 1983)
HA T-18 (HA)	TEST PIT (HU ASSOCIATES 1983)
FBL B-2 (FBL)	BORING (F. BEACH LEIGHTON 1982)
TCA T-8 (TCA)	BACKHOE TEST PITS (THOMAS CLEMENTS ASSOCIATES 1978)
20	BEDDING STRIKE AND DIP
82	JOINT STRIKE AND DIP
80	FAULT
	VERTICAL FAULT
	PALEOSHEAR
	SHEARED SURFACE
	SHALLOW SURFICIAL FAILURE
A A'	GEOLOGIC CROSS SECTIONS
	GEOLOGIC CONTACT, DASHED WHERE APPROXIMATE DOTTED WHERE CONCEALED, QUERIED WHERE UNCERTAIN

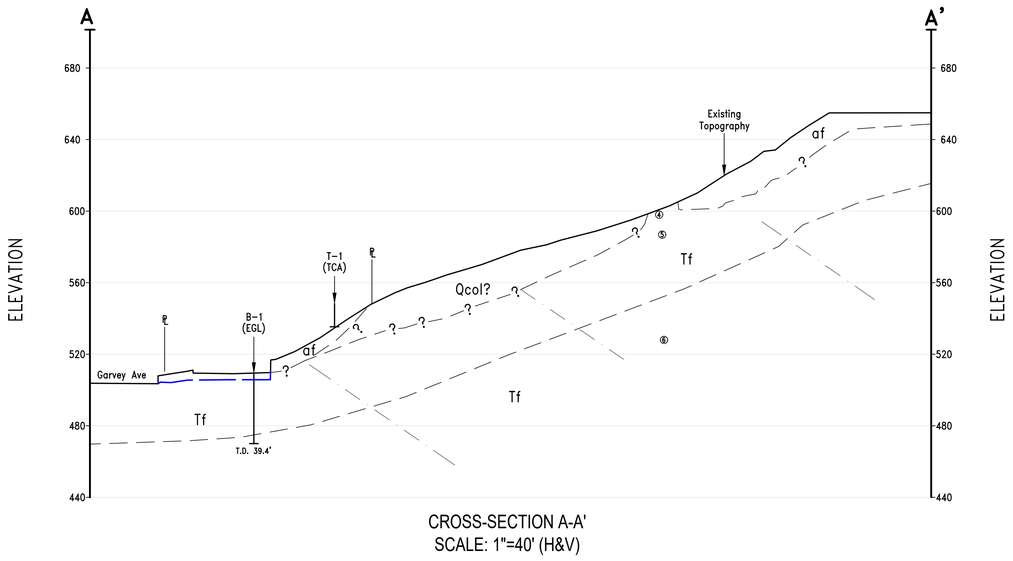
LEGEND:

	PROPOSED LOCATION OF PERMANENT GROUND ANCHOR AND ANCHOR BLOCK
6	PROPOSED SUBDRAIN LOCATION WITH SIZE IN INCHES AND ELEVATION
	LIMITS OF FILL SLOPE WITH GEOGRID REINFORCEMENT
	PROPOSED KEYWAY
A A'	CROSS SECTION

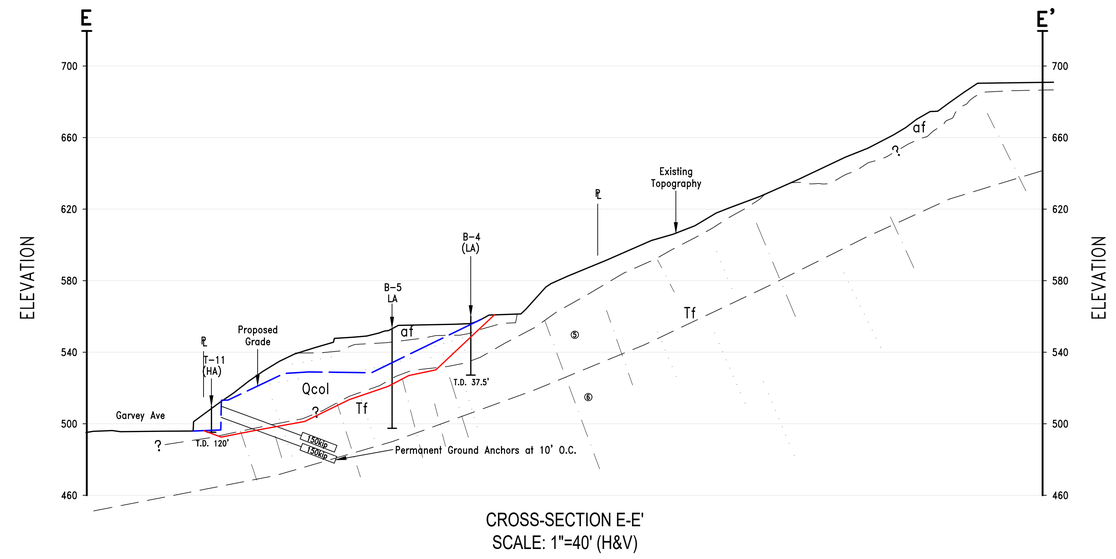
COMPOSITE MAP
PLATE 3

AGS ADVANCED GEOTECHNICAL SOLUTIONS, INC.

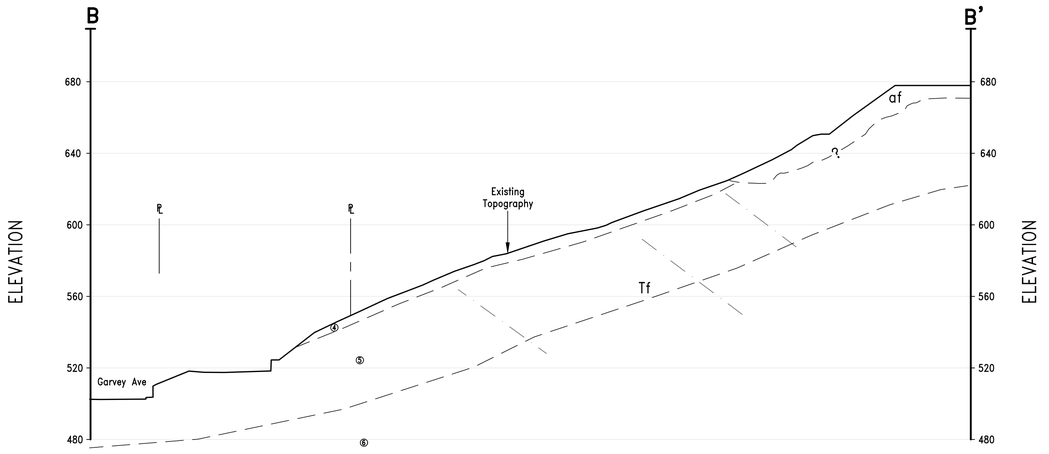
Project:	Report:	Date:
P/W 1605-04	1605-04-B-11	12-9-2019



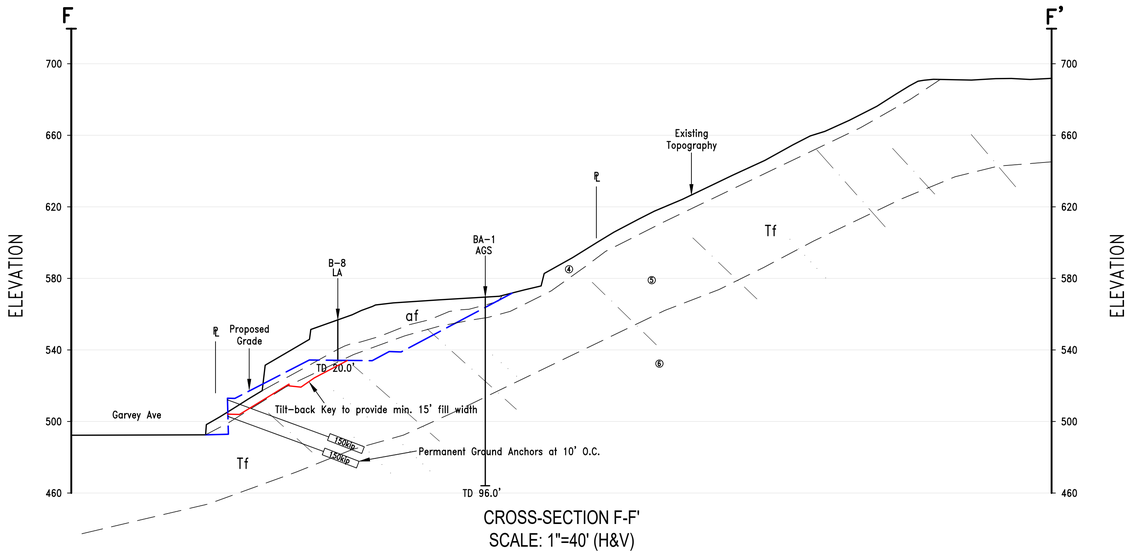
CROSS-SECTION A-A'
SCALE: 1"=40' (H&V)



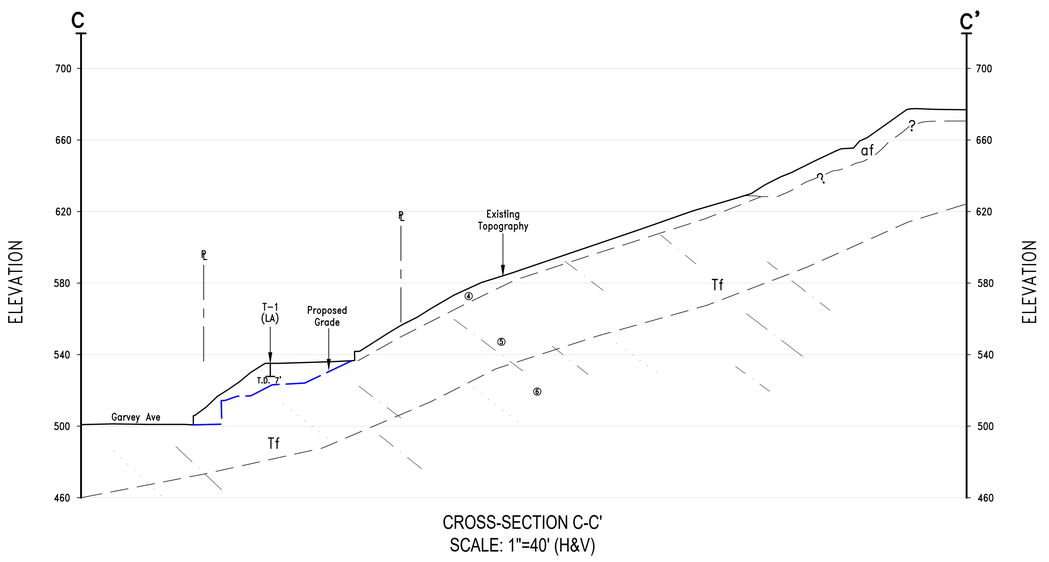
CROSS-SECTION E-E'
SCALE: 1"=40' (H&V)



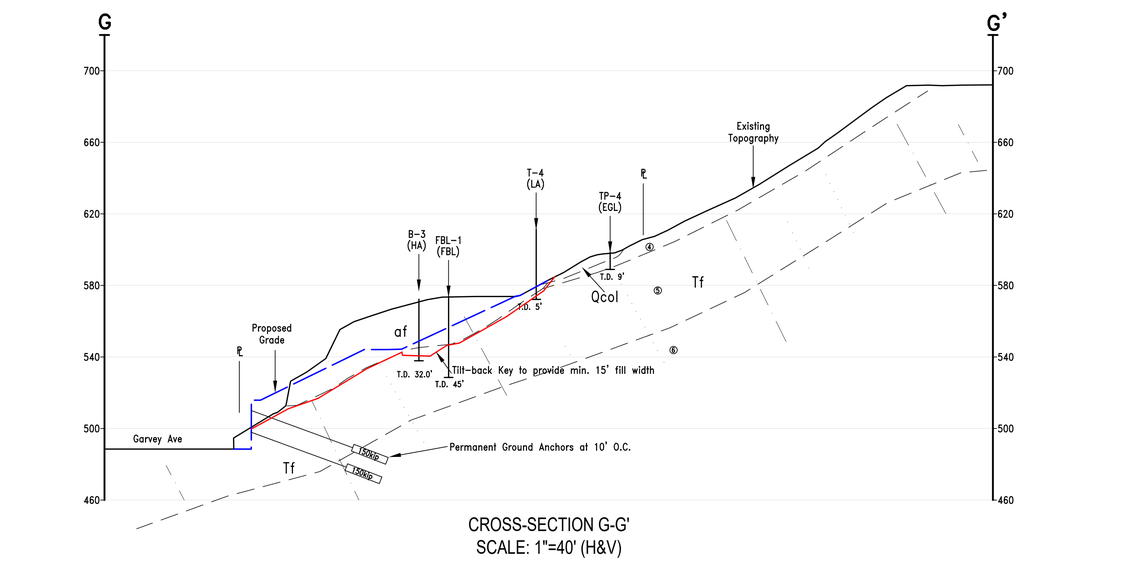
CROSS-SECTION B-B'
SCALE: 1"=40' (H&V)



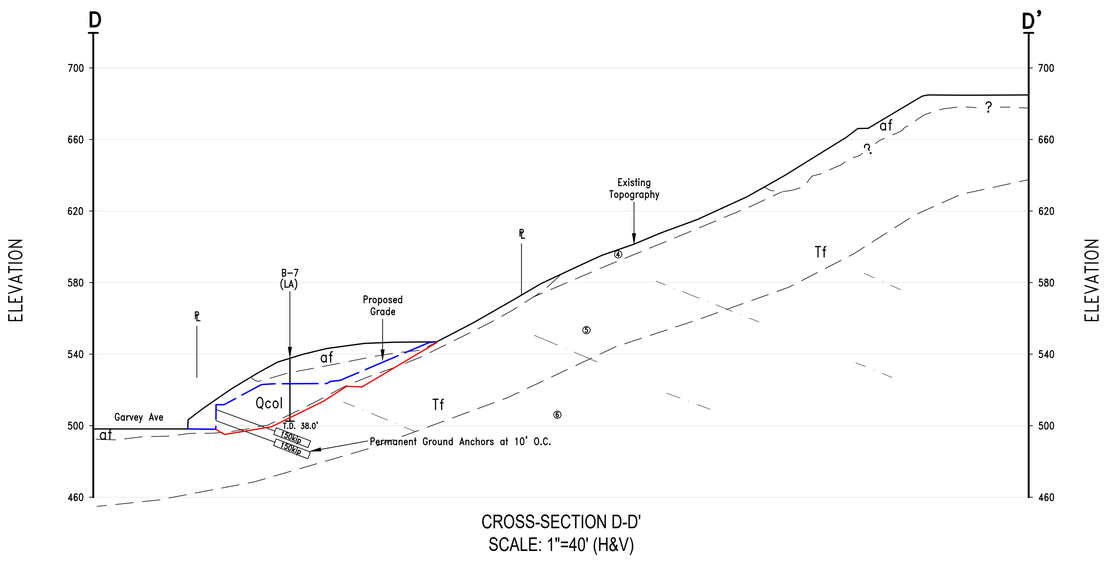
CROSS-SECTION F-F'
SCALE: 1"=40' (H&V)



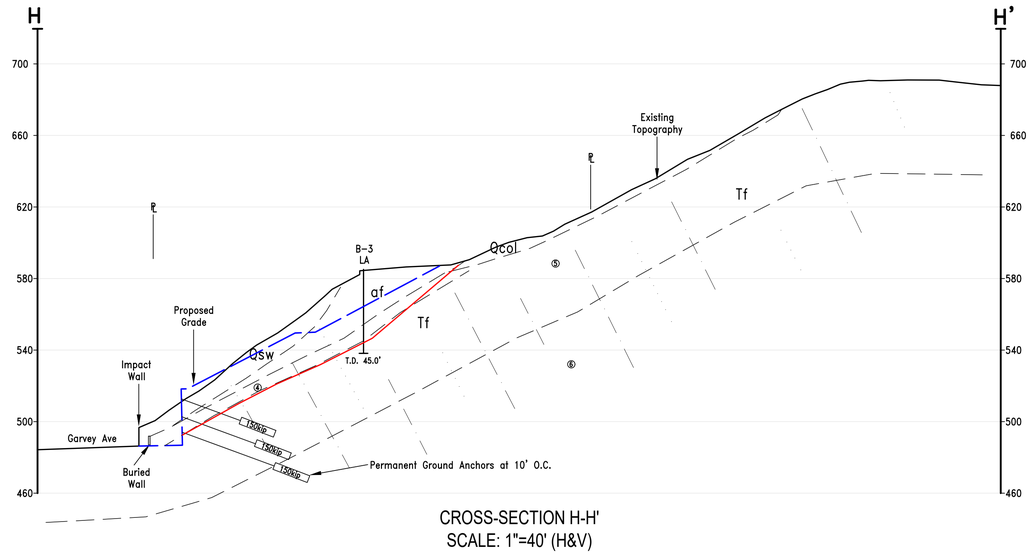
CROSS-SECTION C-C'
SCALE: 1"=40' (H&V)



CROSS-SECTION G-G'
SCALE: 1"=40' (H&V)



CROSS-SECTION D-D'
SCALE: 1"=40' (H&V)



CROSS-SECTION H-H'
SCALE: 1"=40' (H&V)

LEGEND

LIMITS OF REMOVALS OR KEYWAY (BACKFILL WITH NATIVE SOILS)

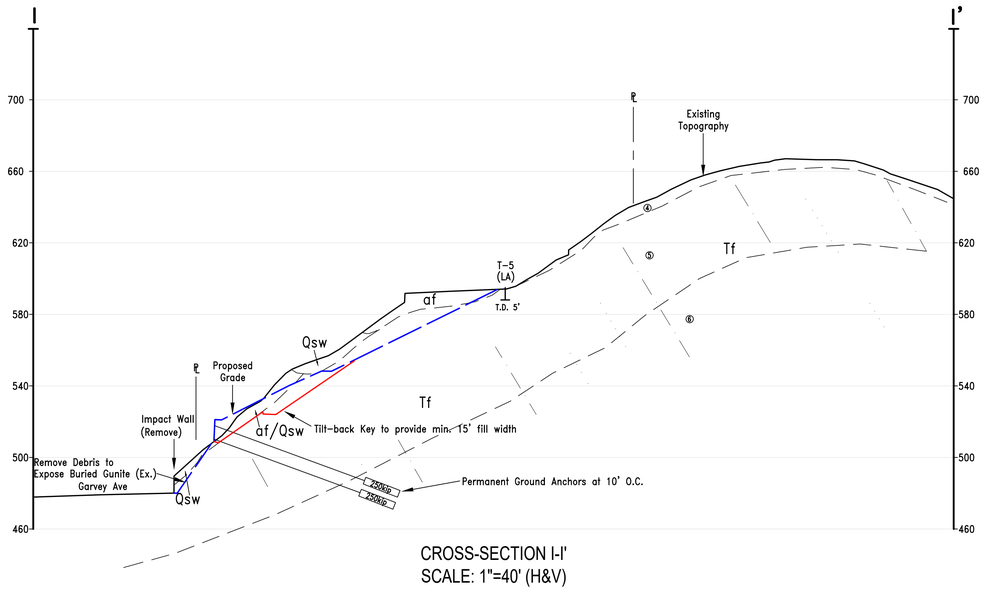
⑥ **BEDROCK SOIL TYPE (See Table 6.5 in Report)**

SCALE: 1"=40' H&V

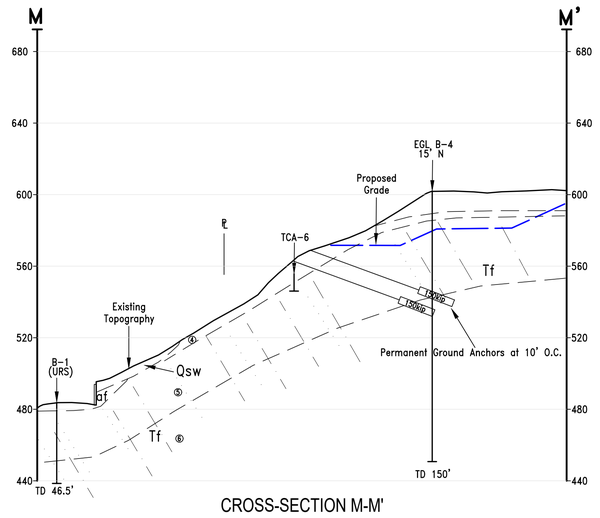
PLATE 4

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

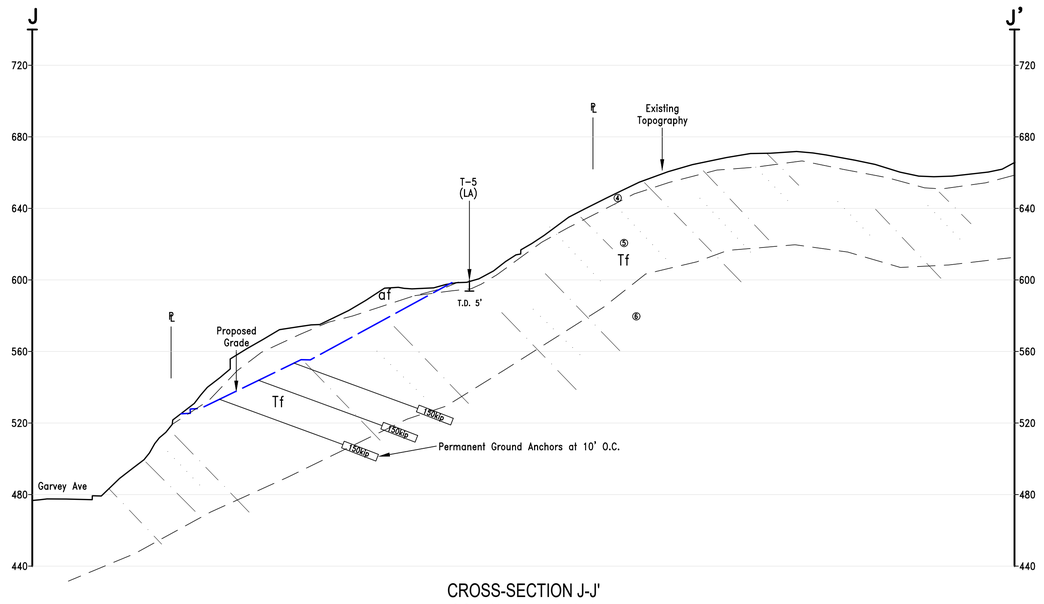
Project:	Report:	Date:
P/W 1605-04	1605-04-B-11	12-9-2019



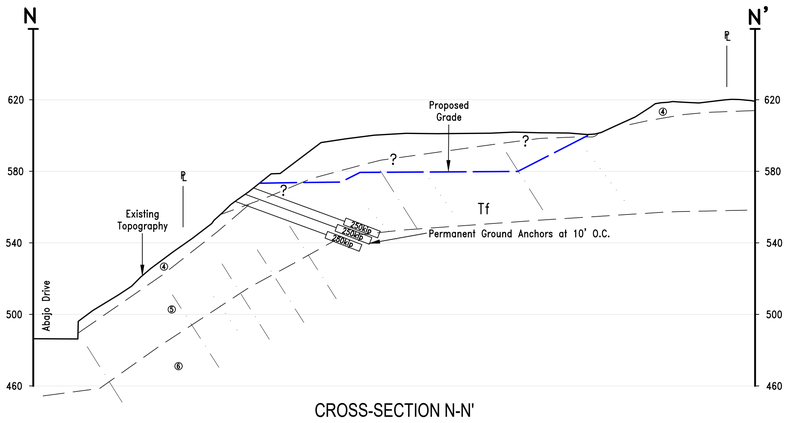
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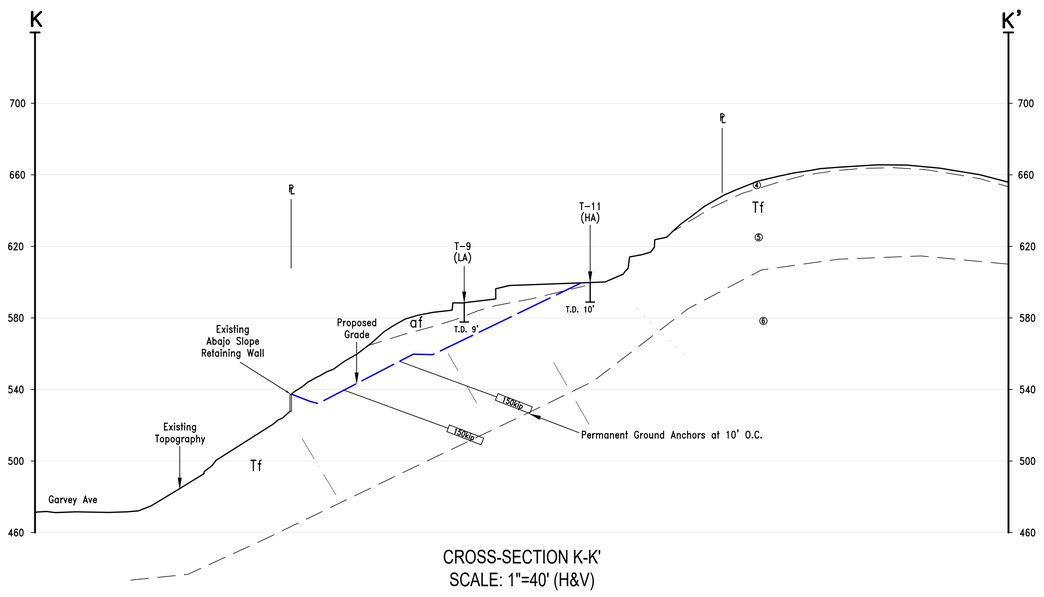
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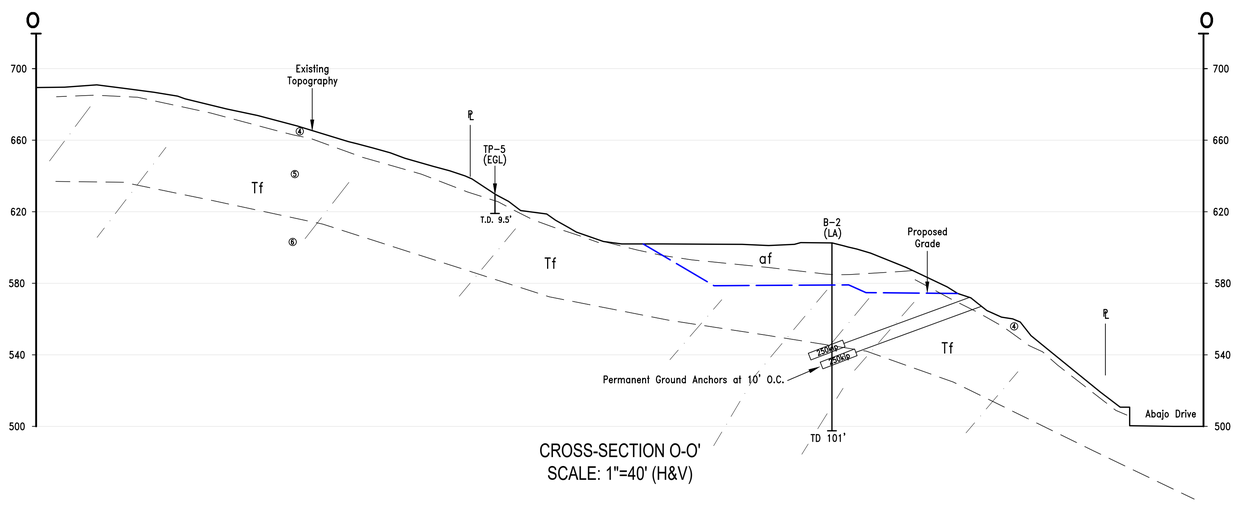
CROSS-SECTION J-J'
SCALE: 1"=40' (H&V)



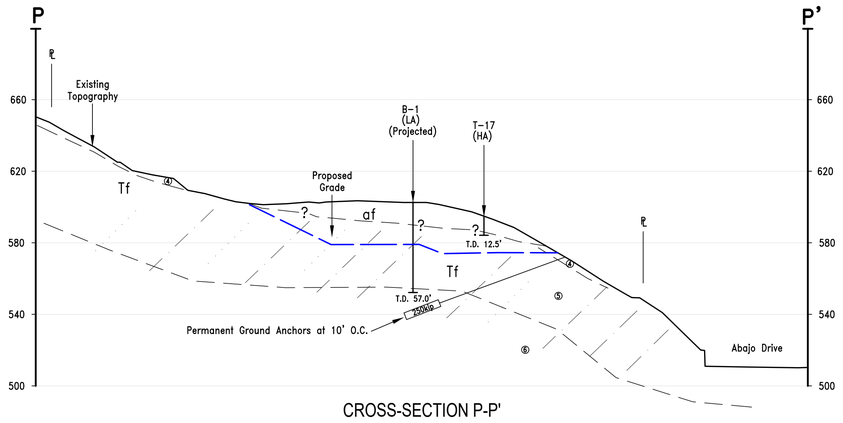
CROSS-SECTION N-N'
SCALE: 1"=40' (H&V)



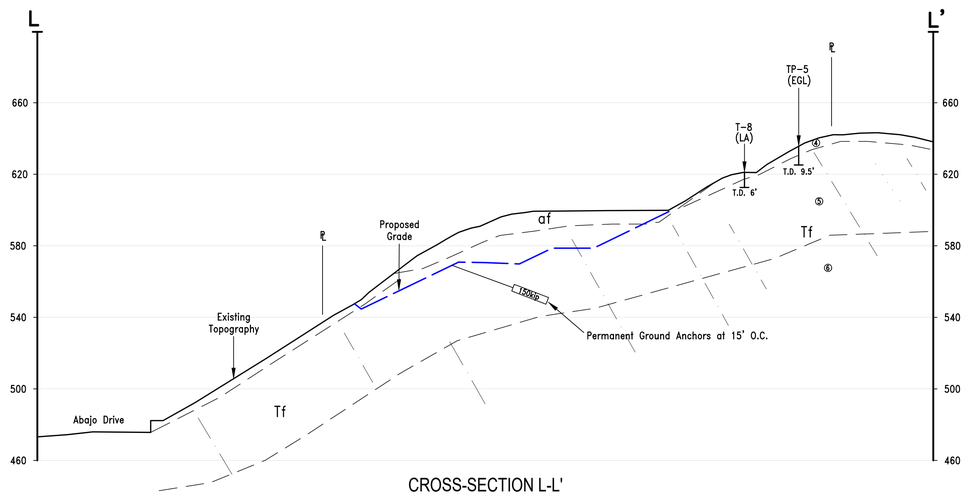
CROSS-SECTION K-K'
SCALE: 1"=40' (H&V)



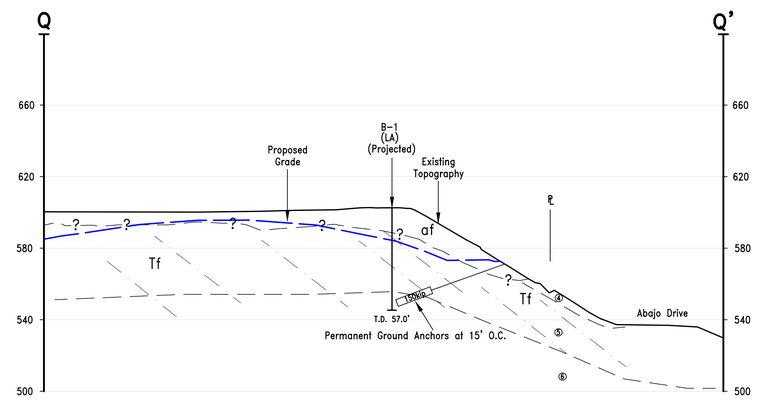
CROSS-SECTION O-O'
SCALE: 1"=40' (H&V)



CROSS-SECTION P-P'
SCALE: 1"=40' (H&V)



CROSS-SECTION L-L'
SCALE: 1"=40' (H&V)



CROSS-SECTION Q-Q'
SCALE: 1"=40' (H&V)

SCALE: 1"=40' H&V

PLATE 5

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1605-04	1605-04-B-11	12-9-2019

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APPENDIX B

Advanced Geotechnical Solutions Response to City of Monterey Park Third Party Review Comments (2020)

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, California 92029
Telephone: (619) 867-0487 Fax: (714) 409-3287

Center Int'l Investments, Inc.
846 East Garvey Avenue, Suite D
Monterey Park, California 91756

April 8, 2020
P/W 1605-04
Report No. 1605-04-B-12

Attention: **Ms. Karrie On**

Subject: ***Response to City of Monterey Park Third Party Review Comments, Site Slope Restoring Improvement Plan, 1688 West Garvey Avenue, Monterey Park, California***

References: See Appendix

Gentleperson:

Advanced Geotechnical Solutions, Inc., (AGS) has prepared this letter presenting our response to the geotechnical review of AGS's referenced report (AGS Report Number 1605-04-B-11 dated December 9, 2019) conducted by Geosyntec Consultants dated February 26, 2020. Geosyntec Consultants performed the geotechnical review on behalf of the City of Monterey Park. This letter presents our response to Geosyntec's review comments that are related to the geotechnical report. The review comments precede AGS's response. AGS has also revised the December 9, 2019, geotechnical report in response to these comments. Additional clarification was provided in the cover letter and Section 6.5 of the revised report. The recommendations, appendices, and plates have not been changed.

Comment 1: Stratigraphic sections from the earlier AGS report (May 13, 2019) have been modified without further exploration at the site. Soil horizons have been geometrically changed, e.g. a significant reduction in the highly weathered bedrock within the slope stability cross sections and inclusion of a colluvium horizon in sections that previously did not include these materials. No explanation or rationale was provided in the report for the changes to the stratigraphic sections.

AGS Response: AGS has generated numerous additional cross sections that were presented in the December 9, 2019, report and slightly modified the cross-sections that were presented in the May 13, 2019, report. The cross-sections were also relabeled in the December 9, 2019, report. A newer topographic model, generated using aerial flown data and checked using site survey data, was used for the December 9, 2019, report, and in some cases topographic grades were adjusted up to roughly 10 feet versus the cross-sections shown in the May 13, 2019, report. Also, AGS added boundaries of the three bedrock domains, which were developed using information from local exploratory borings and test pits. Some of the geologic contacts were slightly modified based on the benefit of using additional cross-sections to interpolate conditions across the site using exploratory excavations. These boundaries were not shown on the geologic cross-sections in the May 13, 2019, report.

AGS's slope stability analyses were updated in the December 9, 2019, report to use the geologic contacts presented on the cross-sections. AGS's previous slope stability model presented in the May 13, 2019, report used relatively consistent thicknesses for each bedrock domain across the cross-sections. AGS's

refined model presented in the December 9, 2019, report used a geologic profile that was based on local exploratory excavations, resulting in more variable bedrock domain thicknesses.

Comment 2: Strength parameters used in the stability analyses for the Highly Weathered Bedrock, Upper Bedrock, Deep Bedrock, and Colluvium have been increased from earlier versions of the report without explanation or rationale provided in the report. Moreover, some of the strength parameters assigned to stratigraphic units varies between sections.

AGS Response: The shear strengths used in AGS's slope stability models have evolved based on acquiring additional information and back and forth discussions with several second party reviewers. The shear strengths presented on a few of the older slope stability analyses of current (existing) conditions presented in the May 13, 2019, report are slightly different than those now being used in AGS's more current model. Grading is now proposed across the entire length of the site, so AGS elected not to present analyses of the existing conditions in the December 9, 2019, report. The strengths did vary between the different iterations conducted, as described below.

Three iterations of each slope stability analysis were completed- one for the initial search (used to determine the critical failure surface), one for the static analysis (the minimum target factor of safety is 1.5), and one for the pseudo-static analysis using a seismic coefficient of 0.2g (the minimum target factor of safety is 1.1). As described in the Section 6.5 of the report and in Appendix G, separate values of shear strengths were used for each of these iterations:

- The unadjusted peak shear strength for bedrock was to search for the critical failure surfaces. Peak shear strengths were used for non-bedrock materials: ("Initial Search").
- The estimated current material strength, accounting for bedrock softening, was used for the static analysis. A reduced peak bedrock strength was used for deeper unweathered bedrock: (Static Analysis).
- The peak shear strengths (or reduced peak strength for bedrock) were used for the pseudo-static analyses: ("Seismic" Analysis).

The recommendations in the reference reports remain valid. Advanced Geotechnical Solutions, Inc. appreciates the opportunity to provide you with geotechnical consulting services and professional opinions. If you have any questions, please contact the undersigned at (619) 867-0487.

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.



JOHN J. DONOVAN
RCE 65051, RGE 2790, Reg. Exp. 6-30-21

Distribution: (1) Addressee (pdf)
(1) KCM Group (pdf)

Appended: Appendix - References
Review Sheet

APPENDIX

REFERENCES

APPENDIX

CITED REFERENCES

Advanced Geotechnical Solutions, Inc. (2017). "Geotechnical Report, Review of Tentative Tract 75033, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-4, P/W 1605-04, April 27, 2017.

---. (2018). "Partial Response to City of Monterey Park Third Party Review Comments, Tract 75033, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-5, P/W 1605-04, January 5, 2018.

---. (2018). "Response to City of Monterey Park Third Party Review Comments, Tract 75033, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-6, Draft report dated March 23, 2018.

---. (2019a). "Geotechnical Report, Review of Site Slope Restoring Improvement Plan, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-7R2, Report dated January 29, 2019, Revised March 28, 2019.

---. (2019b). "Geotechnical Report, Review of Site Slope Restoring Improvement Plan, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-7R3, Report dated January 29, 2019, Revised May 13, 2019.

---. (2019c). "Addendum Report and Response to City of Monterey Park Third Party Review Comments, Site Slope Restoring Improvement Plan, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-9, Report dated July 9, 2019.

---. (2019d). "Geotechnical Report, Review of Vesting Tentative Tract Map 75033, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-10, Report dated November 5, 2019.

---. (2019e). "Geotechnical Report, Review of Site Slope Restoring Improvement B2 Plan, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-11, Report dated December 9, 2019.

---. (2020). "Geotechnical Report, Review of Site Slope Restoring Improvement B2 Plan, 1688 West Garvey Avenue, Monterey Park, California," Report No. 1605-04-B-11R, Report dated December 9, 2019, Revised April 7, 2020.

Geosyntec Consultants. (2019). "Review of Slope Restoring Improvement Design Plan and Supporting Documents Goodview Property - APN: 5254-002-031 1688 West Garvey Avenue, Monterey Park, California," April 9, 2019.

---. (2020). "Draft - Technical Peer Review of Slope Restoring Improvement Design Plan and Slope Stability Evaluations of Goodview Property - APN: 5254-002-031 1688 West Garvey Avenue, Monterey Park, California," February 26, 2020.

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APPENDIX C

CDS Maintenance Guide

CONTECH®
ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide



CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, stormwater, earth stabilization and wastewater treament products. For information, visit www.ContechES.com or call 800.338.1122

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The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

CONTECH ENGINEERED SOLUTIONS
800.925.5240
www.ContechES.com

CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

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APPENDIX D

Flogard Catch Basin Filter Inspection and Maintenance Guide

Oldcastle Infrastructure™
A CRH COMPANY

FLOGARD+PLUS®
CATCH BASIN INSERT FILTER

Inspection and Maintenance Guide



DRAINAGE PROTECTION SYSTEMS
DPS
A division of
Oldcastle Infrastructure

Water

SCOPE:

Federal, State and Local Clean Water Act regulations and those of insurance carriers require that stormwater filtration systems be maintained and serviced on a recurring basis. The intent of the regulations is to ensure that the systems, on a continuing basis, efficiently remove pollutants from stormwater runoff thereby preventing pollution of the nation's water resources. These specifications apply to the FloGard+Plus® Catch Basin Insert Filter.

RECOMMENDED FREQUENCY OF SERVICE:

Drainage Protection Systems (DPS) recommends that installed FloGard+Plus Catch Basin Insert Filters be serviced on a recurring basis. Ultimately, the frequency depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, cans, paper, etc.); however, it is recommended that each installation be serviced a minimum of three times per year, with a change of filter medium once per year. DPS technicians are available to do an on-site evaluation, upon request.

RECOMMENDED TIMING OF SERVICE:

DPS guidelines for the timing of service are as follows:

1. For areas with a definite rainy season: Prior to, during and following the rainy season.
2. For areas subject to year-round rainfall: On a recurring basis (at least three times per year).
3. For areas with winter snow and summer rain: Prior to and just after the snow season and during the summer rain season.
4. For installed devices not subject to the elements (wash racks, parking garages, etc.): On a recurring basis (no less than three times per year).

SERVICE PROCEDURES:

1. The catch basin grate shall be removed and set to one side. The catch basin shall be visually inspected for defects and possible illegal dumping. If illegal dumping has occurred, the proper authorities and property owner representative shall be notified as soon as practicable.
2. Using an industrial vacuum, the collected materials shall be removed from the liner. (Note: DPS uses a truck-mounted vacuum for servicing FloGard+Plus catch basin inserts).
3. When all of the collected materials have been removed, the filter medium pouches shall be removed by unsnapping the tether from the D-ring and set to one side. The filter liner, gaskets, stainless steel frame and mounting brackets, etc., shall be inspected for continued serviceability. Minor damage or defects found shall be corrected on-the-spot and a notation made on the Maintenance Record. More extensive deficiencies that affect the efficiency of the filter (torn liner, etc.), if approved by the customer representative, will be corrected and an invoice submitted to the representative along with the Maintenance Record.
4. The filter medium pouches shall be inspected for defects and continued serviceability and replaced as necessary, and the pouch tethers re-attached to the liner's D-ring.
5. The grate shall be replaced.

REPLACEMENT AND DISPOSAL OF EXPOSED FILTER MEDIUM AND COLLECTED DEBRIS

The frequency of filter medium exchange will be in accordance with the existing DPS-Customer Maintenance Contract. DPS recommends that the medium be changed at least once per year. During the appropriate service, or if so determined by the service technician during a non-scheduled service, the filter medium will be replaced with new material. Once the exposed pouches and debris have been removed, DPS has possession and must dispose of it in accordance with local, state and federal agency requirements.

DPS also has the capability of servicing all manner of storm drain filters, catch basin inserts and catch basins without inserts, underground oil/water separators, stormwater interceptors and other such devices. All DPS personnel are highly qualified technicians and are confined-space trained and certified. Call us at (888) 950-8826 for further information and assistance.

FLOGARD+PLUS®
CATCH BASIN INSERT FILTER

OUR MARKETS



BUILDING STRUCTURES



COMMUNICATIONS



WATER



ENERGY



TRANSPORTATION

EXHIBIT B

Legal Parcel Description

Real property in the City of Monterey Park, County of Los Angeles, State of California, described as follows:

Assessor’s Parcel Number 5254-002-031

EXHIBIT C

Attention Property Owner:

The Monterey Park City Council will hold a Public Hearing on Wednesday, September 15, 2021, at 6:30 p.m. The meeting may be held either electronically in accordance with the Governor's Executive Orders or physically with the City Council Chamber, located at 320 W. Newmark Avenue, to consider creating the Monterey Park Geologic Hazard Abatement District ("MPK GHAD"). Please be advised that your property is within the boundaries of the proposed MPK GHAD.

GHADs are formed for the purpose of preventing, mitigating, abating or controlling geologic hazards. A geologic hazard is an actual or threatened landslide, land subsidence, soil erosion, earthquake, fault movement or any other natural or unnatural movement of land or earth.

On Wednesday, August 18, 2021, the Monterey Park City Council reviewed a Plan of Control for the proposed MPK GHAD and initiated the formation of the MPK GHAD based on the information presented in the plan. The Plan, which is available for public review and duplication at the Monterey Park City Clerk's Office, 320 W. Newmark Avenue, describes in detail the potential geologic hazards, their location, and provides a plan for the prevention, mitigation, abatement and control thereof.

The MPK GHAD would be created to perform the duties necessary to prevent, mitigate, abate and control geologic hazards. This may include erosion control, retaining wall maintenance, mowing, trail maintenance, etc.; the specific duties and responsibilities of the proposed GHAD are explained in greater detail in the Plan. The MPK GHAD will finance the costs of its activities and improvements by assessing the landowners that own property within the district's boundaries. The amount of the assessment will not be determined until after the MPK GHAD is formed.

Any landowner that objects to the formation of the MPK GHAD can submit a written objection to the City Clerk any time before the public hearing and the objections will be presented to the Council at the hearing on Wednesday, September 15, 2021. If owners from more than 50% of the assessed valuation of the land in the proposed MPK GHAD object to the formation, the City Council may not form the district under state law. If less than 50% submit objections, then the Council can move forward and form the MPK GHAD at that time.

If you would like to submit a written objection to the formation of GHAD, please submit the objection to Vincent D. Chang, City Clerk's Office, 320 W. Newmark Avenue. All objections must be received by the City Clerk before 6:30 p.m. on Tuesday, September 14, 2021 in order to be counted. Objections must be made

in writing, signed by the property owner and include a description of the objector's lot, tract and map number.

Please contact Vincent D. Chang, City Clerk with questions regarding reviewing or copying the Plan of Control or submitting a written objection.

Please contact Jon Turner, Acting City Planner with any other questions regarding formation of the GHAD.

Attachment: Resolution No. XXX