Development Services

THE CITY OF SAN DIEGO

FORM
DS-560
September 2021

Stormwater Requirements Applicability Checklist

Project Address: 2538 RUETTE NICOLE, LA JOLLA CA 92037 **Project Number:**

SECTION 1: Construction Stormwater Best Management Practices (BMP) Requirements

All construction sites are required to implement construction BMPs per the performance standards in the Stormwater Standards Manual. Some sites are also required to obtain coverage under the State Construction General Permit (CGP)[1], administered by the California State Water Resources Control Board.

For all projects, complete Part A - If the project is required to submit a Stormwater Pollution Prevention Plan (SWPPP) or Water Pollution Control Plan (WPCP), continue to Part B.

PART A – Determine Construction Phase Stormwater Requirements

1. Is the project subject to California's statewide General National Pollutant Discharge Elimination System (NPDES) permit for Stormwater Discharges Associated with Construction Activities, also known as the State Construction General Permit (CGP)? (Typically projects with land disturbance greater than or equal to 1 acre.)

   ○ Yes, SWPPP is required; skip questions 2-4. ◉ No; proceed to the next question.

2. Does the project propose construction or demolition activity, including but not limited to, clearing, grading, grubbing, excavation, or any other activity resulting in ground disturbance and/or contact with stormwater?

   ◉ Yes, WPCP is required; skip questions 3-4. ○ No; proceed to the next question.

3. Does the project propose routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility? (Projects such as pipeline/utility replacement)

   ○ Yes, WPCP is required; skip question 4. ○ No; proceed to the next question.

4. Does the project only include the following Permit types listed below?

   - Electrical Permit, Fire Alarm Permit, Fire Sprinkler Permit, Plumbing Permit, Sign Permit, Mechanical Permit, Spa Permit.
   - Individual Right of Way Permits that exclusively include only ONE of the following activities: water service, sewer lateral, or utility service.
   - Right of Way Permits with a project footprint less than 150 linear feet that exclusively include only ONE of the following activities: curb ramp, sidewalk and driveway apron replacement, potholing, curb and gutter replacement, and retaining wall encroachments.

   ☐ Yes, no document is required.

Check one of the boxes below and continue to Part B

○ **If you checked "Yes" for question 1**, an SWPPP is REQUIRED – **continue to Part B**

◉ **If you checked "No" for question 1 and checked "Yes" for question 2 or 3**, a WPCP is REQUIRED. If the project proposes less than 5,000 square feet of ground disturbance AND has less than a 5-foot elevation change over the entire project area, a Minor WPCP may be required instead. **Continue to Part B**

○ **If you check "No" for all questions 1-3 and checked "Yes" for question 4,** Part B does not apply, and no document is required. **Continue to Section 2.**

[1] More information on the City's construction BMP requirements as well as CGP requirements can be found at http://www.sandiego.gov/stormwater/regulations/index.shtml

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PART B – Determine Construction Site Priority

This prioritization must be completed within this form, noted on the plans, and included in the SWPPP or WPCP. The city reserves the right to adjust the priority of projects both before and after construction. Construction projects are assigned an inspection frequency based on if the project has a "high threat to water quality." The City has aligned the local definition of "high threat to water quality" to the risk determination approach of the State Construction General Permit (CGP). The CGP determines risk level based on project specific sediment risk and receiving water risk. Additional inspection is required for projects within the Areas of Special Biological Significance (ASBS) watershed. **NOTE:** The construction priority does **NOT** change construction BMP requirements that apply to projects; rather, it determines the frequency of inspections that will be conducted by city staff.

Complete Part B and continue to Section 2

☑ **1. ASBS**

A. Projects located in the ASBS watershed.

☐ **2. High Priority**

A. Projects that qualify as Risk Level 2 or Risk Level 3 per the Construction General Permit (CGP) and are not located in the ASBS watershed.
B. Projects that qualify as LUP Type 2 or LUP Type 3 per the CGP and are not located in the ASBS watershed.

☐ **3. Medium Priority**

A. Projects that are not located in an ASBS watershed or designated as a High priority site.
B. Projects that qualify as Risk Level 1 or LUP Type 1 per the CGP and are not located in an ASBS watershed.
C. WPCP projects (>5,000 square feet of ground disturbance) located within the Los Peñasquitos watershed management area.

☐ **4. Low Priority**

A. Projects not subject to a Medium or High site priority designation and are not located in an ASBS watershed.

Section 2: Construction Stormwater BMP Requirements

Additional information for determining the requirements is found in the Stormwater Standards Manual.

PART C – Determine if Not Subject to Permanent Stormwater Requirements

Projects that are considered maintenance or otherwise not categorized as "new development projects" or "redevelopment projects" according to the Stormwater Standards Manual are not subject to Permanent Stormwater BMPs.

- **If "yes" is checked for any number in Part C**: Proceed to Part F and check "Not Subject to Permanent Stormwater BMP Requirements."
- **If "no" is checked for all the numbers in Part C:** Continue to Part D.

1. Does the project only include interior remodels and/or is the project entirely within an existing enclosed structure and does not have the potential to contact stormwater?

   ○ Yes ◉ No

2. Does the project only include the construction of overhead or underground utilities without creating new impervious surfaces?

   ○ Yes ◉ No

3. Does the project fall under routine maintenance? Examples include but are not limited to roof or exterior structure surface replacement, resurfacing or reconfiguring surface parking lots or existing roadways without expanding the impervious footprint, and routine replacement of damaged pavement (grinding, overlay and pothole repair).

   ○ Yes ◉ No

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PART D – PDP Exempt Requirements

PDP Exempt projects are required to implement site design and source control BMPs.

- **If "yes" is checked for any questions in Part D**, continue to Part F and check the box labeled "PDP Exempt."
- **If "no" is checked for all questions in Part D**, continue to Part E.

1. Does the project ONLY include new or retrofit sidewalks, bicycle lanes, or trails that:
   - Are designed and constructed to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas? Or;
   - Are designed and constructed to be hydraulically disconnected from paved streets and roads? Or;
   - Are designed and constructed with permeable pavements or surfaces in accordance with the Green Streets guidance in the City's Stormwater Standards manual?

   ○ Yes, PDP exempt requirements apply ◉ No, proceed to next question

2. Does the project ONLY include retrofitting or redeveloping existing paved alleys, streets or roads designed and constructed in accordance with the Green Streets guidance in the City's Stormwater Standards Manual?

   ○ Yes, PDP exempt requirements apply ● No, proceed to next question

PART E – Determine if Project is a Priority Development Project (PDP)

Projects that match one of the definitions below are subject to additional requirements, including preparation of a Stormwater Quality Management Plan (SWQMP).

- **If "yes" is checked for any number in Part E**, continue to Part F and check the box labeled "Priority Development Project."
- **If "no" is checked for every number in Part E**, continue to Part F and check the box labeled "Standard Development Project."

1. **New development that creates 10,000 square feet or more of impervious surfaces collectively over the project site.** This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. ○ Yes ◉ No

2. **Redevelopment project that creates and/or replaces 5,000 square feet or more of impervious surfaces on an existing site of 10,000 square feet or more of impervious surfaces.** This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. ○ Yes ◉ No

3. **New development or redevelopment of a restaurant.** Facilities that sell prepared foods and beverages for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) 5812), and where the land development creates and/or replaces 5,000 square feet or more of impervious surface. ○ Yes ◉ No

4. **New development or redevelopment on a hillside.** The project creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site) and where the development will grade on any natural slope that is twenty-five percent or greater. ○ Yes ◉ No

5. **New development or redevelopment of a parking lot that creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site).** ○ Yes ◉ No

6. **New development or redevelopment of streets, roads, highways, freeways, and driveways.** The project creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site). ○ Yes ◉ No

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7. **New development or redevelopment discharging directly to an environmentally sensitive area.** The project creates and/or replaces 2,500 square feet of impervious surface (collectively over the project site), and discharges directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). ○ Yes ◉ No

8. **New development or redevelopment projects of retail gasoline outlet (RGO) that create and/or replaces 5,000 square feet of impervious surface.** The development project meets the following criteria: (a) 5,000 square feet or more or (b) has a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. ○ Yes ◉ No

9. **New development or redevelopment projects of an automotive repair shop that creates and/or replaces 5,000 square feet or more of impervious surfaces.** Development projects categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534 or 7536-7539. ○ Yes ◉ No

10. **Other Pollutant Generating Project.** These projects are not covered in any of the categories above but involve the disturbance of one or more acres of land and are expected to generate post-construction phase pollutants, including fertilizers and pesticides. This category does not include projects creating less than 5,000 square feet of impervious area and projects containing landscaping without a requirement for the regular use of fertilizers and pesticides (such as a slope stabilization project using native plants). Impervious area calculations need not include linear pathways for infrequent vehicle use, such as emergency maintenance access or bicycle and pedestrian paths if the linear pathways are built with pervious surfaces or if runoff from the pathway sheet flows to adjacent pervious areas. ○ Yes ◉ No

PART F – Select the appropriate category based on the outcomes of Part C through Part E

1. The project is **NOT SUBJECT TO PERMANENT STORMWATER REQUIREMENTS** ○ Yes ○ No

2. The project is a **STANDARD DEVELOPMENT PROJECT**. Site design and source control BMP requirements apply. See the Stormwater Standards Manual for guidance. ◉ Yes ○ No

3. The Project is **PDP EXEMPT**. Site design and source control BMP requirements apply. Refer to the Stormwater Standards Manual for guidance. ○ Yes ○ No

4. The project is a **PRIORITY DEVELOPMENT PROJECT**. Site design, source control and structural pollutant control BMP requirements apply. Refer to the Stormwater Standards Manual for guidance on determining if the project requires hydromodification plan management. ○ Yes ○ No

Sebastian Mariscal — **Name of Owner or Agent**

Manager — **Title**

Signature

06.19.23 — **Date**

CLEAR FORM

CHRISTIAN WHEELER
ENGINEERING

May 3, 2024

Paula Hermanny
5660 La Jolla Hermosa Avenue
La Jolla, California 92037

CWE 2210373.03r

Subject: **Revised Response to DSD-Geology Review Comments, Project Issues Report 1099348, Proposed Single-Family Residence, APN 346-831-44, Ruette Nicole, La Jolla, California**

References: 1) City of San Diego, DSD Geology Review Comments, Project Issues Report 1099348, dated October 11, 2023.
2) Sebastian Mariscal Studio, Architectural Plans, Hermanny House, 2538 Ruette Nicole, La Jolla, CA 92037, dated August 8. 2023.
3) K&S Engineering, Inc., Conceptual Grading and BMP Plans, Hermanny House, Lot 25 Montoro, undated.
4) Christian Wheeler Engineering, Report of Preliminary Geotechnical Investigation, CWE 2210373.02, April 17, 2023.

Dear Ms. Hermanny:

In accordance with the request of the project architect, we have prepared this report to present additional information required by the City of San Diego regarding the geotechnical issues at the site. The comments in the City's Project Issue Report and our responses to the comments are presented below.

City Comment 00017: The geotechnical investigation report must update geologic/geotechnical map that shows the distribution of fill and geologic units, location of exploratory excavations, the existing western and eastern slope topography, and proposed development. The map should be on a current topographic base that shows the proposed development; the preliminary grading plan could provide a suitable base map.

CWE Response: Plate No. 1 of this report presents an updated Site Plan and Geotechnical Map that shows the distribution of fill and geologic units, location of exploratory excavations, the existing

western and eastern slope topography, and proposed development. The preliminary grading plan was used as the base map for Plate No. 1.

City Comment 00018: Circumscribe the limits of anticipated remedial grading on the geologic map to delineate the proposed footprint of the project.

CWE Response: The limits of anticipated remedial grading are circumscribed on Plate No. 1 of this report.

City Comment 00019: Provide a professional opinion regarding the suitability of the existing fill to support the recommended remedial grading and the proposed structures founded on shallow foundations.

CWE Response: As presented in the Conclusions section of our referenced geotechnical report, "It is our opinion that fill soils are unsuitable, in their present condition, for the support of settlement sensitive improvements. In order to mitigate this condition, it is recommended that foundations to support the proposed structure, pools, and other settlement sensitive improvements extend through the existing fill into competent materials of the Ardath Shale. Due to the relative depth of the Ardath Shale and the characteristics of the proposed construction, it is anticipated that conventional shallow foundations and drilled cast-in-place piers will be used. In addition, thicker than typical on-grade slabs with increased reinforcement are recommended."

City Comment 00020: Provide an additional east-west representative geologic/geotechnical cross section that shows the existing eastern slope and proposed grades, existing retaining wall, distribution of fill and geologic units, the anticipated area of the proposed excavation, and temporary slopes. The cross-section should be scaled and extend beyond the property lines to show the adjacent structures.

CWE Response: A geologic cross section that depicts the existing eastern slope and proposed grades, existing retaining wall, distribution of fill and geologic units, the anticipated area of the proposed excavation, and temporary slopes is presented on Plate No. 3 of this report.

City Comment 00021: Consider providing slope stability analysis of the eastern slope. Where direct observation geologic is not possible utilize conservative shear strength parameters and geologic conditions. Additional analysis and updated geologic cross-sections may be necessary.

CWE Response: Appendix A of this report presents the results of our stability analyses of the existing slope to the east of the proposed residence. The results of these analyses, which were performed using the same parameters included in the analyses presented in our referenced geotechnical report, indicate that the existing slope to the east of the proposed residence (see Plate No. 3 of this report) will demonstrate minimum factors-of-safety against static and pseudo-static failure of 1.7 and 1.3., respectively. These values are in excess of the minimums that are generally considered to be stable of 1.5 and 1.1 for static and pseudo-static analyses, respectively.

City Comment 00022: Update the existing cross-section to include temporary slopes.

CWE Response: Geologic Cross section A-A' has been updated to show the anticipated temporary cut slopes and is included herein as Plate No. 2.

City Comment 00023: Provide a conclusion regarding the stability of the proposed temporary excavations and shoring. The geotechnical consultant should provide recommendations for safe and adequately stable excavations.

CWE Response: Temporary cut slope and shoring design recommendations are presented on page 15 of our referenced geotechnical report. Temporary excavations within the existing fill soils should be made at inclinations of 1.5:1 (H:V) or flatter. Temporary excavations within materials of the Ardath Shale should be made at inclinations of 1:1 (H:V) or flatter.

Our firm should be contacted to observe all temporary cut slopes during grading to ascertain that no unforeseen adverse conditions exist. No surcharge loads such as foundation loads, or soil or equipment stockpiles, vehicles, etc. should be allowed within a distance from the top of temporary slopes equal to half the slope height. Where it is not possible to construct temporary construction slopes as recommended, shoring will be required.

City Comment 00024: The project's geotechnical consultant must provide a professional opinion that the site and the adjacent slopes will have a factor-of-safety of 1.5 or greater for both gross and surficial stability following project completion.

CWE Response: Provided sound construction practices and the recommendations contained in our referenced geotechnical report are followed, the site and the adjacent slopes will have a factor-of-safety of 1.5 or greater for both gross and surficial stability following project completion. However,

care should be taken by the project contractor and homeowner to minimize the amount of water allowed on the slopes and disturbance to the slope by landscaping, burrowing animals, and pedestrian access.

City Comment 00025: Seismic (pseudo static) slope stability is not discussed in the geotechnical report. Please provide slope stability analysis.

CWE Response: Appendix B of this report presents the results of our pseudo-static stability analysis of the proposed site topography along geologic cross section A-A' (see Plate No. 2). The results of this analysis indicate that following the proposed construction, including recommended shear pin installation, the slope that descends to the northwest of proposed improvements will demonstrate a minimum factor-of-safety against pseudo-static failure of 1.1, which is the minimum that is generally considered to be stable.

City Comment 00026: The project's geotechnical consultant should indicate if the proposed building foundations adjacent to descending slope surfaces shall be founded in firm material with an embedment and set back from the slope surface sufficient to provide vertical and lateral support for the foundation without detrimental settlement as per the current building code (CBC 1808.7.2).

CWE Response: All of the foundations for the proposed residence, swimming pool, and other settlement sensitive improvements that are located near the top of the northwesterly descending fill slope will consist of drilled, cast-in-place concrete piers that will penetrate all existing fill soils and have a minimum embedment of 5 feet into competent materials of the Ardath Shale. As such, it is our professional opinion and judgement that the proposed building foundations adjacent to descending slope surfaces will be founded in firm material with an embedment and set back from the slope surface sufficient to provide vertical and lateral support for the foundation without detrimental settlement as per the current building code (CBC 1808.7.2).

City Comment 00027: Provide a conclusion regarding if the proposed development will destabilize or result in settlement of adjacent property or the right of way.

CWE Response: Provided sound construction practices and the recommendations contained in our referenced geotechnical report are implemented, the proposed development will not destabilize or result in settlement of adjacent property or the right of way.

City Comment 00028: Provide a statement as to whether or not the site is geotechnically suitable for the proposed development.

CWE Response: As presented in the Conclusions section of our referenced geotechnical report, "it is our professional opinion and judgment that the subject property is suitable for the construction of the proposed construction provided the recommendations presented herein are implemented."

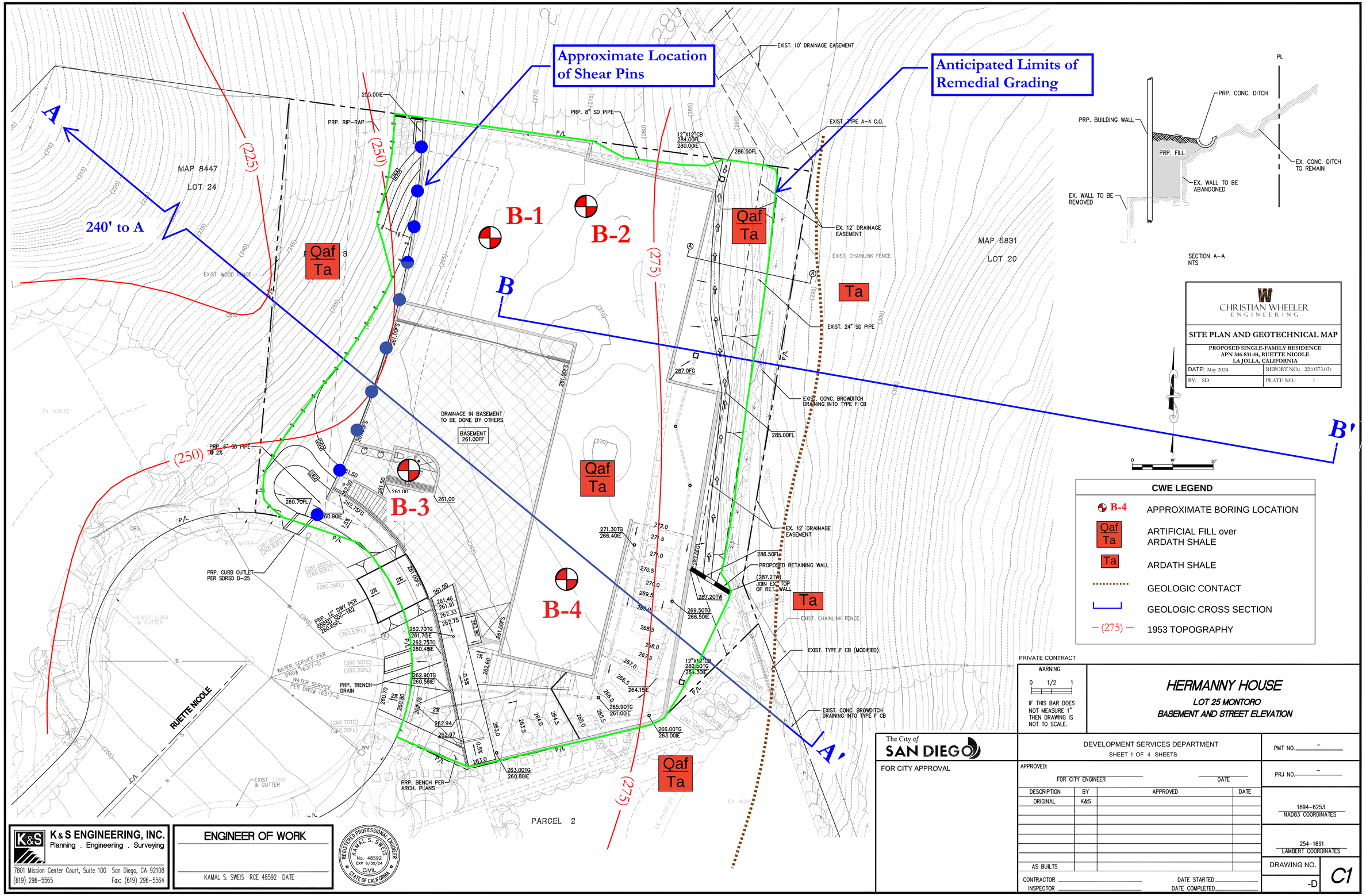
If you have any questions regarding this addendum report, please do not hesitate to contact this office. Christian Wheeler Engineering appreciates this opportunity of providing professional services for you for the subject project.

Respectfully submitted,
CHRISTIAN WHEELER ENGINEERING

Daniel B. Adler, RCE #36037

David R. Russell, CEG #2215

DRR:dba
ec: paula@vixswimwear.com; clau@sebastianmariscal.com; sebastian@sebastianmariscal.com



CWE LEGEND

B-4	APPROXIMATE BORING LOCATION
Qaf / Ta	ARTIFICIAL FILL over ARDATH SHALE
Ta	ARDATH SHALE
.....	GEOLOGIC CONTACT
⌐ ¬	GEOLOGIC CROSS SECTION
— (275) —	1953 TOPOGRAPHY

CHRISTIAN WHEELER ENGINEERING

SITE PLAN AND GEOTECHNICAL MAP

PROPOSED SINGLE-FAMILY RESIDENCE
APN 346-831-44, RUETTE NICOLE
LA JOLLA, CALIFORNIA

DATE: May 2024 | REPORT NO.: 2210373.03r
BY: SD | PLATE NO.: 1

PRIVATE CONTRACT

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

HERMANNY HOUSE
LOT 25 MONTORO
BASEMENT AND STREET ELEVATION

The City of SAN DIEGO
FOR CITY APPROVAL

DEVELOPMENT SERVICES DEPARTMENT
SHEET 1 OF 4 SHEETS

APPROVED: _____ FOR CITY ENGINEER _____ DATE

DESCRIPTION	BY	APPROVED	DATE
ORIGINAL	K&S		
AS BUILTS			

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

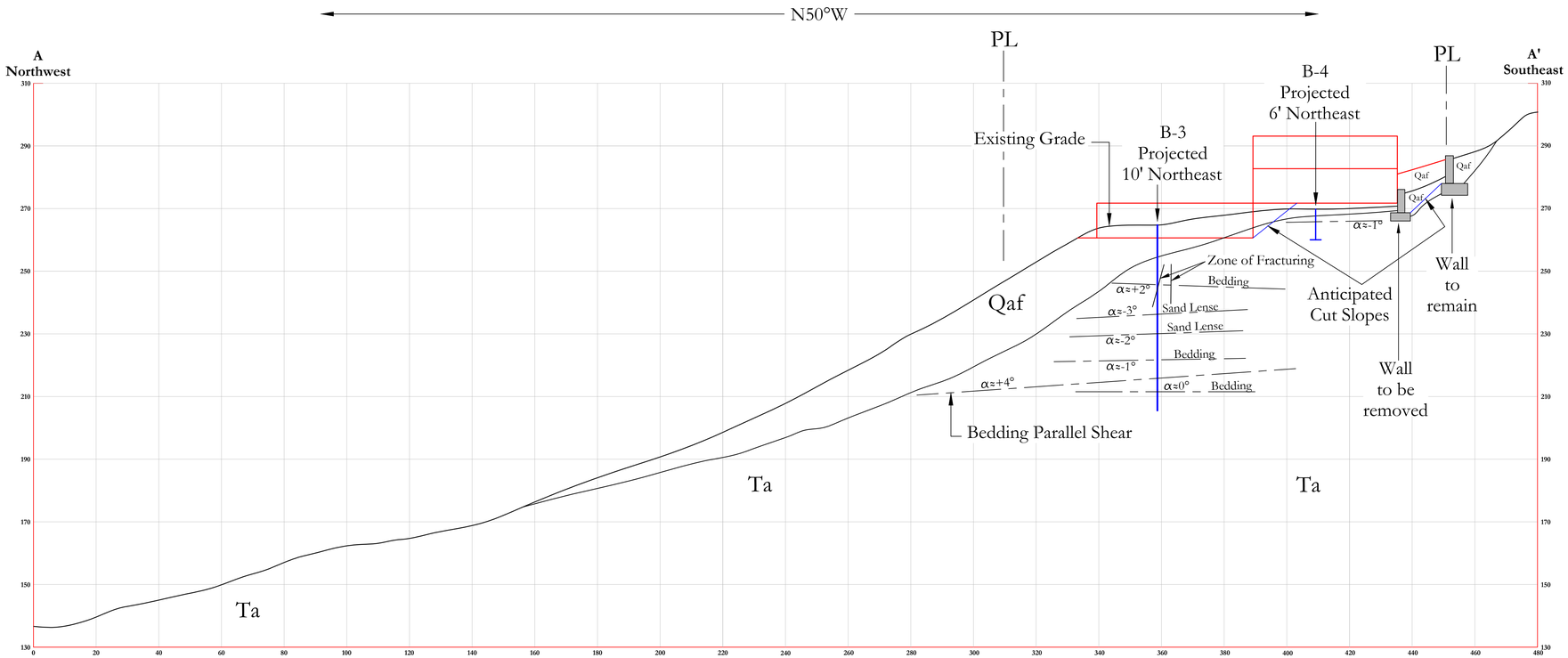
PMT NO. –
PRJ NO. –
1894-6253 NAD83 COORDINATES
254-1691 LAMBERT COORDINATES
DRAWING NO. -D C1

K&S ENGINEERING, INC.
Planning . Engineering . Surveying
7801 Mission Center Court, Suite 100 San Diego, CA 92108
(619) 296-5565 Fax: (619) 296-5564

ENGINEER OF WORK

KAMAL S. SWEIS RCE 48592 DATE

REGISTERED PROFESSIONAL ENGINEER
KAMAL S. SWEIS
No. 48592
EXP 6/30/24
CIVIL
STATE OF CALIFORNIA



CWE LEGEND	
Qaf	Artificial Fill
Ta	Ardath Shale

0 20' 40'

SCALE: 1" = 20'

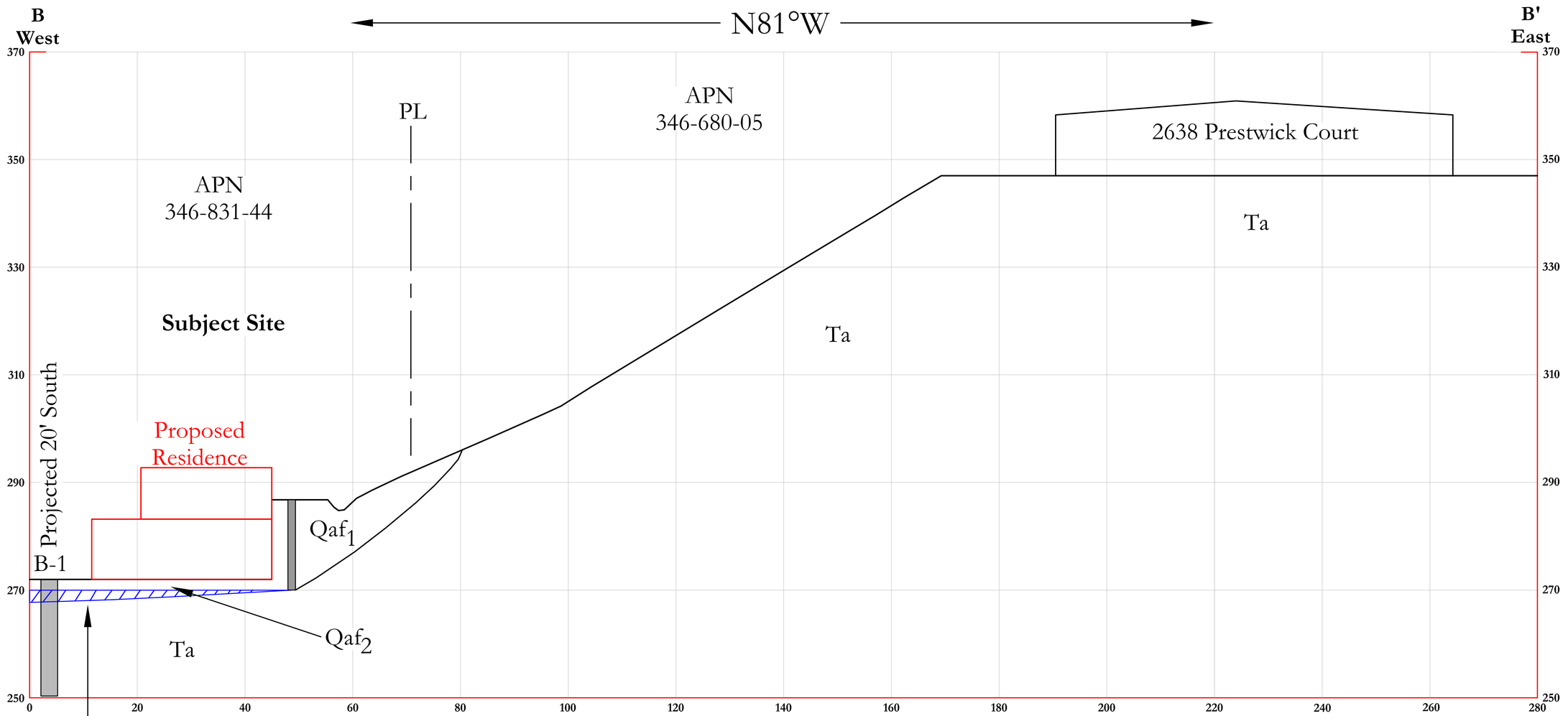
GEOLOGIC CROSS SECTION A-A'

PROPOSED SINGLE-FAMILY RESIDENCE
APN 346-831-44, RUETTE NICOLE
LA JOLLA, CALIFORNIA

DATE: MAY 2024 | JOB NO.: 2210373.03r

BY: SD | PLATE NO.: 2

CHRISTIAN WHEELER ENGINEERING



CWE LEGEND	
Qaf_1	Artificial Fill (undocumented)
Qaf_2	Artificial Fill (documented)
Ta	Ardath Shale

GEOLOGIC CROSS SECTION B-B'

PROPOSED SINGLE-FAMILY RESIDENCE
APN 346-831-44, RUETTE NICOLE
LA JOLLA, CALIFORNIA

DATE: MAY 2024	JOB NO.: 2210373.03r
BY: SD	PLATE NO.: 3

CHRISTIAN WHEELER
ENGINEERING

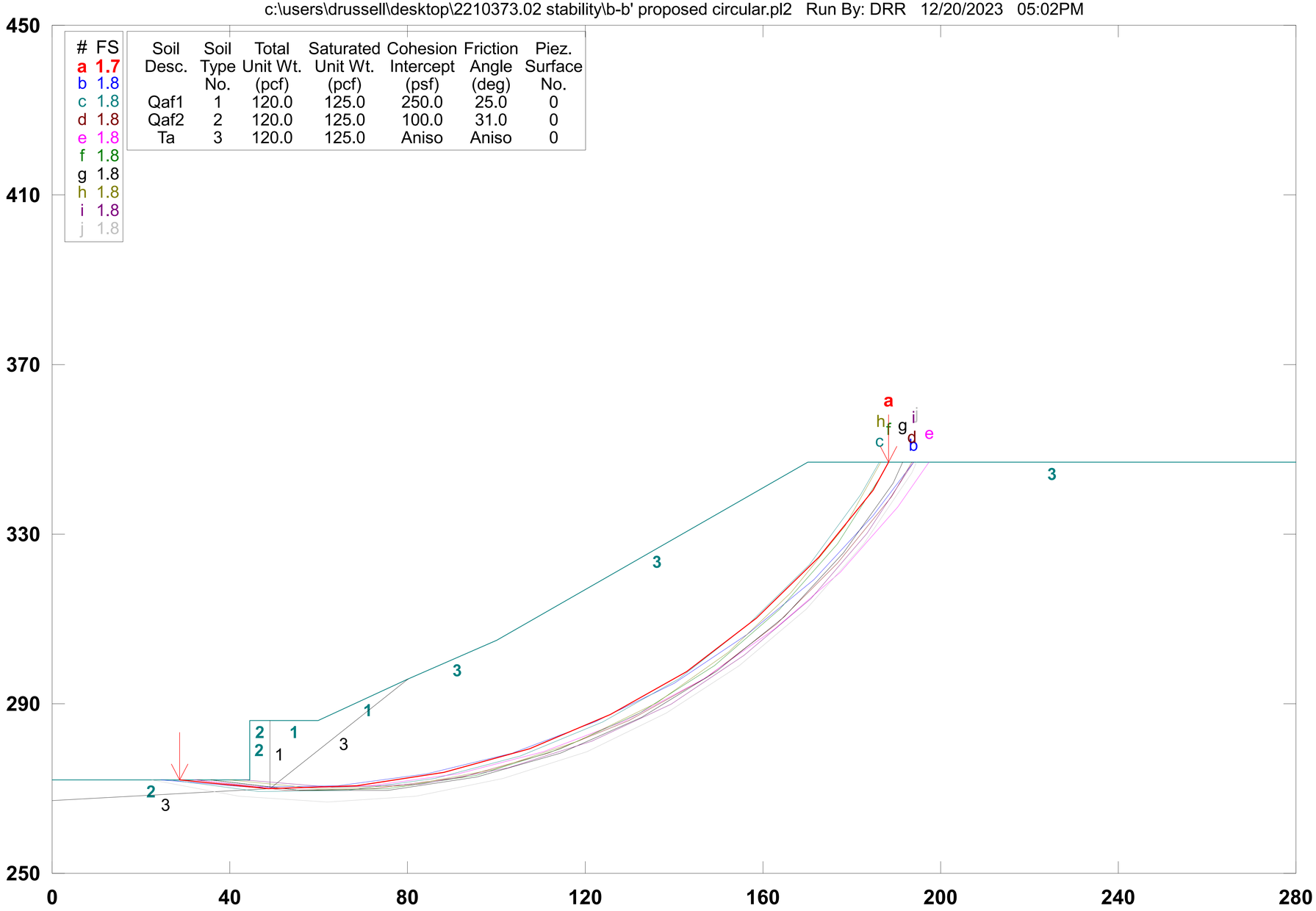
Appendix A

Results of Global Stability Analyses

Geologic Cross Section B-B'

CWE 22210373.02 B-B' Proposed Circular Static

c:\users\drussell\desktop\2210373.02 stability\b-b' proposed circular.pl2 Run By: DRR 12/20/2023 05:02PM



#	FS
a	1.7
b	1.8
c	1.8
d	1.8
e	1.8
f	1.8
g	1.8
h	1.8
i	1.8
j	1.8

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Qaf1	1	120.0	125.0	250.0	25.0	0
Qaf2	2	120.0	125.0	100.0	31.0	0
Ta	3	120.0	125.0	Aniso	Aniso	0

GSTABL7 v.2 FSmin=1.7

Safety Factors Are Calculated By The Modified Bishop Method

***** GSTABL7 *****

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **

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SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 12/20/2023
Time of Run: 05:02PM
Run By: DRR
Input Data Filename: c:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed circular.in
Output Filename: c:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed circular.OUT
Unit System: English
Plotted Output Filename: c:\Users\drussell\Desktop\221037 Stability\b-b' proposed circular.PLT
PROBLEM DESCRIPTION: CWE 22210373.02
B-B' Proposed Circular Static
BOUNDARY COORDINATES
8 Top Boundaries
11 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	272.00	44.50	272.00	2
2	44.50	272.00	44.60	286.00	2
3	44.60	286.00	49.10	286.00	2
4	49.10	286.00	60.00	286.00	1
5	60.00	286.00	80.00	296.00	1
6	80.00	296.00	100.00	305.00	3
7	100.00	305.00	170.00	347.00	3
8	170.00	347.00	280.00	347.00	3
9	49.00	270.00	49.10	286.00	1
10	49.00	270.00	80.00	296.00	3
11	0.00	267.00	49.00	270.00	3

User Specified Y-Origin = 250.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
3 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	250.0	25.0	0.00	0.0	0
2	120.0	125.0	100.0	31.0	0.00	0.0	0
3	120.0	125.0	650.0	27.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	650.00	27.00
2	4.0	480.00	20.00
3	90.0	650.00	27.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

A Critical Failure Surface Searching Method, Using A Random

Technique For Generating Circular Surfaces, Has Been Specified.
4000 Trial Surfaces Have Been Generated.
 100 Surface(s) Initiate(s) From Each Of   40 Points Equally Spaced
Along The Ground Surface Between X =   4.00(ft)
                            and X = 44.00(ft)
Each Surface Terminates Between   X = 175.00(ft)
                           and   X = 275.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y =   0.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Evaluated = 4000
      Statistical Data On All Valid FS Values:
         FS Max =   3.768   FS Min =   1.747   FS Ave =   2.600
         Standard Deviation =   0.467   Coefficient of Variation =   17.95 %
      Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	28.62	272.00
2	48.52	270.04
3	68.51	270.63
4	88.26	273.76
5	107.46	279.39
6	125.77	287.42
7	142.92	297.71
8	158.62	310.11
9	172.60	324.40
10	184.66	340.36
11	188.45	347.00

      Circle Center At X =   53.89 ; Y =   426.57 ; and Radius =   156.62
      Factor of Safety
      ***   1.747   ***
      Individual data on the   19 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	15.9	1491.7	0.0	0.0	0.	0.	0.0	0.0	0.0
2	0.1	102.8	0.0	0.0	0.	0.	0.0	0.0	0.0
3	3.9	7415.4	0.0	0.0	0.	0.	0.0	0.0	0.0
4	0.5	921.5	0.0	0.0	0.	0.	0.0	0.0	0.0
5	0.1	124.8	0.0	0.0	0.	0.	0.0	0.0	0.0
6	0.0	65.9	0.0	0.0	0.	0.	0.0	0.0	0.0
7	10.9	20643.9	0.0	0.0	0.	0.	0.0	0.0	0.0
8	8.5	17997.5	0.0	0.0	0.	0.	0.0	0.0	0.0
9	11.5	29762.1	0.0	0.0	0.	0.	0.0	0.0	0.0
10	8.3	24542.2	0.0	0.0	0.	0.	0.0	0.0	0.0
11	11.7	37851.1	0.0	0.0	0.	0.	0.0	0.0	0.0
12	7.5	25891.4	0.0	0.0	0.	0.	0.0	0.0	0.0
13	18.3	69391.6	0.0	0.0	0.	0.	0.0	0.0	0.0
14	17.1	67995.8	0.0	0.0	0.	0.	0.0	0.0	0.0
15	15.7	59427.3	0.0	0.0	0.	0.	0.0	0.0	0.0
16	11.4	37785.4	0.0	0.0	0.	0.	0.0	0.0	0.0
17	2.6	7478.0	0.0	0.0	0.	0.	0.0	0.0	0.0
18	12.1	21140.1	0.0	0.0	0.	0.	0.0	0.0	0.0
19	3.8	1509.7	0.0	0.0	0.	0.	0.0	0.0	0.0

      Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	24.51	272.00
2	44.42	270.13
3	64.42	270.57
4	84.23	273.33
5	103.59	278.35
6	122.23	285.59
7	139.91	294.94
8	156.40	306.27

9	171.46	319.43
10	184.89	334.24
11	194.01	347.00

Circle Center At X = 50.60 ; Y = 442.52 ; and Radius = 172.51

Factor of Safety

*** 1.756 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	26.56	272.00
2	46.40	269.41
3	66.40	269.49
4	86.20	272.26
5	105.46	277.65
6	123.83	285.57
7	140.97	295.88
8	156.57	308.39
9	170.36	322.87
10	182.09	339.08
11	186.33	347.00

Circle Center At X = 55.75 ; Y = 418.16 ; and Radius = 149.04

Factor of Safety

*** 1.756 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	32.72	272.00
2	52.58	269.67
3	72.58	269.95
4	92.37	272.82
5	111.62	278.25
6	130.00	286.13
7	147.20	296.34
8	162.93	308.70
9	176.91	323.00
10	188.91	339.00
11	193.42	347.00

Circle Center At X = 60.47 ; Y = 422.87 ; and Radius = 153.40

Factor of Safety

*** 1.757 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	31.69	272.00
2	51.60	270.03
3	71.59	270.48
4	91.38	273.35
5	110.69	278.59
6	129.21	286.12
7	146.70	295.83
8	162.87	307.59
9	177.51	321.22
10	190.40	336.51
11	197.25	347.00

Circle Center At X = 57.87 ; Y = 435.08 ; and Radius = 165.17

Factor of Safety

*** 1.758 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	35.79	272.00
2	55.65	269.59
3	75.64	270.01
4	95.38	273.27
5	114.45	279.29
6	132.47	287.95
7	149.09	299.09
8	163.96	312.46
9	176.78	327.81
10	187.29	344.83

11	188.24	347.00

Circle Center At X = 62.66 ; Y = 410.10 ; and Radius = 140.69

Factor of Safety

*** 1.763 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	35.79	272.00
2	55.64	269.49
3	75.64	269.75
4	95.41	272.77
5	114.57	278.49
6	132.76	286.81
7	149.62	297.56
8	164.84	310.54
9	178.12	325.49
10	189.21	342.14
11	191.55	347.00

Circle Center At X = 63.77 ; Y = 413.66 ; and Radius = 144.39

Factor of Safety

*** 1.765 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	39.90	272.00
2	59.78	269.86
3	79.77	270.66
4	99.41	274.40
5	118.30	280.98
6	136.01	290.26
7	152.17	302.05
8	166.42	316.09
9	178.45	332.07
10	186.56	347.00

Circle Center At X = 64.38 ; Y = 405.02 ; and Radius = 135.26

Factor of Safety

*** 1.768 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	42.97	272.00
2	62.89	270.13
3	82.87	271.03
4	102.53	274.69
5	121.49	281.05
6	139.39	289.97
7	155.88	301.28
8	170.65	314.78
9	183.40	330.18
10	193.77	347.00

Circle Center At X = 66.39 ; Y = 414.01 ; and Radius = 143.93

Factor of Safety

*** 1.770 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	22.46	272.00
2	42.08	268.11
3	62.04	266.84
4	81.99	268.22
5	101.59	272.23
6	120.48	278.79
7	138.34	287.79
8	154.85	299.08
9	169.73	312.44
10	182.71	327.66
11	193.56	344.46
12	194.76	347.00

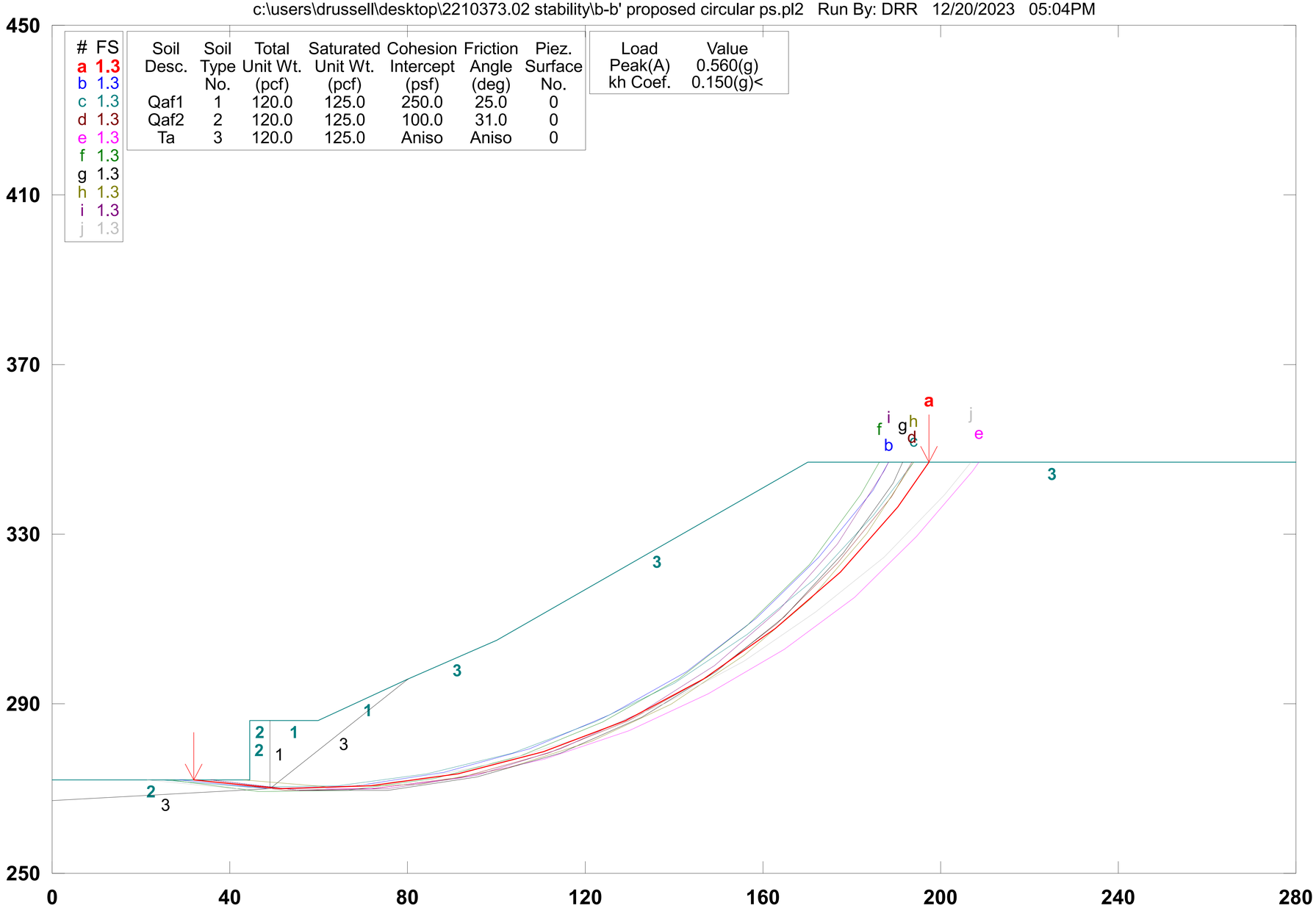
Circle Center At X = 61.63 ; Y = 417.44 ; and Radius = 150.63

Factor of Safety

```
    ***    1.782   ***
        **** END OF GSTABL7 OUTPUT ****
```

CWE 22210373.02 B-B' Proposed Circular Pseudo Static

c:\users\drussell\desktop\2210373.02 stability\b-b' proposed circular ps.pl2 Run By: DRR 12/20/2023 05:04PM



#	FS
a	1.3
b	1.3
c	1.3
d	1.3
e	1.3
f	1.3
g	1.3
h	1.3
i	1.3
j	1.3

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Qaf1	1	120.0	125.0	250.0	25.0	0
Qaf2	2	120.0	125.0	100.0	31.0	0
Ta	3	120.0	125.0	Aniso	Aniso	0

Load	Value
Peak(A)	0.560(g)
kh Coef.	0.150(g)<

GSTABL7 v.2 FSmin=1.3

Safety Factors Are Calculated By The Modified Bishop Method

***** GSTABL7 *****

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **

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SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 12/20/2023
Time of Run: 05:04PM
Run By: DRR
Input Data Filename: C:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed circular ps.in
Output Filename: C:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed circular ps.OUT
Unit System: English
Plotted Output Filename: C:\Users\drussell\Desktop\221037 Stability\b-b' proposed circular ps.PLT
PROBLEM DESCRIPTION: CWE 22210373.02
B-B' Proposed Circular Pseudo Static
BOUNDARY COORDINATES
8 Top Boundaries
11 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	272.00	44.50	272.00	2
2	44.50	272.00	44.60	286.00	2
3	44.60	286.00	49.10	286.00	2
4	49.10	286.00	60.00	286.00	1
5	60.00	286.00	80.00	296.00	1
6	80.00	296.00	100.00	305.00	3
7	100.00	305.00	170.00	347.00	3
8	170.00	347.00	280.00	347.00	3
9	49.00	270.00	49.10	286.00	1
10	49.00	270.00	80.00	296.00	3
11	0.00	267.00	49.00	270.00	3

User Specified Y-Origin = 250.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
3 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	250.0	25.0	0.00	0.0	0
2	120.0	125.0	100.0	31.0	0.00	0.0	0
3	120.0	125.0	650.0	27.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	650.00	27.00
2	4.0	480.00	20.00
3	90.0	650.00	27.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.
Specified Peak Ground Acceleration Coefficient (A) = 0.560(g)

Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
4000 Trial Surfaces Have Been Generated.
 100 Surface(s) Initiate(s) From Each Of 40 Points Equally Spaced
Along The Ground Surface Between X = 4.00(ft)
                            and X = 44.00(ft)
Each Surface Terminates Between X = 175.00(ft)
                           and X = 275.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Evaluated = 4000
Statistical Data On All Valid FS Values:
FS Max = 2.543 FS Min = 1.298 FS Ave = 1.834
Standard Deviation = 0.303 Coefficient of Variation = 16.53 %
Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	31.69	272.00
2	51.60	270.03
3	71.59	270.48
4	91.38	273.35
5	110.69	278.59
6	129.21	286.12
7	146.70	295.83
8	162.87	307.59
9	177.51	321.22
10	190.40	336.51
11	197.25	347.00

Circle Center At X = 57.87 ; Y = 435.08 ; and Radius = 165.17
Factor of Safety
*** 1.298 ***
Individual data on the 19 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	12.8	973.1	0.0	0.0	0.	0.	146.0	0.0	0.0
2	0.1	99.3	0.0	0.0	0.	0.	14.9	0.0	0.0
3	4.4	8184.1	0.0	0.0	0.	0.	1227.6	0.0	0.0
4	0.1	185.2	0.0	0.0	0.	0.	27.8	0.0	0.0
5	0.2	392.5	0.0	0.0	0.	0.	58.9	0.0	0.0
6	2.3	4351.8	0.0	0.0	0.	0.	652.8	0.0	0.0
7	8.4	16008.9	0.0	0.0	0.	0.	2401.3	0.0	0.0
8	11.6	25791.8	0.0	0.0	0.	0.	3868.8	0.0	0.0
9	8.4	23014.0	0.0	0.0	0.	0.	3452.1	0.0	0.0
10	11.4	35566.3	0.0	0.0	0.	0.	5334.9	0.0	0.0
11	8.6	29511.8	0.0	0.0	0.	0.	4426.8	0.0	0.0
12	10.7	39840.6	0.0	0.0	0.	0.	5976.1	0.0	0.0
13	18.5	76967.2	0.0	0.0	0.	0.	11545.1	0.0	0.0
14	17.5	77193.5	0.0	0.0	0.	0.	11579.0	0.0	0.0
15	16.2	70203.8	0.0	0.0	0.	0.	10530.6	0.0	0.0
16	7.1	29033.2	0.0	0.0	0.	0.	4355.0	0.0	0.0
17	7.5	26403.2	0.0	0.0	0.	0.	3960.5	0.0	0.0
18	12.9	28041.5	0.0	0.0	0.	0.	4206.2	0.0	0.0
19	6.9	4313.1	0.0	0.0	0.	0.	647.0	0.0	0.0

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	28.62	272.00
2	48.52	270.04
3	68.51	270.63
4	88.26	273.76

5	107.46	279.39
6	125.77	287.42
7	142.92	297.71
8	158.62	310.11
9	172.60	324.40
10	184.66	340.36
11	188.45	347.00

Circle Center At X = 53.89 ; Y = 426.57 ; and Radius = 156.62

Factor of Safety

*** 1.299 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	24.51	272.00
2	44.42	270.13
3	64.42	270.57
4	84.23	273.33
5	103.59	278.35
6	122.23	285.59
7	139.91	294.94
8	156.40	306.27
9	171.46	319.43
10	184.89	334.24
11	194.01	347.00

Circle Center At X = 50.60 ; Y = 442.52 ; and Radius = 172.51

Factor of Safety

*** 1.300 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	32.72	272.00
2	52.58	269.67
3	72.58	269.95
4	92.37	272.82
5	111.62	278.25
6	130.00	286.13
7	147.20	296.34
8	162.93	308.70
9	176.91	323.00
10	188.91	339.00
11	193.42	347.00

Circle Center At X = 60.47 ; Y = 422.87 ; and Radius = 153.40

Factor of Safety

*** 1.302 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	31.69	272.00
2	51.59	269.96
3	71.59	270.11
4	91.45	272.47
5	110.93	276.98
6	129.80	283.62
7	147.83	292.28
8	164.79	302.87
9	180.49	315.26
10	194.73	329.30
11	207.35	344.82
12	208.75	347.00

Circle Center At X = 60.22 ; Y = 451.15 ; and Radius = 181.41

Factor of Safety

*** 1.309 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	26.56	272.00
2	46.40	269.41
3	66.40	269.49
4	86.20	272.26
5	105.46	277.65

6	123.83	285.57
7	140.97	295.88
8	156.57	308.39
9	170.36	322.87
10	182.09	339.08
11	186.33	347.00

Circle Center At X = 55.75 ; Y = 418.16 ; and Radius = 149.04

Factor of Safety

*** 1.309 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	35.79	272.00
2	55.64	269.49
3	75.64	269.75
4	95.41	272.77
5	114.57	278.49
6	132.76	286.81
7	149.62	297.56
8	164.84	310.54
9	178.12	325.49
10	189.21	342.14
11	191.55	347.00

Circle Center At X = 63.77 ; Y = 413.66 ; and Radius = 144.39

Factor of Safety

*** 1.311 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	42.97	272.00
2	62.89	270.13
3	82.87	271.03
4	102.53	274.69
5	121.49	281.05
6	139.39	289.97
7	155.88	301.28
8	170.65	314.78
9	183.40	330.18
10	193.77	347.00

Circle Center At X = 66.39 ; Y = 414.01 ; and Radius = 143.93

Factor of Safety

*** 1.312 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	35.79	272.00
2	55.65	269.59
3	75.64	270.01
4	95.38	273.27
5	114.45	279.29
6	132.47	287.95
7	149.09	299.09
8	163.96	312.46
9	176.78	327.81
10	187.29	344.83
11	188.24	347.00

Circle Center At X = 62.66 ; Y = 410.10 ; and Radius = 140.69

Factor of Safety

*** 1.313 ***

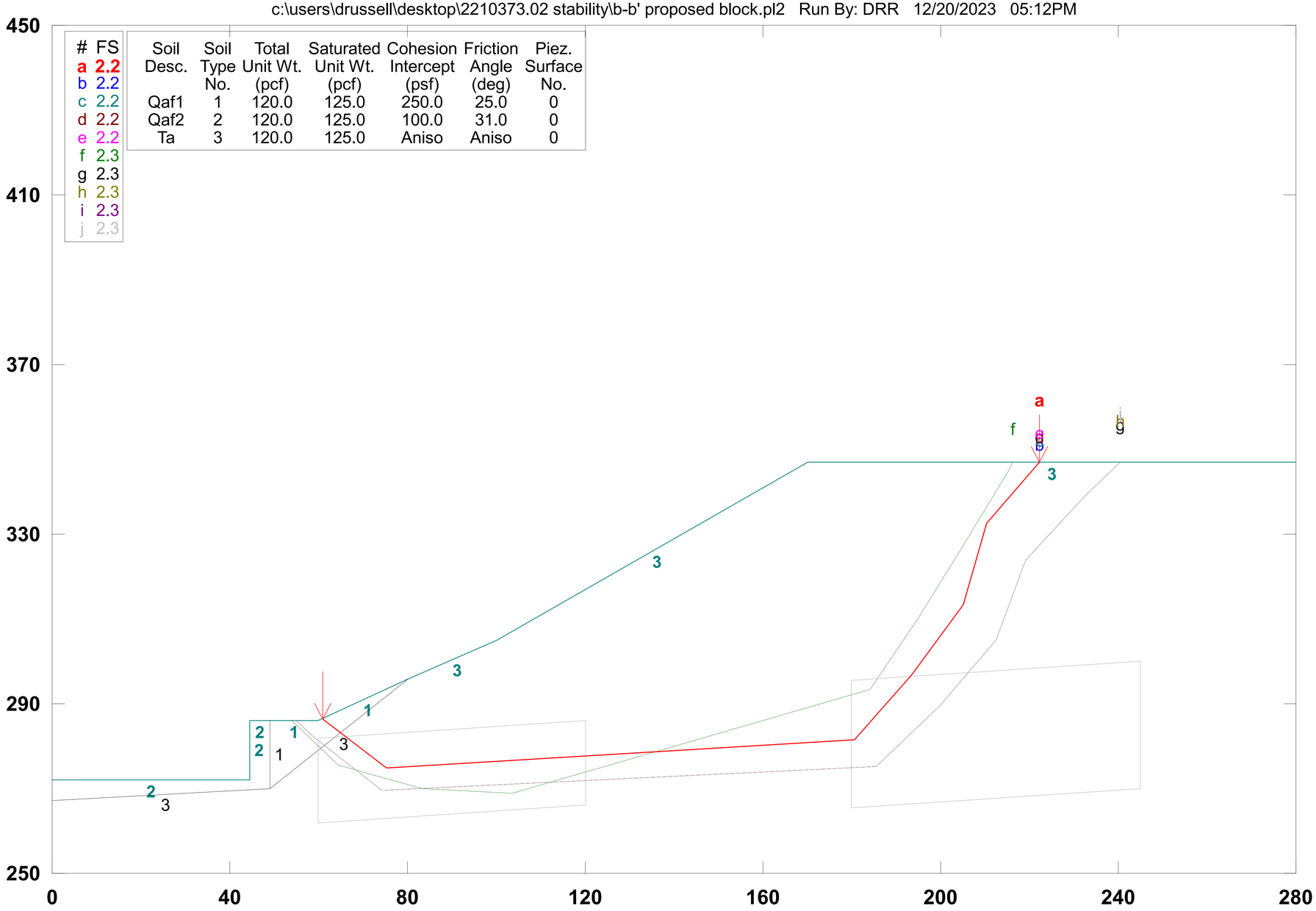
Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	21.44	272.00
2	41.34	270.03
3	61.34	270.08
4	81.23	272.16
5	100.81	276.26
6	119.87	282.31
7	138.22	290.27
8	155.66	300.05

```
     9        172.02      311.55
    10        187.14      324.65
    11        200.84      339.22
    12        206.80      347.00
 Circle Center At X =    50.89 ; Y =   465.76 ; and Radius =   195.98
       Factor of Safety
      ***    1.313   ***
          **** END OF GSTABL7 OUTPUT ****
```

CWE 22210373.02 B-B' Proposed Block Static

c:\users\drussell\desktop\2210373.02 stability\b-b' proposed block.pl2 Run By: DRR 12/20/2023 05:12PM



#	FS
a	2.2
b	2.2
c	2.2
d	2.2
e	2.2
f	2.3
g	2.3
h	2.3
i	2.3
j	2.3

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Qaf1	1	120.0	125.0	250.0	25.0	0
Qaf2	2	120.0	125.0	100.0	31.0	0
Ta	3	120.0	125.0	Aniso	Aniso	0

GSTABL7 v.2 FSmin=2.2

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

***** GSTABL7 *****

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 12/20/2023
Time of Run: 05:12PM
Run By: DRR
Input Data Filename: C:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed Block.in
Output Filename: C:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed Block.OUT
Unit System: English
Plotted Output Filename: C:\Users\drussell\Desktop\221037 Stability\b-b' proposed Block.PLT

PROBLEM DESCRIPTION: CWE 22210373.02
B-B' Proposed Block Static

BOUNDARY COORDINATES
8 Top Boundaries
11 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	272.00	44.50	272.00	2
2	44.50	272.00	44.60	286.00	2
3	44.60	286.00	49.10	286.00	2
4	49.10	286.00	60.00	286.00	1
5	60.00	286.00	80.00	296.00	1
6	80.00	296.00	100.00	305.00	3
7	100.00	305.00	170.00	347.00	3
8	170.00	347.00	280.00	347.00	3
9	49.00	270.00	49.10	286.00	1
10	49.00	270.00	80.00	296.00	3
11	0.00	267.00	49.00	270.00	3

User Specified Y-Origin = 250.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
3 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	250.0	25.0	0.00	0.0	0
2	120.0	125.0	100.0	31.0	0.00	0.0	0
3	120.0	125.0	650.0	27.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	650.00	27.00
2	4.0	480.00	20.00
3	90.0	650.00	27.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.
Janbus Empirical Coef is being used for the case of c & phi both > 0

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Sliding Block Surfaces, Has Been
Specified.
2000 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of
Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	60.00	272.00	120.00	276.20	20.00
2	180.00	280.40	245.00	284.90	30.00

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 2000
Statistical Data On All Valid FS Values:
FS Max = 9.267 FS Min = 2.235 FS Ave = 3.542
Standard Deviation = 0.884 Coefficient of Variation = 24.97 %
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 2.235 ***

Individual data on the 10 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	3.8	1181.2	0.0	0.0	0.	0.	0.0	0.0	0.0
2	10.3	14862.4	0.0	0.0	0.	0.	0.0	0.0	0.0
3	4.8	11426.8	0.0	0.0	0.	0.	0.0	0.0	0.0
4	20.0	59507.8	0.0	0.0	0.	0.	0.0	0.0	0.0
5	70.0	397893.6	0.0	0.0	0.	0.	0.0	0.0	0.0
6	10.7	84495.0	0.0	0.0	0.	0.	0.0	0.0	0.0
7	12.9	89090.7	0.0	0.0	0.	0.	0.0	0.0	0.0
8	11.5	57953.2	0.0	0.0	0.	0.	0.0	0.0	0.0
9	5.3	15358.3	0.0	0.0	0.	0.	0.0	0.0	0.0
10	11.9	10285.7	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 2.235 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 2.235 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety

*** 2.235 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety

*** 2.235 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	53.90	286.00
2	64.29	275.62
3	83.47	269.95
4	103.44	268.88
5	184.25	293.47
6	195.06	310.30
7	205.23	327.52
8	215.30	344.80
9	216.22	347.00

Factor of Safety

*** 2.262 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	54.97	286.00
2	58.92	282.14
3	74.37	269.44
4	185.63	275.37
5	199.77	289.51
6	212.62	304.84
7	219.12	323.75
8	232.30	338.79
9	240.41	347.00

Factor of Safety

*** 2.307 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	54.97	286.00
2	58.92	282.14
3	74.37	269.44
4	185.63	275.37
5	199.77	289.51
6	212.62	304.84
7	219.12	323.75
8	232.30	338.79
9	240.41	347.00

Factor of Safety

*** 2.307 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	54.97	286.00

2	58.92	282.14
3	74.37	269.44
4	185.63	275.37
5	199.77	289.51
6	212.62	304.84
7	219.12	323.75
8	232.30	338.79
9	240.41	347.00

Factor of Safety

*** 2.307 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	54.97	286.00
2	58.92	282.14
3	74.37	269.44
4	185.63	275.37
5	199.77	289.51
6	212.62	304.84
7	219.12	323.75
8	232.30	338.79
9	240.41	347.00

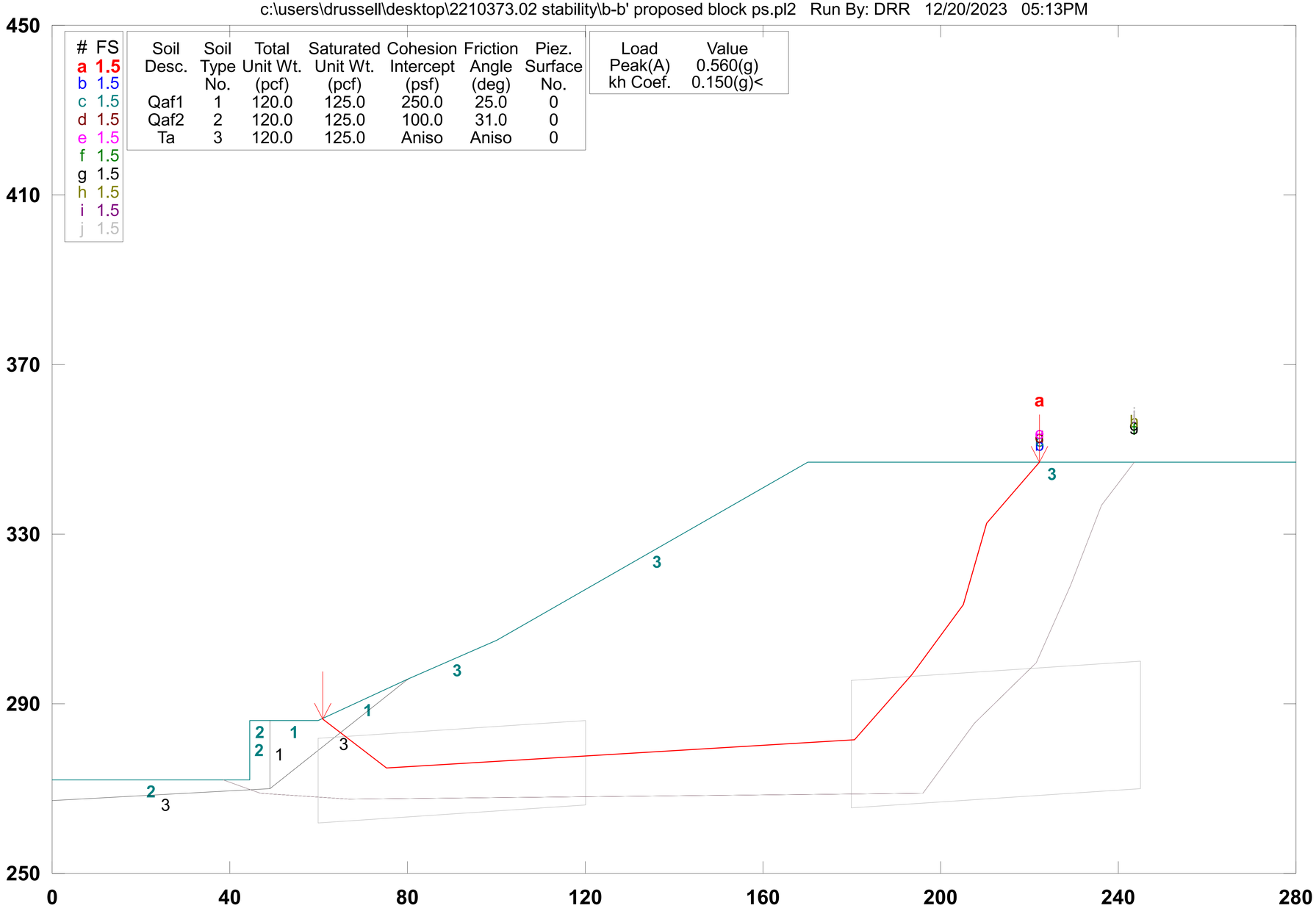
Factor of Safety

*** 2.307 ***

**** END OF GSTABL7 OUTPUT ****

CWE 22210373.02 B-B' Proposed Block Pseudo Static

c:\users\drussell\desktop\2210373.02 stability\b-b' proposed block ps.pl2 Run By: DRR 12/20/2023 05:13PM



#	FS
a	1.5
b	1.5
c	1.5
d	1.5
e	1.5
f	1.5
g	1.5
h	1.5
i	1.5
j	1.5

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Qaf1	1	120.0	125.0	250.0	25.0	0
Qaf2	2	120.0	125.0	100.0	31.0	0
Ta	3	120.0	125.0	Aniso	Aniso	0

Load	Value
Peak(A)	0.560(g)
kh Coef.	0.150(g)<

GSTABL7 v.2 FSmin=1.5

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

***** GSTABL7 *****

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 12/20/2023
Time of Run: 05:13PM
Run By: DRR
Input Data Filename: C:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed block PS.in
Output Filename: C:\Users\drussell\Desktop\2210373.02 Stability\b-b' proposed block PS.OUT
Unit System: English
Plotted Output Filename: C:\Users\drussell\Desktop\221037 Stability\b-b' proposed block PS.PLT

PROBLEM DESCRIPTION: CWE 22210373.02
B-B' Proposed Block Pseudo Static

BOUNDARY COORDINATES
8 Top Boundaries
11 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	272.00	44.50	272.00	2
2	44.50	272.00	44.60	286.00	2
3	44.60	286.00	49.10	286.00	2
4	49.10	286.00	60.00	286.00	1
5	60.00	286.00	80.00	296.00	1
6	80.00	296.00	100.00	305.00	3
7	100.00	305.00	170.00	347.00	3
8	170.00	347.00	280.00	347.00	3
9	49.00	270.00	49.10	286.00	1
10	49.00	270.00	80.00	296.00	3
11	0.00	267.00	49.00	270.00	3

User Specified Y-Origin = 250.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
3 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	250.0	25.0	0.00	0.0	0
2	120.0	125.0	100.0	31.0	0.00	0.0	0
3	120.0	125.0	650.0	27.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	650.00	27.00
2	4.0	480.00	20.00
3	90.0	650.00	27.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Specified Peak Ground Acceleration Coefficient (A) = 0.560(g)

Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Sliding Block Surfaces, Has Been
Specified.
2000 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of
Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	60.00	272.00	120.00	276.20	20.00
2	180.00	280.40	245.00	284.90	30.00

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 2000
Statistical Data On All Valid FS Values:
FS Max = 4.471 FS Min = 1.504 FS Ave = 2.128
Standard Deviation = 0.377 Coefficient of Variation = 17.74 %
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 1.504 ***
Individual data on the 10 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	3.8	1181.2	0.0	0.0	0.	0.	177.2	0.0	0.0
2	10.3	14862.4	0.0	0.0	0.	0.	2229.4	0.0	0.0
3	4.8	11426.8	0.0	0.0	0.	0.	1714.0	0.0	0.0
4	20.0	59507.8	0.0	0.0	0.	0.	8926.2	0.0	0.0
5	70.0	397893.6	0.0	0.0	0.	0.	59684.0	0.0	0.0
6	10.7	84495.0	0.0	0.0	0.	0.	12674.2	0.0	0.0
7	12.9	89090.7	0.0	0.0	0.	0.	13363.6	0.0	0.0
8	11.5	57953.2	0.0	0.0	0.	0.	8693.0	0.0	0.0
9	5.3	15358.3	0.0	0.0	0.	0.	2303.7	0.0	0.0
10	11.9	10285.7	0.0	0.0	0.	0.	1542.9	0.0	0.0

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 1.504 ***
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27

6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 1.504 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 1.504 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	61.04	286.52
2	75.22	274.74
3	180.71	281.60
4	193.57	296.92
5	205.09	313.27
6	210.41	332.55
7	222.27	347.00

Factor of Safety
*** 1.504 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.48	272.00
2	46.83	269.07
3	66.78	267.59
4	195.94	269.07
5	207.65	285.28
6	221.67	299.55
7	229.21	318.07
8	236.20	336.81
9	243.53	347.00

Factor of Safety
*** 1.518 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.48	272.00
2	46.83	269.07
3	66.78	267.59
4	195.94	269.07
5	207.65	285.28
6	221.67	299.55
7	229.21	318.07
8	236.20	336.81
9	243.53	347.00

Factor of Safety
*** 1.518 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.48	272.00
2	46.83	269.07
3	66.78	267.59
4	195.94	269.07
5	207.65	285.28
6	221.67	299.55
7	229.21	318.07
8	236.20	336.81
9	243.53	347.00

Factor of Safety
*** 1.518 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.48	272.00
2	46.83	269.07
3	66.78	267.59
4	195.94	269.07
5	207.65	285.28
6	221.67	299.55
7	229.21	318.07
8	236.20	336.81
9	243.53	347.00

Factor of Safety

*** 1.518 ***

Failure Surface Specified By 9 Coordinate Points

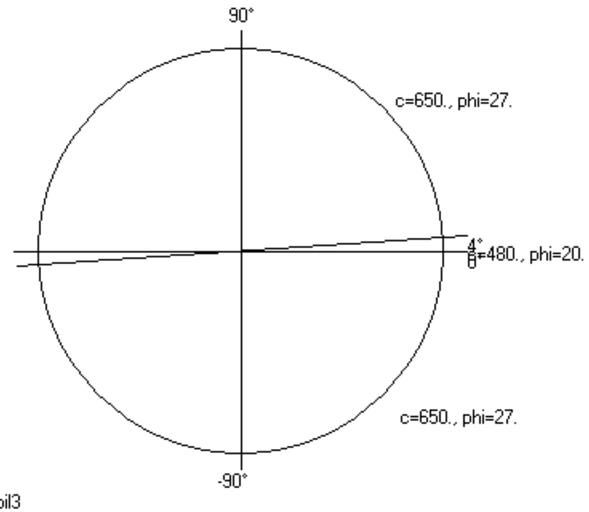
Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.48	272.00
2	46.83	269.07
3	66.78	267.59
4	195.94	269.07
5	207.65	285.28
6	221.67	299.55
7	229.21	318.07
8	236.20	336.81
9	243.53	347.00

Factor of Safety

*** 1.518 ***

**** END OF GSTABL7 OUTPUT ****

Anisotropic Soil Definition



Soil3

CWE 22210373.02

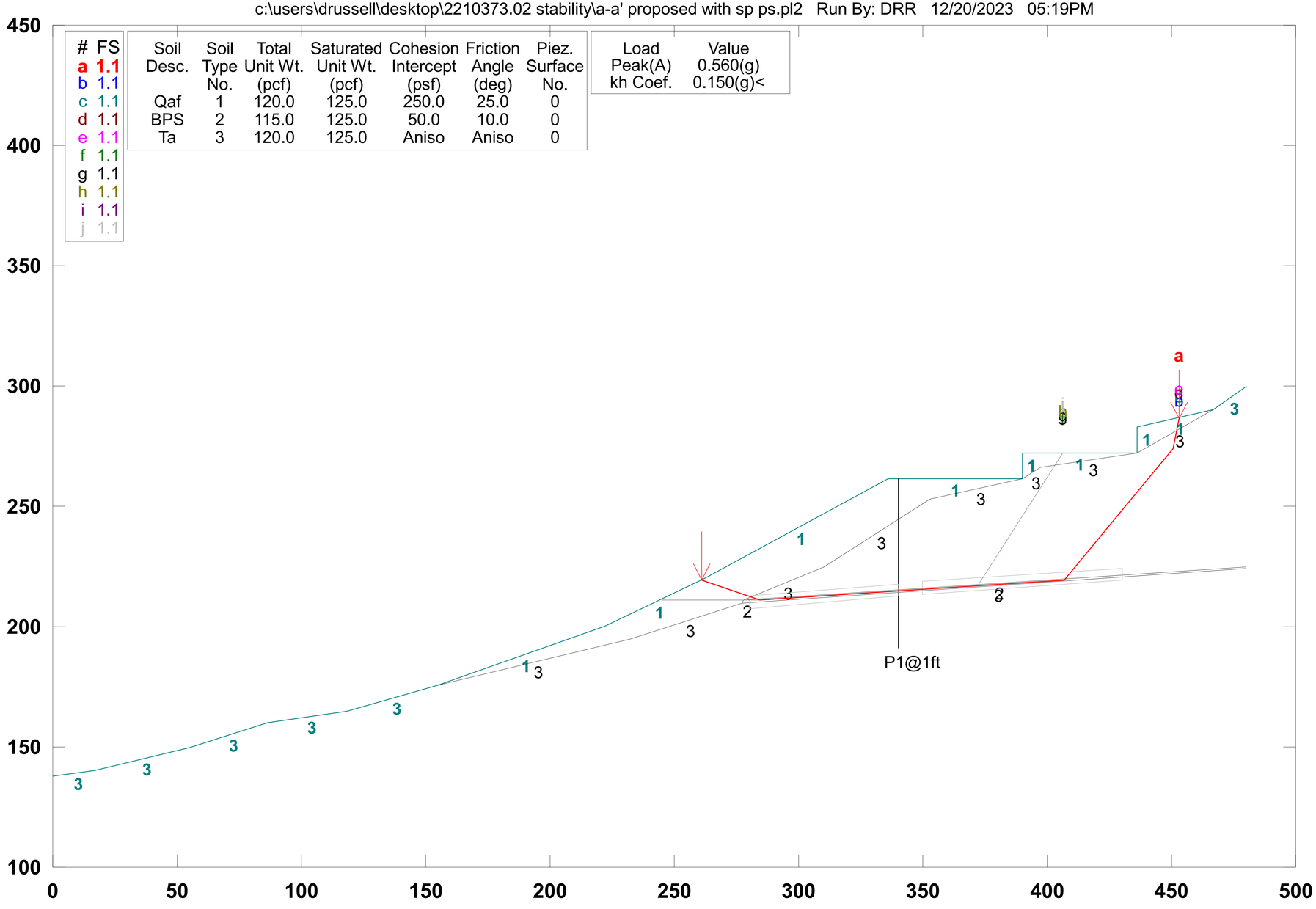
Appendix B

Results of Pseudo-Static Global Stability Analysis

Geologic Cross Section A-A'

CWE 22210373.03 A-A' Proposed Pseudo-Static

c:\users\drussell\desktop\2210373.02 stability\a-a' proposed with sp ps.pl2 Run By: DRR 12/20/2023 05:19PM



#	FS
a	1.1
b	1.1
c	1.1
d	1.1
e	1.1
f	1.1
g	1.1
h	1.1
i	1.1
j	1.1

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Qaf	1	120.0	125.0	250.0	25.0	0
BPS	2	115.0	125.0	50.0	10.0	0
Ta	3	120.0	125.0	Aniso	Aniso	0

Load	Value
Peak(A)	0.560(g)
kh Coef.	0.150(g)<

GSTABL7 v.2 FSmin=1.1

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

***** GSTABL7 *****

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 12/20/2023
Time of Run: 05:19PM
Run By: DRR
Input Data Filename: C:\Users\drussell\Desktop\2210373.02 Stability\a-a' proposed with sp ps.in
Output Filename: C:\Users\drussell\Desktop\2210373.02 Stability\a-a' proposed with sp ps.OUT
Unit System: English
Plotted Output Filename: C:\Users\drussell\Desktop\221037 Stability\a-a' proposed with sp ps.PLT
PROBLEM DESCRIPTION: CWE 22210373.03
A-A' Proposed Pseudo-Static

BOUNDARY COORDINATES
14 Top Boundaries
25 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	138.00	17.00	140.00	3
2	17.00	140.00	55.00	150.00	3
3	55.00	150.00	86.50	160.00	3
4	86.50	160.00	118.00	165.00	3
5	118.00	165.00	154.50	175.75	3
6	154.50	175.75	222.00	200.00	1
7	222.00	200.00	262.00	220.00	1
8	262.00	220.00	336.00	261.50	1
9	336.00	261.50	390.00	261.50	1
10	390.00	261.50	390.10	272.00	1
11	390.10	272.00	436.00	272.00	1
12	436.00	272.00	436.10	283.00	1
13	436.10	283.00	467.00	290.00	1
14	467.00	290.00	480.00	300.00	3
15	436.00	272.00	467.00	290.00	3
16	397.00	266.00	436.00	272.00	3
17	390.00	261.50	397.00	266.00	3
18	353.00	253.00	390.00	261.50	3
19	310.00	225.00	353.00	253.00	3
20	278.00	211.00	310.00	225.00	3
21	278.00	211.00	480.00	225.00	2
22	277.00	210.00	278.00	211.00	2
23	277.00	210.00	480.00	224.00	3
24	232.00	195.00	277.00	210.00	3
25	154.50	175.75	232.00	195.00	3

User Specified Y-Origin = 100.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
3 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	250.0	25.0	0.00	0.0	0
2	115.0	125.0	50.0	10.0	0.00	0.0	0
3	120.0	125.0	650.0	27.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	650.00	27.00
2	4.0	480.00	20.00
3	90.0	650.00	27.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Specified Peak Ground Acceleration Coefficient (A) = 0.560(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

PIER/PILE LOAD(S)

1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	340.00	261.50	23500.0	1.0	90.00	70.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
3000 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 70.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	280.00	210.00	340.00	215.00	5.00
2	350.00	216.00	430.00	221.80	5.00

WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	277.97	228.96
2	296.94	210.19
3	357.87	218.30
4	358.10	261.50

Factor of Safety for the Preceding Surface is Between10.319 and10.291
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	280.70	230.49
2	299.42	212.49
3	371.95	219.24
4	372.10	261.50

Factor of Safety for the Preceding Surface is Between13.139 and13.094
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	264.34	221.31
2	286.93	213.03
3	385.13	218.21
4	385.30	261.50

Factor of Safety for the Preceding Surface is Between 6.011 and 6.004
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	277.97	228.96
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4	385.30	261.50

Factor of Safety for the Preceding Surface is Between 6.011 and 6.004
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 3000
WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 20 Iterations.
Number of Trial Surfaces with Non-Converged FS = 15
Percentage of Trial Surfaces With Non-Valid FS Solutions
of the Total Evaluated = 0.5 %
Statistical Data On All Valid FS Values:
FS Max = 61.337 FS Min = 1.052 FS Ave = 2.636
Standard Deviation = 2.793 Coefficient of Variation = 105.96 %
Failure Surface Specified By 5 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	261.15	219.57
2	284.26	210.94
3	406.89	219.11
4	450.44	273.91
5	452.93	286.81

Factor of Safety
*** 1.052 ***

Individual data on the 17 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	0.9	38.1	0.0	0.0	0.	0.	5.7	0.0	0.0
2	18.8	21509.1	0.0	0.0	0.	0.	3226.4	0.0	0.0
3	2.3	5427.5	0.0	0.0	0.	0.	814.1	0.0	0.0
4	1.1	2834.9	0.0	0.0	0.	0.	425.2	0.0	0.0
5	25.7	86134.9	0.0	0.0	0.	0.	12920.2	0.0	0.0
6	26.0	126878.1	0.0	0.0	0.	0.	19031.7	0.0	0.0
7	17.0	94902.6	0.0	0.0	0.	0.	14235.4	0.0	0.0
8	37.0	198547.6	0.0	0.0	0.	0.	29782.1	0.0	0.0
9	0.1	584.8	0.0	0.0	0.	0.	87.7	0.0	0.0
10	6.9	44501.3	0.0	0.0	0.	0.	6675.2	0.0	0.0
11	9.9	63117.6	0.0	0.0	0.	0.	9467.6	0.0	0.0
12	0.7	4349.9	0.0	0.0	0.	0.	652.5	0.0	0.0
13	28.4	116424.1	0.0	0.0	0.	0.	17463.6	0.0	0.0
14	0.1	260.3	0.0	0.0	0.	0.	39.1	0.0	0.0
15	14.3	33962.7	0.0	0.0	0.	0.	5094.4	0.0	0.0
16	1.4	1493.0	0.0	0.0	0.	0.	223.9	0.0	0.0
17	1.1	348.4	0.0	0.0	0.	0.	52.3	0.0	0.0

Failure Surface Specified By 5 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
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4	450.44	273.91
5	452.93	286.81

Factor of Safety
*** 1.052 ***

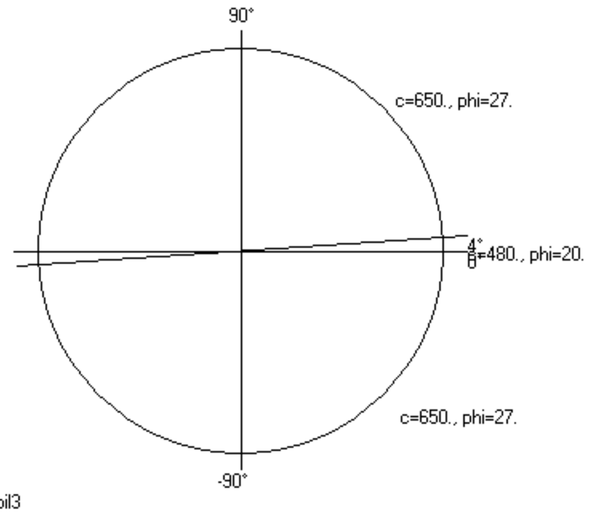
Failure Surface Specified By 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	244.56	211.28
2	286.05	210.91
3	372.08	216.82
4	406.31	272.00

Factor of Safety

```
      ***    1.090   ***
Failure Surface Specified By  4 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        244.56      211.28
    2        286.05      210.91
    3        372.08      216.82
    4        406.31      272.00
       Factor of Safety
      ***    1.090   ***
Failure Surface Specified By  4 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        244.56      211.28
    2        286.05      210.91
    3        372.08      216.82
    4        406.31      272.00
       Factor of Safety
      ***    1.090   ***
Failure Surface Specified By  4 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        244.56      211.28
    2        286.05      210.91
    3        372.08      216.82
    4        406.31      272.00
       Factor of Safety
      ***    1.090   ***
Failure Surface Specified By  4 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        244.56      211.28
    2        286.05      210.91
    3        372.08      216.82
    4        406.31      272.00
       Factor of Safety
      ***    1.090   ***
          **** END OF GSTABL7 OUTPUT ****
```

Anisotropic Soil Definition



Soil3

CWE 22210373.03