



**Submittal Review**



Munjoy Heights  
 JN 1047  
 79 Walnut Street, Portland, Maine, 04101

Submittal # 7 (Spec. 323223, Sub. 1)  
 Revision #  
 Date Submitted: 3/6/2014  
 Date Returned: 3/13/2014

| Client/Owner       |                 | Engineers/Architects   |  |
|--------------------|-----------------|--|--|
| Company            | Contact         | Company  | Contact  |
| Redfern Munjoy LLC | Jonathan Culley | Acorn Engineering, Inc.<br>PO Box 3372<br>Portland, Maine, 04104 | Will Savage, PE<br>Project Manager<br>207.775.2655<br><a href="mailto:wsavage@acorn-engineering.com">wsavage@acorn-engineering.com</a> |

Description of Item Submitted: **Retaining Wall Global Stability Analysis**  
 Sheet/Specification Page: Summit Geoengineering Services Slope Stability Analysis dated March 10, 2014.

|   |  |
|---|--|
| <input type="checkbox"/> Approved                     | <input type="checkbox"/> Revise as Noted |
| <input checked="" type="checkbox"/> Approved as Noted | <input type="checkbox"/> Rejected        |
| <input type="checkbox"/> Revise and Resubmit          |  |

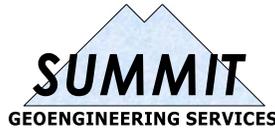
The Consultant's (Acorn Engineering) review was performed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Modifications or comments made on the submittal/shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weights or gauges, fabrication processes, construction means or methods, coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility of the Contractor. Review of a specific item shall not indicate that the Consultant has reviewed the entire assembly of which the item is a component. The Consultant shall not be responsible for any deviations from the Contract Documents not brought to the attention of the Consultant in writing by the Contractor. The Consultant shall not be required to review partial submissions or those for which submissions of correlated items have not been received.

Signature:  Date: 3/13/14

Notes:

- 1) Acorn Engineering's submittal review does not include a review of the wall design, dimensions, calculations, global stability analysis and the design of the temporary soil restraint measures provided by Summit Geoengineering Services.





March 10, 2014  
SGS #13217

Andrew McCrum  
Precast Concrete Products of Maine  
139 Main Street  
Topsham, Maine 04086

Reference: Slope Stability Analysis, Munjoy Heights  
Walnut Street, Portland, Maine

Dear Andy;

Summit performed a global slope stability analysis at the two critical locations for the Munjoy Heights project. The locations, labeled Section 1 and Section 2 are shown on the attached site grading plan C-30. The pictorial and numerical results of the stability analyses are also attached.

The global slope stability analysis was performed by Summit using Slide v6, published by Rocscience. All proposed constructed elements intersected by the cross section line were included in the model, including the subsurface detention system (full water level), proposed building foundations, and MSE and GRAVITY retaining walls. Both the static and seismic conditions were analyzed. All possible failure surfaces were analyzed using the Bishop Simplified and Janbu Simplified methods.

We note that the stability analyses were performed using the Stone Strong retaining wall system, previously designed by SGS.

The critical failure surfaces are shown on the attached figures. The minimum safety factors are summarized below.

| LOCATION  | ANALYSIS                    | SAFETY FACTOR |         |
|-----------|-----------------------------|---------------|---------|
|           |                             | Static        | Seismic |
| Section 1 | Overall Stability           | 1.42          | 1.32    |
|           | Foundation & Retaining Wall | 1.36          | 1.32    |
| Section 2 | Overall Stability           | 1.35          | 1.17    |

In all cases the minimum requirements of 1.3 for static conditions and 1.1 for seismic conditions were met.

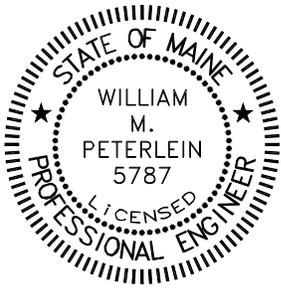


We appreciate the opportunity to assist you with this phase of the project. If there are any questions, please do not hesitate to contact me.

Respectfully Submitted  
**Summit Geoengineering Services, Inc.**

A handwritten signature in blue ink that reads "William M. Peterlein".

William M. Peterlein, P.E.  
President & Principal Engineer



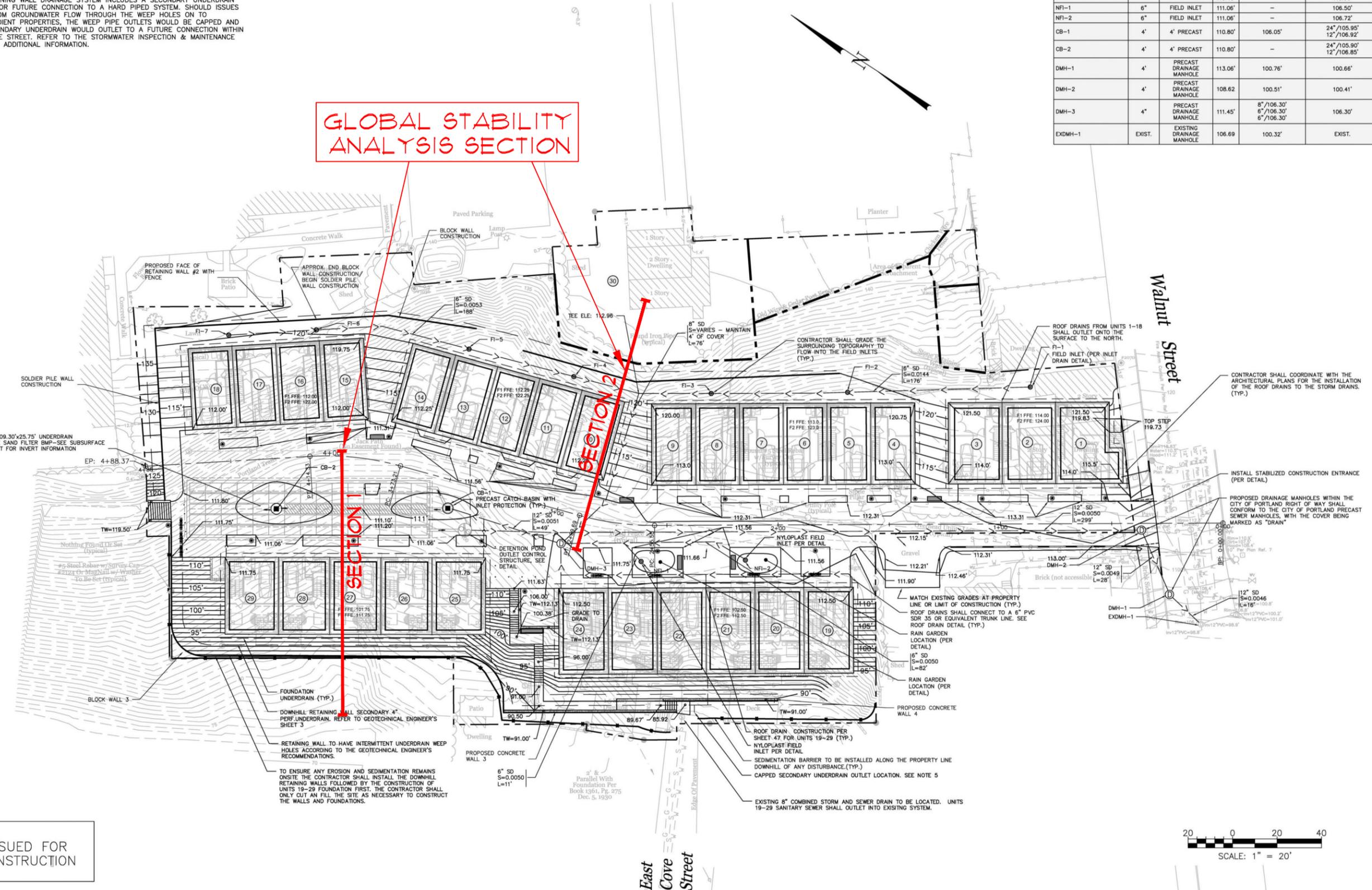
P.O. Box 7216, Lewiston, Maine 04243, (207) 576-3313  
P.O. Box 838, Camden, Maine 04843, (207) 706-7999



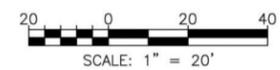
- NOTE:
1. ALL DISTURBED AND PROPOSED SLOPES NOT COVERED WITH MULCH AND GREATER THAN 3:1 SHALL BE STABILIZED WITH 4" OF LOAM SEED AND EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL.
  2. ALL DISTURBED AND PROPOSED SLOPES TO BE COVERED WITH MULCH AND GREATER THAN 3:1 SHALL BE TEMPORARILY STABILIZED WITH EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL.
  3. THE UNDERDRAIN ASSOCIATED WITH THE UPHILL RETAINING WALLS AND FOUNDATION UNDERDRAIN FOR UNITS 1-18 SHALL OUTLET DOWNSTREAM OF THE UNDERDRAINED SUBSURFACE SAND FILTER'S OUTLET CONTROL STRUCTURE.
  4. ALL STORM DRAIN PIPES SHALL CONFORM TO CITY OF PORTLAND TECHNICAL MANUAL SECTION 2.5.2.
  5. THE RETAINING WALL DRAINAGE SYSTEM INCLUDES A SECONDARY UNDERDRAIN SYSTEM FOR FUTURE CONNECTION TO A HARD PIPED SYSTEM. SHOULD ISSUES ARISE FROM GROUNDWATER FLOW THROUGH THE WEEP HOLES ON TO DOWNGRADIENT PROPERTIES, THE WEEP PIPE OUTLETS WOULD BE CAPPED AND THE SECONDARY UNDERDRAIN WOULD OUTLET TO A FUTURE CONNECTION WITHIN EAST COVE STREET. REFER TO THE STORMWATER INSPECTION & MAINTENANCE PLAN FOR ADDITIONAL INFORMATION.

| DRAINAGE STRUCTURE SCHEDULE |        |                           |         |  |                                |
|-----------------------------|--------|---------------------------|---------|--|--------------------------------|
| STRUCTURE                   | SIZE   | TYPE                      | RIM     | INV. IN                                      | INV. OUT                       |
| FI-1                        | -      | FIELD INLET               | 121.00' | -  | 115.50'                        |
| FI-2                        | -      | FIELD INLET               | 120.40' | 114.90'                                      | 114.90'                        |
| FI-3                        | -      | FIELD INLET               | 120.40' | 114.30'                                      | 114.30'                        |
| FI-4                        | -      | FIELD INLET               | 121.90' | 113.16'                                      | 113.16'                        |
| FI-5                        | -      | FIELD INLET               | 121.90' | 113.32'                                      | 113.32'                        |
| FI-6                        | -      | FIELD INLET               | 119.40' | 113.70'                                      | 113.70'                        |
| FI-7                        | -      | FIELD INLET               | 119.40' | -  | 113.90'                        |
| NFI-1                       | 6"     | FIELD INLET               | 111.06' | -  | 106.50'                        |
| NFI-2                       | 6"     | FIELD INLET               | 111.06' | -  | 106.72'                        |
| CB-1                        | 4'     | 4' PRECAST                | 110.80' | 106.05'                                      | 24" / 105.95'<br>12" / 106.92' |
| CB-2                        | 4'     | 4' PRECAST                | 110.80' | -  | 24" / 105.90'<br>12" / 106.85' |
| DMH-1                       | 4'     | PRECAST DRAINAGE MANHOLE  | 113.06' | 100.76'                                      | 100.66'                        |
| DMH-2                       | 4'     | PRECAST DRAINAGE MANHOLE  | 108.62  | 100.51'                                      | 100.41'                        |
| DMH-3                       | 4"     | PRECAST DRAINAGE MANHOLE  | 111.45' | 8" / 106.30'<br>6" / 106.30'<br>6" / 106.30' | 106.30'                        |
| EXDMH-1                     | EXIST. | EXISTING DRAINAGE MANHOLE | 106.69  | 100.32'                                      | EXIST.                         |

**GLOBAL STABILITY ANALYSIS SECTION**



ISSUED FOR CONSTRUCTION



|                      |      |
|----------------------|------|
| ISSUED FOR           | BY   |
| CITY SUBMISSION      | WHS  |
| WORKSHOP #2          | WHS  |
| FINAL SUBMISSION     | WHS  |
| MAINE DEP MCGP       | WHS  |
| CONDITIONS APPROVAL  | WHS  |
| FINAL COND. APPROVAL | WHS  |
| CONSTRUCTION         | WHS  |
| REVISION             | DATE |
| STAFF COMMENTS       | DATE |

DRAWING NAME: GRADING, DRAINAGE & EROSION CONTROL PLAN  
 PROJECT NAME: MUNJOY HEIGHTS  
 CLIENT: REDFERN MUNJOY, LLC.  
 P.O. BOX 8816, PORTLAND, MAINE 04104

ACCREDITED ENGINEERING, INC. ENGINEERING, INC.

STATE OF MAINE  
 WILLIAM H. SAVAGE  
 No. 12114  
 LICENSED PROFESSIONAL ENGINEER

FILE: 1047\_CML  
 DATE: 11/05/13  
 JUN: 1047  
 SCALE: 1"=20'  
 DESIGN BY: WHS  
 DRAWN BY: ZRJ  
 CHECKED BY: WHS

DRAWING NO. **C-30**

INSPECTIONS DIVISION  
 Date: 03/17/14

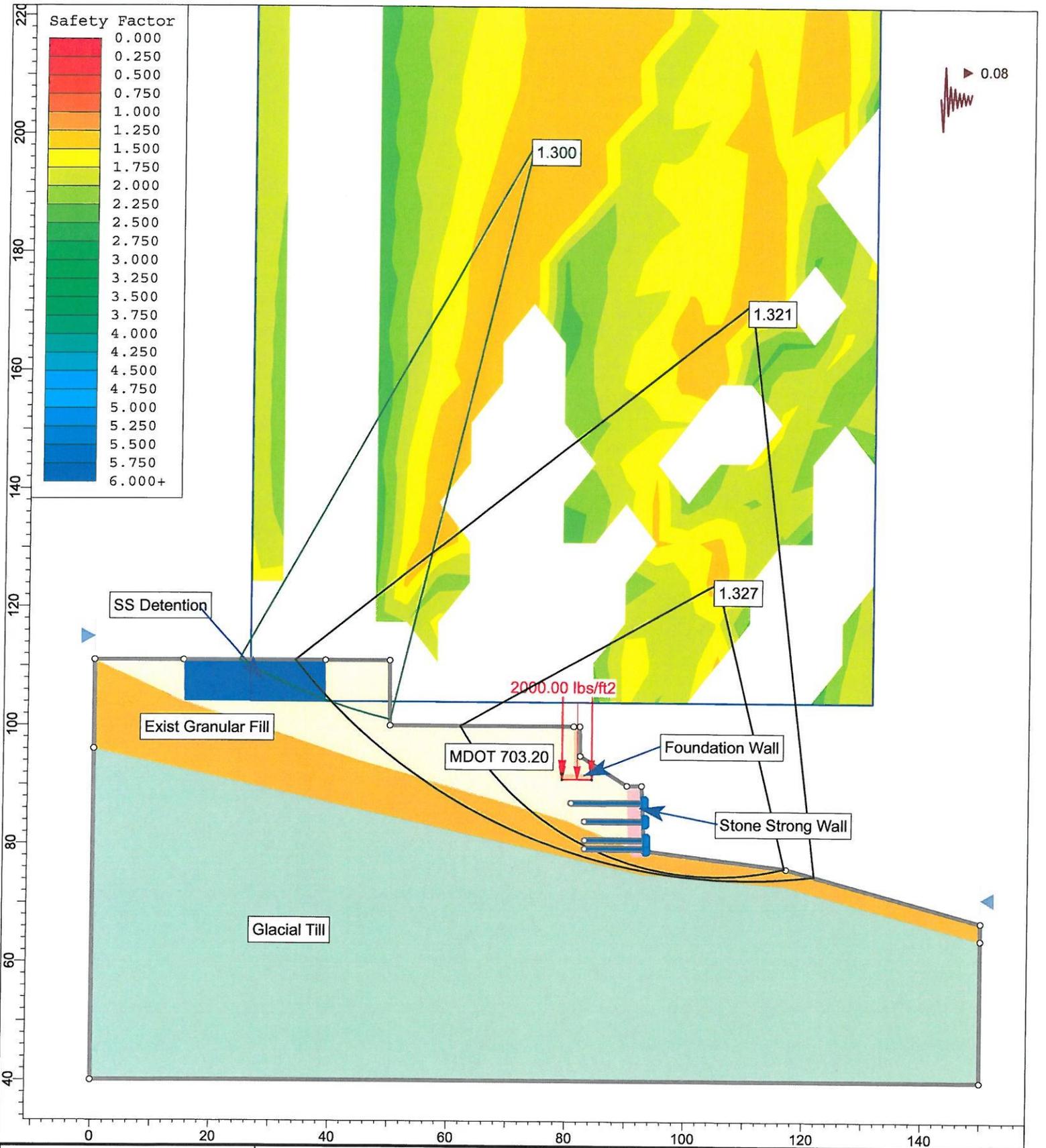


**SLOPE STABILITY ANALYSIS RESULTS**  
**SECTION 1**

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**P.O. Box 7216, Lewiston, Maine 04243, (207) 576-3313**  
**P.O. Box 838, Camden, Maine 04843, (207) 706-7999**

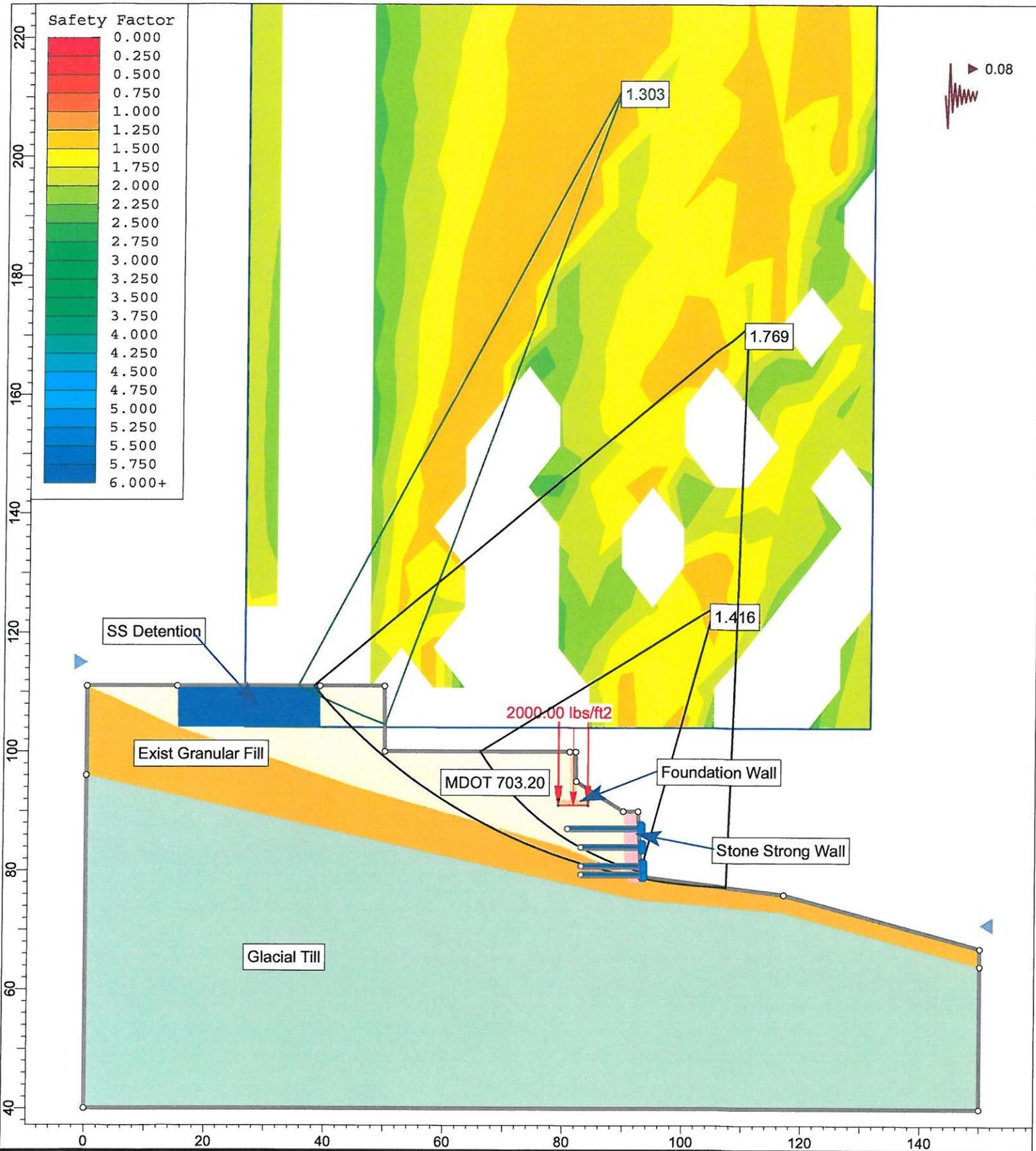




|      |   |           |                           |
|------|---|-----------|---------------------------|
|      | Munjoy Heights - #13217   |           |                           |
|      | <i>Seismic</i><br>SECTION 1 - <del>Static</del> - Stone Strong - Bishop |           |                           |
|      | Analysis Description  | Scale     | Company                   |
|      | Drawn By  | 1:260     | Summit Geoen지니어링 Services |
| Date | 1/7/2014, 8:33:22 AM  | File Name | Section 1 - SEISMIC.slim  |

SLIDEINTERPRET 6.026





|   |                      |                                  |
|---|----------------------|----------------------------------|
| Munjoy Heights - #13217   |                      |                                  |
| SECTION 1 - <del>Static</del> <sup>Seismic</sup> - Stone Strong - Janbu |                      |                                  |
| Analysis Description  | Scale                | Company                          |
| Drawn By  | 1:260                | Summit Geoenengineering Services |
| Date  | 1/7/2014, 8:33:22 AM | File Name                        |
|   |                      | Section 1 - SEISMIC.slim         |



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# Slide Analysis Information

## Munjoy Heights #13067.1

### Project Summary

File Name: Section 1 - SEISMIC  
 Slide Modeler Version: 6.026  
 Project Title: Munjoy Heights #13067.1  
 Analysis: SECTION 1 - SEISMIC ANALYSIS  
 Company: Summit Geoengineering Services  
 Date Created: 1/7/2014, 8:33:22 AM

### General Settings

Units of Measurement: Imperial Units  
 Time Units: days  
 Permeability Units: feet/second  
 Failure Direction: Left to Right  
 Data Output: Maximum  
 Maximum Material Properties: 20  
 Maximum Support Properties: 20

### Analysis Options

#### Analysis Methods Used

Bishop simplified  
 Janbu simplified

Number of slices: 25  
 Tolerance: 0.005  
 Maximum number of iterations: 50  
 Check malpha < 0.2: Yes  
 Apply support forces to interslice boundaries: Yes  
 Discard data for surfaces with FS below: 1.3  
 Discard data for surfaces with FS above: 2.5  
 Initial trial value of FS: 1  
 Steffensen Iteration: Yes

### Groundwater Analysis

Groundwater Method: Water Surfaces

|  |   |                               |                          |
|--|---|-------------------------------|--------------------------|
|  | Munjoy Heights - #13217                           |                               |                          |
|  | <i>Analysis Description</i>                       |                               |                          |
|  | SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |                               |                          |
|  | <i>Drawn By</i>                                   | <i>Scale</i>                  | <i>Company</i>           |
|  |   | Summit Geoengineering Service |                          |
| <i>Date</i>  | 1/7/2014, 8:33:22 AM                              | <i>File Name</i>              | Section 1 - SEISMIC.slim |

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Pore Fluid Unit Weight: 62.4 lbs/ft<sup>3</sup>  
 Advanced Groundwater Method: None

## Random Numbers

Pseudo-random Seed: 10116  
 Random Number Generation Method: Park and Miller v.3

## Surface Options

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

## Loading

Seismic Load Coefficient (Horizontal): 0.08  
 1 Distributed Load present

### Distributed Load 1

Distribution: Constant  
 Magnitude [psf]: 2000  
 Orientation: Vertical

## Material Properties

| Property                           | Inported Fill (MDOT 703.20)   | Native Glacial Till   | Foundation Wall   | Existing Granular Fill - Proofrolled  | Retaining Wall  | water   |
|------------------------------------|---|---|---|---|---|---|
| Color                              |  |  |  |  |  |  |
| Strength Type                      | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  |
| Unit Weight [lbs/ft <sup>3</sup> ] | 130   | 124   | 150   | 130   | 127   | 62.4  |
| Cohesion [psf]                     | 0.02  | 2000  | 10000   | 0.02  | 1257  | 0.02  |
| Friction Angle [deg]               | 35  | 35  | 45  | 32  | 35  | 1   |
| Water Surface                      | None  | None  | None  | None  | None  | None  |
| Ru Value                           | 0   | 0   | 0   | 0   | 0   | 0   |

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  | <i>File Name</i> Section 1 - SEISMIC.slim |  |



## Support Properties

### Support 1

Support Type: GeoTextile  
Force Application: Active  
Force Orientation: Parallel to Reinforcement  
Anchorage: Slope Face  
Shear Strength Model: Linear  
Strip Coverage: 100 percent  
Tensile Strength: 5000 lb/ft  
Pullout Strength Adhesion: 0.8 psf  
Pullout Strength Friction Angle: 40 degrees

## Global Minimums

### Method: bishop simplified

FS: 1.300340  
Center: 73.624, 198.551  
Radius: 100.419  
Left Slip Surface Endpoint: 24.443, 111.000  
Right Slip Surface Endpoint: 49.991, 100.953  
Resisting Moment=764888 lb-ft  
Driving Moment=588220 lb-ft  
Total Slice Area=145.129 ft<sup>2</sup>

### Method: janbu simplified

FS: 1.303140  
Center: 89.366, 212.056  
Radius: 114.565  
Left Slip Surface Endpoint: 35.397, 111.000  
Right Slip Surface Endpoint: 49.959, 104.483  
Resisting Horizontal Force=3487.15 lb  
Driving Horizontal Force=2675.96 lb  
Total Slice Area=50.2131 ft<sup>2</sup>

## Valid / Invalid Surfaces

### Method: bishop simplified

Number of Valid Surfaces: 1001  
Number of Invalid Surfaces: 3850

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  | <i>File Name</i> Section 1 - SEISMIC.slim |  |

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**Error Codes:**

- Error Code -97 reported for 3575 surfaces
- Error Code -100 reported for 1 surface
- Error Code -103 reported for 12 surfaces
- Error Code -106 reported for 24 surfaces
- Error Code -107 reported for 66 surfaces
- Error Code -112 reported for 172 surfaces

**Method: Janbu Simplified**

Number of Valid Surfaces: 1114  
 Number of Invalid Surfaces: 3737

**Error Codes:**

- Error Code -97 reported for 3461 surfaces
- Error Code -100 reported for 1 surface
- Error Code -103 reported for 12 surfaces
- Error Code -106 reported for 24 surfaces
- Error Code -107 reported for 66 surfaces
- Error Code -112 reported for 173 surfaces

**Error Codes**

The following errors were encountered during the computation:

- 97 = Factor of safety is out of valid range set by user.
- 100 = Both surface / slope intersections are on the same horizontal surface. In general, this will give a very high or infinite factor of safety (zero driving force), if calculated.
- 103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
- 106 = Average slice width is less than 0.0001 \* (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
- 107 = Total driving moment or total driving force is negative. This will occur if the wrong failure direction is specified, or if high external or anchor loads are applied against the failure direction.
- 112 = The coefficient  $M\text{-}\alpha = \cos(\alpha)(1 + \tan(\alpha)\tan(\phi)/F) < 0.2$  for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

**Slice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 1.30034

| Slice Number | Width [ft] | Weight [lbs] | Base Material | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|---------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 1.04667    | 18.9336      | water         | 0.02                | 1                             | 0.2563             | 0.333277             | 17.9476                  | 0                   | 17.9476                       |

|  |   |   |  |
|--|---|---|--|
|  | <b>Munjoy Heights - #13217</b>  |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  | <i>File Name</i> Section 1 - SEISMIC.slim |  |

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|    |          |         |                             |      |    |          |          |         |   |         |
|----|----------|---------|-----------------------------|------|----|----------|----------|---------|---|---------|
| 2  | 1.04667  | 56.2738 | water                       | 0.02 | 1  | 0.731805 | 0.951595 | 53.371  | 0 | 53.371  |
| 3  | 1.04667  | 92.5699 | water                       | 0.02 | 1  | 1.1942   | 1.55287  | 87.818  | 0 | 87.818  |
| 4  | 1.04667  | 127.841 | water                       | 0.02 | 1  | 1.64372  | 2.1374   | 121.306 | 0 | 121.306 |
| 5  | 1.04667  | 162.106 | water                       | 0.02 | 1  | 2.0806   | 2.70549  | 153.851 | 0 | 153.851 |
| 6  | 1.04667  | 195.382 | water                       | 0.02 | 1  | 2.50504  | 3.2574   | 185.471 | 0 | 185.471 |
| 7  | 1.04667  | 227.687 | water                       | 0.02 | 1  | 2.91724  | 3.7934   | 216.177 | 0 | 216.177 |
| 8  | 1.04667  | 259.034 | water                       | 0.02 | 1  | 3.31739  | 4.31373  | 245.988 | 0 | 245.988 |
| 9  | 1.04667  | 289.44  | water                       | 0.02 | 1  | 3.70567  | 4.81863  | 274.913 | 0 | 274.913 |
| 10 | 1.04667  | 318.92  | water                       | 0.02 | 1  | 4.08226  | 5.30833  | 302.968 | 0 | 302.968 |
| 11 | 1.04667  | 347.485 | water                       | 0.02 | 1  | 4.44732  | 5.78303  | 330.164 | 0 | 330.164 |
| 12 | 1.04667  | 375.149 | water                       | 0.02 | 1  | 4.80101  | 6.24295  | 356.513 | 0 | 356.513 |
| 13 | 1.04667  | 401.925 | water                       | 0.02 | 1  | 5.14347  | 6.68826  | 382.024 | 0 | 382.024 |
| 14 | 1.04667  | 449.794 | water                       | 0.02 | 1  | 5.75521  | 7.48373  | 427.597 | 0 | 427.597 |
| 15 | 0.990453 | 891.496 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 406.047  | 527.999  | 754.033 | 0 | 754.033 |
| 16 | 0.990453 | 936.685 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 428.904  | 557.721  | 796.48  | 0 | 796.48  |
| 17 | 0.990453 | 980.38  | Inported Fill (MDOT 703.20) | 0.02 | 35 | 451.292  | 586.833  | 838.057 | 0 | 838.057 |
| 18 | 0.990453 | 1022.6  | Inported Fill (MDOT 703.20) | 0.02 | 35 | 473.209  | 615.332  | 878.757 | 0 | 878.757 |
| 19 | 0.990453 | 1063.35 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 494.651  | 643.214  | 918.576 | 0 | 918.576 |
| 20 | 0.990453 | 1102.66 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 515.616  | 670.476  | 957.51  | 0 | 957.51  |
| 21 | 0.990453 | 1140.53 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 536.101  | 697.113  | 995.553 | 0 | 995.553 |
| 22 | 0.990453 | 1176.98 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 556.101  | 723.121  | 1032.7  | 0 | 1032.7  |
| 23 | 0.990453 | 1212.02 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 575.616  | 748.497  | 1068.94 | 0 | 1068.94 |
| 24 | 0.990453 | 1245.66 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 594.641  | 773.236  | 1104.27 | 0 | 1104.27 |
| 25 | 0.990453 | 1218.27 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 584.551  | 760.115  | 1085.53 | 0 | 1085.53 |

Global Minimum Query (janbu simplified) - Safety Factor: 1.30314

| Slice Number | Width [ft] | Weight [lbs] | Base Material | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|---------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 0.60486    | 6.05222      | water         | 0.02                | 1                             | 0.148321           | 0.193283             | 9.92735                  | 0                   | 9.92735                       |
| 2            | 0.60486    | 18.0697      | water         | 0.02                | 1                             | 0.412613           | 0.537692             | 29.6585                  | 0                   | 29.6585                       |
| 3            | 0.60486    | 29.914       | water         | 0.02                | 1                             | 0.673149           | 0.877208             | 49.1094                  | 0                   | 49.1094                       |
| 4            | 0.60486    | 41.5867      | water         | 0.02                | 1                             | 0.929961           | 1.21187              | 68.2824                  | 0                   | 68.2824                       |

|  |   |              |  |
|--|---|--------------|--|
|  | <b>Munjoy Heights - #13217</b>  |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |              |  |
|  | <i>Drawn By</i>   | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  |              | <i>File Name</i> Section 1 - SEISMIC.slim    |



|    |          |         |                             |      |    |         |         |         |   |         |
|----|----------|---------|-----------------------------|------|----|---------|---------|---------|---|---------|
| 5  | 0.60486  | 53.0895 | water                       | 0.02 | 1  | 1.18309 | 1.54173 | 87.1799 | 0 | 87.1799 |
| 6  | 0.60486  | 66.087  | water                       | 0.02 | 1  | 1.46914 | 1.9145  | 108.536 | 0 | 108.536 |
| 7  | 0.575407 | 149.282 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 110.566 | 144.083 | 205.743 | 0 | 205.743 |
| 8  | 0.575407 | 170.039 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 126.308 | 164.597 | 235.041 | 0 | 235.041 |
| 9  | 0.575407 | 190.502 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 141.92  | 184.942 | 264.096 | 0 | 264.096 |
| 10 | 0.575407 | 210.673 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 157.402 | 205.117 | 292.91  | 0 | 292.91  |
| 11 | 0.575407 | 230.553 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 172.753 | 225.121 | 321.479 | 0 | 321.479 |
| 12 | 0.575407 | 250.146 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 187.972 | 244.954 | 349.803 | 0 | 349.803 |
| 13 | 0.575407 | 269.453 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 203.06  | 264.616 | 377.883 | 0 | 377.883 |
| 14 | 0.575407 | 288.476 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 218.016 | 284.105 | 405.715 | 0 | 405.715 |
| 15 | 0.575407 | 307.218 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 232.839 | 303.422 | 433.303 | 0 | 433.303 |
| 16 | 0.575407 | 325.68  | Inported Fill (MDOT 703.20) | 0.02 | 35 | 247.529 | 322.565 | 460.641 | 0 | 460.641 |
| 17 | 0.575407 | 343.865 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 262.085 | 341.534 | 487.734 | 0 | 487.734 |
| 18 | 0.575407 | 361.774 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 276.509 | 360.33  | 514.576 | 0 | 514.576 |
| 19 | 0.575407 | 379.41  | Inported Fill (MDOT 703.20) | 0.02 | 35 | 290.798 | 378.95  | 541.168 | 0 | 541.168 |
| 20 | 0.575407 | 396.773 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 304.952 | 397.395 | 567.511 | 0 | 567.511 |
| 21 | 0.575407 | 413.867 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 318.972 | 415.665 | 593.601 | 0 | 593.601 |
| 22 | 0.575407 | 430.692 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 332.855 | 433.757 | 619.441 | 0 | 619.441 |
| 23 | 0.575407 | 447.25  | Inported Fill (MDOT 703.20) | 0.02 | 35 | 346.604 | 451.673 | 645.028 | 0 | 645.028 |
| 24 | 0.575407 | 463.543 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 360.216 | 469.412 | 670.362 | 0 | 670.362 |
| 25 | 0.575407 | 454.472 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 354.134 | 461.486 | 659.042 | 0 | 659.042 |

**Interslice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 1.30034

| X | Y | Interslice | Interslice | Interslice |
|---|---|------------|------------|------------|
|---|---|------------|------------|------------|

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  | <i>File Name</i> Section 1 - SEISMIC.slim |  |



| Number | coordinate [ft] | coordinate - Bottom [ft] | Normal Force [lbs] | Shear Force [lbs] | Force Angle [degrees] |
|--------|-----------------|--------------------------|--------------------|-------------------|-----------------------|
| 1      | 24.443          | 111                      | 0                  | 0                 | 0                     |
| 2      | 25.4896         | 110.42                   | 11.6526            | 0                 | 0                     |
| 3      | 26.5363         | 109.857                  | 45.4721            | 0                 | 0                     |
| 4      | 27.583          | 109.309                  | 99.7374            | 0                 | 0                     |
| 5      | 28.6296         | 108.776                  | 172.814            | 0                 | 0                     |
| 6      | 29.6763         | 108.259                  | 263.149            | 0                 | 0                     |
| 7      | 30.723          | 107.757                  | 369.266            | 0                 | 0                     |
| 8      | 31.7697         | 107.27                   | 489.76             | 0                 | 0                     |
| 9      | 32.8163         | 106.798                  | 623.295            | 0                 | 0                     |
| 10     | 33.863          | 106.339                  | 768.597            | 0                 | 0                     |
| 11     | 34.9097         | 105.895                  | 924.456            | 0                 | 0                     |
| 12     | 35.9563         | 105.464                  | 1089.72            | 0                 | 0                     |
| 13     | 37.003          | 105.048                  | 1263.28            | 0                 | 0                     |
| 14     | 38.0497         | 104.645                  | 1444.09            | 0                 | 0                     |
| 15     | 39.0964         | 104.255                  | 1640.77            | 0                 | 0                     |
| 16     | 40.0868         | 103.898                  | 1579.54            | 0                 | 0                     |
| 17     | 41.0773         | 103.553                  | 1505.17            | 0                 | 0                     |
| 18     | 42.0677         | 103.219                  | 1416.83            | 0                 | 0                     |
| 19     | 43.0582         | 102.897                  | 1313.74            | 0                 | 0                     |
| 20     | 44.0486         | 102.586                  | 1195.15            | 0                 | 0                     |
| 21     | 45.0391         | 102.286                  | 1060.36            | 0                 | 0                     |
| 22     | 46.0295         | 101.998                  | 908.692            | 0                 | 0                     |
| 23     | 47.02           | 101.72                   | 739.53             | 0                 | 0                     |
| 24     | 48.0104         | 101.454                  | 552.284            | 0                 | 0                     |
| 25     | 49.0009         | 101.198                  | 346.403            | 0                 | 0                     |
| 26     | 49.9913         | 100.953                  | 0                  | 0                 | 0                     |

Global Minimum Query (janbu simplified) - Safety Factor: 1.30314

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 35.3974           | 111                        | 0                             | 0                            | 0                                |
| 2            | 36.0022           | 110.679                    | 3.57822                       | 0                            | 0                                |
| 3            | 36.6071           | 110.363                    | 14.1492                       | 0                            | 0                                |
| 4            | 37.2119           | 110.052                    | 31.4342                       | 0                            | 0                                |
| 5            | 37.8168           | 109.745                    | 55.1618                       | 0                            | 0                                |
| 6            | 38.4217           | 109.442                    | 85.0673                       | 0                            | 0                                |
| 7            | 39.0265           | 109.144                    | 121.818                       | 0                            | 0                                |
| 8            | 39.6019           | 108.865                    | 127.649                       | 0                            | 0                                |
| 9            | 40.1773           | 108.589                    | 133.342                       | 0                            | 0                                |
| 10           | 40.7527           | 108.317                    | 138.659                       | 0                            | 0                                |

|  |   |  |   |  |  |
|--|---|--|---|--|--|
|  | Munjoy Heights - #13217   |  |   |  |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |  |   |  |  |
|  | <i>Drawn By</i>   |  | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |  |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  |  | <i>File Name</i> Section 1 - SEISMIC.slim |  |  |

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|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 11 | 41.3281 | 108.05  | 143.369 | 0 | 0 |
| 12 | 41.9035 | 107.786 | 147.243 | 0 | 0 |
| 13 | 42.479  | 107.526 | 150.061 | 0 | 0 |
| 14 | 43.0544 | 107.27  | 151.606 | 0 | 0 |
| 15 | 43.6298 | 107.017 | 151.667 | 0 | 0 |
| 16 | 44.2052 | 106.769 | 150.038 | 0 | 0 |
| 17 | 44.7806 | 106.524 | 146.519 | 0 | 0 |
| 18 | 45.356  | 106.282 | 140.912 | 0 | 0 |
| 19 | 45.9314 | 106.045 | 133.026 | 0 | 0 |
| 20 | 46.5068 | 105.811 | 122.674 | 0 | 0 |
| 21 | 47.0822 | 105.581 | 109.674 | 0 | 0 |
| 22 | 47.6576 | 105.354 | 93.8484 | 0 | 0 |
| 23 | 48.233  | 105.131 | 75.0228 | 0 | 0 |
| 24 | 48.8084 | 104.911 | 53.0285 | 0 | 0 |
| 25 | 49.3838 | 104.695 | 27.7005 | 0 | 0 |
| 26 | 49.9592 | 104.483 | 0       | 0 | 0 |

**List Of Coordinates**

**Line Load**

| X       | Y  |
|---------|----|
| 79.1998 | 92 |
| 79      | 92 |
| 79.1    | 91 |
| 84.1    | 91 |
| 84      | 92 |
| 83.9796 | 92 |

**External Boundary**

| X    | Y  |
|------|----|
| 0    | 96 |
| 0    | 40 |
| 150  | 40 |
| 150  | 64 |
| 150  | 67 |
| 117  | 76 |
| 93   | 79 |
| 92.5 | 90 |
| 90   | 90 |
| 82.1 | 95 |

|  |   |  |   |  |  |
|--|---|--|---|--|--|
|  | <b>Munjoy Heights - #13217</b>  |  |   |  |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |  |   |  |  |
|  | <i>Drawn By</i>   |  | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |  |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  |  | <i>File Name</i> Section 1 - SEISMIC.slim |  |  |

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|      |     |
|------|-----|
| 82   | 100 |
| 81   | 100 |
| 50   | 100 |
| 49.9 | 111 |
| 39   | 111 |
| 15   | 111 |
| 0    | 111 |

**Material Boundary**

| X    | Y   |
|------|-----|
| 15   | 111 |
| 15.1 | 104 |
| 39.1 | 104 |
| 39   | 111 |

**Material Boundary**

| X   | Y  |
|-----|----|
| 0   | 96 |
| 93  | 75 |
| 117 | 73 |
| 150 | 64 |

**Material Boundary**

| X    | Y   |
|------|-----|
| 81   | 100 |
| 81.2 | 92  |
| 79   | 92  |
| 79.1 | 91  |
| 84.1 | 91  |
| 84   | 92  |
| 82.1 | 92  |
| 82.1 | 95  |

**Material Boundary**

| X      | Y      |
|--------|--------|
| 90     | 90     |
| 90.156 | 79.684 |

|  |   |              |  |
|--|---|--------------|--|
|  | Munjoy Heights - #13217   |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |              |  |
|  | <i>Drawn By</i>   | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM  |              | <i>File Name</i> Section 1 - SEISMIC.slim    |



## Material Boundary

| X      | Y      |
|--------|--------|
| 0      | 111    |
| 15.1   | 104    |
| 45     | 94     |
| 80     | 84     |
| 90.156 | 79.684 |
| 91     | 78     |
| 93     | 78     |
| 93     | 79     |

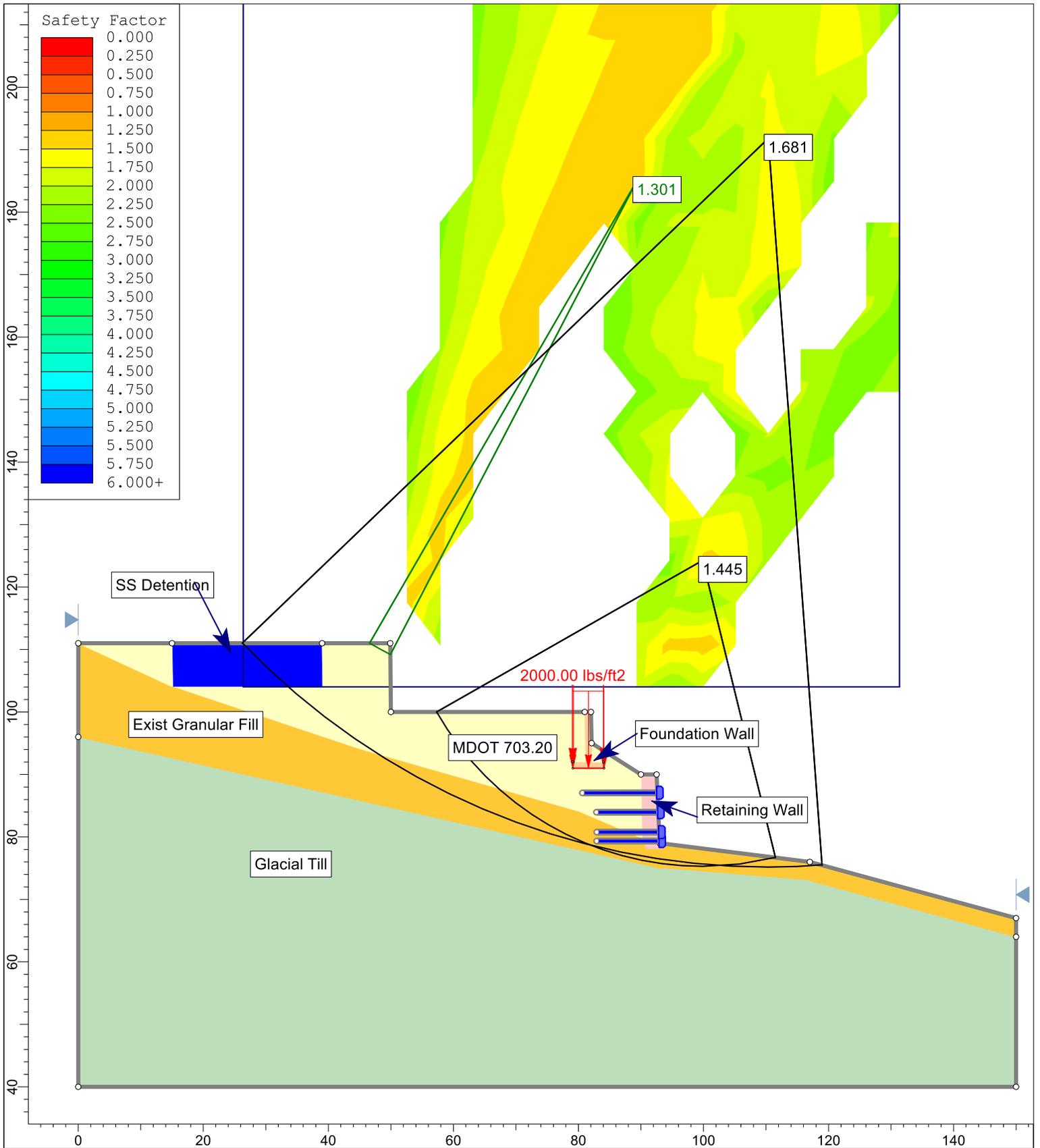


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Munjoy Heights - #13217

|   |                      |                  |                               |
|---|----------------------|------------------|-------------------------------|
| <i>Analysis Description</i>                       |                      |                  |                               |
| SECTION 2 - Seismic - Stone Strong - Janbu/Bishop |                      |                  |                               |
| <i>Drawn By</i>                                   | <i>Scale</i>         | <i>Company</i>   | Summit Geoengineering Service |
| <i>Date</i>                                       | 1/7/2014, 8:33:22 AM | <i>File Name</i> | Section 1 - SEISMIC.slim      |

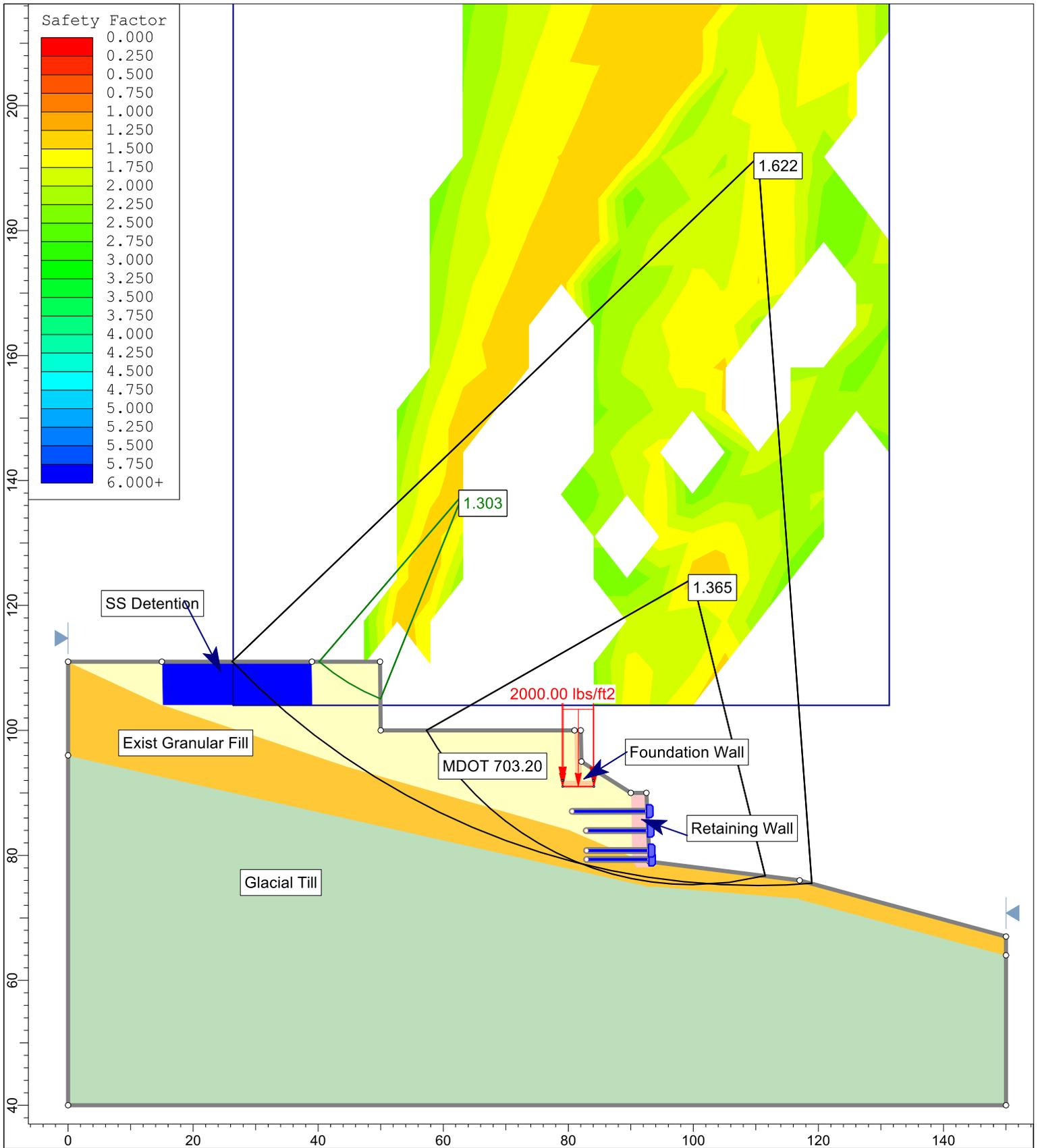




|  |                      |  |           |                               |
|--|----------------------|--|-----------|-------------------------------|
|  |                      | Munjoy Heights - #13217                    |           |                               |
|  |                      | SECTION 1 - Static - Stone Strong - Bishop |           |                               |
| Drawn By   | Scale                | 1:247                                      | Company   | Summit Geoengineering Service |
| Date   | 1/7/2014, 8:33:22 AM |  | File Name | Section 1 - STATIC.slim       |

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|  |  |                                   |                                       |
|--|--|-----------------------------------|---------------------------------------|
|  | Munjoy Heights - #13217  |                                   |                                       |
|  | Analysis Description SECTION 1 - Static - Stone Strong - Janbu |                                   |                                       |
|  | Drawn By   | Scale 1:247                       | Company Summit Geoengineering Service |
|  | Date 1/7/2014, 8:33:22 AM                                      | File Name Section 1 - STATIC.slim |                                       |

SLIDEINTERPRET 6.026



# Slide Analysis Information

## Munjoy Heights #13067.1

### Project Summary

---

File Name: Section 1 - STATIC  
 Slide Modeler Version: 6.026  
 Project Title: Munjoy Heights #13067.1  
 Analysis: SECTION 1 - SEISMIC ANALYSIS  
 Company: Summit Geoengineering Services  
 Date Created: 1/7/2014, 8:33:22 AM

### General Settings

---

Units of Measurement: Imperial Units  
 Time Units: days  
 Permeability Units: feet/second  
 Failure Direction: Left to Right  
 Data Output: Maximum  
 Maximum Material Properties: 20  
 Maximum Support Properties: 20

### Analysis Options

---

#### Analysis Methods Used

Bishop simplified  
 Janbu simplified

Number of slices: 25  
 Tolerance: 0.005  
 Maximum number of iterations: 50  
 Check  $m\alpha < 0.2$ : Yes  
 Apply support forces to interslice boundaries: Yes  
 Discard data for surfaces with FS below: 1.3  
 Discard data for surfaces with FS above: 2.5  
 Initial trial value of FS: 1  
 Steffensen Iteration: Yes

### Groundwater Analysis

---

Groundwater Method: Water Surfaces

|  |  |                               |                         |
|--|--|-------------------------------|-------------------------|
|  | Munjoy Heights - #13217                          |                               |                         |
|  | <i>Analysis Description</i>                      |                               |                         |
|  | SECTION 1 - Static - Stone Strong - Janbu/Bishop |                               |                         |
|  | <i>Drawn By</i>                                  | <i>Scale</i>                  | <i>Company</i>          |
|  |  | Summit Geoengineering Service |                         |
| <i>Date</i>  | 1/7/2014, 8:33:22 AM                             | <i>File Name</i>              | Section 1 - STATIC.slim |

SLIDEINTERPRET 6.026



Pore Fluid Unit Weight: 62.4 lbs/ft3  
 Advanced Groundwater Method: None

## Random Numbers

Pseudo-random Seed: 10116  
 Random Number Generation Method: Park and Miller v.3

## Surface Options

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

## Loading

1 Distributed Load present

### Distributed Load 1

Distribution: Constant  
 Magnitude [psf]: 2000  
 Orientation: Vertical

## Material Properties

| Property              | Inported Fill (MDOT 703.20)   | Native Glacial Till   | Foundation Wall   | Existing Granular Fill - Proofrolled  | Retaining Wall  | water   |
|-----------------------|---|---|---|---|---|---|
| Color                 |  |  |  |  |  |  |
| Strength Type         | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  |
| Unit Weight [lbs/ft3] | 130   | 124   | 150   | 130   | 127   | 62.4  |
| Cohesion [psf]        | 0.02  | 2000  | 10000   | 0.02  | 1257  | 0.02  |
| Friction Angle [deg]  | 35  | 35  | 45  | 32  | 35  | 1   |
| Water Surface         | None  | None  | None  | None  | None  | None  |
| Ru Value              | 0   | 0   | 0   | 0   | 0   | 0   |

|  |  |  |  |
|--|--|--|--|
|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |



## Support Properties

### Support 1

Support Type: GeoTextile  
Force Application: Active  
Force Orientation: Parallel to Reinforcement  
Anchorage: Slope Face  
Shear Strength Model: Linear  
Strip Coverage: 100 percent  
Tensile Strength: 5000 lb/ft  
Pullout Strength Adhesion: 0.8 psf  
Pullout Strength Friction Angle: 40 degrees

## Global Minimums

### Method: bishop simplified

FS: 1.300850  
Center: 89.366, 185.045  
Radius: 85.513  
Left Slip Surface Endpoint: 46.589, 111.000  
Right Slip Surface Endpoint: 49.917, 109.175  
Resisting Moment=21102.6 lb-ft  
Driving Moment=16222.1 lb-ft  
Total Slice Area=3.07546 ft<sup>2</sup>

### Method: janbu simplified

FS: 1.302820  
Center: 63.129, 137.774  
Radius: 35.284  
Left Slip Surface Endpoint: 40.150, 111.000  
Right Slip Surface Endpoint: 49.954, 105.043  
Resisting Horizontal Force=2305.49 lb  
Driving Horizontal Force=1769.62 lb  
Total Slice Area=32.6298 ft<sup>2</sup>

## Valid / Invalid Surfaces

### Method: bishop simplified

Number of Valid Surfaces: 616  
Number of Invalid Surfaces: 4235

#### Error Codes:

|  |  |                  |  |
|--|--|------------------|--|
|  | Munjoy Heights - #13217  |                  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |                  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>     | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> | Section 1 - STATIC.slim                      |

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Error Code -97 reported for 3647 surfaces  
 Error Code -100 reported for 1 surface  
 Error Code -103 reported for 12 surfaces  
 Error Code -106 reported for 24 surfaces  
 Error Code -107 reported for 302 surfaces  
 Error Code -108 reported for 84 surfaces  
 Error Code -112 reported for 165 surfaces

**Method: Janbu simplified**

Number of Valid Surfaces: 679  
 Number of Invalid Surfaces: 4172

**Error Codes:**

Error Code -97 reported for 3584 surfaces  
 Error Code -100 reported for 1 surface  
 Error Code -103 reported for 12 surfaces  
 Error Code -106 reported for 24 surfaces  
 Error Code -107 reported for 302 surfaces  
 Error Code -108 reported for 84 surfaces  
 Error Code -112 reported for 165 surfaces

**Error Codes**

The following errors were encountered during the computation:

- 97 = Factor of safety is out of valid range set by user.
- 100 = Both surface / slope intersections are on the same horizontal surface. In general, this will give a very high or infinite factor of safety (zero driving force), if calculated.
- 103 = Two surface / slope intersections, but one or more surface / nonslope external polygon intersections lie between them. This usually occurs when the slip surface extends past the bottom of the soil region, but may also occur on a benched slope model with two sets of Slope Limits.
- 106 = Average slice width is less than 0.0001 \* (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
- 107 = Total driving moment or total driving force is negative. This will occur if the wrong failure direction is specified, or if high external or anchor loads are applied against the failure direction.
- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 112 = The coefficient  $M\text{-}\alpha = \cos(\alpha)(1 + \tan(\alpha)\tan(\phi)/F) < 0.2$  for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.

**Slice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 1.30085

| Slice Number | Width [ft] | Weight [lbs] | Base Material | Base Cohesion | Base Friction Angle | Shear Stress | Shear Strength | Base Normal Stress | Pore Pressure | Effective Normal Stress |
|--------------|------------|--------------|---------------|---------------|---------------------|--------------|----------------|--------------------|---------------|-------------------------|
|--------------|------------|--------------|---------------|---------------|---------------------|--------------|----------------|--------------------|---------------|-------------------------|

|  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|
|  | <b>Munjoy Heights - #13217</b>   |  |  |  |  |  |  |  |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |  |  |  |  |  |  |  |
|  | <i>Drawn By</i>  |  |  |  |  | <i>Scale</i>                             |  | <i>Company</i> Summit Geoengineering Service |  |  |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   |  |  |  |  | <i>File Name</i> Section 1 - STATIC.slim |  |  |  |  |



|    |          |          |                             |      | [degrees] |         |         |         | [psf] |         |  | [psf] |
|----|----------|----------|-----------------------------|------|-----------|---------|---------|---------|-------|---------|--|-------|
| 1  | 0.133119 | 0.664069 | Inported Fill (MDOT 703.20) | 0.02 | 35        | 2.0627  | 2.68326 | 3.80353 | 0     | 3.80353 |  |       |
| 2  | 0.133119 | 1.98945  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 6.16214 | 8.01602 | 11.4195 | 0     | 11.4195 |  |       |
| 3  | 0.133119 | 3.30934  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 10.2526 | 13.3371 | 19.0187 | 0     | 19.0187 |  |       |
| 4  | 0.133119 | 4.62375  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 14.334  | 18.6464 | 26.6013 | 0     | 26.6013 |  |       |
| 5  | 0.133119 | 5.93269  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 18.4064 | 23.944  | 34.167  | 0     | 34.167  |  |       |
| 6  | 0.133119 | 7.23618  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 22.4698 | 29.2298 | 41.716  | 0     | 41.716  |  |       |
| 7  | 0.133119 | 8.53424  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 26.5241 | 34.5039 | 49.2481 | 0     | 49.2481 |  |       |
| 8  | 0.133119 | 9.82689  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 30.5694 | 39.7662 | 56.7635 | 0     | 56.7635 |  |       |
| 9  | 0.133119 | 11.1141  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 34.6056 | 45.0167 | 64.262  | 0     | 64.262  |  |       |
| 10 | 0.133119 | 12.396   | Inported Fill (MDOT 703.20) | 0.02 | 35        | 38.6327 | 50.2554 | 71.7436 | 0     | 71.7436 |  |       |
| 11 | 0.133119 | 13.6725  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 42.6508 | 55.4823 | 79.2082 | 0     | 79.2082 |  |       |
| 12 | 0.133119 | 14.9436  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 46.6598 | 60.6974 | 86.656  | 0     | 86.656  |  |       |
| 13 | 0.133119 | 16.2095  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 50.6596 | 65.9006 | 94.087  | 0     | 94.087  |  |       |
| 14 | 0.133119 | 17.4699  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 54.6503 | 71.0919 | 101.502 | 0     | 101.502 |  |       |
| 15 | 0.133119 | 18.7251  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 58.632  | 76.2714 | 108.898 | 0     | 108.898 |  |       |
| 16 | 0.133119 | 19.975   | Inported Fill (MDOT 703.20) | 0.02 | 35        | 62.6045 | 81.439  | 116.279 | 0     | 116.279 |  |       |
| 17 | 0.133119 | 21.2197  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 66.5678 | 86.5947 | 123.642 | 0     | 123.642 |  |       |
| 18 | 0.133119 | 22.459   | Inported Fill (MDOT 703.20) | 0.02 | 35        | 70.522  | 91.7385 | 130.987 | 0     | 130.987 |  |       |
| 19 | 0.133119 | 23.6932  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 74.467  | 96.8704 | 138.317 | 0     | 138.317 |  |       |
| 20 | 0.133119 | 24.9221  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 78.4026 | 101.99  | 145.628 | 0     | 145.628 |  |       |
| 21 | 0.133119 | 26.1457  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 82.3292 | 107.098 | 152.924 | 0     | 152.924 |  |       |
| 22 | 0.133119 | 27.3642  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 86.2467 | 112.194 | 160.201 | 0     | 160.201 |  |       |
| 23 | 0.133119 | 28.5775  | Inported Fill (MDOT 703.20) | 0.02 | 35        | 90.1549 | 117.278 | 167.462 | 0     | 167.462 |  |       |

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|  | <b>Munjoy Heights - #13217</b>   |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |

SLIDEINTERPRET 6.026



|    |          |         |                             |      |    |         |         |         |   |         |
|----|----------|---------|-----------------------------|------|----|---------|---------|---------|---|---------|
| 24 | 0.133119 | 29.7856 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 94.0539 | 122.35  | 174.706 | 0 | 174.706 |
| 25 | 0.133119 | 29.0197 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 91.7216 | 119.316 | 170.373 | 0 | 170.373 |

**Query 1 (bishop simplified) - Safety Factor: 1.44499**

| Slice Number | Width [ft] | Weight [lbs] | Base Material                        | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|--------------------------------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 2.0122     | 422.431      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 57.2493            | 82.7246              | 118.114                  | 0                   | 118.114                       |
| 2            | 2.0122     | 1205.18      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 174.539            | 252.207              | 360.16                   | 0                   | 360.16                        |
| 3            | 2.0122     | 1879.45      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 286.902            | 414.57               | 592.039                  | 0                   | 592.039                       |
| 4            | 2.0122     | 2470.6       | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 394.028            | 569.366              | 813.111                  | 0                   | 813.111                       |
| 5            | 2.0122     | 2994.62      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 495.956            | 716.651              | 1023.46                  | 0                   | 1023.46                       |
| 6            | 2.20673    | 3819.17      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 549.958            | 794.684              | 1271.73                  | 0                   | 1271.73                       |
| 7            | 2.20673    | 4318.42      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 640.788            | 925.932              | 1481.77                  | 0                   | 1481.77                       |
| 8            | 2.20673    | 4762.23      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 726.143            | 1049.27              | 1679.15                  | 0                   | 1679.15                       |
| 9            | 2.20673    | 5156.71      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 806.275            | 1165.06              | 1864.46                  | 0                   | 1864.46                       |
| 10           | 2.20673    | 5506.59      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 881.411            | 1273.63              | 2038.2                   | 0                   | 2038.2                        |
| 11           | 2.20673    | 5846.74      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1845.57            | 2666.83              | 4267.79                  | 0                   | 4267.79                       |
| 12           | 2.20673    | 5765.62      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1701.42            | 2458.54              | 3934.45                  | 0                   | 3934.45                       |
| 13           | 2.20673    | 4581.39      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1568.98            | 2267.16              | 3628.18                  | 0                   | 3628.18                       |
| 14           | 2.20673    | 4357.5       | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 758.206            | 1095.6               | 1753.29                  | 0                   | 1753.29                       |
| 15           | 2.20673    | 4125.97      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 731.957            | 1057.67              | 1692.59                  | 0                   | 1692.59                       |
| 16           | 2.20673    | 3920.68      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 708.939            | 1024.41              | 1639.37                  | 0                   | 1639.37                       |
| 17           | 2.20673    | 2448.41      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 451.19             | 651.965              | 1043.33                  | 0                   | 1043.33                       |
| 18           | 2.20673    | 921.983      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 173.155            | 250.207              | 400.382                  | 0                   | 400.382                       |
| 19           | 2.20673    | 892.199      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 170.778            | 246.772              | 394.886                  | 0                   | 394.886                       |
| 20           | 2.20673    | 833.729      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 162.686            | 235.08               | 376.175                  | 0                   | 376.175                       |
| 21           | 2.20673    | 746.701      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 148.588            | 214.708              | 343.573                  | 0                   | 343.573                       |

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|  | <b>Munjoy Heights - #13217</b>   |              |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |              |  |
|  | <i>Drawn By</i>  | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   |              | <i>File Name</i> Section 1 - STATIC.slim     |



|    |         |         |                                      |      |    |         |         |         |   |         |
|----|---------|---------|--------------------------------------|------|----|---------|---------|---------|---|---------|
| 22 | 2.20673 | 631.065 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 128.125 | 185.14  | 296.254 | 0 | 296.254 |
| 23 | 2.20673 | 486.597 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 100.865 | 145.749 | 233.215 | 0 | 233.215 |
| 24 | 2.20673 | 312.887 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 66.2736 | 95.7647 | 153.223 | 0 | 153.223 |
| 25 | 2.20673 | 109.329 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 23.695  | 34.239  | 54.7618 | 0 | 54.7618 |

Query 2 (bishop simplified) - Safety Factor: 1.68059

| Slice Number | Width [ft] | Weight [lbs] | Base Material                        | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|--------------------------------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 3.6666     | 417.811      | water                                | 0.02                | 1                             | 1.18319            | 1.98846              | 112.773                  | 0                   | 112.773                       |
| 2            | 3.6666     | 1218.6       | water                                | 0.02                | 1                             | 3.43127            | 5.76656              | 329.22                   | 0                   | 329.22                        |
| 3            | 3.66339    | 2332.22      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 196.581            | 330.372              | 471.791                  | 0                   | 471.791                       |
| 4            | 3.66339    | 4604.92      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 396.273            | 665.972              | 951.077                  | 0                   | 951.077                       |
| 5            | 3.66339    | 6766.86      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 593.659            | 997.697              | 1424.83                  | 0                   | 1424.83                       |
| 6            | 3.66339    | 7960.28      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 711.113            | 1195.09              | 1706.74                  | 0                   | 1706.74                       |
| 7            | 3.72351    | 6382.92      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 520.599            | 874.913              | 1400.12                  | 0                   | 1400.12                       |
| 8            | 3.72351    | 4936.14      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 408.711            | 686.875              | 1099.2                   | 0                   | 1099.2                        |
| 9            | 3.72351    | 5893.88      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 495.081            | 832.028              | 1331.49                  | 0                   | 1331.49                       |
| 10           | 3.72351    | 6770.28      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 576.606            | 969.038              | 1550.75                  | 0                   | 1550.75                       |
| 11           | 3.72351    | 7569.46      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 653.318            | 1097.96              | 1757.08                  | 0                   | 1757.08                       |
| 12           | 3.72351    | 8294.92      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 725.251            | 1218.85              | 1950.53                  | 0                   | 1950.53                       |
| 13           | 3.72351    | 8949.7       | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 792.406            | 1331.71              | 2131.15                  | 0                   | 2131.15                       |
| 14           | 3.72351    | 9536.35      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 854.807            | 1436.58              | 2298.97                  | 0                   | 2298.97                       |
| 15           | 3.72351    | 10209.7      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1620.25            | 2722.97              | 4357.62                  | 0                   | 4357.62                       |
| 16           | 3.72351    | 7950.71      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1355.32            | 2277.73              | 3645.08                  | 0                   | 3645.08                       |
| 17           | 3.72351    | 6893.09      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 640.364            | 1076.19              | 1722.24                  | 0                   | 1722.24                       |
| 18           | 3.72351    | 6117.57      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 574.994            | 966.33               | 1546.42                  | 0                   | 1546.42                       |
| 19           | 3.72351    | 1259.41      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 119.765            | 201.276              | 322.078                  | 0                   | 322.078                       |

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|  | <b>Munjoy Heights - #13217</b>   |              |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |              |  |
|  | <i>Drawn By</i>  | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   |              | <i>File Name</i> Section 1 - STATIC.slim     |



|    |         |         |                                      |      |    |         |         |         |   |         |
|----|---------|---------|--------------------------------------|------|----|---------|---------|---------|---|---------|
| 20 | 3.72351 | 1231.67 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 118.494 | 199.14  | 318.658 | 0 | 318.658 |
| 21 | 3.72351 | 1161.82 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 113.082 | 190.044 | 304.103 | 0 | 304.103 |
| 22 | 3.72351 | 1033.98 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 101.823 | 171.122 | 273.82  | 0 | 273.82  |
| 23 | 3.72351 | 848.44  | Existing Granular Fill - Proofrolled | 0.02 | 32 | 84.5429 | 142.082 | 227.346 | 0 | 227.346 |
| 24 | 3.72351 | 605.327 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 61.044  | 102.59  | 164.146 | 0 | 164.146 |
| 25 | 3.72351 | 267.89  | Existing Granular Fill - Proofrolled | 0.02 | 32 | 27.3504 | 45.9648 | 73.5269 | 0 | 73.5269 |

**Global Minimum Query (janbu simplified) - Safety Factor: 1.30282**

| Slice Number | Width [ft] | Weight [lbs] | Base Material               | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|-----------------------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 0.392175   | 8.45457      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 7.98061            | 10.3973              | 14.8204                  | 0                   | 14.8204                       |
| 2            | 0.392175   | 25.1186      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 23.906             | 31.1452              | 44.4514                  | 0                   | 44.4514                       |
| 3            | 0.392175   | 41.3008      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 39.6498            | 51.6565              | 73.7445                  | 0                   | 73.7445                       |
| 4            | 0.392175   | 57.0179      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 55.2089            | 71.9272              | 102.694                  | 0                   | 102.694                       |
| 5            | 0.392175   | 72.2849      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 70.5809            | 91.9542              | 131.296                  | 0                   | 131.296                       |
| 6            | 0.392175   | 87.1161      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 85.7632            | 111.734              | 159.545                  | 0                   | 159.545                       |
| 7            | 0.392175   | 101.525      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 100.755            | 131.265              | 187.438                  | 0                   | 187.438                       |
| 8            | 0.392175   | 115.523      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 115.553            | 150.545              | 214.972                  | 0                   | 214.972                       |
| 9            | 0.392175   | 129.123      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 130.157            | 169.571              | 242.145                  | 0                   | 242.145                       |
| 10           | 0.392175   | 142.335      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 144.566            | 188.343              | 268.952                  | 0                   | 268.952                       |
| 11           | 0.392175   | 155.169      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 158.777            | 206.858              | 295.395                  | 0                   | 295.395                       |
| 12           | 0.392175   | 167.634      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 172.791            | 225.116              | 321.47                   | 0                   | 321.47                        |
| 13           | 0.392175   | 179.741      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 186.606            | 243.114              | 347.175                  | 0                   | 347.175                       |
| 14           | 0.392175   | 191.496      | Inported Fill (MDOT 703.20) | 0.02                | 35                            | 200.222            | 260.853              | 372.508                  | 0                   | 372.508                       |
|              |            |              | Inported Fill (MDOT 703.20) |                     |                               |                    |                      |                          |                     |                               |

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|  | <b>Munjoy Heights - #13217</b>   |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |

SLIDEINTERPRET 6.026



|    |          |         |                             |      |    |         |         |         |   |         |
|----|----------|---------|-----------------------------|------|----|---------|---------|---------|---|---------|
| 16 | 0.392175 | 213.985 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 226.852 | 295.547 | 422.056 | 0 | 422.056 |
| 17 | 0.392175 | 224.733 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 239.864 | 312.5   | 446.267 | 0 | 446.267 |
| 18 | 0.392175 | 235.159 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 252.675 | 329.19  | 470.103 | 0 | 470.103 |
| 19 | 0.392175 | 245.269 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 265.284 | 345.617 | 493.562 | 0 | 493.562 |
| 20 | 0.392175 | 255.069 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 277.688 | 361.778 | 516.643 | 0 | 516.643 |
| 21 | 0.392175 | 264.566 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 289.89  | 377.674 | 539.345 | 0 | 539.345 |
| 22 | 0.392175 | 273.763 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 301.886 | 393.303 | 561.666 | 0 | 561.666 |
| 23 | 0.392175 | 282.666 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 313.678 | 408.666 | 583.608 | 0 | 583.608 |
| 24 | 0.392175 | 291.28  | Inported Fill (MDOT 703.20) | 0.02 | 35 | 325.264 | 423.761 | 605.165 | 0 | 605.165 |
| 25 | 0.392175 | 278.641 | Inported Fill (MDOT 703.20) | 0.02 | 35 | 313.085 | 407.893 | 582.504 | 0 | 582.504 |

Query 1 (janbu simplified) - Safety Factor: 1.36531

| Slice Number | Width [ft] | Weight [lbs] | Base Material                        | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|--------------------------------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 2.0122     | 422.431      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 59.0696            | 80.6483              | 115.149                  | 0                   | 115.149                       |
| 2            | 2.0122     | 1205.18      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 180.489            | 246.424              | 351.9                    | 0                   | 351.9                         |
| 3            | 2.0122     | 1879.45      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 297.239            | 405.823              | 579.547                  | 0                   | 579.547                       |
| 4            | 2.0122     | 2470.6       | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 408.893            | 558.266              | 797.258                  | 0                   | 797.258                       |
| 5            | 2.0122     | 2994.62      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 515.424            | 703.713              | 1004.98                  | 0                   | 1004.98                       |
| 6            | 2.20673    | 3819.17      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 573.107            | 782.469              | 1252.18                  | 0                   | 1252.18                       |
| 7            | 2.20673    | 4318.42      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 668.627            | 912.883              | 1460.89                  | 0                   | 1460.89                       |
| 8            | 2.20673    | 4762.23      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 758.612            | 1035.74              | 1657.49                  | 0                   | 1657.49                       |
| 9            | 2.20673    | 5156.71      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 843.296            | 1151.36              | 1842.53                  | 0                   | 1842.53                       |
| 10           | 2.20673    | 5506.59      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 922.897            | 1260.04              | 2016.45                  | 0                   | 2016.45                       |
| 11           | 2.20673    | 5846.74      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1934.5             | 2641.19              | 4226.74                  | 0                   | 4226.74                       |
| 12           | 2.20673    | 5765.62      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 1785.26            | 2437.44              | 3900.68                  | 0                   | 3900.68                       |

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|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |



|    |         |         |                                      |      |    |         |         |         |   |         |
|----|---------|---------|--------------------------------------|------|----|---------|---------|---------|---|---------|
| 13 | 2.20673 | 4581.39 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 1647.98 | 2250    | 3600.73 | 0 | 3600.73 |
| 14 | 2.20673 | 4357.5  | Existing Granular Fill - Proofrolled | 0.02 | 32 | 797.196 | 1088.42 | 1741.8  | 0 | 1741.8  |
| 15 | 2.20673 | 4125.97 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 770.374 | 1051.8  | 1683.2  | 0 | 1683.2  |
| 16 | 2.20673 | 3920.68 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 746.915 | 1019.77 | 1631.94 | 0 | 1631.94 |
| 17 | 2.20673 | 2448.41 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 475.851 | 649.684 | 1039.68 | 0 | 1039.68 |
| 18 | 2.20673 | 921.983 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 182.811 | 249.594 | 399.402 | 0 | 399.402 |
| 19 | 2.20673 | 892.199 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 180.497 | 246.434 | 394.345 | 0 | 394.345 |
| 20 | 2.20673 | 833.729 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 172.137 | 235.02  | 376.079 | 0 | 376.079 |
| 21 | 2.20673 | 746.701 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 157.402 | 214.902 | 343.883 | 0 | 343.883 |
| 22 | 2.20673 | 631.065 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 135.891 | 185.533 | 296.883 | 0 | 296.883 |
| 23 | 2.20673 | 486.597 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 107.115 | 146.245 | 234.009 | 0 | 234.009 |
| 24 | 2.20673 | 312.887 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 70.4759 | 96.2215 | 153.954 | 0 | 153.954 |
| 25 | 2.20673 | 109.329 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 25.2342 | 34.4525 | 55.1034 | 0 | 55.1034 |

Query 2 (janbu simplified) - Safety Factor: 1.62233

| Slice Number | Width [ft] | Weight [lbs] | Base Material                        | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|--------------------------------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 3.6666     | 417.811      | water                                | 0.02                | 1                             | 1.22523            | 1.98772              | 112.73                   | 0                   | 112.73                        |
| 2            | 3.6666     | 1218.6       | water                                | 0.02                | 1                             | 3.55327            | 5.76458              | 329.107                  | 0                   | 329.107                       |
| 3            | 3.66339    | 2332.22      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 201.729            | 327.271              | 467.363                  | 0                   | 467.363                       |
| 4            | 3.66339    | 4604.92      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 406.879            | 660.092              | 942.681                  | 0                   | 942.681                       |
| 5            | 3.66339    | 6766.86      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 609.875            | 989.418              | 1413.01                  | 0                   | 1413.01                       |
| 6            | 3.66339    | 7960.28      | Inported Fill (MDOT 703.20)          | 0.02                | 35                            | 730.912            | 1185.78              | 1693.44                  | 0                   | 1693.44                       |
| 7            | 3.72351    | 6382.92      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 535.702            | 869.085              | 1390.8                   | 0                   | 1390.8                        |
| 8            | 3.72351    | 4936.14      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 420.758            | 682.608              | 1092.37                  | 0                   | 1092.37                       |
| 9            | 3.72351    | 5893.88      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 509.896            | 827.22               | 1323.8                   | 0                   | 1323.8                        |
| 10           | 3.72351    | 6770.28      | Existing Granular Fill - Proofrolled | 0.02                | 32                            | 594.114            | 963.849              | 1542.45                  | 0                   | 1542.45                       |

|  |  |              |  |
|--|--|--------------|--|
|  | <b>Munjoy Heights - #13217</b>   |              |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |              |  |
|  | <i>Drawn By</i>  | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   |              | <i>File Name</i> Section 1 - STATIC.slim     |

SLIDEINTERPRET 6.026



|    |         |         |                                      |      |    |         |         |         |   |         |
|----|---------|---------|--------------------------------------|------|----|---------|---------|---------|---|---------|
| 11 | 3.72351 | 7569.46 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 673.439 | 1092.54 | 1748.39 | 0 | 1748.39 |
| 12 | 3.72351 | 8294.92 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 747.887 | 1213.32 | 1941.69 | 0 | 1941.69 |
| 13 | 3.72351 | 8949.7  | Existing Granular Fill - Proofrolled | 0.02 | 32 | 817.472 | 1326.21 | 2122.35 | 0 | 2122.35 |
| 14 | 3.72351 | 9536.35 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 882.2   | 1431.22 | 2290.39 | 0 | 2290.39 |
| 15 | 3.72351 | 10209.7 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 1672.83 | 2713.89 | 4343.1  | 0 | 4343.1  |
| 16 | 3.72351 | 7950.71 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 1399.86 | 2271.03 | 3634.39 | 0 | 3634.39 |
| 17 | 3.72351 | 6893.09 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 661.672 | 1073.45 | 1717.86 | 0 | 1717.86 |
| 18 | 3.72351 | 6117.57 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 594.365 | 964.256 | 1543.1  | 0 | 1543.1  |
| 19 | 3.72351 | 1259.41 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 123.85  | 200.925 | 321.514 | 0 | 321.514 |
| 20 | 3.72351 | 1231.67 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 122.585 | 198.874 | 318.233 | 0 | 318.233 |
| 21 | 3.72351 | 1161.82 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 117.034 | 189.868 | 303.819 | 0 | 303.819 |
| 22 | 3.72351 | 1033.98 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 105.425 | 171.034 | 273.681 | 0 | 273.681 |
| 23 | 3.72351 | 848.44  | Existing Granular Fill - Proofrolled | 0.02 | 32 | 87.5716 | 142.07  | 227.328 | 0 | 227.328 |
| 24 | 3.72351 | 605.327 | Existing Granular Fill - Proofrolled | 0.02 | 32 | 63.2584 | 102.626 | 164.204 | 0 | 164.204 |
| 25 | 3.72351 | 267.89  | Existing Granular Fill - Proofrolled | 0.02 | 32 | 28.3553 | 46.0017 | 73.5862 | 0 | 73.5862 |

**Interslice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 1.30085

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 46.5886           | 111                        | 0                             | 0                            | 0                                |
| 2            | 46.7217           | 110.923                    | 0.0182935                     | 0                            | 0                                |
| 3            | 46.8549           | 110.847                    | 0.0736666                     | 0                            | 0                                |
| 4            | 46.988            | 110.771                    | 0.161212                      | 0                            | 0                                |
| 5            | 47.1211           | 110.695                    | 0.276062                      | 0                            | 0                                |
| 6            | 47.2542           | 110.619                    | 0.413383                      | 0                            | 0                                |
| 7            | 47.3873           | 110.544                    | 0.568383                      | 0                            | 0                                |
| 8            | 47.5205           | 110.469                    | 0.736304                      | 0                            | 0                                |

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|  | <b>Munjoy Heights - #13217</b>   |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |



|    |         |         |          |   |   |
|----|---------|---------|----------|---|---|
| 9  | 47.6536 | 110.395 | 0.912426 | 0 | 0 |
| 10 | 47.7867 | 110.321 | 1.09207  | 0 | 0 |
| 11 | 47.9198 | 110.247 | 1.27058  | 0 | 0 |
| 12 | 48.0529 | 110.173 | 1.44334  | 0 | 0 |
| 13 | 48.186  | 110.1   | 1.60579  | 0 | 0 |
| 14 | 48.3192 | 110.027 | 1.75339  | 0 | 0 |
| 15 | 48.4523 | 109.954 | 1.88161  | 0 | 0 |
| 16 | 48.5854 | 109.882 | 1.98601  | 0 | 0 |
| 17 | 48.7185 | 109.81  | 2.06213  | 0 | 0 |
| 18 | 48.8516 | 109.738 | 2.10558  | 0 | 0 |
| 19 | 48.9848 | 109.666 | 2.11199  | 0 | 0 |
| 20 | 49.1179 | 109.595 | 2.07702  | 0 | 0 |
| 21 | 49.251  | 109.524 | 1.99637  | 0 | 0 |
| 22 | 49.3841 | 109.454 | 1.86578  | 0 | 0 |
| 23 | 49.5172 | 109.384 | 1.68101  | 0 | 0 |
| 24 | 49.6504 | 109.314 | 1.43785  | 0 | 0 |
| 25 | 49.7835 | 109.244 | 1.13214  | 0 | 0 |
| 26 | 49.9166 | 109.175 | 0        | 0 | 0 |

Query 1 (bishop simplified) - Safety Factor: 1.44499

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 57.3093           | 100                        | 0                             | 0                            | 0                                |
| 2            | 59.3215           | 96.7702                    | 266.373                       | 0                            | 0                                |
| 3            | 61.3337           | 94.0154                    | 907.623                       | 0                            | 0                                |
| 4            | 63.3459           | 91.615                     | 1751.87                       | 0                            | 0                                |
| 5            | 65.3581           | 89.4956                    | 2682.89                       | 0                            | 0                                |
| 6            | 67.3703           | 87.6085                    | 3617.09                       | 0                            | 0                                |
| 7            | 69.577            | 85.7655                    | 4748.21                       | 0                            | 0                                |
| 8            | 71.7837           | 84.1279                    | 5761.78                       | 0                            | 0                                |
| 9            | 73.9905           | 82.6714                    | 6606.2                        | 0                            | 0                                |
| 10           | 76.1972           | 81.3777                    | 7240.51                       | 0                            | 0                                |
| 11           | 78.4039           | 80.2322                    | 7631.56                       | 0                            | 0                                |
| 12           | 80.6107           | 79.2238                    | 7865.64                       | 0                            | 0                                |
| 13           | 82.8174           | 78.3434                    | 7577.82                       | 0                            | 0                                |
| 14           | 85.0241           | 77.5838                    | 6874.29                       | 0                            | 0                                |
| 15           | 87.2309           | 76.9391                    | 6332.76                       | 0                            | 0                                |
| 16           | 89.4376           | 76.4047                    | 5623.3                        | 0                            | 0                                |
| 17           | 91.6443           | 75.9769                    | 4761.34                       | 0                            | 0                                |
| 18           | 93.8511           | 75.6529                    | 4104.43                       | 0                            | 0                                |
| 19           | 96.0578           | 75.4307                    | 3811.58                       | 0                            | 0                                |
| 20           | 98.2645           | 75.3089                    | 3483.12                       | 0                            | 0                                |

|  |   |                                   |                                       |
|--|---|-----------------------------------|---------------------------------------|
|  | Munjoy Heights - #13217   |                                   |                                       |
|  | Analysis Description SECTION 1 - Static - Stone Strong - Janbu/Bishop |                                   |                                       |
|  | Drawn By  | Scale                             | Company Summit Geoengineering Service |
|  | Date 1/7/2014, 8:33:22 AM   | File Name Section 1 - STATIC.slim |                                       |

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|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 21 | 100.471 | 75.2867 | 3132.75 | 0 | 0 |
| 22 | 102.678 | 75.3639 | 2778.55 | 0 | 0 |
| 23 | 104.885 | 75.5412 | 2443.53 | 0 | 0 |
| 24 | 107.091 | 75.8194 | 2156.22 | 0 | 0 |
| 25 | 109.298 | 76.2005 | 1951.69 | 0 | 0 |
| 26 | 111.505 | 76.6869 | 0       | 0 | 0 |

**Query 2 (bishop simplified) - Safety Factor: 1.68059**

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 26.2215           | 111                        | 0                             | 0                            | 0                                |
| 2            | 29.8881           | 107.348                    | 407.542                       | 0                            | 0                                |
| 3            | 33.5547           | 104                        | 1497.11                       | 0                            | 0                                |
| 4            | 37.2181           | 100.926                    | 2227.96                       | 0                            | 0                                |
| 5            | 40.8815           | 98.0952                    | 3469.47                       | 0                            | 0                                |
| 6            | 44.5449           | 95.4869                    | 5012.72                       | 0                            | 0                                |
| 7            | 48.2082           | 93.0834                    | 6512.03                       | 0                            | 0                                |
| 8            | 51.9317           | 90.835                     | 7723.12                       | 0                            | 0                                |
| 9            | 55.6553           | 88.7701                    | 8472.24                       | 0                            | 0                                |
| 10           | 59.3788           | 86.8778                    | 9149.8                        | 0                            | 0                                |
| 11           | 63.1023           | 85.149                     | 9685.48                       | 0                            | 0                                |
| 12           | 66.8258           | 83.5758                    | 10019                         | 0                            | 0                                |
| 13           | 70.5493           | 82.1516                    | 10098.8                       | 0                            | 0                                |
| 14           | 74.2728           | 80.8705                    | 9880.81                       | 0                            | 0                                |
| 15           | 77.9963           | 79.7277                    | 9327.79                       | 0                            | 0                                |
| 16           | 81.7198           | 78.7189                    | 7695.34                       | 0                            | 0                                |
| 17           | 85.4433           | 77.8407                    | 5854.05                       | 0                            | 0                                |
| 18           | 89.1668           | 77.09                      | 4764.44                       | 0                            | 0                                |
| 19           | 92.8903           | 76.4644                    | 3592.7                        | 0                            | 0                                |
| 20           | 96.6138           | 75.9617                    | 3309.01                       | 0                            | 0                                |
| 21           | 100.337           | 75.5804                    | 2989.64                       | 0                            | 0                                |
| 22           | 104.061           | 75.3194                    | 2648.29                       | 0                            | 0                                |
| 23           | 107.784           | 75.1778                    | 2308.24                       | 0                            | 0                                |
| 24           | 111.508           | 75.1551                    | 1998.85                       | 0                            | 0                                |
| 25           | 115.231           | 75.2514                    | 1755.93                       | 0                            | 0                                |
| 26           | 118.955           | 75.4668                    | 0                             | 0                            | 0                                |

**Global Minimum Query (janbu simplified) - Safety Factor: 1.30282**

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 40.1498           | 111                        | 0                             | 0                            | 0                                |
| 2            | 40.542            | 110.668                    | 1.79088                       | 0                            | 0                                |

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|  | <b>Munjoy Heights - #13217</b>   |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |



|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 3  | 40.9341 | 110.346 | 6.74693 | 0 | 0 |
| 4  | 41.3263 | 110.034 | 14.2885 | 0 | 0 |
| 5  | 41.7185 | 109.73  | 23.8717 | 0 | 0 |
| 6  | 42.1107 | 109.435 | 34.9857 | 0 | 0 |
| 7  | 42.5028 | 109.148 | 47.1498 | 0 | 0 |
| 8  | 42.895  | 108.869 | 59.9116 | 0 | 0 |
| 9  | 43.2872 | 108.599 | 72.8442 | 0 | 0 |
| 10 | 43.6794 | 108.336 | 85.5451 | 0 | 0 |
| 11 | 44.0715 | 108.08  | 97.634  | 0 | 0 |
| 12 | 44.4637 | 107.832 | 108.752 | 0 | 0 |
| 13 | 44.8559 | 107.591 | 118.558 | 0 | 0 |
| 14 | 45.2481 | 107.357 | 126.731 | 0 | 0 |
| 15 | 45.6402 | 107.13  | 132.966 | 0 | 0 |
| 16 | 46.0324 | 106.91  | 136.974 | 0 | 0 |
| 17 | 46.4246 | 106.696 | 138.482 | 0 | 0 |
| 18 | 46.8168 | 106.488 | 137.229 | 0 | 0 |
| 19 | 47.2089 | 106.287 | 132.971 | 0 | 0 |
| 20 | 47.6011 | 106.092 | 125.473 | 0 | 0 |
| 21 | 47.9933 | 105.902 | 114.514 | 0 | 0 |
| 22 | 48.3855 | 105.719 | 99.8844 | 0 | 0 |
| 23 | 48.7776 | 105.542 | 81.3839 | 0 | 0 |
| 24 | 49.1698 | 105.37  | 58.824  | 0 | 0 |
| 25 | 49.562  | 105.204 | 32.0254 | 0 | 0 |
| 26 | 49.9542 | 105.043 | 0       | 0 | 0 |

Query 1 (janbu simplified) - Safety Factor: 1.36531

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 57.3093           | 100                        | 0                             | 0                            | 0                                |
| 2            | 59.3215           | 96.7702                    | 253.079                       | 0                            | 0                                |
| 3            | 61.3337           | 94.0154                    | 859.437                       | 0                            | 0                                |
| 4            | 63.3459           | 91.615                     | 1652.63                       | 0                            | 0                                |
| 5            | 65.3581           | 89.4956                    | 2519.77                       | 0                            | 0                                |
| 6            | 67.3703           | 87.6085                    | 3379.45                       | 0                            | 0                                |
| 7            | 69.577            | 85.7655                    | 4422.89                       | 0                            | 0                                |
| 8            | 71.7837           | 84.1279                    | 5340.17                       | 0                            | 0                                |
| 9            | 73.9905           | 82.6714                    | 6080.66                       | 0                            | 0                                |
| 10           | 76.1972           | 81.3777                    | 6604.06                       | 0                            | 0                                |
| 11           | 78.4039           | 80.2322                    | 6877.75                       | 0                            | 0                                |
| 12           | 80.6107           | 79.2238                    | 6872.3                        | 0                            | 0                                |
| 13           | 82.8174           | 78.3434                    | 6367.99                       | 0                            | 0                                |
| 14           | 85.0241           | 77.5838                    | 5467.65                       | 0                            | 0                                |

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|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |

SLIDEINTERPRET 6.026



|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 15 | 87.2309 | 76.9391 | 4831.9  | 0 | 0 |
| 16 | 89.4376 | 76.4047 | 4031.88 | 0 | 0 |
| 17 | 91.6443 | 75.9769 | 3082.21 | 0 | 0 |
| 18 | 93.8511 | 75.6529 | 2369.24 | 0 | 0 |
| 19 | 96.0578 | 75.4307 | 2054.68 | 0 | 0 |
| 20 | 98.2645 | 75.3089 | 1704.53 | 0 | 0 |
| 21 | 100.471 | 75.2867 | 1333.13 | 0 | 0 |
| 22 | 102.678 | 75.3639 | 959.316 | 0 | 0 |
| 23 | 104.885 | 75.5412 | 606.91  | 0 | 0 |
| 24 | 107.091 | 75.8194 | 305.483 | 0 | 0 |
| 25 | 109.298 | 76.2005 | 91.3347 | 0 | 0 |
| 26 | 111.505 | 76.6869 | 0       | 0 | 0 |

Query 2 (janbu simplified) - Safety Factor: 1.62233

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 26.2215           | 111                        | 0                             | 0                            | 0                                |
| 2            | 29.8881           | 107.348                    | 407.229                       | 0                            | 0                                |
| 3            | 33.5547           | 104                        | 1495.97                       | 0                            | 0                                |
| 4            | 37.2181           | 100.926                    | 2193.87                       | 0                            | 0                                |
| 5            | 40.8815           | 98.0952                    | 3371.8                        | 0                            | 0                                |
| 6            | 44.5449           | 95.4869                    | 4823.37                       | 0                            | 0                                |
| 7            | 48.2082           | 93.0834                    | 6216.47                       | 0                            | 0                                |
| 8            | 51.9317           | 90.835                     | 7349.08                       | 0                            | 0                                |
| 9            | 55.6553           | 88.7701                    | 8038.23                       | 0                            | 0                                |
| 10           | 59.3788           | 86.8778                    | 8644.86                       | 0                            | 0                                |
| 11           | 63.1023           | 85.149                     | 9099.58                       | 0                            | 0                                |
| 12           | 66.8258           | 83.5758                    | 9342.93                       | 0                            | 0                                |
| 13           | 70.5493           | 82.1516                    | 9324.05                       | 0                            | 0                                |
| 14           | 74.2728           | 80.8705                    | 8999.52                       | 0                            | 0                                |
| 15           | 77.9963           | 79.7277                    | 8332.61                       | 0                            | 0                                |
| 16           | 81.7198           | 78.7189                    | 6485.72                       | 0                            | 0                                |
| 17           | 85.4433           | 77.8407                    | 4465.84                       | 0                            | 0                                |
| 18           | 89.1668           | 77.09                      | 3292.02                       | 0                            | 0                                |
| 19           | 92.8903           | 76.4644                    | 2044.67                       | 0                            | 0                                |
| 20           | 96.6138           | 75.9617                    | 1745.2                        | 0                            | 0                                |
| 21           | 100.337           | 75.5804                    | 1410.14                       | 0                            | 0                                |
| 22           | 104.061           | 75.3194                    | 1053.73                       | 0                            | 0                                |
| 23           | 107.784           | 75.1778                    | 699.995                       | 0                            | 0                                |
| 24           | 111.508           | 75.1551                    | 379.116                       | 0                            | 0                                |
| 25           | 115.231           | 75.2514                    | 127.801                       | 0                            | 0                                |
| 26           | 118.955           | 75.4668                    | 0                             | 0                            | 0                                |

|  |   |                                   |                                       |
|--|---|-----------------------------------|---------------------------------------|
|  | Munjoy Heights - #13217   |                                   |                                       |
|  | Analysis Description SECTION 1 - Static - Stone Strong - Janbu/Bishop |                                   |                                       |
|  | Drawn By  | Scale                             | Company Summit Geoengineering Service |
|  | Date 1/7/2014, 8:33:22 AM   | File Name Section 1 - STATIC.slim |                                       |

SLIDEINTERPRET 6.026



## List Of Coordinates

### Line Load

| X       | Y  |
|---------|----|
| 79.1998 | 92 |
| 79      | 92 |
| 79.1    | 91 |
| 84.1    | 91 |
| 84      | 92 |
| 83.9796 | 92 |

### External Boundary

| X    | Y   |
|------|-----|
| 0    | 96  |
| 0    | 40  |
| 150  | 40  |
| 150  | 64  |
| 150  | 67  |
| 117  | 76  |
| 93   | 79  |
| 92.5 | 90  |
| 90   | 90  |
| 82.1 | 95  |
| 82   | 100 |
| 81   | 100 |
| 50   | 100 |
| 49.9 | 111 |
| 39   | 111 |
| 15   | 111 |
| 0    | 111 |

### Material Boundary

| X    | Y   |
|------|-----|
| 15   | 111 |
| 15.1 | 104 |
| 39.1 | 104 |
| 39   | 111 |

|  |  |  |  |
|--|--|--|--|
|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |

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### Material Boundary

| X   | Y  |
|-----|----|
| 0   | 96 |
| 93  | 75 |
| 117 | 73 |
| 150 | 64 |

### Material Boundary

| X    | Y   |
|------|-----|
| 81   | 100 |
| 81.2 | 92  |
| 79   | 92  |
| 79.1 | 91  |
| 84.1 | 91  |
| 84   | 92  |
| 82.1 | 92  |
| 82.1 | 95  |

### Material Boundary

| X      | Y      |
|--------|--------|
| 90     | 90     |
| 90.156 | 79.684 |

### Material Boundary

| X      | Y      |
|--------|--------|
| 0      | 111    |
| 15.1   | 104    |
| 45     | 94     |
| 80     | 84     |
| 90.156 | 79.684 |
| 91     | 78     |
| 93     | 78     |
| 93     | 79     |

|  |  |  |  |
|--|--|--|--|
|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 1 - Static - Stone Strong - Janbu/Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                             | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 1/7/2014, 8:33:22 AM   | <i>File Name</i> Section 1 - STATIC.slim |  |

SLIDEINTERPRET 6.026



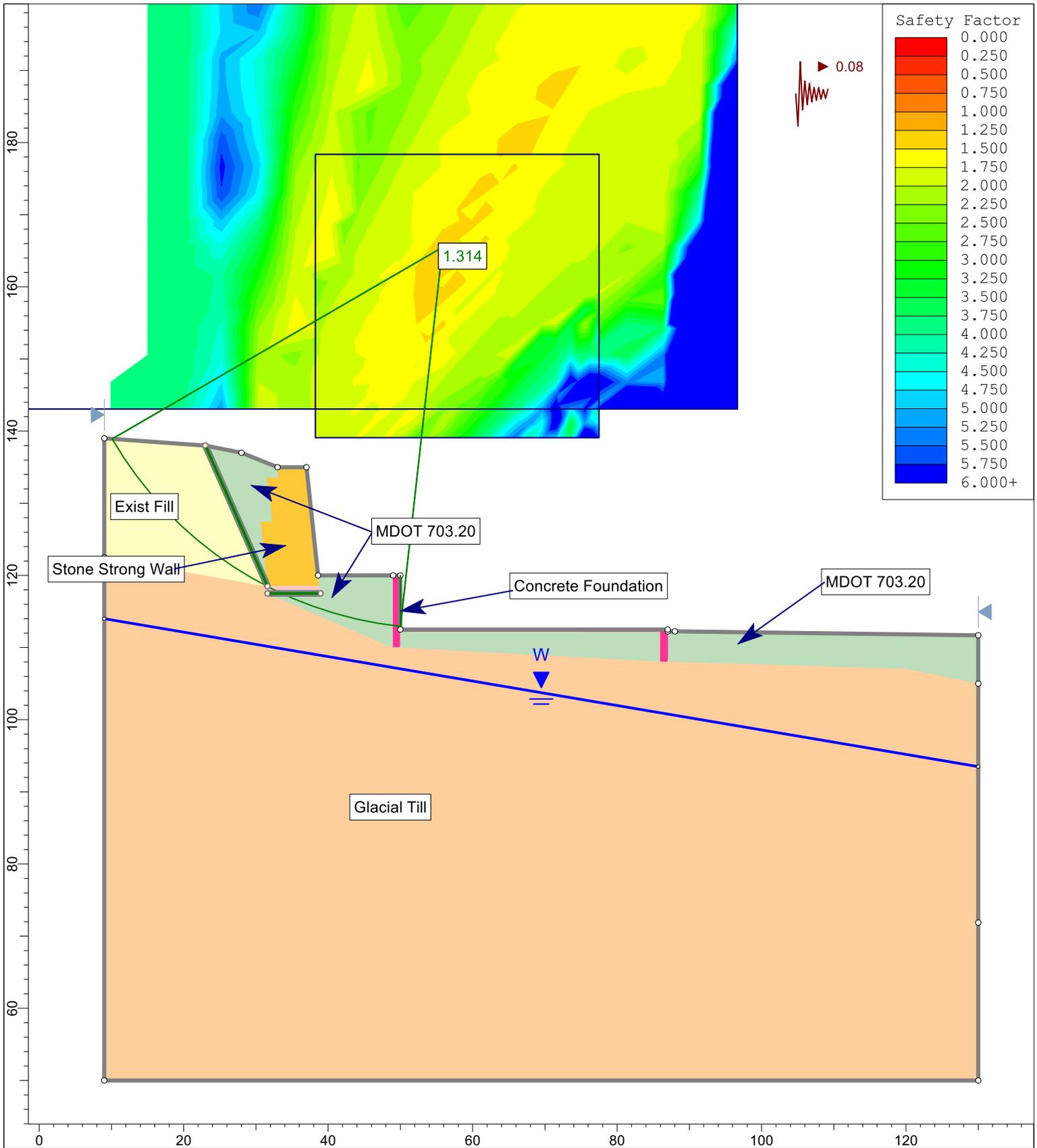


**SLOPE STABILITY ANALYSIS RESULTS**  
**SECTION 2**

---

**P.O. Box 7216, Lewiston, Maine 04243, (207) 576-3313**  
**P.O. Box 838, Camden, Maine 04843, (207) 706-7999**





Munjoy Heights - #13217

Analysis Description

SECTION 2 - Seismic - Stone Strong - Bishop

Drawn By

Scale 1:214

Company

Summit Geoengineering Service

Date

3/10/2014, 10:29:25 AM

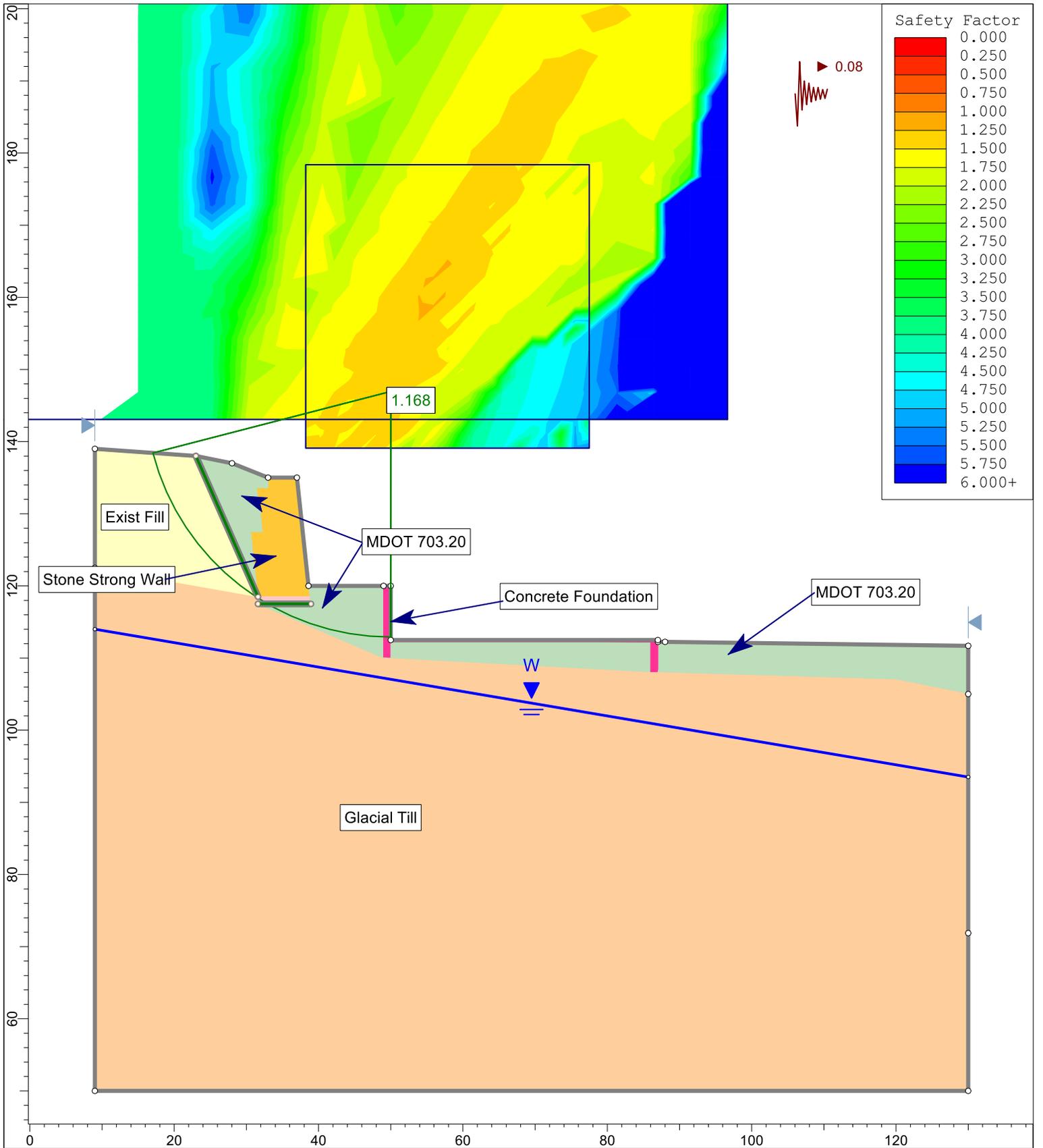
File Name

Section 2 - SEISMIC.slim



SLIDEINTERPRET 6.026





|  |  |                                    |                                       |
|--|--|------------------------------------|---------------------------------------|
|  | Munjoy Heights - #13217                    |                                    |                                       |
|  | SECTION 2 - Seismic - Stone Strong - Janbu |                                    |                                       |
|  | Drawn By                                   | Scale 1:214                        | Company Summit Geoengineering Service |
|  | Date 3/10/2014, 10:29:25 AM                | File Name Section 2 - SEISMIC.slim |                                       |

SLIDEINTERPRET 6.026



# Slide Analysis Information

## SLIDE - An Interactive Slope Stability Program

### Project Summary

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File Name: Section 2 - SEISMIC  
 Slide Modeler Version: 6.026  
 Project Title: SLIDE - An Interactive Slope Stability Program  
 Date Created: 3/10/2014, 10:29:25 AM

### General Settings

---

Units of Measurement: Imperial Units  
 Time Units: days  
 Permeability Units: feet/second  
 Failure Direction: Left to Right  
 Data Output: Standard  
 Maximum Material Properties: 20  
 Maximum Support Properties: 20

### Analysis Options

---

#### Analysis Methods Used

Bishop simplified  
 Janbu simplified

Number of slices: 25  
 Tolerance: 0.005  
 Maximum number of iterations: 50  
 Check malpha < 0.2: Yes  
 Initial trial value of FS: 1  
 Steffensen Iteration: Yes

### Groundwater Analysis

---

Groundwater Method: Water Surfaces  
 Pore Fluid Unit Weight: 62.4 lbs/ft<sup>3</sup>  
 Advanced Groundwater Method: None

### Random Numbers

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM  | <i>File Name</i> Section 2 - SEISMIC.slim |  |

SLIDEINTERPRET 6.026



Pseudo-random Seed: 10116  
 Random Number Generation Method: Park and Miller v.3

## Surface Options

Surface Type: Circular  
 Search Method: Grid Search  
 Radius Increment: 10  
 Composite Surfaces: Enabled  
 Reverse Curvature: Invalid Surfaces  
 Minimum Elevation: Not Defined  
 Minimum Depth: Not Defined

## Loading

Seismic Load Coefficient (Horizontal): 0.08

## Material Properties

| Property              | Existing Fill  | MDOT 703.20  | Glacial Till   | Stone Strong   | Crushed Stone  | Concrete   |
|-----------------------|--|--|--|--|--|--|
| Color                 |  |  |  |  |  |  |
| Strength Type         | Mohr-Coulomb   | Mohr-Coulomb   | Mohr-Coulomb   | Mohr-Coulomb   | Mohr-Coulomb   | Mohr-Coulomb   |
| Unit Weight [lbs/ft3] | 120  | 130  | 124  | 127  | 110  | 150  |
| Cohesion [psf]        | 0.02   | 0.02   | 2000   | 1250   | 0  | 5000   |
| Friction Angle [deg]  | 30   | 35   | 35   | 35   | 45   | 45   |
| Water Surface         | None   | None   | Water Table  | None   | None   | None   |
| Hu Value              |  |  | 1  |  |  |  |
| Ru Value              | 0  | 0  |  | 0  | 0  | 0  |

## Support Properties

### Support 2

Support Type: GeoTextile  
 Force Application: Active  
 Force Orientation: Bisector of Parallel and Tangent  
 Anchorage: None  
 Shear Strength Model: Linear  
 Strip Coverage: 100 percent  
 Tensile Strength: 500 lb/ft  
 Pullout Strength Adhesion: 5 psf

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM  | <i>File Name</i> Section 2 - SEISMIC.slim |  |

SLIDEINTERPRET 6.026



## Global Minimums

### Method: bishop simplified

FS: 1.314030  
 Center: 55.829, 165.474  
 Radius: 52.896  
 Left Slip Surface Endpoint: 10.080, 138.923  
 Right Slip Surface Endpoint: 50.000, 112.900  
 Left Slope Intercept: 10.080 138.923  
 Right Slope Intercept: 50.000 120.000  
 Resisting Moment=1.95925e+006 lb-ft  
 Driving Moment=1.49102e+006 lb-ft  
 Total Slice Area=423.822 ft<sup>2</sup>

### Method: janbu simplified

FS: 1.167780  
 Center: 50.003, 146.946  
 Radius: 34.051  
 Left Slip Surface Endpoint: 17.035, 138.426  
 Right Slip Surface Endpoint: 50.000, 112.895  
 Left Slope Intercept: 17.035 138.426  
 Right Slope Intercept: 50.000 120.000  
 Resisting Horizontal Force=28671.8 lb  
 Driving Horizontal Force=24552.5 lb  
 Total Slice Area=363.623 ft<sup>2</sup>

## Valid / Invalid Surfaces

### Method: bishop simplified

Number of Valid Surfaces: 8542  
 Number of Invalid Surfaces: 1369

#### Error Codes:

Error Code -106 reported for 40 surfaces  
 Error Code -107 reported for 10 surfaces  
 Error Code -108 reported for 9 surfaces  
 Error Code -112 reported for 23 surfaces  
 Error Code -1000 reported for 1287 surfaces

### Method: janbu simplified

Number of Valid Surfaces: 7995

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM  | <i>File Name</i> Section 2 - SEISMIC.slim |  |



Number of Invalid Surfaces: 1916

**Error Codes:**

- Error Code -106 reported for 40 surfaces
- Error Code -107 reported for 10 surfaces
- Error Code -108 reported for 568 surfaces
- Error Code -112 reported for 11 surfaces
- Error Code -1000 reported for 1287 surfaces

**Error Codes**

The following errors were encountered during the computation:

- 106 = Average slice width is less than 0.0001 \* (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
- 107 = Total driving moment or total driving force is negative. This will occur if the wrong failure direction is specified, or if high external or anchor loads are applied against the failure direction.
- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 112 = The coefficient M-Alpha =  $\cos(\alpha)(1+\tan(\alpha)\tan(\phi)/F) < 0.2$  for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.
- 1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

**Slice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 1.31403

| Slice Number | Width [ft] | Weight [lbs] | Base Material | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|---------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 1.64488    | 250.037      | Existing Fill | 0.02                | 30                            | 39.1568            | 51.4532              | 89.0848                  | 0                   | 89.0848                       |
| 2            | 1.64488    | 719.807      | Existing Fill | 0.02                | 30                            | 118.382            | 155.558              | 269.4                    | 0                   | 269.4                         |
| 3            | 1.64488    | 1135.31      | Existing Fill | 0.02                | 30                            | 194.454            | 255.519              | 442.537                  | 0                   | 442.537                       |
| 4            | 1.64488    | 1507.13      | Existing Fill | 0.02                | 30                            | 267.253            | 351.179              | 608.227                  | 0                   | 608.227                       |
| 5            | 1.64488    | 1842.55      | Existing Fill | 0.02                | 30                            | 336.803            | 442.569              | 766.515                  | 0                   | 766.515                       |
| 6            | 1.64488    | 2146.81      | Existing Fill | 0.02                | 30                            | 403.185            | 529.797              | 917.602                  | 0                   | 917.602                       |
| 7            | 1.64488    | 2423.85      | Existing Fill | 0.02                | 30                            | 466.505            | 613.001              | 1061.71                  | 0                   | 1061.71                       |
| 8            | 1.64488    | 2676.87      | Existing Fill | 0.02                | 30                            | 526.898            | 692.36               | 1199.17                  | 0                   | 1199.17                       |
| 9            | 1.64488    | 2916.98      | Existing Fill | 0.02                | 30                            | 586.221            | 770.312              | 1334.18                  | 0                   | 1334.18                       |
| 10           | 1.64488    | 3142.45      | Existing Fill | 0.02                | 30                            | 643.921            | 846.132              | 1465.51                  | 0                   | 1465.51                       |
| 11           | 1.64488    | 3349.3       | Existing Fill | 0.02                | 30                            | 698.978            | 918.478              | 1590.81                  | 0                   | 1590.81                       |
| 12           | 1.64488    | 3497.42      | Existing Fill | 0.02                | 30                            | 742.663            | 975.882              | 1690.24                  | 0                   | 1690.24                       |
| 13           | 1.64488    | 3591.09      | Existing Fill | 0.02                | 30                            | 775.279            | 1018.74              | 1764.48                  | 0                   | 1764.48                       |
| 14           | 0.136728   | 300.165      | Glacial Till  | 2000                | 35                            | 2111.65            | 2774.77              | 1106.49                  | 0                   | 1106.49                       |
| 15           | 1.9474     | 4256.52      | Crushed Stone | 0                   | 45                            | 1180.64            | 1551.4               | 1551.4                   | 0                   | 1551.4                        |

|  |   |              |  |
|--|---|--------------|--|
|  | <b>Munjoy Heights - #13217</b>  |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |              |  |
|  | <i>Drawn By</i>   | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM  |              | <i>File Name</i> Section 2 - SEISMIC.slim    |

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|    |         |         |             |      |    |         |         |         |   |         |
|----|---------|---------|-------------|------|----|---------|---------|---------|---|---------|
| 16 | 1.71696 | 3871.64 | MDOT 703.20 | 0.02 | 35 | 972.641 | 1278.08 | 1825.26 | 0 | 1825.26 |
| 17 | 1.71696 | 4033.47 | MDOT 703.20 | 0.02 | 35 | 1031.73 | 1355.72 | 1936.14 | 0 | 1936.14 |
| 18 | 1.71696 | 2468.63 | MDOT 703.20 | 0.02 | 35 | 642.662 | 844.477 | 1206.01 | 0 | 1206.01 |
| 19 | 1.71696 | 1078.68 | MDOT 703.20 | 0.02 | 35 | 285.704 | 375.424 | 536.132 | 0 | 536.132 |
| 20 | 1.71696 | 1199.08 | MDOT 703.20 | 0.02 | 35 | 323.025 | 424.464 | 606.169 | 0 | 606.169 |
| 21 | 1.71696 | 1301.88 | MDOT 703.20 | 0.02 | 35 | 356.645 | 468.642 | 669.26  | 0 | 669.26  |
| 22 | 1.71696 | 1391.04 | MDOT 703.20 | 0.02 | 35 | 387.455 | 509.128 | 727.082 | 0 | 727.082 |
| 23 | 1.71696 | 1466.88 | MDOT 703.20 | 0.02 | 35 | 415.392 | 545.837 | 779.51  | 0 | 779.51  |
| 24 | 1.71696 | 1529.66 | MDOT 703.20 | 0.02 | 35 | 440.381 | 578.674 | 826.404 | 0 | 826.404 |
| 25 | 1       | 1055.94 | Concrete    | 5000 | 45 | 4222.49 | 5548.48 | 548.483 | 0 | 548.483 |

Global Minimum Query (janbu simplified) - Safety Factor: 1.16778

| Slice Number | Width [ft] | Weight [lbs] | Base Material | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|---------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 1.41373    | 354.369      | Existing Fill | 0.02                | 30                            | 49.6561            | 57.9874              | 100.402                  | 0                   | 100.402                       |
| 2            | 1.41373    | 958.47       | Existing Fill | 0.02                | 30                            | 162.349            | 189.588              | 328.342                  | 0                   | 328.342                       |
| 3            | 1.41373    | 1406.49      | Existing Fill | 0.02                | 30                            | 265.499            | 310.044              | 536.976                  | 0                   | 536.976                       |
| 4            | 1.41373    | 1770.24      | Existing Fill | 0.02                | 30                            | 360.494            | 420.978              | 729.121                  | 0                   | 729.121                       |
| 5            | 1.41373    | 2080.68      | Existing Fill | 0.02                | 30                            | 449.234            | 524.606              | 908.608                  | 0                   | 908.608                       |
| 6            | 1.41373    | 2356.14      | Existing Fill | 0.02                | 30                            | 533.617            | 623.147              | 1079.29                  | 0                   | 1079.29                       |
| 7            | 1.41373    | 2598.59      | Existing Fill | 0.02                | 30                            | 612.94             | 715.779              | 1239.73                  | 0                   | 1239.73                       |
| 8            | 1.41373    | 2812.01      | Existing Fill | 0.02                | 30                            | 687.294            | 802.608              | 1390.12                  | 0                   | 1390.12                       |
| 9            | 1.41373    | 2966.43      | Existing Fill | 0.02                | 30                            | 748.474            | 874.053              | 1513.87                  | 0                   | 1513.87                       |
| 10           | 1.41373    | 3080.77      | Existing Fill | 0.02                | 30                            | 800.17             | 934.423              | 1618.43                  | 0                   | 1618.43                       |
| 11           | 0.427754   | 945.526      | Glacial Till  | 2000                | 35                            | 2183.34            | 2549.66              | 784.993                  | 0                   | 784.993                       |
| 12           | 1.30321    | 2880.12      | Crushed Stone | 0                   | 45                            | 1184.02            | 1382.67              | 1382.67                  | 0                   | 1382.67                       |
| 13           | 1.3414     | 3023.58      | MDOT 703.20   | 0.02                | 35                            | 1015.95            | 1186.41              | 1694.34                  | 0                   | 1694.34                       |
| 14           | 1.3414     | 3145.17      | MDOT 703.20   | 0.02                | 35                            | 1084.48            | 1266.43              | 1808.62                  | 0                   | 1808.62                       |
| 15           | 1.3414     | 3254.62      | MDOT 703.20   | 0.02                | 35                            | 1150.43            | 1343.45              | 1918.61                  | 0                   | 1918.61                       |
| 16           | 1.3414     | 2393.63      | MDOT 703.20   | 0.02                | 35                            | 866.67             | 1012.08              | 1445.37                  | 0                   | 1445.37                       |
| 17           | 1.3414     | 966.757      | MDOT 703.20   | 0.02                | 35                            | 358.338            | 418.46               | 597.594                  | 0                   | 597.594                       |
| 18           | 1.3414     | 990.493      | MDOT 703.20   | 0.02                | 35                            | 375.66             | 438.688              | 626.483                  | 0                   | 626.483                       |
| 19           | 1.3414     | 1055.05      | MDOT 703.20   | 0.02                | 35                            | 409.302            | 477.975              | 682.59                   | 0                   | 682.59                        |
| 20           | 1.3414     | 1109.47      | MDOT 703.20   | 0.02                | 35                            | 440.182            | 514.036              | 734.092                  | 0                   | 734.092                       |
| 21           | 1.3414     | 1154.04      | MDOT 703.20   | 0.02                | 35                            | 468.223            | 546.782              | 780.86                   | 0                   | 780.86                        |
| 22           | 1.3414     | 1188.99      | MDOT 703.20   | 0.02                | 35                            | 493.335            | 576.107              | 822.74                   | 0                   | 822.74                        |
| 23           | 1.3414     | 1214.48      | MDOT 703.20   | 0.02                | 35                            | 515.416            | 601.892              | 859.559                  | 0                   | 859.559                       |
| 24           | 1.3414     | 1230.63      | MDOT 703.20   | 0.02                | 35                            | 534.343            | 623.995              | 891.132                  | 0                   | 891.132                       |
| 25           | 1          | 1064.62      | Concrete      | 5000                | 45                            | 5128.44            | 5988.89              | 988.889                  | 0                   | 988.889                       |

Interslice Data

|  |  |                                    |                                       |
|--|--|------------------------------------|---------------------------------------|
|  | Munjoy Heights - #13217  |                                    |                                       |
|  | Analysis Description SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |                                    |                                       |
|  | Drawn By   | Scale                              | Company Summit Geoengineering Service |
|  | Date 3/10/2014, 10:29:25 AM  | File Name Section 2 - SEISMIC.slim |                                       |

SLIDEINTERPRET 6.026



Global Minimum Query (bishop simplified) - Safety Factor: 1.31403

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 10.0798           | 138.923                    | 0                             | 0                            | 0                                |
| 2            | 11.7247           | 136.272                    | 191.943                       | 0                            | 0                                |
| 3            | 13.3696           | 133.928                    | 686.82                        | 0                            | 0                                |
| 4            | 15.0144           | 131.827                    | 1388.54                       | 0                            | 0                                |
| 5            | 16.6593           | 129.926                    | 2227.24                       | 0                            | 0                                |
| 6            | 18.3042           | 128.193                    | 3150.01                       | 0                            | 0                                |
| 7            | 19.9491           | 126.608                    | 4115.49                       | 0                            | 0                                |
| 8            | 21.594            | 125.151                    | 5090.58                       | 0                            | 0                                |
| 9            | 23.2389           | 123.81                     | 6048.31                       | 0                            | 0                                |
| 10           | 24.8837           | 122.575                    | 6969.09                       | 0                            | 0                                |
| 11           | 26.5286           | 121.435                    | 7834.87                       | 0                            | 0                                |
| 12           | 28.1735           | 120.384                    | 8628.57                       | 0                            | 0                                |
| 13           | 29.8184           | 119.415                    | 9327.27                       | 0                            | 0                                |
| 14           | 31.4633           | 118.524                    | 9915.04                       | 0                            | 0                                |
| 15           | 31.6              | 118.453                    | 9729.41                       | 0                            | 0                                |
| 16           | 33.5474           | 117.5                      | 8769.55                       | 0                            | 0                                |
| 17           | 35.2644           | 116.739                    | 8802.62                       | 0                            | 0                                |
| 18           | 36.9813           | 116.05                     | 8693.78                       | 0                            | 0                                |
| 19           | 38.6983           | 115.429                    | 8540.03                       | 0                            | 0                                |
| 20           | 40.4152           | 114.874                    | 8434.87                       | 0                            | 0                                |
| 21           | 42.1322           | 114.382                    | 8275.72                       | 0                            | 0                                |
| 22           | 43.8491           | 113.952                    | 8056.85                       | 0                            | 0                                |
| 23           | 45.5661           | 113.583                    | 7773.33                       | 0                            | 0                                |
| 24           | 47.283            | 113.273                    | 7421.39                       | 0                            | 0                                |
| 25           | 49                | 113.021                    | 6998.3                        | 0                            | 0                                |
| 26           | 50                | 112.9                      | 0                             | 0                            | 0                                |

Global Minimum Query (janbu simplified) - Safety Factor: 1.16778

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 17.0349           | 138.426                    | 0                             | 0                            | 0                                |
| 2            | 18.4487           | 134.147                    | 387.752                       | 0                            | 0                                |
| 3            | 19.8624           | 131.102                    | 1234.78                       | 0                            | 0                                |
| 4            | 21.2761           | 128.664                    | 2281.52                       | 0                            | 0                                |
| 5            | 22.6899           | 126.612                    | 3409.43                       | 0                            | 0                                |
| 6            | 24.1036           | 124.84                     | 4551.43                       | 0                            | 0                                |
| 7            | 25.5173           | 123.283                    | 5665.34                       | 0                            | 0                                |
| 8            | 26.9311           | 121.903                    | 6718.14                       | 0                            | 0                                |

|  |  |                                    |                                       |
|--|--|------------------------------------|---------------------------------------|
|  | Munjoy Heights - #13217  |                                    |                                       |
|  | Analysis Description SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |                                    |                                       |
|  | Drawn By   | Scale                              | Company Summit Geoengineering Service |
|  | Date 3/10/2014, 10:29:25 AM  | File Name Section 2 - SEISMIC.slim |                                       |

SLIDEINTERPRET 6.026



|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 9  | 28.3448 | 120.671 | 7684.55 | 0 | 0 |
| 10 | 29.7585 | 119.567 | 8535.31 | 0 | 0 |
| 11 | 31.1722 | 118.576 | 9254.4  | 0 | 0 |
| 12 | 31.6    | 118.296 | 8615.53 | 0 | 0 |
| 13 | 32.9032 | 117.5   | 7923.02 | 0 | 0 |
| 14 | 34.2446 | 116.761 | 8054.67 | 0 | 0 |
| 15 | 35.586  | 116.098 | 8051.27 | 0 | 0 |
| 16 | 36.9274 | 115.506 | 7904.62 | 0 | 0 |
| 17 | 38.2688 | 114.981 | 7692.38 | 0 | 0 |
| 18 | 39.6102 | 114.52  | 7564.58 | 0 | 0 |
| 19 | 40.9516 | 114.12  | 7390.41 | 0 | 0 |
| 20 | 42.293  | 113.779 | 7158.42 | 0 | 0 |
| 21 | 43.6344 | 113.496 | 6864.91 | 0 | 0 |
| 22 | 44.9758 | 113.268 | 6507.08 | 0 | 0 |
| 23 | 46.3172 | 113.095 | 6082.94 | 0 | 0 |
| 24 | 47.6586 | 112.976 | 5591.35 | 0 | 0 |
| 25 | 49      | 112.91  | 5031.98 | 0 | 0 |
| 26 | 50      | 112.895 | 0       | 0 | 0 |

**List Of Coordinates**

**Water Table**

| X   | Y       |
|-----|---------|
| 9   | 114     |
| 130 | 93.5022 |

**External Boundary**

| X    | Y      |
|------|--------|
| 9    | 50     |
| 130  | 50     |
| 130  | 71.878 |
| 130  | 105    |
| 130  | 111.7  |
| 88   | 112.25 |
| 87   | 112.25 |
| 87   | 112.5  |
| 50   | 112.5  |
| 50   | 120    |
| 49   | 120    |
| 38.6 | 120    |

|  |   |              |  |
|--|---|--------------|--|
|  | <b>Munjoy Heights - #13217</b>  |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |              |  |
|  | <i>Drawn By</i>   | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM  |              | <i>File Name</i> Section 2 - SEISMIC.slim    |



|    |       |
|----|-------|
| 37 | 135   |
| 33 | 135   |
| 28 | 137   |
| 23 | 138   |
| 9  | 139   |
| 9  | 122.5 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 31.6 | 118.5 |
| 30.9 | 124.5 |
| 30.6 | 127.5 |
| 32.3 | 127.5 |
| 32   | 130.5 |
| 31.5 | 133.5 |
| 33   | 133.5 |
| 33   | 135   |

**Material Boundary**

| X       | Y      |
|---------|--------|
| 49      | 120    |
| 49      | 110    |
| 50      | 110    |
| 50      | 112.25 |
| 50.8001 | 112.25 |
| 86      | 112.25 |
| 87      | 112.25 |

**Material Boundary**

| X  | Y      |
|----|--------|
| 50 | 112.5  |
| 87 | 112.25 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 23   | 138   |
| 31.6 | 118.5 |

Munjoy Heights - #13217

|   |                        |                  |                               |
|---|------------------------|------------------|-------------------------------|
| <i>Analysis Description</i>                       |                        |                  |                               |
| SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |                        |                  |                               |
| <i>Drawn By</i>                                   | <i>Scale</i>           | <i>Company</i>   | Summit Geoengineering Service |
| <i>Date</i>                                       | 3/10/2014, 10:29:25 AM | <i>File Name</i> | Section 2 - SEISMIC.slim      |



### Material Boundary

| X  | Y      |
|----|--------|
| 86 | 112.25 |
| 86 | 108    |
| 87 | 108    |
| 87 | 112.25 |

### Material Boundary

| X   | Y   |
|-----|-----|
| 87  | 108 |
| 120 | 107 |
| 130 | 105 |

### Material Boundary

| X    | Y     |
|------|-------|
| 9    | 122.5 |
| 31.6 | 118.5 |

### Material Boundary

| X      | Y     |
|--------|-------|
| 31.6   | 118.5 |
| 31.6   | 117.5 |
| 38.943 | 117.5 |
| 38.8   | 118.5 |
| 31.6   | 118.5 |

### Material Boundary

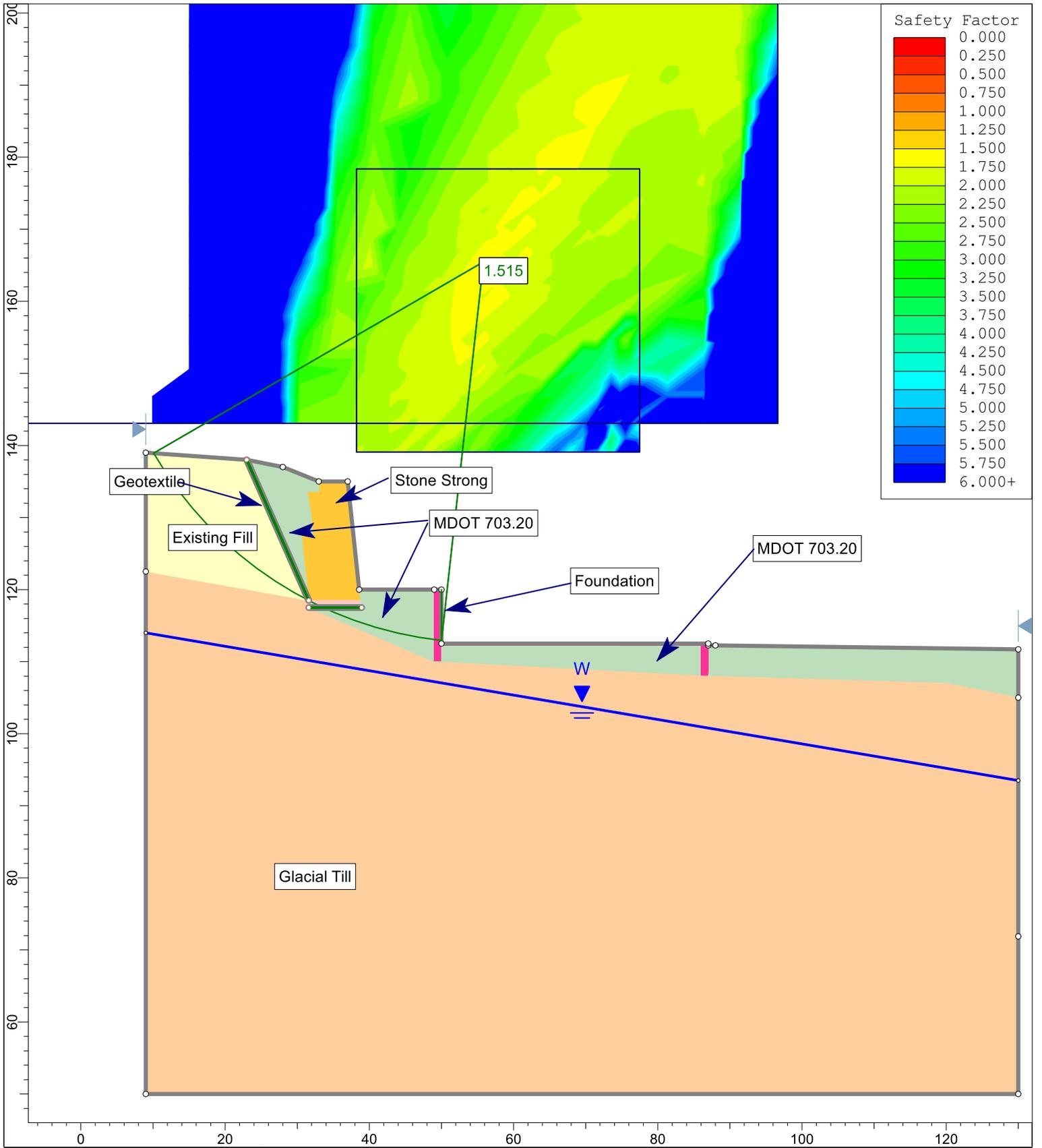
| X    | Y     |
|------|-------|
| 38.6 | 120   |
| 38.8 | 118.5 |

### Material Boundary

| X    | Y     |
|------|-------|
| 31.6 | 117.5 |
| 49   | 110   |
| 86   | 108   |

|  |   |   |  |
|--|---|---|--|
|  | Munjoy Heights - #13217   |   |  |
|  | <i>Analysis Description</i> SECTION 2 - Seismic - Stone Strong - Bishop/Janbu |   |  |
|  | <i>Drawn By</i>   | <i>Scale</i>                              | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM  | <i>File Name</i> Section 2 - SEISMIC.slim |  |

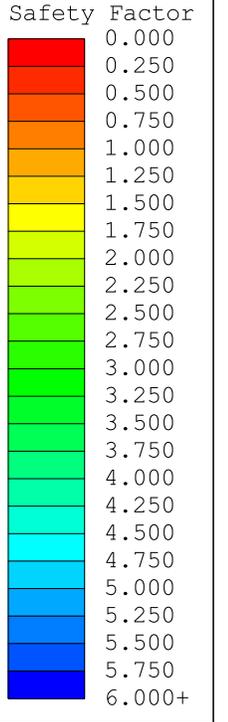
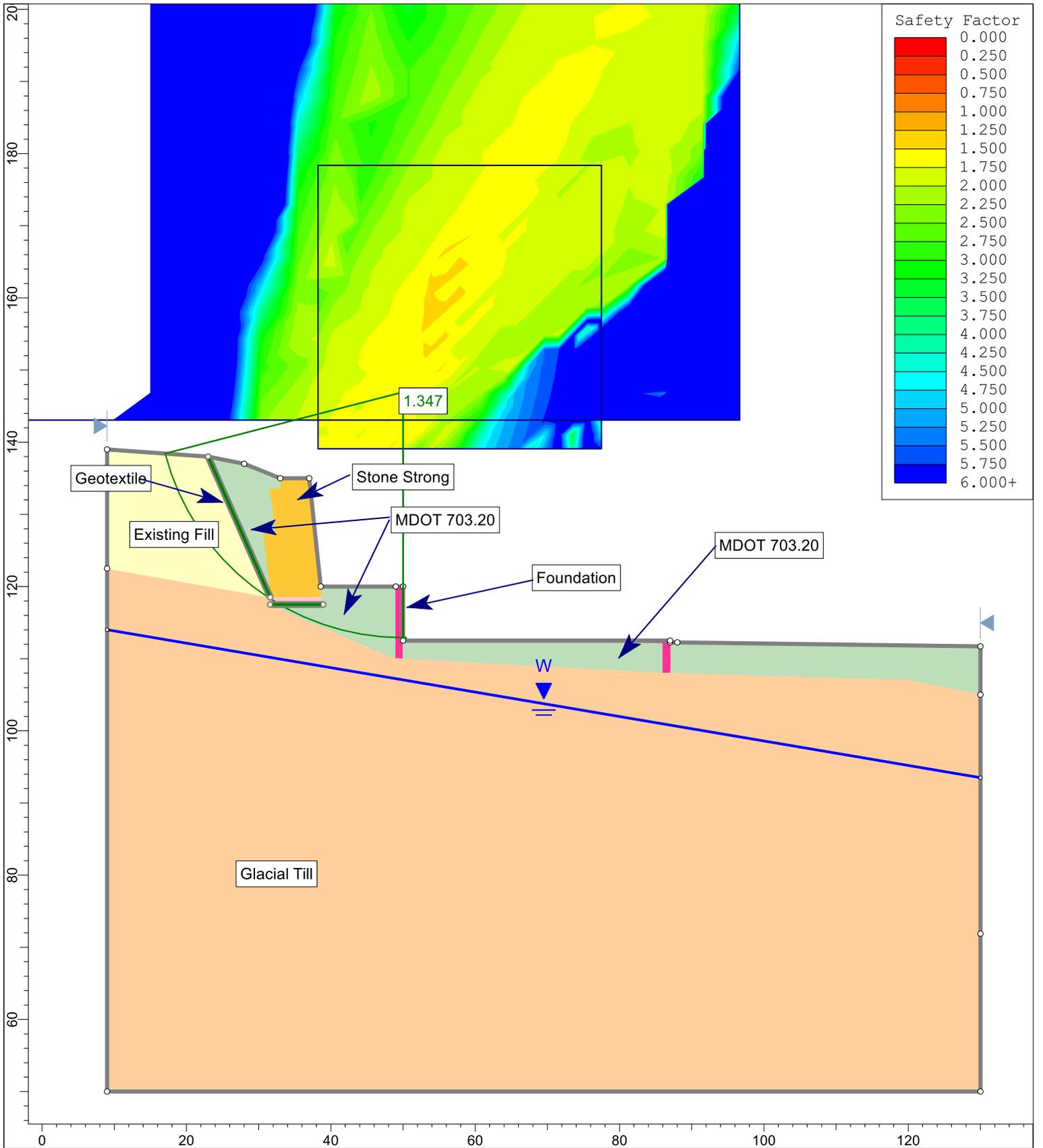




|  |  |  |  |
|--|--|--|--|
|  | <b>Munjoy Heights - #13217</b>   |  |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i> 1:214                                 | <i>Company</i> Summit Geoengineering Service |
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|  |   |   |                                       |
|--|---|---|---------------------------------------|
|  | Munjoy Heights - #13217                   |   |                                       |
|  | SECTION 2 - Static - Stone Strong - Janbu |   |                                       |
|  | Drawn By                                  | Scale 1:214                                 | Company Summit Geoengineering Service |
|  | Date 3/10/2014, 10:29:25 AM               | File Name Section 2 - STATIC w geotextile.s |                                       |

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# Slide Analysis Information

## SLIDE - An Interactive Slope Stability Program

### Project Summary

File Name: Section 2 - STATIC w geotextile  
 Slide Modeler Version: 6.026  
 Project Title: SLIDE - An Interactive Slope Stability Program  
 Date Created: 3/10/2014, 10:29:25 AM

### General Settings

Units of Measurement: Imperial Units  
 Time Units: days  
 Permeability Units: feet/second  
 Failure Direction: Left to Right  
 Data Output: Standard  
 Maximum Material Properties: 20  
 Maximum Support Properties: 20

### Analysis Options

#### Analysis Methods Used

Bishop simplified  
 Janbu simplified

Number of slices: 25  
 Tolerance: 0.005  
 Maximum number of iterations: 50  
 Check malpha < 0.2: Yes  
 Initial trial value of FS: 1  
 Steffensen Iteration: Yes

### Groundwater Analysis

Groundwater Method: Water Surfaces  
 Pore Fluid Unit Weight: 62.4 lbs/ft<sup>3</sup>  
 Advanced Groundwater Method: None

### Random Numbers

|  |  |  |  |
|--|--|--|--|
|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                                       | <i>Company</i> Summit Geoengineering Service |
|  | <i>Date</i> 3/10/2014, 10:29:25 AM                                     | <i>File Name</i> Section 2 - STATIC w geotextile.s |  |

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Pseudo-random Seed: 10116  
 Random Number Generation Method: Park and Miller v.3

## Surface Options

Surface Type: Circular  
 Search Method: Grid Search  
 Radius Increment: 10  
 Composite Surfaces: Enabled  
 Reverse Curvature: Invalid Surfaces  
 Minimum Elevation: Not Defined  
 Minimum Depth: Not Defined

## Material Properties

| Property              | Existing Fill   | MDOT 703.20   | Glacial Till  | Stone Strong  | Crushed Stone   | Concrete  |
|-----------------------|---|---|---|---|---|---|
| Color                 |  |  |  |  |  |  |
| Strength Type         | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  | Mohr-Coulomb  |
| Unit Weight [lbs/ft3] | 120   | 130   | 124   | 127   | 110   | 150   |
| Cohesion [psf]        | 0.02  | 0.02  | 2000  | 1250  | 0   | 5000  |
| Friction Angle [deg]  | 30  | 35  | 35  | 35  | 45  | 45  |
| Water Surface         | None  | None  | Water Table   | None  | None  | None  |
| Hu Value              |   |   | 1   |   |   |   |
| Ru Value              | 0   | 0   |   | 0   | 0   | 0   |

## Support Properties

### Support 2

Support Type: GeoTextile  
 Force Application: Active  
 Force Orientation: Bisector of Parallel and Tangent  
 Anchorage: None  
 Shear Strength Model: Linear  
 Strip Coverage: 100 percent  
 Tensile Strength: 500 lb/ft  
 Pullout Strength Adhesion: 5 psf  
 Pullout Strength Friction Angle: 40 degrees

## Global Minimums

|  |  |  |  |
|--|--|--|--|
|  | Munjoy Heights - #13217  |  |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |  |  |
|  | <i>Drawn By</i>  | <i>Scale</i>                                       | <i>Company</i> Summit Geoengineering Service |
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### Method: bishop simplified

FS: 1.515470  
Center: 55.829, 165.474  
Radius: 52.896  
Left Slip Surface Endpoint: 10.080, 138.923  
Right Slip Surface Endpoint: 50.000, 112.900  
Left Slope Intercept: 10.080 138.923  
Right Slope Intercept: 50.000 120.000  
Resisting Moment=2.01176e+006 lb-ft  
Driving Moment=1.32748e+006 lb-ft  
Total Slice Area=423.822 ft<sup>2</sup>

### Method: janbu simplified

FS: 1.347360  
Center: 50.003, 146.946  
Radius: 34.051  
Left Slip Surface Endpoint: 17.035, 138.426  
Right Slip Surface Endpoint: 50.000, 112.895  
Left Slope Intercept: 17.035 138.426  
Right Slope Intercept: 50.000 120.000  
Resisting Horizontal Force=29447.2 lb  
Driving Horizontal Force=21855.5 lb  
Total Slice Area=363.623 ft<sup>2</sup>

### Valid / Invalid Surfaces

### Method: bishop simplified

Number of Valid Surfaces: 8439  
Number of Invalid Surfaces: 1472

#### Error Codes:

Error Code -106 reported for 40 surfaces  
Error Code -107 reported for 78 surfaces  
Error Code -108 reported for 39 surfaces  
Error Code -112 reported for 28 surfaces  
Error Code -1000 reported for 1287 surfaces

### Method: janbu simplified

Number of Valid Surfaces: 7861  
Number of Invalid Surfaces: 2050

#### Error Codes:

Error Code -106 reported for 40 surfaces  
Error Code -107 reported for 78 surfaces

|  |  |              |  |
|--|--|--------------|--|
|  | Munjoy Heights - #13217  |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |              |  |
|  | <i>Drawn By</i>  | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service       |
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Error Code -108 reported for 627 surfaces  
 Error Code -112 reported for 18 surfaces  
 Error Code -1000 reported for 1287 surfaces

### Error Codes

The following errors were encountered during the computation:

- 106 = Average slice width is less than 0.0001 \* (maximum horizontal extent of soil region). This limitation is imposed to avoid numerical errors which may result from too many slices, or too small a slip region.
- 107 = Total driving moment or total driving force is negative. This will occur if the wrong failure direction is specified, or if high external or anchor loads are applied against the failure direction.
- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 112 = The coefficient  $M\text{-Alpha} = \cos(\alpha)(1 + \tan(\alpha)\tan(\phi)/F) < 0.2$  for the final iteration of the safety factor calculation. This screens out some slip surfaces which may not be valid in the context of the analysis, in particular, deep seated slip surfaces with many high negative base angle slices in the passive zone.
- 1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

### Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.51547

| Slice Number | Width [ft] | Weight [lbs] | Base Material | Base Cohesion [psf] | Base Friction Angle [degrees] | Shear Stress [psf] | Shear Strength [psf] | Base Normal Stress [psf] | Pore Pressure [psf] | Effective Normal Stress [psf] |
|--------------|------------|--------------|---------------|---------------------|-------------------------------|--------------------|----------------------|--------------------------|---------------------|-------------------------------|
| 1            | 1.64488    | 250.037      | Existing Fill | 0.02                | 30                            | 35.9045            | 54.4122              | 94.2101                  | 0                   | 94.2101                       |
| 2            | 1.64488    | 719.807      | Existing Fill | 0.02                | 30                            | 108.106            | 163.832              | 283.731                  | 0                   | 283.731                       |
| 3            | 1.64488    | 1135.31      | Existing Fill | 0.02                | 30                            | 176.95             | 268.163              | 464.438                  | 0                   | 464.438                       |
| 4            | 1.64488    | 1507.13      | Existing Fill | 0.02                | 30                            | 242.439            | 367.409              | 636.336                  | 0                   | 636.336                       |
| 5            | 1.64488    | 1842.55      | Existing Fill | 0.02                | 30                            | 304.673            | 461.723              | 799.691                  | 0                   | 799.691                       |
| 6            | 1.64488    | 2146.81      | Existing Fill | 0.02                | 30                            | 363.786            | 551.307              | 954.859                  | 0                   | 954.859                       |
| 7            | 1.64488    | 2423.85      | Existing Fill | 0.02                | 30                            | 419.917            | 636.372              | 1102.19                  | 0                   | 1102.19                       |
| 8            | 1.64488    | 2676.87      | Existing Fill | 0.02                | 30                            | 473.223            | 717.155              | 1242.12                  | 0                   | 1242.12                       |
| 9            | 1.64488    | 2916.98      | Existing Fill | 0.02                | 30                            | 525.396            | 796.222              | 1379.06                  | 0                   | 1379.06                       |
| 10           | 1.64488    | 3142.45      | Existing Fill | 0.02                | 30                            | 575.955            | 872.843              | 1511.77                  | 0                   | 1511.77                       |
| 11           | 1.64488    | 3349.3       | Existing Fill | 0.02                | 30                            | 624.002            | 945.657              | 1637.89                  | 0                   | 1637.89                       |
| 12           | 1.64488    | 3497.42      | Existing Fill | 0.02                | 30                            | 661.775            | 1002.9               | 1737.05                  | 0                   | 1737.05                       |
| 13           | 1.64488    | 3591.09      | Existing Fill | 0.02                | 30                            | 689.608            | 1045.08              | 1810.1                   | 0                   | 1810.1                        |
| 14           | 0.136728   | 300.165      | Glacial Till  | 2000                | 35                            | 1884.33            | 2855.65              | 1222                     | 0                   | 1222                          |
| 15           | 1.9474     | 4256.52      | Crushed Stone | 0                   | 45                            | 1061.49            | 1608.66              | 1608.66                  | 0                   | 1608.66                       |
| 16           | 1.71696    | 3871.64      | MDOT 703.20   | 0.02                | 35                            | 865.019            | 1310.91              | 1872.14                  | 0                   | 1872.14                       |
| 17           | 1.71696    | 4033.47      | MDOT 703.20   | 0.02                | 35                            | 915.742            | 1387.78              | 1981.93                  | 0                   | 1981.93                       |
| 18           | 1.71696    | 2468.63      | MDOT 703.20   | 0.02                | 35                            | 569.297            | 862.752              | 1232.11                  | 0                   | 1232.11                       |
| 19           | 1.71696    | 1078.68      | MDOT 703.20   | 0.02                | 35                            | 252.594            | 382.799              | 546.665                  | 0                   | 546.665                       |
| 20           | 1.71696    | 1199.08      | MDOT 703.20   | 0.02                | 35                            | 285.032            | 431.958              | 616.869                  | 0                   | 616.869                       |

|  |  |              |  |
|--|--|--------------|--|
|  | <b>Munjoy Heights - #13217</b>   |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |              |  |
|  | <i>Drawn By</i>  | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service       |
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|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 1  | 10.0798 | 138.923 | 0       | 0 | 0 |
| 2  | 11.7247 | 136.272 | 190.757 | 0 | 0 |
| 3  | 13.3696 | 133.928 | 678.183 | 0 | 0 |
| 4  | 15.0144 | 131.827 | 1363.29 | 0 | 0 |
| 5  | 16.6593 | 129.926 | 2174.87 | 0 | 0 |
| 6  | 18.3042 | 128.193 | 3059.52 | 0 | 0 |
| 7  | 19.9491 | 126.608 | 3975.91 | 0 | 0 |
| 8  | 21.594  | 125.151 | 4891.24 | 0 | 0 |
| 9  | 23.2389 | 123.81  | 5779.07 | 0 | 0 |
| 10 | 24.8837 | 122.575 | 6620.21 | 0 | 0 |
| 11 | 26.5286 | 121.435 | 7397.14 | 0 | 0 |
| 12 | 28.1735 | 120.384 | 8093.55 | 0 | 0 |
| 13 | 29.8184 | 119.415 | 8688.54 | 0 | 0 |
| 14 | 31.4633 | 118.524 | 9168.2  | 0 | 0 |
| 15 | 31.6    | 118.453 | 8997.25 | 0 | 0 |
| 16 | 33.5474 | 117.5   | 7979.22 | 0 | 0 |
| 17 | 35.2644 | 116.739 | 7919.87 | 0 | 0 |
| 18 | 36.9813 | 116.05  | 7715.73 | 0 | 0 |
| 19 | 38.6983 | 115.429 | 7504.59 | 0 | 0 |
| 20 | 40.4152 | 114.874 | 7374.9  | 0 | 0 |
| 21 | 42.1322 | 114.382 | 7189.28 | 0 | 0 |
| 22 | 43.8491 | 113.952 | 6942.68 | 0 | 0 |
| 23 | 45.5661 | 113.583 | 6630.84 | 0 | 0 |
| 24 | 47.283  | 113.273 | 6250.61 | 0 | 0 |
| 25 | 49      | 113.021 | 5799.93 | 0 | 0 |
| 26 | 50      | 112.9   | 0       | 0 | 0 |

Global Minimum Query (janbu simplified) - Safety Factor: 1.34736

| Slice Number | X coordinate [ft] | Y coordinate - Bottom [ft] | Interslice Normal Force [lbs] | Interslice Shear Force [lbs] | Interslice Force Angle [degrees] |
|--------------|-------------------|----------------------------|-------------------------------|------------------------------|----------------------------------|
| 1            | 17.0349           | 138.426                    | 0                             | 0                            | 0                                |
| 2            | 18.4487           | 134.147                    | 401.196                       | 0                            | 0                                |
| 3            | 19.8624           | 131.102                    | 1262.13                       | 0                            | 0                                |
| 4            | 21.2761           | 128.664                    | 2311.8                        | 0                            | 0                                |
| 5            | 22.6899           | 126.612                    | 3429.42                       | 0                            | 0                                |
| 6            | 24.1036           | 124.84                     | 4547.95                       | 0                            | 0                                |
| 7            | 25.5173           | 123.283                    | 5625.9                        | 0                            | 0                                |
| 8            | 26.9311           | 121.903                    | 6631.37                       | 0                            | 0                                |
| 9            | 28.3448           | 120.671                    | 7540.3                        | 0                            | 0                                |
| 10           | 29.7585           | 119.567                    | 8325.45                       | 0                            | 0                                |
| 11           | 31.1722           | 118.576                    | 8972.6                        | 0                            | 0                                |
| 12           | 31.6              | 118.296                    | 8391.89                       | 0                            | 0                                |

|  |   |   |                                       |
|--|---|---|---------------------------------------|
|  | Munjoy Heights - #13217   |   |                                       |
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|    |         |         |         |   |   |
|----|---------|---------|---------|---|---|
| 13 | 32.9032 | 117.5   | 7665.13 | 0 | 0 |
| 14 | 34.2446 | 116.761 | 7740.68 | 0 | 0 |
| 15 | 35.586  | 116.098 | 7679.41 | 0 | 0 |
| 16 | 36.9274 | 115.506 | 7474.14 | 0 | 0 |
| 17 | 38.2688 | 114.981 | 7220.25 | 0 | 0 |
| 18 | 39.6102 | 114.52  | 7076.44 | 0 | 0 |
| 19 | 40.9516 | 114.12  | 6886.93 | 0 | 0 |
| 20 | 42.293  | 113.779 | 6639.98 | 0 | 0 |
| 21 | 43.6344 | 113.496 | 6332.47 | 0 | 0 |
| 22 | 44.9758 | 113.268 | 5962.17 | 0 | 0 |
| 23 | 46.3172 | 113.095 | 5527.71 | 0 | 0 |
| 24 | 47.6586 | 112.976 | 5028.54 | 0 | 0 |
| 25 | 49      | 112.91  | 4464.94 | 0 | 0 |
| 26 | 50      | 112.895 | 0       | 0 | 0 |

**List Of Coordinates**

**Water Table**

| X   | Y       |
|-----|---------|
| 9   | 114     |
| 130 | 93.5022 |

**External Boundary**

| X    | Y      |
|------|--------|
| 9    | 50     |
| 130  | 50     |
| 130  | 71.878 |
| 130  | 105    |
| 130  | 111.7  |
| 88   | 112.25 |
| 87   | 112.25 |
| 87   | 112.5  |
| 50   | 112.5  |
| 50   | 120    |
| 49   | 120    |
| 38.6 | 120    |
| 37   | 135    |
| 33   | 135    |
| 28   | 137    |
| 23   | 138    |

|  |  |              |  |
|--|--|--------------|--|
|  | <b>Munjoy Heights - #13217</b>   |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |              |  |
|  | <i>Drawn By</i>  | <i>Scale</i> | <i>Company</i> Summit Geoengineering Service       |
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|   |       |
|---|-------|
| 9 | 139   |
| 9 | 122.5 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 31.6 | 118.5 |
| 30.9 | 124.5 |
| 30.6 | 127.5 |
| 32.3 | 127.5 |
| 32   | 130.5 |
| 31.5 | 133.5 |
| 33   | 133.5 |
| 33   | 135   |

**Material Boundary**

| X       | Y      |
|---------|--------|
| 49      | 120    |
| 49      | 110    |
| 50      | 110    |
| 50      | 112.25 |
| 50.8001 | 112.25 |
| 86      | 112.25 |
| 87      | 112.25 |

**Material Boundary**

| X  | Y      |
|----|--------|
| 50 | 112.5  |
| 87 | 112.25 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 23   | 138   |
| 31.6 | 118.5 |

**Material Boundary**

| X  | Y      |
|----|--------|
| 86 | 112.25 |
| 86 | 108    |

|  |  |              |  |
|--|--|--------------|--|
|  | Munjoy Heights - #13217  |              |  |
|  | <i>Analysis Description</i> SECTION 2 - Static - Stone Strong - Bishop |              |  |
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|    |        |
|----|--------|
| 87 | 108    |
| 87 | 112.25 |

**Material Boundary**

| X   | Y   |
|-----|-----|
| 87  | 108 |
| 120 | 107 |
| 130 | 105 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 9    | 122.5 |
| 31.6 | 118.5 |

**Material Boundary**

| X      | Y     |
|--------|-------|
| 31.6   | 118.5 |
| 31.6   | 117.5 |
| 38.943 | 117.5 |
| 38.8   | 118.5 |
| 31.6   | 118.5 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 38.6 | 120   |
| 38.8 | 118.5 |

**Material Boundary**

| X    | Y     |
|------|-------|
| 31.6 | 117.5 |
| 49   | 110   |
| 86   | 108   |

Munjoy Heights - #13217



*Analysis Description*

SECTION 2 - Static - Stone Strong - Bishop

*Drawn By*

*Scale*

*Company*

Summit Geoengineering Service

*Date*

3/10/2014, 10:29:25 AM

*File Name*

Section 2 - STATIC w geotextile.s

