

EXISTING SEWER - FIELD  
VERIFY LOCATION AND  
CONNECTION TO RESIDENCE  
PRIOR TO ANY EXCAVATION

FLEXIBLE OR RIGID WALL  
DRAIN - TIGHTLINE EXISTING  
DOWNSPOUT DRAINPIPES  
AND WALL DRAIN TO EXISTING  
STORM SEWER

APPROXIMATE LOCATION  
OF HAND BORING 3/21/19  
TYP

HB-1

HB-2

TOW = 167.7  
BOW = 163.0

TOW = 171.4  
BOW = 168.3

TOW = 175.0  
BOW = 170.3

TOW = 165.0  
BOW = 159.7

TOW = 168.7  
BOW = 163.4

TOW = 172.3  
BOW = 167.7

TOW = 171.4  
BOW = 170.1

TOW = 175.0  
BOW = 173.7

DECK OVERHANG - REPLACE  
DECK SUPPORTS AS SHOWN  
ON CROSS-SECTIONS

EXISTING SOLDIER  
PILE RETAINING  
WALL TO REMAIN

C

B

A

HB'

A'

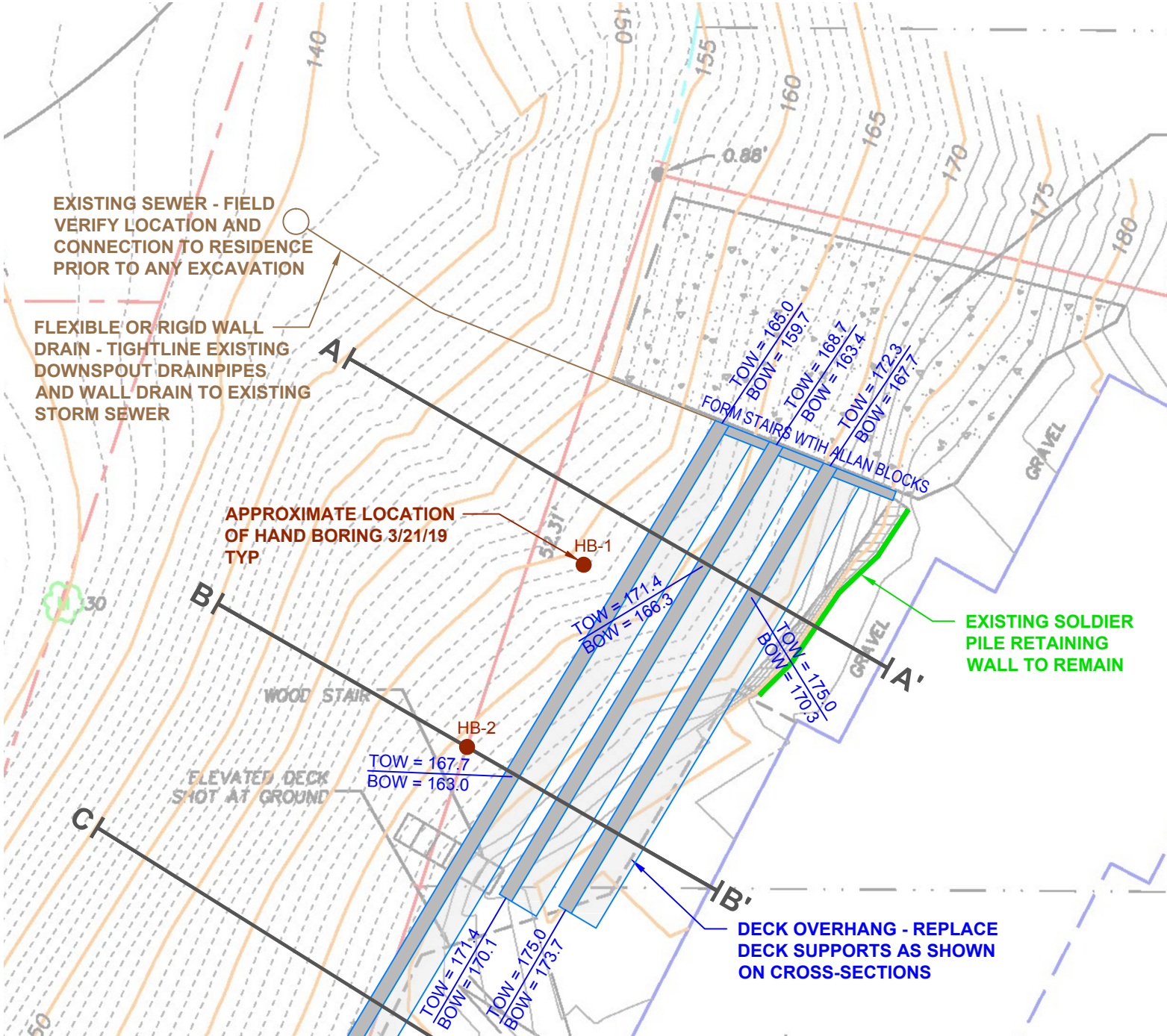
GRAVEL

GRAVEL

WOOD STAIR

ELEVATED DECK  
SHOT AT GROUND

FORM STAIRS WITH ALLAN BLOCKS





# Beresky Retaining Walls

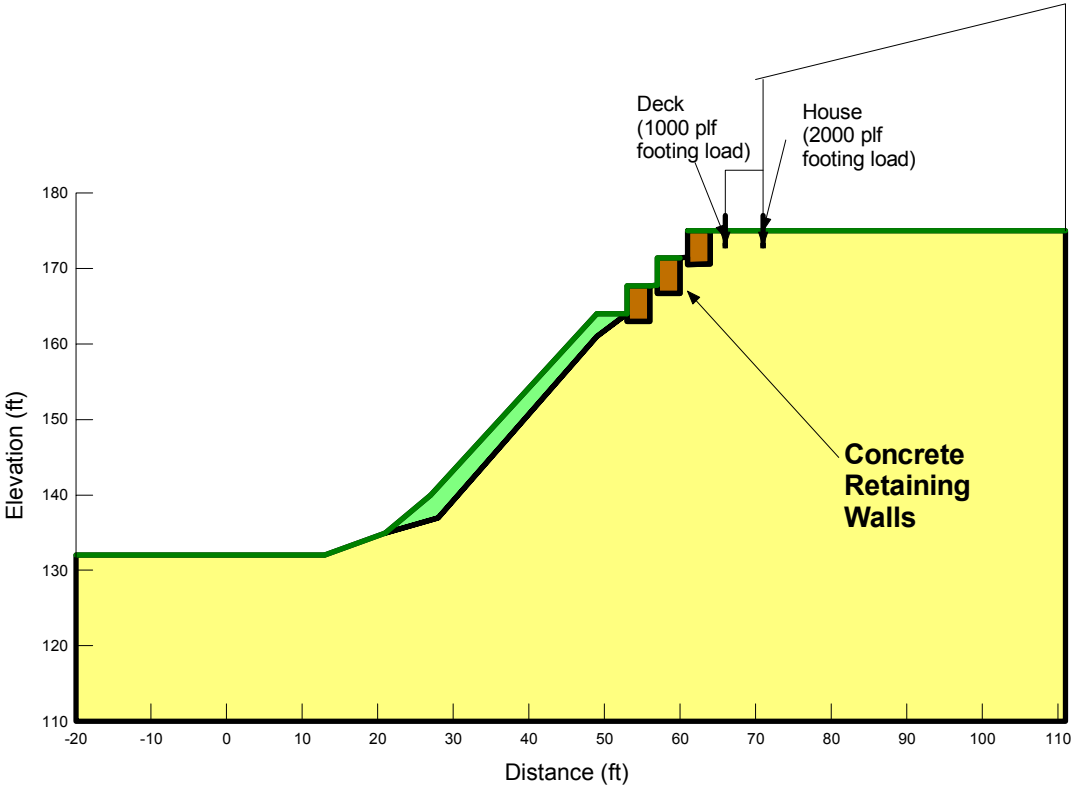
## 180127E001

### Critical Section B-B'

## Slope Geometry

Figure SS1 - 4/19/19

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)	Phi-B (°)
Green	colluvium	110	0	30	0
Brown	concrete walls	135	2,000	0	0
Yellow	pre-Olympia Till	120	500	32	0



# Beresky Retaining Walls

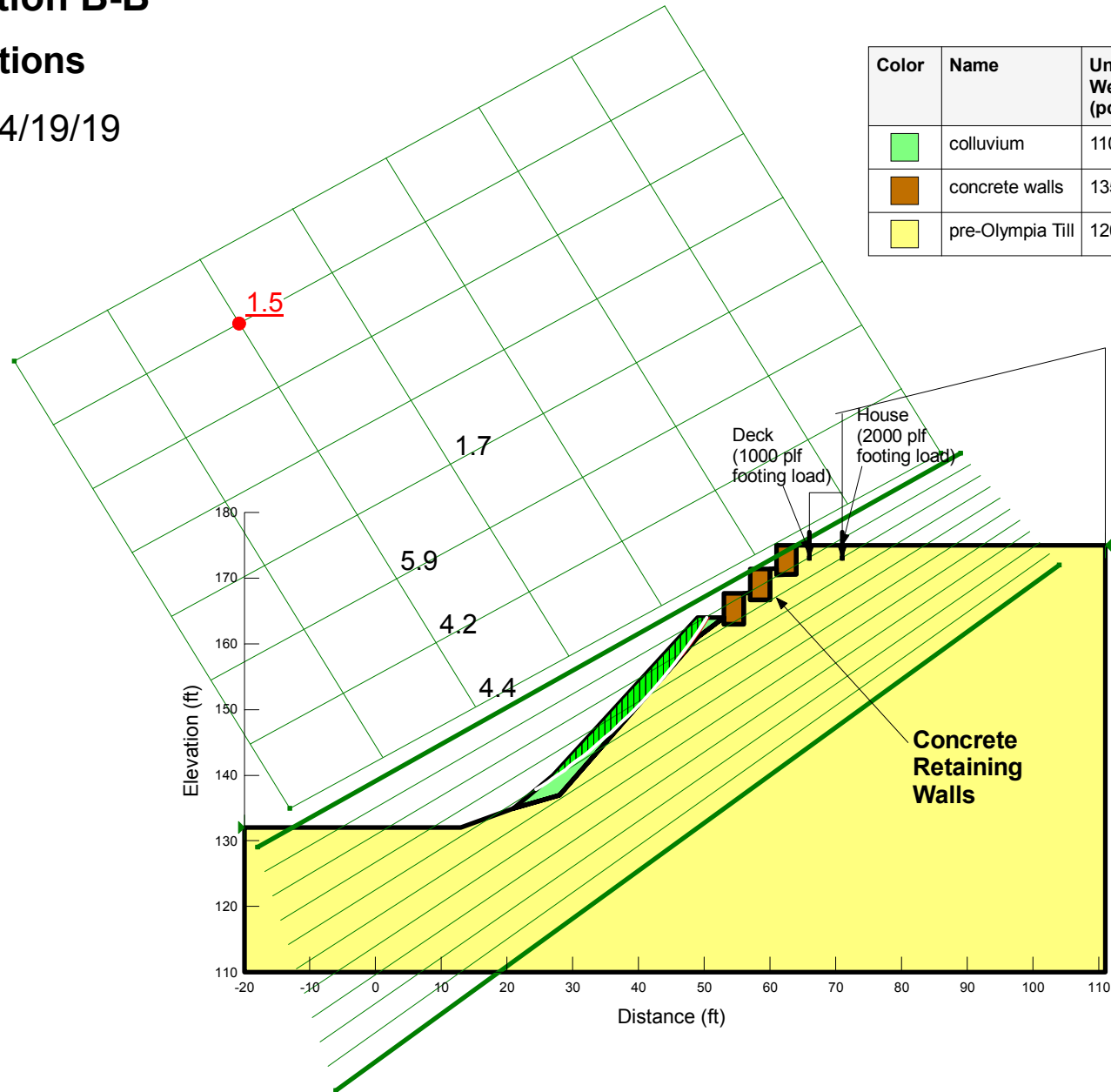
180127E001

## Critical Section B-B'

Static Conditions

Figure SS2 - 4/19/19

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)	Phi-B (°)
Green	colluvium	110	0	30	0
Brown	concrete walls	135	2,000	0	0
Yellow	pre-Olympia Till	120	500	32	0



# Beresky Retaining Walls

180127E001

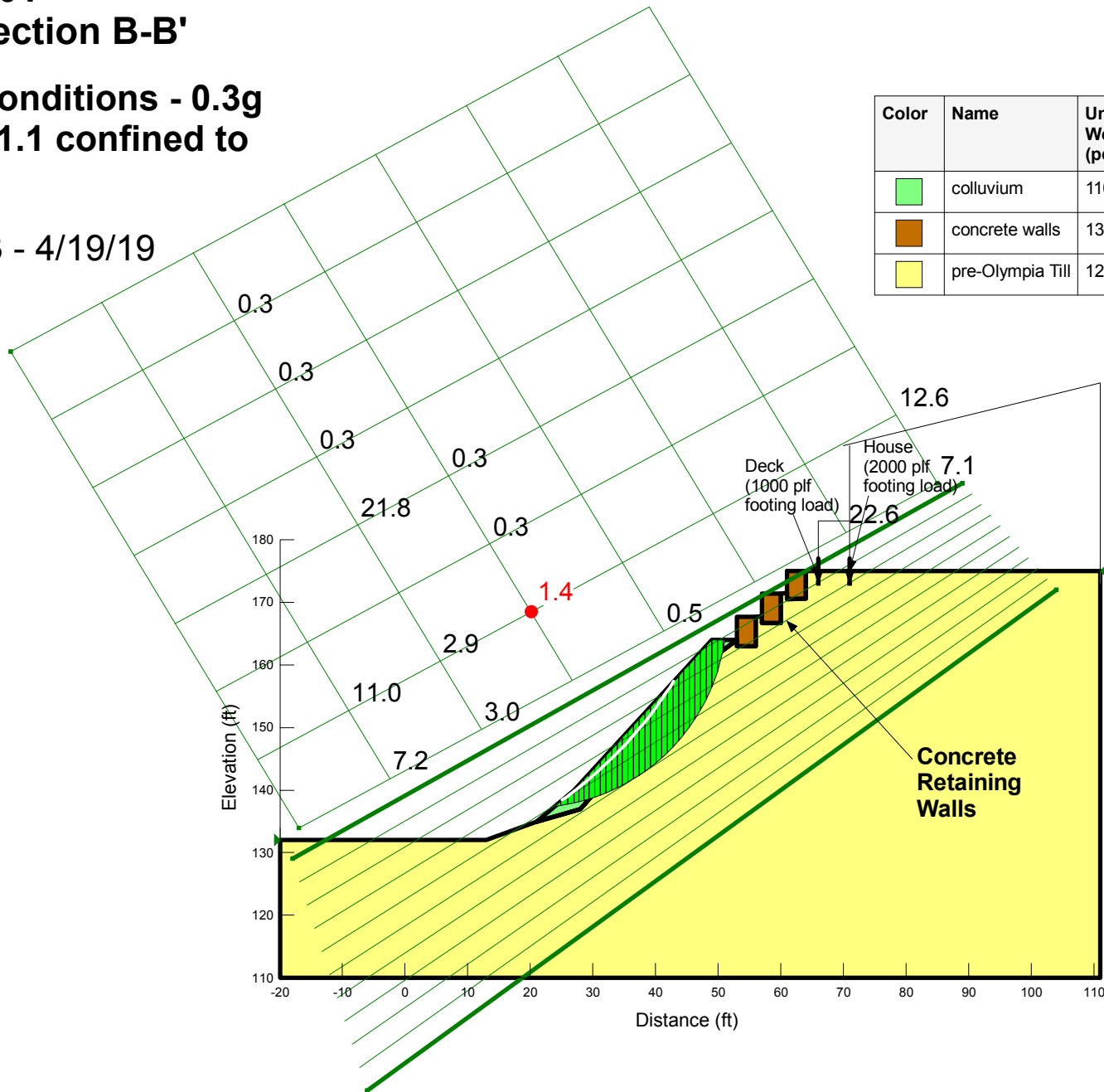
## Critical Section B-B'

Seismic Conditions - 0.3g

All FOS < 1.1 confined to colluvium

Figure SS3 - 4/19/19

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)	Phi-B (°)
Green	colluvium	110	0	30	0
Brown	concrete walls	135	2,000	0	0
Yellow	pre-Olympia Till	120	500	32	0



# Beresky Retaining Walls

180127E001

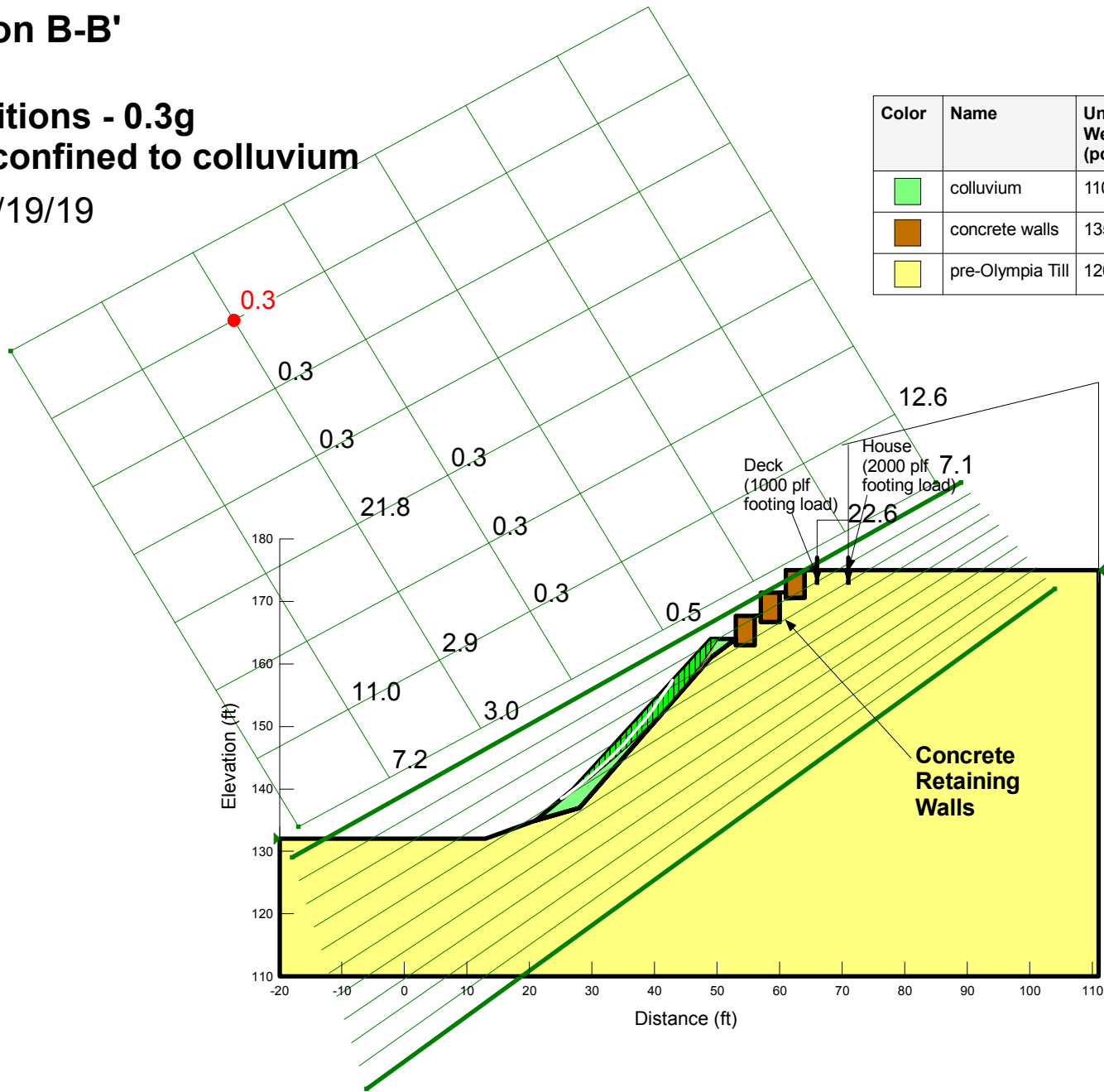
## Critical Section B-B'

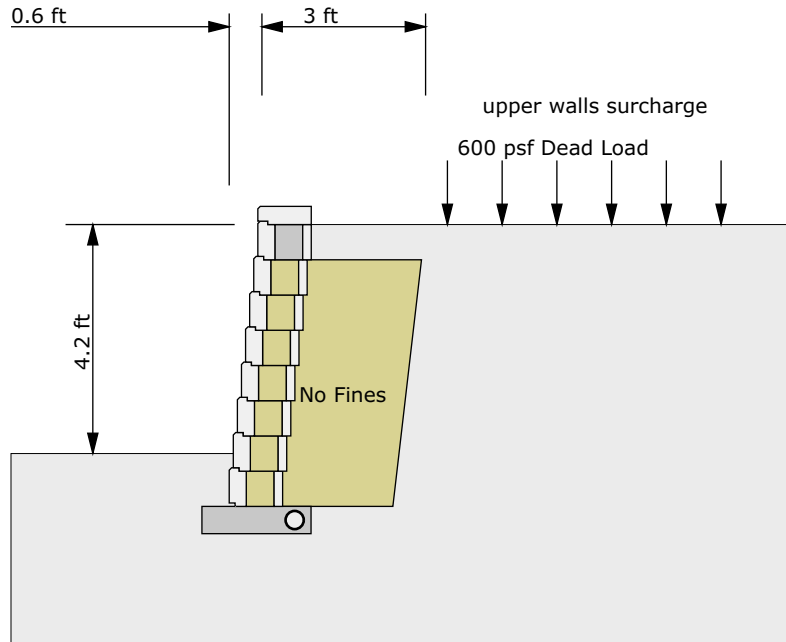
Seismic Conditions - 0.3g

All FOS < 1.1 confined to colluvium

Figure SS4 - 4/19/19

Color	Name	Unit Weight (pcf)	Cohesion (psf)	Phi (°)	Phi-B (°)
Green	colluvium	110	0	30	0
Brown	concrete walls	135	2,000	0	0
Yellow	pre-Olympia Till	120	500	32	0





AB Classic  
Section A-A'

**Base Information:**  
Base Width: 2 ft  
Base Depth: 0.5 ft  
Base From Toe: 0.5 ft

**Allan Block Disclaimer:**

Allan Block provides this software as a service for its clients. The sole purpose of this software is to assist engineers in the design of mechanically stabilized retaining walls. The software uses evaluation techniques and engineering principles found in the Allan Block Engineering Manual. (Refer to R0904 and supporting references.) It is the responsibility of the engineer of record to determine the propriety and accuracy of input parameters and to review and verify the correctness of the results. ALLAN BLOCK CORPORATION, ITS LICENSEES OR AGENTS DO NOT ASSUME ANY LIABILITY OR RESPONSIBILITY FOR DAMAGES WHICH MAY RESULT FROM THE USE OR MISUSE OF THIS SOFTWARE.

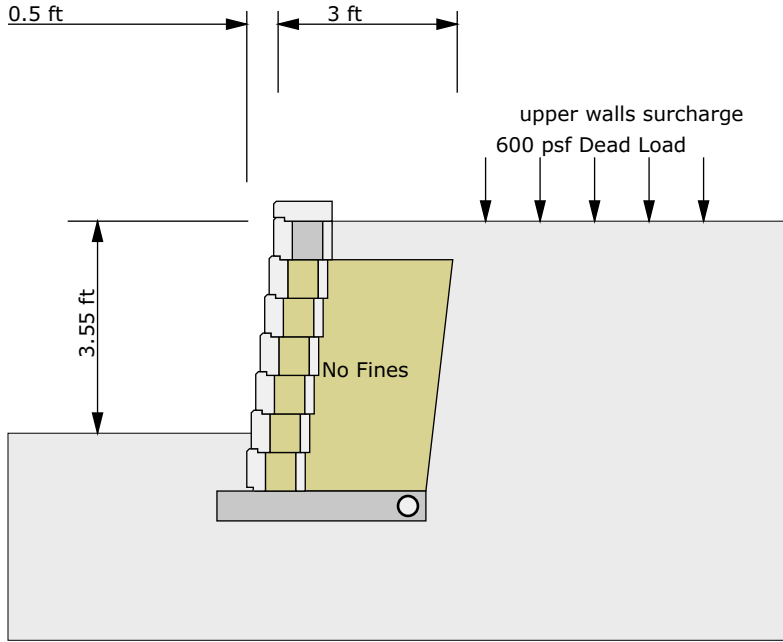
This software only considers internal, external and internal compound stability of the reinforced composite mass. The internal compound stability calculations are limited to an evaluation zone above the base material and back no further than  $2 * H$  or  $H_e + L$ , whichever is greater. This program DOES NOT address global stability, defined as soil stability below the base material and beyond the limits for internal compound stability. Global Stability should be evaluated to determine if the overall site is stable. It is the responsibility of the owner to ensure the global stability is analyzed. The engineer of record must evaluate the project site for proper water management and all potential modes of failure within the segmental retaining wall evaluation zone. The geotechnical engineering firm contracted by the owner should provide a full global stability opinion of the site including the effects on the segmental retaining wall.

AB Walls contains DEFAULT values for all data inputs that the user MUST change or verify as appropriate for the project conditions being analyzed. These DEFAULT values do NOT ensure a conservative design for any site condition. The final design must provide for proper wall drainage to prevent the buildup of hydrostatic pressures over the service life of the structure. In the event additional water is introduced into the general wall area, either above or below grade, any designs from this software would be invalid unless otherwise noted by the engineer of record. It is also recommended that an independent assessment of the foundation soil for settlement potential and wall deflections for the proposed structure be performed. Changes in the subsoil conditions are not included in this software. These additional potential failure modes should be evaluated by the engineer of record prior to initiating wall construction and may require site inspection by the on-site soils engineer. All installations must conform to the Allan Block Spec Book. (Refer to R0901).

MathCAD files for hand calculations to support the software's consideration of internal, external and internal compound stability of the reinforced composite mass are provided on the software disc. These files are to be configured so that the engineer of record can evaluate the output of the software. Individual equations may be altered at the discretion of the engineer of record.

<b>Wall Design Variables</b>
<b>AB Classic</b> Total Panel Height 5.17 ft Block Height 0.646 ft Angle of Setback 6 Deg. Depth of Block 0.98 ft Length of Block 1.47 ft
<b>Surcharge Parameters</b> 600 psf Dead Load @ 4 ft (Distance measured from toe of wall)
<b>Safety Factors Static External</b> Actual Sliding 1.53 >= 1.5 Actual Overturning 2.6 >= 2
<b>Safety Factors Selsmic External</b> Peak Ground Acceleration = 0.3 Actual Sliding 1.16 >= 1.125 Actual Overturning 1.84 >= 1.5
<b>Infill Soil</b> Friction Angle 75 Deg. Unit WT 110 pcf
<b>Retained Soil</b> Friction Angle 32 Deg. Unit WT 120 pcf
<b>Foundation Soil</b> Friction Angle 32 Deg. Unit WT 120 pcf Cohesion 0 psf
<b>Bearing Capacity</b> Factor of Safety 4.37 Sigma_ult - 6727.47 psf Sigma_max - 1539.2 psf
<b>Internal Compound Stability</b> ics not calculated
<b>Wall Rock Requirements</b> Variable Depth Height                      Depth Bottom    4.52 ft                1 ft

Project Name: Beresky Residence  
Location: Section A-A'  
Location: Mercer Island, WA  
Wall Number:  
Project Number: 180127E001  
Designer: AESI  
Date: 4/18/19



AB Classic  
Section B-B'

**Base Information:**  
Base Width: 3.5 ft  
Base Depth: 0.5 ft  
Base From Toe: 0.5 ft

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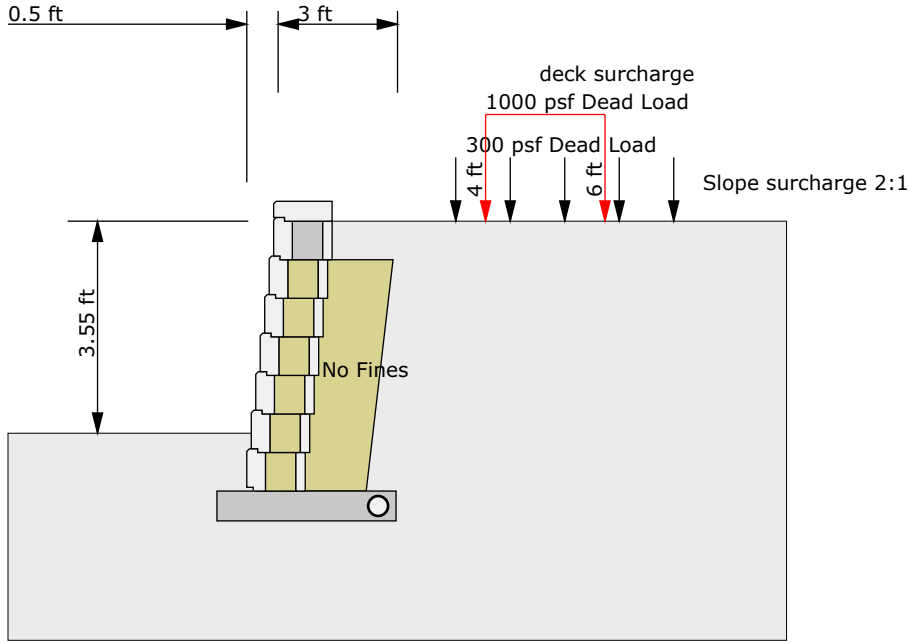
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<b>Wall Design Variables</b>		
<b>AB Classic</b> Total Panel Height 4.52 ft Block Height 0.646 ft Angle of Setback 6 Deg. Depth of Block 0.98 ft Length of Block 1.47 ft		
<b>Surcharge Parameters</b> 600 psf Dead Load @ 4 ft 1000 psf Dead Load: 12 ft - 13 ft (Distance measured from toe of wall)		
<b>Safety Factors Static External</b> Actual Sliding 1.68 >= 1.5 Actual Overturning 3.34 >= 2		
<b>Safety Factors Seismic External</b> Peak Ground Acceleration = 0.3 Actual Sliding 1.27 >= 1.125 Actual Overturning 2.34 >= 1.5		
<b>Infill Soil</b> Friction Angle 75 Deg. Unit WT 110 pcf		
<b>Retained Soil</b> Friction Angle 32 Deg. Unit WT 120 pcf		
<b>Foundation Soil</b> Friction Angle 32 Deg. Unit WT 120 pcf Cohesion 0 psf		
<b>Bearing Capacity</b> Factor of Safety 8.3 Sigma_ult - 8709.49 psf Sigma_max - 1049.35 psf		
<b>Internal Compound Stability</b> ics not calculated		
<b>Wall Rock Requirements</b>		
Variable	Depth	Height
Bottom	3.87 ft	1 ft

Project Name: Beresky Residence  
Location: Section B-B'  
Location: Mercer Island, WA  
Wall Number:  
Project Number: 180127E001  
Designer: AESI  
Date: 4/18/19





AB Classic  
Section C-C'

Base Information:  
Base Width: 3 ft  
Base Depth: 0.5 ft  
Base From Toe: 0.5 ft

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<b>Wall Design Variables</b>		
<b>AB Classic</b> Total Panel Height 4.52 ft Block Height 0.646 ft Angle of Setback 6 Deg. Depth of Block 0.98 ft Length of Block 1.47 ft		
<b>Surcharge Parameters</b> 300 psf Dead Load @ 3.5 ft 1000 psf Dead Load: 4 ft - 6 ft (Distance measured from toe of wall)		
<b>Safety Factors Static External</b> Actual Sliding 1.54 >= 1.5 Actual Overturning 4.53 >= 2		
<b>Safety Factors Seismic External</b> Peak Ground Acceleration = 0.3 Actual Sliding 1.15 >= 1.125 Actual Overturning 2.63 >= 1.5		
<b>Infill Soil</b> Friction Angle 75 Deg. Unit WT 110 pcf		
<b>Retained Soil</b> Friction Angle 32 Deg. Unit WT 120 pcf		
<b>Foundation Soil</b> Friction Angle 32 Deg. Unit WT 120 pcf Cohesion 0 psf		
<b>Bearing Capacity</b> Factor of Safety 9.69 Sigma_ult - 8048.82 psf Sigma_max - 830.76 psf		
<b>Internal Compound Stability</b> ics not calculated		
<b>Wall Rock Requirements</b>		
Variable	Depth	Height
Bottom	3.87 ft	1 ft

Project Name: Beresky Residence  
Location: Section C-C'  
Location: Mercer Island, WA  
Wall Number:  
Project Number: 180127E001  
Designer: AESI  
Date: 4/18/19