REPORT

April 30, 2015
14-1366.2

DRAFT - ISSUED FOR REVIEW IN ORDER TO BEGIN PHASE 1 OF SOIL STABILIZATION.
REFERENCE 4.3.1
ALSO COMPLETE BACKFILL OF FOUNDATIONS NOT COMPLETED TO DATE PER ATTACHED SITE PHOTO (BUTTRESS FILL AND BACKFILL PLAN)

Geotechnical Engineering Services

Evaluation of Apparent Slope Movement
Seaport Lofts
113 Newbury Street
Portland, Maine

PREPARED FOR:
Landry/French Construction
Attention: Denis R Landry
160 Pleasant Hill Road
Scarborough, ME 04074

PREPARED BY:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, ME 04039
T: (207) 657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing*
- *GeoEnvironmental Services*
- *Ecological Services*

www.swcole.com

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14-1366.2

April 30, 2015

Landry/French Construction
Attention: Denis R Landry
160 Pleasant Hill Road
Scarborough, ME 04074

Subject: Geotechnical Engineering Consultation Services
Evaluation of Apparent Slope Movement
Seaport Lofts
113 Newbury Street
Portland, Maine

Dear Denis:

As requested on April 10, 2015 and in accordance with our Agreement, dated April 16, 2015, we have initiated evaluation of an area of apparent slope movement around a retaining wall along the northwesterly site boundary generally between building lines 12 to 21. This report summarizes our findings and geotechnical recommendations for the repair scheme and its contents are subject to the limitations set forth in Attachment A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services is to assist Landry/French Construction in geotechnical evaluation of the slope movement area and development of slope stabilization plans. Our scope of services included:

- Site reconnaissance on April 11, 2015,
- Consideration of Construction Documents,
- Consideration of Geotechnical Reports by Geotechnical Services, Inc. dated August 24, 2013 and Sebago Technics, Inc. dated October 3, 2007,
- Consideration of Optical Survey Data by H.B.Fleming, Inc. and Titcomb Survey on monitoring points established prior to April 11 and additional monitoring points recommended by S.W.COLE,

- Drilling two test borings to collect subsurface information and install two slope inclinometers,
- Periodic reading of two slope inclinometers,
- Slope stability analyses,
- Geotechnical consulting with Gagnon Engineering, H.B. Fleming and Landry/French Construction relative to slope stabilization options, and
- Preparation of this report.

1.2 Site and Proposed Construction

We understand a new building with associated paved areas is currently under construction at the site. Based on information provided on civil drawings, we understand that prior to the start of construction, the westerly portion of the L-shaped lot was relatively level at about elevation 40 feet (project datum) and the easterly portion sloped upward from about elevation 42 feet at Newbury Street to elevation 47 feet at the northerly property line. A concrete retaining wall exists along the northwesterly property line supporting higher ground to the north. Other shorter concrete retaining walls exist or existed along the northeasterly property line supporting higher ground to the north. Property on the northerly side of the site is at about elevation 52 to 56 feet and slopes generally upward to the north toward Federal Street. Several multi-story housing structures exist above the retaining walls along the northerly side of the site.

We understand the proposed four story, steel-framed building will be about 210 by 90 feet in plan dimensions. The on-grade level will be stepped from about elevation 40 to 44 feet (project datum) with residential units along Newbury Street and paved parking and mechanical space behind and partially underneath the second floor. We understand a tapered cut varying from about 2 to 6 feet is needed for the easterly and northerly portion of the site to achieve proposed grades; deeper excavations are needed to construct foundations and utilities.

We understand construction began in the fall of 2014 which has included installation of aggregate piers and grouted columns beneath foundation elements, construction of several interior column foundations and a recently constructed retaining wall located along the northwesterly site boundary.

Based on information provided by Landry/French Construction and other members of the construction team, we understand during removal of the sheetpile shoring installed to construct the retaining wall along northwesterly site boundary, slope movement was observed generally between column lines 12 and 20.5 extending onto three adjacent properties located on the north-northwesterly side of the site and within about 25 feet of the recently constructed retaining wall. We understand the recently constructed retaining wall has unevenly settled up to about 2½ inches in the area of the observed slope movement. Results of H.B.Fleming's survey monitoring of the affected retaining wall are attached in Appendix A.

Proposed and existing site features are shown on the "Exploration Location Plan" attached as Sheet 1.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Two test borings (B-201 and B-202) were made at the site on April 17 and 18, 2015 by Great Works Test Boring, Inc. of Rollinsford, New Hampshire working under subcontract to S. W. Cole Engineering, Inc. (S.W.COLE). The exploration locations were selected and established in the field by S.W.COLE using measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached as Sheet 1. Logs of the test borings are attached as Sheets 2 through 5. A key to the notes and symbols used on the logs is attached as Sheet 6.

Slope inclinometers were installed in borings B-201 and B-202. Graphical results of inclinometer readings to-date are attached in Appendix A.

2.2 Testing

The test borings were drilled using a combination of solid stem auger and cased wash-boring techniques. The soils were generally sampled at 5-foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) techniques. Shelby tube sampling and in-situ Vane Shear Testing (VST) was performed where softer silty clay soils were encountered. SPT blow counts and VST results are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Shelby tube samples are being held in our laboratory for additional geotechnical testing as may be needed.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Surficial

The site is open and currently under construction. A 7 to 9 foot high reinforced concrete retaining wall supported on "improved" soil was recently cast along the northwesterly property line within the slope movement area generally between building lines 12 to 20.5. A portion of the temporary sheetpile shoring wall remains in-place on the downslope side of the affected new retaining wall. Other higher and shorter retaining walls were recently cast outside the apparent slope movement area. Several new interior column and perimeter wall foundations have been installed across the site. The site has been cut and generally backfilled to within about 1 foot of finished grade over the western portion. Foundations have been installed and mostly backfilled generally south of building line A and west of building line 12.

Tension cracks were observed upslope of the affect new retaining wall. The tension cracks form an apparent arc-shaped head scarp that intersects the deck posts of 38 and 40 Federal Street, the raised patio of 36 Federal Street and the foundation of 48 Hancock Street. The ground is visibly slumped, fence posts displaced and the foundation of 48 Hancock Street visibly displaced below the head scarp. The approximate location of the head scarp is illustrated on Sheet 1.

3.2 Soil and Bedrock

Test borings B-201 and B-202 were made within the area of apparent slope movement. The test borings encountered a soils profile generally consisting of urban fills overlying glaciomarine deposits (sand, silt and clay) overlying sands overlying glacial till overlying refusal surfaces (probable bedrock) at depths of about 39 and 41 feet.

The glaciomarine soils consisted of silty fine sand with silty clay seams overlying relatively soft silty clay with fine sand seams. The silty clay was encountered at a depth of about 7 feet and was about 16 and 17 feet thick. In-situ vane shear tests in the silty clay indicated virgin shear strengths of 470 to 620 psf and remolded shear strengths of 40 to 80 psf.

3.3 Groundwater

The soils encountered at the test borings were moist from the ground surface becoming saturated at a depth of about 5 feet. Groundwater likely becomes perched on the relatively impervious silty clay encountered in the test borings. Long-term groundwater information was not obtained. It should be anticipated that groundwater levels will fluctuate, particularly in response to snowmelt, precipitation and changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the available information and our experience, we offer the following:

- The terrain, proposed grade changes, retaining walls and subsurface conditions warrant the evaluation of global stability for temporary excavations, as well as permanent retaining walls and slopes.
- The surficial presence of tension cracks, slumped ground, cracked foundations and displaced fence posts indicate ground movement has occurred.
- The site is underlain by glaciomarine deposits that are sensitive to strength loss when disturbed.
- The installation of ungrouted, vibro-stone column “ground improvement”, in our opinion, likely remolded the glaciomarine clays resulting in reduced strength adversely impacting both bearing capacity and global slope stability.
- Survey monitoring data of the new retaining wall indicates that it began to settle at a pronounced rate shortly after removal of the front (downslope) sheetpiles commenced.
- The slope inclinometer readings to-date do not indicate adverse movement of ground at depth in the area downslope of the affected retaining wall, suggesting the remaining front sheetpiles and unexcavated earth immediately downslope are helping to counteract a broader global slope failure.

Based on the findings and our global stability analyses, it is our opinion that installation of permanent global stability measures and underpinning of affected foundations are necessary to adequately support the new construction, as well as protect adjacent property and public safety.

4.2 Global Stability

We employed SLOPE/W to model the affected slope movement area and estimate the factor of safety against global failure. In summary, we estimate the overall factor of safety at the "stop-work" condition on April 10, 2015 is below the typical 1.5 threshold for temporary stability supporting buildings. The factor of safety against global failure had the remaining front sheetpiles been removed and remaining earth been excavated, the "as-permitted" condition, is estimated below 1.0 which could have resulted in a catastrophic failure encompassing adjacent properties around the ground failure envelope.

Working with Gagnon Engineering and H.B.Fleming, we analyzed several options to stabilize the slope, while attempting to gain benefit to underpin the affected retaining wall and integral column footing. Our analysis included brainstorming sessions with the project construction team and designers, as well as analyses to develop a recommended construction sequence. We also analyzed for seismic loading associated with the peak ground acceleration estimated by the United States Geological Survey (USGS).

A tabulated summary of global stability models and factors of safety, as well as graphical outputs are attached as Appendix B.

4.3 Slope Stabilization

Based on the findings and our global stability analysis, we recommend installation of carefully sequenced slope stabilization measures that are closely monitored during construction to include:

Overall Stabilization Sequence (recommended)

1. Installation of a buttress fill downslope of the affected slope area,
2. Reinstallation of the front (downslope side of retaining wall) sheetpiles driven to about 1-foot below grade and permanently in contact with the retaining wall footing between building lines 12 to 20,
3. Installation of Option 1 or Option 2 Slope Stabilization, as presented herein
4. Remove the buttress fill,
5. Underpin affected building footings, as deemed necessary by engineer-of-record,
6. Underpin and repair adjacent properties, as deemed necessary by others.

4.3.1 Option 1 – Double Sheetpile Walls

This option installs sheetpiles in front and behind the new site retaining wall, as well as behind a basement wall to be cast between building lines 20 to 21, including:

Option 1 Sequence (recommended)

- Steps 1 and 2 of the Overall Stabilization Sequence
- Splice and extend front (PZ-22) sheetpiles to bedrock
- Install new rear (SCZ-14) sheetpiles driven to bedrock and permanently in contact with the retaining wall footing between building lines 12 to 21,
- Cut weepholes in the rear sheetpiles about 1-foot above the retaining wall foundation drain invert,
- Underpinning the retaining wall as necessary to support the modified loads, as deemed necessary by the engineer-of-record,
- Steps 4, 5 and 6 of the Overall Stabilization Sequence

Global stability analyses for each step are summarized in Appendix B. A sketch plan of Option 1 is attached in Appendix C.

4.3.2 Option 2 – Pile Supported Retaining Wall

This option entails installation of driven H-piles to support the site retaining wall, including:

Option 2 Sequence (recommended)

- Steps 1 and 2 of the Overall Stabilization Sequence;
- Drive new HP 10 x 42 plumb piles through the existing retaining wall footing
- Drive new HP 10 x 42 battered piles in-front of the existing retaining wall footing;
- Cast a new pile cap over the existing retaining wall footing providing structural connection between the new H-piles, front sheetpiles and existing retaining wall;
- Install new rear (SCZ-14) sheetpiles driven to bedrock and permanently in contact with the retaining wall footing between building lines 20 to 21;
- Cut weepholes in the rear sheetpiles about 1-foot above the retaining wall foundation drain invert,
- Steps 4, 5 and 6 of the Overall Stabilization Sequence

Global stability analyses for each step are summarized in Appendix B. A sketch plan of Option 2 is attached in Appendix C.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the installation of slope stabilization and underpinning measures.

Sincerely,

S. W. Cole Engineering, Inc.

Michael A. St. Pierre, P.E.
Geotechnical Engineer

Timothy J. Boyce, P.E.
Senior Geotechnical Engineer

MAS/TJB:tjb/pfk

Attachment A
Limitations

This report has been prepared for the exclusive use of Landry/French Construction for specific application to the Evaluation of Apparent Slope Movement of the Seaport Lofts at 113 Newbury Street in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and geotechnical engineering practices. No warranty, expressed or implied, is made.

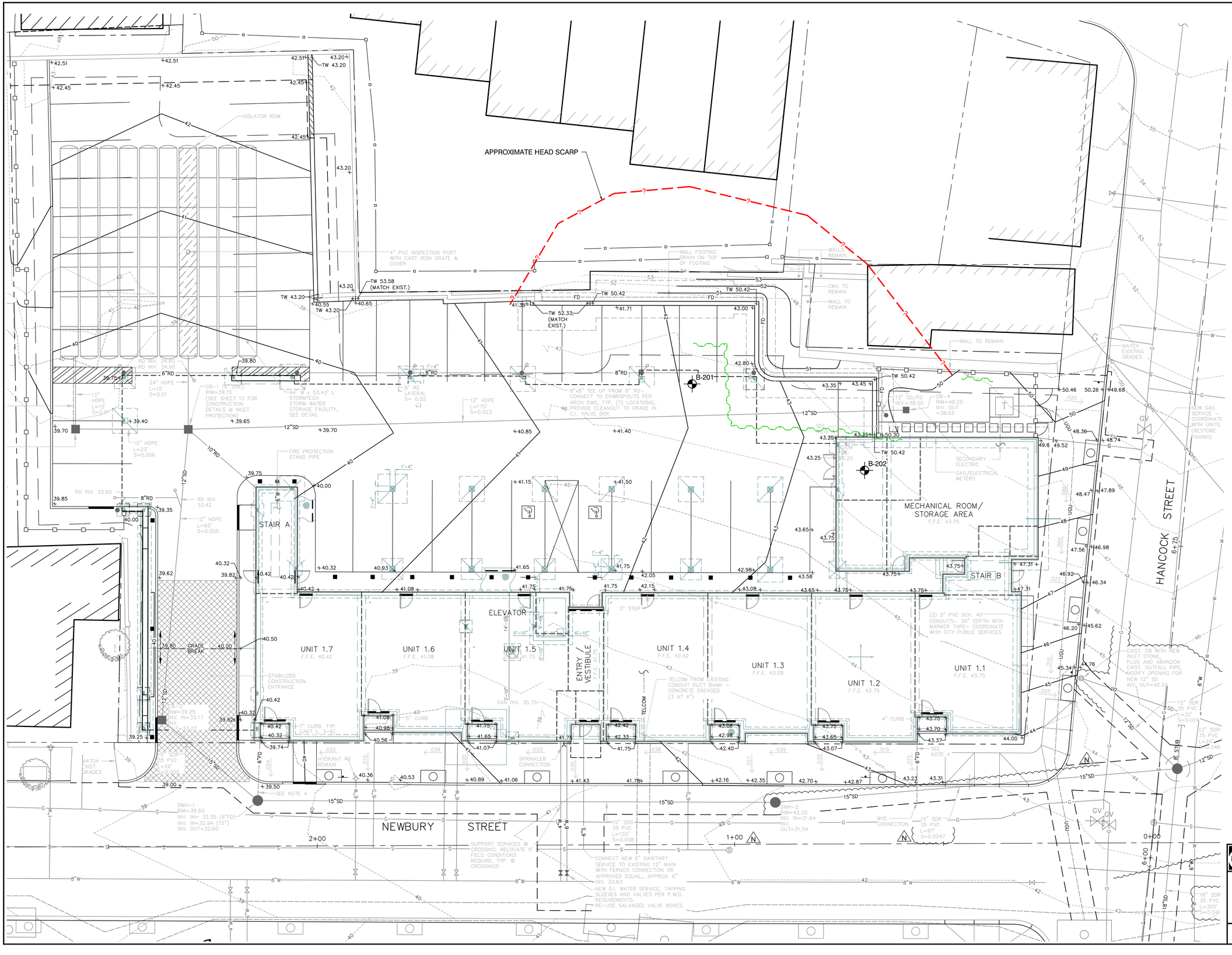
The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.



LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM THE FOLLOWING PLANS: A SCALE PLAN OF THE SITE ENTITLED "FOUNDATION PLAN," PREPARED BY JSN ASSOCIATES, INC., DATED 12/17/2014; A 1"=10' SCALE PLAN OF THE SITE ENTITLED "GRADING AND UTILITY PLAN," PREPARED BY SEBAGO TECHNICS, DATED 7/16/2013, REVISED 12/31/2014.
2. THE BORINGS AND APPROXIMATE HEAD SCARP WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 10 20 Feet

S.W.COLE ENGINEERING, INC.

LANDRY/FRENCH CONSTRUCTION

EXPLORATION LOCATION PLAN

EVALUATION OF APPARENT SLOPE MOVEMENT
SEAPORT LOFTS
113 NEWBURY STREET
PORTLAND, MAINE

Job No.:	14-1366.2	Scale:	1" = 10'
Date :	04/30/2015	Sheet:	1

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-201**
SHEET: 1 OF 2
PROJECT NO.: 14-1366.2

PROJECT / CLIENT: SEAPORT LOFTS / LANDRY FRENCH CONSTRUCTION
LOCATION: 113 NEWBURY STREET, PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORINGS DRILLER: JEFF LEE

DATE START: 4/17/2015
DATE FINISH: 4/18/2015
ELEVATION: 46' +/-
SWC REP.: M. ST. PIERRE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS	30"
SAMPLER:	SS	1 3/8"	140 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
SSA									1.0'	BROWN GRAVELLY SAND, TRACE SILT, OCCASIONAL COBBLES (FILL)
									2.0'	BLACK SILTY SAND WITH ASH AND CONSTRUCTION DEBRIS (FILL)
										BROWN SILTY FINE SAND
									4.0'	
▼									7.0'	GRAY SILTY FINE SAND WITH OCCASIONAL CLAYEY SILT SEAMS
PUSH										
	1D	24"	24"	7.0'	2	1	1	1		~VERY LOOSE~
	1V	9"	-	10.8'	3.5"x7" TAPERED VANE					Sv = 0.47 / 0.06 ksf ~VERY SOFT~
	1V'	9"	-	11.5'	3.5"x7" TAPERED VANE					Sv = 0.49 / 0.06 ksf
										GRAY SILTY CLAY
										WITH OCCASIONAL FINE SAND SEAMS
	1C	24"	20"	17.0'	PISTON SAMPLER					
	2V	9"	-	17.8'	3.5"x7" TAPERED VANE					Sv = 0.57 / 0.10 ksf ~SOFT~
	2V'	9"	-	18.5'	3.5"x7" TAPERED VANE					Sv = 0.57 / 0.16 ksf
	3V	9"	-	20.8'	3.5"x7" TAPERED VANE					Sv = 0.91 / 0.10 ksf PROBABLE SAND SEAM
	3V'	9"	-	21.5'	3.5"x7" TAPERED VANE					Sv = 0.62 / 0.06 ksf ~MEDIUM~
▼									23.0'	
30										GRAY SILTY SAND, SOME GRAVEL
35										
60										~MEDIUM DENSE~
55	2D	24"	18"	27.0'	26	16	3	9		
30										
▼										... BECOMES GRAVELLY WITH SUBANGULAR TO ANGULAR GRAVEL
50-60										(PROBABLE GRAVELS FROM VIBRO STONE COLUMN INSTALLATION)
	3D	24"	8"	32.0'	18	18	13	8		~DENSE~
▼									33.0'	
30										GRAY SILTY SAND, SOME GRAVEL (GLACIAL TILL)
25										~MEDIUM DENSE~
35										
45	4D	24"	10"	37.0'	3	8	8	10		
50										
100									39.0'	
										BEDROCK - ADVANCED BY ROLLER CONE FROM 39 TO 42.9'

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED…

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-201**
SHEET: 2 OF 2
PROJECT NO.: 14-1366.2
DATE START: 4/17/2015
DATE FINISH: 4/18/2015
ELEVATION: 46' +/-
SWC REP.: M. ST. PIERRE

PROJECT / CLIENT: SEAPORT LOFTS / LANDRY FRENCH CONSTRUCTION
LOCATION: 113 NEWBURY STREET, PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORINGS
DRILLER: JEFF LEE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS	30"
SAMPLER:	SS	1 3/8"	140 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 5'

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
										BEDROCK ADVANCED BY ROLLER CONE FROM 39 TO 42.9'
										BOTTOM OF EXPLORATION AT 42.9'

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-201**

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-202**
SHEET: 1 OF 2
PROJECT NO.: 14-1366.2

PROJECT / CLIENT: SEAPORT LOFTS / LANDRY FRENCH CONSTRUCTION
LOCATION: 113 NEWBURY STREET, PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORINGS DRILLER: JEFF LEE

DATE START: 4/17/2015
DATE FINISH: 4/17/2015
ELEVATION: 45' +/-
SWC REP.: M. ST. PIERRE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS	30"
SAMPLER:	SS	1 3/8"	140 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 5'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
SSA									1.0'	BROWN GRAVELLY SAND, TRACE SILT, OCCASIONAL COBBLES (FILL)
									2.0'	BLACK SILTY SAND WITH ASH AND CONSTRUCTION DEBRIS (FILL)
									4.0'	BROWN SILTY FINE SAND
▼									7.0'	GRAY SILTY FINE SAND WITH OCCASIONAL CLAYEY SILT SEAMS
PUSH										
	1D	24"	24"	7.0'	1	1	2	1		~VERY LOOSE~
										GRAY SILTY CLAY
										WITH OCCASIONAL FINE SAND SEAMS
	1V	9"	-	10.8'	3.5"x7" TAPERED VANE					Sv = 0.52 / 0.04 ksf ~SOFT~
	1V'	9"	-	11.5'	3.5"x7" TAPERED VANE					Sv = 0.57 / 0.03 ksf
										... SAND SEAMS/LAYERS BECOME FREQUENT BELOW ±15'
	1C	24"	20"	17.0'	PISTON SAMPLER					
	2V	9"	-	17.8'	3.5"x7" TAPERED VANE					Sv = 0.98 / 0.08 ksf PROBABLE SAND SEAM
	2V'	0"	-							NO PENETRATION
	3V	9"	-	20.8'	3.5"x7" TAPERED VANE					Sv = 0.88 / 0.08 ksf PROBABLE SAND SEAM
	3V'	9"	-	21.5'	3.5"x7" TAPERED VANE					Sv = 0.59 / 0.08 ksf
										~SOFT~
▼									24.0'	
25-35										
										GRAY SILTY SAND, SOME GRAVEL
	2D	24"	19"	27.0'	1	1	3	3		~LOOSE~
▼									30.0'	
35-45										
	3D	24"	8"	32.0'	7	9	9	12		~MEDIUM DENSE~
										GRAY SAND, SOME GRAVEL, TRACE SILT
	4D	24"	6"	37.0'	8	9	4	4		~MEDIUM DENSE~
▼									39.0'	
60										GRAY GRAVELLY SAND, SOME SILT (GLACIAL TILL)

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS: CONTINUED...

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE ENGINEERING, INC.

BORING LOG

BORING NO.: **B-202**
SHEET: 2 OF 2
PROJECT NO.: 14-1366.2

PROJECT / CLIENT: SEAPORT LOFTS / LANDRY FRENCH CONSTRUCTION
LOCATION: 113 NEWBURY STREET, PORTLAND, MAINE
DRILLING CO. : GREAT WORKS TEST BORINGS DRILLER: JEFF LEE

DATE START: 4/17/2015
DATE FINISH: 4/17/2015
ELEVATION: 45' +/-
SWC REP.: M. ST. PIERRE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING:	HW	4"	140 LBS	30"
SAMPLER:	SS	1 3/8"	140 LBS	30"
CORE BARREL:				

WATER LEVEL INFORMATION
SOILS SATURATED BELOW 5'

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
110	5D	11"	7"	40.9'	12	50/5"			40.9'	GRAY GRAVELLY SAND, SOME SILT (GLACIAL TILL)
										BEDROCK ADVANCED BY ROLLER CONE FROM 40.9 TO 45.9'
									45.9'	BOTTOM OF EXPLORATION AT 45.9'

SAMPLES:
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE
U = 3.5" SHELBY TUBE

SOIL CLASSIFIED BY:
[ ] DRILLER - VISUALLY
[X] SOIL TECH. - VISUALLY
[ ] LABORATORY TEST

REMARKS:
STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL.

BORING NO.: **B-202**

KEY TO THE NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

APPENDIX A

NOTES:

1. G.C. SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS. G.C. MAY CONTACT ENGINEER IF DIMENSIONAL CLARIFICATION IS NEEDED DUE TO SCALE OF DRAWINGS.

2. UNDER SLAB AND THROUGH WALL UTILITIES TO BE COORDINATED BY CONTRACTOR. SEE 5/S1.1 FOR REINFORCING AT WALL OPENINGS.

3. BACKFILL ALL WALLS SIMULTANEOUSLY, BOTH SIDES, TO MAXIMUM HEIGHT POSSIBLE, UNLESS NOTED OTHERWISE IN DETAILS.

4. REFER TO GEOTECHNICAL REPORT FOR ALL INFORMATION REGARDING EXCAVATION, BACKFILL, SUBGRADE PREPARATION, STRUCTURAL FILL, DRAINAGE, AGGREGATE PIERS, ETC. CONSULT GEOTECHNICAL REPORT FOR REQUIREMENTS AND LIMITATIONS.

5. BUILDING BEARS DIRECTLY ON FOUNDATIONS. PROVIDE A SMOOTH AND LEVEL SURFACE AT ALL BEARING LOCATIONS.

6. MAINTAIN MINIMUM 4'-6" FROST COVER FROM GRADE TO BOTTOM OF FOOTING AT ALL FOOTING LOCATIONS PER GEOTECHNICAL REPORT.

7. G.C. SHALL COORDINATE ALL FINAL SLAB SLOPE AND INTERIOR FLOOR DRAIN REQUIREMENTS WITH ARCHITECT. PROVIDE BOND-OUTS AT FOUNDATION AS REQUIRED FOR PLUMBING AND UTILITIES.

8. SEE 11/S1.1 FOR BASE PLATE REQUIREMENTS.

9. SEE FOOTING SCHEDULE FOR REINFORCING REQUIREMENTS AT FOOTINGS BENEATH COLUMN LOCATIONS.

10. ARCHITECTURAL DATUM OF 100'-0" IS BASED ON CIVIL DATUM OF 40.42'. SEE CIVIL DRAWINGS.

FOOTING SCHEDULE			
FTG	SIZE	CAPACITY	REINFORCING
F3	3'x3'x12"	27 K	[3] #5 BARS
F4	4'x4'x14"	48 K	[4] #5 BARS
F5	5'x5'x16"	75 K	[5] #6 BARS
F6	6'x6'x16"	108 K	[6] #6 BARS
F7	7'x7'x20"	147 K	[7] #6 BARS

PROVIDE NUMBER OF BARS IN EACH DIRECTION, SPACED EVENLY, TIED IN MAT, AT 3" CLEAR FROM BOTTOM OF FOOTING (U.N.O.) – TOP STEEL SHALL BE 2" CLEAR FROM TOP OF FOOTING WHERE REQUIRED – FOOTING SIZES USE A 3000 PSF NET BEARING PRESSURE ON AGGREGATE PIERS SPECIFIED BY GEOTECHNICAL REPORT

LEGEND:
T.O.C. = TOP OF CONCRETE
T.O.S. = TOP OF SLAB ELEVATION
T.O.W. = TOP OF WALL ELEVATION
T.O.ST. = TOP OF WALL STEM
T.O.SH. = TOP OF SHELF ELEVATION
T.O.KW. = TOP OF KEYWAY
T.O.F. = TOP OF FOOTING ELEVATION
BP–# = BASE PLATE DESIGNATION (T.B.D.)
F# = FOOTING DESIGNATION
= TOP OF GRADE/SLAB ELEVATION

NOTE: AGGREGATE PIER DESIGNER SHALL LOCATE THE AGGREGATE PIERS TO ACCOMMODATE THE OFF-CENTER LOCATIONS OF THE BUILDING COLUMNS ON THE FOUNDATION PIERS. AGGREGATE PIER SHOP DRAWINGS SHALL NOTE CENTER OF COLUMN AND CENTER OF FOOTING WHERE THERE IS AN OFFSET.

⚠1 NOTE: ALL REVISION CLOUDS ON THIS SHEET ARE PART OF REVISION–2 FOR THE CONSTRUCTION DOCUMENTS SET FOR THE FOUNDATION.

Existing Shitty retaining soil. I have a grade stake at the toe by where I have a monitoring point on it.

It looks like the new design makes it even tighter. Our shoots should be just as tight to the existing soil and stay pretty tight to the wooden fence.

#400 #401 #403 #402

APPROX EXCAVATION LIMIT PER SITE CIVIL DRAWINGS

APPROXIMATE PROPERTY LINE – SEE SITE/CIVIL DRAWINGS – G.C. TO COORDINATE ALL BOUNDARY REQUIREMENTS

SLOPED GRADE WITH MAXIMUM STEEPNESS OF 2.5H:1V

EXISTING SITE RETAINING WALLS (SHOWN LIGHTLY) TO REMAIN – VERIFY LOCATIONS IN FIELD – G.C. TO VERIFY LOCATIONS AND PROVIDE SHORING AND UNDERPINNING AS NECESSARY FOR BUILDING CONSTRUCTION

WALL REINFORCING IS CONTINUOUS FROM BUILDING WALL INTO CONNECTED RETAINING WALL

SEE SITE/CIVIL DRAWINGS FOR RAMP TO DOOR

SEE 9/S1.1 FOR FTG STEP

4" THICK 3000 PSI CONCRETE SLAB WITH 3/4" AGGREGATE ON GRADE WITH 6MIL-W1.4XW1.4 WWM OVER VAPOR RETARDER OVER SLAB SUBGRADE AND BASE SOIL PER GEOTECHNICAL REPORT – TYPICAL UNLESS NOTED OTHERWISE

EXTERIOR SLAB OF 6" THICK 4000 PSI CONCRETE SLAB WITH 3/4" AGGREGATE ON GRADE WITH 6X6–W2.9XW2.9 WWM OVER FREE–DRAINING SLAB SUBGRADE AND BASE SOIL PER GEOTECHNICAL REPORT – SEE ARCH FOR EXTENTS (SITE SIDEWALKS BY OTHERS) – SEE DETAIL FOR THICKENED EDGE – LIGHT BROOM FINISH PERPENDICULAR TO PATH OF TRAVEL

APPROXIMATE DRAIN LOCATIONS – G.C. TO COORDINATE – TYP.

LINE OF SLOPE CHANGE AT GRADE

SEE DETAIL 9/S1.1 TO DETERMINE LOCATIONS OF SLAB STEPS

THICKENED SLAB BELOW AT T.O.S. = 100'–0" (BELOW THICKENED EDGE)

THICKENED SLAB BELOW AT T.O.S. = 100'–8" (BELOW THICKENED EDGE)

ELEVATOR REQUIREMENTS TO BE FINALIZED – G.C. TO VERIFY DIMENSIONS AND LOCATE SUMP PIT

THICKENED SLAB BELOW AT T.O.S. = 101'–4" (BELOW THICKENED EDGE)

THICKENED SLAB BELOW AT T.O.S. = 102'–0" (BELOW THICKENED EDGE)

THICKENED SLAB BELOW AT T.O.S. = 102'–8" (BELOW THICKENED EDGE)

SEE DETAIL 1/S1.1 AND NOTE SHEET FOR CONTROL JOINTS AT MAXIMUM 10' O.C. EACH WAY – TYP.

THICKENED SLAB TYPICAL

TYPICAL 6" EXTERIOR SLAB WITH THICKENED EDGE

TYPICAL EXT. SLAB

SLAB SLOPED FOR 30"±

NOTE: SEE DETAILS FOR DISTANCES TO STUD WALLS FROM FACES OF FOUNDATON

⚠3 NOTE: ALL REVISION CLOUDS ON THIS SHEET ARE PART OF REVISION–3 FOR THE FULL CONSTRUCTION DOCUMENTS SET.

1 / S1.0 FOUNDATION PLAN
Scale: 1/8" = 1'

SEAPORT LOFTS
113 Newbury Street
Portland, Maine 04101

Client:
113 Newbury Street, LLC
c/o Bluefin Investments
35 Fay St., Suite 107B
Boston, MA 02118

Architect:
Mark Mueller Architects
100 Commercial Street
Suite 205
Portland, Maine 04101

Date:	12/17/14
Scale:	As Noted
Design By:	MJA
Approved By:	JSN

Revisions
07/31/14 - Pricing Set
⚠1 11/12/14 - FND CD Set
⚠2 12/17/14 - CD Set

Foundation Plan

S1.0

H.B. Fleming, Inc. Survey Monitoring of New Permenant Concrete Retaining Wall
Seaport Lofts, Portland, Maine

MONDAY APRIL 27TH, 2015

negitive (-) indicates settlement

ELEVATION MONITORING

Pnt #	Date of Initial Reading	ELEVATION (HBF Assumed Elevation Datum)	DATE	ELEVATION (HBF Assumed Elevation Datum)	DELTA-Units in Decimal Feet	Total Settlement to Date (INCHES)	**Delta from Previous**	DATE	ELEVATION (HBF Assumed Elevation Datum)	DELTA-Units in Decimal Feet	Total Settlement to Date (INCHES)	**Delta from Previous, after sheet extraction (in)**	DATE	ELEVATION (HBF Assumed Elevation Datum)	DELTA-Units in Decimal Feet	Total Settlement to Date (INCHES)	**Delta from Previous, after sheet extraction (in)**
400	4/3/2015	104.47	4/8/2015	104.47	0.00	-0.03	**-0.03**	4/10/2015	104.34	-0.13	-1.54	**-1.51**	4/17/2015	104.33	-0.14	-1.65	**-0.12**
401	4/3/2015	102.23	4/8/2015	102.20	-0.03	-0.36	**-0.36**	4/10/2015	102.07	-0.16	-1.90	**-1.54**	4/17/2015	102.03	-0.20	-2.42	**-0.52**
402	4/3/2015	102.23	4/8/2015	102.23	0.00	0.00	**0.00**	4/10/2015	102.13	-0.10	-1.25	**-1.25**	4/17/2015	102.08	-0.15	-1.83	**-0.58**
403	4/3/2015	102.29	4/8/2015	102.31	0.02	0.21	**0.21**	4/10/2015	102.17	-0.12	-1.43	**-1.22**	4/17/2015	102.13	-0.16	-1.92	**-0.49**

	DATE	ELEVATION (HBF Assumed Elevation Datum)	DELTA-Units in Decimal Feet	Total Settlement to Date (INCHES)	**Delta from Previous, after sheet extraction (in)**
400	4/27/2015	104.32	-0.15	-1.77	**-0.12**
401	4/27/2015	102.02	-0.21	-2.54	**-0.12**
402	4/27/2015	102.07	-0.16	-1.95	**-0.12**
403	4/27/2015	102.11	-0.18	-2.16	**-0.24**

48.21' Civil Elevation = 100.00' (HBF Assumbed Elevation), Delta = 51.79'
(40.42' Civil Elevation = 100'-00" Structural Elevation, Delta 59.58')
Proposed Top of Wall Elevation = 110'-0"

4/3/2015
#400 = HBF Elevation = 104.47' - 51.79' = 52.68' (Civil Elevation) + 59.58' = 112.26' (Structural Elevation)
#401 = HBF Elevation = 102.23' - 51.79' = 50.44' (Civil Elevation) + 59.58' = 110.02' (Structural Elevation)
#402 = HBF Elevation = 102.23' - 51.79' = 50.44' (Civil Elevation) + 59.58' = 110.02' (Structural Elevation)
#403 = HBF Elevation = 102.29' - 51.79' = 50.50' (Civil Elevation) + 59.58' = 110.08' (Structural Elevation)

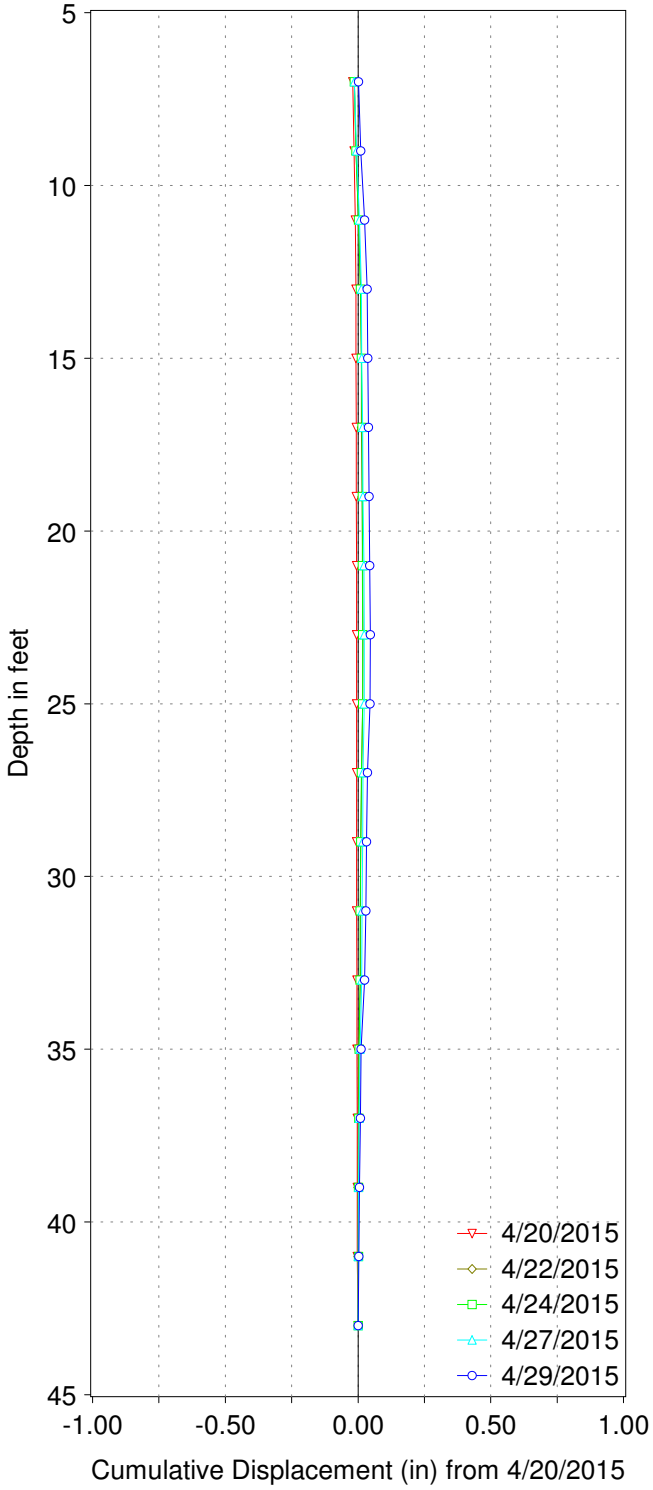
4/27/2015
#400 = HBF Elevation = 104.32' - 51.79' = 52.53' (Civil Elevation) + 59.58' = 112.11' (Structural Elevation) Delta = -0.15' (1.80")
#401 = HBF Elevation = 102.02' - 51.79' = 50.23' (Civil Elevation) + 59.58' = 109.81' (Structural Elevation), Delta = -0.21' (2.52")
#402 = HBF Elevation = 102.07' - 51.79' = 50.28' (Civil Elevation) + 59.58' = 109.86' (Structural Elevation), Delta = -0.16' (1.92")
#403 = HBF Elevation = 102.11' - 51.79' = 50.32' (Civil Elevation) + 59.58' = 109.90' (Structural Elevation), Delta = -0.18' (2.16")

HORIZONTAL MONITORING

Pnt #	DATE	NORTHING	EASTING	DATE	NORTHING	EASTING	delta north (ft)	delta east (ft)	DATE	NORTHING	EASTING	delta north (ft)	delta north (in)	delta east (ft)	delta east (in)
400	4/3/2015	5151.92	4837.82	4/8/2015	5151.97	4837.83	0.05	0.01	4/10/2015	5151.92	4837.89	0.00	0.04	0.07	0.81
401	4/3/2015	5151.72	4855.55	4/8/2015	5151.77	4855.56	0.05	0.01	4/10/2015	5151.75	4855.59	0.03	0.38	0.04	0.45
402	4/3/2015	5133.55	4886.97	4/8/2015	5133.60	4886.96	0.04	-0.01	4/10/2015	5133.61	4886.98	0.05	0.61	0.01	0.13
403	4/3/2015	5133.20	4903.12	4/8/2015	5133.22	4903.12	0.02	0.00	4/10/2015	5133.27	4903.15	0.08	0.91	0.03	0.41
									400	4/17/2015	5151.9352	4837.9059	0.02	0.20	0.09	1.04
									401	4/17/2015	5151.7346	4855.5951	0.02	0.23	0.04	0.49
									402	4/17/2015	5133.628	4886.9665	0.07	0.88	0.00	0.01
									403	4/17/2015	5133.2839	4903.1472	0.09	1.03	0.03	0.33
									400	4/27/2015	5151.9044	4837.9058	-0.01	-0.17	0.09	1.04
									401	4/27/2015	5151.7373	4855.6019	0.02	0.26	0.05	0.57
									402	4/27/2015	5133.6127	4886.9768	0.06	0.70	0.01	0.13
									403	4/27/2015	5133.2811	4903.1476	0.08	0.99	0.03	0.33

S.W.COLE ENGINEERING, INC.

LOFTS B-201, A-Axis



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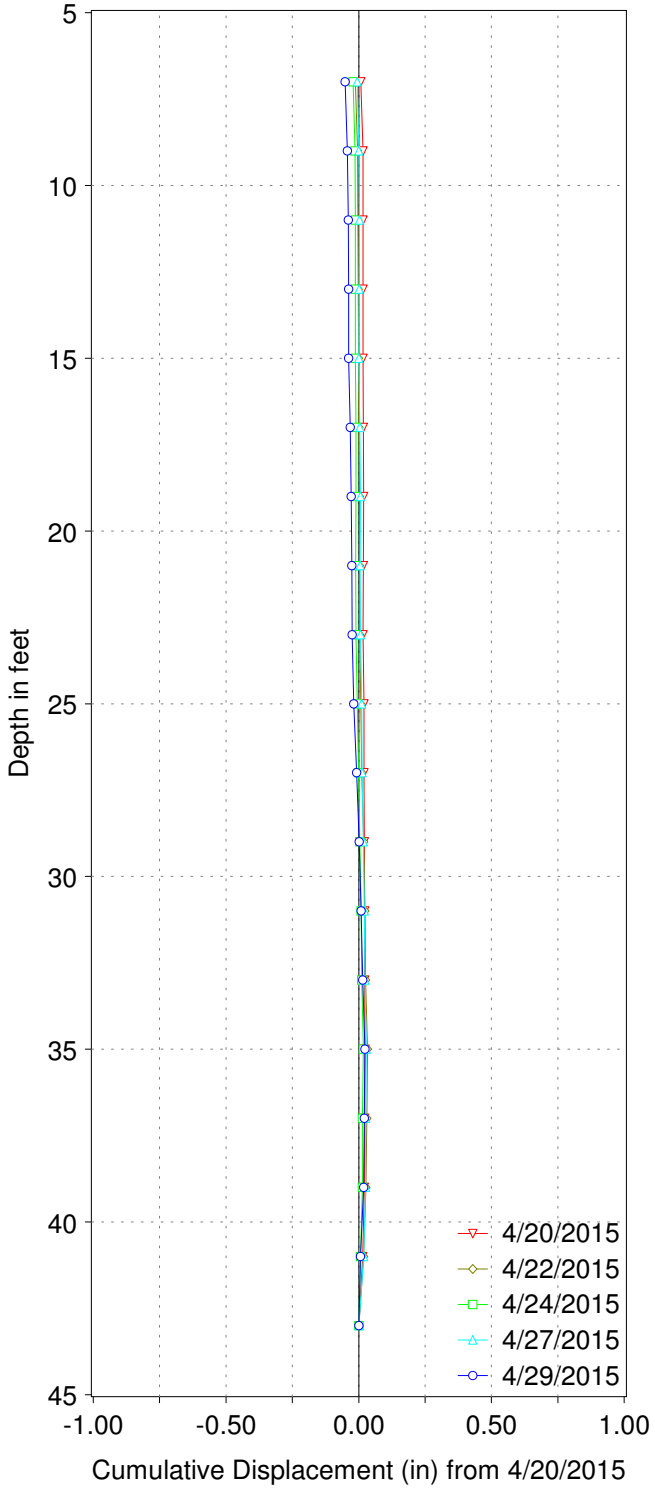

S.W.COLE ENGINEERING, INC.

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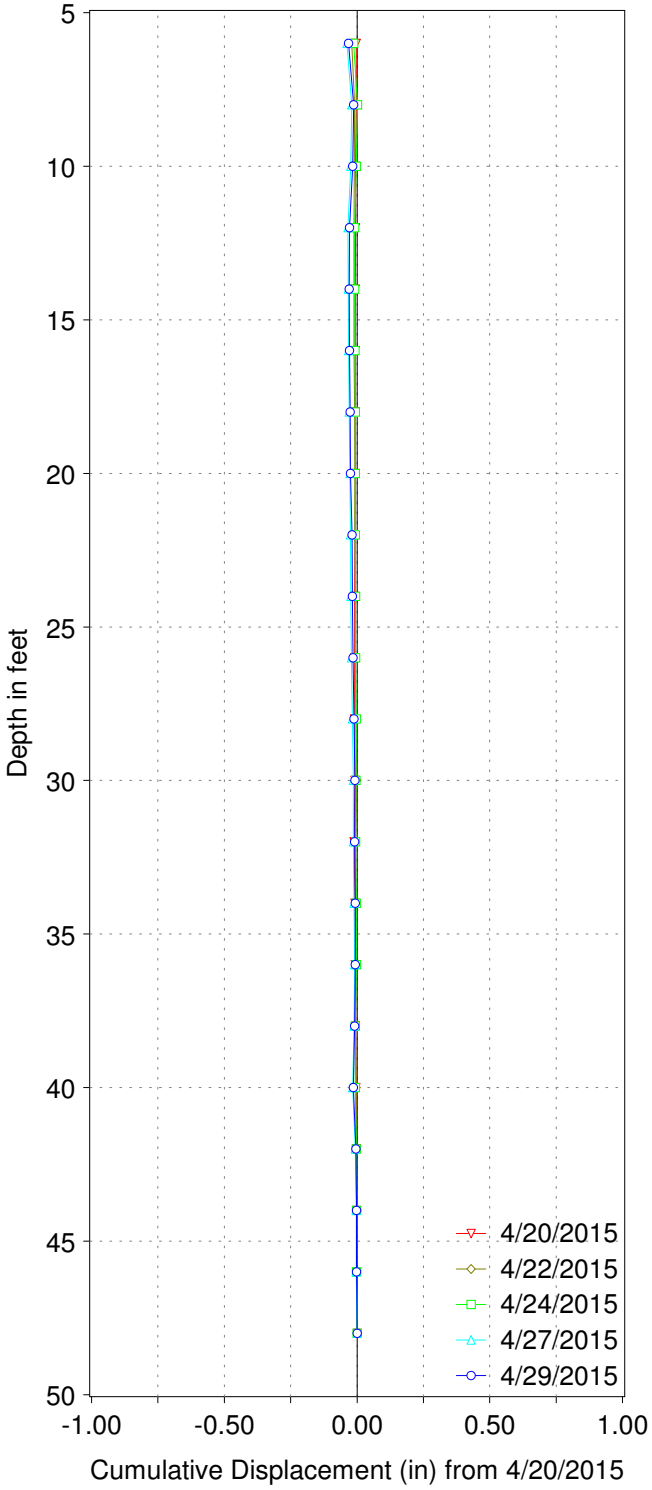

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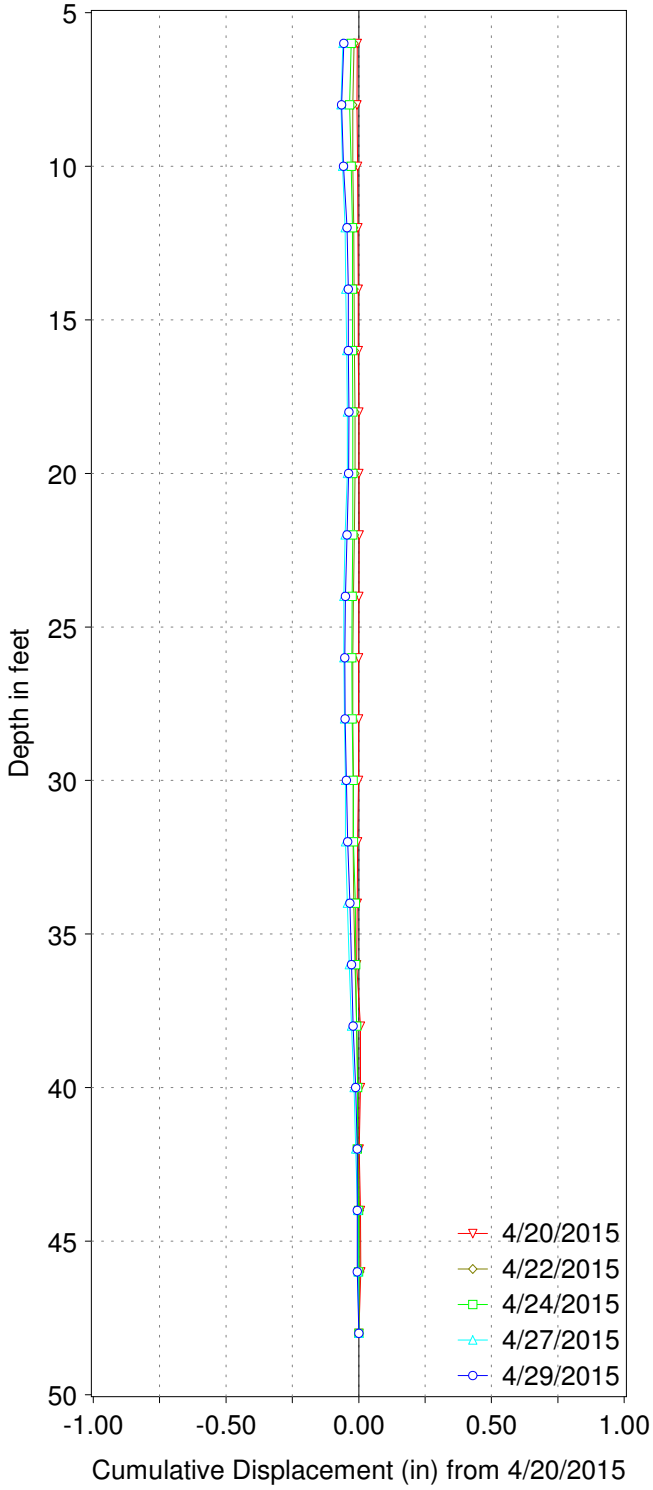


APPENDIX B

S.W.COLE ENGINEERING, INC.

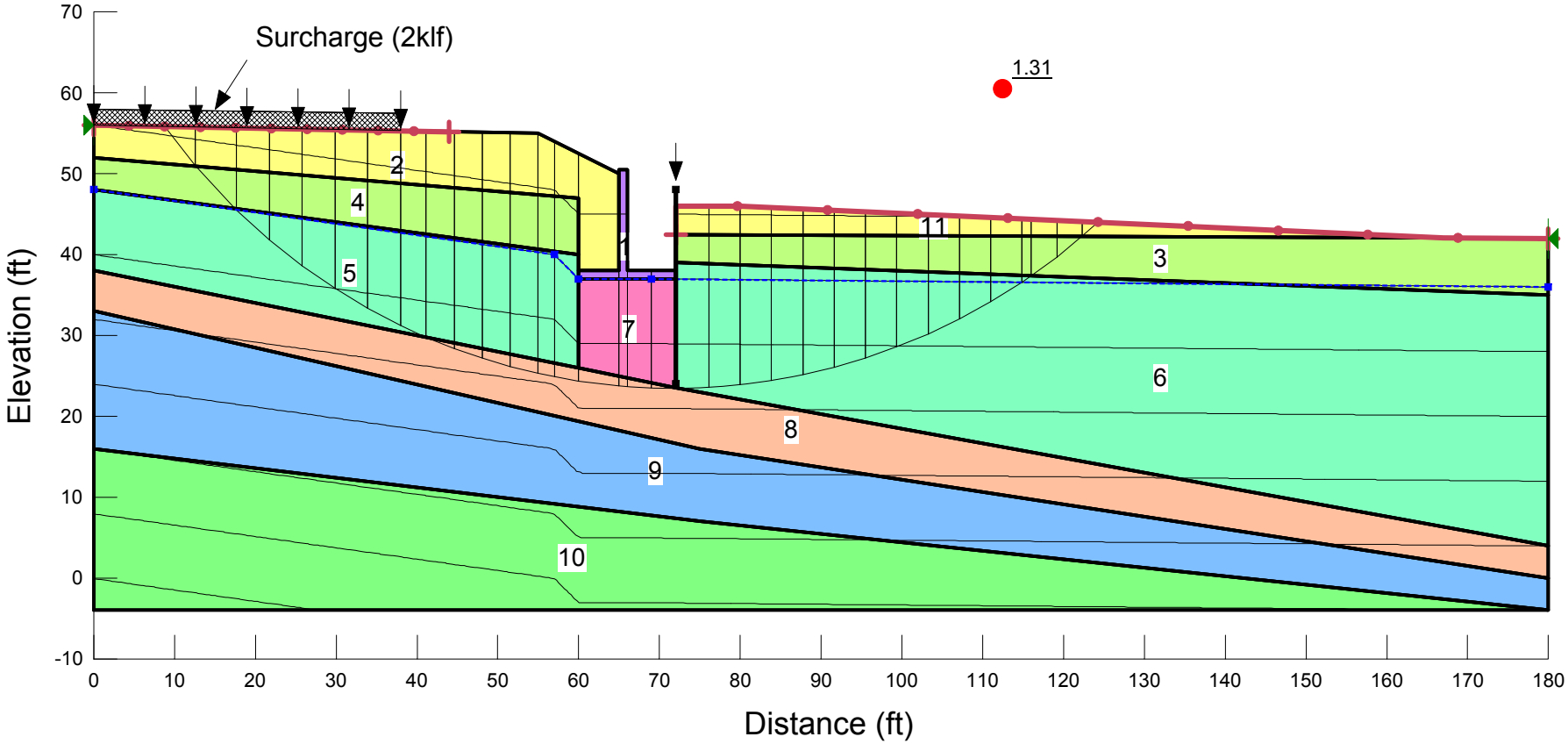
SUMMARY OF GLOBAL STABILITY MODEL OUTPUT

PROJECT: PROPOSED SEAPORT LOFTS
CLIENT: LANDRY/FRENCH CONSTRUCTION
LOCATION: 113 NEWBURY STREET, PORTLAND, MAINE

PROJECT NO.: 14-1366.2

		FACTOR OF SAFETY AGAINST GLOBAL FAILURE							
		B-201			B-202			20.2-21 line	
CASE NO.	DESCRIPTION	STATIC	CV	SEISMIC	STATIC	CV	SEISMIC	Static	Seismic
1A.	Stop Work Condition - Overall	1.31	-	1.02	1.36	-	0.93	-	-
1B.	Stop Work Condition - Through Tension Crack	2.45	-	1.79	3.16	-	2.10	-	-
2.	As-Permitted	0.69	-	0.60	0.84	-	0.72	-	-
3.	As-Permitted - Without Ground Improvement	0.80	-	0.69	0.94	-	0.79	-	-
4A.	Repair Stage 1 - Place Buttress Fill	1.78	1.56	1.36	-	-	-	-	-
4B.	Repair Stage 2 - Remove Fill between Retaining Wall & PZ-22 Sheets	1.76	1.55	1.35	-	-	-	-	-
4C.	Repair Stage 3 - Install PZ-22 Sheetpiles to Bedrock	2.86	2.50	2.19	-	-	-	-	-
4D.	Repair Stage 4 - Install SCZ-14 Sheetpiles	2.86	2.50	2.19	-	-	-	-	-
5.	Repair Final - SCZ-14 and PZ-22 Sheetpiles to Bedrock	2.02	-	1.63	2.37	-	1.80	-	-
4C.	Repair Stage 3 - Install PZ-22 Sheets (±23-foot lenghts)	2.25	1.98	1.73	-	-	-	-	-
4D.	Repair Stage 4 - Install HP10x42 Plumb and Batter Piles	6.00	4.50	3.50	-	-	-	-	-
5.	Repair Final - Short PZ-22 Sheetpiles with HP10x42's to Bedrock	2.54	-	1.86	2.68	-	1.88	-	-
5.	Repair Final - SCZ-14 Sheetpile to Bedrock	-	-	-	-	-	-	2.55	1.84

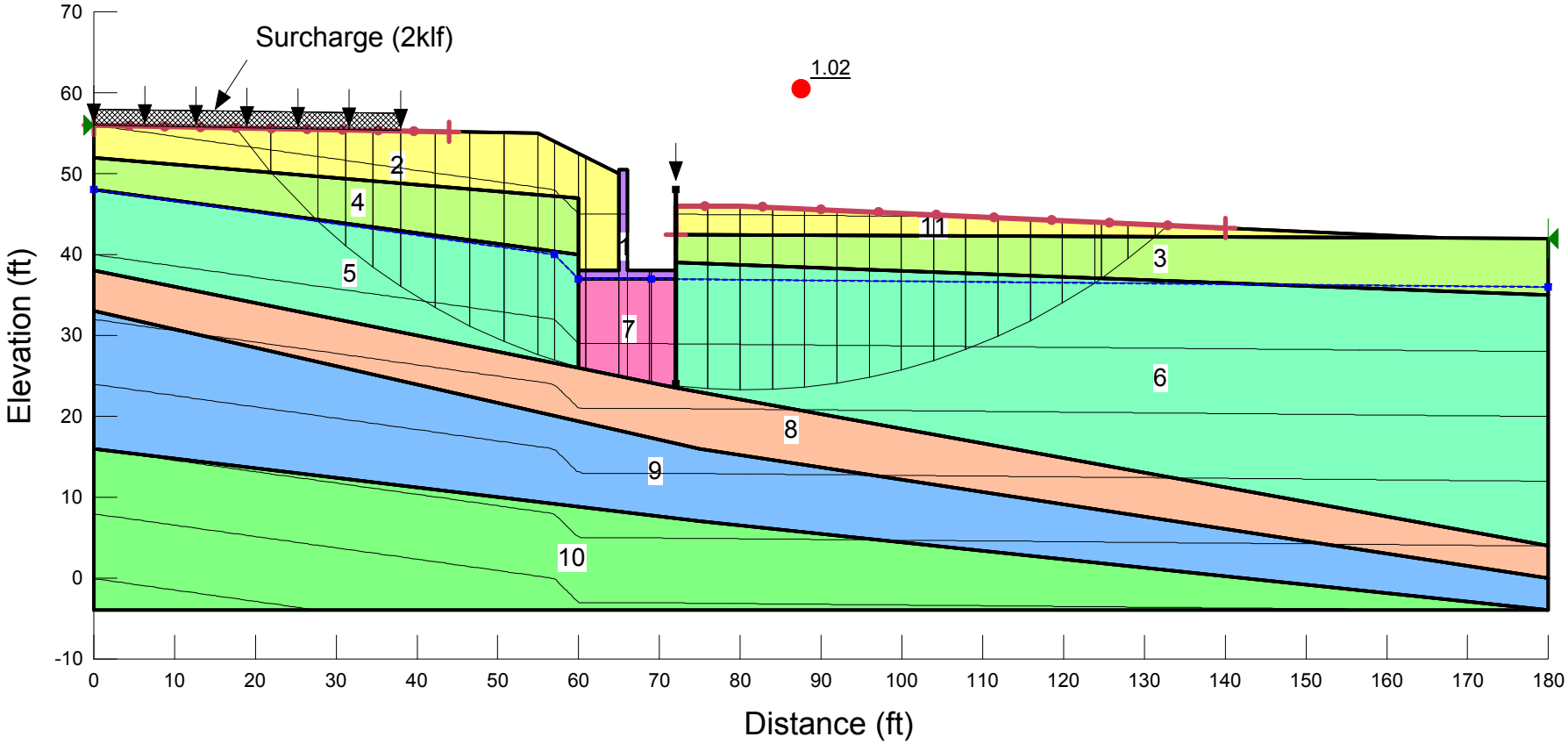
NOTES: CV = Construction Vibration
Seismic horizontal acceleration, A_h = 0.085g
CV horizontal acceleration, A_h = 0.040g
Repair Final includes 1/16-inch of pile corrosion



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

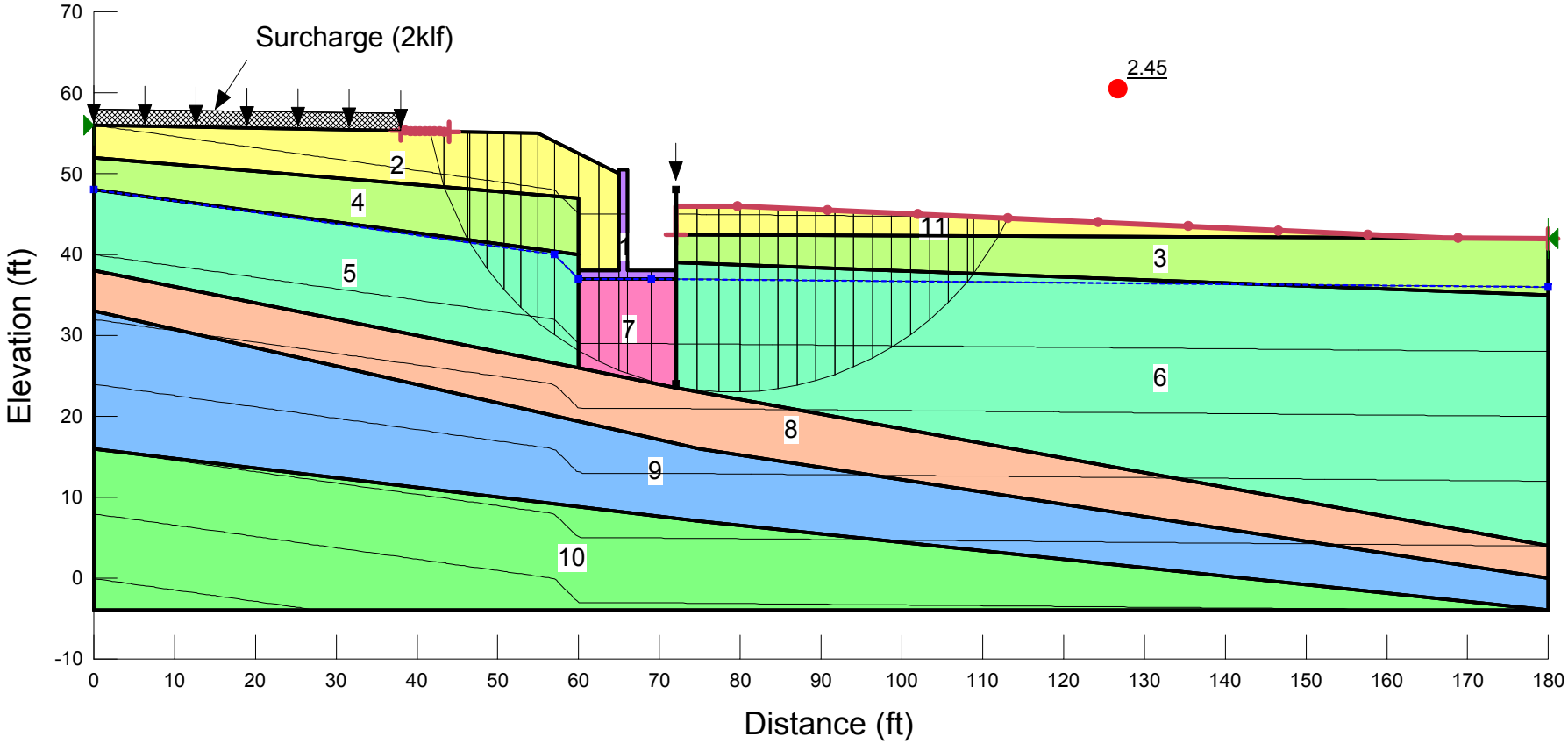
Case 1A: Stop Work Condition
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

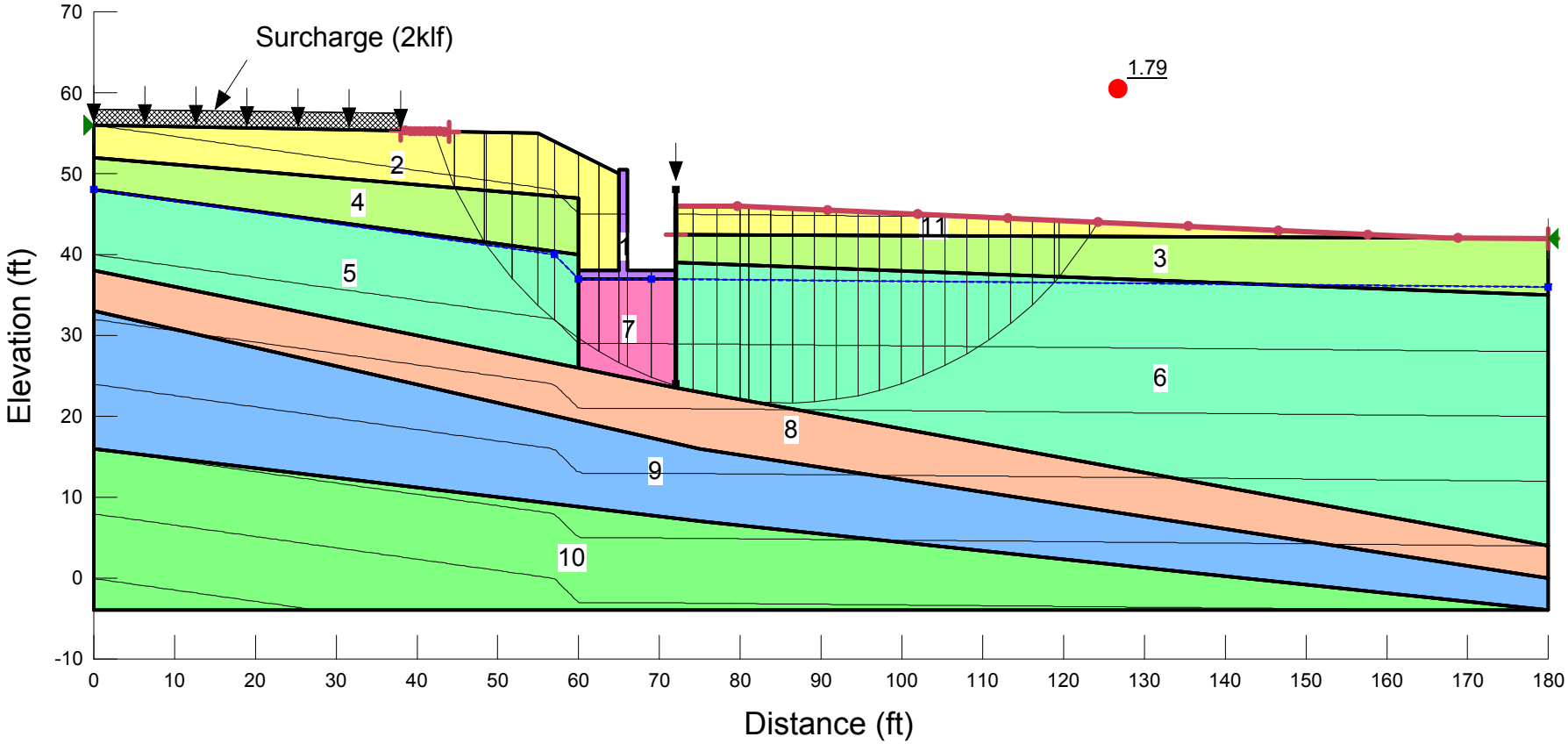
Case 1A: Stop Work Condition
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

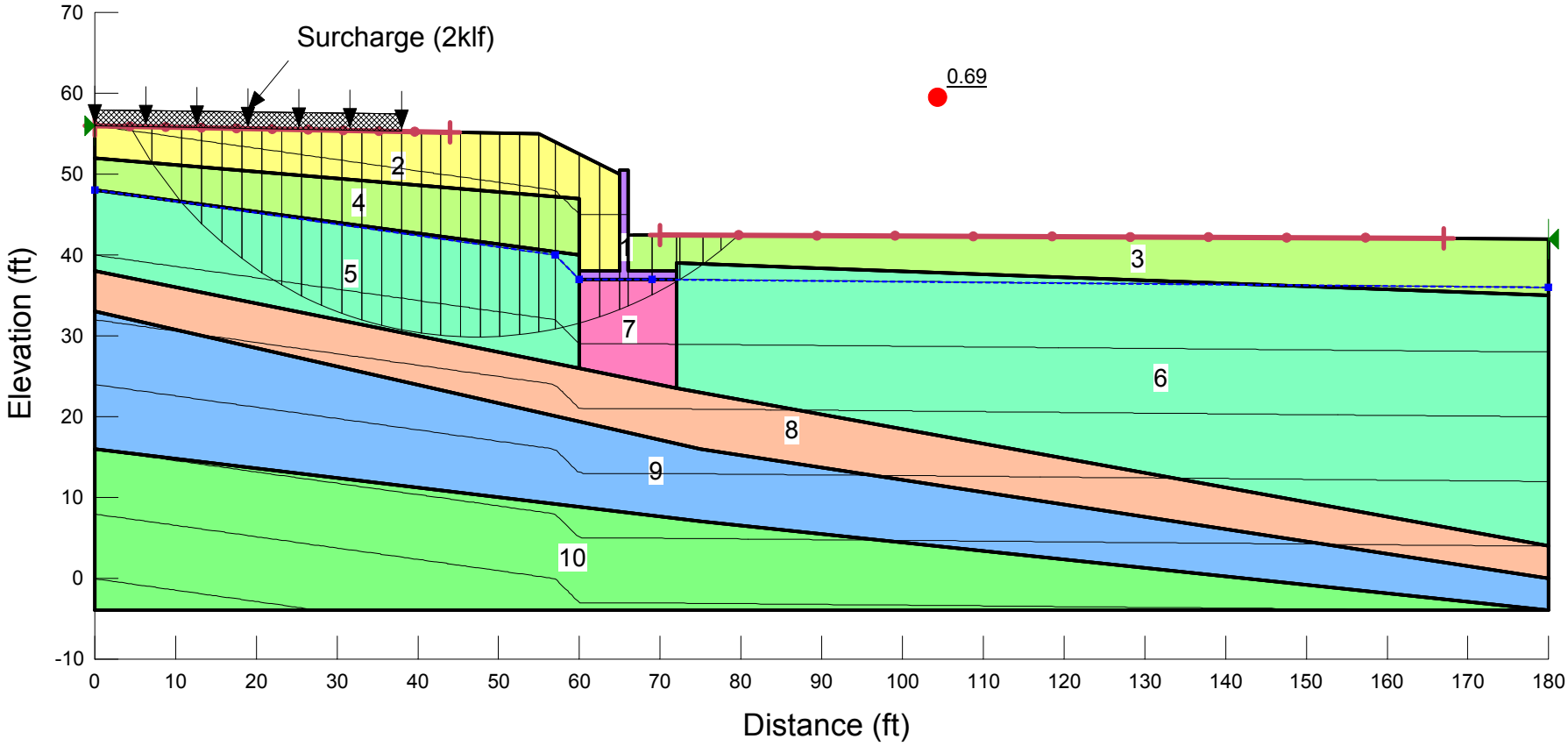
Case 1B: Stop Work Condition
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

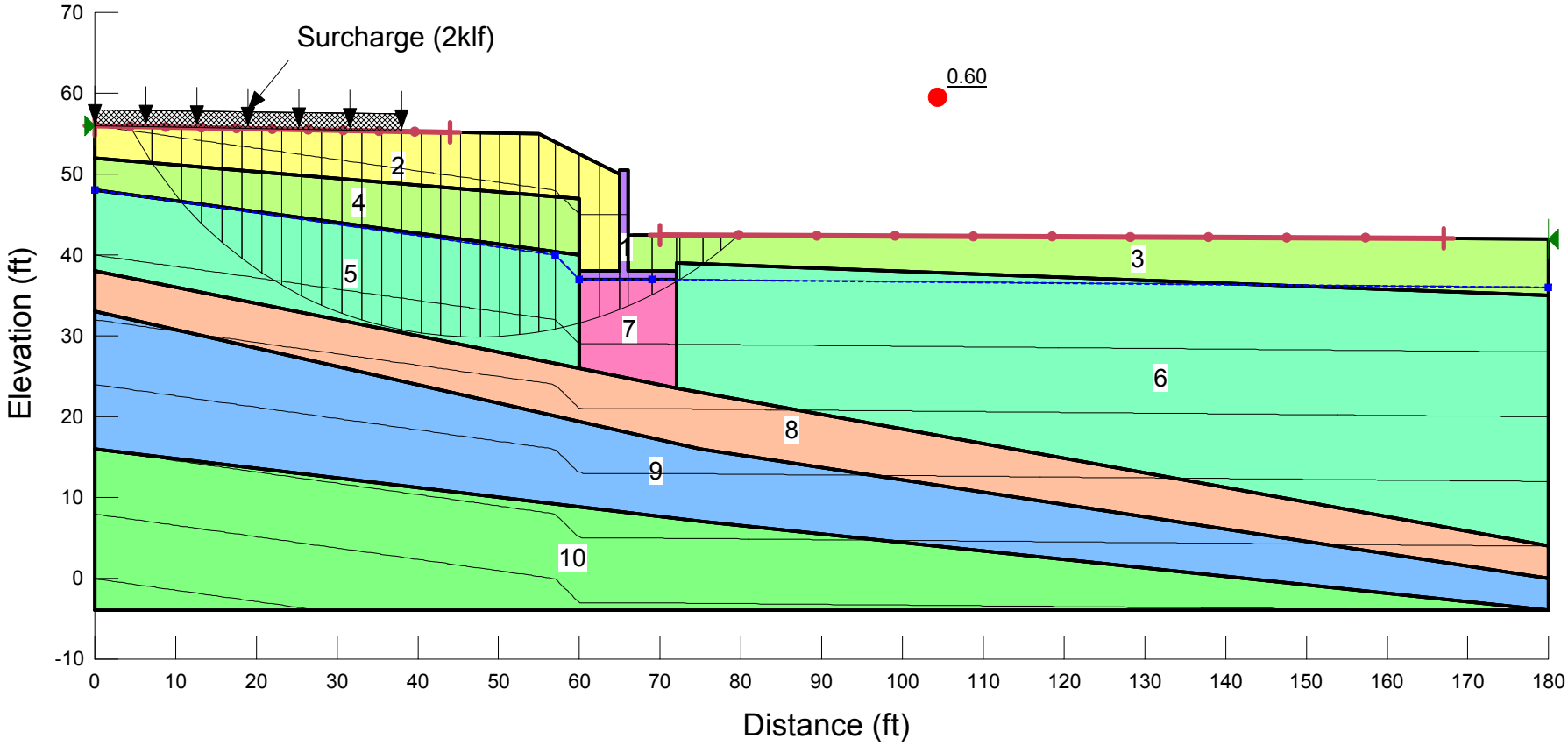
Case 1B: Stop Work Condition
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

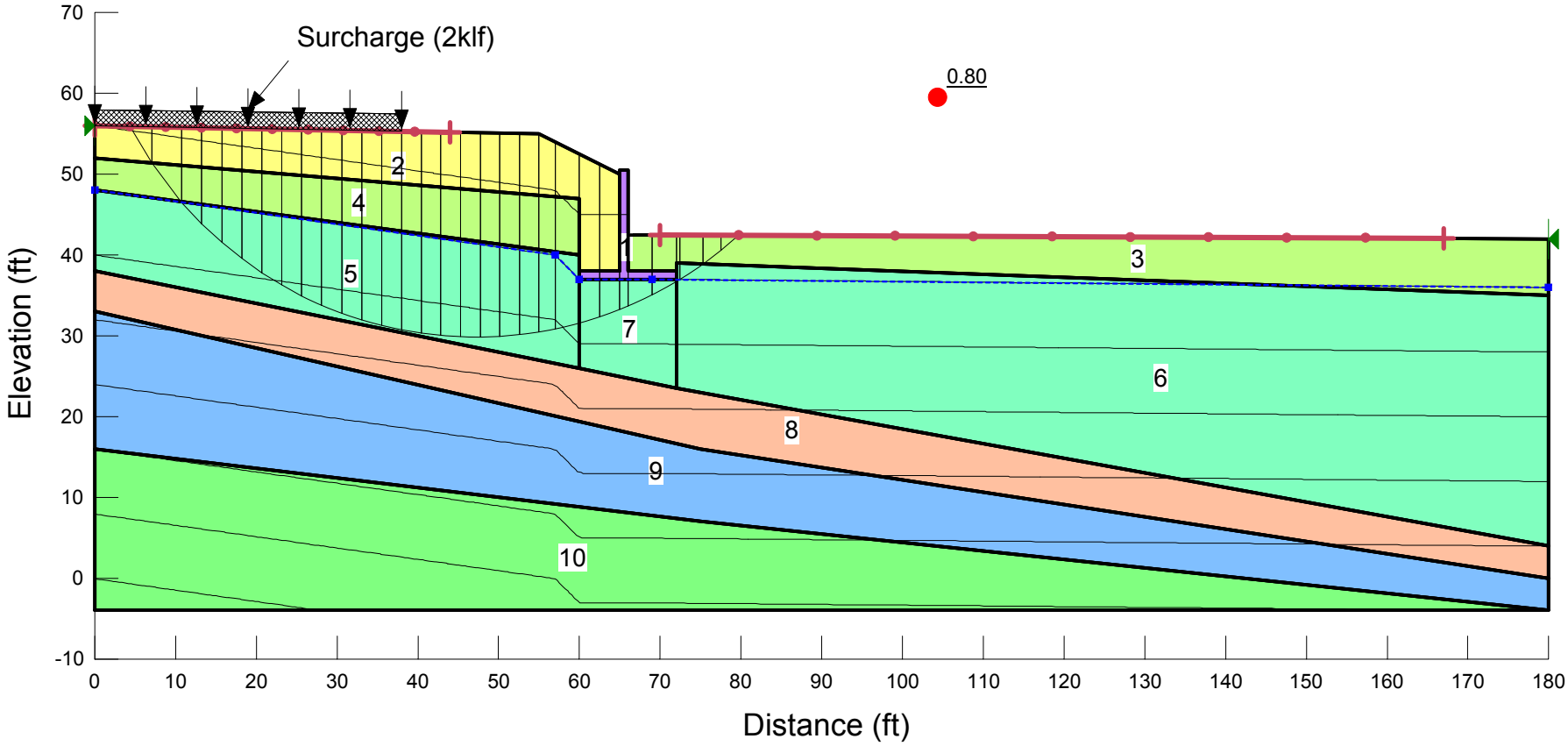
Case 2: As-Permitted
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

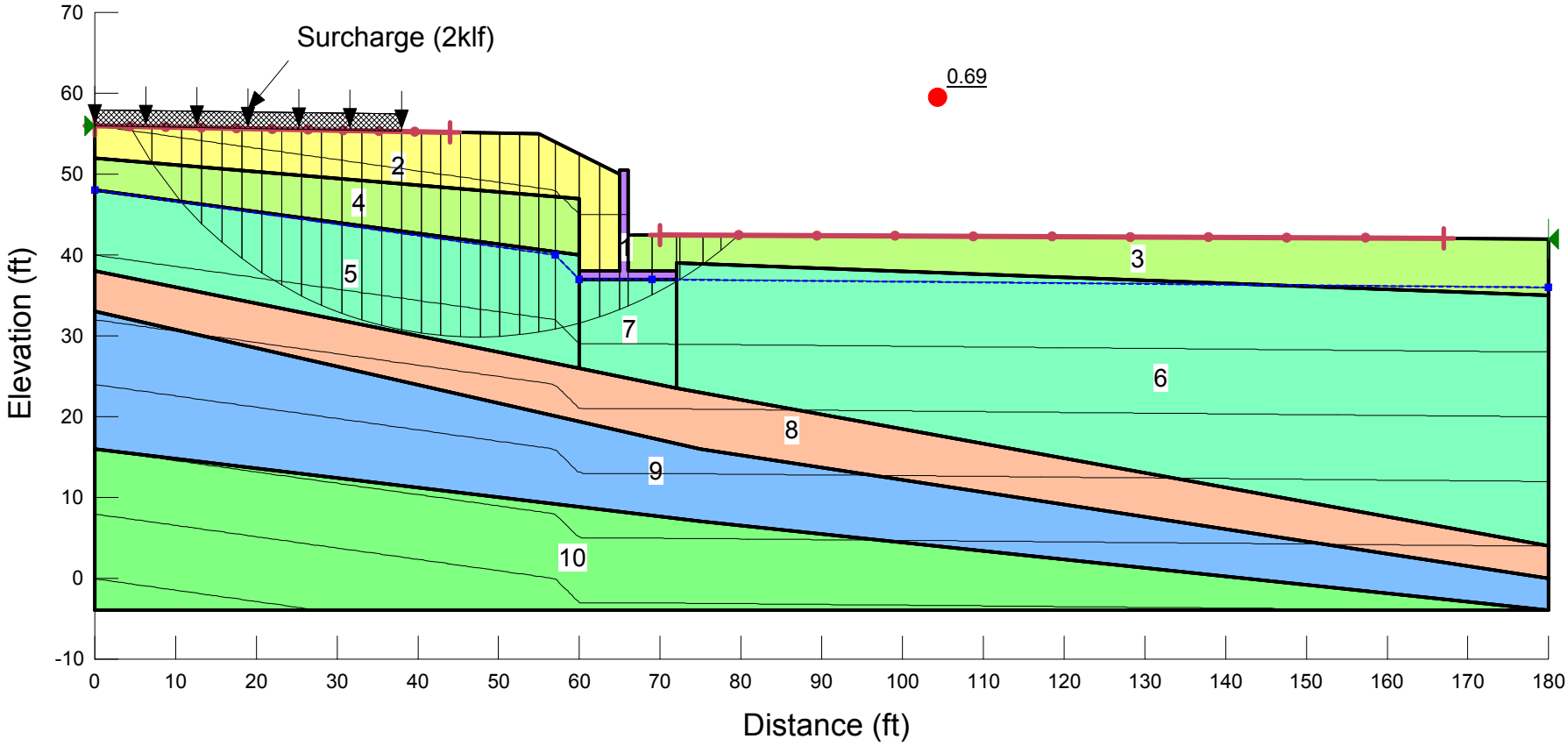
Case 2: As-Permitted
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5-7. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

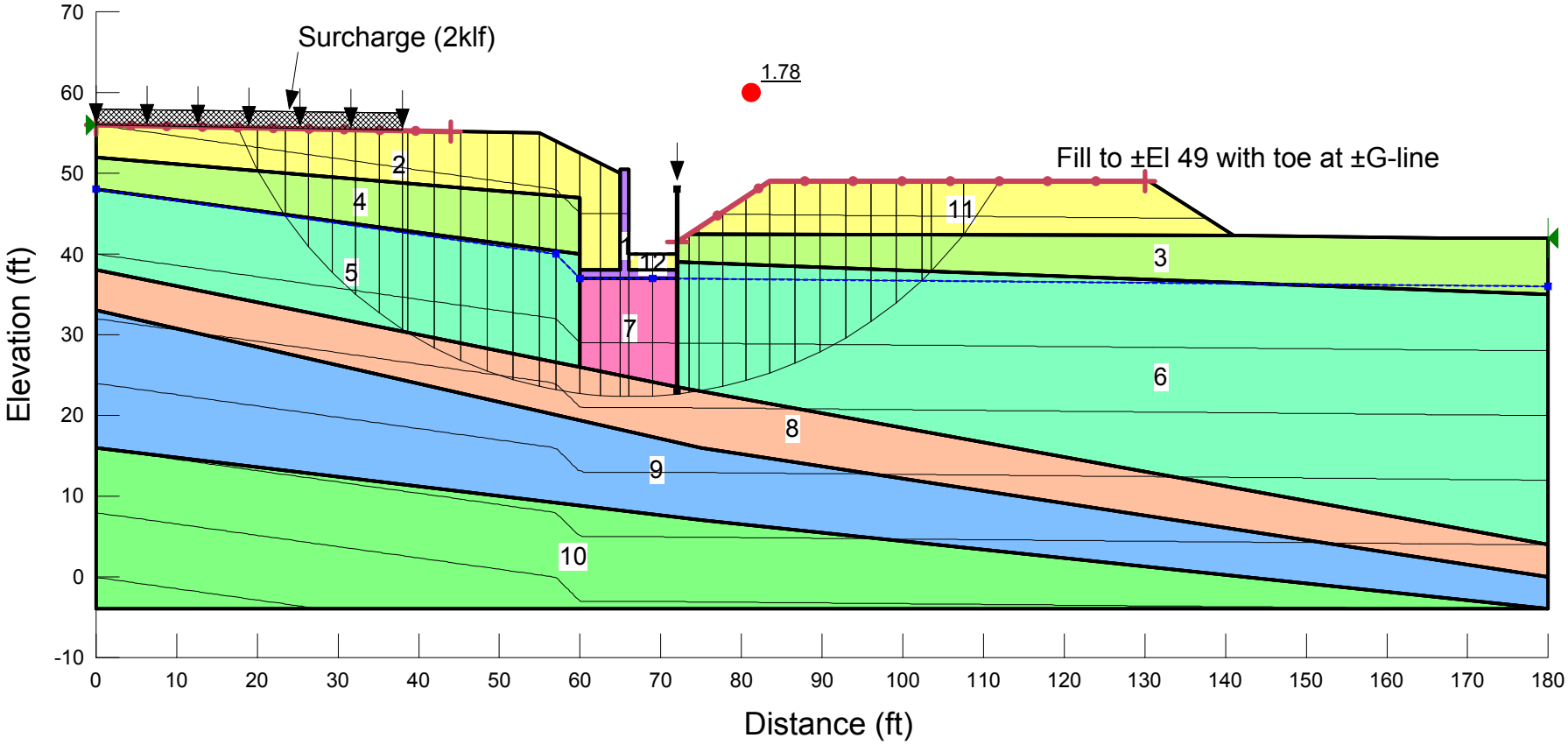
Case 3: As-Permitted
Without Ground Improvement
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5-7. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

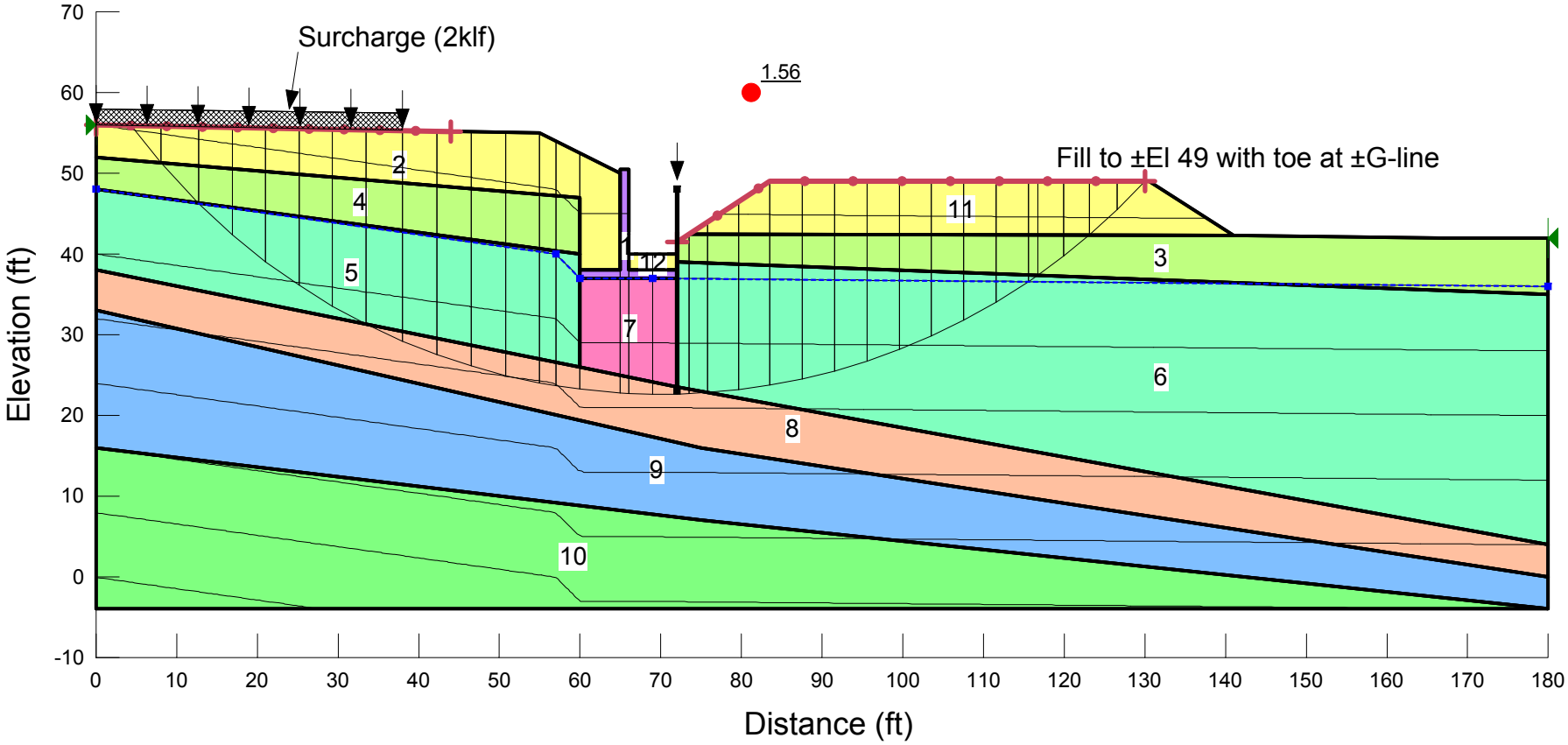
Case 3: As-Permitted
Without Ground Improvement
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2,11&12. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

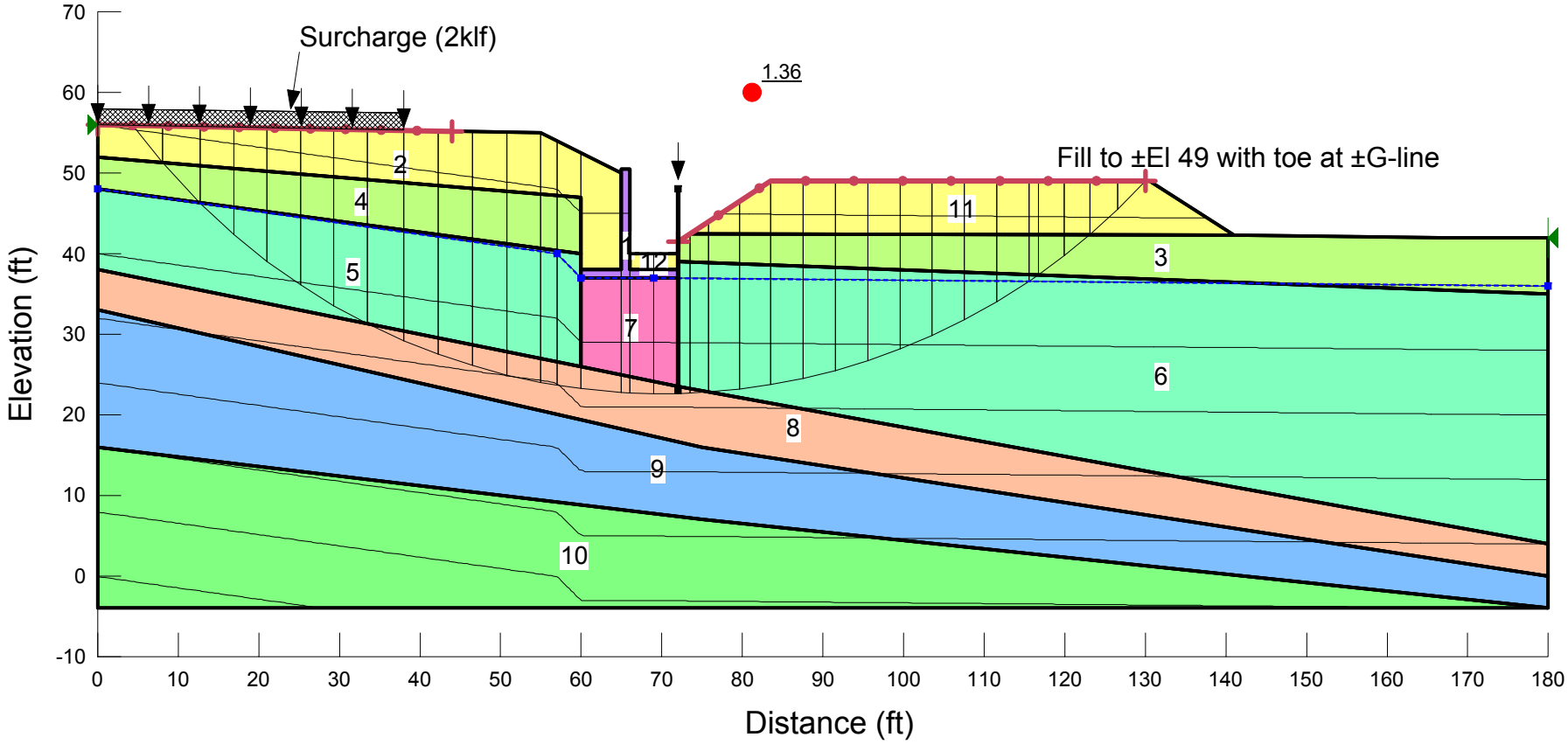
Case 4A: Repair Stage 1
Place Buttress Fill
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2,11&12. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

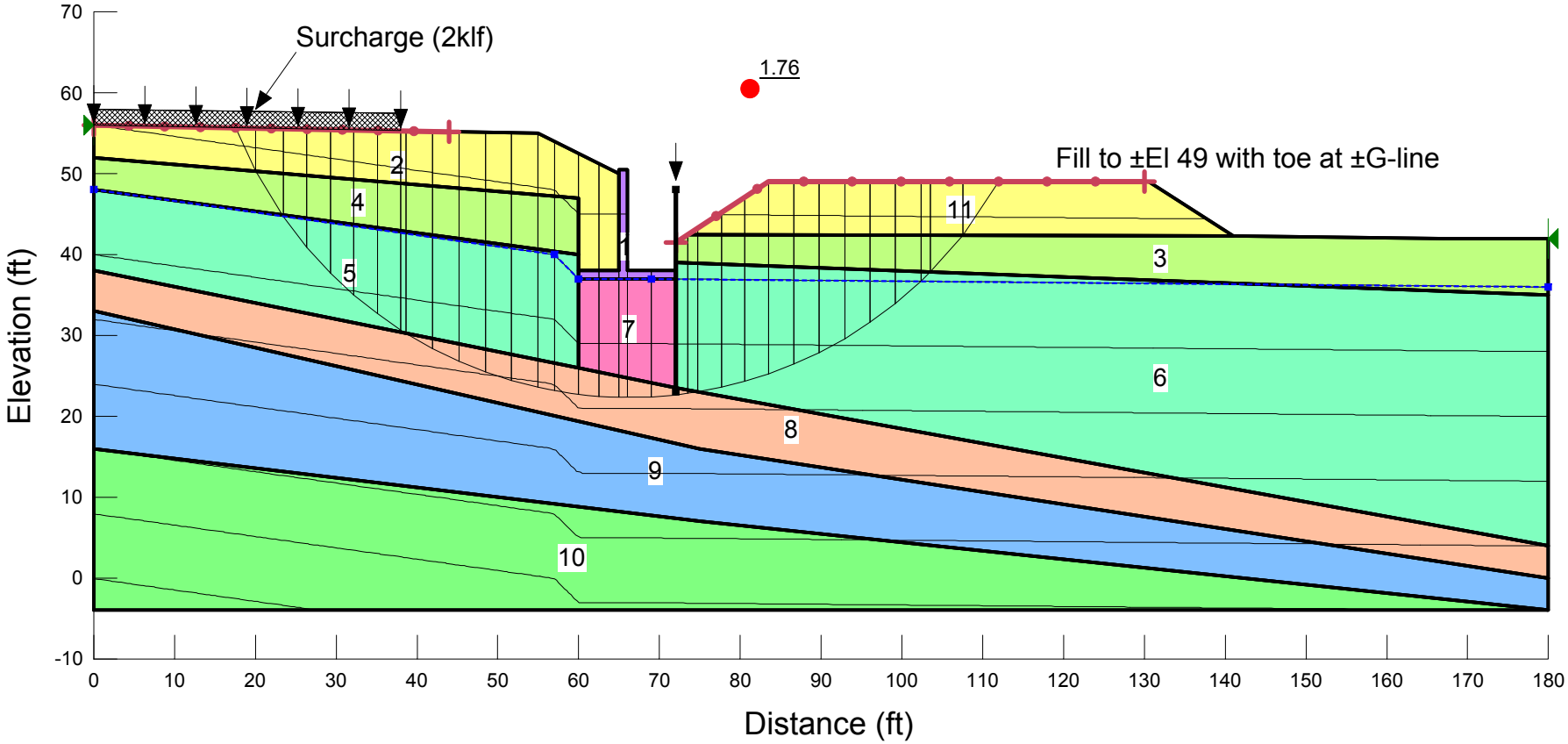
Case 4A: Repair Stage 1
Place Buttress Fill
B-201
Construction Vibration (Ah = 0.04g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2,11&12. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

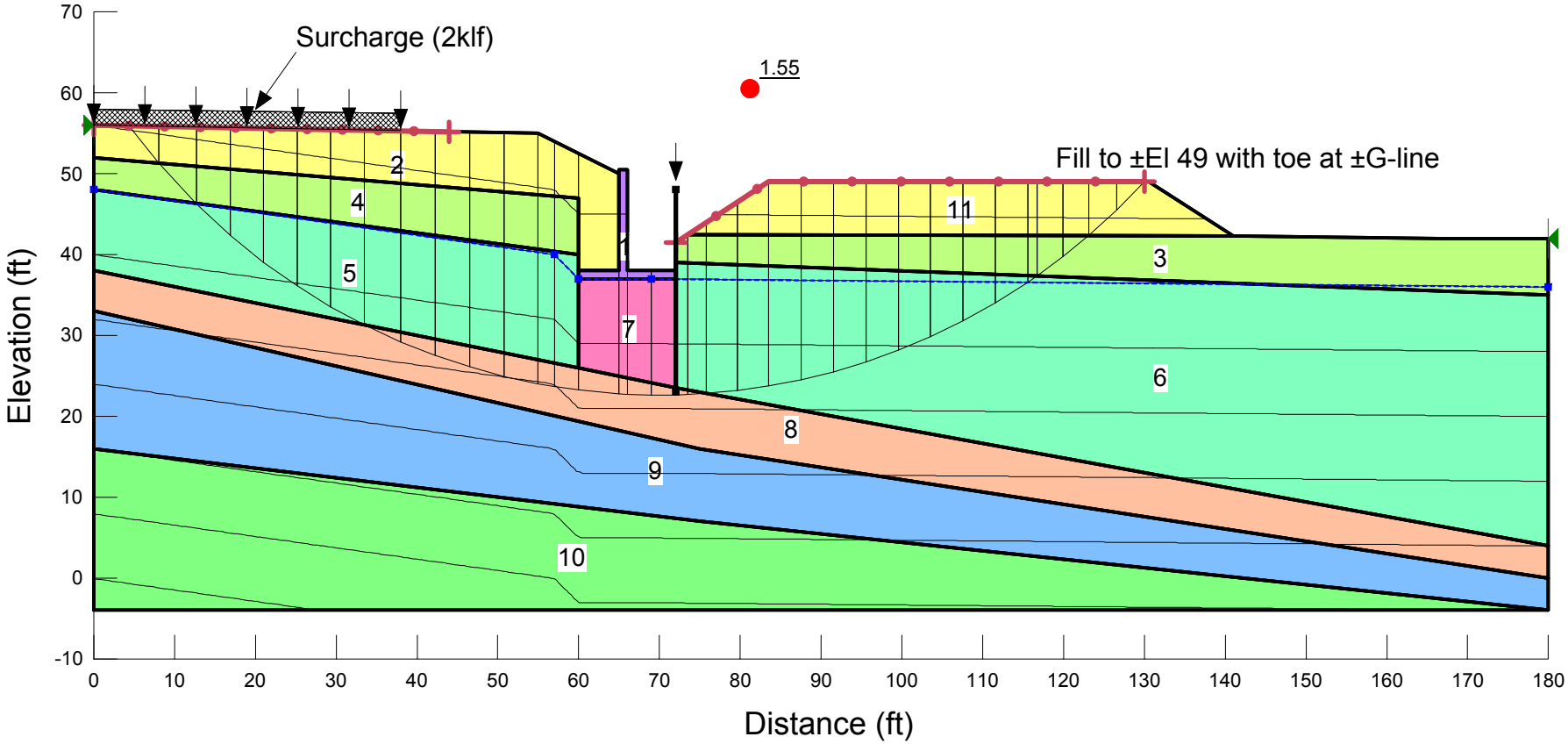
Case 4A: Repair Stage 1
Place Buttress Fill
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

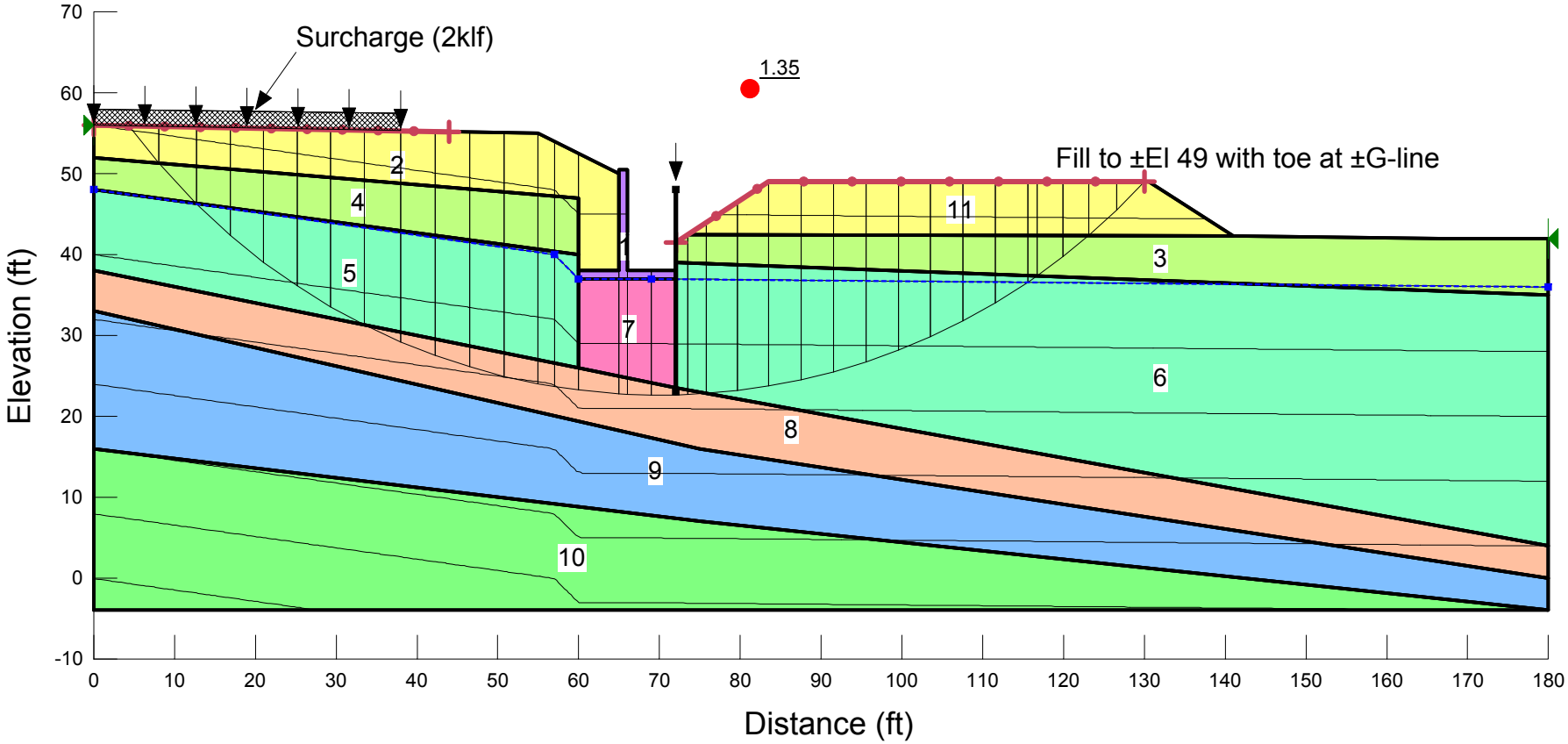
Case 4B: Repair Stage 2
Remove Fill between Retaining Wall
& PZ-22 Sheets
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

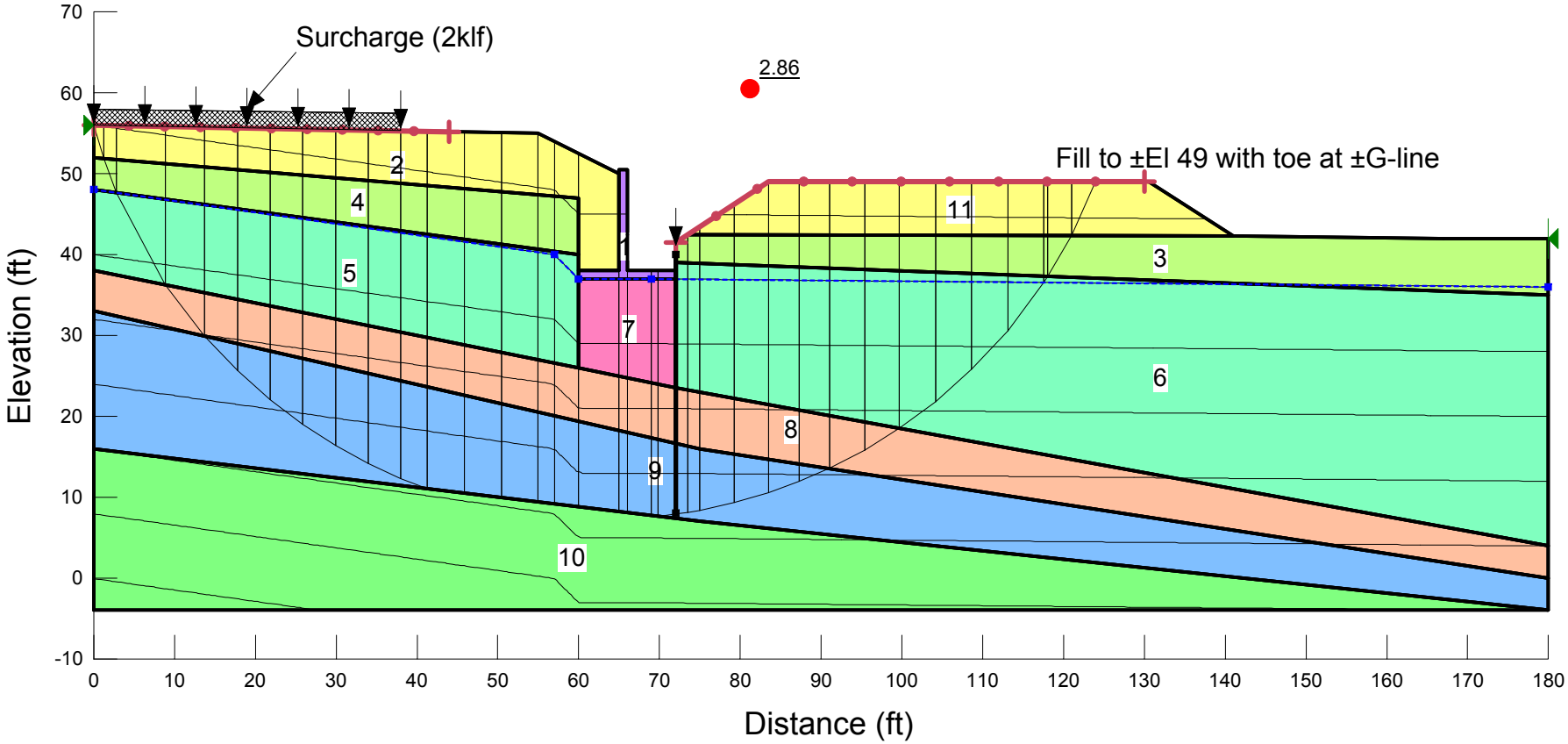
Case 4B: Repair Stage 2
Remove Fill between Retaining Wall
& PZ-22 Sheets
B-201
Construction Vibration (Ah = 0.04g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

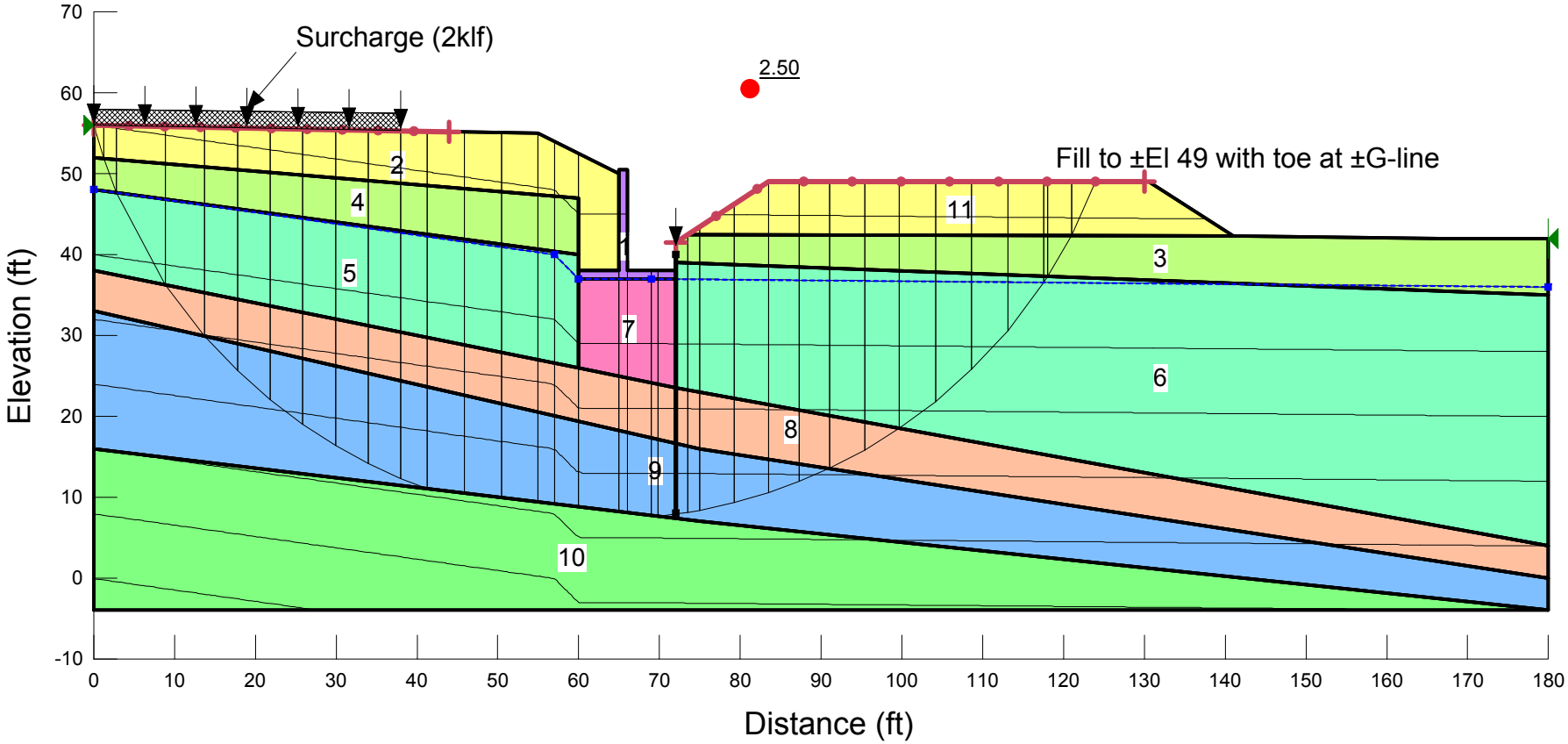
Case 4B: Repair Stage 2
Remove Fill between Retaining Wall
& PZ-22 Sheets
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

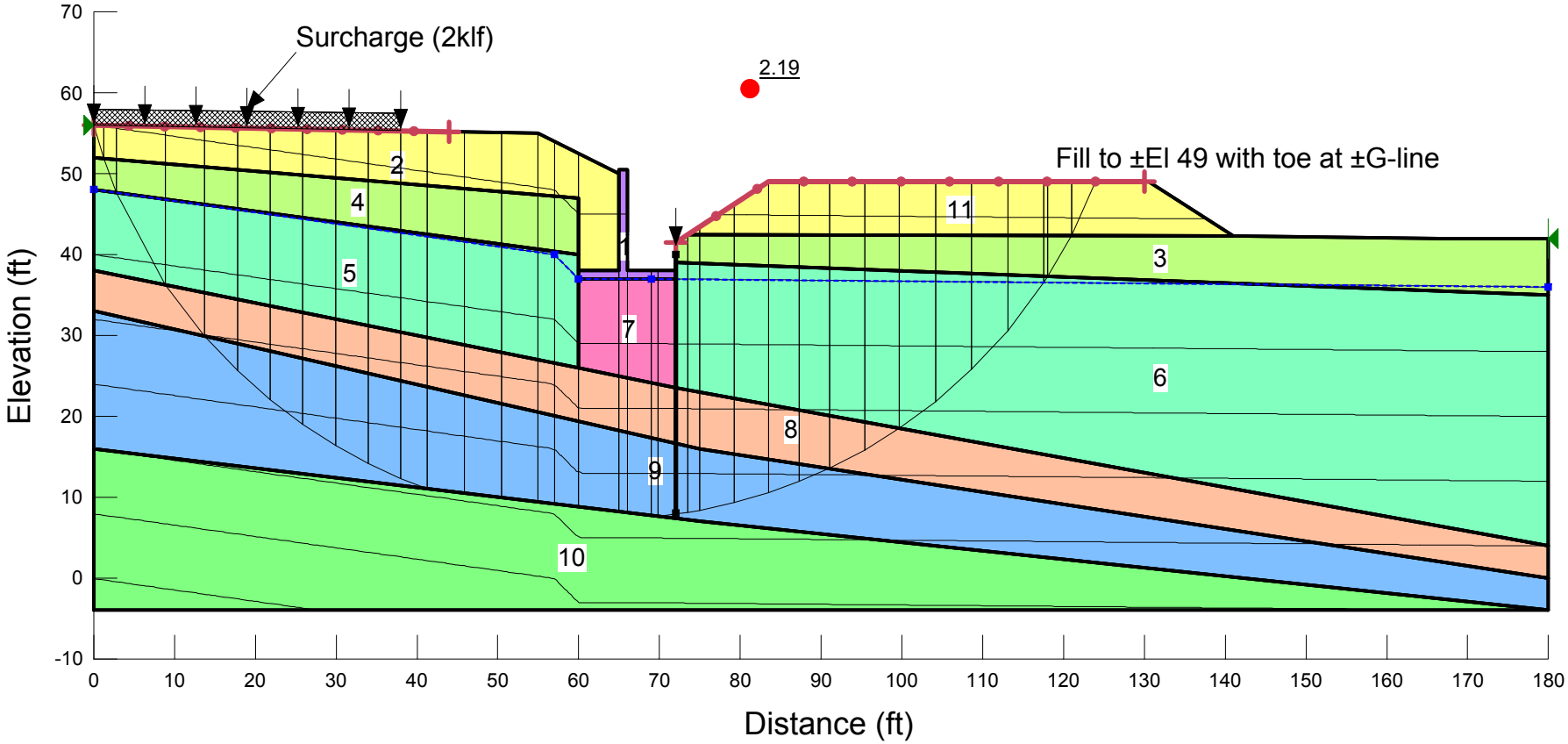
Case 4C: Repair Stage 3
Install PZ-22 Sheets to Bedrock
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

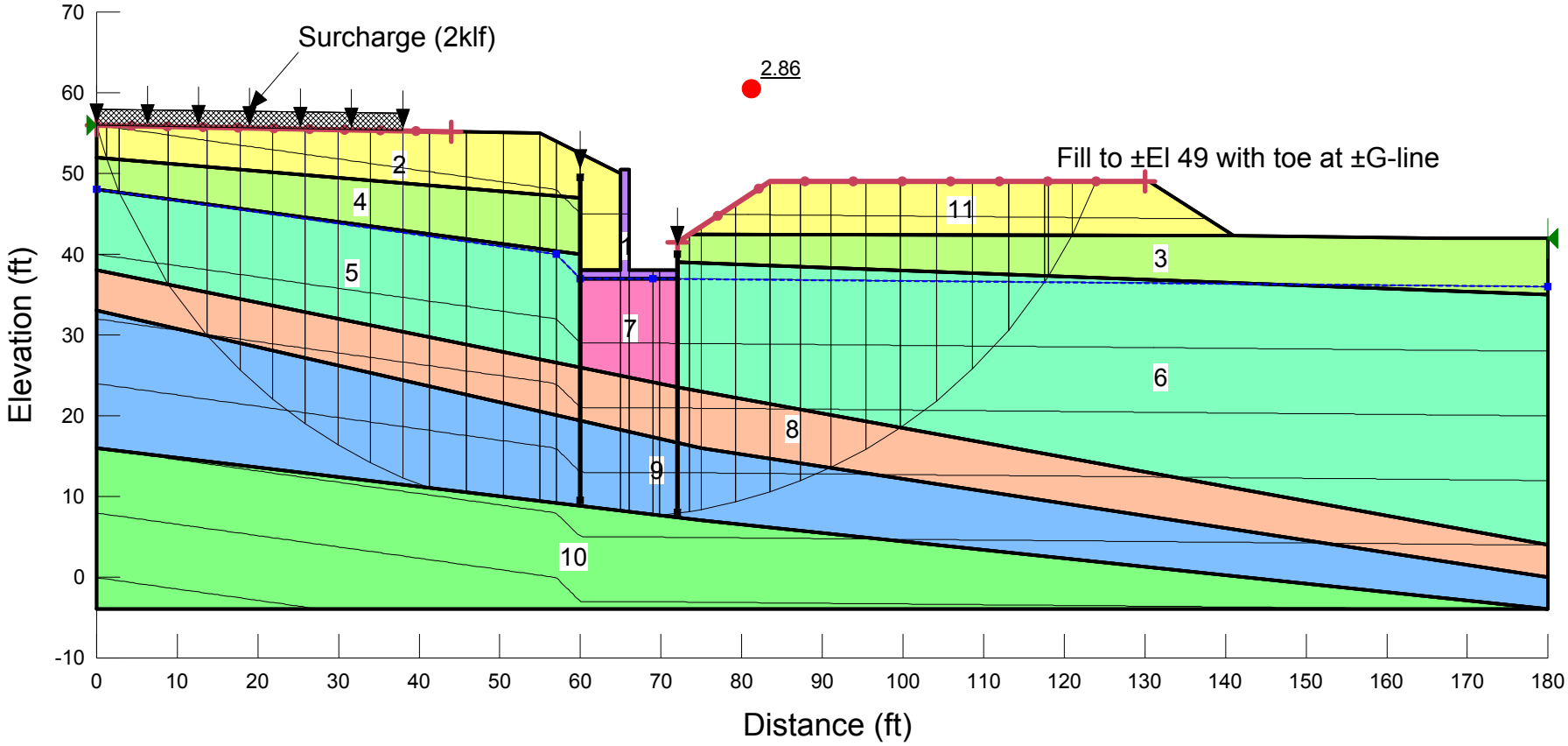
Case 4C: Repair Stage 3
Install PZ-22 Sheets to Bedrock
B-201
Construction Vibration (Ah = 0.04g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

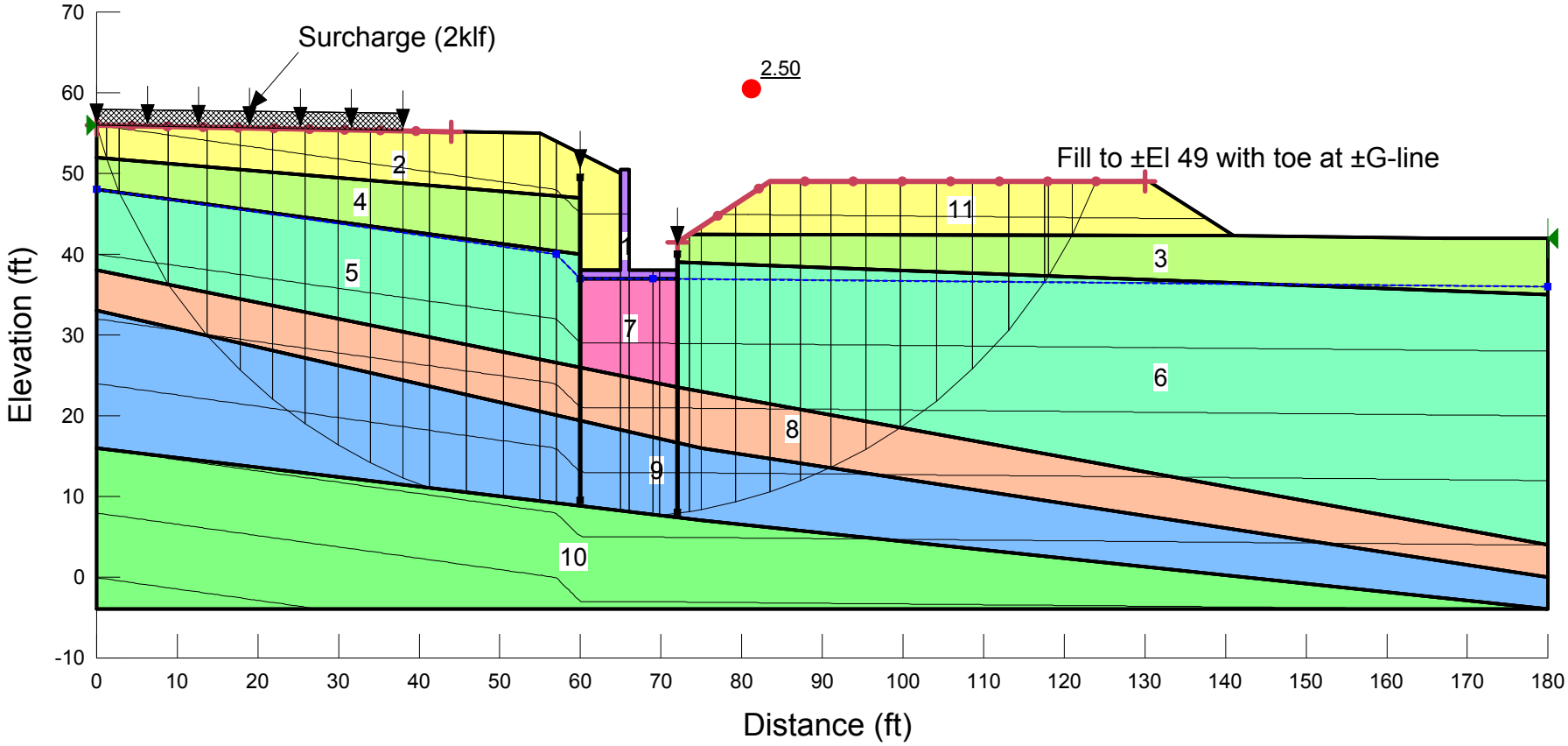
Case 4C: Repair Stage 3
Install PZ-22 Sheets to Bedrock
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

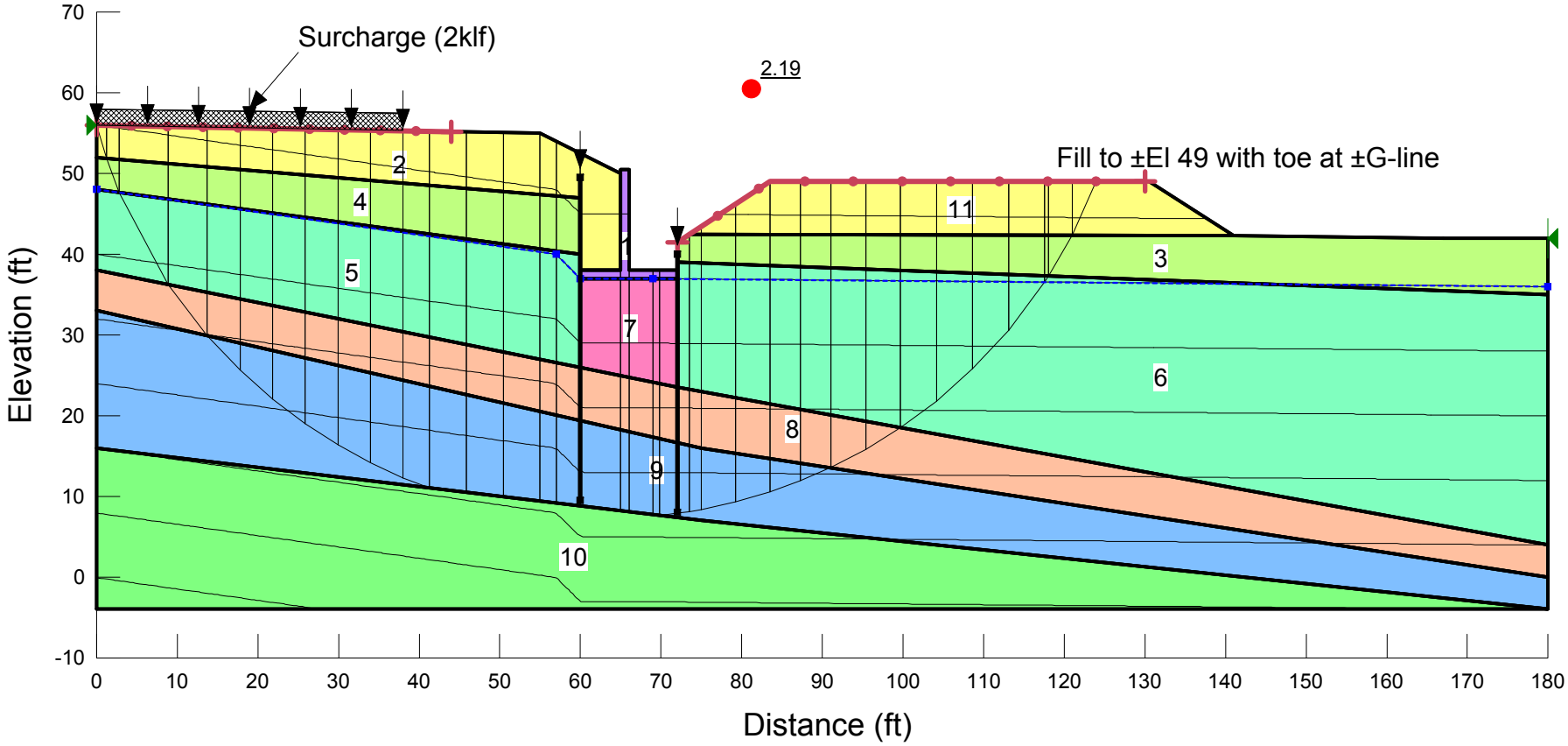
Case 4D: Repair Stage 4
Install SCZ-14 Sheetpiles
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

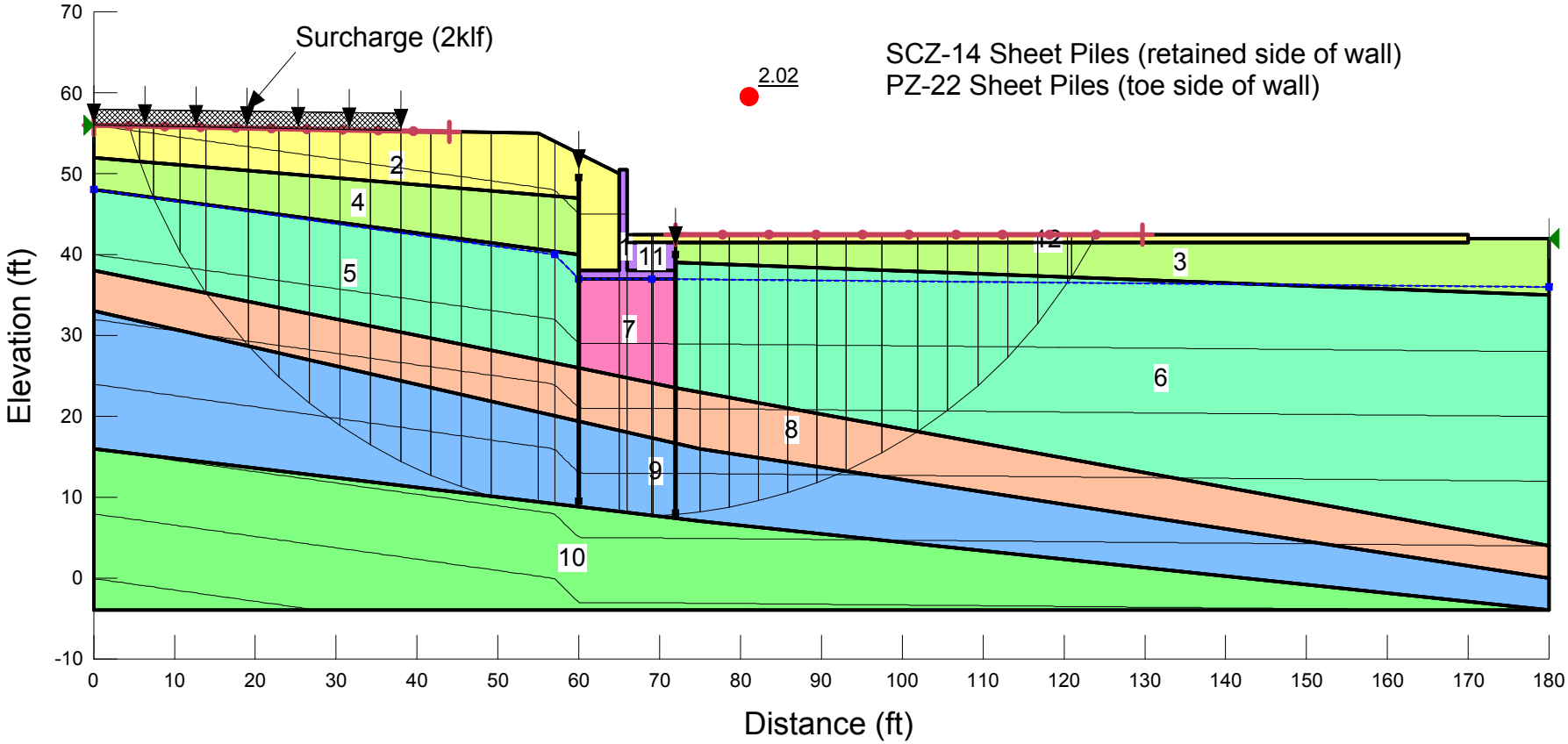
Case 4D: Repair Stage 4
Install SCZ-14 Sheetpiles
B-201
Construction Vibration (Ah = 0.04g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

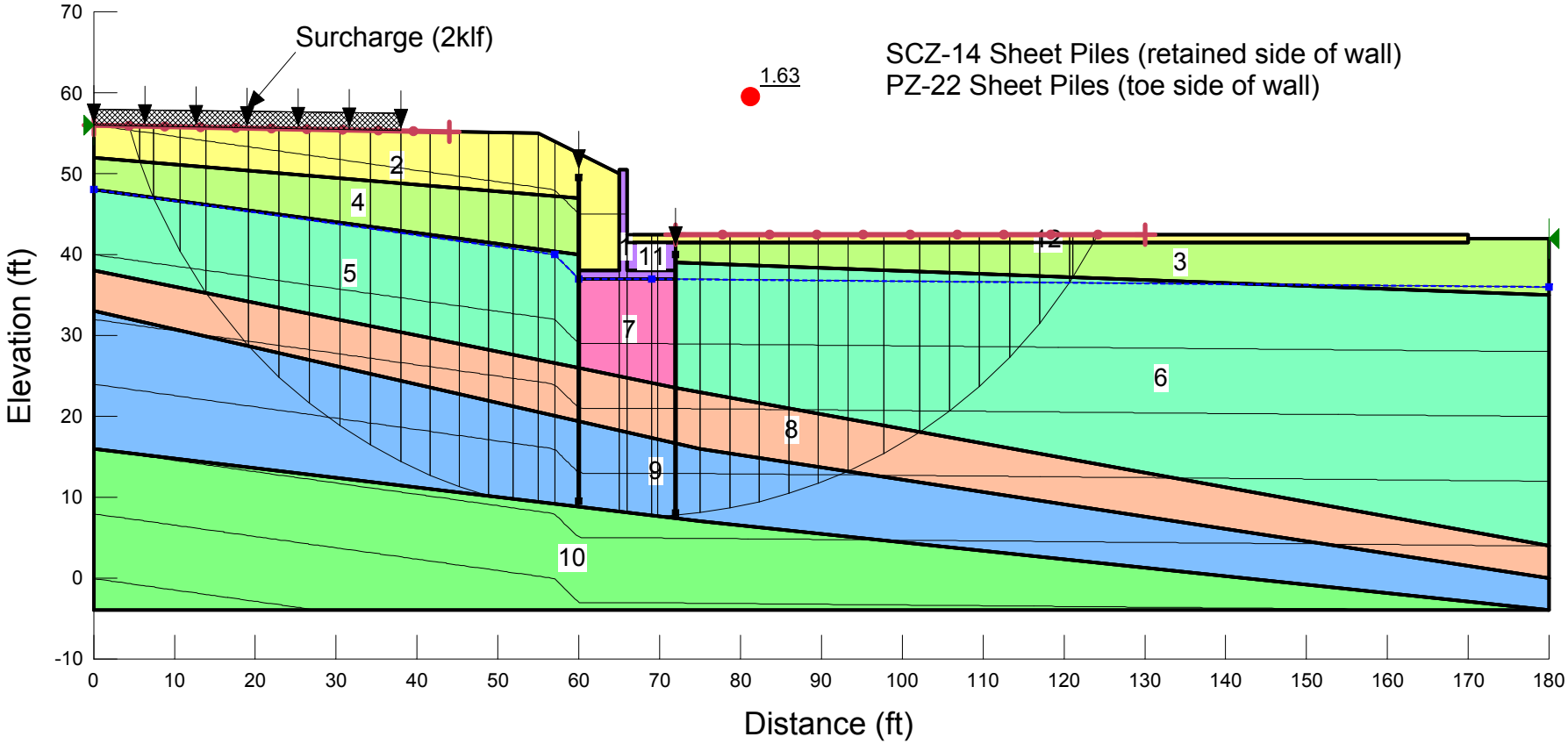
Case 4D: Repair Stage 4
Install SCZ-14 Sheetpiles
B-201
Seismic (Ah = 0.085g)



Materials
1&11. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&12. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

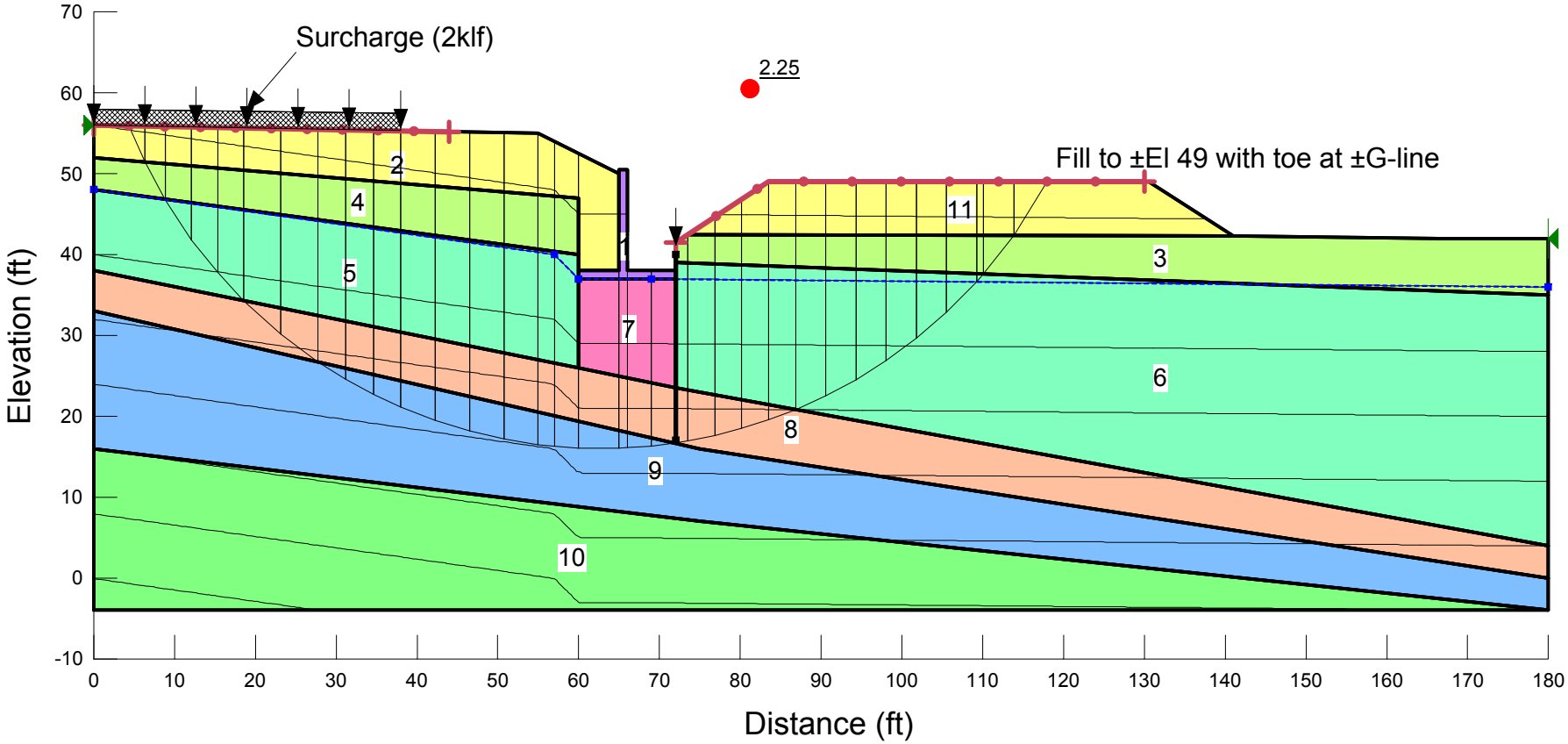
Case 5: Repair Final
B-201
Static



Materials
1&11. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&12. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

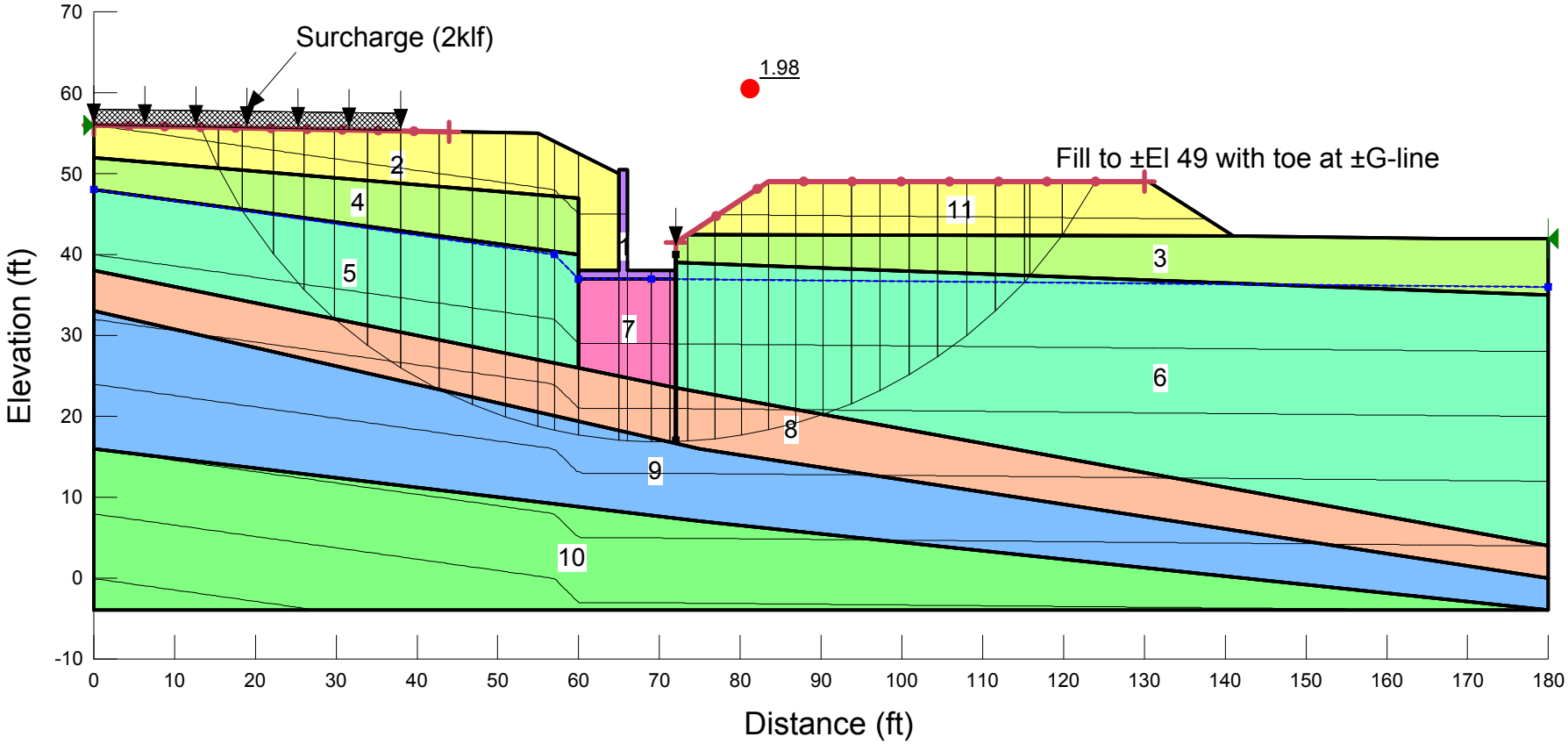
Case 5: Repair Final
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

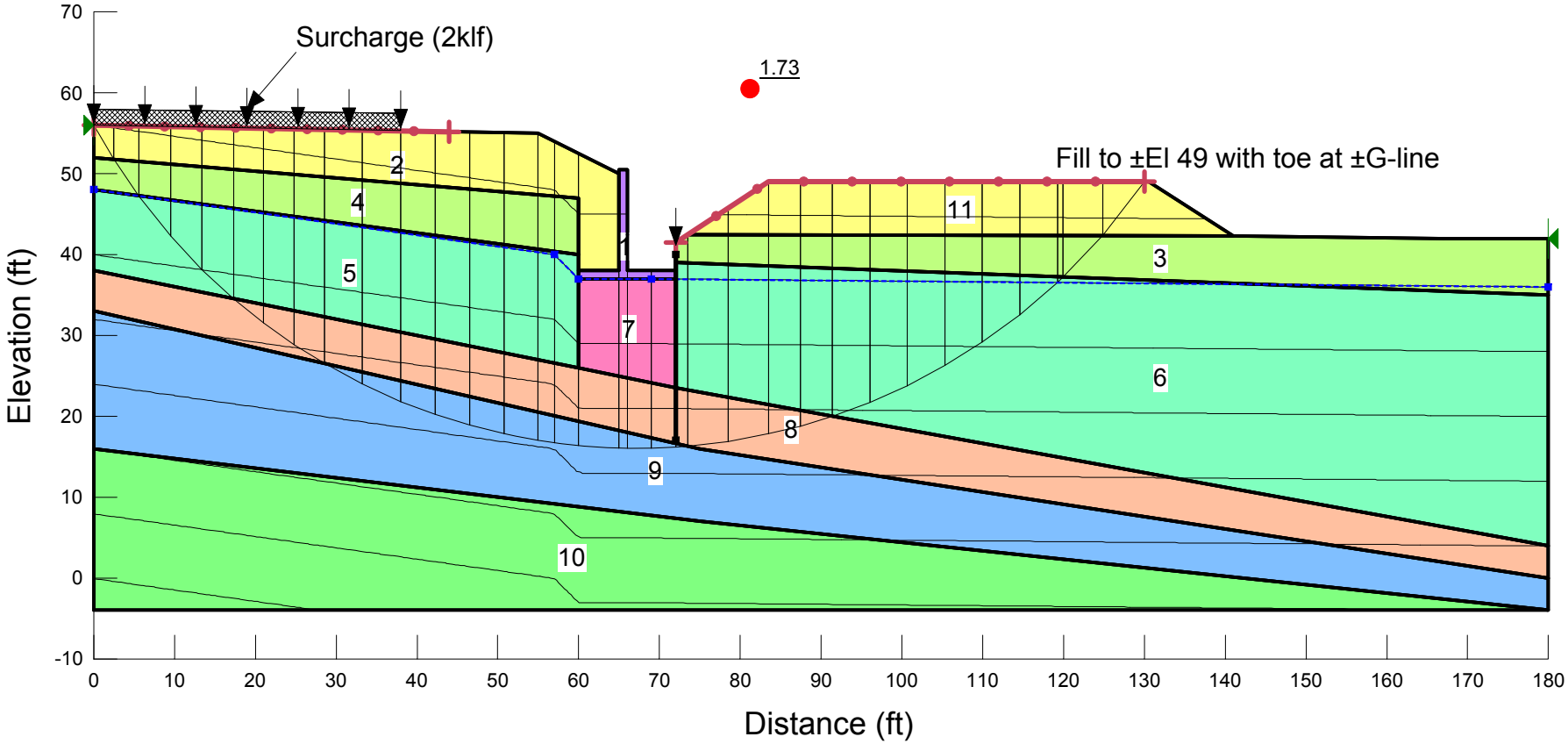
Case 4C: Repair Stage 3
Install PZ-22 Sheets
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

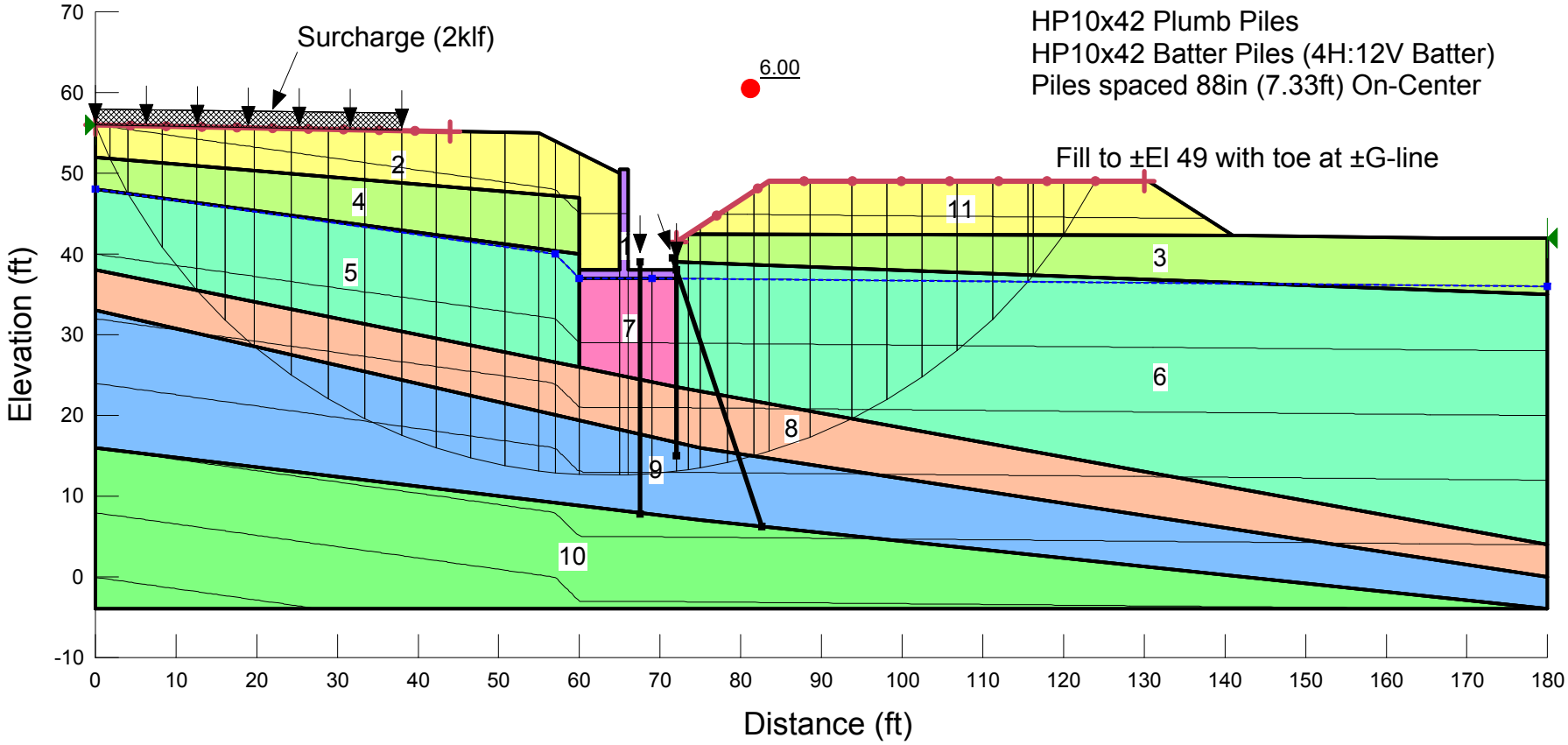
Case 4C: Repair Stage 3
Install PZ-22 Sheets
B-201
Construction Vibration (Ah = 0.04g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

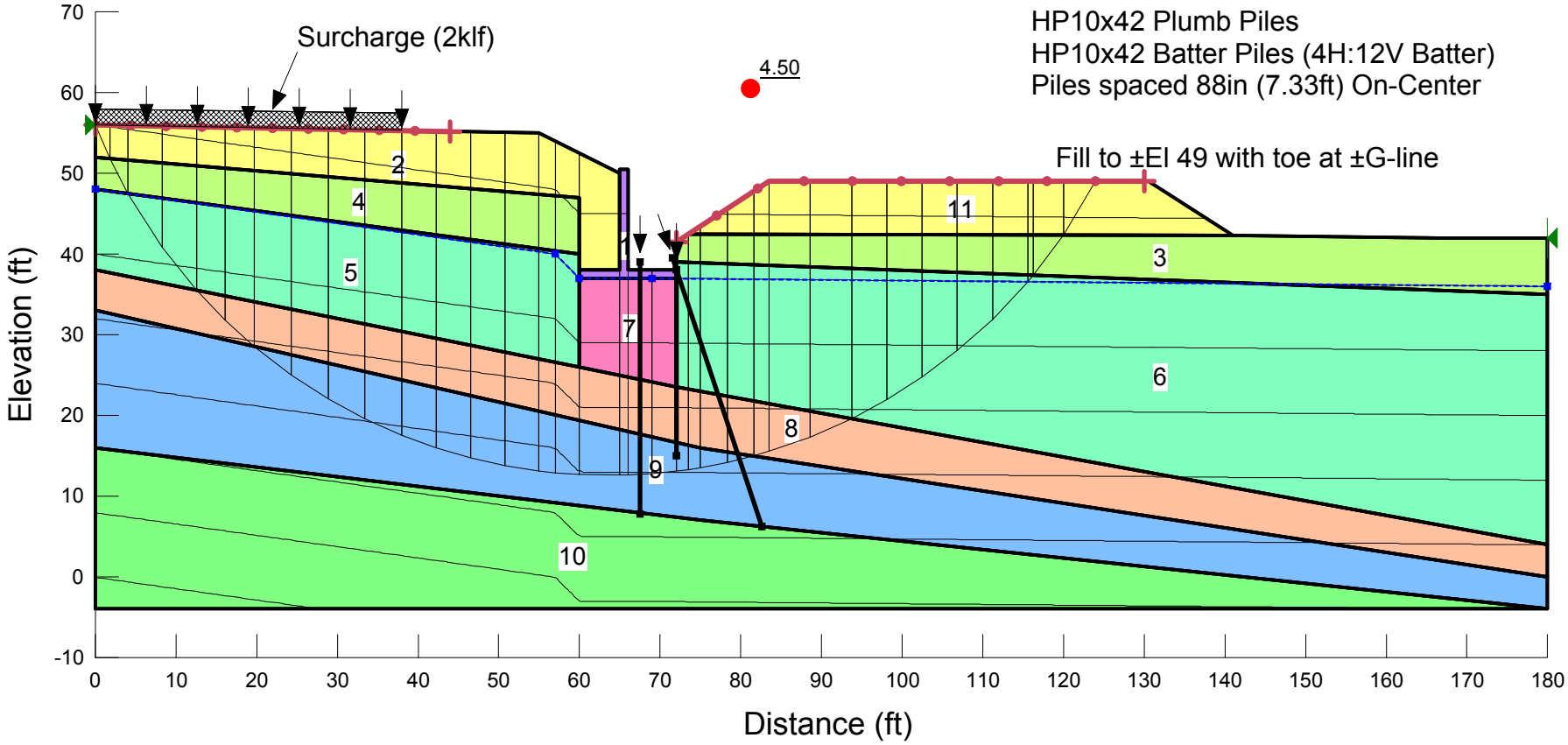
Case 4C: Repair Stage 3
Install PZ-22 Sheets
B-201
Seismic (Ah = 0.085g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

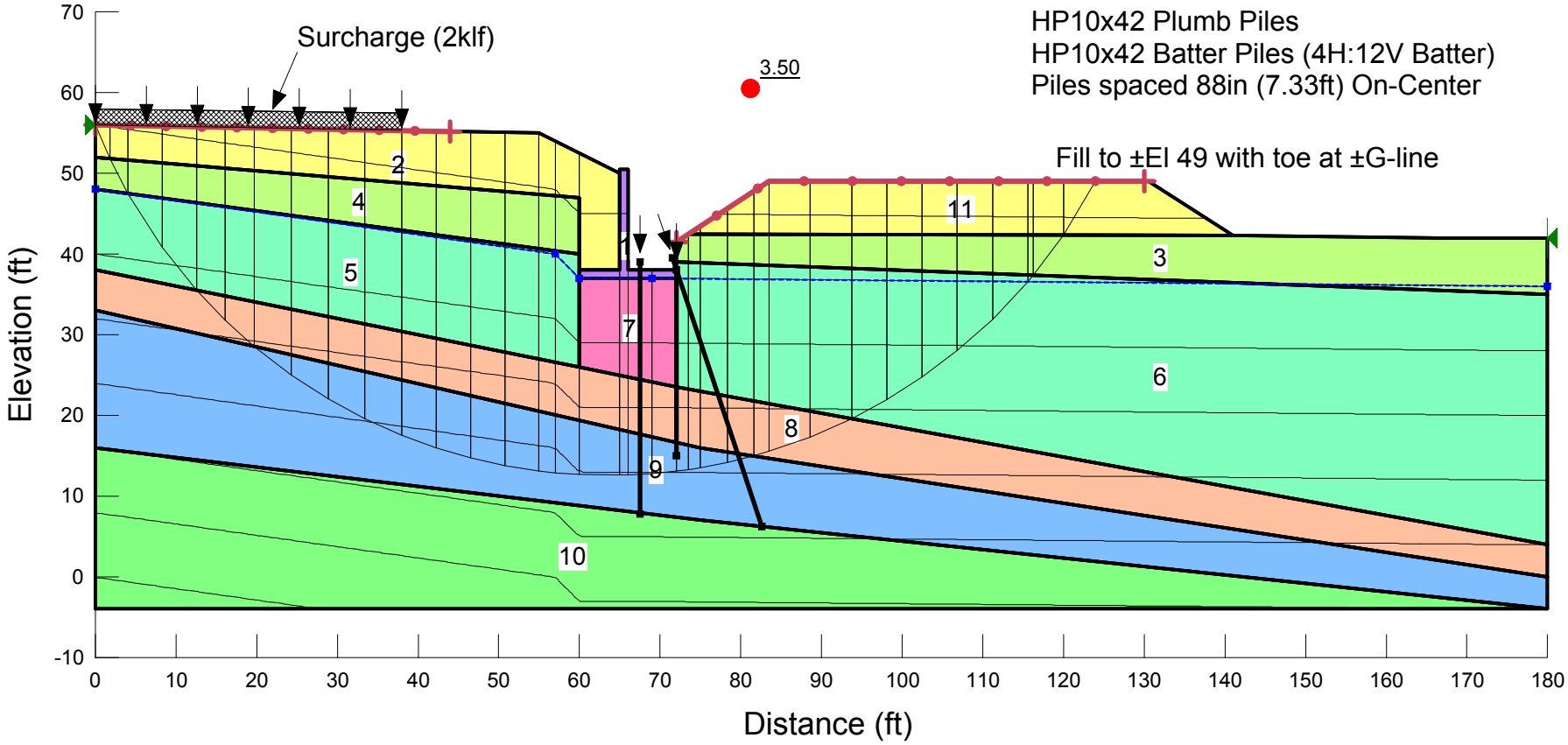
Case 4D: Repair Stage 4
Install Plumb and Batter Piles
B-201
Static



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

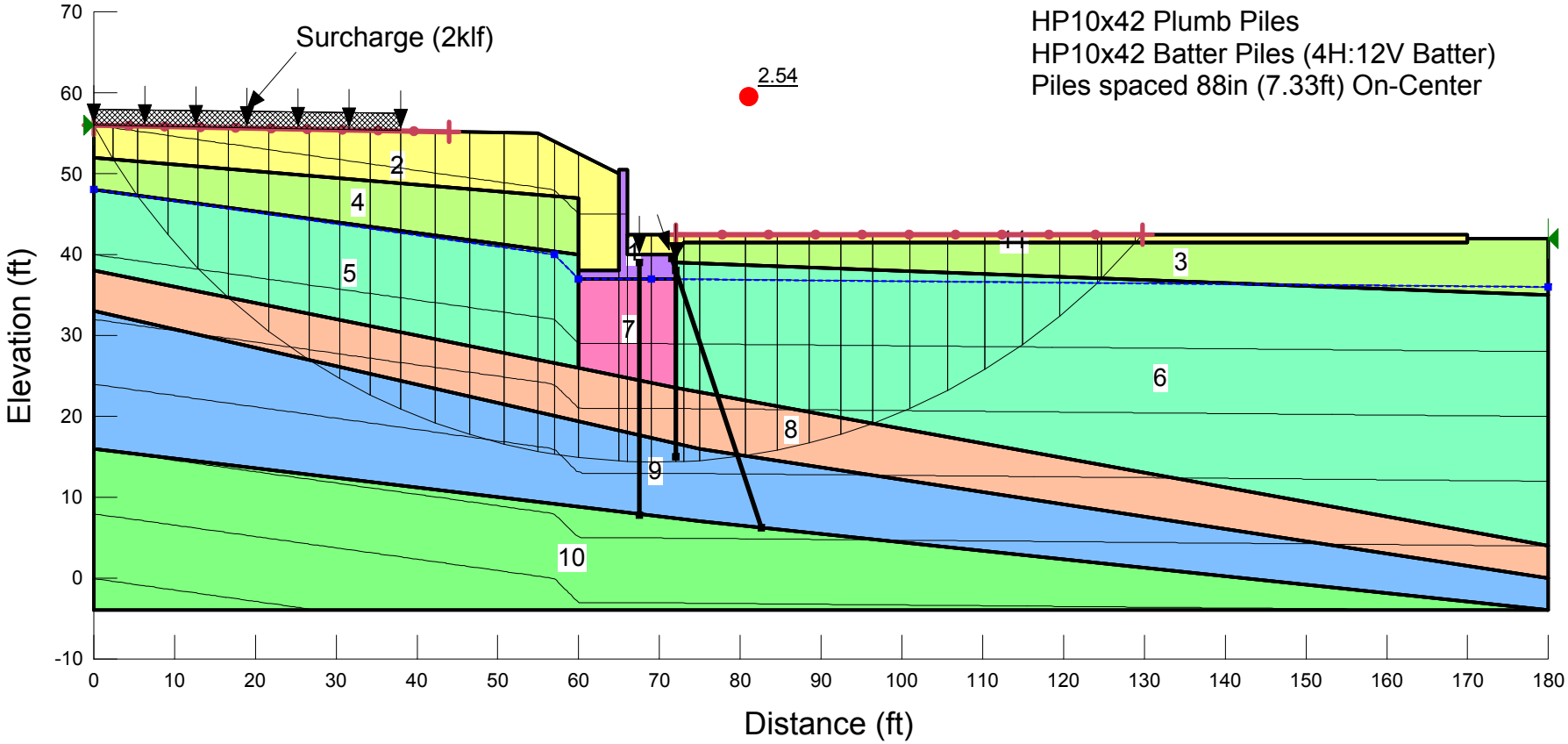
Case 4D: Repair Stage 4
Install Plumb and Batter Piles
B-201
Construction Vibration (Ah = 0.040g)



Materials
1. Concrete/Retaining Wall: Unit Wt = 150 pcf
2&11. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

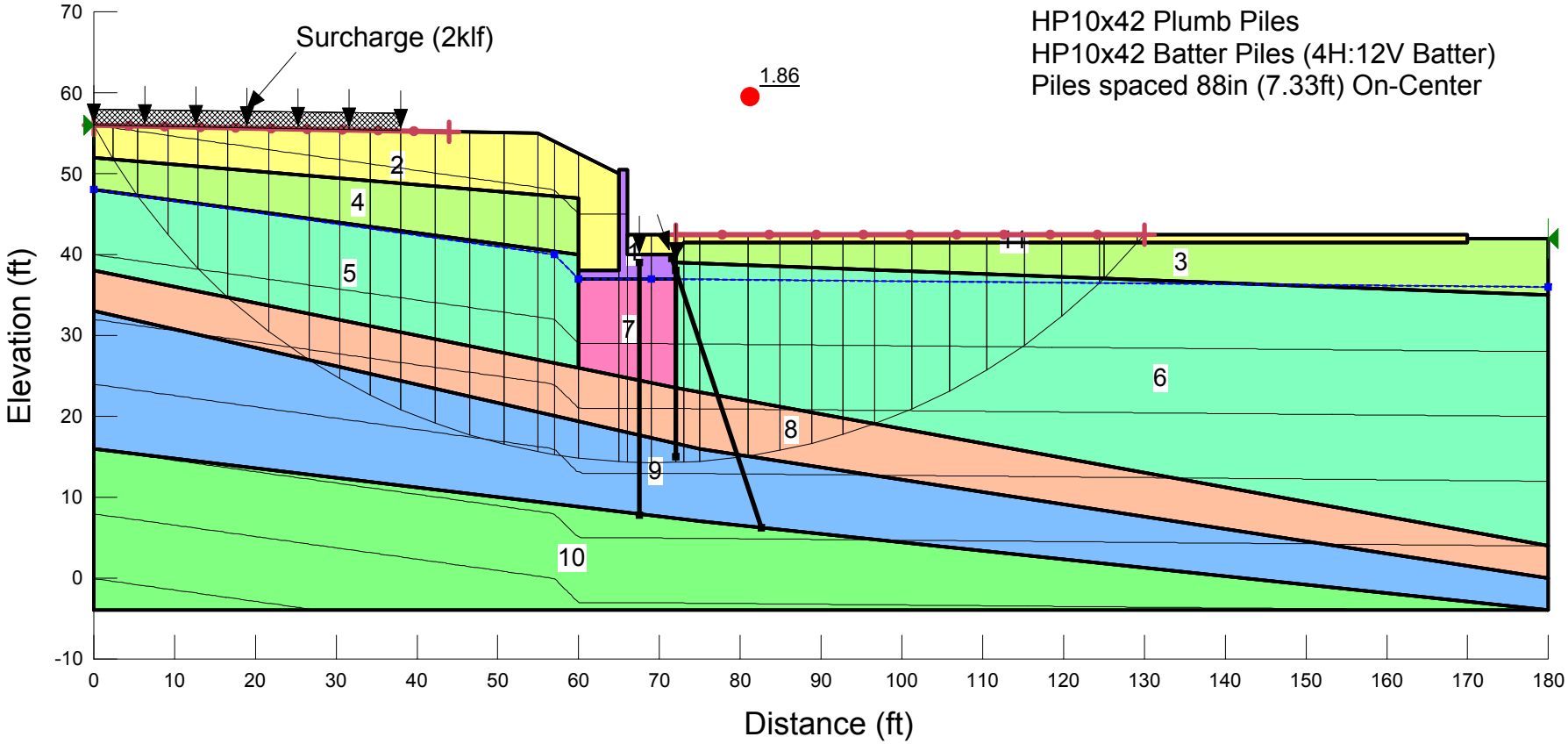
Case 4D: Repair Stage 4
Install Plumb and Batter Piles
B-201
Seismic (Ah = 0.085g)



Materials
1&11. Concrete/Retaining Wall: Unit Wt = 150 pcf
2. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

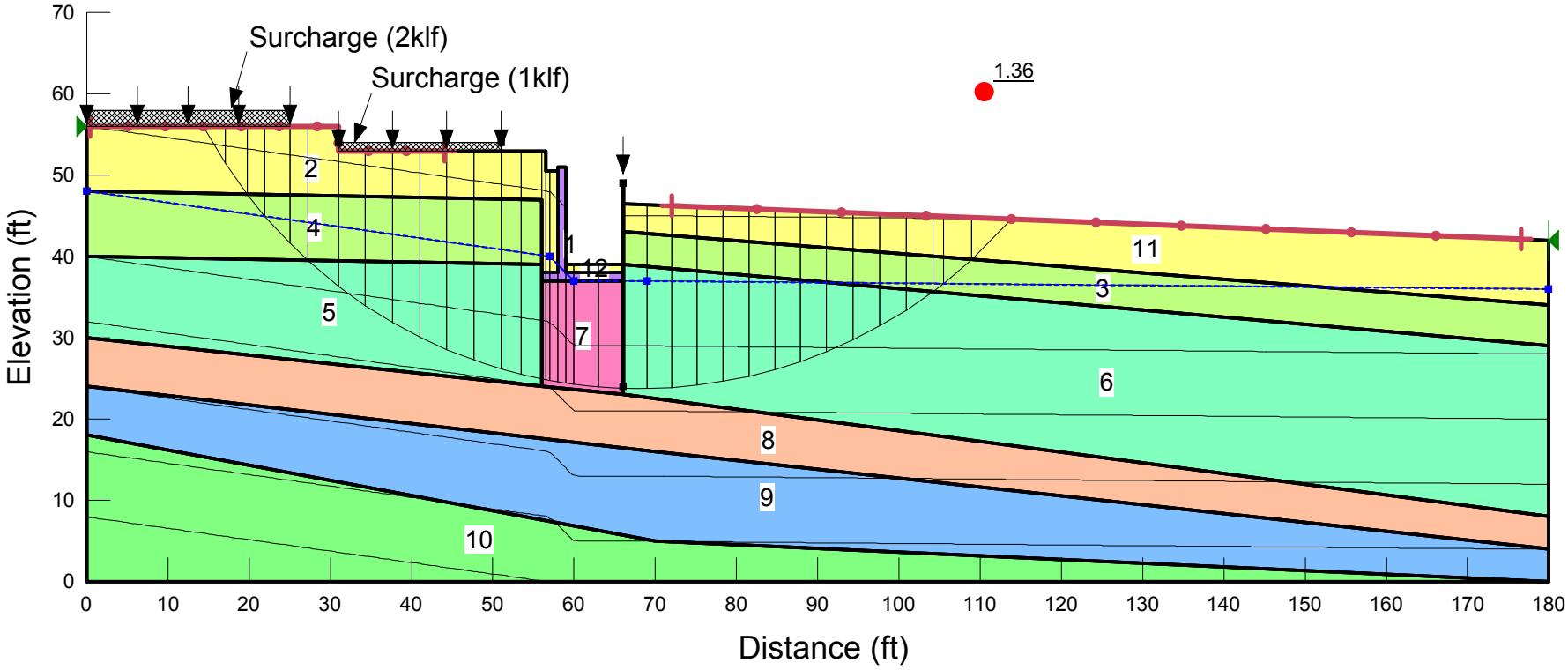
Case 5: Repair Final
B-201
Static



Materials
1&11. Concrete/Retaining Wall: Unit Wt = 150 pcf
2. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

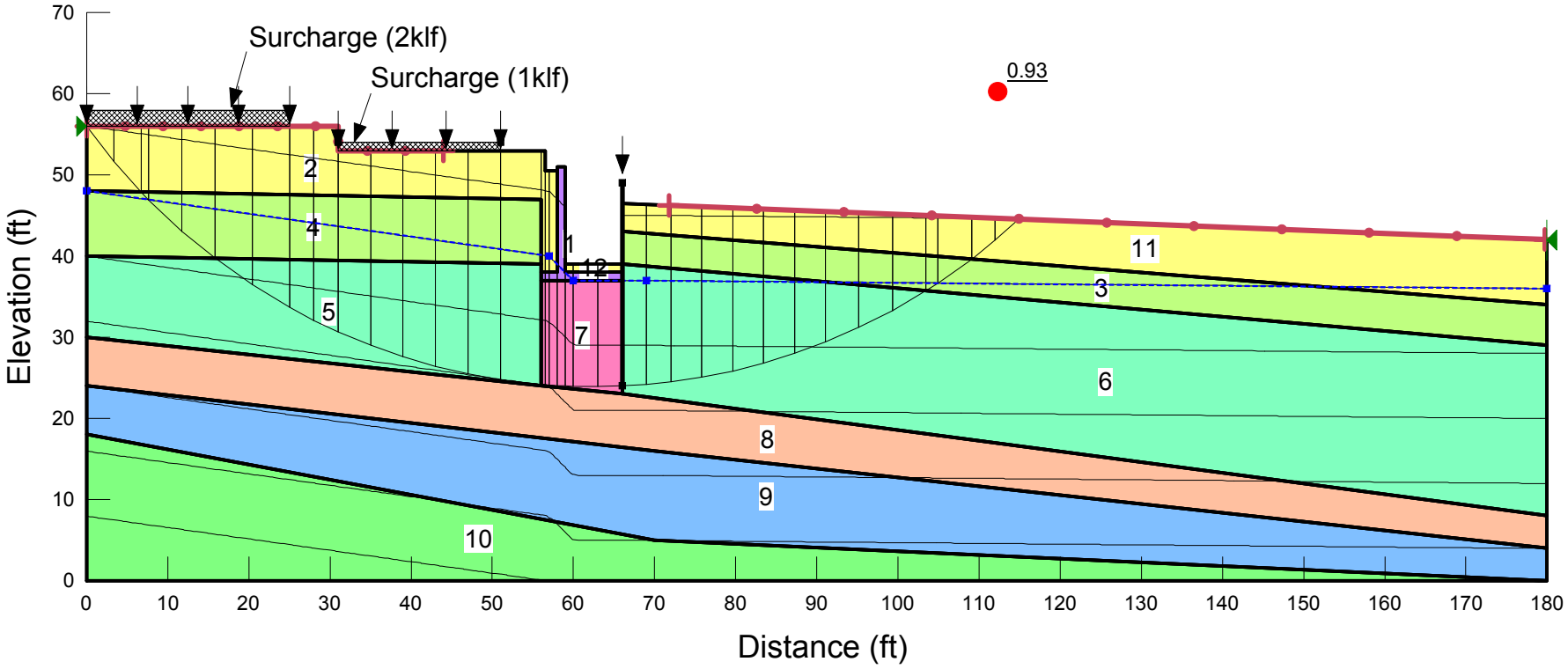
Case 5: Repair Final
B-201
Seismic (Ah = 0.085g)



Materials
1. Foundation/Retaining Wall: Unit Wt = 150 pcf
2,11&12. Granular Fill: Unit Wt = 130 pcf, Phi = 30 deg
3&4. Silty Sand: Unit Wt = 115 pcf, Phi = 28 deg
5&6. Silty Clay: Unit Wt = 105 pcf, C = 500 psf
7. Remolded Silty Clay: Unit Wt = 100 pcf, C = 50 psf
8. Sand, sm gravel, tr silt: Unit Wt = 115 pcf, Phi = 28 deg
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 1A: Stop Work Condition
B-202
Static



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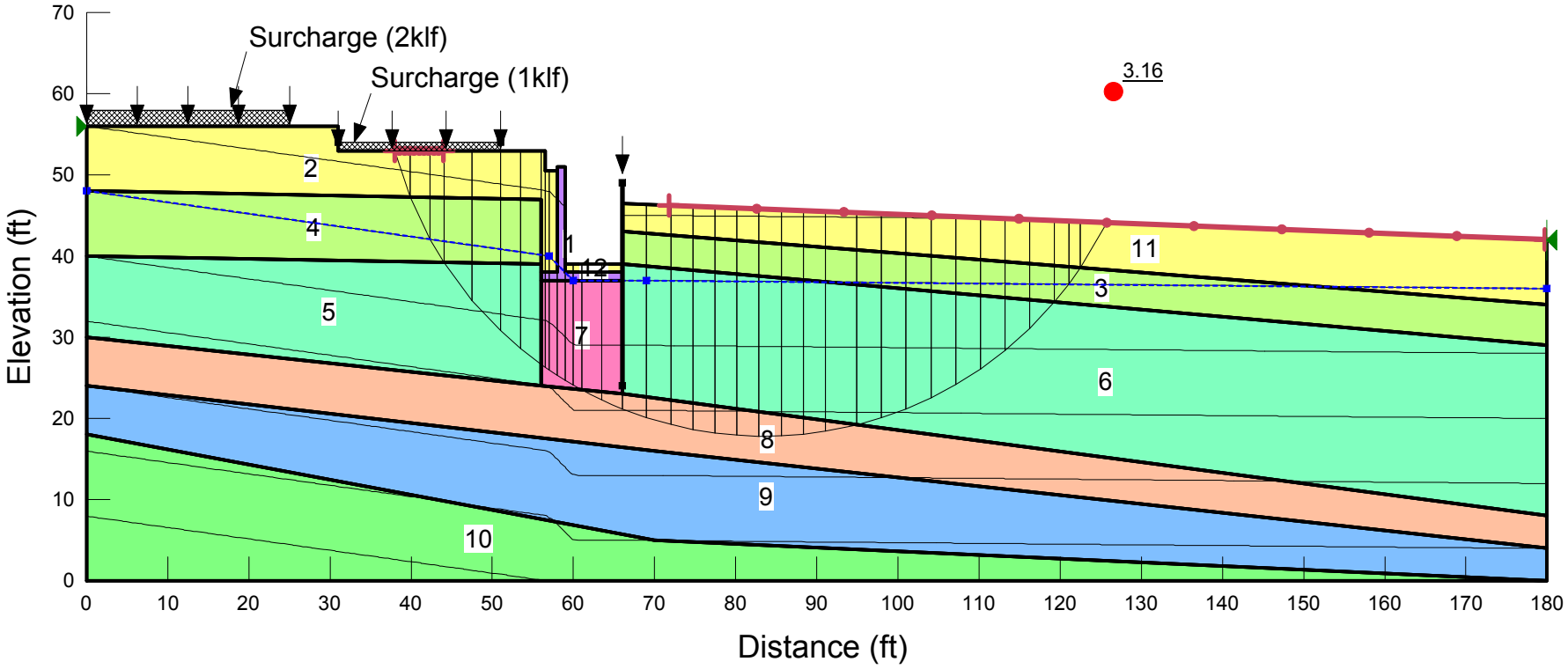
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 1A: Stop Work Condition
B-202
Seismic (Ah = 0.085g)



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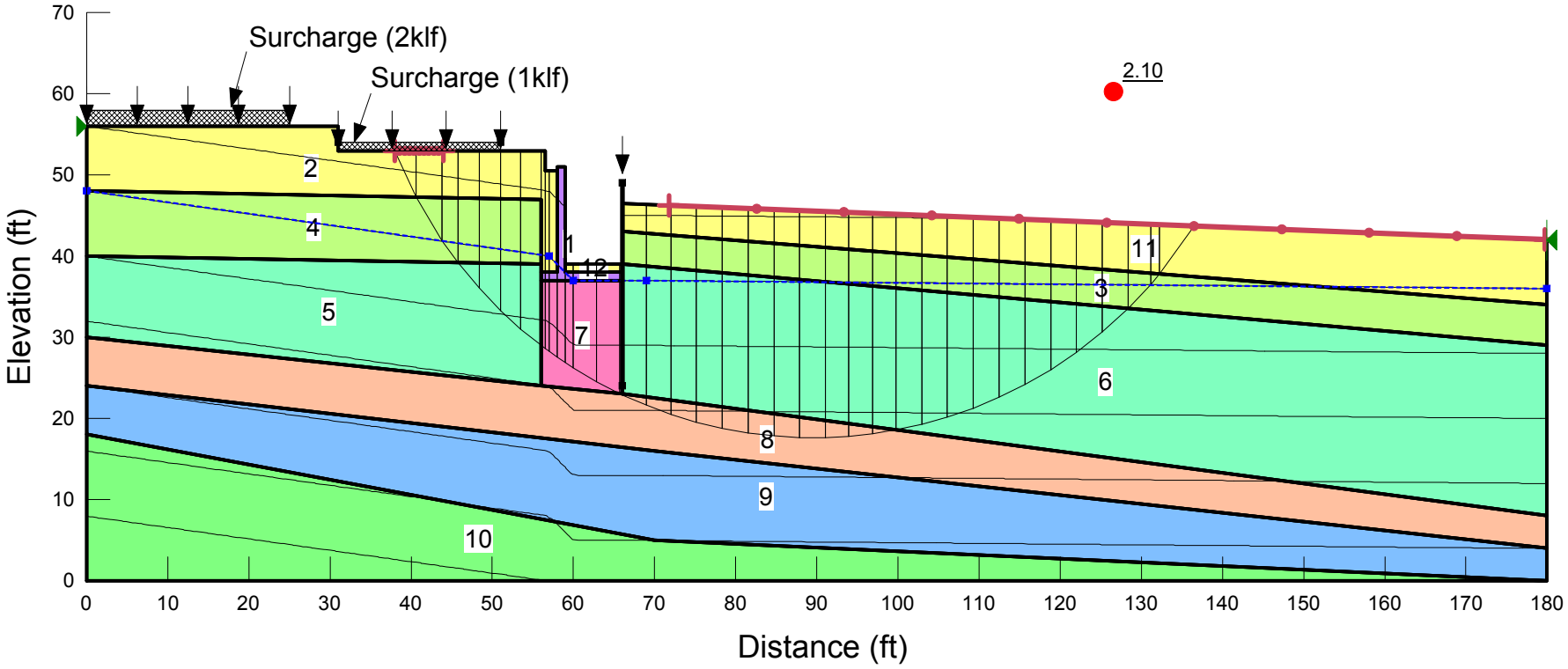
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 1B: Stop Work Condition
B-202
Static



Materials
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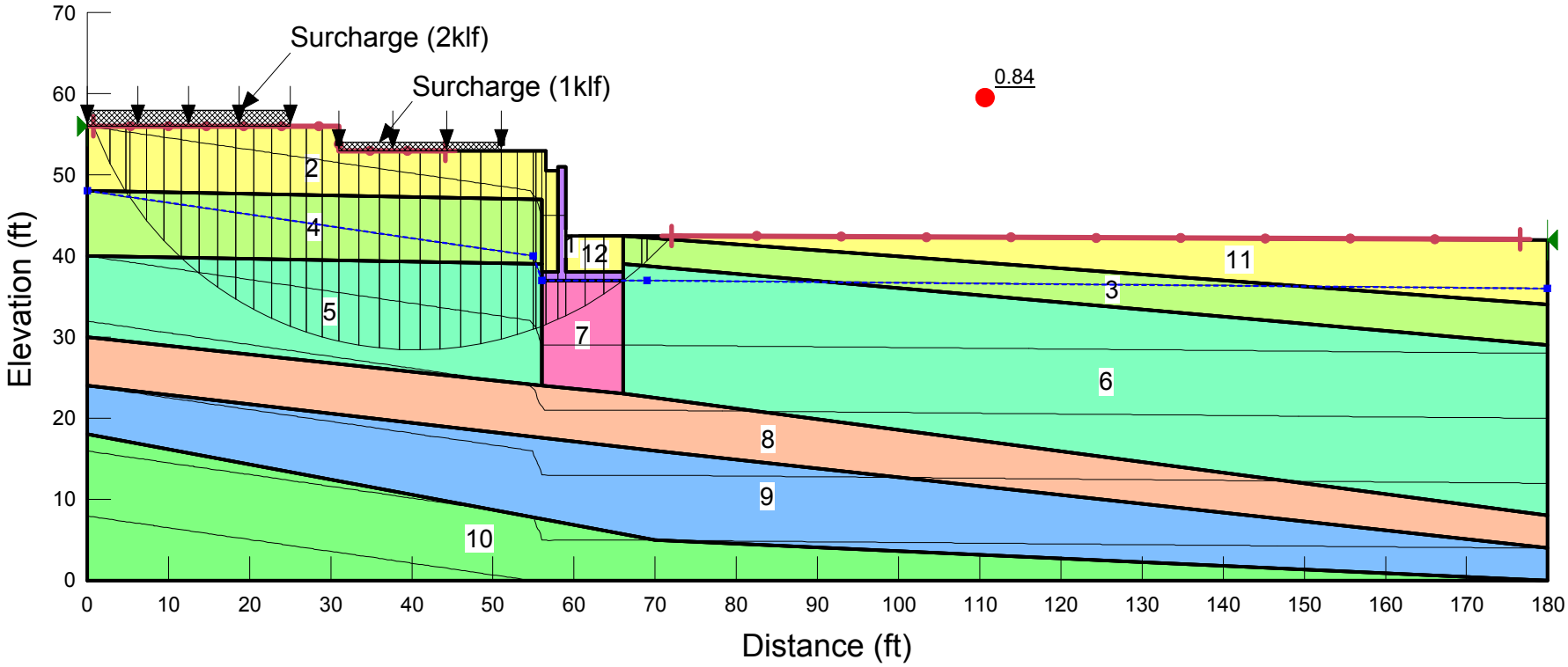
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 1B: Stop Work Condition
B-202
Seismic (Ah = 0.085g)



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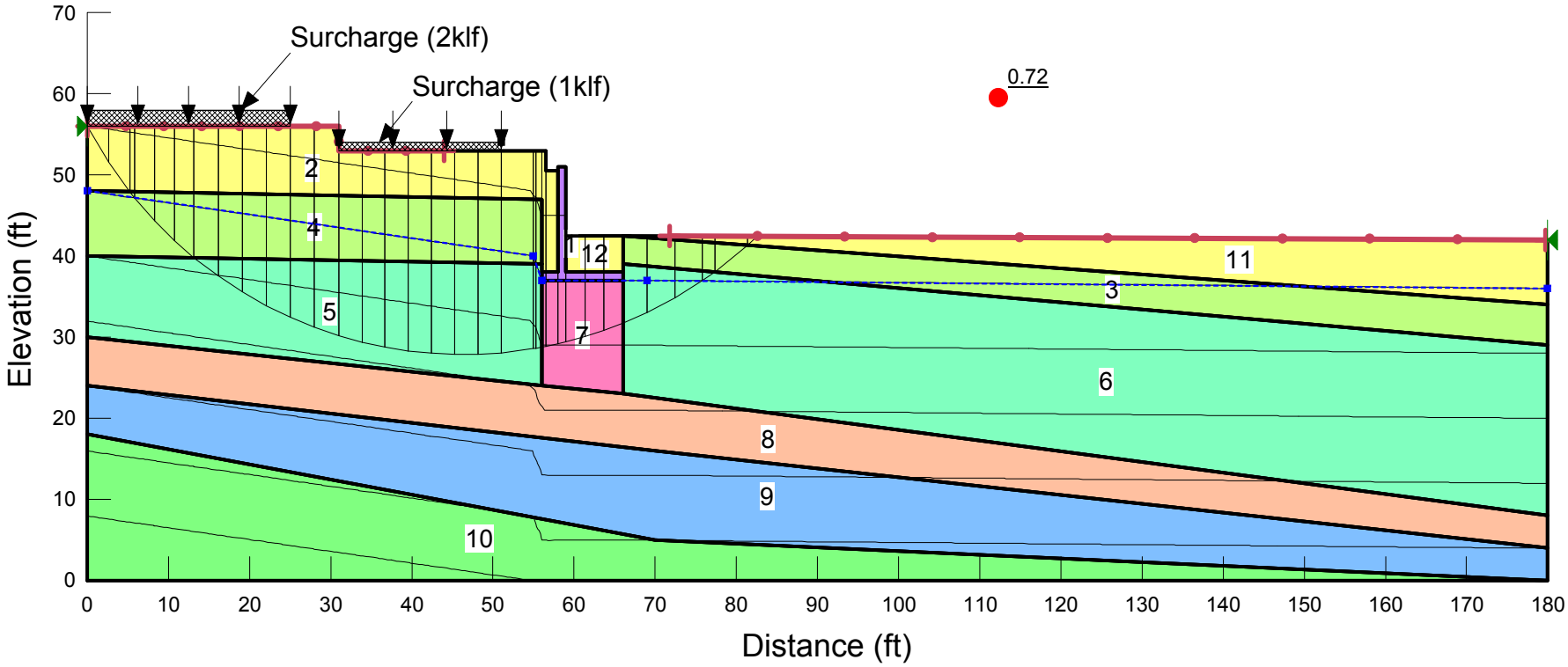
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 2: As-Permitted
B-202
Static



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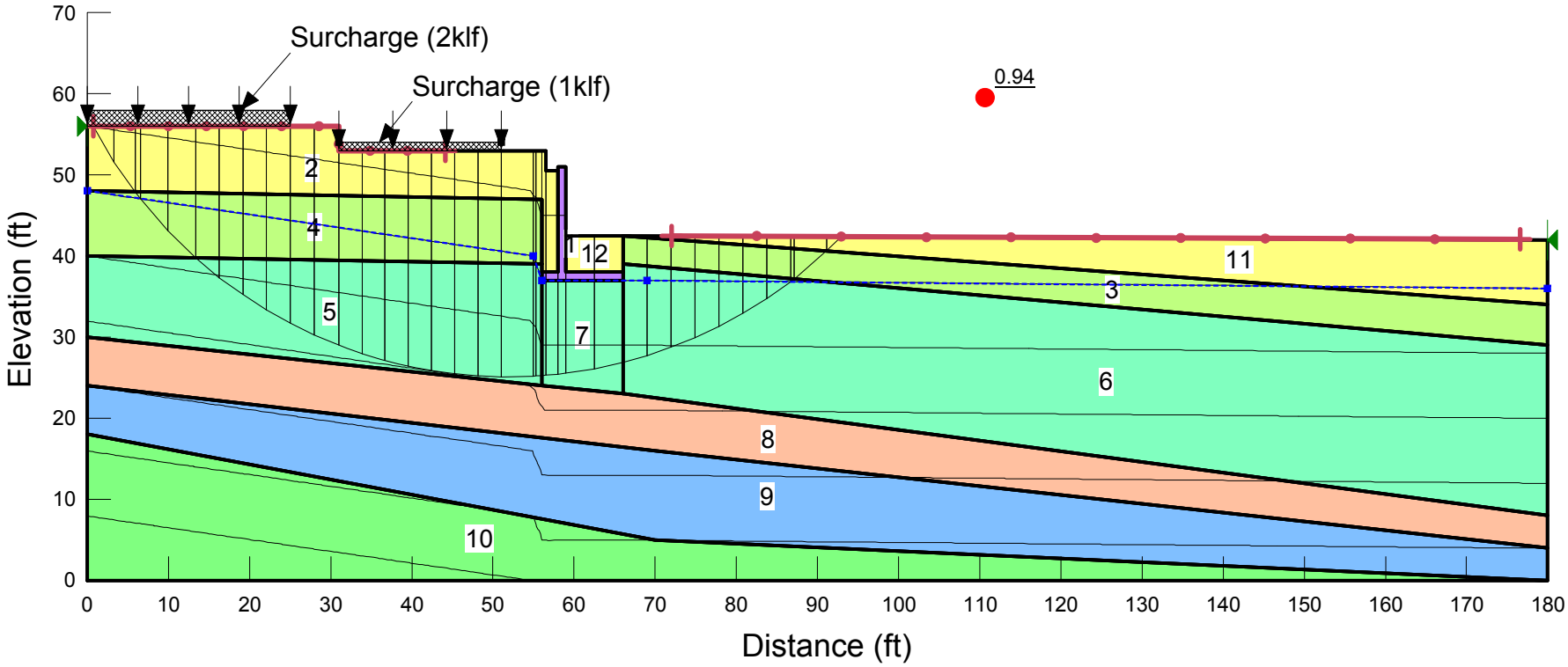
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 2: As-Permitted
B-202
Seismic (Ah = 0.085g)



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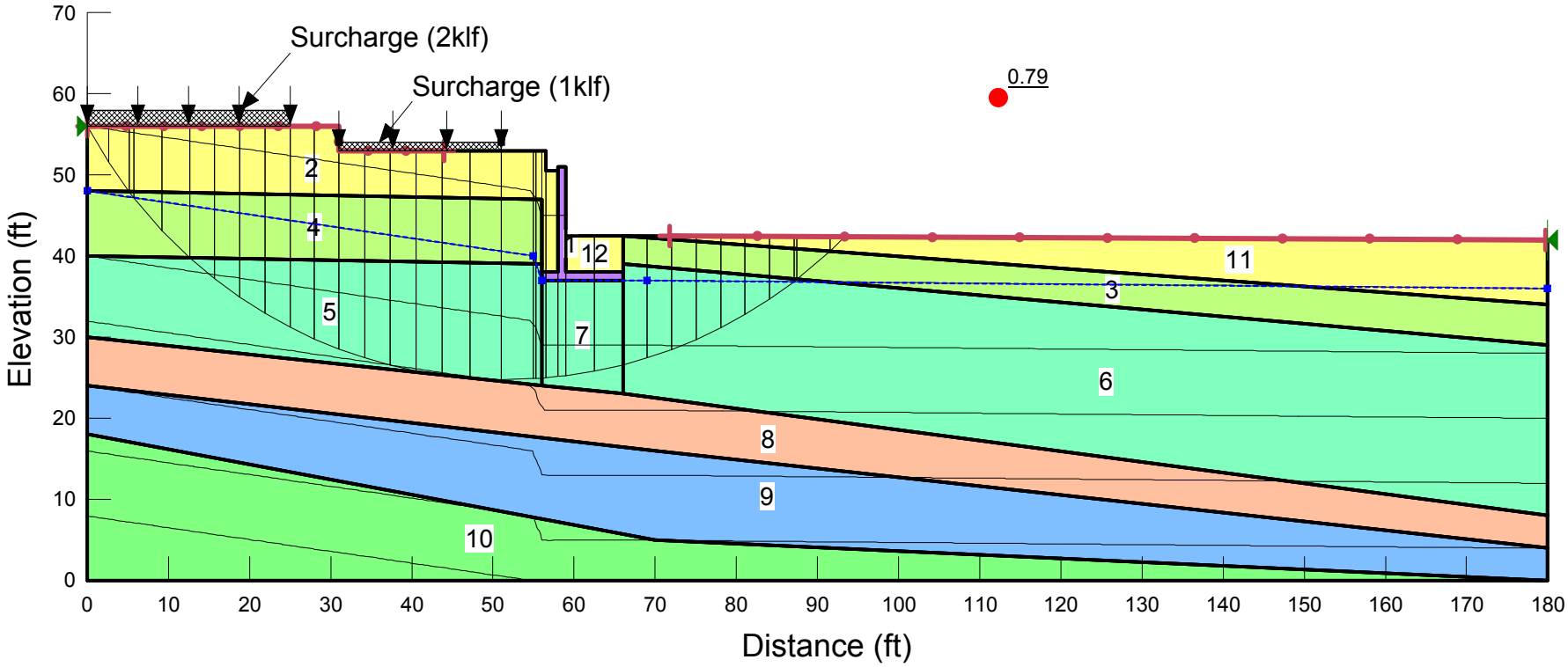
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 3: As-Permitted
Without Ground Improvement
B-202
Static



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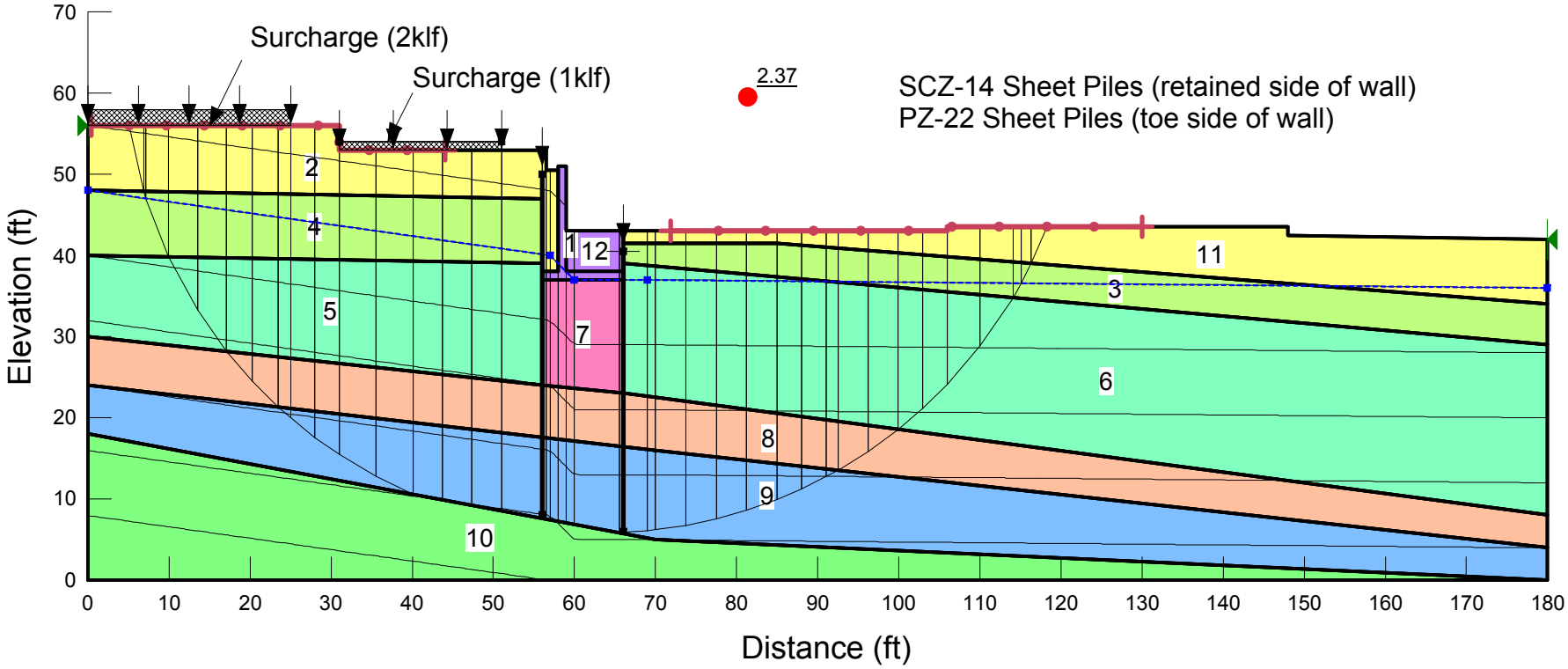
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 3: As-Permitted
Without Ground Improvement
B-202
Seismic (Ah = 0.085g)



Materials
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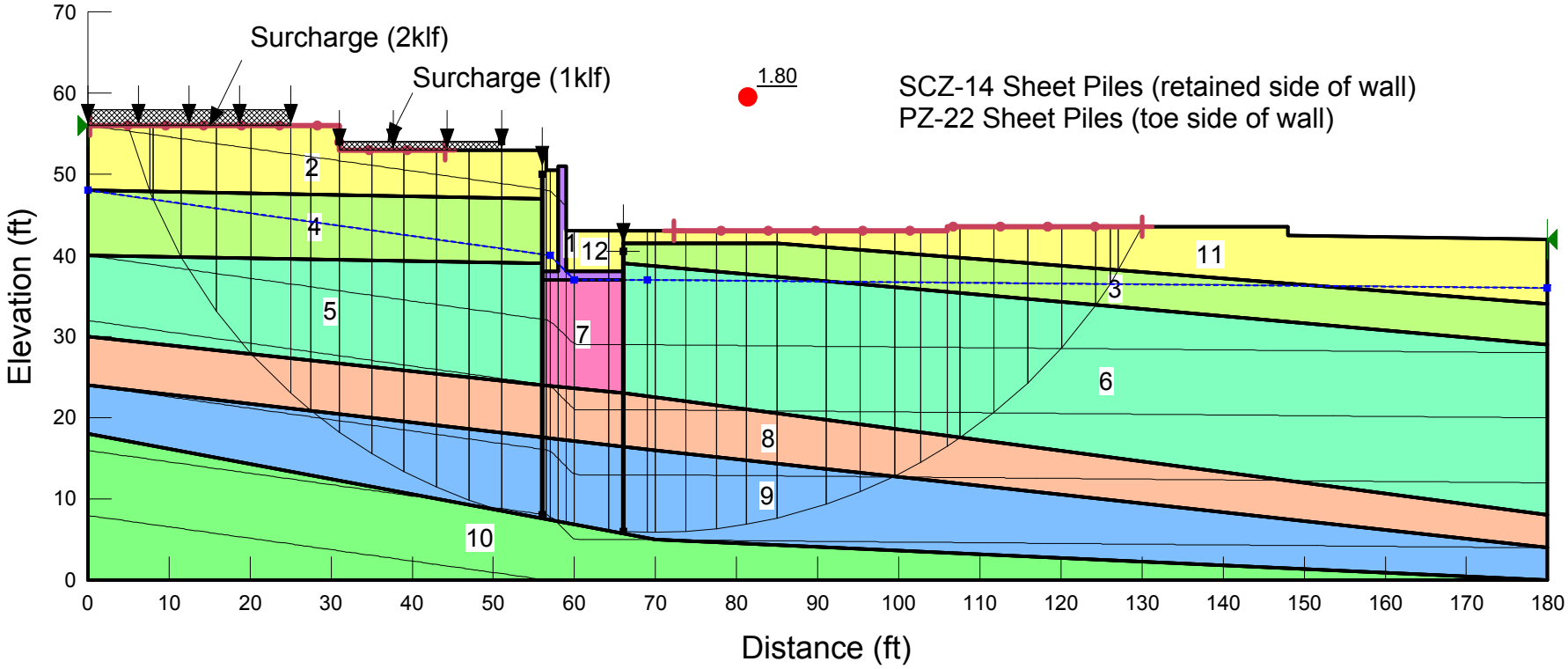
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 5: Repair Final
B-202
Static



Materials
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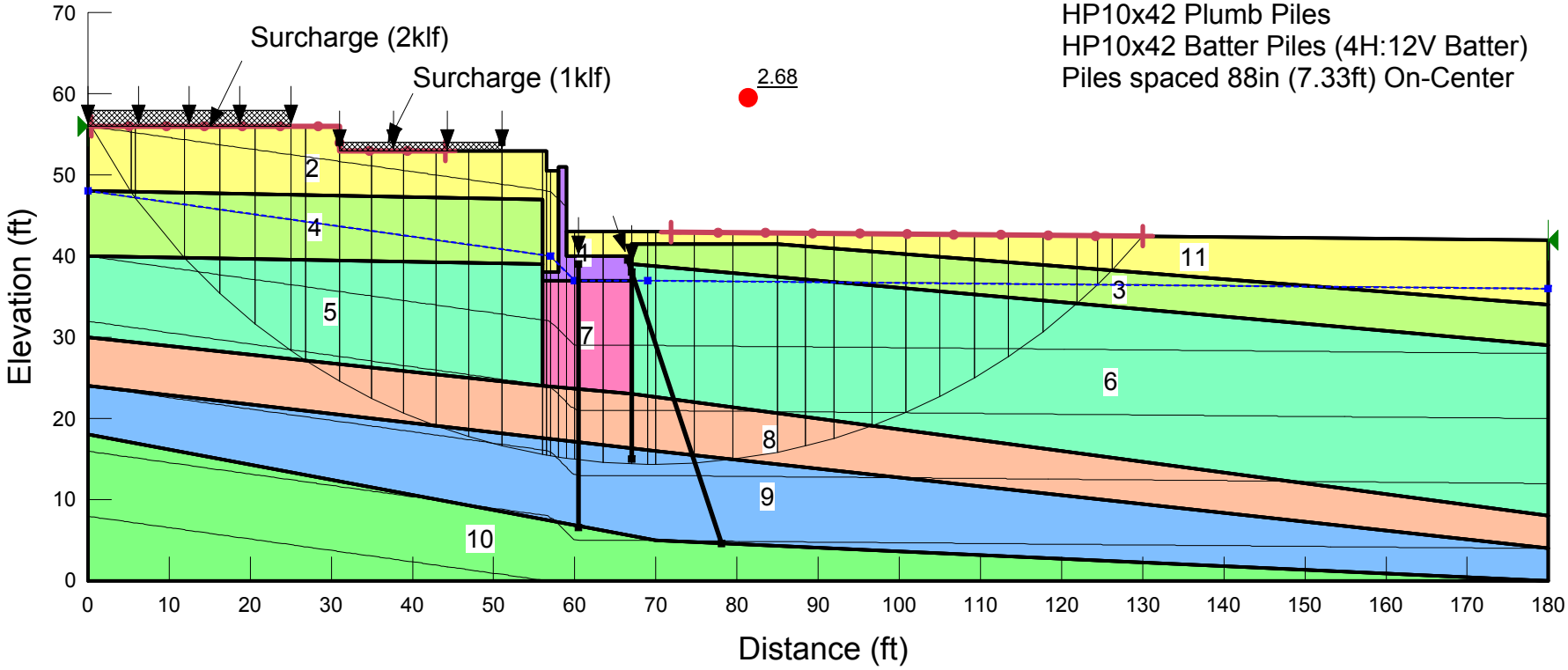
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 5: Repair Final
B-202
Seismic (Ah = 0.085g)



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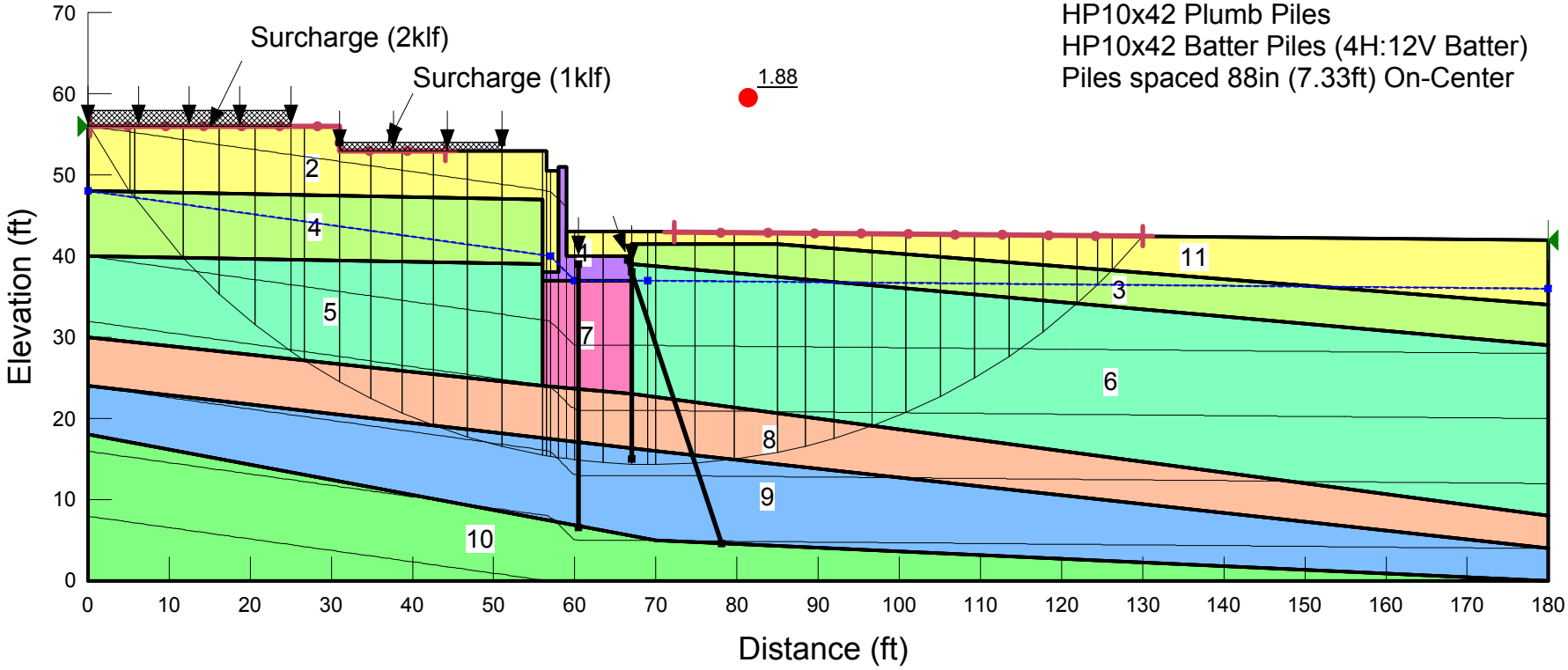
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 5: Repair Final
B-202
Static



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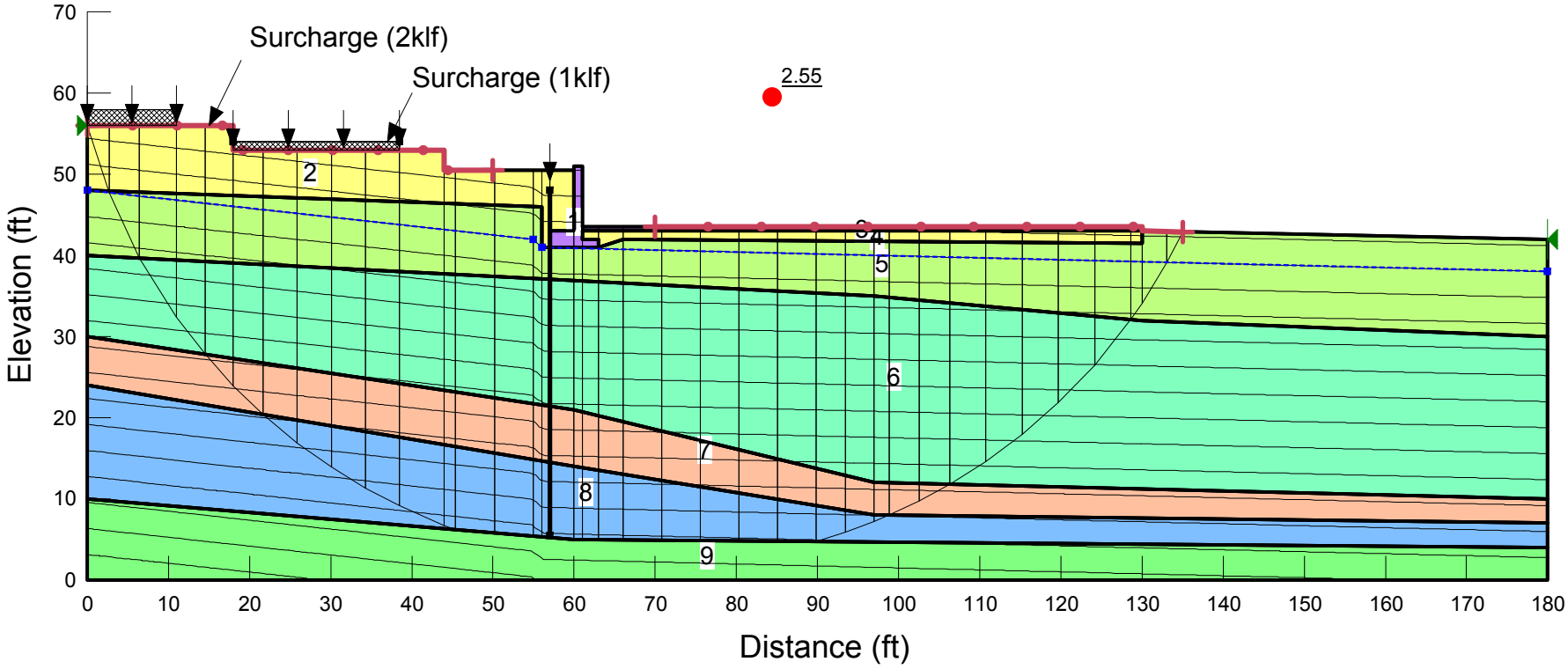
9. silty SAND, sm gravel: Unit Wt = 125 pcf, Phi = 30 deg
10. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 5: Repair Final
B-202
Seismic (Ah = 0.085g)



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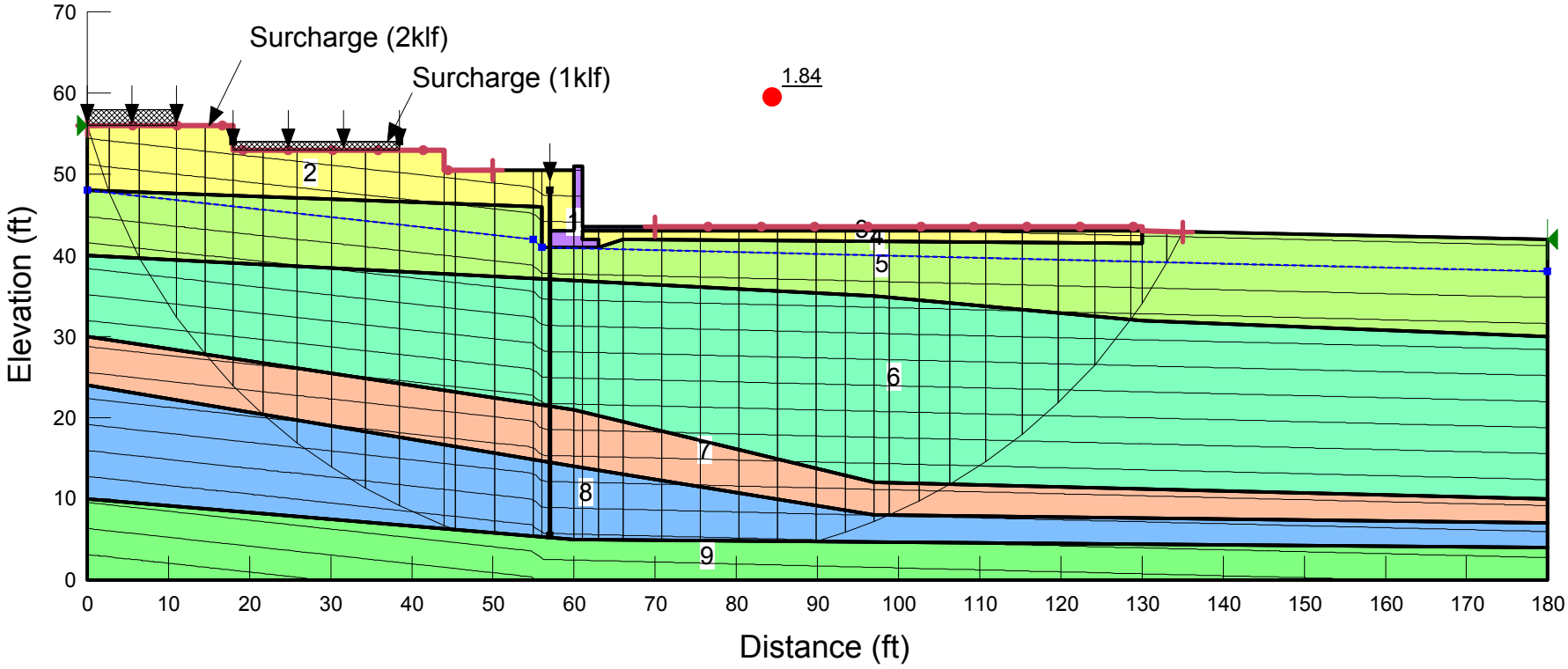
Seaport Lofts
113 Newbury Street
Portland, Maine

Case 5: Repair Final
20.2-line to 21-line
Static



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9. Bedrock

Seaport Lofts
113 Newbury Street
Portland, Maine

Case 5: Repair Final
20.2-line to 21-line
Static

APPENDIX C

REAR SHEETPILE WALL
INSTALL NEW SCZ SHEETPILE TO BEDROCK WITH WEEPHOLES ONE FOOT ABOVE WALL FOOTING DRAIN ELEVATION. FILL AREA BETWEEN RETAINING WALL FOOTING AND SHEET PILE WITH STRUCTURAL CONCRETE

B-201

B-202

20.2-21

REAR SHEETPILE WALL
INSTALL NEW SCZ SHEETPILE TO BEDROCK WITH WEEPHOLES ONE FOOT ABOVE WALL FOOTING DRAIN ELEVATION. FILL AREA BETWEEN RETAINING WALL FOOTING AND SHEET PILE WITH STRUCTURAL CONCRETE

4" PVC INSPECTION PORT WITH CAST IRON GRATE & COVER

WALL FOOTING DRAIN ON TOP OF FOOTING

WALLS TO REMAIN

CMU TO REMAIN

WALL TO REMAIN

TW 53.58 (MATCH EXIST.)

TW 43.20

TW 50.42

TW 52.33 (MATCH EXIST.)

PILE SUPPORTED RETAINING WALL

FILL AREA BETWEEN RETAINING WALL FOOTING AND SHEETPILE WITH STRUCTURAL CONCRETE

BUTTRESS FILL TO ELEVATION 49

FRONT SHEETPILE WALL
PZ-22 SHEETPILE

ISOLATOR ROW

RD INV. 34.60
RD INV. 34.90

24" HDPE L=15' S=0.01

CB-1 (6" DIA.) RIM=39.15 (SEE SHEET 12 FOR CONSTRUCTION DETAILS & INLET PROTECTION)

12" HDPE L=15' S=0.01

12" HDPE L=23' S=0.006

12" HDPE L=65' S=0.005

44' W x 53.43' L STORMTECH STORM WATER STORAGE FACILITY, SEE DETAIL

8"RD

6"RD

10"RD

12"SD

15"SD

FIRE PROTECTION STAND PIPE

STAIR A

STAIR B

ELEVATOR

ENTRY VESTIBULE

UNIT 1.7 F.F.E. 40.42

UNIT 1.6 F.F.E. 41.08

UNIT 1.5 F.F.E. 41.75

UNIT 1.4 F.F.E. 42.42

UNIT 1.3 F.F.E. 43.08

UNIT 1.2 F.F.E. 43.75

UNIT 1.1 F.F.E. 43.75

MECHANICAL ROOM/ STORAGE AREA F.F.E. 43.75

SECONDARY ENTRANCE

GRADE BREAK

STABILIZED CONSTRUCTION ENTRANCE

CB-3 RIM=39.25 INV. IN=33.17 INV. OUT=33.07

CB-4 RIM=49.25 INV. OUT =38.65

8" x 8" TEE UP FROM 8" RD— CONNECT TO DOWNSPOUTS PER ARCHT. DWG. FOR EXACT LOCATIONS. PROVIDE CLEANOUT TO GRADE IN C.I. VALVE BOX

TELCOM FROM EXISTING CONDUIT DUCT BANK — CONCRETE ENCASED (3 AT 4")

TELCOM

(2) 5" PVC SCH. 40 CONDUITS— 30" DEPTH WITH MARKER TAPE— COORDINATE WITH CITY PUBLIC SERVICES

SEE NOTE 4

SPRINKLER CONNECTION

HYDRANT TO REMAIN

7" CURB, TYP. (UNIT 1, 3-6)

5" CURB

4" CURB

SAN INV. 35.75

DMH-1 RIM=39.60 INV. IN= 33.35 (6"FD) INV. IN=32.94 (15") INV. OUT=32.60

DMH-2 RIM=42.20 INV. IN=31.64 INV. OUT=31.54

WYE CONNECTION

15" SDR 35 PVC L=120' S=0.008

15" SDR 35 PVC L=97' S=0.0047

CONNECT NEW 6" SANITARY SERVICE TO EXISTING 12" MAIN WITH FERNCO CONNECTION OR APPROVED EQUAL,, APPROX. 6" INV. 33.63

NEW D.I. WATER SERVICE, TAPPING SLEEVES AND VALVES PER P.W.D. REQUIREMENTS. RE-USE SALVAGED VALVE BOXES.

SUPPORT SERVICES @ CROSSING, RELOCATE IF FIELD CONDITIONS REQUIRE, TYP. @ CROSSINGS

MATCH EXISTING GRADES

NEW GAS SERVICE — COORDINATE WITH UNITIL (RESTORE PAVING)

EXIST. CB WITH NEW INLET STONE. PLUG AND ABANDON EXIST. OUTFALL PIPE. MODIFY OPENING FOR NEW 12" SD. INV. OUT=40.24

12" SDR 35 PVC L=32' S=0.024

12" SDR 35 PVC L=20' S=0.046

18" SDR 35 PVC L=300' S=0.04

NEWBURY STREET

HANCOCK STREET

2+00

1+00

0+00

6+00

6+75

NOTES:

1. PLAN WAS PREPARED FROM THE FOLLOWING PLANS: A SCALE PLAN OF THE SITE ENTITLED "FOUNDATION PLAN," PREPARED BY JSN ASSOCIATES, INC., DATED 12/17/2014; A 1"=10' SCALE PLAN OF THE SITE ENTITLED "GRADING AND UTILITY PLAN," PREPARED BY SEBAGO TECHNICS, DATED 7/16/2013, REVISED 12/31/2014.
2. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
3. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 10 20 Feet

S.W.COLE ENGINEERING, INC.

LANDRY/FRENCH CONSTRUCTION

STABILIZATION OPTION 1
DOUBLE SHEETPILES

EVALUATION OF APPARENT SLOPE MOVEMENT
SEAPORT LOFTS
113 NEWBURY STREET, PORTLAND, MAINE

Job No.: 14-1366.2 Scale: 1" = 10'
Date : 04/30/2015 Sheet:

R:\2014\14-1366.2\CAD\Drawings\14-1366.2 Base.dwg, 4/30/2015 4:43:58 PM, 11, CEM, S. W. Cole Engineering, Inc.

PILES SHOWN FOR ILLUSTRATION - FINAL FOUNDATION PLAN UNDER DEVELOPEMENT FORTHCOMING

PILE SUPPORTED RETAINING WALL
INSTALL NEW HP10x42 VERTICAL PILES
INSTALL NEW HP10x42 4H:12V BATTER

REAR SHEETPILE WALL
INSTALL NEW SCZ SHEETPILE TO BEDROCK WITH WEEPHOLES ONE FOOT ABOVE WALL FOOTING DRAIN ELEVATION. FILL AREA BETWEEN RETAINING WALL FOOTING AND SHEET PILE WITH STRUCTURAL CONCRETE

B-201 | B-202 | 20.2-21

BUTTRESS FILL TO ELEVATION 49

UNIT 1.7 F.F.E. 40.42
UNIT 1.6 F.F.E. 41.08
UNIT 1.5 F.F.E. 41.75
UNIT 1.4 F.F.E. 42.42
UNIT 1.3 F.F.E. 43.08
UNIT 1.2 F.F.E. 43.75
UNIT 1.1 F.F.E. 43.75

ELEVATOR
ENTRY VESTIBULE F.F.E. 41.75
STAIR A
STAIR B
MECHANICAL ROOM/ STORAGE AREA F.F.E. 43.75

NEWBURY STREET
HANCOCK STREET

NOTES:

1. PLAN WAS PREPARED FROM THE FOLLOWING PLANS: A SCALE PLAN OF THE SITE ENTITLED "FOUNDATION PLAN," PREPARED BY JSN ASSOCIATES, INC., DATED 12/17/2014; A 1"=10' SCALE PLAN OF THE SITE ENTITLED "GRADING AND UTILITY PLAN," PREPARED BY SEBAGO TECHNICS, DATED 7/16/2013, REVISED 12/31/2014.
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0 10 20 Feet

S.W.COLE ENGINEERING, INC.

LANDRY/FRENCH CONSTRUCTION
STABILIZATION OPTION 2
PILE SUPPORTED RETAINING WALL
EVALUATION OF APPARENT SLOPE MOVEMENT
SEAPORT LOFTS
113 NEWBURY STREET, PORTLAND, MAINE

Job No.: 14-1366.2 Scale: 1" = 10'
Date : 04/30/2015 Sheet: