| PAGE DESCRIPTION | SHEET NUMBER |
|---|---|
| COVER SHEET | 1 |
| PLAN VIEW | 2 |
| DESIGN CRITERIA | 3 |
| MATERIALS AND SPECS | APPENDIX A |
| CONSTRUCTION DRAWINGS | 4 |
| QUANTITY ESTIMATES | 5 |
| VERTI-BLOCK ELEVATIONS | APPENDIX B |
| WALL 1 ELEVATION VIEW | 6 - 10 |
| WALL 2 ELEVATION VIEW | 11 |
| WALL 3 ELEVATION VIEW | 12 - 14 |
| WALL 4 ELEVATION VIEW | 15 - 16 |
| WALL 5 ELEVATION VIEW | 17 - 21 |
| WALL 6 ELEVATION VIEW | 22 - 23 |
| WALL 7 ELEVATION VIEW | 24 - 25 |
| WALL 8 ELEVATION VIEW | 26 |
| WALL 9 ELEVATION VIEW | 27 |
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| WALL 11 ELEVATION VIEW | 32 - 34 |
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| VERTI-BLOCK CROSS SECTIONS | APPENDIX C |
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| SECTION VIEW - WALL 3 | 42 |
| SECTION VIEW - WALL 4 | 43 |
| SECTION VIEW - WALLS 5 & 6 | 44 |
| SECTION VIEW - WALL 7 | 45 |
| SECTION VIEW - WALL 8 | 46 |
| SECTION VIEW - WALLS 9, 10, & 12 | 47 |
| SECTION VIEW - WALL 11 | 48 |
| CALCULATIONS - STATIC & SEISMIC | APPENDIX D |
| GLOBAL STABILITY - STATIC & SEISMIC | APPENDIX E |


SCALE 1" = 250'-0"

0 125 250 500

VERTI-BLOCK RETAINING WALL DESIGN PACKAGE
SUNDOWN CONDOS PHASE 2
6550 NORTH POWDER MOUNTAIN ROAD
EDEN, UTAH

Alan E Money Digitally signed by Alan E Money
Date: 2025.05.14 14:18:13 -07'00'

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS COVER SHEET | SHEET NUMBER: 1 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=250' | | |

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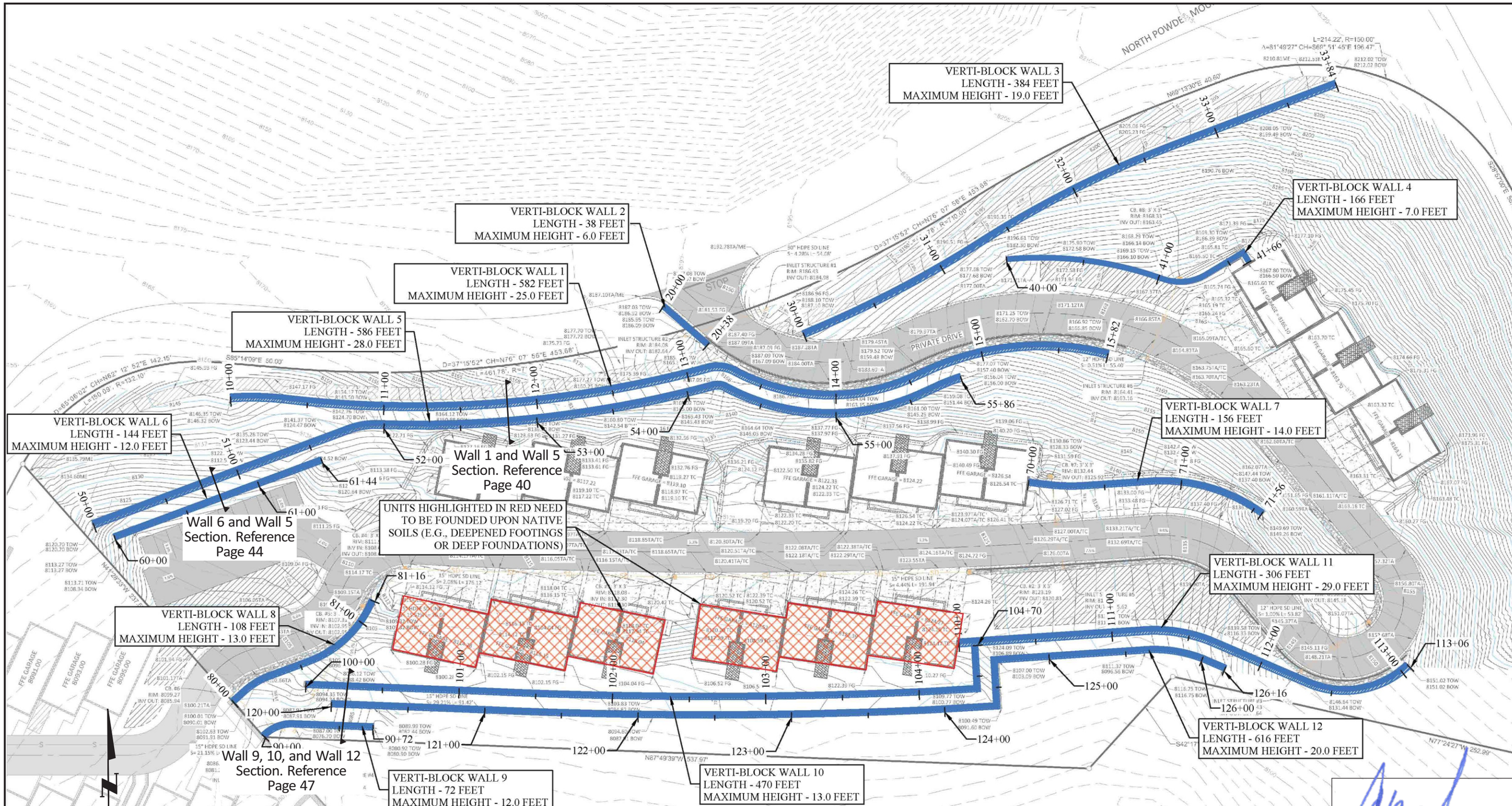
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




PLAN VIEW

REFERENCE IMAGE FROM FAWKES CONSULTANTS, INC., SUNDOWN CONDOS PHASE 2, GRADING PLAN, SHEET C300, SHEETS DATED NOVEMBER 2, 2024.

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS PLAN VIEW | SHEET NUMBER: 2 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | CONSULTING ENGINEERING SERVICES |
| Scale: 1"=60' | | | |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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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STATE OF UTAH
May 14, 2025

## GENERAL NOTES

BASIS OF DESIGN

1. BUILDING CODE ..... 2018 INTERNATIONAL BUILDING CODE (IBC)

2. RETAINING WALL:
   A. ANALYSIS USED IN DESIGN:

| ANALYSIS | DESIGN REFERENCES/SOFTWARE |
|---|---|
| INTERNAL/EXTERNAL STABILITY | VERTI-BLOCK RETAINING WALLS, 2019<br>VERTICRETE WALL DESIGNER SOFTWARE |
| GLOBAL STABILITY | SLIDE 2: ROCSCIENCE, INC. |

3. WALLS
   A. WALL GEOMETRY AND LOADING CONDITIONS:

| WALL | LENGTH(FT) | MAX. HEIGHT(FT) | BACKSLOPE CONDITIONS | SURCHARGE LOADING |
|---|---|---|---|---|
| 1 | 582 | 25 | VARIES | NONE |
| 2 | 38 | 6 | VARIES | NONE |
| 3 | 384 | 19 | VARIES | NONE |
| 4 | 166 | 7 | VARIES | NONE |
| 5 | 586 | 28 | VARIES | 3,375 PSF WALL 1 |
| 6 | 144 | 12 | VARIES | 3,780 PSF WALL 5 |
| 7 | 156 | 14 | VARIES | NONE |
| 8 | 108 | 13 | VARIES | NONE |
| 9 | 72 | 12 | VARIES | 1,910 PSF WALL 12 & WALL 10 |
| 10 | 470 | 13 | VARIES | 1,890 PSF CONDO |
| 11 | 306 | 29 | VARIES | NONE |
| 12 | 616 | 20 | VARIES | 3,915 PSF WALL 11 |

4. SOILS:
   A. SOIL CONDITIONS USED IN DESIGN:

| EARTH MATERIALS | FRICTION ANGLE | COHESION | UNIT WEIGHT |
|---|---|---|---|
| REINFORCED SOIL | 38° | 0 psf | 135 pcf |
| WEATHERED ROCK, SHALE, ARGILLITE | 25° | 3,000 psf | 155 pcf |

   B. COHESION USED ONLY DURING GLOBAL STABILITY ANALYSES

5. SEISMIC:
   A. SEISMIC PARAMETERS USED IN DESIGN:

| SEISMIC CRITERIA | INTERNAL, EXTERNAL & GLOBAL STABILITY | |
|---|---|---|
| | $PGA_M$ | $K_h$ |
| ASCE 7-16(IBC 2018) | 0.448g | 0.449g(INTERNAL)<br>0.187g(EXTERNAL)<br>0.224g(GLOBAL) |

6. CONSTRUCTION MATERIALS:
   A. VERTI-BLOCK
   B. MIRAFI 5XT AND 8XT GEOGRID
   C. FILL MATERIAL
   D. CLEAN CRUSHED STONE/GRAVEL
   E. 4 INCH PERFORATED PVC PIPE
   F. NON-WOVEN GEOTEXTILE FILTER

7. CONSTRUCTION SPECIFICATIONS
   A. FOR VERTI-BLOCK CONSTRUCTION, REFERENCE THE VERTI-BLOCK RETAINING WALL DESIGN MANUAL.

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| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: DESIGN CRITERIA | SHEET NUMBER: 3 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |

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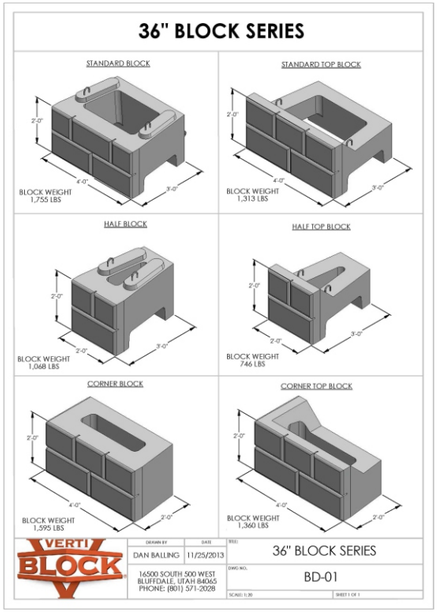
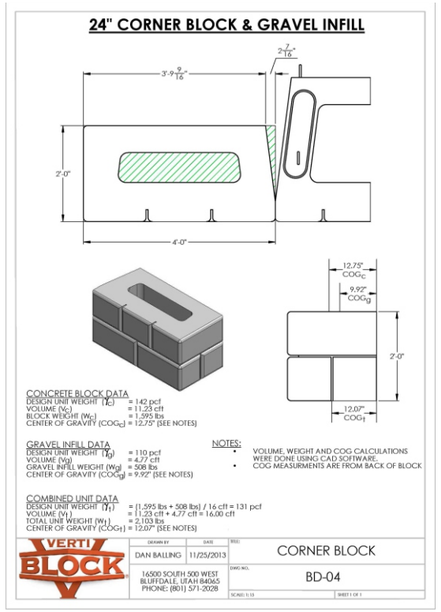
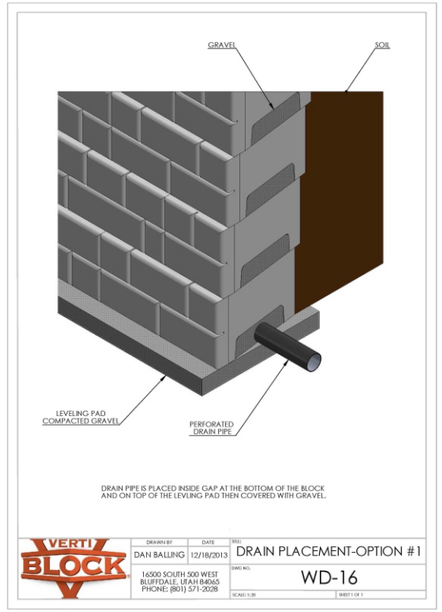
Revision: N/A

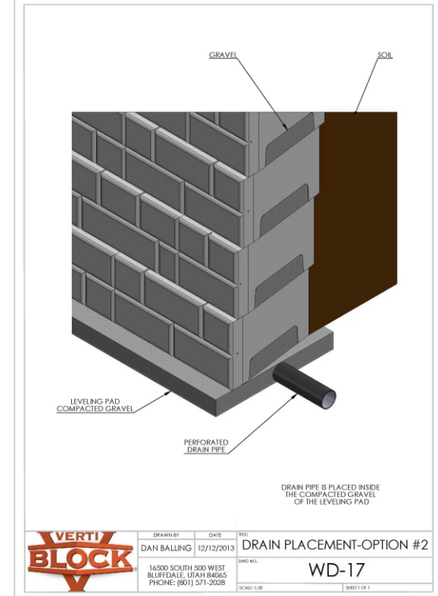
# Appendix A

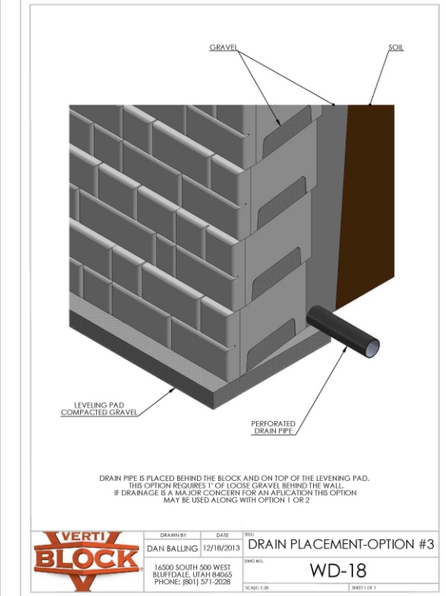
(Materiails and Specs)

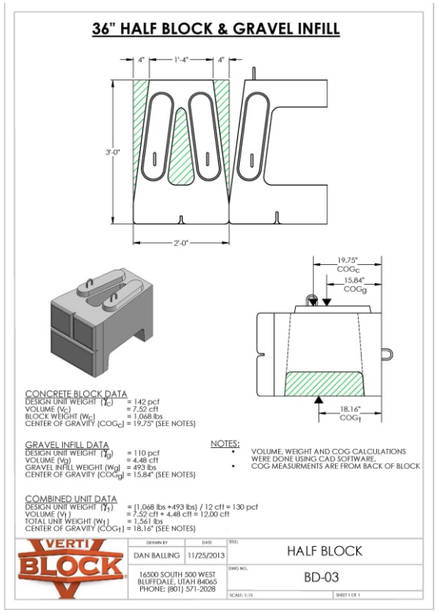


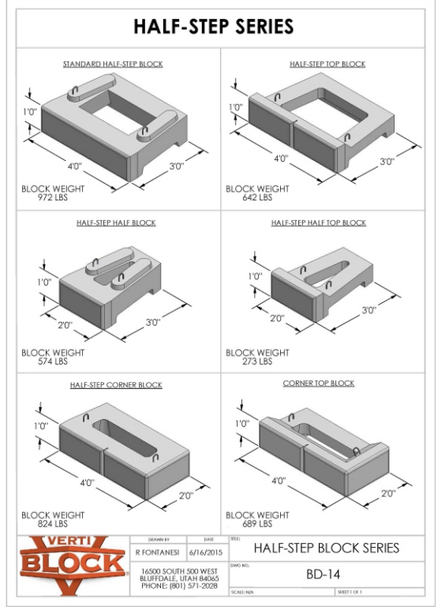



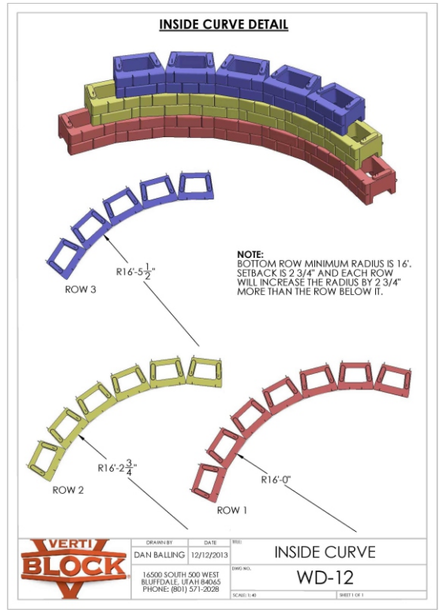



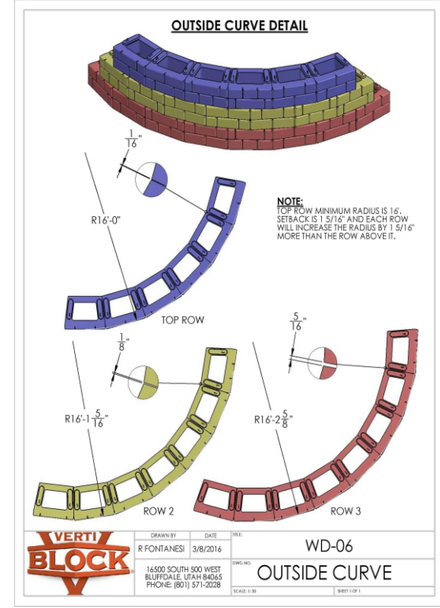



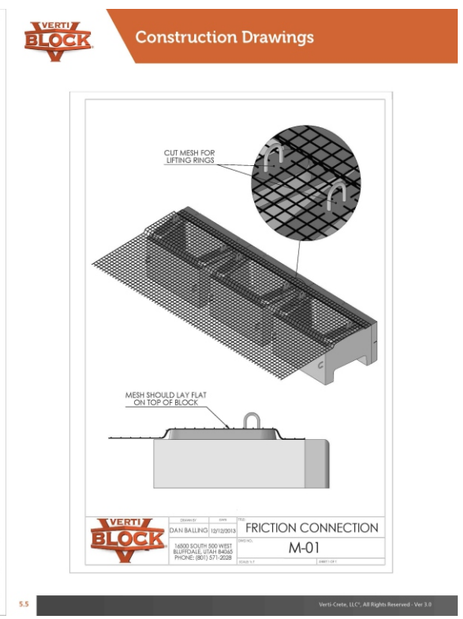




Construction Drawings Shown Used From
verti-block.com/design-resources/

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS CONSTRUCTION DRAWINGS | SHEET NUMBER: 4 | AMMTEC CONSULTANTS, PLLC |
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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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STATE OF UTAH
May 14, 2025

# VERTI-BLOCK RETAINING WALL ESTIMATED QUANTITIES

| MATERIAL | WALL 1 | WALL 2 | WALL 3 | WALL 4 | WALL 5 | WALL 6 | WALL 7 | WALL 8 | WALL 9 | WALL 10 | WALL 11 | WALL 12 | TOTAL | 10% CONTINGENCY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL VERTI-BLOCK WALL AREA | 6369.85 $ft^2$ | 120.68 $ft^2$ | 3442.23 $ft^2$ | 527.92 $ft^2$ | 5918.62 $ft^2$ | 960.47 $ft^2$ | 1075.90 $ft^2$ | 801.72 $ft^2$ | 540.99 $ft^2$ | 3882.62 $ft^2$ | 4394.96 $ft^2$ | 4259.63 $ft^2$ | 32295.59 $ft^2$ | 35,525.15 $ft^2$ |
| TOP VERTI-BLOCK UNITS | 70 | 8 | 51 | 28 | 71 | 14 | 16 | 11 | 5 | 64 | 34 | 82 | 454 | 500 |
| 36-INCH VERTI-BLOCK UNITS | 719 | 15 | 474 | 61 | 1217 | 133 | 154 | 118 | 42 | 544 | 697 | 559 | 4733 | 5207 |
| LEFT CORNER TOP VERTI-BLOCK UNITS | 21 | 1 | 20 | 0 | 23 | 5 | 10 | 5 | 2 | 11 | 14 | 15 | 127 | 140 |
| RIGHT CORNER TOP VERTI-BLOCK UNITS | 10 | 1 | 0 | 4 | 5 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 25 | 28 |
| 1-FOOT STEP TOP VERTI-BLOCK UNITS | 18 | 0 | 17 | 7 | 36 | 14 | 8 | 10 | 6 | 37 | 20 | 49 | 222 | 245 |
| 1-FOOT LEFT CORNER TOP VERTI-BLOCK UNITS | 20 | 0 | 12 | 1 | 21 | 5 | 9 | 5 | 1 | 11 | 14 | 15 | 114 | 126 |
| 1-FOOT RIGHT CORNER TOP VERTI-BLOCK UNITS | 9 | 0 | 0 | 4 | 4 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 24 | 27 |
| MIRAFI 5XT GEOGRID | 8241 $yd^2$ | 0 $yd^2$ | 2963 $yd^2$ | 0 $yd^2$ | 1209 $yd^2$ | 938 $yd^2$ | 872 $yd^2$ | 530 $yd^2$ | 177 $yd^2$ | 2,470 $yd^2$ | 6,340 $yd^2$ | 110 $yd^2$ | 23,850 $yd^2$ | 26,235 $yd^2$ |
| MIRAFI 8XT GEOGRID | 0 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 10989 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 0 $yd^2$ | 4,165 $yd^2$ | 15,154 $yd^2$ | 16,670 $yd^2$ |
| GRANULAR FILL FOR REINFORCED ZONE | 8000 $yd^3$ | 17 $yd^3$ | 3100 $yd^3$ | 90 $yd^3$ | 14100 $yd^3$ | 1200 $yd^3$ | 1300 $yd^3$ | 650 $yd^3$ | 280 $yd^3$ | 2,900 $yd^3$ | 6,800 $yd^3$ | 6,400 $yd^3$ | 44,837 $yd^3$ | 49,321 $yd^3$ |
| DRAINAGE AND INFILL GRAVEL | 400 $yd^3$ | 11 $yd^3$ | 241 $yd^3$ | 41 $yd^3$ | 581 $yd^3$ | 70 $yd^3$ | 82 $yd^3$ | 62 $yd^3$ | 25 $yd^3$ | 278 $yd^3$ | 329 $yd^3$ | 297 $yd^3$ | 297 $yd^3$ | 327 $yd^3$ |
| LEVELING PAD CRUSHED STONE | 45 $yd^3$ | 3 $yd^3$ | 29 $yd^3$ | 13 $yd^3$ | 44 $yd^3$ | 11 $yd^3$ | 12 $yd^3$ | 8 $yd^3$ | 6 $yd^3$ | 35 $yd^3$ | 23 $yd^3$ | 46 $yd^3$ | 2,417 $yd^3$ | 2,659 $yd^3$ |
| 4-INCH PERFORATED DRAINAGE PIPE | 582 ft | 38 ft | 384 ft | 166 ft | 586 ft | 144 ft | 156 ft | 108 ft | 72 ft | 470 ft | 306 ft | 616 ft | 3,628 ft | 3,991 ft |
| 6-OZ NON-WOVEN GEOTEXTILE FABRIC | 260 $yd^2$ | 17 $yd^2$ | 171 $yd^2$ | 74 $yd^2$ | 261 $yd^2$ | 64 $yd^2$ | 70 $yd^2$ | 48 $yd^2$ | 32 $yd^2$ | 209 $yd^2$ | 136 $yd^2$ | 274 $yd^2$ | 1,616 $yd^2$ | 1,778 $yd^2$ |

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May 14, 2025

Project Number: AZ 2025

Engineered By: Alan E. Money

DRAWING TITLE: QUANTITY ESTIMATES

SHEET NUMBER: 5

PROJECT NAME: SUNDOWN CONDOS PHASE 2
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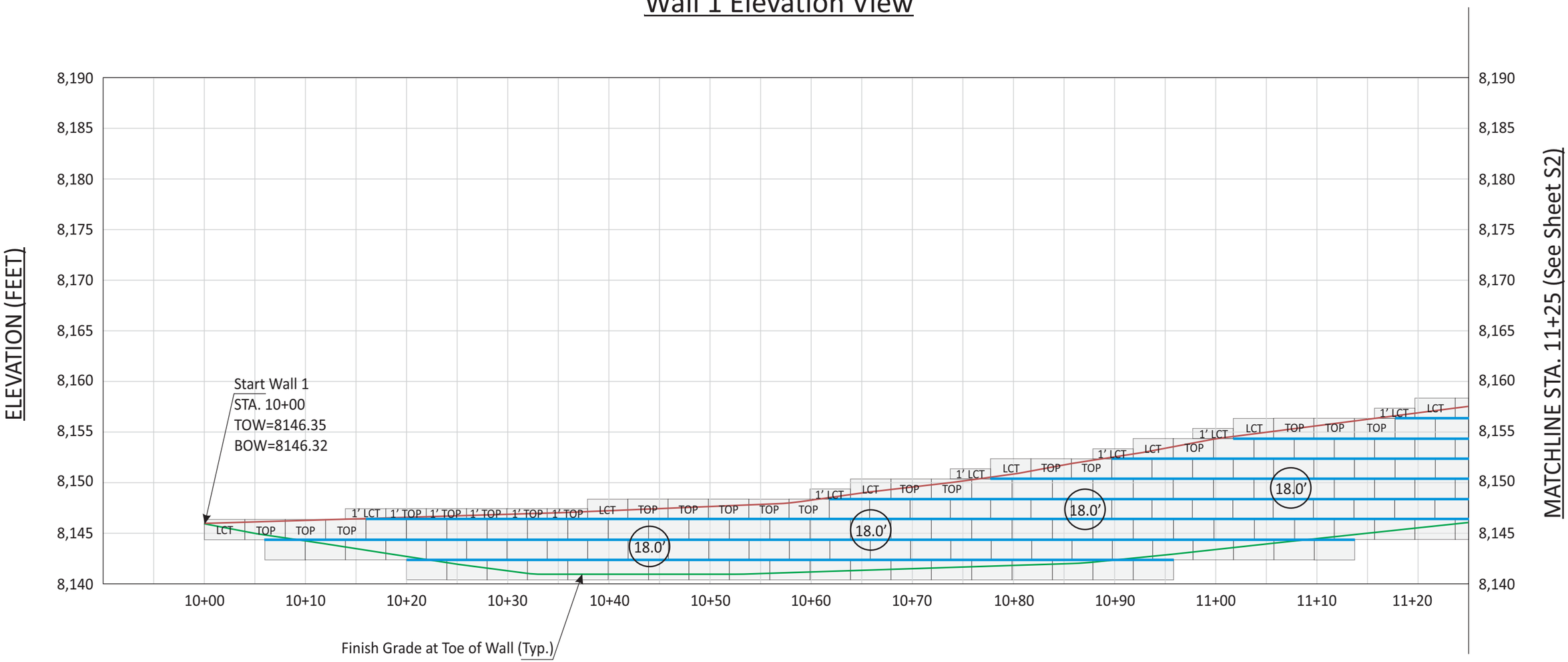
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Appendix B

(Verti-Block Wall Elevations)

# Wall 1 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT | LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT | 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP | 1-FOOT TALL 36-INCH TOP BLOCK |
| | | | | | MIRAFI 8XT GEOGRID |
| TOP | 36-INCH TOP BLOCK | | 36-INCH BLOCK | X.X' | GEOGRID LENGTH (MINIMUM) |
| | | | | | MIRAFI 5XT GEOGRID |
| | | | | | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
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STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 1 ELEVATION VIEW– | SHEET NUMBER: 6 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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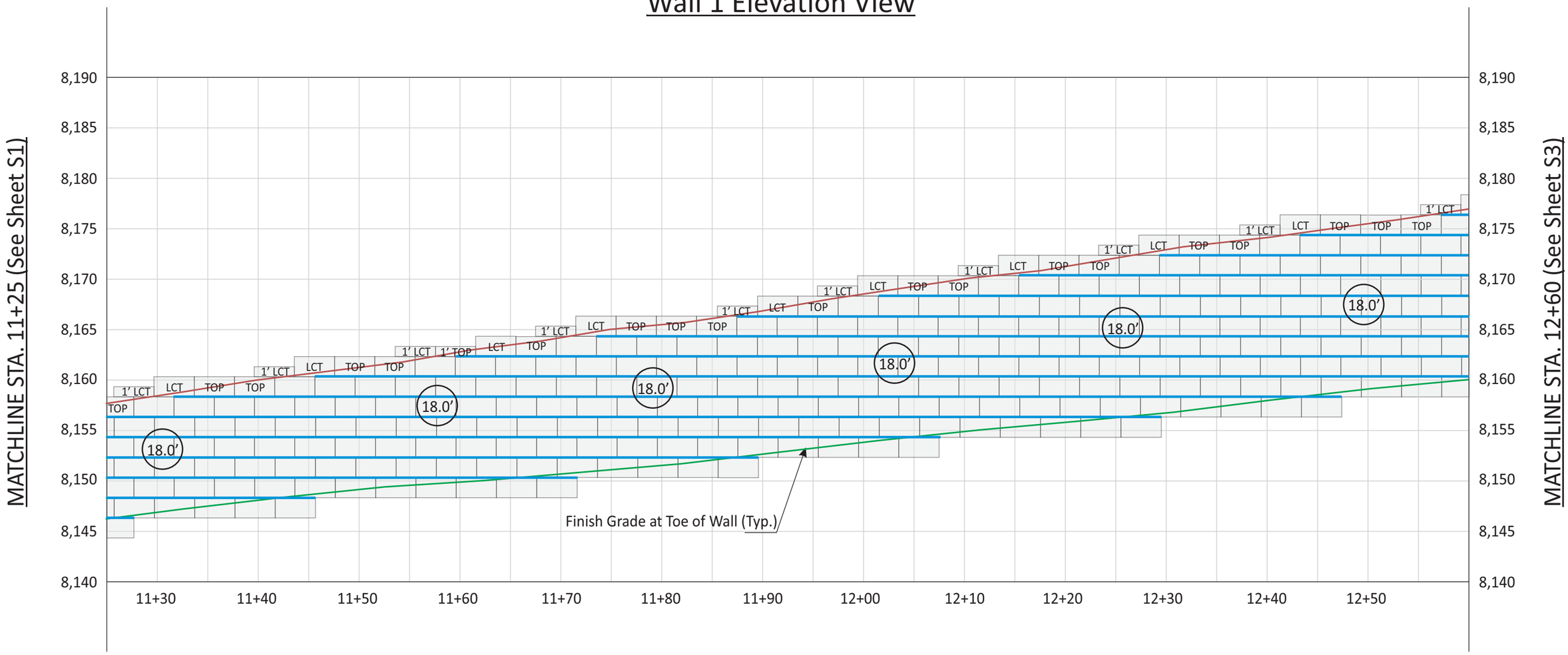
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 1 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 1 ELEVATION VIEW– | SHEET NUMBER: 7 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Revision: N/A

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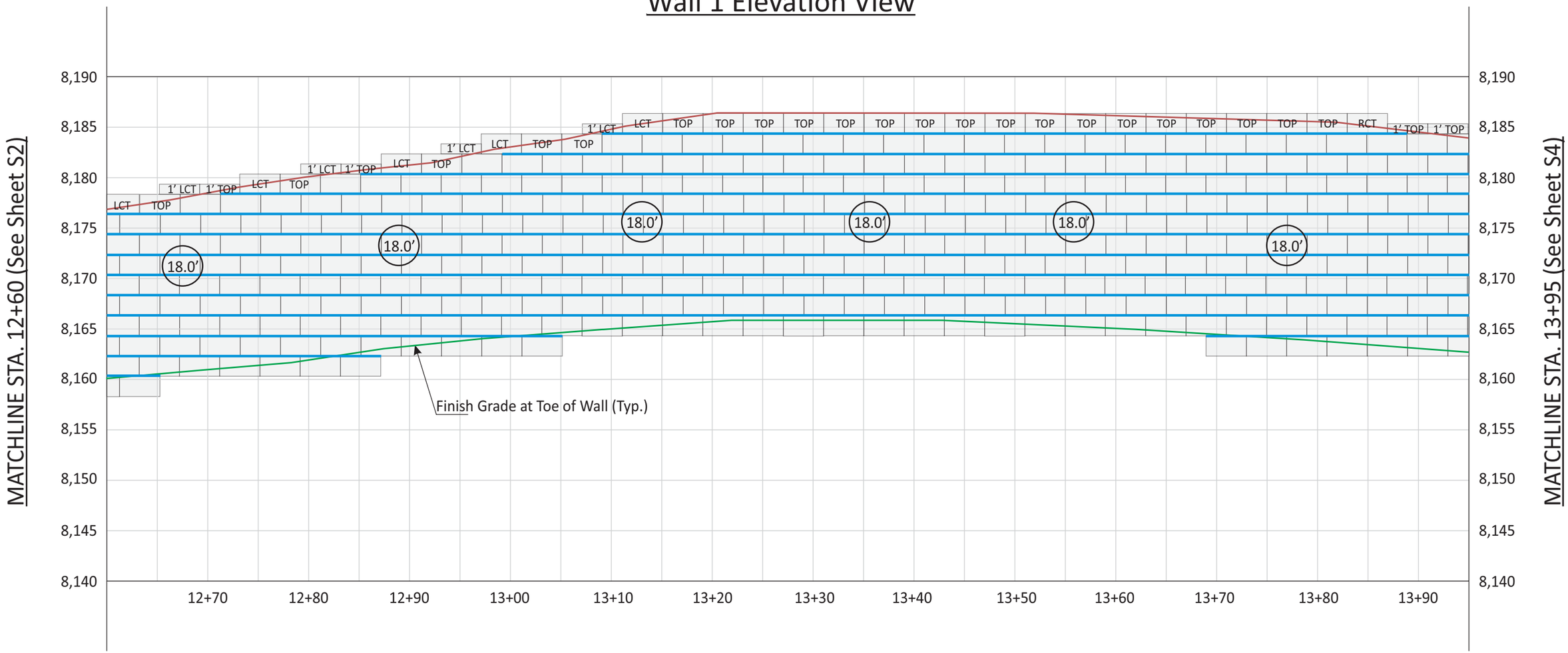
May 14, 2025

# Wall 1 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 1 ELEVATION VIEW– | SHEET NUMBER: 8 |
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| Scale: 1"=10'-0" | | |


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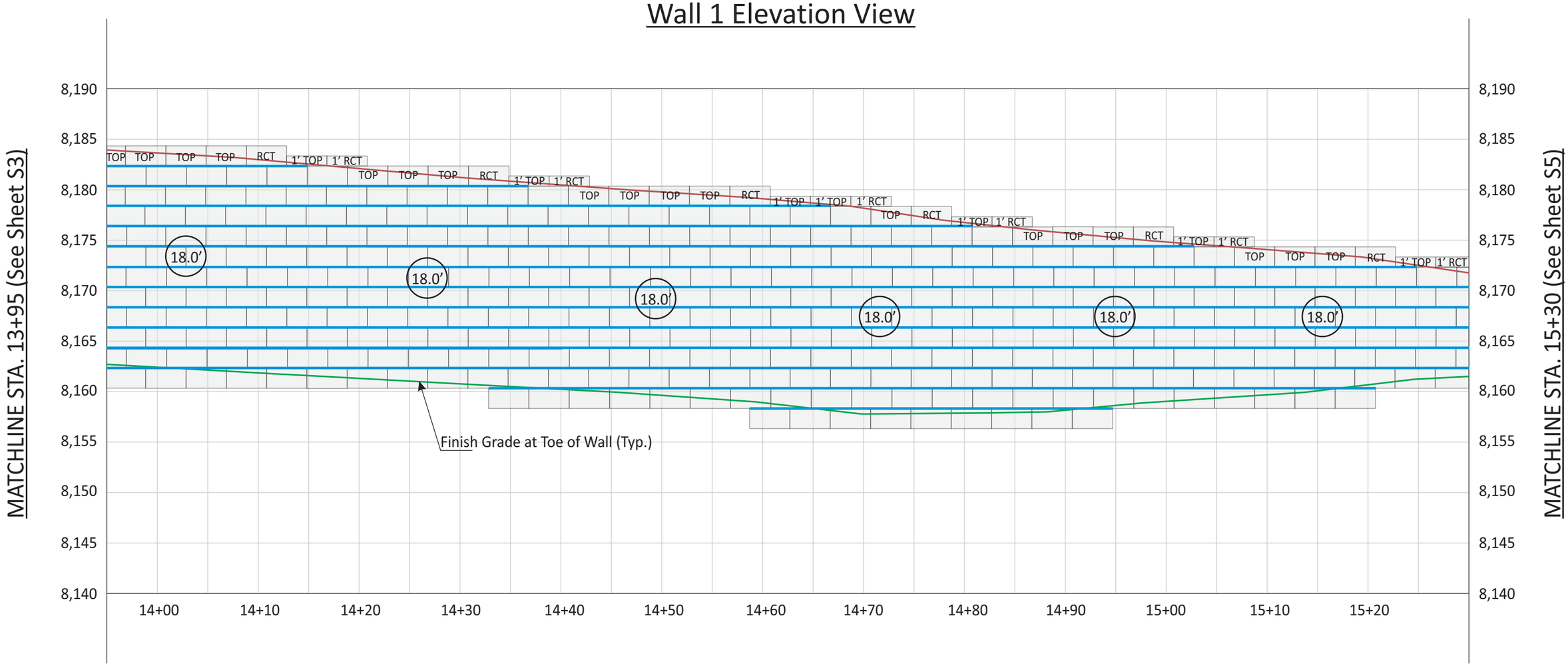
STATE OF UTAH
May 14, 2025

# Wall 1 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 1 ELEVATION VIEW– | SHEET NUMBER: 9 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Revision: N/A

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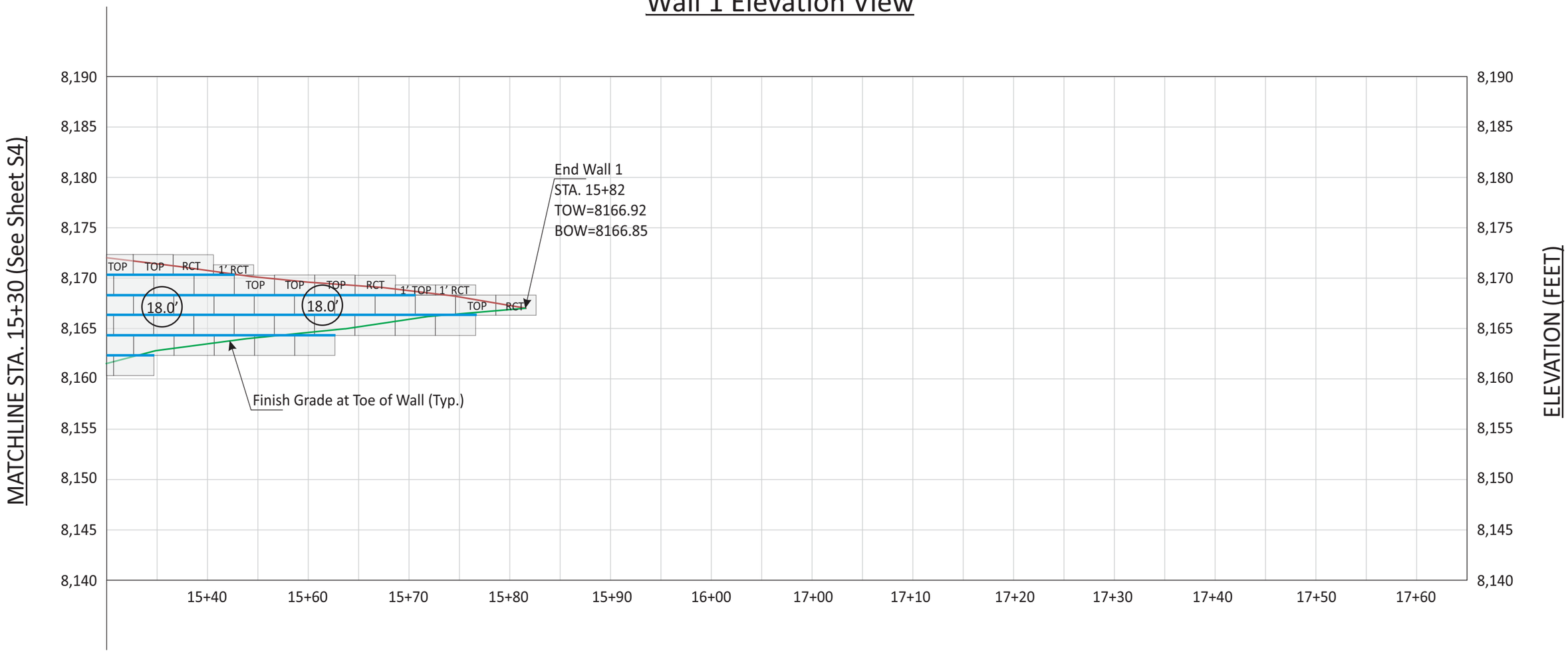
STATE OF UTAH
May 15, 2025

# Wall 1 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 1 ELEVATION VIEW– | SHEET NUMBER: 10 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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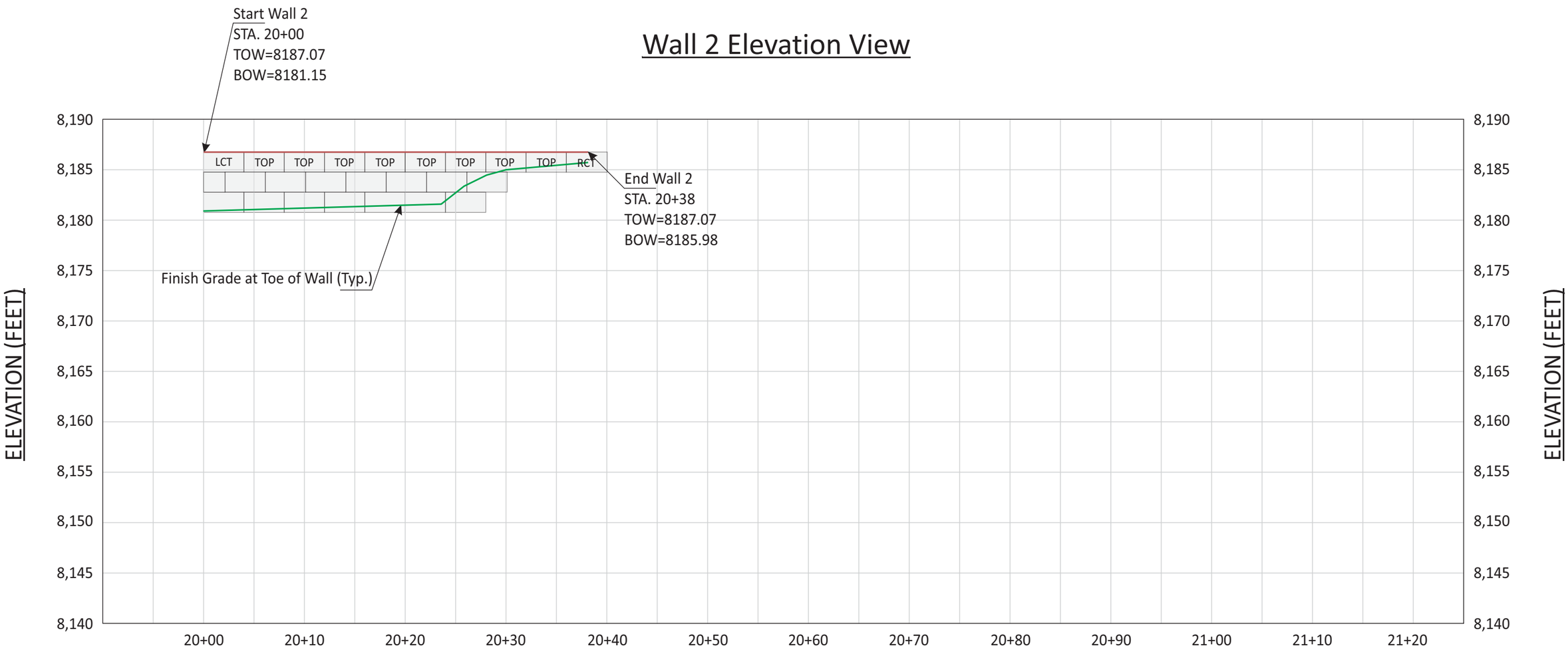
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 2 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 13, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 2 ELEVATION VIEW– | SHEET NUMBER: 11 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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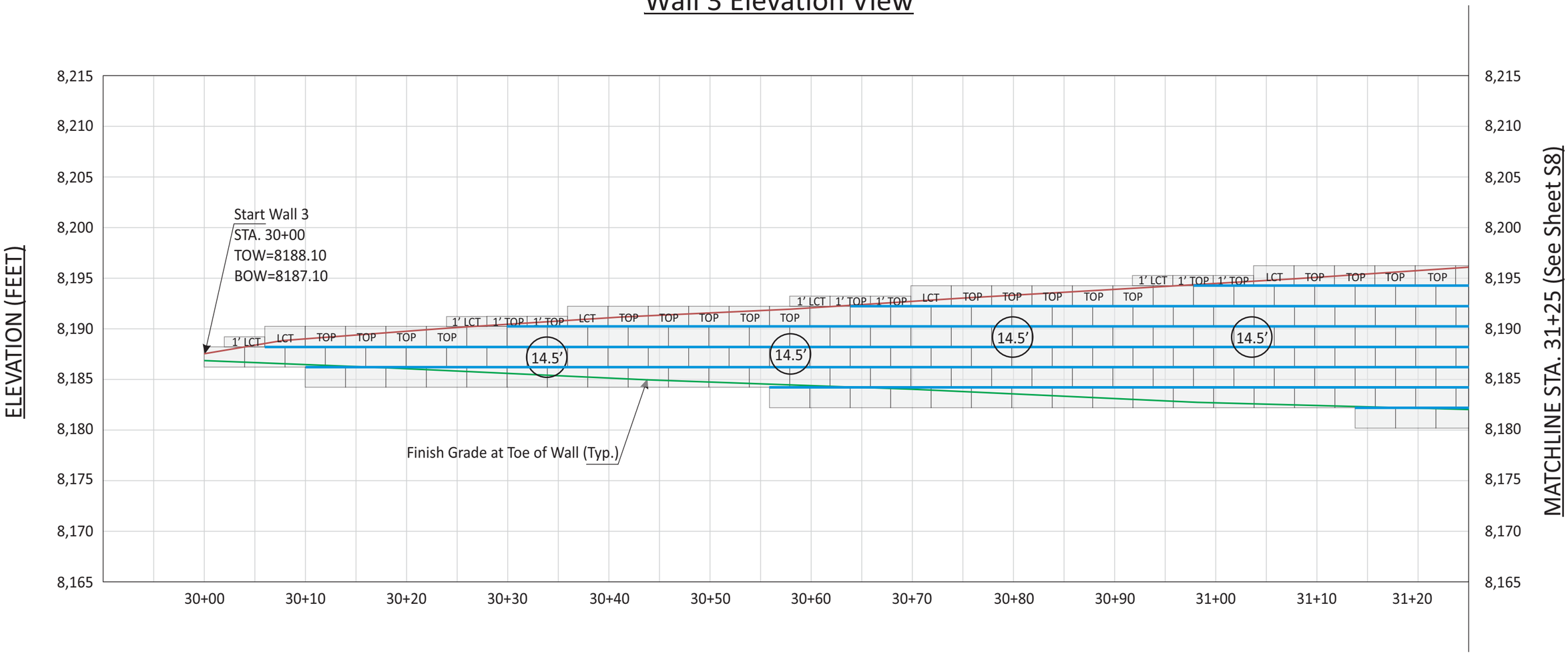
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 3 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT | LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT | 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP | 1-FOOT TALL 36-INCH TOP BLOCK |
| MIRAFI 8XT GEOGRID | | | | | |
| TOP | 36-INCH TOP BLOCK | | 36-INCH BLOCK | X.X' | GEOGRID LENGTH (MINIMUM) |
| MIRAFI 5XT GEOGRID | | CHANGE IN GEOGRID LENGTH/TYPE | | | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 3 ELEVATION VIEW– | SHEET NUMBER: 12 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Date: 05/14/25
Revision: N/A

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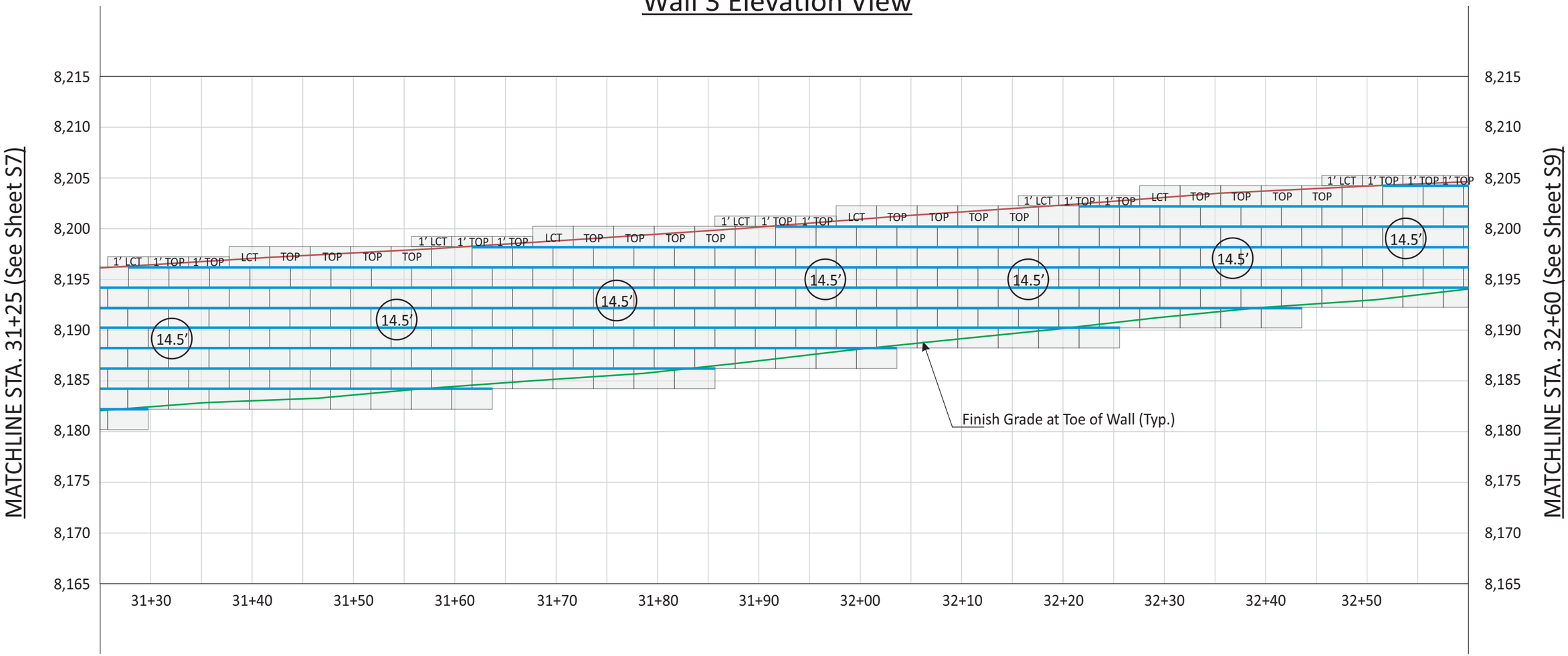
May 14, 2025

# Wall 3 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 3 ELEVATION VIEW– | SHEET NUMBER: 13 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Date: 05/14/25
Revision: N/A

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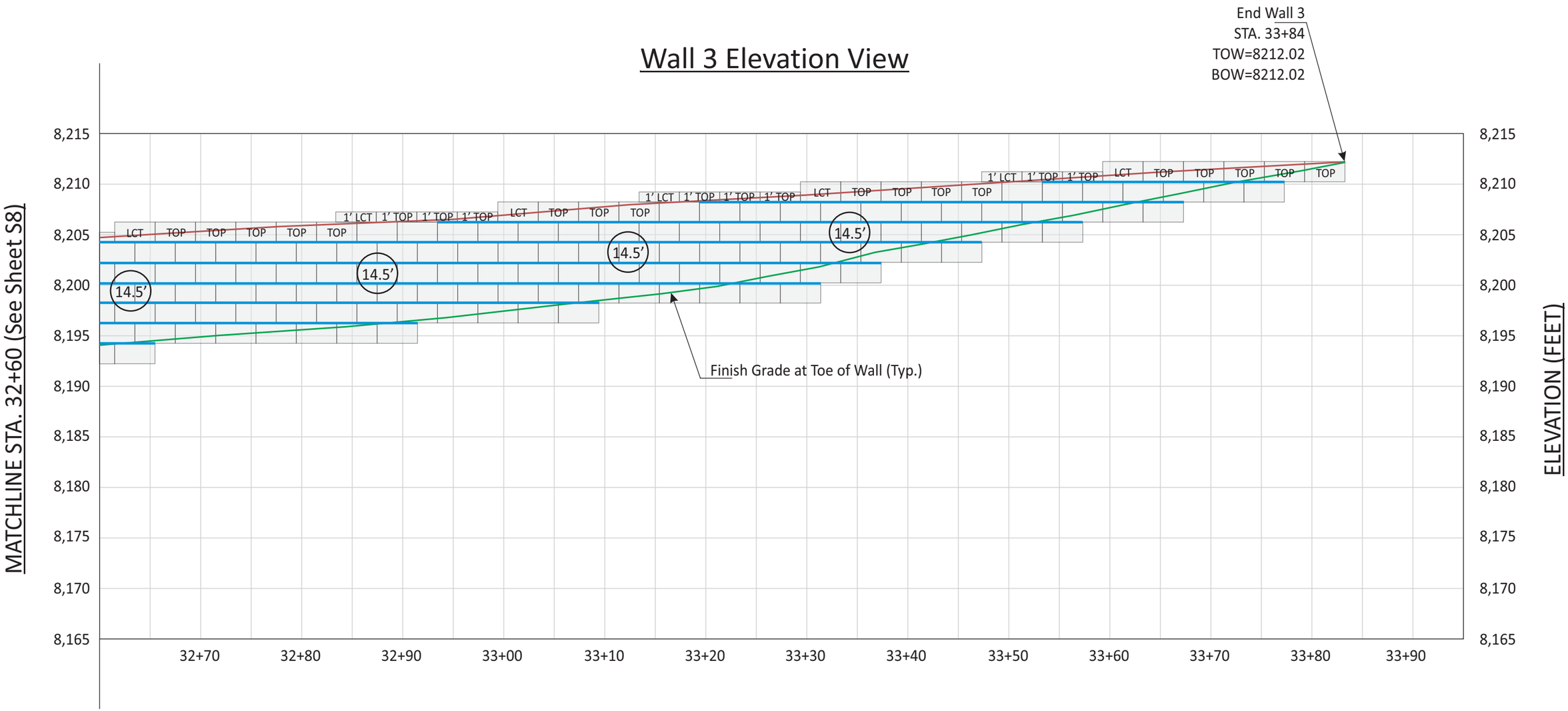
STATE OF UTAH
May 14, 2025

# Wall 3 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
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May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 3 ELEVATION VIEW– | SHEET NUMBER: 14 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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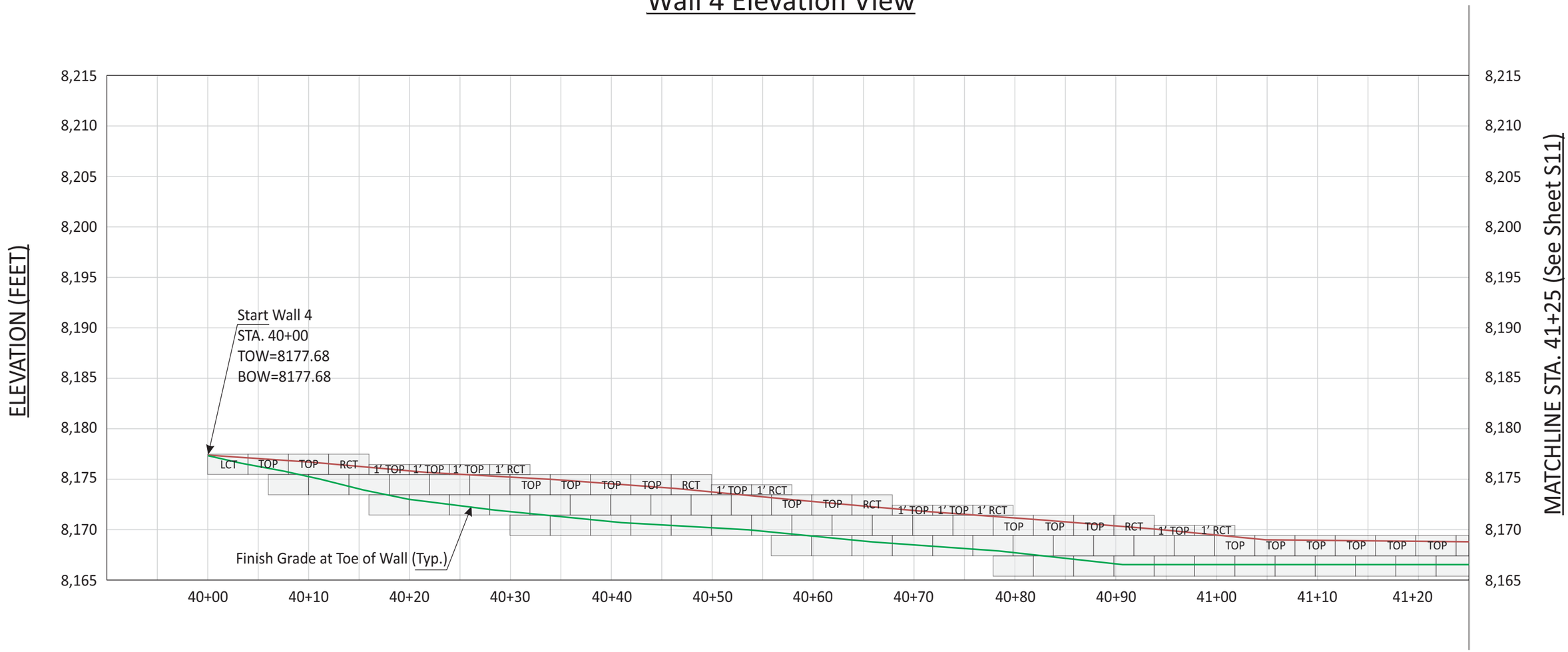
Revision: N/A

# Wall 4 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

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May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 4 ELEVATION VIEW– | SHEET NUMBER: 15 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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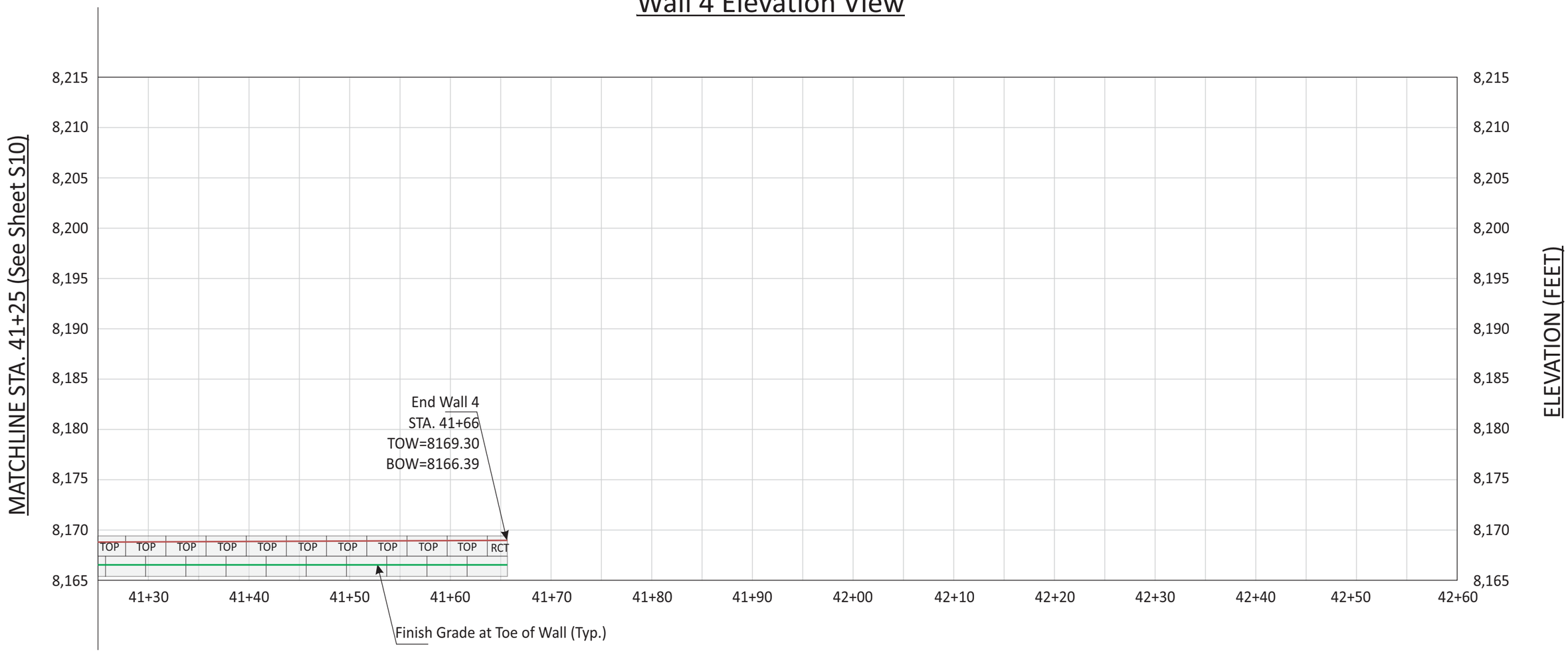
Revision: N/A

# Wall 4 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

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No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 4 ELEVATION VIEW– | SHEET NUMBER: 16 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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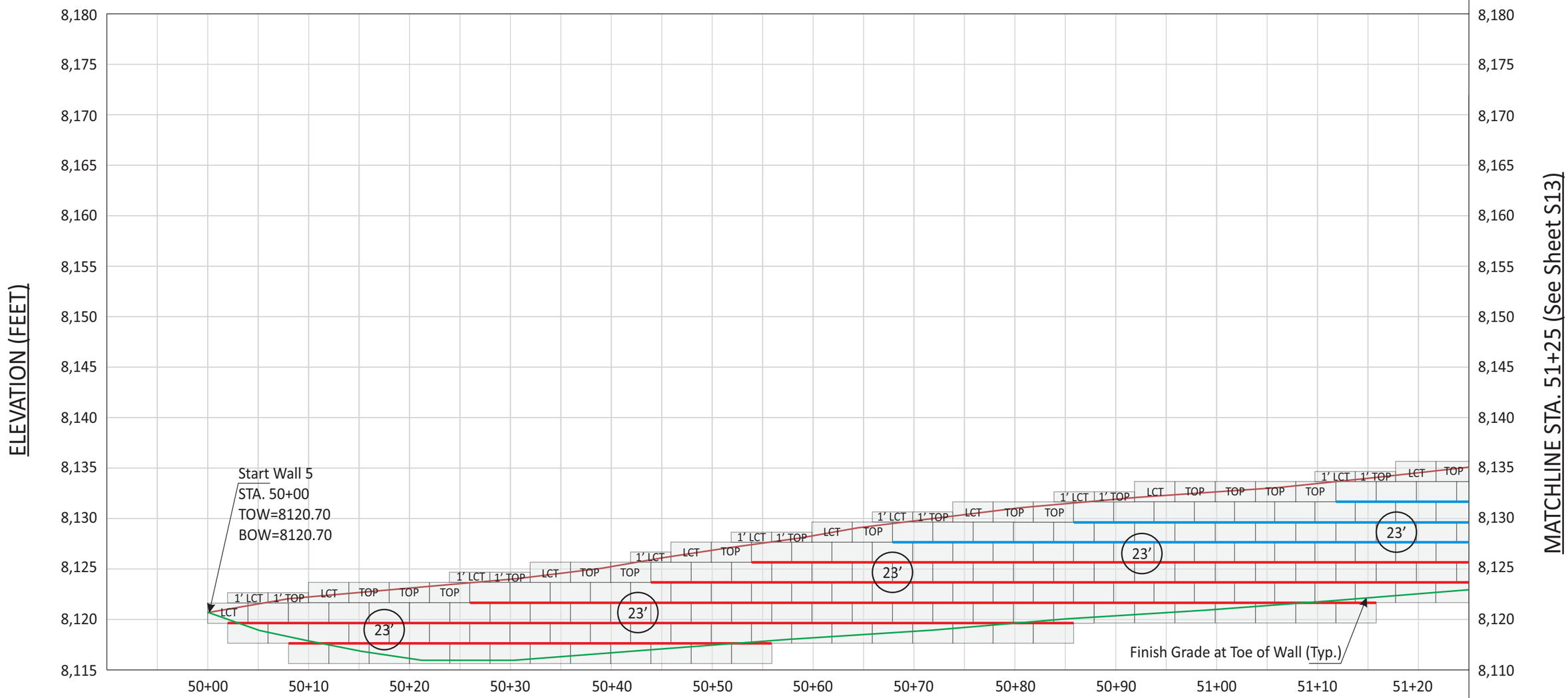
Revision: N/A

# Wall 5 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

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May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 5 ELEVATION VIEW– | SHEET NUMBER: 17 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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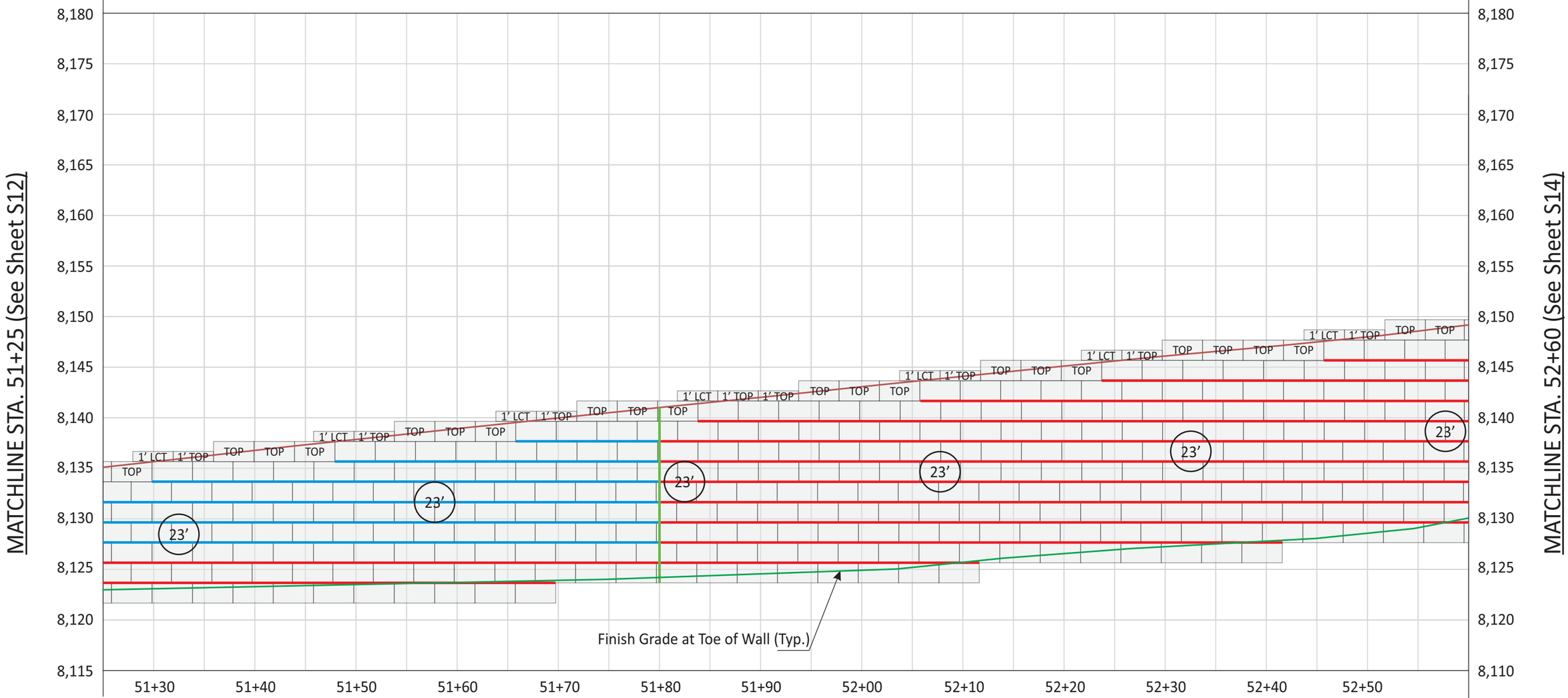
Revision: N/A

# Wall 5 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 5 ELEVATION VIEW– | SHEET NUMBER: 18 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Revision: N/A

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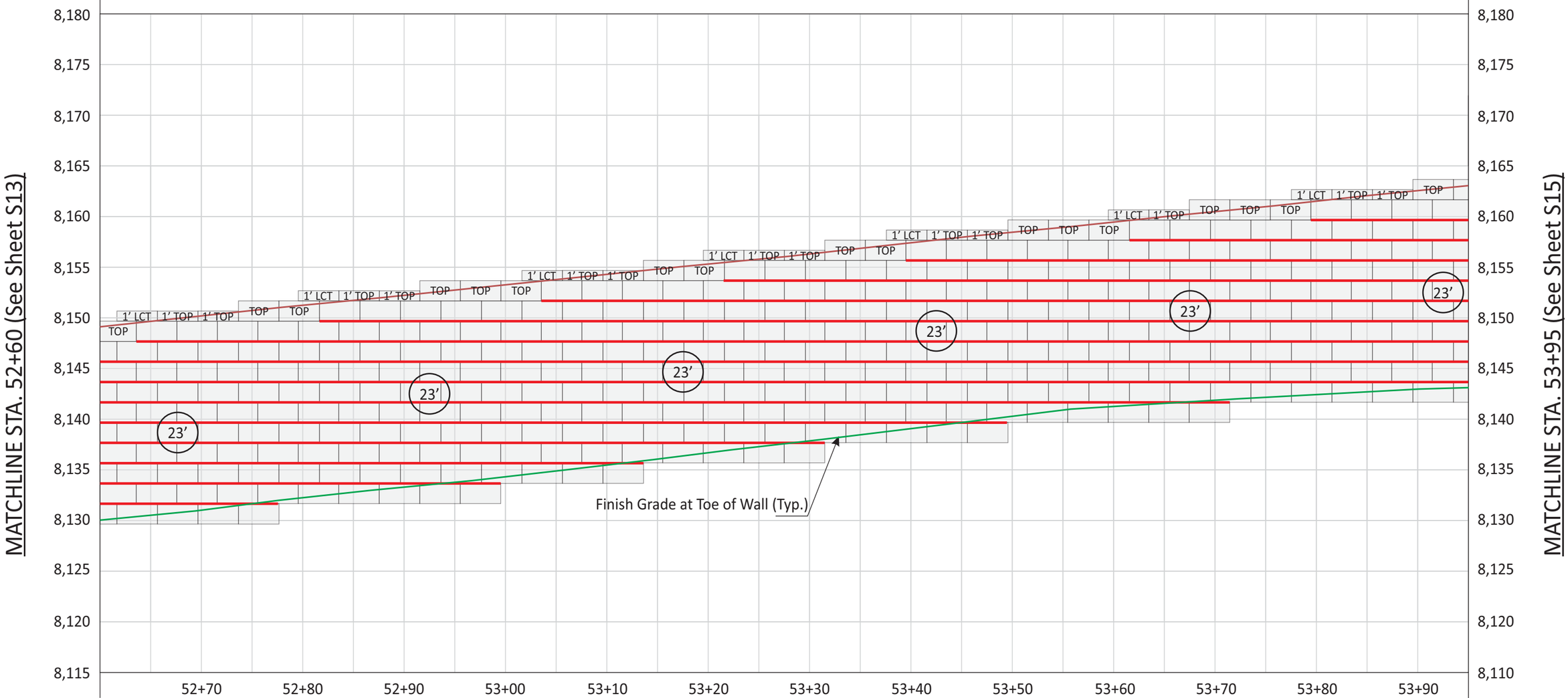
STATE OF UTAH
May 13, 2025

# Wall 5 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT | LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT | 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP | 1-FOOT TALL 36-INCH TOP BLOCK |
| | | | | | MIRAFI 8XT GEOGRID |
| TOP | 36-INCH TOP BLOCK | | 36-INCH BLOCK | X.X' | GEOGRID LENGTH (MINIMUM) |
| | | | | | MIRAFI 5XT GEOGRID |
| | | | | | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

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No. 174267-2202
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May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 5 ELEVATION VIEW– | SHEET NUMBER: 19 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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Reviewed By: AEM
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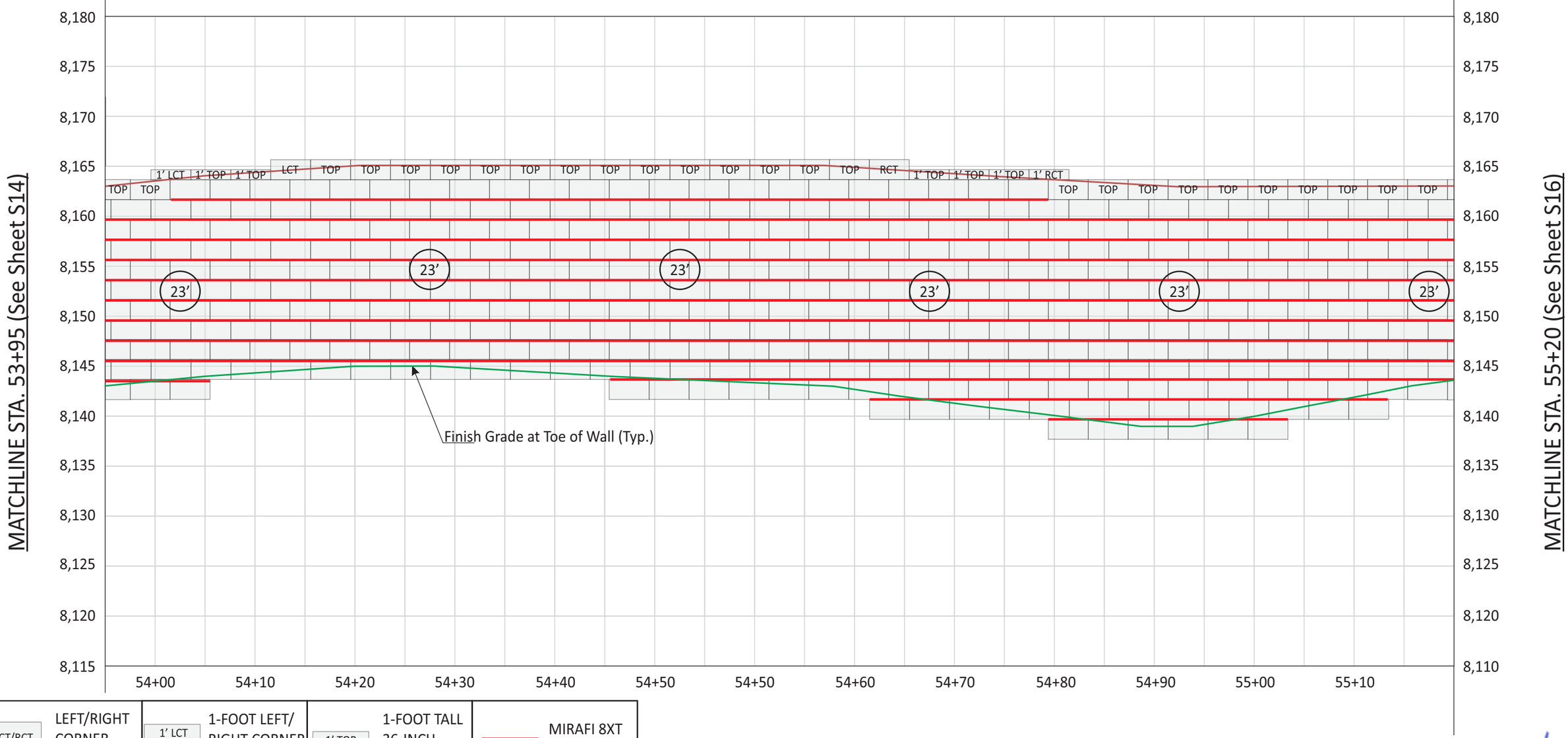
Revision: N/A

# Wall 5 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 5 ELEVATION VIEW– | SHEET NUMBER: 20 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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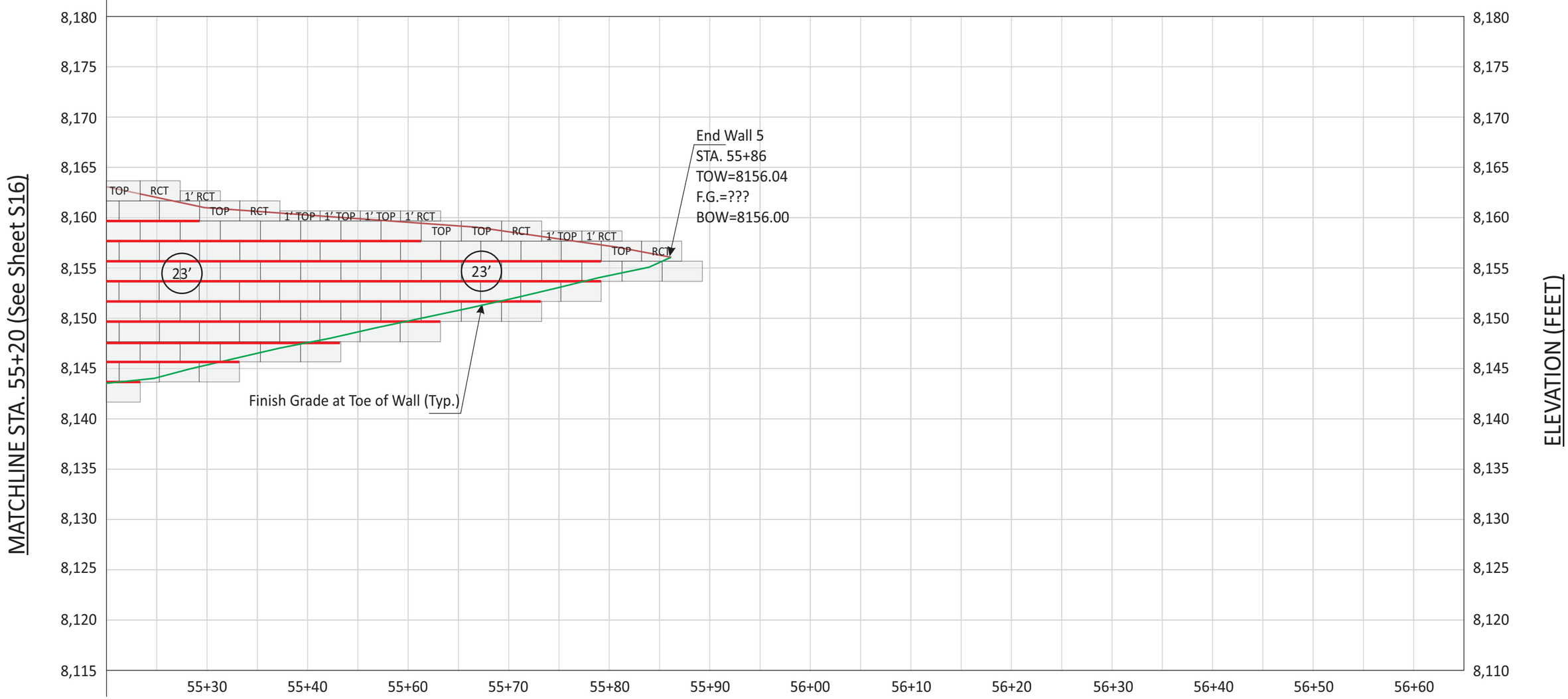
May 13, 2025

# Wall 5 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
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May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 5 ELEVATION VIEW– | SHEET NUMBER: 21 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |


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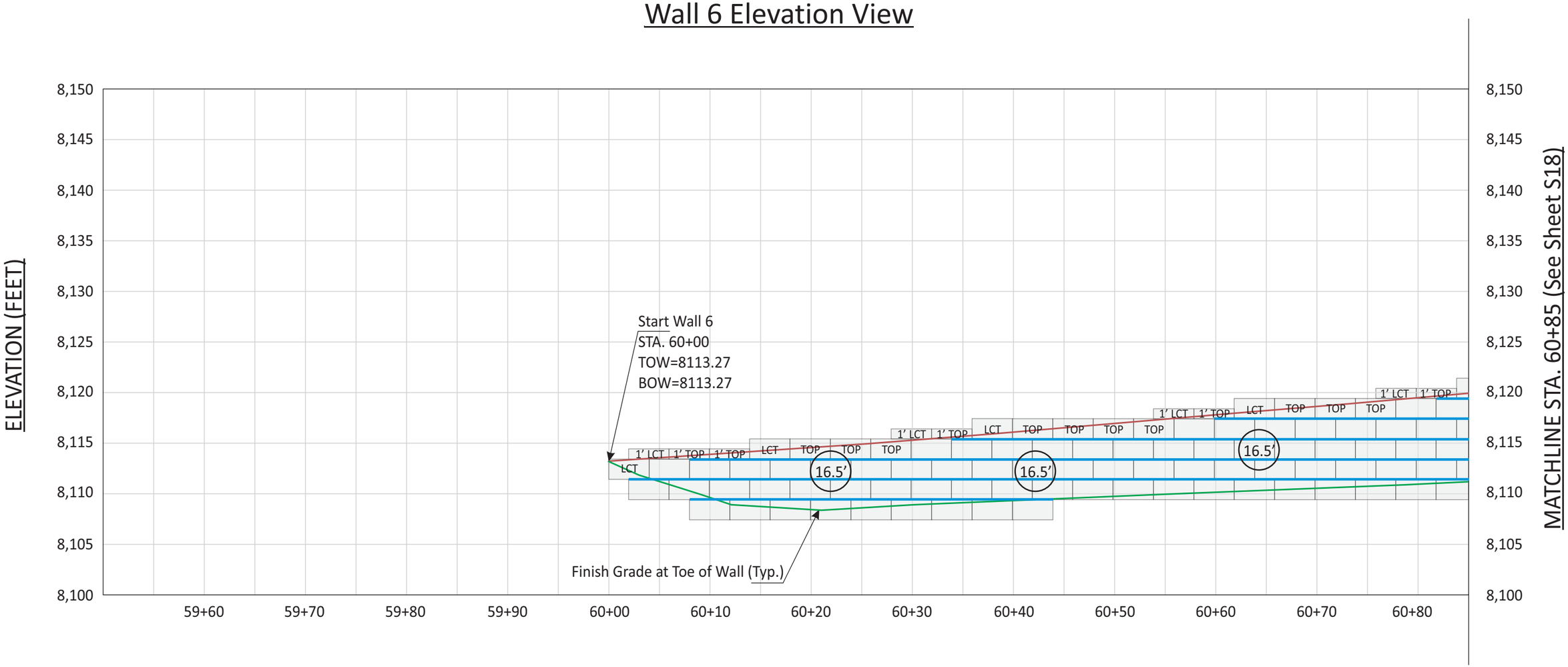
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 6 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 6 ELEVATION VIEW– | SHEET NUMBER: 22 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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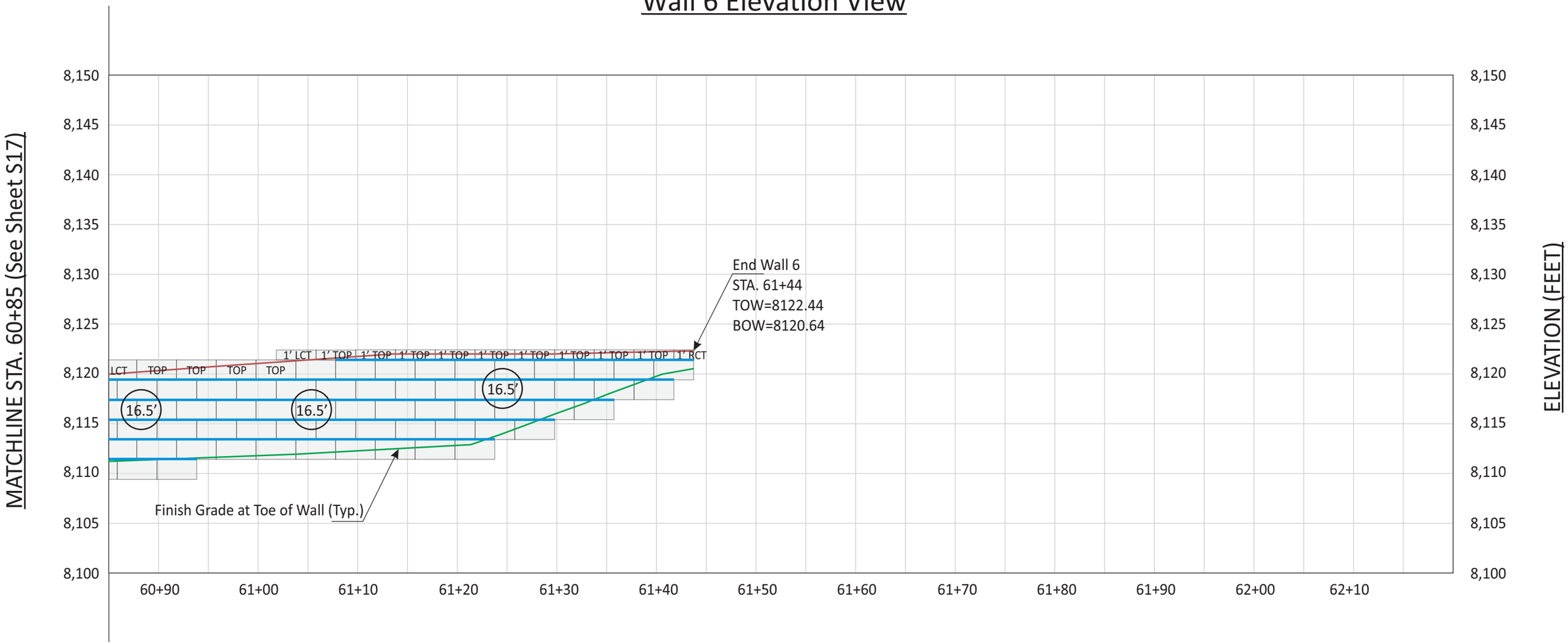
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 6 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 6 ELEVATION VIEW– | SHEET NUMBER: 23 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | |
| Scale: 1"=10'-0" | | | |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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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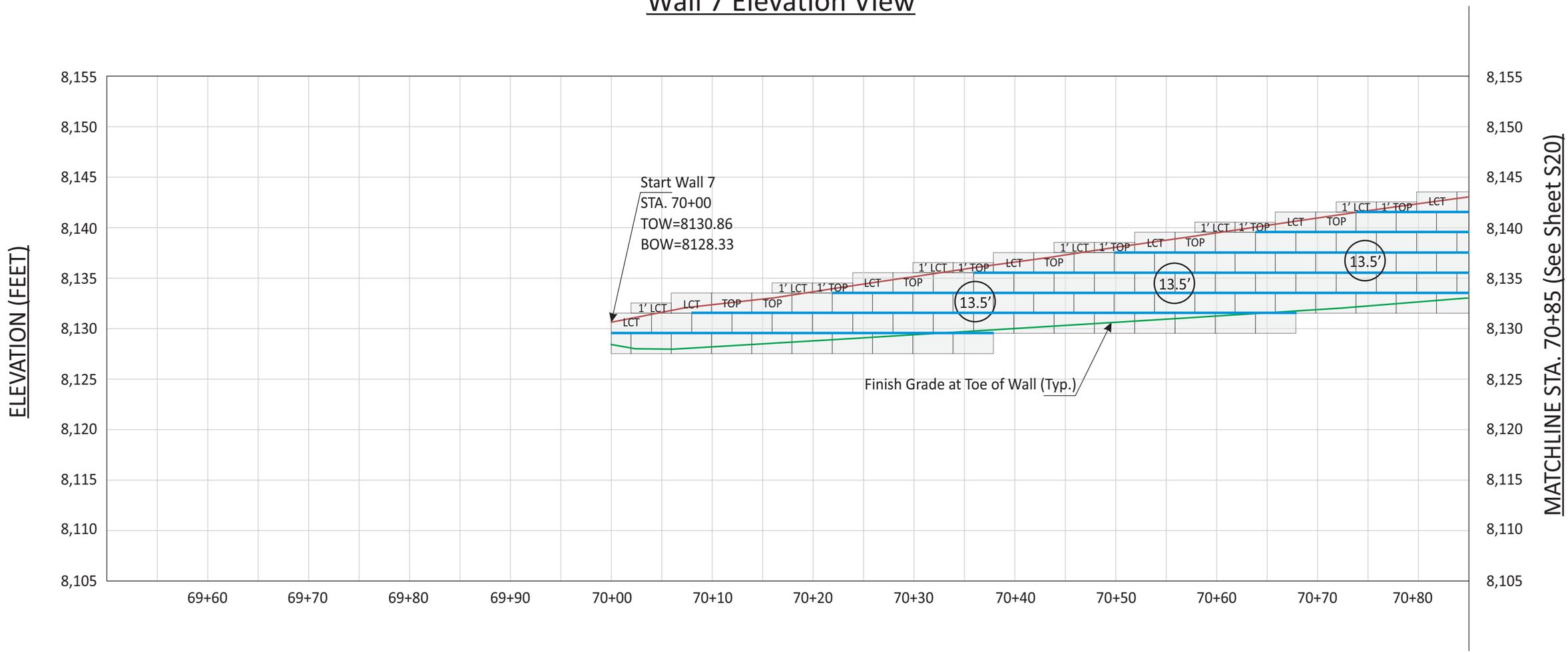
May 13, 2025

# Wall 7 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 7 ELEVATION VIEW– | SHEET NUMBER: 24 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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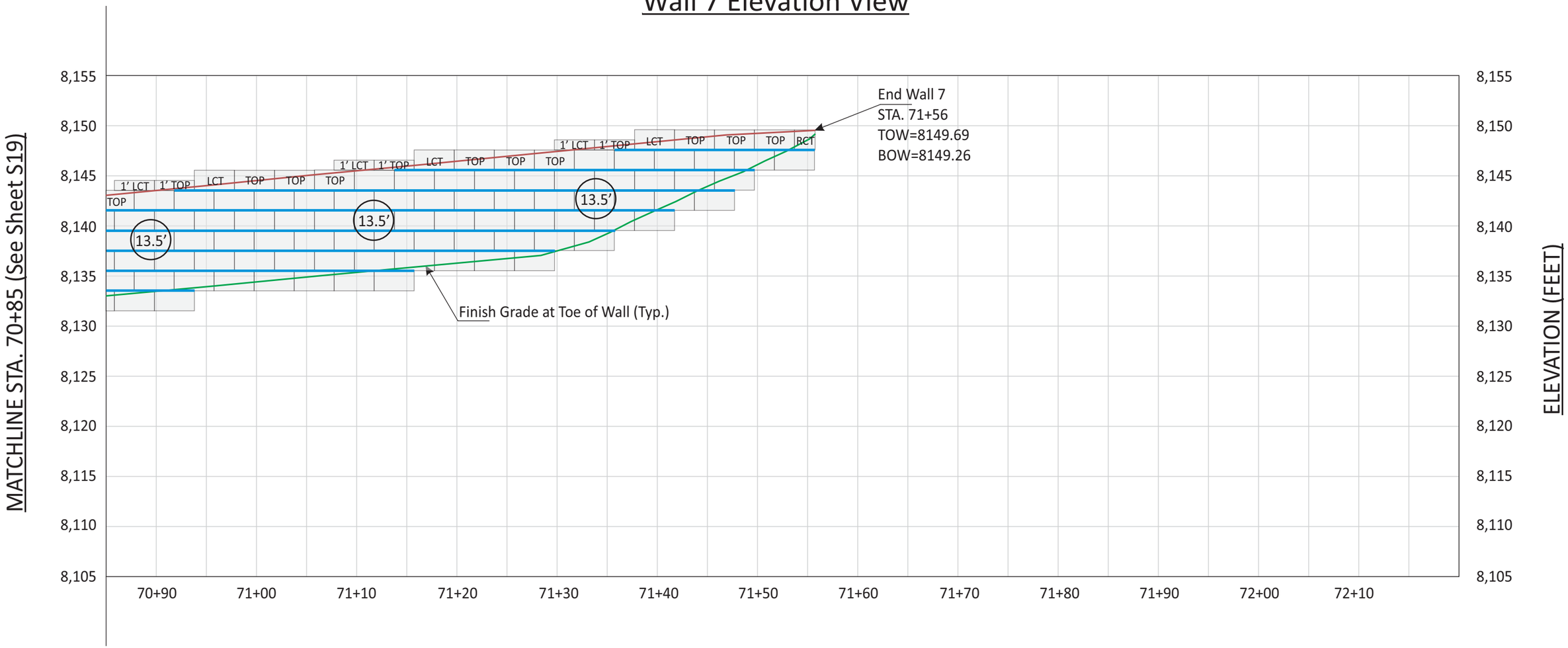
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 7 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 7 ELEVATION VIEW– | SHEET NUMBER: 25 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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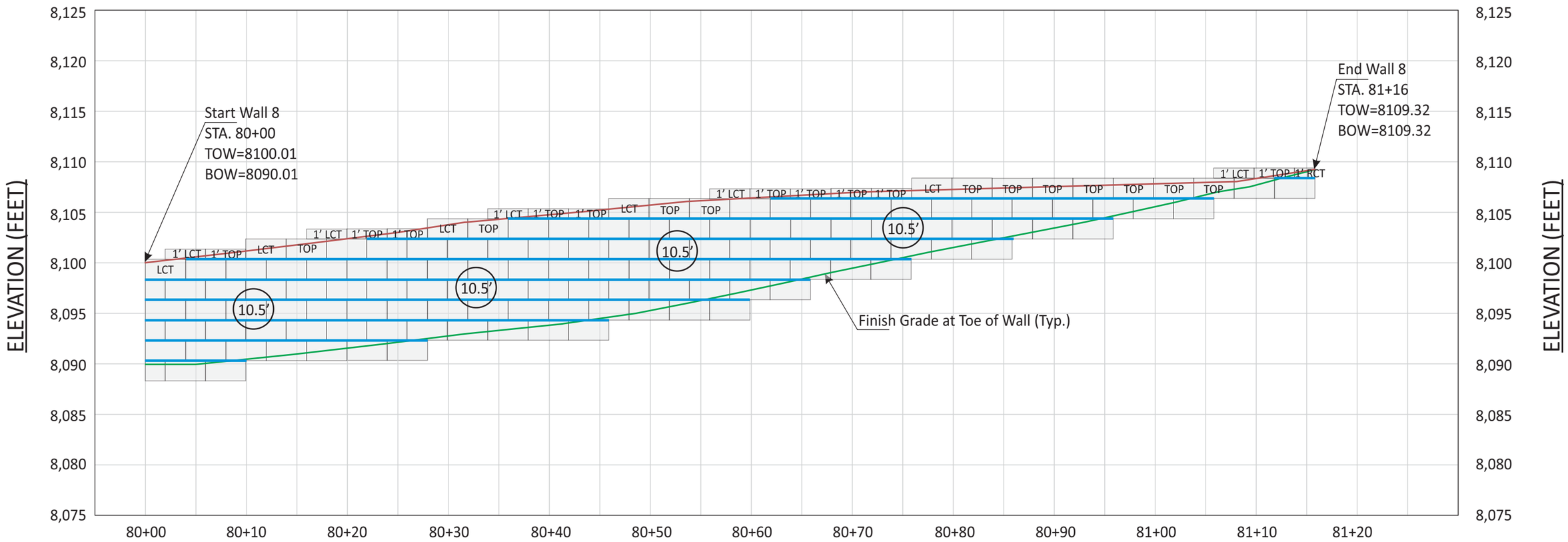
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 8 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 8 ELEVATION VIEW– | SHEET NUMBER: 26 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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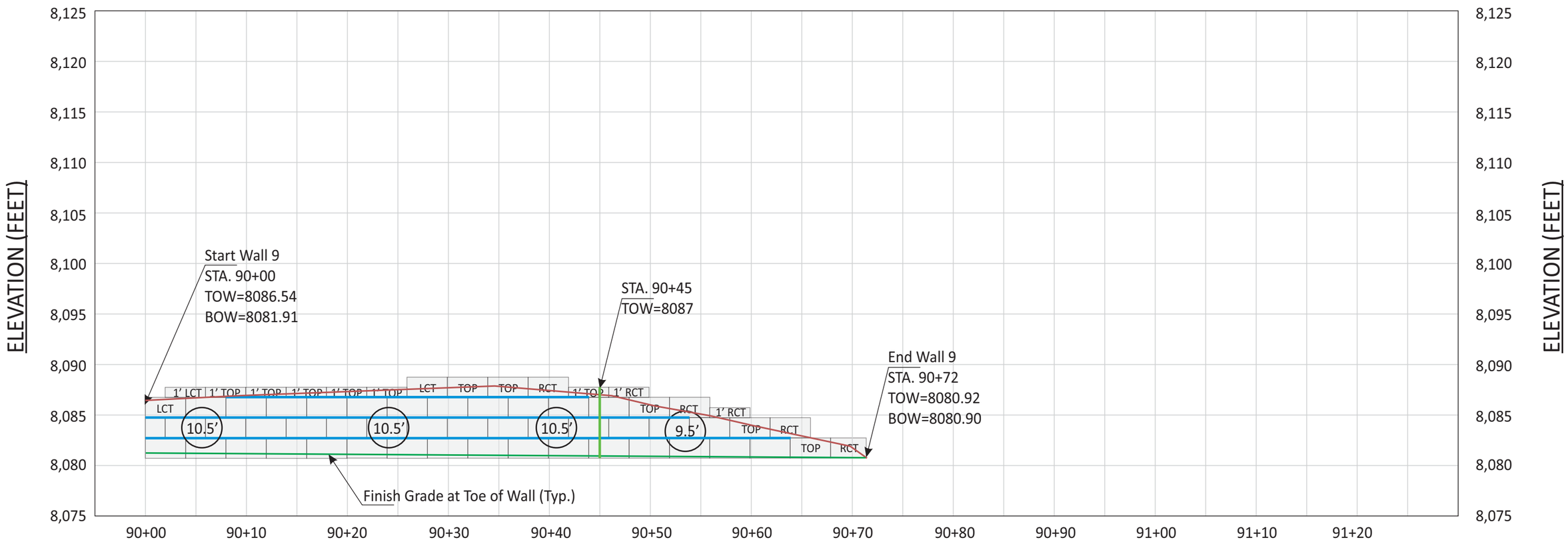
STATE OF UTAH
May 15, 2025

# Wall 9 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 9 ELEVATION VIEW– | SHEET NUMBER: 27 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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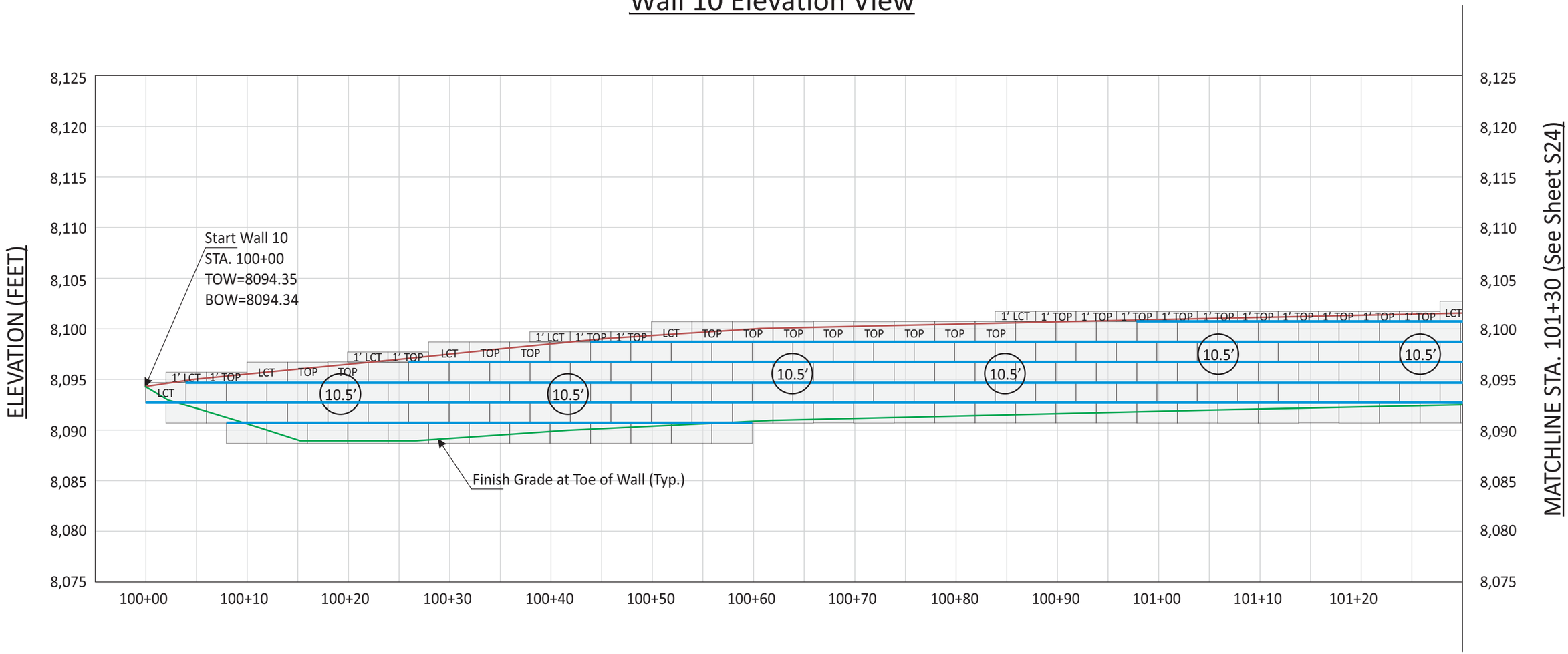
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 10 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT | LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT | 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP | 1-FOOT TALL 36-INCH TOP BLOCK |
| TOP | 36-INCH TOP BLOCK | | 36-INCH BLOCK | X.X' | GEOGRID LENGTH (MINIMUM) |

MIRAFI 8XT GEOGRID

MIRAFI 5XT GEOGRID

CHANGE IN GEOGRID LENGTH/TYPE

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 13, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 10 ELEVATION VIEW– | SHEET NUMBER: 28 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Reviewed By: AEM
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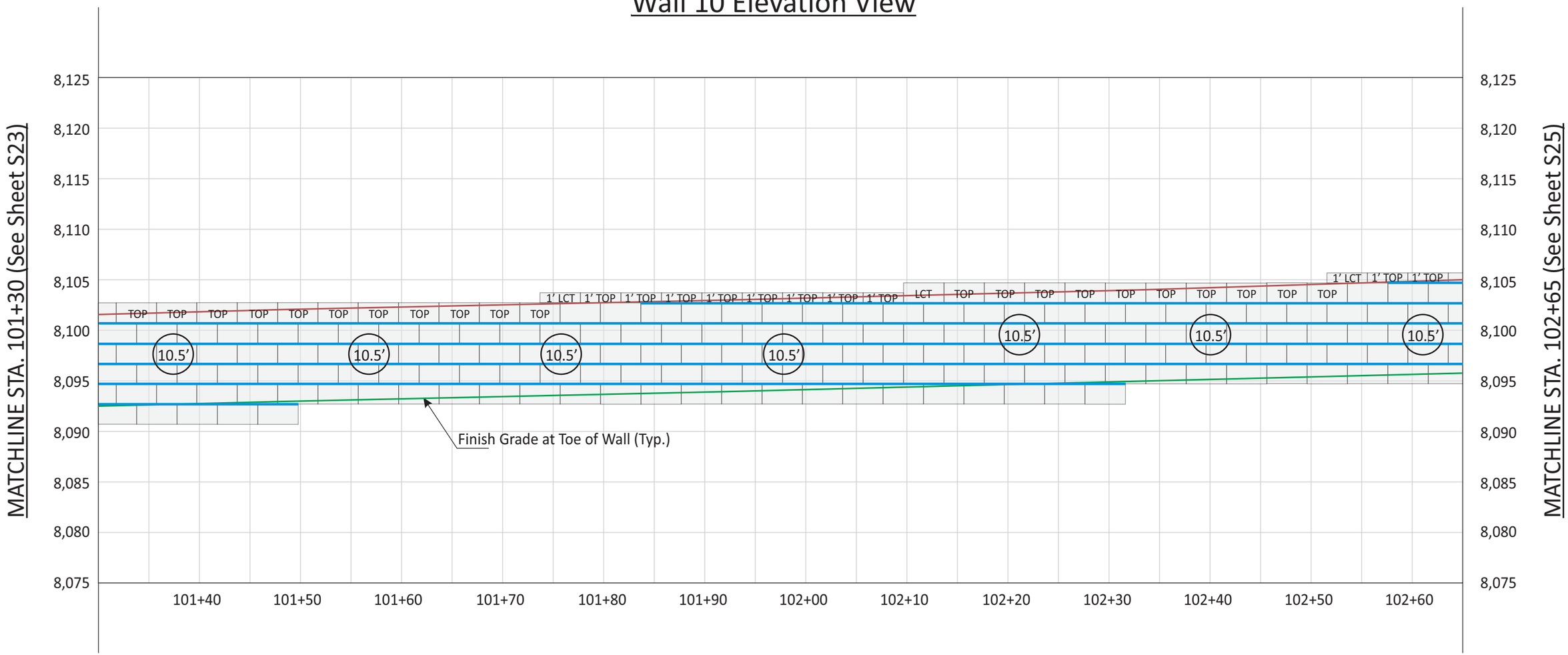
Revision: N/A

# Wall 10 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 10 ELEVATION VIEW– | SHEET NUMBER: 29 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Reviewed By: AEM
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Revision: N/A

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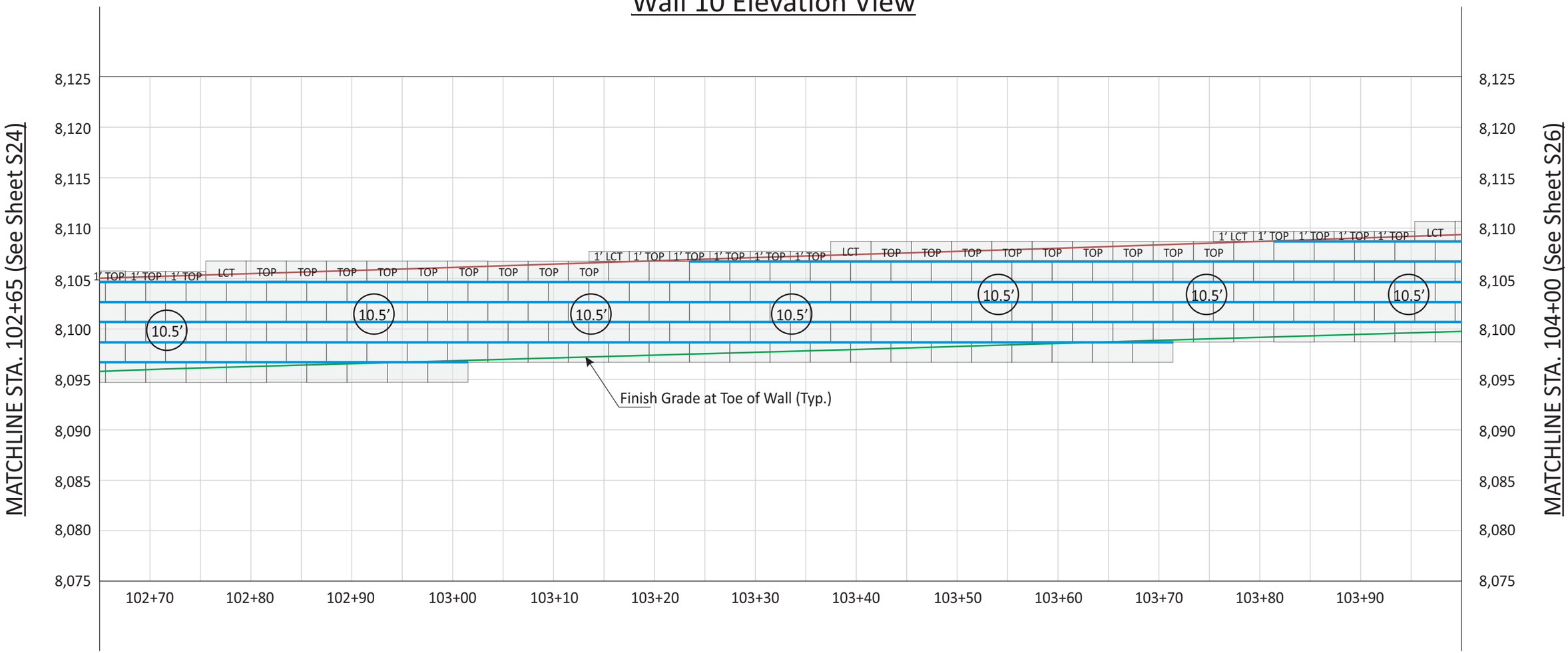
STATE OF UTAH
May 14, 2025

# Wall 10 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 10 ELEVATION VIEW– | SHEET NUMBER: 30 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Date: 05/14/25
Revision: N/A

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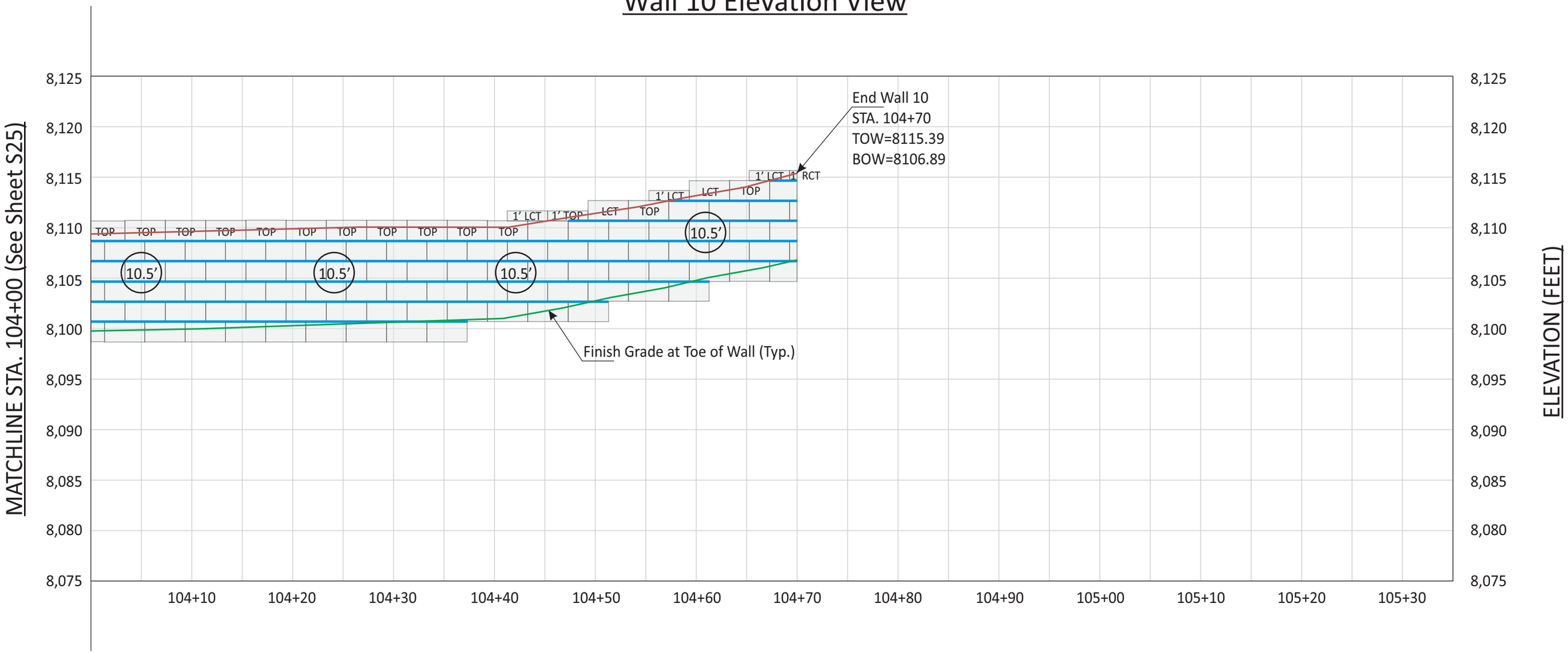
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 10 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 10 ELEVATION VIEW– | SHEET NUMBER: 31 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
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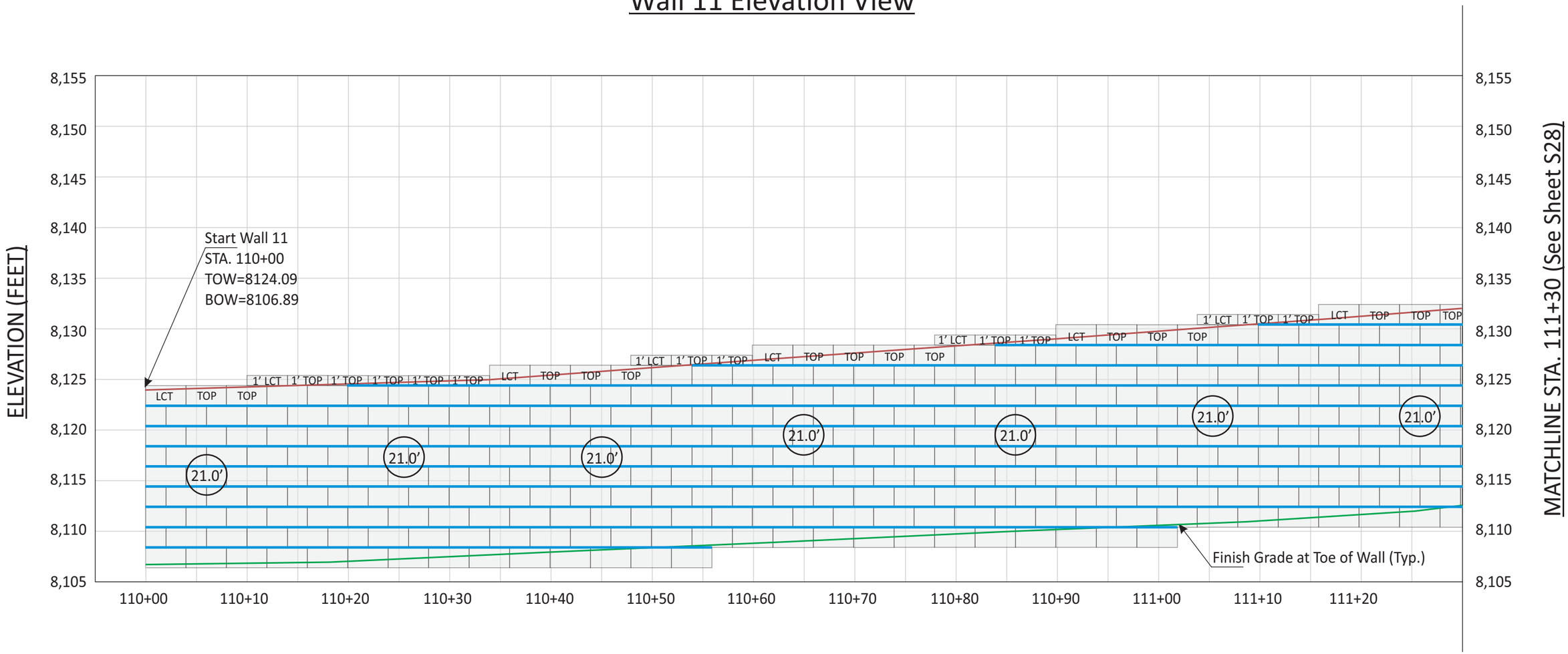
STATE OF UTAH
May 14, 2025

# Wall 11 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 11 ELEVATION VIEW– | SHEET NUMBER: 32 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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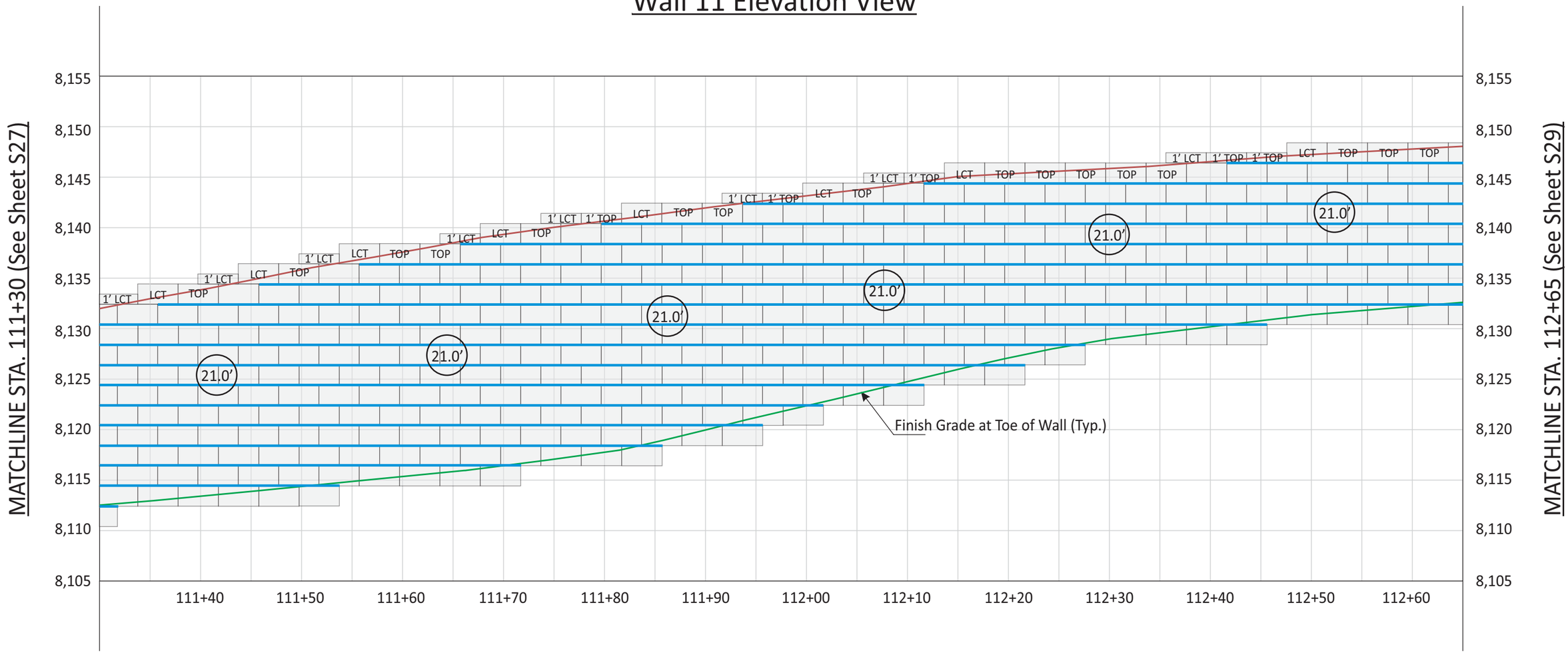
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 11 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 11 ELEVATION VIEW– | SHEET NUMBER: 33 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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Reviewed By: AEM
Date: 05/14/25
Revision: N/A

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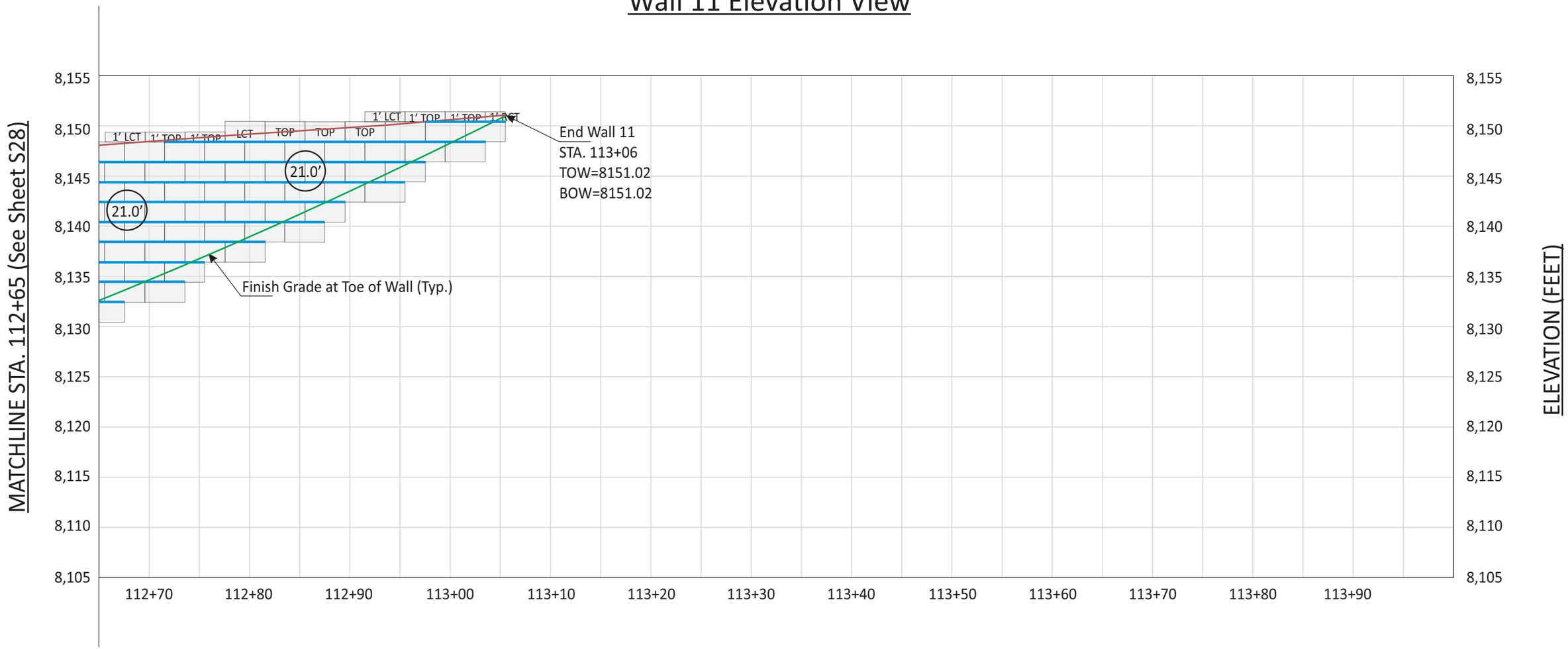
STATE OF UTAH
May 14, 2025

# Wall 11 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 11 ELEVATION VIEW– | SHEET NUMBER: 34 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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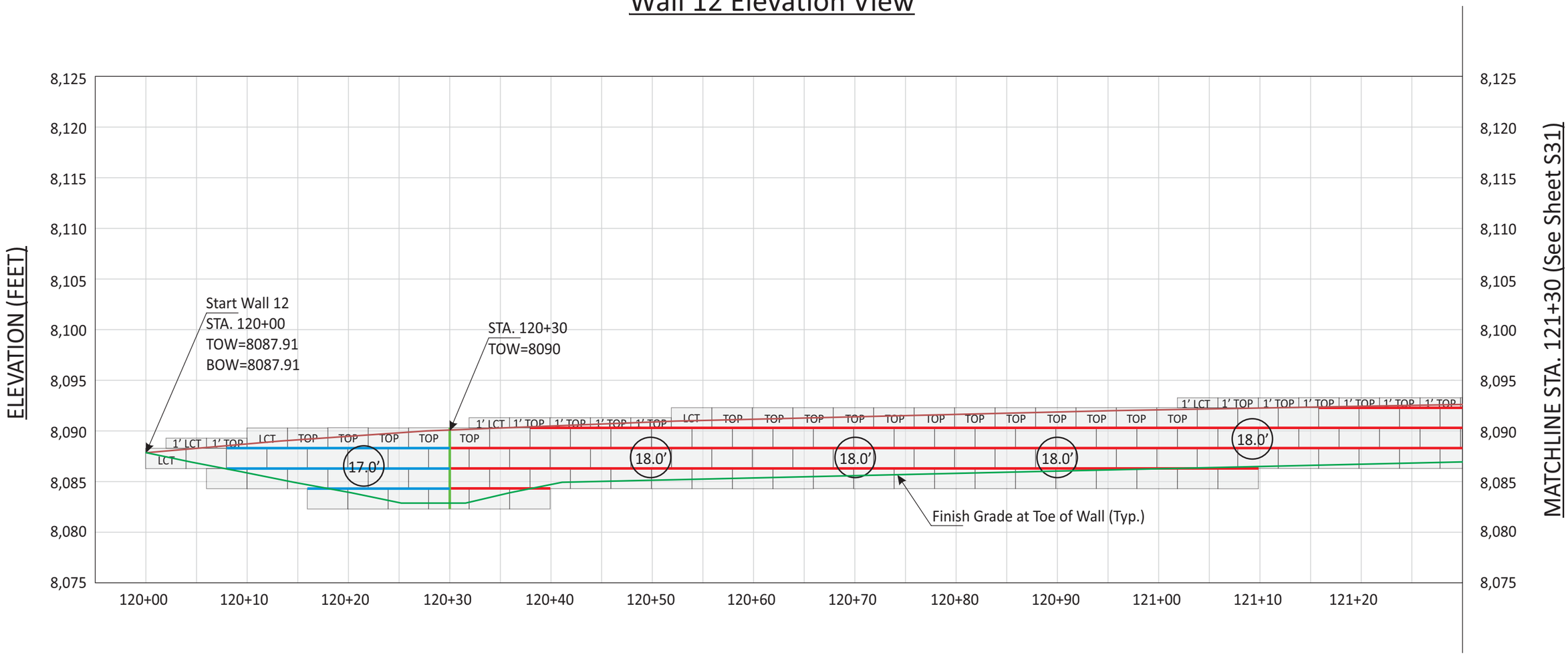
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 12 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 12 ELEVATION VIEW– | SHEET NUMBER: 35 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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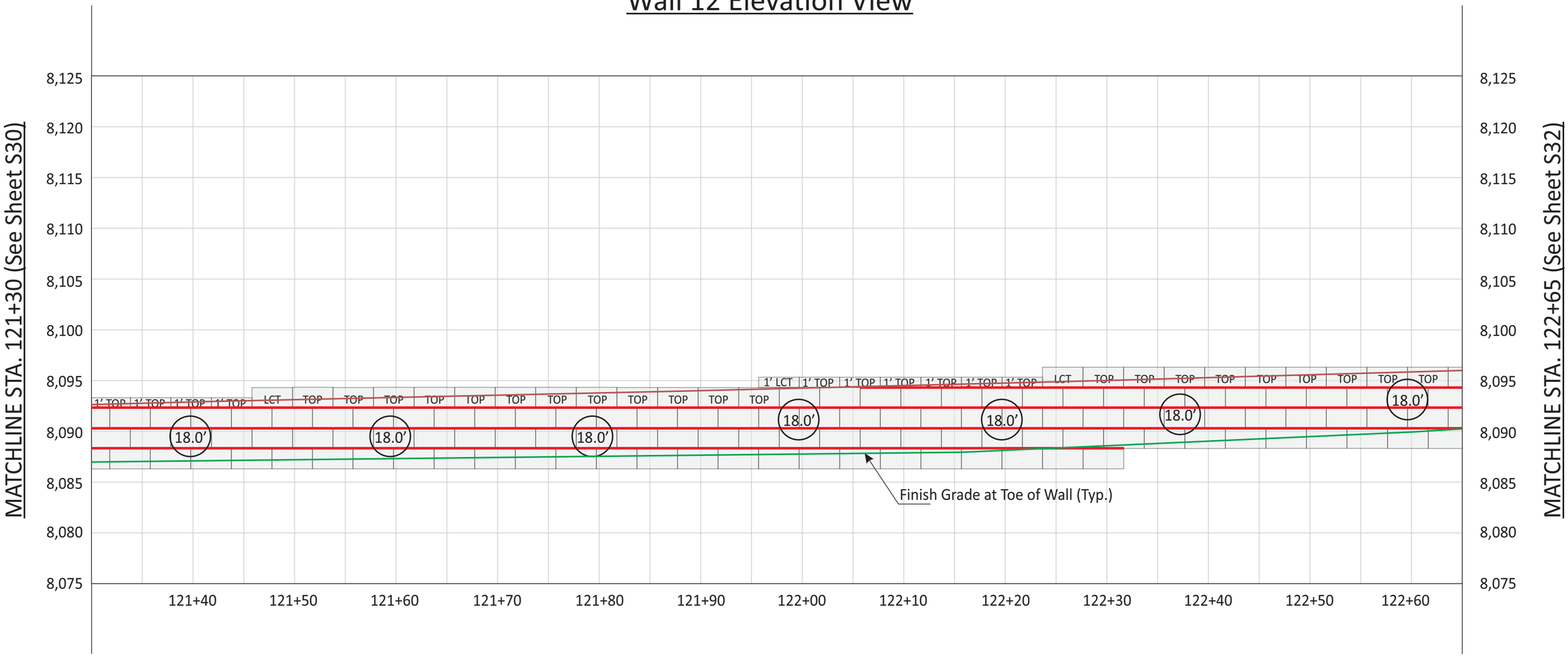
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 12 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 12 ELEVATION VIEW– | SHEET NUMBER: 36 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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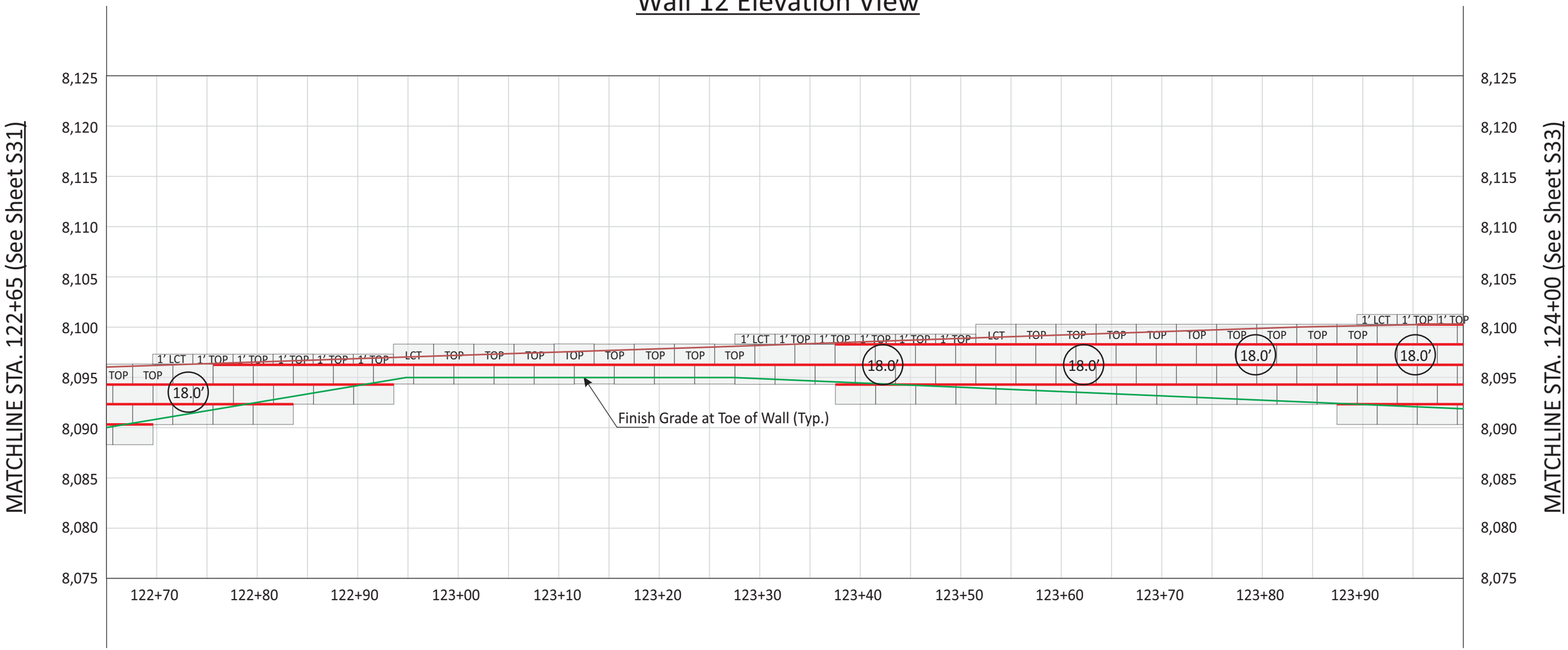
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 12 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 12 ELEVATION VIEW– | SHEET NUMBER: 37 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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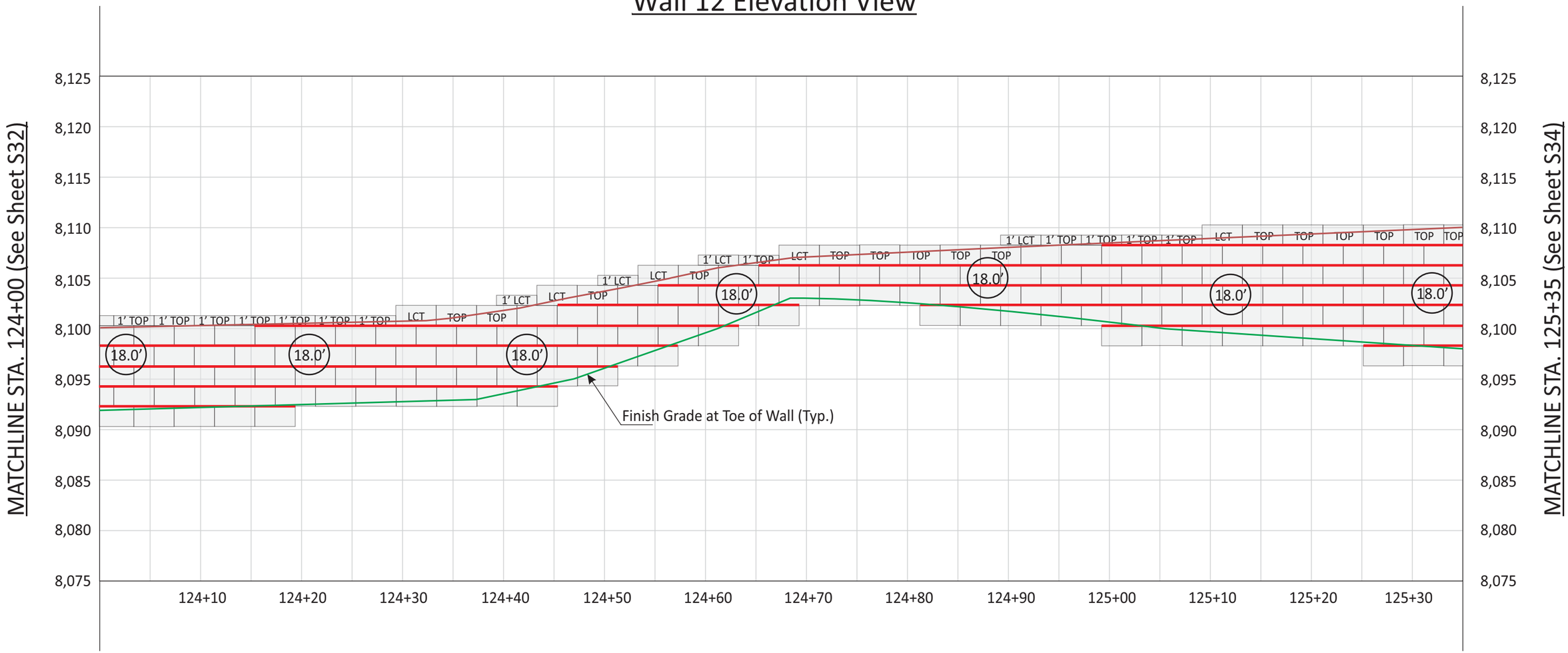
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

# Wall 12 Elevation View




| | | | | | |
|---|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE | |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 12 ELEVATION VIEW– | SHEET NUMBER: 38 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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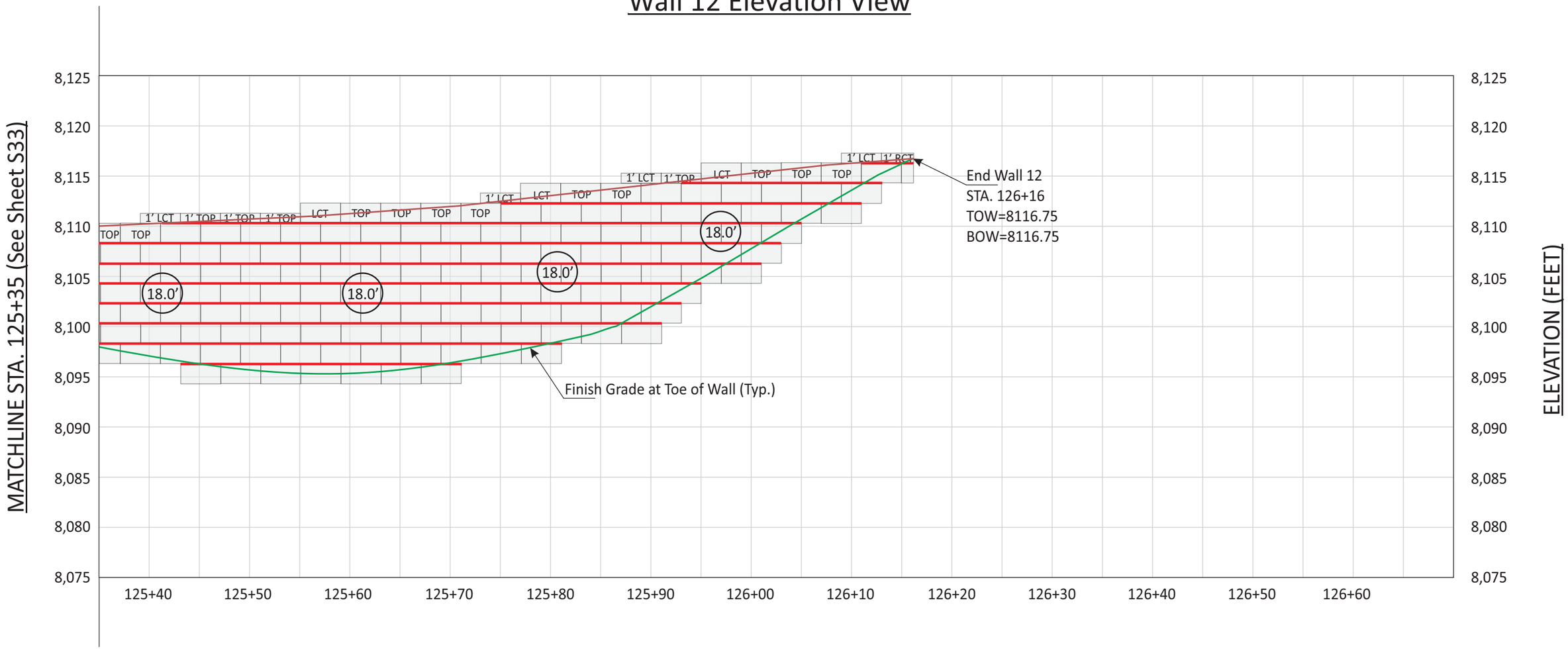
Fax: 480 927-9797
www.ammtec.com


Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Wall 12 Elevation View




| | | | | |
|---|---|---|---|---|
| LCT/RCT — LEFT/RIGHT CORNER TOP BLOCK | 1' LCT / 1' RCT — 1-FOOT LEFT/ RIGHT CORNER TOP BLOCK | 1' TOP — 1-FOOT TALL 36-INCH TOP BLOCK | MIRAFI 8XT GEOGRID | |
| TOP — 36-INCH TOP BLOCK | 36-INCH BLOCK | X.X' — GEOGRID LENGTH (MINIMUM) | MIRAFI 5XT GEOGRID | CHANGE IN GEOGRID LENGTH/TYPE |

SCALE 1" = 10'-0"

0 5 10 20

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 12 ELEVATION VIEW– | SHEET NUMBER: 39 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=10'-0" | | |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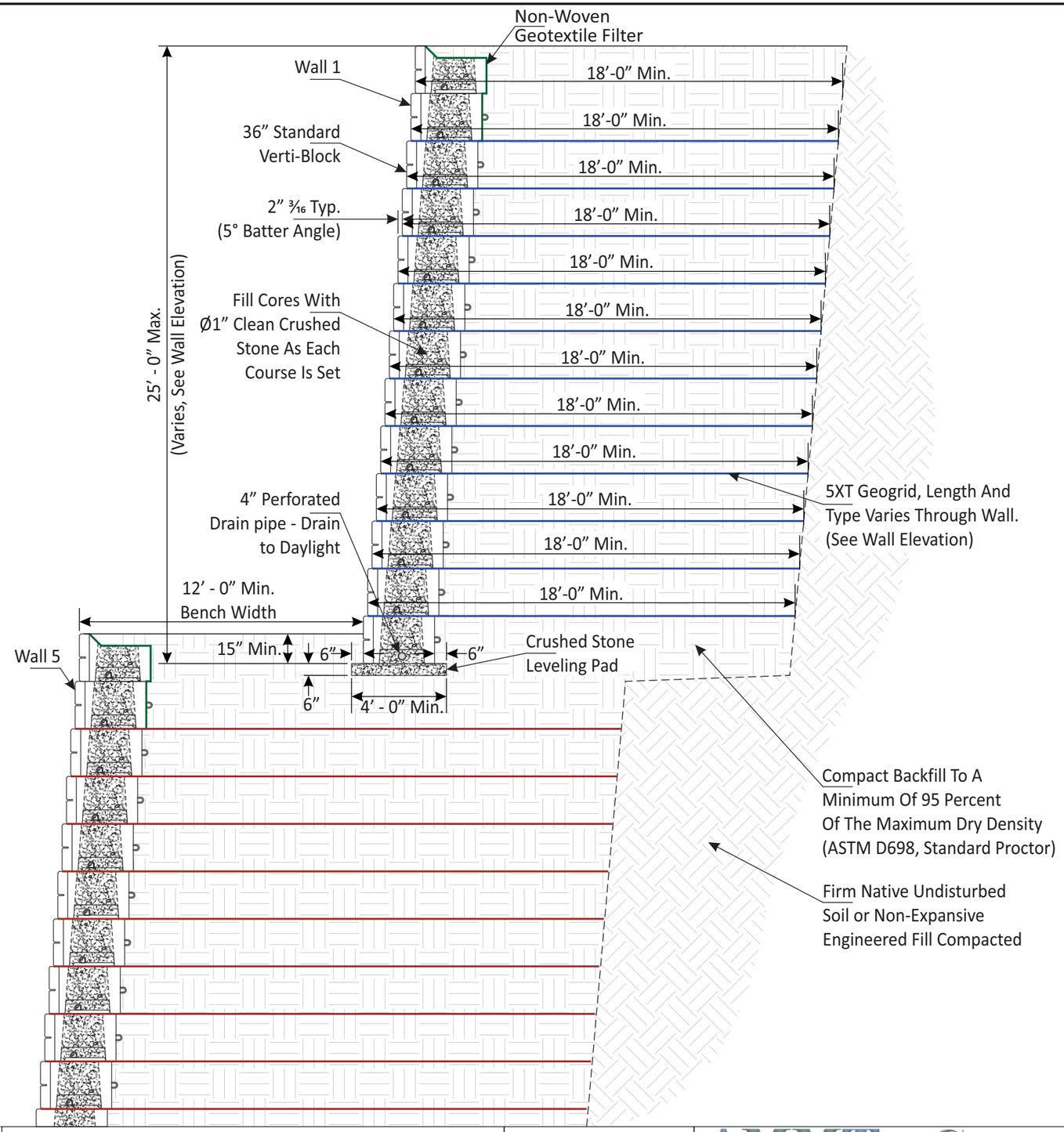
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Appendix C

(Verti-Block Cross Sections)




## Section View - Wall 1

Scale: 1"=5'-0"

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

Safety Barrier Recommendation
It is the responsibility the property owner to install a safety fence/barriers above the retaining wall. During fence/barrier installation, for properties, reactions, and utilities, contractor to maintain the integrity of Verti-Block members and related Geogrid systems and connections. AMMTEC should be contacted for any potential construction impacts to wall including surcharge additions prior to construction.

SCALE 1" = 5'-0"

0 2.5 5 10

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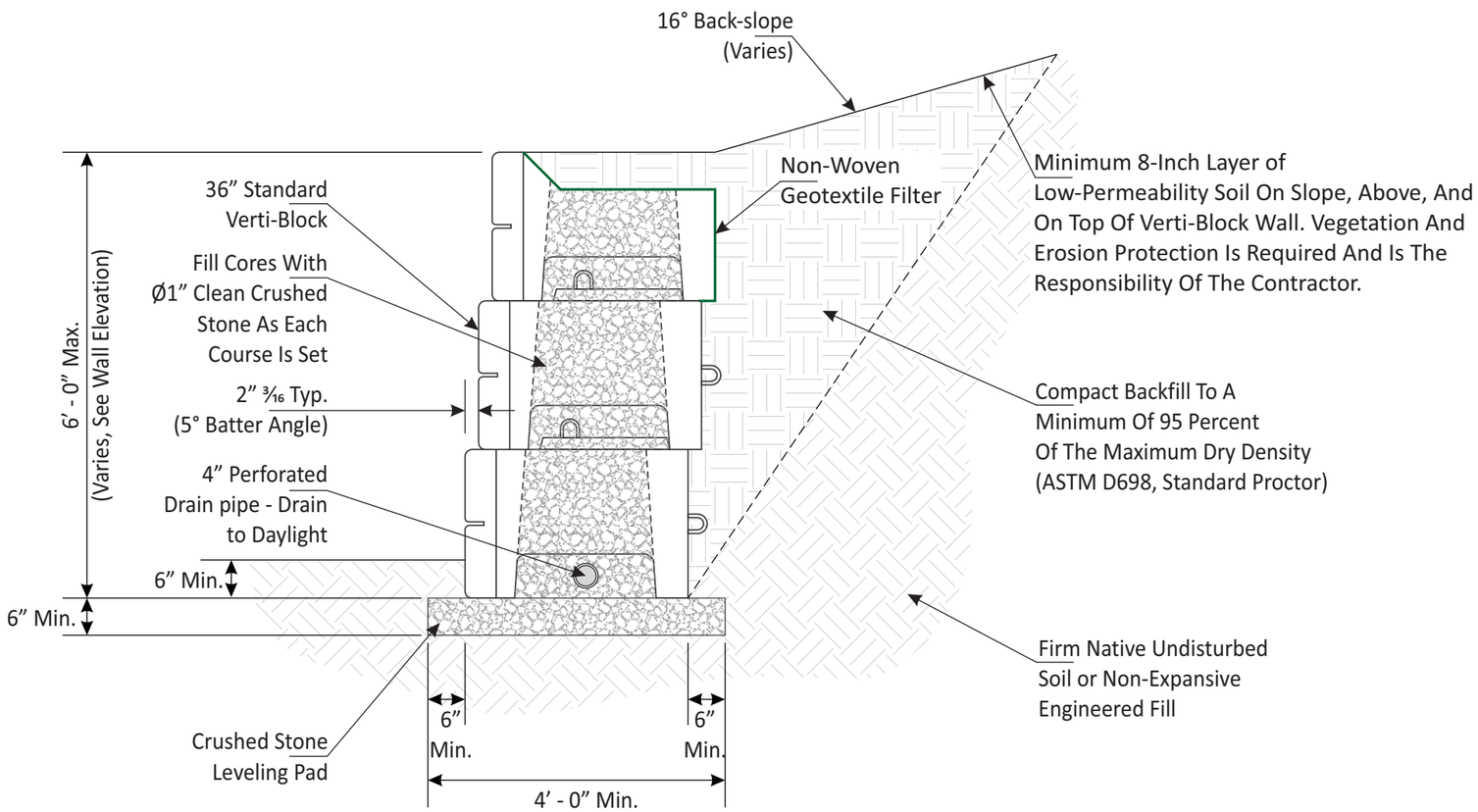
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 1– | SHEET NUMBER: 40 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 | | CONSULTING ENGINEERING SERVICES |
| Scale: 1"=5'-0" | 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | 2447 West 12th Street, Ste #1 Phone: 480 927-9696 |
| | | | Tempe, Arizona 85281 Fax: 480 927-9797 |
| | | | E-Mail: ammtec@ammtec.com www.ammtec.com |

Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




## Section View - Wall 2

Scale: 1"=2'-0"

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

Safety Barrier Recommendation
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SCALE 1" = 2'-0"

0 1 2 4

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No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 2– | SHEET NUMBER: 41 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=2'-0" | | |

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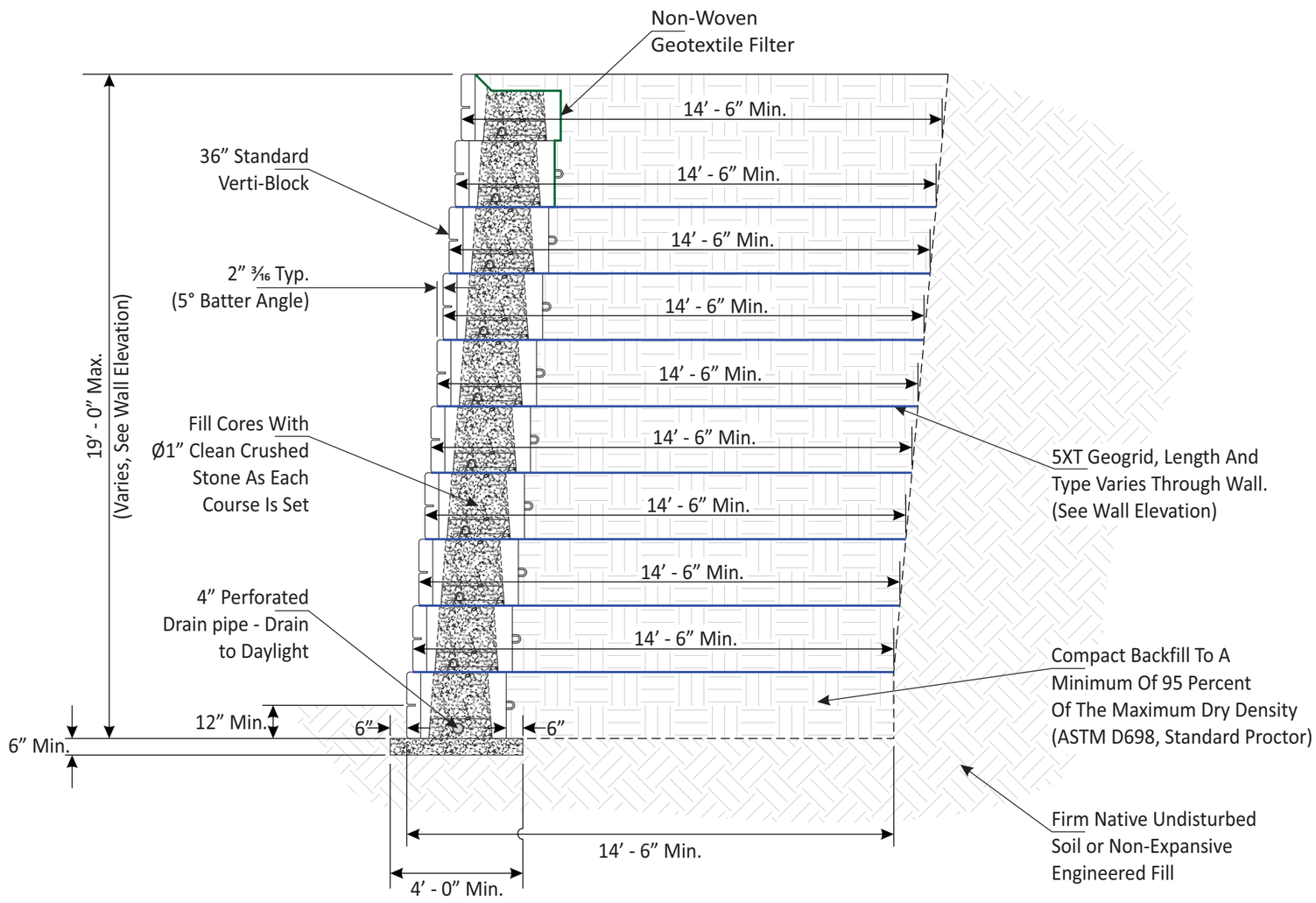
www.ammtec.com

Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




## Section View - Wall 3

Scale: 1"=4'-0"

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

Safety Barrier Recommendation
It is the responsibility the property owner to install a safety fence/barriers above the retaining wall. During fence/barrier installation, for properties, reactions, and utilities, contractor to maintain the integrity of Verti-Block members and related Geogrid systems and connections. AMMTEC should be contacted for any potential construction impacts to wall including surcharge additions prior to construction.

SCALE 1" = 4'-0"

0 2 4 8

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No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 3– | SHEET NUMBER: 42 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1"=4'-0" | | |

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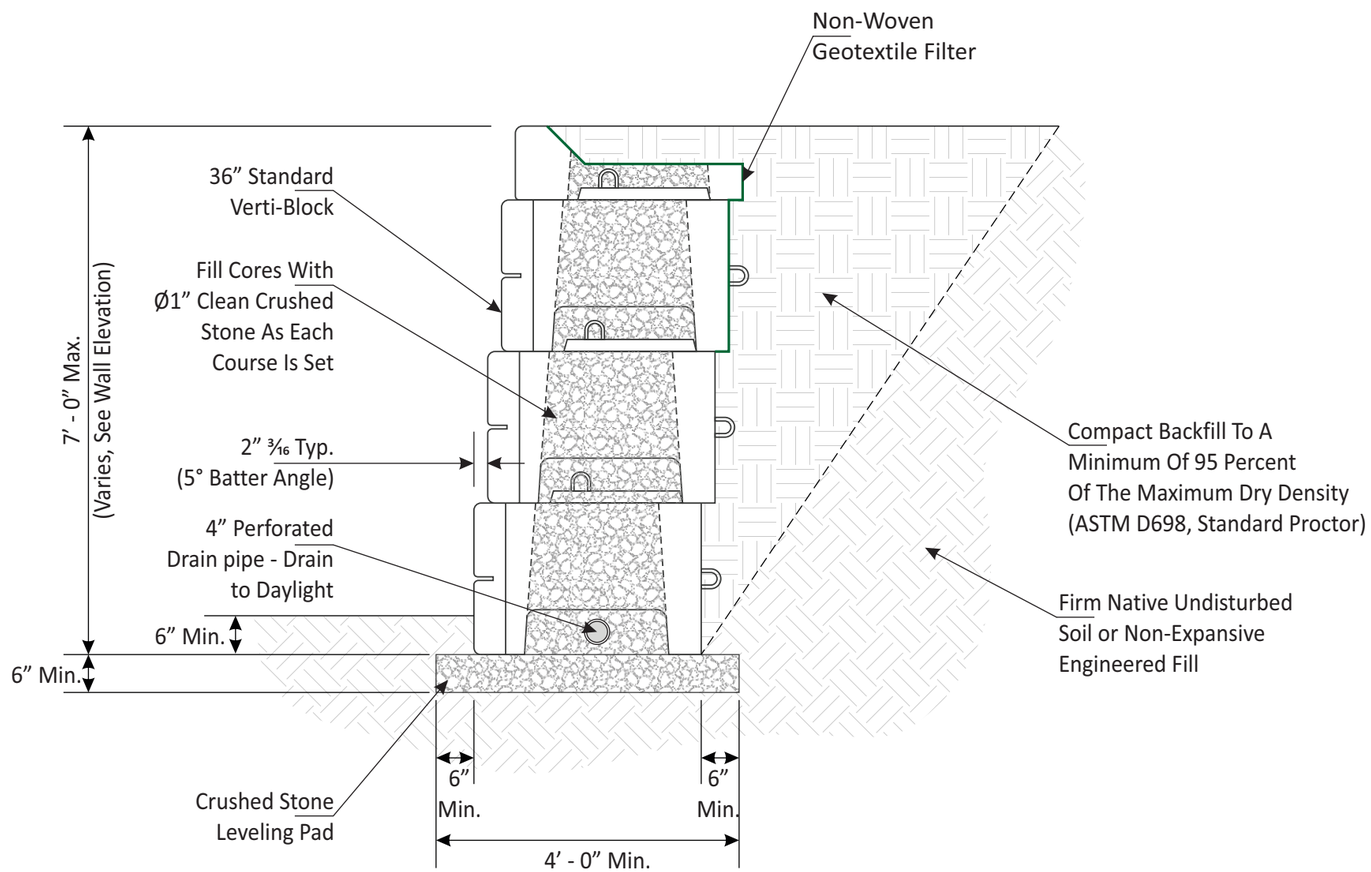
www.ammtec.com

Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




## Section View - Wall 4

Scale: 1”=2’-0”

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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SCALE 1” = 2’-0”

0 1 2 4

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No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 13, 2025

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 4– | SHEET NUMBER: 43 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | CONSULTING ENGINEERING SERVICES |
| Scale: 1”=2’-0” | | | |

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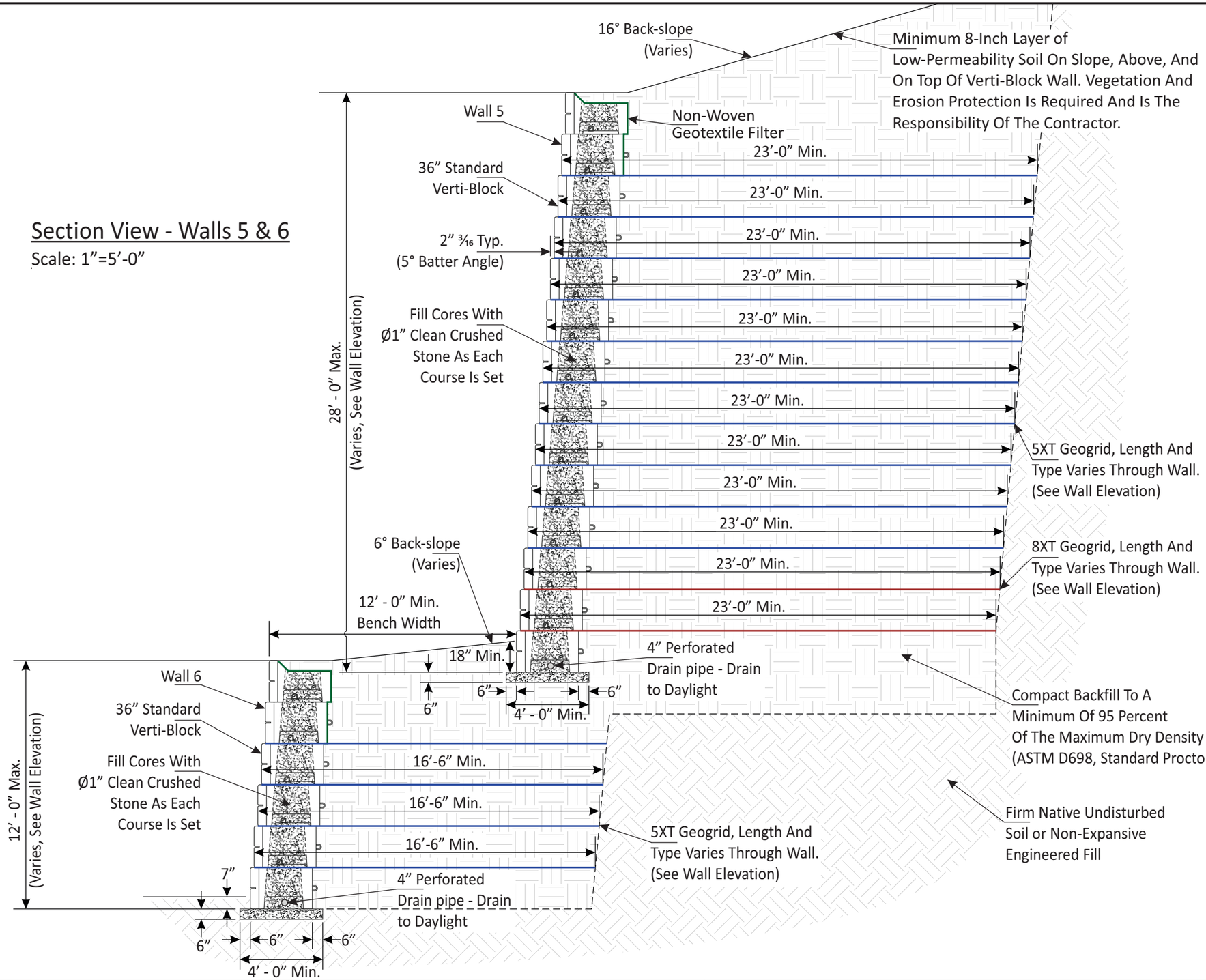
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

## Section View - Walls 5 & 6

Scale: 1”=5’-0”




Notes:

Typical Section Displayed

All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety

Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection

Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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SCALE 1” = 5’-0”

0 2.5 5 10

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No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALLS 5 & 6– | SHEET NUMBER: 44 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1”=5’-0” | | |


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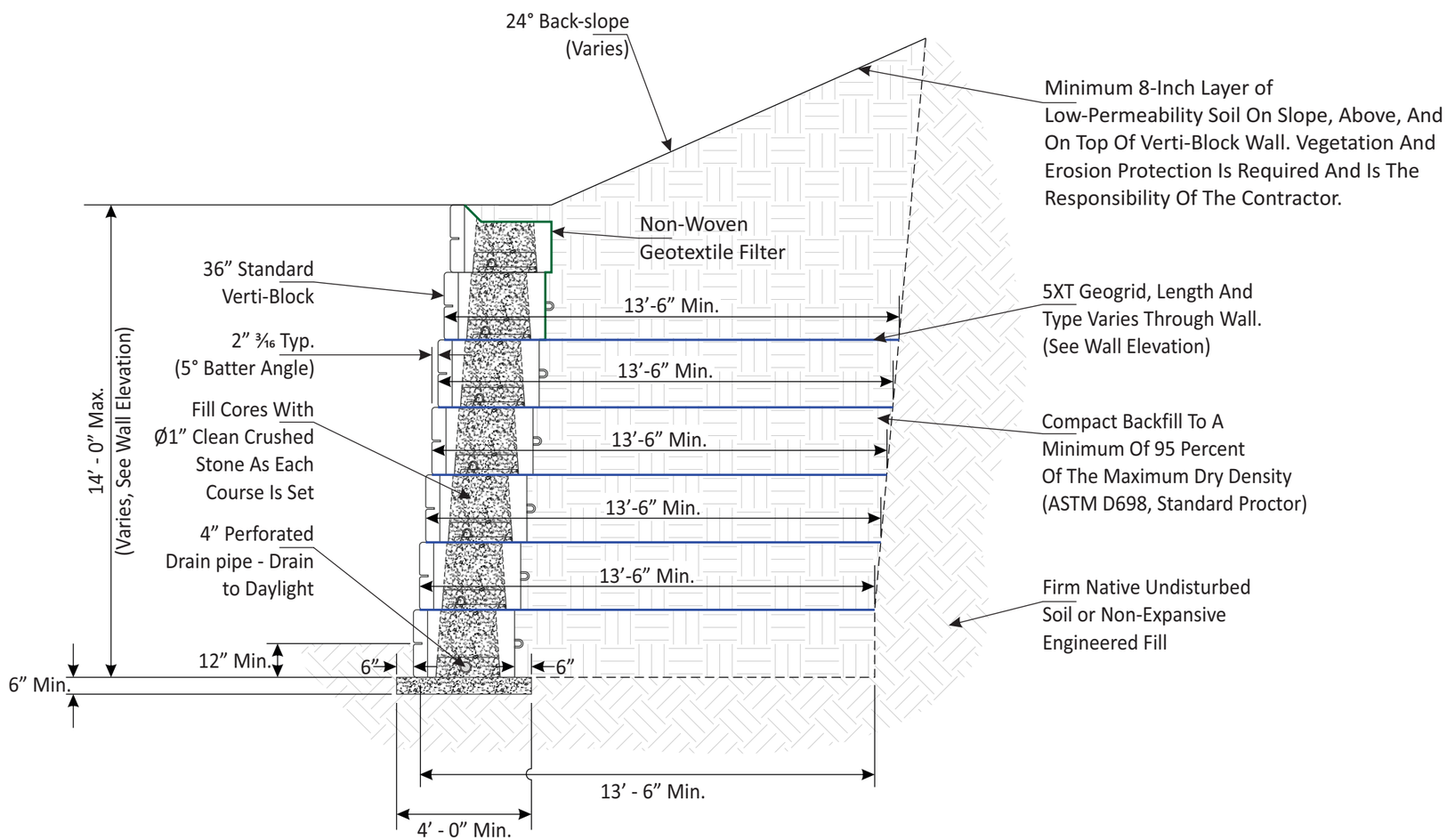
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




## Section View - Wall 7

Scale: 1"=4'-0"

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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SCALE 1" = 4'-0"

0 2 4 8

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 7– | SHEET NUMBER: 45 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | CONSULTING ENGINEERING SERVICES |
| Scale: 1"=4'-0" | | | |

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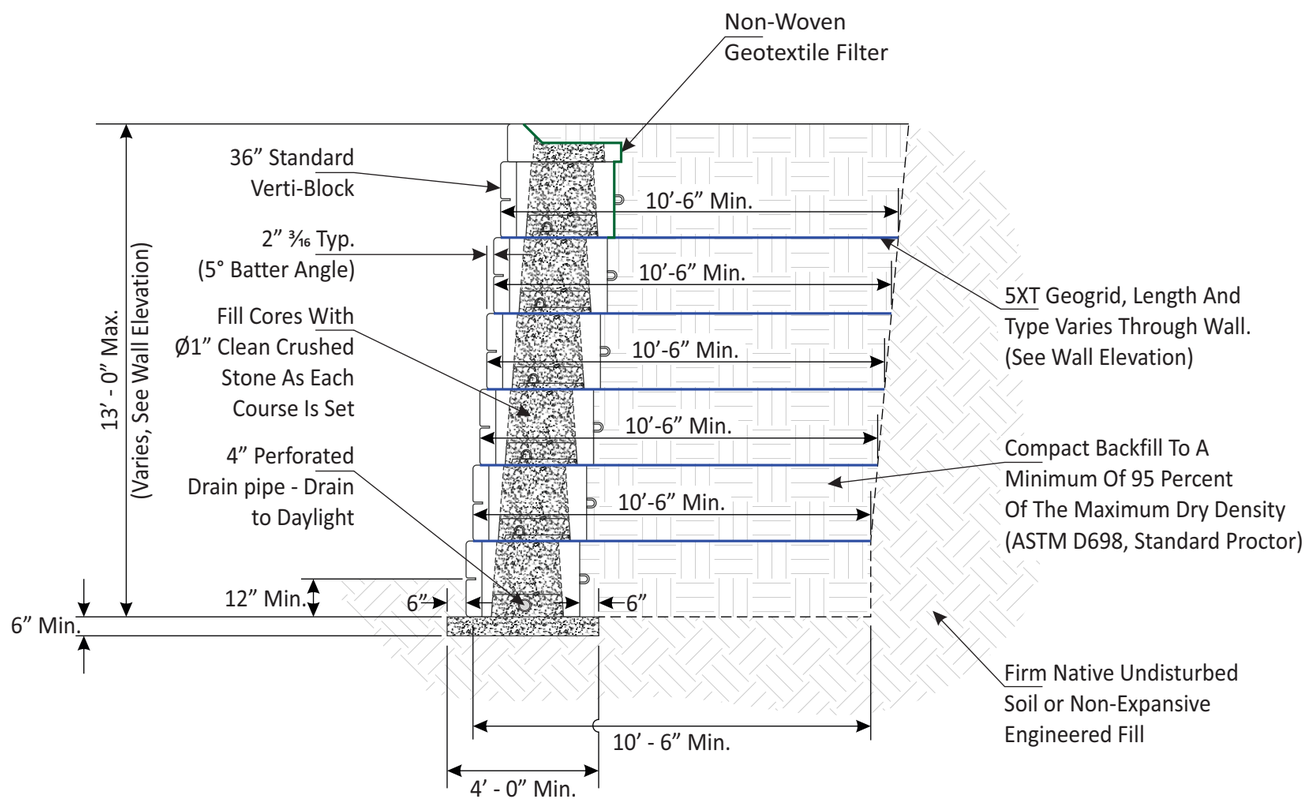
www.ammtec.com

Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




## Section View - Wall 8

Scale: 1”=4’-0”

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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SCALE 1” = 4’-0”
0 2 4 8

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | |
|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 8– | SHEET NUMBER: 46 |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2<br>6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | |
| Scale: 1”=4’-0” | | |

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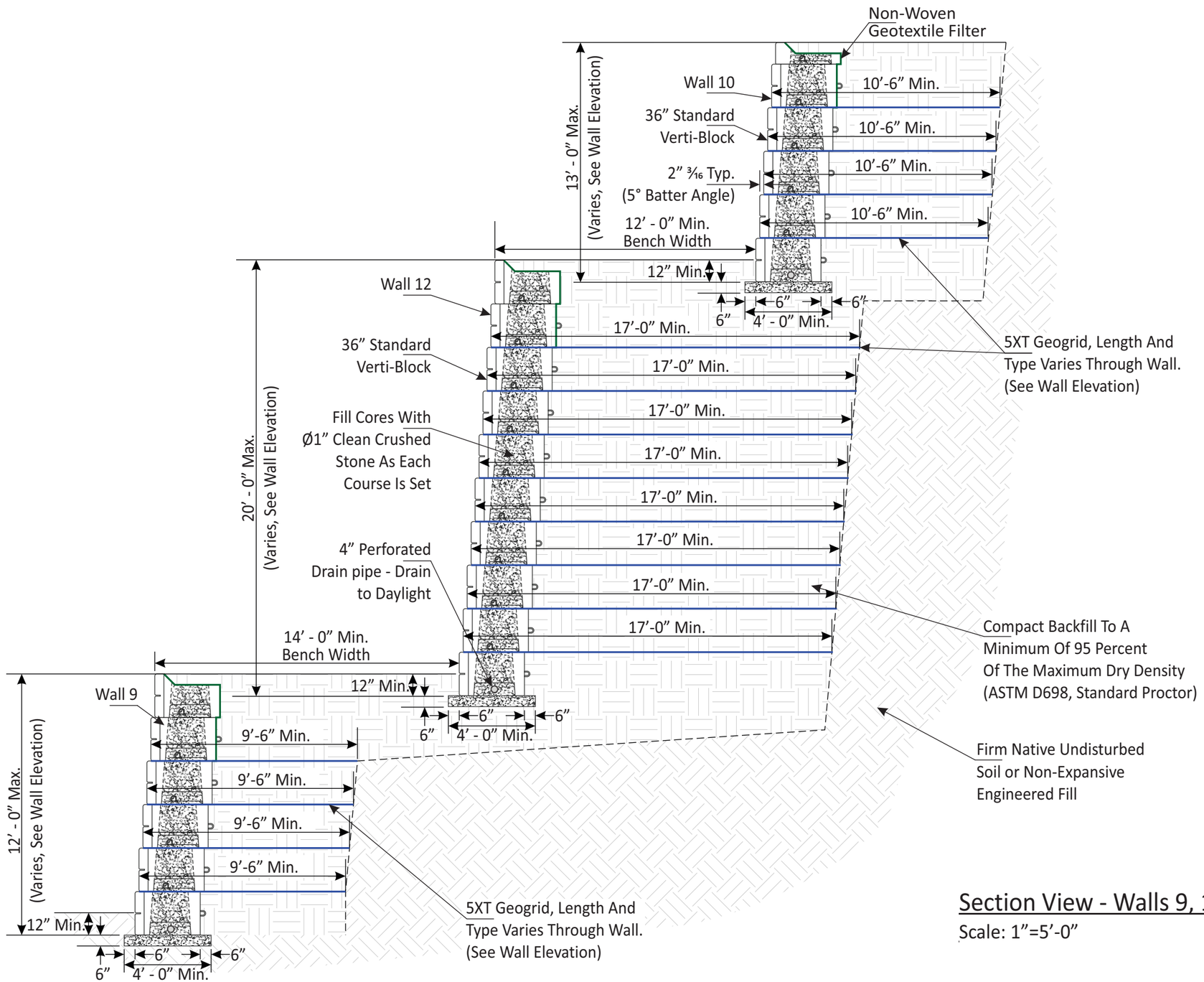
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
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## Section View - Walls 9, 10 , & 12

Scale: 1"=5'-0"

SCALE 1" = 5'-0"

0 2.5 5 10

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALLS 9, 10, & 12– | SHEET NUMBER: 47 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | CONSULTING ENGINEERING SERVICES |
| Scale: 1"=5'-0" | | | |


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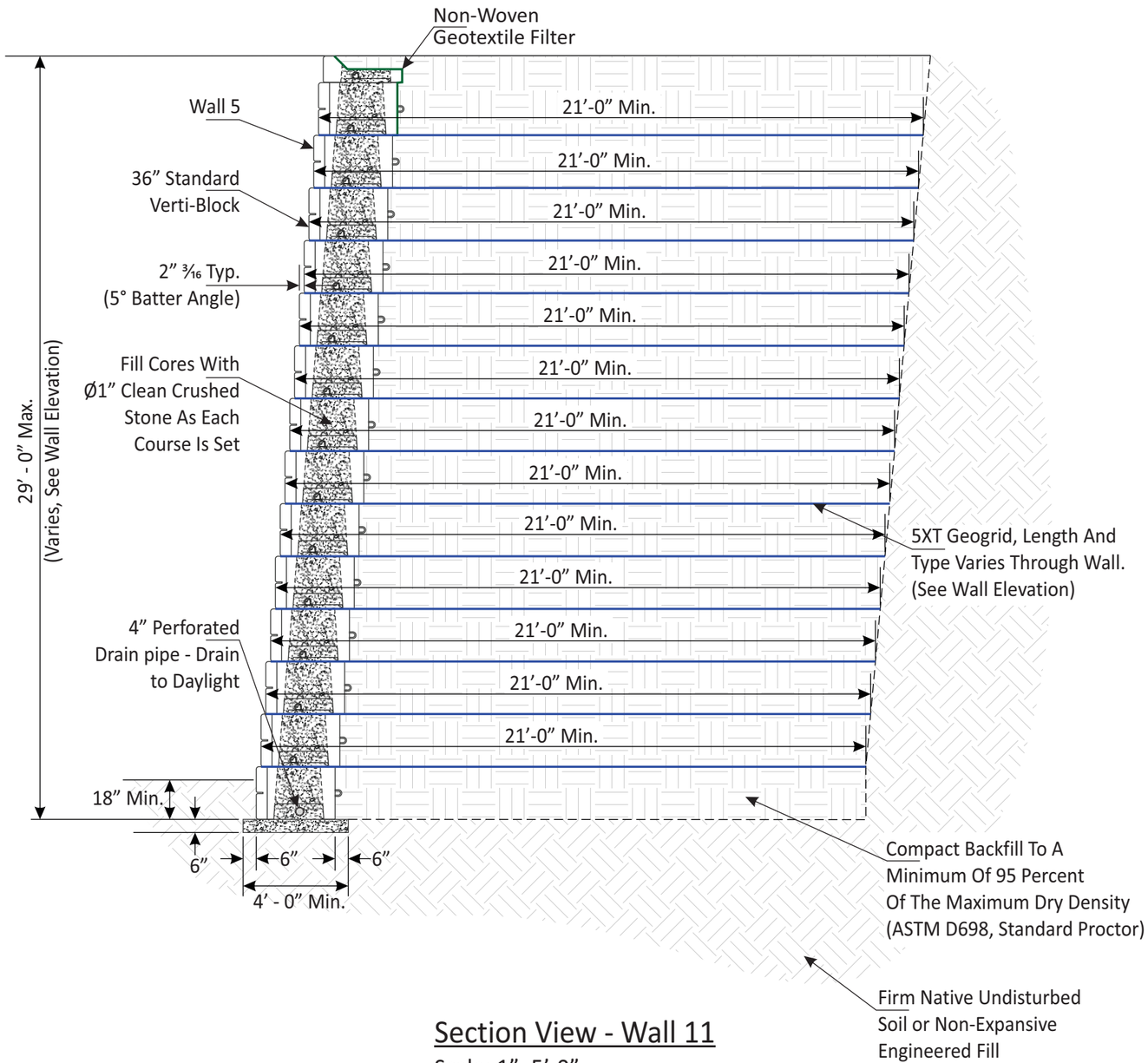
www.ammtec.com


Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A




## Section View - Wall 11

Scale: 1"=5'-0"

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
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SCALE 1" = 5'-0"

0 2.5 5 10

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 13, 2025

| | | | |
|---|---|---|---|
| Project Number: AZ 2025 | DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 11– | SHEET NUMBER: 48 | AMMTEC CONSULTANTS, PLLC |
| Engineered By: Alan E. Money | PROJECT NAME: SUNDOWN CONDOS PHASE 2 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT | | CONSULTING ENGINEERING SERVICES |
| Scale: 1"=5'-0" | | | |

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Phone: 480 927-9696
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www.ammtec.com

Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

# Appendix D

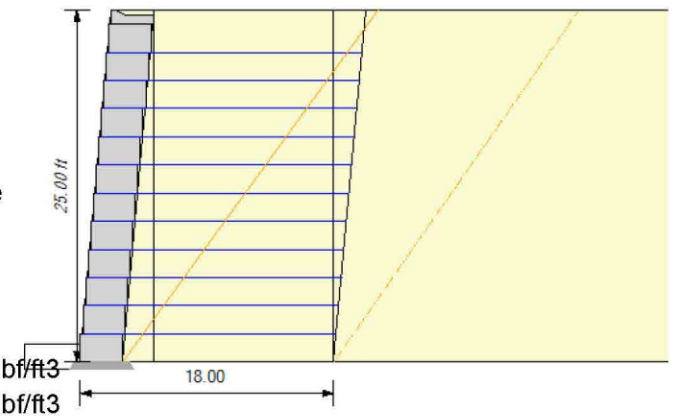
(Calculations - Static & Seismic)

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E.
MONEY
STATE OF UTAH
May 18, 2025

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 1 - 25 ft no SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 25.00 ft (23.75 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | | 0.00 ft | |
| Embedment: | 1.25 ft | LL2 Width: | | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | | 0 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | | 0.0 ft | |
| Back Slope Length: | 30.0 ft | Dead Load Width: | | 0.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

VertiBlock Wall Designer 2025.1.25

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 4.28 | FoS Overturning: | 8.43 |
| Bearing | 3,119 | FoS Bearing: | 13.54 |
| FoS Pullout | 1.42 NG | | |
| Total Pullout | 147,999 | FoS Total Pullout | 15.07 |
| Top FoSot: | 12.77 | FoS Connection: | 1.93 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 22 | 18 | 5XT | 1786 | 243 | 243 | 11.02 | 1.42/[243] | 59.63 | 1.04 |
| 10 | 20 | 18 | 5XT | 1786 | 304 | 304 | 8.82 | 4.21/[304] | 30.04 | 2.31 |
| 9 | 18 | 18 | 5XT | 1786 | 425 | 425 | 6.30 | 6.52/[425] | 19.74 | 3.58 |
| 8 | 16 | 18 | 5XT | 1786 | 547 | 547 | 4.90 | 8.84/[547] | 14.63 | 4.84 |
| 7 | 14 | 18 | 5XT | 1786 | 668 | 668 | 4.01 | 11.15/[668] | 11.61 | 6.11 |
| 6 | 12 | 18 | 5XT | 1786 | 790 | 790 | 3.39 | 13.47/[790] | 9.62 | 7.38 |
| 5 | 10 | 18 | 5XT | 1786 | 911 | 911 | 2.94 | 15.79/[911] | 8.21 | 8.65 |
| 4 | 8 | 18 | 5XT | 1786 | 1033 | 1033 | 2.59 | 18.10/[1033] | 7.17 | 9.92 |
| 3 | 6 | 18 | 5XT | 1786 | 1154 | 1154 | 2.32 | 20.42/[1154] | 6.37 | 11.19 |
| 2 | 4 | 18 | 5XT | 1786 | 1276 | 1276 | 2.10 | 22.73/[1276] | 5.73 | 12.46 |
| 1 | 2 | 18 | 5XT | 1786 | 1398 | 1398 | 1.92 | 25.05/[1398] | 5.21 [4.28] | 13.73 |

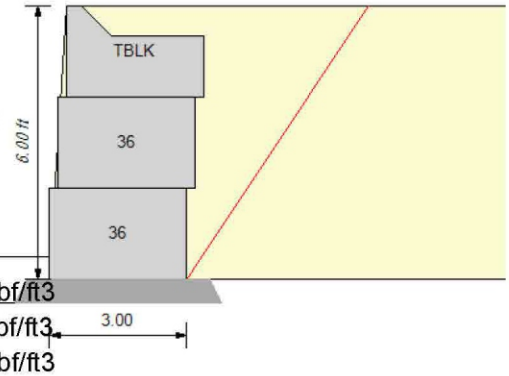
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 2 - 6 ft |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Infill Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| LvlPad / Drain Mat: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Crushed Stone Lvlng Pad | | | |

GEOMETRY

| | | | |
|---|---|---|---|
| Design Height: | 6.00 ft | Live Load: | 0.00 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft |
| Embedment: | 0.50 ft* | Live Load Width: | 0.00 ft |
| Leveling Pad Depth: | 0.50 ft | | |
| Slope Angle: | 0.0 deg | Dead Load: | 0.0 lbf/ft2 |
| Slope Length: | 20.0 ft | Dead Load Offset: | 0.0 ft |
| Slope Toe Offset: | 0.0 ft | Dead Load Width: | 0.00 ft |
| Leveling Pad Width: | 4.00 ft | D.L. Embedment: | 0.00 ft |

Vert δ on Single Dpth

* Note: For all designs the passive resistance in front of the wall units is ignored for sliding calculations.

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Overturning: | 1.50 |
| Bearing: | 2.00 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.75 (lvlpd) | FoS Overturning: | 3.59 |
| Bearing: | 795.36 | FoS Bearing: | 12.52 |

| Name | Elev.[dpth] | ka | Pa | PaT | FSsl | FoS OT | %D/H |
|---|---|---|---|---|---|---|---|
| TBLK | 4.00[2.00] | 0.254 | 64 | 64 | 20.54 | 19.62 | 150% |
| 36 | 2.00[4.00] | 0.219 | 219 | 219 | 8.36 | 7.18 | 75% |
| 36 | 0.00[6.00] | 0.219 | 493 | 493 | 2.75 | 3.59 | 50% |

Design Approach:

The design is a 'top down' approach. The values shown in the table[ka, kae, Pa, etc.] are the values from the top of wall to the base of that row. For trial wedge analysis, the ka and kae are back-calculated from the Pa, Pae values.

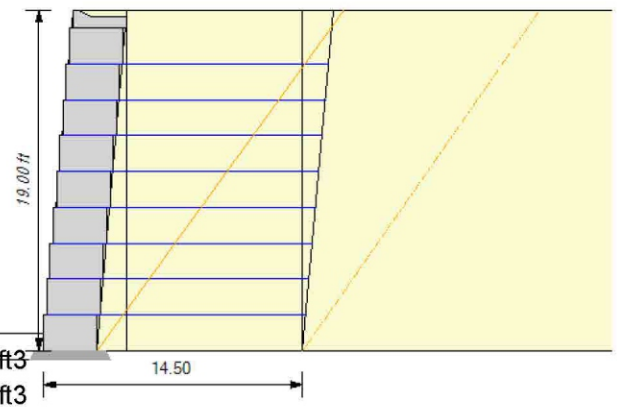
Column Descriptions:

ka: active earth pressure coefficient
Pa: active earth pressure
Paq: live surcharge earth pressure
Paq2: live load 2 surcharge earth pressure
Paqd: dead surcharge earth pressure
(PaC): reduction in load due to cohesion
PaT: sum of all earth pressures
FSsl(lvl Pad): factor of safety for sliding at each layer. (FS sliding below the leveling pad)
FSot: factor of safety of overturning about the toe.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 3 - 19 ft |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 19.00 ft (18.00 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | | 0.00 ft | |
| Embedment: | 1.00 ft | LL2 Width: | | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | | 0 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | | 0.0 ft | |
| Back Slope Length: | 40.0 ft | Dead Load Width: | | 0.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | | |
| Vertical δ on Single Depth | | | | | |

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 4.58 | FoS Overturning: | 9.39 |
| Bearing | 2,370 | FoS Bearing: | 14.37 |
| FoS Pullout | 1.84 | | |
| Total Pullout | 63,145 | FoS Total Pullout | 11.13 |
| Top FoSot: | 12.77 | FoS Connection: | 2.48 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 16 | 14.5 | 5XT | 1786 | 243 | 243 | 11.02 | 1.84/[243] | 54.69 | 1.34 |
| 7 | 14 | 14.5 | 5XT | 1786 | 304 | 304 | 8.82 | 4.77/[304] | 27.08 | 2.61 |
| 6 | 12 | 14.5 | 5XT | 1786 | 425 | 425 | 6.30 | 7.08/[425] | 17.62 | 3.88 |
| 5 | 10 | 14.5 | 5XT | 1786 | 547 | 547 | 4.90 | 9.40/[547] | 12.98 | 5.15 |
| 4 | 8 | 14.5 | 5XT | 1786 | 668 | 668 | 4.01 | 11.72/[668] | 10.26 | 6.42 |
| 3 | 6 | 14.5 | 5XT | 1786 | 790 | 790 | 3.39 | 14.03/[790] | 8.48 | 7.69 |
| 2 | 4 | 14.5 | 5XT | 1786 | 911 | 911 | 2.94 | 16.35/[911] | 7.23 | 8.96 |
| 1 | 2 | 14.5 | 5XT | 1786 | 1033 | 1033 | 2.59 | 18.66/[1033] | 6.30 [4.58] | 10.23 |

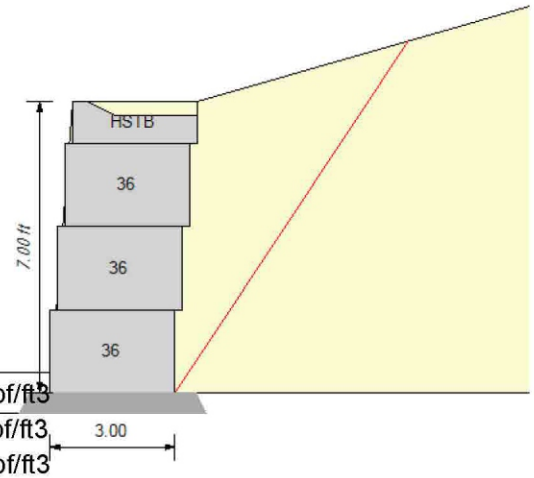
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 4 - 7 ft |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Infill Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| LvlPad / Drain Mat: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Crushed Stone Lvlng Pad | | | |

GEOMETRY

| | | | |
|---|---|---|---|
| Design Height: | 7.00 ft | Live Load: | 0.00 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft |
| Embedment: | 0.50 ft* | Live Load Width: | 0.00 ft |
| Leveling Pad Depth: | 0.50 ft | | |
| Slope Angle: | 16.0 deg | Dead Load: | 0.0 lbf/ft2 |
| Slope Length: | 50.0 ft | Dead Load Offset: | 0.0 ft |
| Slope Toe Offset: | 0.0 ft | Dead Load Width: | 0.00 ft |
| Leveling Pad Width: | 4.00 ft | D.L. Embedment: | 0.00 ft |

Vert δ on Single Dpth

* Note: For all designs the passive resistance in front of the wall units is ignored for sliding calculations.

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Overturning: | 1.50 |
| Bearing: | 2.00 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

VertiBlock Wall Designer 2025.1.25

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.12 (lvlpd) | FoS Overturning: | 2.50 |
| Bearing: | 1119.50 | FoS Bearing: | 8.32 |

| Name | Elev.[dpth] | ka | Pa | PaT | FSsl | FoS OT | %D/H |
|---|---|---|---|---|---|---|---|
| HSTB | 6.00[1.00] | 0.314 | 20 | 20 | 59.57 | 89.10 | 300% |
| 36 | 4.00[3.00] | 0.268 | 151 | 151 | 11.30 | 12.14 | 100% |
| 36 | 2.00[5.00] | 0.268 | 419 | 419 | 5.43 | 4.64 | 60% |
| 36 | 0.00[7.00] | 0.268 | 821 | 821 | 2.12 | 2.50 | 43% |

Design Approach:

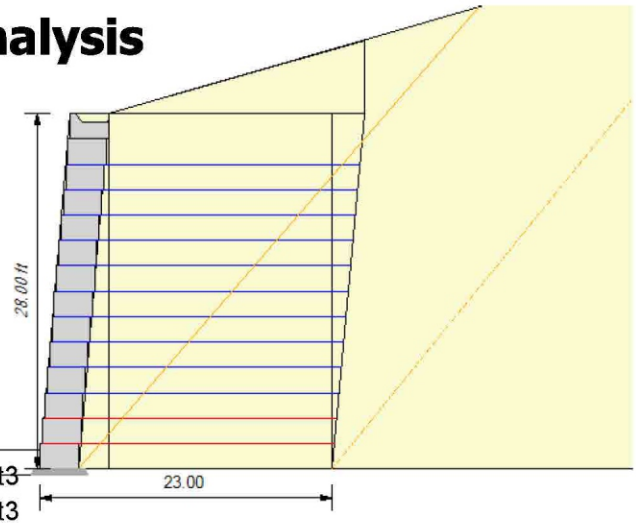
The design is a 'top down' approach. The values shown in the table[ka, kae, Pa, etc.] are the values from the top of wall to the base of that row. For trial wedge analysis, the ka and kae are back-calculated from the Pa, Pae values.

Column Descriptions:

ka: active earth pressure coefficient
Pa: active earth pressure
Paq: live surcharge earth pressure
Paq2: live load 2 surcharge earth pressure
Paqd: dead surcharge earth pressure
(PaC): reduction in load due to cohesion
PaT: sum of all earth pressures
FSsl(lvl Pad): factor of safety for sliding at each layer. (FS sliding below the leveling pad)
FSot: factor of safety of overturning about the toe.

Verti-Block® Retaining Walls

# REA Analysis




| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 5a - 28 ft no SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |

| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | |
|---|---|---|---|
| Design Height: | 28.00 ft (26.50 ft Exp.) | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft |
| Embedment: | 1.50 ft | LL2 Width: | 0 ft |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 0 lbf/ft2 |
| Back Slope Angle: | 16.0 deg | Dead Load Offset: | 0.0 ft |
| Back Slope Length: | 50.0 ft | Dead Load Width: | 0.00 ft |
| Back Slope Toe Offset: | 0.0 ft | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.45 | FoS Overturning: | 4.78 |
| Bearing | 4,094 | FoS Bearing: | 12.23 |
| FoS Pullout | 2.98 | | |
| Total Pullout | 294,131 | FoS Total Pullout | 18.97 |
| Top FoSot: | 4.91 | FoS Connection: | 1.58 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 24 | 23 | 5XT | 1786 | 478 | 478 | 5.60 | 2.98/[478] | 7.53 | 1.32 |
| 11 | 22 | 23 | 5XT | 1786 | 459 | 459 | 5.84 | 7.95/[459] | 6.44 | 2.88 |
| 10 | 20 | 23 | 5XT | 1786 | 612 | 612 | 4.38 | 10.56/[612] | 5.63 | 4.43 |
| 9 | 18 | 23 | 5XT | 1786 | 765 | 765 | 3.50 | 12.91/[765] | 4.99 | 5.99 |
| 8 | 16 | 23 | 5XT | 1786 | 918 | 918 | 2.92 | 15.11/[918] | 4.49 | 7.55 |
| 7 | 14 | 23 | 5XT | 1786 | 1071 | 1071 | 2.50 | 17.24/[1071] | 4.08 | 9.10 |
| 6 | 12 | 23 | 5XT | 1786 | 1224 | 1224 | 2.19 | 19.32/[1224] | 3.74 | 10.66 |
| 5 | 10 | 23 | 5XT | 1786 | 1377 | 1377 | 1.95 | 21.36/[1377] | 3.45 | 12.22 |
| 4 | 8 | 23 | 5XT | 1786 | 1530 | 1530 | 1.75 | 23.39/[1530] | 3.21 | 13.77 |
| 3 | 6 | 23 | 5XT | 1786 | 1683 | 1683 | 1.59 | 25.39/[1683] | 2.99 | 15.33 |
| 2 | 4 | 23 | 8XT | 2812 | 1835 | 1835 | 2.30 | 27.39/[1835] | 2.81 | 16.89 |
| 1 | 2 | 23 | 8XT | 2812 | 1988 | 1988 | 2.12 | 29.47/[1988] | 2.45 [2.47] | 18.44 |

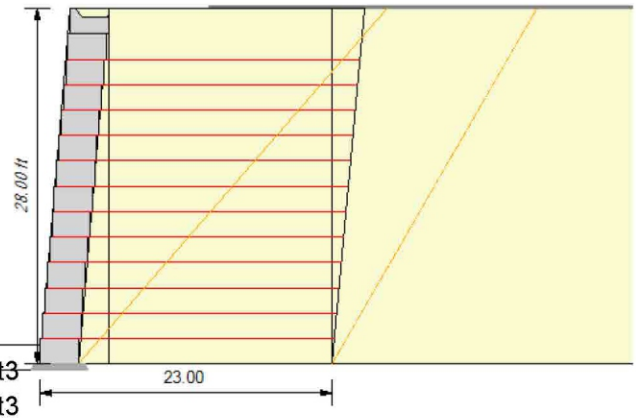
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 5b - 28 ft w/wall 1 SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 28.00 ft (26.50 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | | 0.00 ft | |
| Embedment: | 1.50 ft | LL2 Width: | | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | | 3,375 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | | 8.0 ft | |
| Back Slope Length: | 7.0 ft | Dead Load Width: | | 53.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 1.94 | FoS Overturning: | 3.92 |
| Bearing | 6,703 | FoS Bearing: | 6.52 |
| FoS Pullout | 1.78 | | |
| Total Pullout | 535,968 | FoS Total Pullout | 44.85 |
| Top FoSot: | 6.18 | FoS Connection: | 1.55 |

| ID | Height | Length | Name | Ta | Pa | DL | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 24 | 23 | 8XT | 2812 | 368 | 2277 | 2646 | 1.59 | 1.78/[2646] | 8.42 | 1.32 |
| 11 | 22 | 23 | 8XT | 2812 | 354 | 902 | 1256 | 3.36 | 8.67/[1256] | 6.15 | 2.88 |
| 10 | 20 | 23 | 8XT | 2812 | 472 | 1257 | 1729 | 2.44 | 10.27/[1729] | 4.99 | 4.43 |
| 9 | 18 | 23 | 8XT | 2812 | 590 | 1202 | 1792 | 2.35 | 14.13/[1792] | 4.28 | 5.99 |
| 8 | 16 | 23 | 8XT | 2812 | 707 | 1160 | 1867 | 2.26 | 17.98/[1867] | 3.79 | 7.55 |
| 7 | 14 | 23 | 8XT | 2812 | 825 | 1114 | 1940 | 2.17 | 21.92/[1940] | 3.43 | 9.10 |
| 6 | 12 | 23 | 8XT | 2812 | 943 | 1087 | 2030 | 2.08 | 25.69/[2030] | 3.16 | 10.66 |
| 5 | 10 | 23 | 8XT | 2812 | 1061 | 1058 | 2119 | 1.99 | 27.02/[2119] | 2.94 | 12.22 |
| 4 | 8 | 23 | 8XT | 2812 | 1179 | 1028 | 2208 | 1.91 | 28.47/[2208] | 2.76 | 13.77 |
| 3 | 6 | 23 | 8XT | 2812 | 1297 | 1021 | 2318 | 1.82 | 29.82/[2318] | 2.60 | 15.33 |
| 2 | 4 | 23 | 8XT | 2812 | 1415 | 991 | 2405 | 1.75 | 31.63/[2405] | 2.47 | 16.89 |
| 1 | 2 | 23 | 8XT | 2812 | 1533 | 959 | 2492 | 1.69 | 33.61/[2492] | 2.22 [1.94] | 18.44 |

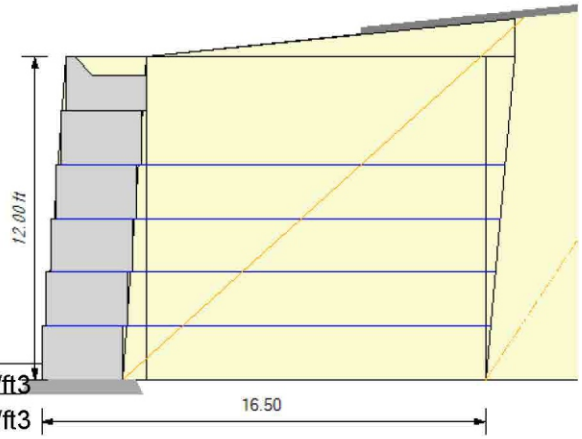
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 6 - 12 ft |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | |
|---|---|---|---|---|
| Design Height: | 12.00 ft (11.40 ft Exp.) | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft | |
| Embedment: | 0.60 ft | LL2 Width: | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 3,780 lbf/ft2 | |
| Back Slope Angle: | 6.0 deg | Dead Load Offset: | 8.0 ft | |
| Back Slope Length: | 20.0 ft | Dead Load Width: | 40.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

VertiBlock Wall Designer 2025.1.25

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 1.91 | FoS Overturning: | 5.97 |
| Bearing | 3,369 | FoS Bearing: | 9.49 |
| FoS Pullout | 18.90 | | |
| Total Pullout | 102,262 | FoS Total Pullout | 49.73 |
| Top FoSot: | 5.75 | FoS Connection: | 3.19 |

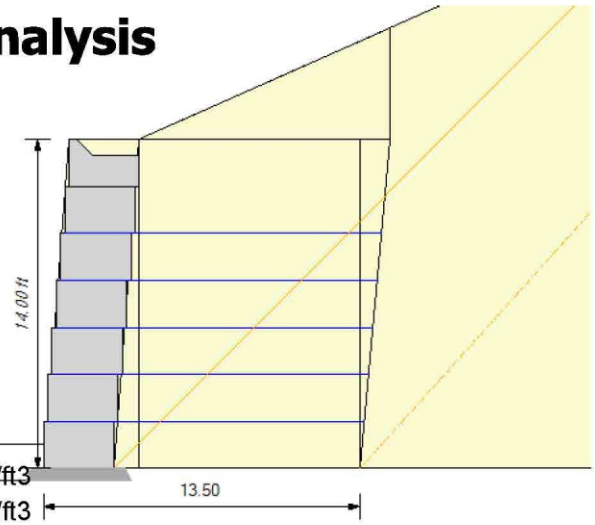
| ID | Height | Length | Name | Ta | Pa | DL | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 8 | 16.5 | 5XT | 1786 | 345 | 372 | 718 | 3.73 | 30.14/[718] | 3.78 | 5.34 |
| 3 | 6 | 16.5 | 5XT | 1786 | 331 | 922 | 1253 | 2.14 | 18.90/[1253] | 2.84 | 7.38 |
| 2 | 4 | 16.5 | 5XT | 1786 | 442 | 815 | 1256 | 2.13 | 21.17/[1256] | 2.34 | 9.42 |
| 1 | 2 | 16.5 | 5XT | 1786 | 552 | 735 | 1288 | 2.08 | 23.57/[1288] | 2.03 [1.91] | 11.46 |

Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis




| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 7 - 14 ft |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |

| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 14.00 ft (13.00 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft | | |
| Embedment: | 1.00 ft | LL2 Width: | 0 ft | | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 0 lbf/ft2 | | |
| Back Slope Angle: | 24.0 deg | Dead Load Offset: | 0.0 ft | | |
| Back Slope Length: | 30.0 ft | Dead Load Width: | 0.00 ft | | |
| Back Slope Toe Offset: | 0.0 ft | | | | |
| Vertical δ on Single Depth | | | | | |

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

VertiBlock Wall Designer 2025.1.25

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.06 | FoS Overturning: | 4.10 |
| Bearing | 2,232 | FoS Bearing: | 12.80 |
| FoS Pullout | 2.24 | | |
| Total Pullout | 35,024 | FoS Total Pullout | 7.32 |
| Top FoSot: | 3.98 | FoS Connection: | 2.14 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 10 | 13.5 | 5XT | 1786 | 590 | 590 | 4.54 | 2.24/[590] | 4.99 | 1.41 |
| 4 | 8 | 13.5 | 5XT | 1786 | 566 | 566 | 4.73 | 6.29/[566] | 4.14 | 3.23 |
| 3 | 6 | 13.5 | 5XT | 1786 | 755 | 755 | 3.55 | 8.48/[755] | 3.54 | 5.05 |
| 2 | 4 | 13.5 | 5XT | 1786 | 944 | 944 | 2.84 | 10.43/[944] | 3.09 | 6.86 |
| 1 | 2 | 13.5 | 5XT | 1786 | 1133 | 1133 | 2.36 | 12.26/[1133] | 2.75 [2.06] | 8.68 |

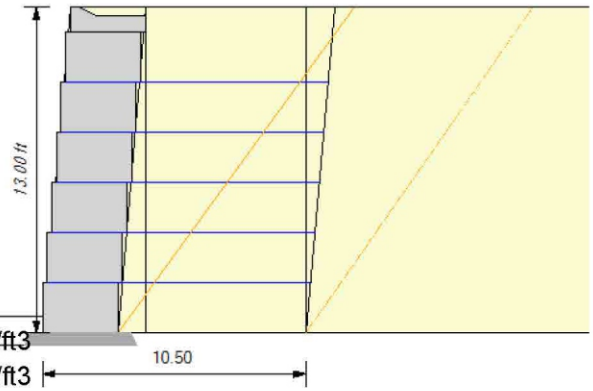
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 8 - 13 ft |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | |
|---|---|---|---|---|
| Design Height: | 13.00 ft (12.35 ft Exp.) | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft | |
| Embedment: | 0.65 ft | LL2 Width: | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 0 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | 0.0 ft | |
| Back Slope Length: | 20.0 ft | Dead Load Width: | 0.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

VertiBlock Wall Designer 2025.1.25

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 4.93 | FoS Overturning: | 10.40 |
| Bearing | 1,636 | FoS Bearing: | 14.86 |
| FoS Pullout | 1.58 | | |
| Total Pullout | 17,138 | FoS Total Pullout | 6.45 |
| Top FoSot: | 12.77 | FoS Connection: | 3.61 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 10 | 10.5 | 5XT | 1786 | 243 | 243 | 11.02 | 1.58/[243] | 48.98 | 1.15 |
| 4 | 8 | 10.5 | 5XT | 1786 | 304 | 304 | 8.82 | 4.42/[304] | 23.66 | 2.42 |
| 3 | 6 | 10.5 | 5XT | 1786 | 425 | 425 | 6.30 | 6.73/[425] | 15.18 | 3.69 |
| 2 | 4 | 10.5 | 5XT | 1786 | 547 | 547 | 4.90 | 9.05/[547] | 11.08 | 4.96 |
| 1 | 2 | 10.5 | 5XT | 1786 | 668 | 668 | 4.01 | 11.37/[668] | 8.70 [4.93] | 6.23 |

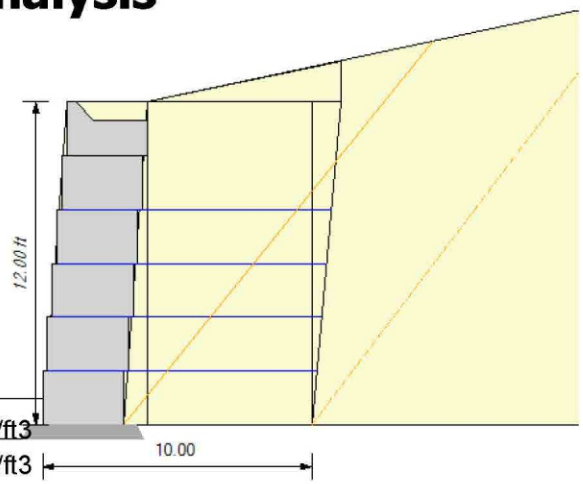
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 9a - 12 ft no SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 12.00 ft (11.00 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft | | |
| Embedment: | 1.00 ft | LL2 Width: | 0 ft | | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 0 lbf/ft2 | | |
| Back Slope Angle: | 12.0 deg | Dead Load Offset: | 0.0 ft | | |
| Back Slope Length: | 30.0 ft | Dead Load Width: | 0.00 ft | | |
| Back Slope Toe Offset: | 0.0 ft | | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 3.05 | FoS Overturning: | 6.06 |
| Bearing | 1,640 | FoS Bearing: | 14.32 |
| FoS Pullout | 1.67 | | |
| Total Pullout | 13,626 | FoS Total Pullout | 5.14 |
| Top FoSot: | 5.27 | FoS Connection: | 3.33 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 8 | 10 | 5XT | 1786 | 445 | 445 | 6.02 | 1.67/[445] | 12.62 | 1.25 |
| 3 | 6 | 10 | 5XT | 1786 | 427 | 427 | 6.27 | 5.00/[427] | 8.63 | 2.69 |
| 2 | 4 | 10 | 5XT | 1786 | 570 | 570 | 4.70 | 7.20/[570] | 6.55 | 4.12 |
| 1 | 2 | 10 | 5XT | 1786 | 712 | 712 | 3.76 | 9.33/[712] | 5.27 [3.05] | 5.56 |

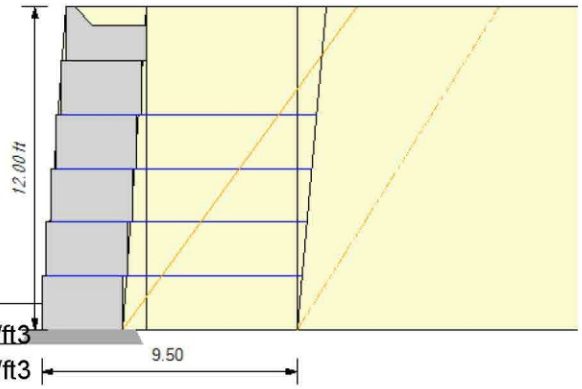
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 9b - 12 ft with Walls 12 and 10 SCs |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | |
|---|---|---|---|---|
| Design Height: | 12.00 ft (11.00 ft Exp.) | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft | |
| Embedment: | 1.00 ft | LL2 Width: | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 1,910 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | 20.0 ft | |
| Back Slope Length: | 10.0 ft | Dead Load Width: | 45.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 4.13 | FoS Overturning: | 8.61 |
| Bearing | 1,506 | FoS Bearing: | 15.45 |
| FoS Pullout | 1.65 | | |
| Total Pullout | 11,721 | FoS Total Pullout | 5.18 |
| Top FoSot: | 6.18 | FoS Connection: | 3.90 |

| ID | Height | Length | Name | Ta | Pa | DL | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 8 | 9.5 | 5XT | 1786 | 380 | 0 | 380 | 7.05 | 1.65/[380] | 25.62 | 1.42 |
| 3 | 6 | 9.5 | 5XT | 1786 | 365 | 0 | 365 | 7.35 | 4.90/[365] | 14.81 | 2.69 |
| 2 | 4 | 9.5 | 5XT | 1786 | 486 | 0 | 486 | 5.51 | 7.22/[486] | 10.28 | 3.96 |
| 1 | 2 | 9.5 | 5XT | 1786 | 608 | 0 | 608 | 4.41 | 9.54/[608] | 7.84 [4.13] | 5.23 |

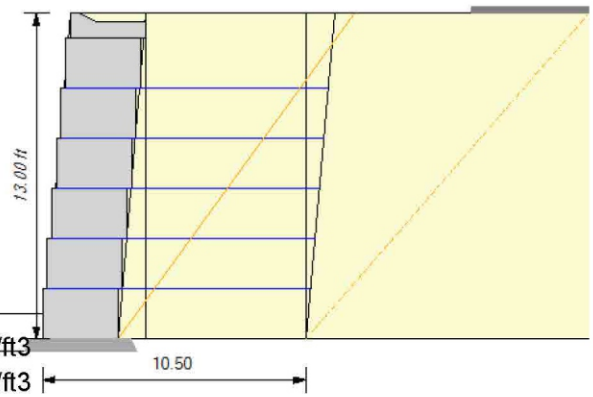
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 10 - 13 ft with Condo SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | |
|---|---|---|---|---|
| Design Height: | 13.00 ft (12.00 ft Exp.) | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | 0.00 ft | |
| Embedment: | 1.00 ft | LL2 Width: | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | 1,890 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | 13.0 ft | |
| Back Slope Length: | 12.0 ft | Dead Load Width: | 14.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.25 | FoS Overturning: | 3.77 |
| Bearing | 2,005 | FoS Bearing: | 10.74 |
| FoS Pullout | 1.57 | | |
| Total Pullout | 17,122 | FoS Total Pullout | 6.45 |
| Top FoSot: | 12.77 | FoS Connection: | 3.61 |

| ID | Height | Length | Name | Ta | Pa | DL | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 10 | 10.5 | 5XT | 1786 | 243 | 0 | 243 | 11.02 | 1.57/[243] | 42.32 | 1.14 |
| 4 | 8 | 10.5 | 5XT | 1786 | 304 | 0 | 304 | 8.82 | 4.41/[304] | 8.75 | 2.42 |
| 3 | 6 | 10.5 | 5XT | 1786 | 425 | 0 | 425 | 6.30 | 6.73/[425] | 5.15 | 3.69 |
| 2 | 4 | 10.5 | 5XT | 1786 | 547 | 0 | 547 | 4.90 | 9.04/[547] | 4.34 | 4.96 |
| 1 | 2 | 10.5 | 5XT | 1786 | 668 | 0 | 668 | 4.01 | 11.36/[668] | 3.72 [2.25] | 6.23 |

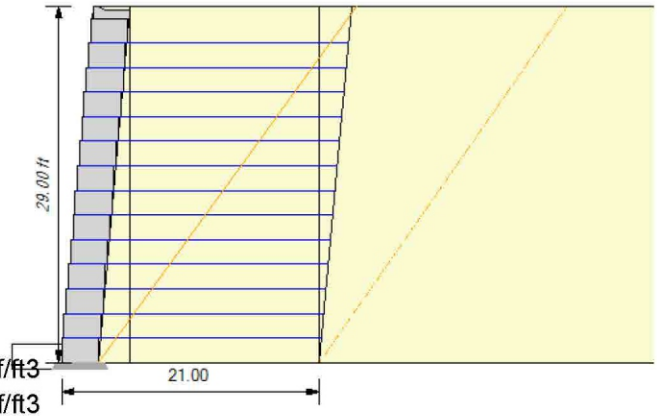
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 11 - 29 ft no SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 29.00 ft (27.55 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | | 0.00 ft | |
| Embedment: | 1.45 ft | LL2 Width: | | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | | 0 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | | 0.0 ft | |
| Back Slope Length: | 45.0 ft | Dead Load Width: | | 0.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | | |
| Vertical δ on Single Depth | | | | | |

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 4.29 | FoS Overturning: | 8.55 |
| Bearing | 3,596 | FoS Bearing: | 13.75 |
| FoS Pullout | 2.05 | | |
| Total Pullout | 248,230 | FoS Total Pullout | 18.79 |
| Top FoSot: | 12.77 | FoS Connection: | 1.71 |

| ID | Height | Length | Name | Ta | Pa | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 26 | 21 | 5XT | 1786 | 243 | 243 | 11.02 | 2.05/[243] | 63.94 | 1.50 |
| 12 | 24 | 21 | 5XT | 1786 | 304 | 304 | 8.82 | 5.05/[304] | 32.63 | 2.77 |
| 11 | 22 | 21 | 5XT | 1786 | 425 | 425 | 6.30 | 7.36/[425] | 21.59 | 4.04 |
| 10 | 20 | 21 | 5XT | 1786 | 547 | 547 | 4.90 | 9.68/[547] | 16.07 | 5.31 |
| 9 | 18 | 21 | 5XT | 1786 | 668 | 668 | 4.01 | 12.00/[668] | 12.78 | 6.58 |
| 8 | 16 | 21 | 5XT | 1786 | 790 | 790 | 3.39 | 14.31/[790] | 10.61 | 7.84 |
| 7 | 14 | 21 | 5XT | 1786 | 911 | 911 | 2.94 | 16.63/[911] | 9.08 | 9.11 |
| 6 | 12 | 21 | 5XT | 1786 | 1033 | 1033 | 2.59 | 18.94/[1033] | 7.93 | 10.38 |
| 5 | 10 | 21 | 5XT | 1786 | 1154 | 1154 | 2.32 | 21.26/[1154] | 7.05 | 11.65 |
| 4 | 8 | 21 | 5XT | 1786 | 1276 | 1276 | 2.10 | 23.57/[1276] | 6.35 | 12.92 |
| 3 | 6 | 21 | 5XT | 1786 | 1398 | 1398 | 1.92 | 25.89/[1398] | 5.77 | 14.19 |
| 2 | 4 | 21 | 5XT | 1786 | 1519 | 1519 | 1.76 | 28.21/[1519] | 5.30 | 15.46 |
| 1 | 2 | 21 | 5XT | 1786 | 1641 | 1641 | 1.63 | 30.52/[1641] | 4.40 [4.29] | 16.73 |

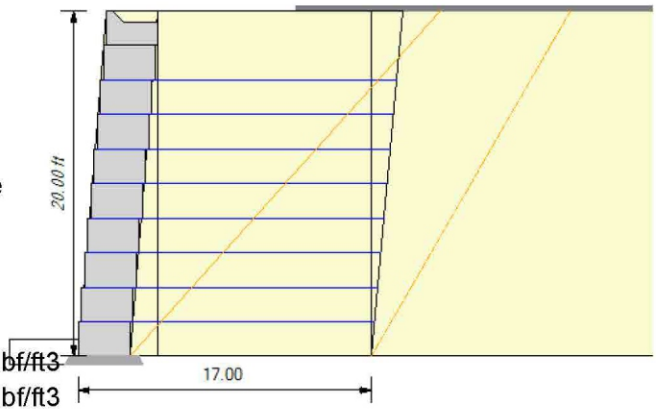
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 12a - 20 ft with Wall 10 SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 20.00 ft (19.00 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | | 0.00 ft | |
| Embedment: | 1.00 ft | LL2 Width: | | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | | 1,755 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | | 8.0 ft | |
| Back Slope Length: | 8.0 ft | Dead Load Width: | | 25.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | | |

Vertical δ on Single Depth

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for
l design or construction without the independent review, verification, and approval by a qualified professional
ineer.

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.07 | FoS Overturning: | 4.21 |
| Bearing | 3,826 | FoS Bearing: | 8.59 |
| FoS Pullout | 2.37 | | |
| Total Pullout | 133,344 | FoS Total Pullout | 22.18 |
| Top FoSot: | 6.18 | FoS Connection: | 1.96 |

| ID | Height | Length | Name | Ta | Pa | DL | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 16 | 17 | 5XT | 1786 | 363 | 550 | 914 | 2.93 | 2.37/[914] | 7.00 | 1.05 |
| 7 | 14 | 17 | 5XT | 1786 | 349 | 217 | 565 | 4.74 | 10.79/[565] | 5.41 | 2.67 |
| 6 | 12 | 17 | 5XT | 1786 | 465 | 542 | 1007 | 2.66 | 10.67/[1007] | 4.56 | 4.29 |
| 5 | 10 | 17 | 5XT | 1786 | 581 | 514 | 1096 | 2.45 | 13.78/[1096] | 4.01 | 5.91 |
| 4 | 8 | 17 | 5XT | 1786 | 698 | 485 | 1182 | 2.27 | 15.45/[1182] | 3.62 | 7.52 |
| 3 | 6 | 17 | 5XT | 1786 | 814 | 453 | 1267 | 2.12 | 17.49/[1267] | 3.32 | 9.14 |
| 2 | 4 | 17 | 5XT | 1786 | 930 | 434 | 1364 | 1.96 | 19.61/[1364] | 3.08 | 10.76 |
| 1 | 2 | 17 | 5XT | 1786 | 1046 | 415 | 1461 | 1.83 | 21.95/[1461] | 2.25 [2.07] | 12.38 |

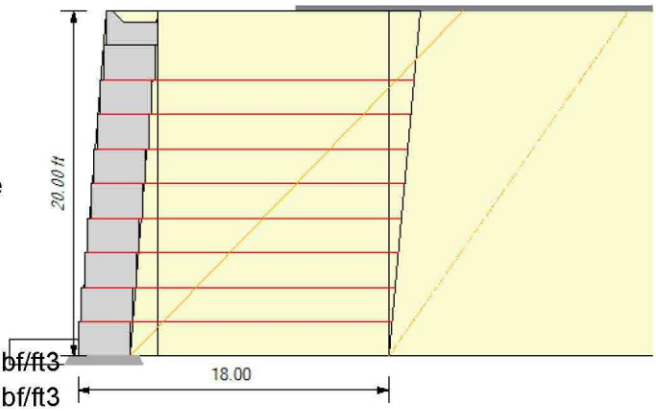
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

# REA Analysis

| | |
|---|---|
| Project: | Sundown Condos Phase 2 |
| Location: | 6550 North Powder Mountain Road |
| Designer: | JAM |
| Date: | 4/21/2025 |
| Section: | Wall 12b - 20 ft with Wall 11 SC |
| Design Method: | NCMA_09_3rd_Ed, Ignore Vert. Force |
| Design Unit: | VertiBlock 4.0: 36 |




| SOIL PARAMETERS | Φ | coh | γ |
|---|---|---|---|
| Reinforced Soil: | 30 deg | 0 lbf/ft2 | 120 lbf/ft3 |
| Retained Soil: | 34 deg | 0 lbf/ft2 | 125 lbf/ft3 |
| Foundation Soil: | 34 deg | 0 lbf/ft2 | 110 lbf/ft3 |
| Leveling Pad: | 40 deg | 0 lbf/ft2 | 135 lbf/ft3 |
| Leveling Pad: | Crushed Stone | | |

GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| Design Height: | 20.00 ft (19.00 ft Exp.) | | | Live Load: | 0 lbf/ft2 |
| Wall Batter/Tilt: | 5.20/ 0.00 deg | Live Load Offset: | | 0.00 ft | |
| Embedment: | 1.00 ft | LL2 Width: | | 0 ft | |
| Leveling Pad Depth: | 0.50 ft | Dead Load: | | 3,915 lbf/ft2 | |
| Back Slope Angle: | 0.0 deg | Dead Load Offset: | | 8.0 ft | |
| Back Slope Length: | 8.0 ft | Dead Load Width: | | 49.00 ft | |
| Back Slope Toe Offset: | 0.0 ft | | | | |
| Vertical δ on Single Depth | | | | | |

FACTORS OF SAFETY

| | | | |
|---|---|---|---|
| Sliding: | 1.50 | Pullout: | 1.50 |
| Overturning: | 2.00 | Tension/Uncertainties: | 1.50 |
| Bearing: | 2.00 | Connection: | 1.50 |
| Unit/Unit Shear: | 1.50 | | |

Note: Calculations and quantities are for PRELIMINARY ANALYTICAL USE ONLY and MUST NOT be used for l design or construction without the independent review, verification, and approval by a qualified professional ineer.

VertiBlock Wall Designer 2025.1.25

Verti-Block® Retaining Walls

RESULTS

| | | | |
|---|---|---|---|
| FoS Sliding: | 2.06 | FoS Overturning: | 4.77 |
| Bearing | 4,935 | FoS Bearing: | 7.07 |
| FoS Pullout | 2.66 | | |
| Total Pullout | 222,468 | FoS Total Pullout | 38.44 |
| Top FoSot: | 6.18 | FoS Connection: | 1.94 |

| ID | Height | Length | Name | Ta | Pa | DL | TMax | FSStr | FSPo | FSSldg | GridEmbedment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 16 | 18 | 8XT | 2812 | 350 | 1182 | 1532 | 2.75 | 2.66/[1532] | 5.35 | 1.01 |
| 7 | 14 | 18 | 8XT | 2812 | 336 | 465 | 801 | 5.27 | 14.73/[801] | 3.99 | 2.75 |
| 6 | 12 | 18 | 8XT | 2812 | 448 | 1213 | 1660 | 2.54 | 12.22/[1660] | 3.30 | 4.50 |
| 5 | 10 | 18 | 8XT | 2812 | 560 | 1131 | 1690 | 2.50 | 17.48/[1690] | 2.87 | 6.25 |
| 4 | 8 | 18 | 8XT | 2812 | 671 | 1068 | 1740 | 2.42 | 18.78/[1740] | 2.58 | 8.00 |
| 3 | 6 | 18 | 8XT | 2812 | 783 | 1031 | 1815 | 2.32 | 20.11/[1815] | 2.36 | 9.75 |
| 2 | 4 | 18 | 8XT | 2812 | 895 | 963 | 1859 | 2.27 | 22.12/[1859] | 2.19 | 11.50 |
| 1 | 2 | 18 | 8XT | 2812 | 1007 | 923 | 1930 | 2.18 | 24.08/[1930] | 2.06 [2.10] | 13.25 |

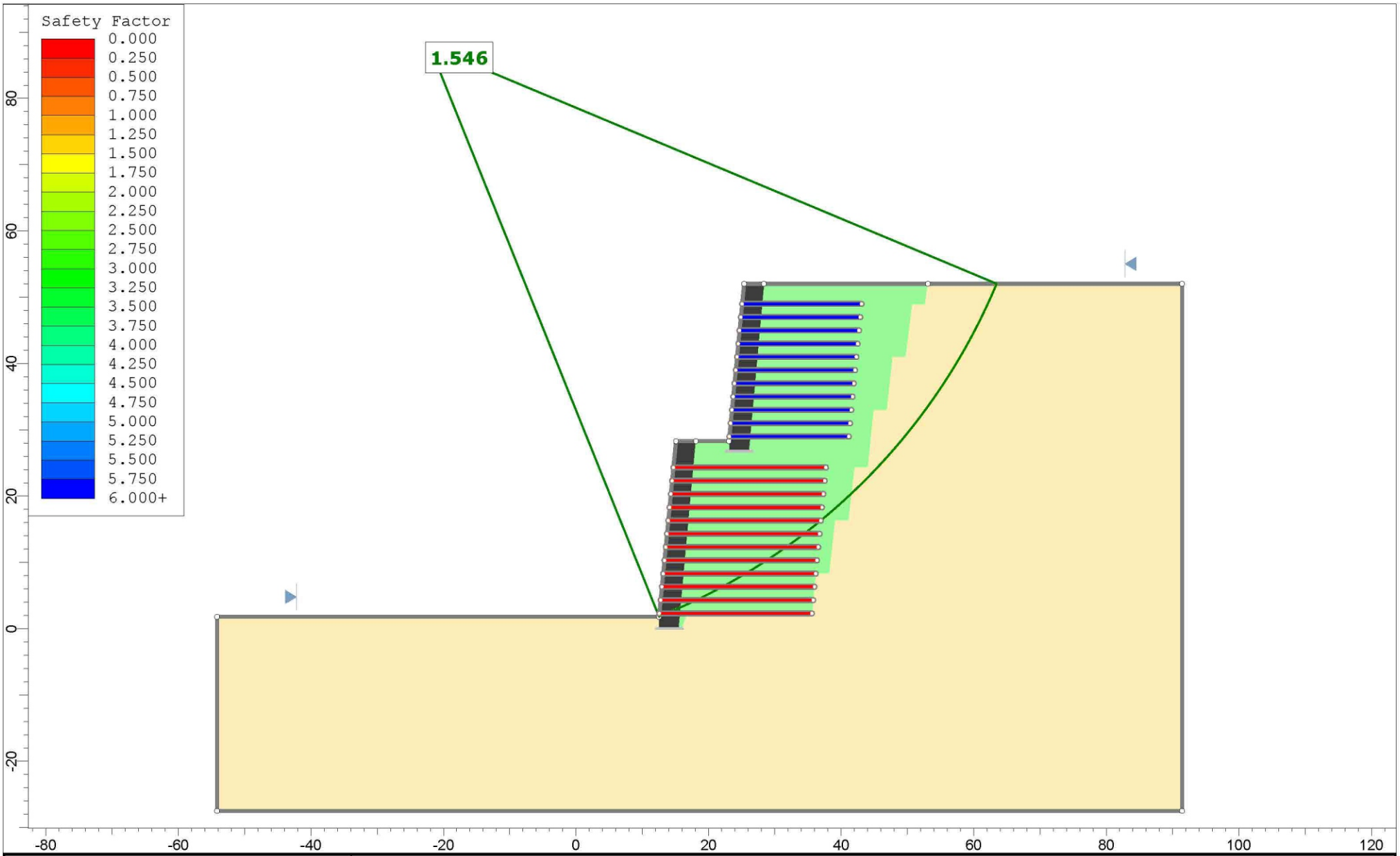
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

# Appendix E

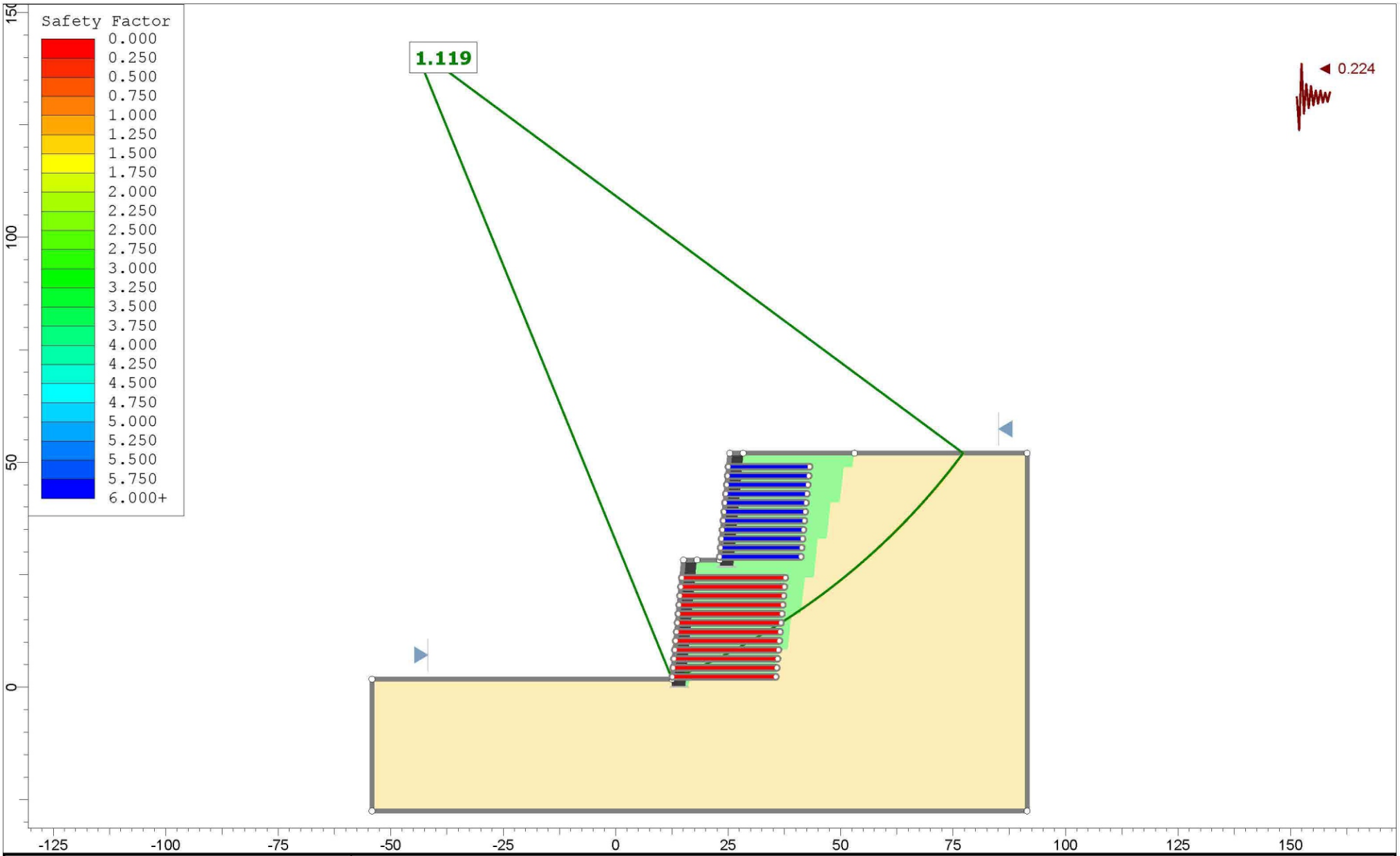
(Global Stability - Static & Seismic)

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E.
MONEY
STATE OF UTAH
May 15, 2025




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES
SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 1 and 5b Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |

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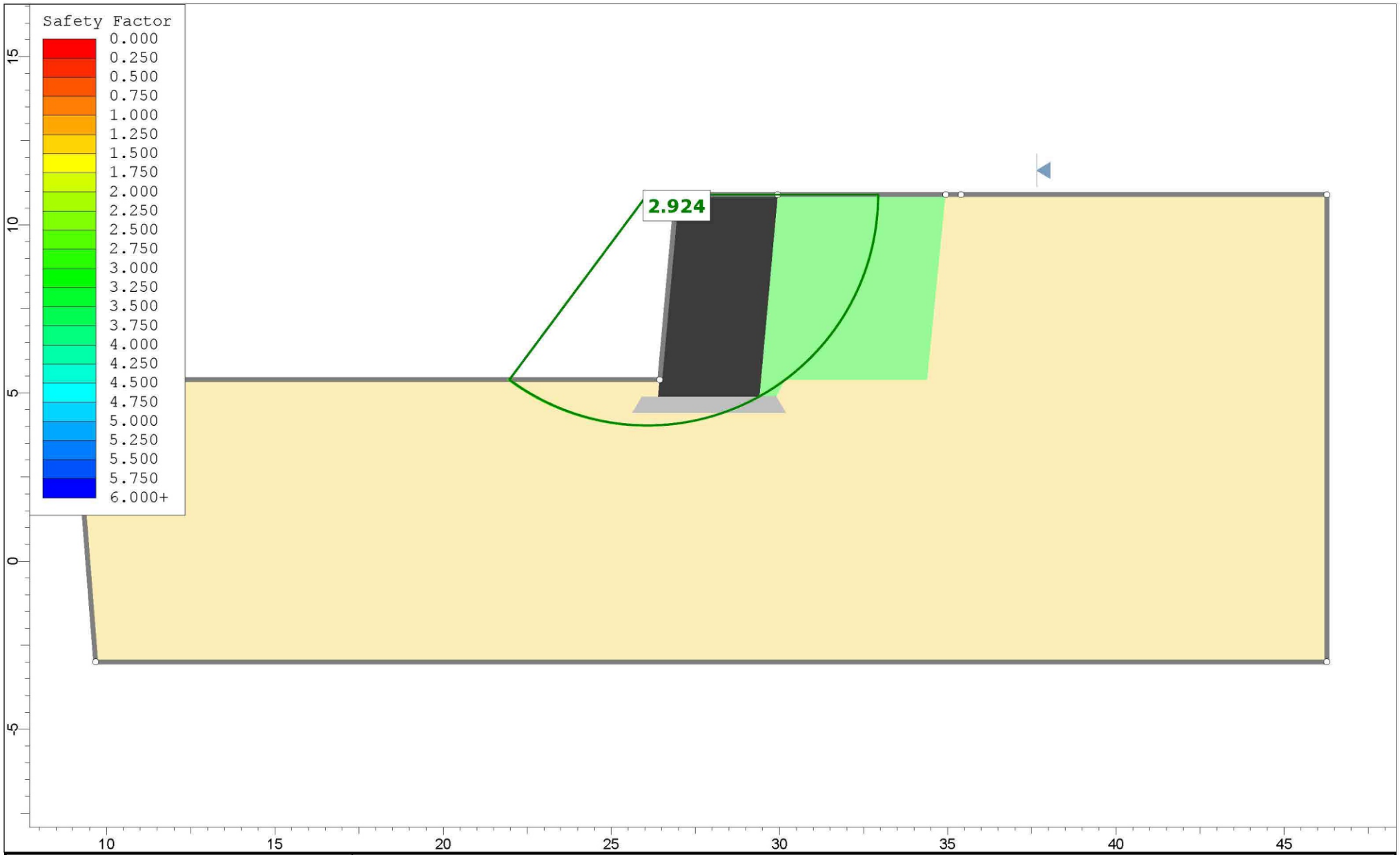
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 1 and 5b Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |

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CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 2 Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
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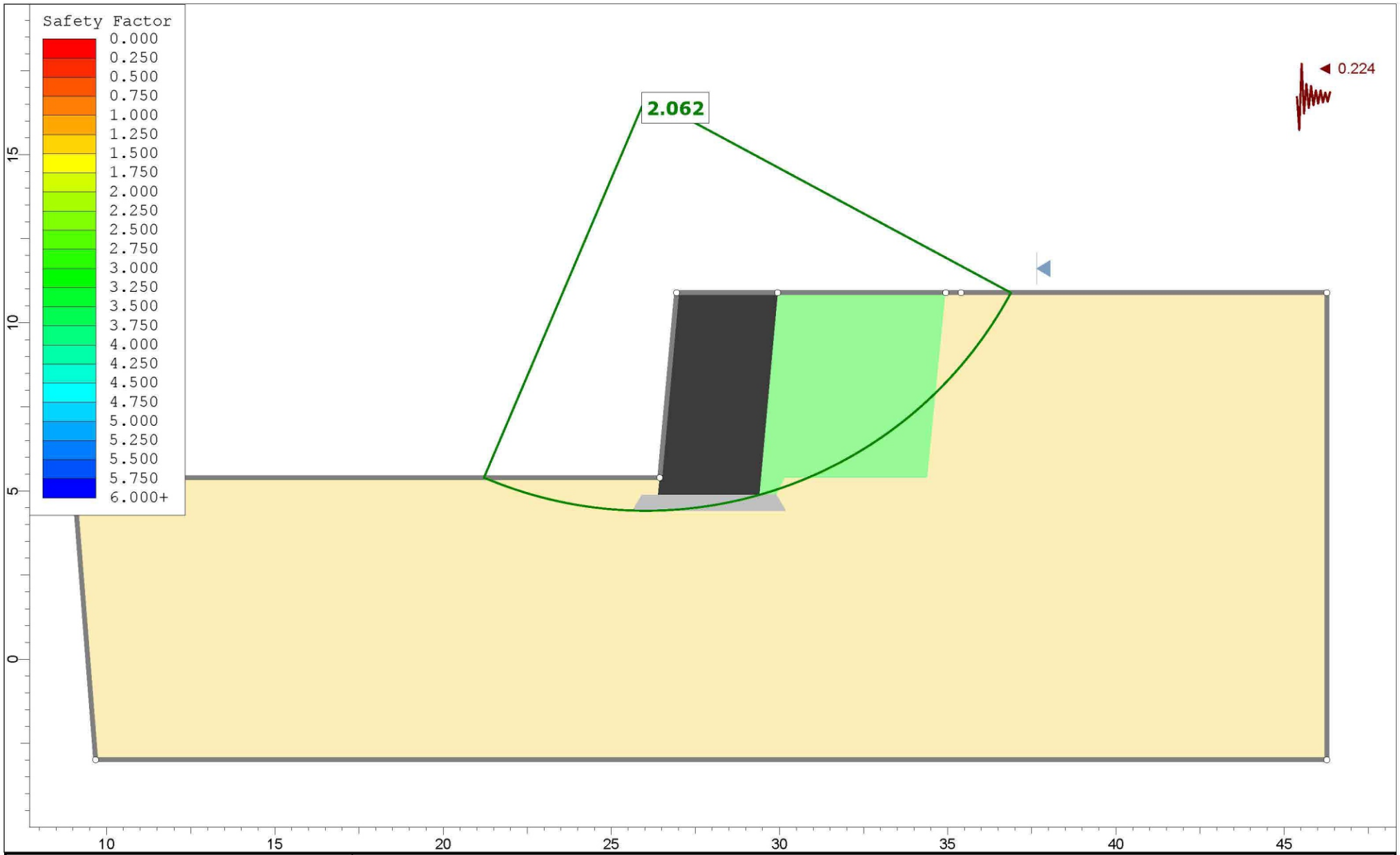
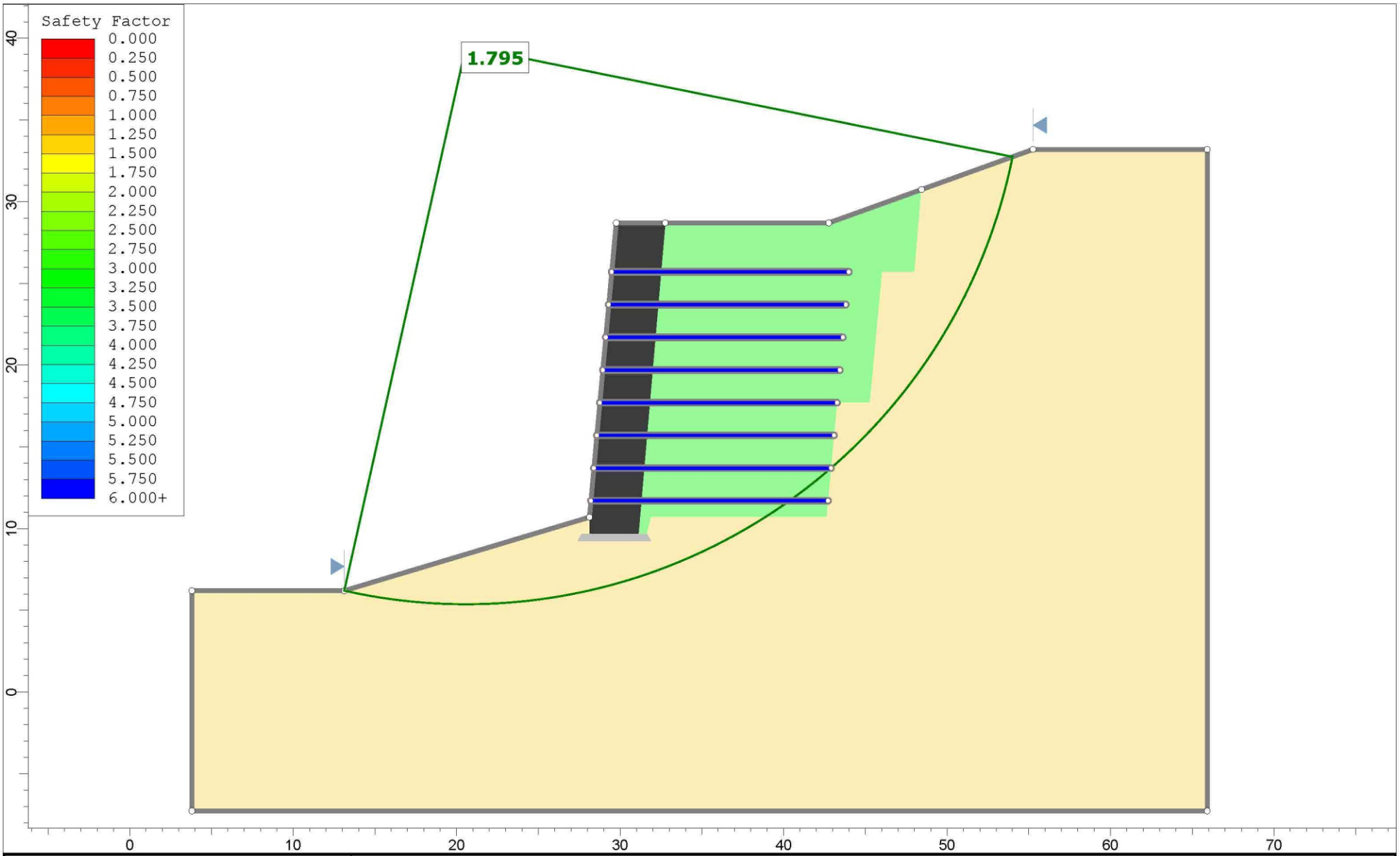



AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 2 Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 3 Static | Scenario | Master Scenario |
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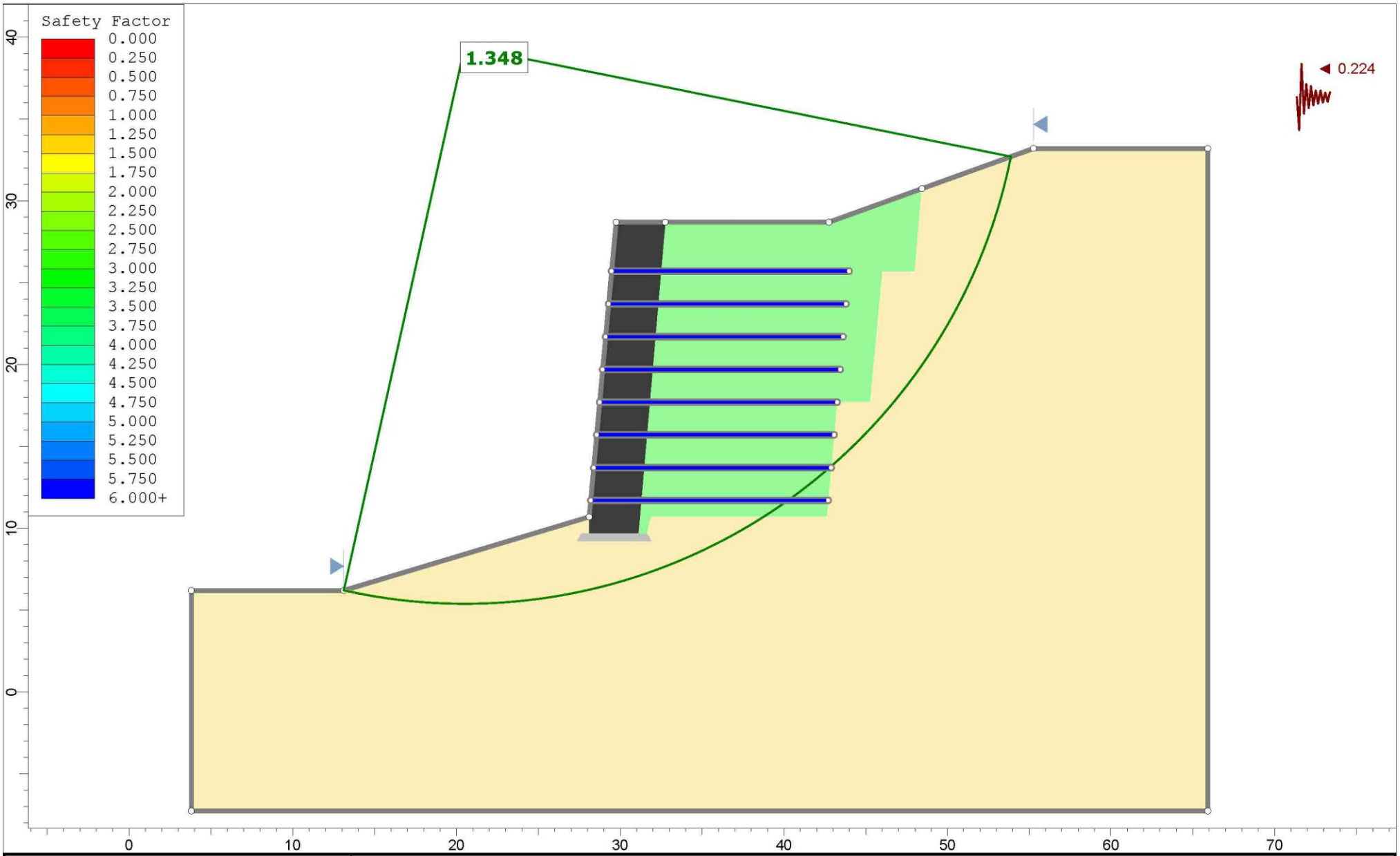
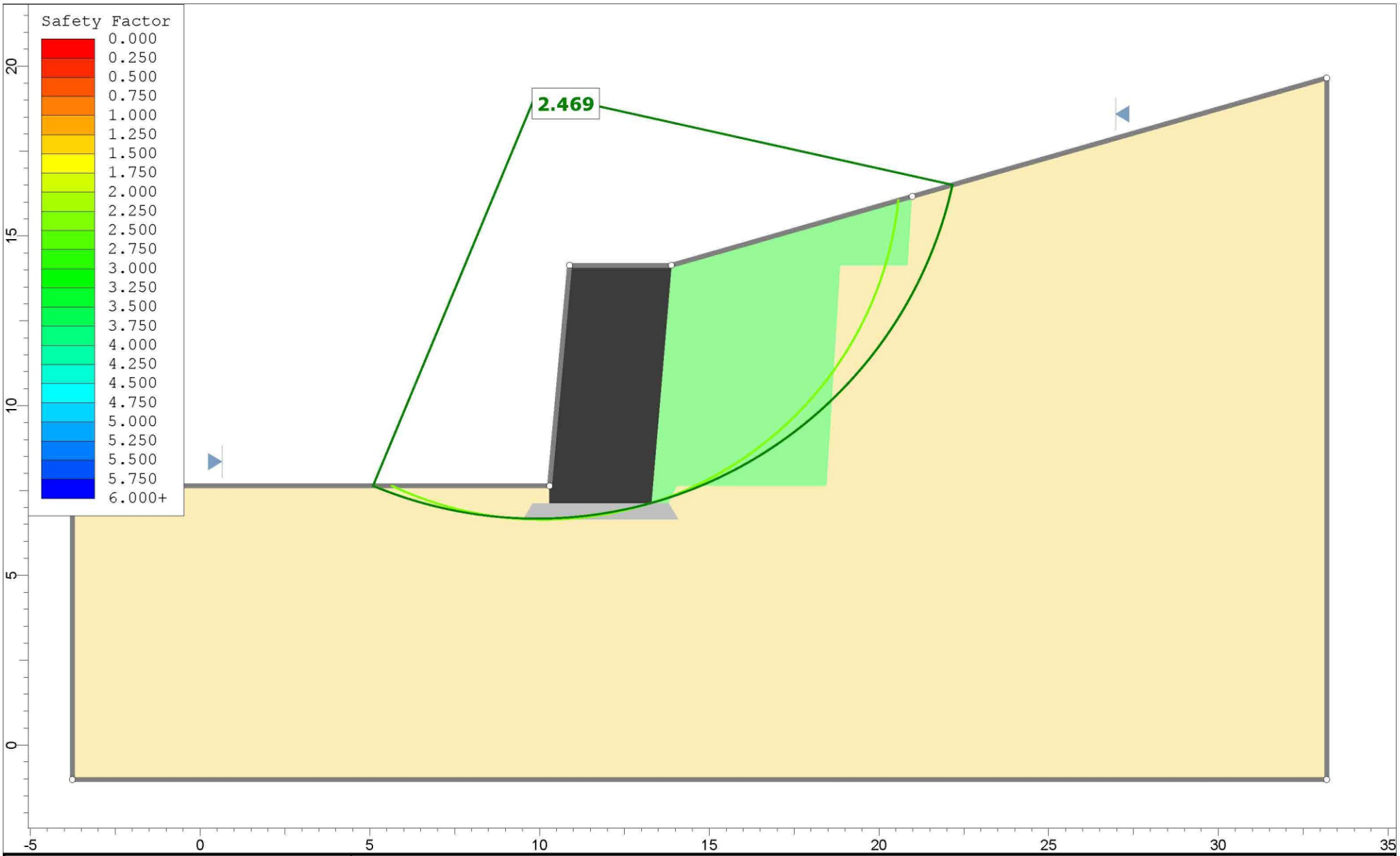



AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 3 Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 4 Static | Scenario | Master Scenario |
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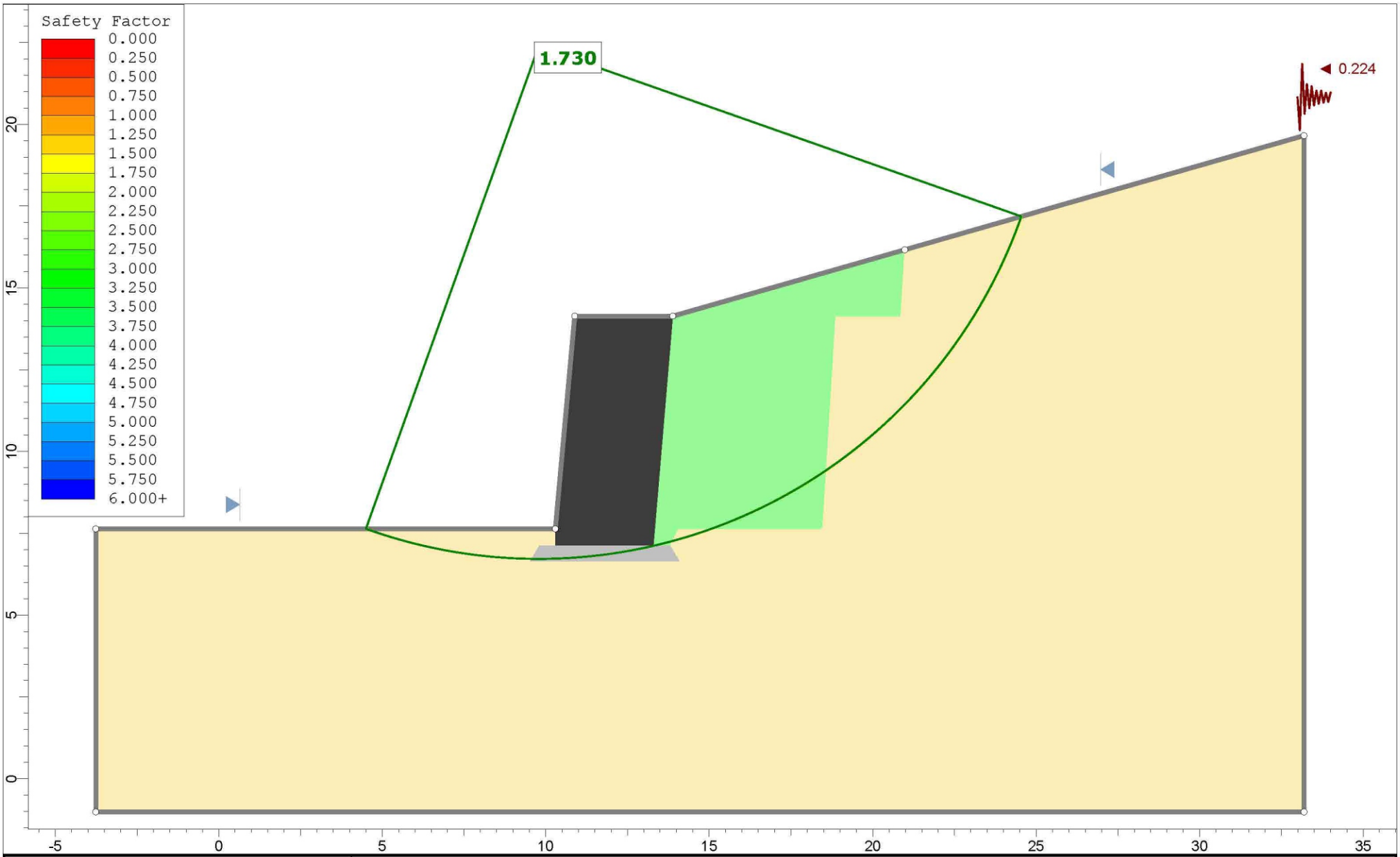


AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 4 Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
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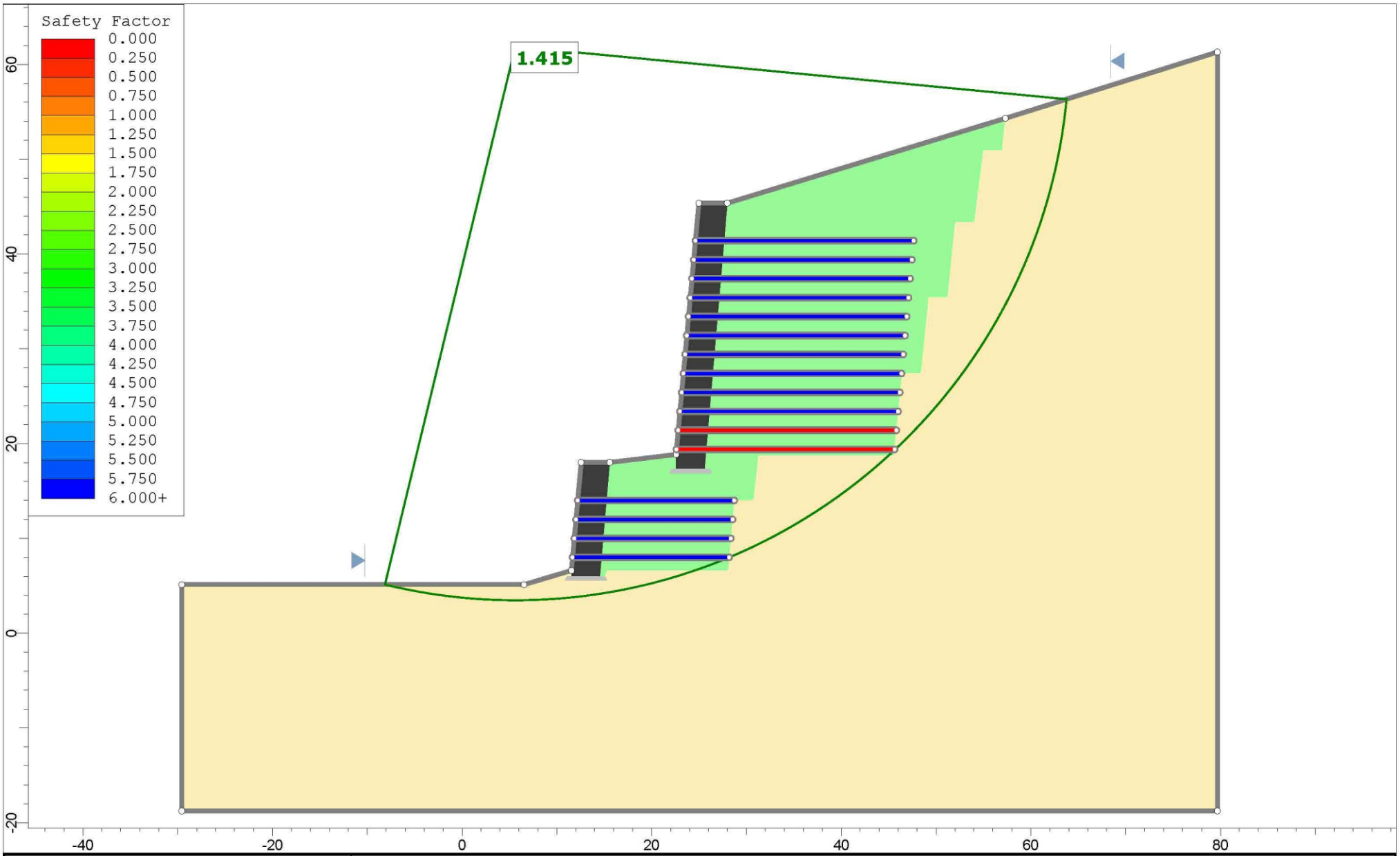
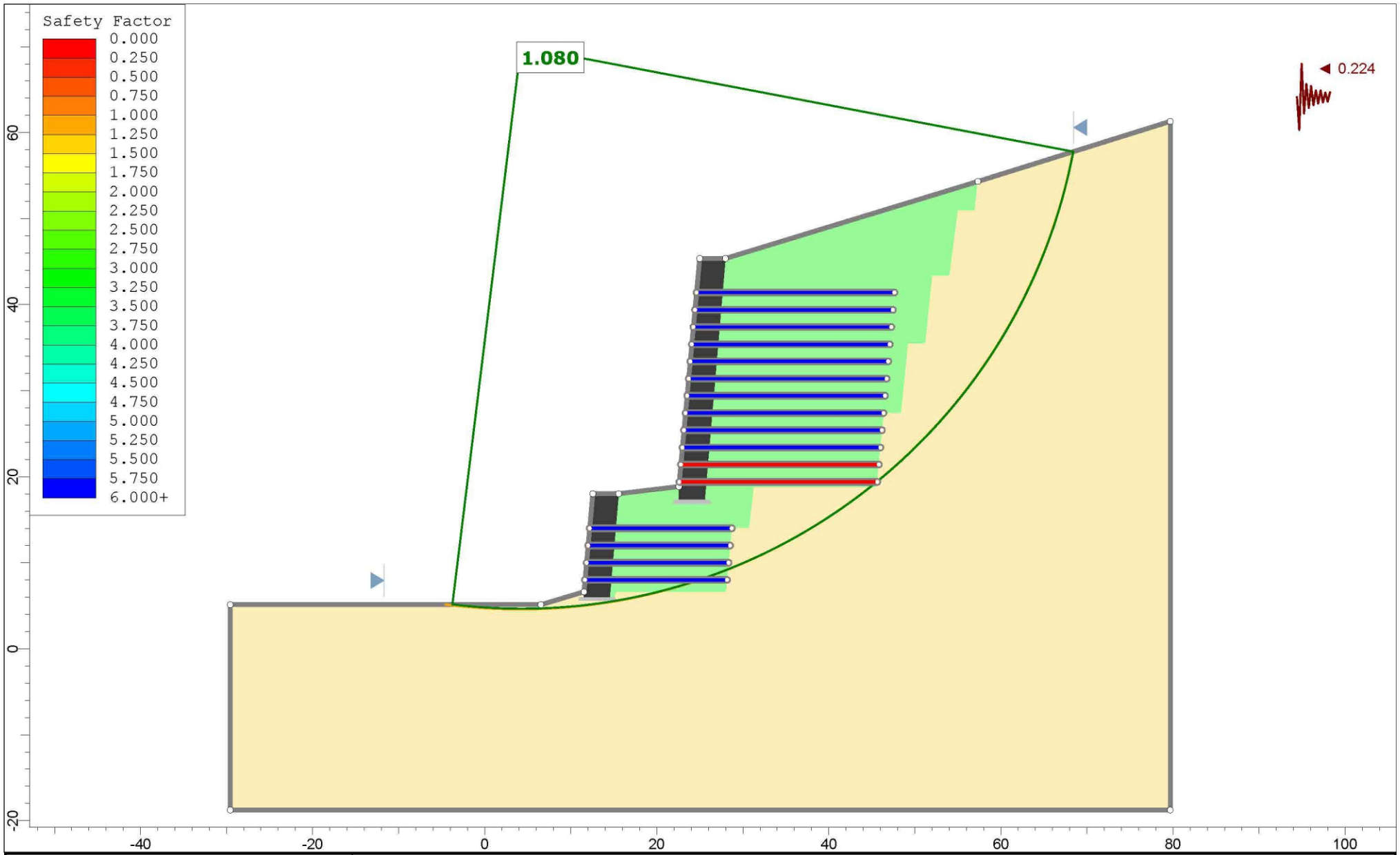



AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

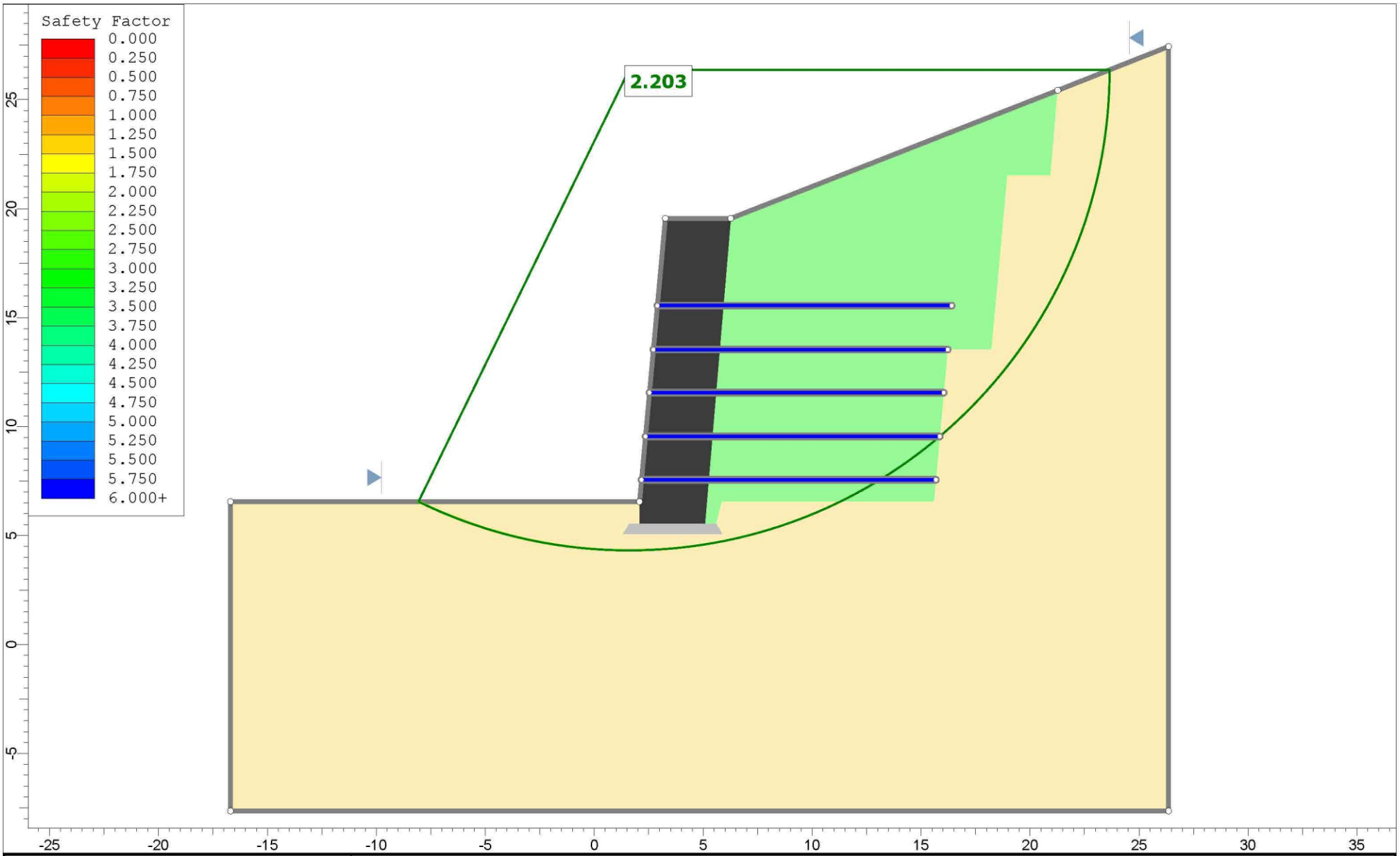
| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 5a and 6 Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 5a and 6 Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 7 Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
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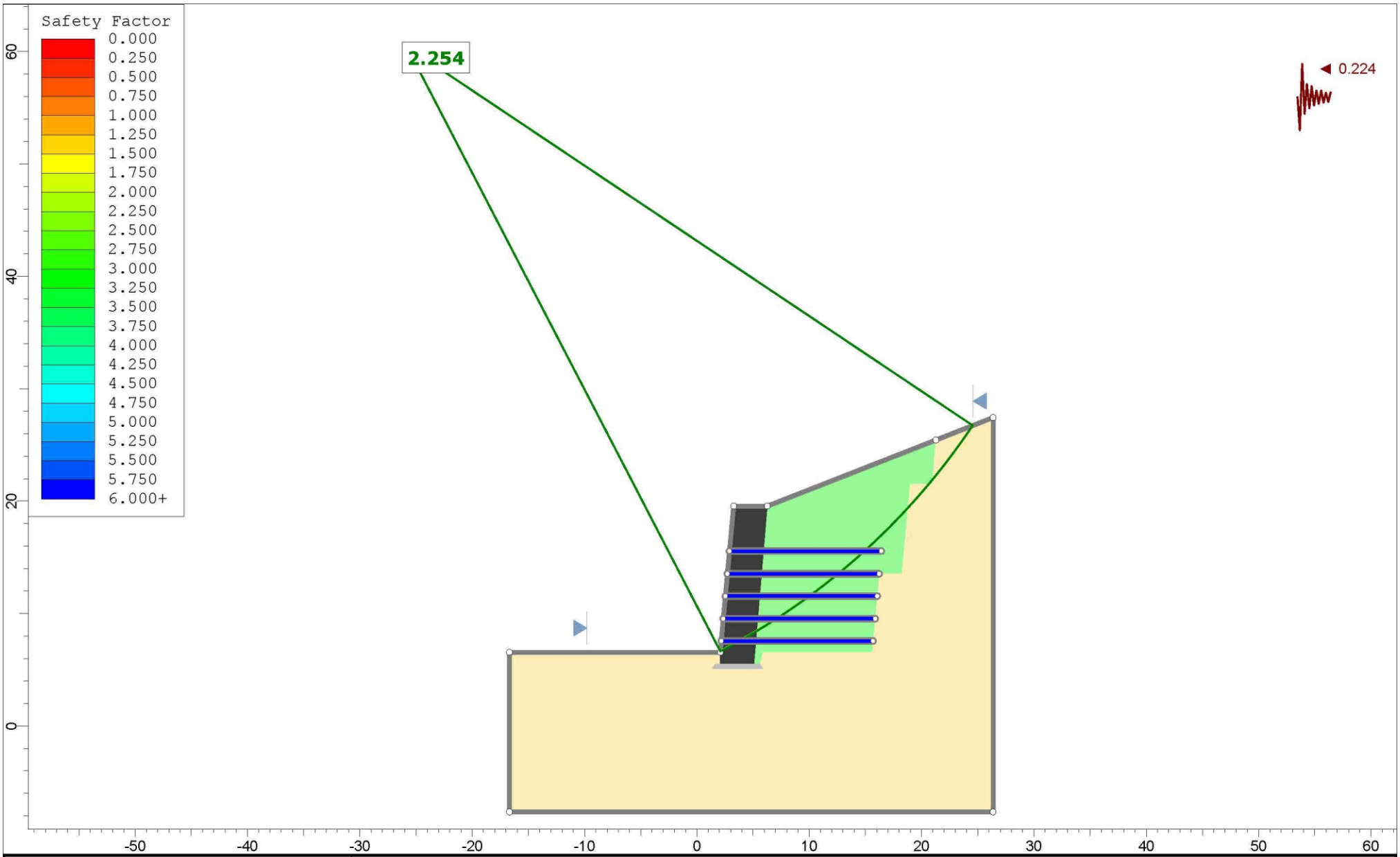


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CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 7 Seismic | Scenario | Master Scenario |
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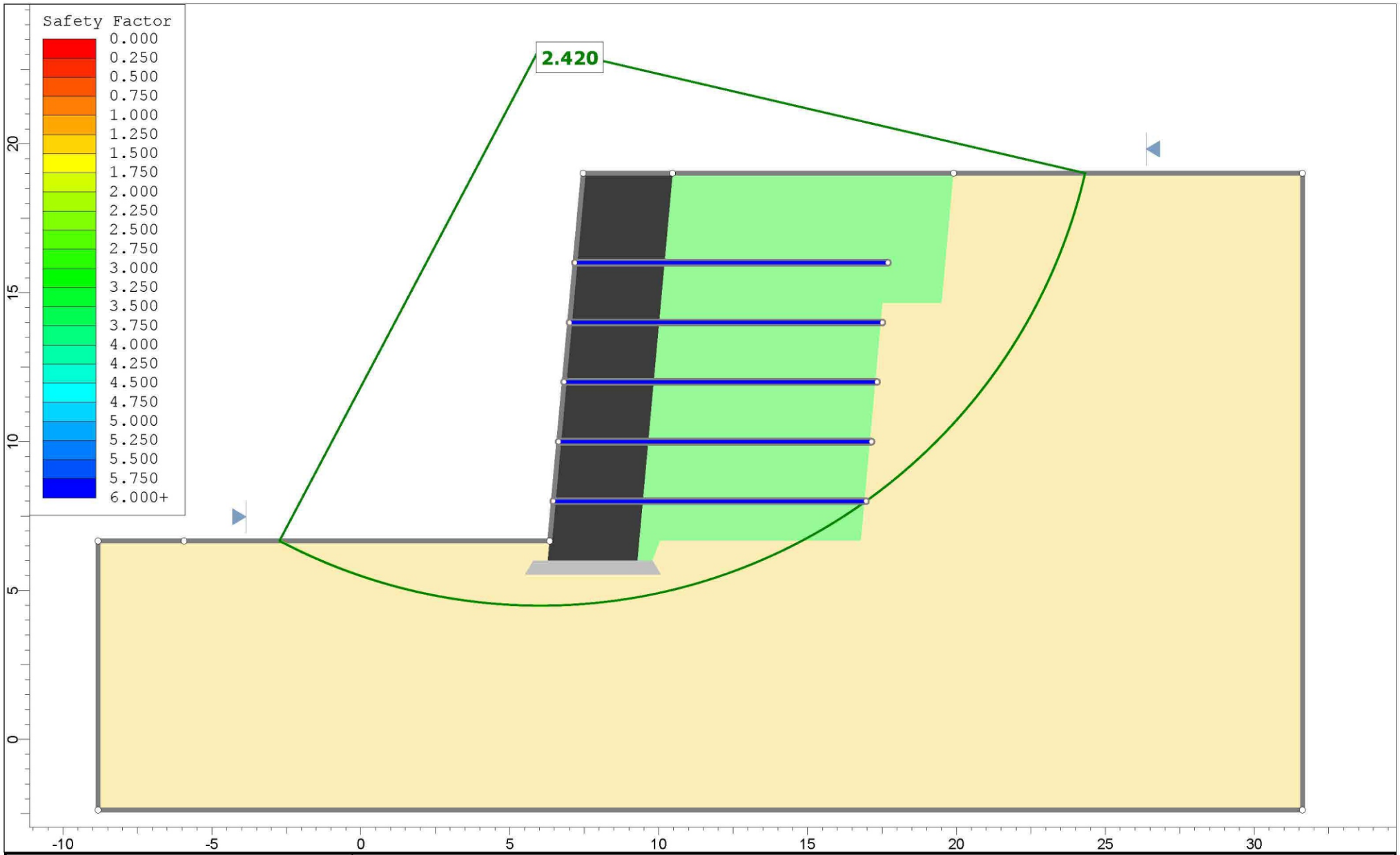


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CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 8 Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
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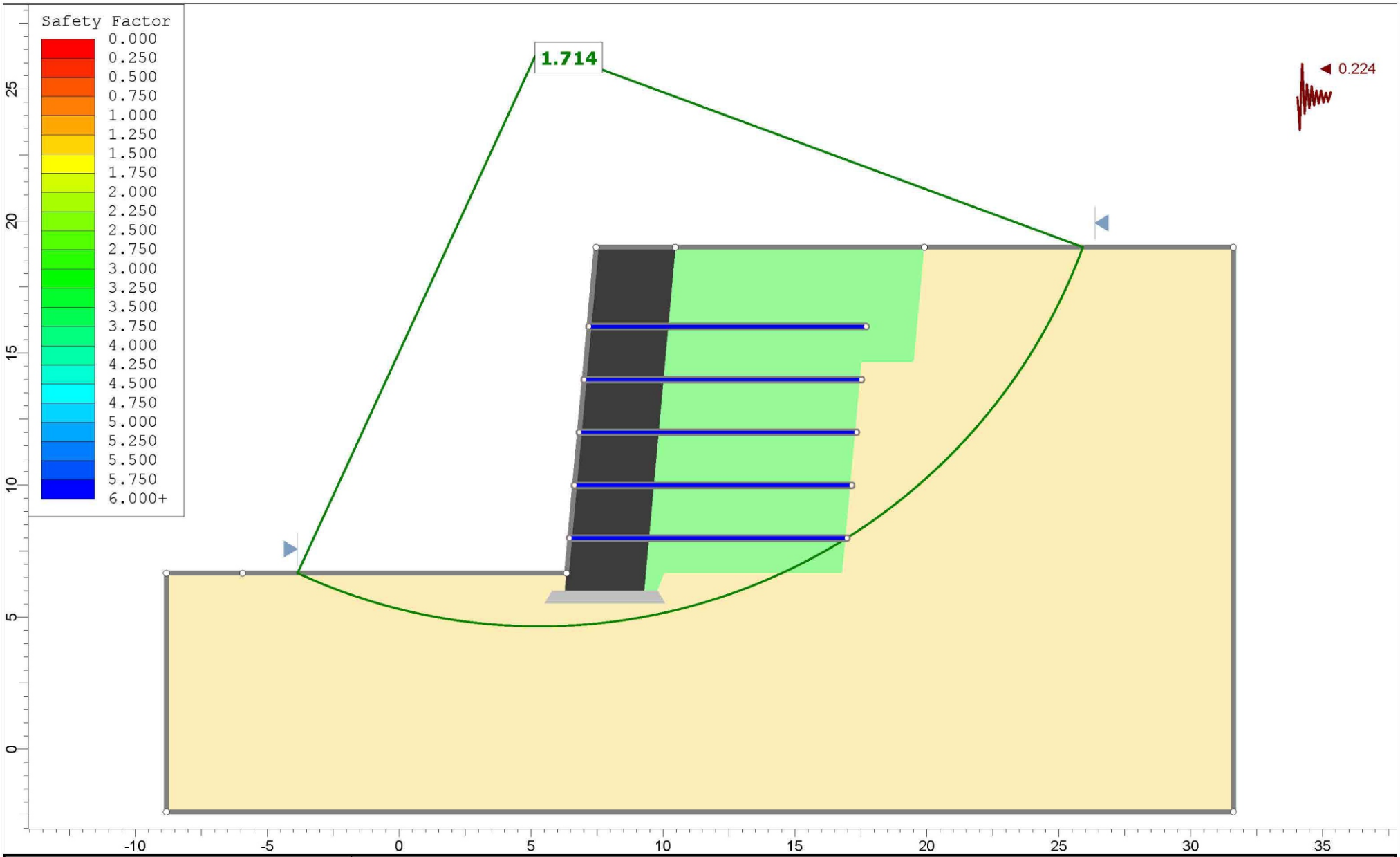
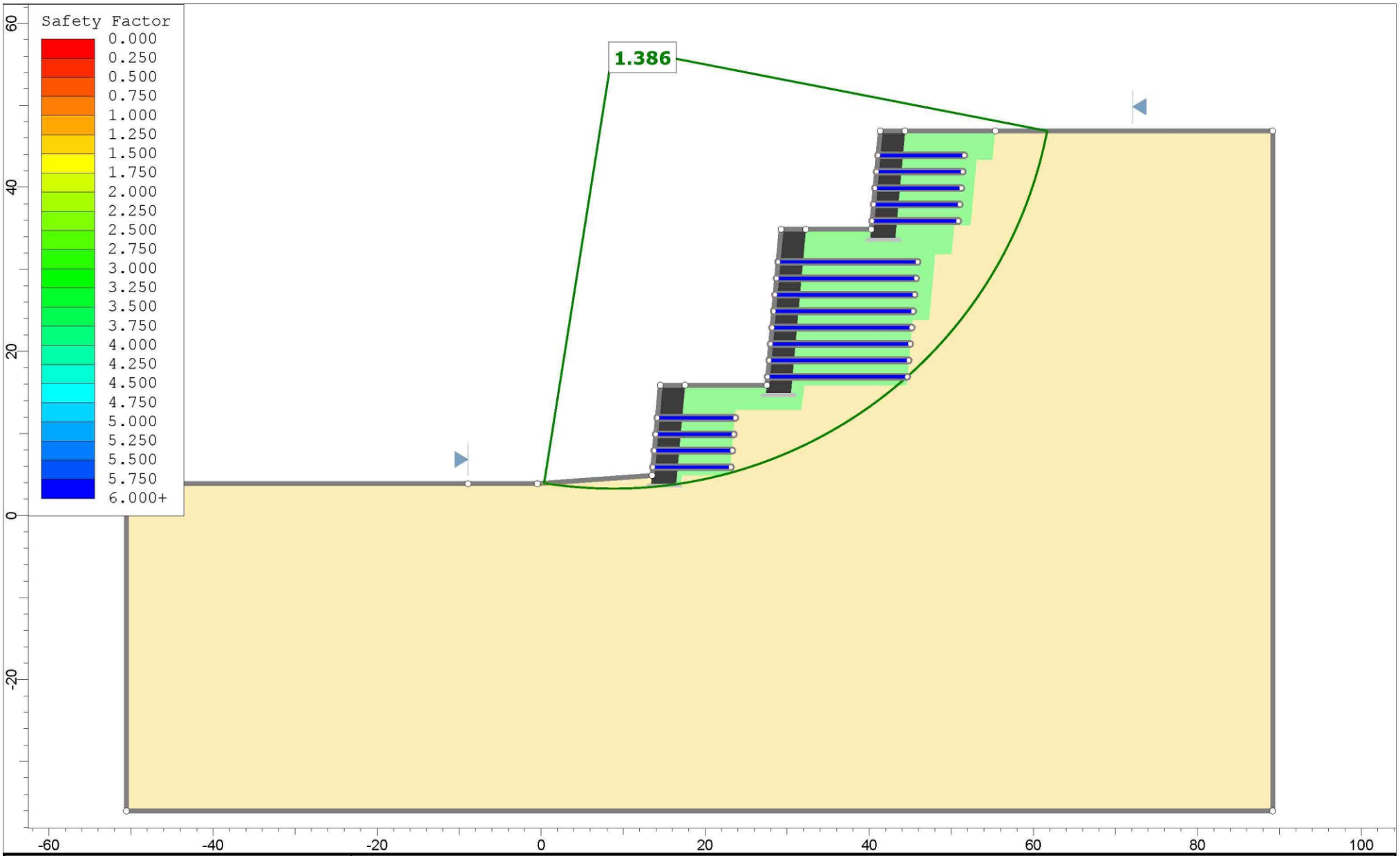



AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Wall 8 Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 9, 10, and 12a Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
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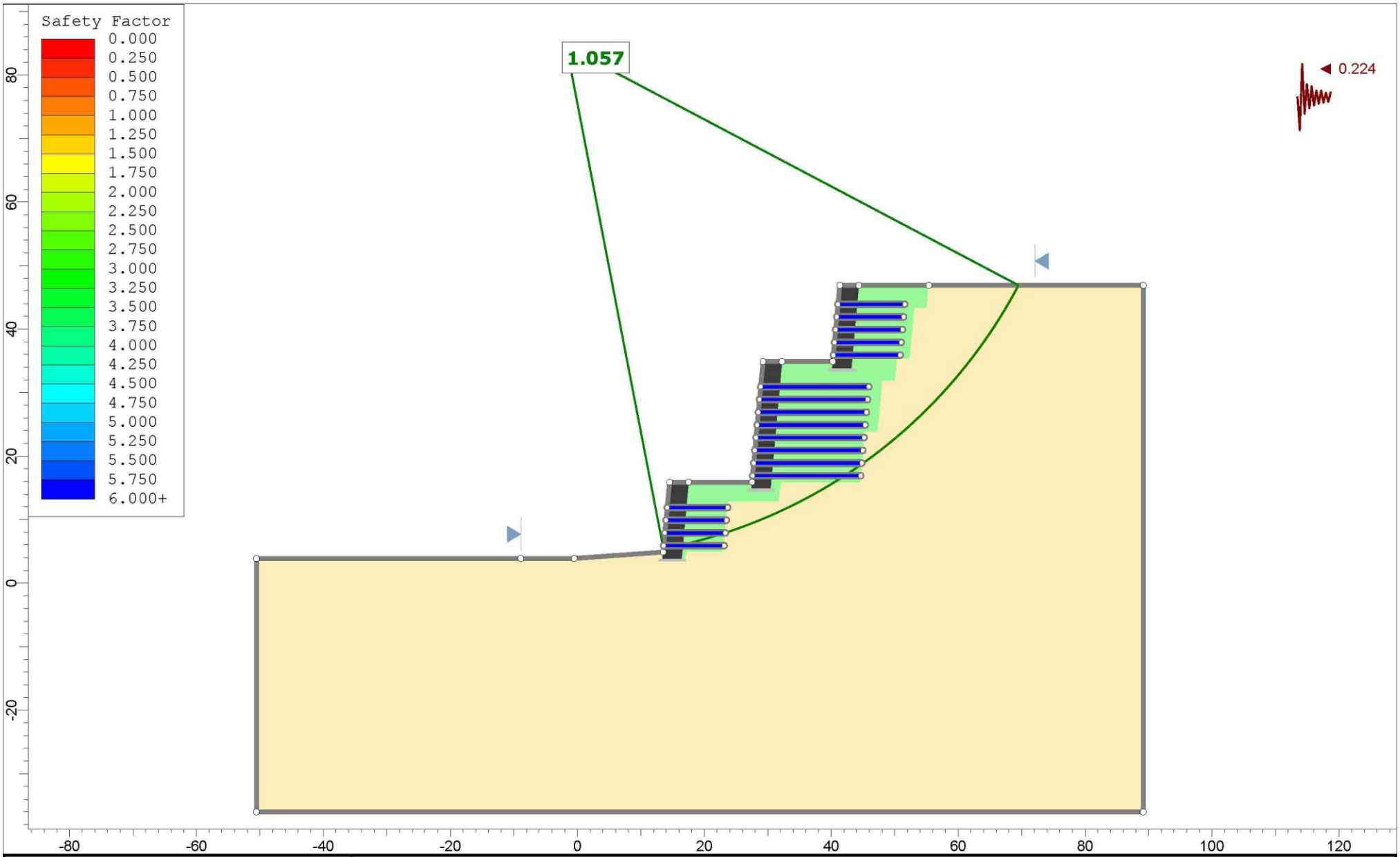
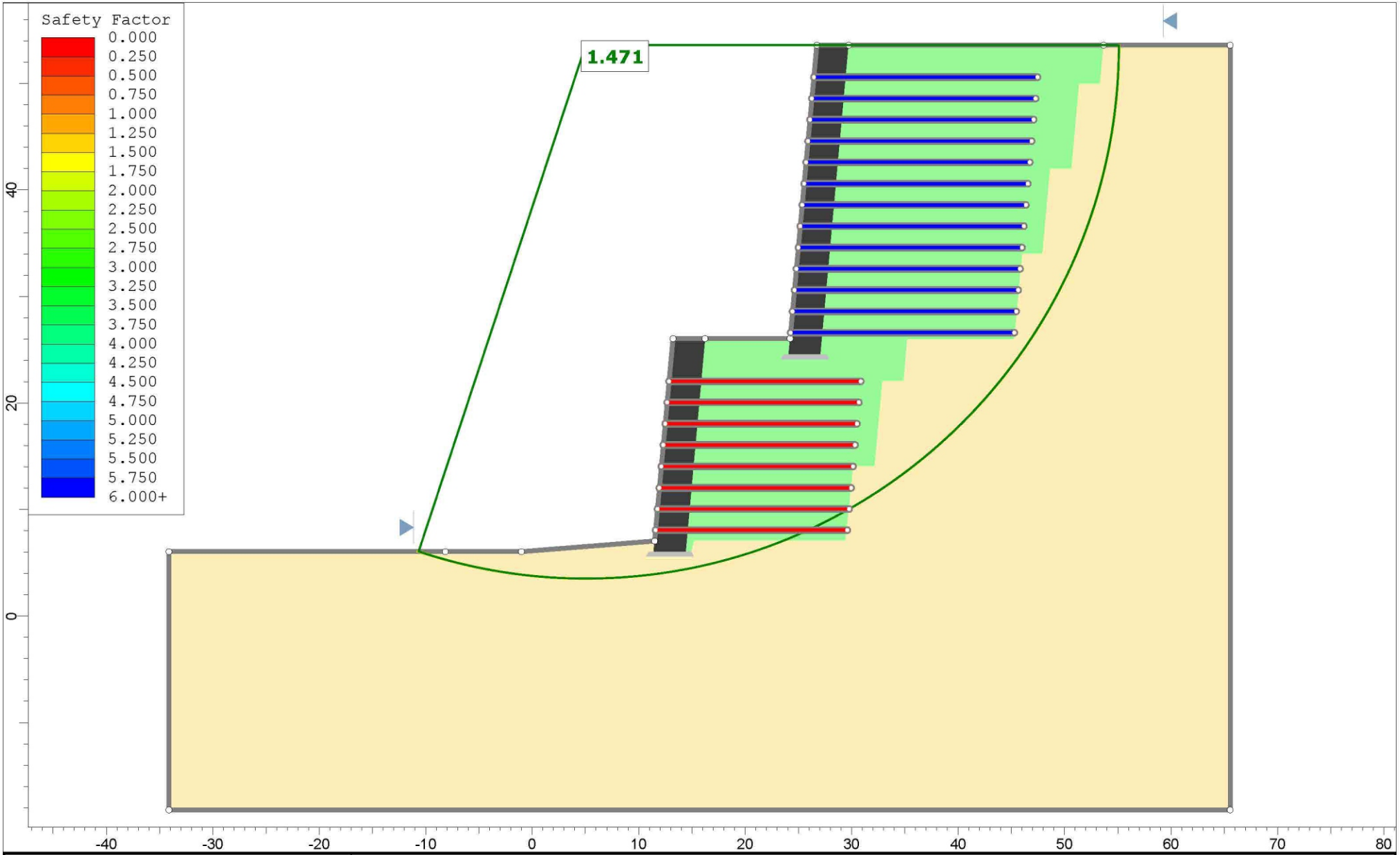



AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

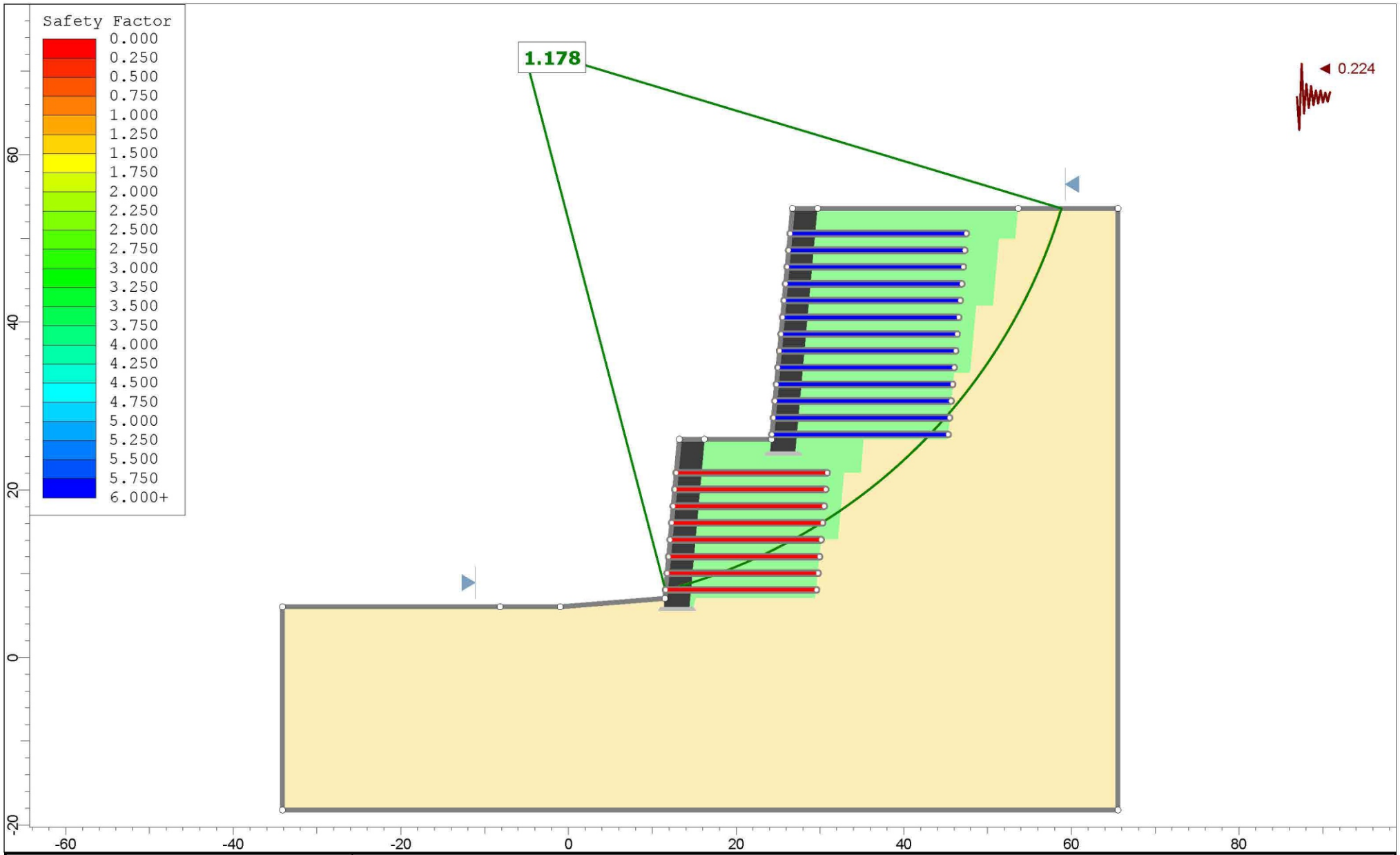
| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 9,10, and 12a Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |




AMMTEC CONSULTANTS, PLLC
CONSULTING ENGINEERING SERVICES

SLIDEINTERPRET 9.038

| | | | |
|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 11 and 12b Static | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |

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SLIDEINTERPRET 9.038

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|---|---|---|---|
| Project | Sundown Condos Phase 2 | | |
| Group | Walls 11 and 12b Seismic | Scenario | Master Scenario |
| Drawn By | JAM | Company | AMMTEC Consultants, PLLC. |
| Date | 4/29/2025, 10:26:18 AM | File Name | Slope Stability Analysis.slmd |