

To: Jerald Schnabel From: Paul Kos
Continental Materials Corp. Denver, CO 80222
File: December 2021 Monitoring Summary Date: January 31, 2022

Reference: December 2021 Geotechnical Monitoring Summary Pikeview Quarry

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has prepared this December 2021 Geotechnical Monitoring Summary for the Pikeview Quarry. The Pikeview Quarry is situated along the foothills of the Rocky Mountains, northwest of Colorado Springs, Colorado. Continental Materials Corp. (CMC) operates the quarry, which is currently closed, pending reclamation. A geotechnical monitoring program was established to monitor reclamation activities which will affect the geotechnical performance of the existing and reclaimed slopes during and following reclamation grading. This report presents the geotechnical monitoring results for the slope reclamation activities at the site through the month of December 2021.

It is important to note that activities at the Pikeview Quarry are focused on preparation for reclamation construction. This includes coordinating with contractors, importing fill, preparing growth medium, clearing construction areas of equipment, extra parts, and trees and shrubs, preparing riprap, and site maintenance; no fill is being permanently placed on the slopes. Continuous monitoring by the robotic survey system began in 2010 and has continued through the month of December 2021 uninterrupted. Visual inspections of the slopes were performed by CMC employees and Stantec engineers.

1.1 PURPOSE

The purpose of this report is to summarize the December 2021 geotechnical monitoring results and verify the geotechnical performance of the existing and reclaimed slopes with respect to the historical performance record. The goals of the geotechnical instrumentation monitoring program can be described as:

- Meet corporate risk management requirements,
- Provide ongoing slope monitoring and advance warning of any changed conditions that could pose a hazard to workers or to the public,
- Document the geotechnical performance of the slope, and
- Document monthly site grading activities and construction quality assurance.

1.2 MONITORING SUMMARY

Major components of the instrumentation monitoring program are listed in Table 1 and shown on Figure 1.

Table 1 Monitoring Frequency

Monitoring Type	Frequency
Visual inspection	Daily (CMC) and Monthly (Stantec)
Robotic theodolite/prism	Continuous
Drone inspection	Monthly
Compaction testing	Every 5,000 yd ³ (min.)



2.0 VISUAL INSPECTIONS

Inspections are completed daily by site personnel and monthly by Stantec personnel to document visual observations of slope conditions, including conditions of instability (i.e., cracking, slumping, over-steepened slopes, seeps, perched boulders, rock falls, erosion, and areas undercut by construction or maintenance activities). Certain areas of the landslide have been designated as safety exclusion zones, and these areas are inspected from adjacent locations.

When present, site operators inspect their work areas for signs of instability on a daily basis before starting work per site safety rules and regulations. The daily inspection starts by reviewing any prism alerts/alarms and inspecting those areas before work begins in that area. The daily inspection also includes visual observations of the quarry walls and floor for any changes. No changes to the quarry conditions were identified during daily inspections in December 2021. The notes from the daily inspections are included in Table A-1 in Appendix A.

Stantec conducted visual inspections of the Pikeview Quarry slopes on December 16, 2021. The engineering inspections were conducted by traversing each area of the mine and observing the uphill slope and the downhill slope for signs of instability, and areas in need of maintenance. Slopes that have been graded and are 2 horizontal (H):1 vertical (V) or shallower are also traversed on foot. The findings are listed below, and photographs of notable observations are included on Figure 2 in Appendix A.

- Riprap continues to be produced on the production floor. (Photo 1)
- Growth Medium: Mulch and soil continue to be processed on the production floor to produce growth medium. The previous stockpiles of mulch and soil that were located in the buttress fill area have been processed and moved out of the fill area. (Photo 2)
- Previously Observed Cracks: Previously observed tension cracks remain on the production floor and at the crest of fill slopes. These cracks appeared the same as in previous inspections.
- Prisms: Several prisms were passed along the walking route and appeared to be in their original position and operating normally. Control points and most of the monitoring points are permanently cemented into the ground while some of the monitoring points are cemented into 5-gal buckets to be portable as needed. (Photo 4)
- Imported fill material and topsoil are being stockpiled in several areas on the production floor. (Photo 5)
- The culvert remains cleared but mostly blocked inside. CMC has partially cleared the debris, but access limitations and supports within the culvert inhibit clearing all the debris. CMC has procured a pump and will begin pumping operations if any water collects behind the culvert. CMC inspects the culvert for ponded water following rain events, and should any water be observed, it will be removed using pumps. To date, no ponding has been observed. (Photo 7)
- Crack Free: No cracking was observed on the native granite slopes above the extents of the disturbed area.
- Healed Cracks: Older cracks and recent cracks are being monitored for changes. Currently the cracks are not growing in any of the areas on the slopes of the site. The hummocky field in the area immediately above the southern extent of the slide shows evidence of cracking but they are not fresh or active. No new or open cracks were found immediately inside or next to the slide area.
- The pond below the Middle Peak remains partially filled, and a notch to be added to the pond's berm in mid-January. This will keep the water level from exceeding a specific level.



- Visual inspections of the Pikeview Quarry did not reveal any evidence of large-scale instability outside of the landslide areas previously identified. No bulging, rippling, over-steepening, depressions, slumps, or dry slip-offs were observed in areas that have been graded and/or reclaimed.

3.0 PRISM SURVEY

A Leica Robotic station is used to continuously survey the prisms onsite to document slope movements. The station records the location of each prism every four hours. There are currently 20 prisms; 3 prisms are control points located outside the slope movement area, 13 prisms are located on the slopes surrounding the landslide area, and 4 prisms are located at the toe of the landslide. As the slope is backfilled and graded, additional prisms will be installed. The existing prism locations are shown on the current topography in Figure 3, and the proposed prism locations are shown on the reclamation topography in Figure 4. Both figures are included in Appendix B.

The monitoring software, GeoMos, has been programed to provide automatic alarms if there is a movement recorded that is greater than 0.35 feet or if a prism cannot be located. The alarm notes and actions taken are logged, and the alarms are summarized in Table 2. Following each alarm, CMC clears the area of concern until the data can be reviewed and the slope can be inspected. CMC made sure that there were no workers in the area before inspecting the slope. All other alarms were determined to be caused by weather.

Table 2 Alarm Summary

Date(s)	Alarm	Cause/Actions taken	Issue Resolved
12/06/2021	NP1 and NP63 could not be found.	Fog and frost blocked the prisms.	12/06/2021
12/15/2021	Several prisms could not be found	Fog, snow and wind blocked the prisms.	12/15/2021
12/15/2021-12/16/2021	TOE3 could not be found.	Prism was knocked over by the wind. It was repositioned on 12/16/2021.	12/16/2021
12/15/2021-12/21/2021	NP1 could not be found.	Prism was damaged by wind and replaced.	12/21/2021
12/21/2021	Measurement error notifications.	System Error. Error resolved after resetting system.	12/21/2021
12/24/2021	P1 and P35 could not be found.	Alert not repeated. No movement identified in areas of prisms.	12/27/2021
12/31/2021	Several prisms could not be found.	Fog, snow and wind blocked the prisms.	01/03/2022

The prism monitoring results for transverse and height displacements, monthly change, and cumulative change are summarized in Table 3 below. The transverse displacement measures the change in the horizontal distance from the robotic station to the prism; positive displacements indicate less distance between the station and prism (movement towards the total station). The height displacement measures the change in the vertical distance from the robotic station to the prism; positive displacements indicate upward movement. The values for the last reading in the month are included in Table 3. The monthly delta is the most recent reading cumulative delta displacement (horizontal, lateral, and vertical) subtracted from the last reading from the previous month. The cumulative delta values are a total displacement and are not associated with a direction. The transverse, height, and cumulative delta displacements are the total displacement over the life of the monitoring, which has been several years for all the prisms except P69. Prism P69 was moved on June 20, 2020, and the displacements included in Table 3 are the displacements



since that date. According to Leica documentation, the survey accuracy is $\pm 4 \text{ mm} + 1.5 \text{ ppm}$ for prisms located greater than 500m from the station; these equates to an accuracy of $\pm 0.016 \text{ ft}$.

The data show stable conditions with no movement for 15 of 20 prisms with recorded displacements limited to data scatter and not actual movements. Prisms NP1 and TOE3 were damaged or displaced by high winds on December 15, 2021, and movements were recorded when the prisms were replaced and repositioned. There were no signs of movement in the areas of these prisms, and the source of the movements recorded is likely the result of the wind damage. Prisms P63 and TOE3 are located at the toe of the landslide, and these locations showed slope creep movements at slow velocities. Prisms NP2 and NP66 are located above the landslide, and these prism also recorded slope creep movements at slow velocity. This settlement is likely related to the landslide material consolidating under its own weight. Plots of the transverse and height displacements for each prism are included in Appendix B.

Table 3 Prism Summary

Prism ID	Cumulative Transverse Displacement (ft)	Cumulative Height Displacement (ft)	Monthly Delta (ft)	Cumulative Delta (ft)	Notes / Recommendations
CP1	-0.002	-0.030	-0.0045	0.0302	
CP2	-0.069	-0.013	-0.0005	0.4150	
CP3	0.277	-0.243	0.0049	0.3711	
NP1	0.606	-0.931	0.6672	1.1110	Prism damaged by wind and replaced. Source of movements recorded.
NP2	0.081	-0.108	0.0340	0.1902	Slope creep movements
NP66	0.538	-0.735	0.0597	1.1018	Slope creep movements
P1	0.350	-0.067	-0.0041	0.3570	
P2	0.144	-0.068	-0.0126	0.2160	
P25	-0.027	0.015	0.0328	0.1777	
P32	-0.074	-0.093	0.0203	0.2968	
P33	-0.094	-0.062	0.0225	0.2217	
P35	0.028	-0.207	-0.0101	0.4398	
P4	0.362	-0.137	-0.0159	0.4819	
P5	0.397	-0.174	-0.0139	0.6191	
P63	15.724	-6.451	0.0560	16.9961	Slope creep movements
P69	-0.019	-0.096	-0.0028	2.0174	
P70	0.337	-0.350	-0.0024	0.6101	
TOE1	0.147	0.017	-0.0097	0.1646	
TOE2	0.653	-0.676	0.0043	0.9799	
TOE3	3.237	-1.746	1.5370	4.0480	Slope creep movements. Prism moved by wind and repositioned. Source of movements recorded.



4.0 DRONE SURVEY

The site was flown for aerial imagery using an unmanned aircraft system (UAS or 'drone') on, December 13, 2021. The imagery was inspected for signs of instability and used to supplement the onsite visual inspections. Features noted in the aerial imagery review were inspected during Stantec's engineering inspection and are summarized in Section 2 above. The imagery was also used to create site topography.

The November topography was also compared to the December topography to identify changes in the site topography. Comparison of the two surveys showed that approximately 3,544 yd³ of fill had been imported and temporarily placed on the stockpile near the top of the ramp. Additionally, a total of 43,498 yd³ of growth medium have been prepared. Approximately 22,000 yd³ of growth medium were moved as a balanced cut/fill from the buttress area to stockpiles on the eastern extent of the production floor. Much of the imported fill was topsoil, and it was added to the growth media pile. No slope movements or other changes in topography were identified. The current imagery and topography are included in Figures 1 and 3, and the comparison surface is included as Figure 5 in Appendix C.

As previously reported in the September 2020 monitoring report, there are limitations with the method of comparing drone surveys from different months. The drone data indicate changes in the slopes along each of the reclamation benches, buildings, and areas with trees or shrubs. These areas are stable, and the changes are the result of survey limitations on or near vertical slopes.

5.0 COMPACTION TESTING

No fill was permanently placed at the quarry in December. Once fill placement starts, the fill will be placed in one-foot lifts, moisture conditioned as necessary, and compacted. Compaction testing will commence at the rate of at least one test per 5,000 yd³ placed.

Per CMC, imported material is being stockpiled onsite for placement at a later date. The material will be tested for compaction level and areas failing compaction testing will either be further compacted until the specification is met or removed and replaced in a compacted manner.

6.0 RECLAMATION PROGRESS

CMC is actively working towards reclaiming the Pikeview Quarry and has contracted with Stantec to provide EPCM services through completion. As an updated feature of our monthly report, we will provide progress of activities, anticipated milestone schedule and a one month look ahead to better communicate project objectives. A phased or 'gated' approach will be used to complete the reclamation process going forward (See milestone schedule below)

Phase 1 - Value Engineering and issue RFP to qualified Contractors

Phase 2 - Commercial negotiations with successful contractor

Phase 3 - Execution planning and Contractor readiness review

Phase 4 - Site Construction execution

Phase 5 - Final revegetation (season 2)



Task/Milestone	Estimated Dates
Phase 1 – Issue RFP to Bidders	Completed June 2021
Phase 1 – RFP Evaluation & Recommendation	Completed July 2021
Phase 2 – Constructor Contract Award	January 2022
Phase 3 – Project Kick-off with successful Contractor	January 2022
Phase 4 – Contractor Mobilization to Site	February 2022
Phase 4 – Contractor Demobilize from Site	Summer 2023
Phase 5 – Final Revegetation season 2 Begins	2023 until acceptance

Progress of activities this month:

- Continued negotiations with preferred contractor.
- Importing fill material continued.
- Riprap processing continued. Approximately 800 cubic yards have been processed to demonstrate that the onsite material can be used for riprap.
- Completed processing of Growth Medium for use as topsoil. Approximately 44,000 cubic yards of Growth Medium or topsoil have been stockpiled.
- Moved stockpiles out of buttress fill area in preparation for fill placement.
- Removal of site debris continued to prepare the site for the reclamation contractor.
- Completed mechanical mulching and grubbing operations in preparation for construction.
- Geotechnical monitoring continued.

Work planned for next month includes:

- Finalize negotiations with preferred contractors.
- Complete project survey and utility locates in preparation for Contractor mobilization.
- Excavate notch in pond below Middle Peak.
- Continue importing fill material and topsoil. Importing and stockpiling topsoil until at least 57,000 cubic yards of Growth Medium or topsoil are available onsite.
- Continue geotechnical monitoring.
- Continue processing of riprap.
- Continue to remove site debris.

7.0 CONCLUSIONS

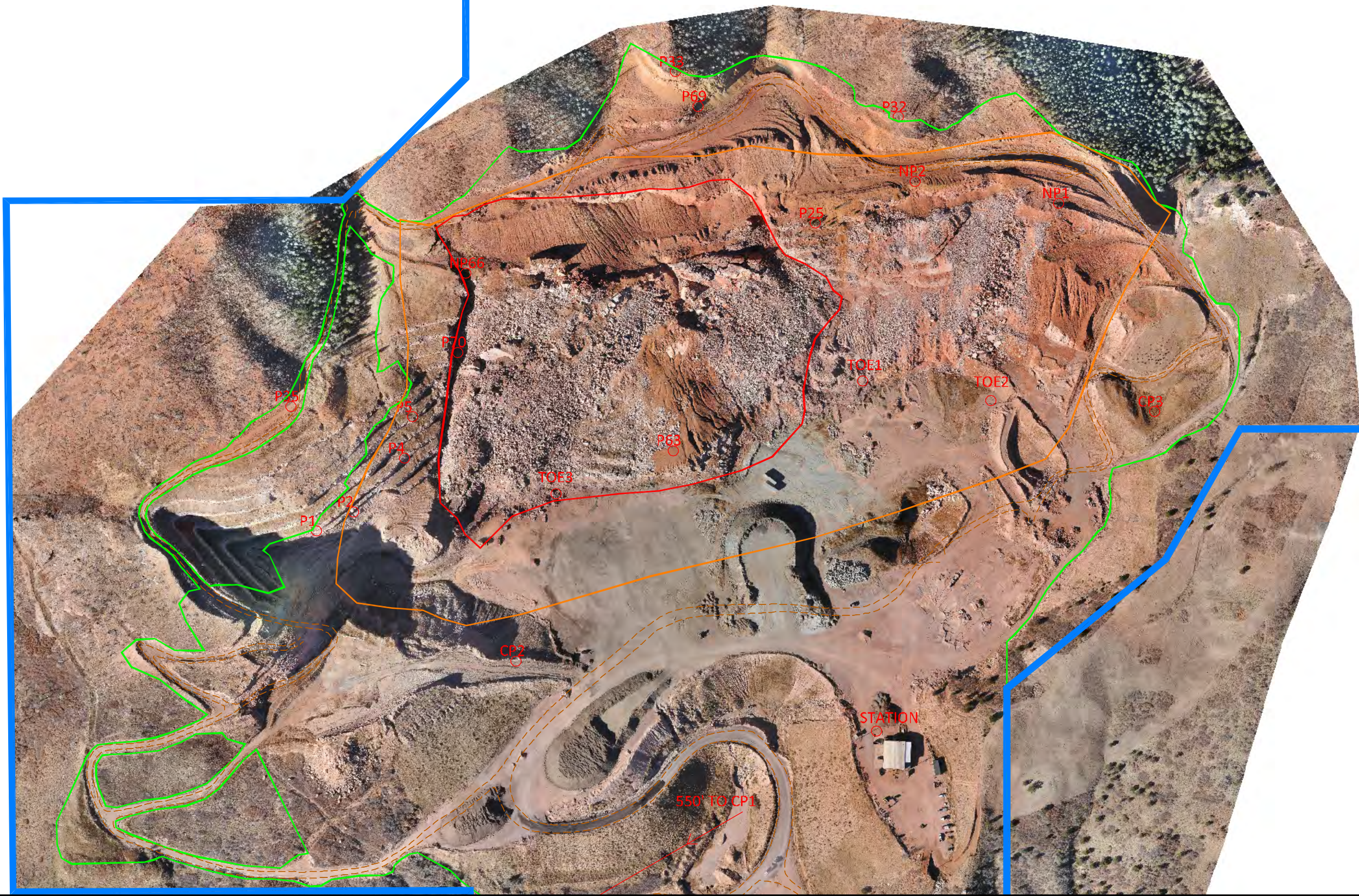
None of the data collected in December 2021 indicate evidence of any large-scale movements that increase risk to workers or to the public. The landslide area continues to show slope creep movements with slow velocities. Shallow surface erosion continues to occur requiring ongoing maintenance and cleanup.

- Restricted access to the ungraded landslide slopes should continue.
- All monitoring should continue at current frequencies.
- All alarms shall continue to be taken seriously even if data errors are suspected.



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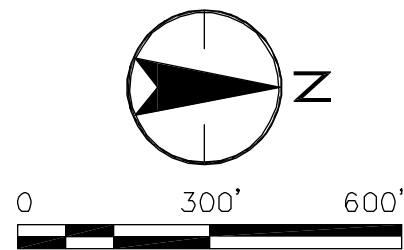
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LEGEND

- Permit/Affected Lands Boundary
- Proposed Disturbance Limit
- Landslide Extent
- Buttress Fill Extent
- Existing Prism
- Proposed Prism



Client/Project
CONTINENTAL MATERIALS
CORP.
PIKEVIEW QUARRY SLOPE
MONITORING

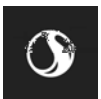
Project No.
227419041

Title
SITE MAP

Revision #	Date 2022.01.31
Drawn By PK	Figure No. 1

Appendix A

Visual Inspections



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6. TOE OF THE SLIDE NEAR PRODUCTION FLOOR



5. VIEW OF STOCKPILES FROM WEST

NOTE 1:
NO CRACKS

NOTE 1:
NO CRACKS



4. PRISM ON MIDDLE PEAK



3. VIEW OF NORTH PEAK FROM MIDDLE PEAK



7. UPSTREAM END OF CULVERT



2. VIEW OF GROWTH MEDIUM AND TOP SOIL



8. RECLAMATION BENCHES AT SOUTH END



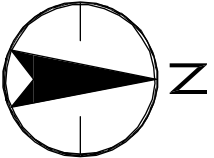
1. RIP RAP PROCESSING ON PRODUCTION FLOOR



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- LEGEND
- Permit/Affected Lands Boundary
 - Proposed Disturbance Limit
 - Landslide Extent
 - Buttress Fill Extent
 - Observed Crack

- NOTES
- NO CRACKS OBSERVED IN THIS AREA.
 - ALL PHOTOS TAKEN DECEMBER 16, 2021.



Client/Project
CONTINENTAL MATERIALS
CORP.
PIKEVIEW QUARRY SLOPE
MONITORING

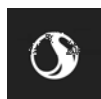
Project No.
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Title
OBSERVATIONS FROM
DECEMBER INSPECTION

Revision #	Date
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Drawn By PK	Figure No. 2

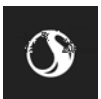
Table A-1 Summary of Daily Inspections

Date	Notes	Inspection By
Wednesday, December 1, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Thursday, December 2, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Friday, December 3, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Saturday, December 4, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Sunday, December 5, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Monday, December 6, 2021	Fog and frost blocked prism readings. Cleared to proceed.	Jerald Schnabel
Tuesday, December 7, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Wednesday, December 8, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Thursday, December 9, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Friday, December 10, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Saturday, December 11, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Sunday, December 12, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Monday, December 13, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Tuesday, December 14, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Wednesday, December 15, 2021	Snow and fog blocked prism readings. Cleared to proceed.	Jerald Schnabel
Thursday, December 16, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Friday, December 17, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Saturday, December 18, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Sunday, December 19, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Monday, December 20, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Tuesday, December 21, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Wednesday, December 22, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Thursday, December 23, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Friday, December 24, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Saturday, December 25, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Sunday, December 26, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Monday, December 27, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Tuesday, December 28, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Wednesday, December 29, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Thursday, December 30, 2021	No Movement or change observed. Good to proceed	Jerald Schnabel
Friday, December 31, 2021	Snow and fog blocked prism readings. Cleared to proceed.	Jerald Schnabel

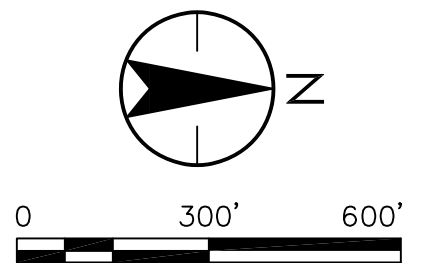
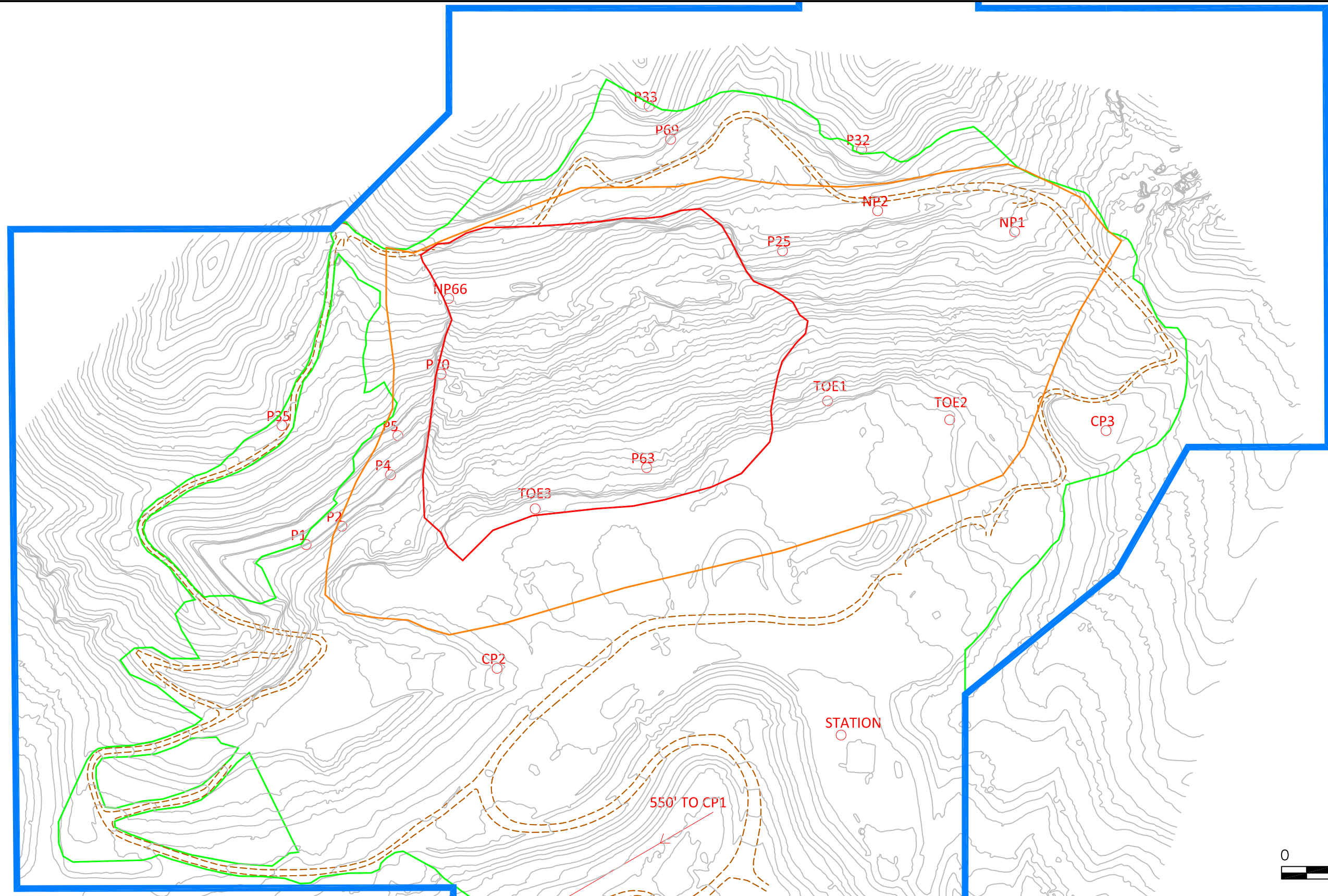


Appendix B

Prism Survey



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LEGEND

- Permit/Affected Lands Boundary
- Proposed Disturbance Limit
- Landslide Extent
- Buttress Fill Extent
- Existing Prism
- Proposed Prism

1. GRADING AND MOVEMENT OF STATION WILL BE EXTENDED AS LONG AS POSSIBLE.
2. PRISMS WILL BE INSTALLED AS EACH BENCH IS FINISHED.
3. ALL PRISMS WILL BE RETAINED AS LONG AS POSSIBLE.
4. TOPOGRAPHY FROM DECEMBER 13, 2021 DRONE SURVEY.
5. CONTOUR INTERVAL IS 10 FEET

Client/Project

CONTINENTAL MATERIALS
CORP.
PIKEVIEW QUARRY SLOPE
MONITORING

Project No.
227419041

Title

EXISTING PRISMS WITH
CURRENT SURFACE

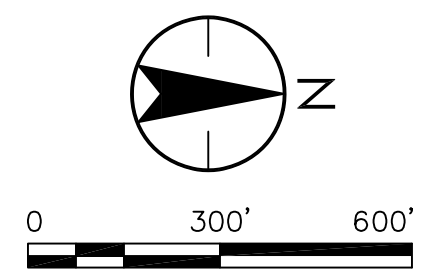
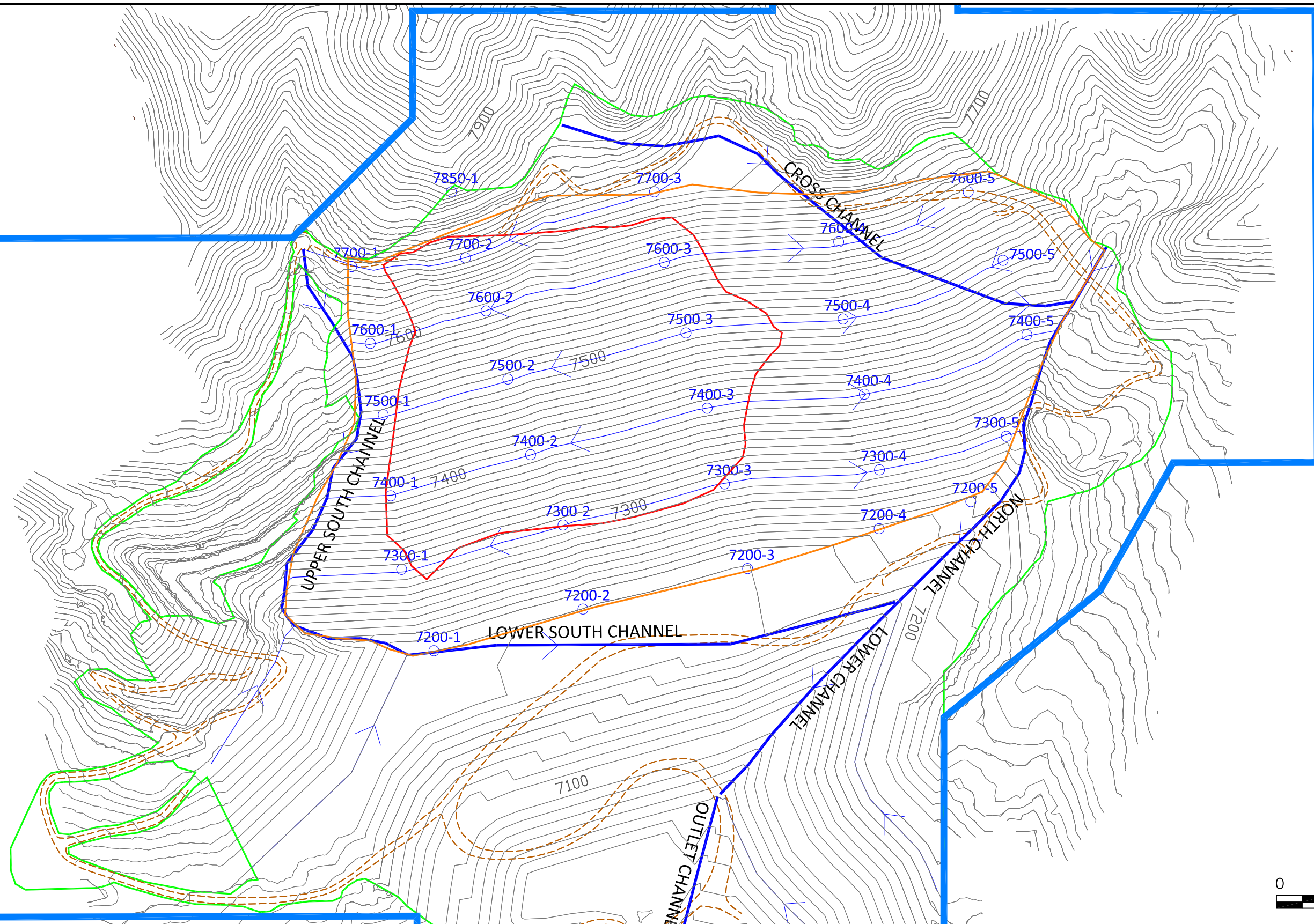
Revision
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Drawn By
PK

Date
2022.01.31

Figure No.
3

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- LEGEND
- Permit/Affected Lands Boundary
 - Proposed Disturbance Limit
 - Landslide Extent
 - - - Buttress Fill Extent
 - Proposed Prism

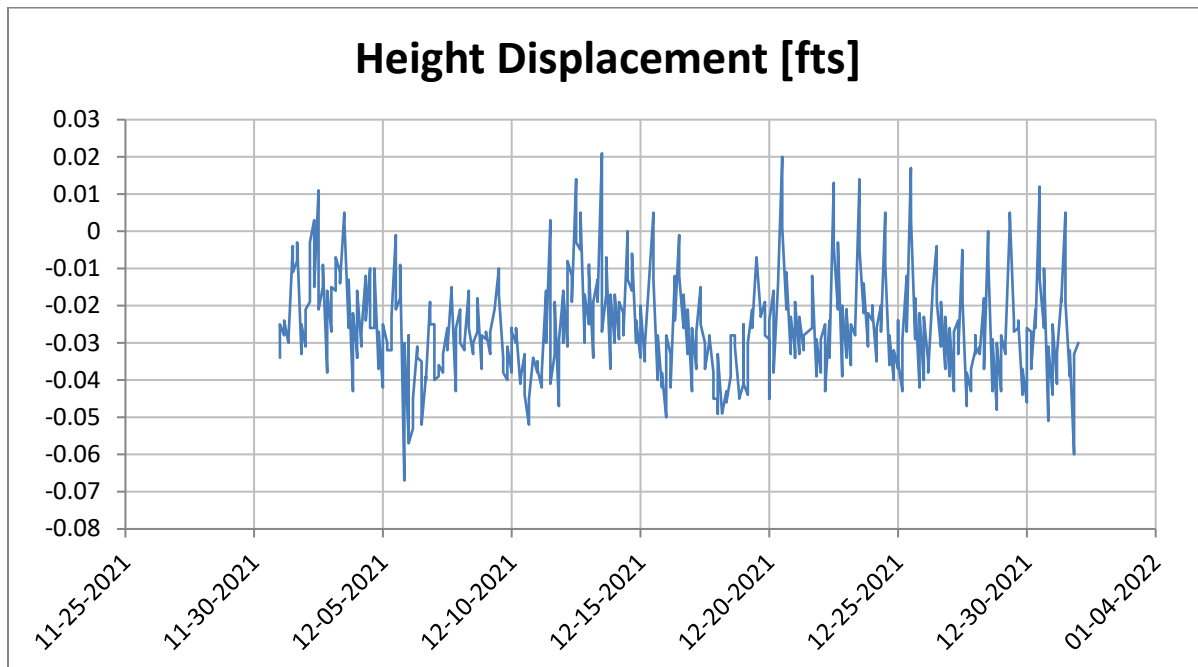
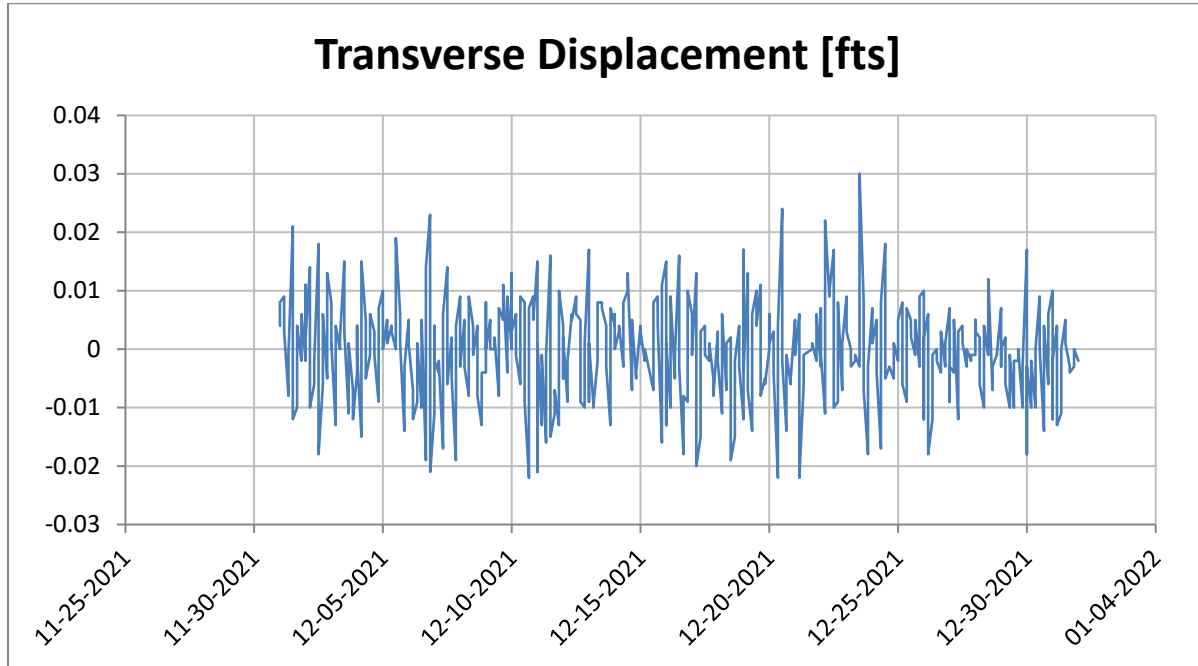
- NOTES
1. GRADING AND MOVEMENT OF STATION WILL BE EXTENDED AS LONG AS POSSIBLE.
 2. PRISMS WILL BE INSTALLED AS EACH BENCH IS FINISHED.
 3. ALL PRISMS WILL BE RETAINED AS LONG AS POSSIBLE.

Client/Project
**CONTINENTAL MATERIALS CORP.
PIKEVIEW QUARRY SLOPE MONITORING**

Project No.
227419041

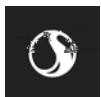
Title PROPOSED PRISMS WITH RECLAMATION SURFACE	
Revision #	Date 2022.01.31
Drawn By PK	Figure No. 4

Prism CP1

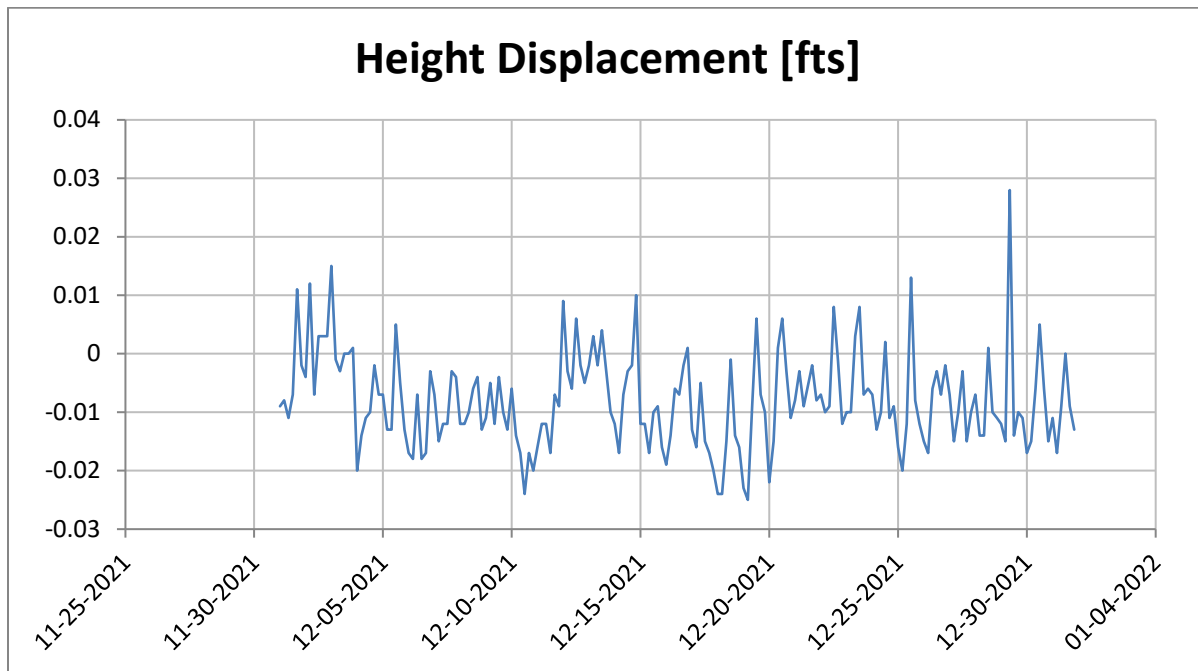
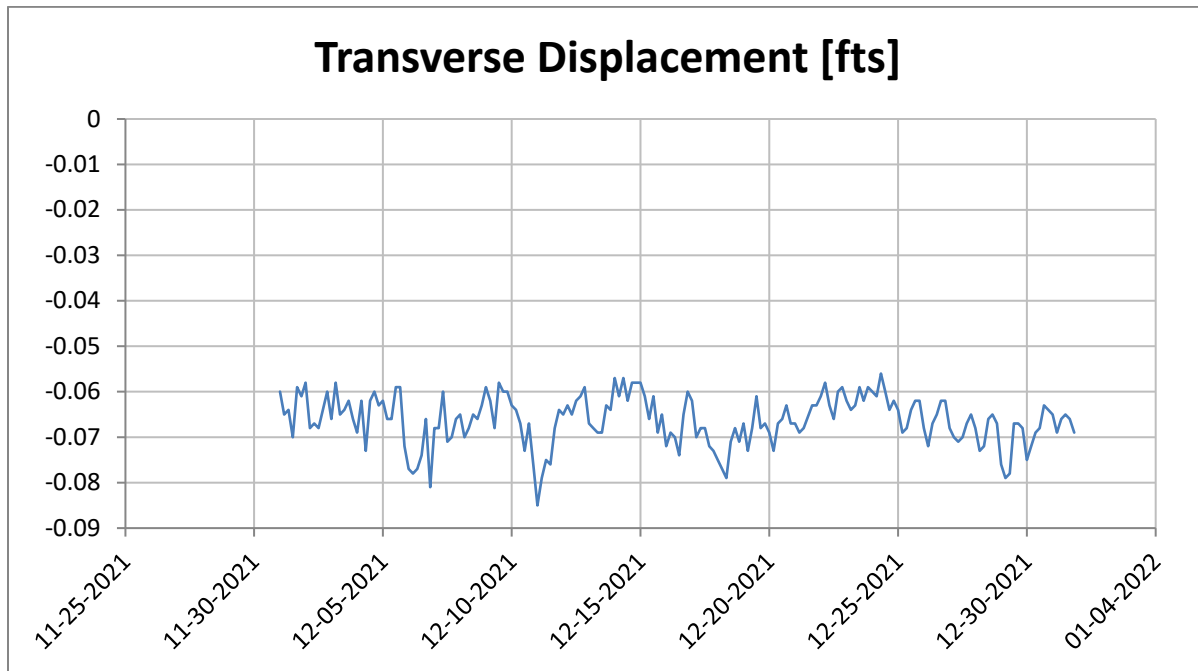


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

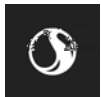


Prism CP2

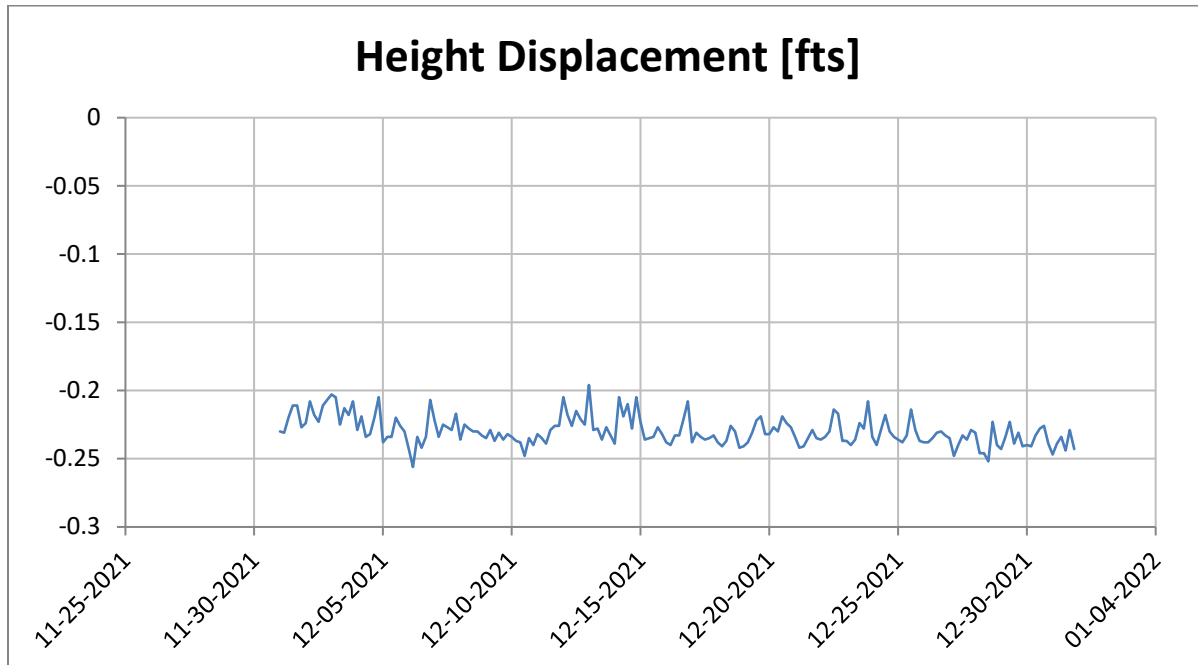
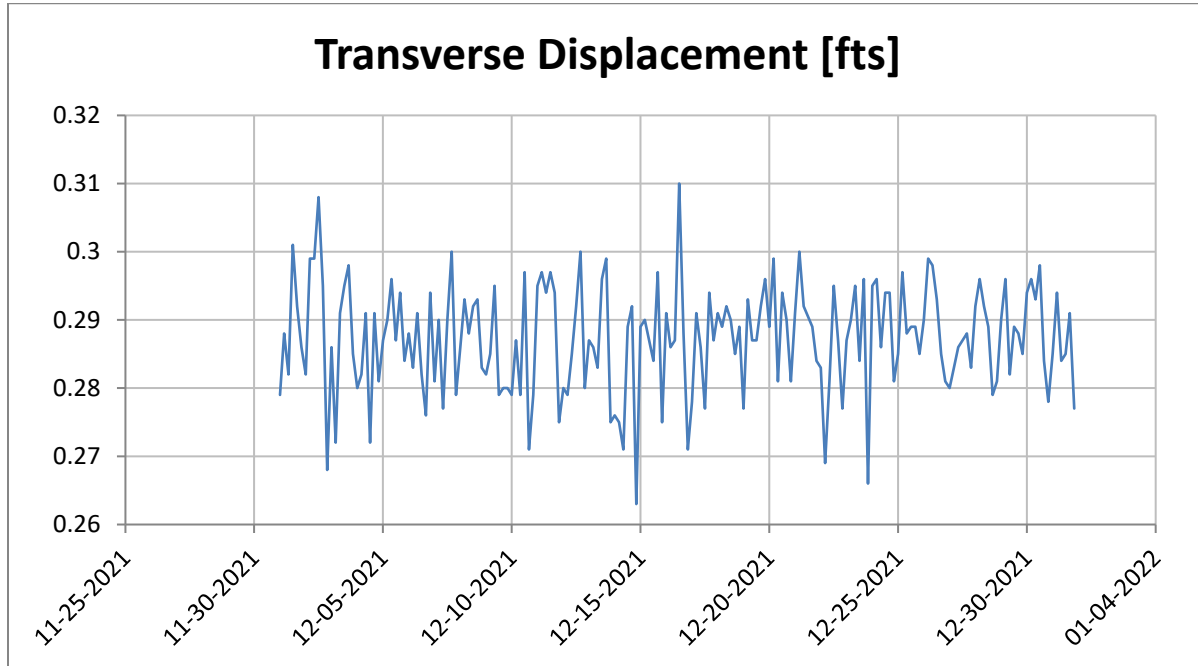


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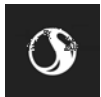


Prism CP3

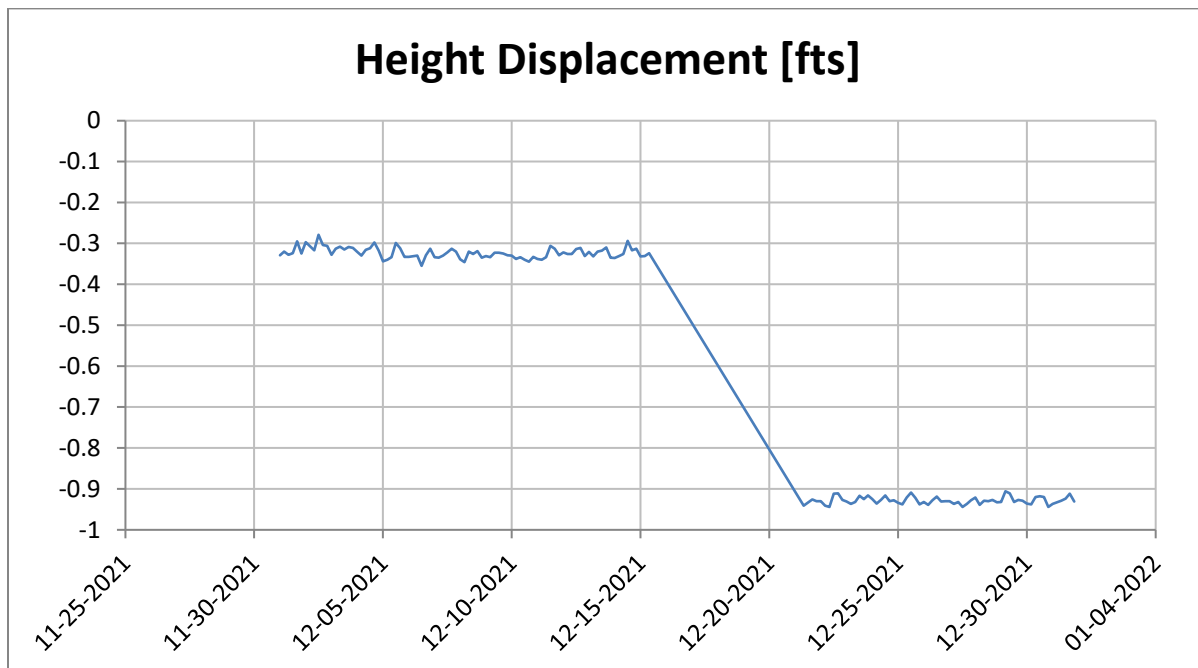
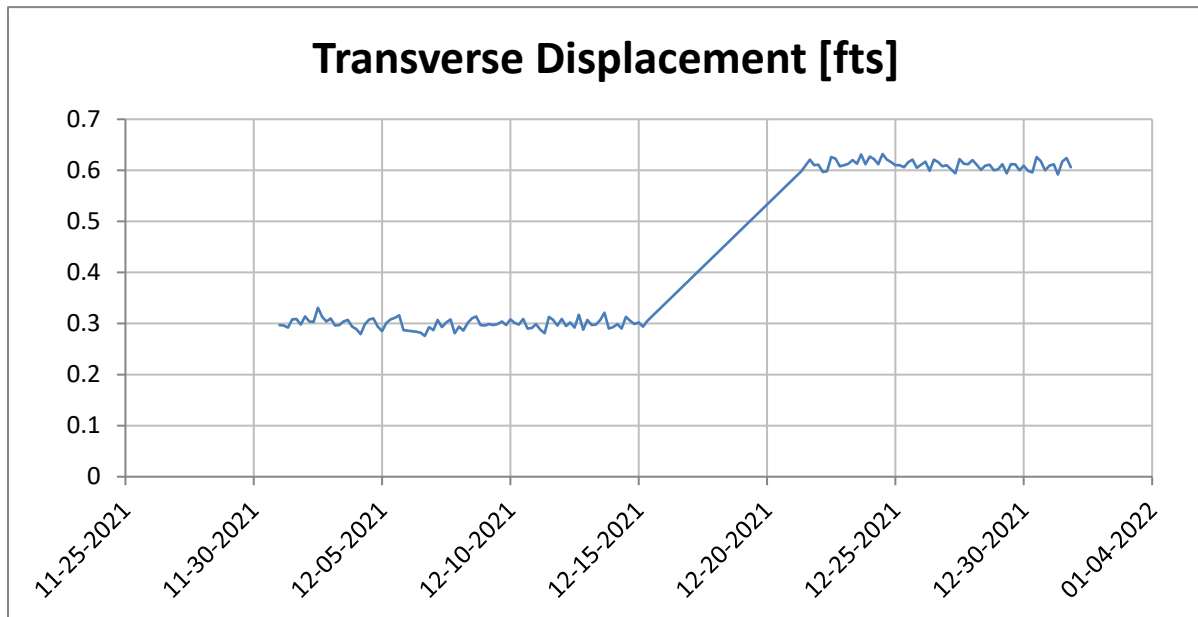


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2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

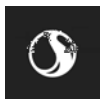


Prism NP1

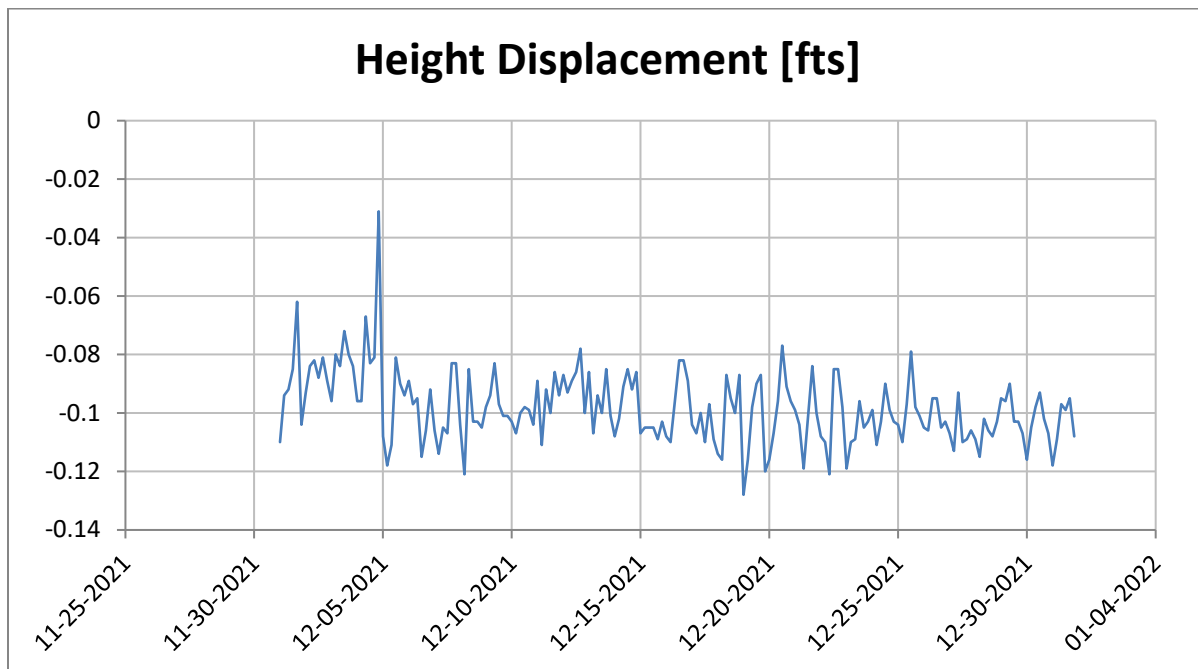
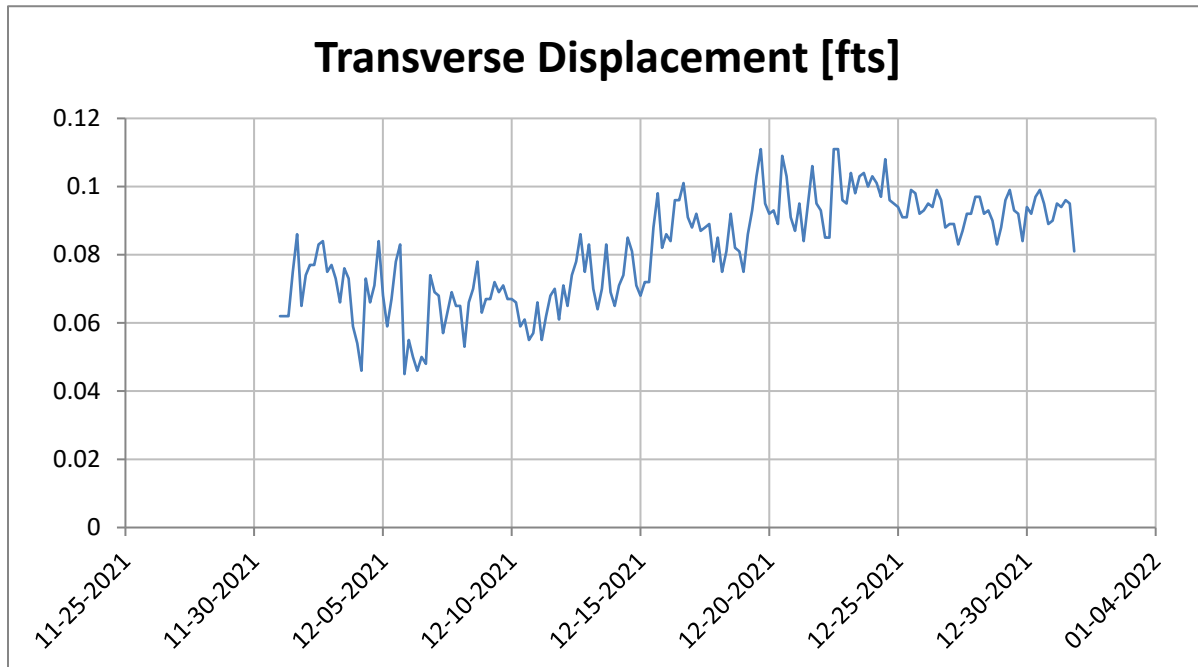


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.
5. Prism damaged by wind and then repositioned on 12-22-2021. No signs of slope movement at prism location.

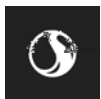


Prism NP2

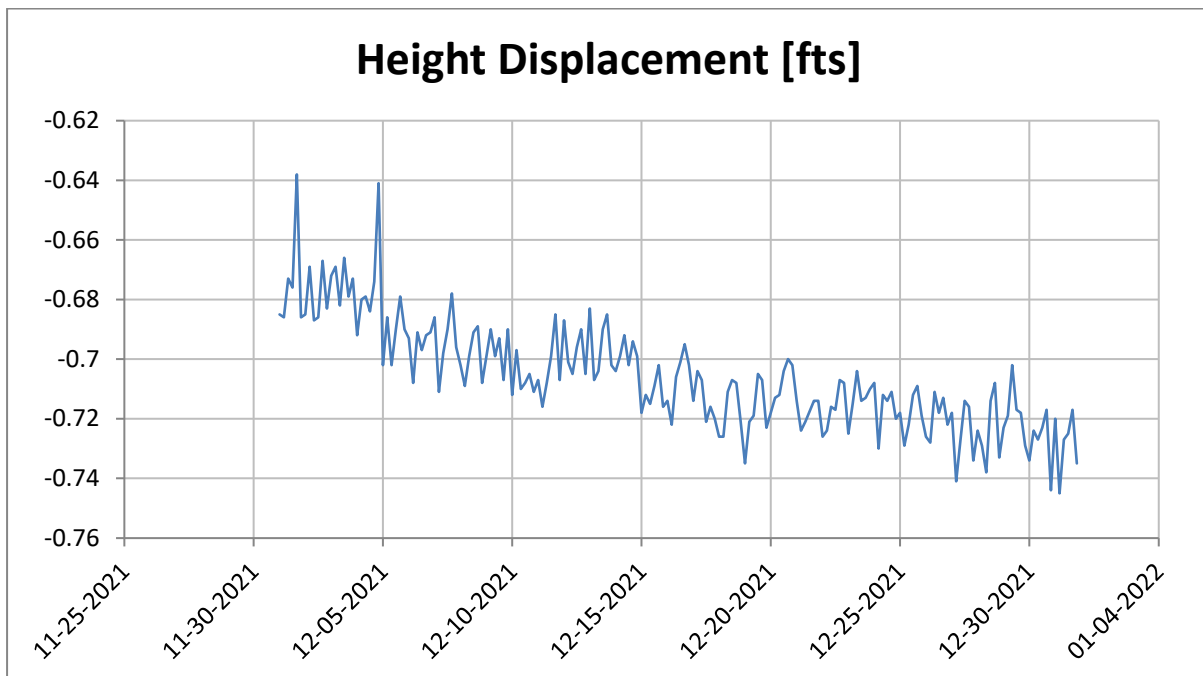
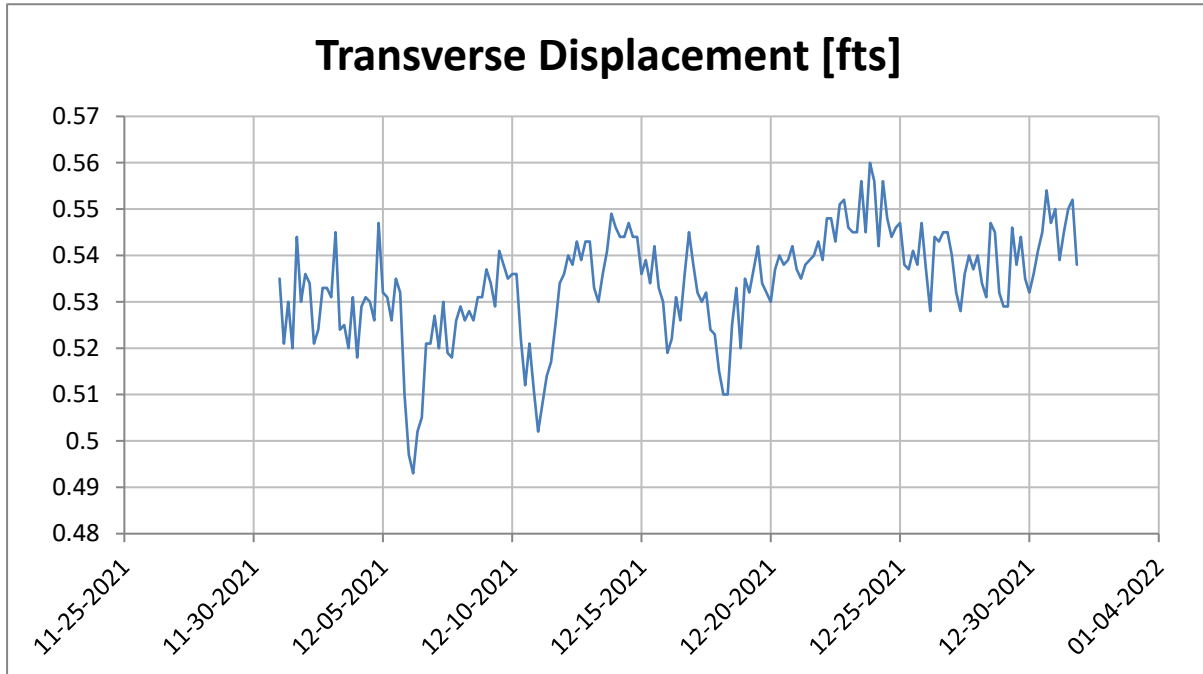


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.
5. Prism records slope creep movements with slow velocity.

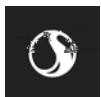


Prism NP66

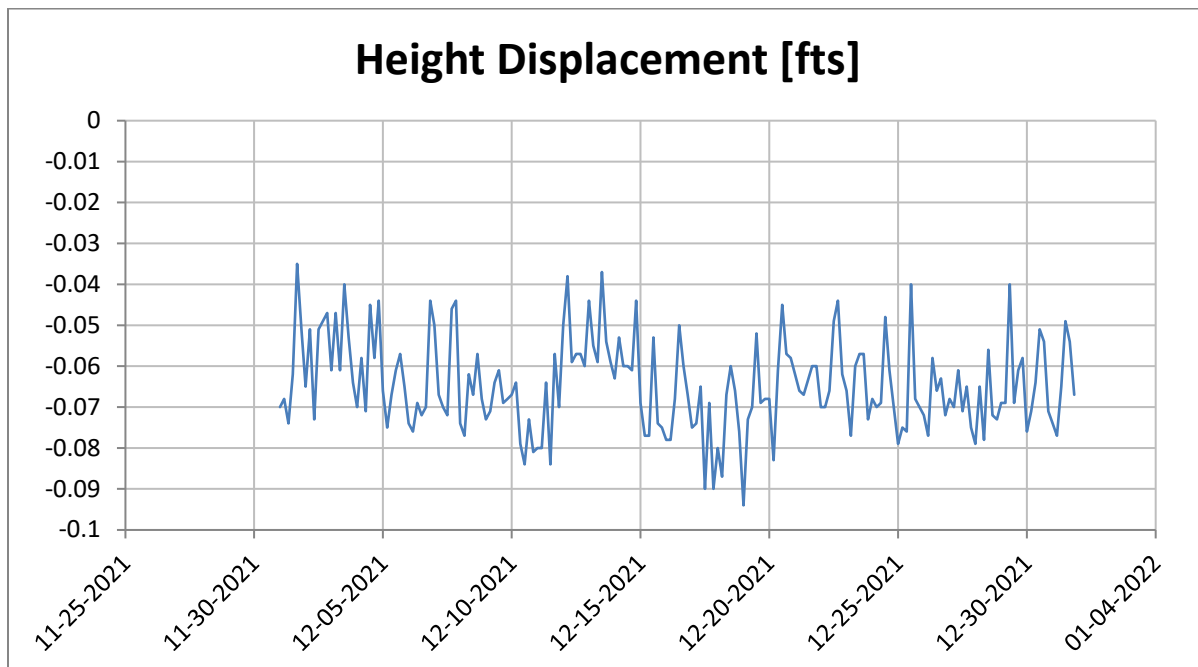
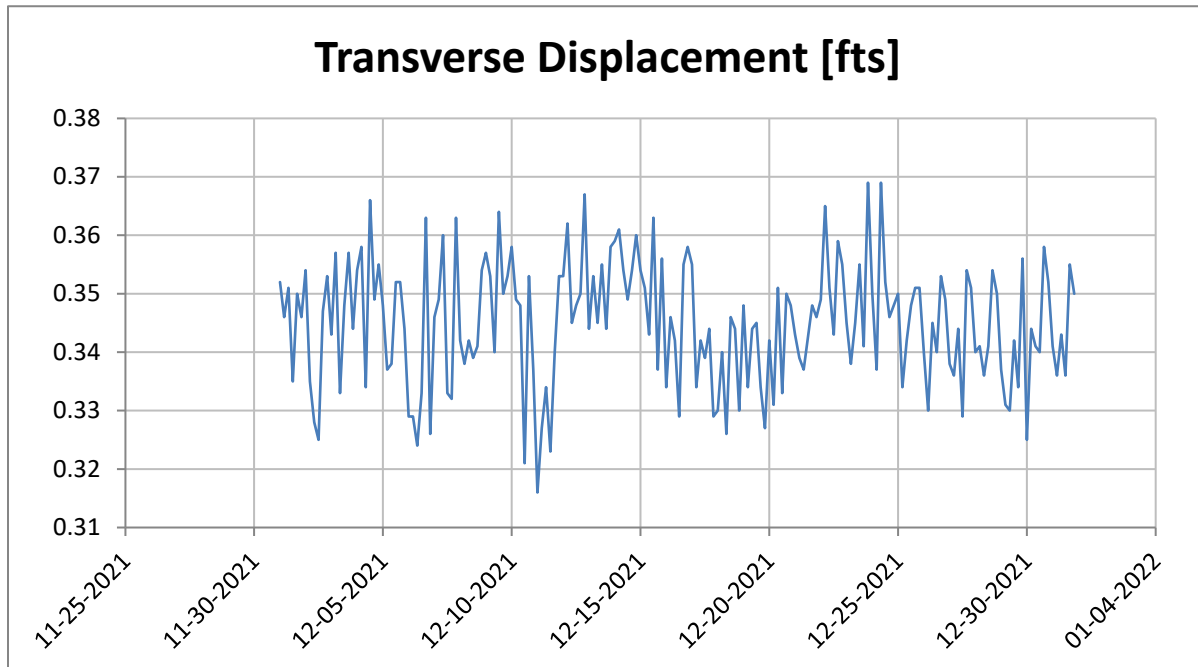


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.
5. Prism records slope creep movements with slow velocity.

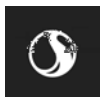


Prism P1

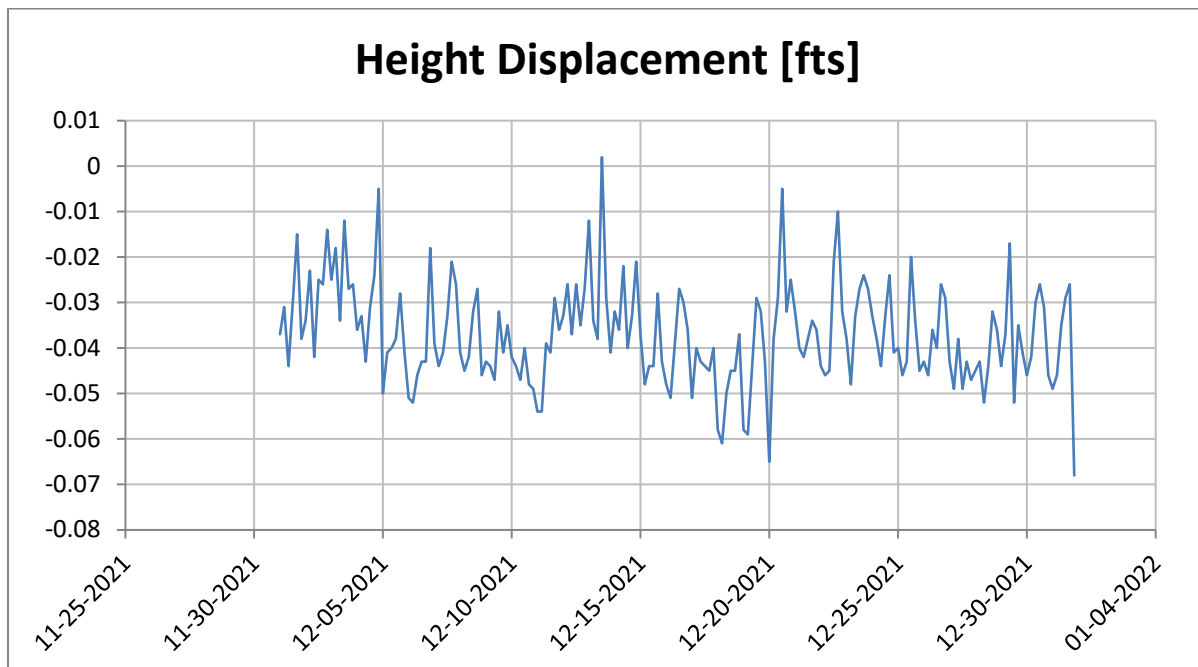
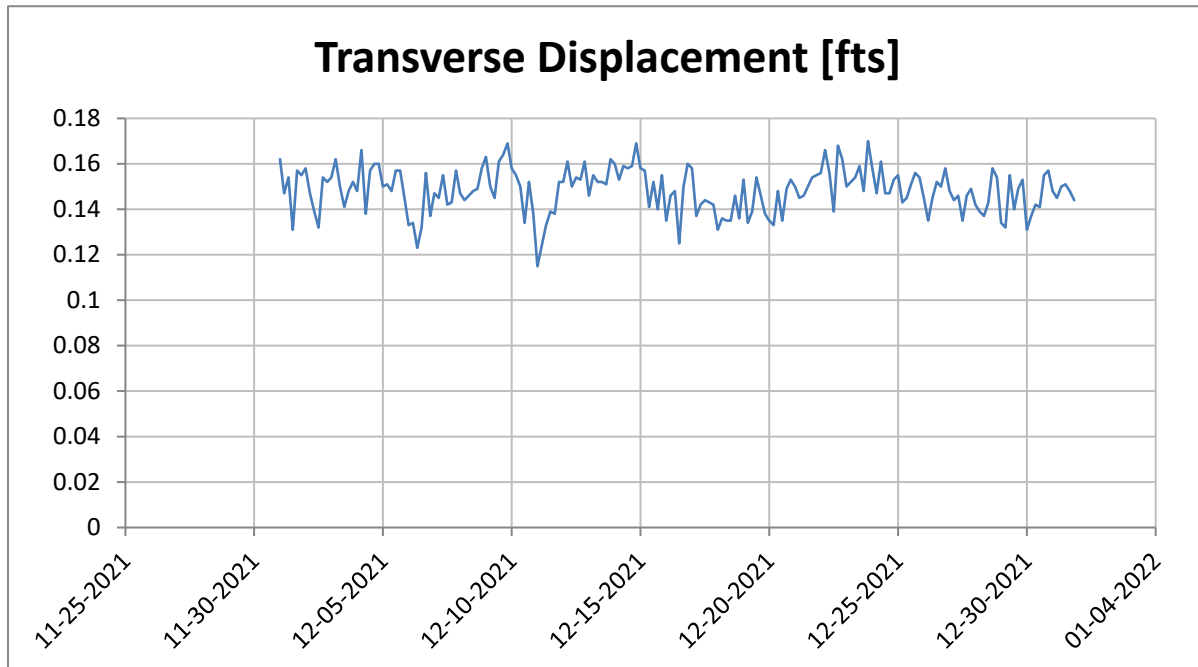


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

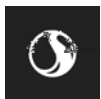


Prism P2

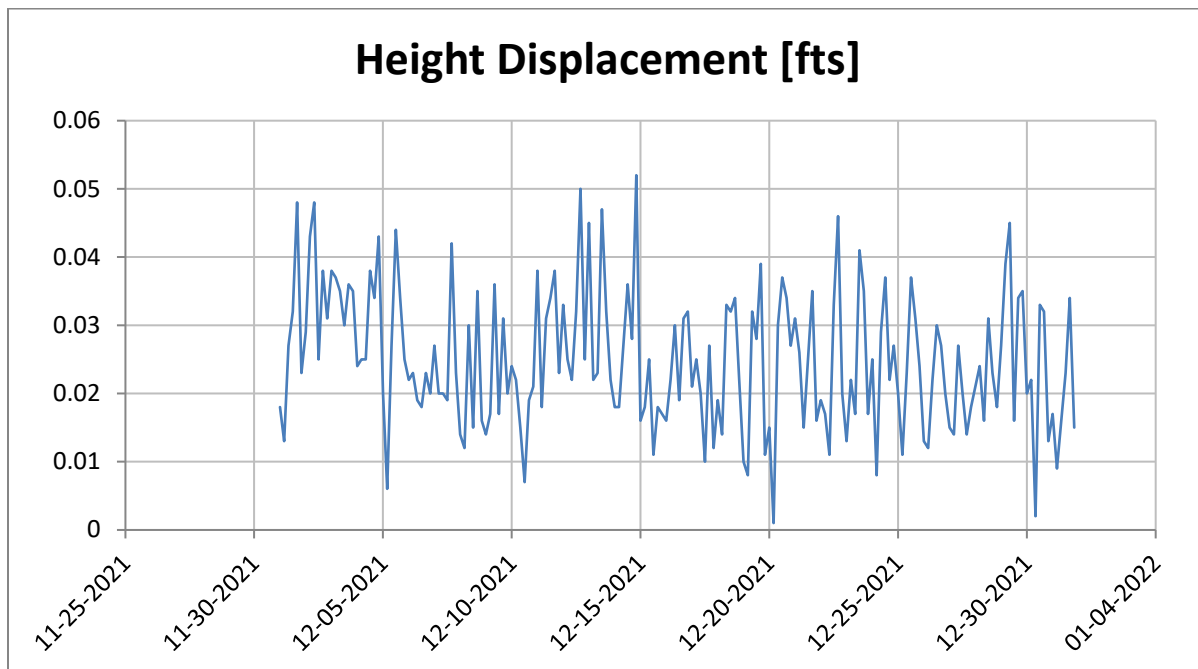
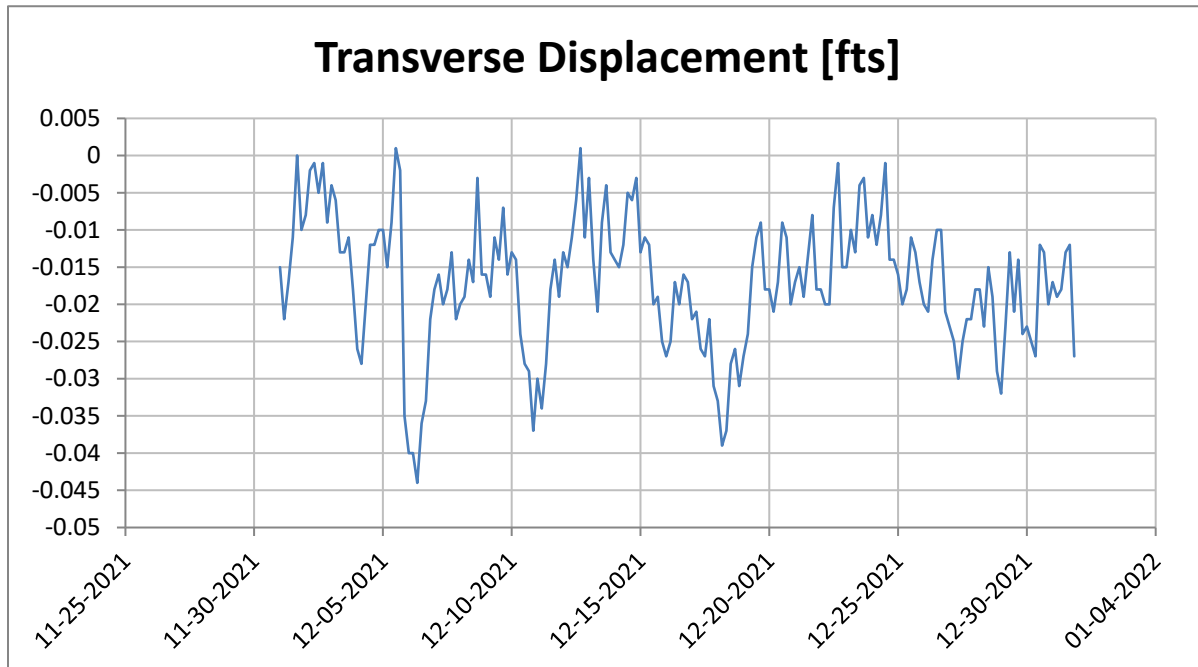


Notes:

1. Survey accuracy is +/-0.016 feet.
2. Alarm threshold is +/-0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

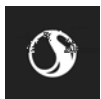


Prism P25

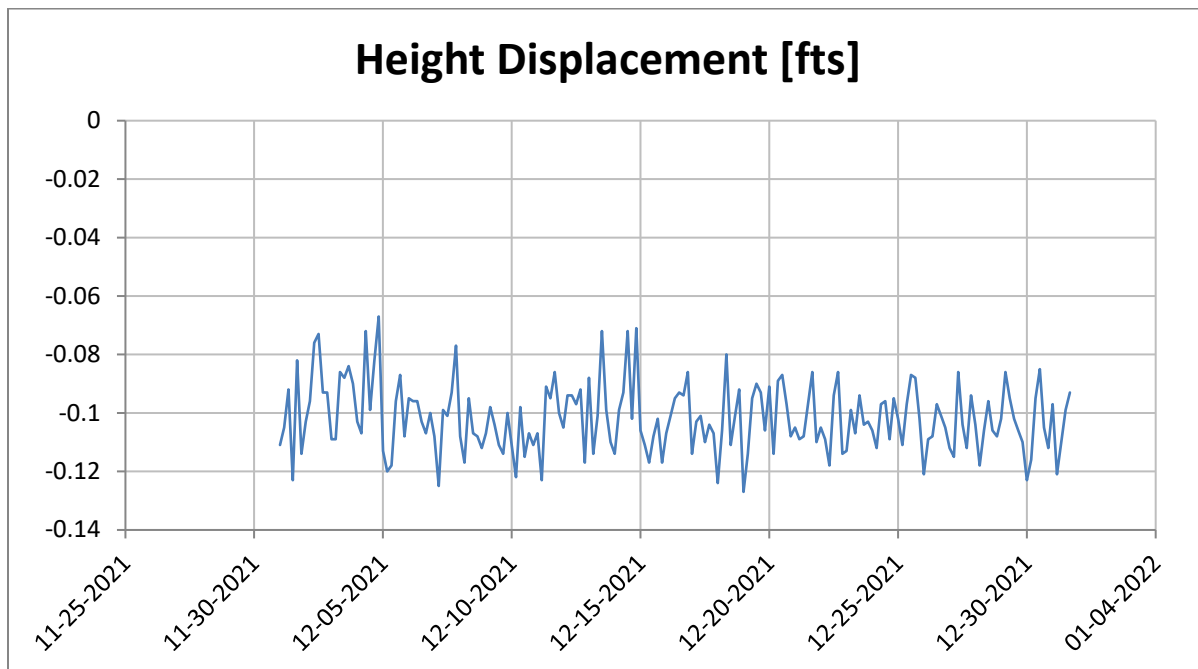
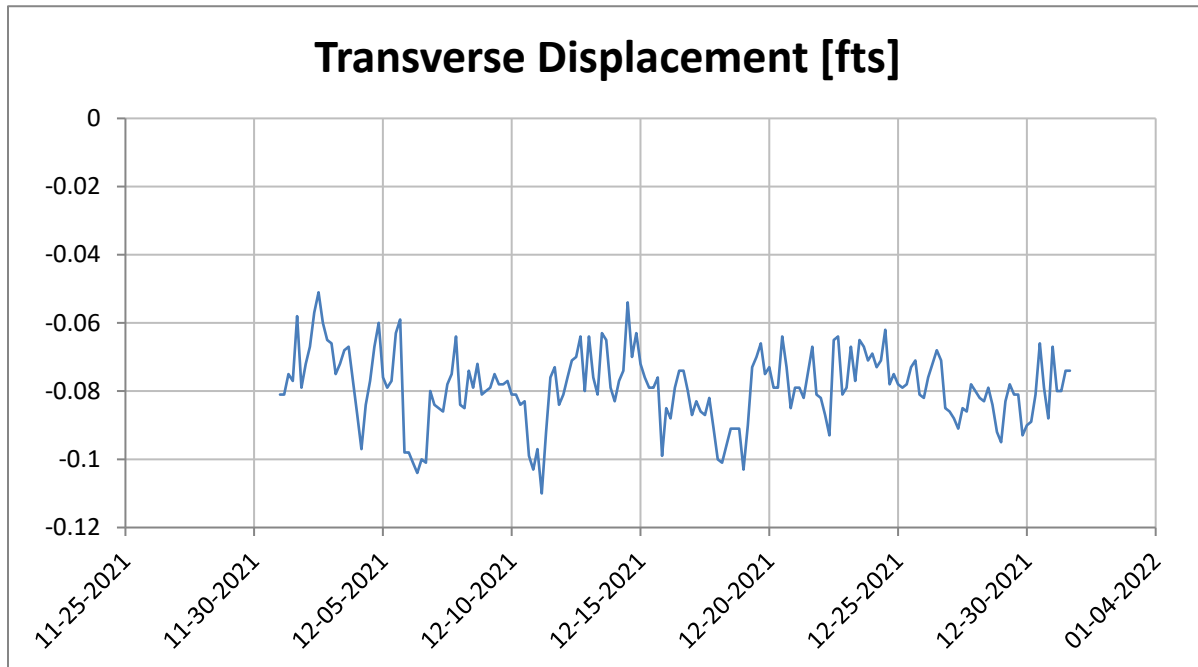


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

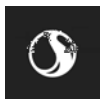


Prism P32

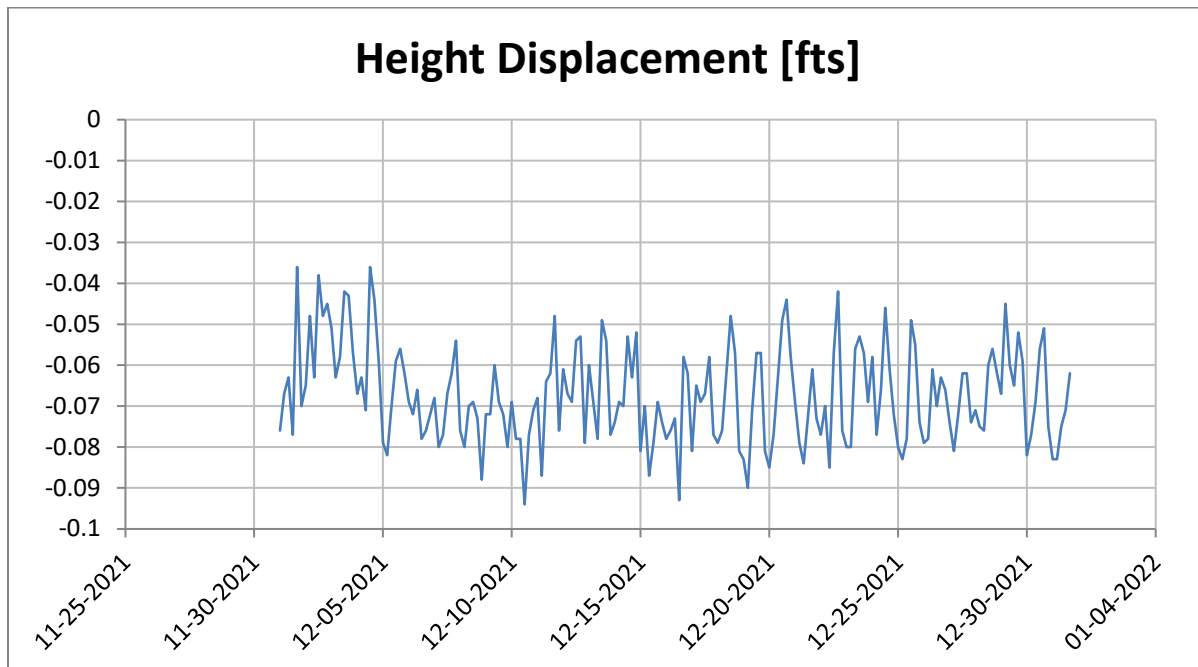
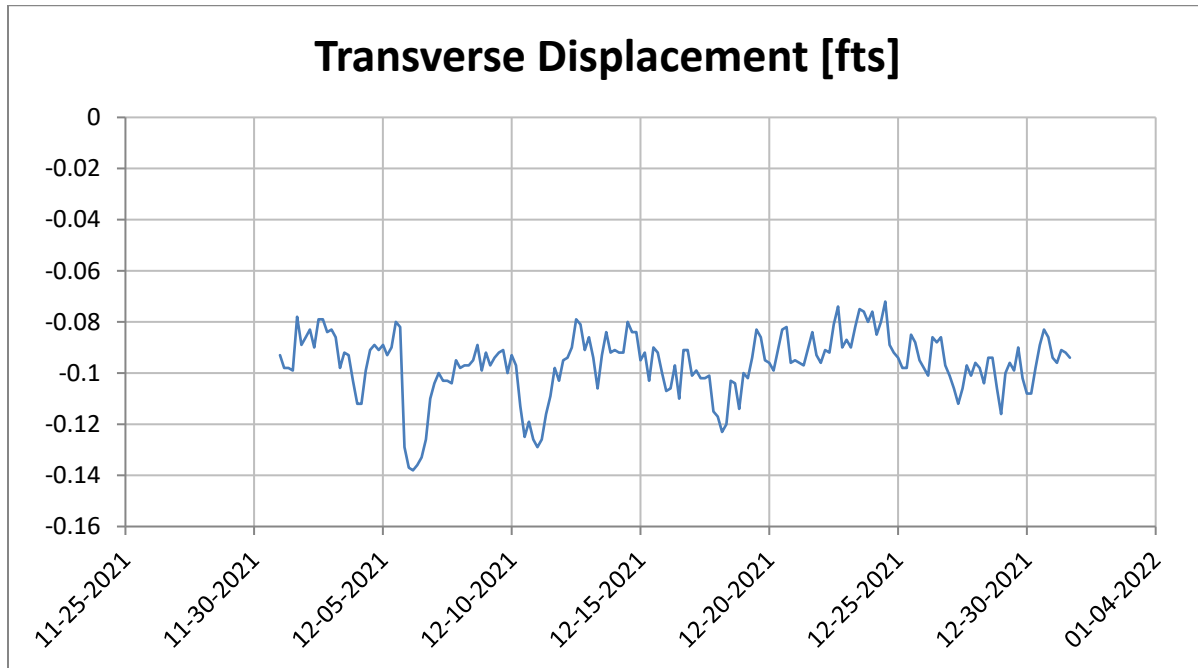


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

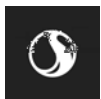


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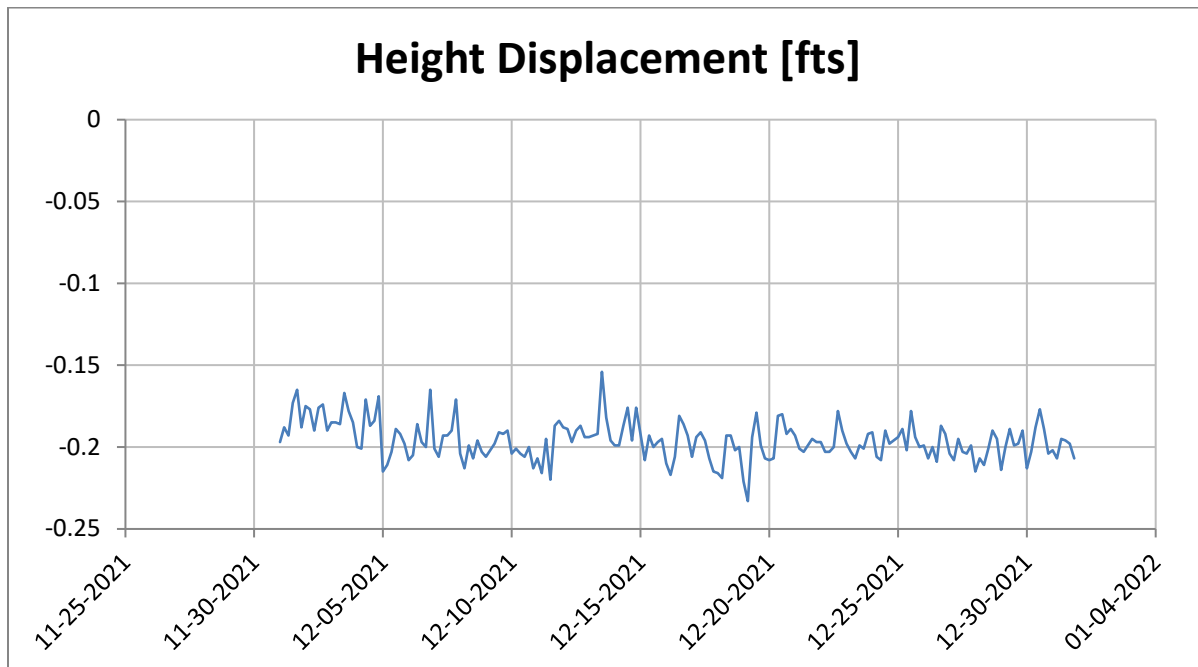
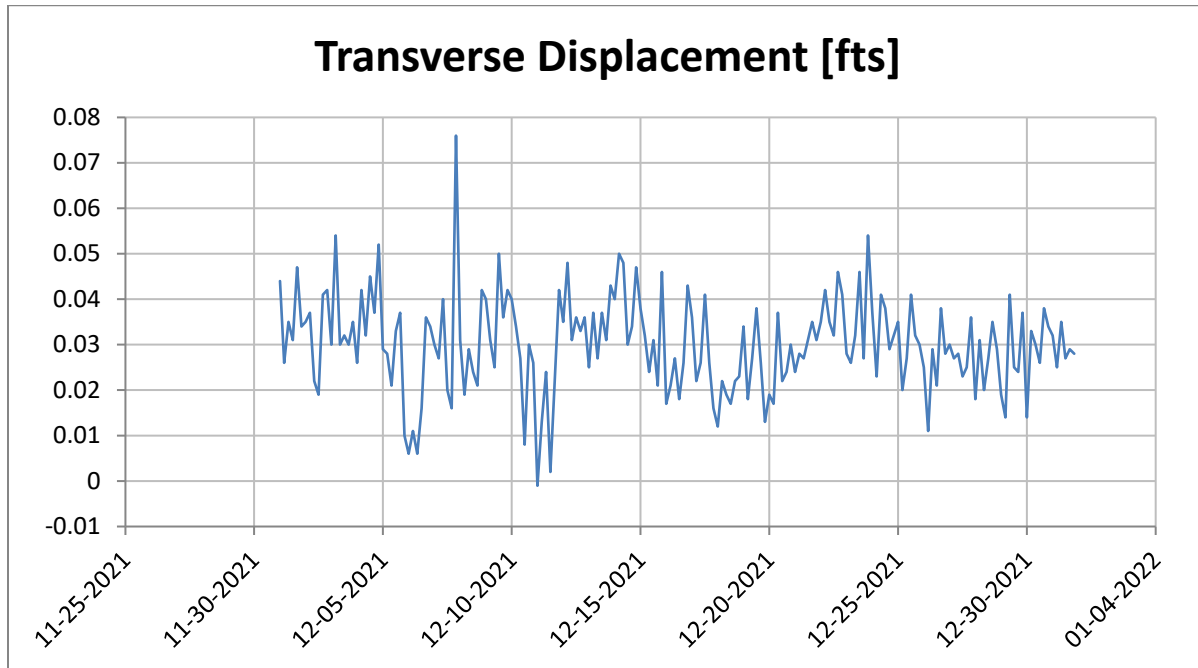


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

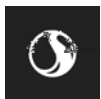


Prism P35

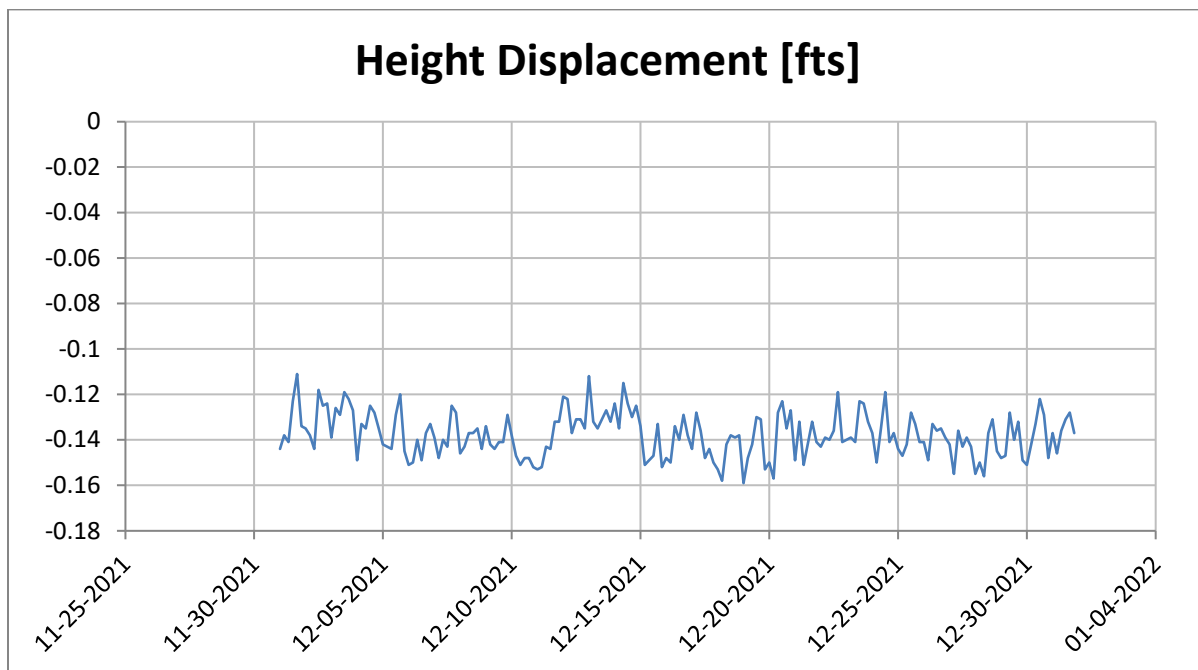
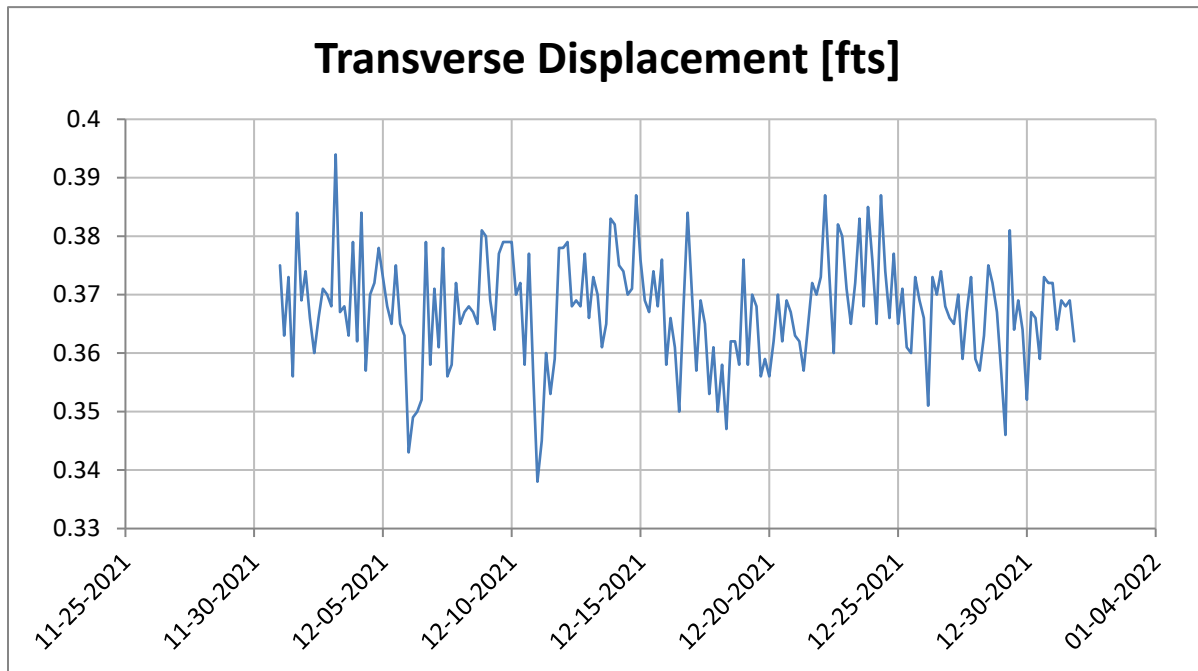


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

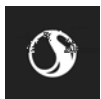


Prism P4

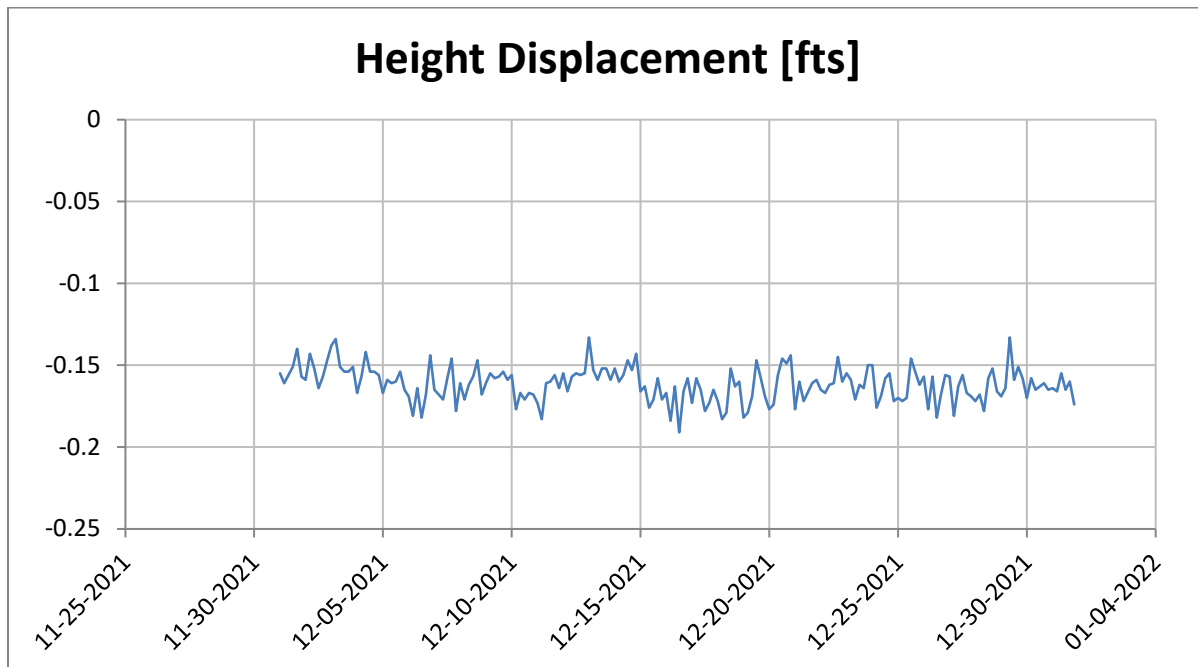
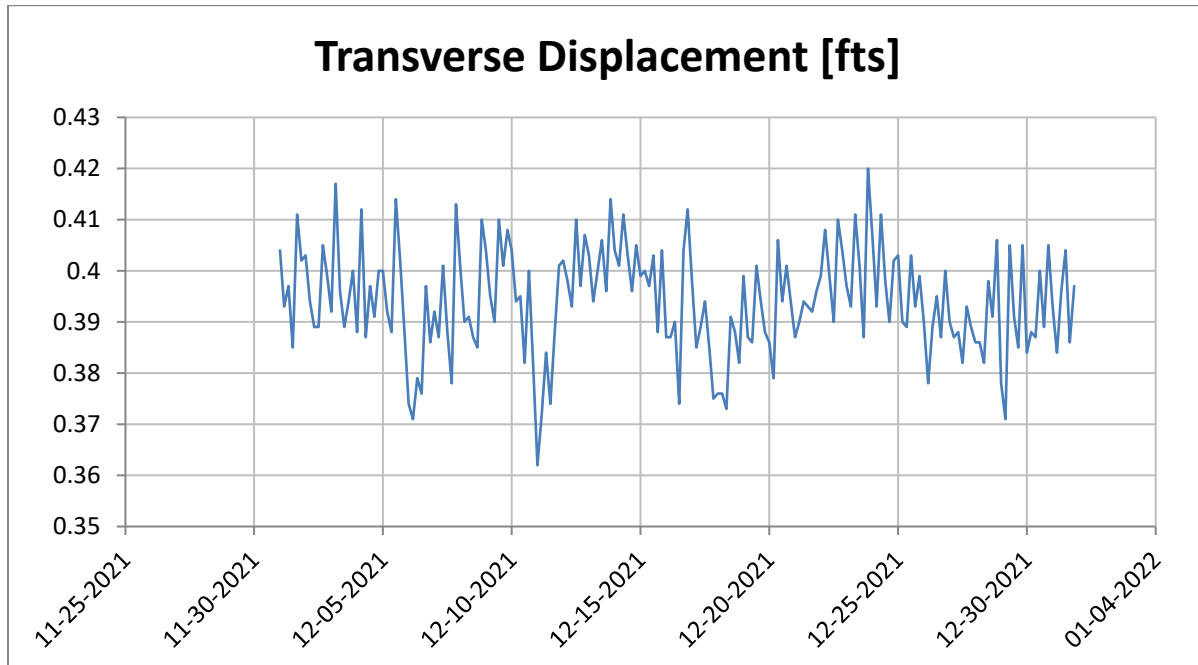


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

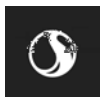


Prism P5

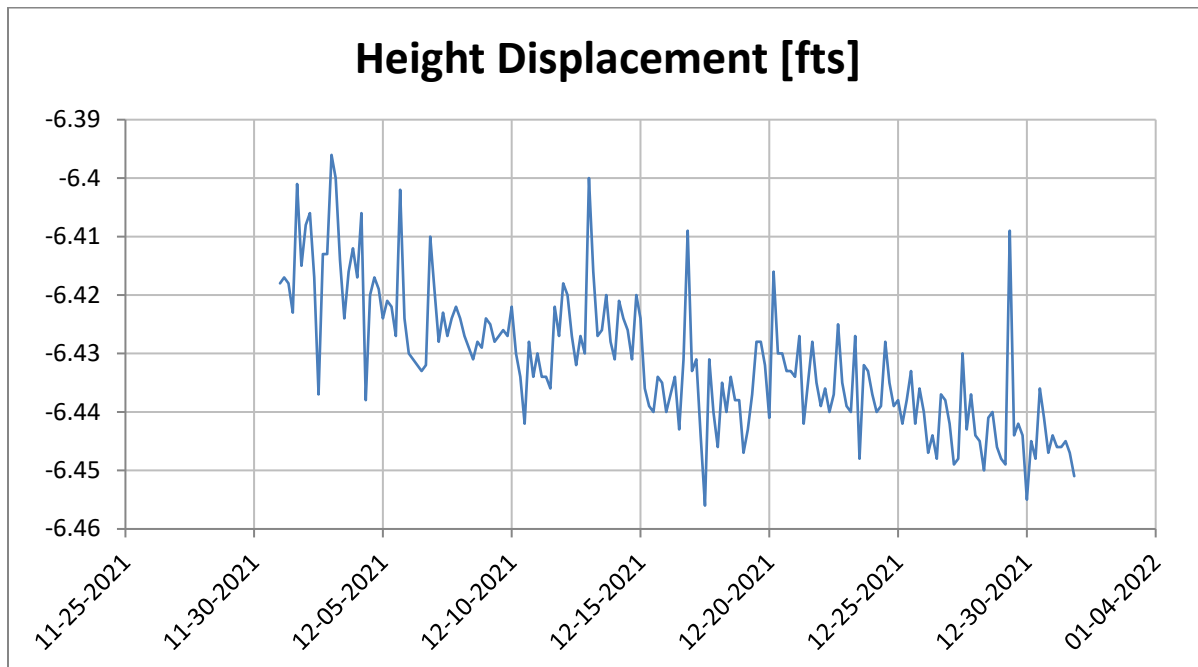
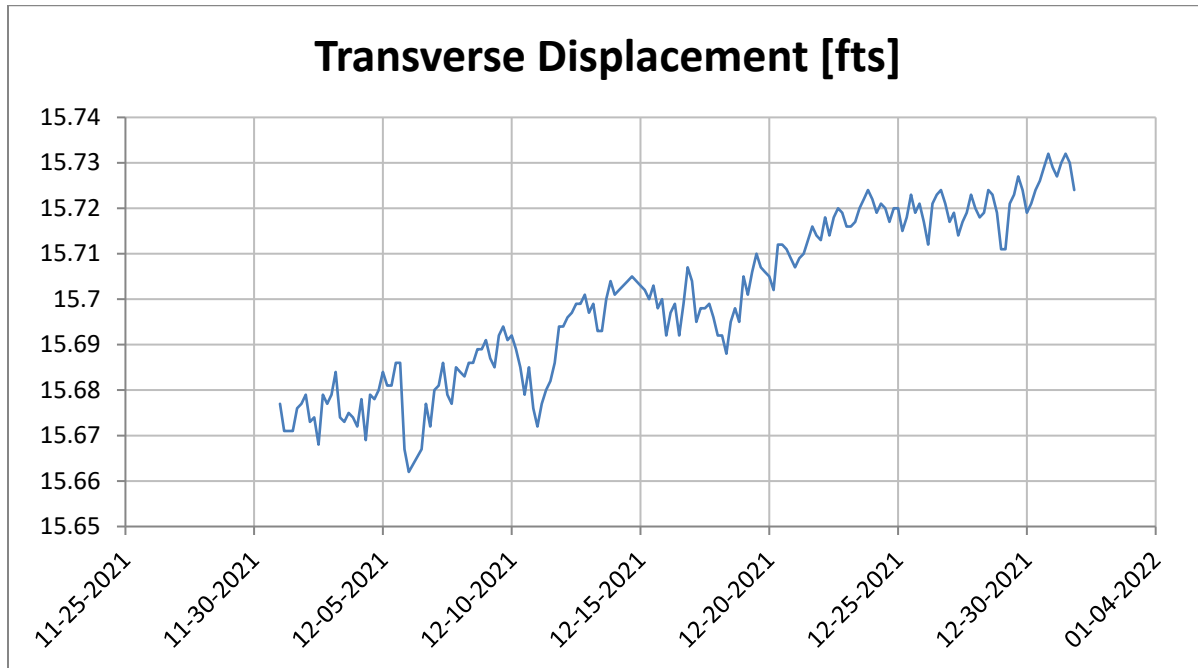


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

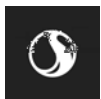


Prism P63

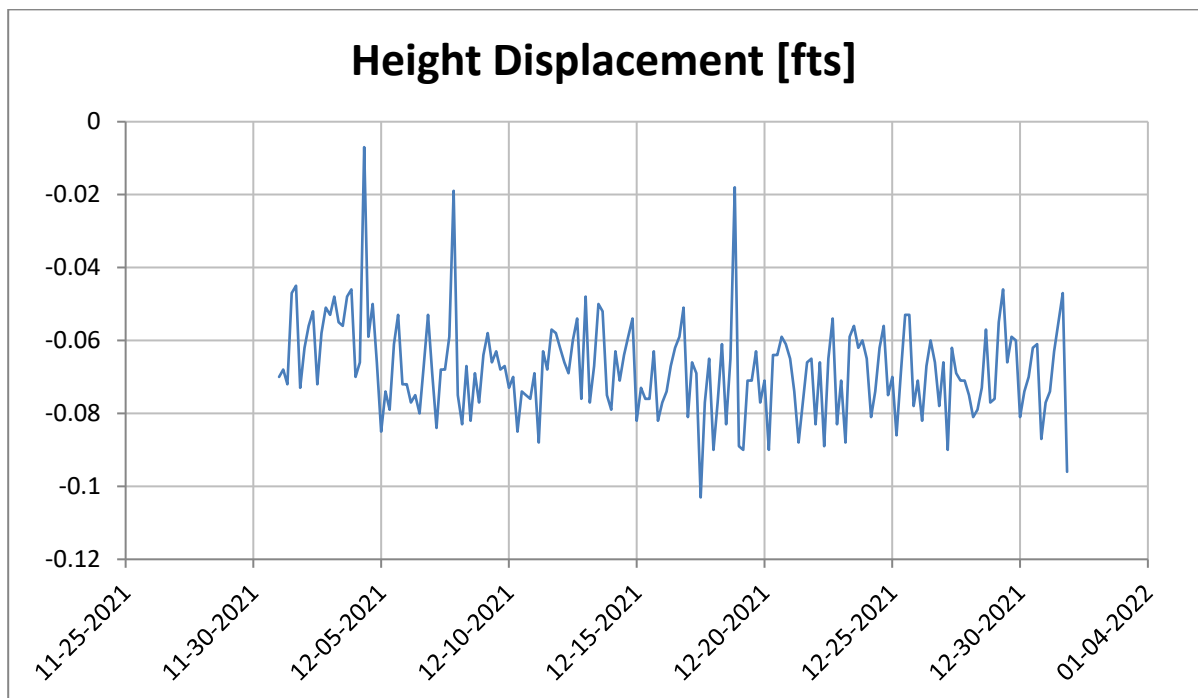
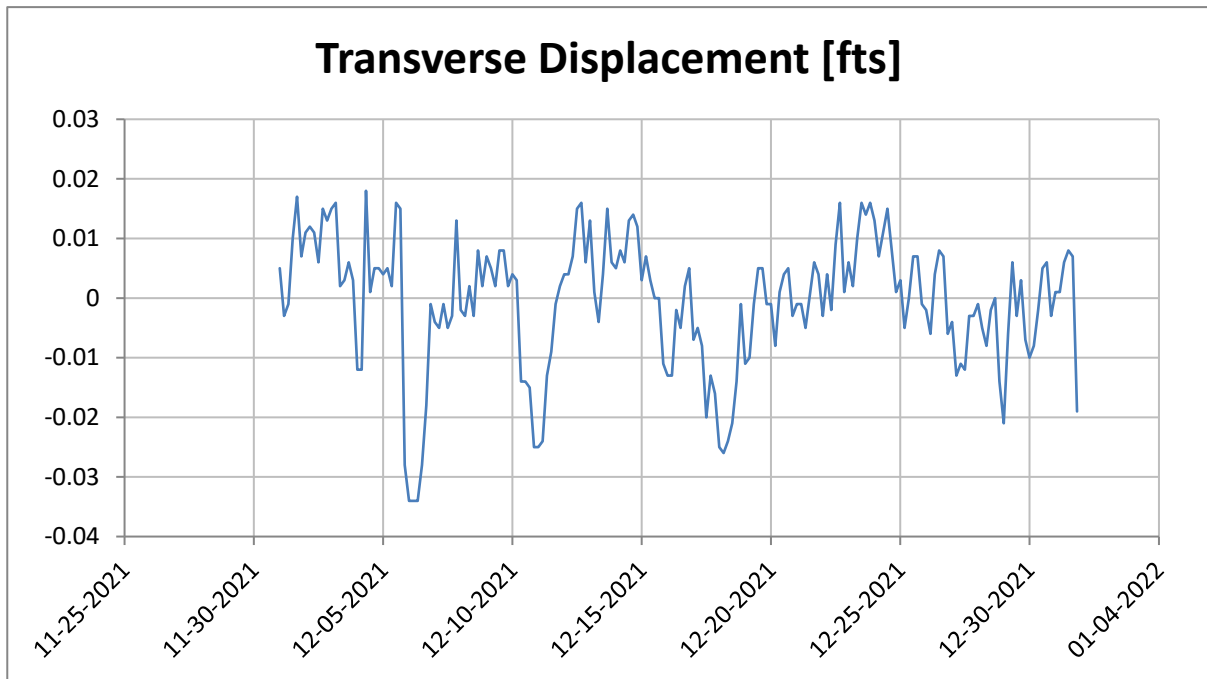


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.
5. Prism records slope creep movements with slow velocity.

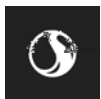


Prism P69

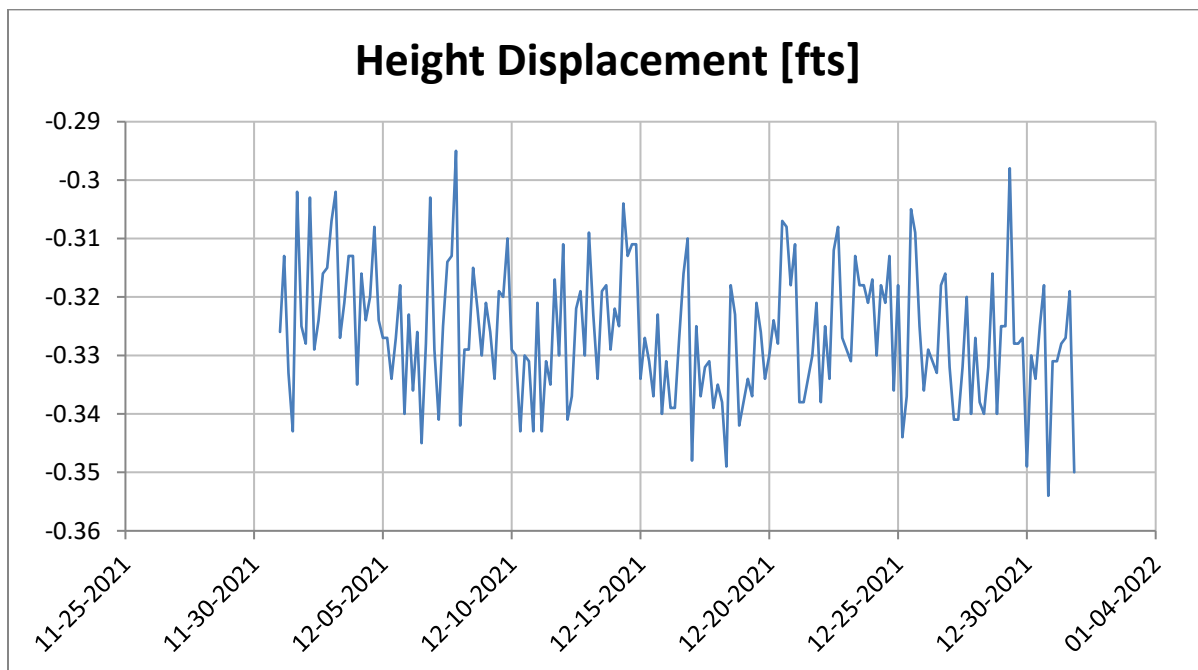
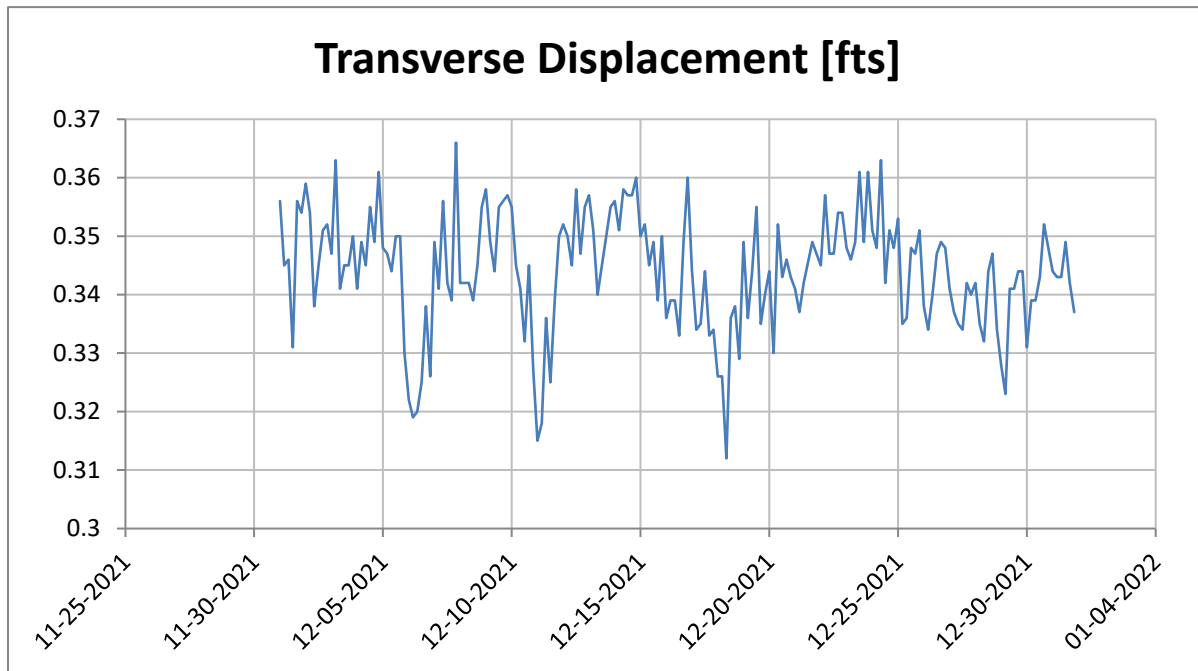


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

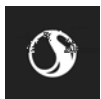


Prism P70

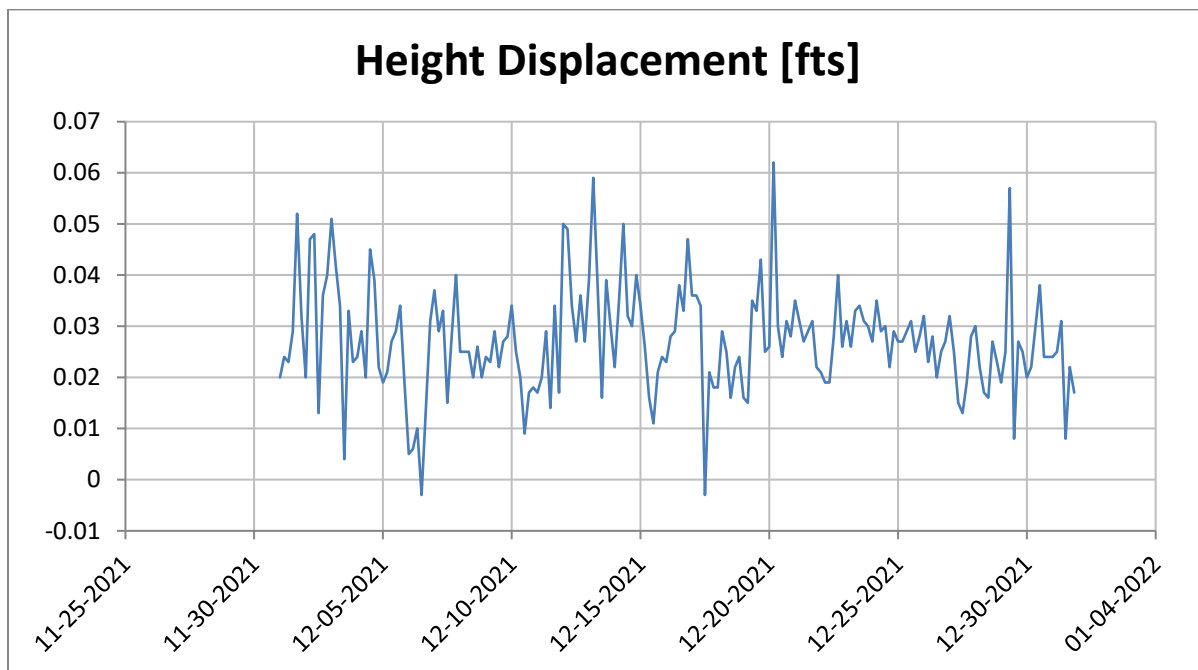
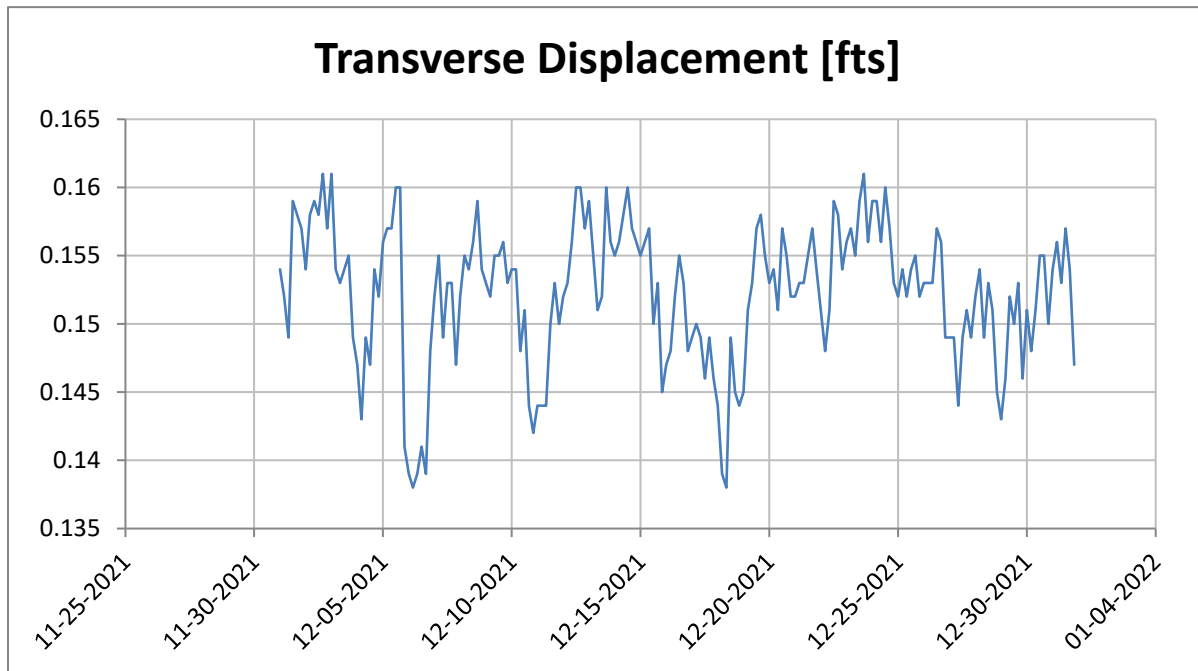


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

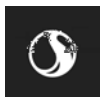


Prism TOE1

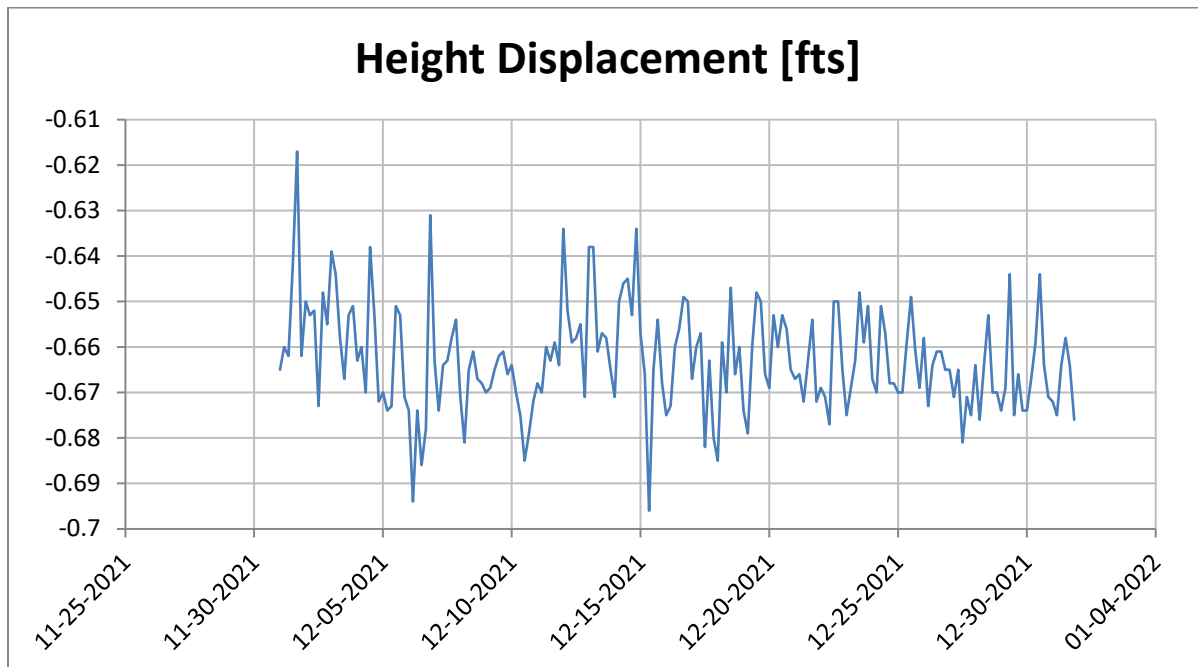
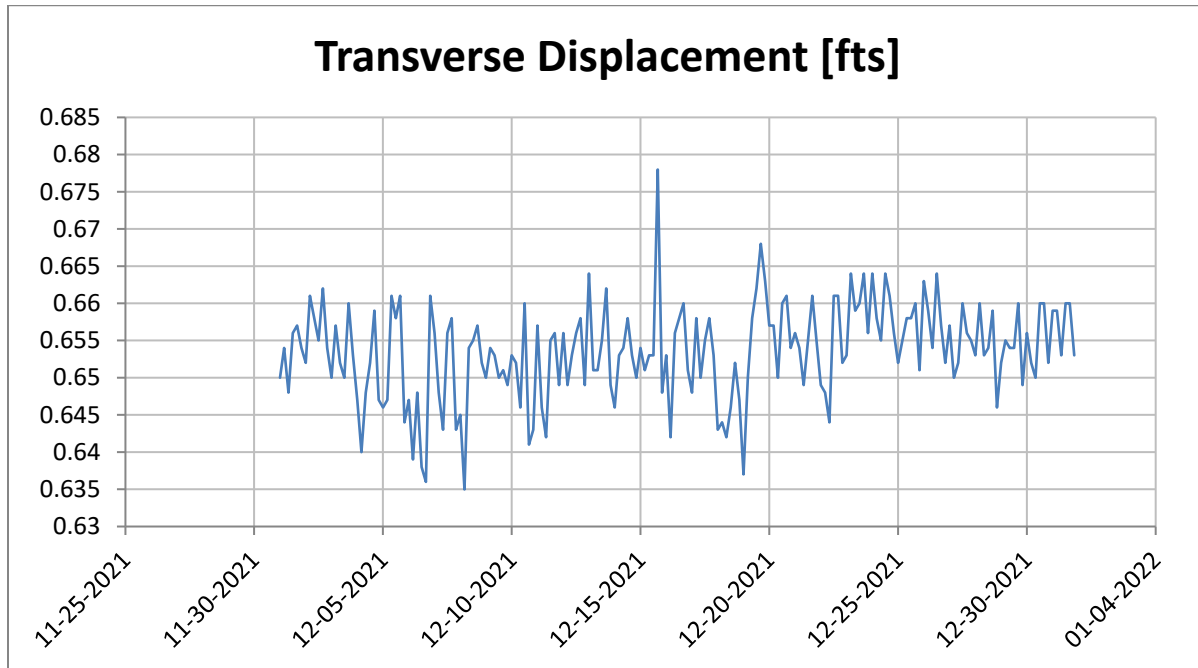


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

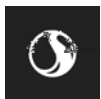


Prism TOE2

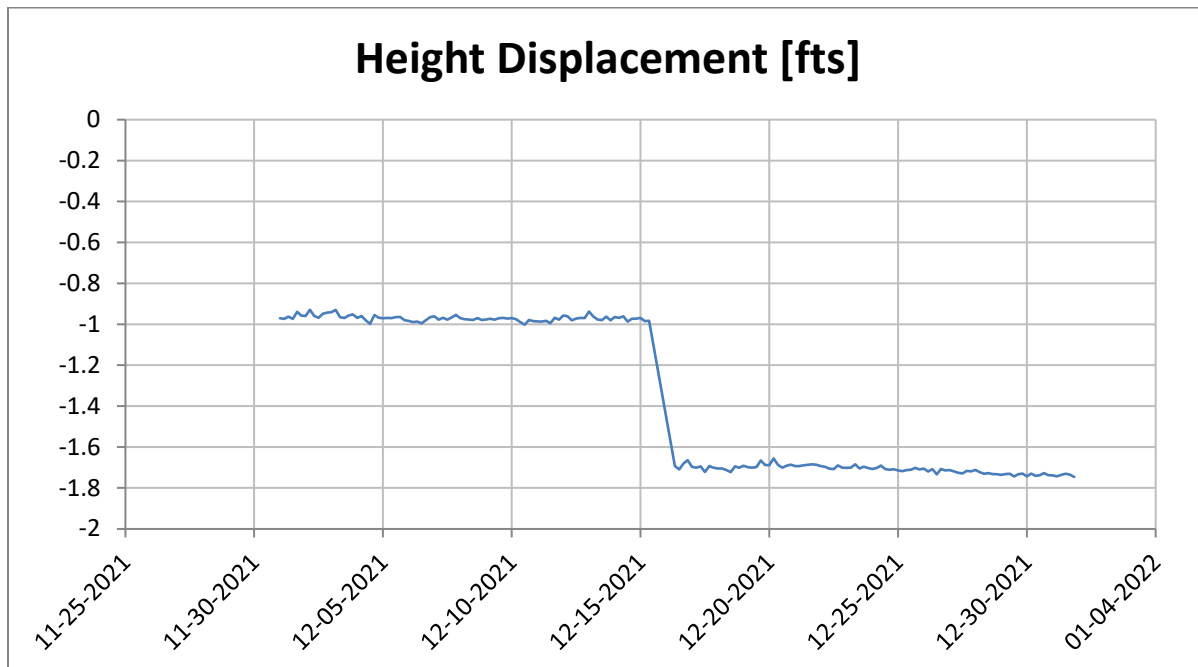
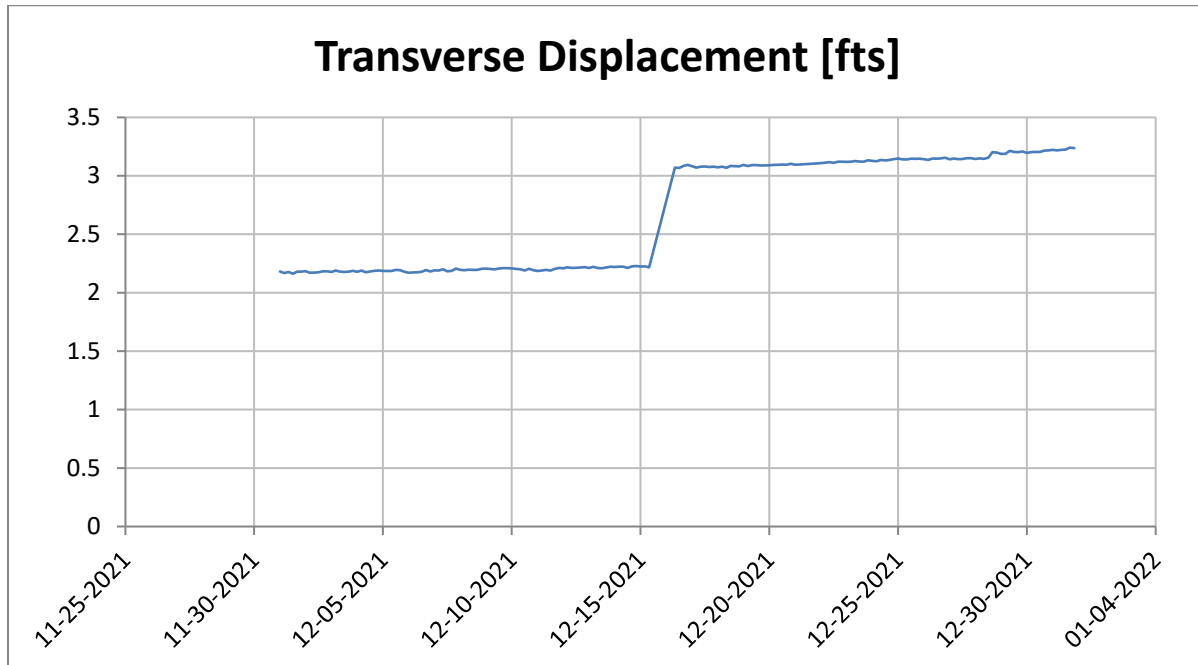


Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.

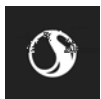


Prism TOE3



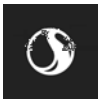
Notes:

1. Survey accuracy is ± 0.016 feet.
2. Alarm threshold is ± 0.35 feet.
3. Transverse displacement is in the horizontal direction. Positive direction means closer to the robotic station.
4. Height displacement is in the vertical direction. Positive direction means higher in elevation.
5. Prism records slope creep movements with slow velocity.
6. Prism displaced by wind and then repositioned on 12-16-2021. No signs of slope movement at prism location.



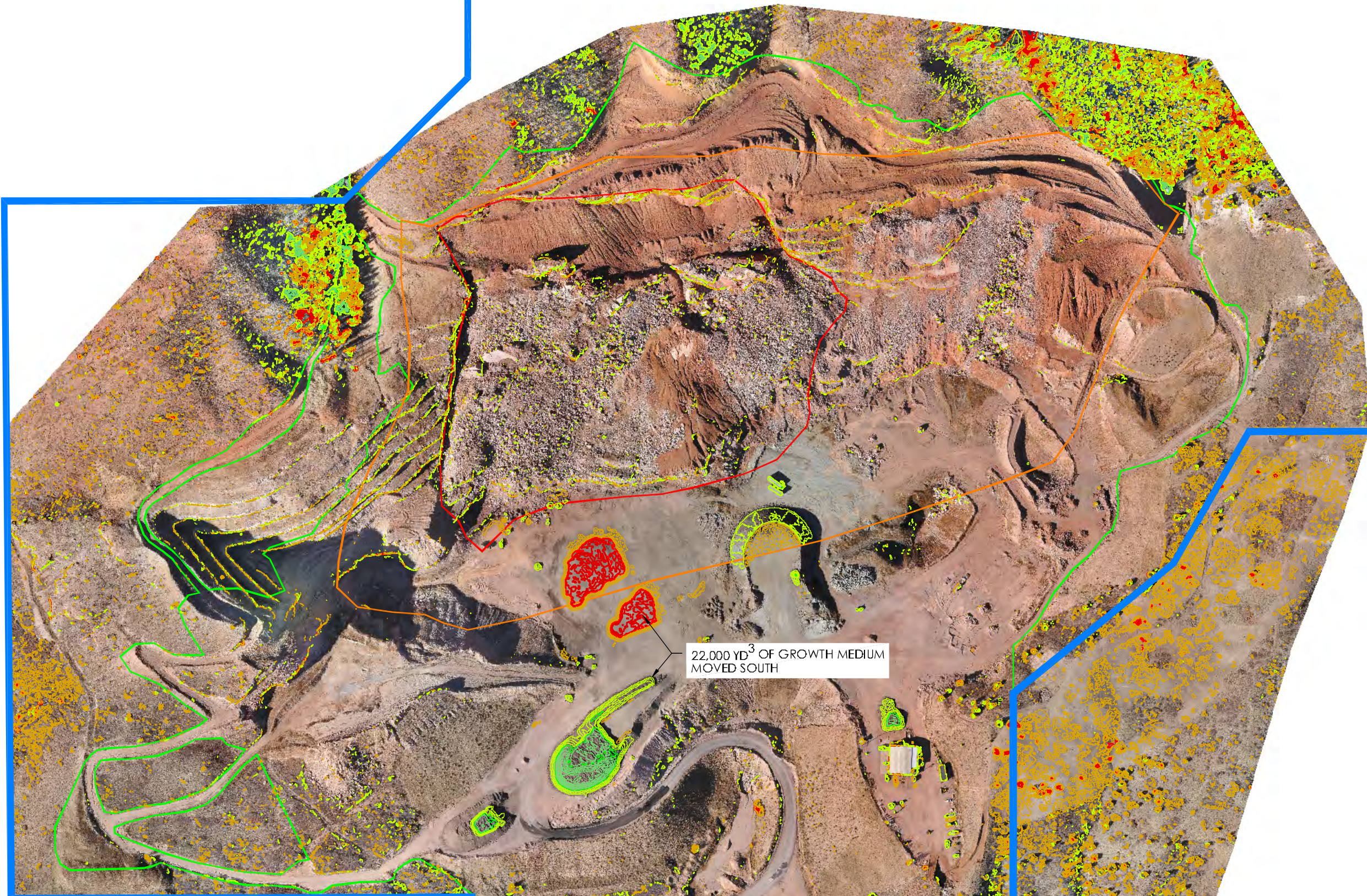
Appendix C

Drone Survey

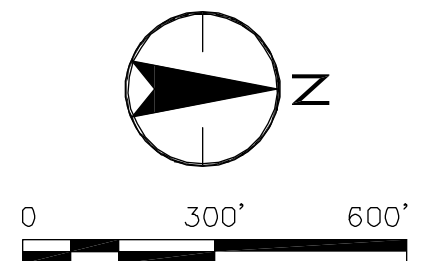


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2022.01.13 4:50:51 PM



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www.stantec.com

LEGEND

- Permit/Affected Lands Boundary
- Proposed Disturbance Limit
- Landslide Extent
- Buttress Fill Extent
- - Comparison Contour. Increase in elevation. (CI=2')
- - Comparison Contour. Decrease in elevation. (CI=2')

1. COMPARISON OF DRONE FLIGHTS FROM 11/17/21 and 12/13/2021.

Client/Project

CONTINENTAL MATERIALS
CORP.
PIKEVIEW QUARRY SLOPE
MONITORING

Project No.
227419041

Title

EXISTING PRISMS WITH
CURRENT SURFACE

Revision

Drawn By
PK

Date
2022.01.31
Figure No.
5