

Project No.
3586.002.023

November 29, 2023

Wiedemann Ranch GHAD Board of Directors
Chair Candace Andersen
Vice Chair Federal D. Glover
Board Member John M. Gioia
Board Member Diane Burgis
Board Member Ken Carlson

Wiedemann Ranch Geologic Hazard Abatement District
651 Pine Street, Room 107
Martinez, CA 94553-1229

Subject: Norris Canyon Estates
Contra Costa County, California

**GEOLOGIC HAZARD ABATEMENT DISTRICT
MONITORING – FALL 2023**

Dear Chair Andersen and Board Members:

ENGEO is pleased to submit this monitoring report for the Norris Canyon Estates development within the Wiedemann Ranch Geologic Hazard Abatement District (GHAD). This letter summarizes our observations made during our site visits in October 2023 within the Norris Canyon Estates (formerly known as Wiedemann Ranch) development in Contra Costa County, California. The previous spring 2023 monitoring event was completed in April 2023 (Reference 1), and a copy has been posted on the GHAD's website at www.wiedemannranchghad.org. The Wiedemann Ranch GHAD has acquired Plan of Control monitoring and maintenance responsibilities for all residential and open-space parcels within the Norris Canyon Estates development (Reference 2).

SCOPE

The site visit included observation or monitoring of the following items.

- Slopes within the creek corridor, including drainage inlets, outlets, and other structures within the creek channel
- Common area and open-space slopes located adjacent to improvements
- Retaining walls
- Concrete-lined surface drainage ditches
- Storm drain inlets
- Debris benches
- Subdrain outlets and measurement of discharge volumes
- Settlement/slope monitoring instruments

CREEK CHANNELS

In general, the creek channels within the GHAD-accepted portion of the Norris Canyon Estates development are deeply incised with oversteepened banks that are subject to slope failure. As stated in the Wiedemann Ranch Plan of Control, the creek channels will be allowed to mature naturally, which may include slope failures, unless there are substantial creek bank failures that threaten site improvements (Reference 3).

During the winter of 2022-2023, the culvert inlets at 2380 Ashbourne Drive and 3221 Ashbourne Circle were obstructed by debris. Woody vegetation became lodged within the culvert adjacent to 3221 Ashbourne Circle and damaged the trash rack upstream of the culvert. We observed during this monitoring event that the woody vegetation had been removed from the culvert pipe and the trash rack had been reconstructed (Site Condition A, Appendix A, Figure 2). We also observed that the culvert at 2380 Ashbourne Drive had been cleared of sediment and debris and a trash rack had been installed upstream of the culvert (Site Condition B, Appendix A, Figure 2).

COMMON AREA AND OPEN-SPACE SLOPES

The common area and open-space slopes and swales were observed for evidence of slope instability, including landslides, mudflows, erosion, diverted drainage, or standing water. This activity has resulted in bare soil and surface voids. We will continue to monitor these disturbed areas for instability in the future. There are a number of unrepaired landslides within the ungraded portions of the HOA-owned parcels that do not appear to be impacting improvements. These landslides have moved in the past and will likely do so in the future when wet conditions occur. The GHAD will continue to monitor these slides during future monitoring events. During this monitoring event, we observed that the site slopes in some locations were disturbed by pig rooting activity (Figure 1). This activity has resulted in bare soil. The GHAD will continue to monitor these disturbed areas for instability in the future.

Since 2018, several minor landslides/earthflows have been observed along the 1:1 (horizontal:vertical) engineered fill slope, north of Lyndhurst Place, downhill from the nearby residences. These shallow landslides were not of immediate concern but have been monitored during subsequent scheduled monitoring events. During this monitoring event, the landslides did not show any significant movement. We did observe a new earthflow and damaged fence at the rear of 149 Lyndhurst Place during the spring 2023 monitoring event (Site Condition C, Appendix A, Figure 1). During this monitoring event, the earthflow did not appear to be impacting the house pad or mid-slope drainage ditch. The GHAD will continue monitoring these areas for slope stability.

During the winter of 2017/2018, a landslide occurred south of Ardleigh Court measuring approximately 35 feet in length, 35 feet in width, and up to 5 feet in depth. In October 2018, the GHAD repaired the landslide and restored the slope to the original graded condition. The repaired slope was observed during this monitoring event and appeared to be performing well. This area will continue to be monitored and observations will be noted if changes occur in the future.

During the winter of 2022/2023, prolonged periods of heavy rainfall saturated open space and residential lot slopes which resulted in several shallow earthflow and erosional features adjacent to improvements. During our spring 2023 monitoring event, we observed that the earthflows and erosion had stabilized. During this monitoring event, we observed repair/mitigation work performed by the GHAD and the status of the features, as listed below.

- Shallow earthflow northeast of Bishop Tank Site pad measuring 18 feet wide by 25 feet long with an estimated depth of 1 to 2 feet. Condition unchanged (Site Condition D.1, Appendix A, Figure 1).
- Shallow earthflow northwest of 3581 Ashbourne Circle rear yard (west) measuring 10 to 15 feet wide by 185 feet long with an estimated depth of 1 to 5 feet. Condition unchanged. Debris wall constructed within open space below earthflow and adjacent to homeowner property (Site Condition D.2, Appendix A, Figure 1).
- Shallow earthflow northwest of 3581 Ashbourne Circle rear yard (east) measuring 40 feet wide by 150 feet long with an estimated depth of 2 to 3 feet. Condition unchanged. Debris wall constructed within open space below earthflow and adjacent to homeowner property (Site Condition D.3, Appendix A, Figure 1).
- Shallow earthflow northwest of 3551 Ashbourne Circle rear yard measuring 10 to 30 feet wide by 75 feet long with an estimated depth of 3 to 4 feet. Erosion control mitigation installed on affected slope. Debris wall constructed within open space below earthflow and adjacent to homeowner property (Site Condition D.4, Appendix A, Figure 1).
- Shallow earthflow within the natural rear slope of 547 Wycombe Court measuring 10 to 15 feet wide by 60 feet long with an estimated depth of 2 to 3 feet. Erosion control mitigation installed on affected slope (Site Condition D.5, Appendix A, Figure 2).
- Shallow earthflow within the natural rear slope of 539 Wycombe Court measuring 10 feet wide by 25 feet long with an estimated depth of 1 to 2 feet. Erosion control mitigation installed on affected slope (Site Condition D.6, Appendix A, Figure 2).
- Shallow earthflow southwest of 539 Wycombe Court rear yard measuring 10 to 15 feet wide by 185 feet long with an estimated depth of 1 to 5 feet. Condition unchanged (Site Condition D.7, Appendix A, Figure 2).
- Shallow earthflow within the natural rear slope of 533 Wycombe Court measuring 15 to 20 feet wide by 60 feet long with an estimated depth of 12 to 4 feet. Erosion control mitigation installed on affected slope (Site Condition D.8, Appendix A, Figure 2).
- Shallow earthflow west of 3340 Ashbourne Circle rear yard measuring 15 feet wide by 20 feet long with an estimated depth of 2 to 3 feet. Slope repair was completed and erosion control installed on affected slope (Site Condition D.9, Appendix A, Figure 2).
- Multiple shallow earthflows along northwestern side of EVA Road. Condition unchanged (Site Condition D.10, Appendix A, Figure 2).
- Shallow earthflow west of EVA Road and retaining wall measuring 50 to 60 feet wide by 40 feet long with an estimated depth of 2 to 3 feet. Condition unchanged (Site Condition D.11, Appendix A, Figure 2).
- Shallow earthflow within the natural rear slope of 231 Cliffecastle Court measuring 15 wide by 30 feet long with an estimated depth of 4 to 5 feet. Slope repair completed (Site Condition D.12, Appendix A, Figure 2).
- Shallow earthflow within the natural rear slope of 223 and 231 Cliffecastle Court measuring 15 feet wide by 30 to 40 feet long with an estimated depth of 2 to 3 feet. Slope repair completed. (Site Condition D.13, Appendix A, Figure 2).
- Slope erosion rills northeast of Whitcliffe Court (outside of the GHAD boundary) measuring 1 to 2 feet wide by 35 feet long with an estimated depth of 1 to 2 feet. Condition unchanged with partial revegetation on affected slope. (Site Condition E, Appendix A, Figure 1).

- Eroded and displaced backfill above culvert pipe. Slope repair and culvert improvements completed. (Site Condition F.1, Appendix A, Figure 1).
- Eroded and displaced backfill behind retaining wall and below wall lagging. Backfill restored (Site Condition F.2, Appendix A, Figure 2).
- Creek bank failure/slump within the natural creek bank of 2380 Ashbourne Drive measuring 40 to 45 feet wide by 35 feet long with an estimated depth of 5 to 6 feet. Slide mitigation/wall construction completed (Site Condition G, Appendix A, Figure 1).

The GHAD will continue to monitor these areas above and will perform mitigation and/or repairs, as needed.

MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS

In addition to the other structures within the creek channels, we observed the conditions of the mechanically stabilized earth (MSE) retaining walls above or adjacent to the culvert headwall structures. Many of the MSE walls within the development were observed to have some minor cracking along or adjacent to planned expansion joints above culvert headwalls.

On Wall J, a 1-inch gap along an expansion joint was observed between the concrete headwall and the adjacent MSE retaining wall blocks during the 2002 monitoring event. During the 2007 site visit, it appeared that the gap had widened to approximately 2 inches. During the 2011 site visit, the gap had widened to approximately 2¼ inches. As observed during the most recent monitoring event, the gap has remained at approximately 2¼ inches wide.

On the southern side of the upper portion of Wall M, cracks up to ¼-inch wide were observed in the wall, which is located at the base of the southern 1:1 (horizontal:vertical) creek bank slope. The cracks are not associated with an expansion joint. The cracks were first observed during the 2002 monitoring and do not appear to have significantly changed since the first observation.

We noted during our fall 2020 monitoring event that linear cracking parallel to the adjacent MSE Retaining Wall L2 and top of slope had occurred in the asphaltic concrete (AC) pavement along Ashbourne Drive. The cracks in the street ranged in width from hairline to 1 inch. We did not see evidence of any instability failure of the MSE retaining wall or downhill slope adjacent to the road at the time of our visit. During this monitoring event, the cracking within the street was visible due to recent wear and degradation of previous crack sealing of the asphalt paving on the roadways, and some distress was observed within the upper portion of the wall. The GHAD has an ongoing investigation to determine necessary mitigation related to movement of the MSE retaining wall. Repairs of the retaining wall and roadway are scheduled to be performed during spring/summer 2024

Observation of the above-listed retaining wall conditions should be included in future monitoring events.

CONCRETE-LINED SURFACE DRAINAGE DITCHES

The concrete drainage ditches were checked for accumulation of debris/sediment and for obvious distress, such as cracking or shifting of the concrete. Some minor cracking was observed in the concrete drainage ditches, but the cracks do not appear to be related to significant slope movement nor do they substantially impact the integrity of the ditches. As part of annual

maintenance, the GHAD removes debris from the concrete-lined drainage ditches.

During previous monitoring, we observed an approximate 1-inch gap separation in the drainage ditch expansion joint where the Retaining Wall L-5 subdrain outlet discharges. During this monitoring event, the surrounding slope did not show significant saturation or movement. The GHAD will continue monitoring the area for slope stability and will repair the concrete-lined drainage ditch, as needed.

STORM DRAIN IMPROVEMENTS

Storm drain improvements within the open space area of the GHAD appeared to be relatively clear of debris with the exception of some materials accumulating in concrete-lined drainage ditches and within drain inlet boxes where the drainage ditches discharge into the inlets. Any accumulated material will be removed as part of the GHAD's annual maintenance work.

During the spring 2020 monitoring event, the top of the storm drain inlet box at the concrete-lined drainage ditch, located southwest of 3057 Ashbourne Circle, showed cracking and significant separation from the inlet box structure. At the time of this monitoring event, the cracking had not progressed (Site Condition H, Appendix A, Figure 2). The inlet box and cracks should continue to be monitored and, if needed, sealed or replaced to maintain the integrity and longevity of the drain inlet.

We observed that the storm drain inlet located at the southeastern corner of 101 Lyndhurst Place was obstructed by vegetation and sediment (Site Condition I, Appendix A, Figure 1). The drain inlet will be cleared during annual maintenance work.

A series of pre-development culvert pipe inlets along the upslope side of an access road west of Ashbourne Drive (APN 211210045) were obstructed during the rains of winter 2022/2023 and required maintenance. We noted during our spring 2023 monitoring that performed maintenance of the pipe inlets allowed for proper drainage. During this monitoring event, we observed the pipe inlets to be functioning properly (Site Condition J.1-J.3, Figure 1). The GHAD will continue to monitor the culvert pipes during future monitoring and will provide maintenance, as needed.

DEBRIS BENCHES

The debris benches within the development were relatively free of debris and do not appear to require cleaning at this time.

SUBDRAIN OUTLET MONITORING AND LOCATION

Subdrain outlet locations were observed and/or monitored during the site visit. Discharge levels flowing from the subdrain outlets are shown in Tables A and B (attached). As shown in Tables A and B, we were unable to locate some of the subdrain outlets. The GHAD will continue to search for the surveyed locations of these outlets during future site monitoring, and, if possible, will locate, expose, and mark the outlets in the field for future monitoring.

INCLINOMETER AND SONDEX SETTLEMENT MONITORING

In order to monitor engineered fill and graded slope performance, two monitoring devices were installed at 149 Lyndhurst Place (Lot 8) in December 1998. The monitoring devices, a slope inclinometer, and a Sondex settlement monument are located at the northwestern corner of the rear yard of the lot near the top of slope. A slope inclinometer is used to measure the lateral movement, if any, within the slope. The Sondex monitoring instrument is used to measure vertical movement within the engineered fill.

We attempted to contact the homeowner of Lot 8 during this monitoring event, but they were not available at this time to allow access to their rear yard. As access is provided to the GHAD, we will report monitoring results for the Sondex and inclinometer instruments in future monitoring letters.

As previously mentioned in this report, The GHAD has an ongoing investigation in regard to AC cracking along Ashbourne Drive, which includes monitoring of two slope inclinometers installed between Ashbourne Drive and MSE Retaining Wall L2 (Figure 1). Test results of the inclinometer readings performed in October are presented in Appendix B.

If you have any questions regarding the contents of this letter, please contact us.

Sincerely,

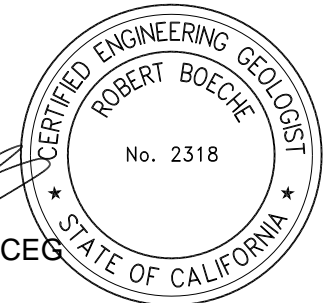
ENGEO Incorporated



Greg Hudson

gh/rhb/ca

Robert H. Boeche, CEG



Attachments: Selected References
Tables A and B
Appendix A – Site Condition Summary with Photographs
Appendix B – Inclinometer Test Results
Figures 1 and 2 – Site Plans

SELECTED REFERENCES

1. ENGEO. 2023. Geologic Hazard Abatement District Monitoring – Spring 2023, Norris Canyon Estates, Contra Costa County, California. June 7, 2023. Project No. 3586.002.02.
2. ENGEO. 2020. Wiedemann Ranch Geologic Hazard Abatement District Plan of Control Transfer Acceptance of Selected Parcels, Norris Canyon Estates, Contra Costa County, California. July 27, 2020. Project No. 3586.002.020.
3. ENGEO. 1998. Plan of Control for Wiedemann Ranch Geologic Hazard Abatement District (GHAD), Contra Costa County, California. May 1, 1998, Revised August 17, 1998. Project No. 3586-W4.

TABLES

Table A – Keyway Subdrains

Table B – MSE Retaining Wall Subdrains

TABLE A: Keyway Subdrains

LABEL/LOCATION	FLOW (GALLONS/DAY)	COMMENTS
K-1	23	
K-1A	-	UTM/UTL (beneath riprap embankment)
K-2 (west)	2739	
K-2 (east)	-	UTM, (pipe outlet partially submerged in sediment and water)
K-3	0	Wet
K-5	0	Dry
K-5A	23	
K-6	-	UTM/UTL (beneath riprap apron)
K-7	0	Wet
K-8 (north)	-	UTM (pipe outlet submerged in creek water)
K-8 (south)	1826	
K-9 (west)	-	UTM (pipe outlet submerged in creek water)
K-9 (east)	-	UTM/UTL (beneath riprap apron)
K-11	23	
K-14	23	
K-16	0	UTM (pipe outlet submerged in creek water)
K-17 (northwest)	0	Dry
K-17 (southeast)	1826	
K-17 (east)	23	
K-21 (west)	228	
K-21 (east)	0	Dry
K-22 (west)	913	
K-22 (east)	685	
K-24	913	EST. UTA (pipe outlet visible but not accessible)
K-26	114	
K-32	228	
K-33	0	Dry
K-39	0	Dry
K-39A	0	Dry
K-41	0	Dry
K-41A	0	Dry
K-42	799	
K-43	2054	
K-43A	1141	
K-43B	23	

TABLE A: Keyway Subdrains (Continued)

LABEL/LOCATION	FLOW (GALLONS/DAY)	COMMENTS
K-43C	-	UTM/UTL
K-45 (west)	1826	
K-45A	0	Dry
K-45N	1826	
K-45 (east)	1141	EST. UTA (pipe outlet visible)
K-46	-	UTL
K-47	228	
K-47A	0	Dry
K-58	0	Dry
K-66	-	UTM/UTL (silted over by SD outfall wash)
K-70	0	Dry
K-D	-	UTM/UTA (within SD structure)
K-B	0	Dry
K-T	0	Dry
K-OS	0	Dry
Lot 1	0	Dry
Lot 50, 7578	-	UTM/UTL (within homeowner property)
EVA Roadway	0	Dry
Bishop Tank Site	0	Dry
Ashbourne Drive Landslide	0	Wet
Ashbourne Drive	0	Dry
KL-1	0	Dry
KL-18A	0	Dry
KL-22	23	
KL-22A	0	Dry
KL-22B	0	Dry
KL-22C	0	Dry
KL-28	0	Dry
KL-38	0	Dry
KL-48	91	
KL-58	0	Dry
KL-60	228	
KL-92	-	UTM/UTL (within homeowner property)
KL-99	0	Dry
KL-101	0	Dry
KL-103	23	
KL-118	0	Dry

TABLE A: Keyway Subdrains (Continued)

LABEL/LOCATION	FLOW (GALLONS/DAY)	COMMENTS
KL-121	-	UTM/UTL (within homeowner property)
KL-122	0	Dry
KL-123	0	Dry
KL-124	0	Wet
KL-125	23	
Ardleigh Drive Landslide	0	Wet
SAR-1	0	Dry
S-3	-	UTM (pipe outlet obstructed by vegetation)
S-100	0	Dry
S-101	0	Dry
S-102	0	Dry
S-103	-	UTM (pipe outlet submerged in creek water and soil)
S-43A	571	EST. Pipe outlet partially obstructed by soil and vegetation.
S-43B	571	EST. Pipe outlet partially obstructed by soil and vegetation.

LEGEND

EST - Estimate
 UTM – Unable to monitor
 UTL – Unable to locate
 UTA – Unable to access

TABLE B: MSE Retaining Wall Subdrains

LABEL/LOCATION	FLOW (GALLONS/DAY)	COMMENTS
B (south)	23	
B (north)	0	Dry
E	-	UTM (pipe outlet submerged in creek water and soil)
F (east)	-	UTM (pipe outlet not visible/obstructed by riprap and soil)
G	0	Dry
I	0	Dry
J (south)	0	Dry
J (north)	0	Dry
L-2	0	Dry
L-5	0	Dry
M (northwest)	0	Dry
M (southeast)	0	Dry
P	457	
Q	0	Dry
V	0	Dry
RW-26	0	Dry
RW-31	-	UTM (within homeowner property)
RW-33	0	Dry
RW-54	0	Dry
RW-57	0	Dry
RW-61	-	UTM (within homeowner property)
RW-62	0	Dry
RW-67	0	Dry
RW-69	-	UTM (within homeowner property)
RW-70	0	Dry
RW-70A	-	UTM/UTL (within homeowner property)
RW-71	0	Dry
RW-71A	0	Dry
RW-72	0	Dry
RW-72A	0	Dry
RW-77	0	Dry
RW-96	-	UTM/UTL (within homeowner property)
RW-104	0	Dry
RW-105	-	UTM/UTL (within homeowner property)
RW-2380	0	Dry

LEGEND

- EST - Estimate
- UTM – Unable to monitor
- UTL – Unable to locate
- UTA – Unable to access

APPENDIX A

**Norris Canyon Estates
Site Condition Summary with Photographs**

Site Condition: A
Observation Date: 10/26/2023
Description: Damaged trash rack. Trash rack replaced.
Recommendation: None
Field Representative: GH



Site Condition: B
Observation Date: 10/26/2023
Description: Culvert pipe obstructed by sediment and vegetation. Sediment and vegetation removal completed and trash rack installed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: C
Observation Date: 10/26/2023
Description: Surficial mudslide along 1:1 slope.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.1
Observation Date: 10/26/2023
Description: Shallow earthflow (18 feet wide by 25 feet long with an estimated depth of 1 to 2 feet).
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.2
Observation Date: 10/27/2023
Description: Shallow earthflow (10 to 15 feet wide by 185 feet long with an estimated depth of 1 to 2 feet). Debris wall constructed below earthflow.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.3
Observation Date: 10/27/2023
Description: Shallow earthflow (40 feet wide by 150 feet long with an estimated depth of 2 to 3 feet). Debris wall constructed below earthflow.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.4
Observation Date: 10/27/2023
Description: Shallow earthflow (10 to 30 feet wide by 75 feet long with an estimated depth of 3 to 4 feet). Earth flow mitigation installed and debris wall constructed below earthflow.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.5
Observation Date: 10/27/2023
Description: Shallow earthflow (10 to 15 feet wide by 60 feet long with an estimated depth of 2 to 3 feet). Earthflow mitigation installed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.6
Observation Date: 10/27/2023
Description: Shallow earthflow (10 feet wide by 25 feet long with an estimated depth of 1 to 2 feet). Earthflow mitigation installed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.7
Observation Date: 10/27/2023
Description: Shallow earthflow (25 feet wide by 35 feet long with an estimated depth of 2 to 3 feet).
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.8
Observation Date: 10/27/2023
Description: Shallow earthflow (15-20 feet wide by 60 feet long with an estimated depth of 2 to 4 feet). Earthflow mitigation installed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.9
Observation Date: 10/27/2023
Description: Shallow earthflow (15 feet wide by 20 feet long with an estimated depth of 2 to 3 feet). Slope repair completed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.10
Observation Date: 10/27/2023
Description: Multiple shallow earthflows along northwest side of EVA Road.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.11
Observation Date: 10/27/2023
Description: Shallow earthflow (50 to 60 feet wide by 40 feet long with an estimated depth of 2 to 3 feet).
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.12
Observation Date: 10/26/2023
Description: Shallow earthflow (15 feet wide by 30 feet long with an estimated depth of 4 to 5 feet). Slope repair completed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: D.13
Observation Date: 10/26/2023
Description: Shallow earthflow (15 feet wide by 30 to 40 feet long with an estimated depth of 2 to 3 feet). Slope repair completed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: E
Observation Date: 10/26/2023
Description: Off-site slope erosion adjacent to GHAD boundary
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: F.1
Observation Date: 10/26/2023
Description: Eroded and displaced backfill above culvert pipe. Culvert and slope repair completed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: F.2
Observation Date: 10/27/2023
Description: Eroded and displaced backfill behind retaining wall and below wall lagging. Backfill restored.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: G
Observation Date: 10/26/2023
Description: Creek bank failure/slump measuring 40 to 45 feet wide by 35 feet long with an estimated depth of 5 to 6 feet. Slide mitigation/wall construction completed.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: H
Observation Date: 10/26/2023
Description: Crack along top portion of DI box.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: I
Observation Date: 10/26/2023
Description: Storm drain inlet obstructed by vegetation and sediment.
Recommendation: Storm drain inlet should be cleared of vegetation and sediment.
Field Representative: GH



Site Condition: J.1
Observation Date: 10/26/2023
Description: Maintained drainage culvert.
Recommendation: Continue to monitor.
Field Representative: GH



Site Condition: J.2
Observation Date: 10/26/2023
Description: Maintained drainage culvert.
Recommendation: Continue to monitor.
Field Representative: GH



Appendix A
Site Condition Summary with Photographs
Norris Canyon Estates

Site Condition: J.3
Observation Date: 10/26/2023
Description: Maintained drainage culvert.

Recommendation: Continue to monitor.

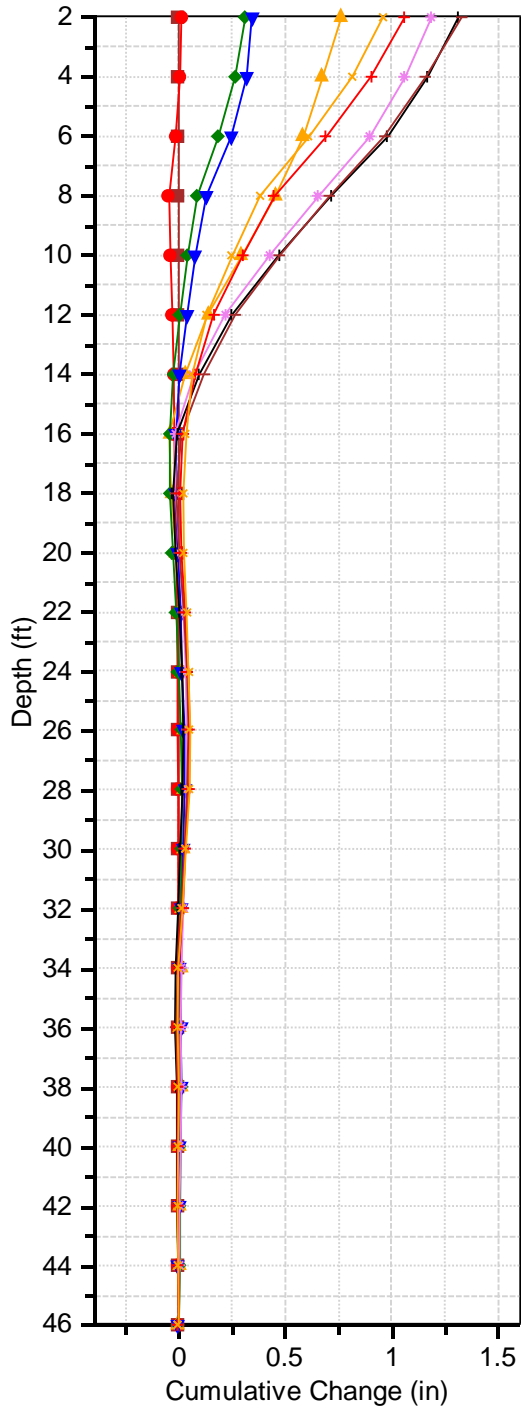
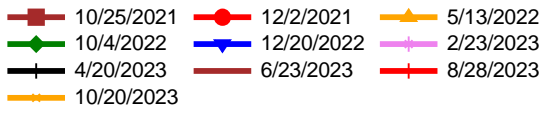
Field Representative: GH



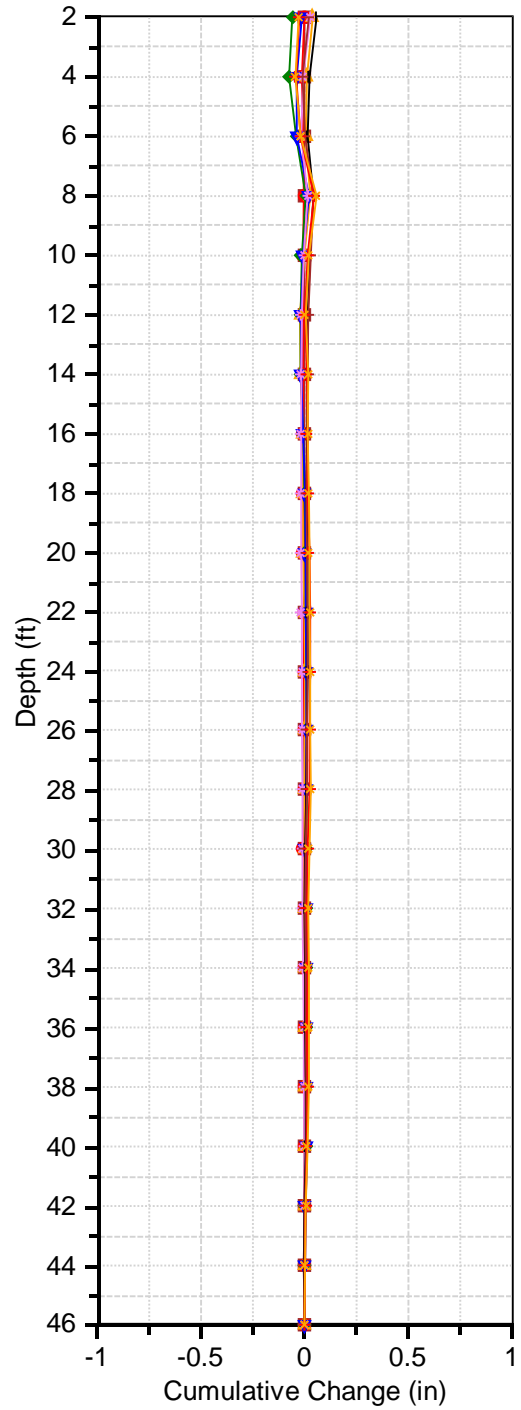
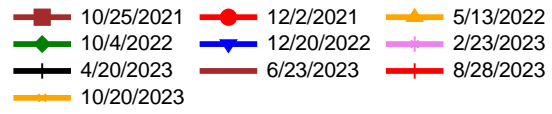
APPENDIX B

Inclinometer Test Results

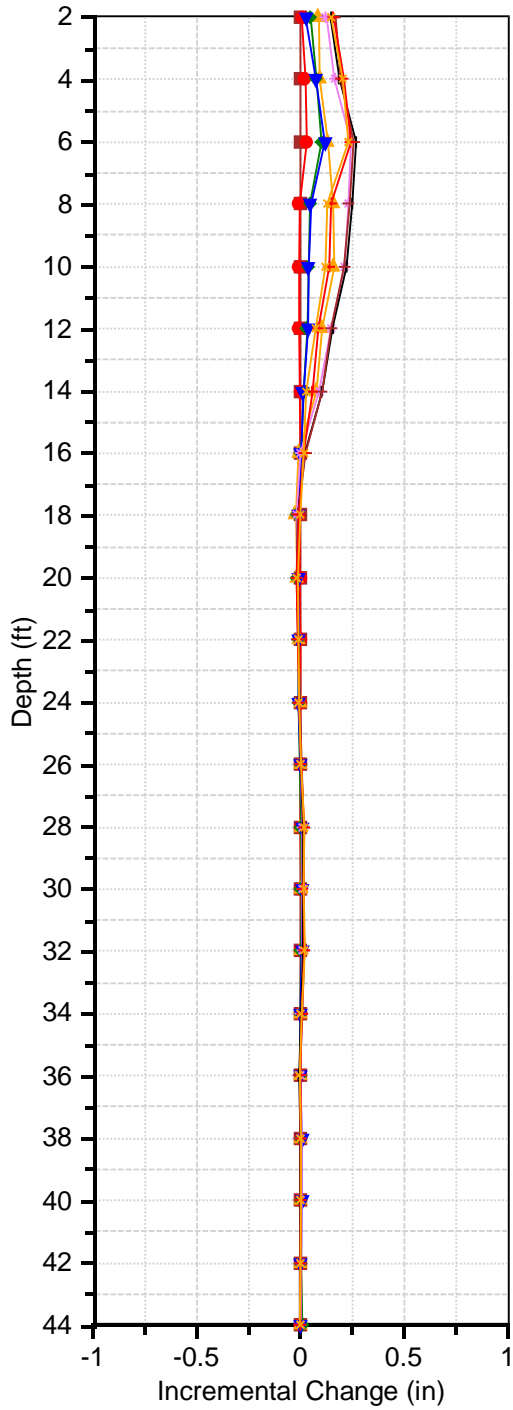
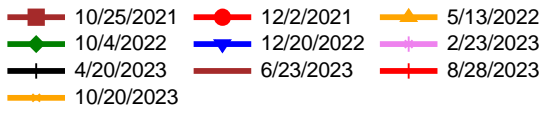
Norris SI-1 A



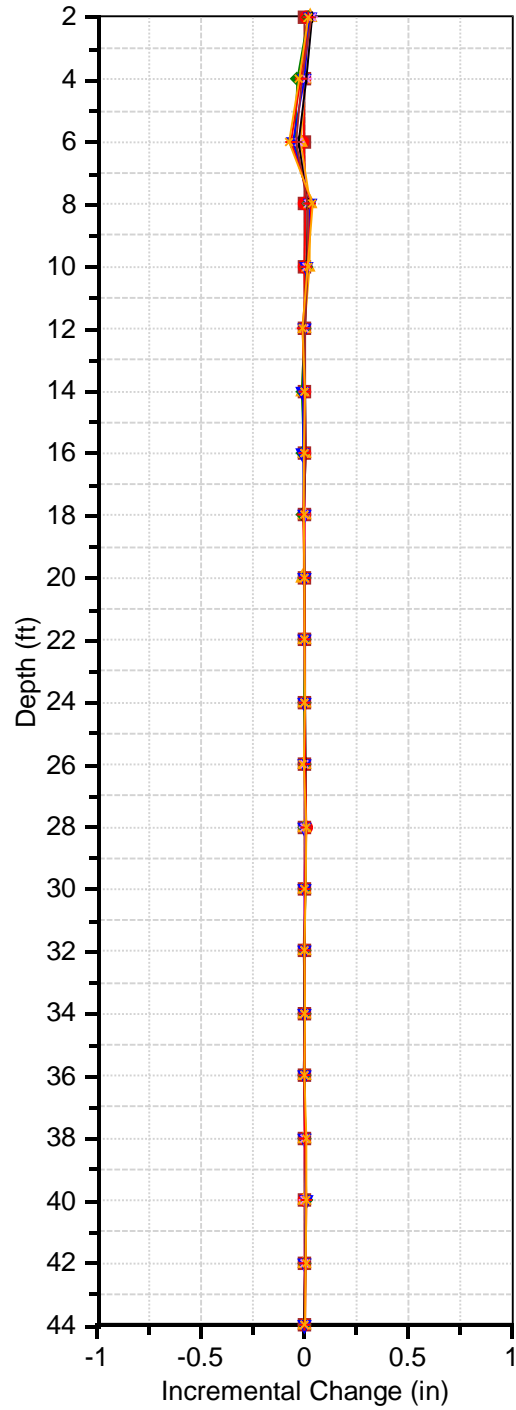
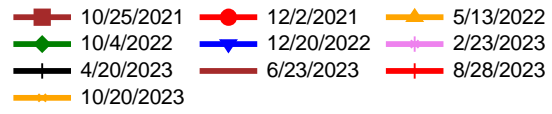
Norris SI-1 B



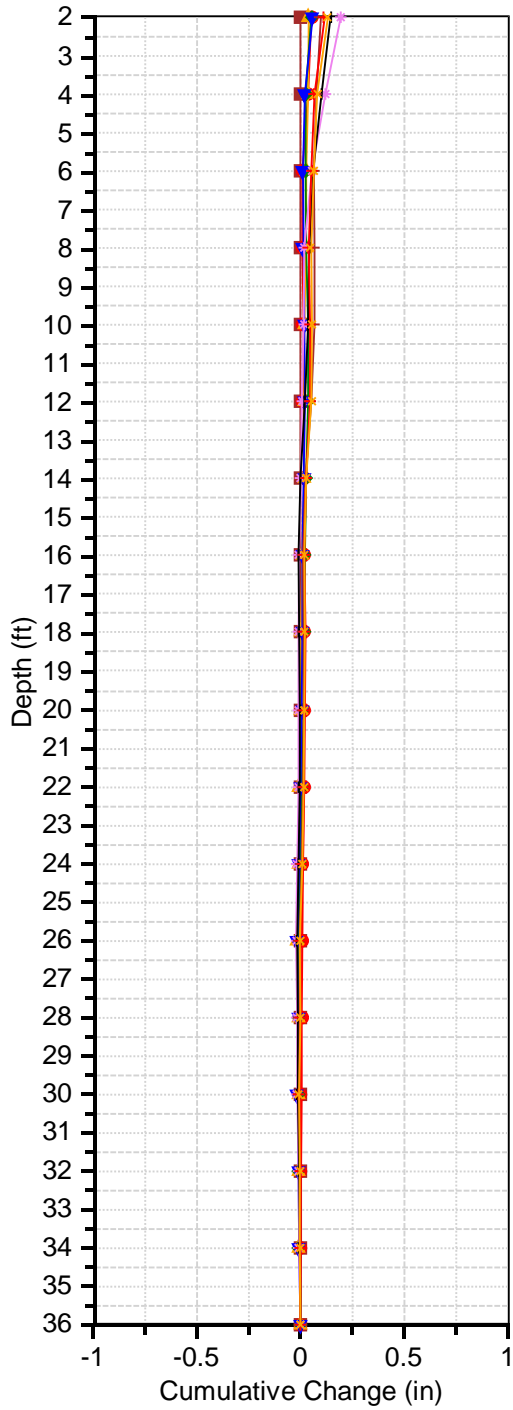
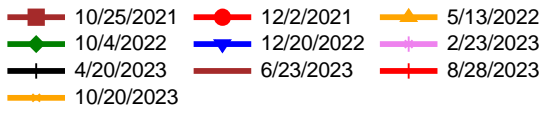
Norris SI-1 A



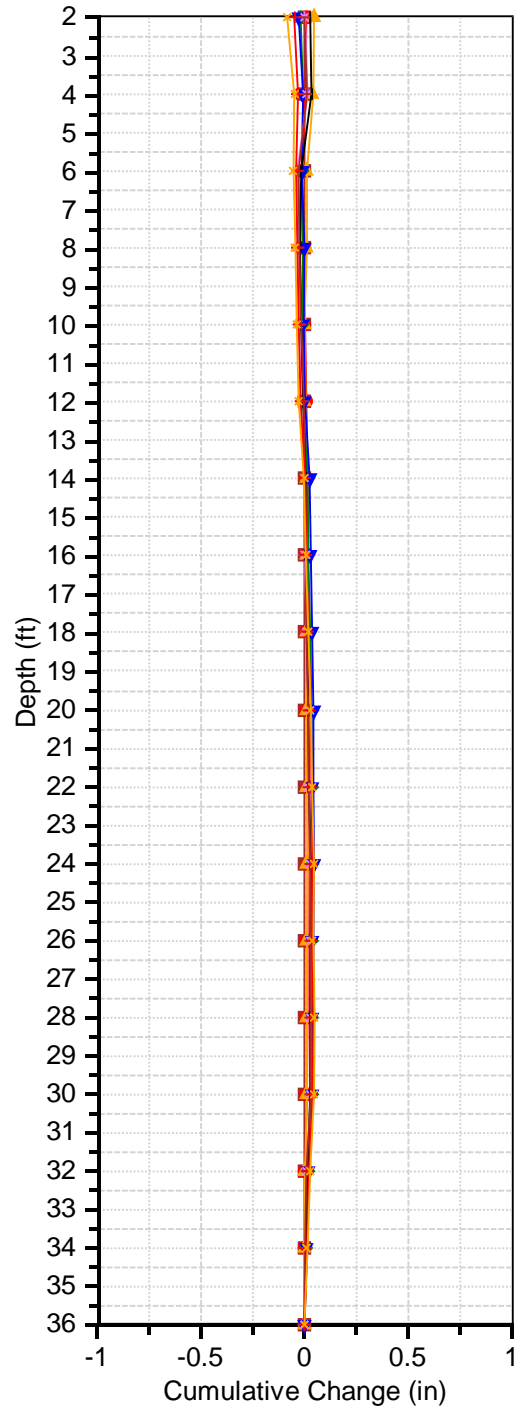
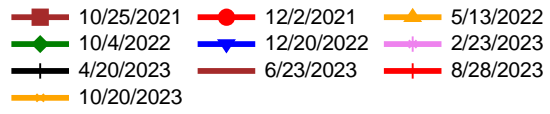
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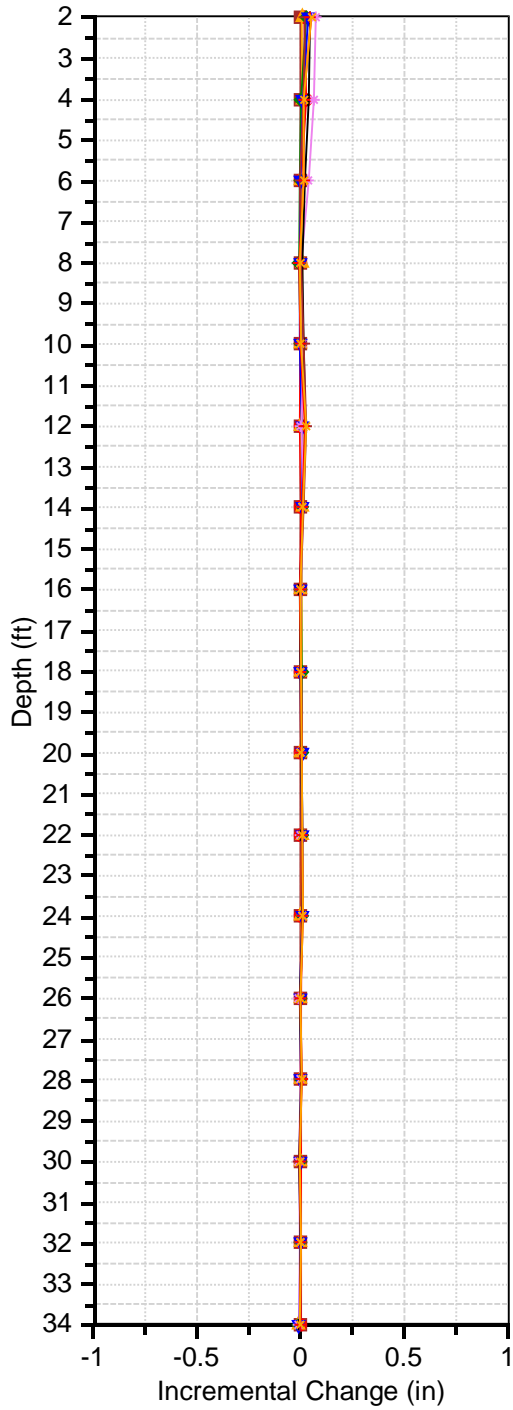
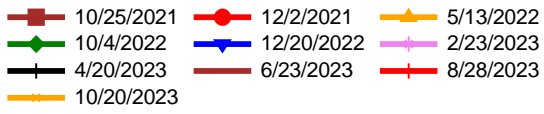
Norris SI-2 A



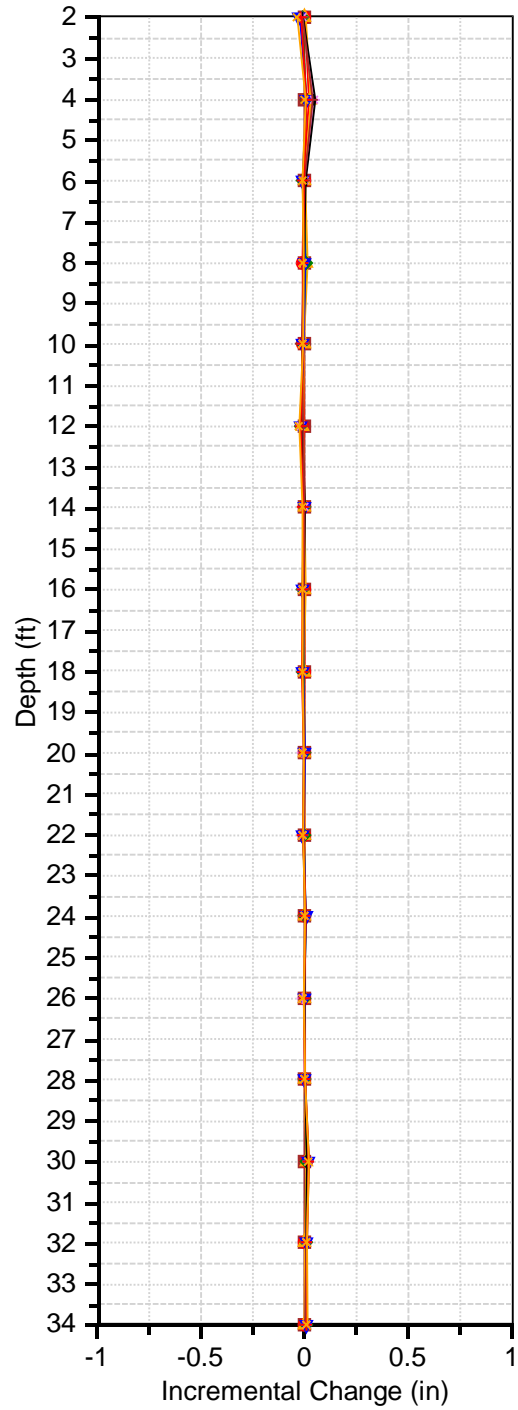
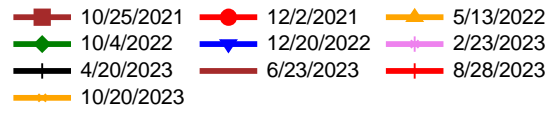
Norris SI-2 B



Norris SI-2 A

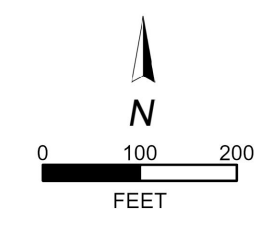
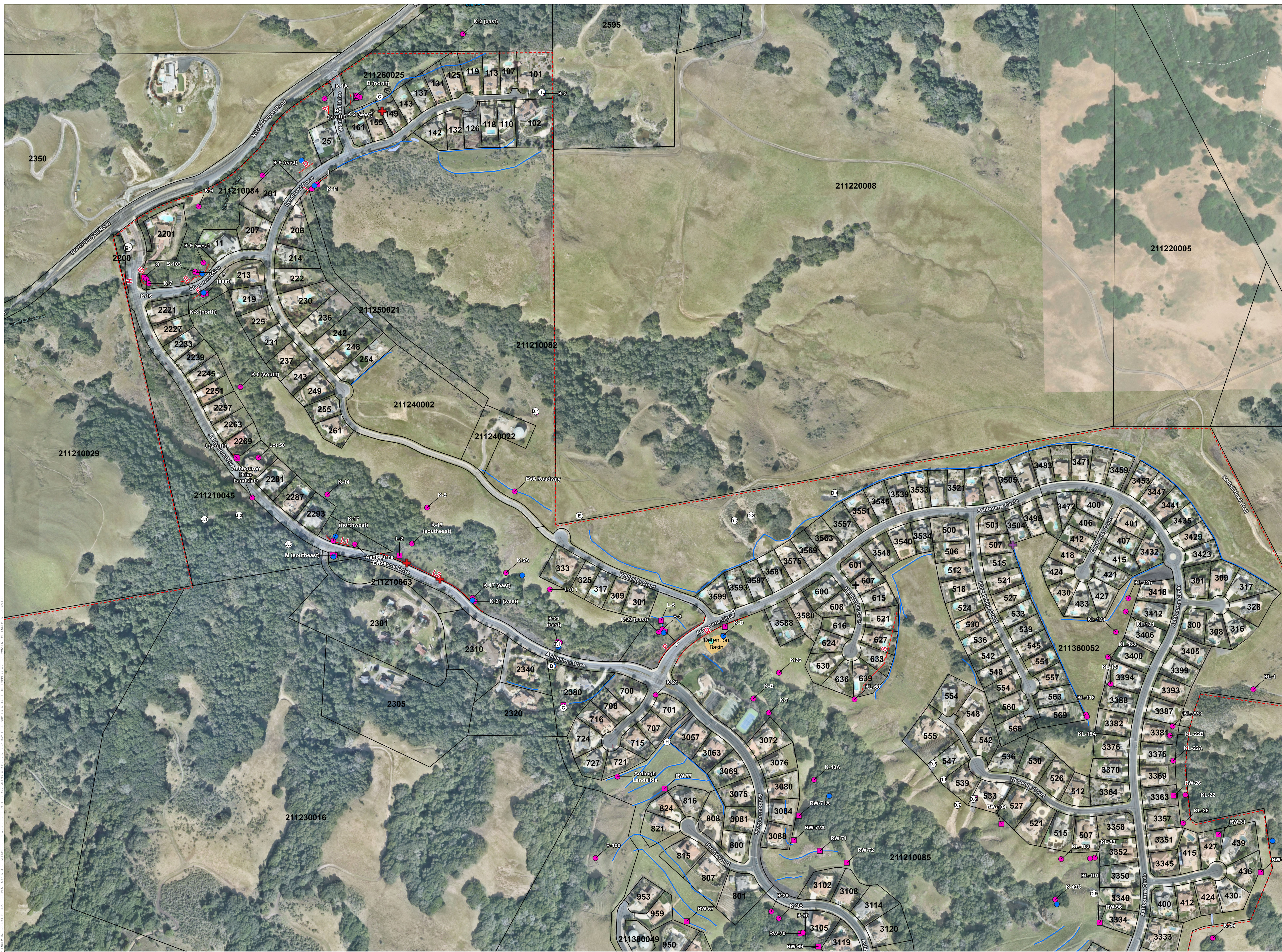


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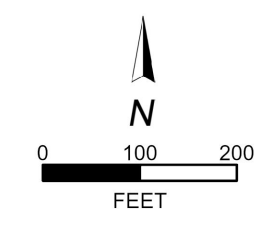


FIGURES

Figures 1 and 2 – Site Plan



- EXPLANATION**
ALL LOCATIONS ARE APPROXIMATE
- Parcel Line (2022)
 - Geologic Hazard Abatement District Boundary
 - Grasses and Basin Maintenance
 - Pig Roofing
 - Retaining Wall
 - Concrete-Lined Drainage Ditch
 - Landslide
 - Site Condition (Fall 2023)
 - + Inclinometer
 - + Other
 - + Sondex
 - Culvert
 - Inlet Box
 - Basin Inlet/Outlet
 - Subdrain Outlet
 - Subdrain Outlet (Retaining Wall)
- 6009 ADDRESS
211020026 ASSESSOR'S PARCEL NUMBER



- EXPLANATION**
ALL LOCATIONS ARE APPROXIMATE
- Parcel Line (2022)
 - Geologic Hazard Abatement District Boundary
 - Grasses and Basin Maintenance
 - Pig Rooting
 - Catchment Fence
 - Retaining Wall
 - Concrete-Lined Drainage Ditch
 - Site Condition (Fall 2023)
 - + Inclinometer
 - + Other
 - + Sondex
 - Culvert
 - Basin Inlet/Outlet
 - Subdrain Outlet
 - Subdrain Outlet (Retaining Wall)

6009 ADDRESS
211020026 ASSESSOR'S PARCEL NUMBER