FY24/25 Maintenance and Monitoring

AD98-2, Calle del Barco

City of Malibu, California

Yeh Project No.: 220-277

March 6, 2026



Prepared for:

City of Malibu
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Malibu, California 90265
Attn: Mr. Travis Hart

Prepared by:

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Project No. 220-277

City of Malibu
23825 Stuart Ranch Rd.
Malibu, California 90265

Attn: Mr. Travis Hart, Interim Assistant Public Works Director

Subject: **Annual Monitoring and Maintenance Report FY24/25, City of Malibu Assessment District 98-2, Calle del Barco, Malibu, CA**

Dear Mr. Hart:

Yeh and Associates, Inc. is pleased to submit this monitoring and maintenance report for FY24/25 City of Malibu Assessment District AD-2, Calle del Barco in Malibu, California. This report was prepared in accordance with our Agreement for Professional Services, dated June 22, 2020, between the City of Malibu and Yeh and Associates, Inc. and Amendment Nos. 1 and 2, dated June 10, 2024, and June 9, 2025. This report provides a geotechnical and annual summary of monitoring and maintenance for the project over fiscal year July 1, 2024, to June 30, 2025.

The geotechnical services consisted of monitoring and maintenance, data management, public outreach, reporting, and capital improvements. A map showing the location of the maintenance and monitoring facilities is provided on Plate 1.

We appreciate the opportunity to be of service. Please contact Loree Berry at 805-440-0966 or Lberry@yeh-eng.com if you have questions or require additional information.

Sincerely,
YEH AND ASSOCIATES, INC.

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1. Purpose and Scope of Study

Yeh and Associates (Yeh) was retained by the City of Malibu (City) to perform maintenance and monitoring of the existing geotechnical instrumentation and dewatering facilities within the City of Malibu's Calle del Barco Landslide Assessment District, 98-2. The project location is shown by the polygon in Figure 1. This report presents monitoring results, a maintenance summary, and facilities status for July 2024 through July 2025 (monitoring year). Yeh monitors groundwater levels, surveys slope inclinometers, and measures the dewatering flow from dewatering wells and horizontal drains. Yeh also oversees and maintains the monitoring and dewatering facilities. Plate 1 shows the approximate locations of the assessment district facilities. Table 1 summarizes the equipment inventory and the approximate frequency of monitoring and maintenance over the monitoring year. This report provides a summary of the facility repairs made following the Palisades Fire and regular maintenance activities performed during this monitoring period.

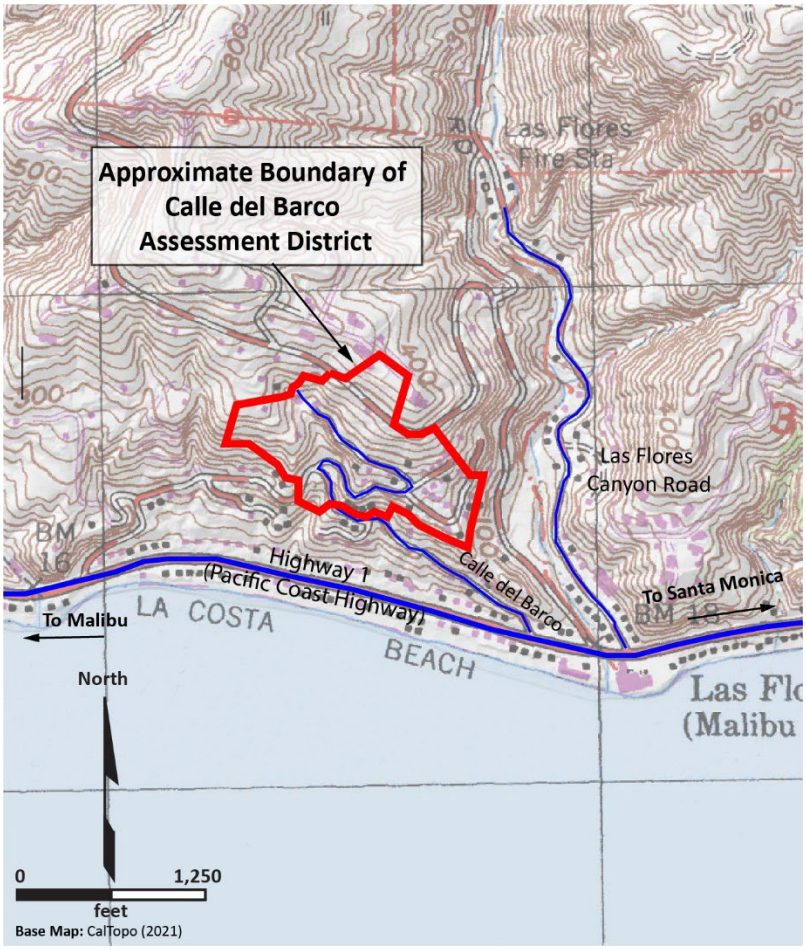


Figure 1: Project Location Map

Table 1. Summary of Annual Monitoring and Maintenance

Type of Monitoring Instrument or Dewatering Device	Number of Locations	Brief Description	Monitoring Frequency	Maintenance Effort[1]
Standpipe piezometer	9	2.75-inch perforated PVC casing used to measure depth to groundwater using electric sounder or by a transducer/datalogger	monthly; hourly data from pressure transducer	low
Inclinometer survey casings	12	1.5-inch and 2.75-inch diameter grooved casings made of PVC, used to survey for shear displacement by an inclinometer probe	quarterly	low
Shape Array (SAA)	1	A chain of in-place, 2-foot long sensorized segments installed in existing inclinometer casing. Each segment measures tilt in two directions. Sensor string is programmed to average 1000 readings once per day and records to an onsite datalogger.	Programmed to record once per day, downloaded as needed	medium
Dewatering wells	11	6-inch or 12-inch diameter steel or PVC casings equipped with 0.5 to 1.5HP submersible pump and connected to electrical controls, pumped water flows through meter and into conveyance piping to discharge	monthly	high
Horizontal Drains (hydraugers)	11	1-inch to 1.5-inch perforated PVC casings drilled slightly higher than horizontal into slope through the soldier pile wall along Rambla Orienta and at the toe of the landslide below Rambla Vista. Installed hundreds to thousands of feet into the slope and used to drain groundwater that intercepts the casing. Flow can be measured from the hydraugers before it flows to discharge	monthly	medium
Big Rock Mesa Rain Gauge #1239	1	Documented Rainfall, Data obtained from Los Angeles County Public Works	monthly	N/A

Notes:
[1] - maintenance effort (generalized): "high" – services monthly, "medium" – services quarterly, "low" – services annually

2. PALISADES FIRE

The Calle del Barco Neighborhood was heavily impacted by the Palisades Fire with homes and significant public infrastructure within the Assessment District 98-2 boundary damaged or destroyed. Dewatering well pump controls, control enclosures, Southern California Edison (SCE) electrical meters, power hookups, and electrical wiring/conduit to dewatering wells suffered damage. Damage to the SCE electrical grid caused widespread power loss and as a result, de-watering wells were de-energized. Groundwater discharge from the gravity drained hydraugers continued to flow; however, much of the above ground plumbing was damaged and the

hydraugers were not connected to the conveyance system into the storm drains. During the same period, the imported water usage and influence of irrigation and septic was reduced due to limited residential occupation.

On January 13, 2025, Yeh personnel performed initial district facility fire damage assessments. On January 20, 2025, Yeh and a well repair subcontractor used a truck mounted generator to check all well motors and electronics. Repair efforts have been underway since that time. Table 2 is a summary of Palisades Fire facility damage and repairs that were completed during the monitoring year. Facility maintenance not related to the Palisades fire is presented in Section 6.0 of this report.

Table 2. Summary of Palisades Fire Facility Damages and Repairs

Facility/Equipment	Damages	Repairs
Well control enclosures on Calle del Barco	Heavy fire and heat damage to six of seven enclosures.	Replaced six existing enclosures with four new, strut-mounted stainless-steel enclosures
Well control enclosures on Rambla Vista	Heat and fire damage.	Replaced two existing enclosures with two new, stainless-steel strut-mounted enclosures.
Wells and facilities on Rambla Pacifica	No fire Damage.	--
Enclosure risers and buried power wires conduit: Calle del Barco and Rambla Vista	All risers with heat/fire exposure. All wiring heat/fire exposed at risers.	Replaced all risers to 6-inches below grade. Pulled approximately 900-feet of new wire for all enclosure and well head power conduits.
Edison electrical meters and meter panel enclosures	Calle del Barco: Edison meter melted and enclosure sustained heavy fire damage. Rambla Vista: enclosure fire/heat exposed/charred.	Replaced both enclosures with stainless steel strut-mounted enclosures.
Well pump controls and wiring	All well controls and wiring in heat/flame exposed enclosures damaged.	Replaced controls and wiring for 10 of 11 wells (W-K not replaced).
Well pumps/motors	W-J and W-M possible motor short.	Pull and replace two well pumps/motors. Chem-treat and scrub two well casings while pumps are out.
Hydraugers	Fire damage to hydrauger plumbing and conveyance lines on Rambla Orienta and Lower cluster below rambla vista.	Excavated existing conveyance line, replaced damaged plumbing and conveyance piping.

3. MONITORING

The following provides the result of monitoring the water level in standpipe piezometers and the results of inclinometer surveys performed. For the purposes of discussion and context throughout the report, the monitoring results are discussed with respect to three areas within the landslide boundaries: Rambla Vista, Calle Del Barco and Rambla Pacifico:

- **Rambla Vista** is located in the southern portion of the 1978 landslide boundary, near the mapped toe of the landslide.

- **Calle del Barco** encompasses the middle portion of the 1978 Landslide. District facilities are located along Calle Del Barco and on the slope south of Calle del Barco. This area includes the headscarp area of the repaired 1998 shallow failure.

- **Rambla Pacifico** is the northernmost geographic region and includes the headscarp portion of the 1978 landslide.

3.1 New Capital Improvement Facility

A shape-array identified as SI-9-SAA was installed within existing slope inclinometer casing SI-9 as part of this monitoring year's capital improvement program. The installation is intended to provide improved slope deformation data. Installation of the shape array was completed on September 11, 2024. Additional work to install the enclosure, datalogger, program software and calibrate instrumentation occurred through September 2025. The 96-foot-long facility consists of 40 feet of 2-foot long bi-axial tilt-sensorized segments and 56 feet of blank segments. The sensor chain was compressed in the existing casing to target a span across the zone of previous known deformation. The surface installation is a pole mounted stainless steel enclosure containing a *Campbell Scientific CR300* data logger with a *Measureand SAA232* interface. The system is programmed to read and record once per day and the datalogger will be downloaded onsite as necessary. Data from SI-9-SAA for this monitoring year is presented in Section 3.3.3.

3.2 Groundwater Levels

Groundwater levels were measured approximately monthly in 9 standpipe piezometers located on Plate 1. Water levels are acquired by lowering an electric probe into the standpipe to contact the groundwater surface and manually recording the depth to water. Groundwater hydrographs for individual standpipes through the end of this monitoring year are presented in Appendix A.

Pneumatic piezometers were installed with some of the inclinometers prior to 1998. Existing pneumatic piezometers either no longer function or the reliability of remaining locations are not certain. Pneumatic piezometers were not measured during the monitoring year. Appendix A includes historic pneumatic piezometer results.

Table 3 summarizes the average groundwater levels over the monitoring year for each of the three areas, their change from the prior monitoring year area averages, and change from the historical area averages. Average annual groundwater elevations for the three areas remained

relatively consistent or declined over the first half of the monitoring year. Water levels in individual standpipes were generally continuing to decline from elevated levels following the two consecutive heavy rainfall years in FY22/23 and FY23/24 and then rose following the January through March rainfall and the de-energizing of dewatering wells in January. Additional discussion by area is provided in the following sections:

Table 3: Summary of Area Average Groundwater Elevations[1]

Area Averaged	Total No. of Standpipes Monitored	2024-2025 Area Average Groundwater Elevation (ft)	Change in Area Averaged Groundwater Elevation from Prior Monitoring Year (ft)	2024-2025 Area Average Groundwater Elevation versus Historical Area Average Groundwater Elevation (ft)
Rambla Vista	2	171.8	+4.6	+4.9
Calle Del Barco	5	249.9	+1.6	-8.7
Rambla Pacifico	2	354.2	+0.0	+3.8

Notes:
[1] Comparison between the current and prior monitoring periods for the eight standpipe piezometers measured during the current monitoring year: SI-4, SI-5, SI-7, SI-9, SI-13, SI-14, SI-15, SI-16

3.2.1 RAMBLA VISTA

Two standpipes are used for groundwater level monitoring in the Rambla Vista Area: SI-4 and SI-7. After the Palisades Fire a pressure transducer was installed in de-energized dewatering well W-B on Rambla Orienta and programmed to record hourly groundwater data. Table 4 summarizes results of the standpipe manual groundwater data over the monitoring year and changes from historic water level averages for each standpipe.

Table 4: Rambla Vista Area Water Level Monitoring

Standpipe ID	Change in Groundwater Elevation between last and first measurements of monitoring year (ft)	2024-2025 Average Groundwater Elevation (ft)	Change in Average Groundwater Elevation from Prior Monitoring Year (ft)	1991-2025 Historical Mean Groundwater Elevation (ft)	2024-2025 Average Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SI-4	-4.0	186.3	+3.5	180.0	+6.3
SI-7	+4.9	157.3	+5.6	157.0	+0.3

During this monitoring year, water level measurements in SI-4 declined until January and then rose following the January dewatering well shut off and winter storm events. Water levels in both standpipes have been declining since April 2025 but remain elevated above both the

historic average and the prior monitoring year. Data appeared to indicate water levels in the area had stabilized by early February. Transducer data for well W-B is presented in Figure 2.

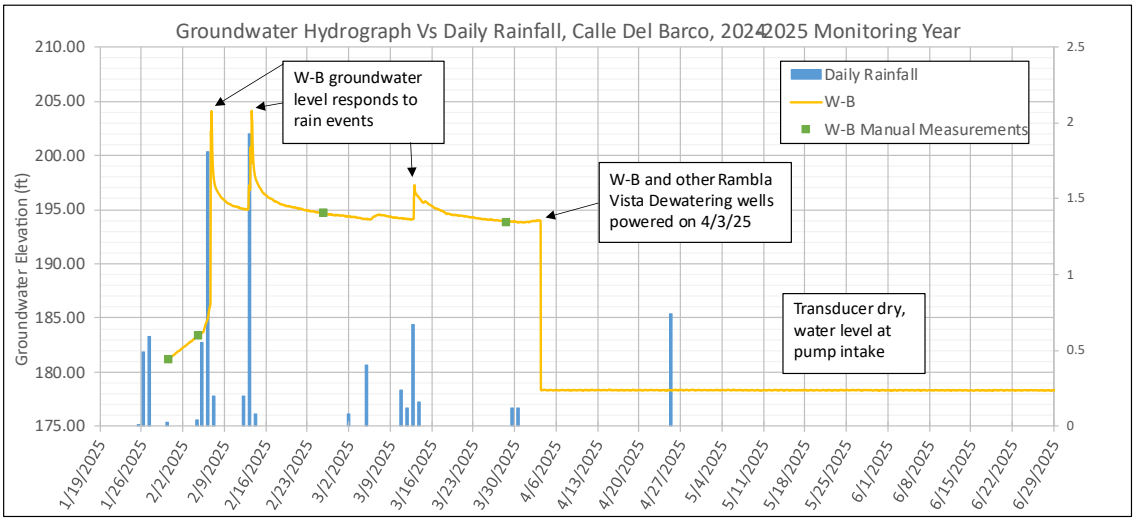


Figure 2: Hourly transducer data De-energized dewatering well W-B

3.2.2 CALLE DEL BARCO

Five standpipes are in use for groundwater level monitoring in the Calle Del Barco Area: SI-5, SI-8, SI-9, SI-15 and SI-16. Table 5 summarizes results of manual groundwater measurements over the monitoring year and changes from historic water level averages by individual standpipe. Water levels in Standpipe SI-9 are not included because they could not be obtained once the shape array was installed in September 2024. Following the Palisades Fire, pressure traducers were installed and manual measurements taken in de-energized de-watering Wells W-C, -J and -M to supplement groundwater level data.

Table 5: Calle del Barco Area Water Level Monitoring

Standpipe ID	Change in Groundwater Elevation between last and first measurements of monitoring year (ft)	2024-2025 Average Groundwater Elevation (ft)	Change in Average Groundwater Elevation from Prior Monitoring Year (ft)	1991-2025 Historical Mean Groundwater Elevation (ft)	2024-2025 Average Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SI-5	+0.1	281.0	+2.9	273.1	+7.9
SI-8	+0.2	291.5	+2.9 from FY19/20	287.9	+3.6
SI-9	--	--	--	--	--
SI-15	-1.1	268.2	+1.0	264.3	+4.0
SI-16	-0.8	226.7	+1.6	226.9	-0.1

During this monitoring year, the standpipes monitored on Called del Barco were declining from elevated levels after the two consecutive high rainfall years of FY22/23 and FY23/24 until January when they rose slightly. The groundwater level rise was likely in response to both the January through March rainfall and the de-energizing of dewatering wells in January. Standpipe water levels indicate groundwater in this area has stabilized or declined slightly since approximately April 2025. Hourly transducer data from the de-energized dewatering wells also suggests that after an initial rise, the groundwater levels had stabilized by February and are currently stable or declining. Groundwater levels at the end of the monitoring year generally remain elevated above historic means but are approximately unchanged from the end of the previous monitoring year. Hydrographs for the de-energized dewatering wells are presented in Figure 3.

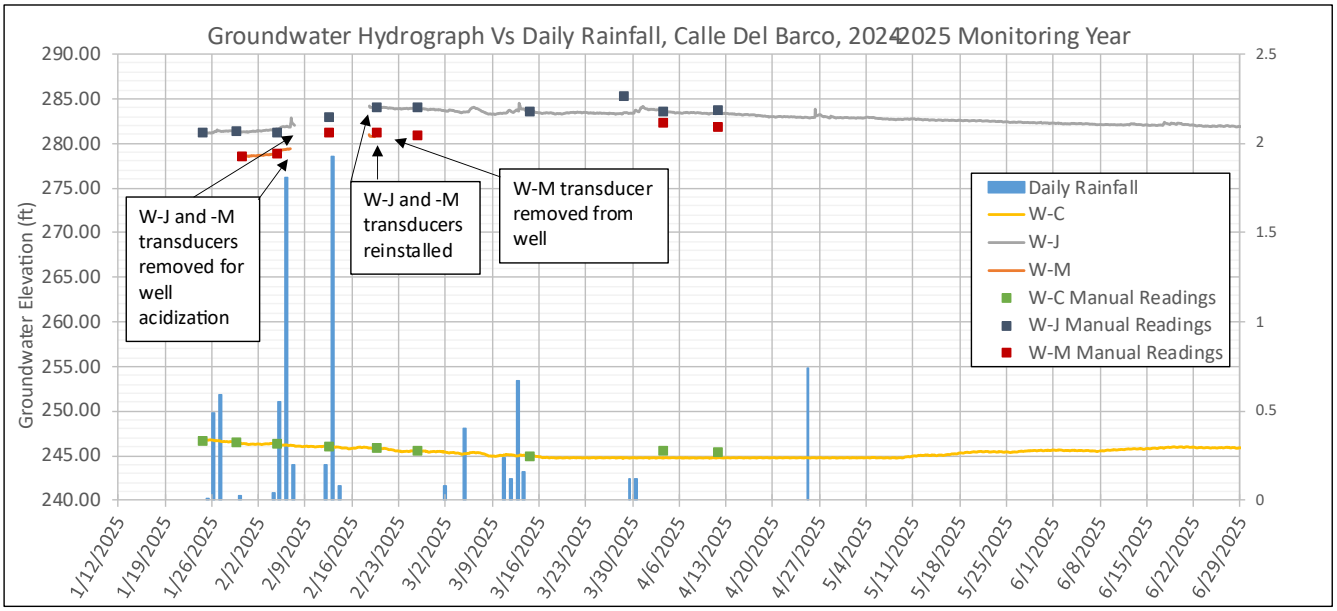


Figure 3: De-energized dewatering wells W-C, -J, -M transducer and manual measurements.

3.2.3 RAMBLA PACIFICO

Two standpipes are in use for groundwater level monitoring in the Rambla Pacifico Area: SI-13 and SI-14. Table 6 summarizes results of manual groundwater measurements over the monitoring year and changes from historic water level averages by individual standpipe. Groundwater levels in both standpipes continued to decline from peaks in May 2024 which followed two consecutive high rainfall years. Water levels in the area did not appear to significantly react to the dewatering well shut off or the January to March rainfall. There is one dewatering well facility in the Rambla Pacifico Area, W-K, which has been dry since 2015. At the end of this monitoring year, water levels in both standpipes were at approximately the elevation of the end of the previous year and both remain elevated above historic means.

Table 6: Rambla Pacifico Area Water Level Monitoring

Standpipe ID	Change in Groundwater Elevation between last and first measurements of monitoring year (ft)	2024-2025 Average Groundwater Elevation (ft)	Change in Average Groundwater Elevation from Prior Monitoring Year (ft)	1991-2025 Historical Mean Groundwater Elevation (ft)	2024-2025 Average Groundwater Elevation from Historical Mean Groundwater Elevation (ft)
SI-13	-3.3	363.2	-0.4	359.2	+4.0
SI-14	-4.6	345.3	+0.4	342.2	+3.1

3.3 Slope Inclinometers

3.3.1 Summary of Slope Inclinometer Monitoring

Appendix B provides a summary of the Calle del Barco inclinometers information, status, and past survey results along with cumulative and incremental profile change plots in the A and B axis directions for each of the inclinometers surveyed over the monitoring year. Inclinometers were assessed for distinct shear-type movement. Inclinometer survey results for each of the three Calle del Barco areas are summarized below:

3.3.2 Rambla Vista

Two inclinometers are currently monitored within the Rambla Vista Area: SI-4 and SI-7. The inclinometers did not display discernable shear-type movement over the monitoring year. Inclinometer SI-4 and SI-7 both displayed depth positioning errors in the B direction.

Inclinometer SI-10 is deformed above approximately 12 feet, and the probe traverse is impeded at that depth and is potentially damaging to the probe. The existing deformation may be the result of previous construction and the replacement of the upper part of the casing in 1999. SI-10 will no longer be surveyed and is included as a Capital Improvement for future replacement.

3.3.3 Calle del Barco

There are seven inclinometers located in the Calle del Barco Area: SI-5, SI-8, SI-9, SI-11, SI-12, SI-15 and SI-16. Inclinometer SI-8 had not previously been accessible between July 2020 and February 2025, measurements resumed at SI-8 in March 2025.

Inclinometer SI-5 measured approximately 0.05-inches of shear type displacement between 36 and 38-feet bgs, between the May 2024 and August 2024 surveys. The displacement appears to be continued deceleration of movement that occurred primarily between February and April 2024 and that appears to currently be stopped or slowed below measurable rates.

Inclinometer SI-12 measured approximately 0.06-inches of shear type displacement at a depth between 36 and 38-feet bgs, from the March 2024 to the August 2024 surveys, no additional displacement was measured during this monitoring year. The SI-12 displacement of 0.06-inches was reported with the 0.14 inches of displacement during the 2023-2024 annual report, which included the August 1, 2024, survey. Since the changes in SI-12 occurred near the bottom of the casing there are an insufficient number of stable readings below the movement depths to quantify the interpreted magnitudes with certainty. Additionally, the bottom readings on some casings are unreliable and vulnerable to error caused by debris in the tracks, depth positioning due to infilling and other variables. Therefore, these measurements should be considered approximate.

Inclinometer SI-9 did not record displacement between the May 2024 and August 2024 surveys. Movement recorded after February 2024 during the 2023-2024 monitoring year appears to have stopped or decelerated below measurable rates by March 2024. SI-9 was not surveyed with the traversing probe after August 2024 because the casing was installed with a semi-permanent shape array sensors as described in Section 3.1. No movement is interpreted in the shape array data. Plots for daily data for SI-9-SAA from November 2024 to July 2025 are presented in Figure 4.

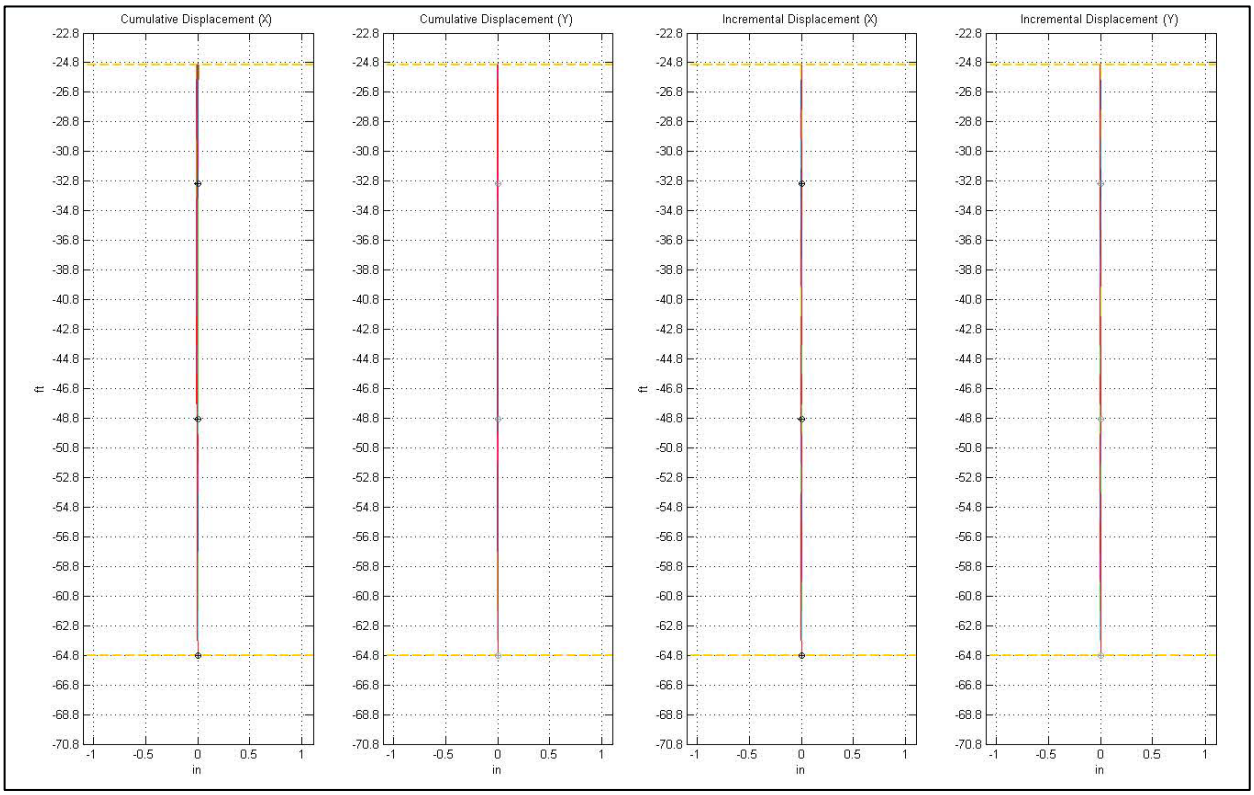


Figure 4: SI-9-SAA daily data from 11/1/2024 to 7/15/2025, Sensors between 25 and 65 feet.

3.3.4 Rambla Pacifico

There are two inclinometers surveyed in the Rambla Pacifico Area: SI-13 and SI-14. Neither inclinometer displayed discernable shear displacement during the monitoring year. Inclinometer SI-13 continues to display an error in the upper 28 feet. Inconsistent curves have displayed on the cumulative displacement plots for SI-13 since the first survey after installation and is therefore probably the result of depth positioning error on highly curved or kinked casing that occurred during grouting.

4. Water Budget Tracking

4.1 Rainfall Data

Yeh obtained rainfall data for the monitoring year from the Big Rock Mesa Rain Gauge #1239 operated by the Los Angeles County Department of Public Works (LADPW). Prior to 1984, rainfall data was obtained from the Carbon Canyon Rain Gauge #447C and after 1984 from the onsite Big Rock Mesa Rain Gauge #1239. For this report, a 41-year rainfall average of 16.13 inches from the Big Rock Mesa Rain Gauge is used as an annual average.

Plate 2 - Rainfall Graph displays historical monthly and rain season annual rainfall for the Malibu area from October 1968 through September 2025. Recorded rainfall for the Malibu area over the monitoring year from July 1, 2024, to June 30, 2025, totaled 8.50 inches, which is 7.63 inches below the 41-year Big Rock Mesa Rain Gauge running average of 16.13 inches. The recorded rainfall total for the rain season year from October 1, 2024, to September 30, 2025, totaled 8.52 inches. This year was the first monitoring and rain season year of below average rainfall after two consecutive years of above average rainfall.

Plate 4 – Discharge vs Rainfall shows rainfall deviation from the 41-year mean and compares rainfall amounts to changes in the annual sum of monthly dewatering output.

4.2 Dewatering

Yeh tracks dewatering production for the pumping dewatering wells installed across the district and the horizontal gravity drains (hydraugers) installed along Rambla Orienta and at the toe of the landslide. The combined dewatering production for the monitoring year averaged 691 gallons per day (gpd), which is a decrease of 41-percent from the previous monitoring years' average production of 1,112 gpd. The decrease in dewatering production is a result of below average rainfall and the de-energizing of dewatering wells following the Palisades Fire. Approximately 56-percent of the total dewatering production was pumped from dewatering wells and 44-percent was generated from hydraugers this monitoring year.

4.2.1 Dewatering Well Production

Yeh performed monthly monitoring of production for the 11 dewatering wells when they were accessible and powered. Well production is generally measured approximately monthly for each well by reading flow totalizers that are installed along the discharge line. A summary of well production and well status is presented in Appendix C. A plot for historical production and a plot for monitoring year production vs daily rainfall for each individual well are included in Appendix C. A graph showing total dewatering production since 1992 is included on Plate 3 and Plate 4 presents the sum of the monthly average production vs daily rainfall over the monitoring year.

The sum of the monthly average dewatering well production over the monitoring year was 390 gpd which is 50-percent lower than last year's average production of 769 gpd and 26-percent less than the historical sum of the monthly average of 521 gpd calculated from 1992 to present.

Well production typically varies in response to rainfall totals. The dewatering well production decrease for this year was primarily influenced by the dewatering wells being de-energized after the Palisades Fire.

4.2.2 Hydrauger Production

Hydrauger production is measured directly from a sampling port installed along each hydrauger casing where it daylights the slope face. Yeh generally performed monthly monitoring to measure flow from 11 hydraugers. Two of the 11 locations, HD-13 and H-1, recorded consistent flow in recent years. Hydrauger H-2 and H-2A also flow intermittently in response to rainfall. Remaining hydraugers recorded no flow for the monitoring year. Production data and status for individual hydraugers is included in Appendix C. A graph showing total hydrauger production since 1992 is presented on Plate 4.

The average monthly hydrauger production over the monitoring year was 301 gpd which is 12-percent less than last year's average monthly production of 343 gpd and 30-percent more than the historical average production of 231 gpd calculated from 1992 to present. The values recorded during the monitoring year are 34-percent less than the maximum average annual production of 455 gpd recorded during the 1996-1997 monitoring year.

The lower hydrauger cluster, located on the hillside below Rambla Vista, was burned during the fire and later buried. Hydrauger HD-13 was recovered and is the only producing hydrauger in the lower cluster.

Hydrauger production typically varies in response to rainfall totals. The increase in average hydrauger production over this monitoring year from the previous monitoring year is primarily due to an increase in production at H-2A. New flow in H-2A is likely related to the lack of dewatering from nearby dewatering wells that were de-energized in January.

5. Seismic Events Summary

Twenty-four (24) earthquakes with a magnitude of M3.0 or greater occurred with epicentral distances within 25-miles of the project area and five earthquakes with a magnitude of M4.0 or greater were recorded between 25 to 100-miles of the project area (See Figure 5). The largest event was a M5.2 located 79 miles northwest, near Lamont, CA which was followed by a cluster of three aftershocks exceeding M4.0. For the M5.2 event, the USGS shake map reported a Modified Mercalli Intensity (MMI) of 2 with weak shaking felt at the Calle del Barco area. On September 12, 2024, an M4.7 event occurred approximately 11 miles west of the Calle del Barco area. The USGS shake map reported an MMI of 3.5 to 4 with light shaking felt at the Calle del Barco area, six aftershocks with magnitudes ranging from M3.1 to 3.7 were associated with the main quake. The closest event to the project site was a M 3.0 with an epicenter offshore approximately 5.5 miles southwest of the project site with the USGS shake map reporting MMI of 1 to 1.5 and weak shaking.

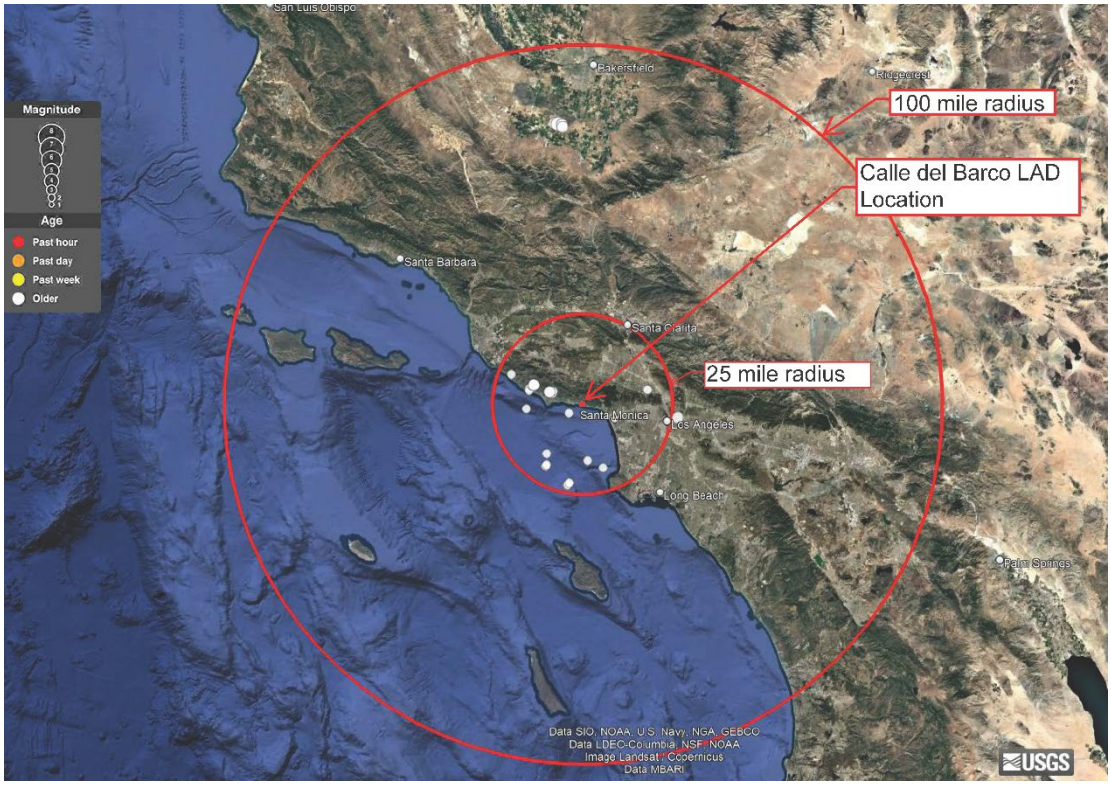


Figure 5: Seismic events within 100-mile radius >M4.0 and 25-mile radius >3.0.

Yeh personnel performed post-earthquake observations and measurements that included surveying of key inclinometers and/or field observations of the ground surface made during scheduled monitoring and maintenance before and after the earthquake events. Yeh staff did not observe surface displacements or inclinometer deformations in response to the earthquakes and is unaware of any reports of damage local to the Calle del Barco Landslide AD resulting from the earthquakes.

6. Facility Maintenance

Table 7 summarizes the maintenance activities performed over the monitoring year that are not a direct result of damage from the Palisades Fire. Typical maintenance activities to dewatering wells include assessing and replacing or repairing dewatering well pumps, well electronics and well controls. Typical maintenance to hydraugers include PVC repairs within the conveyance piping and discharge locations.

Table 7: Summary of Facility Maintenance (Not Palisades Fire Repairs)

Dates Noted	Maintenance Item Description	Assessment	Status
7/19/2024-10/28/2024	Decrease production noted in W-L during monthly reading	Assessed by Yeh; no amps, buzzing sound noted in control panel.	• Coast Pump assessed circuit breaker and pulled and tested pump/motor. Pump was good and reinstalled. • Assessed by Bergen Electric and noted damaged wiring at junction box. New wire was pulled from control panel to well and from Edison meter panel to control panel. • Well returned to service

7. Capital Improvements and Special Projects

The following improvements have been identified and are being tracked and planned for future consideration.

- Upgrade dewatering well flow meters with near real-time data transmission capability.
- Replace inclinometer SI-10, install new inclinometer casing with a vibrating wire piezometer and a time domain refractometry cable.
- Install replacement hydraugers near the toe of the landslide to replace hydraugers that are dry, degraded, damaged, and vulnerable to being buried by soil and rock debris.
- A modern form of repeatable surface survey should be re-introduced and continued for the project as a consistent means to observe and evaluate potential land movement throughout the extent of the assessment district area and more specifically in-between inclinometer casing locations.

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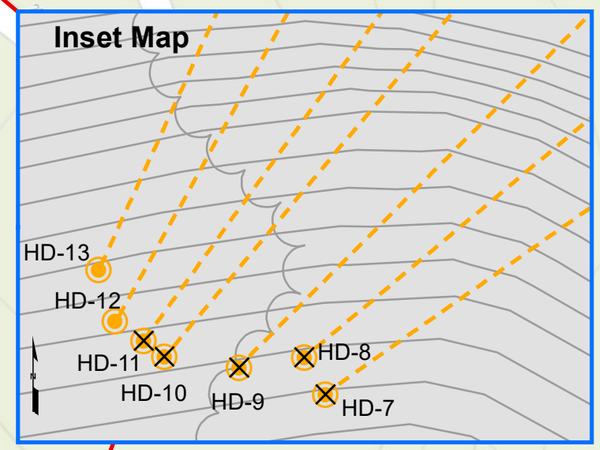
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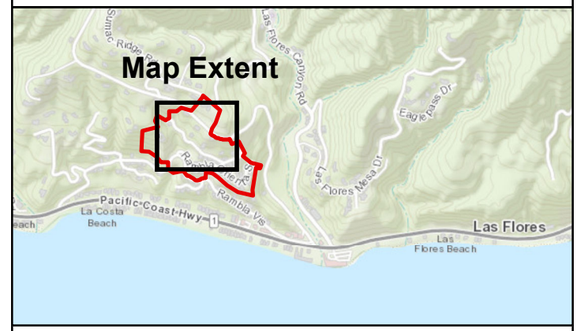
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CALLE DEL BARCO LANDSLIDE ASSESSMENT DISTRICT MALIBU, CALIFORNIA

MONITORING INSTRUMENTATION AND DEWATERING FACILITIES MAP

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- Active Dewatering Well
- Inactive Dewatering Well
- Slope Inclinometer/Standpipe Piezometer
- Non-monitored Slope Inclinometer/ Standpipe Piezometer
- Shape Array
- Pneumatic Piezometers
- Nonproducing Hydrauger
- Producing Hydrauger
- Hydrauger Installed Length
- District Boundary
- Approximate Limits of Deep Seated Landslide
- Approximate Limits of 1998 Shallow Slope Failure (BYA, 1999)

SCALE 1:1,000

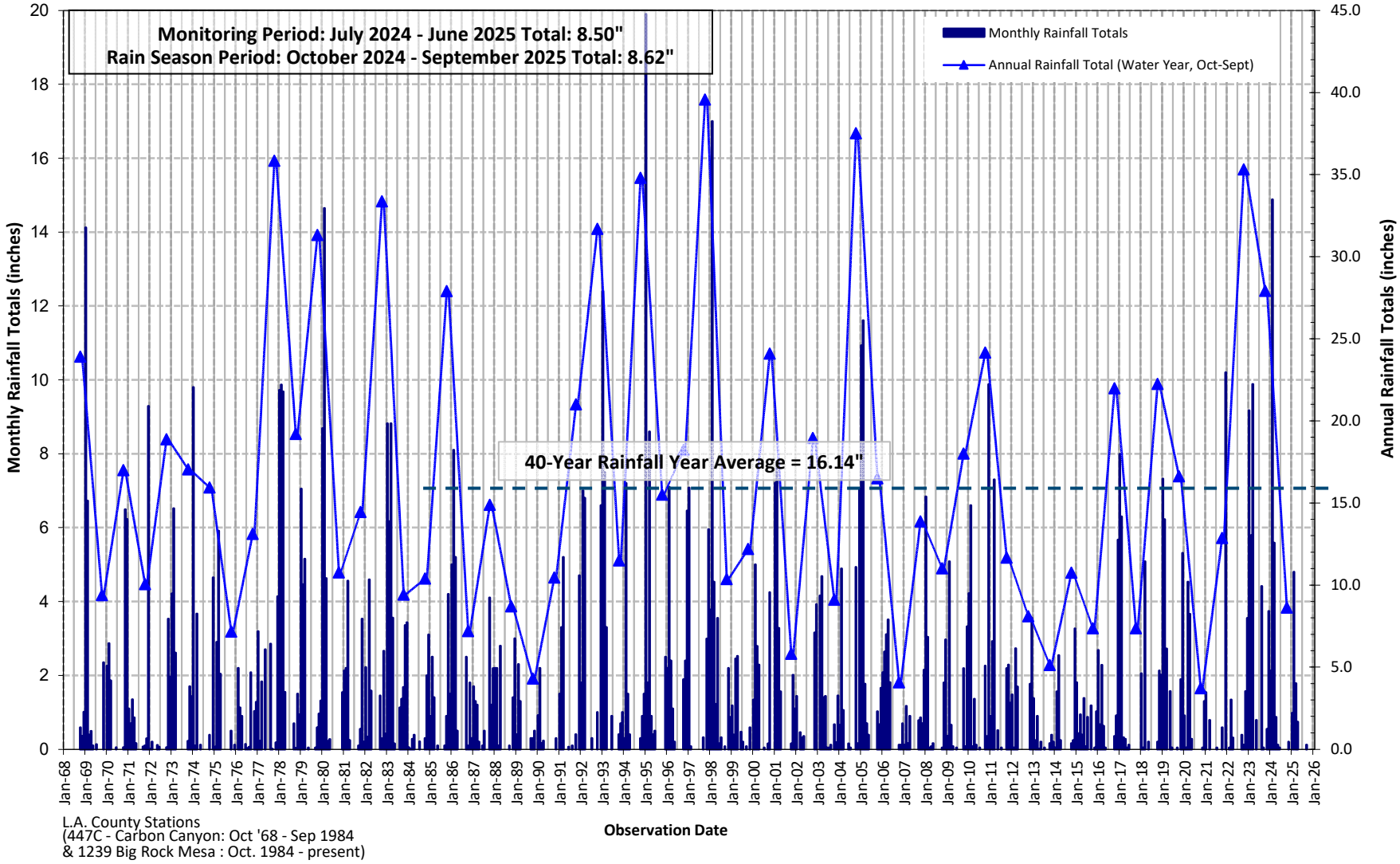
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DATE:	PROJECT NUMBER:	PLATE:
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DRAWN BY:	APPROVED BY:	

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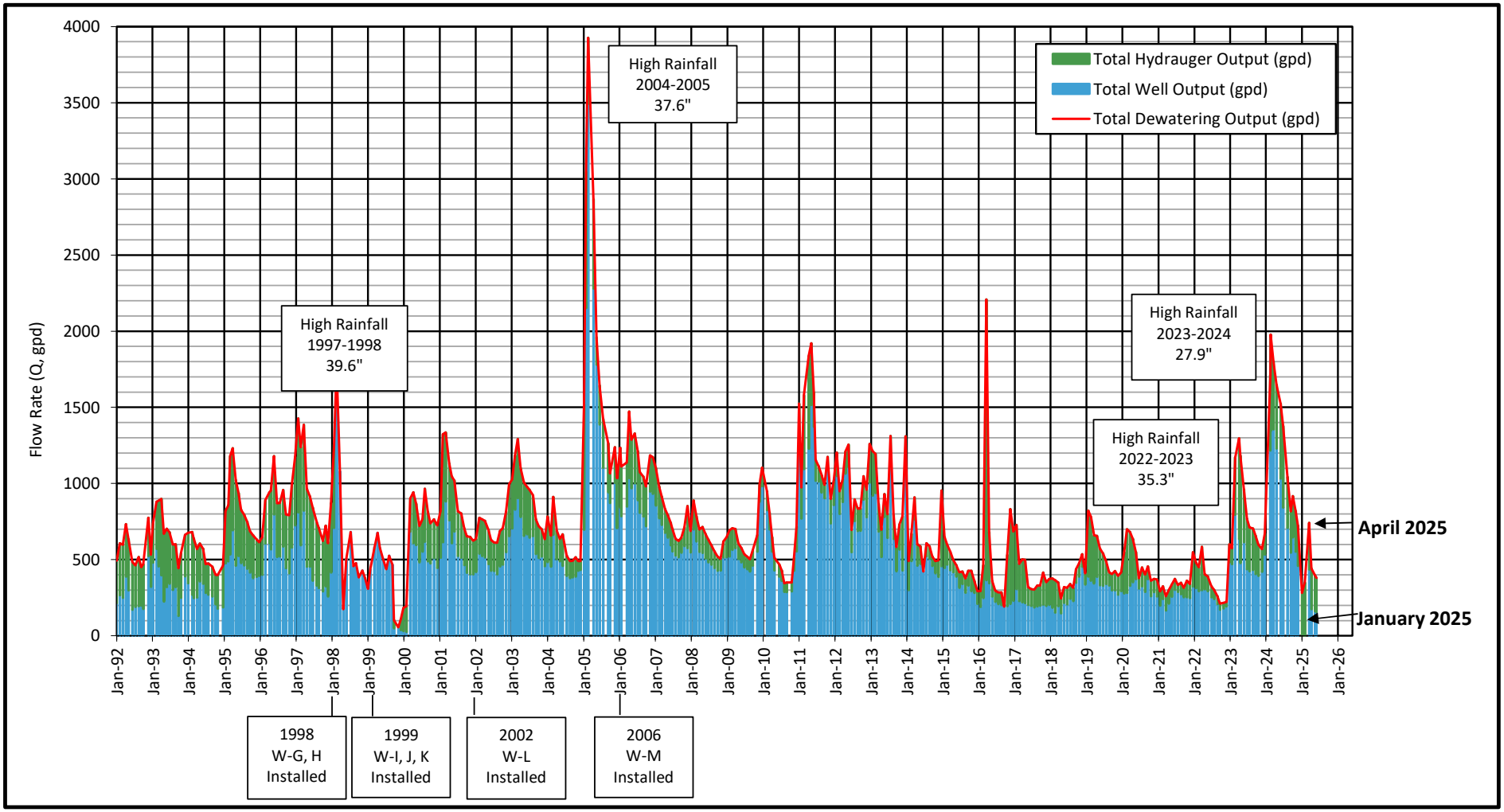
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RAINFALL GRAPH
Calle del Barco Landslide Assessment District
Malibu, California

PLATE 2

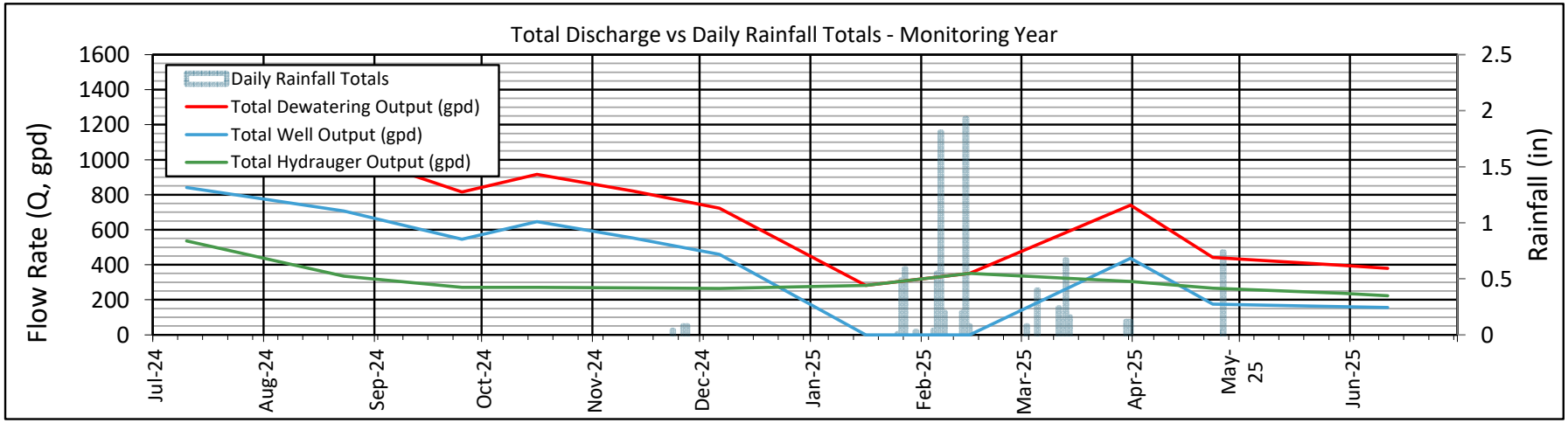
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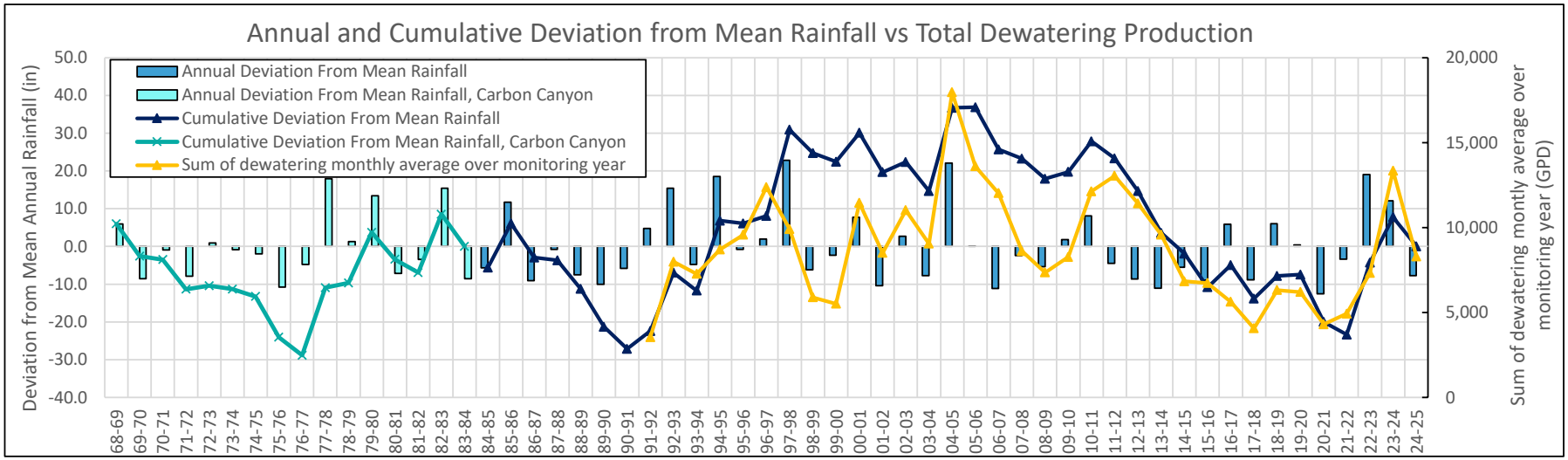


TOTAL DISCHARGE - WELLS AND HYDRAUGERS (HISTORIC)
Calle del Barco Landslide Assessment District
Malibu, California

PLATE 3

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DISCHARGE RATES VS RAINFALL TOTALS
Calle del Barco Landslide Assessment District
Malibu, California

PLATE 4

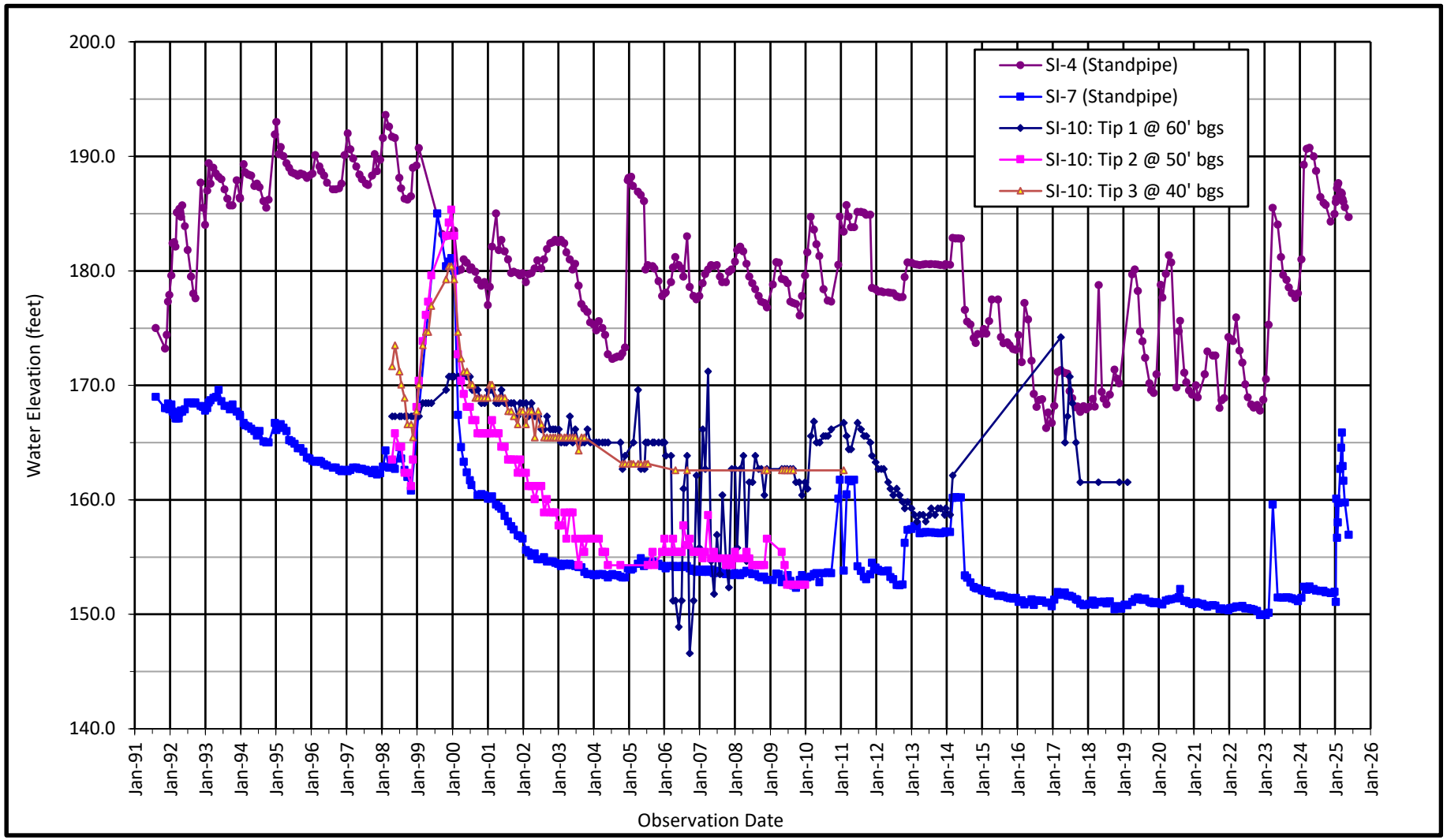
APPENDIX A - GROUNDWATER LEVELS

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CALLE DEL BARCO LAD - Standpipe Piezometer Information					
Standpipe ID	**Reference Elevation (ft)**	**Casing Depth (ft)**	**Perforation Interval (ft)**	**Installed By**	**Notes**
SI-4	207.0	81.0	Unknown	Unknown	
SI-5	302.0	100.0	Unknown	Unknown	
SI-7	201.0	106.0	Unknown	Unknown	
SI-8	352.0	131.0	Unknown	Unknown	
SI-9	298.0	100.0	Unknown	Unknown	
SI-13	424.0	82.0	75-80	BYA	
SI-14	408.0	80.0	73-78	BYA	
SI-15	301.0	78.0	71-76	BYA	
SI-16	297.0	90.0	Unknown	Unknown	

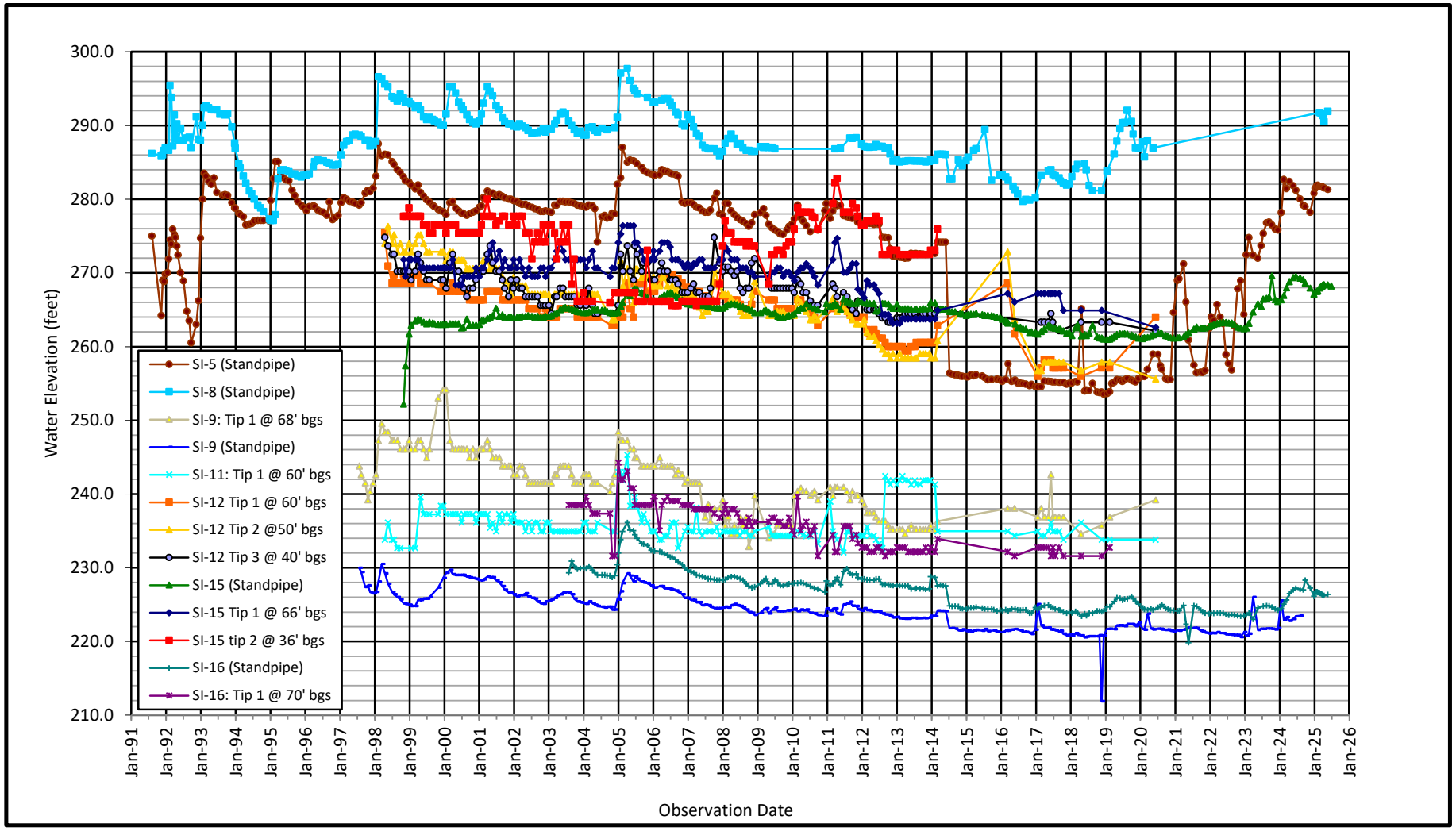
CALLE DEL BARCO LAD - Pneumatic Piezometer Information						
Piezomenter ID	**Tip No.**	**Reference Elev. (ft)**	**Tip depth (ft)**	**Tip Elev. (ft)**	**Installed By**	**Notes**
SI-9	1	298	68	230	BYA	functioning as of 2020
	2[a]		38	260	BYA	0 PSI as of 2020
SI-10	1	202	60	142	BYA	functioning as of 2020
	2*		50	152	BYA	blocked air line
	3[a]		40	162	BYA	0 PSI as of 2020
	4[a]		20	182	BYA	0 PSI a sof 2020
SI-11	1	291.5	60	231.5	BYA	functioning as of 2020
	2		50	241.5	BYA	functioning as of 2020
	3*		40	251.5	BYA	air line leak
	4*		20	271.5	BYA	blocked air line
SI-12	1	301	60	241	BYA	functioning as of 2020
	2		50	251	BYA	functioning as of 2020
	3[a]		40	261	BYA	functioning as of 2020
	4*		20	281	BYA	0 PSI as of 2020
SI-13	1[a]	424	70	354	BYA	readings <0.3PSI as of 2020
	2[a]		50	374	BYA	above water level since installation
SI-14	1	408	68	340	BYA	functioning as of 2020
	2		48	360	BYA	above water level since installation
SI-15	1	301	66	235	BYA	functioning as of 2020
	2*		36	265	BYA	non functioning
SI-16	1	297	70	227	BYA	functioning as of 2020
	2		40	257	BYA	functioning as of 2020

* - Piezometer not functioning
[a] - functionality not certain



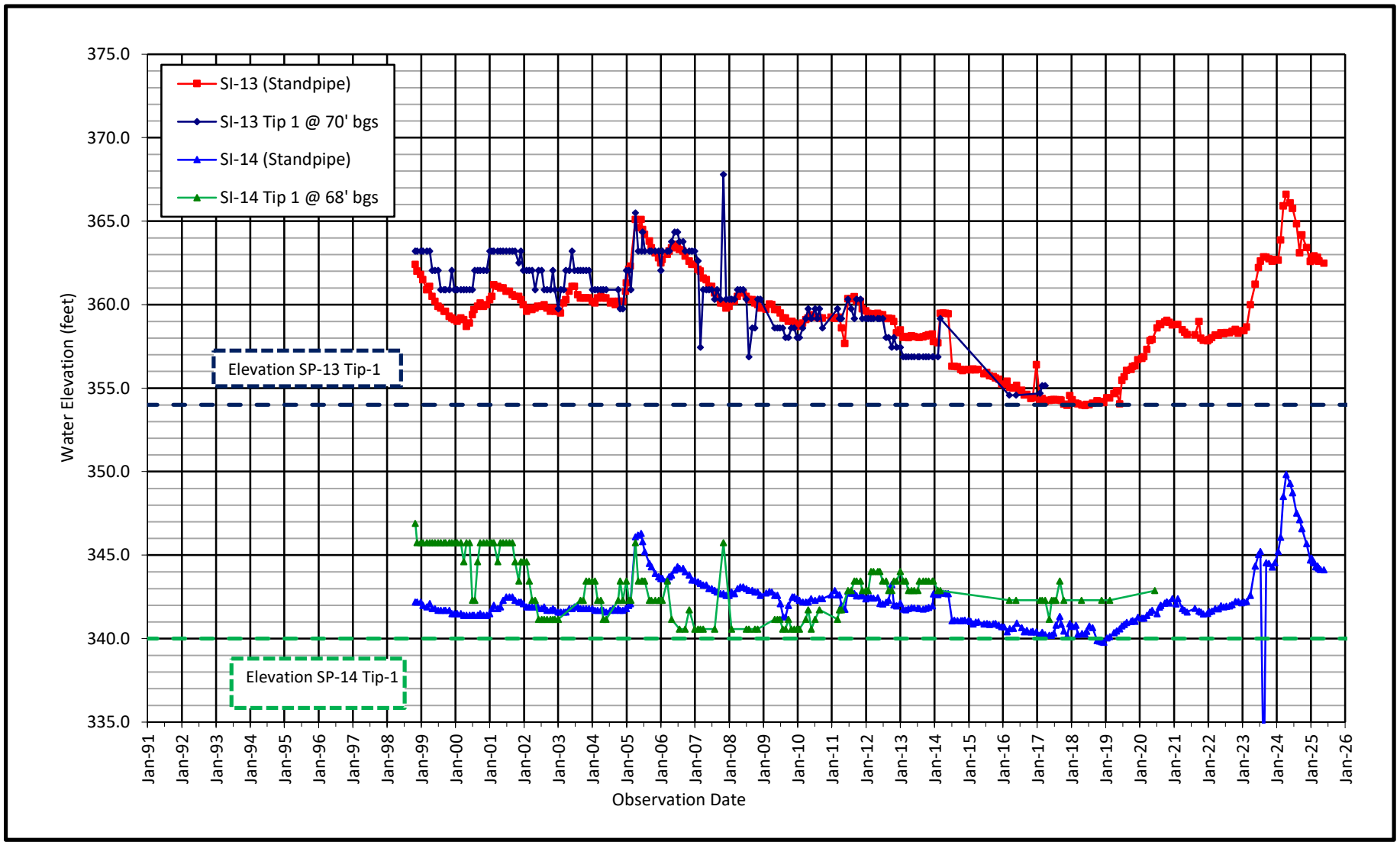
GROUNDWATER HYDROGRAPH
Rambla Vista
Calle del Barco Landslide Assessment District
Malibu, California

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GROUNDWATER HYDROGRAPH
Calle del Barco
Calle del Barco Landslide Assessment District
Malibu, California

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GROUNDWATER HYDROGRAPH
Rambla Pacifico
Calle del Barco Landslide Assessment District
Malibu, California

APPENDIX B - SLOPE INCLINOMETERS

Slope Inclinometer Interpretation Summary																	
	SI-1*	SI-1A	SI-2**	SI-3	SI-4	SI-5	SI-6	SI-7	SI-8	SI-9	SI-10	SI-11	SI-12	SI-13	SI-14	SI-15	SI-16
Installation Details																	
Surface Elev. (ft) 4/00	295.0	297.0	298.0	207.0	206.0	302.0	295.0	200.0	335.0	298.0	202.0	291.5	301.0	405.0	398.0	304.0	295.0
Original DEPTH (ft.)	64.0	NI	NI	NI	76.0	100.0	NI	100.0	130.0	100.0	60.0	60.0	60.0	80.0	78.0	76.0	88.0
Current DEPTH (ft.)	64.0	NI	NI	NI	78.0	96.0	NI	102.0	130.0	96.0	62.0	57.0	56.0	78.0	76.0	72.0	86.0
STATUS	D	D	D	D	F	F	D	F	F	F	F	F	F	F	F	F	F
READING INTERVAL	N/A	N/A	N/A	N/A	Semi	Semi	N/A	Semi	Semi	Qrtly	Semi	Semi	Semi	Semi	Semi	Semi	Qrtly
DATE OF INSTALLATION	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	3/13/98	3/12/98	3/12/98	9/1998	9/1998	9/1998	8/8/03
DATE FIRST BASE READING	NI	NI	NI	NI	NI	NI	NI	NI	NI	12/22/97	3/16/98	3/13/98	3/16/98	10/12/98	10/12/98	10/23/98	8/13/03
DEPTH of MOVEMENT (ft)***	NI	NI	NI	NI	17-22	0-10, 36-38	15.0	40.0	15-17	53, 44	35-38	0-55	54	0-30	8.0	0-25, 77	46, 87
A+ Axis orientation	NI	NI	NI	NI	0	38.0	NI	28.0	22.0	212.0	244.0	258.0	238.0	210.0	224.0	190.0	210 est.
Interpretation Movement (inches)																	
2024-2025	NR	NR	NR	NR	--	0.05		--	NR	--	--	--	--	--	--	--	--
2023-2024	NR	NR	NR	NR	--	0.19	NR	--	NR	0.1	--	--	0.14	--	--	--	0.1
2022-2023	NR	NR	NR	NR	--	--	NR	--	NR	--	--	--	--	--	--	--	--
2021-2022	NR	NR	NR	NR	--	--	NR	--	NR	--	--	--	--	--	--	--	--
2020-2021	NR	NR	NR	NR	--	--	NR	--	NR	--	--	--	--	--	--	--	--
2019-2020	NR	NR	NR	NR	--	--	NR	--	0.1	0.2	--	--	--	--	--	--	--
2018-2019	NR	NR	NR	NR	0.1	--	NR	--	--	--	--	--	--	--	--	--	--
2017-2018	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	--
2016-2017	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	<0.1
2015-2016	NR	NR	NR	NR	--	<0.05	NR	--	--	0.2	--	--	--	--	--	--	--
2014-2015	NR	NR	NR	NR	--	0.1	NR	--	--	--	--	--	--	--	--	--	<0.1
2013-2014	NR	NR	NR	NR	--	0.1	NR	--	--	--	--	--	--	--	--	--	<0.1
2012-2013	NR	NR	NR	NR	--	0.1	NR	--	--	0.15	0.1	--	0.1	--	--	--	0.2
2011-2012	NR	NR	NR	NR	--	--	NR	<0.05	0.1	0.15	--	0.2	--	--	--	0.1	0.35
2010-2011	NR	NR	NR	NR	--	--	NR	<0.05	0.05	<0.05	--	--	--	--	--	--	--
2009-2010	NR	NR	NR	NR	--	--	NR	--	--	0.2	--	0.1	--	--	--	--	0.1
2008-2009	NR	NR	NR	NR	--	--	NR	NA	--	0.1	--	--	--	--	--	--	--
2007-2008	NR	NR	NR	NR	--	--	NR	--	--	0.1	--	--	--	--	--	--	--
2006-2007	NR	NR	NR	NR	--	<0.1	NR	--	--	0.2	--	--	--	--	0.2	--	0.2
2005-2006	NR	NR	NR	NR	--	--	NR	--	--	0.1	--	--	<0.1	--	0.15	--	0.1
2004-2005	NR	NR	NR	NR	--	0.45	NR	<0.1	0.1	0.5	--	<0.1	0.11	--	--	--	0.35
2003-2004	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	NA
2002-2003	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	NI
2001-2002	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	NI
2000-2001	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	NI
1999-2000	NR	NR	NR	NR	--	--	NR	--	--	--	--	--	--	--	--	--	NI
1998-1999	NR	NR	NR	NR	--	0.16	NR	0.11	--	2.19	--	--	--	--	--	--	NI
1997-1998	NR	NR	NR	NR	0.22	0.4	NR	0.66	0.32	13	0.22	--	--	NI	NI	NI	NI
1996-1997	NR	NR	NR	NR	--	--	0.36	0.12	--	NI	NI	NI	NI	NI	NI	NI	NI
1995-1996	NR	NR	NR	NR	--	0.12	--	--	--	NI	NI	NI	NI	NI	NI	NI	NI

KEY:

D	Destroyed
F	Functioning
B	New baseline in 1999
NI	Not Installed
--	Shaded yellow to indicate inclinometer does penetrate basal rupture.
--	Shaded blue to indicate inclinometer does NOT penetrate basal rupture.
--	Shaded gray to indicate inclinometer is no longer monitored.

--	No clearly defined interpreted movement
NR	No reading
NA	Data not available

NOTES:

* Original SI-1 installed in 1978, and was destroyed. SI-65 (installed in 1979) was renamed to SI-1

** Original SI-2 installed in 1978, and was destroyed. SI-90 (installed in 1979) was renamed to SI-2

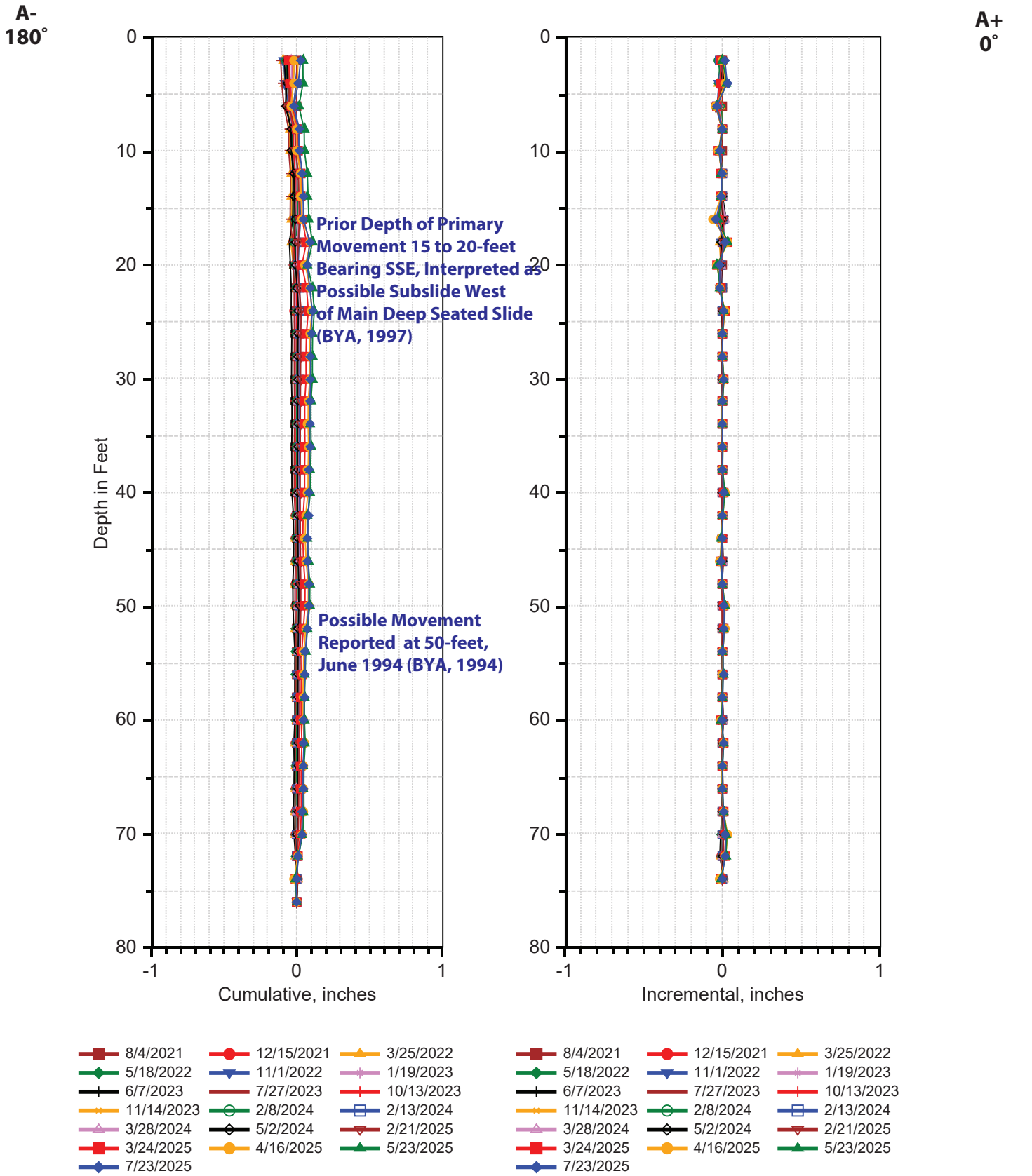
*** Referenced to current depth of SI (see note below)

**** SI-4, SI-7, and SI-10 were extended 6 feet upwards during reconstruction of the road in 1999 and interpretations are referenced to their current depth.

SUMMARY OF SLOPE INCLINOMETERS

Calle del Barco Landslide Assessement District

Malibu, California



Plot of Slope Inclinometer

SI-4

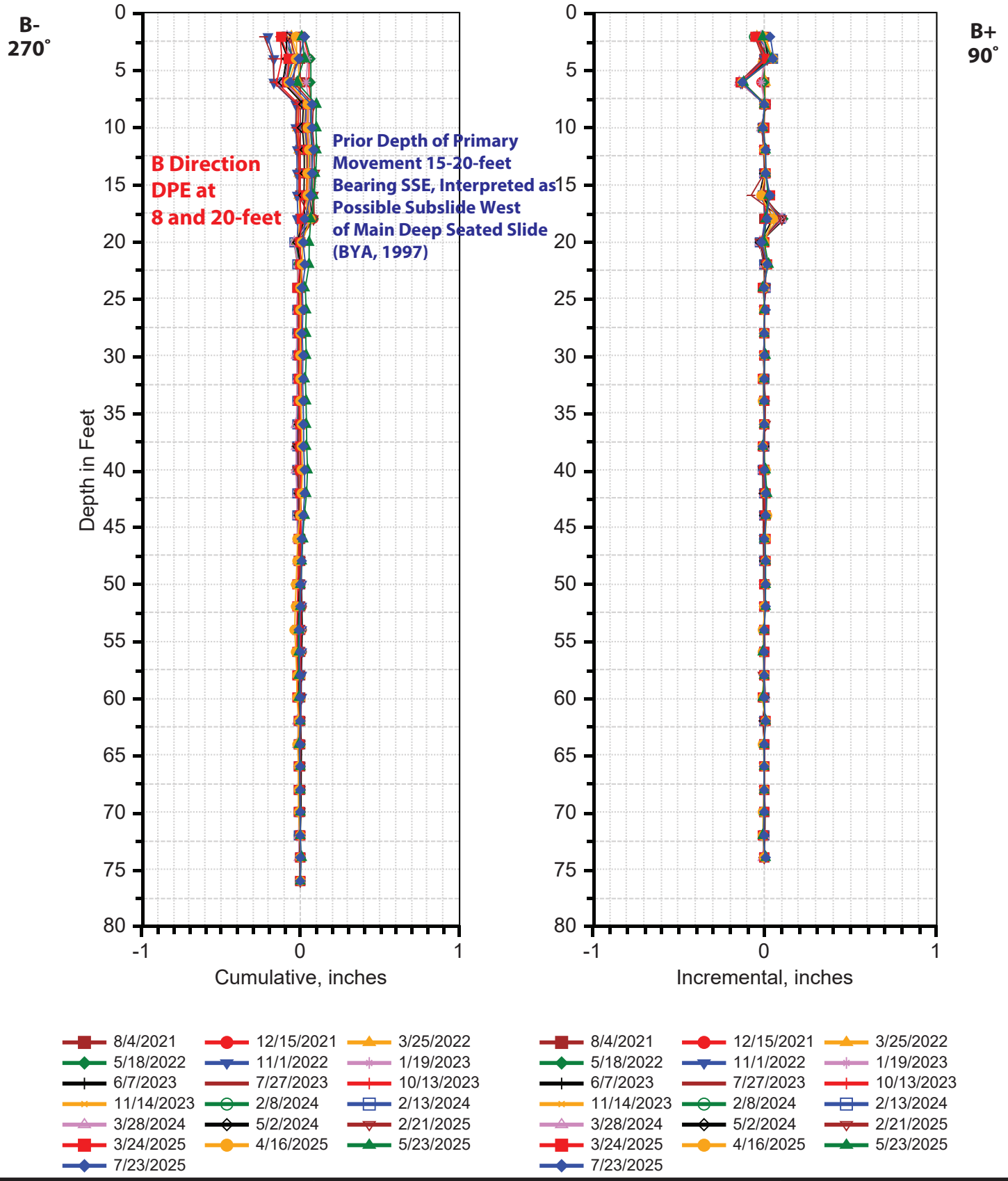
Plot Type: Cumulative and Incremental			Plot Direction: A-Direction
Depth of Survey (ft): 78	Baseline Date: 8/4/21		Corrections: None
Install Date: <9/1992	Installed Depth (ft): 76	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 8/18/2025



Plot of Slope Inclinometer

SI-4

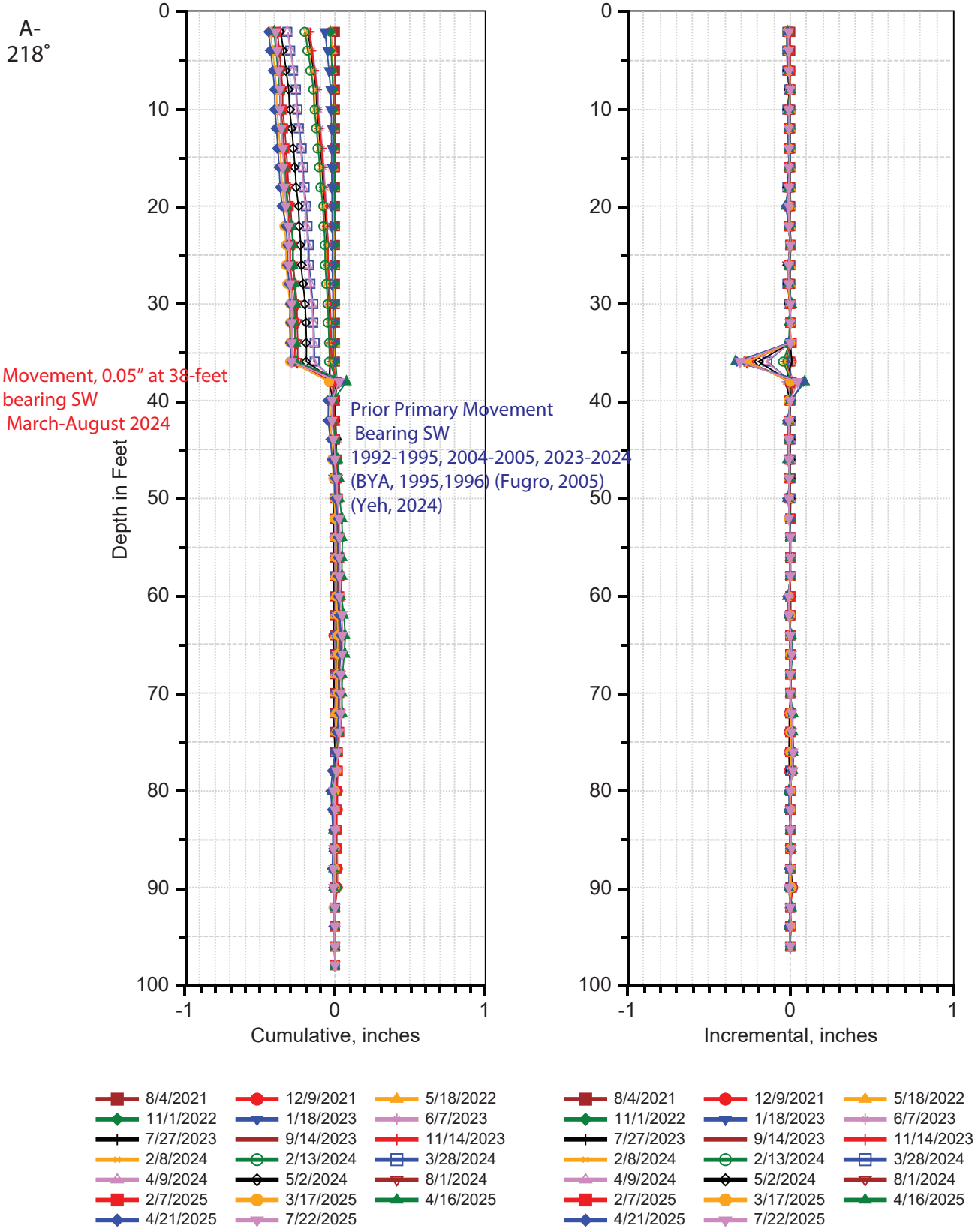
Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
Depth of Survey (ft): 78		Baseline Date: 8/4/21	Corrections: None
Install Date: <9/1992	Installed Depth (ft): 76	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
Geotechnical • Geological • Construction Services

PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 10/1/2025



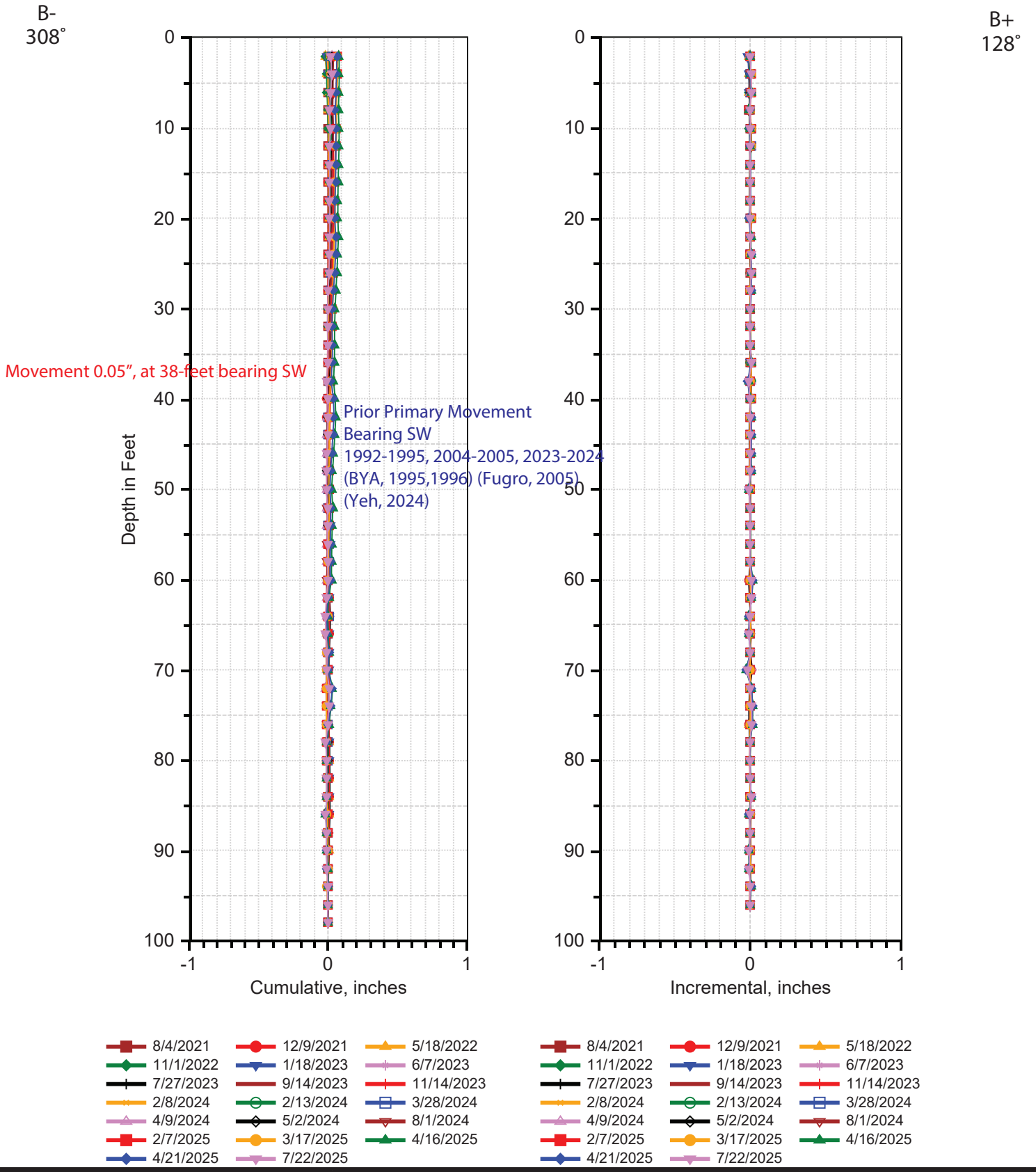
Plot of Slope Inclinometer SI-5	Plot Type: Cumulative and Incremental		Plot Direction: A-Direction
	Depth of Survey (ft): 96	Baseline Date: 8/4/21	Corrections: None
	Install Date: <7/1992 / Installed Depth (ft): 100	Interpreted Movement Since Baseline (in): 0.30	Interpreted Movement Monitoring Year (in): 0.05

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

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Plot of Slope Inclinometer

SI-5

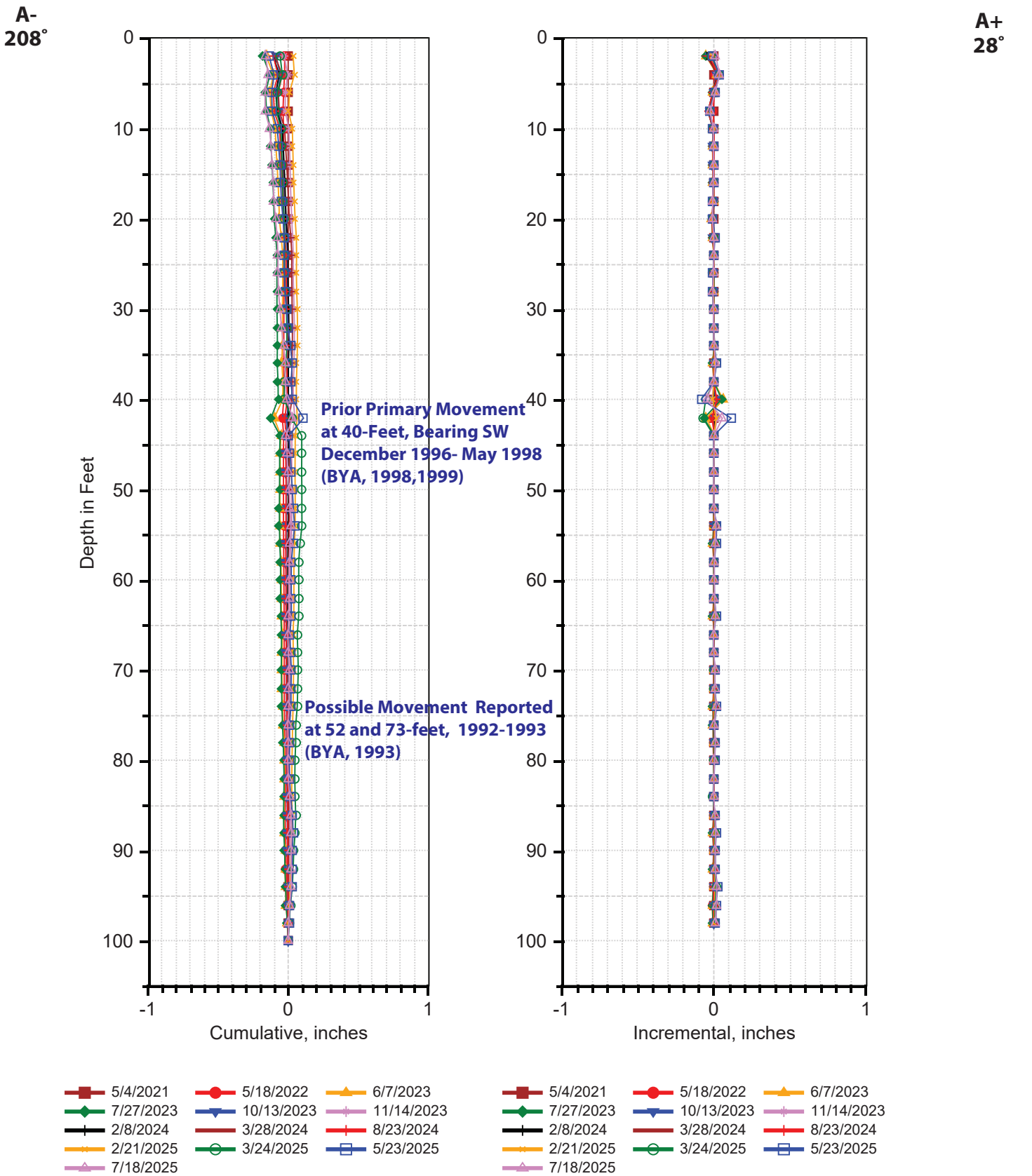
Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
Depth of Survey (ft): 96		Baseline Date: 8/4/21	Corrections: None
Install Date: <7/1992	Installed Depth (ft): 100	Interpreted Movement Since Baseline (in): 0.3	Interpreted Movement Monitoring Year (in): 0.05

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

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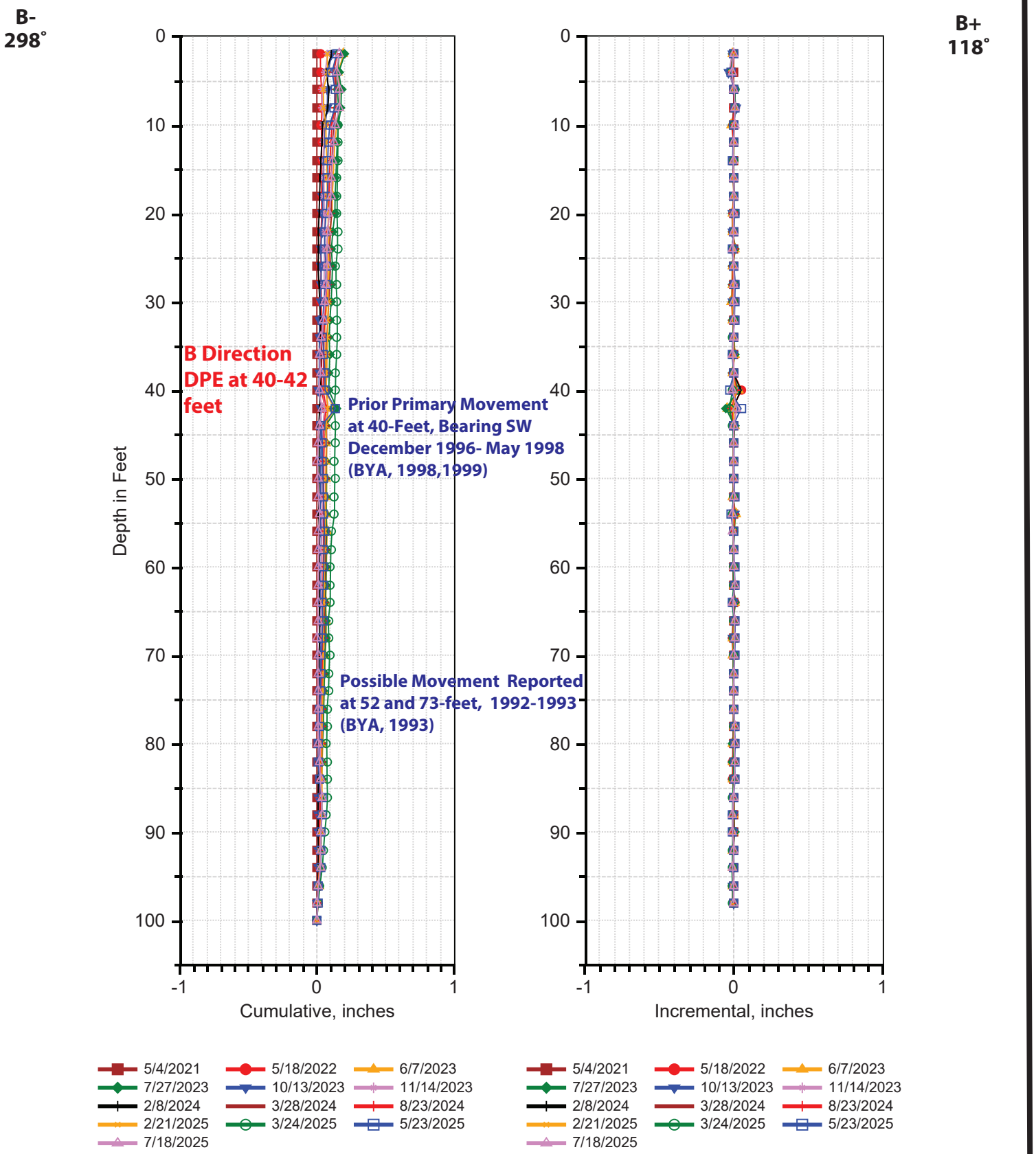
Plot of Slope Inclinometer SI-7	Plot Type: Cumulative and Incremental		Plot Direction: A-Direction
	Depth of Survey (ft): 102	Baseline Date: 5/4/21	Corrections: Rotation
	Install Date: <7/1992	Installed Depth (ft): 100	Interpreted Movement Since Baseline (in): 0
			Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 8/18/2025



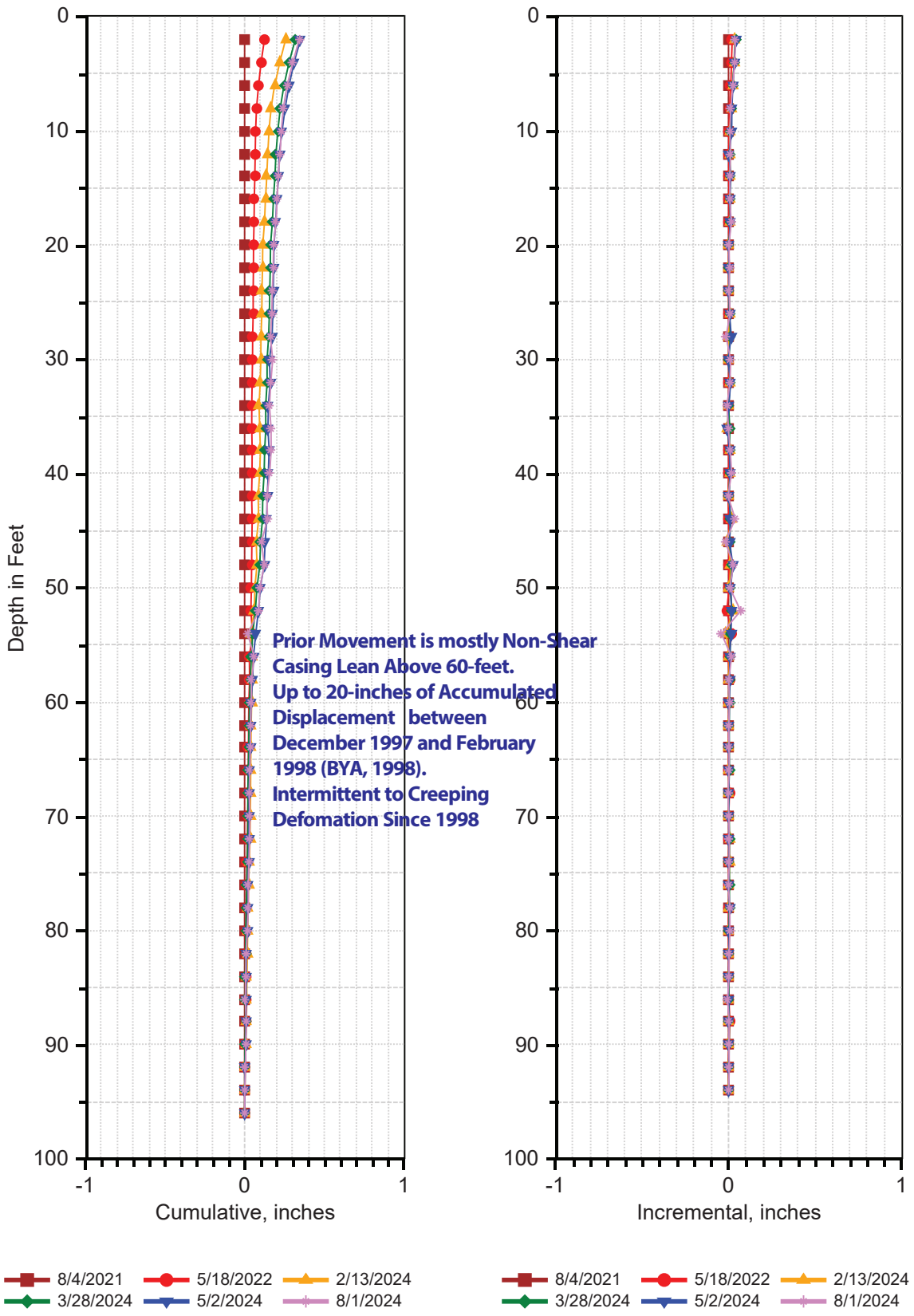
Plot of Slope Inclinometer	Plot Type: Cumulative and Incremental		Plot Direction: B-Direction
SI-7	Depth of Survey (ft): 102	Baseline Date: 5 /4/21	Corrections: None
	Install Date: <7/1992	Installed Depth (ft): 100	Interpreted Movement Since Baseline (in): 0
			Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

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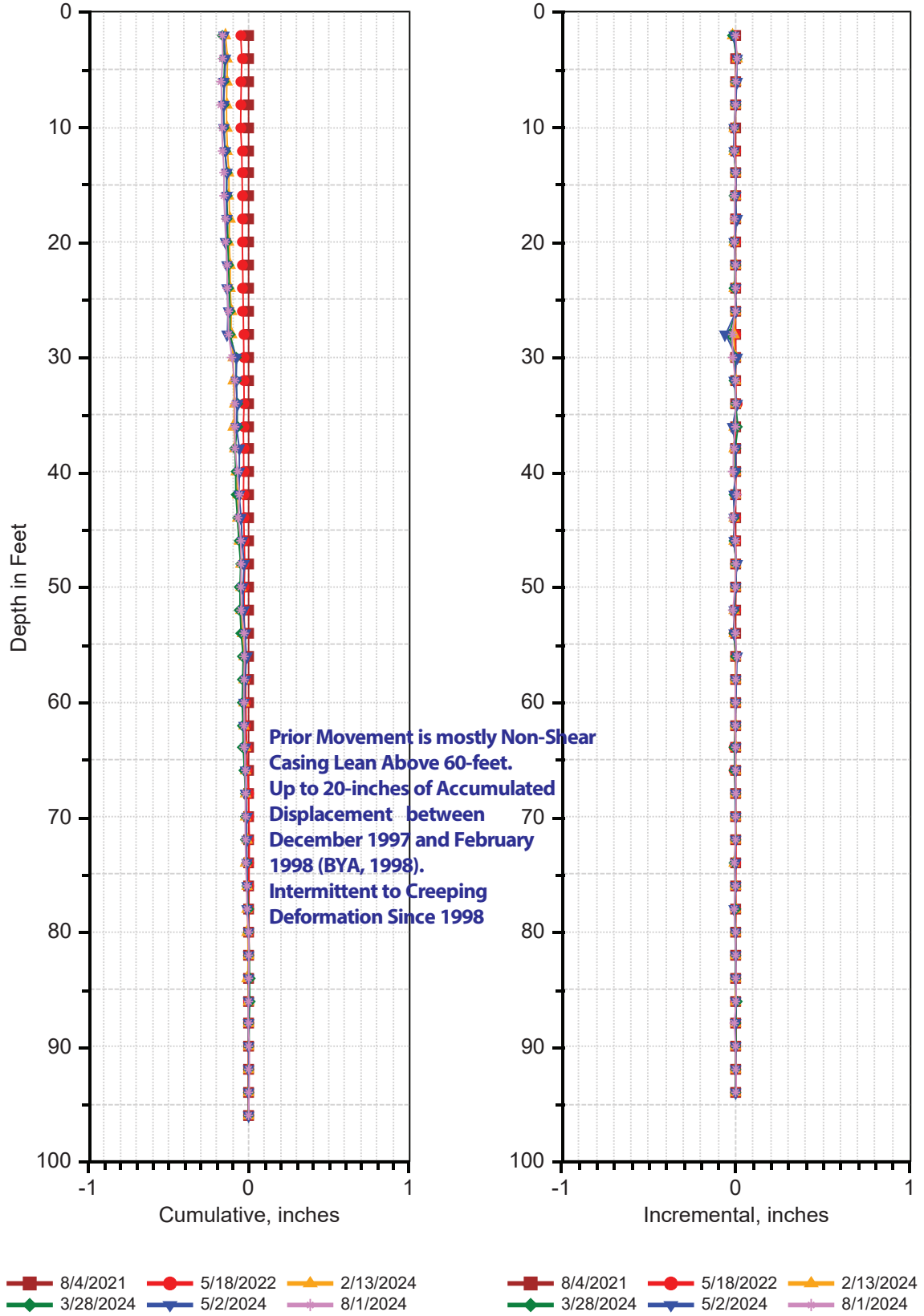
Plot of Slope Inclinometer	Plot Type: Cumulative and Incremental		Plot Direction: A-Direction
SI-9	Depth of Survey (ft): 96	Baseline Date: 8/4/21	Corrections: Rotation
	Install Date: <12/1997	Installed Depth (ft): 100	Interpreted Movement Since Baseline (in): 0.3
			Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 10/10/2025



Plot of Slope Inclinometer

SI-9

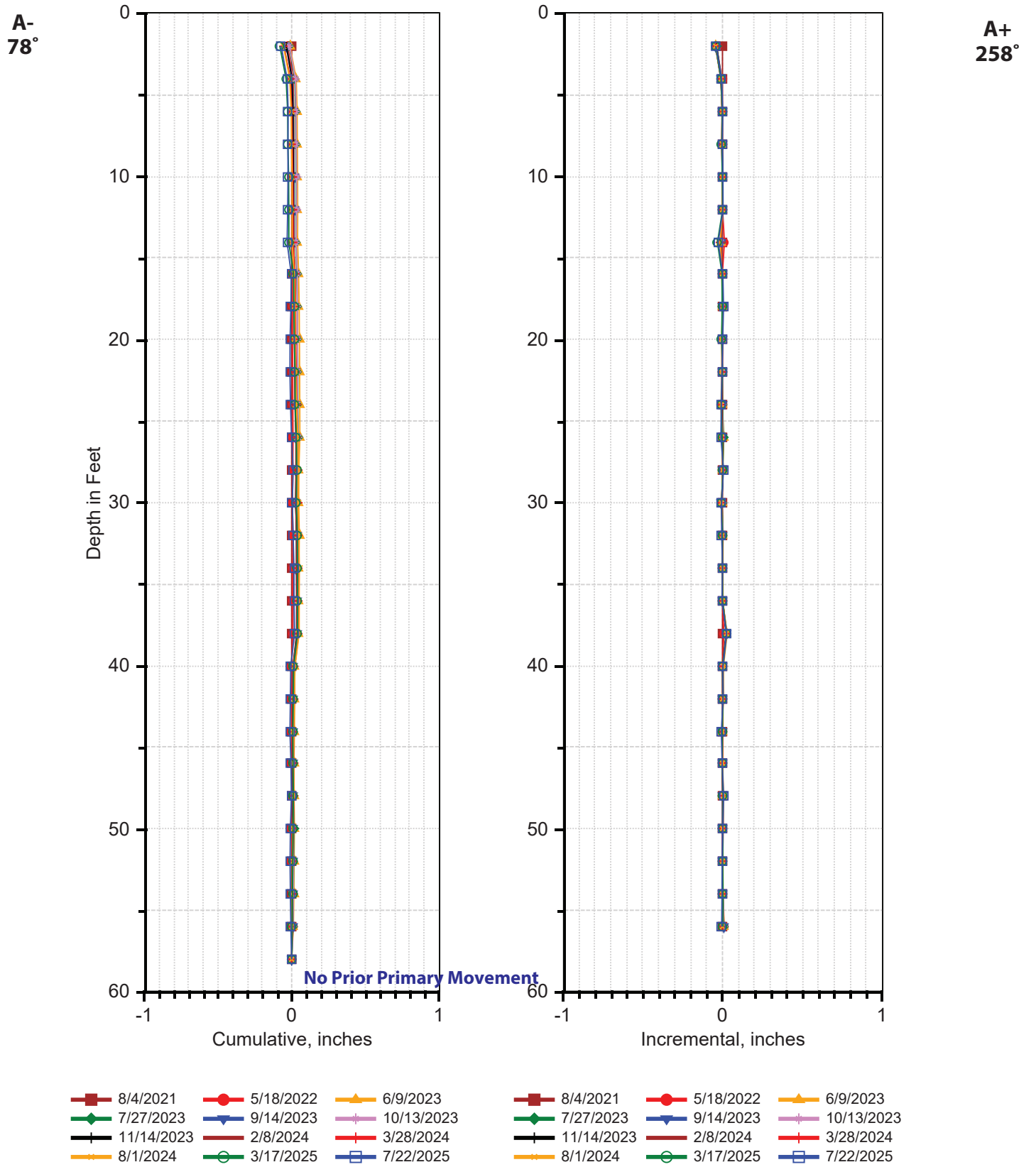
Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
Depth of Survey (ft): 96		Baseline Date: 8/4/21	Corrections: Rotation
Install Date: <12/1997	Installed Depth (ft): 100	Interpreted Movement Since Baseline (in): 0.3	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
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PROJECT: Calle del Barco LAD
Malibu, CA

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Plot of Slope Inclinometer

SI-11

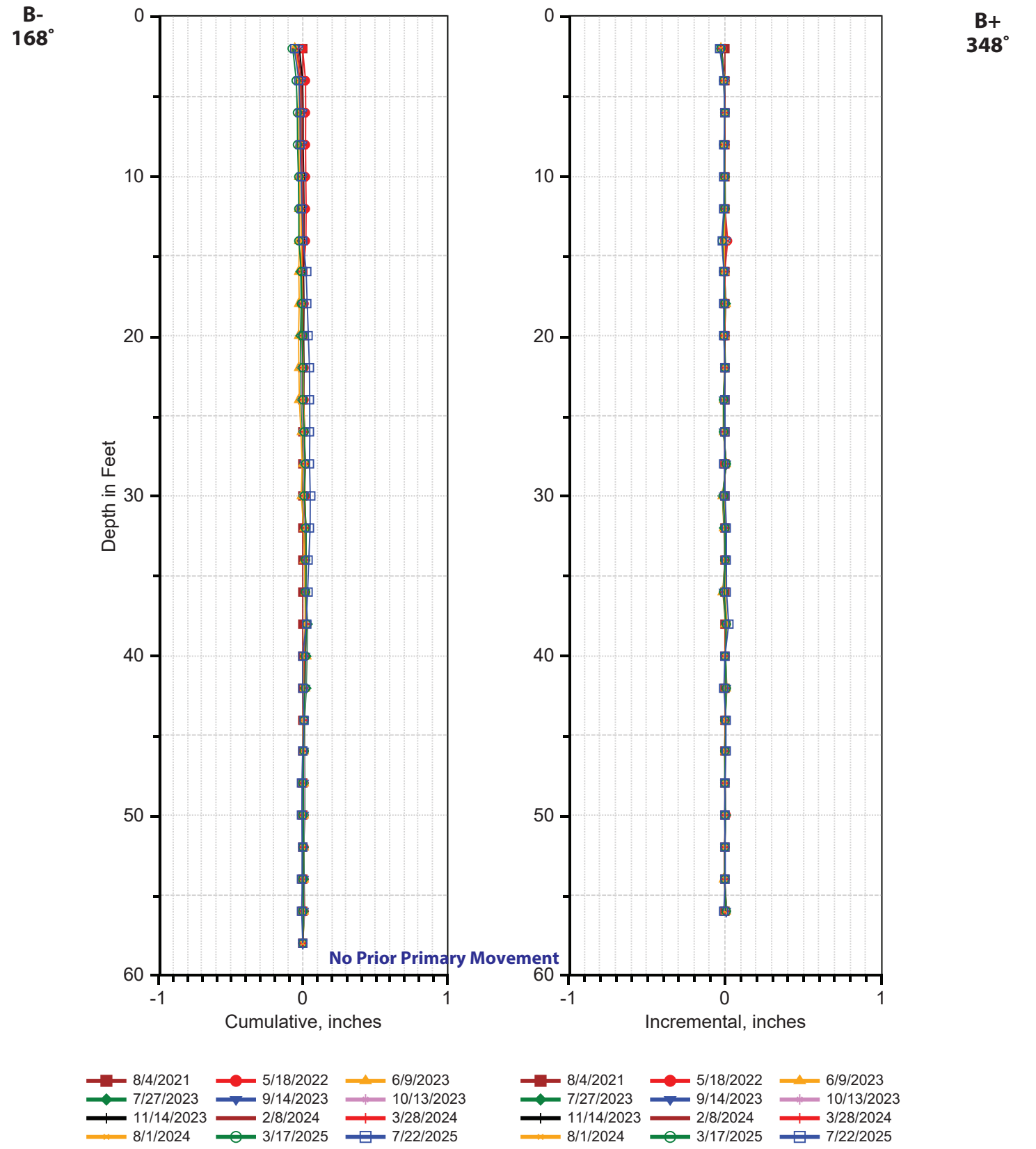
Plot Type: Cumulative and Incremental			Plot Direction: A-Direction
Depth of Survey (ft): 57		Baseline Date: 8/4/21	Corrections: None
Install Date: 3/1998	Installed Depth (ft): 60	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
Geotechnical • Geological • Construction Services

PROJECT: Calle del Barco LAD
Malibu, CA

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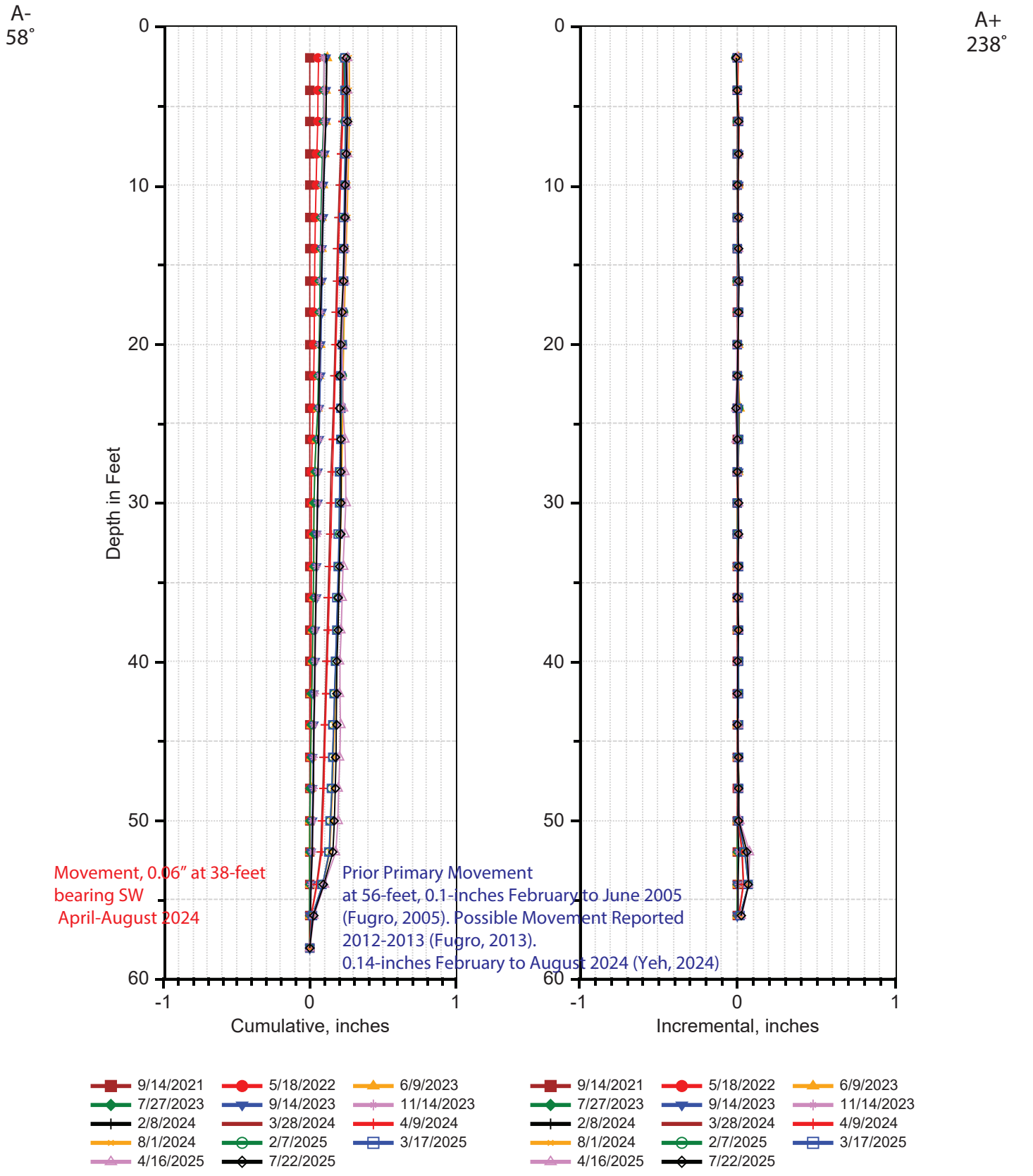
Plot of Slope Inclinometer	Plot Type: Cumulative and Incremental		Plot Direction: B-Direction
SI-11	Depth of Survey (ft): 57	Baseline Date: 8/4/21	Corrections: None
	Install Date: 3/1998	Installed Depth (ft): 60	Interpreted Movement Since Baseline (in): 0
			Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
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PROJECT: Calle del Barco LAD
Malibu, CA

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Plot of Slope Inclinometer

SI-12

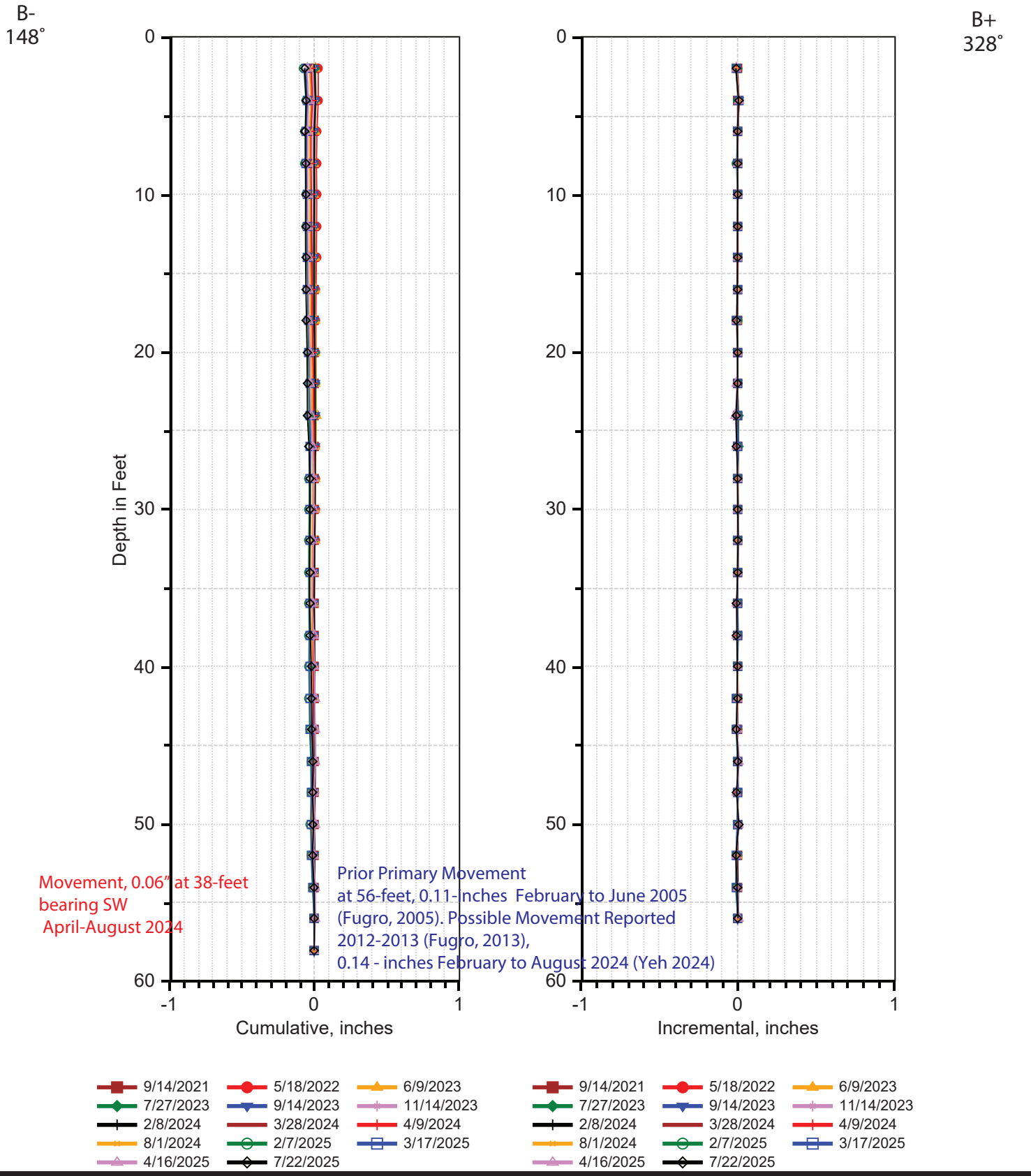
Plot Type: Cumulative and Incremental			Plot Direction: A-Direction
Depth of Survey (ft): 56		Baseline Date: 9/14/2021	Corrections: None
Install Date: 3/1998	Installed Depth (ft): 60	Interpreted Movement Since Baseline (in): 0.14	Interpreted Movement Monitoring Year (in): >0.06

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PROJECT: Calle del Barco LAD
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Plot of Slope Inclinometer

SI-12

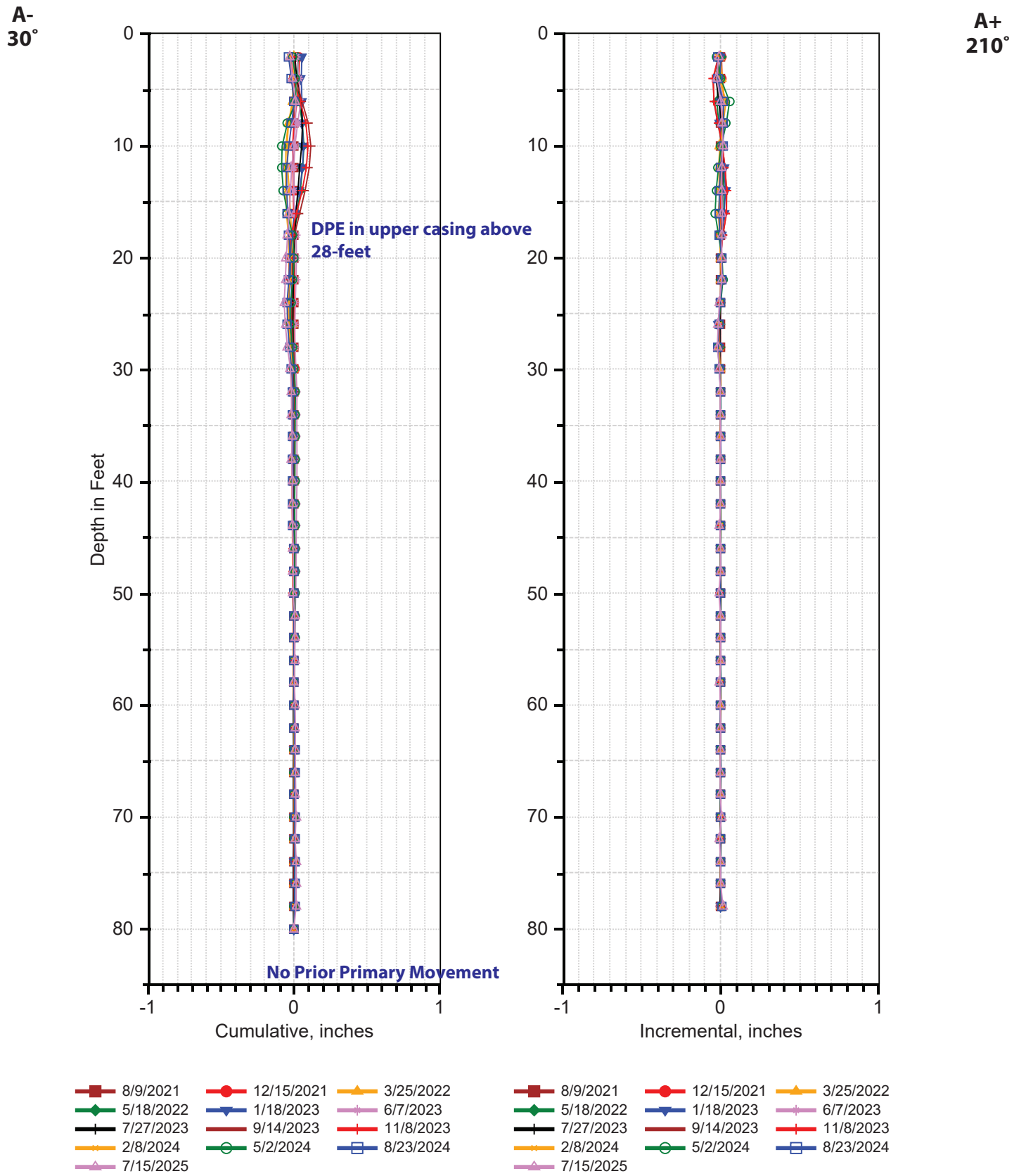
Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
Depth of Survey (ft): 56		Baseline Date: 9/14 /21	Corrections: None
Install Date: 3/1998	Installed Depth (ft): 60	Interpreted Movement Since Baseline (in): 0 .14	Interpreted Movement Monitoring Year (in): >0.06

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Malibu, CA

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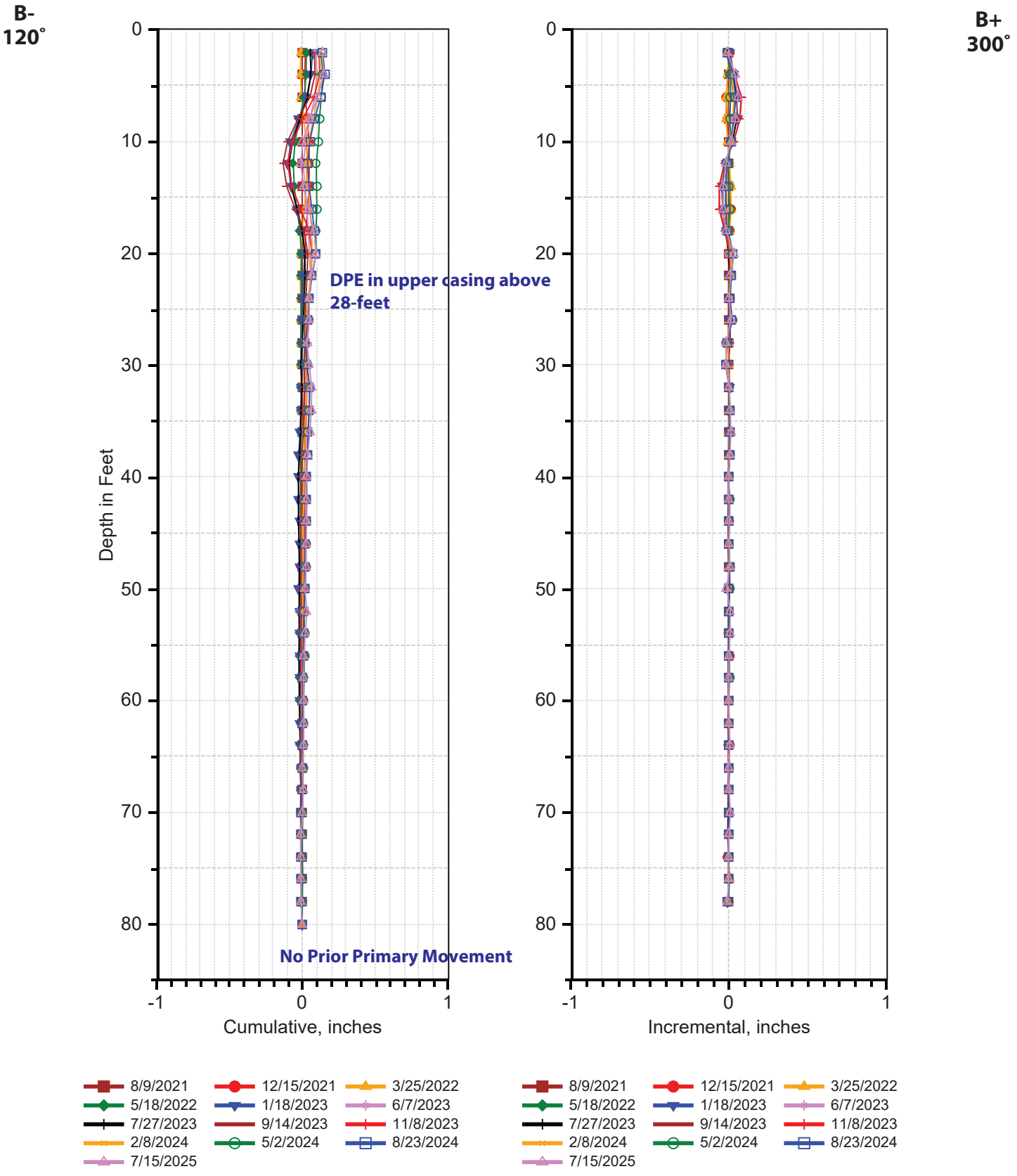
Plot of Slope Inclinometer	Plot Type: Cumulative and Incremental		Plot Direction: A-Direction
SI-13	Depth of Survey (ft): 78	Baseline Date: 8/9/21	Corrections: None
	Install Date: 9/1998	Installed Depth (ft): 80	Interpreted Movement Since Baseline (in): 0
			Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
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PROJECT: Calle del Barco LAD
Malibu, CA

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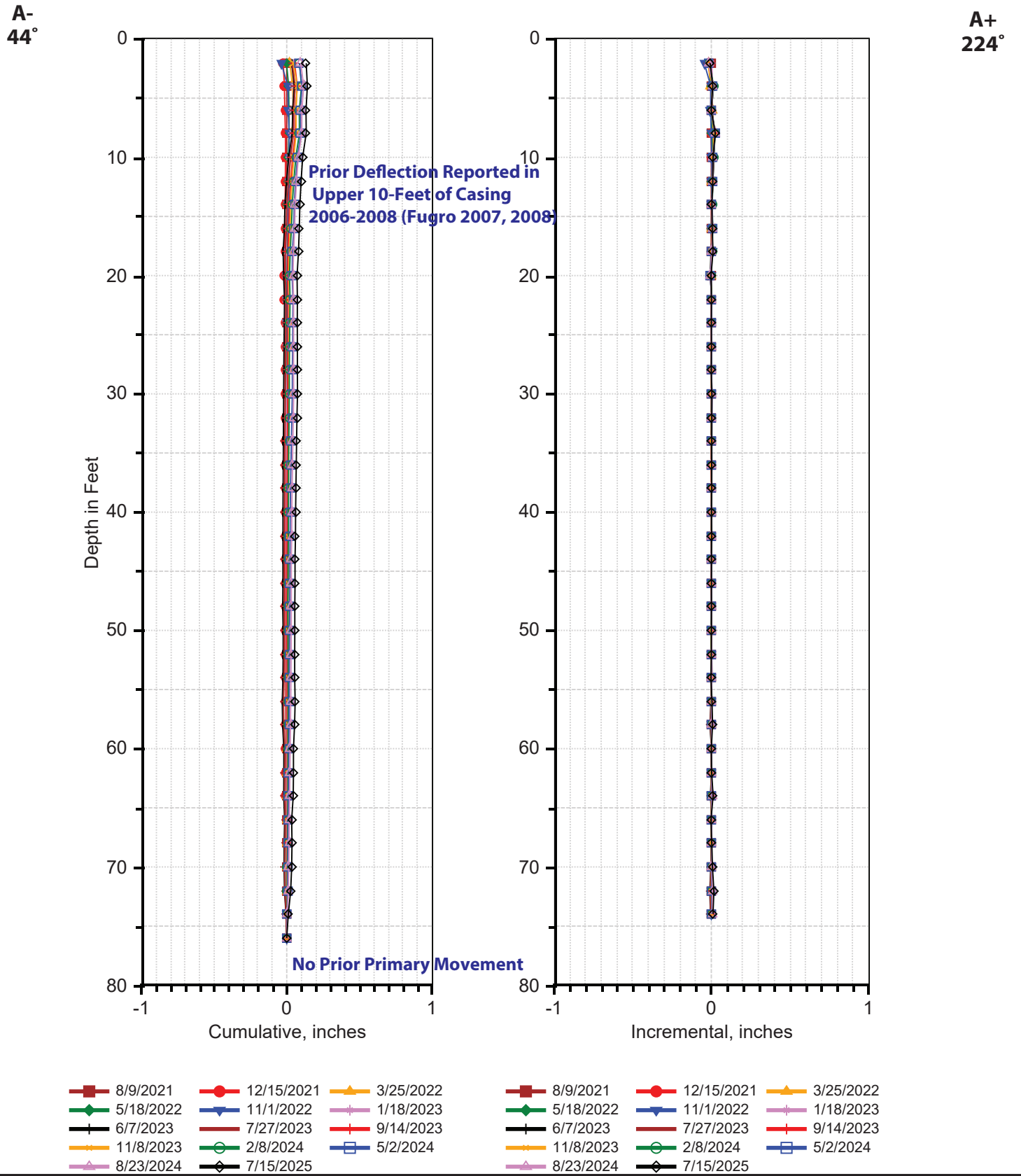
REVISION DATE: 8/18/2025



Plot of Slope Inclinometer	Plot Type: Cumulative and Incremental		Plot Direction: B-Direction
SI-13	Depth of Survey (ft): 78	Baseline Date: 8/9/21	Corrections: None
	Install Date: 9/1998 / Installed Depth (ft): 80	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
Geotechnical • Geological • Construction Services

PROJECT: Calle del Barco LAD, Malibu, CA
PROJECT NUMBER: 220-277
REVISION DATE: 8/18/2025



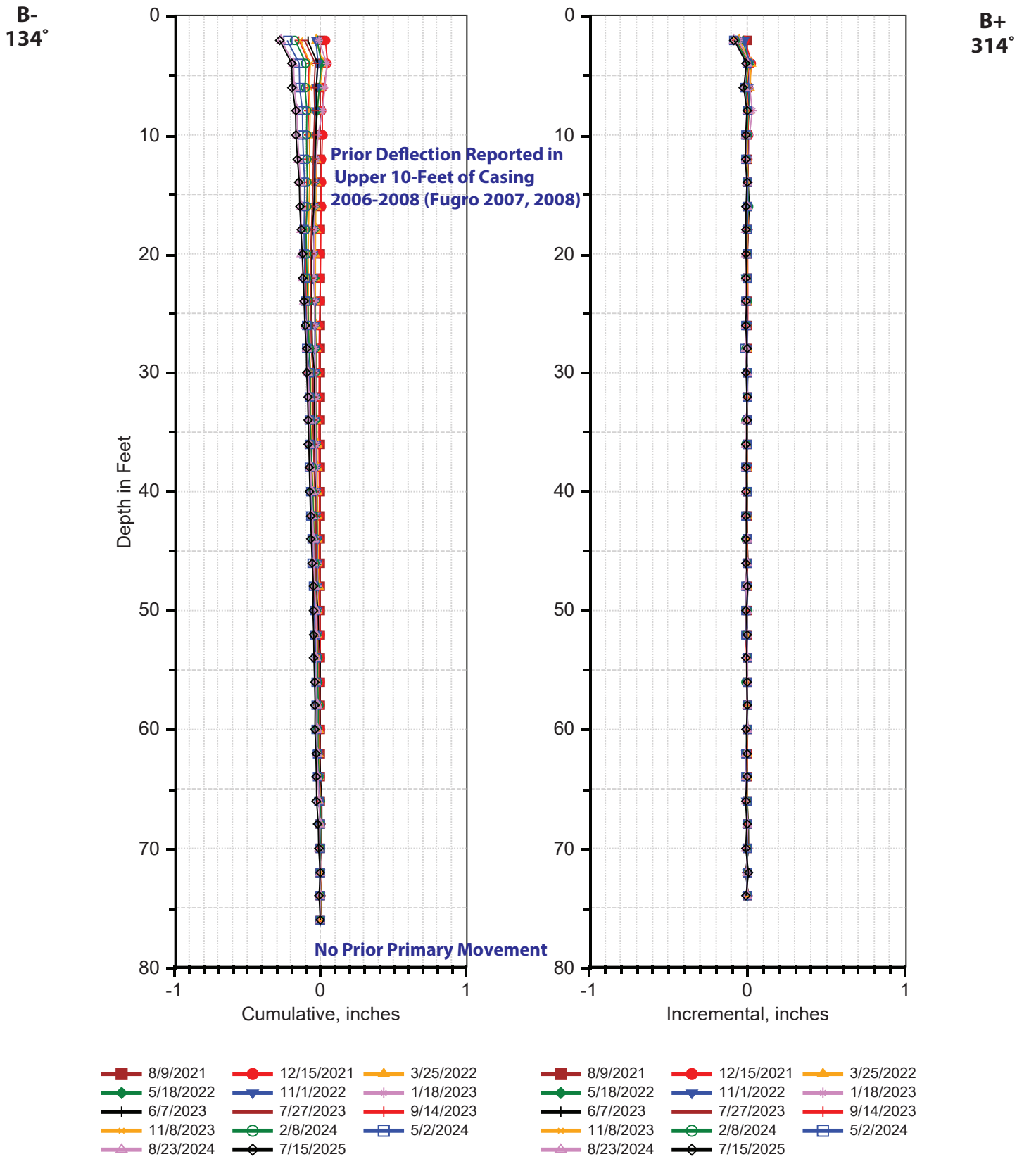
Plot of Slope Inclinometer SI-14	Plot Type: Cumulative and Incremental		Plot Direction: A-Direction
	Depth of Survey (ft): 76	Baseline Date: 8/9/21	Corrections: None
	Install Date: 9/1998 / Installed Depth (ft): 78	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
Geotechnical • Geological • Construction Services

PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 8/18/2025



Plot of Slope Inclinometer

SI-14

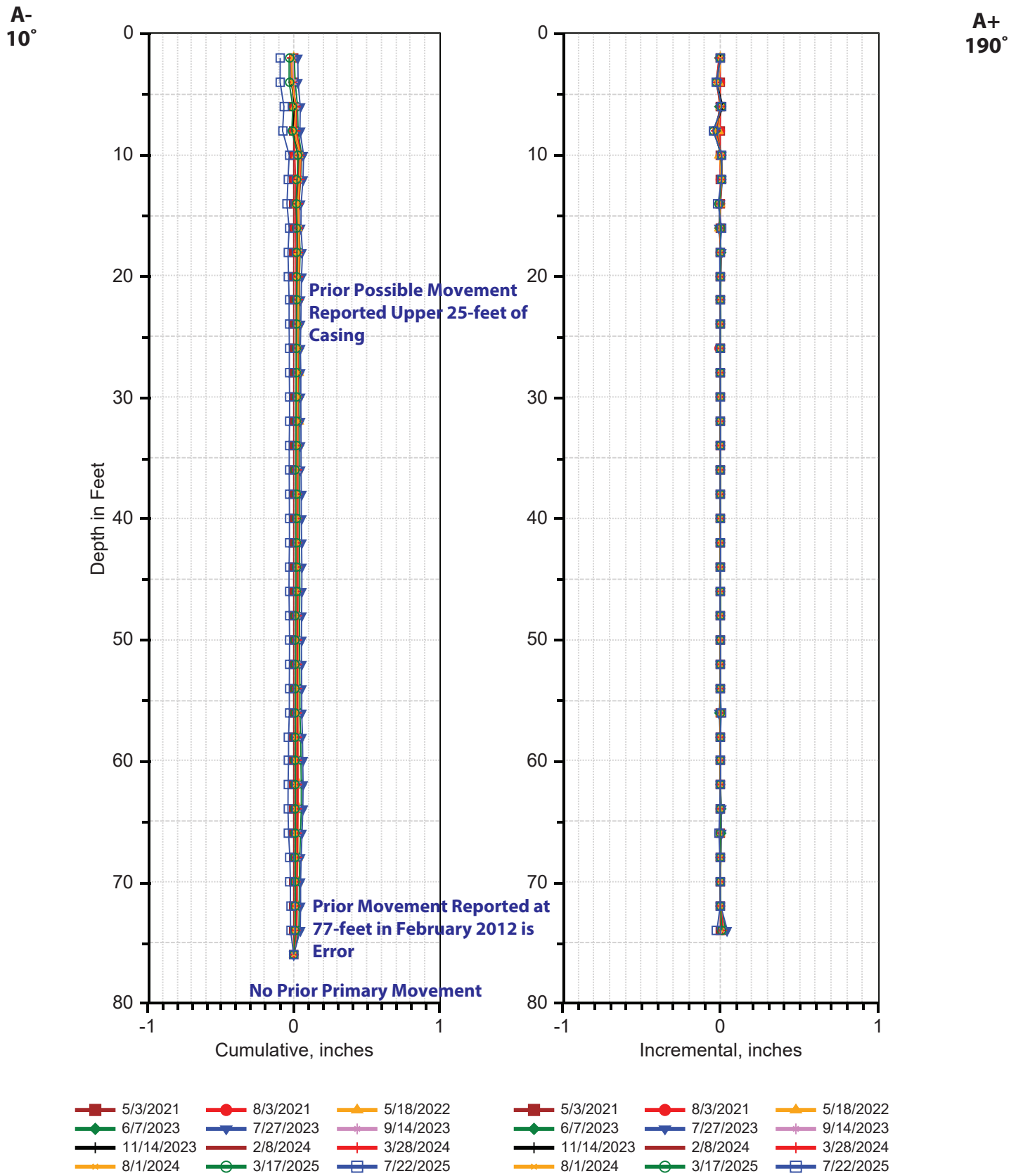
Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
Depth of Survey (ft): 76		Baseline Date: 8/9/21	Corrections: None
Install Date: 9/1998	Installed Depth (ft): 78	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

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REVISION DATE: 8/18/2025



Plot of Slope Inclinometer

SI-15

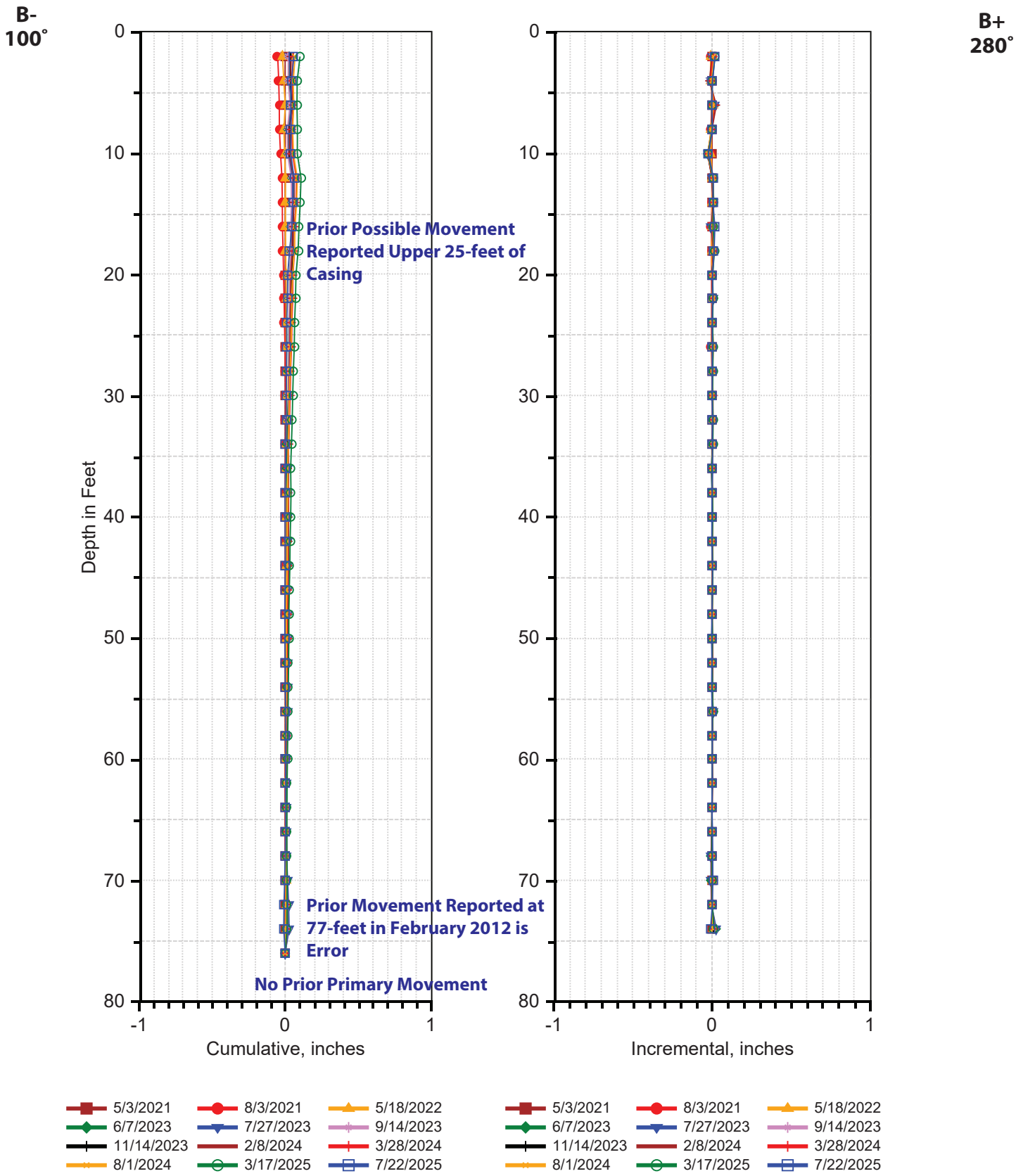
Plot Type: Cumulative and Incremental			Plot Direction: A-Direction
Depth of Survey (ft): 74		Baseline Date: 5/3/21	Corrections: None
Install Date: 9/1998	Installed Depth (ft): 80	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 8/18/2025



Plot of Slope Inclinometer

SI-15

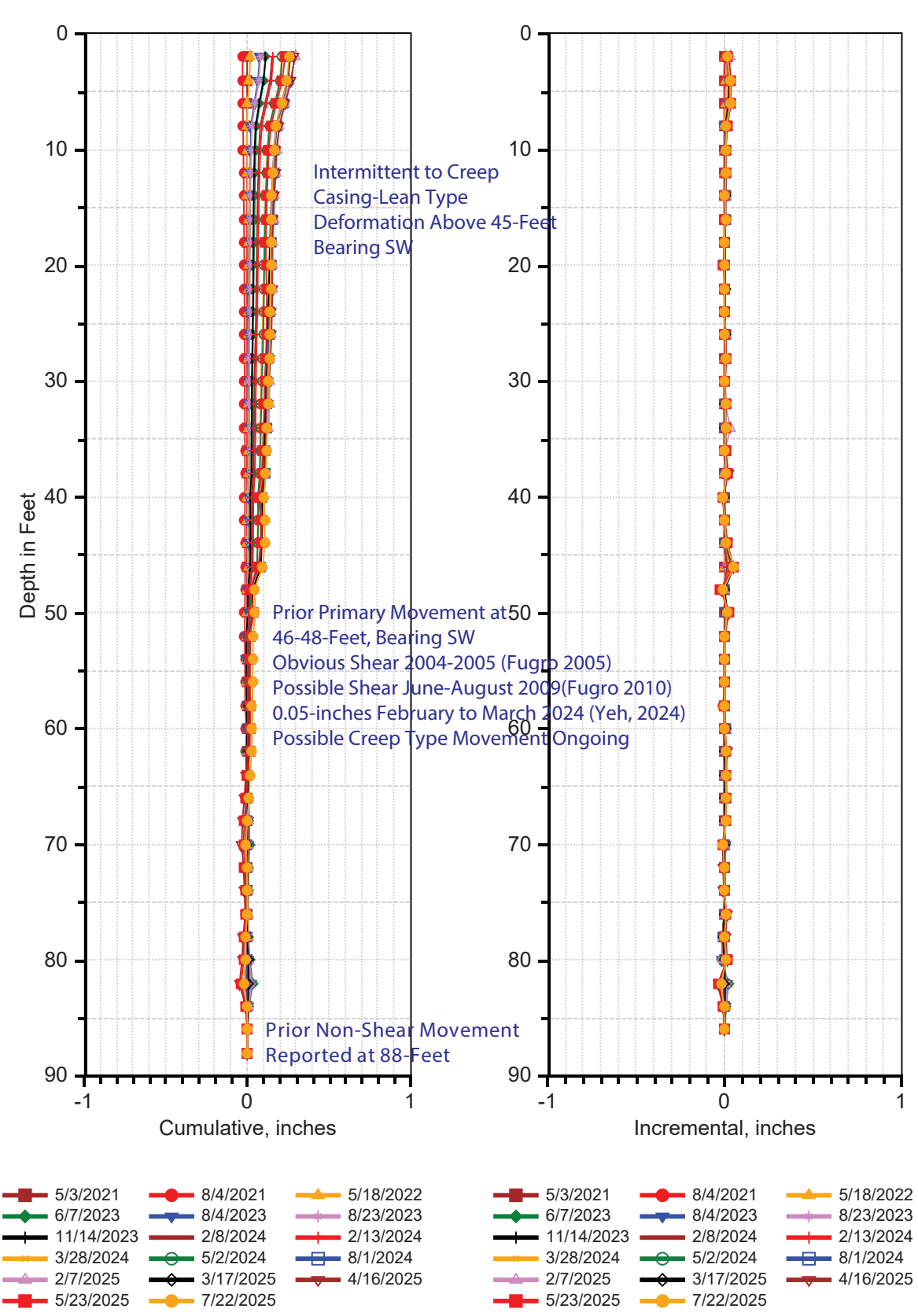
Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
Depth of Survey (ft): 74		Baseline Date: 5/3/21	Corrections: None
Install Date: 9/1998	Installed Depth (ft): 80	Interpreted Movement Since Baseline (in): 0	Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

REVISION DATE: 8/18/2025



Plot of Slope Inclinometer

SI-16

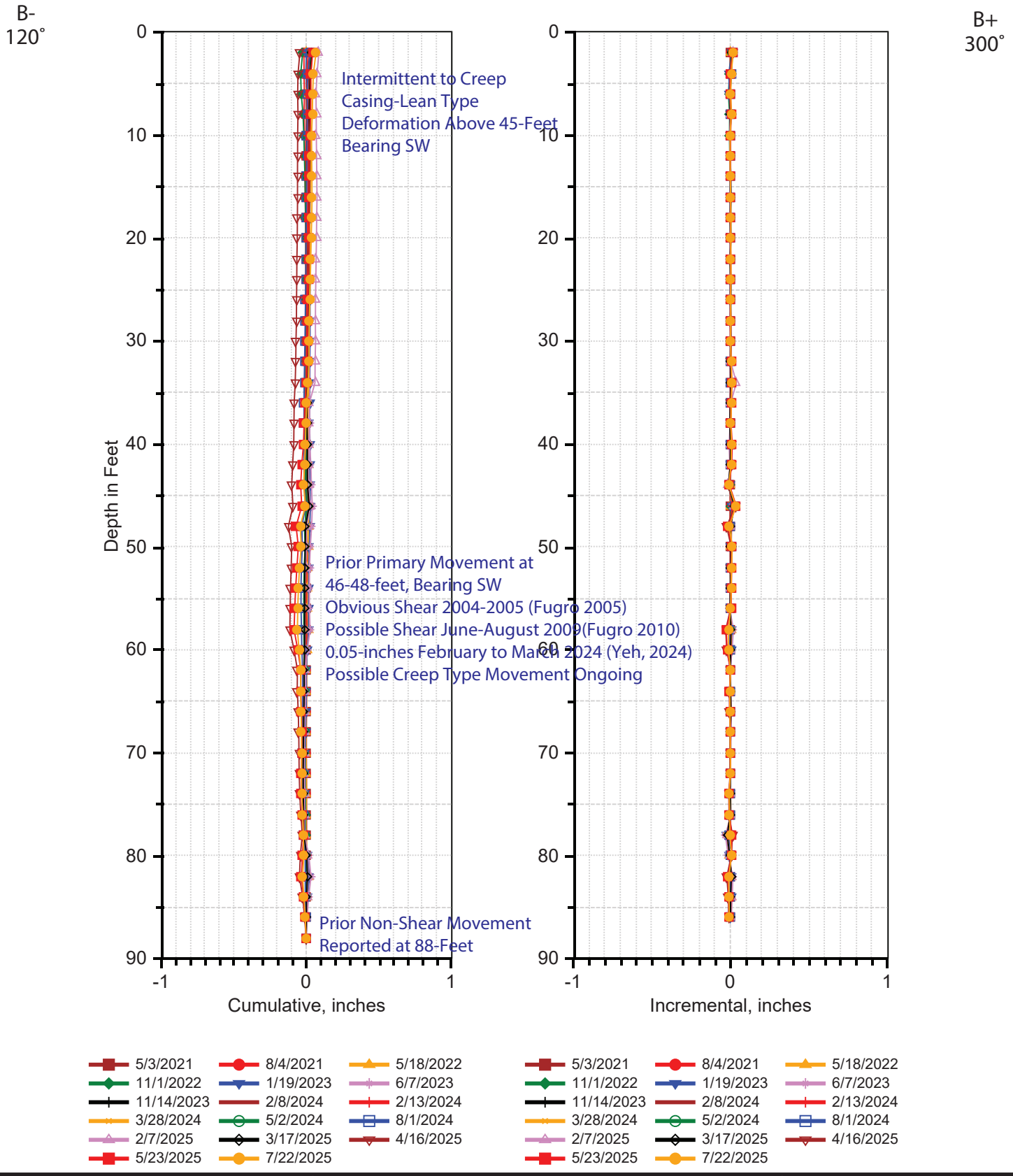
Plot Type: Cumulative and Incremental			Plot Direction: A-Direction
Depth of Survey (ft): 86		Baseline Date: 5/3/21	Corrections: None
Install Date: 8/2003	Installed Depth (ft): 88	Interpreted Movement Since Baseline (in): 0.3	Interpreted Movement Monitoring Year (in): 0

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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

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Plot of Slope Inclinometer SI-16	Plot Type: Cumulative and Incremental			Plot Direction: B-Direction
	Depth of Survey (ft): 86		Baseline Date: 5/3/21	Corrections: None
	Install Date: 8/2003	Installed Depth (ft): 88	Interpreted Movement Since Baseline (in): 0.3	Interpreted Movement Monitoring Year (in): 0

Yeh and Associates, Inc.
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PROJECT: Calle del Barco LAD
Malibu, CA

PROJECT NUMBER: 220-277

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APPENDIX C - DEWATERING

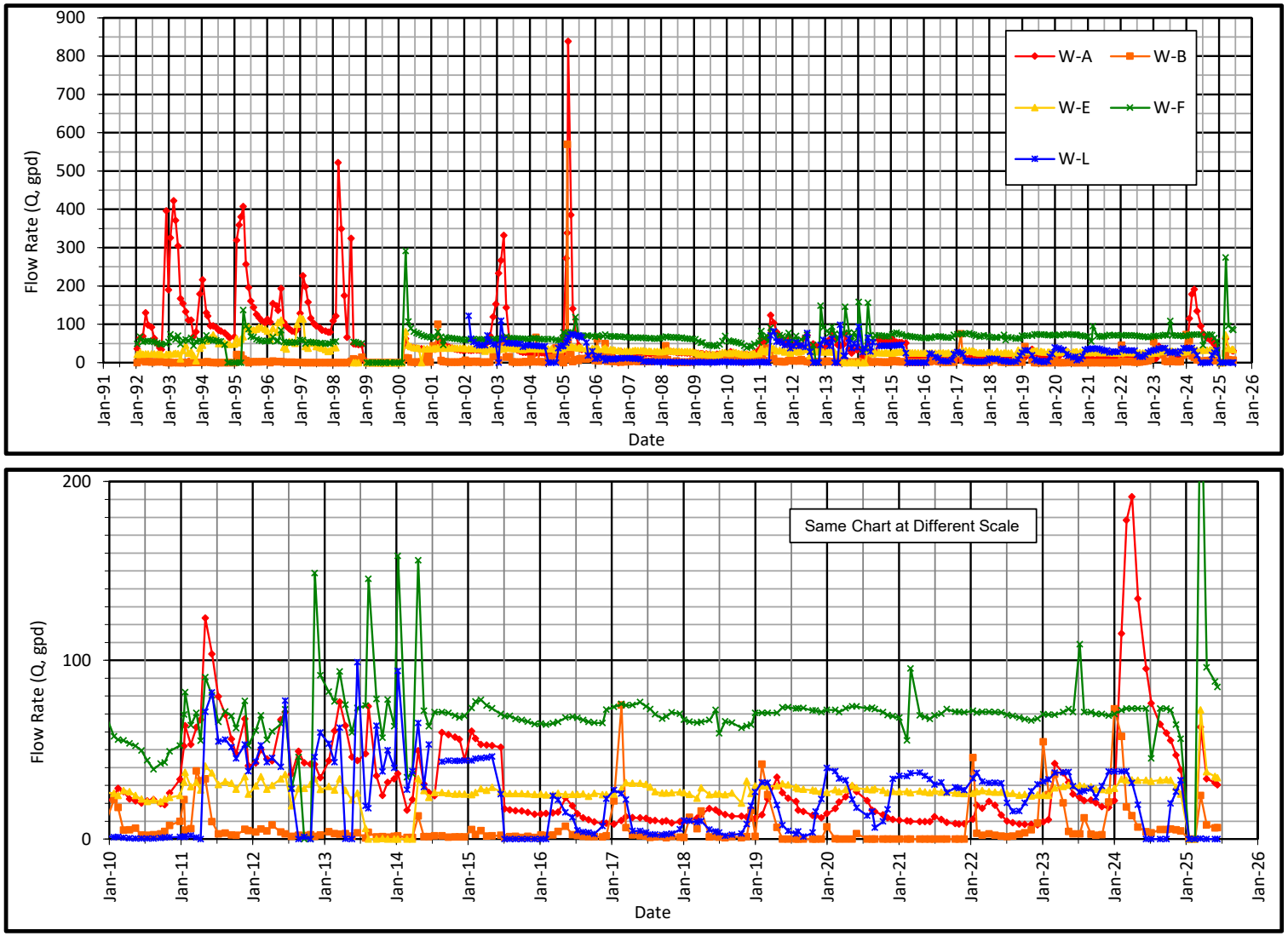
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Dewatering Well Information							
Well ID	Vault Elevation (ft.)	Bottom Elevation (ft.)	Pump Elevation (ft.)	Pump Size (hp)	2024-2025 Pumping Rate (gpd)	% of Total Well Production	Comment
W-A	196.0	Unknown	45.0	1/2	41.5	11%	
W-B	204.0	169.7	173.7	1/2	6.2	2%	
W-C	295.0	233.5	237.5	1/2	50.4	13%	
W-D*	297.0	Unknown	Unknown	none	0.0	0%	Destroyed '98
W-E	215.0	Unknown	116.5	1/2	30.4	8%	
W-F	210.0	109.0	112.0	1/2	77.2	20%	
W-G*	292.0	222.0	none	none	0.0	0%	No Pump, Dry
W-H	299.5	234.5	242.5	1/3	2.1	1%	
W-I	298.0	238.0	248.0	1/3	22.7	6%	
W-J	304.0	244.0	250.0	1/3	48.1	12%	
W-K	430.0	370.0	380.0	1/3	0.0	0%	Dry
W-L	258.0	189.0	192.5	1/2	6.6	2%	
W-M	302.0	242.4	245.0	1/2	104.9	27%	

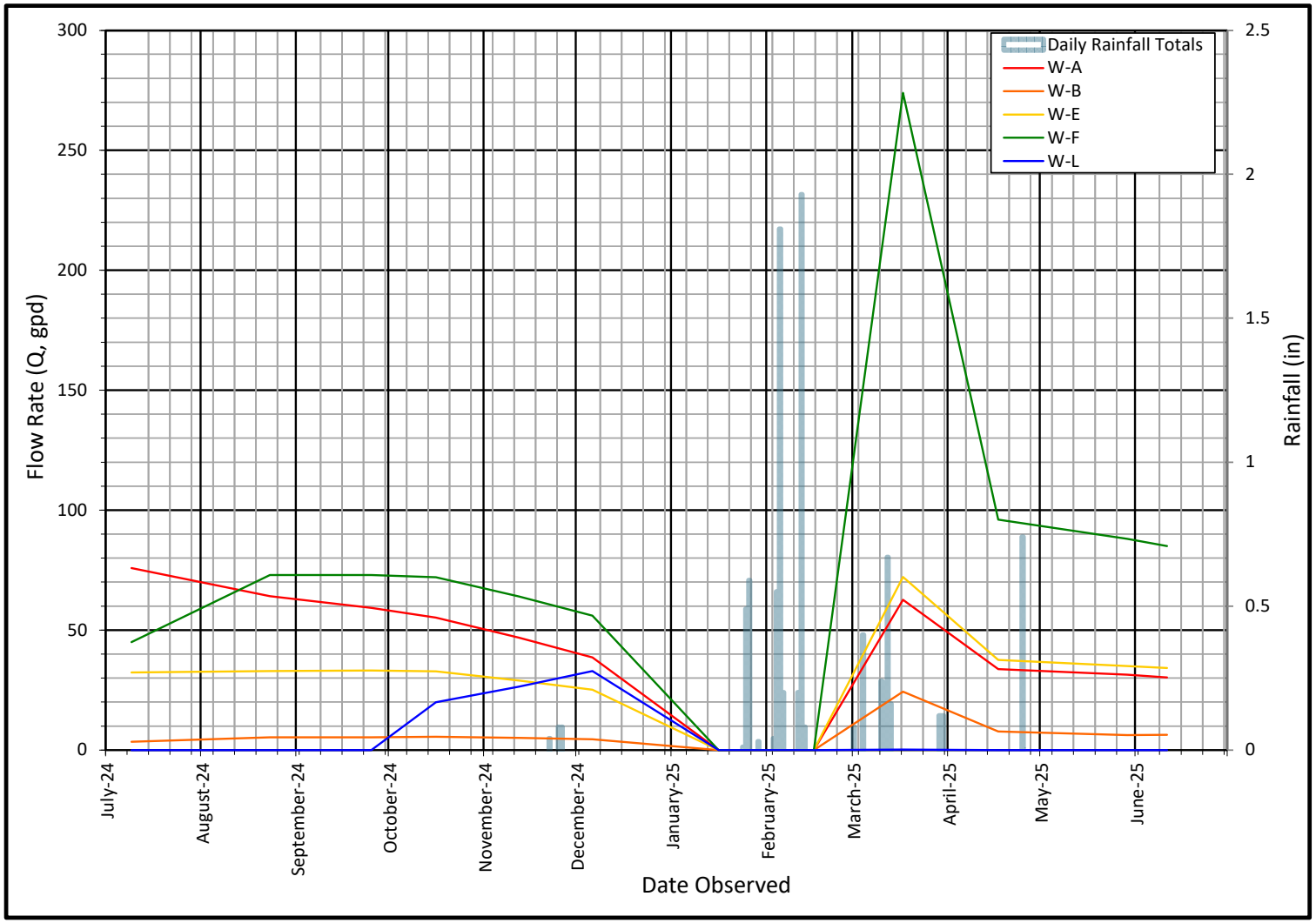
*Note: * Non-functioning Dewatering Wells*

Hydrauger Information						
Hydrauger ID	Installed Length (ft)	Functional Length (ft)	2024-2025 Flow Rate (gpd)	% of Total Production	Installed By	Comment
HD-1	93	unknown	0.0	0%	BYA	Destroyed per BYA (2000)
HD-2	127	unknown	0.0	0%	BYA	Destroyed per BYA (2000)
HD-3	155	unknown	0.0	0%	BYA	Destroyed per BYA (2000)
HD-4	80	unknown	0.0	0%	BYA	Destroyed per BYA (2000)
HD-5	65	unknown	0.0	0%	BYA	Destroyed per BYA (2000)
HD-6	97	unknown	0.0	0%	BYA	Destroyed per BYA (2000)
HD-7	227	unknown	0.0	0%	BYA	no production '21-'24
HD-8	290	unknown	0.0	0%	BYA	no production '21-'24
HD-9	230	unknown	0.0	0%	BYA	no production '21-'24
HD-10	330	unknown	0.0	0%	BYA	no production '21-'24
HD-11	230	unknown	0.0	0%	BYA	no production '21-'24
HD-12	330	unknown	0.0	0%	BYA	no production '21-'24
HD-13	210	unknown	99.6	33%	BYA	
H-1	240	unknown	112.2	37%	LA County	
H-2	180	unknown	0.0	0%	LA County	No outlet to monitor
ROWH-1	--	unknown	0.0	0%	BYA	discharge diverted from H-2
H-3	235	unknown	0.0	0%	LA County	Destroyed 1998
H-4	140	unknown	0.0	0%	LA County	Destroyed 1998
H-5	260	unknown	0.0	0%	LA County	Destroyed 1998
H-6	140	unknown	0.0	0%	LA County	Destroyed 1998
H-7	205	unknown	0.0	0%	LA County	Destroyed 1998
H-1A	100	92	0.0	0%	Fugro	no production '21-'24
H-2A	130	125	88.9	30%	Fugro	Flowing after January 2023, First time since 2014

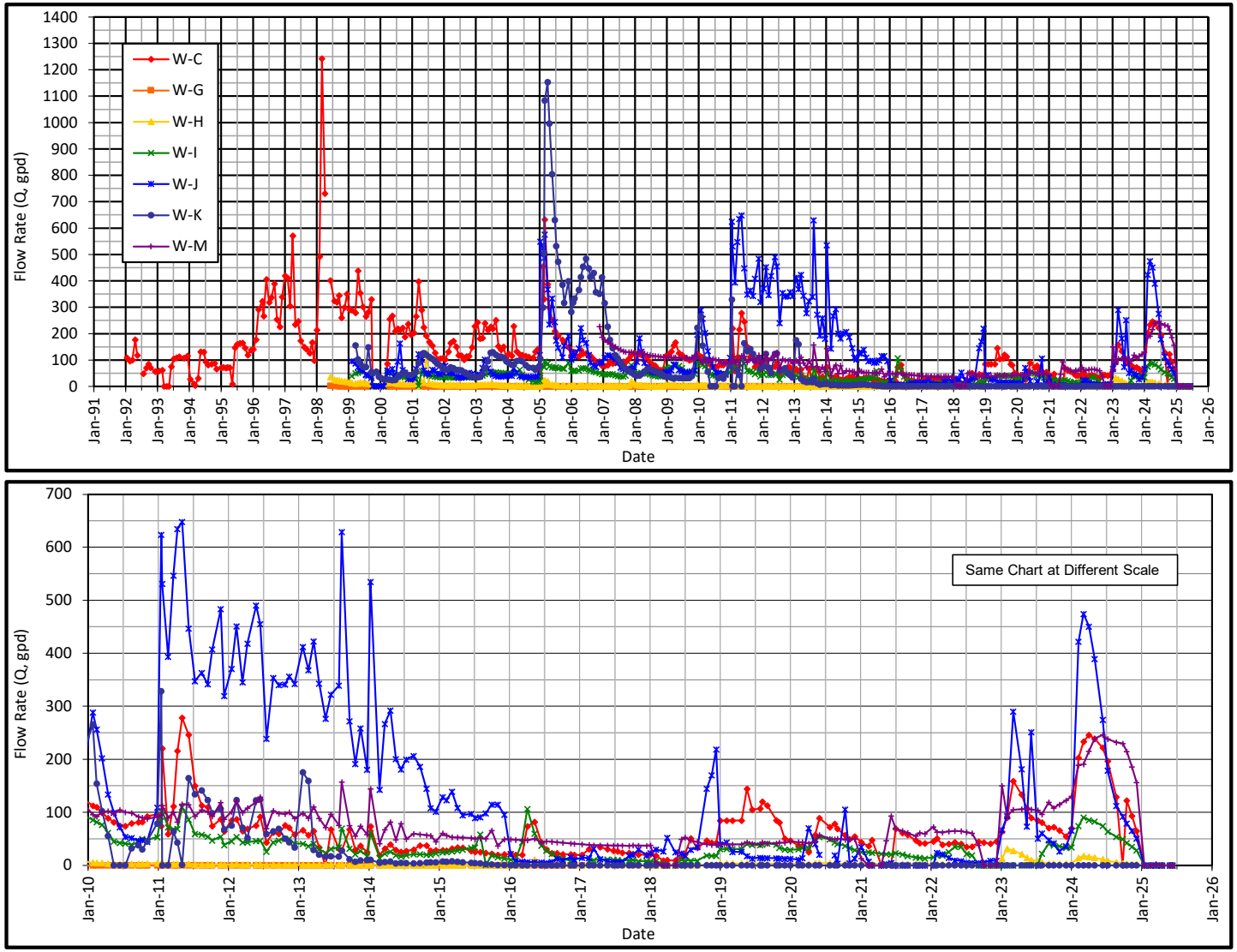
DEWATERING WELL / HYDRAUGER INFORMATION
Calle del Barco Landslide Assessment District
Malibu, California



DEWATERING WELL DISCHARGE RATE GRAPH (HISTORIC)
Rambla Orienta and Slope
Calle del Barco Landslide Assessment District
Malibu, California

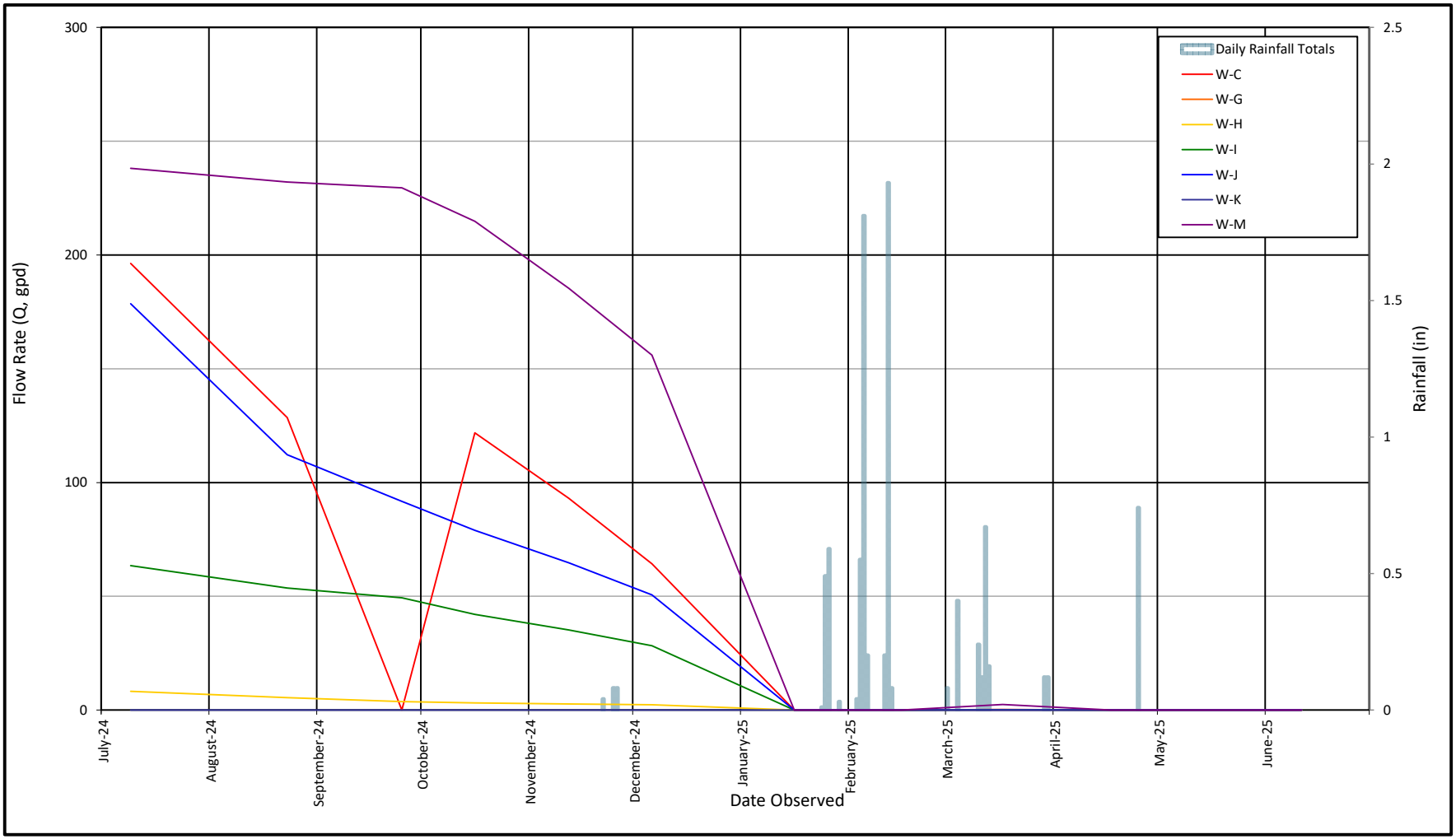


DEWATERING WELL DISCHARGE RATE GRAPH (MONITORING YEAR)
Rambla Orienta and Slope
Calle del Barco Landslide Assessment District
Malibu, California



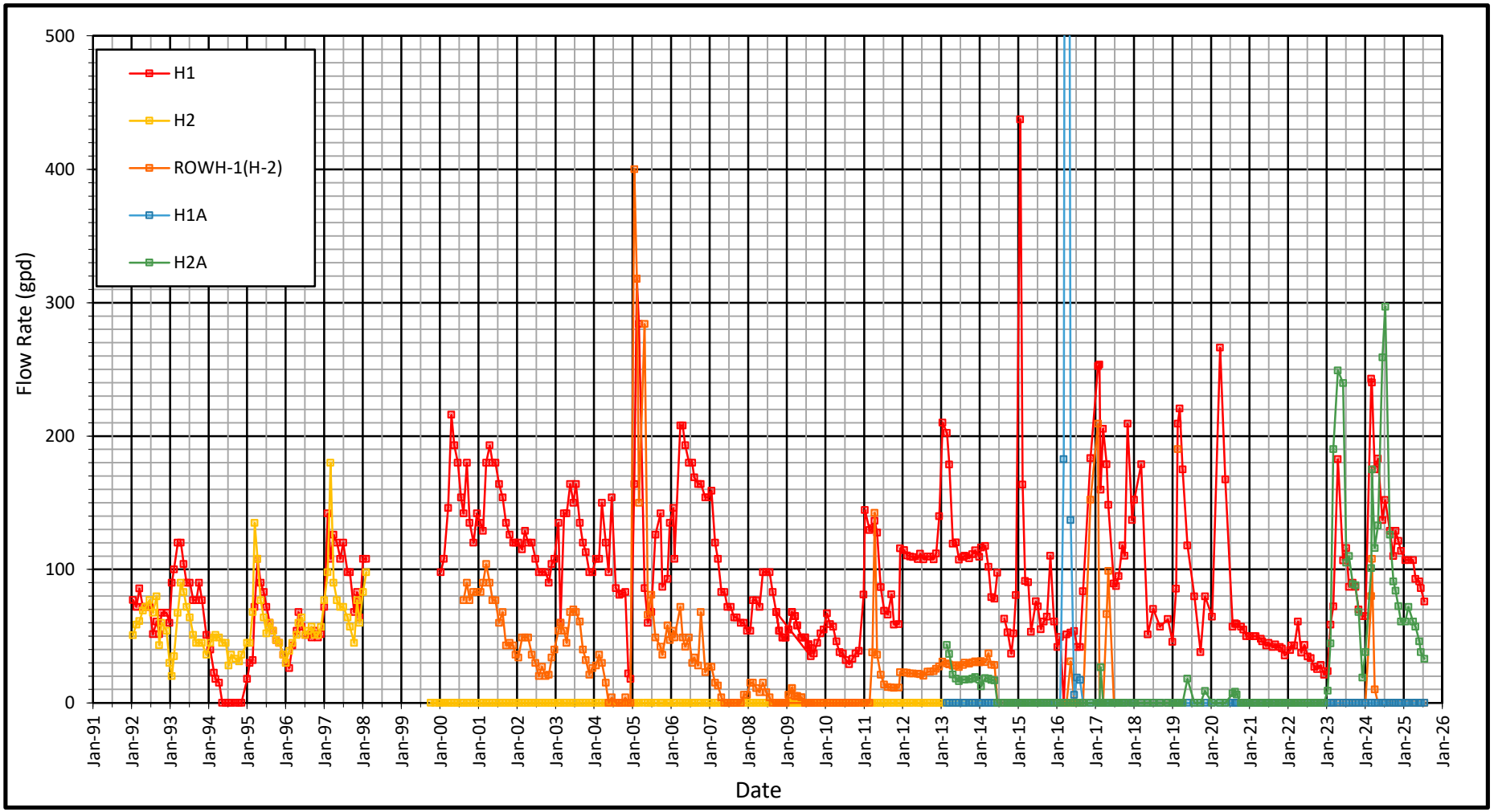
DEWATERING WELL DISCHARGE RATE GRAPH (HISTORIC)
Calle del Barco and Rambla Pacifico
Calle del Barco Landslide Assessment District
Malibu, California

Yeh and Associates, Inc.
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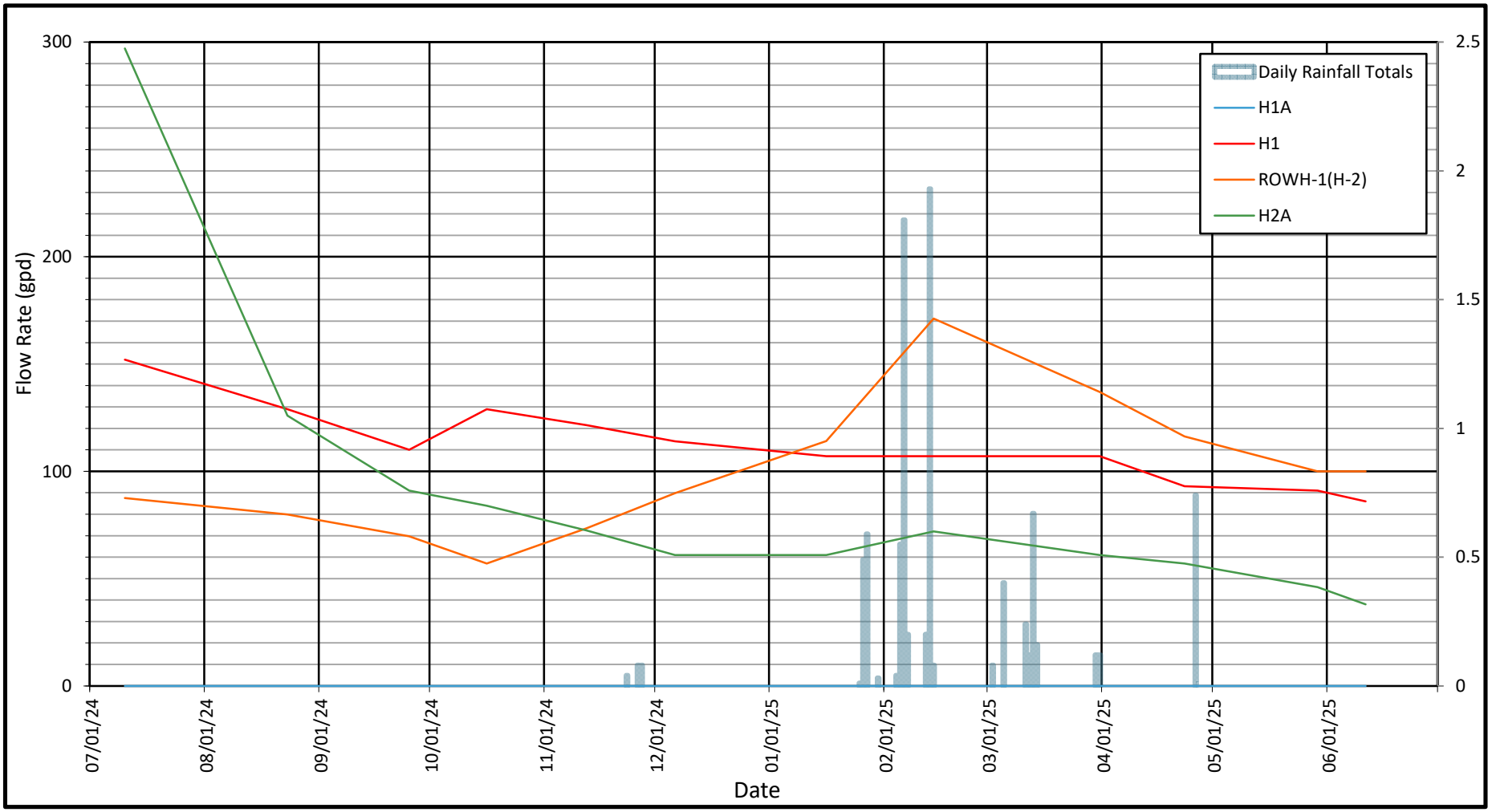


DEWATERING WELL DISCHARGE RATE GRAPH (MONITORING YEAR)
Calle del Barco and Rambla Pacifico
Calle del Barco Landslide Assessment District
Malibu, California

Yeh and Associates, Inc.
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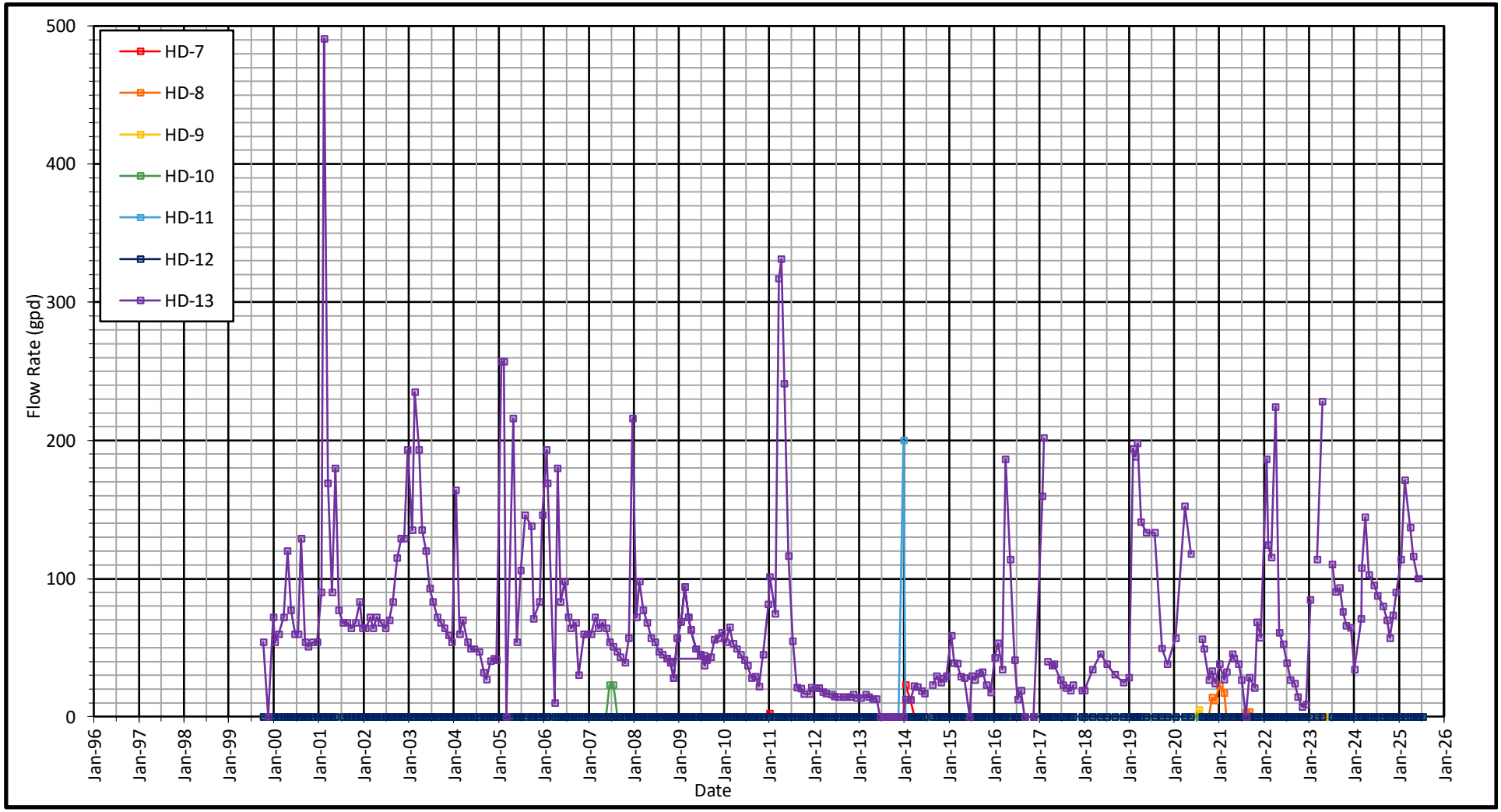


HYDRAUGER DISCHARGE RATE GRAPH (HISTORIC)
Rambla Orienta
Calle del Barco Landslide Assessment District
Malibu, California

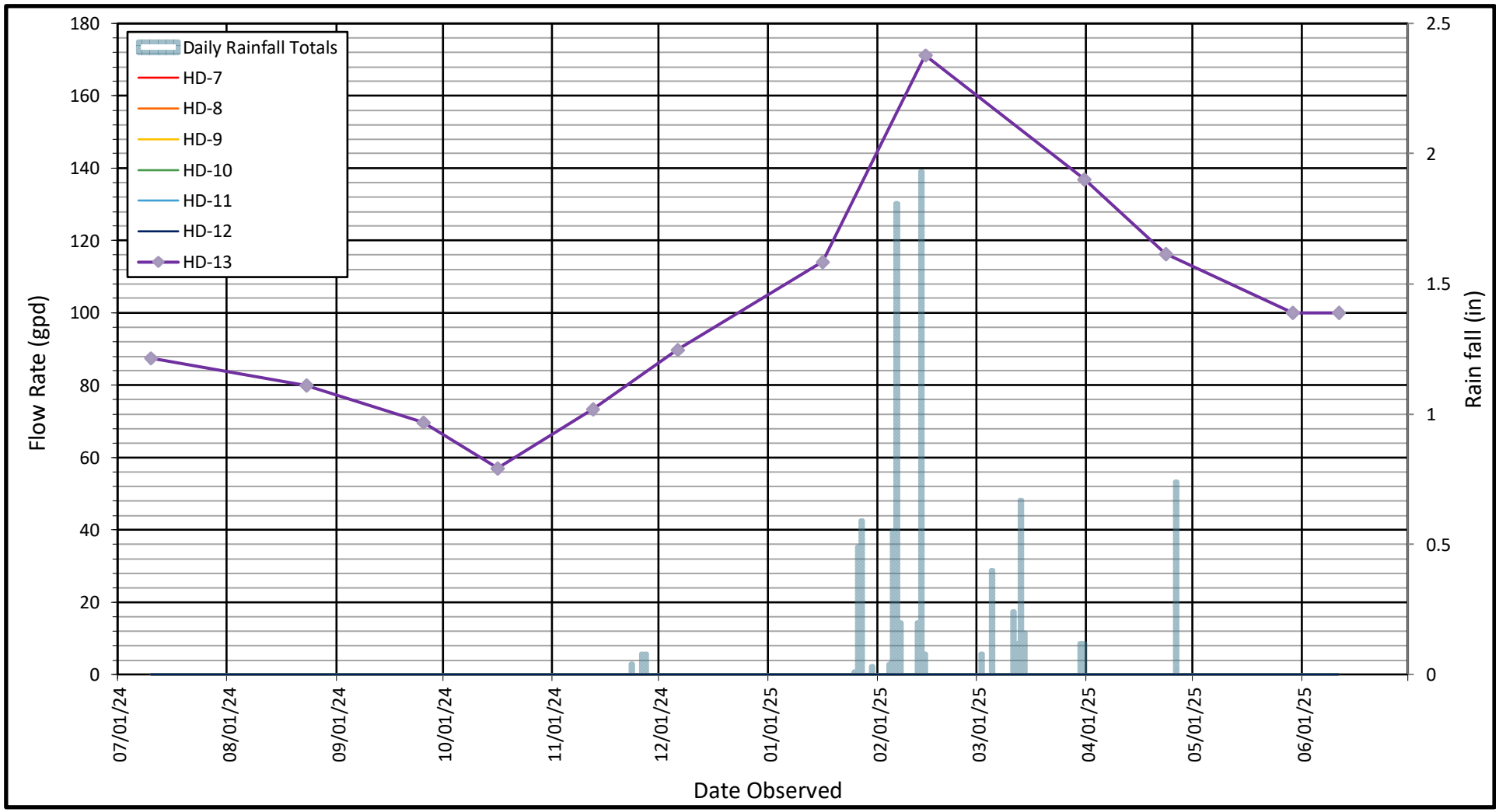


HYDRAUGER DISCHARGE RATE GRAPH (MONITORING YEAR)
Rambla Orienta
Calle del Barco Landslide Assessment District
Malibu, California

Yeh and Associates, Inc.
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HYDRAUGER DISCHARGE RATE GRAPH (HISTORIC)
Landslide Toe
Calle del Barco Landslide Assessment District
Malibu, California



HYDRAUGER DISCHARGE RATE GRAPH (MONITORING YEAR)
Landslide Toe
Calle del Barco Landslide Assessment District
Malibu, California