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Via Electronic Mail

January 09, 2026

Mr. Alexander Carli-Dorsey
U.S. Environmental Protection Agency, New England Region
Five Post Office Square
Suite 100
Boston, MA 02109

Re: GE-Pittsfield/Housatonic River Site
Rest of River (GECD850)
Rising Pond Dam - 2025 Penstock Investigations – End-of-Year Report

Dear Mr. Carli-Dorsey:

In accordance with the *2024 Penstock Investigations End-of-Year Report*, submitted on December 19, 2024 and approved by EPA on February 19, 2025, GE's consultants at GZA GeoEnvironmental, Inc. (GZA) conducted annual investigations of the penstock at Rising Pond Dam in October 2025, as well as an evaluation of alternatives for repairs to improve the current condition of the penstock. GZA has prepared the enclosed report on those activities, entitled *2025 Penstock Investigations End-of-Year Report*. That report also includes GZA's recommendation for repairs to improve the condition of the penstock, a schedule for design and implementation of those repairs, and recommendations for continued monitoring in the meantime. GE intends to carry out the recommended monitoring, design, and repair activities on the schedule described in this report.

Please let me know if you have any questions about the enclosed end-of year report or the repair and monitoring recommendations included in that report.

Very truly yours,

Kevin G. Mooney
Senior Project Manager

Enclosure

Cc: (via electronic mail)
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2025 PENSTOCK INVESTIGATIONS
END-OF-YEAR REPORT
Rising Pond Dam (MA00250)
Great Barrington, Massachusetts

January 9, 2026
File No.: 01.0019896.81

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1.0 INTRODUCTION

1.1 PURPOSE

On December 23, 2022, General Electric Company (GE) submitted to the U.S. Environmental Protection Agency (EPA) a letter report prepared by GZA GeoEnvironmental, Inc. (GZA) titled "Proposed Penstock Investigations/ Evaluations for 2023" (GZA 2022a) describing proposed investigations to be performed at the Rising Pond Dam in 2023 to gather data for future evaluation and potential repair or modification of the penstock. That report was conditionally approved by EPA on March 6, 2023.

In accordance with that proposal, penstock investigations were performed in 2023 and documented in a report entitled *2023 Penstock Investigations End-of-Year Report* (GZA 2024a), submitted to EPA on May 24, 2024. That report included recommendations for additional investigations in 2024. Such additional investigations were conducted in 2024 and documented in a report entitled *2024 Penstock Investigations End-of-Year Report* (GZA 2024b), submitted to EPA on December 19, 2024 (approved by EPA on March 17, 2025), with a follow-up report on material identification testing submitted on January 3, 2025 (and approved by EPA on February 19, 2025). The 2024 End-of-Year Report included recommendations for annual monitoring of the penstock until repairs or modifications are made.

Annual penstock investigations were again conducted in October 2025. This 2025 End-of-Year Report describes and presents the results of the investigations conducted in October 2025, as well as GE's plans to address the penstock going forward, including plans for repairs to improve the current condition of the penstock and continued monitoring in the meantime.

Please note that this report references right and left from the perspective of looking downstream where right is west and left is east. The penstock alignment and stationing (Sta.) are shown on **Figure 1**. Unless otherwise noted, stations in this report are presented in feet and elevations reference the National Geodetic Vertical Datum of 1929 (NGVD29). This report is subject to the Limitations stated in **Appendix A**.

1.2 PENSTOCK BACKGROUND[1]

1.2.1 Site History

Rising Pond Dam was originally constructed with a stone masonry outlet channel along the alignment of the existing penstock. A railroad trestle spanned across the open outlet channel at a diagonal orientation. The outlet channel was used to divert power-generating flow into an adjacent mill building. However, the downstream portion of the channel wall was reportedly damaged during 1948 flooding. Between 1948 and 1951, a headgate was installed along with a 14-foot diameter steel penstock constructed within the former masonry channel. The headgate and penstock currently act as the low-level outlet for the dam.

The upstream 100 to 110 feet of the steel penstock was reportedly constructed within the existing (and presumably undamaged) stone masonry channel, and the downstream portion of the new penstock was constructed above a six-inch-thick reinforced concrete slab, as indicated in the design drawings in **Appendix B**.

[1] This section presents much of the same information presented in the 2023 and 2024 End-of-Year Reports. It is included again for context in this report.

A steel sheetpile wall was added along the left (east) bank of the river (to the right of the penstock) during the 1948 to 1951 repairs. The sheetpile wall's lateral bracing reportedly consisted of deadman anchors that terminate near the slab underlying the penstock.

The penstock was reportedly constructed in eight-foot sections with a uniform slope to the north (i.e., upstream). The original penstock wall thickness is noted as ⅜-inch on ca. 1949 design drawing 1816-1-2 (see **Appendix B**). Longitudinal joints were butt welded, and circumferential joints were riveted, lap welded or fastened with girth joints. The penstock backfill was reportedly well-compacted.

As described in the 2023 Penstock Investigations End-of-Year Report, subsurface investigations encountered a near-surface concrete structure spanning diagonally across the penstock alignment. This structure is likely a grade beam structure to replace the former trestle and carry rail traffic across the penstock alignment.

The historical drawings and photographs in **Appendix B** show the original configuration of the outlet channel, the 1948 to 1951 storm damage, and penstock installation details. In the early 1990s, penstock outflows were modified by abandoning the mill connection and constructing the current surge chamber and reinforced concrete diversion channel with discharge into the Housatonic River.

1.2.2 Existing Conditions

The low-level outlet is located directly to the left of the spillway. The low-level outlet works consist of a mortared stone masonry forebay with a steel trash rack, a concrete-walled gate chamber with slide gate, and a 14-foot-diameter steel penstock that extends approximately 220 feet downstream to a surge chamber next to the mill. The surge chamber is drained by a reinforced concrete open channel tailrace (diversion channel) that discharges to the Housatonic River approximately 230 feet downstream of the dam.

In the past, low-point penstock drainage was provided by a 12-inch-diameter well drainpipe with discharge at the left downstream training wall located approximately 40 feet downstream of the penstock gate. Well drain flow was controlled by a valve located in a covered pit between the penstock and left training wall. The well drain is no longer needed and has not been operated for years because the diversion channel now provides gravity discharge for the penstock. In the past, penstock filling and priming was provided by a 12-inch diameter filler pipe controlled by a 12-inch Chapman sluice gate on the downstream forebay wall. That penstock filler pipe has likewise not been operated for years because the penstock no longer needs priming and is filled by slide gate operation. A fire protection pumphouse services the mill building and is located on the left embankment crest to the left of the forebay.

1.2.3 Past Investigations and Findings

In 2022, an internal penstock geophysical survey was performed, including UT measurements and slab impulse response (SIR) testing, along with visual observations and internal topographic surveys. The results of these investigations were documented in a GZA report titled "Penstock Geophysical Testing and Topographic Survey, Rising Pond Dam," dated September 30, 2022 (GZA 2022b). The 2022 investigations indicated that the penstock deviated from expected original installation conditions, and that these deviations, including a non-uniform slope, a low spot, irregular ovality, and roof deformation, occur near the middle of the penstock (i.e., at approximate Stations 1+10 to 1+50). The expected original installation conditions are based on historical repair design drawings ca. 1949 (see **Appendix B**) and may not reflect the actual as-built condition of the penstock.

In June 2023, the first round of penstock investigations was conducted. These investigations included a ground-penetrating radar (GPR) survey of the area above the penstock, a dive survey of the forebay, and the first 2023 topographic survey of the area above the penstock, including an interior survey and ovality measurements of the penstock. The results of the June 2023 investigations were documented in a 2023 Mid-Year Status Report, submitted on August 16, 2023 (GZA 2023).

The second round of 2023 penstock investigations began on October 9, 2023 with the performance of a subsurface exploration program consisting of seven test pit excavations (TP-1 through TP-7), four test borings (PS-1, -2, -2A, and -3), and three monitoring well installations in the area above the penstock. Six soil samples collected from the October 2023 test borings were submitted to Thielsch Engineering, Inc. for grain size distribution analyses (sieve testing) in accordance with ASTM D6913. The second round of the 2023 penstock investigations continued in December 2023 with a topographic survey and ovality measurements of the penstock. In addition, UT testing was performed in December 2023, and visual observations of the penstock were made at that time. A follow-up ground surface topographic survey (with no survey inside the penstock) was performed on March 13, 2024. The results of the October-December 2023 investigations and the follow-up ground surface topographic survey were documented in the 2023 End-of-Year Report.

In 2024, the investigations included: another topographic survey of the area above the penstock and the invert, crown and springlines of the penstock; additional UT testing; internal visual inspections of the penstock; and collection of interior penstock material samples for identification testing in order to better understand the nature and composition of the material. The 2024 penstock investigations were documented in the 2024 End-of-Year Report; and the results of the material identification testing were submitted to EPA on January 3, 2025. As noted above, the latter was approved by EPA on February 19, 2025, and the former was approved by EPA on March 17, 2025.

2.0 SUMMARY OF 2025 PENSTOCK INVESTIGATIONS

2.1 TOPOGRAPHIC SURVEY / OVALITY MEASUREMENTS

The 2025 topographic survey and ovality measurements were performed by GZA's subcontractor, Hill Engineers, Architects, and Planners (Hill), on October 23 and 24, 2025. This survey and these measurements were conducted for comparison to prior surveys and measurements, primarily the initial baseline survey from the early 1990s, and to survey results from December 2023, March 2024, and December 2024. GZA was on-site on October 23, 2025 to oversee the internal penstock survey and ovality measurements. The ground surface topographic survey was performed on October 24, 2025.

The 2025 survey and ovality measurements were performed following the same protocols used in 2023 and 2024. Hill used the existing benchmark depicted on an October 7, 2020 topographic survey drawing of Rising Pond Dam by Foresight Land Services. The benchmark that was selected is a chiseled square located on the top of the concrete wall immediately upstream of the diversion channel with an elevation of 726.93 feet. Hill used the existing project stationing of 0+00 at the upstream end of the penstock/intake and 2+20 at the downstream end of the penstock (discharge to diversion channel). This is the same benchmark and project stationing used during the previous surveys.

Before Hill entered the penstock, the intake gate was confirmed to be in the fully closed position and locked out of service by GE's contractor, LB Corp. Lock-out/tag-out procedures were implemented to help prevent intake gate operation while personnel were in the penstock.

The penstock was accessed via a ladder near the walkway crossing over the diversion channel. Air quality inside the penstock was monitored using a five-gas air monitor during all activities inside the penstock. LB Corp. set up temporary pole lights throughout the penstock to facilitate visual observation, survey, and ovality measurements. At the end of the penstock investigations, LB Corp. removed the temporary lighting. Little to no leakage through the penstock intake gate was observed during the 2025 investigations. Up to about eight inches of water remained pooled at the invert of the penstock. Since this depth of water did not interfere with the activities inside the penstock, water was not pumped from the penstock during the 2025 inspections/evaluations.

Internal crown elevations, invert elevations, and springline (penstock wall midpoint) locations were surveyed between Stations 0+00 and 2+20. A diagram of the penstock crown, springline, and invert location conventions is provided as **Figure 2**. The internal surveys were performed at 10-foot station increments along the centerline of the penstock. At each 10-foot station increment, the penstock horizontal dimensions (springline to springline) and vertical dimensions (invert to crown) were surveyed. Ovality at each station was calculated by dividing the difference between the horizontal and vertical dimensions by the nominal 14-foot diameter of the penstock.

A topographic survey was also performed to obtain ground surface elevations in the area above the penstock. The ground surface elevations above the penstock were surveyed between Stations 0+10 and 2+10 on a 10-foot grid, along the centerline of the penstock, 10 feet to the left and right of the penstock centerline, and 20 feet to the left and right of the penstock centerline.

Tables 1 through **4** show the results of the October 2025 topographic surveys and ovality measurements, along with comparisons to the surveys conducted in 2023 and 2024. Specifically, **Table 1** shows surveyed penstock crown elevations from June and December 2023, November 2024, and October 2025 (as well as the 1991 survey

for comparison);[2] **Table 2** shows surveyed penstock invert elevations from June and December 2023, November 2024, and October 2025; **Table 3** shows ovality measurements from June and December 2023, November 2024, and October 2025; and **Table 4** shows ground surface elevations measured in June 2023, March 2024, November 2024, and October 2025. **Tables 1** through **3** indicate that the penstock crown and invert elevations and ovality measurements from October 2025 are stable and comparable to those from December 2023 and November 2024. **Table 4** shows that ground surface elevations from October 2025 are similar to those from March and November 2024 with a few variations to the right of the penstock as discussed below.

Figures 3 through 5 present graphical representations of these surveys. Specifically, **Figure 3** shows the June 2023, March 2024, November 2024, and October 2025 surveyed ground surface elevations above the centerline of the penstock, along with the June 2023, December 2023, November 2024, and October 2025 surveyed crown and invert elevations (as well as the 1991 crown survey elevations);[3] **Figure 4** shows the November 2024 and October 2025 ground surface elevations; and **Figure 5** shows the June 2023, December 2023, November 2024, and October 2025 ovality measurements.

Surveyed ground surface elevations (GSEs) from 2025 were compared to prior surveyed GSEs. The GSEs were consistent above and to the left (east) of the penstock. Variations in a few locations to the right of the penstock are likely attributed to general unevenness of the ground and the difficulty in taking repeatable measurements on sloping ground, along with grade changes resulting from the October 2023 test pit explorations.

Overall, based on the collected survey data, there does not appear to be any progressive settlement of the ground above the penstock, nor continued deformation of the penstock at this time. The surveyed ground surface elevations above the penstock and the ovality measurements inside the penstock were relatively stable. Survey data from the topographic survey of the area above the penstock, interior survey, and ovality measurements are provided in **Appendix C**.

2.2 INTERNAL PENSTOCK ULTRASONIC THICKNESS TESTING AND VISUAL OBSERVATIONS

UT testing was performed, and visual observations were made on October 23, 2025, by GZA's on-site representatives, with additional support from LB Corp. UT measurements of the penstock's steel shell and visual observations of the current condition of the penstock were documented for comparison to previous UT measurements and visual observations.

The intake gate was confirmed to be in the fully closed position and locked out of service by LB Corp. before GZA entered the penstock. Lock-out/tag-out procedures were implemented to help prevent gate operation while the engineers were in the penstock. Air quality inside the penstock was monitored using a five-gas air monitor during all activities inside the penstock. The same access and temporary lighting used during Hill's ovality measurements were also used during GZA's UT testing and visual observations.

[2] The 2023, 2024, and 2025 surveys were all performed by the same licensed Professional Land Surveyor (Hill) using the same methods and thus can be directly compared. The 1991 survey was performed by a different licensed Professional Land Surveyor.

[3] On this figure, since the data over time are consistent, it is difficult to see any data points other than those from 2025.

2.2.1 UT Testing

UT wall pipe wall thickness measurements were taken using a Reed Instruments Ultrasonic Thickness Gage Model No. TM-8811. The UT meter frequency was set to the default setting for common steel, 5,920 meters per second (m/s). The UT meter was calibrated prior to the inspection in accordance with the manufacturer's instructions. Additional field verification was performed to help confirm the UT meter calibration. An exposed section of the penstock shell at the downstream end (Station 2+20) was physically measured using a measuring tape and then measured using the UT meter. The results confirmed proper calibration of the UT meter.

A ladder provided by LB Corp. was used to access the different test positions within the penstock. Prior to testing, LB Corp. performed light surface grinding at each test location to remove surface rust from the steel in order to allow proper contact between the UT meter probe and the steel surface.

As in December 2023 and 2024, a total of 37 UT thickness measurements were taken along the interior of the steel penstock in October 2025 at virtually the same locations as during the December 2023 and 2024 UT testing to allow direct comparison between UT measurements over time. All measurements were performed and logged by GZA. Specifically:

- Five measurements were taken at Stations 0+00, 0+50, 1+10, 1+70, and 2+20 at the 12 o'clock, 3 o'clock, 5 o'clock, 7 o'clock, and 9 o'clock positions, for a total of 25 measurements. These measurements are considered to represent the typical thickness of the existing steel penstock shell.

- Twelve additional measurements were taken at Stations 1+15, 1+25, 1+35, and 1+69. These measurements were taken at locations of observed deformations within the penstock.

Of the 37 measurements taken, 14 wall thickness measurements exceeded the ⅜ inch (0.375") design thickness (as shown on the ca 1949 design drawings) by up to 0.021 inch. These measurements are potentially due to variations in original pipe thickness, cleaning or probe contact at those measurement locations, or measurements taken at longitudinal butt joints. These 14 measurements were conservatively excluded from minimum, maximum, and average calculations as shown on the tables described below.

The 23 UT wall measurements that were less than the design thickness returned a steel thickness range of 0.268 to 0.372 inch with an average thickness of 0.335 inch. This indicates a maximum section loss of 29 percent and an average section loss of 11 percent when compared to the original thickness of the steel penstock wall noted on the design drawings. **Tables 5** and **6** show the December 2023, November 2024, and October 2025 UT measurements, along with comparisons to the design thickness of 0.375 inches noted on the ca 1949 design drawings.

There are a few minor differences (increases and/or decreases) in some of the 2023 to 2025 thickness readings, which can likely be attributed to variability in surface preparation, sensor contact, and exact test location (i.e., penstock wall thickness variability). These differences are on the order of 0.01 to 0.03 inch, or less than 8 percent of the original design thickness. The average section loss measured in 2025 (11 percent) is comparable to that measured in 2023 and 2024 (11 percent and 10 percent, respectively), which is indicative of relatively stable overall section thickness. See **Tables 5** and **6** for additional information. A visual summary showing the location of the 37 UT thickness measurements taken on October 23, 2025 is provided on **Figure 6**.

2.2.2 Visual Observations

Overall, the visual observations made during the October 23, 2025 internal visual inspection of the penstock were generally similar to what was observed during the 2023 and 2024 inspections. Based on flow measurements at the United States Geological Survey (USGS) gage of the Housatonic River flow at Division Street, the river flow peaked at about 317 cubic feet per second (cfs) during the October 23, 2025 investigations. Notable visual observations from the October 23, 2025 internal penstock inspection included the following:

- There were no visible signs of continued ground surface settlement in the area above the penstock or displacement of adjacent structures observed during the October 2025 investigations. See discussion below for November 2025 observations of the ground surface above the penstock.

- The intake gate was observed to be in the fully closed position, with little to no leakage through the gate. It is noted that minor leakage through the gate was observed in the previous two years.

- General observations of the penstock's interior indicated minor to moderate surficial rusting or pitting of the penstock's steel shell, the presence of a low area or "belly" at the invert of the penstock and inward "bulge" of the penstock crown and upper sidewalls between approximate Stations 1+10 and 1+50, and a general out of-roundness/ovalized shape of the penstock throughout most of its length. These conditions are consistent with previous internal penstock inspections and survey/ovality measurements.

Overall, there does not appear to be any short-term progressive movement or deterioration of the steel penstock.

During the November 20, 2025 Phase 1 inspection of Rising Pond Dam, GZA's inspection team observed a depression in the area above and to the left of the penstock adjacent to the concrete grade beam structure (former railroad crossing) at about Station 1+30. The depression was located about 4½ feet left of the penstock springline (sidewall). The depression measured up to two feet deep and one to two feet in plan dimensions. The depression was vertical sided and triangular-shaped (in plan view), likely due to the geometry of the adjacent concrete structure. This depression had not been observed during annual penstock inspections (including in October 2025) or during prior quarterly inspections (the most recent of which was conducted in August 2025).

A similar depression had been previously observed about four to five feet further left and downstream during a December 1, 2005 visual inspection conducted by GZA. That depression measured about four feet deep and was subsequently filled with concrete. The depression was documented in a January 2006 visual inspection report.

Groundwater level measurements in monitoring wells installed as part of the 2023 penstock investigations indicate that the phreatic surface is below the invert with no hydraulic gradient across the penstock.

Photographs of the October 2025 visual inspections, as well as photographs from the November 20, 2025 Phase 1 inspection depicting the depression, are provided in **Appendix D**.

2.3 REPAIR ALTERNATIVES

GZA explored repair alternatives to improve the penstock condition. GZA considered three alternatives to achieve this goal. They are:

1. Excavation, removal, and replacement of the penstock;
2. Penstock lining (both structural and non-structural); and
3. No repairs; continue to monitor.

Each alternative is described below. Conclusions and recommendations for the repair alternatives evaluated are provided in Sections 3 and 4.

2.3.1 Excavation, Removal, and Replacement

This option included two sub-alternatives: full excavation and removal of the existing penstock; and partial excavation and removal of the existing penstock. Both sub-alternatives include penstock replacement within the excavation.

Full Excavation and Replacement of the penstock would consist of excavating about 25 feet below the existing ground surface to the bottom of the penstock, removal of the existing penstock, and installation of a replacement penstock in the existing alignment.

Partial Excavation and Replacement would consist of excavating approximately 16 feet below existing ground surface to the spring line (horizontal mid-point) of the existing penstock, cutting the existing penstock conduit along the spring line, removal of the upper half of the penstock, and installation of a new penstock in the remaining lower half of the existing penstock.

This alternative has the advantage of allowing for either full or partial removal of an existing, dated structure with known deficiencies and the installation of a new structure, designed and constructed with modern techniques. However, there are some complications that accompany this alternative, as discussed in the following paragraphs.

The existing mill building is located approximately 20 feet to the east (left) of the penstock, and the existing riverbank sheetpile/masonry walls are located about 16 to 100 feet west (right) of the penstock. The mill building foundation details are unknown and would need to be considered to mitigate potential excavation-induced movements and damage, along with monitoring during construction. According to the 1949 penstock installation drawing, deadman anchors to provide lateral support for the riverbank sheetpile wall are located about nine feet west (right) of the penstock and about two feet right of the concrete slab beneath the penstock. These deadman anchors would be unloaded by the penstock excavation. Unloading the anchors would reduce their capacity to provide lateral support for the riverbank sheetpile wall, which could result in unacceptable movement or failure of the sheetpile wall. Thus, consideration of impacts to the anchored sheetpile wall would be required, along with potential mitigating measures and monitoring of the riverbank sheetpile and left training wall during construction.

The 2023 subsurface exploration program (described in the 2023 End-of-Year Report) encountered difficult excavation and cobbles/stones outside the former channel, which would make excavation and/or installation of excavation support more difficult and could cause additional ground disturbance due to cobble or stone obstructions. In addition, former channel walls (i.e., masonry walls left in-place during ca 1949 penstock installation) are in place on both sides of the penstock and would need to be laterally braced and protected from damage due to excavation and earth support activities.

A significant engineering effort would be required to address these issues, including design for support of excavation, consideration for maintaining deadman load capacity during excavation, and construction monitoring for the mill building and riverbank sheetpile wall/left training wall.

2.3.2 Penstock Lining

Penstock lining would retain the existing structure by lining the inside of the penstock with a new material. The new penstock material would either be applied as a spray-lining to the inside of the existing penstock or by inserting a new, smaller-diameter pipe into the existing penstock (sliplining). Two sub-alternatives for penstock lining were considered – structural lining and non-structural lining.

Structural Lining would create a structurally self-sufficient pipe within the existing penstock such that if the existing penstock were to further deteriorate, the new lining material would be able to resist applied loads. In other words, the structural lining could independently function as a penstock even if the existing penstock were to deteriorate to the point at which it provided no support.

Non-Structural Lining would line the inside of the existing penstock with the intent of providing a coating to resist further deterioration of the interior penstock material. Unlike the structural lining alternative, the non-structural lining would rely on the existing penstock to resist applied loading. If the existing penstock were to deteriorate further to the point where it did not provide sufficient support, the non-structural repair could fail. Due to this limitation, the non-structural lining sub-alternative was not further developed.

Spray-lining techniques have the advantage of conforming to the penstock's irregular geometry and helping maintain current cross-sectional area. Sliplining methodology involves insertion of a round pipe into the ovalized penstock, with grouting of the annular space between the lining and existing penstock. The grouted area would not be available to carry flow; thus, sliplining would tend to result in a larger loss of cross-sectional pipe area than would spray-lining. For this reason, as well as logistical challenges of transporting and inserting sliplining materials up the 16-foot wide diversion channel and around an approximate 100-degree turn into the penstock, sliplining methodology was not further considered.

A contractor experienced with lining of pipelines and penstocks, Hartman Walsh Industrial Services (Hartman), made a site visit to Rising Pond Dam on October 23, 2025, during the 2025 penstock inspections/investigations. The purpose of Hartman's site visit was to observe site conditions and discuss potential alternatives for repairing the penstock with GE and GZA. GZA shared with Hartman the history of the penstock and the studies, inspections, and evaluations completed to date, as described in the 2023 and 2024 End-of-Year Reports. Hartman took photographs and measurements of the penstock and discussed potential alternatives with GZA to repair and improve the current condition of the penstock.

Hartman's preliminary recommendation was to structurally line the penstock using a geopolymer mortar liner system. This recommendation was based on the relatively low penstock head pressure and the surveyed penstock deformations and ovality. This type of system is durable and will conform to the irregular penstock geometries to help reduce penstock cross-sectional area reduction.

2.3.3 No Repairs; Continue to Monitor

GZA also considered the alternative of conducting no repairs at this time and continuing to monitor the penstock. Monitoring efforts would continue to evaluate penstock conditions and be used to determine whether repairs are necessary in the future. A disadvantage of this alternative is that, if penstock conditions deteriorate rapidly, time for evaluation, design, and construction of penstock repairs would be compressed. Depending on the nature of future deterioration, Rising Pond Dam could be without a functional low-level outlet for a longer time period, as opposed to undertaking one of the proactive options described above.

3.0 CONCLUSIONS

3.1 GENERAL

Overall, there are no apparent signs of active movement or settlement of the penstock, no apparent signs of continued ovalization of the penstock, and no apparent signs of progressive deterioration of the steel penstock shell. The findings from the penstock investigations described in Section 2 are comparable to those of past investigations. The non-uniform slope, "dip" (belly), and change in ovality between approximate Stations 1+00 and 1+50, as observed during the 2022, June 2023, December 2023, and November 2024 investigations, were also observed during the October 2025 investigations.

The cause of the observed settlement and deformation of the penstock is unknown. The observed deficiencies (i.e., apparent settlement, deterioration, and deformation of the penstock shell, etc.) remain. Although the current data indicate that these deficiencies are not worsening, some follow-up actions to address these conditions are deemed warranted.

Conclusions based on the investigations conducted in 2025 are provided below.

3.2 SUMMARY OF 2025 INVESTIGATIONS

3.2.1 Topographic Survey and Ovality Measurements

1. Overall, the October 2025 topographic survey results and internal ovality measurements are consistent with those from the 1991, June 2023, December 2023/March 2024, and November 2024 surveys. There does not appear to be any further ovalization of the penstock, or progressive settlement of the penstock or ground above the penstock.

2. The ground surface elevation to the right of the penstock is variable and slopes downward towards the river. The differences in surveyed ground surface elevations in this area are likely due to the difficulty in taking repeatable measurements on sloping ground.

3.2.2 Ultrasonic Thickness Testing and Visual Observations

1. Overall, the minimum, maximum, and average thicknesses of the steel penstock measured in October 2025 are similar to those measured in 2023 and 2024. There does not appear to be any short-term progressive deterioration of the steel penstock.

    a. Fourteen of the October 2025 UT measurements exceeded the design thickness of ⅜ inch (0.375 inch) shown on the ca. 1949 design drawing 1816-1-2. These measured exceedances were up to 0.02 inch thicker than the design thickness and are potentially due to variations in original pipe thickness, cleaning, or probe contact at those measurement locations, or measurements taken at joints. Similar measurements exceeding the design thickness were recorded during the 2023 and 2024 UT testing.

    b. The UT measurements made in October 2025 measured steel penstock wall thicknesses of 0.268 inch to 0.372 inch, with an average thickness of 0.335 inch (excluding the 14 measurements that exceeded the design thickness of 0.375 inch). This indicates a maximum section loss of 29 percent

and an average section loss of 11 percent when compared to the original thickness of the steel penstock wall noted on the design drawings. These results are similar to the 2023 and 2024 measurements.

c. There are a few minor differences in some of the 2023 to 2025 thickness readings, which can likely be attributed to variability in surface preparation, sensor contact, and exact test location (i.e., penstock wall thickness variability). These differences are on the order of 0.01 to 0.03 inch, or less than 8 percent of the original design thickness. The average section loss measured in 2025 (11 percent) is comparable to that measured in 2023 and 2024 (11 percent and 10 percent, respectively), indicating relatively stable overall section thickness. It is anticipated that greater section loss would be measured over time periods greater than three years.

2. Because the UT measurements are relatively stable and internal corrosion is not expected to be an issue over the next few years (i.e., repair duration recommended in Section 4), further UT measurements are not recommended going forward.

3. The depression observed during the November 20, 2025 Phase 1 inspection of Rising Pond Dam is in a similar location to the depression that was observed during a 20-year-old visual inspection conducted by GZA in December of 2005. Although these depressions were outside of the penstock limits, the locations roughly align with the "low spot/belly" of the penstock. This area should continue to be monitored as described in Section 4.0.

3.3 EVALUATION OF REPAIR ALTERNATIVES

1. Although the penstock hydraulic capacity is not required to safely pass the regulatory Spillway Design Flood, a functional low-level outlet is required by Massachusetts Dam Safety Regulations (302 CMR 10.00). The penstock is at or approaching the end of its service life and is exhibiting deficiencies. Thus, the "no Repairs; continue to monitor" option is not considered appropriate for long-term performance.

2. Excavating and replacing the penstock is not a preferred repair alternative, mainly due to the relatively higher risk of excavation-induced damage to existing site features.

3. Structural lining of the penstock is the preferred repair alternative for the penstock. Non-structural lining is not preferred as it relies on the existing penstock for structural support. A spray-on lining is preferable to sliplining due to site constraints and maintaining pipe cross-sectional area. Applicability of this repair methodology should be confirmed during the monitoring and design steps outlined in Section 4.0.

4. Until repairs are undertaken, penstock monitoring should continue as recommended in Section 4.0.

4.0 RECOMMENDED NEXT STEPS

Based on the findings and conclusions from the penstock investigations, GZA recommends repairing the penstock using a structural lining system (e.g., geopolymer mortar lining). GZA also recommends continuing to monitor the penstock until repairs are performed to confirm that the penstock is not undergoing additional movement or deformation that could interfere with the selected repair program. Specifically, GZA recommends the following next steps:

1. GZA recommends engaging a contractor experienced with the design and implementation of structural lining systems within pipelines/penstocks to design a structural penstock lining system and provide constructability input for such a system. GZA recommends scheduling development of most of design of the structural lining system (e.g., 75% design) for 2026, with final design and construction of the structural lining system to be targeted for 2027.

2. Until repairs are completed, the penstock gate should not be operated beyond four feet open unless necessary.

3. Until penstock repairs are undertaken, GZA recommends continuing with the following annual monitoring activities to be performed using the same procedures used in 2023-2025:

    a. Conduct an additional topographic survey of the area above the penstock, along with visual monitoring (including during quarterly dam inspections) for potential surface depressions near the penstock similar to that observed during the November 2025 Phase 1 inspection;

    b. Conduct an additional confirmatory topographic survey of the interior penstock crown, invert and springline, along with internal ovality measurements at approximate 10-foot stations along the penstock;

    c. Conduct an external visual inspection of the area above the penstock and exterior brick façade of the mill building; and

    d. Conduct an internal visual inspection of the penstock;

4. In addition to the monitoring listed above, GZA also recommends adding new monitoring activities for 2026:

    a. Establish topographic survey points on the riverbank sheetpile wall and monitor them in conjunction with the annual topographic survey; and

    b. Perform additional monitoring activities required by the contractor in support of the design of the structural lining system.

The monitoring and design activities conducted in 2026 will be documented in an End-of-Year Report, to be submitted in January 2027. That report will include the results of the 2026 monitoring activities, a summary of the design through 2026 of a structural lining system, and other appropriate recommendations based on 2026 activities. The final design and plan for construction of the system and installation of the structural lining system would be targeted for 2027.

5.0 REFERENCES

GZA GeoEnvironmental, Inc. 2022a. *Proposed Penstock Investigations/Evaluations for 2023 – Rising Pond Dam.* Prepared for General Electric Company. December 23, 2022.

GZA GeoEnvironmental, Inc. 2022b. *Penstock Geophysical Testing and Topographic Survey – Rising Pond Dam.* Prepared for General Electric Company. September 30, 2022.

GZA GeoEnvironmental, Inc. 2023. *2023 Penstock Investigations Mid-Year Status Report – Rising Pond Dam.* Prepared for General Electric Company. August 16, 2023.

GZA GeoEnvironmental, Inc. 2024a. *2023 Penstock Investigations End-of-Year Report – Rising Pond Dam.* Prepared for General Electric Company. May 24, 2024.

GZA GeoEnvironmental, Inc. 2024b. *2024 Penstock Investigations End-of-Year Report – Rising Pond Dam.* Prepared for General Electric Company. December 19, 2024.

Tables

Table 1 - Rising Pond Dam Penstock Crown Elevations
Rising Pond Dam Penstock Investigations

Station	Elevations (NGVD)				
	1991 Crown Survey	June 2023 Crown Survey	December 2023 Crown Survey	November 2024 Crown Survey	October 2025 Crown Survey
0+00	712.900	712.890	712.879	712.880	712.880
0+10	712.740	712.740	712.716	712.721	712.720
0+20		712.617	712.618	712.618	712.620
0+30		712.420	712.427	712.433	712.430
0+40		712.256	712.254	712.251	712.240
0+50		711.935	711.938	711.940	711.940
0+60		711.668	711.661	711.661	711.660
0+70	711.740	711.740	711.514	711.515	711.520
0+80		711.581	711.565	711.567	711.580
0+90		711.316	711.304	711.308	711.300
1+00		711.246	711.244	711.243	711.240
1+10		711.301	711.308	711.313	711.310
1+20	711.360	711.360	711.236	711.245	711.240
1+30		711.264	711.264	711.278	711.270
1+40	711.400	711.400	711.442	711.445	711.440
1+50		711.551	711.547	711.540	711.540
1+60	711.660	711.660	711.685	711.685	711.690
1+70		711.771	711.776	711.776	711.780
1+80	711.780	711.780	711.811	711.808	711.800
1+90		712.100	712.102	712.097	712.100
2+00	712.070	712.070	712.132	712.128	712.120
2+10		712.320	712.320	712.329	712.320
2+20		712.520	712.550	712.552	712.540

Notes:

1. Stations are based on Station 0+00 being the upstream gate, and 2+20 the outlet of the pipe.
2. Elevations reference the National Geodetic Vertical Datum (NGVD29).
3. The 1991 Survey was performed by Foresight Land Services, using a total station, and referenced from a CADD File provided by Foresight Land Services, Inc. of Pittsfield, Massachusetts entitled “Record Plans – Repairs to Rising Pond Dam,” dated September 14, 1993.
4. The 2023, 2024 & 2025 Surveys were performed by Hill using a total station and prism with an elevation 726.93' NGVD benchmark (chisel square on a concrete wall as depicted on a GZA-provided October 7, 2020 drawing by Foresight Land Services).

Table 2 - Rising Pond Dam Penstock Invert Elevations
Rising Pond Dam Penstock Investigations

Station	Elevations (NGVD)			
	June 2023 Invert Survey	December 2023 Invert Survey	November 2024 Invert Survey	October 2025 Invert Survey
0+00	698.992	698.992	698.993	699.000
0+10	698.870	698.872	698.876	698.870
0+20	698.880	698.887	698.891	698.890
0+30	698.960	698.967	698.960	698.970
0+40	698.840	698.845	698.837	698.850
0+50	698.810	698.816	698.815	698.820
0+60	698.850	698.853	698.850	698.850
0+70	698.770	698.775	698.781	698.760
0+80	698.720	698.727	698.732	698.730
0+90	698.650	698.651	698.644	698.650
1+00	698.720	698.719	698.719	698.720
1+10	698.560	698.569	698.566	698.570
1+20	698.430	698.428	698.430	698.430
1+30	698.330	698.335	698.332	698.330
1+40	698.370	698.374	698.380	698.370
1+50	698.320	698.318	698.321	698.320
1+60	698.370	698.368	698.365	698.370
1+70	698.450	698.457	698.455	698.450
1+80	698.580	698.574	698.576	698.570
1+90	698.660	698.664	698.663	698.660
2+00	698.740	698.749	698.742	698.740
2+10	698.870	698.876	698.870	698.870
2+20	699.010	699.033	699.029	699.020

Notes:

1. Stations are based on Station 0+00 being the upstream gate, and 2+20 the outlet of the pipe.

2. Elevations reference the National Geodetic Vertical Datum (NGVD29).

3. The 2023, 2024 & 2025 Surveys were performed by Hill using a total station and prism with an elevation 726.93' NGVD benchmark (chisel square on a concrete wall as depicted on a GZA-provided October 7, 2020 drawing by Foresight Land Services).

Table 3 - Rising Pond Dam Penstock Ovality Measurements
Rising Pond Dam Penstock Investigations

Station	June 2023 Survey			December 2023 Survey			November 2024 Survey			October 2025 Survey		
	Springline-to-Springline (ft)	Invert-to-Crown (ft)	Ovality	Springline-to-Springline (ft)	Invert-to-Crown (ft)	Ovality	Springline-to-Springline (ft)	Invert-to-Crown (ft)	Ovality	Springline-to-Springline (ft)	Invert-to-Crown (ft)	Ovality
0+00	14.190	13.910	2.00%	14.210	13.890	2.29%	14.200	13.890	2.21%	14.210	13.890	2.29%
0+10	14.180	13.857	2.31%	14.190	13.840	2.50%	14.190	13.850	2.43%	14.190	13.850	2.43%
0+20	14.260	13.733	3.76%	14.280	13.730	3.93%	14.270	13.730	3.86%	14.280	13.730	3.93%
0+30	14.420	13.463	6.84%	14.440	13.460	7.00%	14.440	13.470	6.93%	14.450	13.470	7.00%
0+40	14.710	13.419	9.22%	14.710	13.410	9.29%	14.710	13.410	9.29%	14.700	13.410	9.21%
0+50	14.900	13.121	12.71%	14.940	13.120	13.00%	14.930	13.130	12.86%	14.940	13.130	12.93%
0+60	15.100	12.822	16.27%	15.130	12.810	16.57%	15.130	12.810	16.57%	15.120	12.810	16.50%
0+70	15.160	12.749	17.22%	15.180	12.740	17.43%	15.170	12.730	17.43%	15.170	12.730	17.43%
0+80	15.310	12.858	17.51%	15.310	12.840	17.64%	15.310	12.840	17.64%	15.320	12.840	17.71%
0+90	15.300	12.665	18.82%	15.360	12.650	19.36%	15.350	12.660	19.21%	15.360	12.660	19.29%
1+00	15.340	12.529	20.08%	15.380	12.530	20.36%	15.380	12.520	20.43%	15.380	12.520	20.43%
1+10	15.270	12.742	18.06%	15.290	12.740	18.21%	15.280	12.750	18.07%	15.290	12.750	18.14%
1+20	15.150	12.839	16.51%	15.180	12.810	16.93%	15.170	12.820	16.79%	15.170	12.820	16.79%
1+30	14.890	12.934	13.97%	14.930	12.930	14.29%	14.930	12.950	14.14%	14.920	12.950	14.07%
1+40	14.770	13.065	12.18%	14.790	13.070	12.29%	14.800	13.070	12.36%	14.800	13.070	12.36%
1+50	14.760	13.233	10.91%	14.780	13.230	11.07%	14.780	13.220	11.14%	14.780	13.220	11.14%
1+60	14.590	13.313	9.12%	14.630	13.320	9.36%	14.650	13.320	9.50%	14.640	13.320	9.43%
1+70	14.620	13.317	9.31%	14.670	13.320	9.64%	14.650	13.320	9.50%	14.660	13.320	9.57%
1+80	14.640	13.229	10.08%	14.640	13.240	10.00%	14.650	13.230	10.14%	14.660	13.230	10.21%
1+90	14.700	13.437	9.02%	14.670	13.440	8.79%	14.700	13.430	9.07%	14.690	13.430	9.00%
2+00	14.580	13.395	8.46%	14.580	13.380	8.57%	14.560	13.390	8.36%	14.570	13.390	8.43%
2+10	14.300	13.452	6.06%	14.300	13.440	6.14%	14.340	13.460	6.29%	14.300	13.460	6.00%
2+20	14.300	13.510	5.64%	14.260	13.520	5.29%	14.300	13.520	5.57%	14.280	13.520	5.43%
Average:	**14.76**	**13.20**	**11.1%**	**14.776**	**13.194**	**11.30%**	**14.778**	**13.197**	**11.30%**	**14.777**	**13.197**	**11.29%**

Notes:

1. Stations are based on Station 0+00 being the upstream gate, and 2+20 the outlet of the pipe.
2. The 2023, 2024 & 2025 Ovality Measurments were obtained by Hill using a total station and prism.
3. Ovality is calculated by the difference between the springline to springline measurement, and the invert to crown measurement, divided by the nominal diameter of 14 feet.

Table 4 - Rising Pond Dam Penstock Ground Surface Elevations
Rising Pond Dam Penstock Investigations

Station	June 2023 Ground Surface Elevations (NGVD)					March 2024 Ground Surface Elevations (NGVD)					November 2024 Ground Surface Elevations (NGVD)					October 2025 Ground Surface Elevations (NGVD)					Difference from November 2024 to October 2025				
	20-ft Right	10-ft Right	Center	10-ft Left	20-ft Left	20-ft Right	10-ft Right	Center	10-ft Left	20-ft Left	20-ft Right	10-ft Right	Center	10-ft Left	20-ft Left	20-ft Right	10-ft Right	Center	10-ft Left	20-ft Left	20-ft Right	10-ft Right	Center	10-ft Left	20-ft Left
0+00																									
0+10	721.220	720.780	721.080	721.860	723.050	721.500	720.800	721.200	721.900	723.000	721.300	720.900	721.200	721.800	723.000	721.500	720.800	721.200	721.900	723.000	-0.20	0.10	0.00	-0.10	0.00
0+20	720.940	720.730	721.100	721.480	722.110	721.100	720.900	721.100	721.600	722.100	721.000	720.800	721.100	721.500	722.100	721.100	720.900	721.100	721.600	722.100	-0.10	-0.10	0.00	-0.10	0.00
0+30	720.890	720.750	721.160	721.310	721.830	721.000	720.900	721.300	721.300	721.800	721.000	720.800	721.200	721.400	721.800	721.000	720.900	721.300	721.300	721.800	0.00	-0.10	-0.10	0.10	0.00
0+40	720.990	720.680	720.870	721.170	721.740	720.900	720.700	720.900	721.200	721.700	720.900	720.700	720.900	721.200	721.700	720.900	720.700	720.900	721.200	721.700	0.00	0.00	0.00	0.00	0.00
0+50	720.830	720.630	720.910	721.140	721.650	720.900	720.700	721.000	721.200	721.700	720.800	720.700	720.900	721.200	721.700	720.900	720.700	721.000	721.200	721.700	-0.10	0.00	-0.10	0.00	0.00
0+60	720.640	720.590	720.910	721.180	721.740	721.000	720.700	721.000	721.400	721.800	720.900	720.700	720.900	721.300	721.700	721.000	720.700	721.000	721.400	721.800	-0.10	0.00	-0.10	-0.10	-0.10
0+70	720.900	720.410	720.690	721.150	721.910	720.900	720.400	720.700	721.200	721.900	720.700	720.400	720.700	721.200	721.900	720.900	720.400	720.700	721.200	721.900	-0.20	0.00	0.00	0.00	0.00
0+80	720.550	720.450	720.630	721.280	722.010	720.700	720.400	720.700	721.300	722.100	720.600	720.400	720.600	721.300	722.000	720.700	720.400	720.700	721.300	722.100	-0.10	0.00	-0.10	0.00	-0.10
0+90	720.600	720.200	720.720	721.560	722.200	720.600	720.200	720.800	721.600	722.200	720.600	720.200	720.700	721.600	722.200	720.600	720.200	720.800	721.600	722.200	0.00	0.00	-0.10	0.00	0.00
1+00	720.310	720.330	720.900	721.970	722.320	720.400	720.400	721.000	722.000	722.300	719.700	720.400	721.000	721.900	722.300	720.400	720.400	721.000	722.000	722.300	-0.70	0.00	0.00	-0.10	0.00
1+10	718.140	720.770	721.410	722.450	722.580	717.900	720.800	721.500	722.400	722.500	717.800	720.800	721.500	722.400	722.500	717.900	720.800	721.500	722.400	722.500	-0.10	0.00	0.00	0.00	0.00
1+20	719.030	721.270	722.070	722.520	722.350	719.600	721.300	722.000	722.400	722.400	719.500	721.300	722.000	722.400	722.300	719.600	721.300	722.000	722.400	722.400	-0.10	0.00	0.00	0.00	-0.10
1+30	720.730	721.940	722.440	722.510	722.170	720.800	722.200	722.300	722.600	722.200	720.800	722.200	722.300	722.500	722.200	720.800	722.200	722.300	722.600	722.200	0.00	0.00	0.00	-0.10	0.00
1+40	720.690	722.440	722.400	722.420	722.260	720.800	722.300	722.500	722.500	722.300	720.700	722.300	722.500	722.400	722.200	720.800	722.300	722.500	722.500	722.300	-0.10	0.00	0.00	-0.10	-0.10
1+50	719.560	722.480	722.240	722.320	721.990	720.300	722.400	722.400	722.400	722.100	720.300	722.400	722.300	722.400	722.000	720.300	722.400	722.400	722.400	722.100	0.00	0.00	-0.10	0.00	-0.10
1+60	719.400	721.710	722.030	722.140	722.050	719.700	722.000	722.100	722.300	722.000	719.600	722.000	722.100	722.300	722.000	719.700	722.000	722.100	722.300	722.000	-0.10	0.00	0.00	0.00	0.00
1+70	720.850	720.650	721.550	721.940	721.930	721.000	720.900	721.600	722.000	722.000	720.800	720.900	721.600	721.900	722.000	721.000	720.900	721.600	722.000	722.000	-0.20	0.00	0.00	-0.10	0.00
1+80	720.870	721.220	720.540	721.600	721.660	720.800	721.500	720.700	721.700	721.800	720.800	721.500	720.700	721.600	721.800	720.800	721.500	720.700	721.700	721.800	0.00	0.00	0.00	-0.10	0.00
1+90	720.870	721.490	720.940	721.070	721.770	721.000	721.700	721.100	721.100	721.800	720.900	721.600	721.000	721.100	721.800	721.000	721.700	721.100	721.100	721.800	-0.10	-0.10	-0.10	0.00	0.00
2+00	720.730	721.290	721.010	720.700	721.640	720.900	721.400	721.200	720.800	721.700	720.800	721.400	721.100	720.700	721.600	720.900	721.400	721.200	720.800	721.700	-0.10	0.00	-0.10	-0.10	-0.10
2+10	721.210	721.210	721.210	720.800	721.560	720.000	721.600	721.300	720.900	721.600	719.500	721.500	721.300	720.800	721.600	720.000	721.600	721.300	720.900	721.600	-0.50	-0.10	0.00	-0.10	0.00
2+20																									
Average:	**720.47**	**721.05**	**721.28**	**721.65**	**722.02**	**720.56**	**721.15**	**721.35**	**721.70**	**722.05**	**720.43**	**721.14**	**721.31**	**721.66**	**722.02**	**720.56**	**721.15**	**721.35**	**721.70**	**722.05**	**-0.13**	**-0.01**	**-0.04**	**-0.04**	**-0.03**

Notes:

1. Stations are based on Station 0+00 being the upstream gate, and 2+20 the outlet of the pipe.
2. Elevations reference the National Geodetic Vertical Datum (NGVD29).
3. The 2023, 2024 & 2025 Surveys were performed by Hill using a total station and prism with an elevation 726.93' NGVD benchmark (chisel square on a concrete wall as depicted on a GZA-provided October 7, 2020 drawing by Foresight Land Services).
4. Subsurface investigations (test pits and test borings) were performed in October 2023. Ground surface elevatoins surveyed after October 2023 may differ from surveys perfomred before October 2023 due to disturbances from the subsurface investigations.

Table 5 - Rising Pond Dam Penstock UT Measurements
Rising Pond Dam Penstock Investigations

Station	Clock Position	Thickness (inches)				% Section Loss December 2023	% Section Loss November 2024	% Section Loss October 2025
		December 2023	November 2024	October 2025	Design			
0+00	12	0.357	0.355	0.355	0.375	4.8%	5.3%	5.3%
	3	0.308	0.338	0.268	0.375	17.9%	9.9%	28.5%
	5	0.303	0.304	0.337	0.375	19.2%	18.9%	10.1%
	7	0.313	0.372	0.313	0.375	16.5%	0.8%	16.5%
	9	0.328	0.311	0.294	0.375	12.5%	17.1%	21.6%
0+50	12	0.371	**0.377**	**0.381**	0.375	1.1%	-0.5%	-1.6%
	3	0.328	0.328	**0.381**	0.375	12.5%	12.5%	-1.6%
	5	0.337	0.367	0.338	0.375	10.1%	2.1%	9.9%
	7	0.357	**0.381**	0.367	0.375	4.8%	-1.6%	2.1%
	9	0.362	**0.386**	0.353	0.375	3.5%	-2.9%	5.9%
1+10	12	0.318	0.318	0.357	0.375	15.2%	15.2%	4.8%
	3	**0.386**	**0.389**	**0.396**	0.375	-2.9%	-3.7%	-5.6%
	5	0.333	**0.386**	0.372	0.375	11.2%	-2.9%	0.8%
	7	0.350	0.362	**0.377**	0.375	6.7%	3.5%	-0.5%
	9	**0.386**	**0.386**	**0.386**	0.375	-2.9%	-2.9%	-2.9%
1+15	12	0.328	0.338	0.335	0.375	12.5%	9.9%	10.7%
	11	0.342	0.335	0.333	0.375	8.8%	10.7%	11.2%
1+25	12	0.318	0.333	**0.377**	0.375	15.2%	11.2%	-0.5%
	1	0.313	0.304	0.312	0.375	16.5%	18.9%	16.8%
	2	0.238	0.278	0.281	0.375	36.5%	25.9%	25.1%
	3	**0.391**	**0.386**	**0.396**	0.375	-4.3%	-2.9%	-5.6%
	5	0.320	0.333	0.328	0.375	14.7%	11.2%	12.5%
	9	0.357	0.361	**0.396**	0.375	4.8%	3.7%	-5.6%
1+35	12	0.362	0.357	0.362	0.375	3.5%	4.8%	3.5%
	11	0.342	0.338	**0.386**	0.375	8.8%	9.9%	-2.9%
1+69	3	**0.386**	**0.389**	**0.377**	0.375	-2.9%	-3.7%	-0.5%
	9	0.372	**0.385**	0.367	0.375	0.8%	-2.7%	2.1%
1+70	12	0.333	0.353	0.311	0.375	11.2%	5.9%	17.1%
	3	**0.396**	**0.396**	**0.391**	0.375	-5.6%	-5.6%	-4.3%
	5	0.342	0.352	**0.377**	0.375	8.8%	6.1%	-0.5%
	7	0.367	0.352	**0.377**	0.375	2.1%	6.1%	-0.5%
	9	**0.396**	**0.396**	**0.386**	0.375	-5.6%	-5.6%	-2.9%
2+20	12	0.333	0.334	0.333	0.375	11.2%	10.9%	11.2%
	3	0.347	0.343	0.362	0.375	7.5%	8.5%	3.5%
	5	0.333	0.333	0.333	0.375	11.2%	11.2%	11.2%
	7	0.337	0.343	0.352	0.375	10.1%	8.5%	6.1%
	9	0.342	0.338	0.333	0.375	8.8%	9.9%	11.2%
	Min:	**0.238**	**0.278**	**0.268**	**Max:**	**37%**	**25.9%**	**29%**
	Max:	**0.372**	**0.372**	**0.372**	**Min:**	**1%**	**0.8%**	**1%**
	Average:	**0.335**	**0.338**	**0.335**	**Average:**	**11%**	**9.9%**	**11%**

Notes:

1. UT measurements were taken by GZA using a Reed Instruments Ultrasonic Thickness Gage Model No. TM-8811. The UT meter frequency was set to the default setting for common steel, 5,920 m/s.

2. The design thickness is noted as 3/8-inch on ca 1949 design drawing 1816-1-2.

3. Measurements greater than the design thickness are noted in**bold**. These measurements have been excluded from min, max, and average calculations, as they are conservatively considered not representative of the actual thickness of the steel shell.

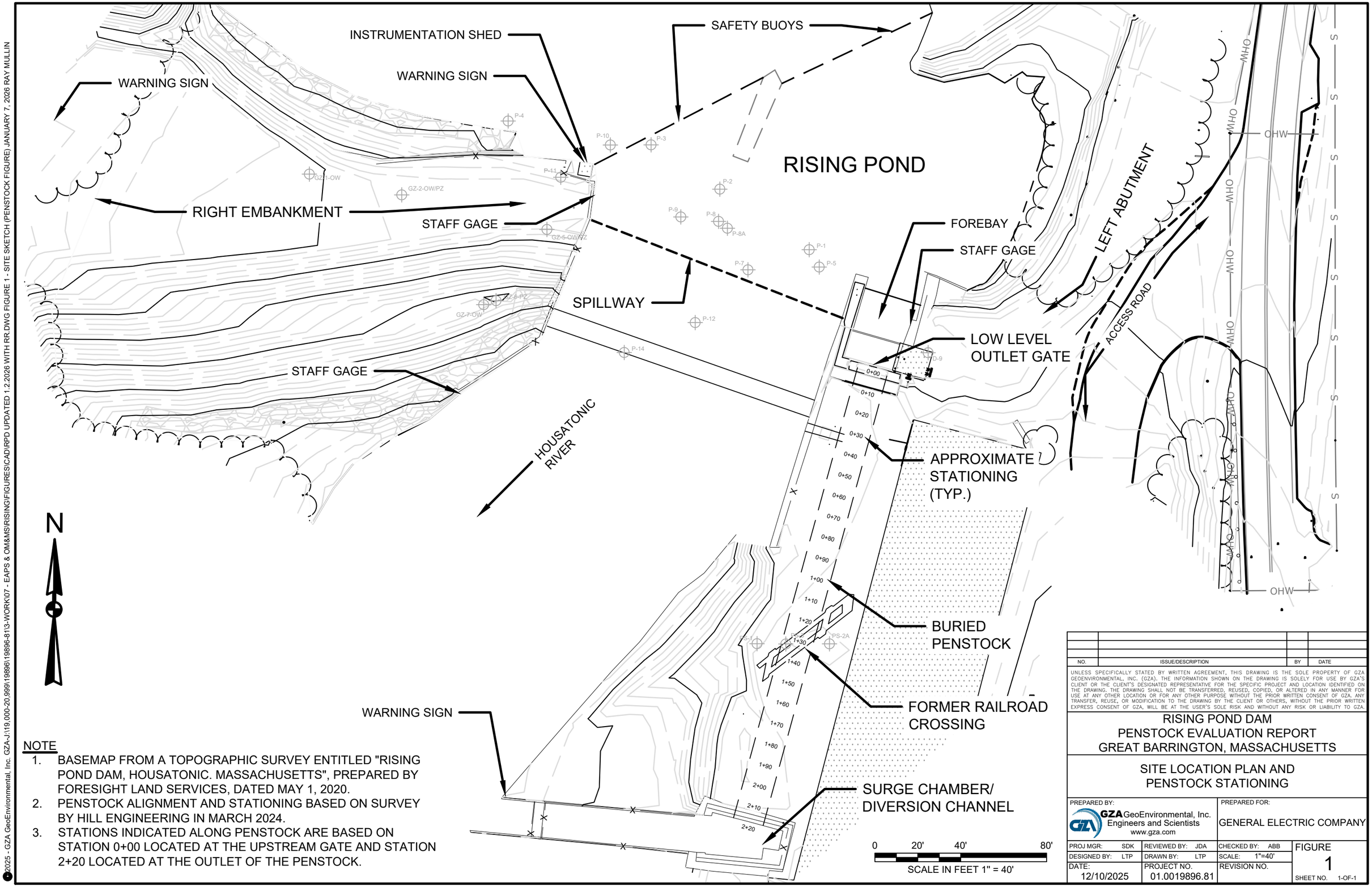
Table 6 - Rising Pond Dam Penstock UT Measurements - Average Comparison
Rising Pond Dam Penstock Investigations

Clock Position	December 2023 Number of Valid Readings	November 2024 Number of Valid Readings	October 2025 Number of Valid Readings	December 2023 Average	November 2024 Average	October 2025 Average	Design	Average % Section Loss for December 2023	Average % Section Loss for November 2024	Average % Section Loss for October 2025
All	31	26	23	0.335	0.338	0.335	0.375	11%	10%	11%
1	1	1	1	0.313	0.304	0.312	0.375	17%	19%	17%
2	1	1	1	0.238	0.278	0.281	0.375	37%	26%	25%
3	3	3	2	0.328	0.336	0.315	0.375	13%	10%	16%
4	0	0	0	-	-	-	0.375	-	-	-
5	6	5	5	0.328	0.338	0.342	0.375	13%	10%	9%
6	0	0	0	-	-	-	0.375	-	-	-
7	5	4	3	0.345	0.357	0.344	0.375	8%	5%	8%
8	0	0	0	-	-	-	0.375	-	-	-
9	5	3	4	0.352	0.337	0.337	0.375	6%	10%	10%
10	0	0	0	-	-	-	0.375	-	-	-
11	2	2	1	0.342	0.337	0.333	0.375	9%	10%	11%
12	8	7	6	0.340	0.341	0.342	0.375	9%	9%	9%

Notes:

1. Measurements greater than the design thickness have been excluded from the number of readings and average calculations, as they are likely not representative of the actual thickness of the steel shell.

Figures



NOTE

1. BASEMAP FROM A TOPOGRAPHIC SURVEY ENTITLED "RISING POND DAM, HOUSATONIC. MASSACHUSETTS", PREPARED BY FORESIGHT LAND SERVICES, DATED MAY 1, 2020.
2. PENSTOCK ALIGNMENT AND STATIONING BASED ON SURVEY BY HILL ENGINEERING IN MARCH 2024.
3. STATIONS INDICATED ALONG PENSTOCK ARE BASED ON STATION 0+00 LOCATED AT THE UPSTREAM GATE AND STATION 2+20 LOCATED AT THE OUTLET OF THE PENSTOCK.

NO.	ISSUE/DESCRIPTION	BY	DATE

RISING POND DAM
PENSTOCK EVALUATION REPORT
GREAT BARRINGTON, MASSACHUSETTS

SITE LOCATION PLAN AND PENSTOCK STATIONING

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: GENERAL ELECTRIC COMPANY	
PROJ MGR: SDK	REVIEWED BY: JDA	CHECKED BY: ABB	FIGURE 1
DESIGNED BY: LTP	DRAWN BY: LTP	SCALE: 1"=40'	
DATE: 12/10/2025	PROJECT NO. 01.0019896.81	REVISION NO.	SHEET NO. 1-OF-1

Figure 2 - Diagram of Penstock Crown, Springline, and Invert
Rising Pond Dam Penstock Investigations

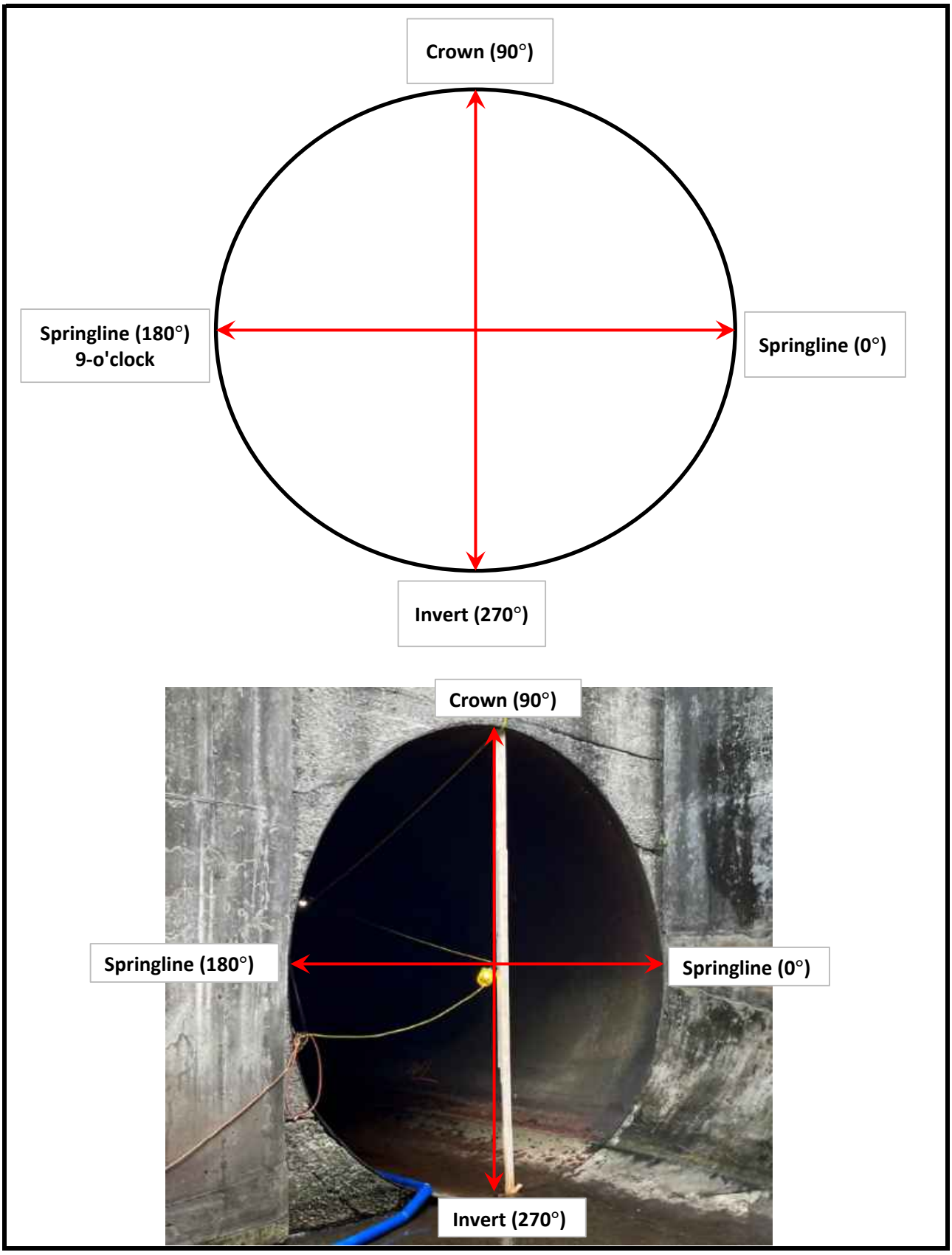


Figure 3
Rising Pond Dam Penstock Investigations
Ground Surface Elevation (GSE), Crown & Invert Elevations Survey Comparisons

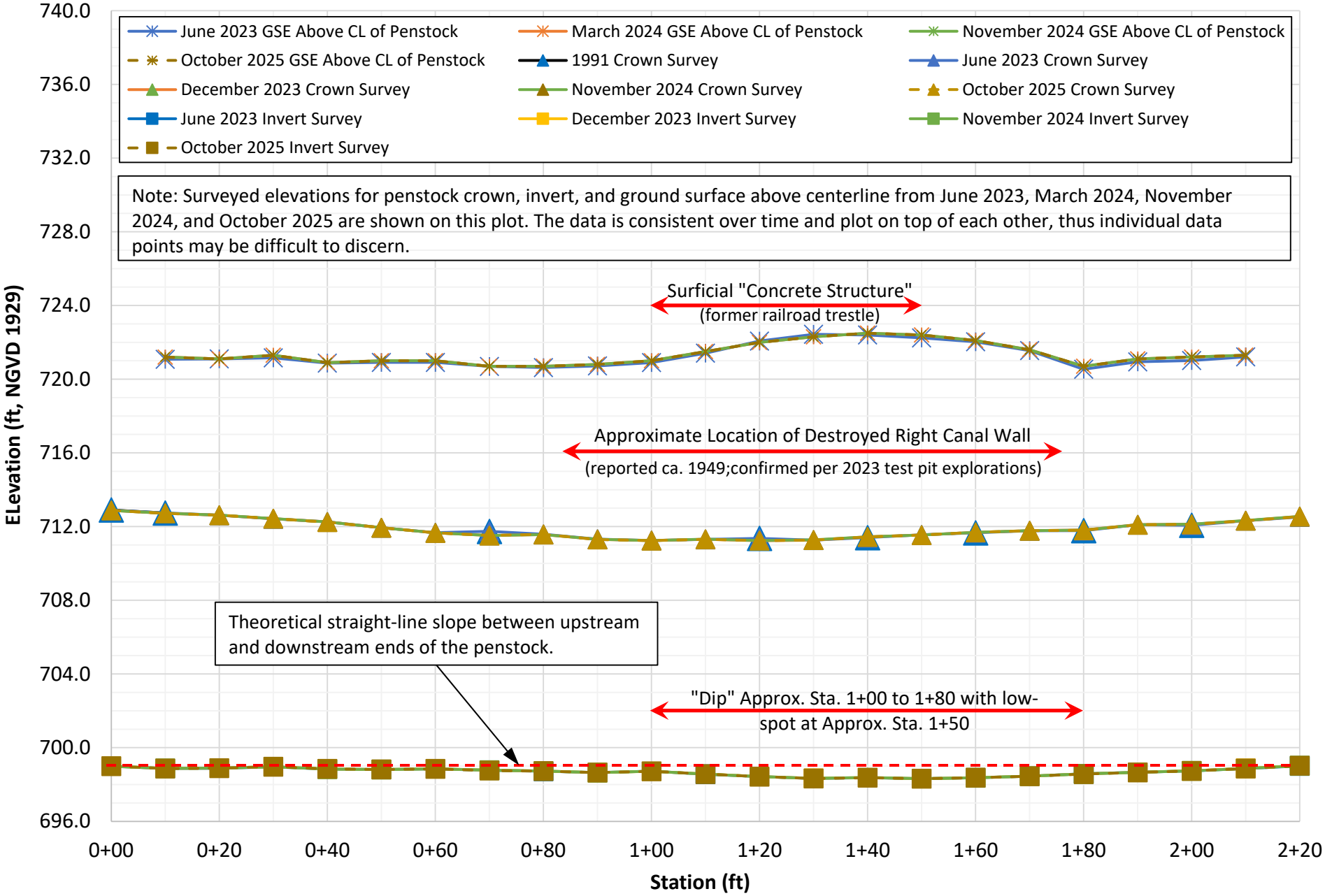


Figure 4
Rising Pond Dam Penstock Investigations
Ground Surface Elevations (GSE) Survey Results

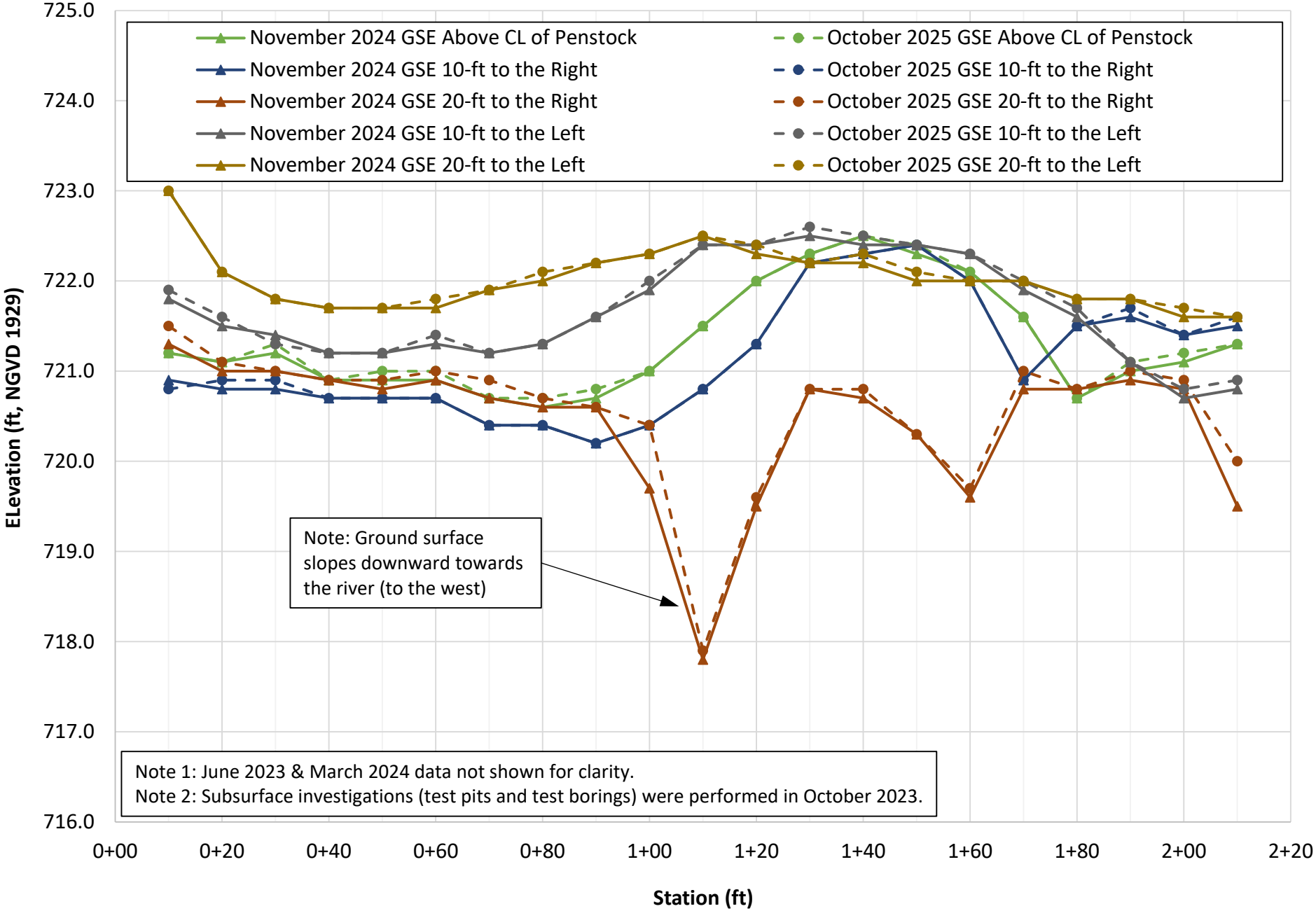
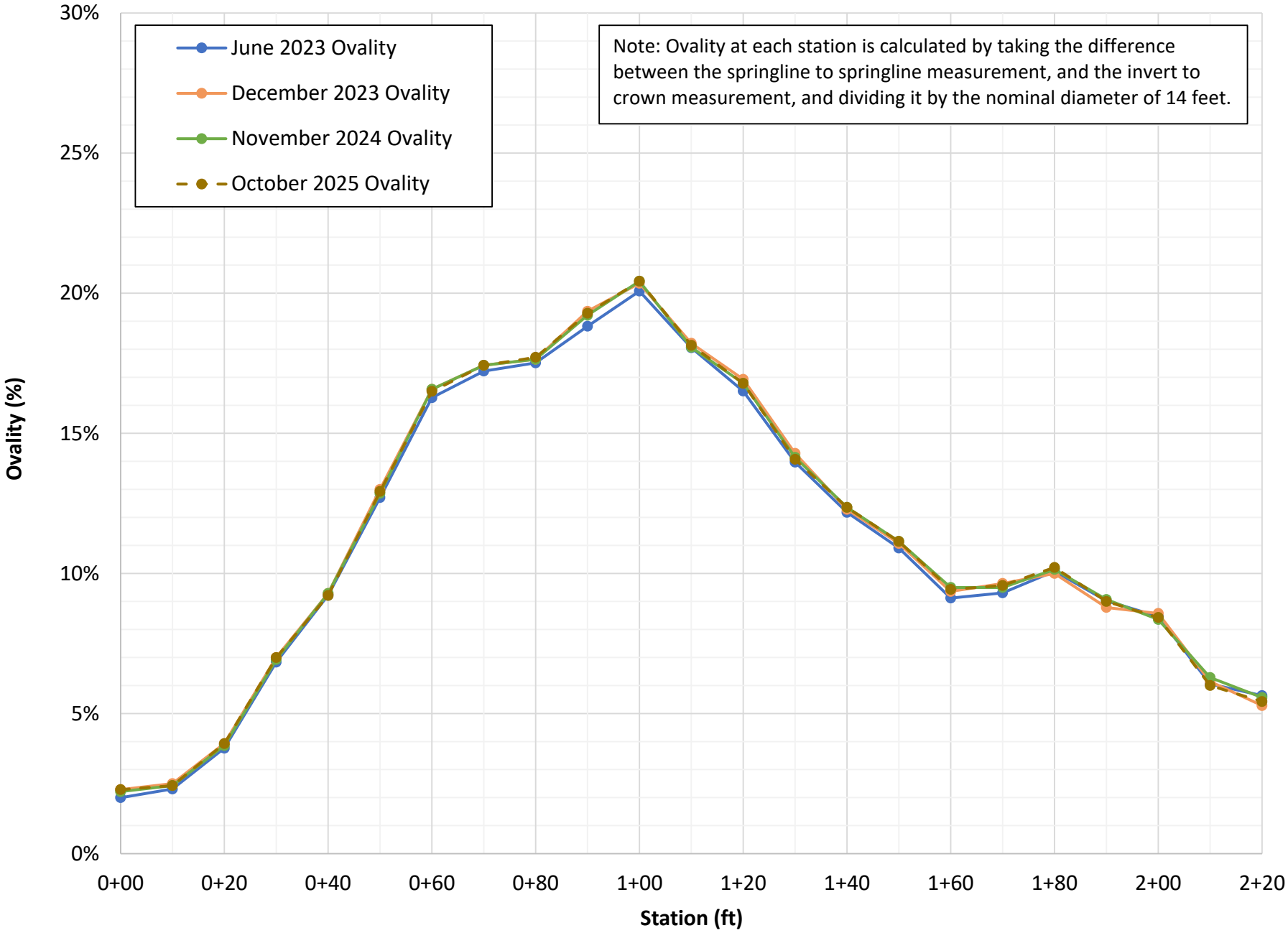
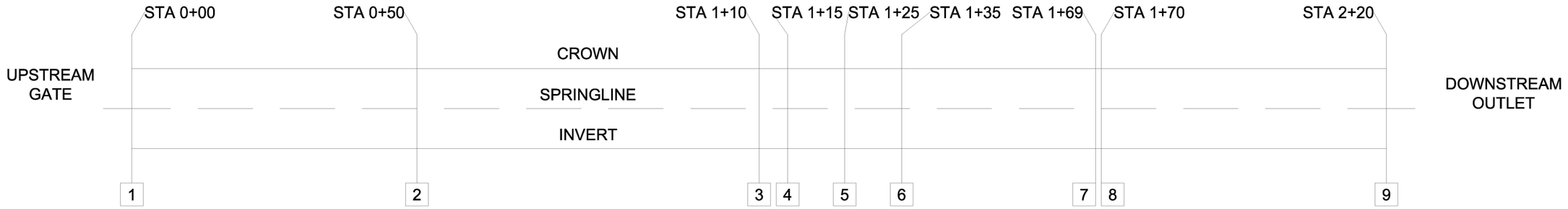
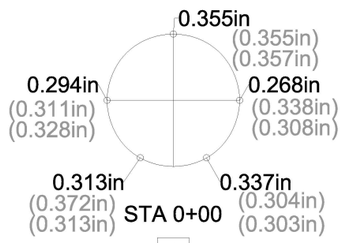


Figure 5
Rising Pond Dam Penstock Investigations
Ovality Measurement Comparisons





PENSTOCK ELEVATION VIEW



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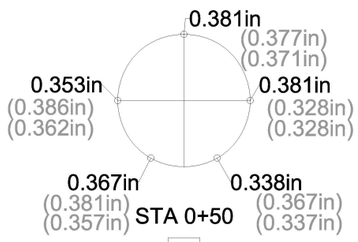

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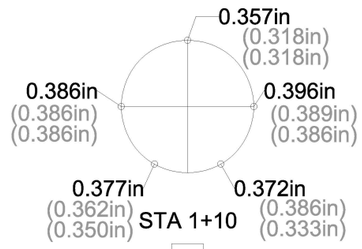

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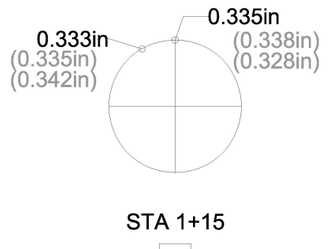

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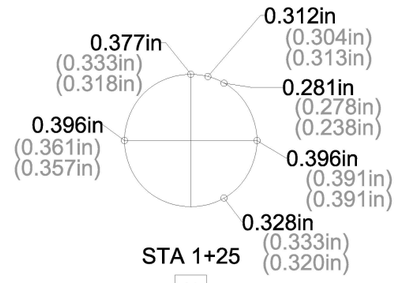

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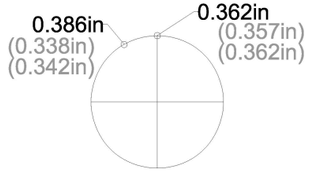

STA 1+35

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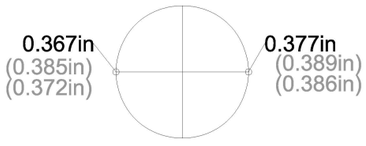

STA 1+69

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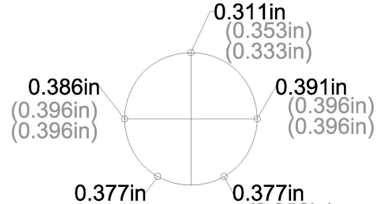

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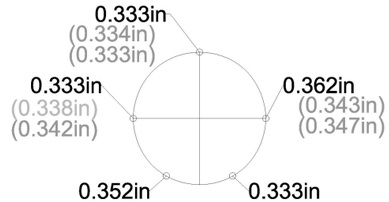
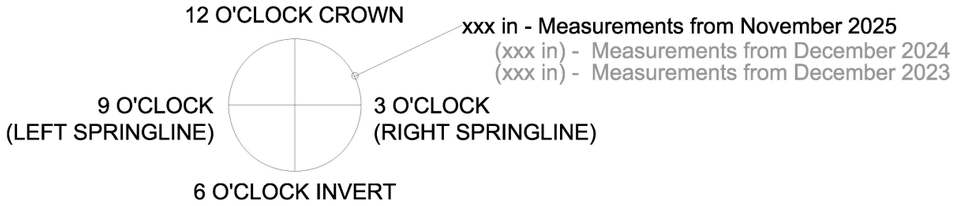


9

NOTES:

1. UT MEASUREMENTS WERE TAKEN BY GZA ON DECEMBER 12, 2023, NOVEMBER 19, 2024, AND OCTOBER 23, 2025 USING REED INSTRUMENTS ULTRASONIC THICKNESS GAGE MODEL NO. TM-8811. THE UT METER FREQUENCY WAS SET TO THE DEFAULT SETTING FOR COMMON STEEL, 5,920 m/s.
2. STATIONS INDICATED ALONG PENSTOCK ALIGNMENT ARE BASED ON STATION 0+00 LOCATED AT THE UPSTREAM GATE AND STATION 2+20 LOCATED AT THE OUTLET OF THE PENSTOCK.
3. ALL POSITIONS AND SECTIONS ARE NOTED FACING THE DOWNSTREAM DIRECTION.



NO.	ISSUE/DESCRIPTION	BY	DATE

RISING POND DAM
PENSTOCK EVALUATION REPORT
GREAT BARRINGTON, MASSACHUSETTS

SITE LOCATION PLAN - ULTRASONIC THICKNESS TEST RESULTS

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: GENERAL ELECTRIC COMPANY	
PROJ MGR: SDK	REVIEWED BY: XXX	CHECKED BY: XXX	FIG 6
DESIGNED BY: SDK	DRAWN BY: MZ	SCALE: 1" = 16'	
DATE: OCT. 24, 2025	PROJECT NO. 19896.81	REVISION NO.	SHEET NO. 1 OF 1

Appendix A – Limitations

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of the General Electric Company (Client) to submit to the United States Environmental Protection Agency for the stated purpose(s) and location(s) identified in this report. Use of this report, in whole or in part, for other purposes may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s).

STANDARD OF CARE

2. Our findings and conclusions are based on the work described in GZA's report titled "2025 Penstock Investigations End-of-Year Status Report", dated January 2026, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).
3. Our services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made.

SUBSURFACE CONDITIONS

4. If presented, the generalized soil profile(s) and description, along with the conclusions and recommendations provided in our Report, are based in part on widely-spaced subsurface explorations by GZA and/or others, with a limited number of soil and/or rock samples and groundwater /piezometers data and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.
5. Water level readings have been made in test holes (as described in the Report), monitoring wells and piezometers, at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this Report. Fluctuations in the groundwater and piezometer levels, however, occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, reservoir and tailwater levels, the presence of subsurface utilities, and/or natural or artificially induced perturbations.

GENERAL

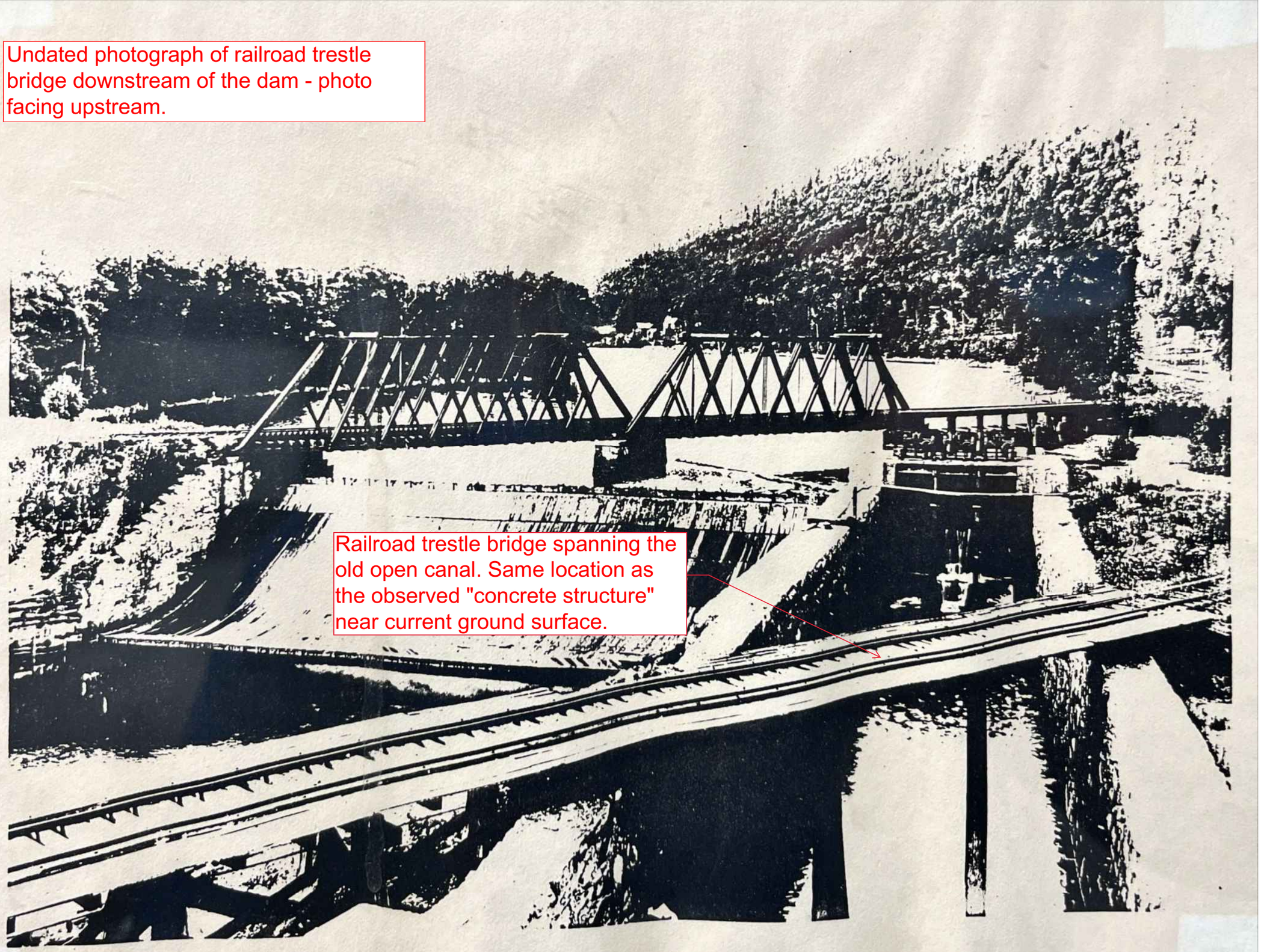
6. The observations described in this report were made under the conditions stated therein. The conclusions presented were based solely upon the activities described therein, and not on scientific tasks or procedures beyond the scope of described activities or the time and budgetary constraints imposed by the Client.
7. In preparing this report, GZA relied on certain information provided by the Client and other parties referenced therein available to GZA at the time of the evaluation. GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this evaluation.
8. Observations were made of the site and of structures on the site as indicated within the report. Where access to portions of the structure or site or to structures on the site was unavailable or limited, GZA renders no opinion as to the condition of that portion of the site or structure. In particular, it is noted that water levels in the impoundment and elsewhere and/or flow over the spillway may have limited GZA's ability to make observations of underwater portions of the structure. Excessive vegetation, when present, also inhibits observations.
9. In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions during the course of this study along with data made available to GZA. It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through continued inspection and care can there be any chance that unsafe conditions be detected.
10. This report does not include an assessment of the need for fences, gates, no-trespassing signs, repairs to existing fences and railings and other items which may be needed to minimize trespass and provide greater security for the facility and safety to the public. An evaluation of the project for compliance with OSHA rules and regulations is also excluded.

ADDITIONAL SERVICES

10. It is recommended that GZA be retained to provide services during any future: site observations, explorations, evaluations, design, implementation activities, construction and/or implementation of remedial measures recommended in this Report. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

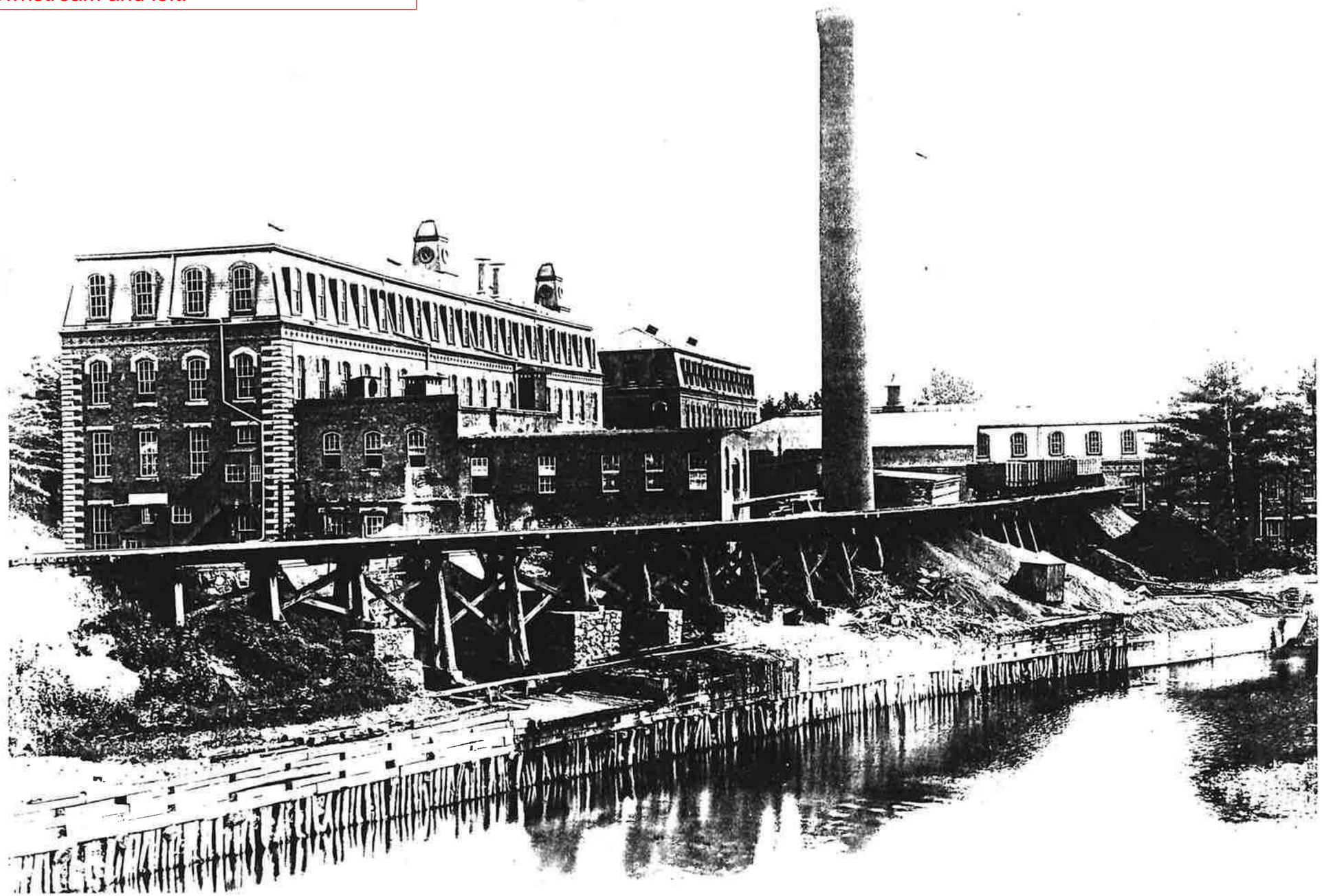
Appendix B – Historical Drawings

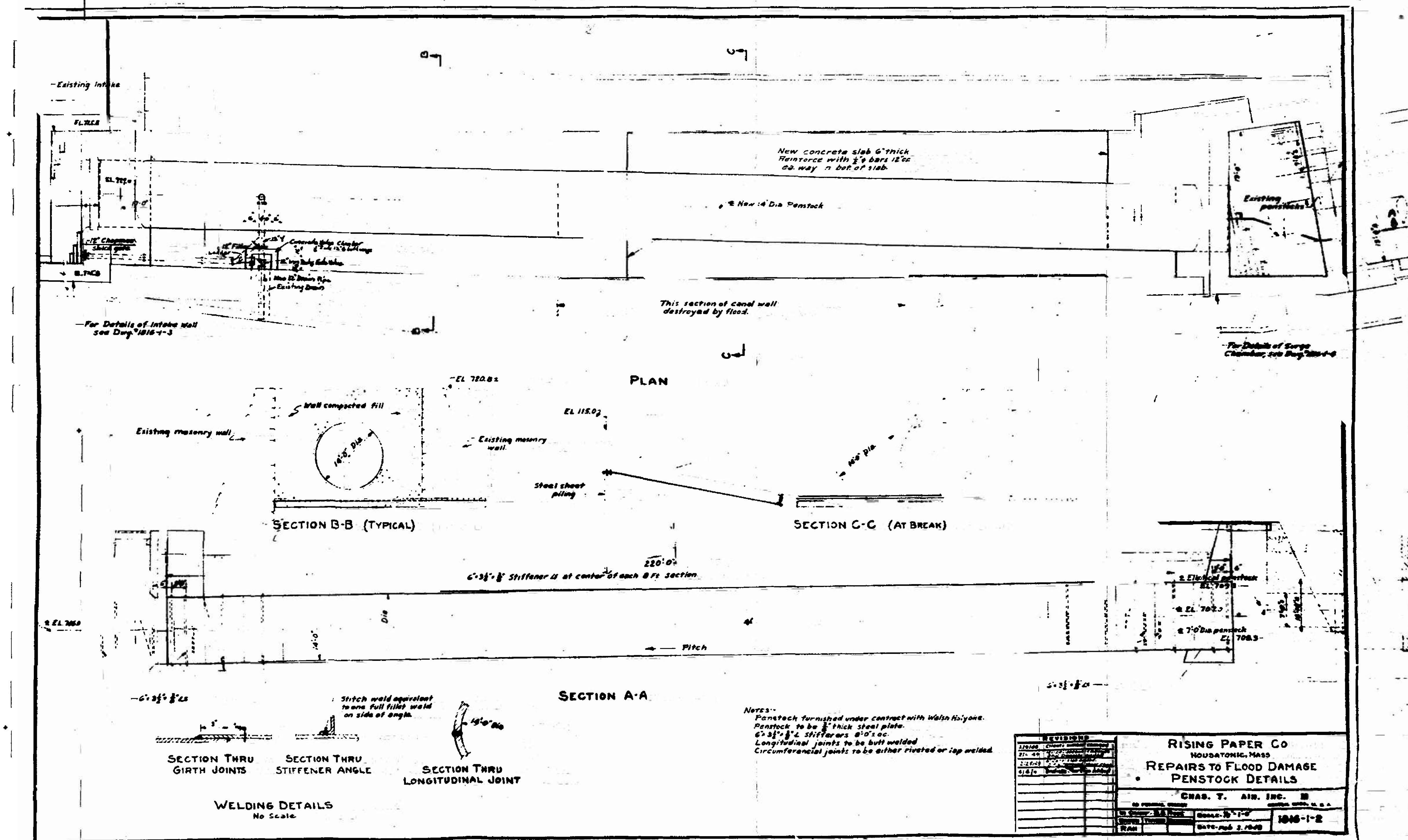
Undated photograph of railroad trestle bridge downstream of the dam - photo facing upstream.



Railroad trestle bridge spanning the old open canal. Same location as the observed "concrete structure" near current ground surface.

Photograph of railroad trestle bridge downstream of the dam - photo facing downstream and left.





Existing intake
New concrete slab 6" thick
Reinforce with ½"ø bars 12"cc
ea. way in bot. of slab.
New 14' Dia Penstock
Existing penstocks
This section of canal wall
destroyed by flood.
For Details of Intake wall
see Dwg. 1816-1-3
For Details of Surge
Chamber, see Dwg. 1816-1-6
PLAN
EL 720.8±
Well compacted fill
Existing masonry wall
Existing masonry wall
EL 115.0±
Steel sheet piling
SECTION B-B (TYPICAL)
SECTION C-C (AT BREAK)
220'-0"
Stiffener at center of each 8 Ft section
Pitch
SECTION A-A
Stitch weld equivalent to one full fillet weld on side of angle.
SECTION THRU GIRTH JOINTS
SECTION THRU STIFFENER ANGLE
SECTION THRU LONGITUDINAL JOINT
WELDING DETAILS
No Scale
Notes:-
Penstock furnished under contract with Walsh Holyoke.
Penstock to be ⅜" thick steel plate.
Longitudinal joints to be butt welded
Circumferencial joints to be either riveted or lap welded.
RISING PAPER CO
HOUSATONIC, MASS
REPAIRS TO FLOOD DAMAGE
PENSTOCK DETAILS
CHAS. T. MAIN, INC.
1816-1-2

New concrete slab 6" thick.
Reinforce with ½"ø bars 12" oc.
ea. way in bot. of slab.

℄ New 14' Dia. Penstock

Existing penstocks

19'-0"

12" Filler pipe

Ladder

Concrete Valve Chamber
½" Ends 12" ø bolt rings

12" Iron Body Gate Valve

New 12" Drain Pipe
to Existing Drain

Details of Intake Wall
Dwg.™ 1816-1-3

This section of canal wall
destroyed by flood.

For Details o
Chamber, Sh

Note saying well compacted fill.

PLAN

EL 720.8±

Wall compacted fill

EL 115.0

Existing masonry wall

Existing masonry wall

14'-0" Dia

Steel sheet piling

SECTION B-B (TYPICAL)

14'-0" Dia

SECTION C-C (AT BREAK)

220'-0"

6"×3½"×⅜" Stiffener ∠s at center of each 8 Ft. section

3'-0"

℄ Elliptical penstock
EL. 709.3

℄ EL. 707.0

℄ 7'-0" Dia. penstock
EL. 708.3

14'-0" Dia

Pitch

Note saying penstock to be 3/8" thick steel plates

SECTION A-A

6"×3½"×½"×⅝" ∠s

Stitch weld equivalent to one full fillet weld on side of angle.

14'-0" Dia

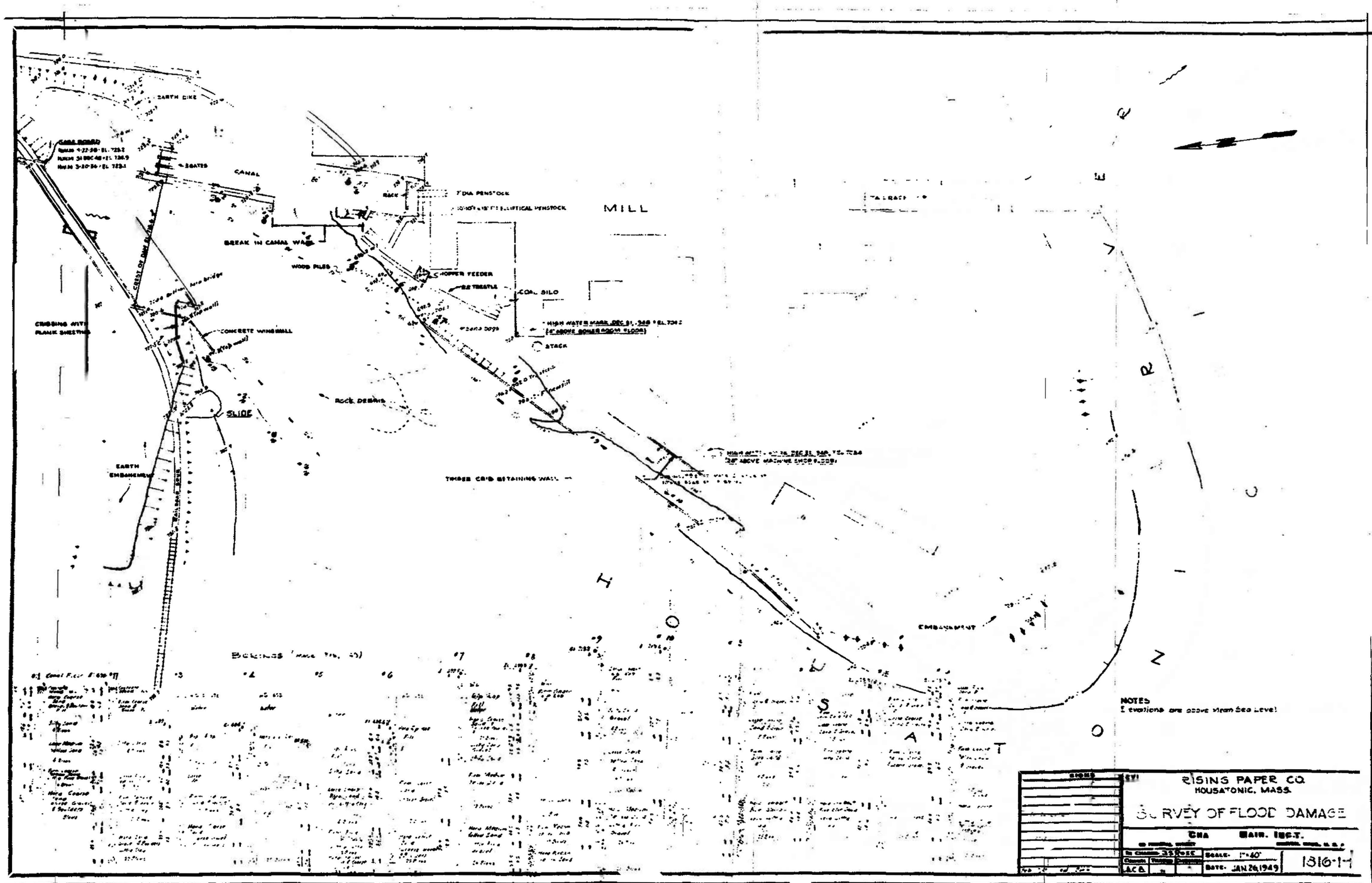
SECTION THRU

SECTION THRU

Notes:
Penstock furnished under contract with Walsh Holyoke.
Penstock to be ⅜" thick steel plate.
6"×3½"×⅜" ∠ stiffeners 8'-0" s oc.
Longitudinal joints to be butt welded
Circumferencial joints to be either riveted or lap welded

REVISIONS	
2/13/40	Client's number changed
2/17/40	No. of sheets changed

RISING PAPER C
HOUSATONIC, MASS


EARTH DIKE
CANAL
MILL
BREAK IN CANAL WALL
WOOD PILES
HOPPER FEEDER
COAL SILO
STACK
CONCRETE WINDMILL
ROCK DEBRIS
SLUICE
EARTH EMBANKMENT
TIMBER CRIB RETAINING WALL
EMBANKMENT
TAILRACE
NOTES
Elevations are above Mean Sea Level
RISING PAPER CO.
HOUSATONIC, MASS.
SURVEY OF FLOOD DAMAGE
CHA
MAIN. ISL. T.
SCALE- 1"=40'
DATE- JAN 26 1949
1816-1-H

Old canal (new area above the penstock)

Railroad Trestle Bridge

Break in canal wall

EARTH DIKE

3 GATES

CANAL

RACK

7' DIA PENSTOCK

10'10½" x 15'1" ELLIPTICAL PENSTOCK

MILL

BREAK IN CANAL WALL

WOOD PILES

HOPPER FEEDER

RR TRESTLE

COAL SILO

HIGH WATER MARK, DEC 31, 1948 = EL 704.2
(4" ABOVE BOILER ROOM FLOOR)

STACK

CONCRETE WINGWALL

ROCK DEBRIS

SLIDE

EARTH EMBANKMENT

RAILROAD SPUR

TIMBER CRIB RETAINING WALL

TAIL RACE

HIGH WATER MARK, DEC 31, 1948, = EL 703.4
(24" ABOVE MACHINE SHOP FLOOR)

EMBANKMENT

BORINGS (MADE FEB., 1951)

NOTES
Elevations are above Mean Sea Level

REVISIONS

RISING PAPER
HOUSATONIC, MA

Appendix C – October 2025 Topographic Survey and Ovality Measurements

Rising Pond Dam Surface Topo Comparison
Project No. SRV-2523

Station	Northing	Easting	March 2024 Elev.	Oct. 2025 Elev.	Difference
0+10	2918768.3	153252.9	721.2	721.1	-0.1
0+10 10L	2918765.8	153262.5	721.9	721.9	0.0
0+10 10R	2918770.9	153243.2	720.8	720.8	0.0
0+10 20L	2918763	153272.4	723	723.0	0.0
0+10 20R CLF	2918773.4	153234.7	721.5	721.3	-0.2
0+20	2918758.5	153250.1	721.1	721.0	-0.1
0+20 10L	2918756	153259.8	721.6	721.5	-0.1
0+20 10R	2918761.3	153240.5	720.9	720.8	-0.1
0+20 20L	2918753.5	153269.7	722.1	722.1	0.0
0+20 20R+CLF	2918764	153231.8	721.1	720.9	-0.2
0+30	2918749	153247.4	721.3	721.1	-0.2
0+30 10L	2918746.4	153257.2	721.3	721.3	0.0
0+30 10R	2918751.6	153237.9	720.9	720.9	0.0
0+30 20L	2918743.8	153267	721.8	721.8	0.0
0+30 20R+CLF	2918754.5	153228.9	721	720.9	-0.1
0+40	2918739.3	153244.8	720.9	720.9	0.0
0+40 10L	2918736.7	153254.5	721.2	721.2	0.0
0+40 10R	2918742.1	153235.2	720.7	720.7	0.0
0+40 20L	2918734.2	153264.3	721.7	721.7	0.0
0+40 20R+CLF	2918745	153226	720.9	720.8	-0.1
0+50	2918729.9	153242.2	721	720.9	-0.1
0+50 10L	2918727.1	153251.8	721.2	721.1	-0.1
0+50 10R	2918732.6	153232.5	720.7	720.7	0.0
0+50 20L	2918724.4	153261.6	721.7	721.7	0.0
0+50 20R+CLF	2918735.2	153222.9	720.9	720.7	-0.2
0+60	2918720	153239.5	721	720.9	-0.1
0+60 10L	2918717.5	153249	721.4	721.3	-0.1
0+60 10R	2918722.8	153229.8	720.7	720.6	-0.1
0+60 20L	2918715	153258.9	721.8	721.7	-0.1
0+60 20R+CLF	2918725.8	153219.9	721	720.9	-0.1
0+70	2918710.5	153236.8	720.7	720.7	0.0
0+70 10L	2918708.1	153246.6	721.2	721.2	0.0
0+70 10R	2918713.1	153227.2	720.4	720.4	0.0
0+70 20L	2918705.1	153256.2	721.9	721.9	0.0
0+70 20R+CLF	2918716.3	153217.3	720.9	720.8	-0.1
0+80	2918700.8	153234.1	720.7	720.6	-0.1
0+80 10L	2918698.4	153243.9	721.3	721.3	0.0
0+80 10R	2918703.5	153224.5	720.4	720.4	0.0
0+80 20L	2918695.6	153253.6	722.1	722.0	-0.1
0+80 20R+CLF	2918706.2	153214.8	720.7	720.6	-0.1

Rising Pond Dam Surface Topo Comparison
Project No. SRV-2523

Station	Northing	Easting	March 2024 Elev.	Oct. 2025 Elev.	Difference
0+90	2918691.1	153231.3	720.8	720.7	-0.1
0+90 10L	2918688.7	153241.2	721.6	721.6	0.0
0+90 10R	2918694	153221.8	720.2	720.2	0.0
0+90 20L	2918686	153251	722.2	722.2	0.0
0+90 20R+CLF	2918697	153212.1	720.6	720.6	0.0
1+00	2918681.8	153228.8	721	720.9	-0.1
1+00 10L	2918679.1	153238.5	722	722.0	0.0
1+00 10R	2918684.7	153219.3	720.4	720.3	-0.1
1+00 20L	2918676.3	153248.3	722.3	722.3	0.0
1+00 20R	2918687.3	153209.7	720.4	719.8	-0.6
1+10	2918671.9	153226	721.5	721.5	0.0
1+10 10L	2918669.5	153235.7	722.4	722.4	0.0
1+10 10R	2918674.9	153216.3	720.8	720.8	0.0
1+10 20L	2918666.8	153245.7	722.5	722.5	0.0
1+10 20R	2918677.1	153206.5	717.9	717.8	-0.1
1+20	2918662.5	153223.6	722	722.0	0.0
1+20 10L	2918659.8	153233.2	722.4	722.4	0.0
1+20 10R	2918665.4	153213.6	721.3	721.3	0.0
1+20 20L	2918657.1	153242.9	722.4	722.3	-0.1
1+20 20R	2918667.3	153203.9	719.6	719.4	-0.2
1+30	2918652.7	153220.7	722.3	722.3	0.0
1+30 10L	2918650.1	153230.4	722.6	722.6	0.0
1+30 10R	2918655.5	153211.1	722.2	722.2	0.0
1+30 20L	2918647.5	153240.1	722.2	722.2	0.0
1+30 20R	2918658.4	153201.7	720.8	720.8	0.0
1+40	2918642.9	153218	722.5	722.5	0.0
1+40 10L	2918640.4	153227.8	722.5	722.4	-0.1
1+40 10R	2918645.8	153208.7	722.3	722.3	0.0
1+40 20L	2918637.9	153237.5	722.3	722.2	-0.1
1+40 20R	2918648.5	153199.1	720.8	720.7	-0.1
1+50	2918633.6	153215.3	722.4	722.3	-0.1
1+50 10L	2918630.9	153225.1	722.4	722.3	-0.1
1+50 10R	2918635.9	153206.1	722.4	722.4	0.0
1+50 20L	2918628.2	153235	722.1	722.0	-0.1
1+50 20R	2918637.8	153196.8	720.3	720.3	0.0
1+60	2918623.8	153212.7	722.1	722.1	0.0
1+60 10L	2918621.1	153222.5	722.3	722.2	-0.1
1+60 10R	2918626.3	153203.3	722	721.9	-0.1
1+60 20L	2918618.6	153232	722	721.9	-0.1
1+60 20R	2918628.6	153193.6	719.7	719.6	-0.1
1+70	2918614	153210.1	721.6	721.5	-0.1

Rising Pond Dam Surface Topo Comparison
Project No. SRV-2523

Station	Northing	Easting	March 2024 Elev.	Oct. 2025 Elev.	Difference
1+70 10L	2918611.5	153219.7	722	721.9	-0.1
1+70 10R	2918616.7	153200.4	720.9	720.8	-0.1
1+70 20L	2918608.8	153229.5	722	721.9	-0.1
1+70 20R	2918619.1	153190.7	721	720.8	-0.2
1+80	2918604.1	153207.6	720.7	720.6	-0.1
1+80 10L	2918602	153217.2	721.7	721.6	-0.1
1+80 10R	2918606.3	153198.4	721.5	721.5	0.0
1+80 20L	2918599.4	153226.7	721.8	721.8	0.0
1+80 20R	2918607.6	153188.7	720.8	720.5	-0.3
1+90	2918595.2	153205.1	721.1	721.0	-0.1
1+90 10L	2918592.3	153214.6	721.1	721.1	0.0
1+90 10R	2918597.9	153195.6	721.7	721.5	-0.2
1+90 20L	2918589.8	153223.9	721.8	721.8	0.0
1+90 20R	2918600.2	153186.5	721	720.9	-0.1
2+00	2918585.1	153202.6	721.2	721.0	-0.2
2+00 10L	2918582.8	153212.1	720.8	720.7	-0.1
2+00 10R	2918587.9	153193	721.4	721.3	-0.1
2+00 20L	2918580.1	153221.2	721.7	721.7	0.0
2+00 20R	2918591.3	153184.3	720.9	720.7	-0.2
2+10	2918574.4	153199.4	721.3	721.2	-0.1
2+10 10L	2918572.5	153208.9	720.9	720.8	-0.1
2+10 10R	2918574.7	153189	721.6	721.4	-0.2
2+10 20L	2918570.6	153218.4	721.6	721.6	0.0
2+10 20R+EC	2918573.5	153177.1	720	719.8	-0.2

Rising Pond Dam Penstock Crown and Invert Elevations
Project No. SRV-2523

Station	Oct. 2025 Crown Elevation (ft)	Oct. 2025 Invert Elevation (ft)	Difference
0+00	712.88	699.00	13.88
0+10	712.72	698.87	13.85
0+20	712.62	698.89	13.74
0+30	712.43	698.97	13.47
0+40	712.24	698.85	13.40
0+50	711.94	698.82	13.12
0+60	711.66	698.85	12.81
0+70	711.52	698.76	12.75
0+80	711.58	698.73	12.85
0+90	711.30	698.65	12.65
1+00	711.24	698.72	12.52
1+10	711.31	698.57	12.74
1+20	711.24	698.43	12.81
1+30	711.27	698.33	12.93
1+40	711.44	698.37	13.07
1+50	711.54	698.32	13.22
1+60	711.69	698.37	13.32
1+70	711.78	698.45	13.32
1+80	711.80	698.57	13.23
1+90	712.10	698.66	13.44
2+00	712.12	698.74	13.38
2+10	712.32	698.87	13.46
2+20	712.54	699.02	13.52

Note: Elevations are based on a benchmark depicted on a drawing by Foresight Land Survices, dated October 7, 2020, provided by GZA Chisel square on a concrete wall, with elevation 726.93' NGVD.

Rising Pond Dam Penstock Invert Elevations
Project No. SRV-2523

Station	June 2023 Invert Elevation (ft)	Dec. 2023 Invert Elevation (ft)	Difference	Dec. 2023 Invert Elevation (ft)	Nov. 2024 Invert Elevation (ft)	Difference	Nov. 2024 Invert Elevation (ft)	Oct. 2025 Invert Elevation (ft)	Difference
0+00	698.98	698.99	-0.01	698.99	698.99	0.00	698.99	699.00	0.00
0+10	698.87	698.87	0.00	698.87	698.88	0.00	698.88	698.87	0.00
0+20	698.88	698.89	-0.01	698.89	698.89	0.00	698.89	698.89	0.01
0+30	698.96	698.97	-0.01	698.97	698.96	0.01	698.96	698.97	-0.01
0+40	698.84	698.84	0.00	698.84	698.84	0.01	698.84	698.85	-0.01
0+50	698.81	698.82	-0.01	698.82	698.82	0.00	698.82	698.82	0.00
0+60	698.85	698.85	0.00	698.85	698.85	0.00	698.85	698.85	0.00
0+70	698.77	698.78	0.00	698.78	698.78	-0.01	698.78	698.76	0.02
0+80	698.72	698.73	-0.01	698.73	698.73	-0.01	698.73	698.73	0.00
0+90	698.65	698.65	0.00	698.65	698.64	0.01	698.64	698.65	-0.01
1+00	698.72	698.72	0.00	698.72	698.72	0.00	698.72	698.72	0.00
1+10	698.56	698.57	-0.01	698.57	698.57	0.00	698.57	698.57	-0.01
1+20	698.43	698.43	0.00	698.43	698.43	0.00	698.43	698.43	0.00
1+30	698.33	698.34	-0.01	698.34	698.33	0.00	698.33	698.33	0.00
1+40	698.37	698.37	0.00	698.37	698.38	-0.01	698.38	698.37	0.01
1+50	698.32	698.32	0.00	698.32	698.32	0.00	698.32	698.32	0.00
1+60	698.37	698.37	0.00	698.37	698.37	0.00	698.37	698.37	0.00
1+70	698.45	698.46	-0.01	698.46	698.46	0.00	698.46	698.45	0.00
1+80	698.58	698.57	0.01	698.57	698.58	0.00	698.58	698.57	0.01
1+90	698.66	698.66	0.00	698.66	698.66	0.00	698.66	698.66	0.00
2+00	698.74	698.75	-0.01	698.75	698.74	0.01	698.74	698.74	0.00
2+10	698.87	698.88	-0.01	698.88	698.87	0.01	698.87	698.87	0.00
2+20	699.01	699.03	-0.02	699.03	699.03	0.00	699.03	699.02	0.01

Note: Elevations are based on a benchmark depicted on a drawing by Foresight Land Survices, dated October 7, 2020, provided by GZA Chisel square on a concrete wall, with elevation 726.93' NGVD.

Rising Pond Dam Penstock Inside Diameter Measurements
Project No. SRV-2523

Station	June 2023 Springline to Springline Measurement (ft)	June 2023 Invert to Crown Measurement (ft)	June 2023 Ovality	Dec. 2023 Springline to Springline Measurement (ft)	Dec. 2023 Invert to Crown Measurement (ft)	Dec. 2023 Ovality	Nov. 2024 Springline to Springline Measurement (ft)	Nov. 2024 Invert to Crown Measurement (ft)	Nov. 2024 Ovality	Oct. 2025 Springline to Springline Measurement (ft)	Oct. 2025 Invert to Crown Measurement (ft)	Oct. 2025 Ovality
0+00	14.2	13.9	2%	14.2	13.9	2%	14.2	13.9	2%	14.2	13.9	2%
0+10	14.2	13.9	2%	14.2	13.8	3%	14.2	13.9	2%	14.2	13.9	2%
0+20	14.3	13.7	4%	14.3	13.7	4%	14.3	13.7	4%	14.3	13.7	4%
0+30	14.4	13.5	7%	14.4	13.5	7%	14.4	13.5	7%	14.5	13.5	7%
0+40	14.7	13.4	9%	14.7	13.4	9%	14.7	13.4	9%	14.7	13.4	9%
0+50	14.9	13.1	13%	14.9	13.1	13%	14.9	13.1	13%	14.9	13.1	13%
0+60	15.1	12.8	16%	15.1	12.8	17%	15.1	12.8	17%	15.1	12.8	17%
0+70	15.2	12.7	17%	15.2	12.7	17%	15.2	12.7	17%	15.2	12.7	17%
0+80	15.3	12.9	18%	15.3	12.8	18%	15.3	12.8	18%	15.3	12.8	18%
0+90	15.3	12.7	19%	15.4	12.7	19%	15.4	12.7	19%	15.4	12.7	19%
1+00	15.3	12.5	20%	15.4	12.5	20%	15.4	12.5	20%	15.4	12.5	20%
1+10	15.3	12.7	18%	15.3	12.7	18%	15.3	12.8	18%	15.3	12.8	18%
1+20	15.2	12.8	17%	15.2	12.8	17%	15.2	12.8	17%	15.2	12.8	17%
1+30	14.9	12.9	14%	14.9	12.9	14%	14.9	13.0	14%	14.9	13.0	14%
1+40	14.8	13.1	12%	14.8	13.1	12%	14.8	13.1	12%	14.8	13.1	12%
1+50	14.8	13.2	11%	14.8	13.2	11%	14.8	13.2	11%	14.8	13.2	11%
1+60	14.6	13.3	9%	14.6	13.3	9%	14.7	13.3	10%	14.6	13.3	9%
1+70	14.6	13.3	9%	14.7	13.3	10%	14.7	13.3	10%	14.7	13.3	10%
1+80	14.6	13.2	10%	14.6	13.2	10%	14.7	13.2	10%	14.7	13.2	10%
1+90	14.7	13.4	9%	14.7	13.4	9%	14.7	13.4	9%	14.7	13.4	9%
2+00	14.6	13.4	8%	14.6	13.4	9%	14.6	13.4	8%	14.6	13.4	8%
2+10	14.3	13.5	6%	14.3	13.4	6%	14.3	13.5	6%	14.3	13.5	6%
2+20	14.3	13.5	6%	14.3	13.5	5%	14.3	13.5	6%	14.3	13.5	5%

Note: Ovality is calculated by the difference between the springline to springline measurement, and the invert to crown measurement, divided by the nominal diameter of 14 feet.

Appendix D – Photographs

Photographic Log

Client Name: General Electric Company	**Site Location:** Rising Pond Dam – Great Barrington, MA October 2025 Penstock Investigations	**Project No.** 01.019896.81

Photo No.	**Date:**
1	10/23/2025

Direction Photo Taken:
Upstream

Description:
Downstream end of penstock (access point for inspectors).

Photo No.	**Date:**
2	10/23/2025

Direction Photo Taken:
Left

Description:
Intake gate operator. Note Lock-Out-Tag-Out (LOTO) equipment in-place.

Photographic Log

Client Name: General Electric Company	**Site Location:** Rising Pond Dam – Great Barrington, MA October 2025 Penstock Investigations	**Project No.** 01.019896.81

Photo No.	**Date:**
3	10/23/2025

Direction Photo Taken:
Upstream

Description:
Overview of the inside of the penstock.

Note: Penstock crown deformations and minimal to no gate leakage. Minor leakage was observed during previous year's inspections (refer to the Appendix D of 2023 and 2024 End-of-Year Report).

Photo No.	**Date:**
4	10/23/2025

Direction Photo Taken:
Right and up (upstream is to photo right / downstream is to photo left).

Description:
Interface and seal between penstock (photo left) and gate (photo right); approx. Sta. 0+00.

Photographic Log

Client Name: General Electric Company	**Site Location:** Rising Pond Dam – Great Barrington, MA October 2025 Penstock Investigations	**Project No.** 01.019896.81

Photo No.	**Date:**
5	10/23/2025

Direction Photo Taken:
Downstream

Description:
Overview of the inside of the penstock looking downstream.
Note: Crown deformations.

Photo No.	**Date:**
6	10/23/2025

Direction Photo Taken:
Upstream

Description:
Typical condition of the penstock interior. Photo taken between invert and springline.
Note: Minor to moderate surface rusting, corrosion, and pitting.

Photographic Log

Client Name: General Electric Company	**Site Location:** Rising Pond Dam – Great Barrington, MA October 2025 Penstock Investigations	**Project No.** 01.019896.81

Photo No.	**Date:**
7	10/23/2025

Direction Photo Taken:
Downstream

Description:
Deformation/bulge near the Penstock crown near Station 1+10.

Photo No.	**Date:**
8	11/20/2025

Direction Photo Taken:
Downstream

Description:
Overview of the area above the penstock during the November 2025 Phase 1 inspection.

Red arrow points to location of depression (see photos 9 and 10).

Photographic Log

Client Name: General Electric Company	**Site Location:** Rising Pond Dam – Great Barrington, MA October 2025 Penstock Investigations	**Project No.** 01.019896.81

Photo No.	**Date:**
9	11/20/2025

Direction Photo Taken:
Upstream

Description:
Depression at the concrete grade beam structure (former railroad crossing) above the penstock, approximate station 1+30.

Photo No.	**Date:**
10	11/20/2025

Direction Photo Taken:
Down

Description:
Close up of the depression. The depression measured up to 2-feet deep.

GZA GeoEnvironmental, Inc.