



**Assessment and Design Report
Soil-Cement Condition Assessment and Design Project
Manatee Plant Cooling Pond Dam
Parrish, Florida
Project Number 300906**



To: Mr. Lewis Rounds, P.E.
FPL Manatee Plant

Date: June 2015

From: Jeff Beriswill
Amec Foster Wheeler Environment & Infrastructure, Inc.



**CERTIFICATION
Lakeland**

Engineering Certification

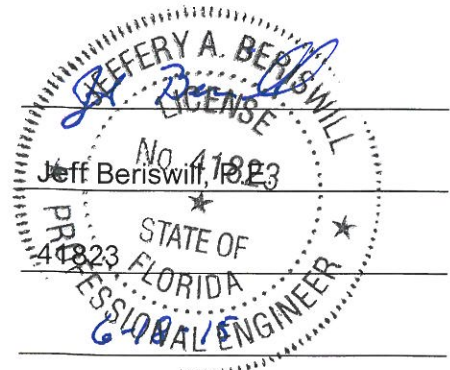
I hereby certify that I am a registered professional engineer in the State of Florida practicing with Amec Foster Wheeler Environment & Infrastructure, Inc., (Amec Foster Wheeler), as the successor in interest to AMEC Environment & Infrastructure, Inc., 2000 E. Edgewood Drive, Suite 215, Lakeland, FL 33803, a corporation authorized to operate as a business providing engineering consulting services (5392) by the State of Florida Department of Professional Regulation, Board of Engineers. I further certify that I, or others under my direct supervision, have prepared the geotechnical engineering evaluations, findings, opinions, calculations, conclusions or technical advice hereby represented in this report.

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Report Title: Assessment and Design Report
Manatee Plant Cooling Pond/Dam Soil-Cement
Condition Assessment and Design Project
Parrish, Florida

June 2015

Project No: 300906



Assessment and Design Report Soil-Cement Condition Assessment and Design Project Manatee Plant Cooling Pond Dam Parrish, Florida

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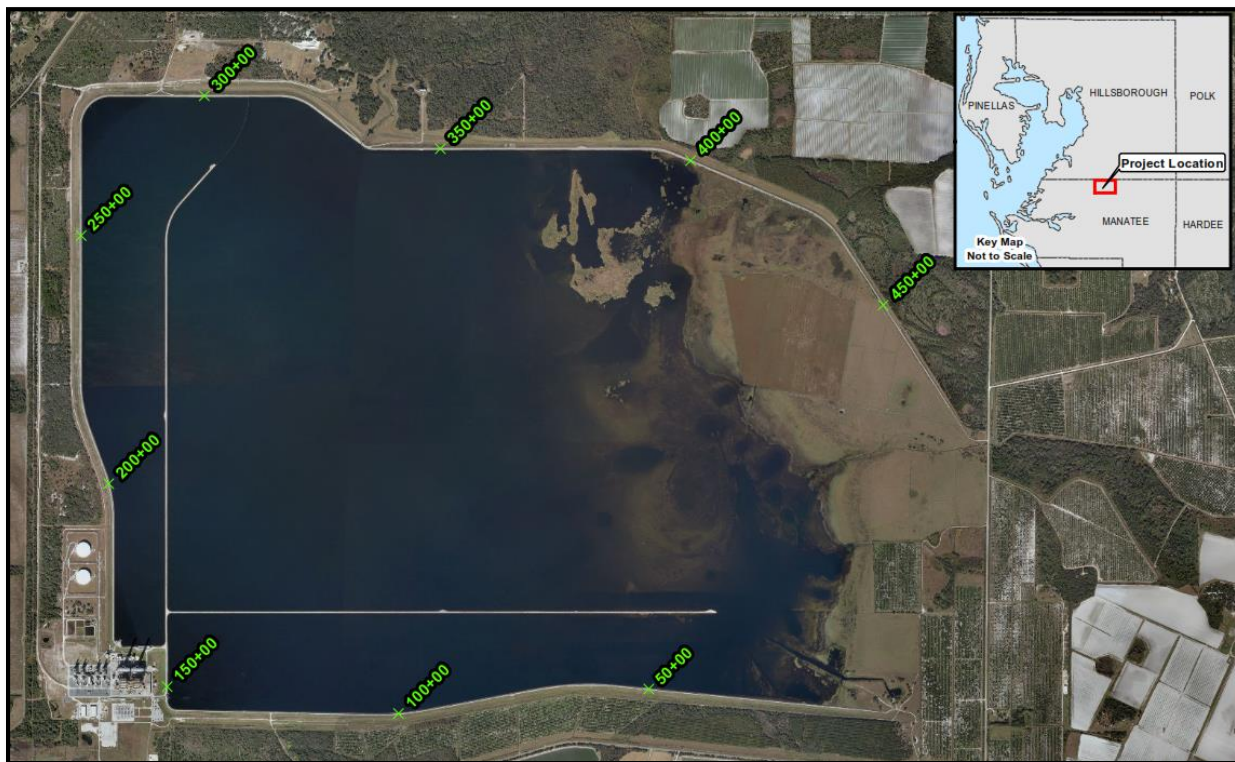
June 2015
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EXECUTIVE SUMMARY

INTRODUCTION

On behalf of Florida Power and Light (FPL), Amec Foster Wheeler Environmental & Infrastructure, Inc. (Amec Foster Wheeler) has completed this condition assessment and design report for the perimeter dam upstream (inside) slope soil-cement facing at the FPL Manatee Plant Cooling Pond. The Plant is located at 19050 State Route (SR) 62 in Manatee County near Parrish, Florida (see **Figure ES-1**). The purpose of this assessment was to investigate the condition of the existing soil-cement and provide an estimated remaining useful life (RUL). Alternative engineering solutions were developed for improving the RUL of the soil-cement; and detailed design, repair sequences, schedules, and costs were developed for the preferred repair alternative.

Figure ES-1
Site Location Plan



SCOPE OF WORK

The following tasks were completed by Amec Foster Wheeler and are presented within this report:

- Review of historical observations, testing and inspections, and previous repair efforts;
- Detailed above-water visual inspection of existing conditions;
- Detailed dive inspection of existing conditions;
- Soil-cement slope coring (below water);
- 3D Survey of the upstream slope using above-water LiDAR and underwater SONAR surveys;
- Evaluation of assessment information and RUL estimate;

- Repair and reconstruction alternatives designs; and
- Final design, repair sequence, schedule, and cost for the recommended repair section.

CONDITION ASSESSMENT

The focus of this study was to collect sufficient of data to assess the current condition of the soil-cement on the upstream slope of the Manatee Power Plant Cooling Pond perimeter embankment. A combination of visual observations, field measurements, and laboratory test results were summarized and normalized to a consistent scale ranging between 0 and 1, where 0 is the worst and 1 is the best condition for each parameter. Numerical values were developed for a range of condition assessment parameters (CAPs) relating to the current condition of the soil-cement including the following:

- Eroded steps;
- Transverse crack spacing;
- Transverse crack width;
- Repairs, anomalies or voids;
- Soil-cement section thickness;
- Soil-cement core RQD;
- Soil-cement core UCS;
- Area below projected soil-cement slope; and
- Fetch length;

Influence factors were then developed to provide a relative weight of importance of the various parameters on the overall condition of the soil-cement. The evaluations were focused on 400-foot stations along the wetted embankment perimeter. The selected influence factors are summarized in **Table ES-1**.

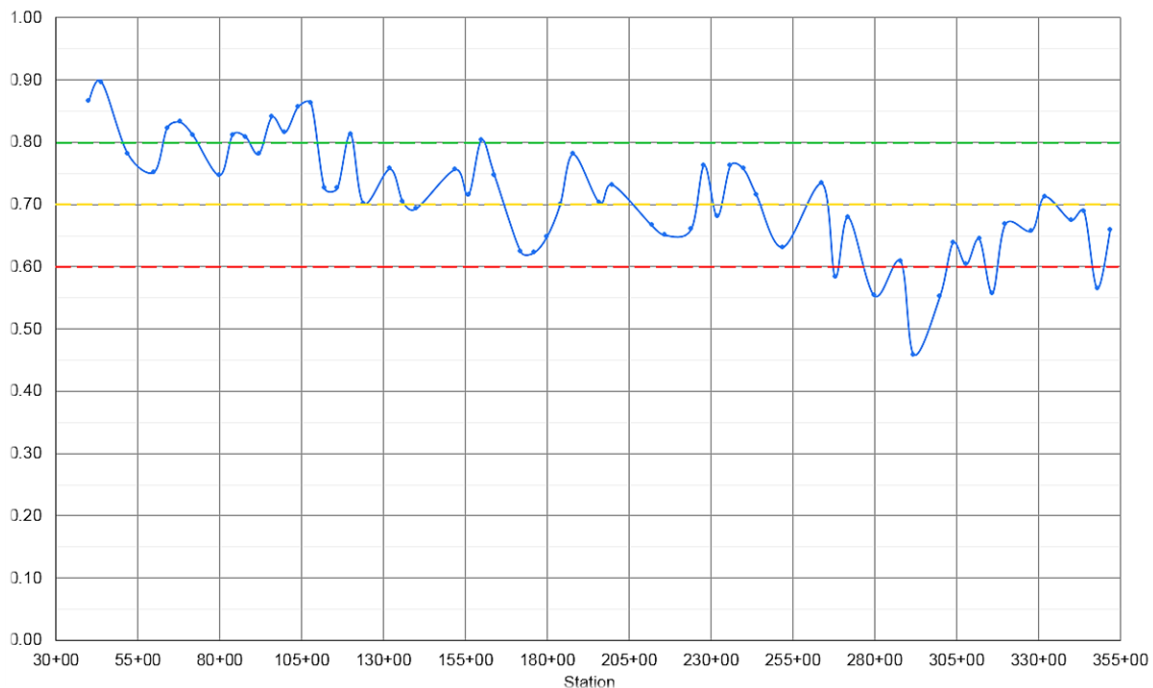
Table ES-1
Normalized Condition Assessment Parameters Influence Factors

	Influence Factor (%)
Eroded Steps	10
Transverse Crack Spacing	5
Crack Width	5
SC Thickness vs Design Thickness	10
Repairs, Anomalies or Voids	10
Average RQD	20
Minimum UCS	10
Area Below Projected Soil-Cement Slope	10
Fetch Length	20

In determining influence factors, greater weight was given to average RQD of the soil-cement cores and fetch length because the overall strength of the soil-cement and its susceptibility to

high wind energy during significant storm events are considered to be important contributing factors in the function of the soil-cement. Using the above influence factors, a profile of the resulting Condition Assessment Factors (CAFs) along the embankment alignment is provided on **Figure ES-2**. A CAF below 0.6 is considered to be a value at which the soil-cement should be repaired. The CAFs generally match the historical observations of the FPL dam inspection personnel.

Figure ES-2
Condition Assessment Factor Profile



REMAINING USEFUL LIFE EVALUATION

The RUL of the soil-cement was estimated assuming a linear rate of degradation over time based on current values of CAF. For the estimation of RUL, a CAF of 0.6 is assumed to have an RUL of 0. This does not mean that areas having a CAF of 0.6 or less require immediate emergency repairs. Rather, repairs to these areas will reduce or eliminate the O&M cost of inspection and repair in replaced sections, reduce the risk of a void behind the soil-cement developing into an emergency condition, and reduce the chance of a failure of the replaced sections in the unlikely but possible occurrence of multiple storm events in a single season where repairs may not be possible.

Using these simplifying assumptions, the estimated time for the soil-cement to degrade to a CAF of 0.6 for various existing values of CAF is provided in **Table ES-2**. The estimated repair length of soil-cement over time is also provided in **Table ES-2**.

**Table ES-2
Estimated RUL for Existing Values of CAF**

CAF	RUL (yrs)	Projected Date (yr)	Cum. Repair Length (ft)
0.6	0	2015	5,000
0.7	13	2028	16,500
0.8	40	2055	24,500
0.9	120	2135	31,500

This simplifying assumption should be verified over time. As a result, we recommend that a detailed visual/dive inspection and LiDAR/SONAR survey be completed on a 5-year basis to evaluate the change in CAFs over time. Detailed inspections should also be completed after any significant storm event.

REPAIR ALTERNATIVES ASSESSMENT

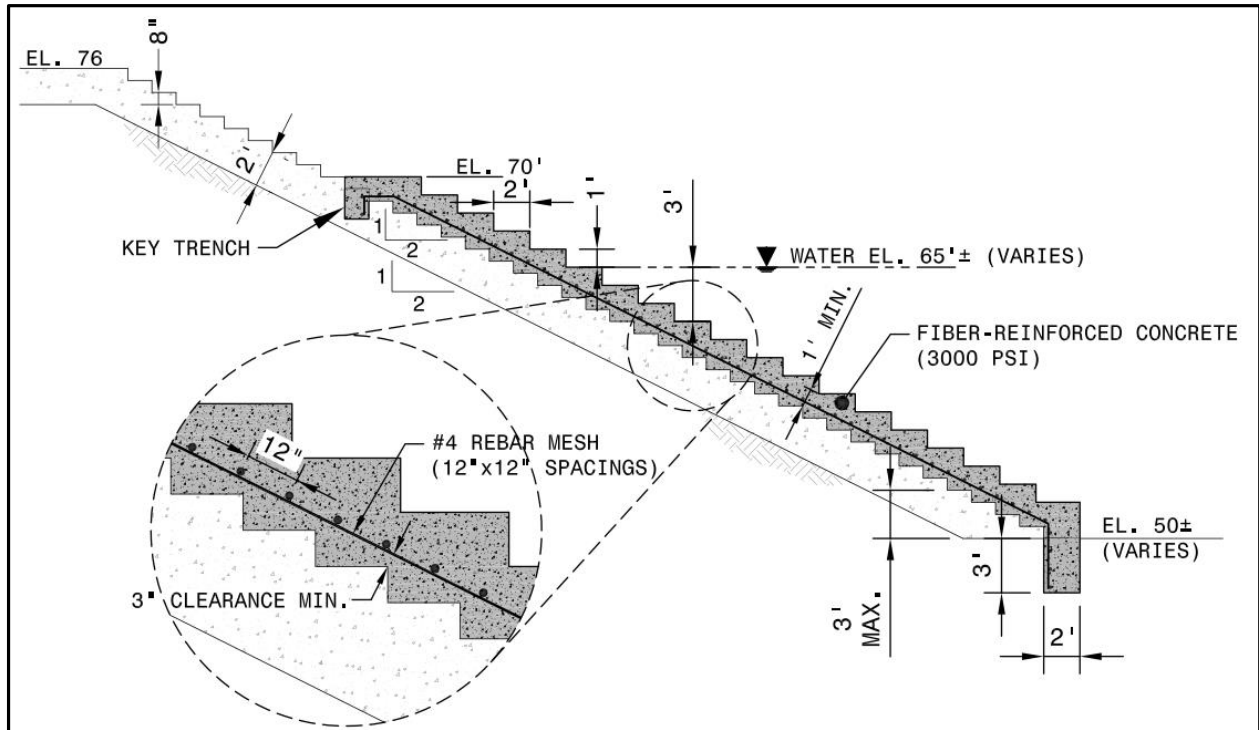
Several repair and reconstruction alternatives were considered for the soil-cement embankment slope protection at the Manatee Plant Cooling Pond. Consideration was given to both established and innovative technologies, including:

- Concrete overlay constructed in the dry;
- Concrete overlay constructed in the wet;
- Concrete overlay and fabric-formed concrete mat;
- Concrete overlay and precast concrete plate;
- Articulated block system;
- Riprap; and
- Chemical grouting.

For each of the considered repair alternatives, engineering analyses were performed to develop preliminary design sections based on project-specific conditions. Subsequently, the constructability aspects of each alternative were evaluated based on the preliminary design sections.

The two most viable options were selected for detailed cost estimates – placing a concrete facing over the soil-cement either in the wet or in the dry using a cofferdam. The placement of the concrete facing in the wet was determined to be the most cost effective repair option. A typical section for this option is shown on **Figure ES-3.**

Figure ES-3
Stair Step Concrete Overlay Constructed in the Wet



Chemical grouting may be a consideration for repair of localized areas that have loose or raveling soils beneath the soil-cement. If chemical grouting is considered, the repair procedures should be developed in conjunction with an experienced specialty contractor, using grout products and injection techniques best suited for the gradation and condition of the soils to be permeated.

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1.0 INTRODUCTION

On behalf of Florida Power and Light (FPL), Amec Foster Wheeler Environmental & Infrastructure, Inc. (Amec Foster Wheeler) has completed this condition assessment and design report for the perimeter dam upstream (inside) slope soil-cement facing at the FPL Manatee Plant Cooling Pond. The Plant is located at 19050 State Route (SR) 62 in Manatee County near Parrish, Florida (see **Figure 1**). The purpose of this assessment was to investigate the condition of the existing soil-cement and provide an estimated remaining useful life (RUL). Alternative engineering solutions were developed for improving the RUL of the soil-cement; and detailed design, repair sequences, schedules, and costs were developed for the preferred repair alternative.

1.1 Project Description

The FPL Manatee Plant Cooling Pond is located northeast of the power plant facility. The cooling pond was constructed in 1973 and 1974. The perimeter embankment was designed by Mid Valley, Inc. (a division of Brown & Root, Houston). The perimeter embankment is approximately 48,000 feet (9 miles) long. The upstream slopes are protected from erosion by a layer of stair-stepped soil-cement. The designed upstream slope is 2 horizontal to 1 vertical (2H:1V) for the majority of the embankment, however the as-built slopes also vary from approximately 1.5H:1V to 2.5H:1V.

Referring to **Figure 1**, An existing stationing system is established along the crest and is marked at an approximate interval of every 500 linear feet from Station 5+00 (STA 5+00) at the east side of its south embankment to STA 475+00 at the east side of its north embankment. The stationing is approximate and is estimated to vary by approximately ± 50 feet over 500 feet. A spillway structure is located at approximately STA 330+00 on the north embankment, and discharge and intake structures are located near the plant at STA 148+32 and STA 162+36 on the west embankment. An emergency spillway is located on the north embankment at STA 334+00.

In October of 2014, FPL requested an in-depth inspection of the existing soil-cement slopes of the cooling pond. FPL has determined that the upstream soil-cement face of the embankment had deteriorated and required further evaluation. The soil-cement may have to be ultimately replaced over several years. The scope of this project included inspection and comprehensive engineering evaluation of the entire 48,000 linear feet of the pond's soil-cement.

The request for evaluation of the soil-cement included visual observation both above and below water level, core samples at regular intervals along the embankment alignment in addition to areas of concern, digitally cataloging of the soil-cement samples, crack, and deterioration mapping, documenting missing steps, and testing of soil-cement samples. Based on the information gathered during the evaluation, the RUL of the soil-cement was to be estimated. Also, engineering and design was to be provided to support repair and replacement of the soil-cement face. The engineering and design was to include developing cost effective methods and designs for replacement of soil-cement while the cooling pond remains in operation. The soil-cement is to be replaced from a minimum elevation 70 NGVD (6 to 10 feet from the crest of the embankment) to the upstream toe of the embankment, including a minimum 3-foot deep cutoff at the upstream toe of the embankment.

A kick-off meeting was held by FPL at the FPL Manatee Plant on February 2, 2015. During the meeting, the project team reviewed the schedule and scope of work; roles and responsibilities, site safety, deliverables to FPL; and the work areas with FPL representatives.

1.2 Scope of Work

Amec Foster Wheeler completed this condition assessment and design in general accordance with the revised scope of work dated December 31, 2014. The following tasks were completed by Amec Foster Wheeler and are presented within this report:

- Review of historical observations, testing and inspections, and previous repair efforts;
- Detailed above-water visual inspection of existing conditions;
- Detailed dive inspection of existing conditions;
- Soil-cement slope coring (below water);
- Evaluation of assessment information and RUL estimate;
- Repair and reconstruction alternatives designs; and
- Final design, repair sequence, schedule, and cost for the recommended repair section.

1.3 Project Submittals

Prior to and during mobilization of the Project Team to the project site, Amec Foster Wheeler prepared and submitted a Site Work Plan (SWP), dated February 11, 2015. The Site Work Plan either included or referenced required submittals including a project schedule; safety manual, inspection and test plan; quality assurance manual; safety data sheets (SDS's) not on hand with the Manatee FPL plant; and a waste management plan, environmental control and disposal plan. The Site-Specific Health and Safety Plan (HASP) was submitted as an independent document in February 2015. The HASP also included the Dive Operations Plan dated February 16, 2015 and the HASP's from subconsultants (UESI and George F. Young). The HASP was maintained on project site and updated as needed.

During the condition assessment, weekly progress reports were provided by Amec Foster Wheeler and discussed during regular weekly conference calls with team members. The project schedule was updated and presented at the time of the weekly progress conference calls.

2.0 CONDITION ASSESSMENT

The condition assessment of the soil-cement included a historical review of available information, both an above-water and below water visual inspection, soil-cement coring and compressive strength testing, topographic survey of the perimeter of the cooling pond, and GIS modeling. The following sections discuss the methodologies and findings of these tasks within the overall condition assessment.

2.1 Historical Review

FPL provided Amec Foster Wheeler with readily available historical information related to the cooling-pond/dam soil-cement slopes. This information included:

- Clearing & Grubbing Plan for construction(overlay of an aerial photograph),Mid-Valley, Inc., 1972;
- Embankment Plan Sheets, 1972;

- Rye Quadrangle, 7.5 Minute Series, Manatee Co. Florida, 1972;
- Wimauma Quadrangle, 7.5 Minute Series, Manatee Co. Florida, 1972;
- Embankment Layout, FPL, 1995;
- Soil Boring Logs, Stone and Webster, 1980; and
- Previous underwater surveys and repair notes, Underwater Services Inc.

This information was reviewed for indications of historical issues related to the condition and performance of the soil-cement embankments at the cooling pond. The review of the Clearing & Grubbing Plan and Embankment Plan sheets indicated the condition of the cooling pond area prior to construction. Soils from within the pond area were excavated for use as fill in construction of the pond embankments.

The Rye and Wimauma Quadrangles indicated the topography of the cooling pond area prior to construction. Portions of the site overly or adjoin the Little Manatee Drainage. The topography of the site was generally level, sloping toward the east from an elevation of approximately 50 to 70 feet NGVD 29¹.

The Soil Boring Logs indicate that the embankment fill and the underlying foundation soils typically consisted of fine sand with variable amounts of silt and clay. A clay soil layer was typically encountered at elevations ranging from about 15 to 5 feet.

The previous underwater surveys and repair notes provided in **Appendix A** indicated previous inspections were less detailed and typically focused on voids, missing steps, and readily apparent degradation of the soil-cement. The repairs typically consisted of placing formed concrete in areas with missing steps, cracking, and separations between steps. In February 2011, a 3-foot wide by 2-foot tall by 5-foot deep void was repaired near STA 345+00. In addition, FPL representatives stated that voids, identified as fish beds and other soil deltas located along the toe of the slope were filled with pumped sand. No documentation was provided to Amec Foster Wheeler to confirm this repair method.

2.2 Visual Inspection

Above-Water Visual Inspection

Amec Foster Wheeler conducted the above-water visual inspection of the soil-cement slopes along the perimeter embankment. The first inspection was conducted on February 11 and 12, 2015. The initial inspection included Amec Foster Wheeler representatives, FPL representatives, and Kenneth Hansen PE, an industry expert on soil-cement structures. This initial inspection was conducted as an overall inspection to develop a methodology for inspection and a collective understanding of the soil-cement condition.

¹ National Geodetic Vertical Datum 29
All elevations in feet reference the National Geodetic Vertical Datum, 1929 (NGVD 29)

Amec Foster Wheeler conducted a more detailed visual inspection of the above-water soil-cement between February 18, 2015 and March 31, 2015. The visual inspection was conducted by Derek Rickcreek, P.G. The inspection included review of an approximately 30-foot wide strip from the dam crest to the water elevation, which was typically elevation 65 feet throughout the inspection. The detailed inspections were conducted at 400-foot intervals along the soil-cement slope. The areas between the detailed inspections were reviewed for readily observable features relating to the condition of the soil-cement. The inspection locations were referenced to station numbers located at the dam crest. The station numbering at the crest varied ± 50 feet over a 500-foot length, and the inspection locations were adjusted to tie to the existing station markers. The inspection included observation and measurement of:

- Transverse crack spacing, length and depth;
- Presence of vegetation;
- Pitting or “honey combing”;
- Erosion;
- Previous repairs;
- Voids or holes;
- Lateral cracking;
- Step loss and deterioration; and
- Step numbers, thickness, width, and hardness.

Observations were recorded and photographs were taken of observations related to the condition of the soil-cement. Inspection forms were completed in the field and entered into a digital visual inspection log on a daily basis. The visual inspections were recorded typically at 400-foot intervals from STA 5+69, which is the starting point of the soil-cement slope at the southeast corner of the cooling pond, to STA 472+00, which was roughly 50 feet from the edge of the soil-cement at the northeast corner of the cooling. The logs are presented in **Appendix B**, and a summary of the visual observations is provided on **Figures 2A** through **2F**.

The above-water and underwater inspections included slightly different methodologies but assessed the exposed soil-cement for similar information.

Underwater Visual Inspection

Amec Foster Wheeler contracted with Underwater Engineering Services, Inc. (UESI) of Fort Pierce, Florida to conduct an underwater visual inspection. The underwater inspection started on February 26, 2015. The inspection consisted of a diver with video recording capabilities recording the inspection through a dive support trailer. The video recording was monitored by another diver who recorded any observations by recording the stationing, depth and dimensions of the observation.

The inspection included a nearly continuous inspection of the exposed soil-cement slope from near the top of water elevation, which was typically about 65 feet, to the embankment upstream toe. The inspection observations referenced station numbers located at the dam crest and depths from the top of water. The underwater inspection included the observable soil-cement slope. Where voids were observed, a white fiberglass pole with one-foot increments marked was used to probe the voids to explore their extent. The station numbering at the crest varied ± 50 feet and

the inspection locations were generally corrected to tie to the existing station markers. The inspection included observation and measurement of defects including:

- Transverse, longitudinal and diagonal cracks spacing, length and depth;
- Undermining;
- Erosion;
- Previous repairs;
- Soil deltas;
- Voids or holes,
- Pitting or “honeycombing”; and
- Differential settlement.

Observations were recorded at the surface and video was taken of notable observations. The observations and measurements were recorded on inspection forms, which were completed in the field. Some areas of the soil-cement slope were covered by a muck or mud layer. A summary table of significant deficiencies and the detailed inspection forms are in **Appendix C**. UESI’s inspection report and video data are provided under separate cover.

The underwater visual inspections were recorded starting from STA 40+00, near the southeast corner of the cooling pond. The inspection concluded at STA 364+00, which is near the northeast corner of the cooling pond. The underwater inspection was typically limited to water depths greater than 4 feet. Shallower areas are considered observable from the surface and are periodically dry at lower operational pond elevations. The visual inspections were conducted between February 18, 2015 and March 24, 2015.

2.3 Soil-Cement Coring

UESI also conducted coring along the soil-cement slope. The coring was performed using both 3-inch and 1-inch diameter cores along the perimeter soil-cement slopes. A total of 526 3-inch diameter cores were performed, predominately at the 400-foot interval visual inspection locations starting at STA 40+00 and ending at STA 352+00 and at other areas of concern along the embankment alignment. A total of 410 1-inch diameter core holes were also drilled through the soil-cement. The 1-inch diameter cores were performed at 100-foot intervals between the 400-foot core locations. All core holes were backfilled with a cement/water grout.

The cores were conducted at three different levels beneath the water along the soil-cement slope. The cores were typically performed at an elevation of 65 feet, 59 feet, and 53 feet. Where shallower bottom of slope elevations were encountered the top 65-foot, elevation and bottom elevation were cored and the middle core was performed at mid-depth between the top and bottom cores.

The 3-inch diameter cores were inspected, measured, and logged by Derek Richcreek, PG. The cores were observed for indications of strength, quality, bond between soil-cement layers, and length of the soil-cement pieces retrieved. The quality was recorded as a Rock Quality Designation (RQD) in accordance with ASTM D6032. A log of each core was prepared including measurements, observations and a photograph of the core. The cores were placed in core boxes and transported to Amec Foster Wheeler’s Tampa Materials Laboratory for review and testing.

Inspection forms were completed in the field and entered into a digital core log on a daily basis. The core logs are provided in **Appendix D**.

The 1-inch cores were measured, and the core holes were measured and probed for the presence of voids. The 1-inch cores were disposed of on-site and the core holes were grouted. The 1-inch cores were observed to be generally consistent with the information developed from the 3-inch cores. Voids within the core holes were not observed based on probing the core holes.

2.4 Soil-Cement Strength Testing

Amec Foster Wheeler collected all of the cored 3-inch samples and transported them back to their Lakeland offices. The 3-inch cores collected from the project site were reviewed and select cores were pulled and prepared for compressive strength testing. The cores were typically selected from poorer quality soil-cement layers based on RQD values and noted visual damage associated with the testing locations. However, some cores were selected at locations to develop an understanding of soil-cement strength throughout the cooling pond embankment.

Point Load Strength Testing

During the initial stages of the project, selected soil-cement samples were tested for strength using the Point Load Strength (PLS) test in accordance with ASTM D5731. The PLS test provides a rapid means of determining the general strength of concrete mixtures. A total of 169 PLS tests were completed, and 48 unconfined compressive strength (UCS) tests were completed on companion core samples for comparison purposes. Results of the above tests are summarized in **Appendix E**. A plot of PLS versus UCS tests is also provided in **Appendix E**. The test results show that the PLS test does not correlate well with the UCS test, largely as a result of the relatively low strength of the soil-cement compared to a typical concrete mixture. As a result, no further PLS tests were completed, and the PLS test results were not used in our engineering evaluations.

Unconfined Compressive Strength Testing

A total of 72 cores were tested for UCS in accordance with ASTM C42. The selected soil-cement cores ranged from 2.5 to 2.8 inches in diameter. The ends of the cores were cut to provide a flat, level surface prior to breaking. The cores ranged from 2.5 to 7.0 inches in length. Based on the tests, the UCS of the soil-cement ranged from 47 to 2,257 pounds per square inch (psi). The soil-cement samples tested had an average UCS of 870 psi, with a moderate trend toward lower UCS with depth. UCS test results are provided in **Appendix E**.

2.5 Topographic Survey

Amec Foster Wheeler retained George F. Young, Inc. (GFY) to perform an underwater and above-water survey of the soil-cement slopes. GFY conducted an underwater survey using SONAR imaging. During the SONAR imaging, LiDAR 3D modeling was conducted on the above-water soil-cement slopes from a boat. Upon completion of the underwater operations, Amec Foster Wheeler retained Maser Consulting to perform LiDAR 3D modeling on the eastern portions of north and south embankments that were inaccessible by boat. At the completion of the survey, the data were processed and compiled. The data were then used to develop a 3D model of the soil-cement slope for further analysis and review.

Detailed topographic maps obtained from the 3D model are included in **Appendix F**. The 3D models could not detect the soil-cement surface in the immediate vicinity of the water line due to wave action. Also, the model did not provide fine resolution of individual soil-cement steps. However, the survey model did show trends of erosion that typically matched visual observations.

2.6 GIS Modeling

Amec Foster Wheeler developed a Geographic Information System (GIS) model and database. The database includes information from the above site investigations/condition assessments that was subsequently used to evaluate the remaining useful life of the soil-cement.

3.0 REMAINING USEFUL LIFE EVALUATION

3.1 Evaluation Approach

In order to evaluate the RUL, data and observations from the site investigation were summarized along the embankment alignment. Numerical values were developed for a range of parameters relating to the current condition of the soil-cement including the following:

- Eroded steps;
- Transverse crack spacing;
- Transverse crack width;
- Repairs, anomalies or voids;
- Soil-cement section thickness;
- Soil-cement core RQD;
- Soil-cement core UCS;
- Area below projected soil-cement slope; and
- Fetch length.

The first four items above were determined from the visual inspections, while the next three items are based on measurements and tests completed on the 3-inch diameter cores. The area below the projected soil-cement slope was based on the 3D survey model results, and the fetch length was graphically determined from an aerial photograph. The numerical data for each parameter were subsequently normalized to numbers ranging from 0 to 1 (0 being worst case and 1 being best case). Influence factors were subsequently applied to the normalized values for each parameter, and the resulting values for all of the parameters were summed together to develop an overall Condition Assessment Factor (CAF) for specific stations along the embankment alignment.

Finally, the CAF was used as a guide to estimate RUL criteria along the embankment alignment.

3.2 Condition Assessment Parameters

The parameters used in the condition assessment were normalized as discussed below. Plots of the normalized parameters are provided on **Figures 3 to 5**.

Eroded Steps

The number of eroded steps above the water line ranged from 0 to 13. A normalized function was developed by subtracting the number of eroded steps divided by the total number of steps from one.

$$\left(1 - \frac{\text{No. Eroded Steps}}{\text{No. Total Steps}}\right)$$

Transverse Crack Spacing and Width

Measured transverse crack spacings were between 10 to 30 feet. They were normalized by assigning the maximum crack spacing a value of 1 and the minimum crack spacing a value of 0. The remaining values were calculated as a percentage between 0 and 1 by linear interpolation.

Measured transverse crack widths ranged from 0.5 to 6 inches. The values were normalized by assigning the maximum crack width a value of 0 and the minimum crack width a value of 1. The remaining values were calculated as a percentage between 0 and 1 by linear interpolation.

Repairs, Anomalies, or Voids

Repairs, anomalies, or voids were counted per 400-foot section (200 feet on either side of the visual observation markers). At any given location, a maximum of three observations were noted. Therefore, these observations were normalized by no observed distress having a value of 1, one observation as 0.66, two observations as 0.33, and three observations as 0.

$$\left(1 - \frac{\text{No. of Observations}}{3}\right)$$

Soil-Cement Section Thickness

The soil-cement thickness, measured from the cores, were divided by the designed thickness (3.25 feet) based upon the design documents provided by FPL. Design thickness values were calculated as a percentage between 1 and 0.

$$\left(\frac{\text{Measured Soil Cement Thickness}}{3.25}\right)$$

Soil-Cement Core RQD

The RQD value is a percentage ranging between 1 and 0. As a result, it does not need to be normalized. The RQD is presented with a breakdown by core location (i.e. top core, middle core, and bottom core).

$$\left(\frac{\text{Length of Core Fragments Greater than 4 inches}}{\text{Total Length of Core}}\right)$$

Soil-Cement Core UCS

The UCS data were normalized by taking the strength data and comparing them to an estimated typical long-term design strength of 1,000 psi. Therefore, the UCS value was divided by 1000 and presented as a percentage between 1 and 0. The strength data that measured more than 1,000 psi were presented as 1.

$$\left(\frac{\text{Measured UCS (psi)}}{1,000 \text{ psi}}\right)$$

Area Below Projected Soil-Cement Slope

Cross sections were developed from the 3D survey model at 400-foot spacings corresponding with the visual inspection logs. Lines were then fit along the peaks of the relatively unworn soil-cement steps to

project the original slope of the soil-cement steps. The area below the projected slope line was then calculated at each cross section. Higher areas beneath the projected slopes are indicative of past erosion/section loss. Due to the limitations of the survey equipment, a 2 to 3-foot vertical section along the water line was not considered for this calculation. The cross sections and calculated areas are provided in **Appendix G**.

The values were normalized by assigning the maximum calculated area of 29.83 square feet a value of 0 and the minimum calculated area of 2.37 square feet was assigned a value of 1. The remaining values were calculated as a percentage between 0 and 1 by linear interpolation.

Fetch Length

Wave height is directly related to the square root of the fetch length at a point within a reservoir (USACE SPM Vol 1 Eq. 3-33). The fetch length at any given point is taken as the average of the longest possible fetch length for a given wind direction from the point and 8 additional fetch lengths determined from 12 degrees of deflection on either side(24 degrees total) of the maximum length in 3-degree increments (see **Appendix G**). The fetch length was graphically determined at 1,200-foot spacings along the embankment perimeter and then linearly interpolated for the points at 400-foot spacings between the analyzed points.

The values were normalized by assigning the maximum calculated fetch length of 14,854 feet at STA 292+00 a value of 0 and the minimum calculated fetch length of 3,617 feet at STA 52+00 was assigned a value of 1. The remaining values were calculated as a percentage between 0 and 1 by linear interpolation.

A statistical breakdown of the normalized data is presented in **Table 1**.

Table 1
Normalized Condition Assessment Parameters Statistics

	Minimum	Maximum	Average	Standard Deviation
Eroded Steps	0.00	1.00	0.62	0.21
Transverse Crack Spacing	0.00	1.00	0.28	0.21
Crack Width	0.00	1.00	0.72	0.16
SC Thickness vs Design Thickness	0.51	1.00	0.78	0.09
Repairs, Anomalies or Voids	0.00	1.00	0.87	0.21
RQD Top Core	0.38	1.00	0.94	0.10
RQD Middle Core	0.00	1.00	0.88	0.18
RQD Bottom Core	0.00	1.00	0.88	0.16
UCS Top Core	0.04	1.00	0.55	0.35
UCS Middle Core	0.07	1.00	0.70	0.32
UCS Bottom Core	0.27	1.00	0.85	0.21
Area Below Projected Soil-Cement Slope	0.00	1.00	0.59	0.21
Fetch Length	0.00	1.00	0.67	0.29

3.3 Determination of Condition Assessment Factors

Using the normalized condition assessment parameters discussed above, overall CAFs were determined at typically 400-foot spacings along the embankment alignment. For the determination

of the CAFs, the RQD values at each station were averaged and the minimum UCS value in the immediate vicinity of the station was used. Influence factors were qualitatively estimated for each parameter based on its relative importance in the soil-cement performance. The selected influence factors are summarized in **Table 2**.

Table 2
Normalized Condition Assessment Parameters Influence Factors

	Influence Factor (%)
Eroded Steps	10
Transverse Crack Spacing	5
Crack Width	5
SC Thickness vs Design Thickness	10
Repairs, Anomalies or Voids	10
Average RQD	20
Minimum UCS	10
Area Below Projected Soil-Cement Slope	10
Fetch Length	20

In determining influence factors, greater weight was given to average RQD of the soil-cement cores and fetch length because the overall strength of the soil-cement and its susceptibility to high wind energy during significant storm events are considered to be important contributing factors in the function of the soil-cement. Using the above influence factors, a profile of the resulting CAFs along the embankment alignment both with and without including UCS data is provided on **Figure 6**.

3.4 RUL Evaluation

The prediction of RUL is an important functional aspect of managing risk related to failure, and evaluating and anticipating pending capital investment needs. The CAF profile (**Figure 6**) was used to estimate RUL criteria along the embankment alignment. Since the CAF is an assessment of the current condition of the soil-cement, and because detailed as-built conditions and information relating to degradation with time is not available, accurately predicting the rate of future degradation of the soil-cement is not possible. As a result, the RUL estimate is more qualitative than quantitative and will likely be significantly impacted by future wind events from tropical systems.

The CAF profiles show minimum values (less than 0.6) typically between STA 275+00 to STA 325+00 along the north embankment of the cooling pond. Less pronounced local minimums occur at STA 220+00 and STA 325+00 located along the west and north embankments, respectively. Also, the CAF is consistently above 0.8 along the south embankment, indicating that the area is in relatively good condition. This matches well with general field observations, and past inspections and repairs.

We recommend completing repairs first in areas where the CAF is consistently below 0.6. For the estimation of RUL, a CAF of 0.6 is assumed to have an RUL of 0. This does not mean that areas having a CAF of 0.6 or less require immediate emergency repairs. Rather, repairs to these areas will reduce or eliminate the O&M cost of inspection and repair in replaced sections, reduce the risk of a void behind the soil-cement developing into an emergency condition, and reduce the chance of a failure of the replaced sections in the unlikely but possible occurrence of multiple storm events in a single season where repairs may not be possible.

The estimation of RUL for the remainder of the embankment involves the following assumptions:

1. The soil-cement has been in service for 40 years.
2. The soil-cement was originally placed at a CAF of 1.
3. Degradation of the soil-cement has occurred linearly over time.
4. Continued degradation of the soil-cement will occur linearly over time.

Using these simplifying assumptions, the estimated time for the soil-cement to degrade to a CAF of 0.6 for various existing values of CAF is provided in **Table 3**. The estimated repair length of soil-cement over time is also provided in Table 3 and shown graphically on **Figure 7**.

Table 3
Estimated RUL for Existing Values of CAF

CAF	RUL (yrs)	Projected Date (yr)	Cum. Repair Length (ft)
0.6	0	2015	5,000
0.7	13	2028	16,500
0.8	40	2055	24,500
0.9	120	2135	31,500

The RUL values in **Table 3** were calculated by assuming that the soil-cement has deteriorated from a CAF of 1, when constructed, to the present CAF value for the current state. Taking the current age of the soil-cement, 40 years, and assuming that a CAF of 0.6 has a RUL of 0 we can calculate how long the current CAF will take to reach a CAF of 0.6, or RUL of 0. This is done by using the following equation:

$$RUL (years) = \frac{40 \text{ years}}{(1 - CAF)} \times (CAF - 0.6)$$

As discussed above, we recommend completing repairs first in areas where the CAF is consistently below 0.6. Furthermore, the zones of the embankment alignment where the CAF ranges from 0.6 to 0.7 should be closely monitored for the rate of future degradation. In addition, conducting a detailed visual inspection both above and below water and a combined LiDAR and SONAR survey using the same approach as used in this study on a 5-year basis would be useful in monitoring the rate of degradation of the soil-cement. This would assist in further refining the RUL.

4.0 REPAIR ALTERNATIVES ASSESSMENT

Several repair and reconstruction alternatives have been considered for the soil-cement embankment slope protection at the Manatee Plant Cooling Pond. Consideration was given to both established and innovative technologies, including:

- Concrete overlay constructed in the dry;
- Concrete overlay constructed in the wet;
- Concrete overlay and fabric-formed concrete mat;
- Concrete overlay and precast concrete plate;
- Articulated block system;
- Riprap; and
- Chemical grouting.

4.1 Assessment Approach

For each of the considered repair alternatives, engineering analyses were performed to develop preliminary design sections based on project-specific conditions. Subsequently, the constructability aspects of each alternative were evaluated based on the preliminary design sections. As part of our evaluation, we consulted with product manufacturers and specialty contractors to develop a better understanding of the construction methods involved in each alternative and to identify potential difficulties associated with each construction method. Finally, preliminary engineering cost estimates were developed for each of the repair alternatives considered feasible from a constructability standpoint.

4.2 Repair Alternatives

Following is a brief discussion of each of the considered repair alternatives, including their main features and constructability considerations.

Concrete Overlay Constructed in the Dry

A schematic depiction of this repair alternative is presented in **Figure 8A**. It involves the installation of a temporary cofferdam to allow the construction of a concrete overlay over the existing soil-cement slope protection in the dry. For this evaluation, a cofferdam was considered consisting of a cantilevered sheet pile wall installed parallel to the embankment at a distance of approximately 15 feet from the toe of the upstream slope, with earthen plugs placed between the slope and the sheet piling to reduce disturbance to the existing soil-cement. The cofferdam would allow the unwatering of the upstream embankment slope to construct the concrete overlay in the dry using conventional concrete forming and placement procedures.

As shown in **Figure 8A**, the concrete overlay considered for this evaluation consists of a flat plate section from the toe of the slope to elevation 58 feet, followed by a stair-stepped section to an elevation of 70 feet, with the steps having a 1-foot rise and 2-foot run. Both the flat plate and stair stepped overlay sections should have a minimum thickness of 1-foot perpendicular to the embankment slope at any point. The construction of the flat-plate section through the lower portion of the slope will reduce the concrete volume and increase productivity, thus reducing the cost of the overlay. However, consideration can be given to constructing a full depth stair-stepped

section. In any case, the overlay would be placed in direct contact with the existing soil-cement surface. It would be keyed into the soil-cement along its top edge and keyed into the soil along the toe of the slope to prevent erosion/undermining. The concrete would be provided with a reinforcement mat consisting of No. 4 rebars spaced 12 inches in each direction, placed near the base of the overlay. It would also contain polypropylene fiber reinforcing to reduce minor cracking and spalling.

From a constructability standpoint, the concrete overlay in the dry allows the use of conventional concrete forming and placement procedures. This alternative facilitates surface preparation to develop better bonding between the existing soil-cement and the concrete overlay, facilitates the excavation of the toe trench, and allows for a higher level of quality assurance than any alternative involving construction in the wet. On the other hand, unwatering short segments of the reservoir along the embankment upstream slope could result in the development of relatively high hydraulic gradients along the underside of the soil-cement facing, which could exacerbate localized loose or raveled soil conditions, increasing the potential for the development of piping.

Concrete Overlay Constructed in the Wet

A schematic depiction of this repair alternative is presented in **Figure 8B**. It involves the construction of a concrete overlay over the existing soil-cement slope protection in the wet below the waterline, using specialized construction techniques that allow the preparation of the soil-cement surface, forming, and placement of concrete underwater.

As shown in **Figure 8B**, the concrete overlay considered for this alternative consists of a stair-stepped section from the toe of the slope to an elevation of 70 feet, with the steps having a 1-foot rise and 2-foot run. The overlay should have a minimum thickness of 1-foot perpendicular to the embankment slope at any point. Consideration can be given to constructing larger steps below elevation 58 feet, if it is deemed to facilitate construction. The overlay would be placed in direct contact with the existing soil-cement surface. It would be keyed into the soil-cement along its top edge and keyed into the soil along the toe of the slope to reduce the risk of erosion/undermining. Similar to the previous alternative, the concrete would be provided with a reinforcement mat consisting of No. 4 rebars spaced 12 inches in each direction, placed near the base of the overlay. It would also contain polypropylene fiber reinforcing to reduce minor cracking and spalling. The concrete mix placed underwater would contain fluidizing admixtures to increase the workability of a relatively low water/cement ratio, non-segregating mix while maintaining good long-term strength characteristics.

From a constructability standpoint, the construction of the concrete overlay in the wet obviates the need for a temporary cofferdam, thereby reducing cost and construction time. However, it requires specialized construction methods for the preparation of the surface, excavation of the toe trench, forming and casting of the concrete underwater. In addition, the surface preparation and toe trench excavation underwater should produce large amounts of sediment-laden water/slurry requiring special measures to decant the sediments without affecting the quality of the pond water, particularly in areas close to the power plant cooling water intake. Other constructability issues related to the underwater work include likely difficulties in the surface preparation to obtain adequate bonding between the existing soil-cement and the concrete overlay, and more difficult quality control and inspection procedures.

Concrete Overlay and Fabric-Formed Concrete Mat

This alternative involves the construction of a fabric-formed concrete mat from the toe of the slope to elevation 58 feet, followed by a stair stepped concrete overlay section to an elevation of 70 feet, with the steps having a 1-foot rise and 2-foot run. This alternative would require the placement of a gravel layer on the soil-cement's irregular surface to provide a uniform bearing surface for the fabric-formed concrete mat. The fabric-formed concrete mat would have to be anchored at its top and bottom. The concrete overlay would be placed directly on the soil-cement surface, and keyed into the soil-cement at the top and bottom. This repair alternative would be constructed in the wet.

From a constructability standpoint, this alternative has several challenges including (i) placing the gravel subgrade for the fabric-formed mat (ii) obtaining proper anchoring of the top and bottom of the mat, (iii) splicing of the fabric form, and (iv) obtaining uniform concrete filling throughout the mat while underwater. The difficulty in constructing the fabric form underwater is aggravated by limitations related to quality assurance procedures. In addition, this alternative would require the keying of the concrete overlay into the soil-cement at its top and bottom, with the bottom key at the interface with the concrete filled mat constructed underwater. Further, this alternative requires measures to provide proper drainage of the gravel layer between the soil-cement and the fabric-formed concrete mat. These constructability issues are anticipated to result in higher construction costs than the full concrete overlay alternative.

From a performance perspective, the lack of bonding between the fabric-formed concrete mat and the underlying subgrade in conjunction with its limited thickness adversely affects its ability to withstand large hydrodynamic forces induced by wave action.

This alternative was dismissed from further consideration in light of the above constructability and performance shortcomings.

Concrete Overlay and Precast Concrete Panels

This alternative involves the installation of precast concrete panels from the toe of the slope to elevation 58 feet, followed by a stair stepped concrete overlay section to an elevation of 70 feet, with the steps having a 1-foot rise and 2-foot run. This alternative would be constructed similarly to the fabric-formed concrete mat alternative. It would require the placement of a gravel layer on the soil-cement irregular surface to provide a uniform bearing surface for the precast concrete panels, and the panels would be anchored at the top and bottom of the slope. The concrete overlay would be placed directly on the soil-cement surface, and keyed into the soil-cement at the top and bottom. This repair alternative would be constructed in the wet.

From a constructability standpoint, the precast concrete panels would have to be relatively thick and heavy, requiring large amounts of reinforcement able to withstand the bending stresses associated with handling of the panels during transportation, staging, and placement. In addition, the weight of the panels would require the use of very large cranes for installation, which the existing embankment crest may not be able to accommodate without the construction of temporary working platforms. The construction of proper jointing between the precast panels as well as the anchoring of the top and bottom of the panels underwater would be very challenging. In addition, similarly to the fabric-formed concrete mat alternative, the concrete overlay would need to be keyed into the soil-cement at its top and bottom, with the bottom key at the interface with the precast concrete panels to be constructed underwater. This alternative also requires measures to provide proper drainage of the gravel layer between the soil-cement and the panels.

These constructability issues are anticipated to result in higher construction costs than the full-length concrete overlay and fabric formed concrete mat alternatives.

This alternative was dismissed from further consideration in light of the above described constructability concerns.

Articulated Block System

Articulated block systems were evaluated for waves generated by a design wind event of 180 miles per hour. The estimated significant wave heights were greater than 10 feet, which leads to block size requirements in excess of typical articulated block systems. Based on the analysis a block thickness of at least 2.5 feet was considered necessary (see **Figure 9**). Further discussion with suppliers of articulated block systems indicated that a block thicker than the typical 1-foot maximum thickness may be possible. However, the larger sized block and cable requirements make the articulated block system impractical for typical installation and supply. Based on the analysis and evaluation, the articulated block system was dismissed from consideration.

Riprap

A riprap revetment overlying the soil-cement slope was also evaluated for waves generated for a design wind event of 180 miles per hour. Based on estimated significant wave heights of more than 10 feet, the riprap size requirement was estimated to be a median diameter (D_{50}) of approximately 7 feet for limestone and 5 feet for granite rock. Supplying the large rock size was considered impractical for the project. A plot of D_{50} vs. water depth is provided on **Figure 9**. For a practical D_{50} of 2 feet, the water depth would need to be less than 5 feet. As a result, the riprap revetment alternative was dismissed from consideration.

Chemical Grouting

This alternative involves drilling through the soil-cement facing and injecting low viscosity chemical grout into the soils underlying the soil-cement. The chemical grout binds the permeated granular soils, resulting in a solidified mass with physical properties similar of those of soft rock that is, with significantly higher strength and stiffness, and lower hydraulic conductivity than the permeated soils.

Several types of chemical grouts and grouting procedures are available. The procedure considered for this repair alternative would involve injecting sodium silicate permeating grout into the granular soils directly beneath the soil-cement facing to solidify a mass of soils extending about 2 feet below the bottom of the soil-cement. Injections would be performed in a grid pattern throughout the entire repair area. It is tentatively estimated that a 2-foot spacing would be adequate to produce a relatively uniform solidified soil mass. Subsequently, high-density polyurethane expansive grout would be injected to fill any remaining voids between the soil-cement facing and the underlying soils and to solidifying any soils that may have not been permeated by the sodium silicate grout. The polyurethane grout would be injected in a similar 2-foot pattern, staggered from the initial injection points.

From a constructability standpoint, chemical grouting can be accomplished in the wet without disrupting normal facility operations. Coring grouting portholes through the soil-cement facing is not anticipated to have an adverse effect on its remaining useful life, as the core holes would be subsequently repaired. Further, this repair alternative is not anticipated to require cutting, excavation or to induce any fracturing of the existing soil-cement facing. However, the effectiveness of the chemical grouting procedures is difficult to ascertain. Typical quality

assurance procedures are limited to the monitoring of injection volumes and pressures, and core sampling of the treated area. In addition, the injection of expansive polyurethane grout would require close control to avoid the development of heaving pressures that could distress the overlying soil-cement.

From a performance perspective, chemical grouting significantly decreases the hydraulic conductivity of the permeated soils, which will affect seepage through the embankment. Comprehensive seepage and slope stability analyses for varying water stages would have to be conducted to determine that chemical grouting would not adversely affect the overall stability of the embankment.

Chemical grouting employs specialized techniques and expensive materials, which typically renders it cost prohibitive for very large applications; thus, this alternative would not be suited for the rehabilitation of the entire embankment slope. However, consideration may be given to using this solution for the treatment of isolated areas. It would be particularly well suited for the rehabilitation of areas where the soils beneath the soil-cement facing have been loosened or eroded.

In order to determine the most suitable grouting injection pattern to produce a uniform solidified soil mass and to refine the procedures required to minimize the development of heaving pressures while injecting polyurethane grout, construction of a test section in an easily accessible area prior to full production is recommended.

4.3 Comparative Costs

Preliminary engineering cost estimates were developed for the repair alternatives involving the construction of concrete overlays in the dry and in the wet, which were deemed to be most feasible based on our evaluation of the constructability and performance aspects of each repair alternative under consideration.

The cost estimates were developed in consultation with specialty contractors (including underwater contractors, earthwork and structural contractors, sheet piling contractors and suppliers) concerning best-suited construction techniques, productivity rates and typical cost for the various tasks involved in each alternative. We also researched published construction cost estimating databases to obtain unit costs for some of the construction items.

In order to prepare the cost estimate for the repair alternative involving the construction of a concrete overlay in the dry, a preliminary cofferdam design was completed including sheet piling analyses, earthen plug stability analyses, and seepage analyses to estimate the unwatering pumpage volumes. In addition, various construction sequences were evaluated based on materials costs and productivity rates. The construction sequence considered in the estimate is presented in schematic form in **Appendix H**. The unit cost for this repair alternative varies significantly depending on the length of the segments to be repaired because of the high cost of materials for the construction of the cofferdam, which would be reused if the rehabilitation work is constructed in multiple segments as anticipated. Hence, we developed cost estimates based on the rehabilitation of a 5,000 lineal foot continuous section of embankment for comparative purposes.

Detailed cost estimates for the rehabilitation of 5,000 lineal feet of embankment with a concrete overlay constructed in the wet and in the dry are presented in **Appendix H**. In brief, the repair

alternative involving the construction of a concrete overlay in the dry is estimated to cost on the order of \$4,250 per lineal foot of embankment, whereas the repair alternative involving the construction of a concrete overlay in the wet is estimated to cost on the order of \$3,000 per lineal foot of embankment (approximately 70% of the unit cost of the dry alternative).

The cost of repairs involving chemical grouting cannot be readily estimated because they are highly dependent on the cost of the grout products and the injection patterns and procedures. A budgetary estimate of the cost of implementing the grouting repair procedure described in the previous section of this report for a 100 lineal foot segment of embankment, extending from the toe of the embankment to elevation 70 feet (approximately 4,500 square feet of surface area) would be on the order of \$5,000,000, or approximately \$50,000 per lineal foot of embankment (see **Appendix H** for details). This rough estimate takes into consideration the cost of the chemical grout products and injection, drilling of core holes through the embankment to insert the grout ports and subsequent patching, and incidental items such as grout spoil containment and disposal, turbidity curtains, mobilization/demobilization, etc. Consideration is also given to the fact that the majority of the work would be performed underwater.

4.4 Recommended Design Alternative

Based on our evaluation of the constructability and performance aspects of each of the considered design alternatives described above, the most feasible repair procedure is considered to be the construction of a full-length concrete overlay, extending from the toe of the embankment at approximately elevation 50 feet to an elevation of 70 feet. Even though the construction of the concrete overlay in the dry would have some advantages over its construction in the wet, the need for the construction of a cofferdam designed to withstand very high hydrostatic pressures results in a significantly higher construction cost; rendering the construction in the wet more cost effective.

As previously, discussed, chemical grouting may be a consideration for repair of localized areas that have loose or raveling soils beneath the soil-cement. If chemical grouting is considered, the repair procedures should be developed in conjunction with an experienced specialty contractor, using grout products and injection techniques best suited for the gradation and condition of the soils to be permeated.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The focus of this study was to collect sufficient of data to assess the current condition of the soil-cement on the upstream slope of the Manatee Power Plant Cooling Pond perimeter embankment. A combination of visual observations, field measurements, and laboratory test results were summarized and normalized to a consistent scale ranging between 0 and 1, where 0 is the worst and 1 is the best condition for each parameter. Influence factors were then developed to provide a relative weight of importance of the various parameters on the overall condition of the soil-cement. The evaluations were focused on 400-foot stations along the wetted embankment perimeter.

The resulting profile of CAFs shown on **Figure 6** was used to determine the condition of the soil-cement along the embankment alignment. A CAF below 0.6 is considered to be a value at which the soil-cement should be repaired. The CAFs generally match the historical observations of the FPL dam inspection personnel.

The RUL of the soil-cement was estimated assuming a linear rate of degradation over time based on current values of CAF. This simplifying assumption should be verified over time. As a result, we recommend that a detailed visual/dive inspection and LiDAR/SONAR survey be completed on a 5-year basis to evaluate the change in CAFs over time. Detailed inspections should also be completed after any significant storm event.

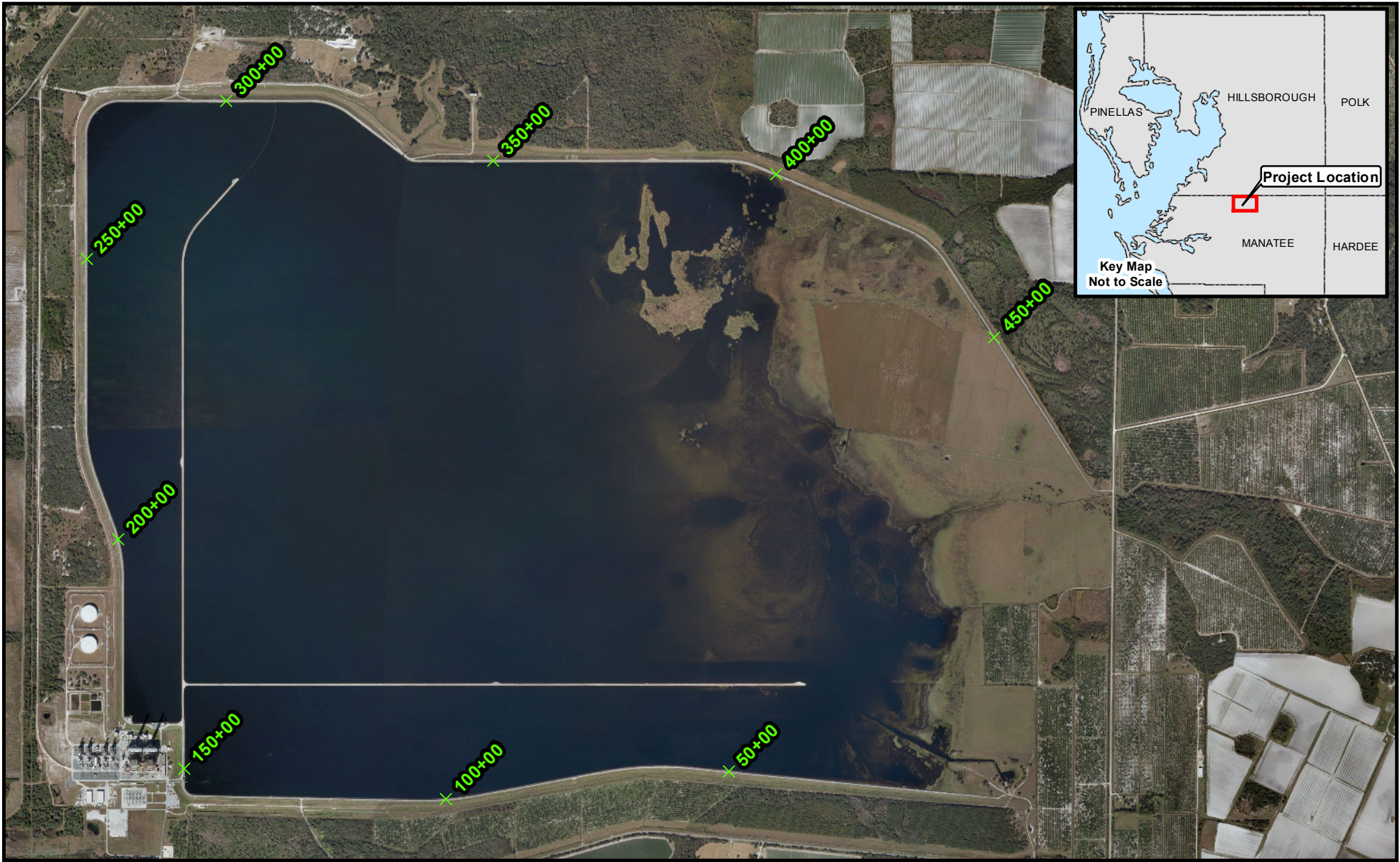
A variety of repair options were evaluated, and the two most viable options were selected for detailed cost estimates – placing a concrete facing over the soil-cement either in the wet or in the dry using a cofferdam. The placement of the concrete facing in the wet was determined to be the most cost effective repair option. **The cost to repair a typical 5,000-foot section of soil-cement is estimated to be \$15,000,000, or approximately \$3,000 per lineal feet of repaired embankment.**

6.0 BIBLIOGRAPHY

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- Wimauma Quadrangle, 7.5 Minute Series, Manatee Co. Florida, 1972;
- Embankment Layout, FPL, 1995; and
- Soil Boring Logs, Stone, and Webster, 1980.

FIGURES

FIGURE 1	Site Location Plan
FIGURE 2A-F	Summary of Plan and Visual Inspection
FIGURE 3A-F	RUL Profiles – Section Wear
FIGURE 4A-E	RUL Profiles – Section Strength
FIGURE 5A-E	RUL Profiles – Survey Loss & Fetch
FIGURE 6	Condition Assessment Factor Profiles
FIGURE 7	Relationship of RUL to CAF
FIGURE 8A-B	Soil-Cement Repair Alternatives Typical Sections
FIGURE 9	Required Armor Size vs. Pond Water Depth
FIGURE 10	Required Repair Length Over Time



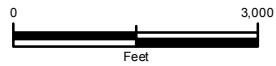
Notes:
 1- Project No.: 300906
 2- Data Sources - Amecfw, 2014 FDOT Imagery
 3- This map is intended to be used for planning purposes only. It is not a survey.
 Date: 05/08/2014
 Revised 05/27/2015
 Checked By: JB

Explanation of Features

N

X Stations (5,000-Ft Interval)

County



amec foster wheeler

Amec Foster Wheeler
 Environment & Infrastructure, Inc.
 2000 E. Edgewood Drive Ste #215
 Lakeland, FL 33803
 CA-6392
 (850) 667-2345

Figure 1
Location Map
Manatee Plant Cooling Pond
Manatee County, Florida

STA	Visual Inspection								
	Typical Transvers Crack Spacing (ft)	Typical Transvers Crack Width (in)	# of Soft Steps	# of Moderate Steps	# of Hard Steps	# of Eroded Steps	Pitting Observed	Vegetation Observed	Repairs Observed
5+69			0	1	4	1	No	No	No
8+00			3	1	3	2	Yes	Yes	No
12+00			5	3	3	5	Yes	Yes	No
16+00	15	1	5	4	4	8	Yes	Yes	Yes
20+00	20	1	5	6	2	6	Yes	Yes	No
24+00	20	1	3	7	3	5	Yes	Yes	No
28+00	15	1	4	6	3	5	Yes	Yes	No
32+00	15	1	4	7	3	6	Yes	Yes	No
36+00	20	2	5	6	2	5	Yes	Yes	No
40+00	17	1.5	0	2	8	3	Yes	No	No
44+00	18	3	1	4	4	0	Yes	No	No
48+00	11	0.5	5	4	2	3	Yes	Yes	No
52+00	14	2	1	2	9	3	Yes	Yes	No
56+00			1	1	11	1	Yes	No	No
60+00	20	0.5	1	1	10	3	Yes	No	No
64+00	25	1	1	2	9	4	No	Yes	No
65+00						1			No
68+00	19	2	0	2	11	3	Yes	Yes	No
70+85									Yes
72+00	18	1	0	3	10	2	Yes	Yes	No
76+00			0	0	12	1	No	No	No
80+00	10	0.5	0	2	9	3	Yes	No	No
84+00	20	1	0	1	10	1	No	No	Yes
88+00	14	1	0	3	8	2	Yes	Yes	No
92+00	12	1.5	1	1	9	2	No	No	No
96+00	12	1	0	3	8	0	Yes	No	No
100+00	20	1.5	2	1	8	3	Yes	No	No



Notes:

- Project No.: 300906
- Data Sources - Amecfw, 2014 FDOT Imagery
- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
 Checked By: JB



Explanation of Features

GPS Locations # of Eroded Steps

- ✕ Stations
- △ Repair
- 0 - 4
- 5 - 8
- 9 - 12
- >12

LABEL KEY

- 40+00 — Station Number
- 1.5 — Typical crack width (inches)

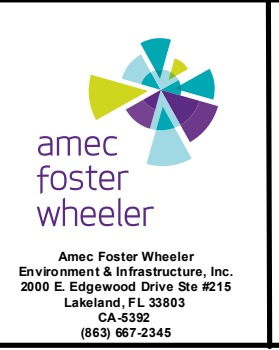
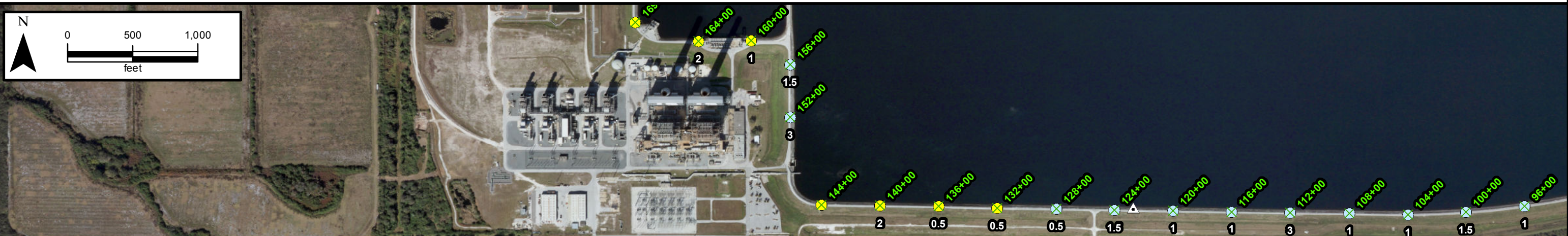


Figure 2A
Summary Plan of Visual Inspections
Stations 5+00 to 100+00
Manatee Plant Cooling Pond
Manatee County, Florida

STA	Visual Inspection								
	Typical Transvers Crack Spacing (ft)	Typical Transvers Crack Width (in)	# of Soft Steps	# of Moderate Steps	# of Hard Steps	# of Eroded Steps	Pitting Observed	Vegetation Observed	Repairs Observed
100+00	20	1.5	2	1	8	3	Yes	No	No
104+00	20	1	3	1	6	2	No	No	No
108+00	20	1	1	3	6	2	Yes	Yes	No
112+00	10	3	1	3	6	2	Yes	No	No
116+00	10	1	4	2	5	4	Yes	Yes	No
120+00	10	1	7	6	1	4	Yes	No	No
122+80									Yes
124+00	12	1.5	1	3	7	4	Yes	Yes	No
128+00	10	0.5	4	2	5	3	Yes	Yes	No
132+00	15	0.5	5	3	2	5	Yes	Yes	Yes
136+00	12	0.5	7	2	2	8	Yes	Yes	No
137+25							Yes		
139+00							Yes		
140+00	15	2	6	1	5	7	Yes	Yes	No
144+00			4	1	7	7	Yes	Yes	No
148+00		0.5	0	0	13	2	Yes	No	No
152+00	10	3	0	1	12	2	Yes	No	No
155+00							Yes		No
155+20									Yes
156+00	12	1.5	0	1	12	4	Yes	No	Yes
160+00	20	1	0	0	13	6	Yes	Yes	No
164+00	20	2	2	7	2	8	Yes	No	No



Notes:

- Project No.: 300906
- Data Sources - Amecfw, 2014 FDOT Imagery
- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
Revised: AB
Checked By: JB



Explanation of Features

GPS Locations # of Eroded Steps

- ✕ Stations
- △ Repair
- 0 - 4
- 5 - 8
- 9 - 12
- >12

LABEL KEY

- 100+00 — Station Number
- 1.5 — Typical crack width (inches)

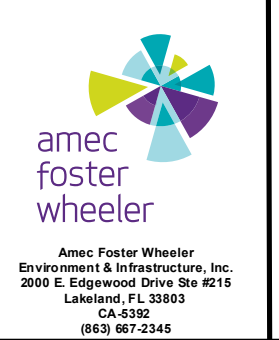
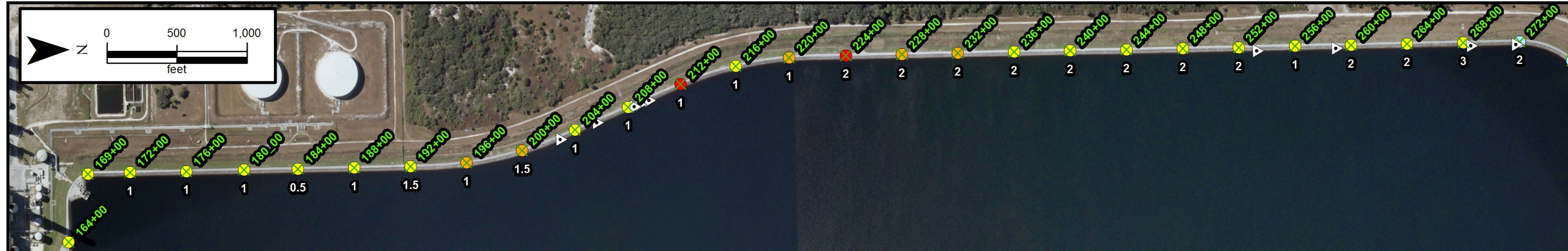
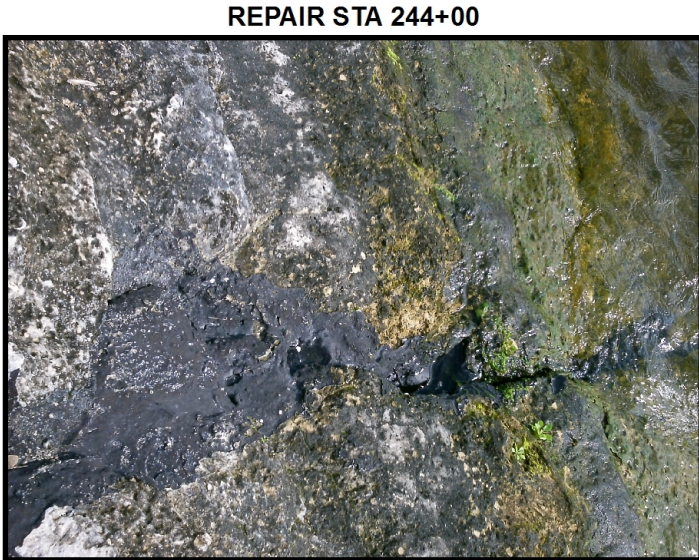


Figure 2B
Summary Plan of Visual Inspections
Stations 100+00 to 164+00
Manatee Plant Cooling Pond
Manatee County, Florida

STA	Visual Inspection								
	Typical Transvers Crack Spacing (ft)	Typical Transvers Crack Width (in)	# of Soft Steps	# of Moderate Steps	# of Hard Steps	# of Eroded Steps	Pitting Observed	Vegetation Observed	Repairs Observed
164+00	20	2	2	7	2	8	Yes	No	No
169+00			3	8	1	8	Yes	Yes	No
172+00	20	1	8	2	2	6	Yes	Yes	No
176+00	15	1	9	0	3	8	Yes	Yes	No
180+00	10	1	9	3	0	6	Yes	Yes	No
184+00	10	0.5	11	2	0	8	Yes	Yes	No
188+00	15	1	6	3	3	7	Yes	Yes	No
192+00		1.5	4	5	3	8	Yes	Yes	No
196+00	15	1	5	3	4	12	Yes	No	No
200+00	30	1.5	4	6	2	12	Yes	Yes	Yes
203+00									Yes
204+00	20	1	7	3	3	8	Yes	Yes	No
205+75									Yes
208+00	20	1	7	3	3	8	No	No	No
212+00	12	1	5	6	2	13	Yes	Yes	No
216+00	15	1	4	5	4	7	Yes	Yes	No
220+00	15	1	6	4	3	10	Yes	Yes	No
224+00	10	2	5	6	2	13	Yes	No	No
228+00	15	2	6	5	2	12	Yes	Yes	No
232+00	15	2	3	7	3	12	Yes	Yes	No
236+00	12	2	4	7	2	6	Yes	Yes	No
240+00	12	2	4	6	3	6	Yes	No	No
244+00	10	2	5	4	4	6	Yes	No	No
248+00	10	2	4	3	5	5	Yes	Yes	No
252+00	15	2	4	4	5	6	Yes	Yes	No
253+35									Yes
256+00	15	1	3	3	7	5	Yes	Yes	No
259+25									Yes
260+00	20	2	2	6	4	8	Yes	No	No
264+00	20	2	3	6	4	5	Yes	No	No
268+00	10	3	4	6	3	5	Yes	No	No
268+60									Yes
272+00	20	2	4	4	5	4	Yes	Yes	No



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.



Explanation of Features

GPS Locations # of Eroded Steps

- ✕ Stations
- △ Repair
- 0 - 4
- 5 - 8
- 9 - 12
- >12

LABEL KEY

Station Number

Typical crack width (inches)

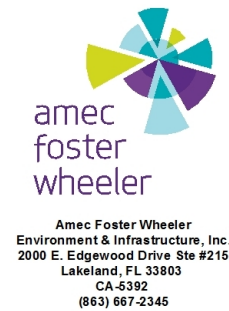
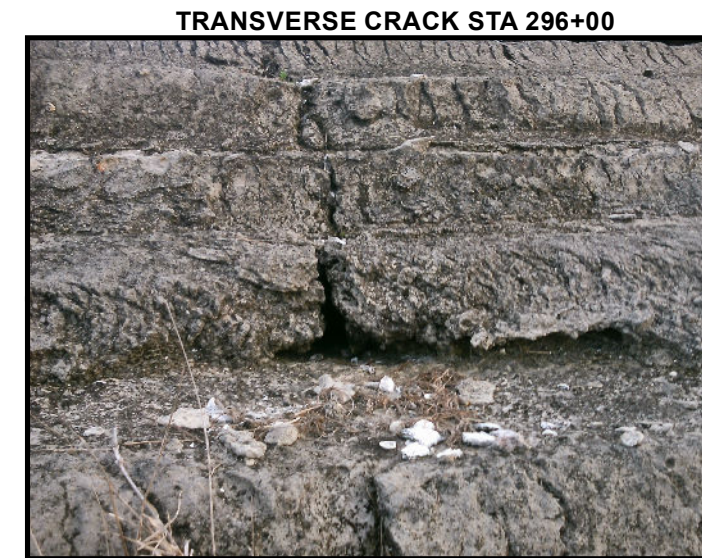


Figure 2C
Summary Plan of Visual Inspections
Stations 164+00 to 272+00
Manatee Plant Cooling Pond
Manatee County, Florida

STA	Visual Inspection								
	Typical Transvers Crack Spacing (ft)	Typical Transvers Crack Width (in)	# of Soft Steps	# of Moderate Steps	# of Hard Steps	# of Eroded Steps	Pitting Observed	Vegetation Observed	Repairs Observed
272+00	20	2	4	4	5	4	Yes	Yes	No
276+00	20	1	3	4	6	4	Yes	No	No
280+00	20	3	7	5	1	6	Yes	Yes	No
284+00	15	1	3	3	8	4	Yes	No	Yes
288+00	20	6	2	3	11	4	Yes	Yes	No
292+00	15	6	3	3	10	4	Yes	No	No
296+00	15	3	3	3	10	4	Yes	No	No
300+00	15	2	3	3	10	6	Yes	Yes	No
304+00	10	1	3	3	10	5	Yes	No	No
308+00	15	2	3	2	12	5	Yes	No	No
308+50									Yes
310+65									Yes
312+00	15	2	4	3	11	6	Yes	No	No
316+00	10	2	3	3	10	4	Yes	No	No
320+00	15	2	5	4	8	7	Yes	No	No
324+00	15	2	5	7	6	5	Yes	No	No
328+00	20	2	5	5	7	5	Yes	No	No



Notes:

- Project No.: 300906
- Data Sources - Amecfw, 2014 FDOT Imagery
- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
Revised: AB
Checked By: JB



Explanation of Features

GPS Locations # of Eroded Steps

- ⊗ Stations
- △ Repair
- 0 - 4
- 5 - 8
- 9 - 12
- >12

LABEL KEY

- Station Number
- Typical crack width (inches)

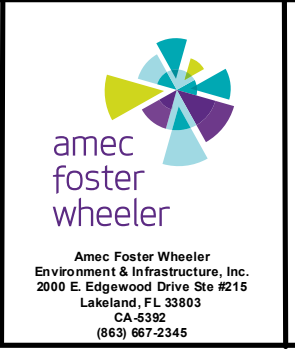


Figure 2D
Summary Plan of Visual Inspections
Stations 272+00 to 328+00
Manatee Plant Cooling Pond
Manatee County, Florida

STA	Visual Inspection								
	Typical Transvers Crack Spacing (ft)	Typical Transvers Crack Width (in)	# of Soft Steps	# of Moderate Steps	# of Hard Steps	# of Eroded Steps	Pitting Observed	Vegetation Observed	Repairs Observed
328+00	20	2	5	5	7	5	Yes	No	No
332+00	20	2	4	5	8	7	Yes	No	No
333+15									Yes
336+00	15	2	3	3	11	4	Yes	No	No
340+00	15	2	3	3	11	3	Yes	No	No
341+45									Yes
344+00	20	2	3	3	11	4	Yes	No	No
348+00	10	2	3	3	11	6	Yes	No	No
352+00	10	1	3	2	12	6	Yes	No	No
356+00	20	2	3	4	10	6	Yes	No	No
360+00	15	2	2	4	10	7	Yes	No	No
364+00	20	2	3	3	10	3	Yes	No	Yes
368+00	10	3	3	6	9	5	Yes	No	No
372+00	15	3	4	12	2	6	Yes	Yes	Yes
376+00	20	1	3	10	5	5	Yes	Yes	No
380+00	20	3	3	7	8	7	Yes	Yes	Yes
384+00	15	2	3	5	9	5	Yes	No	Yes
388+00	20	2	3	8	6	5	Yes	No	No
392+00			0	11	7	7	Yes	No	No
396+00			0	10	5	8	Yes	Yes	No
400+00			0	8	6	6	Yes	Yes	No
404+00			0	10	4	5	Yes	No	No
408+00			0	8	5	5	Yes	No	Yes
412+00			0	7	5	4	No	No	No



Notes:

- Project No.: 300906
- Data Sources - Amecfw, 2014 FDOT Imagery
- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
Revised: AB
Checked By: JB



Explanation of Features

GPS Locations # of Eroded Steps

- Station (X)
- Repair (△)
- 0 - 4 (Blue circle)
- 5 - 8 (Yellow circle)
- 9 - 12 (Orange circle)
- >12 (Red circle)

LABEL KEY

- Station Number (40+00)
- Typical crack width (inches) (15)

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Figure 2E
Summary Plan of Visual Inspections
Stations 328+00 to 412+00
Manatee Plant Cooling Pond
Manatee County, Florida

STA	Visual Inspection								
	Typical Transvers Crack Spacing (ft)	Typical Transvers Crack Width (in)	# of Soft Steps	# of Moderate Steps	# of Hard Steps	# of Eroded Steps	Pitting Observed	Vegetation Observed	Repairs Observed
412+00			0	7	5	4	No	No	No
416+00			0	4	6	2	No	Yes	No
420+00			0	5	7	4	Yes	No	No
424+00			2	6	4	1	No	No	No
428+00			2	6	4	1	No	No	No
432+00			3	6	3	4	No	No	No
436+00			4	6	2	4	No	No	No
440+00			6	5	1	1	No	No	No
444+00			6	4	0	1	No	No	No
448+00			3	4	2	3	No	Yes	No
452+00			0	4	2	1	No	No	No
456+00			0	6	0	2	No	Yes	No
460+00			0	4	2	2	No	No	No
464+00			0	3	2	1	No	No	No
468+00			0	3	2	3	No	No	No
472+00			0	2	2	1	No	No	No



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
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Explanation of Features

GPS Locations # of Eroded Steps

⊗ Stations	● 0 - 4
△ Repair	● 5 - 8
	● 9 - 12
	● >12

LABEL KEY

40+00 — Station Number

1.5 — Typical crack width (inches)

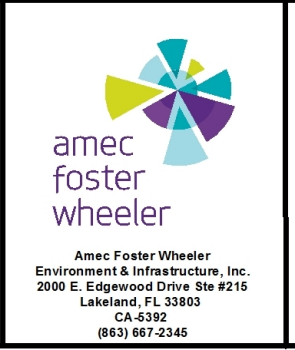
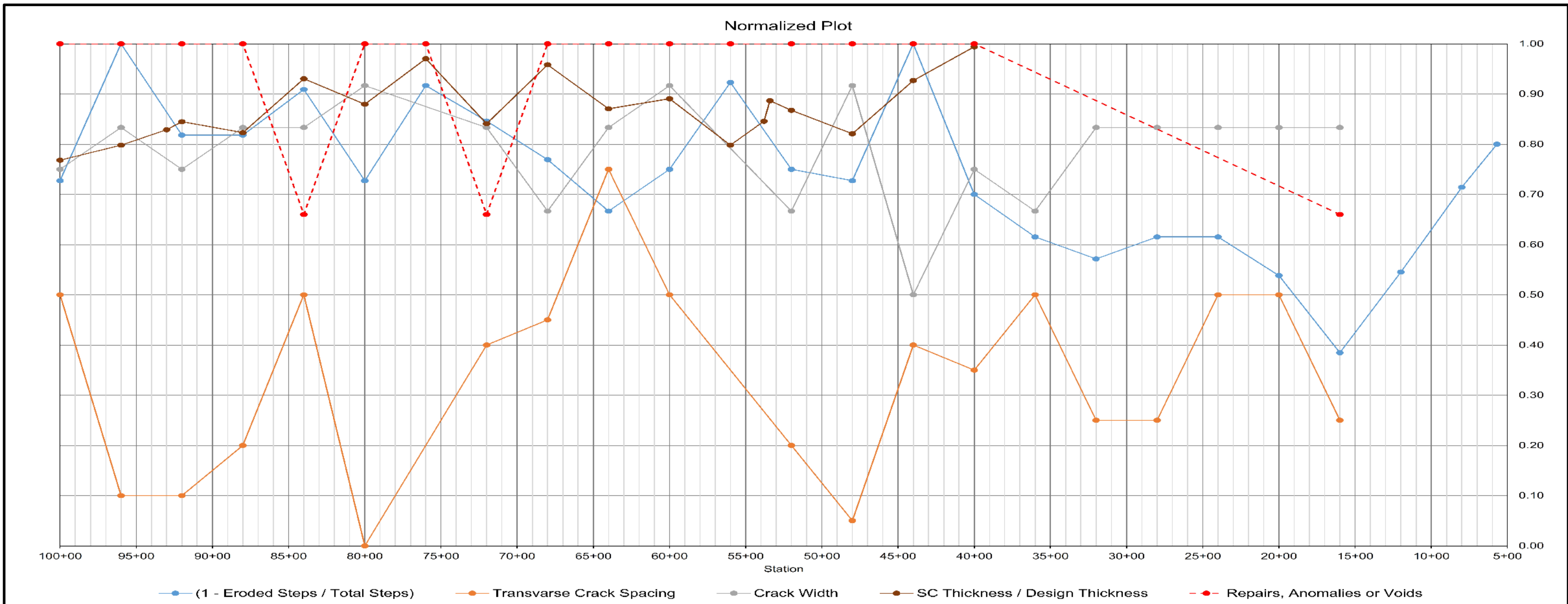


Figure 2F
Summary Plan of Visual Inspections
Stations 412+00 to 472+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
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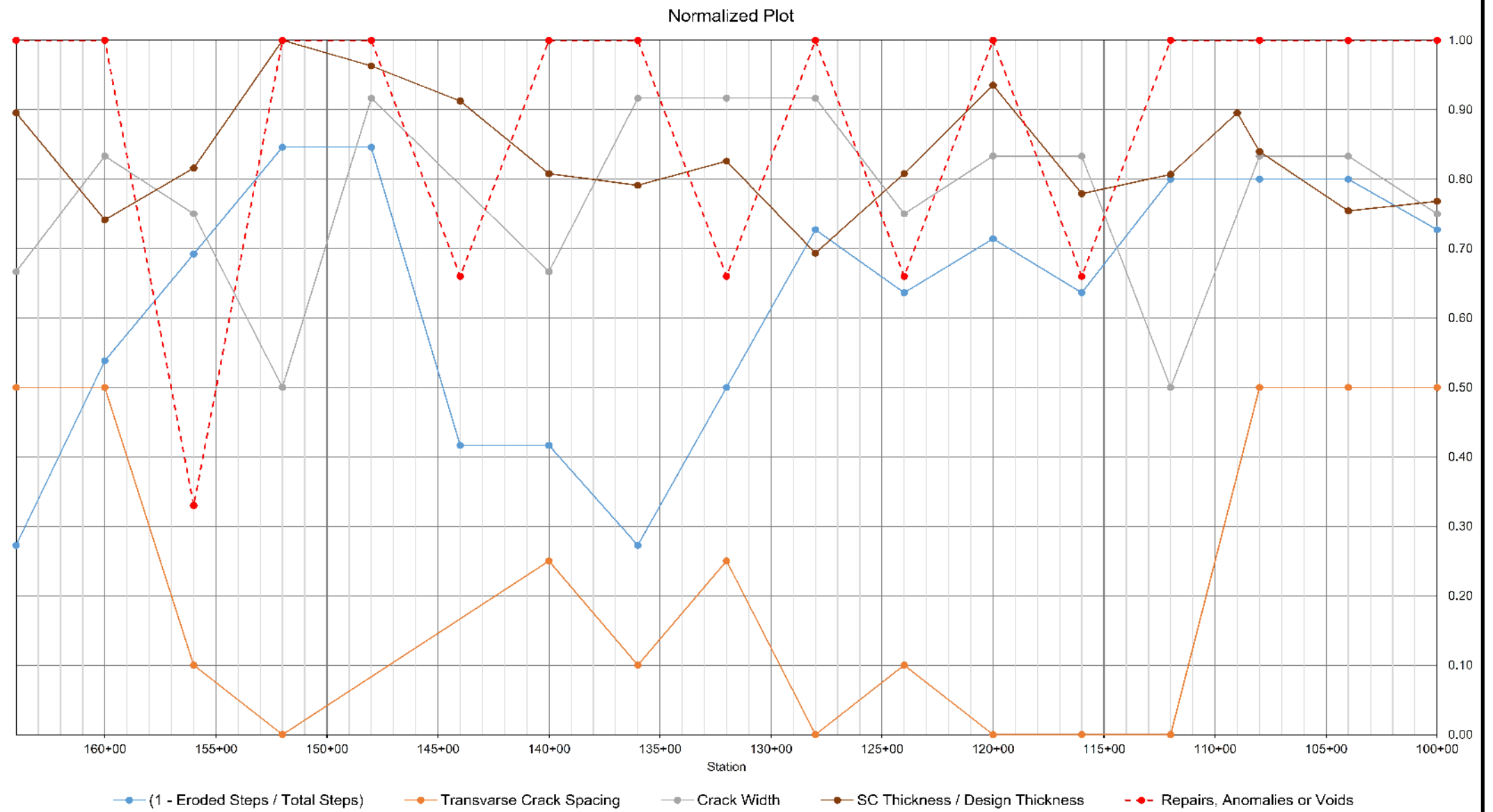
Explanation of Features

GPS Locations

- ✕ Stations
- △ Repair



Figure 3A
Condition Assessment Parameter -
Section Wear
Stations 5+00 to 100+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
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Explanation of Features

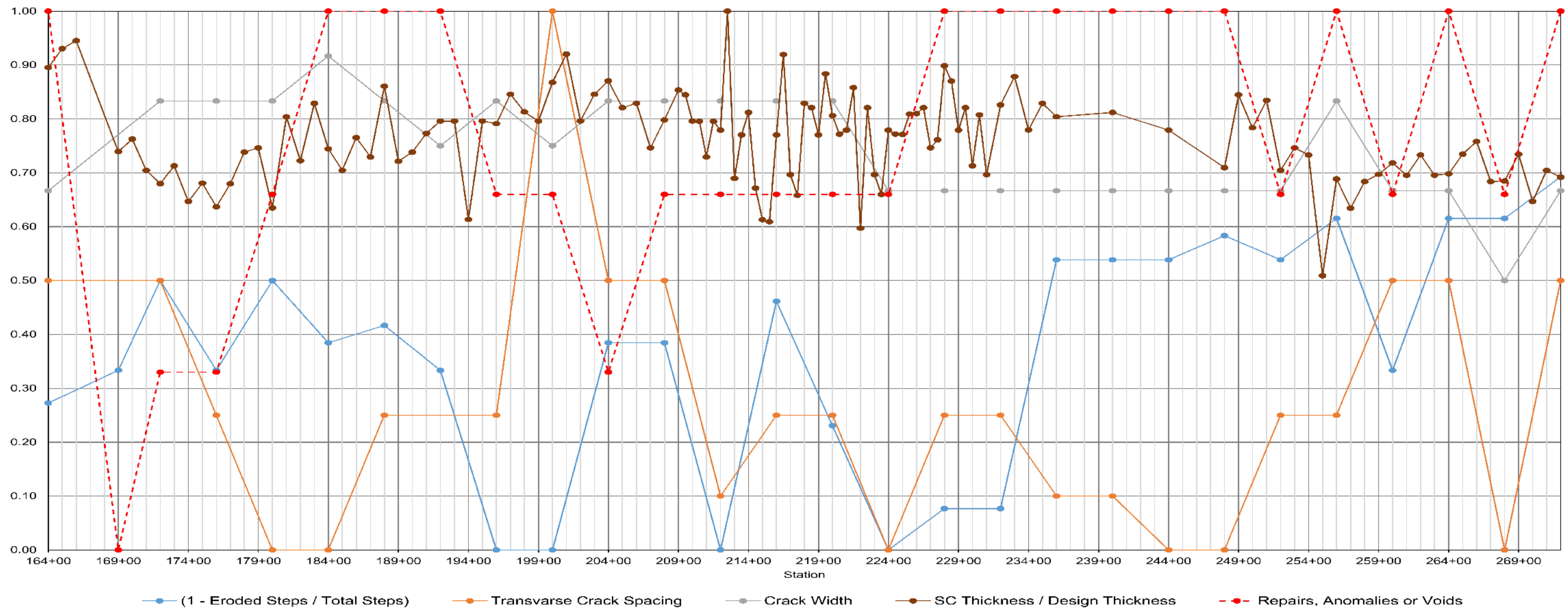
GPS Locations

- ✕ Stations
- △ Repair



Figure 3B
Condition Assessment Parameter -
Section Wear
Stations 100+00 to 164+00
Manatee Plant Cooling Pond
Manatee County, Florida

Normalized Plot



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
Revised: AB
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Explanation of Features

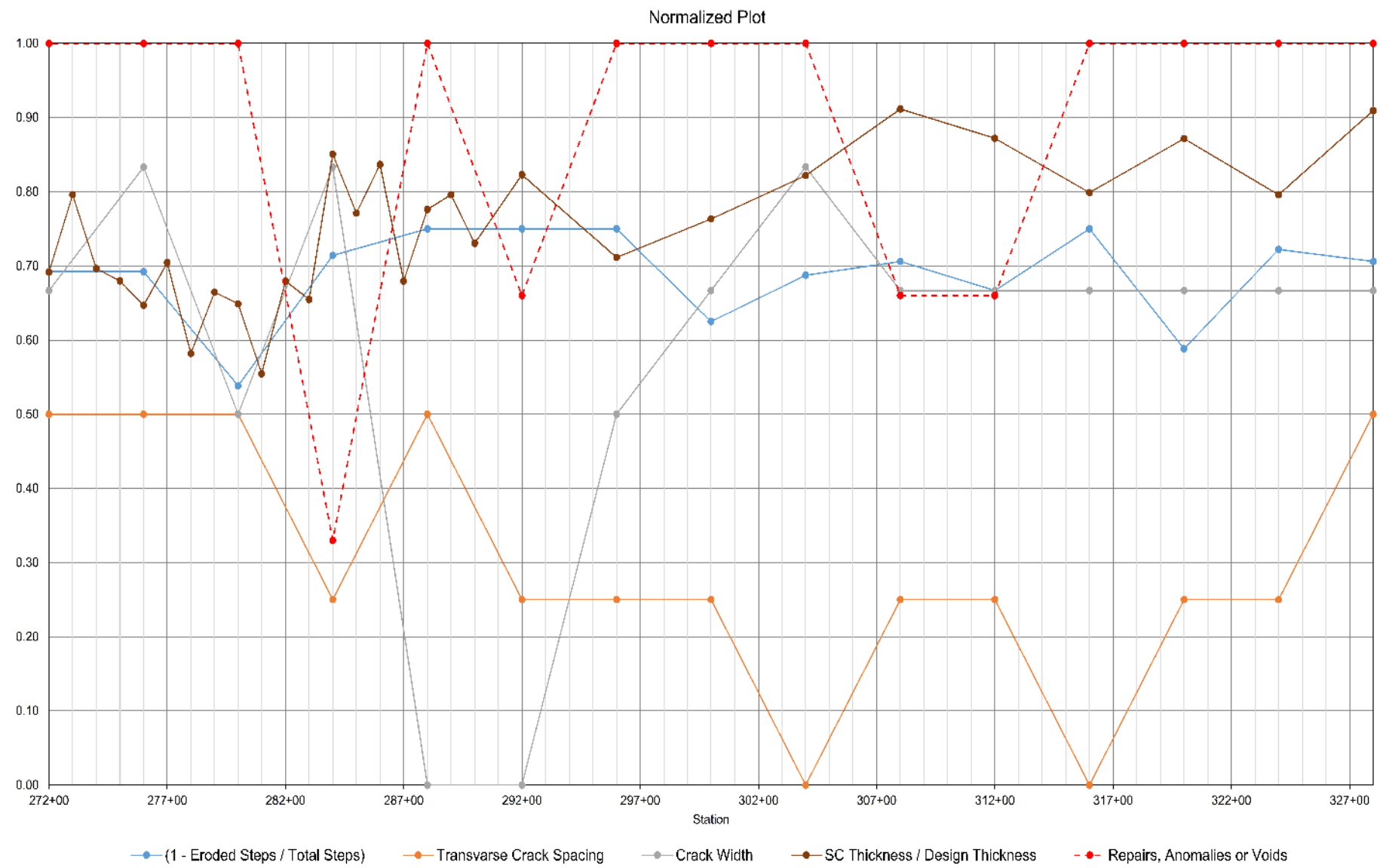
GPS Locations

- ✕ Stations
- △ Repair



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Figure 3C
Condition Assessment Parameter -
Section Wear
Stations 164+00 to 272+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
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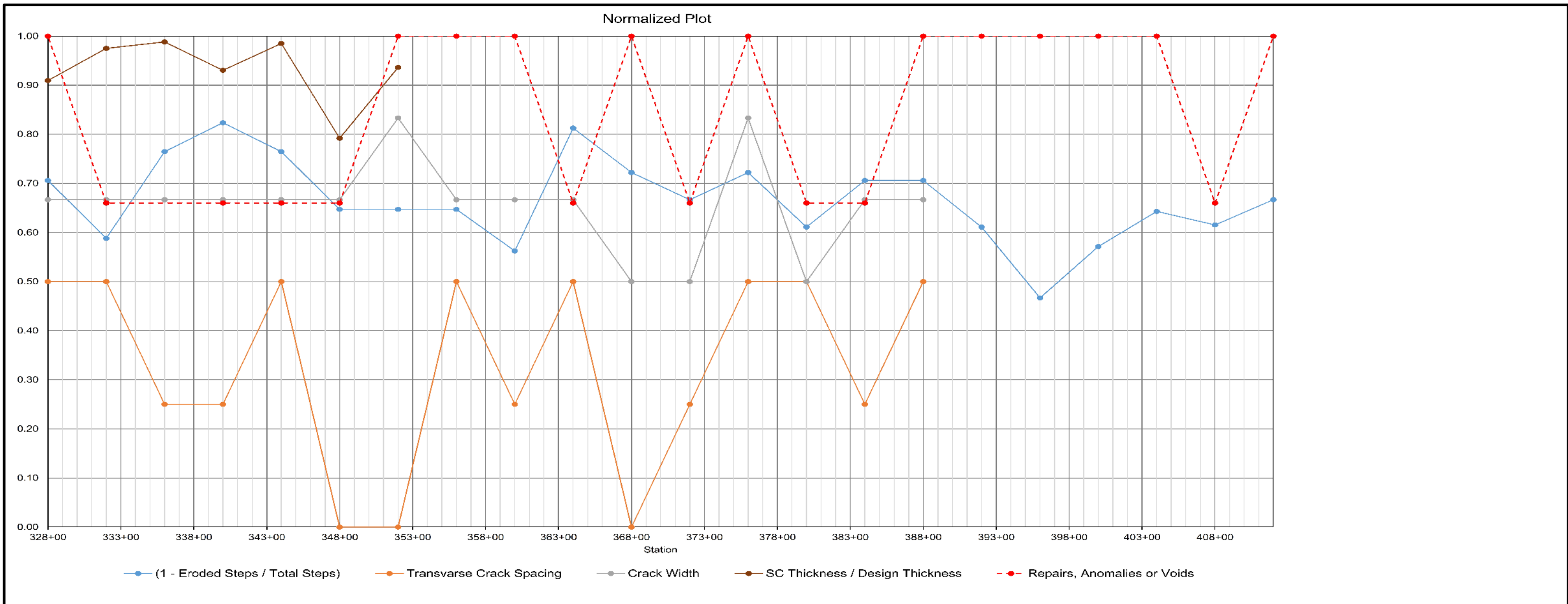
Explanation of Features

GPS Locations

- X Stations
- △ Repair



Figure 3D
Condition Assessment Parameter -
Section Wear
Stations 272+00 to 328+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- Project No.: 300906
- Data Sources - Amecfw, 2014 FDOT Imagery
- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
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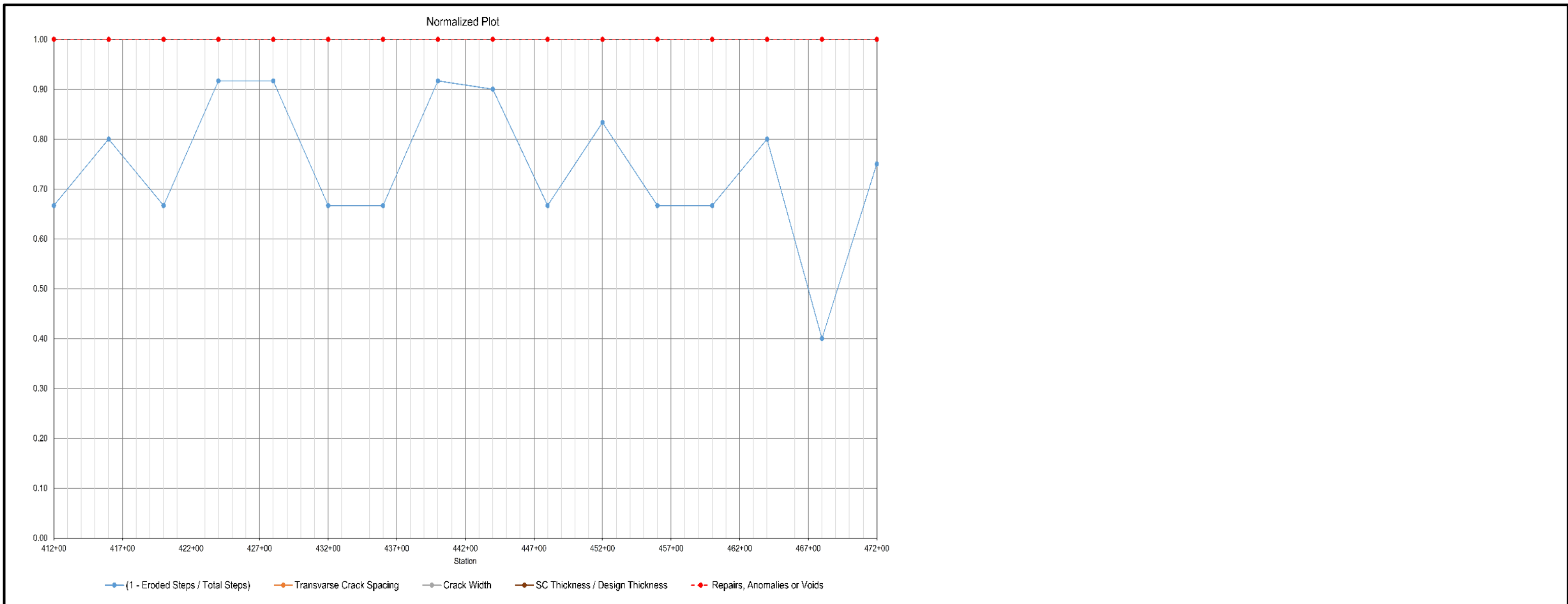
Explanation of Features

GPS Locations

- X Stations
- △ Repair



Figure 3E
Condition Assessment Parameter -
Section Wear
Stations 328+00 to 412+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
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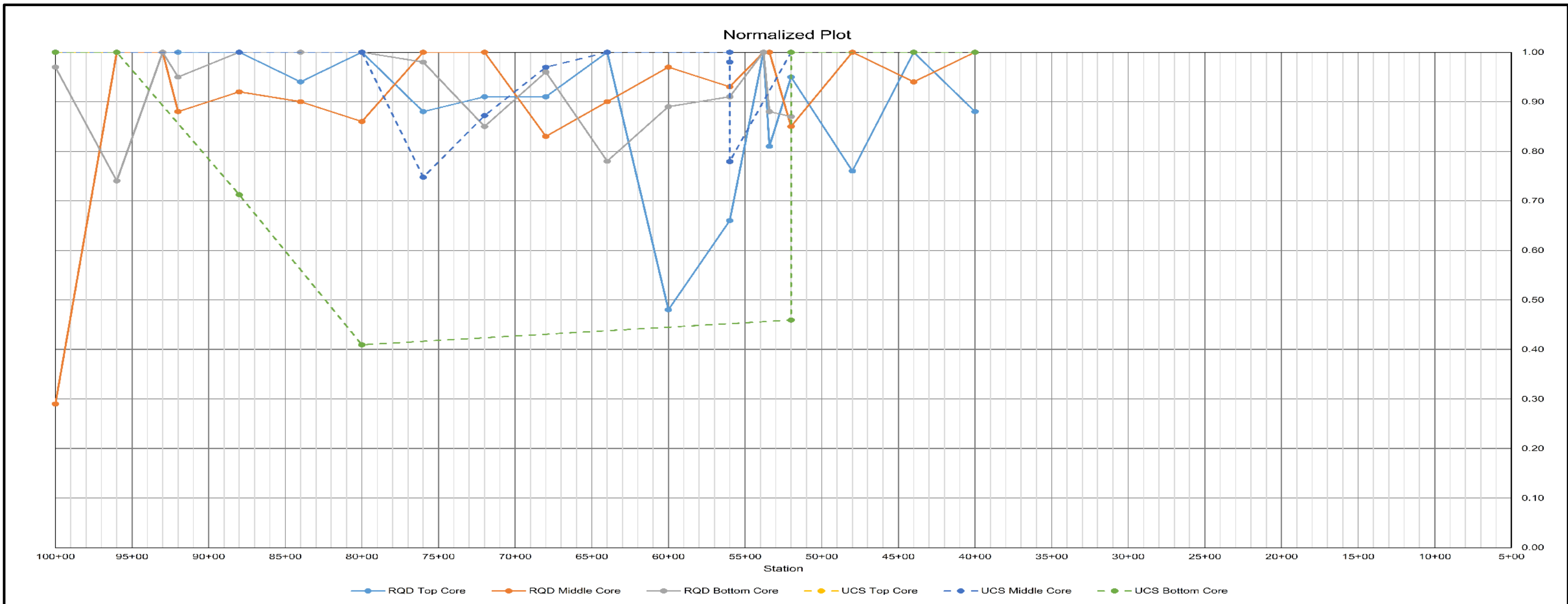
Explanation of Features

GPS Locations

- ✕ Stations
- △ Repair



Figure 3F
Condition Assessment Parameter -
Section Wear
Stations 412+00 to 472+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
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Explanation of Features

GPS Locations

- ✕ Stations
- △ Repair

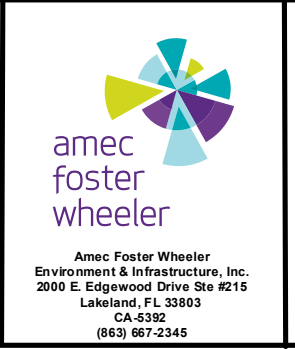
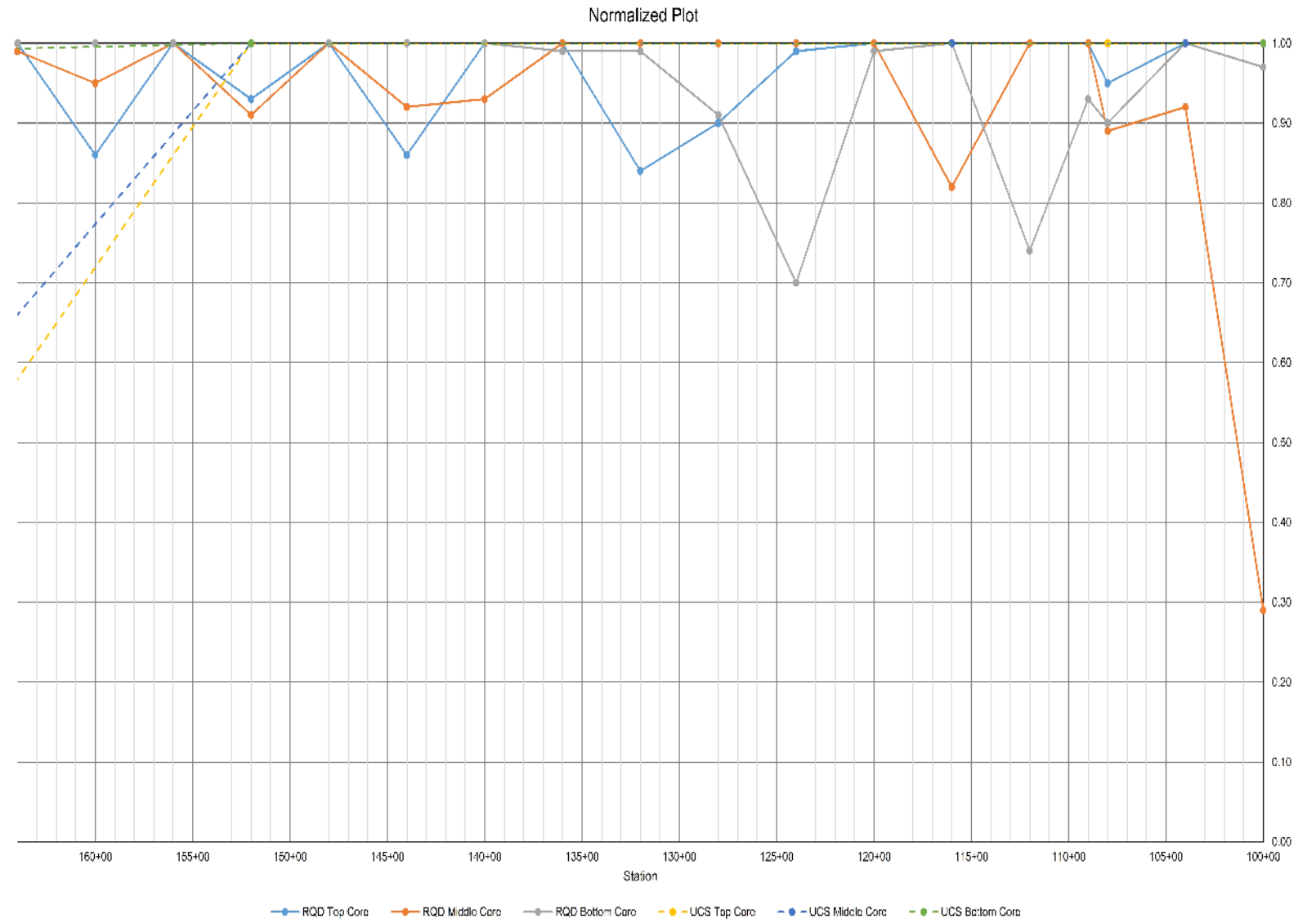


Figure 4A
Condition Assessment Parameter -
Section Strength
Stations 5+00 to 100+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
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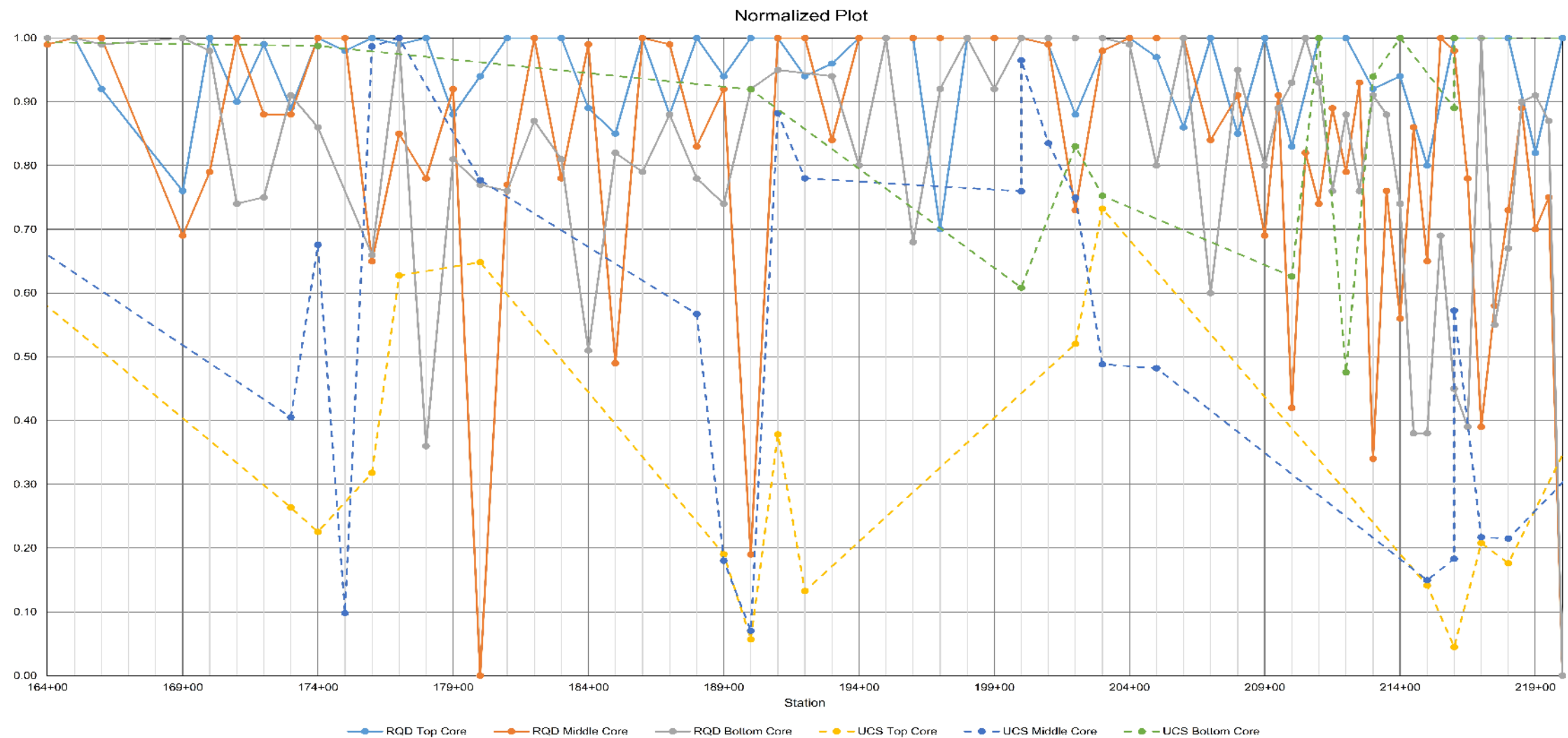
Explanation of Features

GPS Locations

- X Stations
- △ Repair



Figure 4B
Condition Assessment Parameter -
Section Strength
Stations 100+00 to 164+00
Manatee Plant Cooling Pond
Manatee County, Florida



—●— RQD Top Core
 —●— RQD Middle Core
 —●— RQD Bottom Core
 - - -●- - - UCS Top Core
 - - -●- - - UCS Middle Core
 - - -●- - - UCS Bottom Core



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
 Checked By: JB



LOCATION MAP
 NOT TO SCALE

Explanation of Features

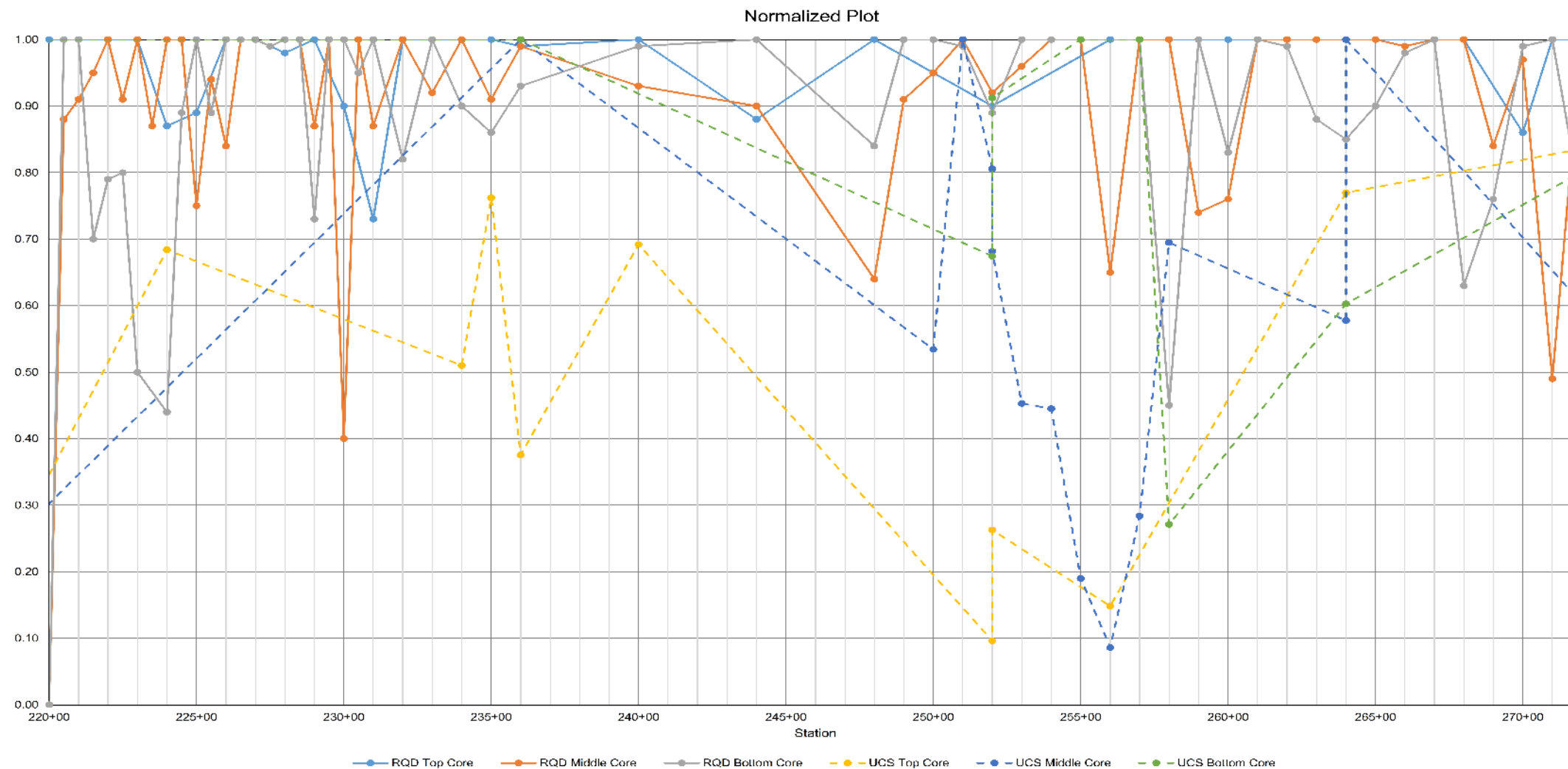
GPS Locations

- ✕ Stations
- ▲ Repair



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Figure 4C
Condition Assessment Parameter -
Section Strength
Stations 164+00 to 220+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
 Checked By: JB



Explanation of Features

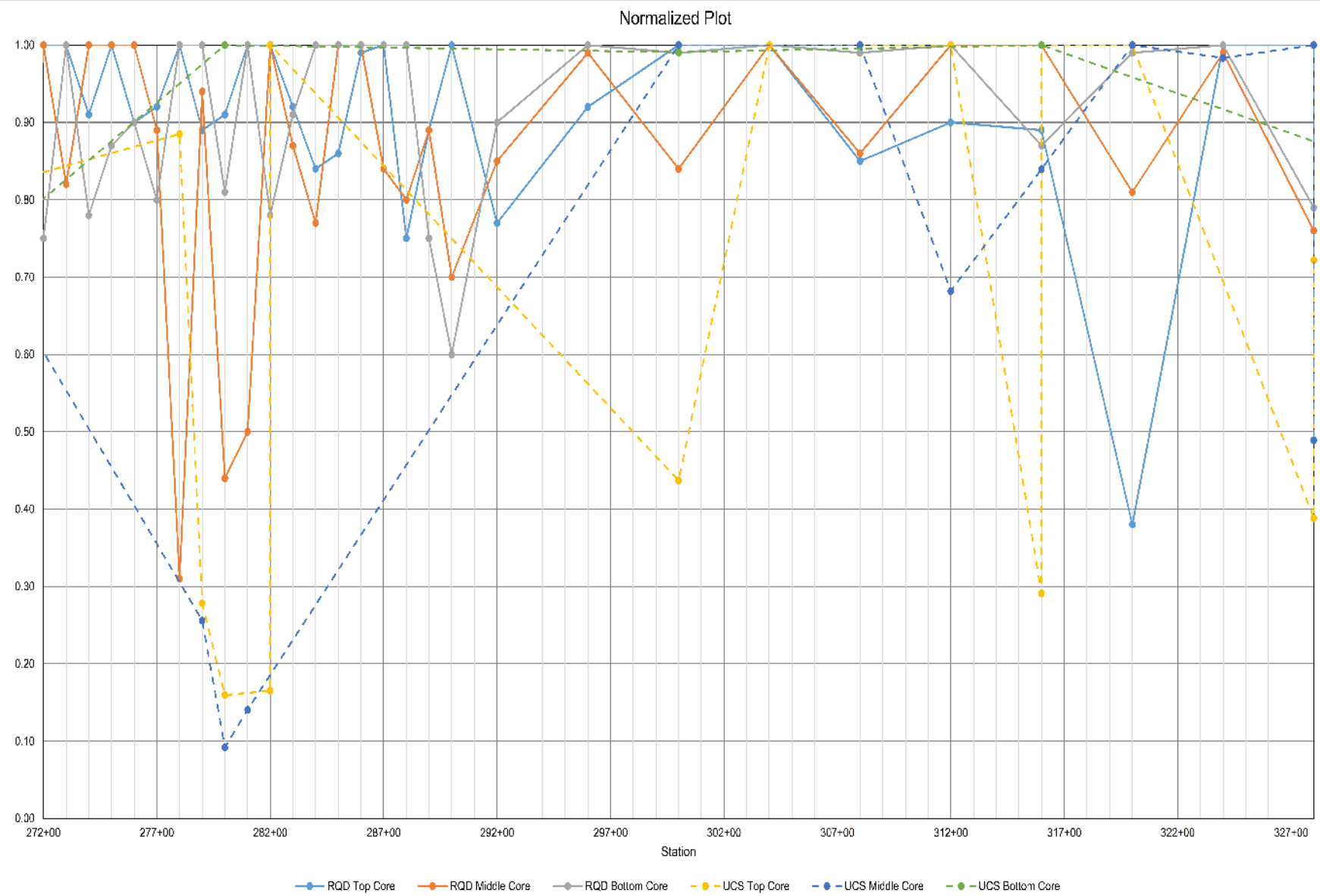
GPS Locations

- ✕ Stations
- △ Repair



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Figure 4D
Condition Assessment Parameter -
Section Strength
Stations 220+00 to 272+00
Manatee Plant Cooling Pond
Manatee County, Florida



—●— RQD Top Core
 —●— RQD Middle Core
 —●— RQD Bottom Core
 - -●- - UCS Top Core
 - -●- - UCS Middle Core
 - -●- - UCS Bottom Core



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
 Checked By: JB



Explanation of Features

GPS Locations

- ✕ Stations
- △ Repair

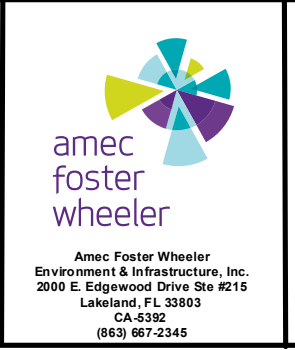
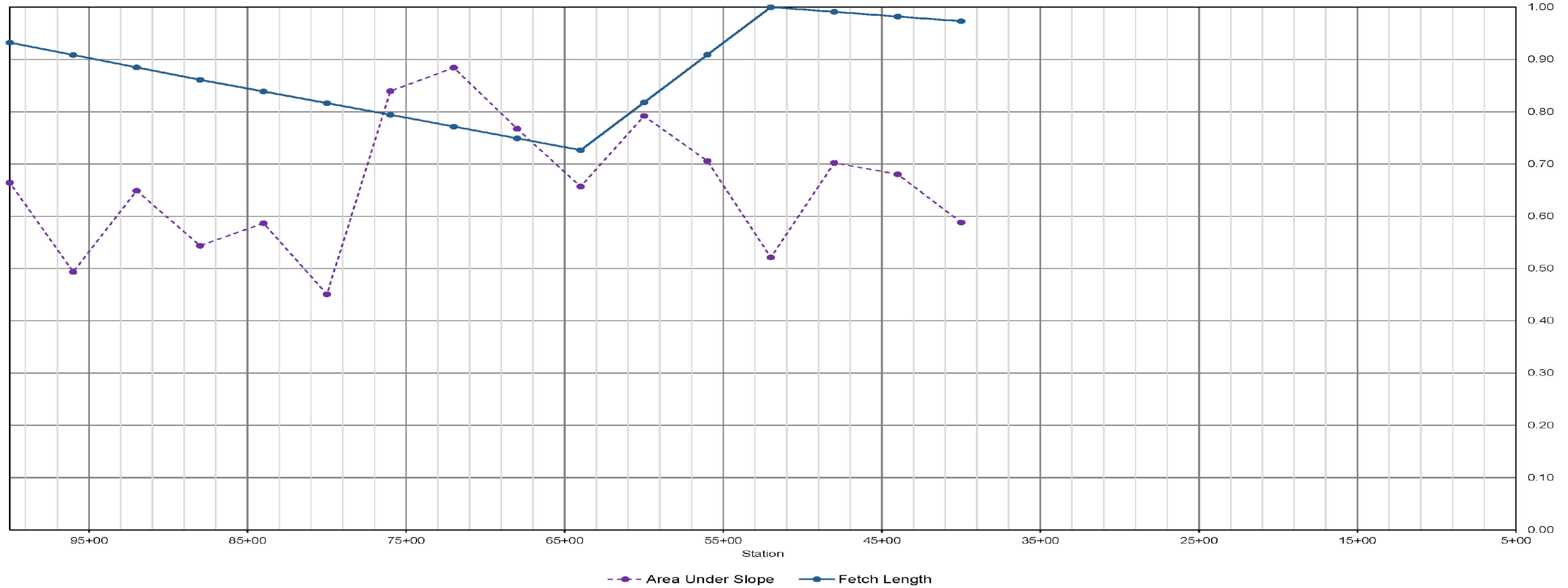


Figure 4E
Condition Assessment Parameter -
Section Strength
Stations 272+00 to 328+00
Manatee Plant Cooling Pond
Manatee County, Florida

Normalized Plot



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: 08/19/2015
 Checked By: JB



LOCATION MAP
 NOT TO SCALE

Explanation of Features

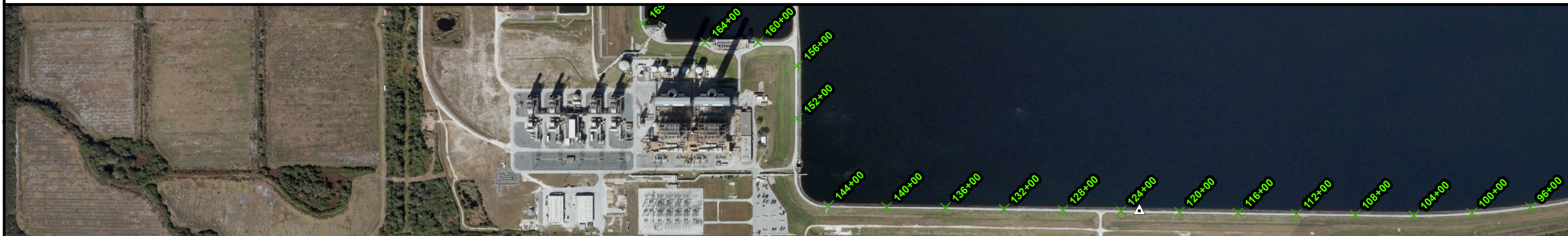
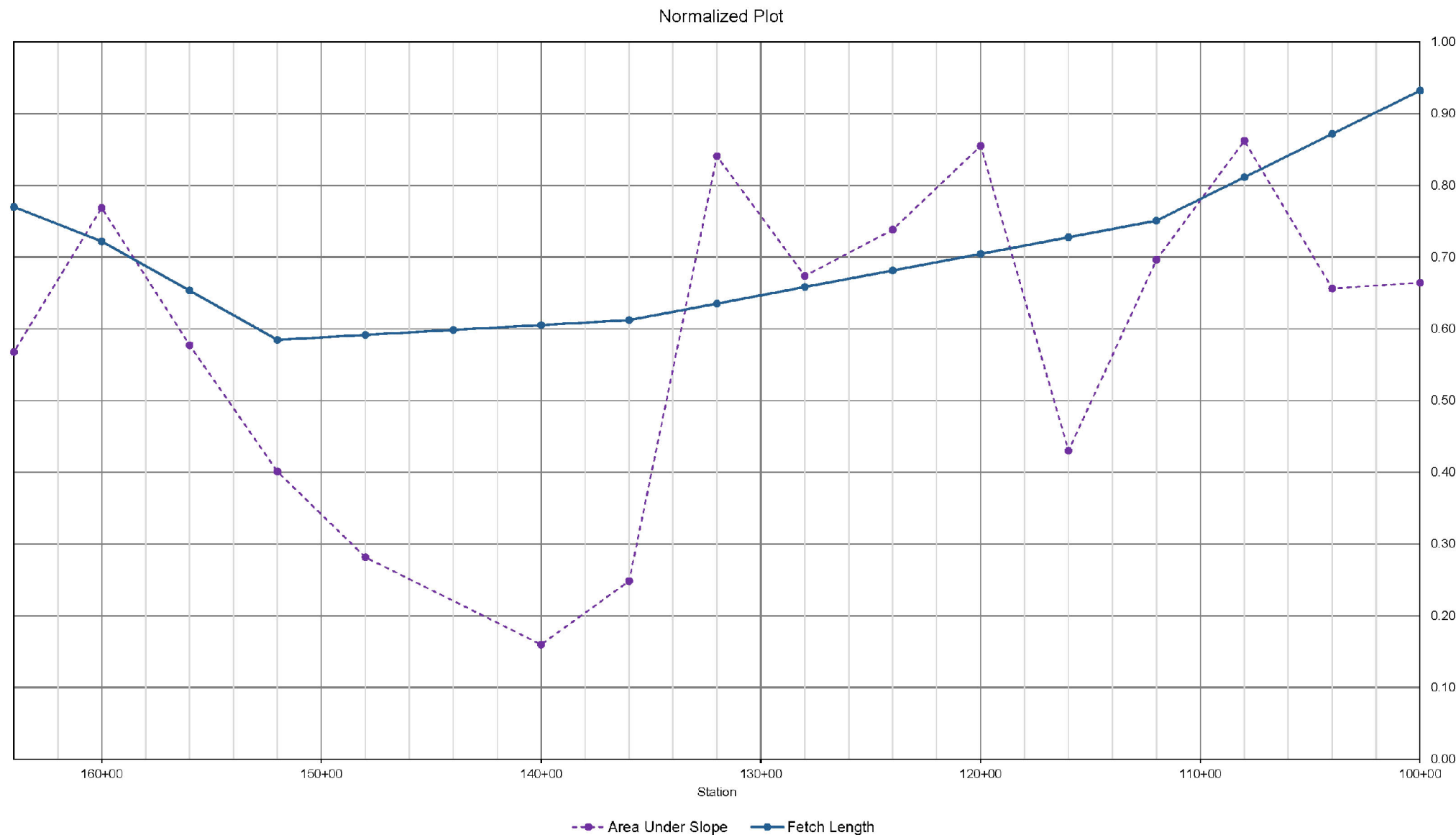
GPS Locations

- ✕ Stations
- △ Repair



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Figure 5A
Condition Assessment Parameter -
Survey Loss and Fetch
Stations 5+00 to 100+00
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: 08/19/2015
 Checked By: JB



Explanation of Features

GPS Locations

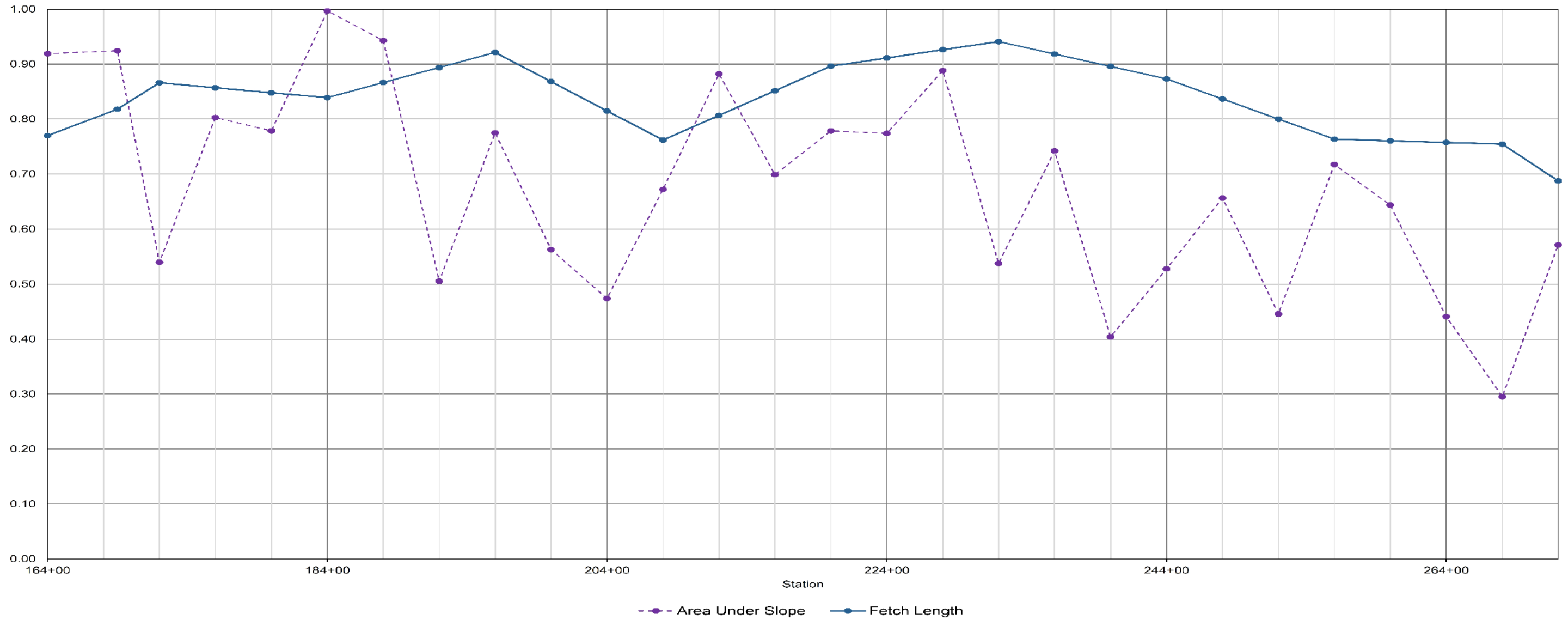
- X Stations
- △ Repair

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Figure 5B

Condition Assessment Parameter - Survey Loss and Fetch Stations 100+00 to 164+00 Manatee Cooling Pond Manatee County, Florida

Normalized Plot



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
 Checked By: JB



LOCATION MAP
 NOT TO SCALE

Explanation of Features

GPS Locations

- ✕ Stations
- △ Repair

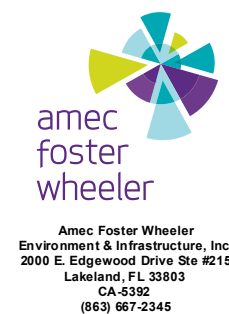
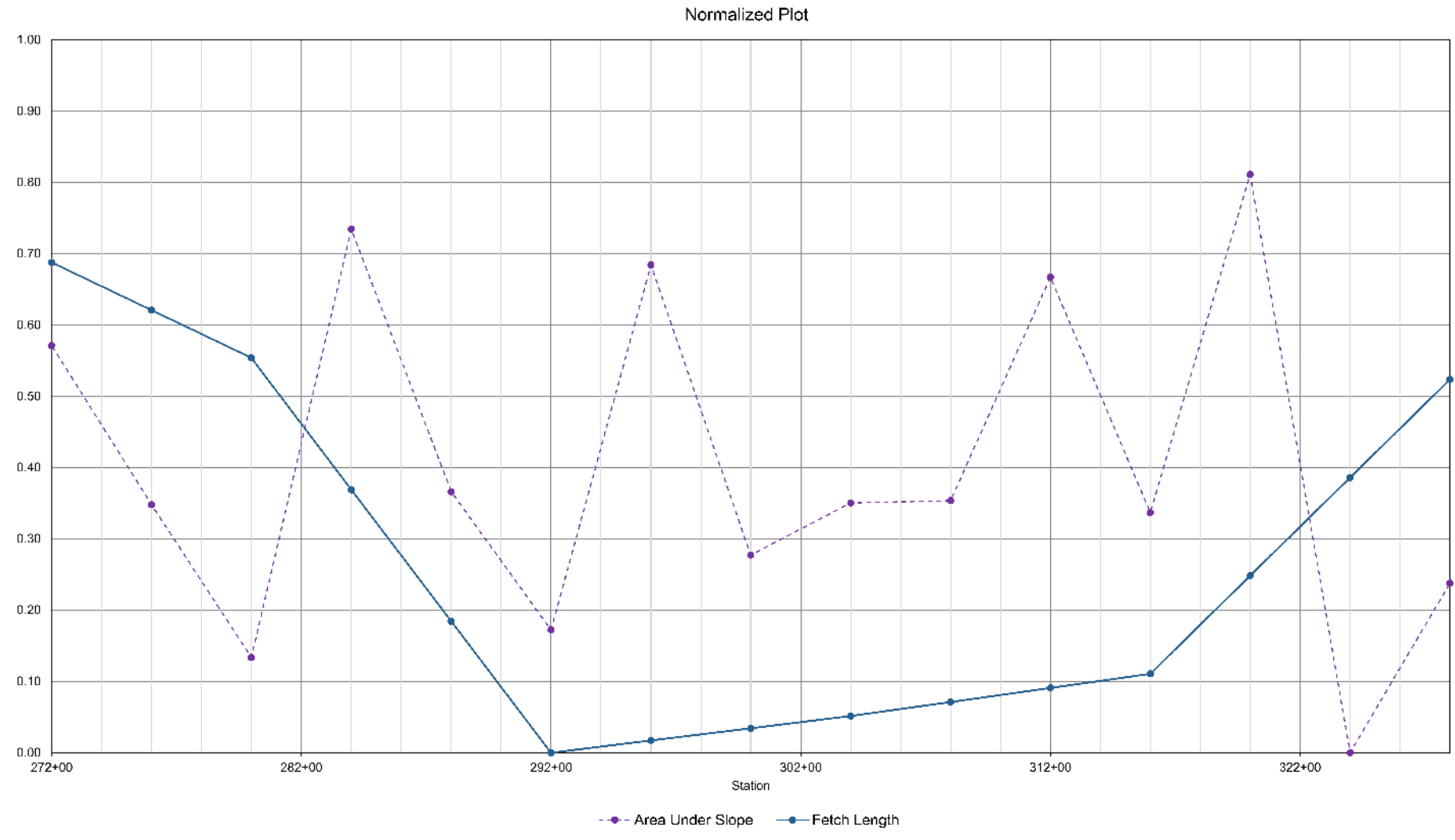


Figure 5C
Condition Assessment Parameter -
Survey Loss and Fetch
Stations 164+00 to 272+00
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw, 2014 FDOT Imagery
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/16/2015
 Revised: AB
 Checked By: JB



Explanation of Features

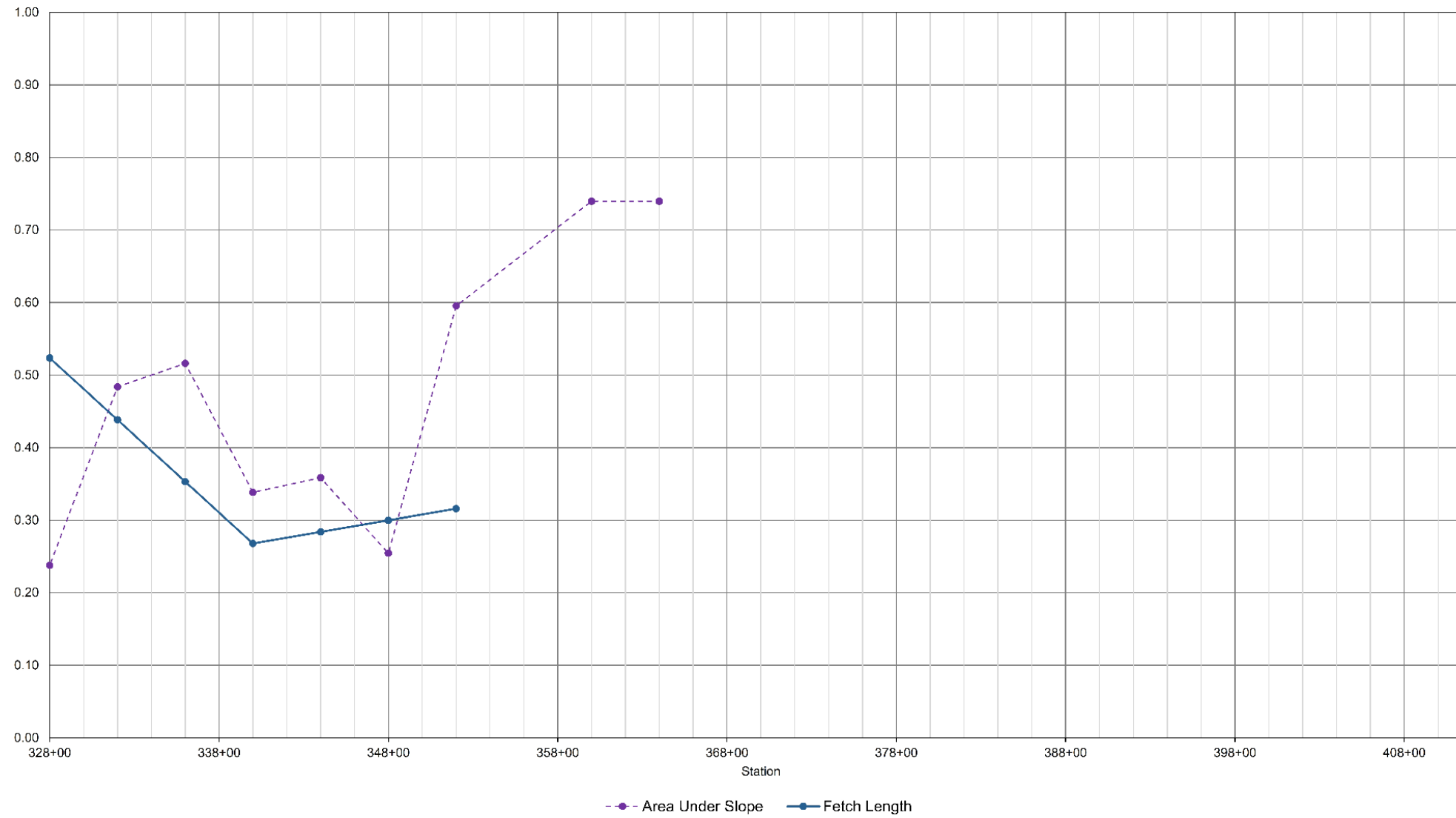
GPS Locations

- X Stations
- △ Repair



Figure 5D
Condition Assessment Parameter -
Survey Loss and Fetch
Stations 272+00 to 328+00
Manatee Plant Cooling Pond
Manatee County, Florida

Normalized Plot



Notes:

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Date: 04/16/2015
 Revised: AB
 Checked By: JB



Explanation of Features

GPS Locations

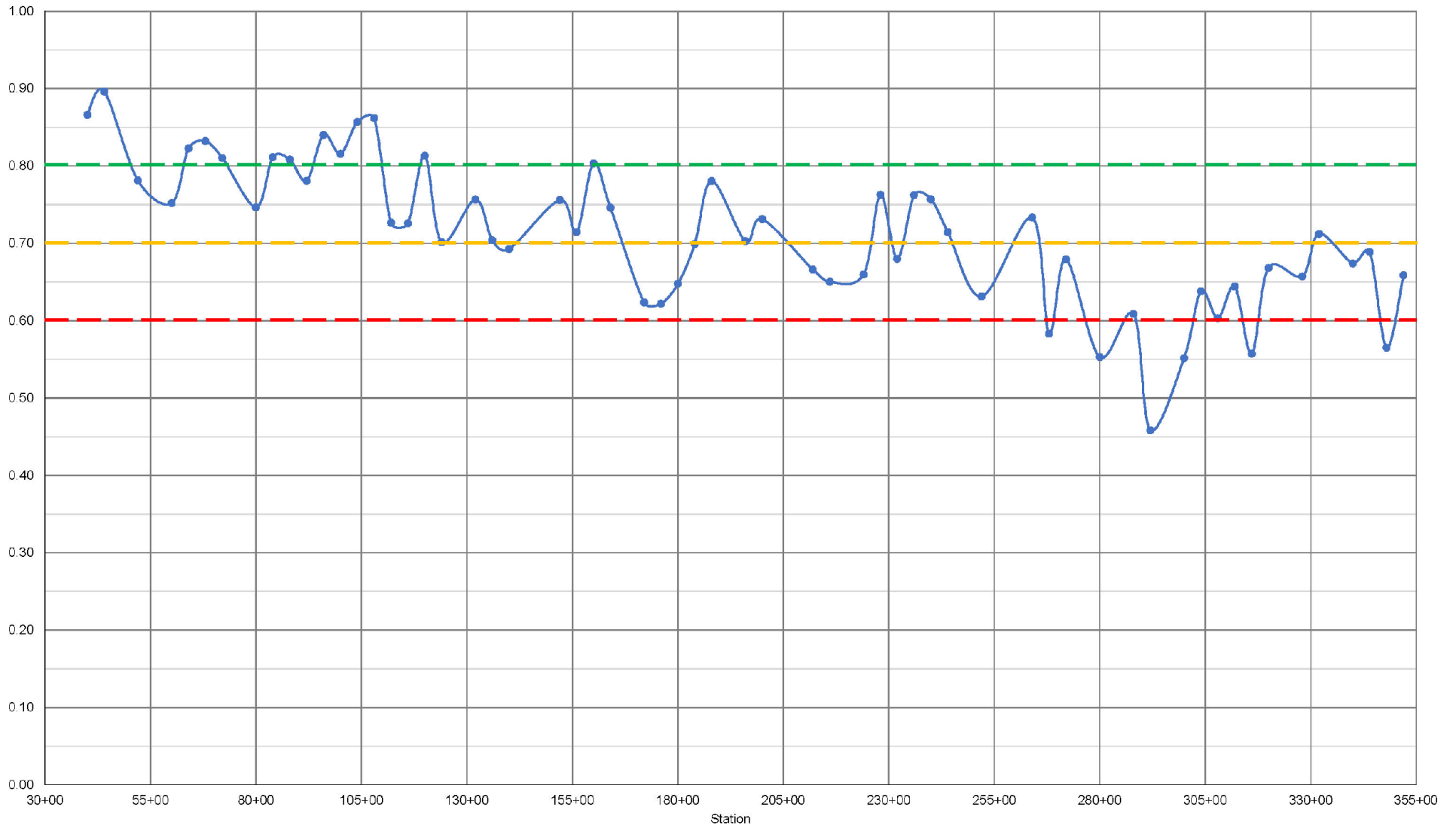
- X Stations
- △ Repair



Amec Foster Wheeler
 Environment & Infrastructure, Inc.
 2000 E. Edgewood Drive Ste #215
 Lakeland, FL 33803
 CA-5392
 (863) 667-2345

Figure 5E
Condition Assessment Parameter -
Survey Loss and Fetch
Stations 328+00 to 412+00
Manatee Plant Cooling Pond
Manatee County, Florida

Condition Assessment Factor Profile

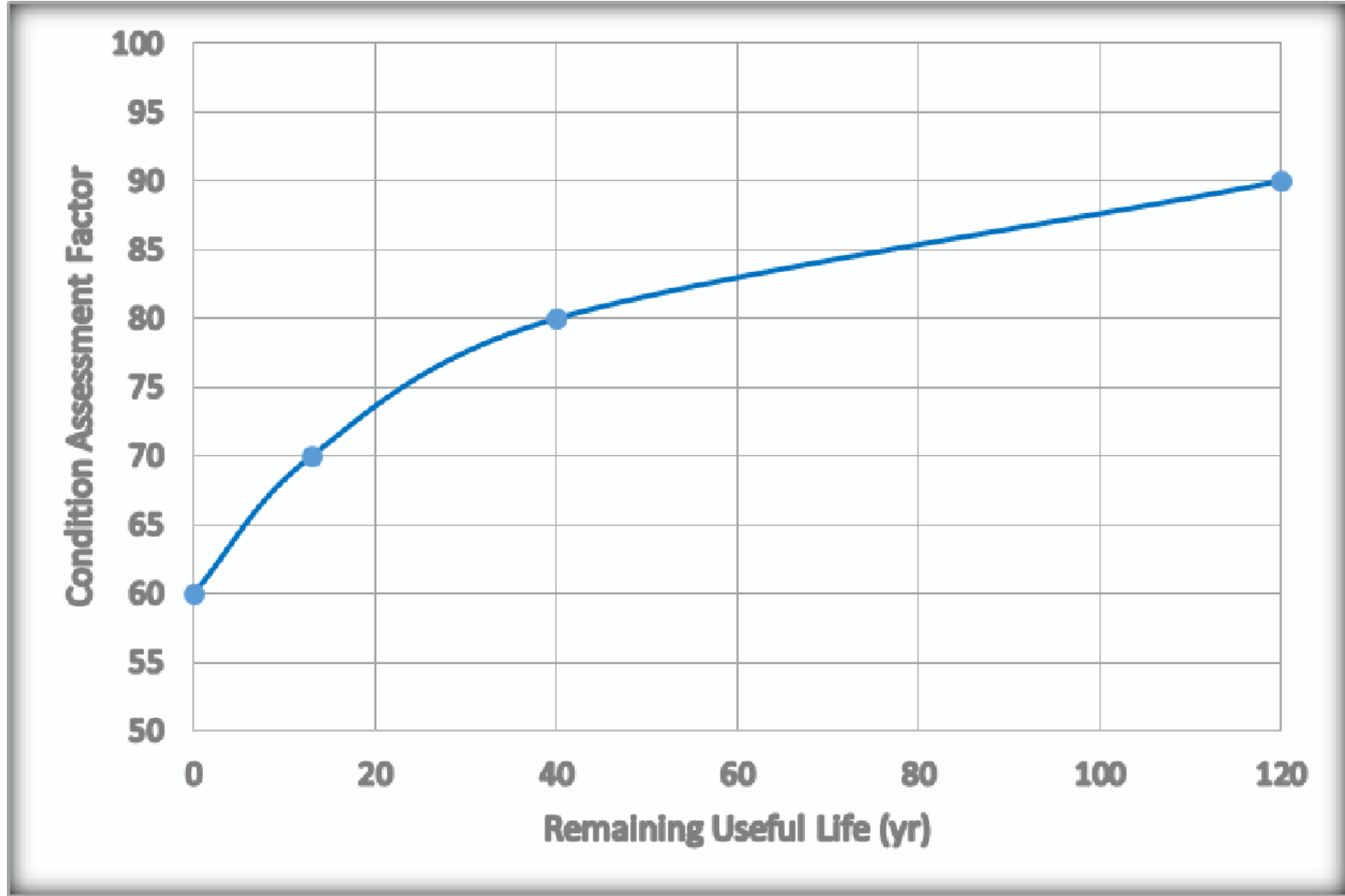


- Notes:**
- 1- Project No.: 300906
 - 2- Data Sources - Amecfw
 - 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 05/18/2015
 Revised: 06/18/2015
 Checked By: JB



Figure 6
Condition Assessment Factor Profiles
Manatee Plant - Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw

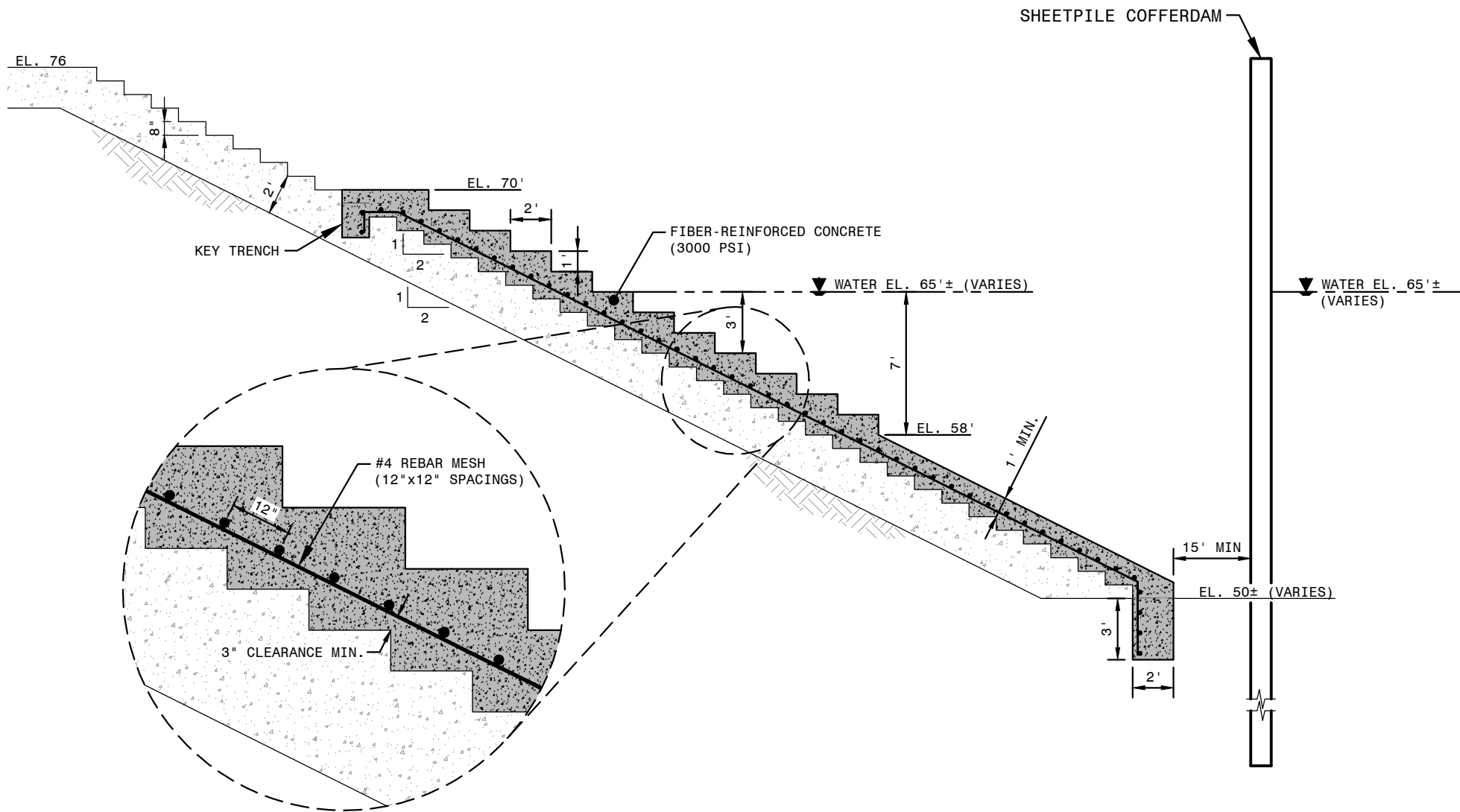
Date: 05/18/2015

Revised:

Checked By: JB



Figure 7
Relationship of RUL to CAF
Manatee Plant Cooling Pond
Manatee County, Florida



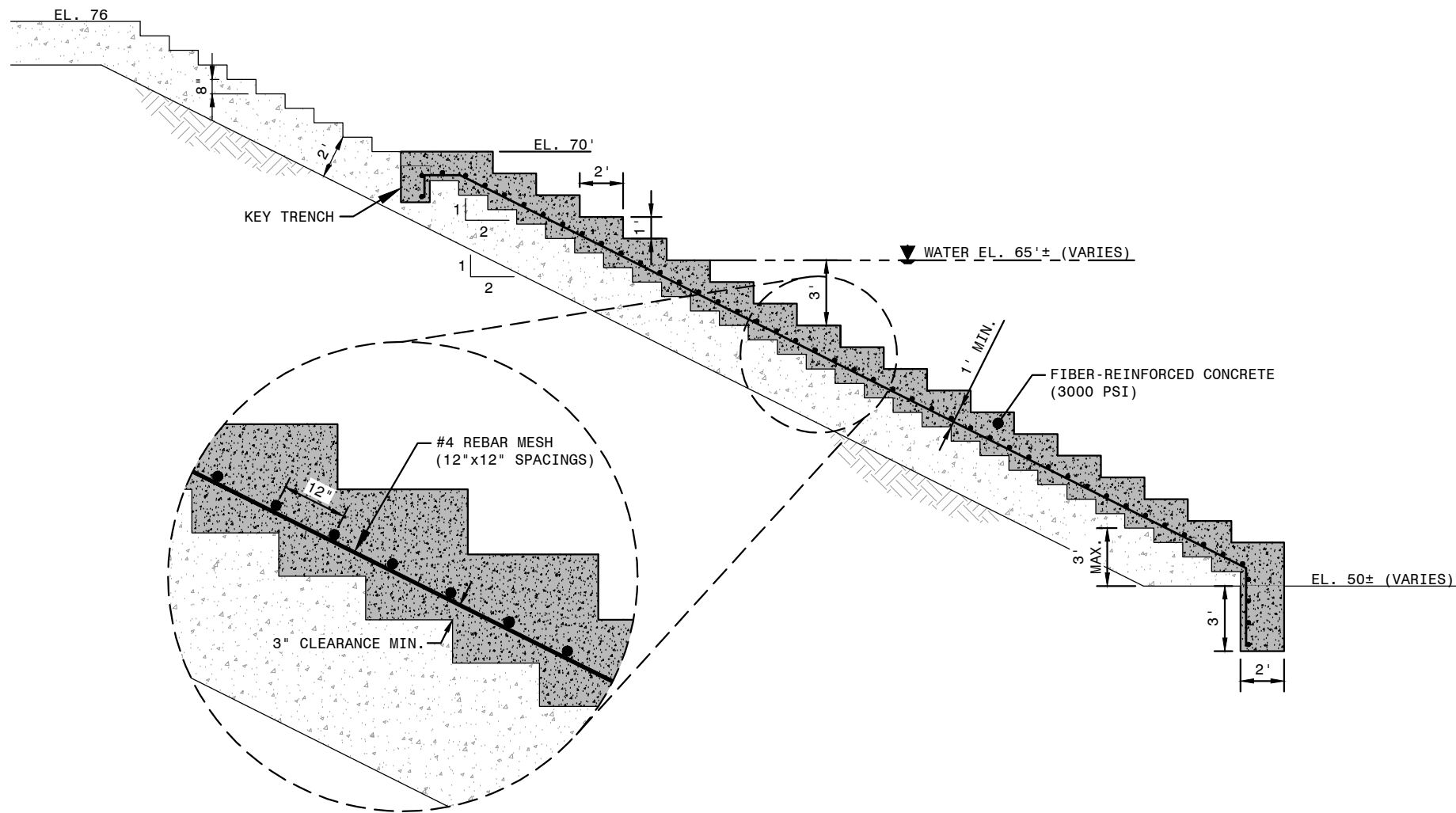
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 www.amecfw.com CA-5392



MANATEE PLANT COOLING POND
FIGURE 8A
SOIL-CEMENT REPAIR - ALTERNATIVE 1
STAIR STEP & FLAT PLATE CONCRETE OVERLAY
CONSTRUCTED IN THE DRY

DATE: 3/27/15	REVISED: 5/28/15	DRAWN BY: MAJ
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SCALE: N.T.S.	PROJECT NO.: 300906
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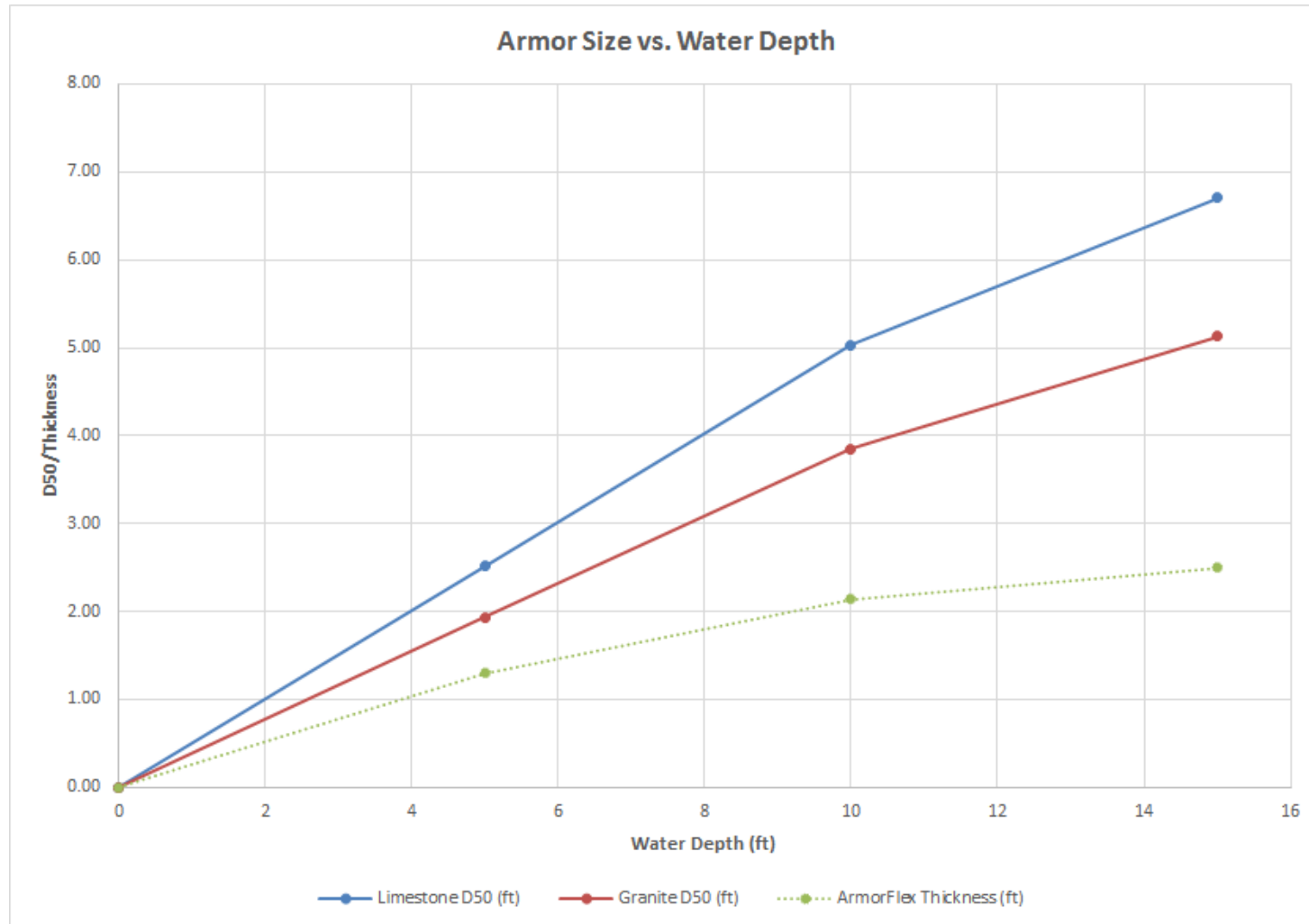
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MANATEE PLANT COOLING POND
FIGURE 8B
SOIL-CEMENT REPAIR - ALTERNATIVE 2
STAIR STEP CONCRETE OVERLAY
CONSTRUCTED IN THE WET

DATE: 3/27/15	REVISED: 5/28/15	DRAWN BY: MAJ
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SCALE: N.T.S.	PROJECT NO.: 300906
---------------	---------------------

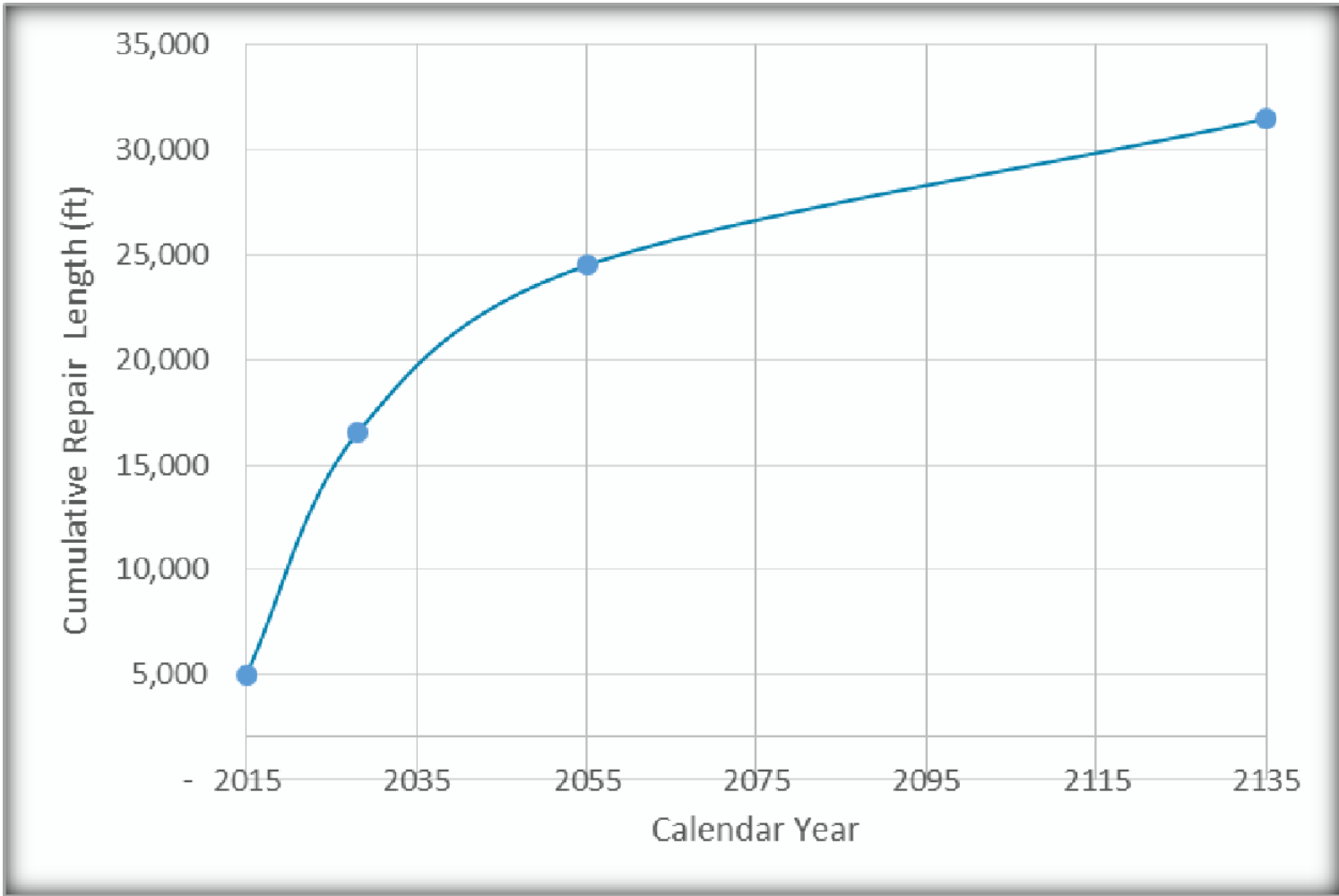


Notes:
 1- Project No.: 300906
 2- Data Sources - Amecfw

Date: 05/18/2015
 Revised:
 Checked By: JB



Figure 9
Required Armor Size vs. Pond
Water Depth
Manatee Plant Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - Amecfw

Date: 05/18/2015

Revised:

Checked By: JB



Figure 10
Required Repair Length Over Time
Manatee Plant Cooling Pond
Manatee County, Florida
Project No. 300906

APPENDIX A

Soil-Cement Cooling Pond Repairs 2010 to 2014

**UNDERWATER SERVICE ASSOCIATES
PO BOX 3041
HIGH SPRINGS, FL 32655-3041
PHONE: 772-485-1734
FAX 1-800-957-5378**

**FP&L
Kevin Kleist
Manatee Power Plant**

January 5, 2015

**2010 to 2014
Soil Cement Cooling Pond
Repairs**

December 2014 – PO 2000158283, Invoice 0485

Repair 5 wash outs:

- 3 wash outs at +466 to 493
- 1 wash out at +435
- 1 wash out at +405

March 2014 – PO 2000132733, Invoice 0454

Diving Services to perform Cooling Pond Soil Cement Repairs in three areas, one area north side of cooling pond, one area south side of cooling pond, and one area west side of the cooling pond.

Location 135+369. This area was found to have 10-15 feet of step four eroded and broke away. There are remnants of the step 4 on the bottom of the lake. At the break point of step four where a vertical crack was the area has washed out under step three with the max depth of 6 feet to hard material and extends east to west 6 feet.

Location 205+299-330. This location was found to have soft and honey cone areas of soil cement. It was found at the location a previous repair had been made one step above the bottom. It was found that approx. 50- 100 feet of honey coning exists mainly from the south side of the previous repair northward. The honey cone appears to be the worse the length of the previous repair underside, as a result the previous repaired are had voiding underneath and is causing stress to the steps above the repair

Location 300+460. This area was found to be soil cement erosion over time that has left and area 2"H X 7' in length there was found voiding in this are from 4' to 9 feet max. The area 9' in depth is an area 6' in length but is clearly into the soil behind the dike, and without doing core drilling it cannot be determined if voiding exists. This step location is number 6 below water lime.

June 2013 – PO 2000096866, Invoice 0418

Diving Services to perform repairs on cooling pond retention dike:

- 170+250-350 Repair 100' Length, up to the third step from bottom.

UNDERWATER SERVICE ASSOCIATES
PO BOX 3041
HIGH SPRINGS, FL 32655-3041
PHONE: 772-485-1734
FAX 1-800-957-5378

March 2013 – PO 2000096866, Invoice 0407

Diving Services to perform repairs on cooling pond retention dike:

- 115 + 38 Repair size 4'L x 1/4" H x 5' D at first step below water line
- 136 + 421 Repair size 3.5" L x 1" H x 5' D at 4th step below water line
- 245 + 64 Repair size 12' L x 18" H x 4' D at bottom step 12
- East end of intake cooling pond at finger dike transition, Repair size 30' L x 18" H

March 2012 – PO 2000064597, Invoice 0357

Diving Services to perform Soil Cement Repairs:

- 140 + 200 Missing bottom step with wash out, 6 ft L x 3 ft H x 4 ft D
- 140 + 255 Missing step, 2nd above bottom, 10 ft L x 2 ft H x 5 ft D
- 345+99 Horizontal step separation between steps 2 & 3 below waterline, 3 ft L x 2 in H x 5 ft D

February 2012 – PO 2000063227, Invoice 0354

Diving Services to perform repair of minor cracks in finger dike

February 2011 – 4500650767, Invoice 0308

Diving Services to perform Soil Cement Repairs:

- 160+ 32 Crack 6th step to last step below water line. Step at water line to step 3 below water is 3" W x 2' D
- 160+ 47 Crack at water line 4" W x 4' D
- 160+ 65 Crack from Road to bottom step below water line. Step at water line is 6" W x 4' D
- 160+ 70 At corner of where soil cement and concrete structure for intake meet is a void 4' W x 2' H x 4' D
- 345+ 111 Void 3' W x 2' H x 5' D inside measurement 10' W x 2' H x 10' D

August 2010 – 4500584118, Invoice 0276, 0277 and 0279

Finger dike repairs located at E75 +121-160

Additionally, there have been minor repairs that were performed to use leftover cement, these repair locations are not documented above.

Submitted by:

Fred C. West
General Manager
Underwater Service Associates
Contact at 772-485-1734

APPENDIX B

Above Water Visual Inspection Logs

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 5+69
Water Level (ft.): 65.12 ASL

of Steps : 5

General Observations
Step 3 variably eroded from moderately to severely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 1 moderate	(5) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> End of embankment looking East	<u>Description:</u> General profile of steps looking West	<u>Description:</u> Step 3 looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 8+00
Water Level (ft.): 65.12 ASL

of Steps : 7

General Observations
Steps 3 and 4 variably eroded, weathered, and pitted from moderately to severely. Slight amounts of vegetation observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 1 moderate, 3 soft	(1) 6 to 12 inches, (6) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking East	<u>Description:</u> General profile of steps looking East	<u>Description:</u> Steps 3 and 4

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 12+00
Water Level (ft.): 65.12 ASL

of Steps : 11

General Observations
Steps 6 through 10 variably eroded, pitted, weathered severely to extremely. Moderate amounts of vegetation on steps 8 through 11.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 3 moderate, 5 soft	(1) 0 to 6 inches, (3) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Erosion of steps 6 through 10

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 16+00
Water Level (ft.): 65.12 ASL

of Steps : 13

General Observations
Steps 6 through 9 variably eroded, pitted, and weathered moderately to severely with slight amounts of vegetation. Steps 10 through 13 extremely pitted, eroded, and rounded. on steps 8 through 11.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	12 and 13	1	5	1	N
Notes: 2 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
15+65	9 and 10	13.5 ft. X 2.5 ft. X 1 ft. step repair

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 4 moderate, 5 soft	(4) 0 to 6 inches (2) 6 to 12 inches (7) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Erosion of steps 10 through 13

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/31/15

Location: STA 15+65



Description: A repair to steps 9 and 10 was observed at STA 15+65.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 20+00
Water Level (ft.): 65.12 ASL

of Steps : 13

General Observations

Step 2 severely eroded and weathered. Steps 9 and 10 moderately to severely eroded and pitted. Steps 11 through 13 extremely eroded and rounded. Extreme under cutting observed at step 11 with moderate amounts of vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	11 through 13	1	5	1	N
Notes: 2 transverse cracks noted with an approximate spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 6 moderate, 5 soft	(3) 0 to 6 inches (2) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Erosion of steps 9 through 13



Manatee Cooling Pond Visual Inspection

Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 24+00
Water Level (ft.): 65.12 ASL

of Steps : 13

General Observations

Steps 9 through 13 variably eroded and pitted from moderately to severely. Small amounts of vegetation also observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	12 and 13	1	5	1	N
Notes: 2 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 7 moderate, 3 soft	(3) 6 to 12 inches (10) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Erosion of steps 9 through 13

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/31/2015
Amec FW Staff: Derek Richcreek

Station: 28+00
Water Level (ft.): 65.12 ASL

of Steps : 13

General Observations

Step 2 has large sections dislodged. Steps 9 and 10 moderately to severely pitted and eroded. Steps 11 through 13 extremely eroded and rounded. Step 11 extremely under cut with moderate amounts of vegetation.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	11 through 13	1	5	1	N

Notes: 2 transverse cracks were noted with an approximate average spacing of 15 feet.

Additional Damage or Repair Observations

Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
3 hard, 6 moderate, 4 soft	(3) 6 to 12 inches (10) > 12 inches

General Photographs of Observations

1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Step 2 with dislodged blocks

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 4/1/2015
Amec FW Staff: Derek Richcreek

Station: 32+00
Water Level (ft.): 65.12 ASL

of Steps : 14

General Observations
Steps 9 through 11 variably eroded and pitted moderately to severely. Slight vegetation noted on step 8. Steps 12 and 14 moderately to severely under cut. Moderate vegetation at step 13.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	12 through 14	1	6	1	N
Notes: 3 transverse cracks noted with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 7 moderate, 4 soft	(3) 0 to 6 inches (2) 6 to 12 inches (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Under cutting of steps 12 and 14

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 4/1/2015
Amec FW Staff: Derek Richcreek

Station: 36+00
Water Level (ft.): 65.12 ASL

of Steps : 13

General Observations

Moderate vegetation noted at steps 2 and 3. Steps 9 through 13 extremely eroded, pitted, and rounded. Step 9 has large sections missing with moderate growth of vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	11 through 13	2	8	4	N
Notes: 2 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 6 moderate, 5 soft	(4) 0 to 6 inches (2) 6 to 12 inches (7) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking East	Description: General profile of steps looking West	Description: Erosion of steps 9 through 13

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906 **** 3
Date: 2/18/2015
Amec FW Staff: Derek Richcreek

Station: 40+00
Water Level (ft.): 65.5 feet ASL

of Steps : 10

General Observations
Step 2 highly eroded and weathered. Steps 7 through 9 very pitted, eroded, and some sections missing. Very minor vegetation observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
4	7 through 10	3	7	6	N
17	9 and 10	1	3	1	N
Notes:					

Additional Damage or Repair Observations		
Station	Step #	Description
41+00	7 to 9	Very pitted and highly eroded.
42+00	7 to 9	Very pitted and highly eroded.
43+00	7 to 9	Very pitted and highly eroded.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 2 moderate	(1) 6 to 12 inches, (9) >12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Step 2 looking East	<u>Description:</u> Steps 7 through 9 looking East	<u>Description:</u> Steps 7 through 9 looking West



Manatee Cooling Pond Visual Inspection

Project: Manatee FPL Cooling Pond
 Project #: 300906.***.3
 Date: 2/18/2015
 Amec FW Staff: Derek Richcreek

Station: 44+00
 Water Level (ft.): 65.5 feet ASL

of Steps : 9

General Observations

Step 2 variably soft, eroded and weathered. Steps 6 through 9 very pitted and moderately eroded. Very minor vegetation observed.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
18	1 through 9	3	24	6	N
18	1 through 9	3	24	6	N
Notes:					

Additional Damage or Repair Observations

Station	Step #	Description
Notes: Nothing to report.		

Overall Step Condition and Observation

Step Hardness	Step Width
4 hard, 4 moderate, 1 soft	all >12 inches

General Photographs of Observations

1	2	3
		
<u>Description:</u> Looking West	<u>Description:</u> Steps 6 through 9 looking East	<u>Description:</u> Transverse crack

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
 Project #: 300906.****.3
 Date: 2/20/2015
 Amec FW Staff: Derek Richcreek

Station: 48+00
 Water Level (ft.): 65.5 feet ASL

of Steps : 11

General Observations
Step 2 highly eroded and weathered. Step 7 highly eroded and weathered. Steps 9 through 11 severely pitted, eroded, and weathered. Moderate vegetation at step 2.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
11	1 through 4	0.5	10	1	N
3	1 through 4	0.5	10	1	N
Notes:					

Additional Damage or Repair Observations		
Station	Step #	Description
47+40	11	2 ft. x 12 ft. x 0.5 ft. repair
48+25 to 51+25	5 through 11	Concrete slurry cap. Remains in reasonable condition save for 40 ft. section missing with under cutting in steps 8 through 11.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 4 moderate, 5 soft	(2) 0 to 6 inches (1) 6 to 12 inches (8) >12 inches

General Photographs of Observations		
1	2	3
Description: Start of slurry repairs looking West	Description: Step 7 looking East	Description: Step 2 looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/20/2015
Amec FW Staff: Derek Richcreek

Station: 52+00
Water Level (ft.): 65.5 feet ASL

of Steps : 12

General Observations
Steps 9 through 12 variably eroded, weathered, and pitted from moderate to extreme. Steps 8 and 10 under cut with moderate vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
14	8 through 12	2	9	1.5	N
Notes:					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
9 hard, 2 moderate, 1 soft	(1) 0 to 6 inches, (11) >12 inches

General Photographs of Observations		
1	2	3
Description: Steps 9 through 12 looking West	Description: Steps 9 through 12 looking East	Description: Undercutting steps 8 and 10 looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/20/2015
Amec FW Staff: Derek Richcreek

Station: 56+00
Water Level (ft.): 65.5 feet ASL

of Steps : 13

General Observations
Step 9 highly eroded, weathered, and under cut. Moderate to heavy pitting on steps 10 through 13. No significant vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: None observed.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard, 1 moderate, 1 soft	(1) 0 to 6 inches, (12) >12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Looking West	<u>Description:</u> Looking East	<u>Description:</u> Looking Down.

Manatee Cooling Pond Visual Inspection

Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/20/2015
Amec FW Staff: Derek Richcreek

Station: 60+00
Water Level (ft.): 65.5 feet ASL




of Steps : 12

General Observations
Step 9 highly eroded, weathered, soft, with moderate plant growth. Step 10 through 12 variably eroded and pitted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Crack at Sta. sign	1 through 5	0.5	9	0.5	N
Notes:					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 1 moderate, 1 soft	(1) 0 to 6 inches, (11) >12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> Looking West	<u>Description:</u> Looking East	<u>Description:</u> Looking down

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/20/2015
Amec FW Staff: Derek Richcreek

Station: 64+00
Water Level (ft.): 65.5 feet ASL

of Steps : 12

General Observations
Steps 9 through 12 variably eroded from moderate to extreme. Moderate vegetation noted at step 12.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
8	1 through 12	2	28	6	N
25	6 through 12	1	11	1	N
Notes:					

Additional Damage or Repair Observations		
Station	Step #	Description
65+00	9	Highly eroded, weathered, soft, with moderate vegetation.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
9 hard, 2 moderate, 1 soft	(1) 0 to 6 inches, (1) 6 to 12 inches, (10) >12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 9 through 12 looking East	<u>Description:</u> Steps 9 through 12 looking West	<u>Description:</u> Moderate vegetation step 12

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 2/20/15

Location: STA 65+00



Description: Severe erosion, weathering, and very soft at step 9, STA 65+00. Moderate vegetation also noted.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 68+00
Water Level (ft.): 65.5 feet ASL

of Steps : 13

General Observations

Step 10 severely pitted. Step 11 severely pitted, eroded, and weathered. Step 12 severely eroded and weathered to the point that the step face is absent. Undercutting of step 10 and 11 due to the erosion of step 12. Moderate to heavy vegetation in the vicinity of steps 11 and 12.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	1 through 13	1.5	23	3	N
18	8 through 13	3	12	3	N
Notes:					

Additional Damage or Repair Observations

Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation

Step Hardness	Step Width
11 hard, 2 moderate	(2) 6 to 12 inches, (11) >12 inches

General Photographs of Observations

1	2	3
<u>Description:</u> Steps 11 and 12 looking East	<u>Description:</u> Steps 10 and 11 looking West	<u>Description:</u> Looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 72+00
Water Level (ft.): 65.5 feet ASL

of Steps : 13

General Observations
Step 12 severely pitted and eroded with minor vegetation. Step 11 moderately under cut. Step 10 and 11 variably pitted with moderate to severe erosion. As many 14 gullies/washouts noted on step one.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
18	9 through 13	1	10	2	N
Notes:					

Additional Damage or Repair Observations		
Station	Step #	Description
70+85	12	24 ft. X 1 ft. X 0.5 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 3 moderate	(1) 6 to 12 inches, (12) >12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Undercutting Step 11	<u>Description:</u> Step 12	<u>Description:</u> Washouts step 1

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 2/23/15

Location: STA 70+85



Description: A repair to the soil-cement slope was observed at STA 70+85. The repair was observed at step 12.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 76+00
Water Level (ft.): 65.5 feet ASL

of Steps : 12

General Observations
Step 11 moderately eroded and weathered with little vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
	9 through 12	0,5	9	1	N
Notes: Only one transverse crack noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
12 hard	(12) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Looking West	<u>Description:</u> Looking East	<u>Description:</u> Step 11

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 80+00
Water Level (ft.): 65.5 feet ASL




of Steps : 11

General Observations
Steps 9 through slight to moderately pitted and eroded. No significant vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	1 through 11	0.5	20	1	N
Notes: Noted three cracks with typical spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
9 hard, 2 moderate	(1) 6 to 12 inches, (10) >12 inches

General Photographs of Observations		
1	2	3
		
Description: Down view	Description: Transverse crack	Description: Transverse crack

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 84+00
Water Level (ft.): 65.5 feet ASL




of Steps : 11

General Observations
Step 11 severely eroded and under cut. No significant vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	10 and 11	1	5	1	N
Notes: 3 cracks noted with typical spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
84+00	8	16 ft. X 8 in X 8 in step repair
84+00	9	5 ft. X 1 ft. X 8 in step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 1 moderate	(10) >12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> Step 11 erosion and weathering looking West	<u>Description:</u> Step 11 erosion and weathering looking East	<u>Description:</u> General view looking West

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 2/23/15

Location: STA 84+00



Description: A repair to the soil-cement slope was observed at STA 84+00 step 8 and 9.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 88+00
Water Level (ft.): 65.5 feet ASL

of Steps : 11

General Observations
Step 8 moderately pitted. Step 10 severely eroded and pitted along face. Step 11 severely eroded and under cut. No significant vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
14	10 and 11	1	5	4	N
Notes: 3 cracks noted with typical spacing of 14 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 3 moderate	(1) 0 to 6 inches, (10) >12 inches

General Photographs of Observations		
1	2	3
Description: Steps 10 and 11 looking East	Description: Steps 10 and 11 looking West	Description: Step 8

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 92+00
Water Level (ft.): 65.5 feet ASL




of Steps : 11

General Observations	
Step 2 very soft and eroded sloughing onto step 3. Step 11 severely eroded and under cut. No significant vegetation noted.	

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	10 and 11	2	5	8	N
14	10 and 11	1	5	4	N
10	10 and 11	2	5	4	N
Notes: Typical spacing 12 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
9 hard, 1 moderate, 1 soft	(1) 0 to 6 inches inches, (10) >12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> Step 2	<u>Description:</u> Step 11 looking West	<u>Description:</u> Looking East

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/23/2015
Amec FW Staff: Derek Richcreek

Station: 96+00
Water Level (ft.): 65.5 feet ASL

of Steps : 11

General Observations	
Steps 9 through 11 have minor pitting and weathering. No significant vegetation.	

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	10 and 11	1	5	1	N
12	10 and 11	1	5	2	N
14	10 and 11	1	5	1	N
Notes: Typical spacing is 12 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: None observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 3 moderate	(11) >12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Looking East	<u>Description:</u> Looking West	<u>Description:</u> Upper steps

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/26/2015
Amec FW Staff: Derek Richcreek

Station: 100+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations
Steps 2 and 4 variably eroded, weathered, and soft. Steps 9 and 10 variably pitted from slight to extreme with undercutting. No significant vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	7 through 11	1.5	11	1	N
Notes: 3 cracks noted with typical spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 1 moderate, 2 soft	(2) 0 to 6 inches, (1) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 9 and 10	<u>Description:</u> Steps 2 through 4	<u>Description:</u> Transverse Crack into water

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/26/2015
Amec FW Staff: Derek Richcreek

Station: 104+00
Water Level (ft.): 65.5 ASL

of Steps : 10

General Observations
Steps 2 and 3 variably eroded, weathered, and very soft. No significant pitting or vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	5 through 10	1	11	1	N

Notes: Two cracks noted with approximate 20 foot spacing.

Additional Damage or Repair Observations		
Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation	
Step Hardness	Step Width
6 hard, 1 moderate, 3 soft	(1) 0 to 6 inches, (1) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 2 and 3	Description: Looking West	Description: Looking East

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/26/2015
Amec FW Staff: Derek Richcreek

Station: 108+00
Water Level (ft.): 65.5 ASL

of Steps : 10

General Observations
Step 4 variably weathered, eroded, and soft. Step 8 variably eroded and pitted from slight to extreme. Moderate vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	5 through 10	1	11	1	N

Notes: Typical spacing between transvers cracks were approximately 20ft or greater.

Additional Damage or Repair Observations		
Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation	
Step Hardness	Step Width
6 hard, 3 moderate, 1 soft	(1) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: Step 4	Description: Looking west	Description: Step 8

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/26/2015
Amec FW Staff: Derek Richcreek

Station: 112+00
Water Level (ft.): 65.5 ASL

of Steps : 10

General Observations
Step 4 variably eroded, weathered, and soft. Step 8 moderately pitted and eroded. No significant vegetation noted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	6 through 10	3	11	5	N

Notes: 3 sets of cracks noted with a typical spacing of 10 feet.

Additional Damage or Repair Observations		
Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation	
Step Hardness	Step Width
6 hard, 3 moderate, 1 soft	(1) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: Step 4 looking West	Description: Step 8	

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/26/2015
Amec FW Staff: Derek Richcreek

Station: 116+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations
Steps 3 and 4 variably eroded, weathered, and very soft with slight vegetation. Step 8 moderately pitted and eroded. Step 9 moderately eroded and under cut with slight vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	8 through 11	1	7	1	N
Notes: 3 cracks noted with a typical spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 2 moderate, 4 soft	(2) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 3 and 4	Description: Looking East	Description: Looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/26/2015
Amec FW Staff: Derek Richcreek

Station: 120+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations
Steps 2 through 5 variably eroded, weathered from moderate to severer. Steps 8 and 9 moderately eroded and pitted. Face of step 10 rounded. No significant vegetation observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	7 through 11	1	10	1	N
Notes: 3 cracks noted with a typical spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
STA 120+00		Moderate vegetation around discharge pipe of outfall D-007
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 1 moderate, 6 soft	(1) 0 to 6 inches, (2) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 2 through 5 looking West	Description: Steps 8 through 10 looking East	Description: Steps 2 through 5 looking East

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 2/27/2015
Amec FW Staff: Derek Richcreek

Station: 124+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations
Step 2 severely eroded, weathered, and very soft. Step 8 severely eroded, pitted, and missing large areas. Steps 9 and 10 eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	9 and 10	1.5	6	5	N
Notes: 6 cracks noted with an approximate 12 foot spacing.					

Additional Damage or Repair Observations		
Station	Step #	Description
122+80	Steps 2 and 3	Severely eroded, weathered, and rounded.
122+80	Step 8	8 ft. X 14 in. X 10 in. step repair.
122+80	Steps 8 through 10	Severely eroded, weathered, and soft.
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 3 moderate, 1 soft	(2) 0 to 6 inches (1) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 8 through 11 looking West	Description: Step 2 looking West	Description: Step 8

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 2/27/15

Location: STA 122+80



Description: A repair to the soil-cement slope was observed at STA 122+80 at step 8.

Location: STA 122+80



Description: Severe erosion and weathering on steps 2 and 3 was observed at STA 122+80.

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 2/27/15

Location: STA 122+80



Description: Severe erosion and weathering was noted on steps 8 through 10 at STA 122+80.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 2/27/2015
Amec FW Staff: Derek Richcreek

Station: 128+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations

Step 3 severely eroded, weathered, and very soft with heavy moss growth. Step 8 very pitted, eroded, and weathered. Step 9 is under cut with moderate vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	9 through 11	0.5	7	1	N
Notes: 7 transverse cracks noted with a typical spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 2 moderate, 4 soft	(1) 0 to 6 inches, (1) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: Step 3 looking East	Description: Step 8	Description: Step 9 looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 132+00
Water Level (ft.): 65.5 ASL

of Steps : 10

General Observations

Steps 3 through 6 moderate weathering, erosion, and very soft. Step 8 severe pitting, erosion, weathering, and very soft with moderate vegetation. Step 9 has minor pitting and severely eroded and weathered. Step 10 is under cut, well pitted, and eroded.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	9 and 10	0.5	4	0.5	N

Notes: Two transverse cracks noted with a typical spacing between transvers cracks were approximately 15

Additional Damage or Repair Observations

Station	Step #	Description
STA 132+00	10	7 ft. X 18 in X 12 in step repair
STA 132+00	10	8 ft. X 2 ft. X 20 in step repair

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
2 hard, 3 moderate, 5 soft	(2) 0 to 6 inches, (2) 6 to 12 inches, (6) > 12 inches

General Photographs of Observations

1	2	3
<u>Description:</u> Steps 8 through 10 looking East	<u>Description:</u> Steps 3 through 6	<u>Description:</u> Under cutting of step 10

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 132+00



Description: A repair to the soil-cement slope was observed at STA 132+00.

Location: STA 132+00



Description: A repair to the soil-cement slope was observed at STA 132+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 136+00
Water Level (ft.): 65.5 ASL

of Steps : 10

General Observations
Step 2 extreme erosion, weathering, very soft with heavy moss growth. Step 4 through 6 has extreme erosion, weathering, very soft where the steps have slumped into one. Steps 7 and 8 severe erosion and heavy pitting. Step 9 severe erosion, weathering, very soft with heavy vegetation. Step 10 has severe erosion and weathering.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	9 through 11	0.5	5	0.5	N
Notes: 5 transverse cracks noted with an average of 12 foot spacing.					

Additional Damage or Repair Observations		
Station	Step #	Description
137+25	11 and 12	Step 11 has a 6 in lateral void, step 12 severe under cutting
139+00	11	Severely pitted, eroded with missing sections.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 2 moderate, 7 soft	(3) 0 to 6 inches, (3) 6 to 12 inches, (5) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Step 2 looking East	<u>Description:</u> Steps 4 through 6 looking East	<u>Description:</u> Steps 9 and 10 looking East

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 137+25



Description: Step 11 and 12 looking East showing a small void and under cutting of steps 11 and 12 at STA 137+25.

Location: STA 139+00



Description: Severe pitting, erosion, and missing sections of step 11 observed at STA 139+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 140+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations

Step 1 has large area damaged and breaking apart. Steps 2 through 4 variably eroded, weathered, and soft. Step 7 severely eroded, weathered, pitted, and has been under cut. Steps 8 through 10 extreme pitting, erosion, and weathering. Step 11 moderate erosion and under cutting.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	8 through 12	2	10	3	N
Notes: 3 transverse cracks noted with a typical spacing between cracks of approximately 15ft or greater.					

Additional Damage or Repair Observations

Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation

Step Hardness	Step Width
5 hard, 1 moderate, 6 soft	(2) 0 to 6 inches, (1) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations

1	2	3
Description: Steps 2 through 4 looking West	Description: Steps 8 through 10 looking East	Description: Step 7

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 140+00



Description: Damage to step 1 observed at STA 140+00.

Location: STA 140+00



Description: A wide transverse crack at STA 140+00 step 12.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 144+00
Water Level (ft.): 65.5 ASL




of Steps : 12

General Observations
Steps 3 through 6 variably eroded, weathered, and soft from moderate to severe. Steps 8 through 12 moderately pitted.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant cracks observed.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 1 moderate, 4 soft	(3) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> Steps 8 through 12	<u>Description:</u> Steps 3 through 6	<u>Description:</u> General view West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 148+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 11 and 12 variably pitted and eroded. Moderate under cutting of steps 11 through 13.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
	12 through 13	0.5	4	0.5	N
Notes: One significant transverse crack noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
148+00	1 through 11	Partial concrete capping.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
13 hard	(13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Under cutting steps 11 through 13	Description: Partial concrete capping	Description: Steps 11 through 13

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 152+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 11 through 9 moderately pitted, eroded, and under cut. Step 12 under cut with moderate erosion.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	11 through 13	3	12	6	N
Notes: Two transverse cracks noted with a spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
155+00	10	50 ft. X 1 ft. X 0.5 ft. step repair
155+20	10	Extreme pitting outside of above repair
155+20	7 through 13	Old caulk repair of a transverse crack
155+20	12 through 13	Erosion and under cutting of step 12 and 13
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
12 hard, 1 moderate	(13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 9 through 12 looking South	Description: Step 12 looking North	Description: Steps 9 through 11 looking South

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 155+20



Description: A repair to the soil-cement slope was observed at STA 155+20.

Location: STA 155+00



Description: Extreme pitting of step 10 at STA 155+00.

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 155+20



Description: A caulk repair to a transverse crack at STA 155+20.

Location: STA 155+20



Description: General view of the erosion and under cutting of step 12 at STA 155+20.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 156+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Step 4 very eroded, weathered, and soft. Step 10 very pitted and eroded. Steps 11 through 13 variably pitted, eroded, weathered from moderate to extreme. Step 12 and 13 have varying stages of under cutting.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	8 through 13	1.5	13	4	N
Notes: 5 transverse cracks with a typical spacing of 12 feet. Two cracks have old caulk repairs.					

Additional Damage or Repair Observations

Station	Step #	Description
158+00	8 and 9	11 ft. X 2.5 ft. X 16 in step repair
158+00	8 and 9	(2) 4 ft. X 1 ft. X 1 ft. step repair
158+00	6 through 13	Caulk repair of a transverse crack.
Notes:		

Overall Step Condition and Observation

Step Hardness	Step Width
12 hard, 1 soft	(1) 0 to 6 inches, (1) 6 to 12 inches, (11) > 12 inches

General Photographs of Observations

1	2	3
Description: Step 4 looking South	Description: Steps 11 through 13 looking North	Description: Steps 11 through 13 looking South

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 156+00



Description: A repair to the soil-cement steps 8 and 9 was observed at STA 156+00.

Location: STA 156+00



Description: A repair to the soil-cement steps 8 and 9 was observed at STA 156+00.

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 156+00



Description: A caulk repair to a transverse crack at STA 156+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 160+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 8 through 13 moderate pitting and erosion. Large amounts of decaying vegetation with new growth.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length	Depth (inches)	Noted Void Y/N
20	1 through 13	1	Steps 1 through 13	1	N
Notes: 3 transverse cracks observed from roadway to step 13 and continuing underwater. 2 cracks have old					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
13 hard	(13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Rotting and growing vegetation	Description: General pitting of steps 8 through 13	Description: Transverse crack from roadway to step 13

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 164+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations
Step 2 variably eroded and weathered. Steps 3 through 10 variably eroded and pitted from moderate to extreme. Step 9 eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length	Depth (inches)	Noted Void Y/N
20	1 through 11	2	Steps 1 through 11	6	N
Notes: 4 transverse cracks noted with a typical spacing of 20 feet. 2 had signs of old concrete repairs.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
(2) hard, (7) moderate, (2) soft	(11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 3 through 10 looking East	Description: Transverse crack repair	Description: Transverse crack repair

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 169+00
Water Level (ft.): 65.5 ASL




of Steps : 12

General Observations
Steps 2 through 6 variably eroded and weathered from slight to moderate. Steps 8 and 9 variably eroded and weathered from moderate to severe. Steps 10 through 12 extremely eroded, weathered, and rounded. Light to moderate vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
169+00		Heavy vegetation around outfall structure D-007
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
1 hard, 8 moderate, 3 soft	(3) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations		
1	2	3
		
Description: Steps 2 through 6	Description: General Erosion of steps 10 through 12 looking North	Description: Steps 10 through 12

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/2/15

Location: STA 169+00



Description: Vegetation around outfall D-009 STA 169+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 172+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Steps 2 through 4 variably eroded and weathered from moderate to extreme. Steps 6 through 8 variably eroded, weathered, and pitted. Steps 10 through 12 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	9 through 12	1	6	1	N
Notes: 2 transverse cracks were observed.					

Additional Damage or Repair Observations		
Station	Step #	Description
172+00	6 through 11	Heavy amounts of rotting and new vegetation.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 2 moderate, 8 soft	(1) 0 to 6 inches, (5) 6 to 12 inches, (6) >12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 6 through 8 with vegetation	<u>Description:</u> Steps 10 through 12	<u>Description:</u> Steps 2 through 4

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/3/2015
Amec FW Staff: Derek Richcreek

Station: 176+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations

Steps 1 through 4 variably eroded, weathered, and pitted slight to moderately. Steps 5 through 10 has a heavy cover of decaying vegetation along with new growth. Steps 9 through 12 extremely eroded, weathered, and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	10 through 12	1	5	1	N
Notes:		Two transverse cracks noted with the spacing of 15 feet. Typical spacing between transvers cracks were approximately 20ft or greater.			

Additional Damage or Repair Observations		
Station	Step #	Description
Notes:		No additional damage or repairs observed.

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 9 soft	(3) 0 to 6 inches, (2) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 1 through 4 looking South	<u>Description:</u> Decaying vegetation and new growth	<u>Description:</u> Steps 9 through 12

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/3/2015
Amec FW Staff: Derek Richcreek

Station: 180+00
Water Level (ft.): 65.5 ASL

of Steps : 12




General Observations

Steps 1 through 4 variably eroded, weathered, and pitted slight to moderately. Steps 5 through 10 has a heavy cover of decaying vegetation along with new growth. Steps 9 through 12 extremely eroded, weathered, and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	10 through 12	1	5	1	N
Notes: two transverse cracks noted with a spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 moderate, 9 soft	(3) 0 to 6 inches, (1) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> decaying vegetation and new growth	<u>Description:</u> Steps 1 through 4 looking South	<u>Description:</u> Steps 9 through 12

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/3/2015
Amec FW Staff: Derek Richcreek

Station: 184+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 1 through 4 variably eroded, weathered, and pitted slight to moderately. Steps 5 through 12 has a heavy cover of decaying vegetation along with new growth. Steps 9 through 13 extremely eroded, weathered, and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	12 and 13	0.5	4	0.5	N
Notes: two transverse cracks observed with a spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
184+00	13	20 ft. X 0.5 ft. X 0.5 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 moderate, 11 soft	(4) 0 to 6 inches, (2) 6 to 12 inches, (6) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 1 through 4 looking South Transverse cracking and erosion	Description: Decaying vegetation and new growth	Description: Profile of steps 1 through 13

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/3/15

Location: STA 184+00



Description: A repair to the soil-cement slope was observed at STA 184+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/3/2015
Amec FW Staff: Derek Richcreek

Station: 188+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations

Steps 1 through 5 variably eroded, weathered, and pitted slight to moderately. Steps 6 through 10 heavy cover of decaying vegetation with new growth. Steps are also extremely eroded and pitted. Steps 9 through 12 very eroded, weathered, and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	9 through 12	1	5	1	N
Notes: 4 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 3 moderate, 6 soft	(3) 0 to 6 inches, (2) 6 to 12 inches, (7) . 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Profile of steps 1 through 12	<u>Description:</u> General Erosion of steps 9 through 12	<u>Description:</u> Steps 1 through 5

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/3/2015
Amec FW Staff: Derek Richcreek

Station: 192+00
Water Level (ft.): 65.5 ASL

of Steps : 12




General Observations

Steps 1 through 4 variably soft, eroded, and weathered slight to moderately. Steps 8 through 10 heavy amounts of decaying vegetation with moderate amounts of new growth. Steps 8 through 10 also very eroded, soft, and weathered. Steps 10 through 12 extremely eroded, weathered, and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
	10 through 12	1.5	5	4	N
Notes: One significant transverse crack noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 5 moderate, 4 soft	(3) 0 to 6 inches, (1) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> Steps 8 through 12Ste	<u>Description:</u> Decaying vegetation with moderate new growth	<u>Description:</u> Steps 1 through 4

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/3/2015
Amec FW Staff: Derek Richcreek

Station: 200+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Steps 1 through 5 variably soft, eroded, weathered, and pitted slight to moderately. Steps 6 through 10 varying amounts of decaying vegetation with moderate amounts of new growth. Steps 10 through 12 extremely eroded, weathered, and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
30	11 and 12	1.5	4	2	N
Notes: 2 transverse cracks noted with an approximate spacing of 30 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
200+00	11 and 12	Large section of step 11 dislodged with under cutting of step 12
203+00	11	5.5 ft. X 16 in X 6 in step repair
203+00	11	20 ft. X 16 in X 6 in step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 6 moderate, 4 soft	(2) 0 to 6 inches, (2) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 1 through 5	Description: Steps 10 through 12	Description: Steps 6 through 10

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/3/2015

Location: STA 200+00



Description: A large section of step 11 is dislodged and step 12 has severe erosion and under cutting.

Location: STA 203+00



Description: A repair to the soil-cement slope was observed at STA 203+00 step 11.

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date:

Location: STA 203+00



Description: A repair to the soil-cement slope was observed at STA 203+00 step 11.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/4/2015
Amec FW Staff: Derek Richcreek

Station: 204+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 1 through 3 variably soft, eroded, weathered, and pitted from slight to moderately. Steps 7 through 10 has decaying vegetation with moderate amounts of new growth. Steps 9 is extremely pitted and eroded. Steps 10 through 12 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	11 and 12	1	4	1	N
Notes: Two transverse cracks were observed with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
205+75	7	20 ft. X 16 in X 8 in step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 3 moderate, 7 soft	(4) 0 to 6 inches, (2) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 1 through 3 looking South	Description: General Erosion of steps 10 through 13	Description: Extreme pitting of step 9

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/4/2015

Location: STA 205+75



Description: A repair to the soil-cement slope was observed at STA 205+75.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/4/2015
Amec FW Staff: Derek Richcreek

Station: 208+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 1 through 3 variably soft, eroded, weathered, and pitted from slight to moderately. Steps 7 through 10 has decaying vegetation with moderate amounts of new growth. Steps 9 is extremely pitted and eroded. Steps 10 through 12 extremely eroded and well rounded.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	10 to 14	1	9	0.5	N

Notes: Typical spacing between transvers cracks were approximately 20ft or greater.

Additional Damage or Repair Observations

Station	Step #	Description
209+00	11	16 ft. X 16 in X 6 in step repair
209+50	11	16 ft. X 16 in X 6 in step repair
209+90	9	6 ft. X 1 ft. X 6 in step repair

Notes:

Overall Step Condition and Observation

Step Hardness	Step Width
3 hard, 3 moderate, 7 soft	(4) 0 to 6 inches, (2) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations

1	2	3
Description: Steps 1 through 3	Description: General Erosion of steps 10 through 13	Description: Decaying vegetation with moderate new growth

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/4/2015

Location: STA 209+00



Description: A repair to the soil-cement slope was observed at STA 209+00 step 11.

Location: STA 209+50



Description: A repair to the soil-cement slope was observed at STA 209+50 step 11.



Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date:

Location: STA 209+90



Description: A repair to the soil-cement slope was observed at STA 209+50 step 9.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/4/2015
Amec FW Staff: Derek Richcreek

Station: 212+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 1 through 3 variably soft, eroded, weathered, and pitted from slight to moderately. Steps 4 and 5 variably pitted and eroded from slight to moderately. Steps 9 and 10 severely eroded and pitted. Steps 11 through 13 severely eroded and well rounded. Step 13 observed to have severe under cutting.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	7 through 13	1	10	2	N

Notes: Four transverse cracks noted with an average spacing of 12 feet.

Additional Damage or Repair Observations

Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
2 hard, 6 moderate, 5 soft	(3) 0 to 6 inches, (3) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations

1	2	3
<u>Description:</u> Steps 1 through 3	<u>Description:</u> General erosion of steps 9 and 10	<u>Description:</u> Steps 11 through 13

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/4/2015

Location: STA 212+00



Description: Large transverse crack at STA 212+00.

Location: STA 212+00



Description: Under cutting of step 13 at STA 212+00.



Manatee Cooling Pond Visual Inspection

amec
foster
wheeler

Project: Manatee FPL Cooling Pond
 Project #: 300906.****.3
 Date: 3/4/2015
 Amec FW Staff: Derek Richcreek

Station: 216+00
 Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 1 and 2 variably soft, weathered, eroded slight to moderately. Steps 9 and 10 severe pitting and erosion. Steps 11 through 13 severely eroded and rounded. Step 13 missing large sections.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	8 through 13	1	8	1	N

Notes: 3 transverse cracks noted with an average spacing of 15 feet.

Additional Damage or Repair Observations




Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
4 hard, 5 moderate, 4 soft	(3) 0 to 6 inches, (3) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations

1	2	3
		
<u>Description:</u> Steps 1 and 2 showing erosion	<u>Description:</u> Sections of step 13 missing	<u>Description:</u> Steps 9 and 10

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/4/2015
Amec FW Staff: Derek Richcreek

Station: 220+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 1 and 2 variably soft, eroded, and weathered from slight to moderately. Steps 5 through 10 has decaying vegetation with no observable new growth. Steps 9 and 10 severely pitted and eroded. Steps 11 through 13 severely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	8 through 13	1	8	1	N
Notes: 3 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 4 moderate, 6 soft	(4) 0 to 6 inches, (2) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 11 through 13	<u>Description:</u> Erosion of steps 1 and 2	<u>Description:</u> Pitting of steps 9 and 10

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/5/2015
Amec FW Staff: Derek Richcreek

Station: 224+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 1 through 4 variably soft, pitted, and eroded from slight to severely. Steps 8 and 9 moderately to severely pitted and eroded. Steps 8 through 11 heavy amounts of decaying vegetation with moderate new growth. Steps 11 through 13 severely eroded and well rounded. Step under cut with numerous voids and cavities with the largest being measured 6 inches laterally and 3 inches deep.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	12 and 13	2	5	3	N
Notes: 6 transverse cracks noted with a spacing between 5 and 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 6 moderate, 5 soft	(4) 0 to 6 inches, (2) 6 to 12 inches, (7) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 1 through 4	Description: A typical void observed in step 13	Description: Vegetation steps 8 through 11

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/5/2015
Amec FW Staff: Derek Richcreek

Station: 228+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 5 through 10 had moderate amounts of decaying vegetation with slight amounts of new growth. Steps 8 and 9 is moderately to severely pitted, weathered, and eroded. Steps 10 through 13 severely eroded and well rounded.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	10 through 13	2	5	2	N

Notes: 3 transverse cracks noted with an approximate spacing of 15 feet.

Additional Damage or Repair Observations




Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
2 hard, 5 moderate, 6 soft	(3) 0 to 6 inches (1) 6 to 12 inches (9) > 12 inches

General Photographs of Observations

1	2	3
		
Description: Decaying and new vegetation	Description: Typical transverse crack	Description: Steps 8 and 9 looking South

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/5/2015
Amec FW Staff: Derek Richcreek

Station: 232+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Step 4 variable weathering, erosion, softness from slight to moderately. Steps 8 through 10 moderately to severely eroded and pitted. Steps 11 through 13 severely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	10 through 13	2	6	2	N
Notes: 4 transverse cracks noted with an average spacing of 15 feet,					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 7 moderate, 3 soft	(3) 0 to 6 inches, (2) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Step 4	<u>Description:</u> General erosion of steps 11 through 13	<u>Description:</u> Steps 8 through 10 looking South

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/5/2015
Amec FW Staff: Derek Richcreek

Station: 236+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 8 and 9 eroded and pitted from severe to moderately. Step 11 has moderate under cutting. Steps 10 through 13 severely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	8 through 13	2	10	2	N
Notes: 5 transverse cracks noted with an average spacing of 12 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 7 moderate, 4 soft	(4) 0 to 6 inches (1) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 8 and 9 looking North	Description: Typical transverse crack	Description: Under cutting of step 11

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/5/2015
Amec FW Staff: Derek Richcreek

Station: 240+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations	
Steps 8 and 9 eroded and pitted from severe to moderately. Steps 10 through 13 severely eroded and well weathered. Step 12 has moderate undercutting.	

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
12	8 through 13	2	6	3	N
Notes: 6 transverse cracks noted with an average spacing of approximately 12 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 6 moderate, 4 soft	(4) 0 to 6 inches (1) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 8 and 9 looking South	Description: Under cutting of step 12	Description: Typical transverse crack into water

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/5/2015
Amec FW Staff: Derek Richcreek

Station: 440+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 1 and 2 numerous breaks and small pot-holes. Steps 9 and 10 severely eroded, weathered, and pitted. Steps 11 through 13 severely eroded and well rounded. Step 13 moderate under cutting was observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	7 through 10	2	12	3	N
Notes: 4 transverse cracks were noted with a typical spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
244+00	7 through 13	A bituminous caulk repair was noted.
244+00	10	A one foot laterally measured cavity was noted.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 4 moderate, 5 soft	(3) 0 to 6 inches, (2) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 1 and 2 with significant cracks and potholes	Description: Erosion and pitting of steps 9 and 10.	Description: general profile of steps looking South.

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/5/2015

Location: STA 244+00



Description: A repair to the soil-cement slope with a bituminous type caulk applied to a transverse crack from step 7 to the waterline at STA 244+00.

Location: STA 244+00



Description: A cavity under step 10 measured one foot laterally was observed at STA 244+00.



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Manatee Cooling Pond Visual Inspection

Project: Manatee FPL Cooling Pond
 Project #: 300906.****.3
 Date: 3/5/2015
 Amec FW Staff: Derek Richcreek

Station: 248+00 # of Steps : 12
 Water Level (ft.): 65.5 ASL

General Observations

Step 1 eroded slight to moderately. Steps 9 and 10 variably eroded, weathered, and pitted moderately to severely. Step 11 has slight under cutting. Steps 11 and 12 slightly eroded.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	10 through 12	2	6	3	N
Notes: 4 transverse cracks noted with a typical spacing of 10 feet.					

Additional Damage or Repair Observations

Station	Step #	Description
248+00	2	Cavity under step 2 created by washout or animal.
248+00	13	3 voids noted just below waterline in step 13.
Notes:		

Overall Step Condition and Observation

Step Hardness	Step Width
5 hard, 3 moderate, 4 soft	(2) 0 to 6 inches (1) 6 to 12 inches (9) > 12 inches

General Photographs of Observations

1	2	3
Description: Steps 9 and 10 looking North	Description: Steps 11 and 12 looking South	Description: Steps 9 and 10 looking North



Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/5/2015

Location: STA 248+00



Description: A cavity under step 2 at STA 248+00.

Location: STA 248+00



Description: One of several voids noted just under the water at STA 248+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/6/2015
Amec FW Staff: Derek Richcreek

Station: 252+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Step variably eroded, weathered, pitted from slight to severely. Steps 8 and 9 eroded and pitted moderately to severely. Step 10 moderately pitted and eroded. Steps 11 through 13 extremely eroded and well rounded. Step 12 has moderate moss and plant growth.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	9 through 13	2	10	4	N
Notes: 4 transverse cracks noted with an average spacing of 15 feet,					

Additional Damage or Repair Observations		
Station	Step #	Description
253+35	13	8 ft. X 3 ft. X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 4 moderate, 4 soft	(3) 0 to 6 inches (2) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 8 and 9	<u>Description:</u> Steps 11 through 13 looking South	<u>Description:</u> Steps 11 through 13 looking North



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Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/6/2015

Location: STA 253+35



Description: A repair to the soil-cement slope was observed on step 13 at STA 235+35.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/6/2015
Amec FW Staff: Derek Richcreek

Station: 256+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 9 and 10 variably eroded and pitted from slight to moderately. Step 11 extremely eroded with moderate under cutting. Steps 12 and 13 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	7 through 13	1	12	3	N
Notes: # transverse cracks observed with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (2) 6 to 12 inches (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 9 and 10	Description: Steps 11 through 13 looking South	Description: Steps 11 through 13 looking North

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/6/2015
Amec FW Staff: Derek Richcreek

Station: 260+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Steps 3 and 4 moderately to severely eroded and weathered. Steps 5 through 9 has moderate amounts of decaying vegetation with no significant new growth. Steps 8 through 10 eroded and pitted moderately to severely. Steps 11 and 12 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	10 through 12	2	6	3	N
Notes: 3 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
259+25	9	45 ft. X 1 ft. X 0.5 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 6 moderate, 2 soft	(2) 0 to 6 inches (2) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 8 through 10 looking South	Description: Steps 3 and 4 looking North	Description: Steps 10 through 12



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Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/6/2015

Location: STA 259+25



Description: A repair to the soil-cement slope was observed at step 9 STA 259+25.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/6/2015
Amec FW Staff: Derek Richcreek

Station: 264+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Steps 8 through 10 moderately to severely eroded and pitted. Steps 11 through 13 extremely eroded and well rounded. Slight under cutting of step 11. Up to 6 voids observed with an average diameter of 6 inches located just below the waterline.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	6 through 13	2	14	3	N

Notes: 3 transverse cracks noted with an average spacing of approximately 20 feet.

Additional Damage or Repair Observations

Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
4 hard, 6 moderate, 3 soft	(2) 0 to 6 inches, (2) 6 to 12 inches, (9) > 12 inches

General Photographs of Observations

1	2	3
<u>Description:</u> Steps 8 through 10 looking South	<u>Description:</u> Steps 8 through 10 looking North	<u>Description:</u> Steps 11 through 13

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/6/2015

Location: STA 264+00



Description: Numerous small voids/potholes noted just below the waterline at STA 264+00.



Manatee Cooling Pond Visual Inspection

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Project: Manatee FPL Cooling Pond
 Project #: 300906.****.3
 Date: 3/6/2015
 Amec FW Staff: Derek Richcreek

Station: 268+00 # of Steps : 13
 Water Level (ft.): 65.5 ASL

General Observations

Steps 8 and 9 moderately to severely eroded and pitted. Steps 10 through 12 virtually eroded away entirely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	8 through 13	3	10	6	N
Notes: 7 transverse cracks noted with an approximate average spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
268+60	10 through underwa	3 types of repairs noted; step repair on 11 through 13
		Concrete slurry ramp on steps 11 through 13, sections broken away
		Underwater shelf type extension of step 13
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 6 moderate, 4 soft	(4) 0 to 6 inches, (1) 6 to 12 inches, (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 8 and 9 looking South	Description: Station profile looking North	Description: Absence of steps 10 through 12



Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/6/2015

Location: STA 268+60



Description: A repair to the soil-cement slope was observed at steps 11 through 13 at STA 268+60.

Location: STA 268+60



Description: A concrete slurry repair was made to steps 11 through 13 at STA 268+60.

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/6/2015

Location: STA 268+60



Description: A shelf extension was made to step 13 at STA 268+60.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/2/2015
Amec FW Staff: Derek Richcreek

Station: 272+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 7 through 9 severely eroded, weathered, and pitted with moderate amounts of decaying vegetation and little new growth. Steps 10 through 13 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	7 through 13	2	12	3	N
Notes: 2 transverse cracks noted with a spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
272+00	9	25 ft. X 1 ft. X 0.5 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 4 moderate, 4 soft	(4) 0 to 6 inches (1) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 7 through 9 looking South	Description: Large transverse crack just below step repair	Description: Steps 10 through 13 looking North

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/6/2015
Amec FW Staff: Derek Richcreek

Station: 276+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 10 and 11 eroded and pitted moderately to severely. Steps 12 and 13 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	10 through 13	1	8	3	N
Notes: 3 transverse cracks noted spaced approximately 20 feet apart.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
6 hard, 4 moderate, 3 soft	(3) 0 to 6 inches (10) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 12 and 13 looking South	Description: Steps 12 and 13 looking North	Description: Steps 10 and 11 looking South

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/6/2015
Amec FW Staff: Derek Richcreek

Station: 280+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations

Step 1 moderately eroded and pitted. Steps 7 through 10 has moderate amounts of decaying vegetation with little new growth. Steps 9 through 11 eroded, pitted, and weathered from moderately to severely. Steps 11 through 13 extremely eroded and well rounded. Step 11 has large sections missing. Step 12 has moderate under cutting.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	10 through 13	3	7	6	N

Notes: 5 transverse cracks noted spaced approximately 20 feet apart.

Additional Damage or Repair Observations

Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
1 hard, 5 moderate, 7 soft	(3) 0 to 6 inches (1) 6 to 12 inches (9) > 12 inches

General Photographs of Observations

1	2	3
<u>Description:</u> Step 1 erosion	<u>Description:</u> Decaying vegetation on steps 7 through 10	<u>Description:</u> Section of step 11 missing

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/6/2015

Location: STA 280+00



Description: Steps 11 through 13 extremely eroded and well-rounded at STA 280+00.

Location: STA 280+00



Description: Large sections of step 11 observed to be missing at STA 280+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 284+00
Water Level (ft.): 65.5 ASL

of Steps : 14

General Observations
Steps 10 through 12 variable erosion and pitting from moderate to severe. Steps 13 and 14 extremely eroded and well rounded. No significant vegetation observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length	Depth (inches)	Noted Void Y/N
15	1 through 14	1	Steps 1 through 14	1	N
Notes: Typical spacing between transverse cracks were approximately 20ft or greater. 3 transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
284+00	1 through 14	Foam filled repair of a transverse crack.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (3) 6 to 12 inches (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 10 through 12 looking West	Description: General profile of STA 284+00	Description: Steps 13 and 14 looking East

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/9/2015

Location: STA 284+00



Description: A repair to a transverse crack was observed at STA 284+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 288+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations
Steps 12 through 14 variably eroded and pitted moderately to severely. Steps 15 and 16 extreme eroded and well rounded. Step 16 under cut moderately to severe. Moderate amounts of decaying vegetation with minor new growth.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	8 through 16	6	12	6	N
Notes: 3 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
288+00	16 into water	Numerous potholes
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard 3 moderate 2 soft	(2) 0 to 6 inches (2) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 15 and 16	<u>Description:</u> Erosion of step 12 to waterline	<u>Description:</u> Potholes below water just below a transverse crack in step 16

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 292+00
Water Level (ft.): 65.5 ASL

of Steps : 16




General Observations

Step 1 numerous cracks and broken sections. Steps 12 through 14 pitted and eroded from moderate to severely. Steps 13 and 14 moderate under cutting. Steps 15 and 16 extreme erosion and well rounded. Step 16 moderate under cutting. Moderate amounts of decaying vegetation and new growth on steps 8 through 10.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	6 through 16	6	12	6	N
Notes: 6 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
292+00	16 into water	Numerous potholes
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (1) 6 to 12 inches (13) > 12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> steps 12 through 14	<u>Description:</u> General profile of steps 3 through 10	<u>Description:</u> Steps 14 through 16

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/9/2015

Location: STA 292+00



Description: Step 1 at STA 292+00 showing multiple cracks and breaks.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 296+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations
Steps 12 and 13 pitted and eroded moderately to severely. Steps 8 through 10 has moderate decaying vegetation and new growth. Steps 14 through 16 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	8 through 16	3	10	3	N
Notes: 4 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
296+00	3	Lateral void 6 inches deep.
296+00	9	Lateral void 6 inches deep.
296+00	12	Lateral void 6 inches deep.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 3 moderate, 3 soft	(3) 0 to 6 inches (2) 6 to 12 inches (13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 12 through 16 looking West	Description: Steps 12 through 16 looking East	Description: 6 inch lateral void at step 4

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/9/2015

Location: STA 296+00



Description: A 6 inch deep lateral void measured at STA 296+00 step 12.

Location: STA



Description: A 6 inch deep lateral void measured at STA 296+00 step 9.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 300+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations
Steps 8 through 13 has moderate amounts of decaying vegetation with minor new growth. Steps 11 through 13 variably eroded, pitted, and weathered moderately to severely. Steps 14 through 16 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	10 through 16	2	10	2	N
Notes: 4 transverse cracks were noted with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
300+00	13	Extreme erosion and under cutting
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (1) 6 to 12 inches (13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 8 through 16 looking West	Description: Steps 8 through 16 looking East	Description: Under cutting step 13



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Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/9/2015

Location: STA 300+00



Description: Extreme erosion and under cutting of step 13 was noted at STA 300+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 304+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations
Steps 11 through 13 variably eroded and pitted moderately to severely. Steps 14 through 16 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	8 through 16	1	2	14	N
Notes: 5 transverse cracks were noted with an approximate average spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (1) 6 to 12 inches (13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 11 through 16 looking West	Description: Steps 11 through 16 looking East	Description: Typical transverse crack into water

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/9/2015
Amec FW Staff: Derek Richcreek

Station: 308+00
Water Level (ft.): 65.5 ASL




of Steps : 17

General Observations
Steps 12 and 13 variably eroded and pitted moderately to severely. Steps 14 through 17 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	12 through 17	2	10	5	N
Notes: 4 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
308+50	16 and 17	40 ft. X 33 in X 16 in step repair
310+65	12	33 ft. X 1 ft. X 0.5 ft. step repair
310+65	13	6 ft. X 16 in X 0.5 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
12 hard, 2 moderate, 3 soft	(3) 0 to 6 inches (14) > 12 inches

General Photographs of Observations		
1	2	3
		
<u>Description:</u> Steps 12 through 17	<u>Description:</u> Transverse crack from 12 through 17 into water	<u>Description:</u> Transverse crack into water

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/9/2015

Location: STA 308+50



Description: A repair to the soil-cement slope was observed at STA 308+50 steps 16 and 17.

Location: STA 310+65



Description: A repair to the soil-cement slope was observed at STA 310+65 step 13.

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/9/2015

Location: STA 310+65



Description: A repair to the soil-cement slope was observed at STA 310+65 step 12.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 312+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations
Steps 1 and 2 variably weathered and eroded from slightly to moderately. Steps 12 and 13 eroded and pitted moderately to severely. Step 15 moderate under cutting. Steps 14 through 16 extreme erosion and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	12 through 16	2	8	6	N
Notes: 5 transverse cracks noted with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard, 3 moderate, 4 soft	(3) 0 to 6 inches (1) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 1 and 2 looking east	<u>Description:</u> Steps 12 through 16 looking West	<u>Description:</u> Under cutting of step 15

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 316+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations

Steps 11 through 12 moderately pitted and weathered. Steps 13 and 14 moderately to severely pitted and eroded. Step 15 missing large sections. Steps 15 and 16 extremely eroded and well rounded.

Transverse Crack Observations

Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	10 through 16	2	13	5	N

Notes: 6 transverse cracks noted with an average spacing of 10 feet,

Additional Damage or Repair Observations

Station	Step #	Description

Notes: No additional damage or repairs observed.

Overall Step Condition and Observation

Step Hardness	Step Width
10 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (1) 6 to 12 inches (13) > 12 inches

General Photographs of Observations

1	2	3
<u>Description:</u> Steps 11 through 16 looking West	<u>Description:</u> Steps 11 through 15 looking East	<u>Description:</u> Step 15

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 320+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Steps 4 and 5 variably weathered and eroded from slight to moderately. Steps 12 and 13 moderately to severely eroded and pitted. Steps 14 through 17 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	12 through 17	2	12	5	N
Notes: 7 transverse cracks noted with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
320+00	14	large sections missing.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 4 moderate, 5 soft	(4) 0 to 6 inches (2) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 12 through 17 looking West	Description: Steps 12 through 17 looking East	Description: Large transverse crack into water

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 320+00



Description: Large sections from step 14 noted missing at STA 320+00.

Location: STA 320+00



Description: Large sections from step 14 noted missing at STA 320+00.



Manatee Cooling Pond Visual Inspection

amec
foster
wheeler

Project: Manatee FPL Cooling Pond
 Project #: 300906.****.3
 Date: 3/10/2015
 Amec FW Staff: Derek Richcreek

Station: 324+00 # of Steps : 18
 Water Level (ft.): 65.5 ASL

General Observations

Step 1 moderately to severely eroded and weathered. Steps 13 and 14 pitted and eroded from moderately to severely. Steps 15 through 18 extremely eroded and well rounded. Step 16 has large sections missing. Step 17 has extreme under cutting. Step 18 is moderately to severely under cut.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length	Depth (inches)	Noted Void Y/N
	1 through 18	2	Steps 1 through 18	2	N
15	11 through 18	3	20 feet	4	N
Notes: 1 transverse crack extended from step 1 to underwater. 4 other transverse cracks were noted as above with approximate spacing's of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
324+00	17	Extreme undercutting
324+00 to 327+00	13	300 foot X 16 inches X 0.5 feet step repair in variably continuous sections. Some repairs was a solid pour, other repairs used a concrete slurry.
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
6 hard, 7 moderate, 5 soft	(5) 0 to 6 inches (2) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Step 1	Description: Steps 15 through 18 looking West	Description: Steps 15 through 18 looking East



Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 324+00



Description: Large sections of step 16 noted missing at STA 324+00.

Location: STA 324+00 to STA 327+00



Description: A repair to the soil-cement slope was observed at step 13 STA 324+00 to STA 327+00.



Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 324+00 to STA 327+00



Description: A repair to the soil-cement slope was observed at step 13 STA 324+00 to STA 327+00.

Location: STA STA 324+00 to STA 327+00



Description: A repair to the soil-cement slope was observed at step 13 STA 324+00 to STA 327+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 328+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Steps 13 and 14 moderately pitted and eroded. Step 15 moderately under cut and eroded. Steps 16 and 17 severely eroded and rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	12 through 17	2	10	4	N
Notes: 5 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 5 moderate, 5 soft	(7) 0 to 6 inches (3) 6 to 12 inches (7) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 13 and 14 looking West	Description: Steps 16 and 17 looking West	Description: Under cutting of step 15



Manatee Cooling Pond Visual Inspection

Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 332+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Steps 10 through 12 pitted, eroded, and weathered slightly to moderately. Steps 13 through 15 pitted, eroded, and weathered moderately to severely. Steps 16 and 17 extremely eroded and well rounded with moderate under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	13 through 17	2	10	4	N
Notes: 4 transverse cracks noted with an approximate spacing averaging 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
333+15	15	35 ft. X 2 ft. X 1 ft. step repair
333+15	15	6 ft. X 2 ft. X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 5 moderate, 4 soft	(2) 0 to 6 inches (3) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 15 through 17 looking West	Description: Steps 10 through 12 looking West	Description: Large transverse crack into water

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 333+15



Description: A repair to the soil-cement slope was observed at step 15 STA 333+15

Location: STA 333+15



Description: A repair to the soil-cement slope was observed at step 15 STA 333+15.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 336+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Steps 13 and 14 moderately to severely pitted and eroded. Step 15 extremely pitted and eroded. Steps 16 and 17 extremely eroded and well rounded. Step 17 under cut moderately to severely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	13 through 17	2	10	4	N
Notes: 5 transverse cracks were noted with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard, 3 moderate, 3 soft	(3) 0 to 6 inches (2) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 13 and 14 looking West	Description: Under cutting of step 17	Description: Large transverse crack into water

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 340+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Step 14 variably eroded and pitted from slight to moderately. Step 15 extremely eroded, pitted, and missing sections. Steps 16 and 17 extremely eroded and well rounded with under cutting from moderate to severe.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	14 through 17	2	10	5	N
Notes: 6 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
341+45	15 into water	repair of 7 new steps from step 15 into and underwater. The repair is 44 feet in
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard, 3 moderate, 3 soft	(3) 0 to 6 inches (2) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 14 through 17 looking West	Description: Steps 14 through 17 looking East	Description: Undercutting steps 16 and 17

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 340+00



Description: A large transverse crack noted at STA 340+00.

Location: STA 341+45



Description: A repair to the soil-cement slope was observed at STA 341+45.

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 341+45



Description: A repair to the soil-cement slope was observed at STA 341+45.

Location: STA 341+45



Description: A separation crack was observed from the repair and step 15 at STA 341+45.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 344+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Step 14 moderately pitted and eroded. Step 15 variably pitted and eroded from severe to extremely. Steps 16 and 17 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	12 through 17	2	15	4	N
Notes: 3 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
344+40	17	Extreme under cutting with missing sections.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (4) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 14 through 17 looking West	Description: Steps 14 through 17 looking East	Description: Extreme erosion steps 16 and 17

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 344+00



Description: Under cutting of steps 16 and 17 observed at STA 344+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 348+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Step 12 moderately pitted. Step 13 extremely pitted and weathered. Step 14 extremely pitted and weathered with missing sections. Steps 15 through 17 extremely eroded and well rounded. Step 16 has sections missing.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	11 through 17	2	15	5	N
Notes: 5 transverse cracks noted with an average spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
11 hard, 3 moderate, 3 soft	(3) 0 to 6 inches (2) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 12 through 17 looking West	<u>Description:</u> Steps 12 through 17 looking East	<u>Description:</u> Sections missing step 16

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 352+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Step 12 moderately to severely pitted and weathered. Step 13 and 14 moderately to severely eroded and rounded. Steps 15 through 17 extremely eroded and well rounded. Steps 16 and 17 extremely under cut.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	13 through 17	1	8	3	N
Notes: 3 transverse cracks noted with an average spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
352+00	18	Concrete slurry pour to repair under cutting of step 17
352+00	18	~30 ft. X 2 ft. X 1 ft. step repair
352+00	18	~10 ft. X 2 ft. X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
12 hard, 2 moderate, 3 soft	(2) 0 to 6 inches (1) 6 to 12 inches (14) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 12 through 17 looking West	Description: Steps 12 through 17 looking East	Description: Erosion of steps 16 and 17

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 352+00



Description: A concrete slurry repair to the soil-cement slope was observed at step 17 STA 352+00.

Location: STA 352+00



Description: An underwater repair to the soil-cement slope was observed at STA 352+00. The repair was observed just below the water level.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 356+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Steps 12 through 14 variably eroded and pitted from moderately to severely. Steps 15 through 17 extremely eroded and well rounded with moderate under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	9 through 17	2	15	5	N
Notes: 5 transverse cracks noted with an approximate average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
356+00	17	35 ft. X 1.5 ft. X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 4 moderate, 3 soft	(3) 0 to 6 inches (3) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 12 through 17 looking West	Description: Step repair on 17 looking East	Description: Part of transverse crack on step 16

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 360+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations

Step 1 variably eroded and weathered from moderately to severely. Step 10 variably eroded and weathered from moderately to severely. Steps 12 and 13 eroded and pitted moderately to severely. Step 14 severely eroded and under cut. Steps 15 and 16 extremely eroded and rounded with moderate to severe under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	14 through 16	2	6	6	N
Notes: 5 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
360+00	15	Multiple sections missing
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 4 moderate, 2 soft	(3) 0 to 6 inches (3) 6 to 12 inches (10) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 10 through 16 looking West	Description: Steps 10 through 16 looking East	Description: Step 1 weathering and erosion

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 360+00



Description: Extreme erosion of steps 15 and 16 at STA 360+00.

Location: STA 360+00



Description: Multiple sections missing from step 15 at STA 360+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/10/2015
Amec FW Staff: Derek Richcreek

Station: 364+00
Water Level (ft.): 65.5 ASL

of Steps : 16

General Observations
Step 10 variably eroded and pitted from severely to extremely. Step 12 moderately pitted and under cut. Step 14 severely to moderately eroded and pitted. Steps 15 and 16 extremely eroded and and well rounded with moderate to severe under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	14 through 16	2	6	3	N
Notes: 4 transverse cracks noted with an average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
364+00	14	30 ft. X 1 ft. X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
10 hard, 3 moderate, 3 soft	(2) 0 to 6 inches (6) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking west	Description: Step 10 looking West	Description: Steps 15 and 16 looking East

Manatee Cooling Pond

Additional Damage/Repair Observations



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/10/2015

Location: STA 364+00



Description: A repair to the soil-cement slope was observed at step 14 STA 364+00.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/18/2015
Amec FW Staff: Derek Richcreek

Station: 368+00
Water Level (ft.): 65.5 ASL

of Steps : 18

General Observations
Step 14 moderately pitted and under cut. Steps 15 and 16 variably pitted and eroded moderately to severely with sections missing. Step 16 moderately under cut. Steps 17 and 18 extremely eroded and well rounded with moderate to severe under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
10	15 through 18	3	6	5	N
Notes: 7 transverse cracks noted with an average spacing of 10 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
		Numerous potholes
Notes: No additional damage observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
9 hard, 6 moderate, 3 soft	(2) 0 to 6 inches (3) 6 to 12 inches (13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 14 through 16 looking West	Description: Steps 14 through 16 looking East	Description: Typical transverse crack at Station

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/18/2015
Amec FW Staff: Derek Richcreek

Station: 372+00
Water Level (ft.): 65.5 ASL

of Steps : 18

General Observations

Four inch lateral voids observed at steps 5 and 7. Step 13 variably eroded and weathered from moderately to severely. Step 14 severely eroded and pitted with moderate amounts of vegetation. Steps 15 and 16 variably eroded and pitted from slightly to severely. Steps 17 and 18 extremely eroded and well rounded with moderate amounts of vegetation and moderate to severe under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	15 through 18	3	6	6	N
Notes: 3 transverse cracks noted with an average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
371+25	14	28 ft. X 16 in X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 12 moderate, 4 soft	(3) 0 to 6 inches (2) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 12 through 18 looking West	Description: Steps 12 through 18 looking East	Description: 4 inch lateral voids at steps 5 and 7

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 376+00
Water Level (ft.): 65.5 ASL

of Steps : 18

General Observations
Steps 14 and 15 eroded and pitted severely to extremely. Steps 16 through 18 extremely eroded and rounded. Steps 17 and 18 under cut moderately to severely. Step 18 has moderate amounts of vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	14 through 17	1	10	2	N
Notes: 3 transverse cracks were noted with an approximate average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 10 moderate, 3 soft	(3) 0 to 6 inches (3) 6 to 12 inches (12) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 14 through 18 looking West	Description: Steps 14 through 18 looking East	Description: Under cutting step 18

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 380+00
Water Level (ft.): 65.5 ASL

of Steps : 18

General Observations
Steps 10 and 11 variably weathered and pitted from slightly to moderately. Steps 14 through 18 extremely eroded, pitted, and well rounded. Steps 16 through 18 moderately to severely under cut. Steps 17 and 18 have moderate amounts of vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	14 through 18	3	9	6	N
Notes: 4 transverse cracks noted with an approximate average spacing of 20 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
380+00	14	20 ft. X 16 in X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
8 hard, 7 moderate, 3 soft	(5) 0 to 6 inches (2) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 14 through 18 looking West	Description: Steps 14 through 18 looking East	Description: Steps 15 through 18

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 384+00
Water Level (ft.): 65.5 ASL

of Steps : 17

General Observations
Steps 13 through 15 variably eroded and pitted from moderately to severely. Steps 16 and 17 extremely eroded and well rounded. Step 16 extremely under cut and step 17 has moderate under cutting.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
15	16 and 17	2	5	3	N
Notes: 3 transverse cracks noted with an approximate average spacing of 15 feet.					

Additional Damage or Repair Observations		
Station	Step #	Description
386+30	13	10.5 ft. X 16 in X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
9 hard, 5 moderate, 3 soft	(2) 0 to 6 inches (2) 6 to 12 inches (13) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 13 through 15 looking West	Description: Steps 13 through 15 looking East	Description: Under cutting of steps 16 and 17

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 388+00
Water Level (ft.): 65.5 ASL

of Steps : 18

General Observations
Steps 13 through 15 variably eroded and pitted from severely to extremely with numerous sections missing. Steps 16 through 18 extremely eroded and well rounded. Step 17 moderately to severely under cut.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
20	15 through 18	2	7	4	N
Notes: 5 transverse cracks noted with an average spacing of 20 feet,					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
6 hard, 8 moderate, 3 soft	(3) 0 to 6 inches (4) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps at station	Description: Steps 13 through 18 looking East	Description: Typical transverse crack observed at station

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 392+00
Water Level (ft.): 65.5 ASL

of Steps : 18

General Observations
Steps 1 through 3 variably eroded, pitted, and rounded severely to extremely. Step 14 severely to moderately eroded and pitted with sections missing. Steps 15 through 18 variably eroded and rounded from severely to extremely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
320+00	14	large sections missing.
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 11 moderate	(4) 0 to 6 inches (3) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: General view of step profile	Description: Steps 15 through 18 looking East	Description: Steps 1 through 3 showing erosion

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 396+00
Water Level (ft.): 65.5 ASL

of Steps : 15

General Observations
Steps 1 through 3 slightly to moderately eroded and weathered. Steps 10 through 15 variably eroded, pitted, and rounded from severely to extremely. Steps 13 and 14 under cut moderately to severely. Moderate amounts of grass clumps.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 10 moderate	(4) 0 to 6 inches (3) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 10 through 15 looking West	Description: Steps 10 through 15 looking East	Description: Steps 1 through 3 looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 404+00
Water Level (ft.): 65.5 ASL

of Steps : 14

General Observations
Steps 1 and 2 moderately to severely eroded and weathered. Steps 10 through 13 variably eroded and pitted moderately to severely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 10 moderate	(3) 0 to 6 inches (3) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> Steps 10 through 14 looking West	<u>Description:</u> Steps 10 through 14 looking East	<u>Description:</u> Steps 1 and 2 erosion

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 408+00
Water Level (ft.): 65.5 ASL

of Steps : 13

General Observations
Steps 7 and 8 slightly to moderately eroded and pitted. Steps 10 through 12 extremely eroded and well rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
408+00	8	21 ft. X 16 in X 1 ft. step repair
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 8 moderate	(3) 0 to 6 inches (2) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 10 through 13 looking West	Description: Steps 7 and 8 looking West	Description: Steps 7 and 8 looking East

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/19/15

Location: STA 408+00



Description: A repair to the soil-cement slope was observed at STA 408+00 step 8.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 412+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Step 1 slightly to moderately eroded. Step 6 slightly to moderately eroded and weathered. Steps 11 and 12 slightly to moderately eroded and rounded.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
5 hard, 7 moderate	(1) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: Steps 11 and 12 looking West	Description: Steps 11 and 12 looking East	Description: Step 1

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 416+00
Water Level (ft.): 65.5 ASL

of Steps : 11

General Observations
Step 10 and 11 slightly to moderately eroded and weathered. Moderate amounts of vegetation.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 4 moderate	(3) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile looking West	Description: General profile looking East	Description: Steps 10 and 11

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/19/2015
Amec FW Staff: Derek Richcreek

Station: 420+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Steps 4, 5, 10, and 11 variably eroded and pitted slightly to moderately.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damage or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
7 hard, 5 moderate	(2) 6 to 12 inches (10) > 12 inches

General Photographs of Observations		
1	2	3
Description: General view of steps looking West	Description: General view of steps looking East	Description: Steps 10 and 11 looking West

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 424+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Step 9 moderately to severely eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 6 moderate, 2 soft	(3) 6 to 12 inches (9) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of step 9

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 428+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Step 11 moderately to severely eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 hard, 6 moderate, 2 soft	(12) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of step 11

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 432+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Steps 9 through 12 variably eroded and weathered from moderately to severely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
3 hard, 6 moderate, 3 soft	(1) 6 to 12 inches (11) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking North	Description: General profile of steps looking South	Description: Erosion of steps 9 through 12

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 436+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Step 1 slightly to moderately eroded. Steps 9 through 12 variably eroded and weathered from severely to extremely.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 6 moderate, 4 soft	(1) 0 to 6 inches (2) 6 to 12 inches (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking North	Description: General profile of steps looking South	Description: Erosion of steps 9 through 12

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 440+00
Water Level (ft.): 65.5 ASL

of Steps : 12

General Observations
Step 1 slightly eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
1 hard, 5 moderate, 6 soft	(12) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking North	Description: General profile of steps looking South	Description: Erosion of step 1

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 440+00
Water Level (ft.): 65.5 ASL

of Steps : 10

General Observations
Step 1 slightly eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
444+00	1	>30 inch deep hole at base of asphalt and step 1
445+20	1	>30 inch deep hole at base of asphalt and step 1
446+45	1	>30 inch deep hole at base of asphalt and step 1
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
4 moderate, 6 soft	(1) 6 to 12 inches (9) > 12 inches

General Photographs of Observations		
1	2	3
Description: General profile of steps looking North	Description: General profile of steps looking South	Description: Erosion of step 1

Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/24/15

Location: STA 444+00



Description: A small hole/void at least 30 inches deep vertical and lateral under step 1 from edge of asphalt embankment road base.

Location: STA 445+20



Description: A small hole/void at least 30 inches deep vertical and lateral under step 1 from edge of asphalt embankment road base.



Manatee Cooling Pond

Additional Damage/Repair Observations

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek
Date: 3/24/15

Location: STA 446+45



Description: A small hole/void at least 30 inches deep vertical and lateral under step 1 from edge of asphalt embankment road base.

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 448+00
Water Level (ft.): 65.5 ASL

of Steps : 9

General Observations
Steps 1 through 3 slightly to moderately eroded and weathered. Moderate amounts of vegetation observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 4 moderate, 3 soft	(1) 6 to 12 inches (8) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of steps 1 through 3

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 452+00
Water Level (ft.): 65.5 ASL

of Steps : 6

General Observations	
Step 1 slightly eroded and weathered.	

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 4 moderate	(6) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of step 1

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 456+00
Water Level (ft.): 65.5 ASL

of Steps : 6

General Observations
Steps 1 and 2 slightly to moderately eroded and weathered. Moderate amounts of vegetation observed.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
6 moderate	(1) 6 to 12 inches (5) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of steps 1 and 2

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 460+00
Water Level (ft.): 65.5 ASL

of Steps : 6

General Observations
Steps 1 and 2 slightly to moderately eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 4 moderate	(6) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of steps 1 and 2

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 464+00
Water Level (ft.): 65.5 ASL

of Steps : 5

General Observations
Step 1 moderately to severely eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 3 moderate	(5) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of step 1

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.****.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 468+00
Water Level (ft.): 65.5 ASL

of Steps : 5

General Observations
Steps 1, 3, and 4 slightly to moderately eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
Notes: No additional damages or repairs observed.		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 3 moderate	(5) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of step 4

Manatee Cooling Pond Visual Inspection



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Date: 3/24/2015
Amec FW Staff: Derek Richcreek

Station: 472+00
Water Level (ft.): 65.5 ASL

of Steps : 4

General Observations
Step 1 slightly to moderately eroded and weathered.

Transverse Crack Observations					
Spacing (feet)	Step #	Width (inches)	Length (feet)	Depth (inches)	Noted Void Y/N
Notes: No significant transverse cracks noted.					

Additional Damage or Repair Observations		
Station	Step #	Description
473+74		End of embankment
Notes:		

Overall Step Condition and Observation	
Step Hardness	Step Width
2 hard, 2 moderate	(4) > 12 inches

General Photographs of Observations		
1	2	3
<u>Description:</u> General profile of steps looking North	<u>Description:</u> General profile of steps looking South	<u>Description:</u> Erosion of step 1

APPENDIX C

Underwater Visual Inspection Summary Table

AMECFW
 FPL MANATEE PLANT UNDERWATER INSPECTION OF THE COOLING POND SOIL-CEMENT



Summaries of Significant Deficiencies

Beg Station	End Station	Comment
40 + 00	TO 50 + 00	Nothing significant - numerous voids/missing steps, but typically around 1 ft x 8 in. x 3 in. penetration
52 + 20	TO 52 + 35	Void Edge of Step - 6" V x 15 ft long x 3" max. penetration, 6 ft from WL
52 + 73	TO 52 + 79	Void Edge of Step - 18" V x 6 ft long x 12" max. penetration, 2 ft from WL
54 + 87	TO 54 + 95	Void Edge of Step - 7" V x 8 ft long x 8" max. penetration, 2 ft from WL
57 + 40	TO 57 + 48	Void Edge of Step - 7" V x 8 ft long x 6" max. penetration, 3 ft from WL
66 + 00	TO 120 + 00	Void Edge of Step - Mostly continuous over 5400 ft - 8" V x 2 to 6" penetration, on 1st and occasionally 2nd step from WL
82 + 30	TO 83 + 00	Void Edge of Step - 8" V x 6" penetration, on 2nd and 3rd steps from WL
97 + 98	TO 98 + 28	Void Edge of Step - 8" V x 6" penetration, on 2nd and 3rd steps from WL
117 + 08	TO 117 + 13	Void / UM Edge of Step - 5" V x 14" penetration, on 4th step from WL
131 + 50	TO 132 + 00	Lost definition Step 5 to channel bottom (approximately 30 ft)
144 + 10	TO +	Void / UM - 12" V x 2 ft long x 18" penetration, on 18th step from WL
145 + 20	TO 146 + 20	Multiple wide TC's - typically 3" wide x 2 ft long x, at 20 ft from WL (5th step from bottom)
146 + 45	TO +	TC, 3" wide x 15 ft long at 3rd step from bottom
149 + 00	TO 150 + 00	Softer material throughout - upper three steps slightly stronger
150 + 00	TO 151 + 00	Soft material bottom 15 feet
151 + 00	TO 152 + 29	Soft material bottom 20 feet
152 + 00	TO 152 + 47	Missing step edges/erosion starts 14 ft from WL and is 13 ft wide
153 + 43	TO 153 + 47	HC / Brittle material, 4-ft wide at 5th step from bottom - 4 ft long
153 + 47	TO 157 + 00	HC / Brittle material, 8-ft wide at 4th and 5th step from bottom - 353 ft long
158 + 70	TO 160 + 30	HC / Brittle material, 8-ft wide from mudline - 160 ft long - [Area east of East Intake Structure]
160 + 15	TO 160 + 62	Void / UM - 1" V x 50 ft long x 8" max. penetration between Step 2 and 3 from WL - [Area east of East Intake Structure]
164 + 45	TO 164 + 62	HC / Brittle material, 2-ft wide at 9th step from bottom - 17 ft long - [Area between intake structures]
165 + 00	TO 165 + 25	HC / Brittle material, 1-ft wide at bottom step - 25 ft long - [Area between intake structures]
165 + 45	TO 165 + 65	HC / Brittle material, 4-ft wide at 6th and 7th step from bottom - 20 ft long - [Area between intake structures]
166 + 08	TO 166 + 30	HC / Brittle material, 4-ft wide at 2nd and 3rd step from bottom - 22 ft long - [Area between intake structures]
166 + 00	TO 166 + 30	HC / Brittle material, 2-ft wide at bottom step - 30 ft long - [Area between intake structures]
169 + 15	TO 169 + 28	Void / UM - 2" V x 13 ft long x 6" max. penetration
170 + 26	TO 170 + 30	Void / UM - 8" V x 4 ft long x 9" max. penetration 4 ft from ML
170 + 76	TO 170 + 80	Void / UM - 2" V x 4 ft long x 8" max. penetration 7 ft from ML
171 + 00	TO 172 + 30	HC / Brittle material, 2- to 8-ft wide from bottom - 130 ft long
173 + 70	TO 174 + 04	HC / Brittle material, 7-ft wide starting from bottom - 34 ft long
174 + 04	TO 174 + 85	HC / Brittle material, 4-ft wide starting from bottom - 81 ft long
174 + 85	TO 175 + 40	HC / Brittle material, 4-ft wide starting from bottom - below existing repair - 55 ft long
174 + 94	TO 175 + 06	Void under the step above the repair, 3 in. V x 8 in. penetration x 12 ft long
175 + 40	TO 175 + 78	HC / Brittle material, 8-ft wide starting from bottom - 38 ft long
175 + 45	TO 175 + 85	Void / UM - 6 in. V x 8 in. max. pen. x 40 ft long at 8th step from bottom
175 + 78	TO 176 + 60	HC / Brittle material, 4-ft wide starting from bottom - 82 ft long
176 + 60	TO 177 + 00	HC / Brittle material, 8-ft wide starting from bottom - 40 ft long
176 + 60	TO +	Void / UM - 9 in. V x 24 in. max. pen. x 1 ft long at 5th step from bottom
176 + 85	TO +	Void / UM - 9 in. V x 12 in. max. pen. x 1 ft long at 5th step from bottom
177 + 00	TO 178 + 00	HC / Brittle material, 4-ft wide starting from bottom - 100 ft long
178 + 00	TO 179 + 20	HC / Brittle material, 4- to 8-ft wide starting from bottom - 120 ft long
180 + 65	TO 183 + 00	HC / Brittle material, 4-ft wide starting from bottom - 235 ft long
180 + 40	TO +	Void / UM - 3 in. V x 48+ in. pen. x 4 ft long at bottom step
183 + 00	TO 188 + 00	HC / Brittle material, 4- to 6-ft wide starting from bottom - 500 ft long
188 + 00	TO 194 + 45	HC / Brittle material, 6- to 8-ft wide starting from bottom - 645 ft long (decreases to 4 ft where repairs are present)
194 + 45	TO 194 + 80	HC / Brittle material, 2-ft wide starting 6 ft from bottom - 35 ft long
194 + 80	TO 197 + 70	HC / Brittle material, 6- to 8-ft wide starting from bottom - 290 ft long (decreases to 4 ft where repairs are present)
198 + 00	TO 199 + 55	HC / Brittle material, 4-ft wide starting from bottom - 155 ft long
199 + 55	TO 207 + 00	HC / Brittle material - after 199+55, not seeing the HC as before. Steps still show erosion and mostly brittle
198 + 70	TO +	Void under Step 3 from WL - 3 ft x 8 in. x 13 in. pen.
202 + 00	TO +	Bottom sand has risen up the S-C levee where last visual bottom step is approx. the 8th step (7 ft deep)
202 + 00	TO 207 + 00	Bottom sand depth is 10 ft deep max. (8th to 10th step)
207 + 00	TO 213 + 00	Continuous area of void/undermining of step located 12 ft from waterline (2nd to last step). Six specific noted areas of 1 ft to 3 ft of penetration. Step looks like an overhanging ledge.

AMECFW
FPL MANATEE PLANT UNDERWATER INSPECTION OF THE COOLING POND SOIL-CEMENT
Summaries of Significant Dificiencies

Beg Station	End Station	Comment
213 + 00	TO 224 + 00	Continuous area of void/undermining of step located 12 ft from waterline (2nd to last step) - continues. Penetrations generally less than 6 in. Step looks like an overhanging ledge.
207 + 00	TO 213 + 00	Steps do not have much definition (rounded)
214 + 63	TO 214 + 93	HC along bottom step, 3 ft wide
222 + 00		Repaired step has undermining with 2.4 ft of penetration (repair 8 ft long on 2nd step from bottom)
224 + 00	TO 225 + 30	"Ledge-looking" step (2nd from bottom) covered up by higher sand - only counted 5 steps
228 + 00	TO 232 + 00	Sand has receded slightly - now counting 13+ steps - "ledge-looking" step coming in and out of exposure
234 + 25	TO 234 + 79	HC / Brittle material, 2 ft wide starting from bottom - 54 ft long - some undermining up to 1 ft penetration
238 + 03	TO 243 + 00	HC / Brittle material, 4- to 6-ft wide starting from bottom - intermittent - not as bad as previous
244 + 00	TO 254 + 00	HC / Brittle material reappears, 4- to 6-ft wide starting from bottom - intermittent - not as bad as previous - 1000 ft
254 + 00	TO 255 + 00	HC / Brittle material, 12 ft wide starting from bottom - 100 ft long
255 + 00	TO 257 + 00	HC / Brittle material, 6 ft wide starting from bottom - 200 ft long
255 + 00	TO 255 + 31	Approx. eight sections of soil-cement laying on the slope - typically near the bottom (4-ft wide x 2.5- to 7-ft long) - additional sections observed throughout remaining levee - not included in this list.
257 + 00	TO 261 + 00	HC / Brittle material, 6 ft wide starting from bottom - intermittent - 400 ft long
263 + 00	TO 267 + 00	HC / Brittle material, sporadic patches 2 ft wide x 4- to 5-ft long - starting from bottom - 400 ft long
269 + 00	TO 278 + 00	HC / Brittle material, 8 ft wide starting from bottom - 900 ft long
278 + 00	TO 285 + 00	HC / Brittle material, 12 ft wide starting from bottom - 700 ft long
285 + 00	TO 287 + 70	HC / Brittle material, 8 ft wide starting 4 ft from bottom and 4- to 5-ft from waterline - 270 ft long
286 + 89		Void / Undermining under Step 4 from WL - 5 ft x 8 in. vertical x 2 ft penetration
288 + 22		Missing step at 4th step from waterline - 4 ft x 1 ft vertical x 2 ft wide
288 + 45		Missing step at 4th step from waterline - 8 ft x 1 ft vertical x 1.5 ft wide
287 + 70	TO 291 + 00	HC / Brittle material, 4 ft wide starting 6 ft from waterline - 330 ft long
289 + 50	TO 291 + 00	HC / Brittle material, 2 ft wide starting 2 ft from waterline - 150 ft long
289 + 00	TO 289 + 51	HC / Missing step at 1st step from waterline - 51 ft x 10 in. vertical x 1 ft wide
290 + 00	TO 290 + 90	HC/Missing step at 1st step from waterline - 10 in. vertical x 1 ft wide over 80 percent of the 90 feet
290 + 20		Void / Missing step - at 15 ft from the waterline - 4 ft long x 1.5 ft vertical x 2.5 ft wide with up to 1.5 ft penetration
291 + 00	TO 295 + 00	HC / Brittle material, 6 ft wide starting 6 ft from waterline - 400 ft long
291 + 00	TO 295 + 05	HC / Brittle material, 4- to 6-ft wide starting 1 to 2 ft from waterline - 405 ft long
293 + 00	TO 293 + 43	Old repair formwork left in place - no concrete - 1.5 ft vertical x 2 ft wide x 43 ft long
294 + 00	TO 296 + 00	HC / Brittle material, 2-ft wide starting from bottom - intermittent - 200 ft long
295 + 00	TO 297 + 00	HC / Brittle material, 6 ft wide starting 6 ft from waterline - not as advanced as previous 400 ft - 200 ft long
298 + 00	TO 300 + 00	HC / Brittle material, 3-ft wide starting from bottom - intermittent - not too defined - 200 ft long
345 + 95	TO 346 + 30	Void / Undermining under repair west side of discharge chute typically 1 ft pen., but up to 3 ft. - 35 ft repair length - non-secured grout bags used on downstream end have sloughed away down the slope
346 + 40	TO 346 + 60	Void / Undermining under repair west side of discharge chute less penetration - up to 1 ft - 20 ft repair length - non-secured grout bags used on downstream end have sloughed away down the slope
348 + 00		Starting to observe more "mud" up on the steps (up to 8 ft from bottom)
352 + 00	TO 358 + 00	HC / Brittle material, 4-ft wide starting from bottom - intermittently covered in silt/mud - 600 ft long
358 + 00	TO 364 + 00	HC / Brittle material, 6-ft wide starting from bottom - more advanced than last 600 feet - intermittently covered in silt/mud - 600 ft long
352 + 00	TO 364 + 00	Erosion / Missing steps / Pitting - upper three steps - intermittent - not as brittle as lower HC typically has been, but it is eroding and breaking away. First 600 feet worse than last 600 feet
240 + 00	TO 280 + 00	Band of decaying, loose vegetation, 2- to 4-ft wide along bottom or 2nd from bottom step - hampers visual inspection - 4000 ft
280 + 00	TO 291 + 00	Band of decaying, loose vegetation, 2- to 4-ft wide along bottom or 2nd from bottom step - more sporadic - hampers visual inspection - 1100 ft
291 + 00	TO	Band of decaying, loose vegetation, Little to none observed beyond 291+00

APPENDIX D

Soil-Cement Core Logs

Manatee Cooling Pond Soil-Cement Core Logs

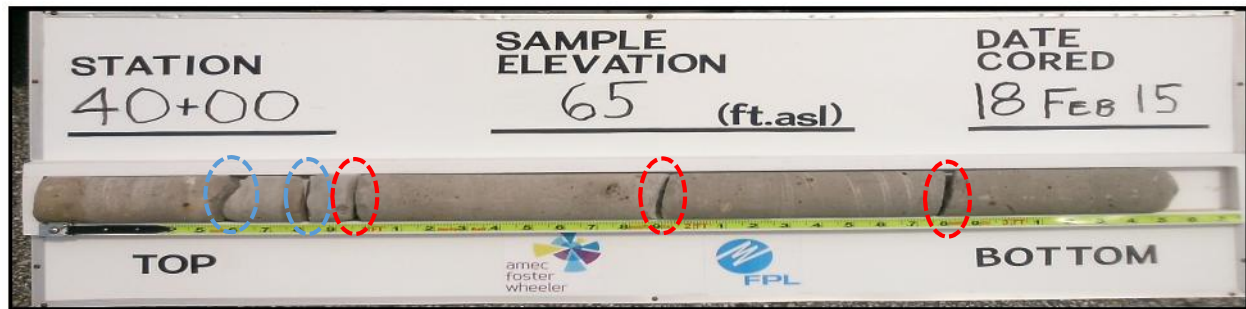


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 40+00



Core ID:	40+00 (top)	Date Cored:	2/18/15
Core Elevation:	65' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	3.5	SC Thickness (ft):	3.5
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

Location: STA 40+00



Core ID:	40+00 (middle)	Date Cored:	2/23/15
Core Elevation:	59' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	3	SC Thickness (ft):	3.16
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

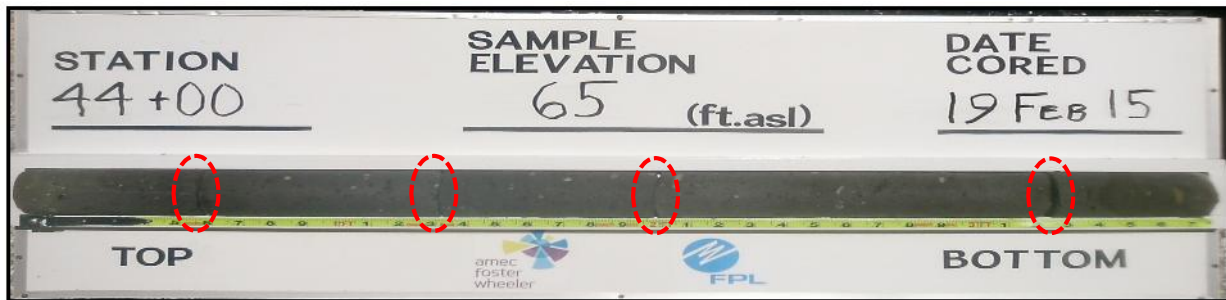


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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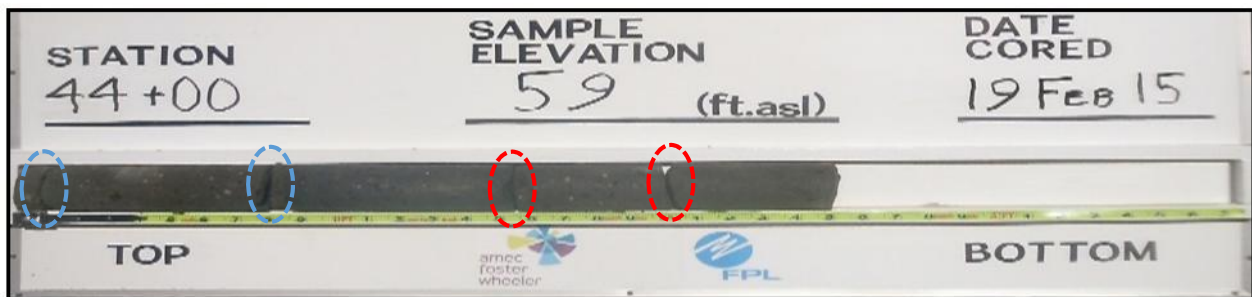
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 44+00



Core ID:	44+00 (top)	Date Cored:	2/19/15
Core Elevation:	65' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	3.71	SC Thickness (ft):	3.71
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 44+00



Core ID:	44+00 (middle)	Date Cored:	2/19/15
Core Elevation:	59' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.5
RQD (%):	94	Void Depth (ft):	N/A
Notes:			

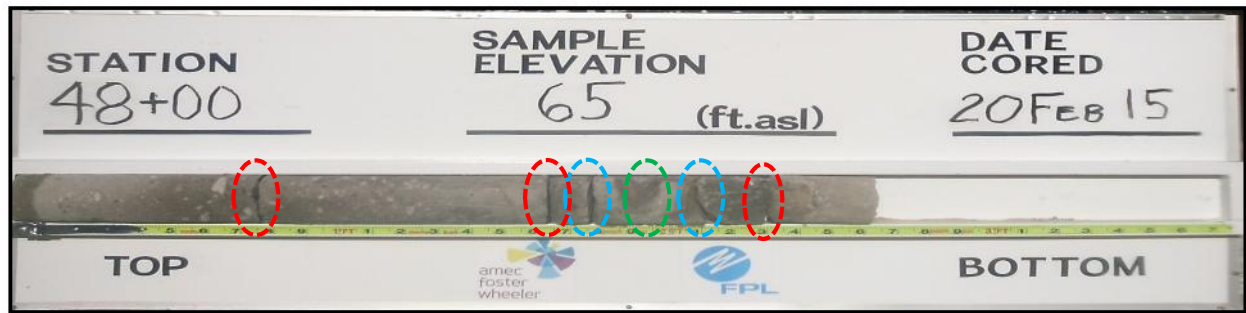
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 48+00



Core ID:	48+00 (top)	Date Cored:	2/20/15
Core Elevation:	65' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	76	Void Depth (ft):	N/A
Notes:	Plant material in core at 1.75 to 2.1 feet		

Location: STA 48+00



Core ID:	48+00 (mid)	Date Cored:	2/23/15
Core Elevation:	59' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

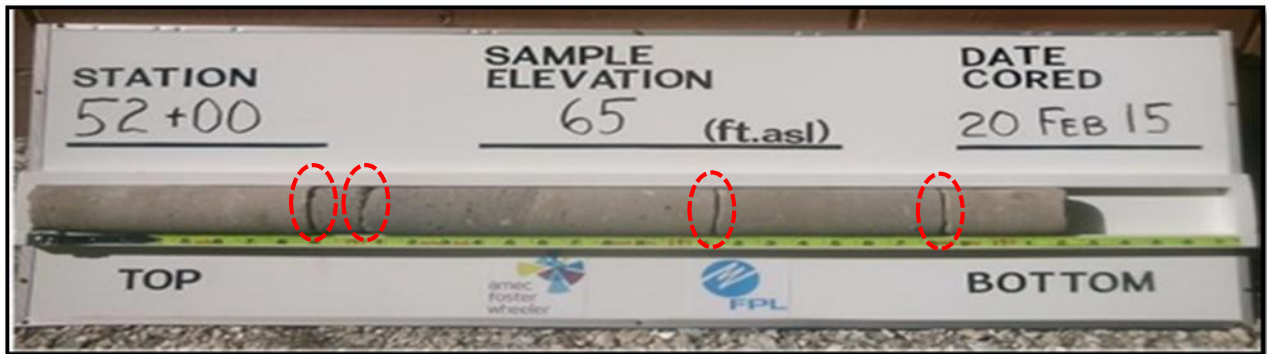
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

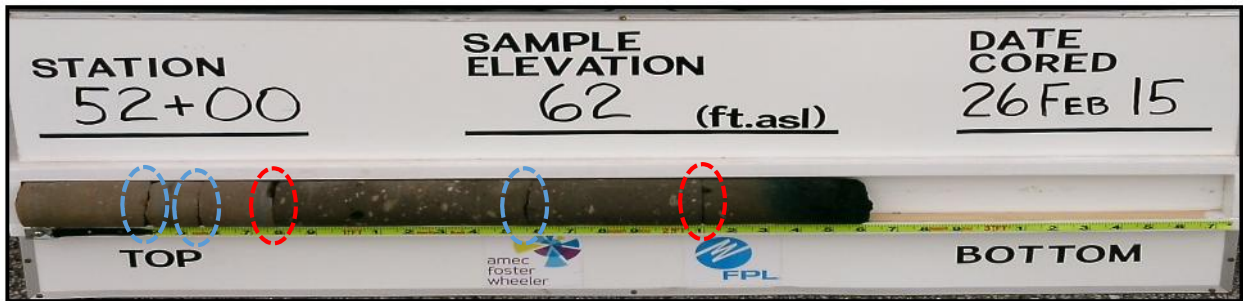
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 52+00



Core ID:	52+00 (top)	Date Cored:	2/20/15
Core Elevation:	65' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	3.2	SC Thickness (ft):	3.2
RQD (%):	95	Void Depth (ft):	N/A
Notes:			

Location: STA 52+00



Core ID:	52+00 (middle)	Date Cored:	2/26/15
Core Elevation:	62' ASL	Date Photographed:	2/26/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	85	Void Depth (ft):	0.05
Notes:			

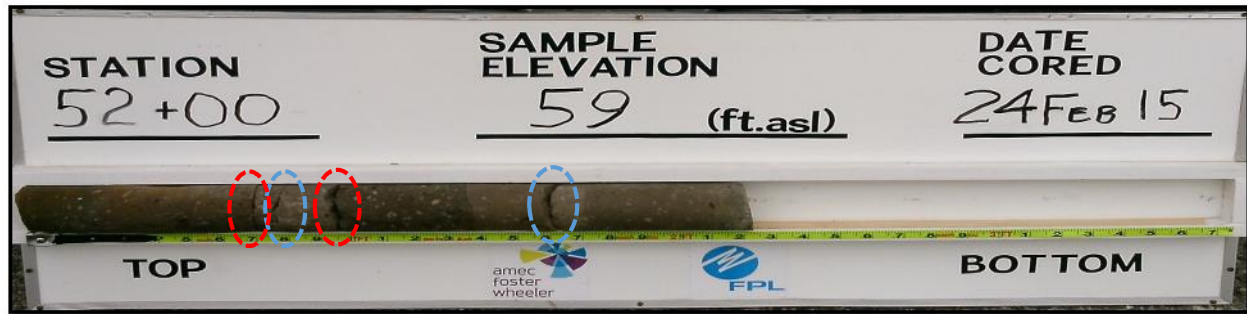
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 52+00



Core ID:	52+00 (bottom)	Date Cored:	2/20/15
Core Elevation:	59' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	2.22	SC Thickness (ft):	2.92
RQD (%):	87	Void Depth (ft):	0.70
Notes:			

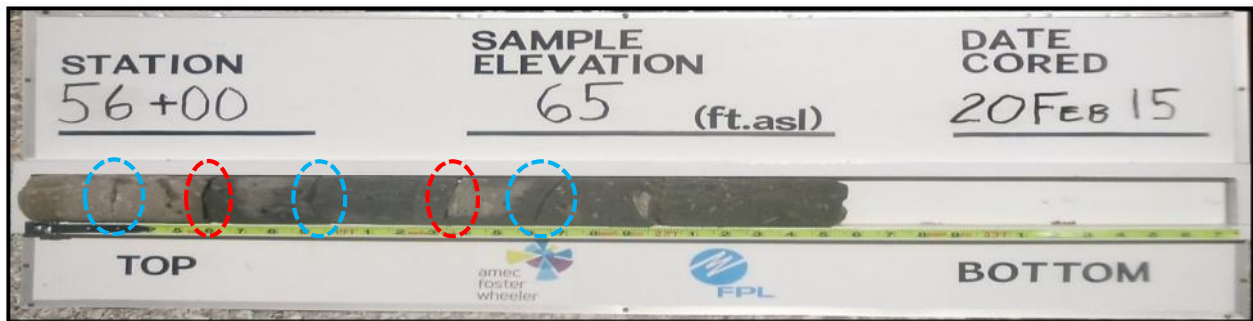
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 56+00



Core ID:	56+00 (top)	Date Cored:	2/20/15
Core Elevation:	65' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.55
RQD (%):	66	Void Depth (ft):	N/A
Notes:			

Location: STA 56+00



Core ID:	56+00 (middle)	Date Cored:	2/26/15
Core Elevation:	62' ASL	Date Photographed:	2/26/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.92
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 56+00



Core ID:	56+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.55
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

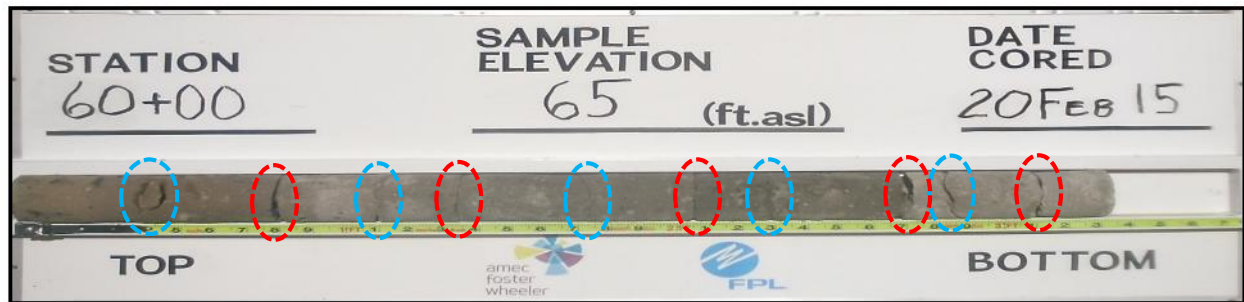


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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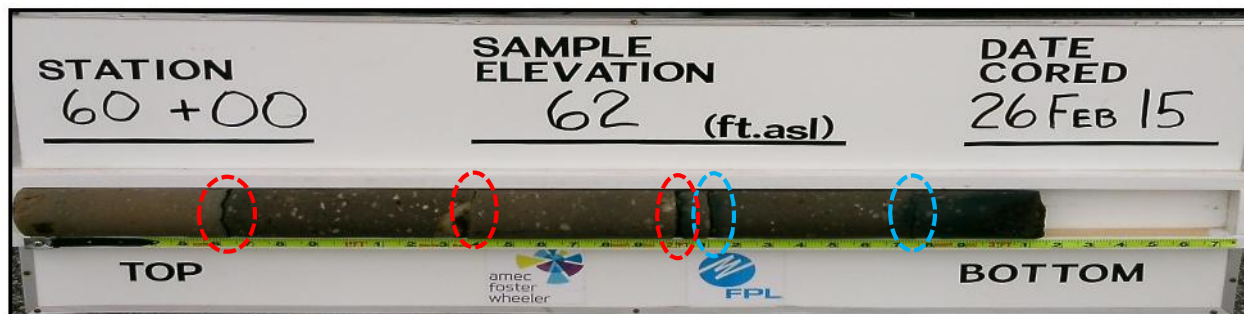
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 60+00



Core ID:	60+00 (top)	Date Cored:	2/20/15
Core Elevation:	65' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	3.3	SC Thickness (ft):	3.3
RQD (%):	48	Void Depth (ft):	N/A
Notes:	Small void observed at first fracture from top		

Location: STA 60+00



Core ID:	60+00 (middle)	Date Cored:	2/20/15
Core Elevation:	62' ASL	Date Photographed:	2/22/15
Recovered Length (ft):	3.15	SC Thickness (ft):	3.15
RQD (%):	97	Void Depth (ft):	N/A
Notes:	Void observed at second mechanical break from top		

Manatee Cooling Pond Soil-Cement Core Logs



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Amec FW Staff: Derek Richcreek

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Location: STA 48+00






Core ID:	60+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	2.18	SC Thickness (ft):	2.5
RQD (%):	89	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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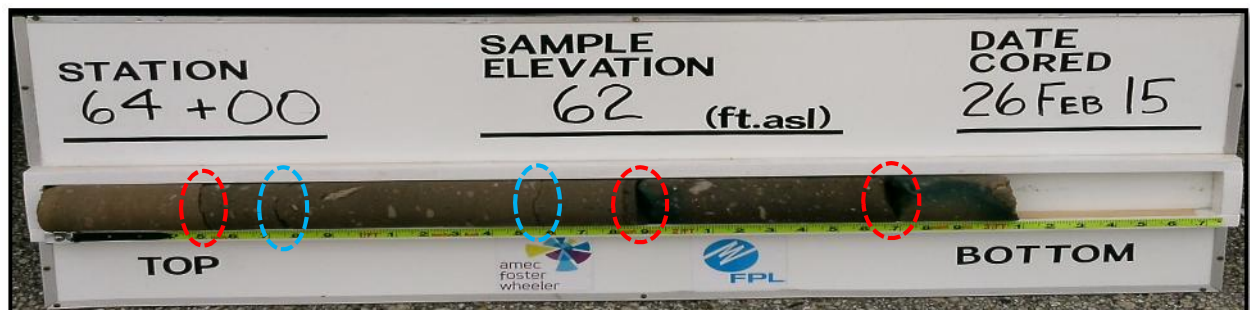
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 64+00



Core ID:	64+00 (top)	Date Cored:	2/24/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	3.15	SC Thickness (ft):	3.15
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Clay nodules observed at bottom of core		

Location: STA 64+00



Core ID:	64+00 (middle)	Date Cored:	2/26/15
Core Elevation:	62' ASL	Date Photographed:	2/26/15
Recovered Length (ft):	3.1	SC Thickness (ft):	3.1
RQD (%):	90	Void Depth (ft):	N/A
Notes:			

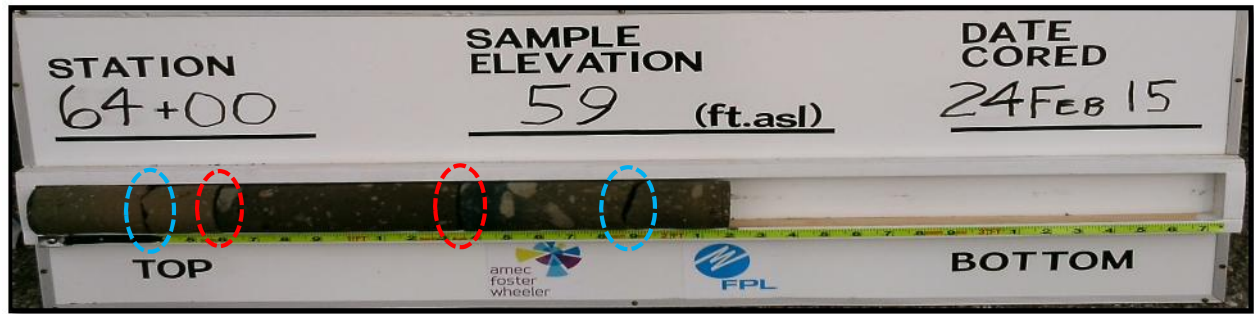
Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 64+00



Core ID:	64+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.5
RQD (%):	78	Void Depth (ft):	N/A
Notes:			

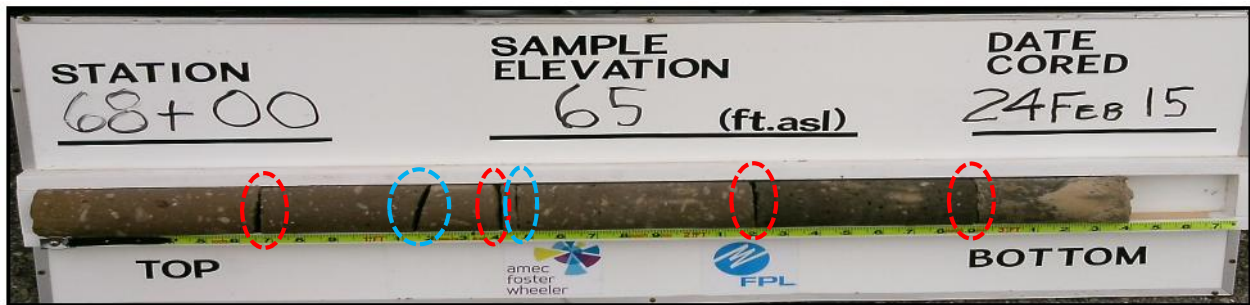
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

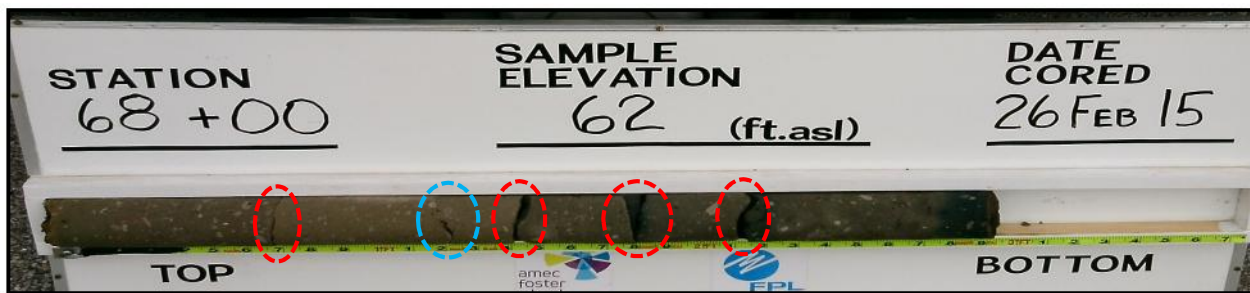
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 68+00



Core ID:	69+00 (top)	Date Cored:	2/24/15
Core Elevation:	65' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	3.4	SC Thickness (ft):	3.4
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

Location: STA 68+00



Core ID:	68+00 (middle)	Date Cored:	2/26/15
Core Elevation:	62' ASL	Date Photographed:	2/26/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	83	Void Depth (ft):	N/A
Notes:			

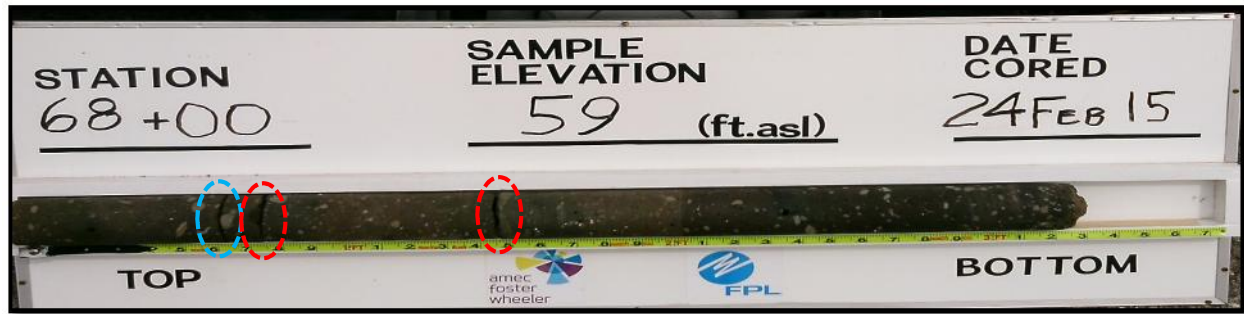
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 68+00



Core ID:	68+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/24/15
Recovered Length (ft):	3.22	SC Thickness (ft):	3.33
RQD (%):	96	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

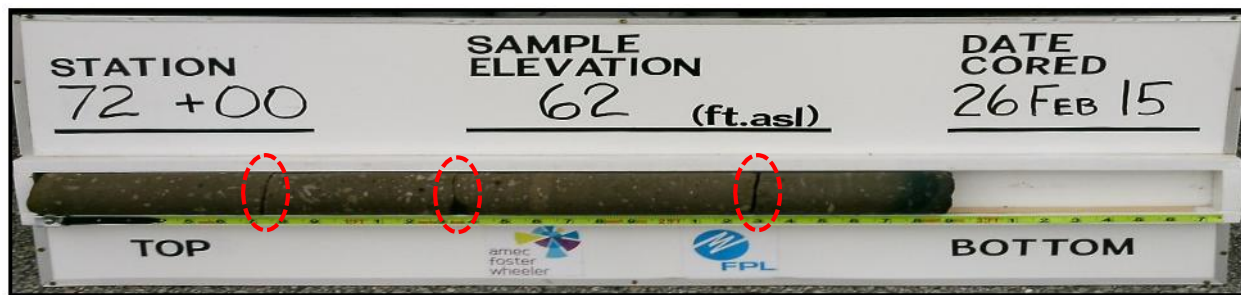
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 72+00



Core ID:	72+00 (top)	Date Cored:	2/24/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Clay nodule located below second mechanical break from top		

Location: STA 72+00



Core ID:	72+00 (middle)	Date Cored:	2/26/15
Core Elevation:	62' ASL	Date Photographed:	2/26/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 72+00



Core ID:	72+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.65	SC Thickness (ft):	2.65
RQD (%):	85	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 76+00



Core ID:	76+00 (top)	Date Cored:	2/24/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.05
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

Location: STA 76+00



Core ID:	76+00 (middle)	Date Cored:	2/26/15
Core Elevation:	62' ASL	Date Photographed:	2/26/15
Recovered Length (ft):	3.2	SC Thickness (ft):	3.2
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

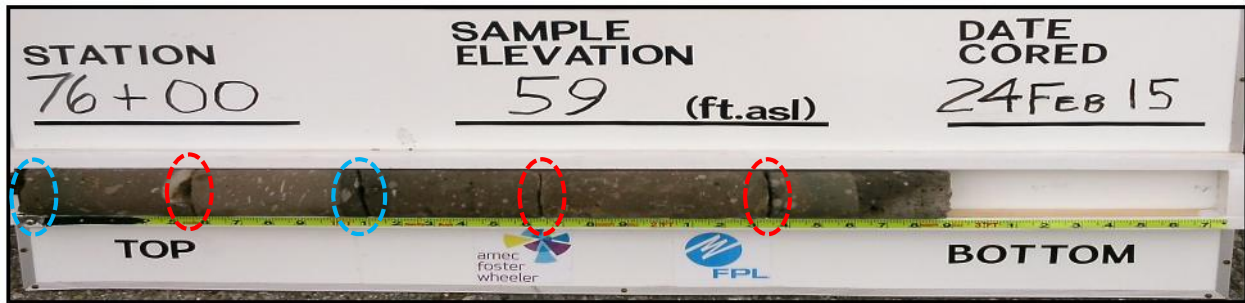
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 76+00



Core ID:	76+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.88	SC Thickness (ft):	3.5
RQD (%):	98	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

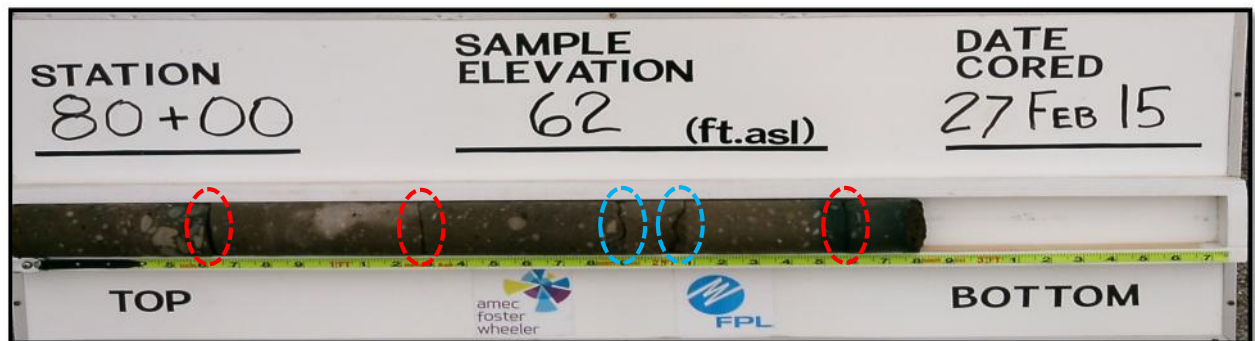
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 80+00



Core ID:	80+00 (top)	Date Cored:	2/24/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.96	SC Thickness (ft):	2.96
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 80+00



Core ID:	80+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	86	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 80+00






Core ID:	80+00 (bottom)	Date Cored:	2/24/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.55	SC Thickness (ft):	3.08
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

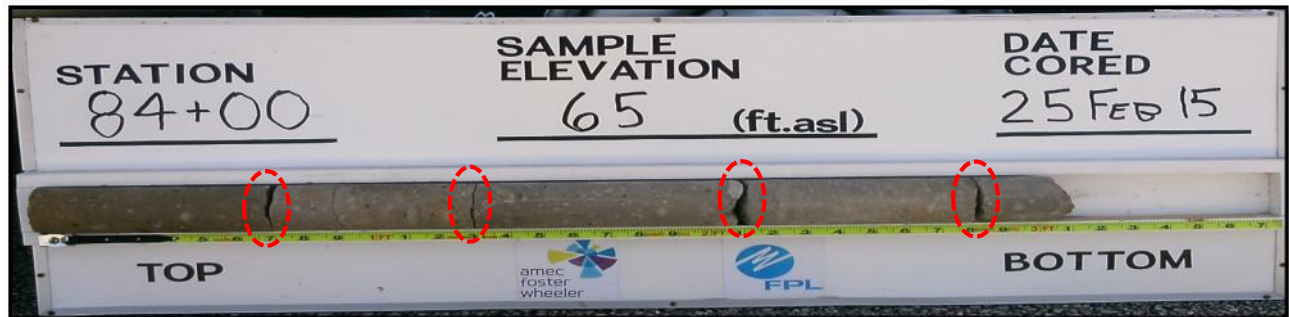


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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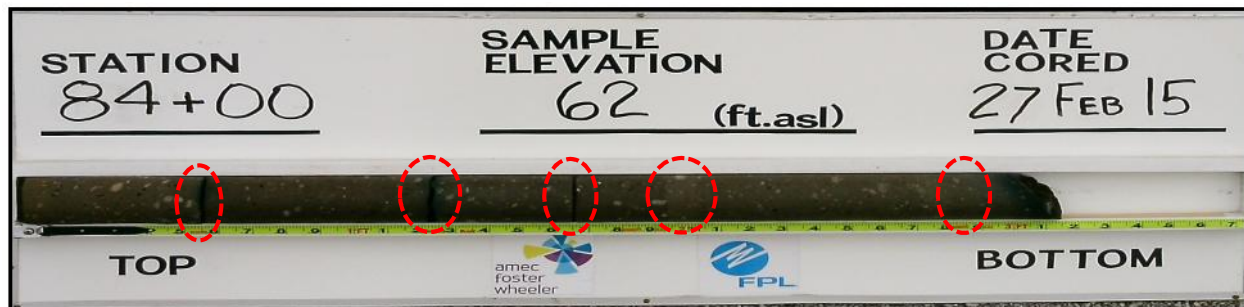
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 84+00



Core ID:	84+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	3.1	SC Thickness (ft):	3.1
RQD (%):	94	Void Depth (ft):	N/A
Notes:			

Location: STA 84+00



Core ID:	84+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	3.15	SC Thickness (ft):	3.15
RQD (%):	90	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 84+00



Core ID:	84+00 (bottom)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	3.1	SC Thickness (ft):	3.1
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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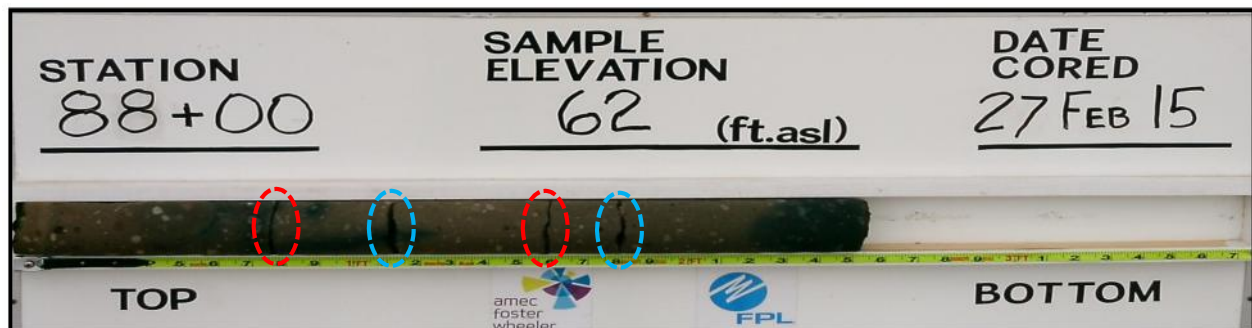
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 88+00



Core ID:	88+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.95	SC Thickness (ft):	2.96
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 88+00



Core ID:	88+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.51	SC Thickness (ft):	2.51
RQD (%):	92	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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wheeler

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 88+00






Core ID:	88+00 (bottom)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 92+00



Core ID:	92+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	3.16	SC Thickness (ft):	3.16
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 92+00



Core ID:	92+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

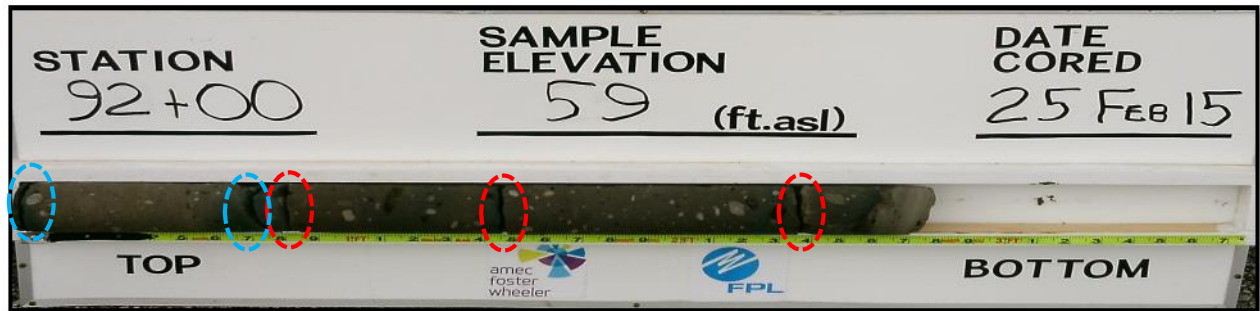
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 92+00






Core ID:	92+00 (bottom)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.73	SC Thickness (ft):	2.73
RQD (%):	95	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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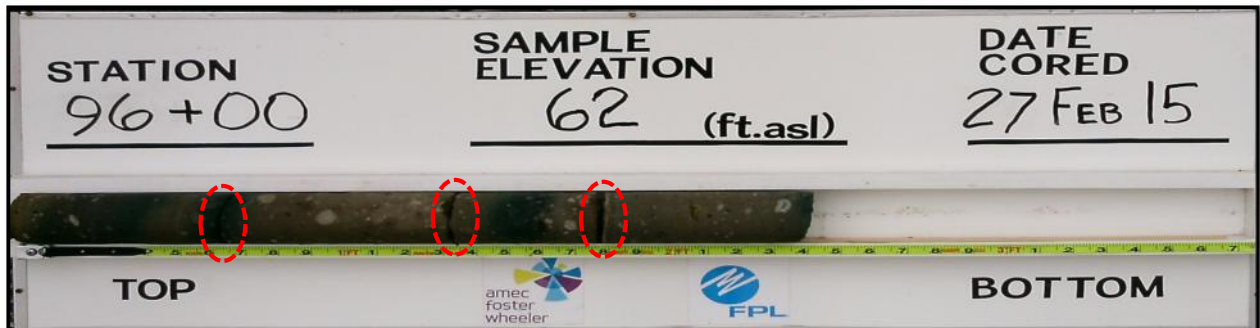
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 96+00



Core ID:	96+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 96+00



Core ID:	96+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.4
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 96+00



Core ID:	96+00 (bottom)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.82	SC Thickness (ft):	2.82
RQD (%):	74	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

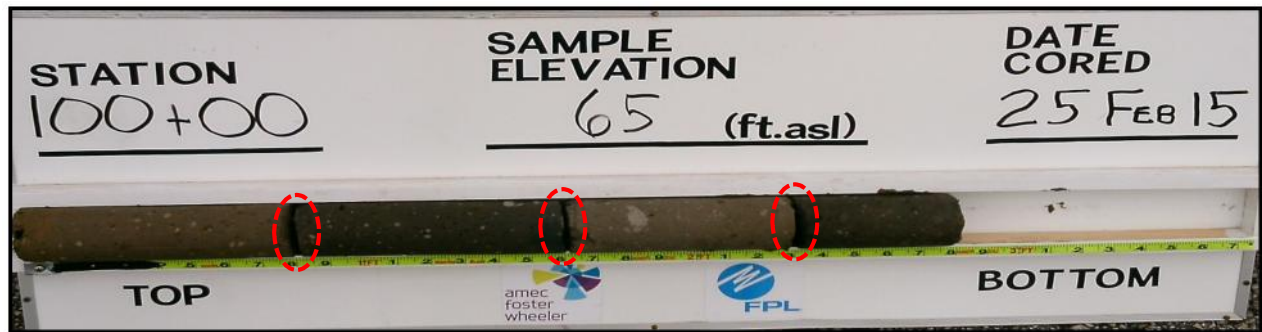


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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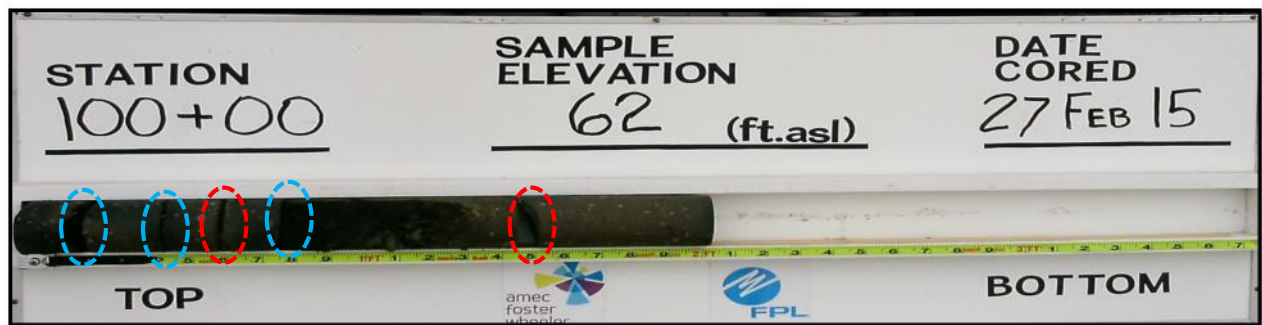
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 100+00



Core ID:	100+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 100+00



Core ID:	100+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.02	SC Thickness (ft):	2.02
RQD (%):	29	Void Depth (ft):	N/A
Notes:			

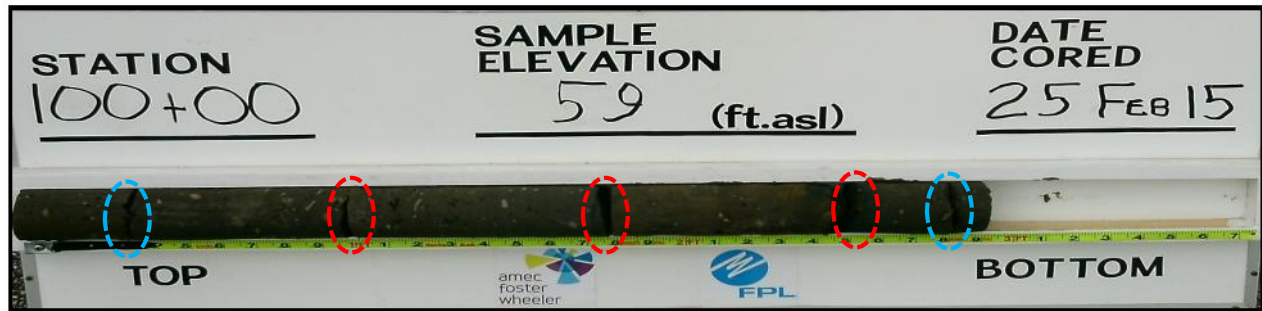
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 100+00



Core ID:	100+00 (bottom)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	97	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 104+00



Core ID:	104+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.25
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 104+00



Core ID:	104+00 (middle)	Date Cored:	2/27/15
Core Elevation:	62' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.5
RQD (%):	92	Void Depth (ft):	N/A
Notes:			

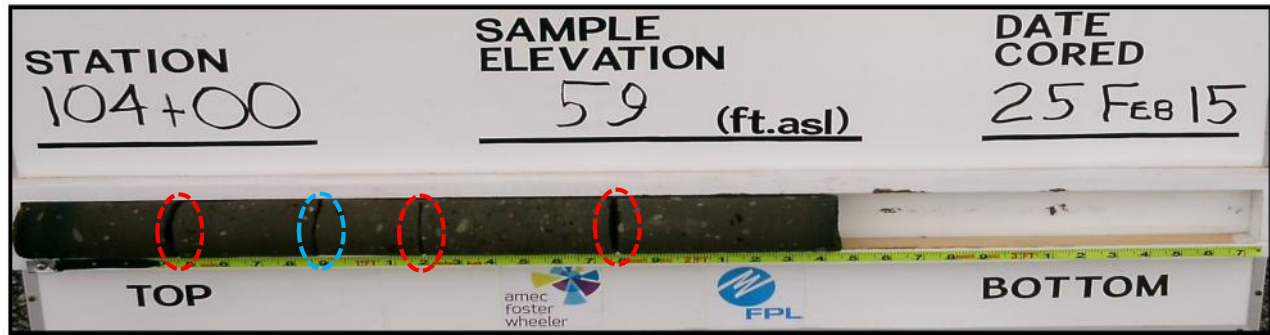
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 104+00



Core ID:	104+00 (bottom)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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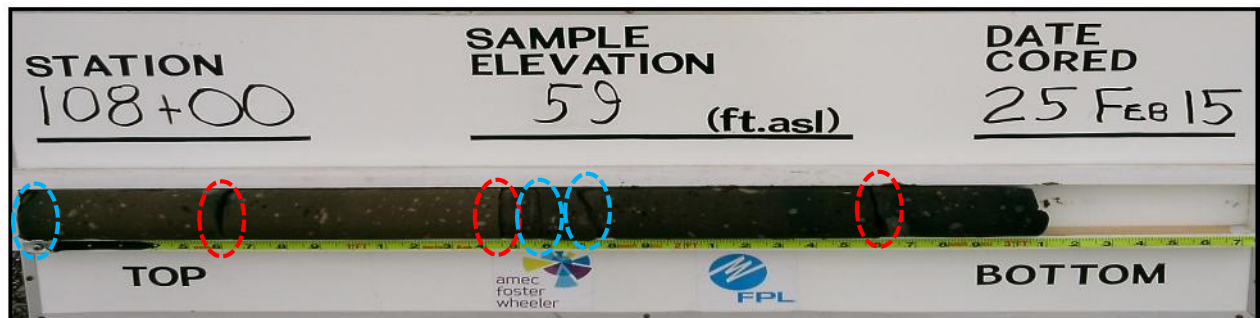
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 108+00



Core ID:	108+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.88	SC Thickness (ft):	2.88
RQD (%):	95	Void Depth (ft):	N/A
Notes:			

Location: STA 108+00



Core ID:	108+00 (middle)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.05
RQD (%):	89	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 108+00






Core ID:	108+00 (bottom)	Date Cored:	2/27/15
Core Elevation:	53' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.51	SC Thickness (ft):	2.51
RQD (%):	90	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 112+00



Core ID:	112+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	1.7	SC Thickness (ft):	1.7
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 112+00



Core ID:	112+00 (middle)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.55	SC Thickness (ft):	3.16
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Plant material 2.52 feet		

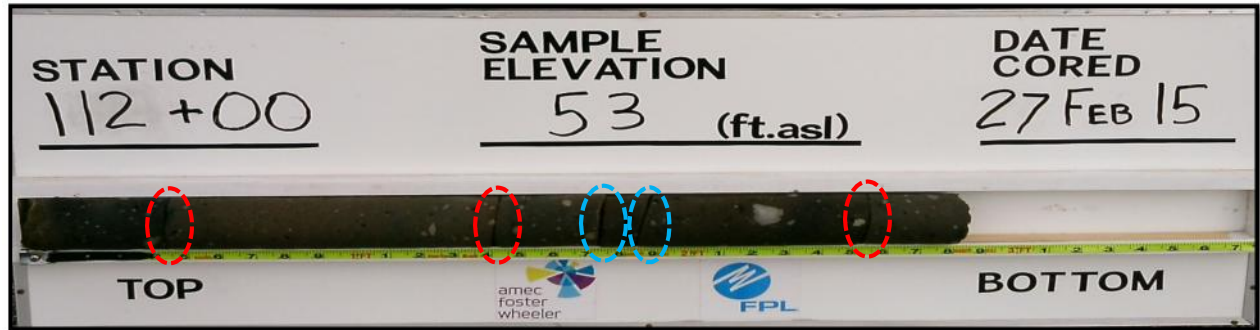
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 112+00



Core ID:	112+00 (bottom)	Date Cored:	2/27/15
Core Elevation:	53' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.8	SC Thickness (ft):	3.25
RQD (%):	74	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

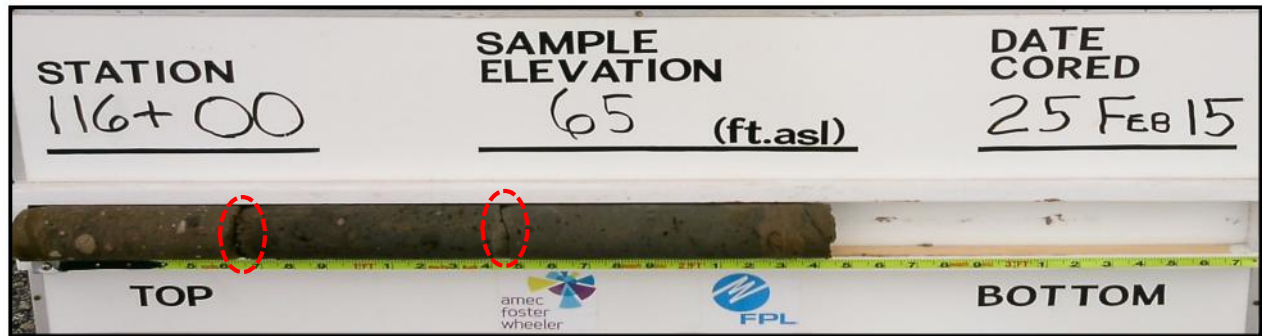


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

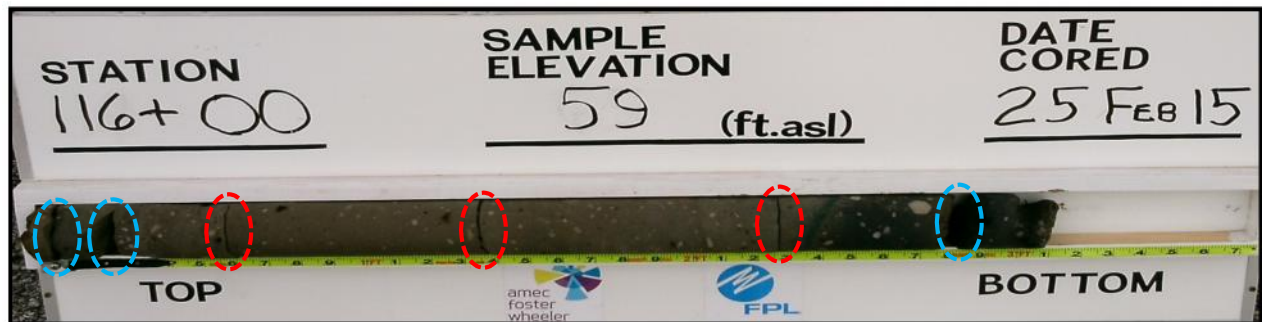
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 116+00



Core ID:	116+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.43	SC Thickness (ft):	2.43
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 116+00



Core ID:	116+00 (middle)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	3.1	SC Thickness (ft):	3.1
RQD (%):	82	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 116+00



Core ID:	116+00 (bottom)	Date Cored:	2/27/15
Core Elevation:	53' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.3
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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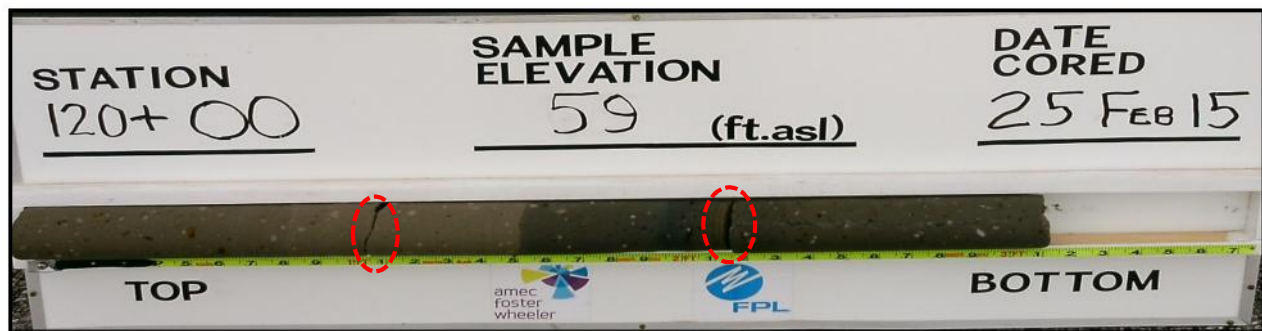
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 120+00



Core ID:	120+00 (top)	Date Cored:	2/25/15
Core Elevation:	65' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.4
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 120+00



Core ID:	120+00 (middle)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	4.0	SC Thickness (ft):	4.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 120+00



Core ID:	120+00 (mid)	Date Cored:	2/25/15
Core Elevation:	59' ASL	Date Photographed:	2/25/15
Recovered Length (ft):	4.0	SC Thickness (ft):	4.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 120+00



Core ID:	120+00 (bot)	Date Cored:	2/27/15
Core Elevation:	53' ASL	Date Photographed:	2/27/15
Recovered Length (ft):	2.15	SC Thickness (ft):	3.0
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

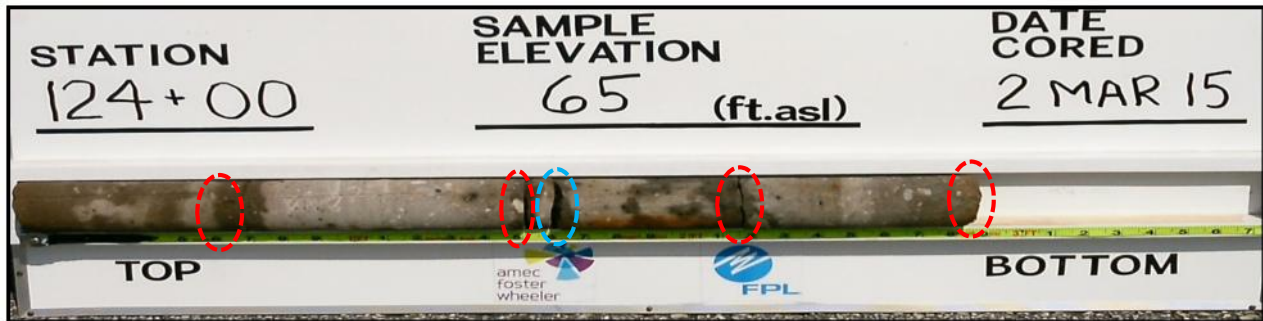


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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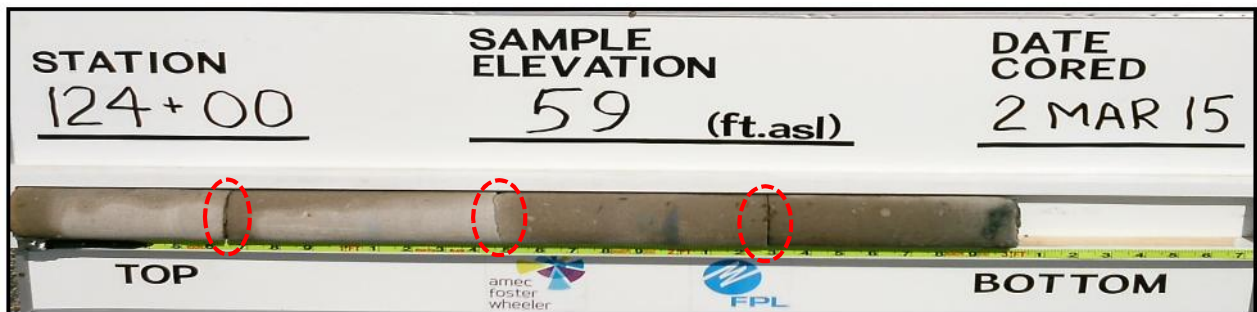
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 124+00



Core ID:	124+00 (top)	Date Cored:	3/2/15
Core Elevation:	65' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.82	SC Thickness (ft):	2.82
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Location: STA 124+00



Core ID:	124+00 (middle)	Date Cored:	3/2/15
Core Elevation:	59' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	3.0	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 124+00



Core ID:	124+00 (bottom)	Date Cored:	3/2/15
Core Elevation:	53' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.3
RQD (%):	70	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

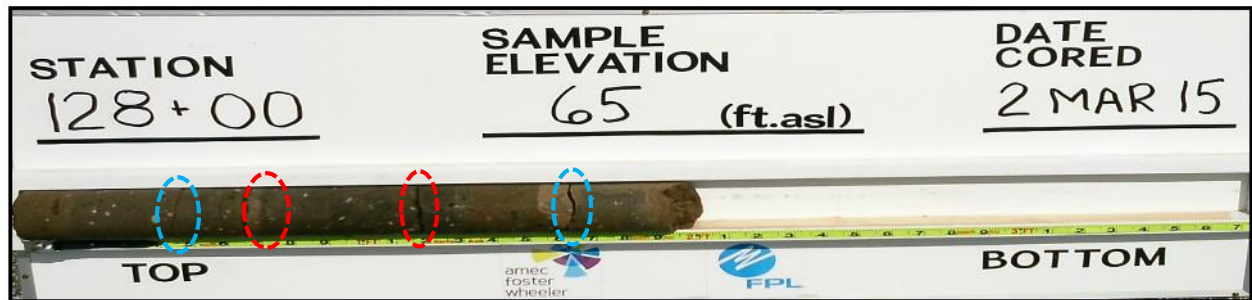


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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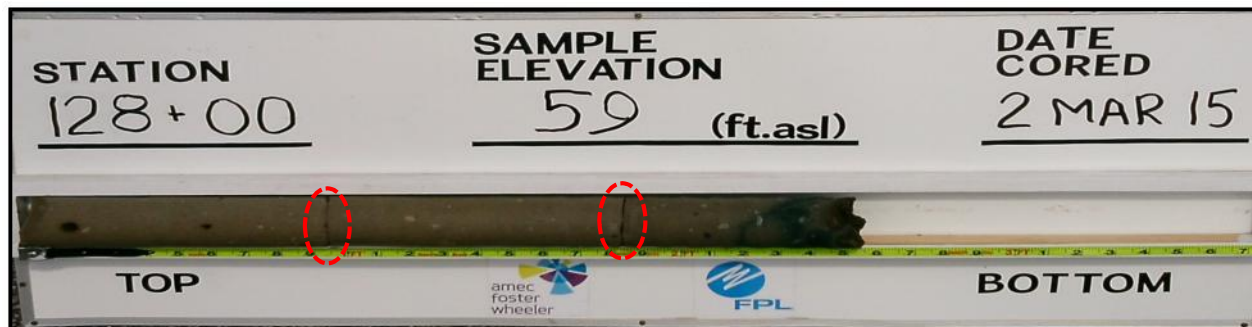
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 128+00



Core ID:	128+00 (top)	Date Cored:	3/2/15
Core Elevation:	65' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.0
RQD (%):	90	Void Depth (ft):	N/A
Notes:			

Location: STA 128+00



Core ID:	128+00 (middle)	Date Cored:	3/2/15
Core Elevation:	59' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.97
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

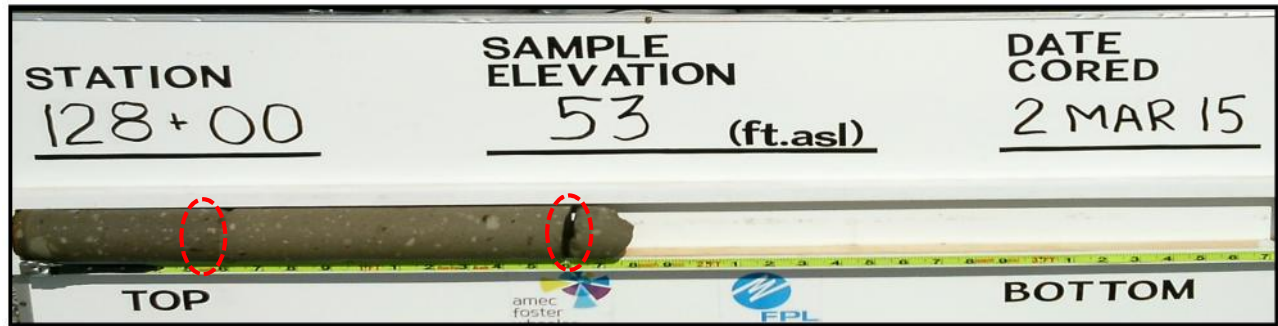
Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 128+00



Core ID:	128+00 (bottom)	Date Cored:	3/2/15
Core Elevation:	53' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.0
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

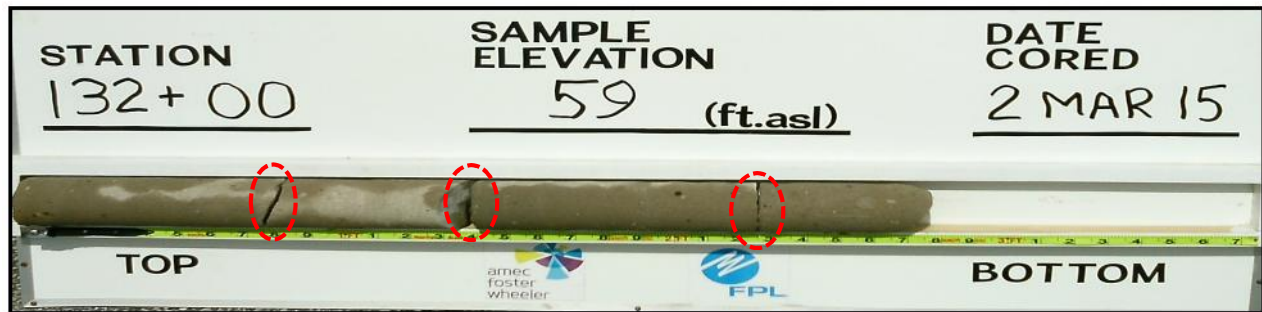
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 132+00



Core ID:	132+00 (top)	Date Cored:	3/2/15
Core Elevation:	65' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	84	Void Depth (ft):	N/A
Notes:			

Location: STA 132+00



Core ID:	128+00 (middle)	Date Cored:	3/2/15
Core Elevation:	59' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

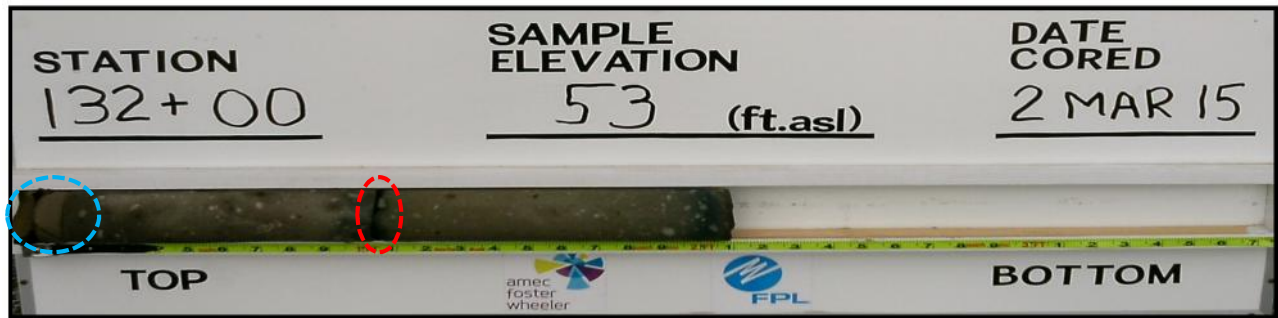
Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 132+00



Core ID:	132+00 (bottom)	Date Cored:	3/2/15
Core Elevation:	53' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.5
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

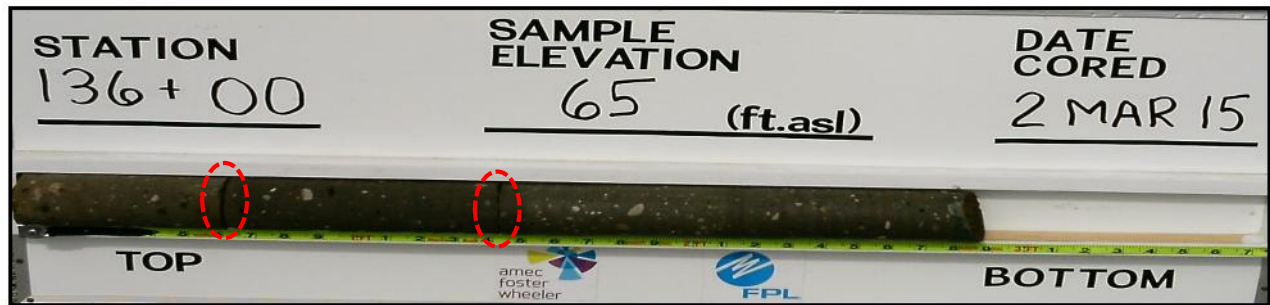


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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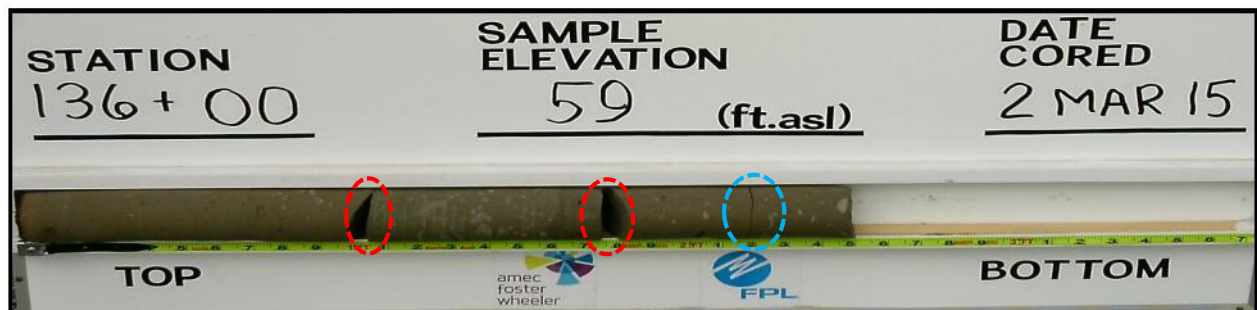
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 136+00



Core ID:	136+00 (top)	Date Cored:	3/2/15
Core Elevation:	65' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.85	SC Thickness (ft):	2.85
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 136+00



Core ID:	136+00 (middle)	Date Cored:	3/2/15
Core Elevation:	59' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 136+00



Core ID:	136+00 (bottom)	Date Cored:	3/2/15
Core Elevation:	53' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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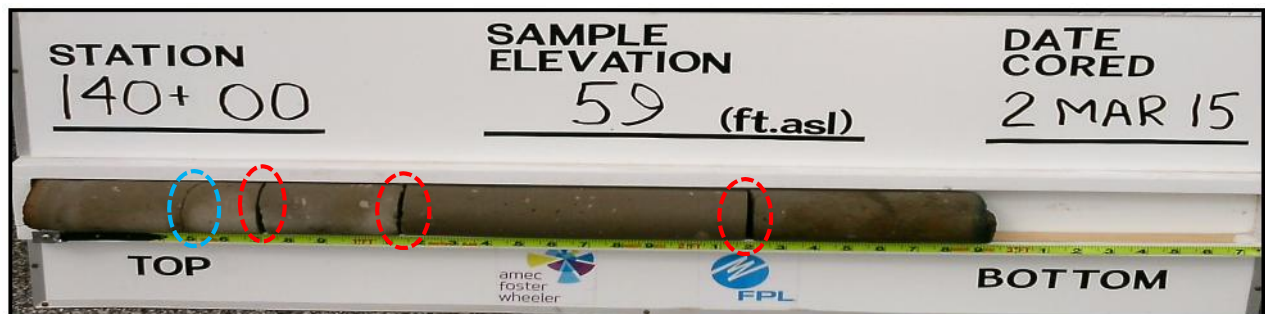
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 140+00



Core ID:	140+00 (top)	Date Cored:	3/2/15
Core Elevation:	65' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.55
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 140+00



Core ID:	140+00 (middle)	Date Cored:	3/2/15
Core Elevation:	59' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 140+00



Core ID:	140+00 (bottom)	Date Cored:	3/2/15
Core Elevation:	53' ASL	Date Photographed:	3/2/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

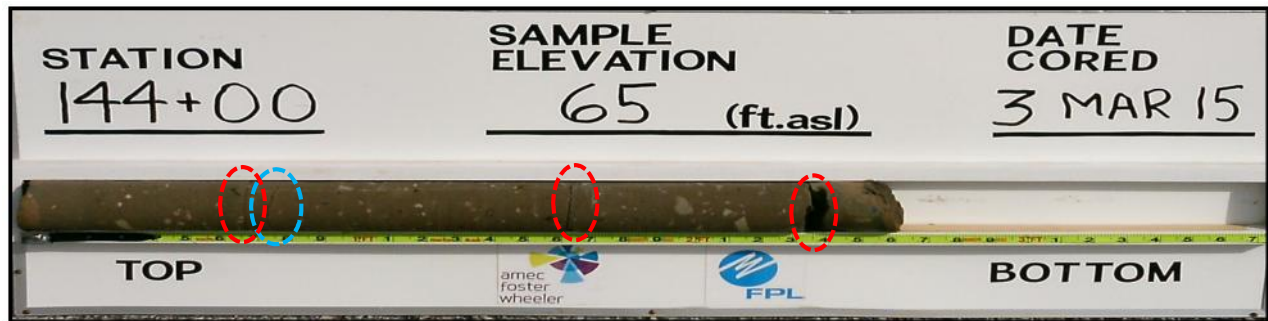


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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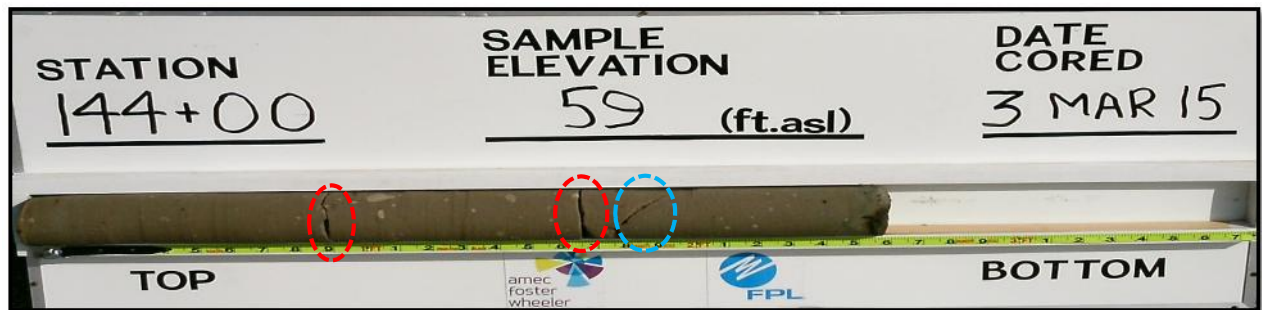
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 144+00



Core ID:	144+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.75
RQD (%):	86	Void Depth (ft):	N/A
Notes:			

Location: STA 144+00



Core ID:	144+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.75
RQD (%):	92	Void Depth (ft):	N/A
Notes:			

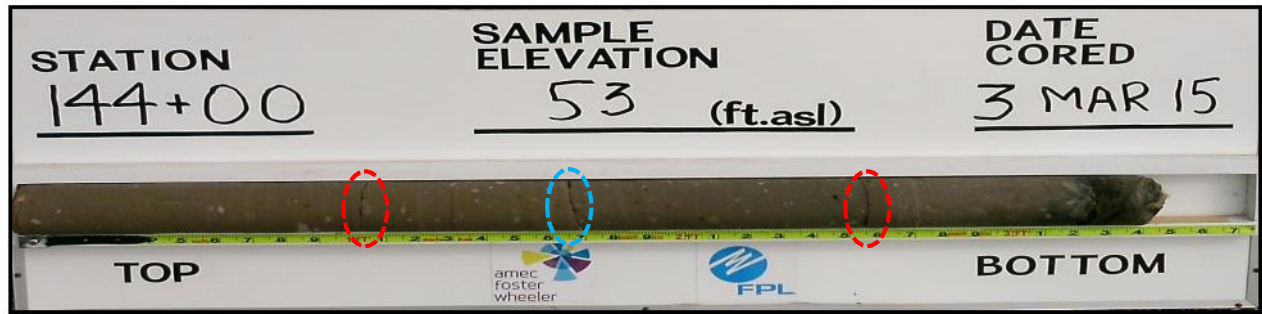
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 144+00



Core ID:	144+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	3.4	SC Thickness (ft):	3.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 148+00



Core ID:	148+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 148+00



Core ID:	148+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	3.1	SC Thickness (ft):	3.1
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Native soil from 3.1 to 3.5 feet		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 148+00






Core ID:	148+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.95	SC Thickness (ft):	3.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

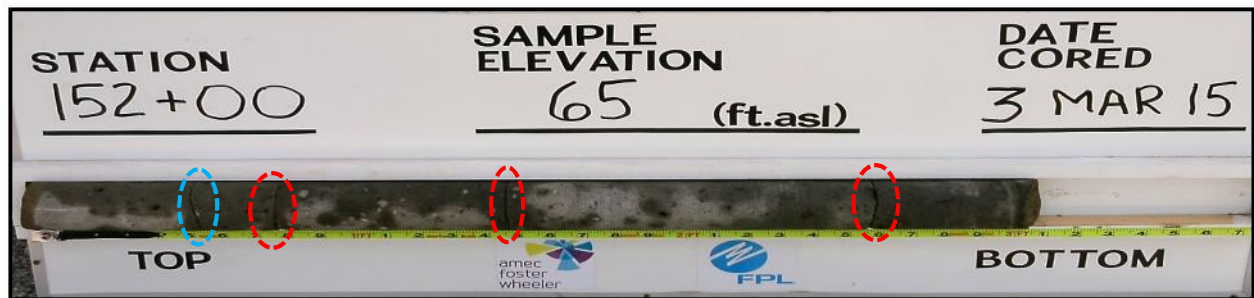


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 152+00



Core ID:	152+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.05
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

Location: STA 152+00



Core ID:	152+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.96	SC Thickness (ft):	3.25
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

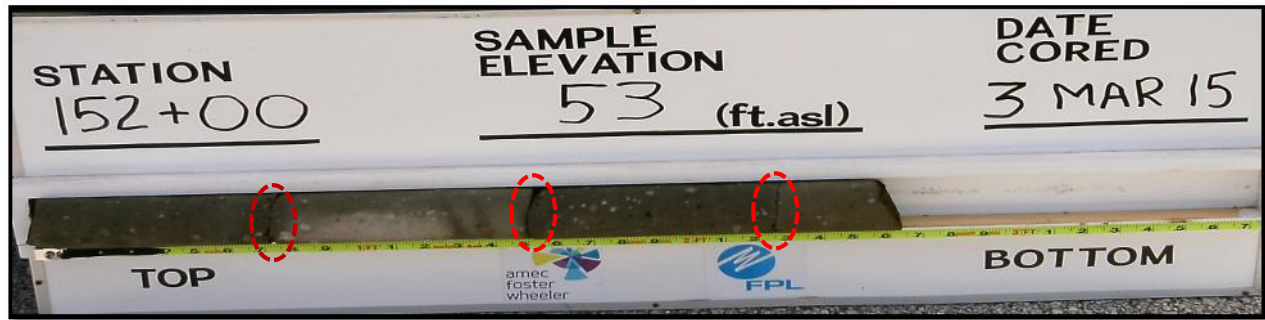
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 152+00



Core ID:	152+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.62	SC Thickness (ft):	3.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 156+00



Core ID:	156+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 156+00



Core ID:	156+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.7
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 156+00



Core ID:	156+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	1.9	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Section broke off exposing plant matter		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

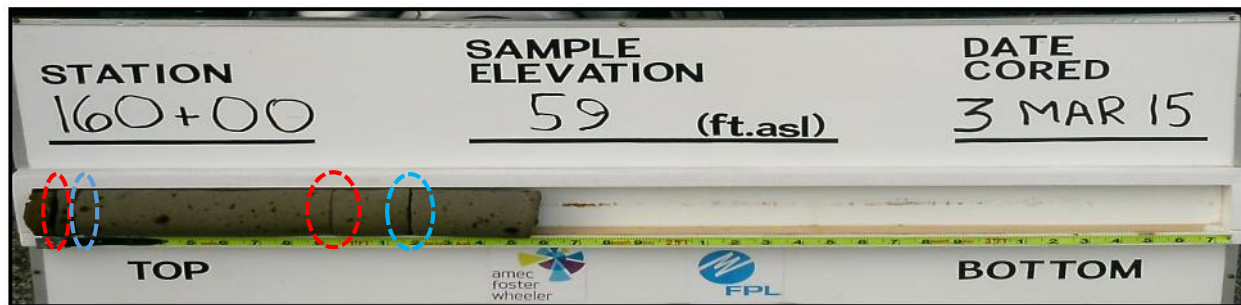
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 160+00



Core ID:	160+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	3	SC Thickness (ft):	3
RQD (%):	86	Void Depth (ft):	N/A
Notes:	Piece of core missing following last mechanical break		

Location: STA 160+00



Core ID:	160+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	1.55	SC Thickness (ft):	1.55
RQD (%):	95	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 160+00



Core ID:	160+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/3/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

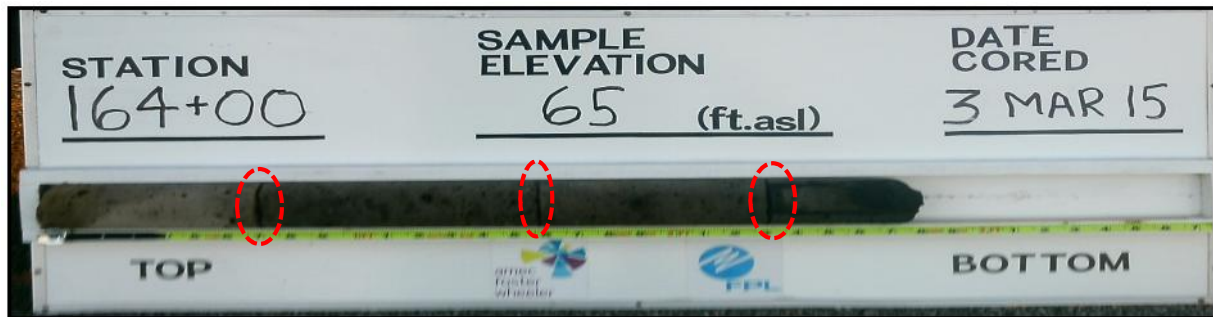
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 164+00



Core ID:	164+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 164+00



Core ID:	164+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.15	SC Thickness (ft):	3.5
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Location: STA 164+00



Core ID:	164+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

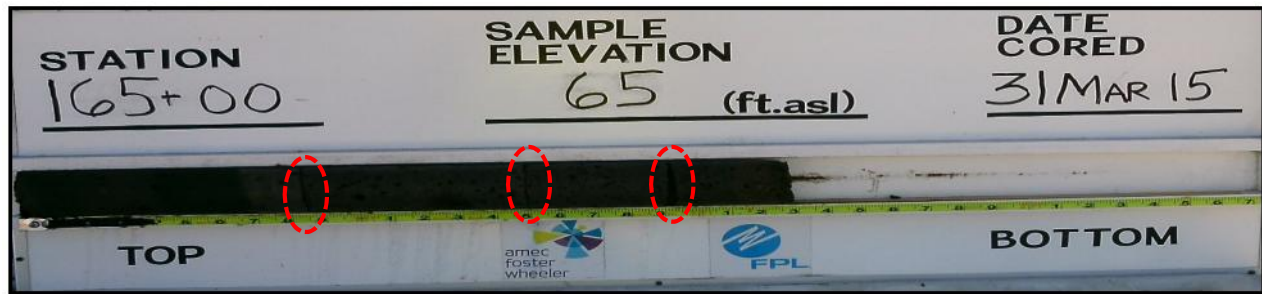


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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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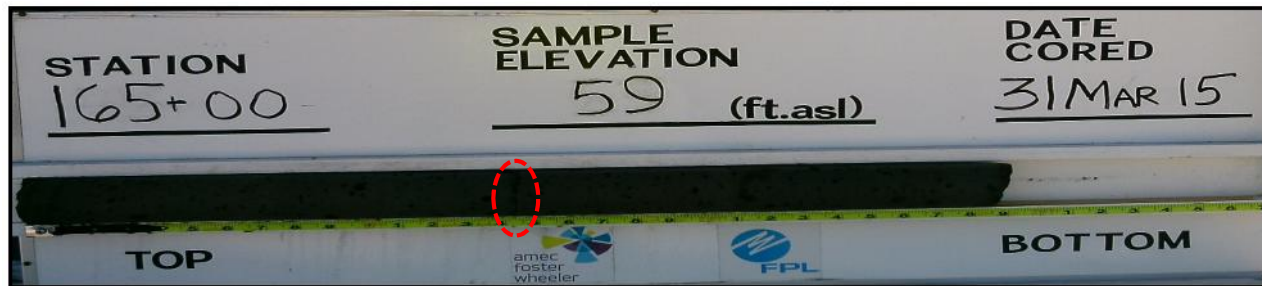
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 165+00



Core ID:	165+00 (top)	Date Cored:	3/31/15
Core Elevation:	65' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 165+00



Core ID:	165+00 (middle)	Date Cored:	3/31/15
Core Elevation:	59' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.85	SC Thickness (ft):	2.85
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

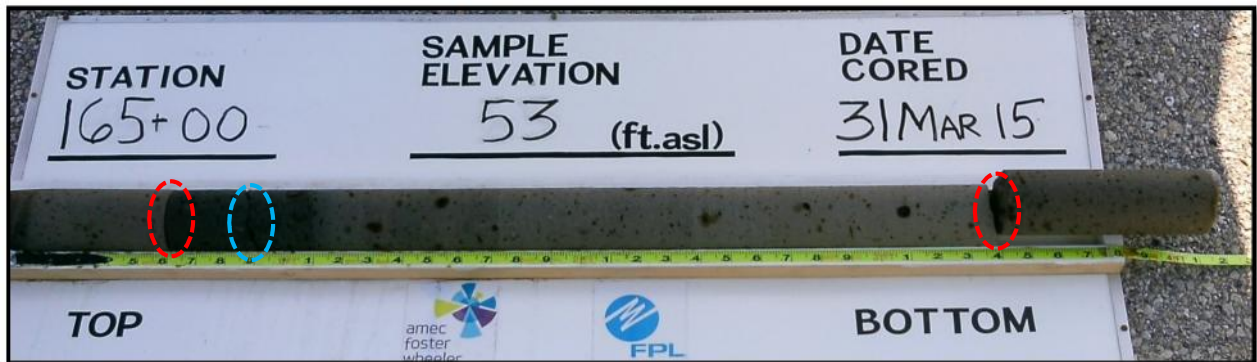
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 165+00






Core ID:	165+00 (bottom)	Date Cored:	3/31/15
Core Elevation:	53' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	4.0	SC Thickness (ft):	4.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 166+00



Core ID:	166+00 (top)	Date Cored:	3/31/15
Core Elevation:	65' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.67
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Soft material from 0.1 to 0.2 feet.		

Location: STA 166+00



Core ID:	166+00 (middle)	Date Cored:	3/31/15
Core Elevation:	59' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.9	SC Thickness (ft):	3.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 166+00



Core ID:	166+00 (bottom)	Date Cored:	3/31/15
Core Elevation:	53' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	3.15	SC Thickness (ft):	2.5
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

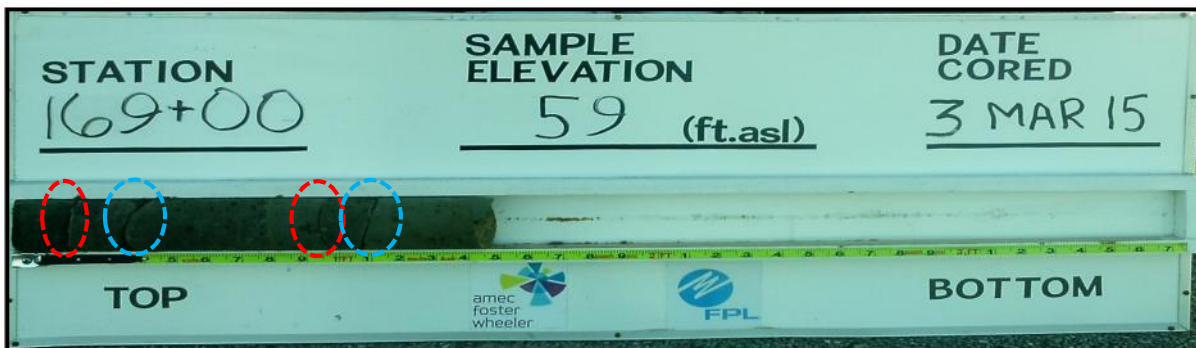
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 169+00



Core ID:	169+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.1
RQD (%):	76	Void Depth (ft):	N/A
Notes:			

Location: STA 169+00



Core ID:	169+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.45	SC Thickness (ft):	2.83
RQD (%):	69	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 169+00



Core ID:	169+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.6	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 170+00



Core ID:	170+00 (top)	Date Cored:	3/31/15
Core Elevation:	65' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.165
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 170+00



Core ID:	170+00 (middle)	Date Cored:	3/31/15
Core Elevation:	59' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.5
RQD (%):	79	Void Depth (ft):	N/A
Notes:	Entire recovered core comprised of soft material.		

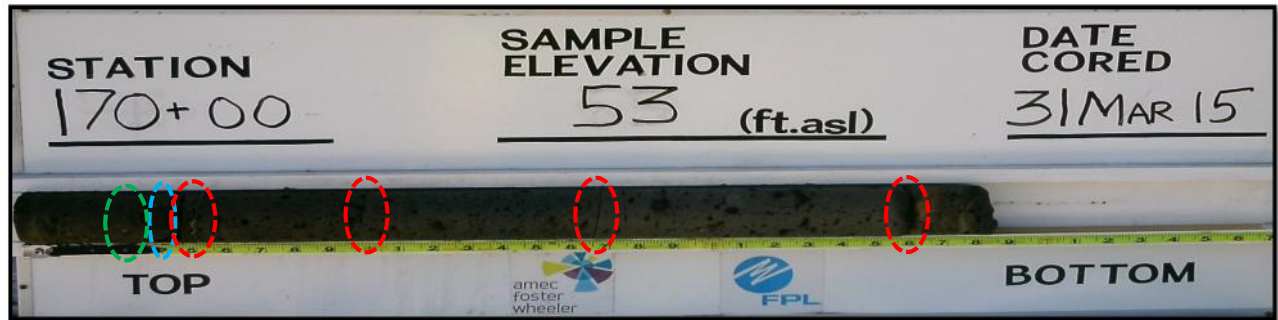
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 170+00



Core ID:	170+00 (bottom)	Date Cored:	3/31/15
Core Elevation:	53' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.55	SC Thickness (ft):	3.0
RQD (%):	98	Void Depth (ft):	N/A
Notes:	Decay vegetation at 0.35 feet. Insitu soil from 2.55 to 2.8 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

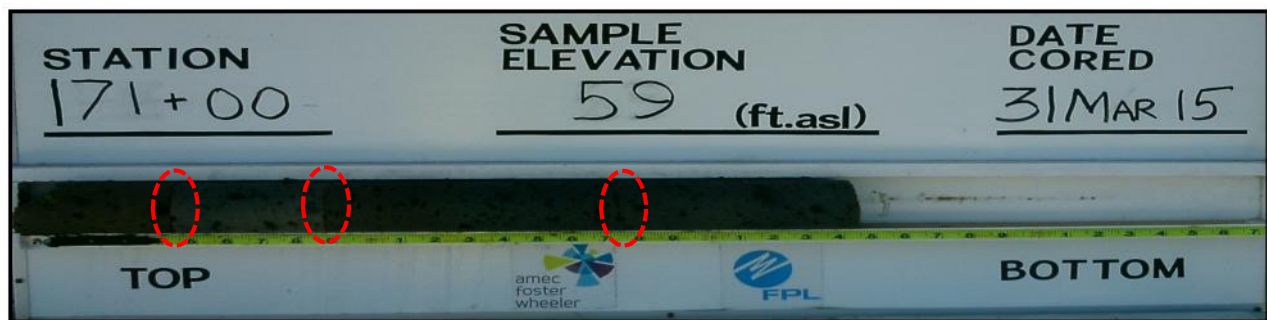
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 171+00



Core ID:	171+00 (top)	Date Cored:	3/31/15
Core Elevation:	65' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.83
RQD (%):	90	Void Depth (ft):	N/A
Notes:			

Location: STA 171+00



Core ID:	171+00 (middle)	Date Cored:	3/31/15
Core Elevation:	59' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.41	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
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Location: STA 171+00



Core ID:	171+00 (bottom)	Date Cored:	3/31/15
Core Elevation:	53' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	1.15	SC Thickness (ft):	1.5
RQD (%):	74	Void Depth (ft):	N/A
Notes:	Entire recovered core comprised of soft material.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 172+00



Core ID:	172+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.25	SC Thickness (ft):	1.5
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Location: STA 172+00



Core ID:	172+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.83
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

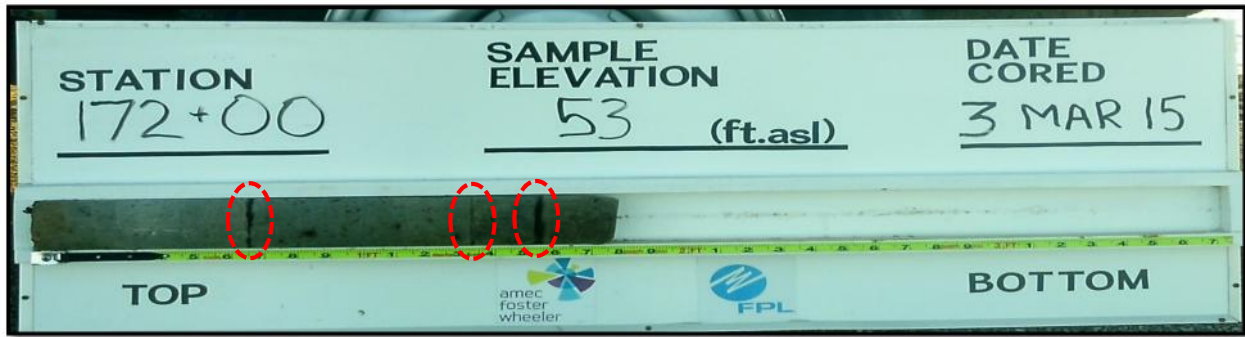
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 172+00



Core ID:	172+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.5
RQD (%):	75	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

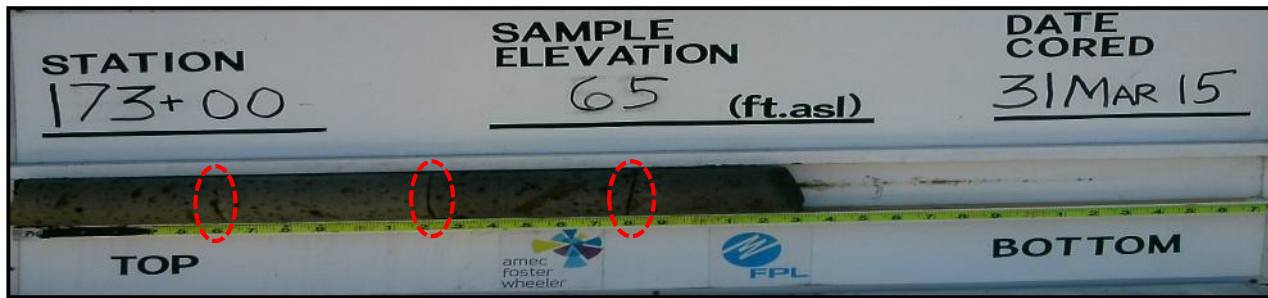


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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

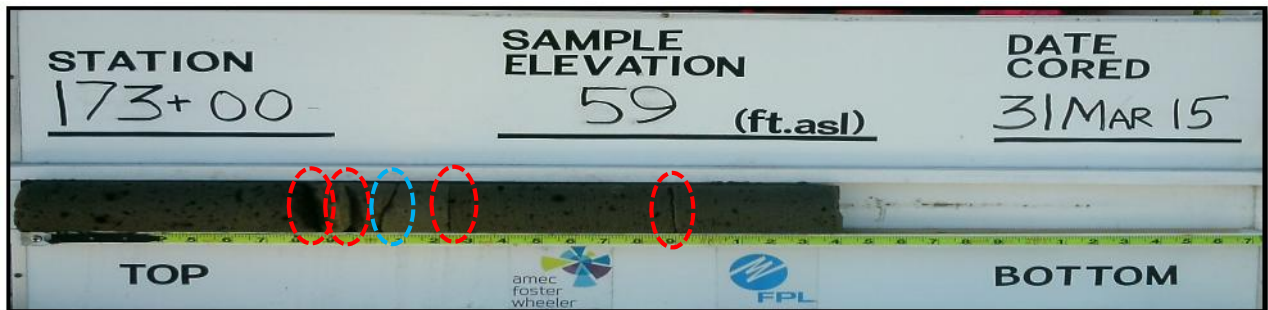
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 173+00



Core ID:	173+00 (top)	Date Cored:	3/31/15
Core Elevation:	65' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.58
RQD (%):	89	Void Depth (ft):	N/A
Notes:			

Location: STA 173+00



Core ID:	173+00 (middle)	Date Cored:	3/31/15
Core Elevation:	59' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.42
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

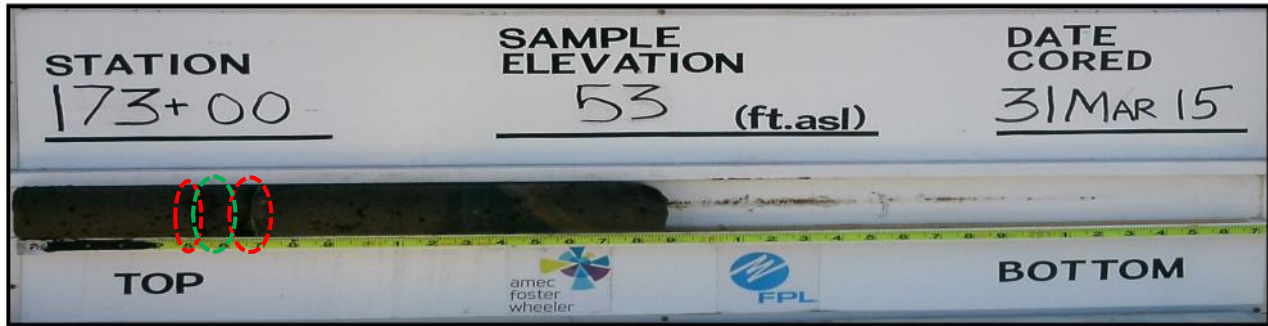
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 173+00






Core ID:	173+00 (bottom)	Date Cored:	3/31/15
Core Elevation:	53' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	1.85	SC Thickness (ft):	2.165
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Wood piece at 0.52 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

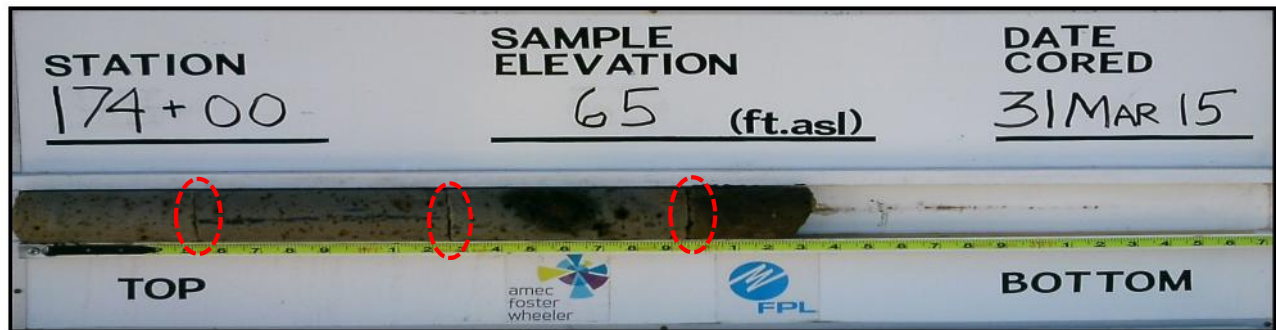


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 174+00



Core ID:	174+00 (top)	Date Cored:	3/31/15
Core Elevation:	65' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 174+00



Core ID:	174+00 (middle)	Date Cored:	3/31/15
Core Elevation:	59' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	1.57	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.4 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 174+00



Core ID:	174+00 (bottom)	Date Cored:	3/31/15
Core Elevation:	53' ASL	Date Photographed:	3/31/15
Recovered Length (ft):	1.7	SC Thickness (ft):	2.0
RQD (%):	86	Void Depth (ft):	N/A
Notes:	Entire recovered core comprised of soft material. Wood piece at 0.2 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 175+00



Core ID:	175+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.5
RQD (%):	98	Void Depth (ft):	N/A
Notes:			

Location: STA 175+00



Core ID:	175+00 (middle)	Date Cored:	3/30/15
Core Elevation:	60' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.25 to 2.5 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 175+00



Core ID:	175+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	55' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.45	SC Thickness (ft):	1.67
RQD (%):	0	Void Depth (ft):	N/A
Notes:	Entire recovered core variably soft to very soft. Partial recovered of core from 1.15 to 1.45 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 176+00



Core ID:	176+00 (top)	Date Cored:	3/3/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.25
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 176+00



Core ID:	176+00 (middle)	Date Cored:	3/3/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.15
RQD (%):	65	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 176+00



Core ID:	176+00 (bottom)	Date Cored:	3/3/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.8	SC Thickness (ft):	2.0
RQD (%):	66	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

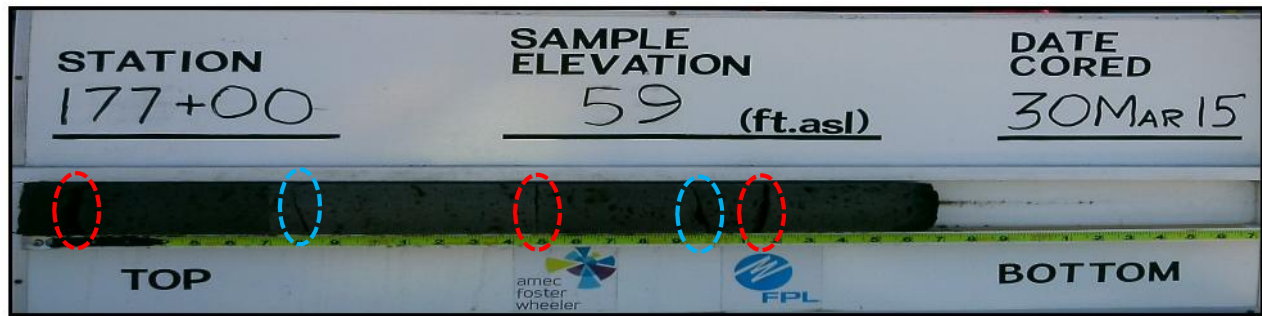
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 177+00



Core ID:	177+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	21.4	SC Thickness (ft):	1.83
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Location: STA 177+00



Core ID:	177+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.62	SC Thickness (ft):	3.0
RQD (%):	85	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 177+00






Core ID:	177+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.78	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.47 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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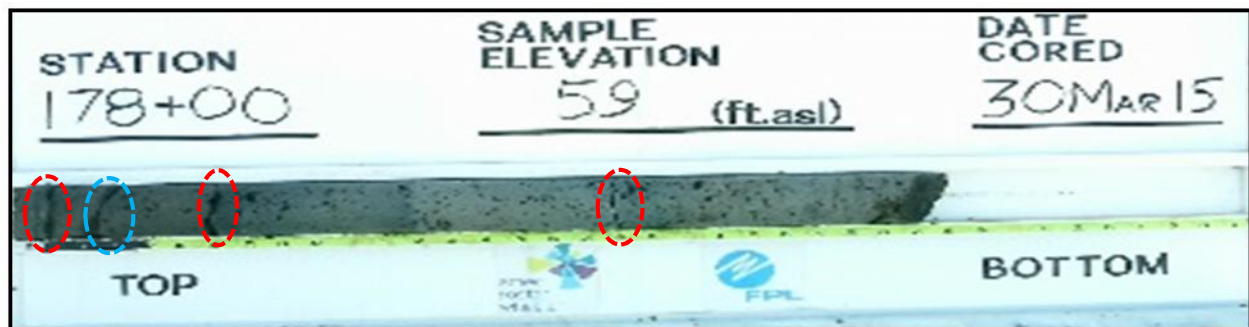
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 178+00



Core ID:	178+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.42
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 178+00



Core ID:	178+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	78	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 178+00






Core ID:	178+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.65	SC Thickness (ft):	2.0
RQD (%):	36	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.3 and from 0.45 to 1.65 feet. Very soft material from 0.3 to 0.45 feet. Broken and fractured core pieces recovered from 0.3 to 0.45 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

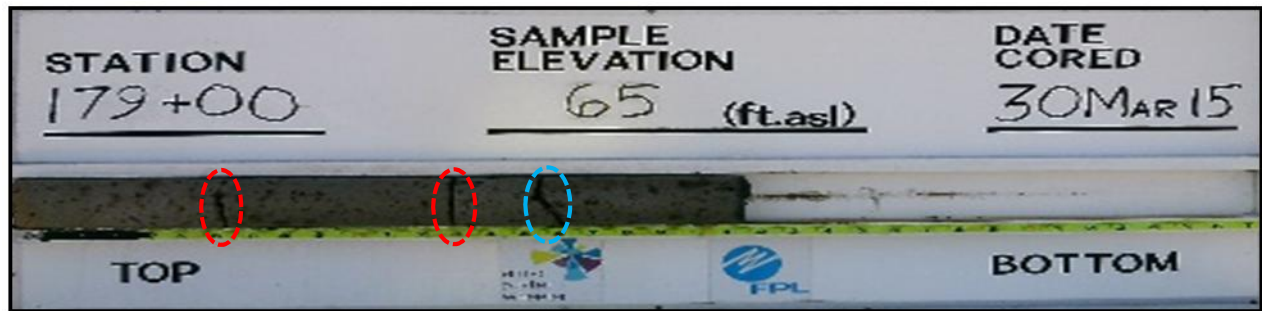


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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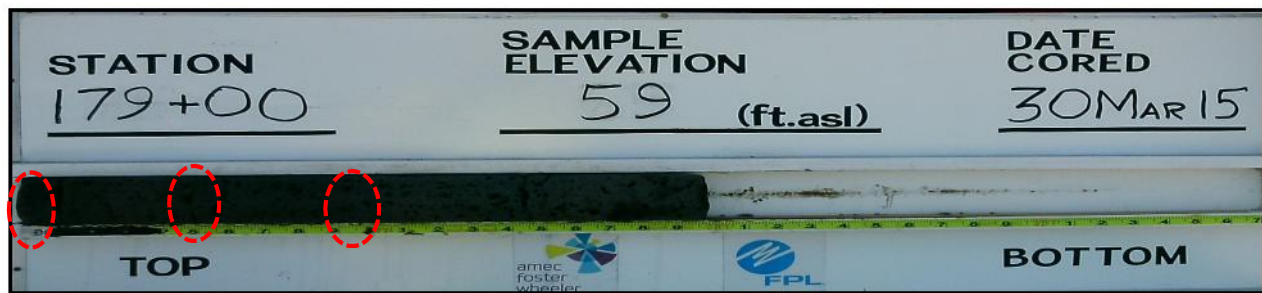
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 179+00



Core ID:	179+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.12	SC Thickness (ft):	2.5
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

Location: STA 179+00



Core ID:	179+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.33
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Recovered core moderately pitted.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 179+00






Core ID:	179+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.67
RQD (%):	81	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.55 feet. Soft material from 0.55 to 1.13 feet. Insitu soil from 2.15 to 2.2 feet.		

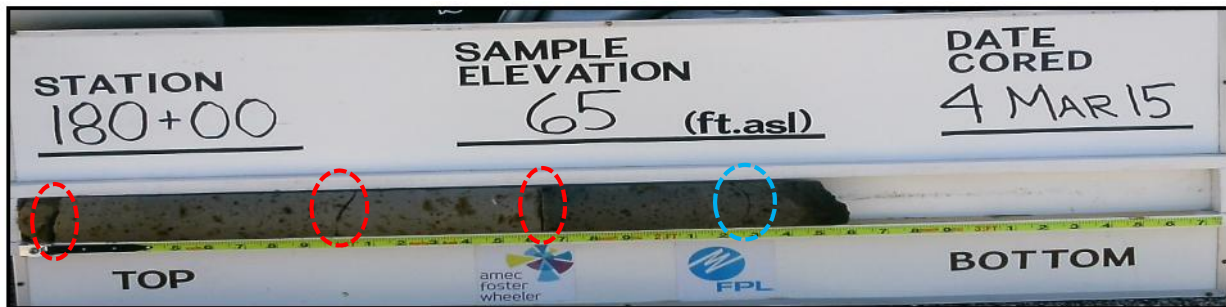
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 180+00



Core ID:	180+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.92
RQD (%):	94	Void Depth (ft):	N/A
Notes:			

Location: STA 180+00



Core ID:	180+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):		SC Thickness (ft):	2.16
RQD (%):	0	Void Depth (ft):	N/A
Notes:	Core was un-recoverable, pieces were unable to be re-configured		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 180+00



Core ID:	180+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.1	SC Thickness (ft):	1.3
RQD (%):	77	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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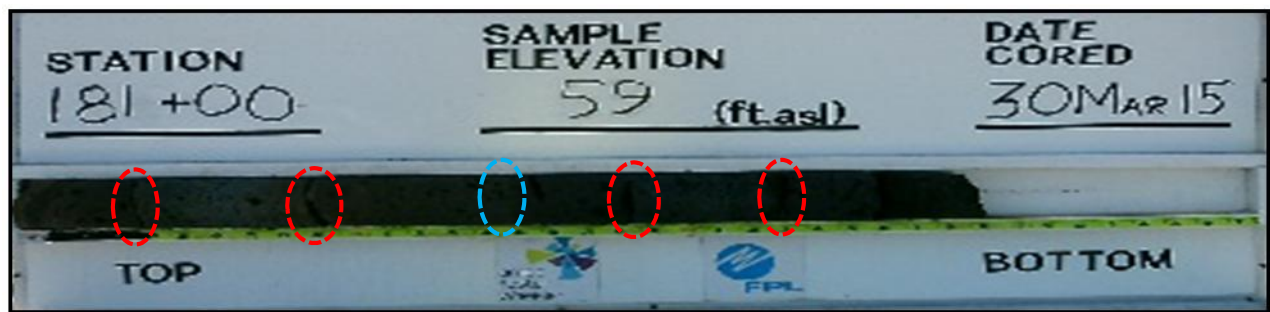
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 181+00



Core ID:	181+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.99	SC Thickness (ft):	2.08
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 181+00



Core ID:	181+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.55	SC Thickness (ft):	3.0
RQD (%):	77	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.55 to 2.85 feet.		

Manatee Cooling Pond

Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 181+00






Core ID:	181+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.5	SC Thickness (ft):	3.0
RQD (%):	76	Void Depth (ft):	N/A
Notes:	Insitu soil from 1.5 to 1.6 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 182+00



Core ID:	182+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.75	SC Thickness (ft):	1.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 182+00



Core ID:	182+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.6	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.6 to 2.75 feet.		

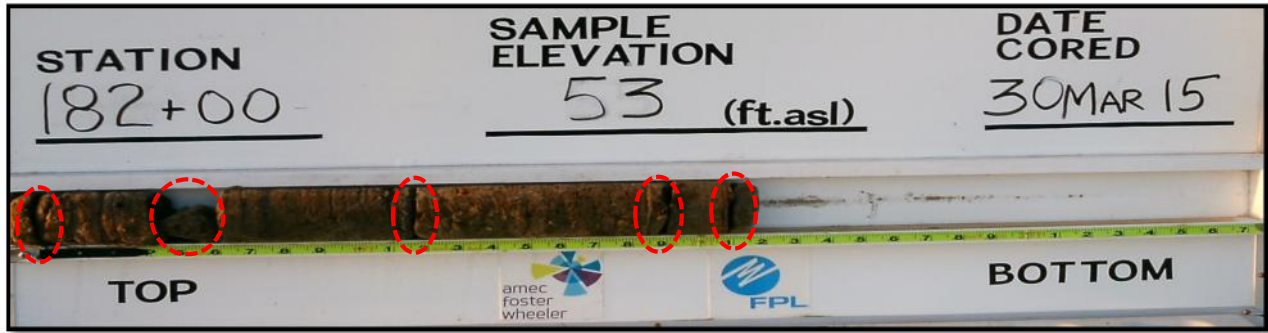
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 182+00



Core ID:	182+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.5
RQD (%):	87	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

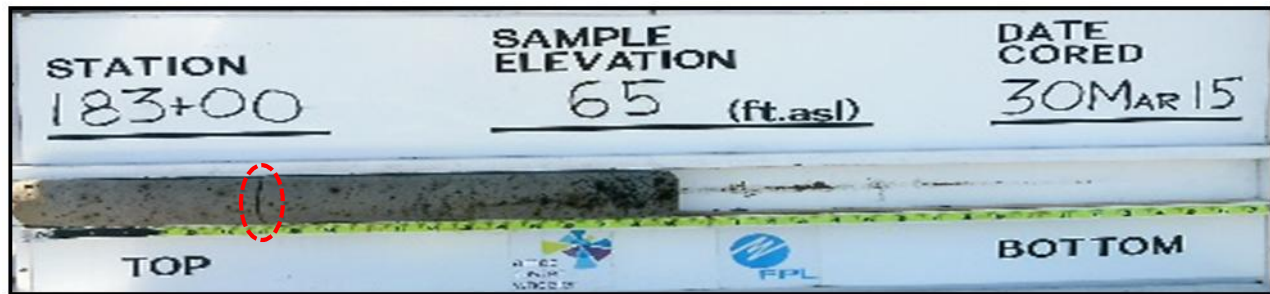


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 183+00



Core ID:	183+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 183+00



Core ID:	183+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.75	SC Thickness (ft):	3.0
RQD (%):	78	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet. Insitu soil from 2.75 to 2.8 feet.		

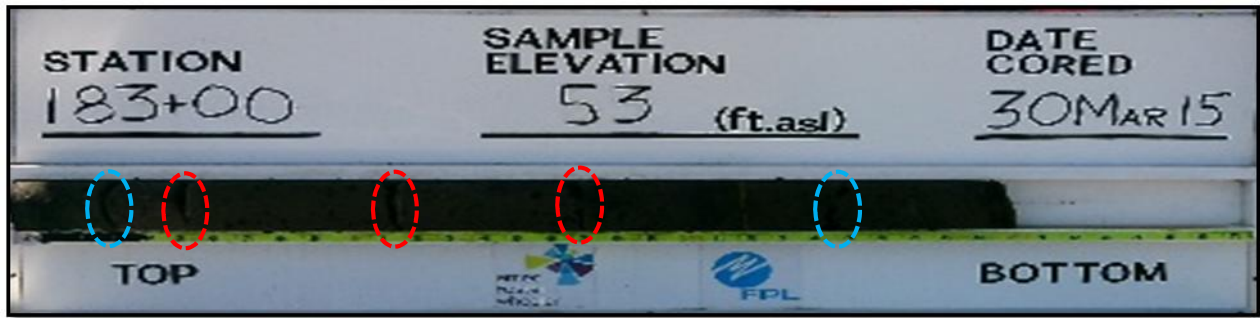
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 183+00



Core ID:	183+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.9	SC Thickness (ft):	3.33
RQD (%):	81	Void Depth (ft):	N/A
Notes:	Insitu soil from to 2.9 to 2.95 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

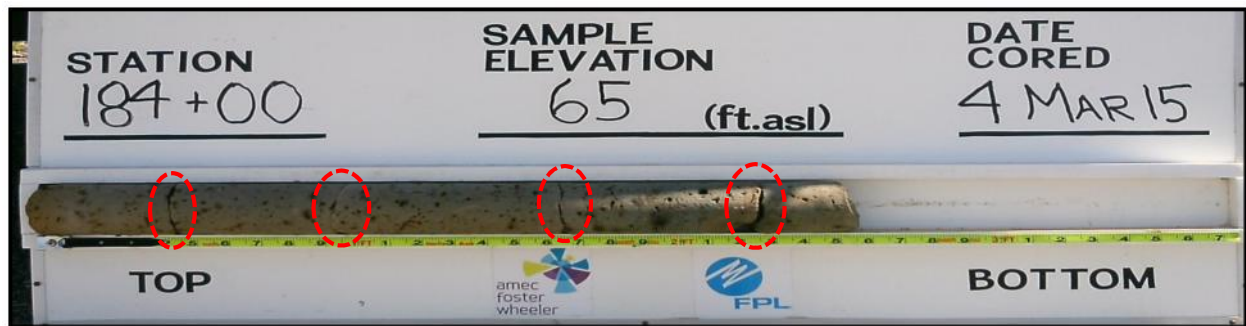


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 184+00



Core ID:	184+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.5
RQD (%):	89	Void Depth (ft):	N/A
Notes:			

Location: STA 184+00



Core ID:	184+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.65	SC Thickness (ft):	2.65
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Last 0.05 feet of sample was soil		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 184+00



Core ID:	184+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.5	SC Thickness (ft):	2.33
RQD (%):	51	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 185+00



Core ID:	185+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.13	SC Thickness (ft):	2.33
RQD (%):	85	Void Depth (ft):	N/A
Notes:			

Location: STA 185+00



Core ID:	185+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.92	SC Thickness (ft):	2.08
RQD (%):	49	Void Depth (ft):	N/A
Notes:	Wood piece at 1.45 feet. Insitu soil from 2.8 to 2.9 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 185+00






Core ID:	185+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.67
RQD (%):	82	Void Depth (ft):	N/A
Notes:	Entire recovered core is of soft material.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 186+00



Core ID:	186+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.35
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 186+00



Core ID:	186+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.27	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 186+00






Core ID:	186+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.67
RQD (%):	79	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 1.5 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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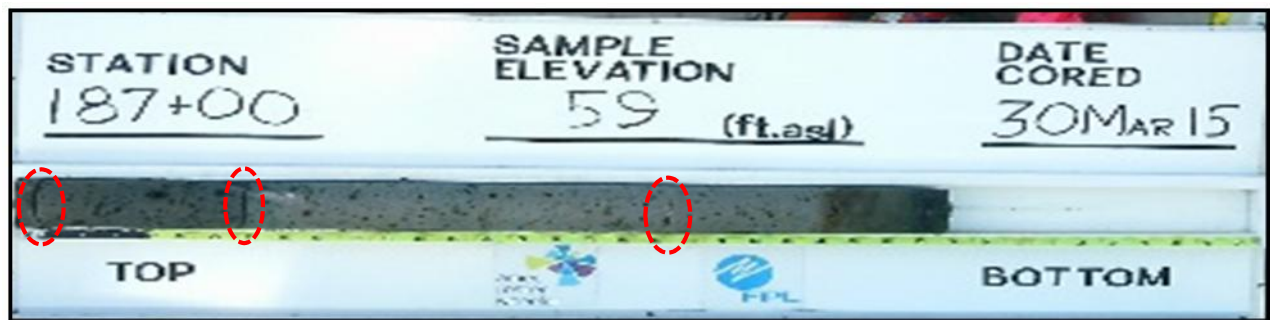
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 187+00



Core ID:	187+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.88	SC Thickness (ft):	2.0
RQD (%):	88	Void Depth (ft):	N/A
Notes:	Wood piece at 1.75 feet. Soft material from 0 to 0.2 feet.		

Location: STA 187+00



Core ID:	187+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	12.75	SC Thickness (ft):	3.0
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 187+00



Core ID:	187+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.33
RQD (%):	88	Void Depth (ft):	N/A
Notes:	Entire recovered core is soft material.		

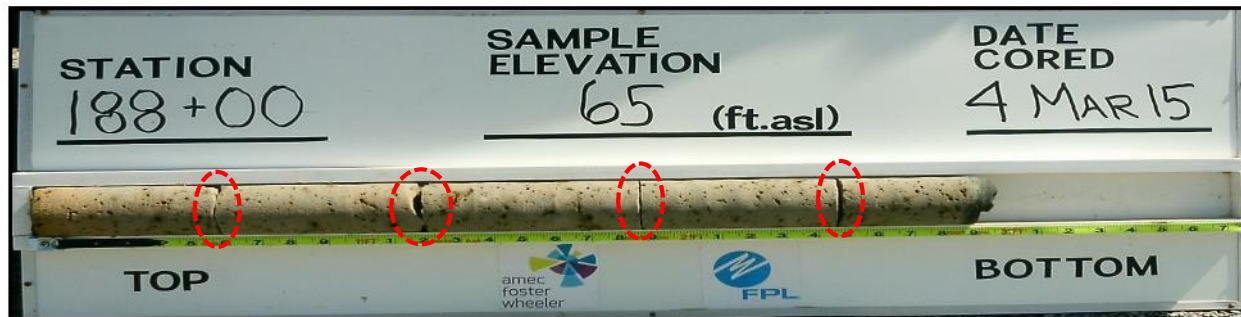
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 188+00



Core ID:	188+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.9	SC Thickness (ft):	2.9
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 188+00



Core ID:	188+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.4	SC Thickness (ft):	3.0
RQD (%):	83	Void Depth (ft):	N/A
Notes:	50% missing from bottom portion after last mechanical break		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 188+00



Core ID:	188+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.75
RQD (%):	78	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

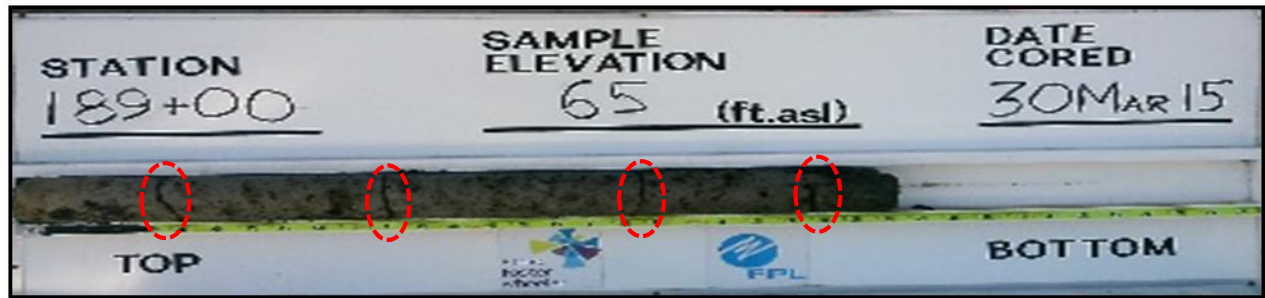


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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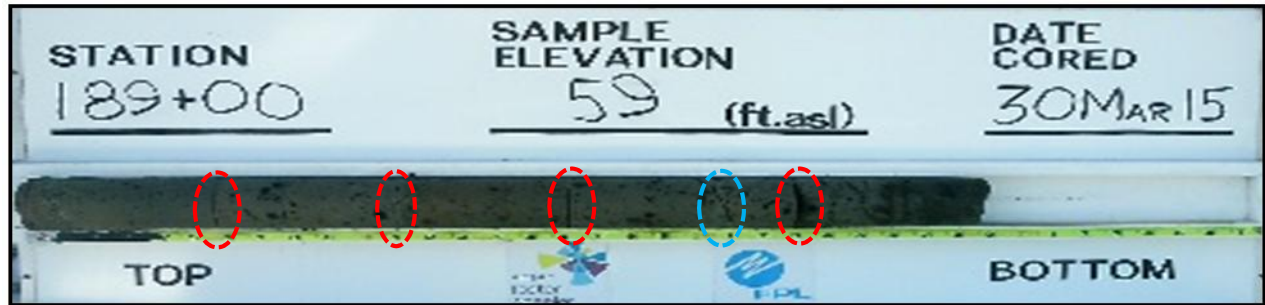
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 189+00



Core ID:	189+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.67
RQD (%):	94	Void Depth (ft):	N/A
Notes:			

Location: STA 189+00



Core ID:	189+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.83	SC Thickness (ft):	3.0
RQD (%):	92	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 189+00



Core ID:	189+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.25	SC Thickness (ft):	1.58
RQD (%):	74	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.1 feet and from 1.03 to 1.25 feet. Soft material from 0.1 to 1.03 feet.		

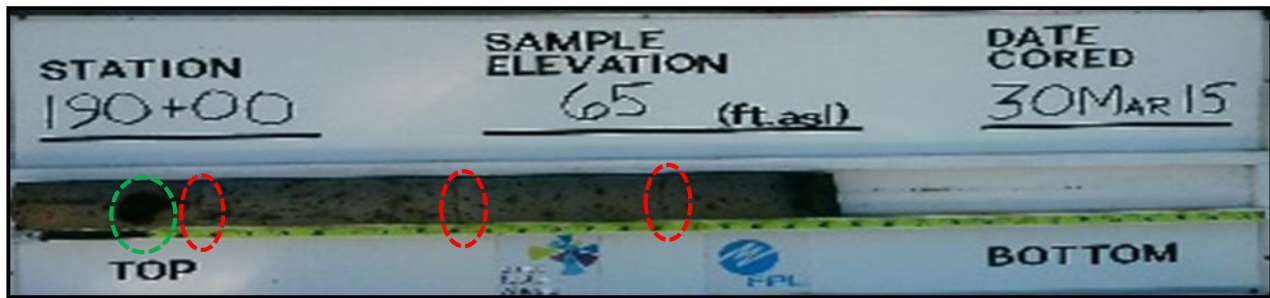
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

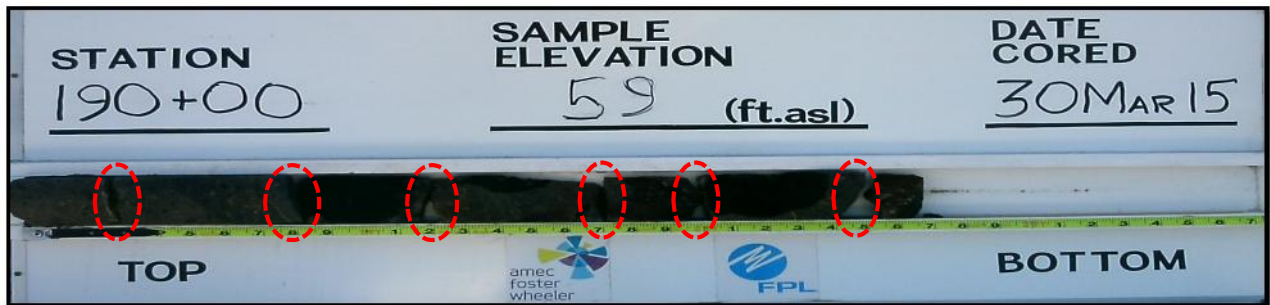
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 190+00



Core ID:	190+00 (top)	Date Cored:	3/30/15
Core Elevation:	65' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.42
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Wood piece at 0.4 feet.		

Location: STA 190+00



Core ID:	190+00 (middle)	Date Cored:	3/30/15
Core Elevation:	59' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	2.6	SC Thickness (ft):	3.0
RQD (%):	19	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.8 feet. From 0.8 to 2.6 feet, recovered core sections are laterally fractured in half.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 190+00



Core ID:	190+00 (bottom)	Date Cored:	3/30/15
Core Elevation:	53' ASL	Date Photographed:	3/30/15
Recovered Length (ft):	1.85	SC Thickness (ft):	2.0
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Entire recovered core is soft.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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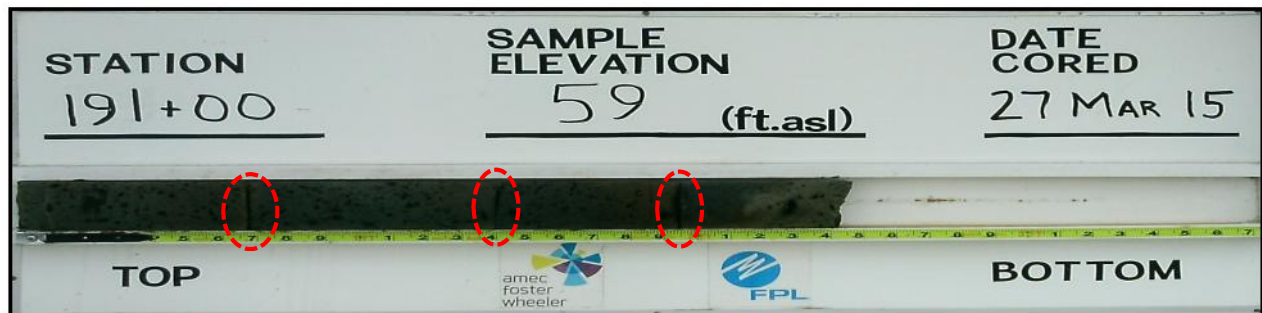
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 191+00



Core ID:	191+00 (top)	Date Cored:	3/27/15
Core Elevation:	65' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 191+00



Core ID:	191+00 (middle)	Date Cored:	3/27/15
Core Elevation:	59' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 191+00



Core ID:	191+00 (bottom)	Date Cored:	3/27/15
Core Elevation:	53' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.5
RQD (%):	95	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.15 feet and from 1.63 to 2.0 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 192+00



Core ID:	192+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	94	Void Depth (ft):	N/A
Notes:			

Location: STA 192+00



Core ID:	192+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 192+00



Core ID:	192+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):		SC Thickness (ft):	2.33
RQD (%):	0	Void Depth (ft):	N/A
Notes:	Sample un-recoverable. Broke into pieces and could not be re-arranged.		

Manatee Cooling Pond Soil-Cement Core Logs

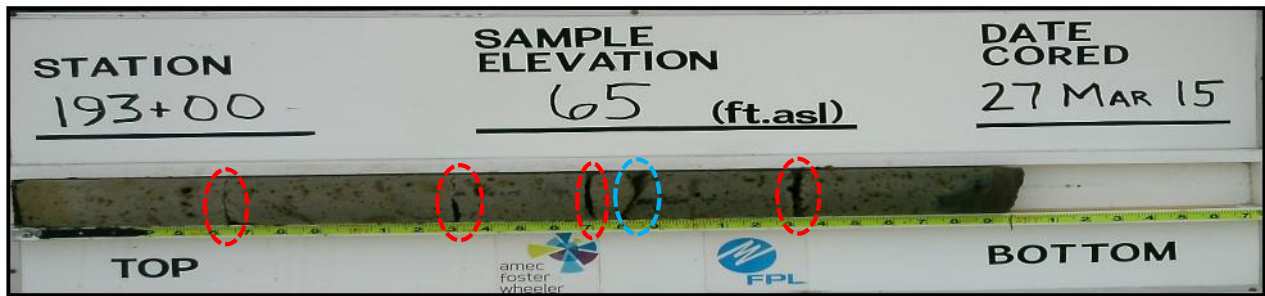


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 193+00



Core ID:	193+00 (top)	Date Cored:	3/27/15
Core Elevation:	65' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.83	SC Thickness (ft):	3.0
RQD (%):	96	Void Depth (ft):	N/A
Notes:			

Location: STA 193+00



Core ID:	193+00 (middle)	Date Cored:	3/27/15
Core Elevation:	59' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	1.82	SC Thickness (ft):	2.0
RQD (%):	84	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 193+00



Core ID:	193+00 (bottom)	Date Cored:	3/27/15
Core Elevation:	53' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.2	SC Thickness (ft):	3.0
RQD (%):	94	Void Depth (ft):	N/A
Notes:	Complete recovered core is soft.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

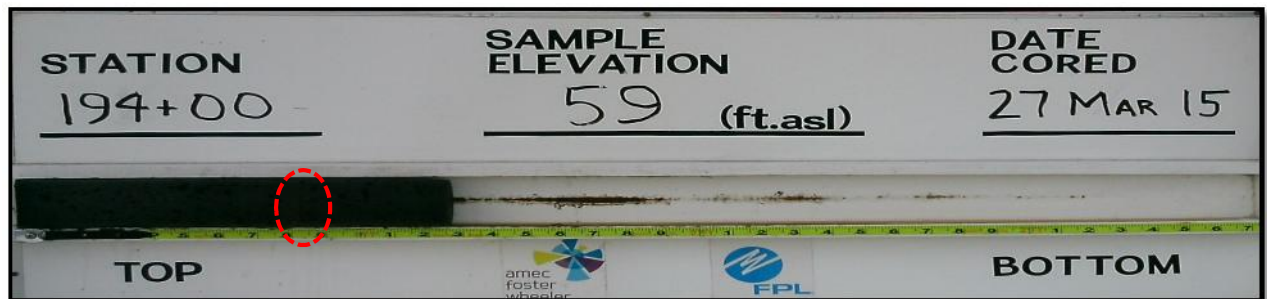
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 194+00



Core ID:	194+00 (top)	Date Cored:	3/27/15
Core Elevation:	65' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 194+00



Core ID:	194+00 (middle)	Date Cored:	3/27/15
Core Elevation:	59' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	1.25	SC Thickness (ft):	1.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

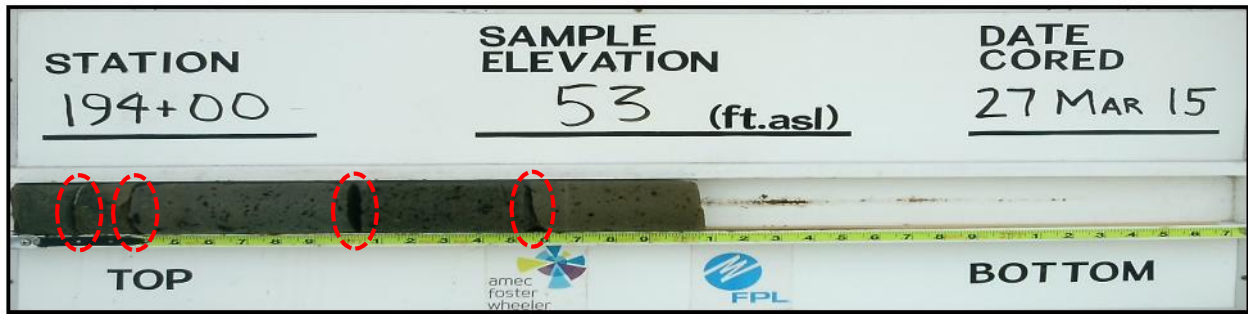
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 194+00



Core ID:	194+00 (bottom)	Date Cored:	3/27/15
Core Elevation:	53' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.165
RQD (%):	80	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.4 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

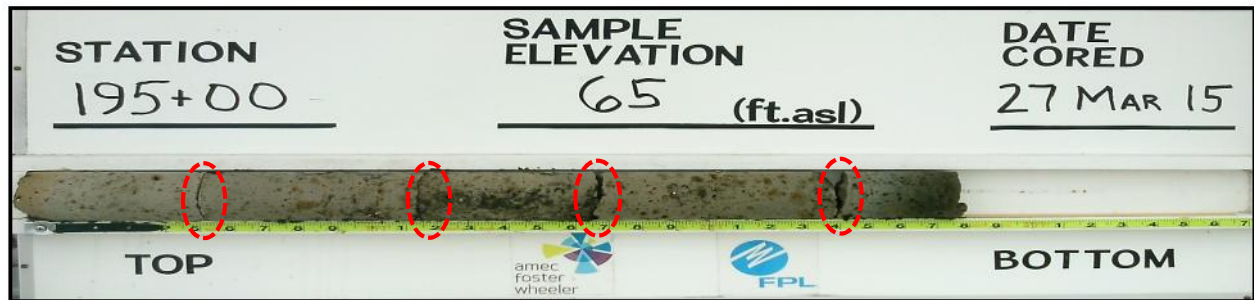


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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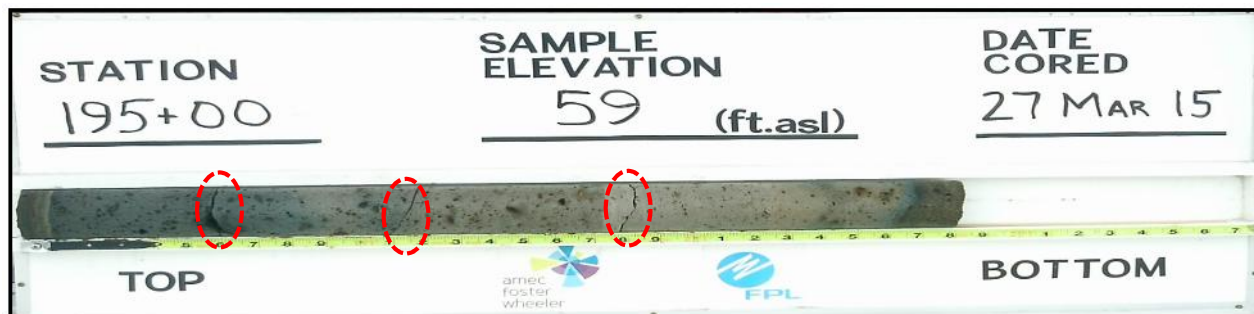
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 195+00



Core ID:	195+00 (top)	Date Cored:	3/27/15
Core Elevation:	65' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 195+00



Core ID:	195+00 (middle)	Date Cored:	3/27/15
Core Elevation:	59' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

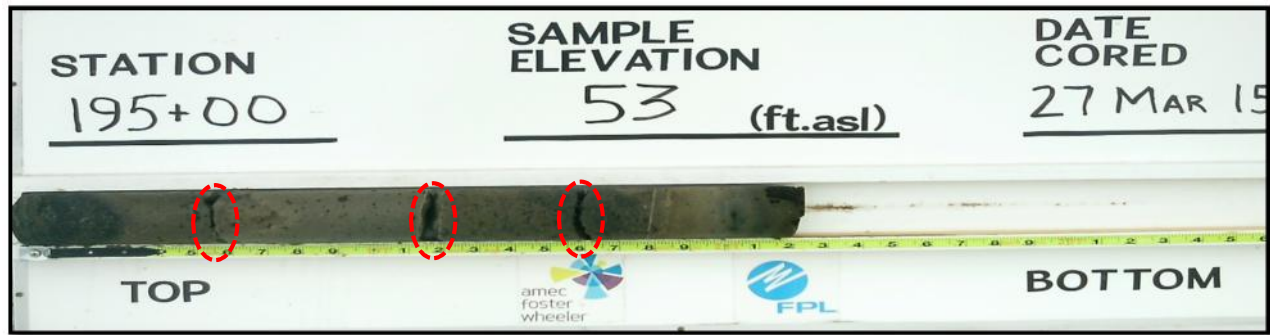
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 195+00






Core ID:	195+00 (bottom)	Date Cored:	3/27/15
Core Elevation:	53' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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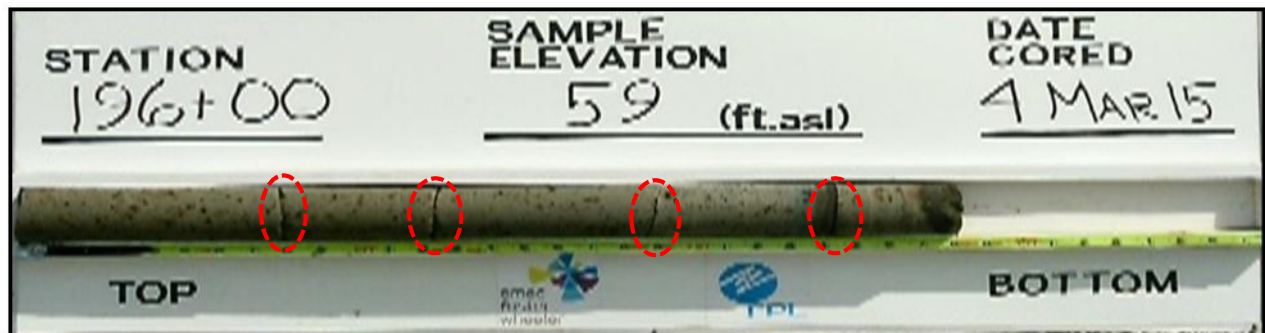
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 196+00



Core ID:	196+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.4
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA196+00



Core ID:	196+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 196+00



Core ID:	196+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.75
RQD (%):	68	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

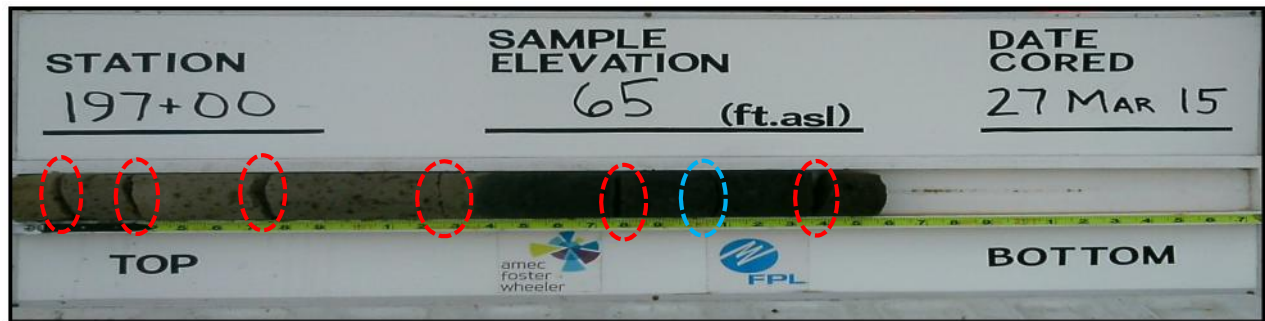


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 197+00



Core ID:	197+00 (top)	Date Cored:	3/27/15
Core Elevation:	65' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.83
RQD (%):	70	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

Location: STA 197+00



Core ID:	197+00 (middle)	Date Cored:	3/27/15
Core Elevation:	60' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Wood piece at 0.1 feet.		

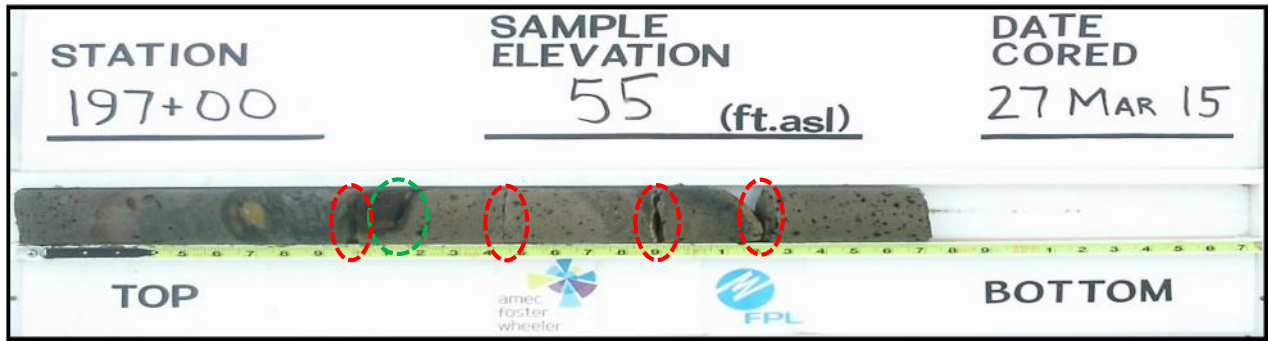
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 197+00



Core ID:	197+00 (bottom)	Date Cored:	3/27/15
Core Elevation:	55' ASL	Date Photographed:	3/27/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Decaying vegetation at 1.05 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

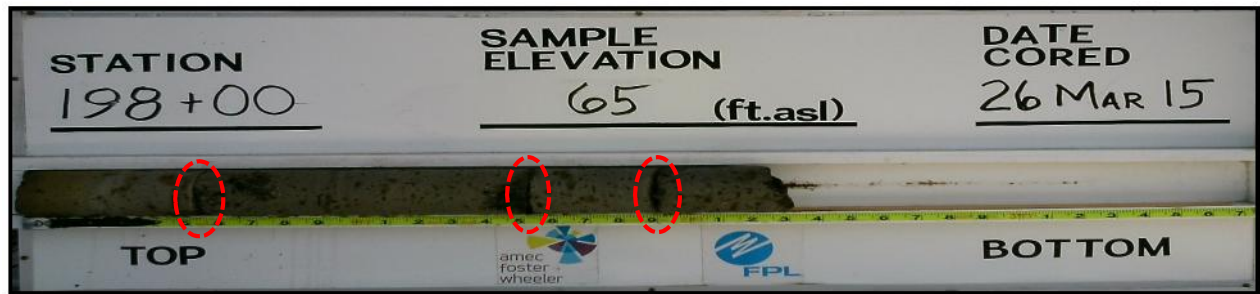


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 198+00



Core ID:	198+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 198+00



Core ID:	198+00 (middle)	Date Cored:	3/26/15
Core Elevation:	57' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	12.2	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.2 to 2.4 feet..		

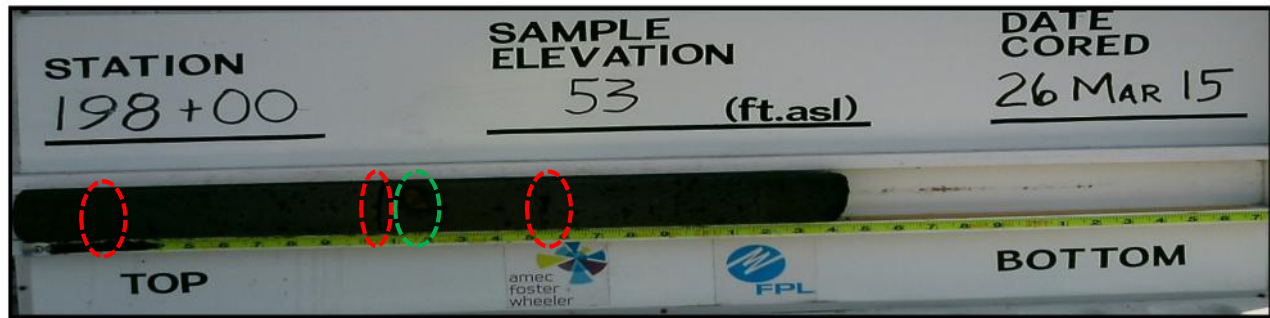
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 198+00



Core ID:	198+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	53' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.4	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Wood piece at 1.15 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

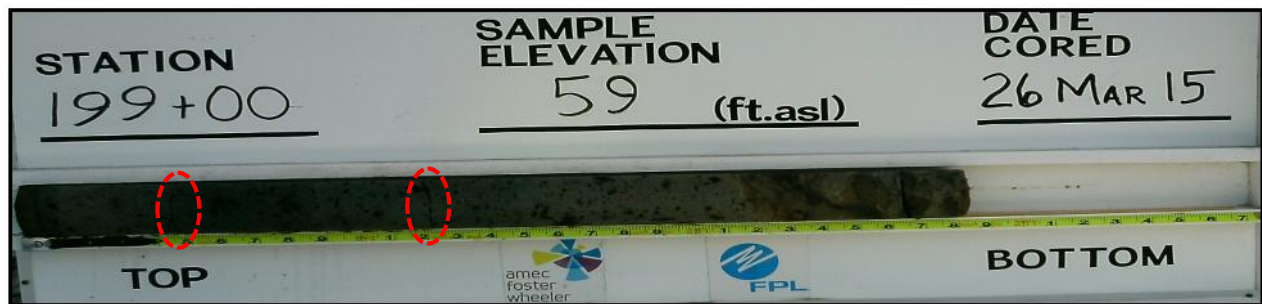
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 199+00



Core ID:	199+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 199+00



Core ID:	199+00 (middle)	Date Cored:	3/26/15
Core Elevation:	59' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.15	SC Thickness (ft):	3.08
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.15 to 2.8 feet.		

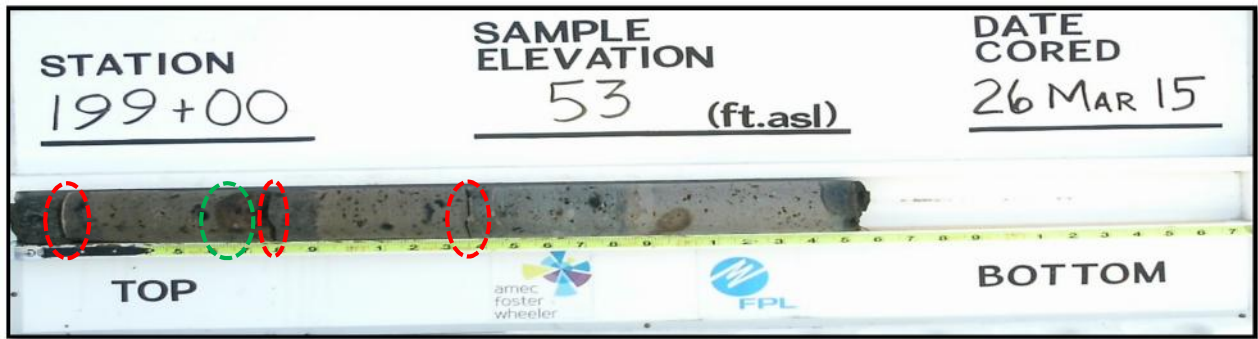
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 199+00



Core ID:	199+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	53' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.92
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.2 feet. Decaying vegetation at 0.65 feet.		

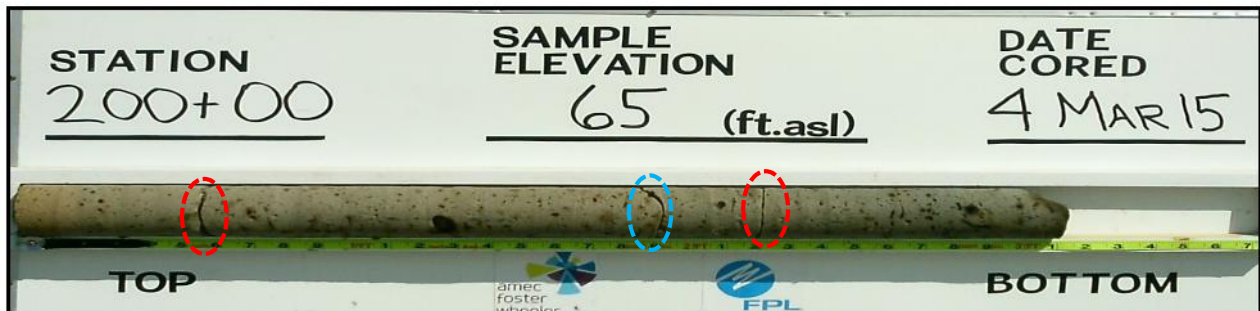
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

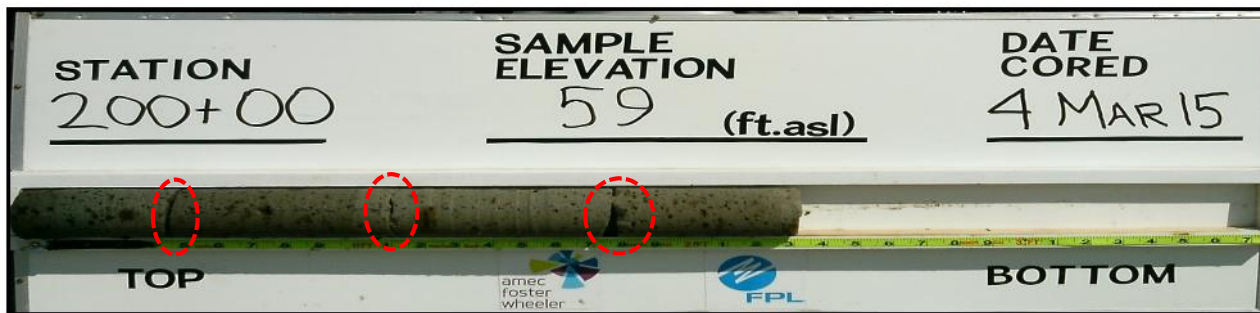
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 200+00



Core ID:	200+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.05
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 204+00



Core ID:	204+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 200+00






Core ID:	200+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.92
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

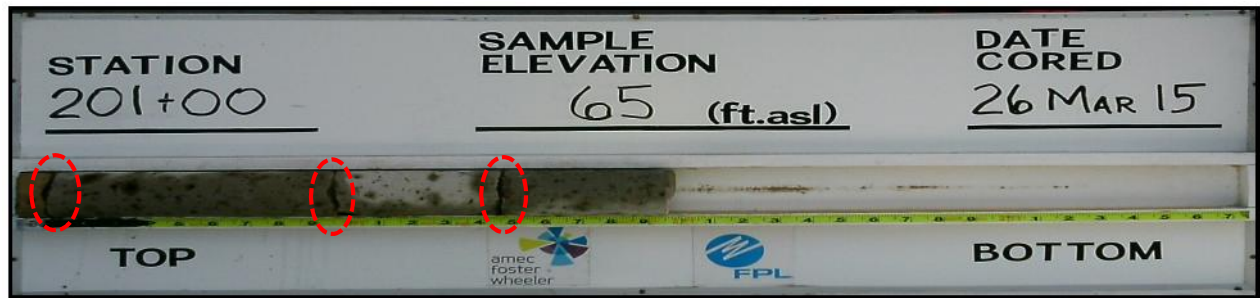


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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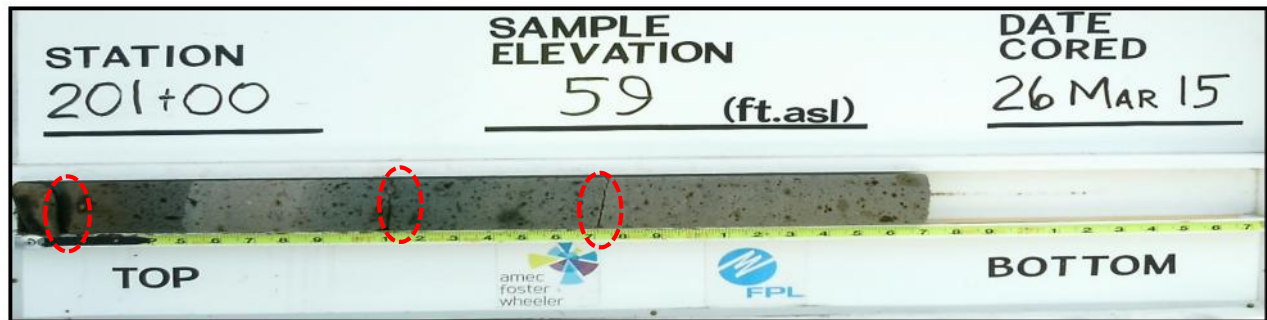
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 201+00



Core ID:	201+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.95	SC Thickness (ft):	3.0
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Location: STA 201+00



Core ID:	201+00 (middle)	Date Cored:	3/26/15
Core Elevation:	59' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.67	SC Thickness (ft):	2.92
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 201+00



Core ID:	201+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	53' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

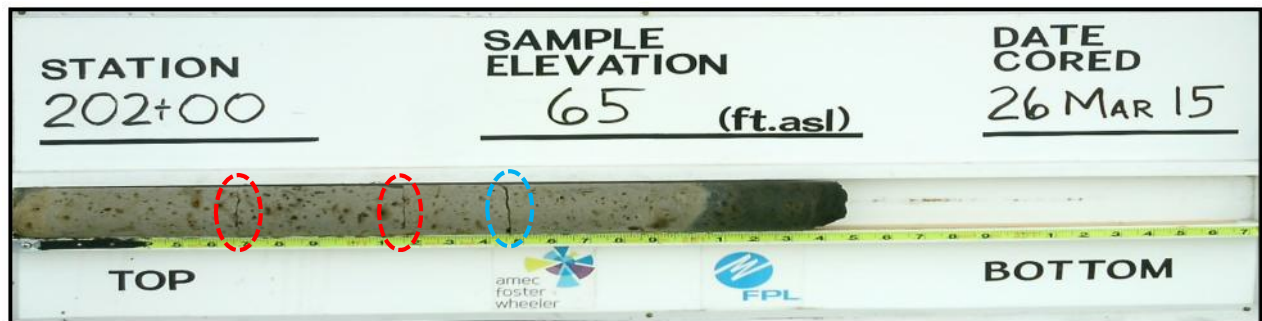


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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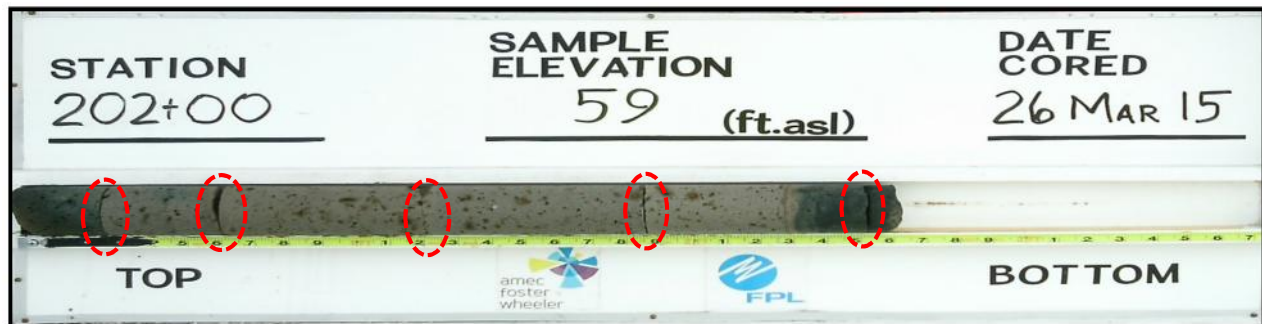
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 202+00



Core ID:	202+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.75
RQD (%):	88	Void Depth (ft):	N/A
Notes:			

Location: STA 202+00



Core ID:	202+00 (middle)	Date Cored:	3/26/15
Core Elevation:	59' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.67
RQD (%):	73	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

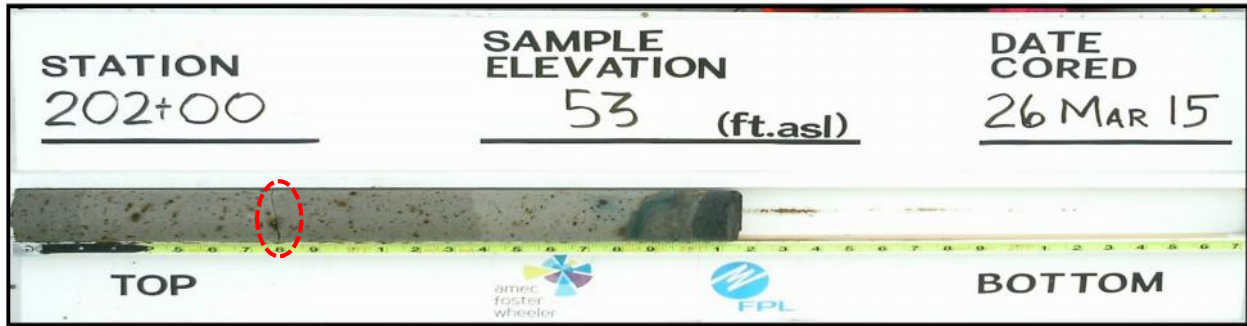
Soil-Cement Core Logs



amec
foster
wheeler

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 202+00



Core ID:	202+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	53' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.58
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

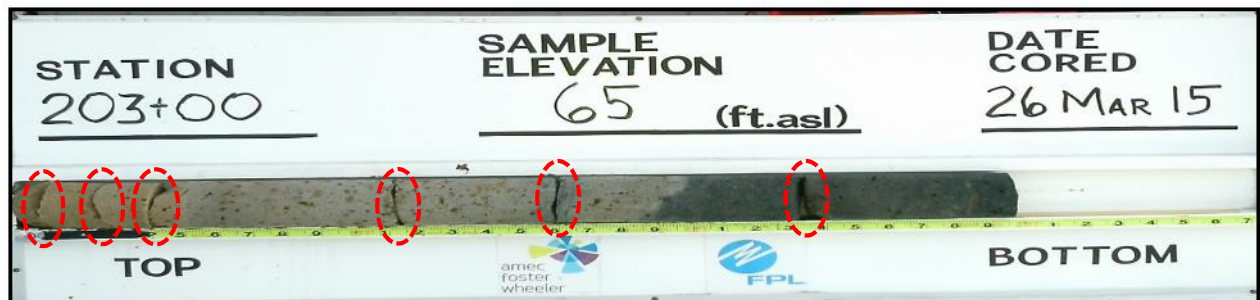


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

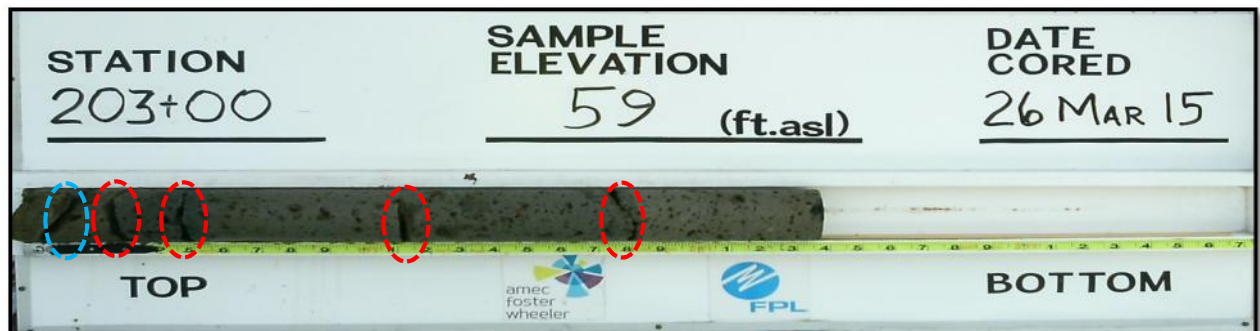
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 203+00



Core ID:	203+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.95	SC Thickness (ft):	3.0
RQD (%):	98	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.52 feet.		

Location: STA 203+00



Core ID:	203+00 (middle)	Date Cored:	3/26/15
Core Elevation:	59' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.67
RQD (%):	98	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.3 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 203+00



Core ID:	203+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	53' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

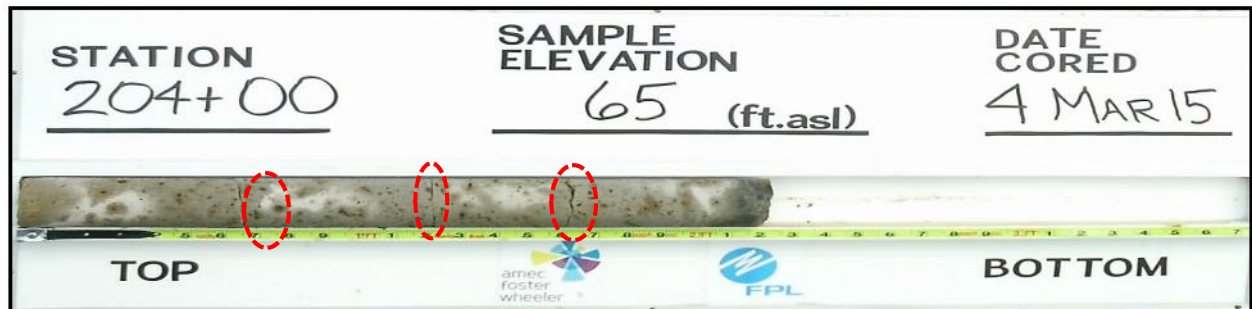


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

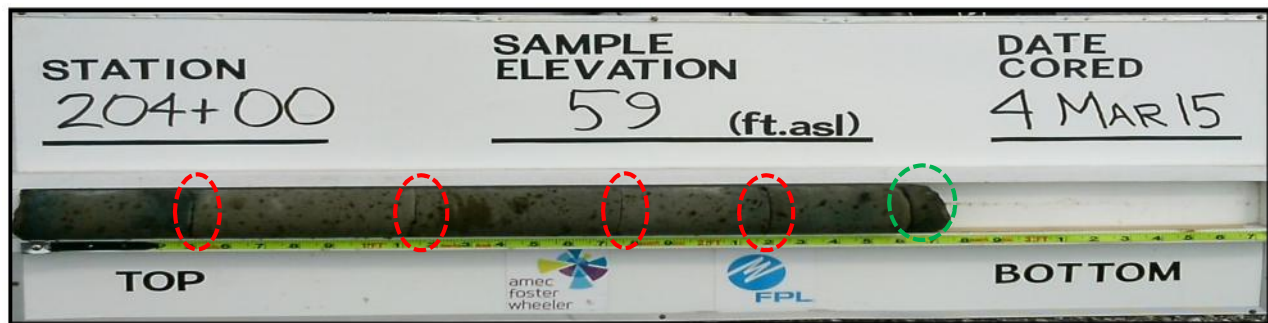
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 204+00



Core ID:	204+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 204+00



Core ID:	204+00 (middle)	Date Cored:	3/4/15
Core Elevation:	659' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.6	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soil at tip of core		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 204+00



Core ID:	204+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.46	SC Thickness (ft):	3.0
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

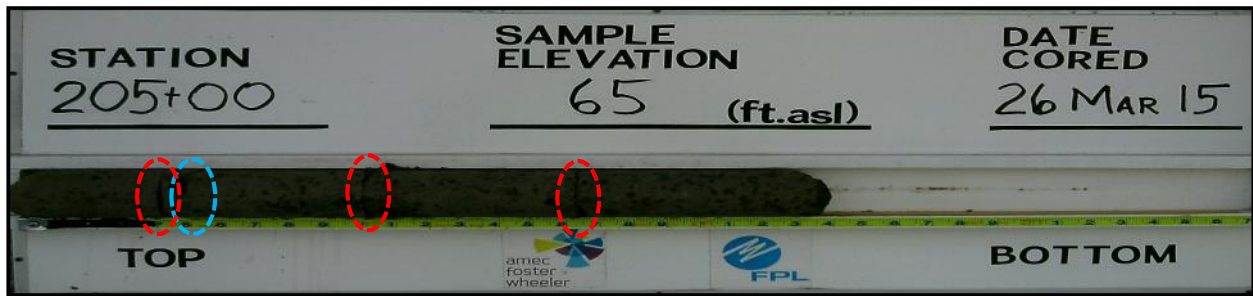


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

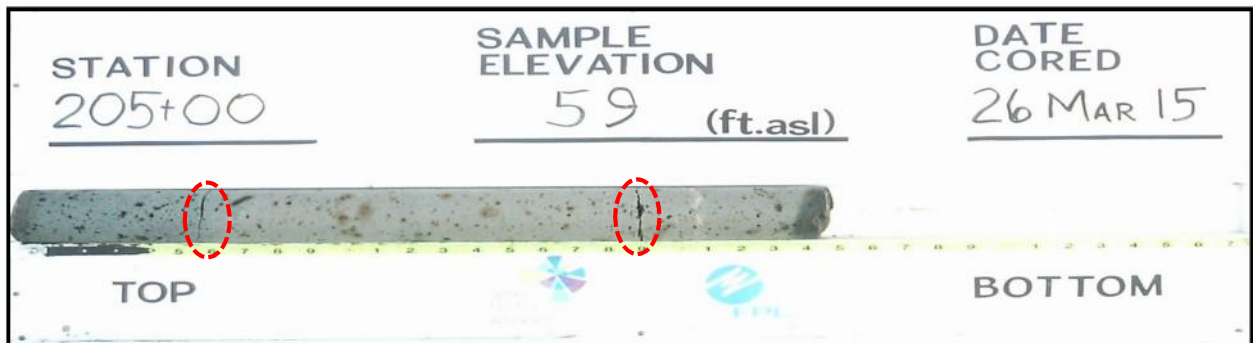
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 205+00



Core ID:	205+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.3	SC Thickness (ft):	3.0
RQD (%):	97	Void Depth (ft):	N/A
Notes:			

Location: STA 205+00



Core ID:	205+00 (middle)	Date Cored:	3/26/15
Core Elevation:	59' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

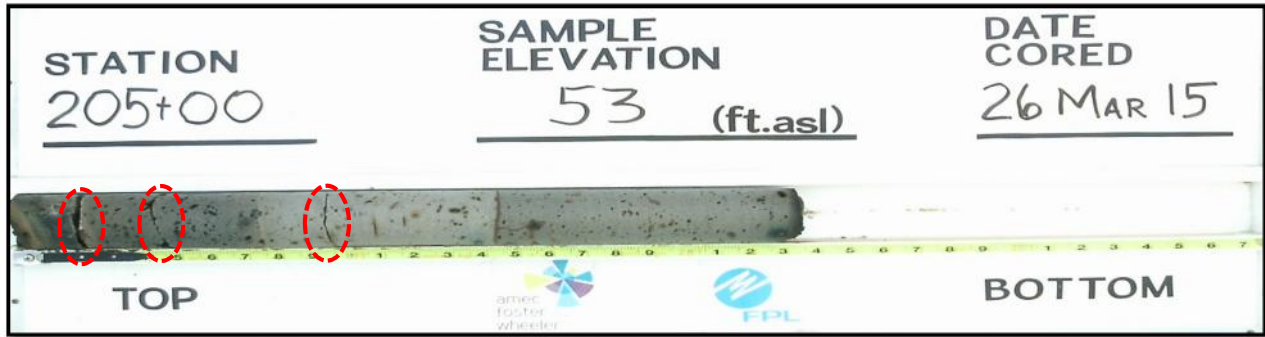
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 205+00



Core ID:	205+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	53' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.58
RQD (%):	80	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

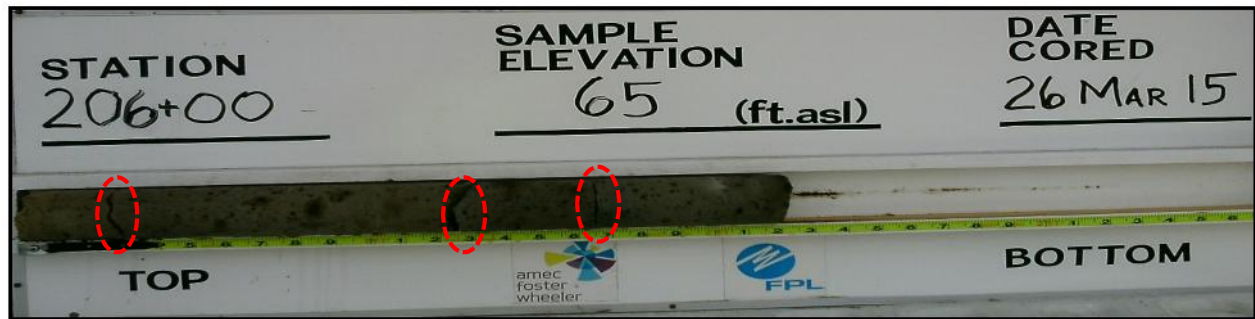


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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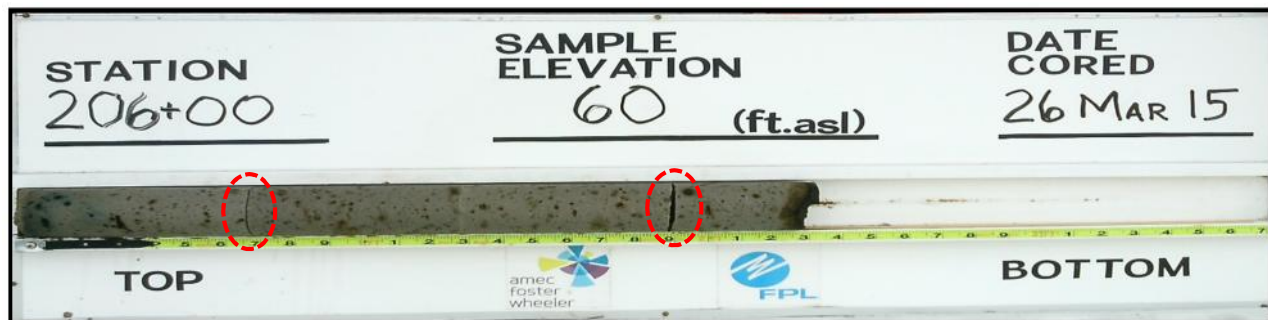
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 206+00



Core ID:	206+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.17	SC Thickness (ft):	2.83
RQD (%):	86	Void Depth (ft):	N/A
Notes:			

Location: STA 206+00



Core ID:	206+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

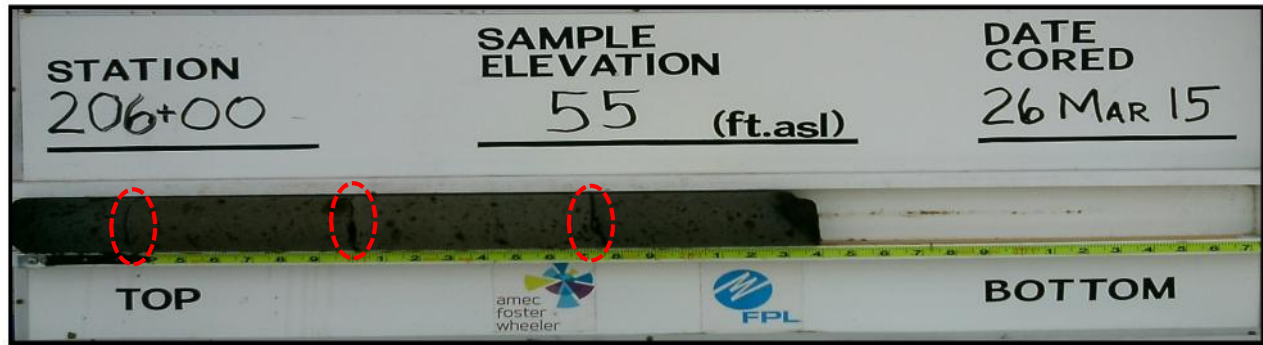
Soil-Cement Core Logs



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Project #: 300906.***.3
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Location: STA 206+00






Core ID:	206+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

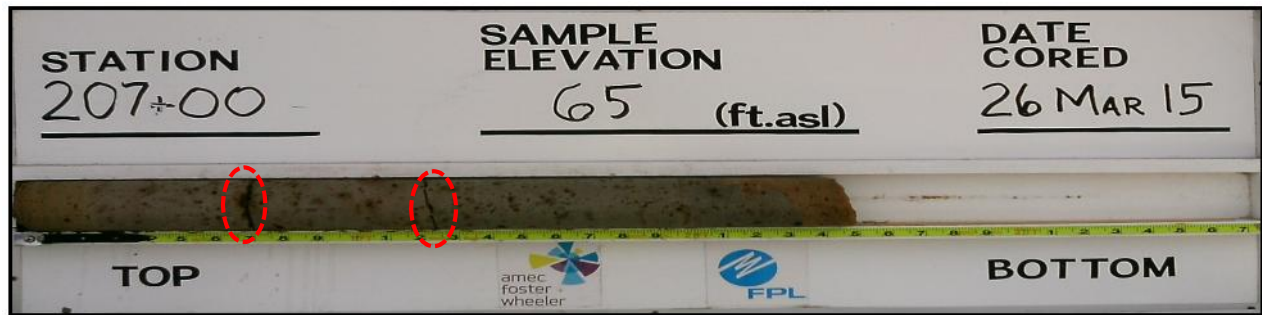


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 207+00



Core ID:	207+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.45	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 207+00



Core ID:	207+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.58
RQD (%):	84	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.4 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 207+00



Core ID:	207+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.5	SC Thickness (ft):	1.92
RQD (%):	60	Void Depth (ft):	N/A
Notes:	Soft material and core fragments from 1.1 to 1.5 feet.		

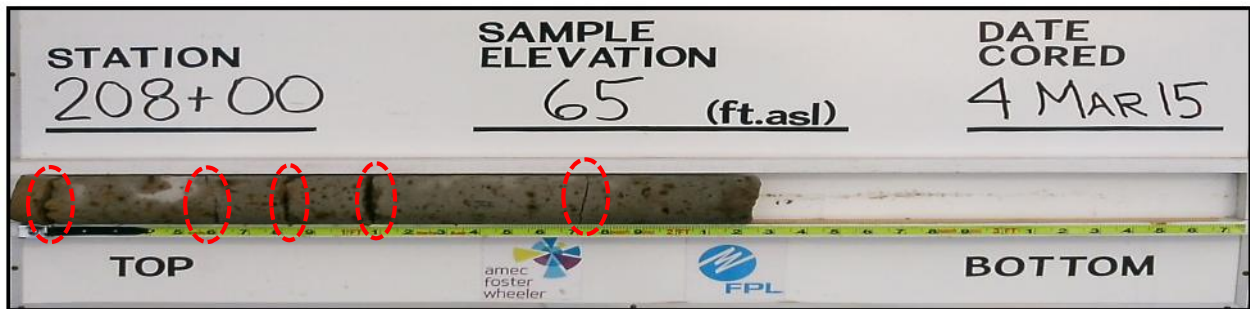
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

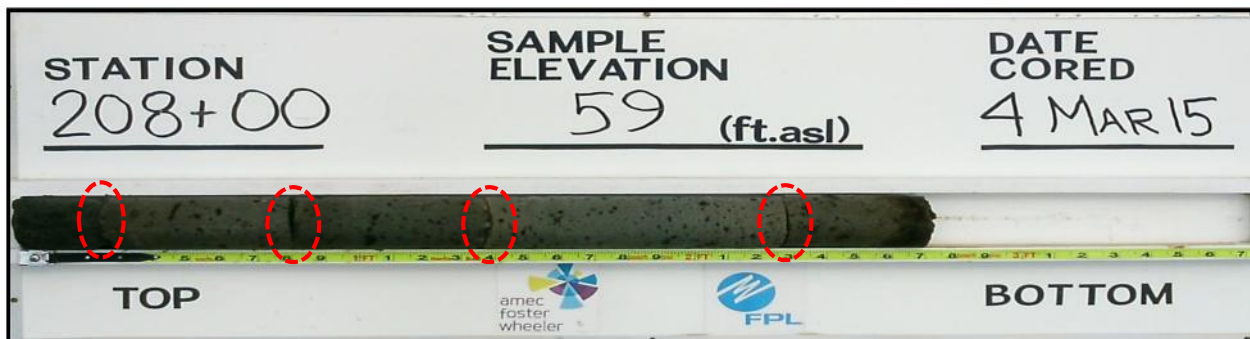
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 208+00



Core ID:	208+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.2
RQD (%):	85	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet		

Location: STA 208+00



Core ID:	208+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.9
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.25 feet		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 208+00



Core ID:	208+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.92
RQD (%):	95	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet		

Manatee Cooling Pond Soil-Cement Core Logs

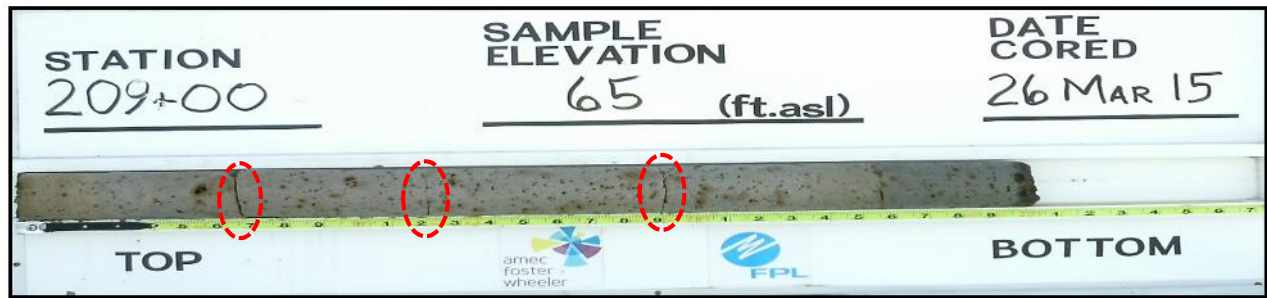


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 209+00



Core ID:	209+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	3.0	SC Thickness (ft):	3.25
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 209+00



Core ID:	209+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.5
RQD (%):	69	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

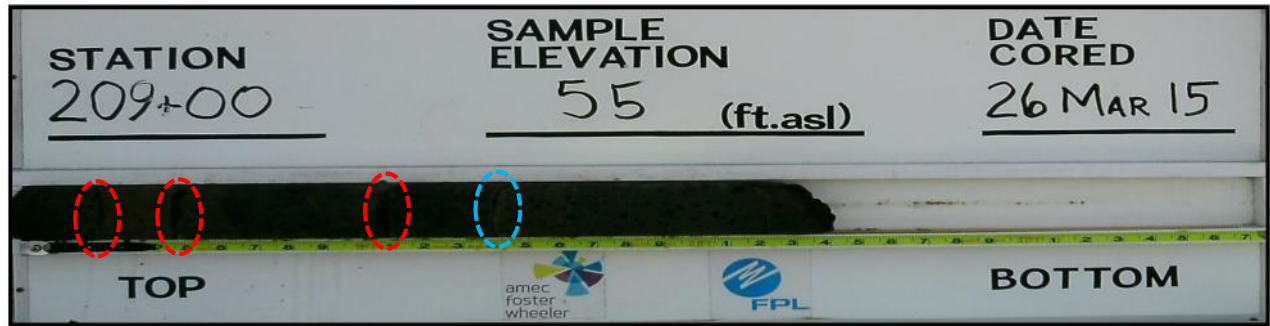
Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 209+00



Core ID:	209+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.83
RQD (%):	80	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.55 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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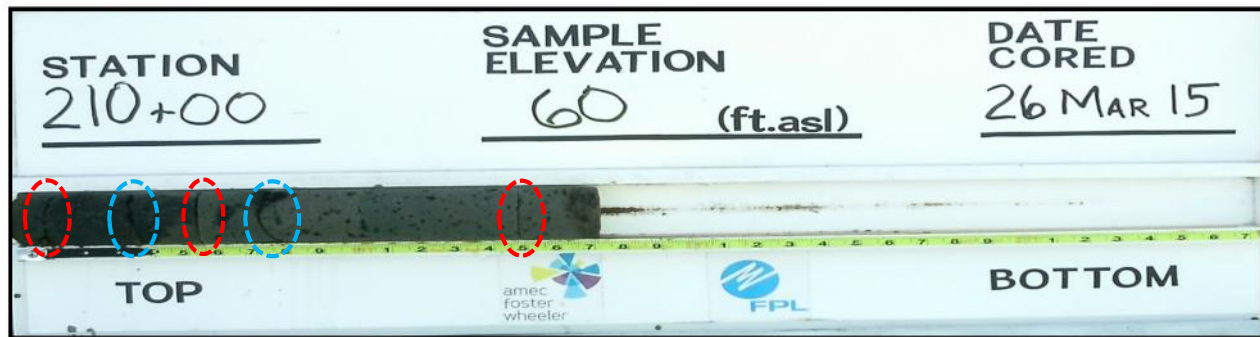
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 210+00



Core ID:	210+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.9	SC Thickness (ft):	3.0
RQD (%):	83	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.25 feet.		

Location: STA 210+00



Core ID:	210+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.7	SC Thickness (ft):	2.58
RQD (%):	42	Void Depth (ft):	N/A
Notes:			

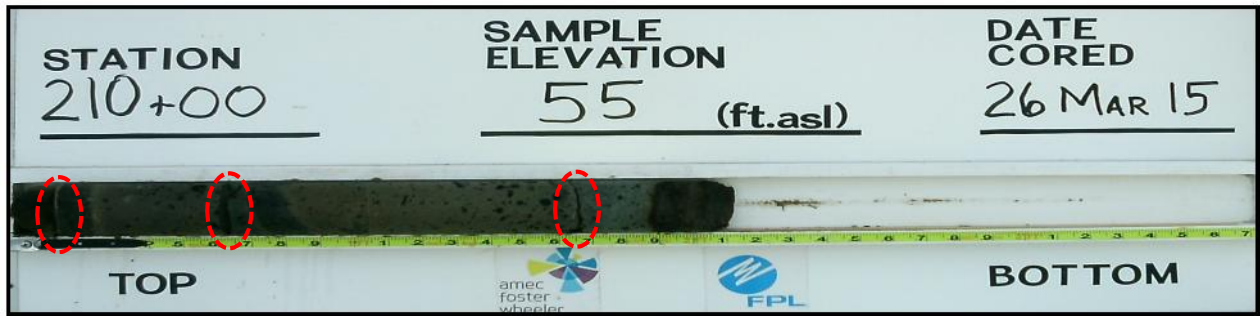
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 210+00



Core ID:	210+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.42
RQD (%):	93	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.15 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

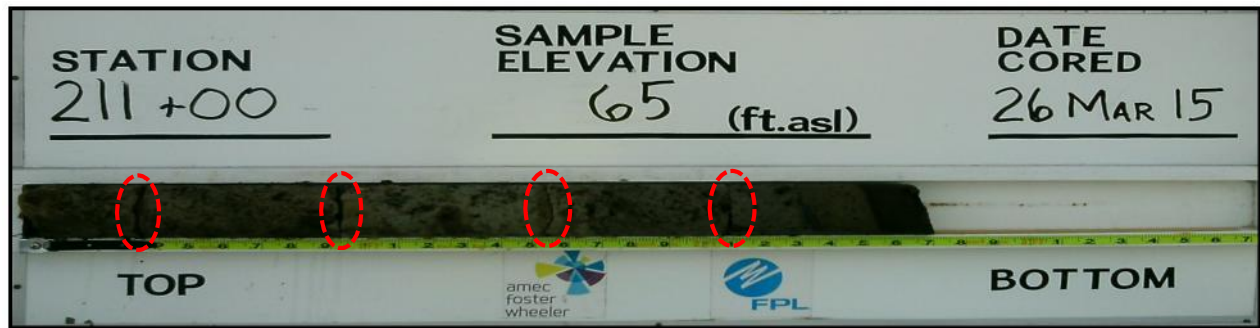


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 211+00



Core ID:	211+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.65	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 211+00



Core ID:	211+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.7	SC Thickness (ft):	1.83
RQD (%):	74	Void Depth (ft):	N/A
Notes:			

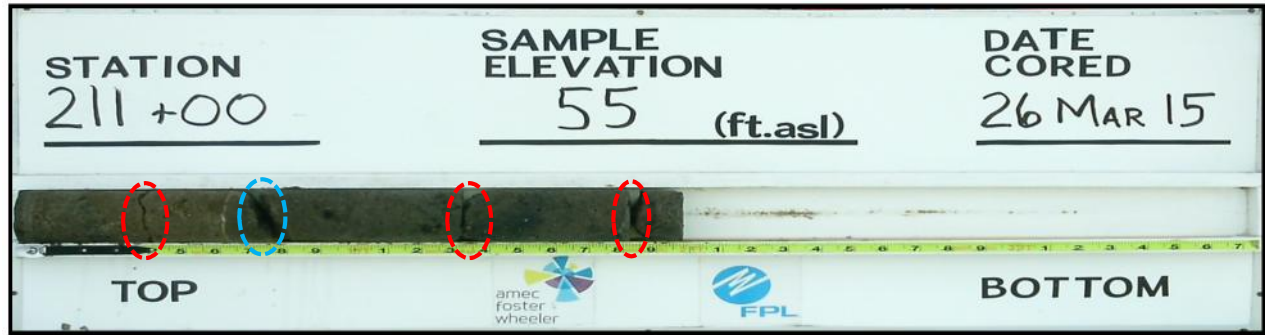
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 211+00



Core ID:	211+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.5
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

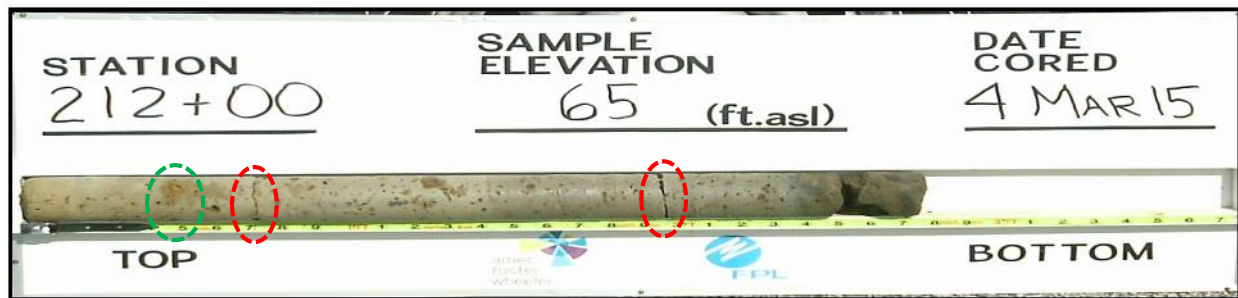
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

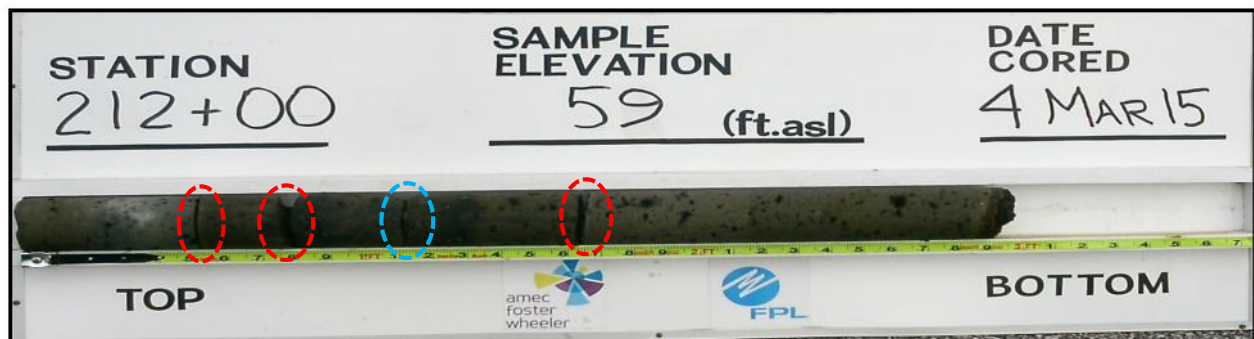
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 212+00



Core ID:	212+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Plant debris at 0.45 feet. Soft soil 2.5 to 2.75 feet.		

Location: STA 212+00



Core ID:	212+00 (middle)	Date Cored:	3/4/15
Core Elevation:	59' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.9	SC Thickness (ft):	3.0
RQD (%):	79	Void Depth (ft):	N/A
Notes:			

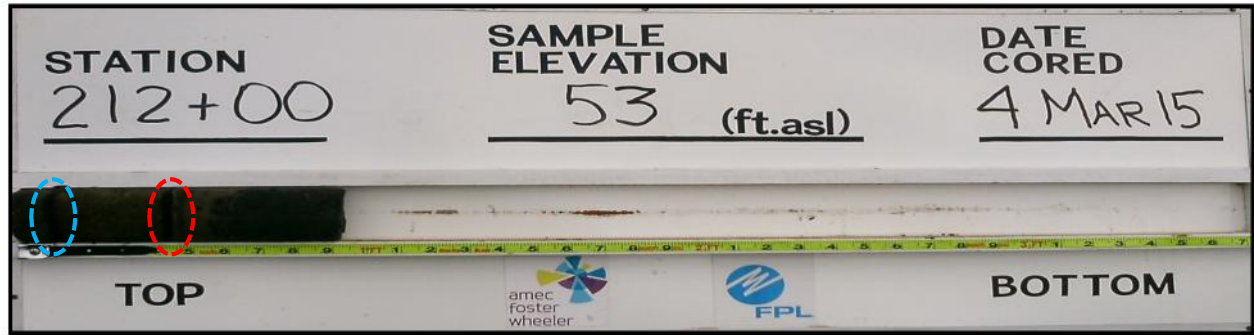
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 212+00



Core ID:	212+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	53' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	0.9	SC Thickness (ft):	2.0
RQD (%):	88	Void Depth (ft):	N/A
Notes:	Soft material 0 to 0.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 213+00



Core ID:	213+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.75
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.2 feet.		

Location: STA 213+00



Core ID:	213+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.4	SC Thickness (ft):	1.83
RQD (%):	34	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.35 feet. A very soft half section of core recovered from 0.35 to 0.6 feet..		

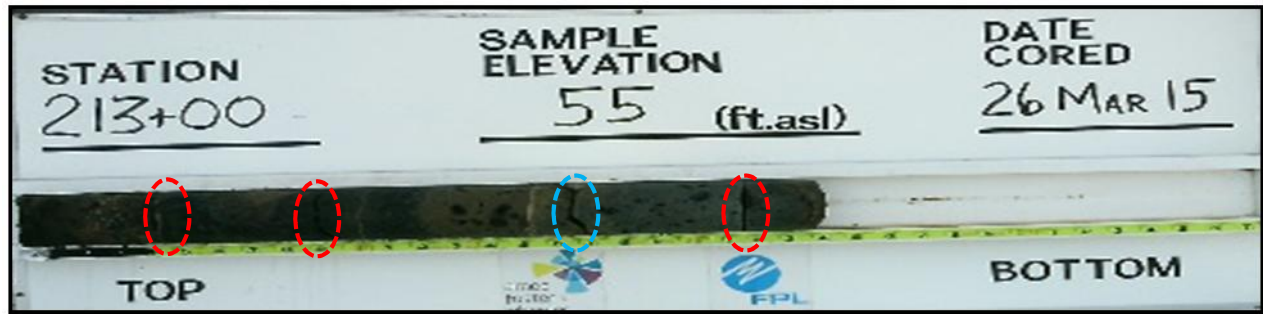
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 213+00



Core ID:	213+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.33
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

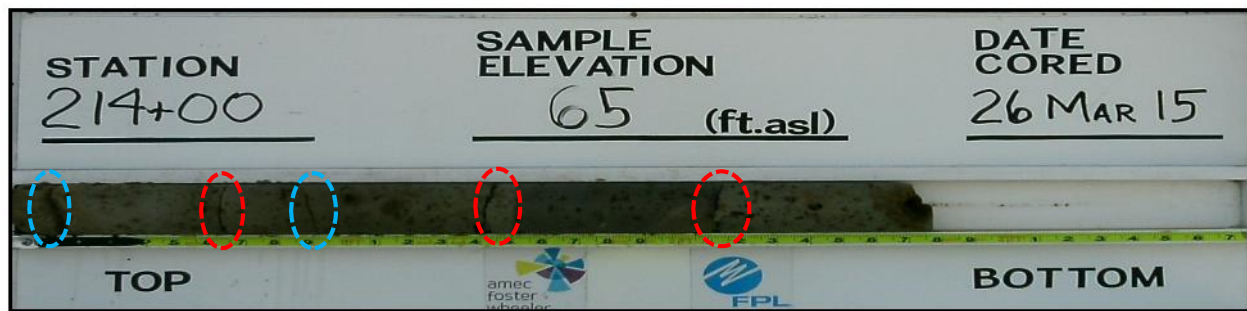


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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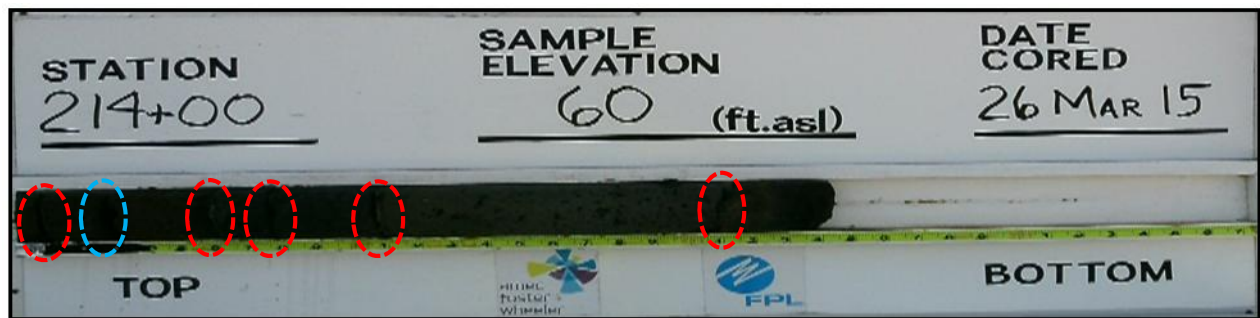
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 214+00



Core ID:	214+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.83
RQD (%):	94	Void Depth (ft):	N/A
Notes:			

Location: STA 214+00



Core ID:	214+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.58
RQD (%):	56	Void Depth (ft):	N/A
Notes:	Variably soft to very soft material from 0 to 1.1 feet.		

Manatee Cooling Pond

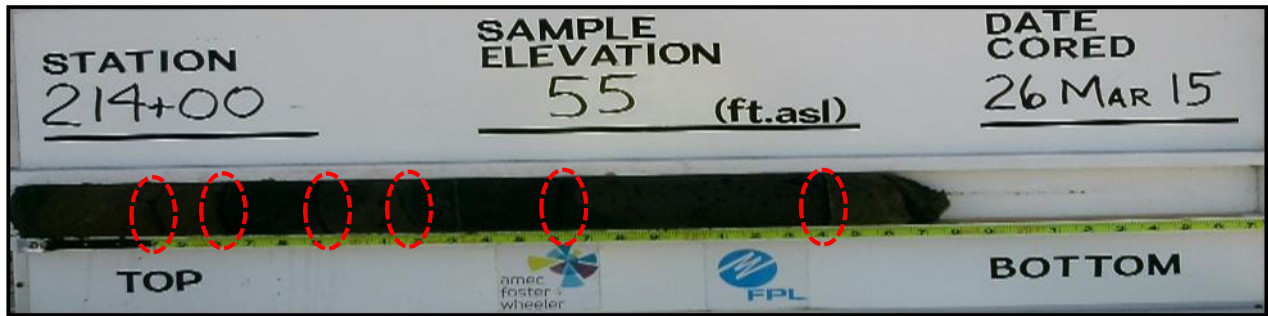
Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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 wheeler

Location: STA 214+00



Core ID:	214+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.75
RQD (%):	74	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 1.6 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 215+00



Core ID:	215+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.95	SC Thickness (ft):	3.08
RQD (%):	80	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet. Wood piece at 0.3 feet.		

Location: STA 215+00



Core ID:	215+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.0	SC Thickness (ft):	1.25
RQD (%):	65	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.53 feet. Soft material between 0.53 to 0.7 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 215+00



Core ID:	215+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	0.92	SC Thickness (ft):	1.83
RQD (%):	38	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.92 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

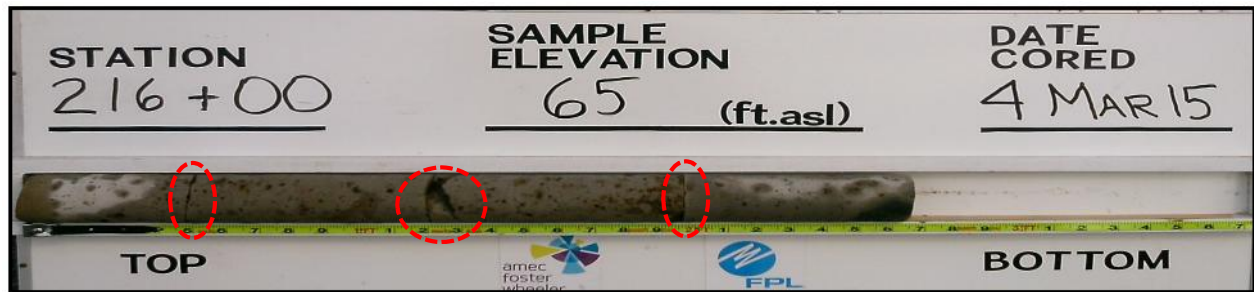


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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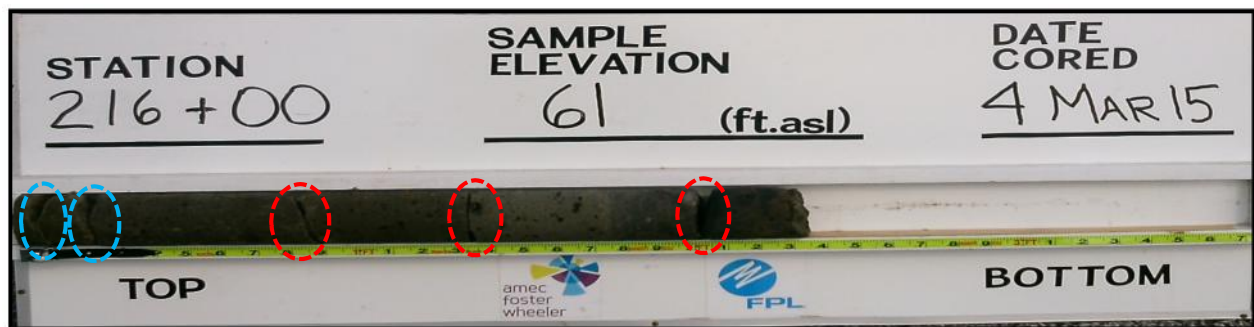
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 216+00



Core ID:	216+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.65	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Broken/missing piece at 1.25 feet.		

Location: STA 216+00



Core ID:	216+00 (middle)	Date Cored:	3/4/15
Core Elevation:	61' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.33	SC Thickness (ft):	2.58
RQD (%):	98	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

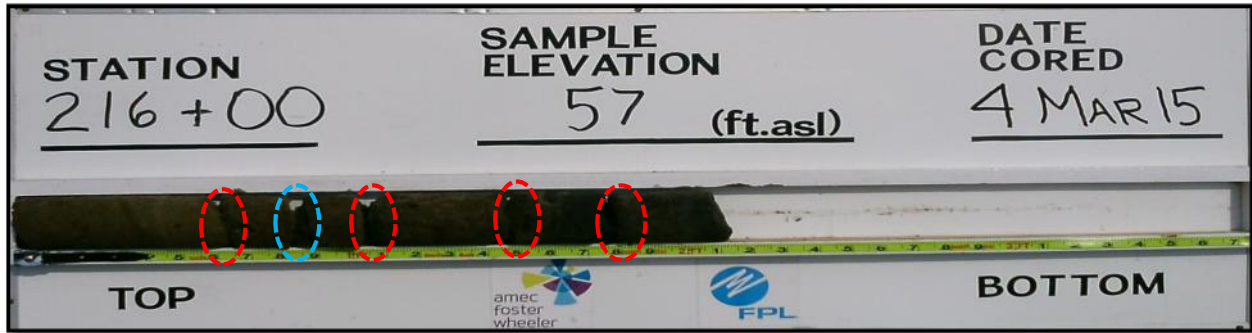
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 216+00






Core ID:	216+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	57' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.33
RQD (%):	45	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.6 feet. Very soft and friable material from 0.6 to 1.75 feet. Soft material from 1.75 to 2.1 feet.		

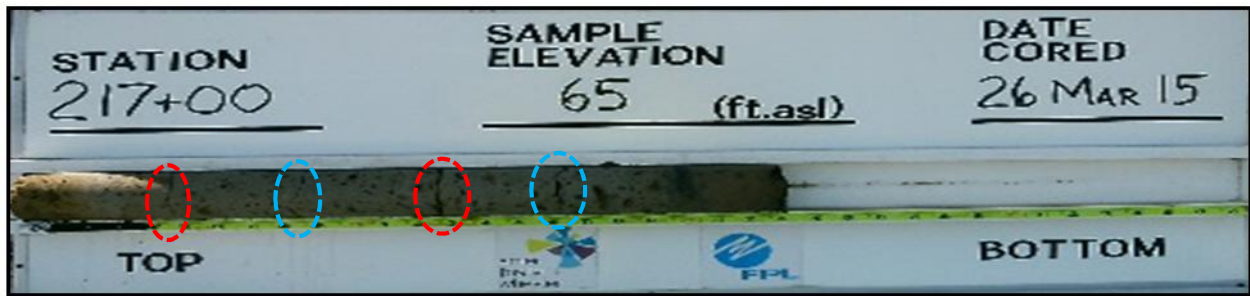
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 217+00



Core ID:	217+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.27	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 217+00



Core ID:	217+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.55	SC Thickness (ft):	2.0
RQD (%):	39	Void Depth (ft):	N/A
Notes:	Entire core variably soft to very soft.		

Manatee Cooling Pond

Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 217+00



Core ID:	217+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft from 0 to 0.35 feet. Soft from 0.35 to 0.95 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 218+00



Core ID:	218+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.66	SC Thickness (ft):	3.25
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 218+00



Core ID:	218+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.91	SC Thickness (ft):	2.5
RQD (%):	73	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.85 feet. Soft material from 0.85 to 1.6 feet.		

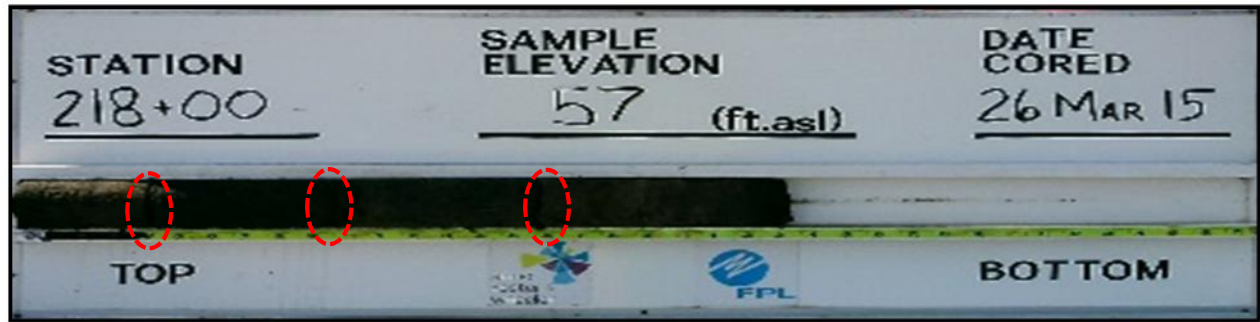
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 218+00



Core ID:	218+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	57' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.58
RQD (%):	67	Void Depth (ft):	N/A
Notes:	Very soft from 0 to 0.4 feet. Lateral fracture from 1.55 to 2.3 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

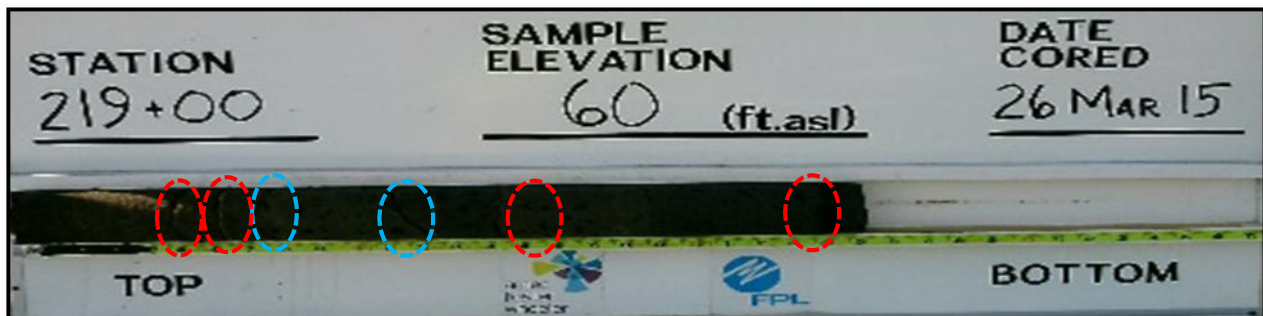
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 219+00



Core ID:	219+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	1.7	SC Thickness (ft):	2.33
RQD (%):	82	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.3 feet.		

Location: STA 219+00



Core ID:	219+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.83
RQD (%):	70	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.75 feet. Soft material 0.75 feet to 1.42 feet.		

Manatee Cooling Pond

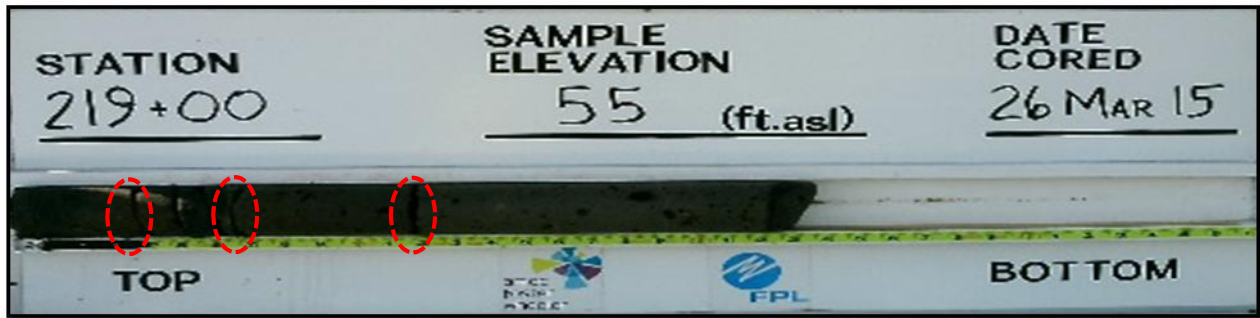
Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 219+00



Core ID:	219+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.58
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.67 feet. Broken core pieces between 0.38 to 0.67 feet.		

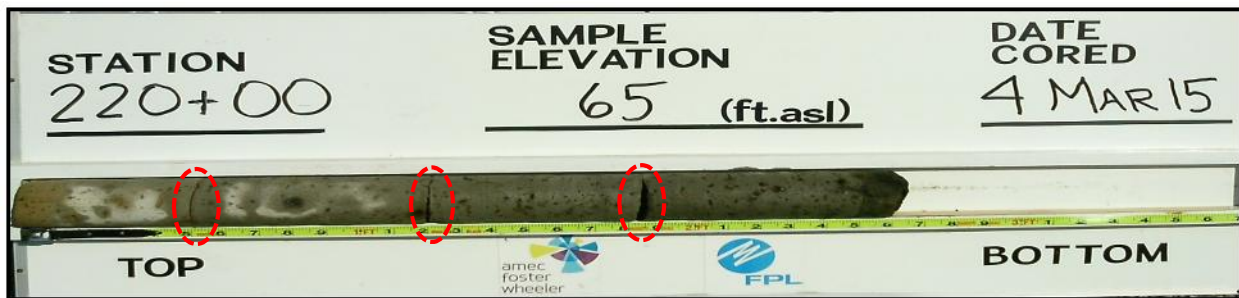
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

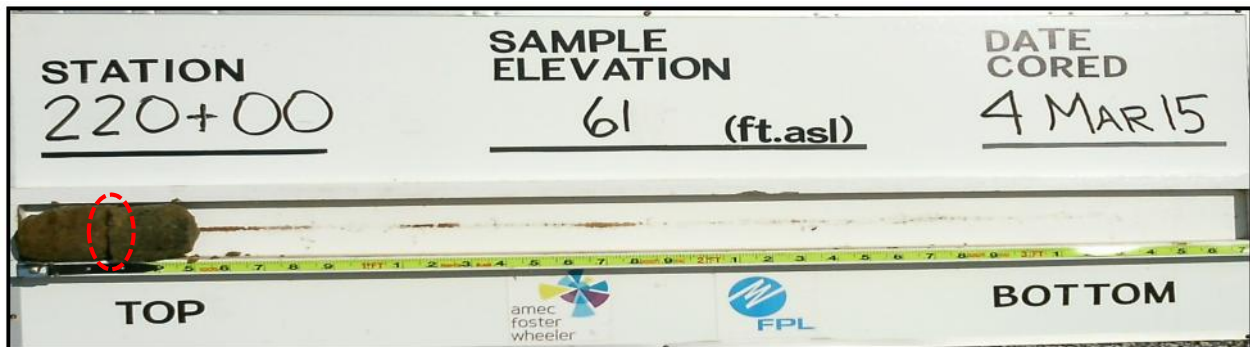
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 220+00



Core ID:	220+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 220+00



Core ID:	220+00 (middle)	Date Cored:	3/4/15
Core Elevation:	61' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	0.5	SC Thickness (ft):	3.0
RQD (%):	0	Void Depth (ft):	N/A
Notes:	Recovered sample very soft and friable.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 220+00



Core ID:	220+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	57' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	0.9	SC Thickness (ft):	2.5
RQD (%):	0	Void Depth (ft):	N/A
Notes:	Recovered sample very soft and friable. Unable to determine breaks and fractures.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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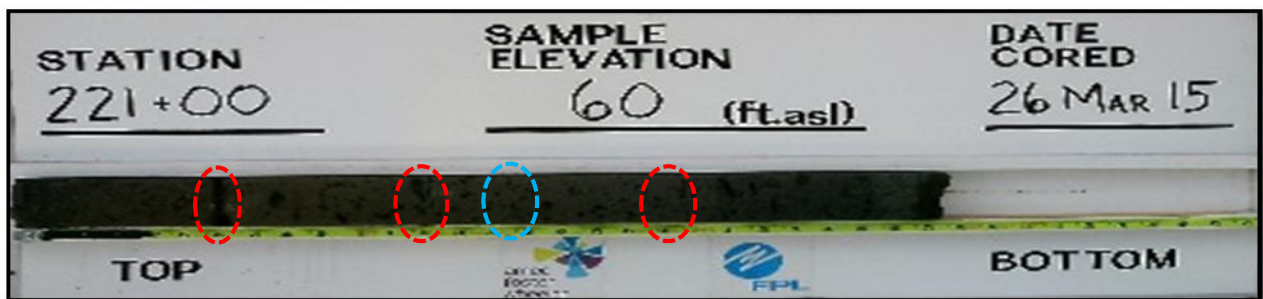
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 221+00



Core ID:	221+00 (top)	Date Cored:	3/26/15
Core Elevation:	65' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 221+00



Core ID:	221+00 (middle)	Date Cored:	3/26/15
Core Elevation:	60' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.6 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 221+00



Core ID:	221+00 (bottom)	Date Cored:	3/26/15
Core Elevation:	55' ASL	Date Photographed:	3/26/15
Recovered Length (ft):	2.13	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 222+00



Core ID:	222+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.65	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.35 feet and from 1.55 to 1.65 feet.		

Location: STA 222+00



Core ID:	222+00 (middle)	Date Cored:	3/25/15
Core Elevation:	60' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.7	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 1.25 feet and soft material from 1.25 to 1.79 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 222+00






Core ID:	222+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	55' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.42	SC Thickness (ft):	2.0
RQD (%):	79	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 1.0 feet. Soft material from 1.0 to 1.42 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 223+00



Core ID:	223+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.87	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 223+00



Core ID:	223+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0.3 to 0.58 feet. Insitu soil from 2.05 to 2.45 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 223+00



Core ID:	223+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.7	SC Thickness (ft):	2.0
RQD (%):	50	Void Depth (ft):	N/A
Notes:	Core sample ranged variably from soft to very soft.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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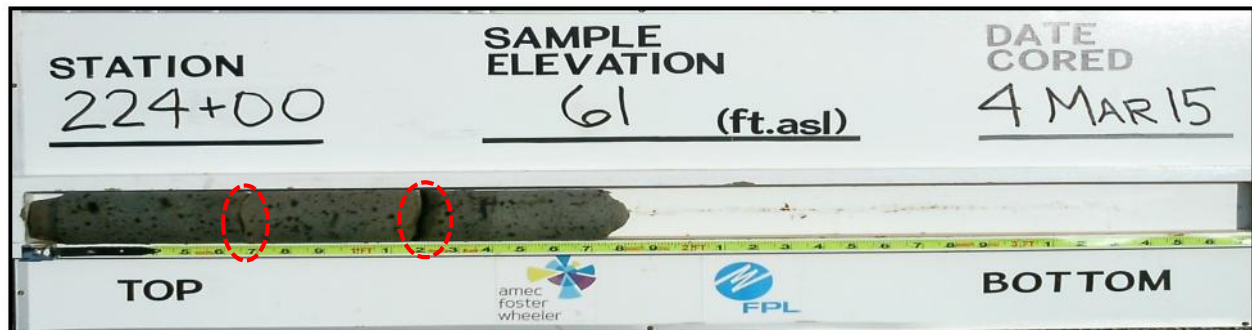
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 224+00



Core ID:	224+00 (top)	Date Cored:	3/4/15
Core Elevation:	65' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.5
RQD (%):	87	Void Depth (ft):	N/A
Notes:			

Location: STA 224+00



Core ID:	224+00 (middle)	Date Cored:	3/4/15
Core Elevation:	61' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material between 0.67 and 1.2 feet.		

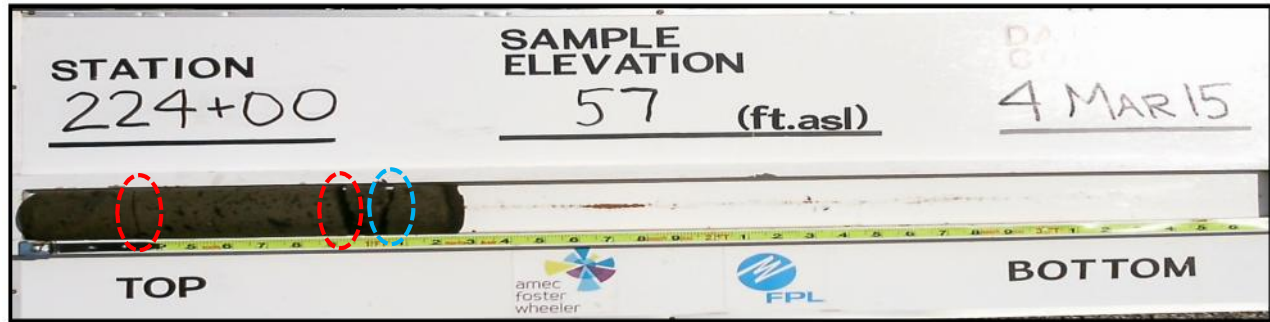
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 224+00



Core ID:	224+00 (bottom)	Date Cored:	3/4/15
Core Elevation:	57' ASL	Date Photographed:	3/4/15
Recovered Length (ft):	1.25	SC Thickness (ft):	2.5
RQD (%):	44	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.35 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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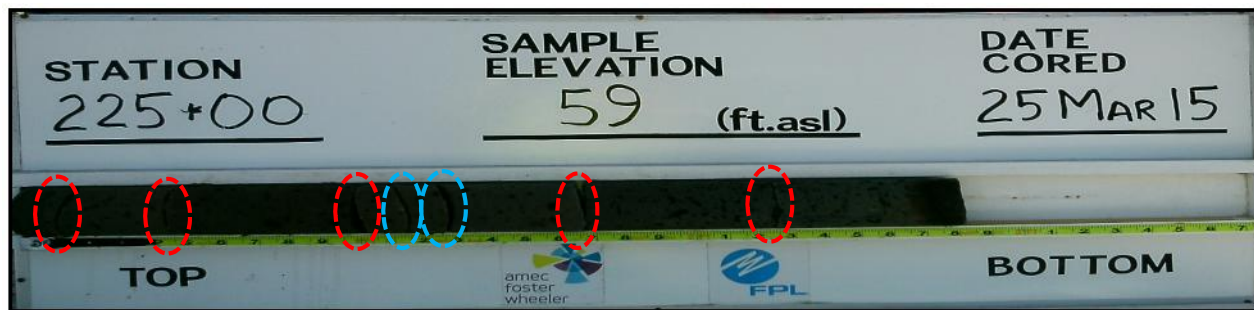
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 225+00



Core ID:	225+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.85	SC Thickness (ft):	2.08
RQD (%):	89	Void Depth (ft):	N/A
Notes:			

Location: STA 225+00



Core ID:	225+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.8	SC Thickness (ft):	3.0
RQD (%):	75	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 225+00



Core ID:	225+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.8	SC Thickness (ft):	2.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.4 feet. Insitu soil from 1.8 to 1.85 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

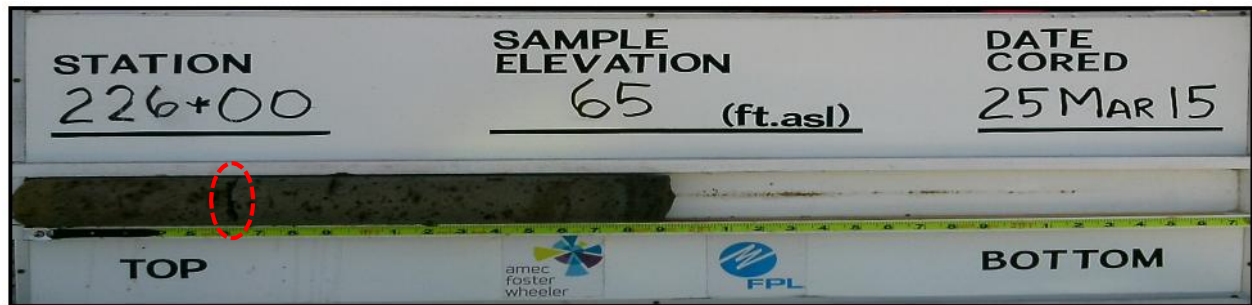


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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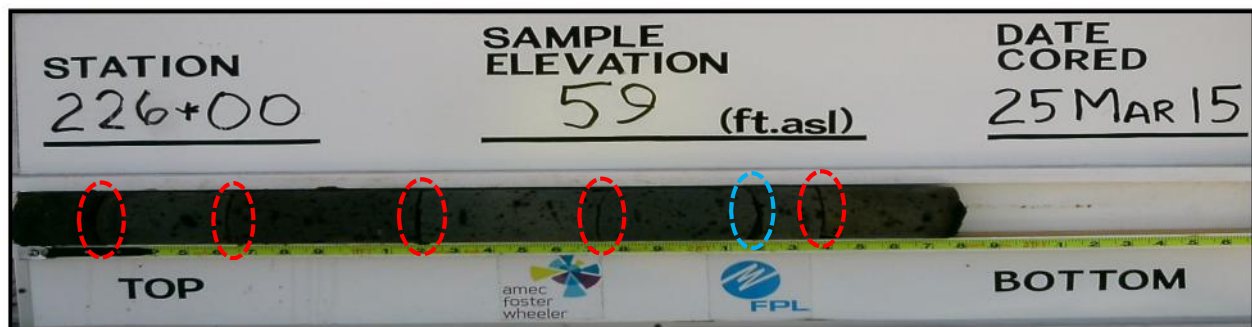
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 226+00



Core ID:	226+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.42
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 226+00



Core ID:	226+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.92
RQD (%):	84	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.25 feet.		

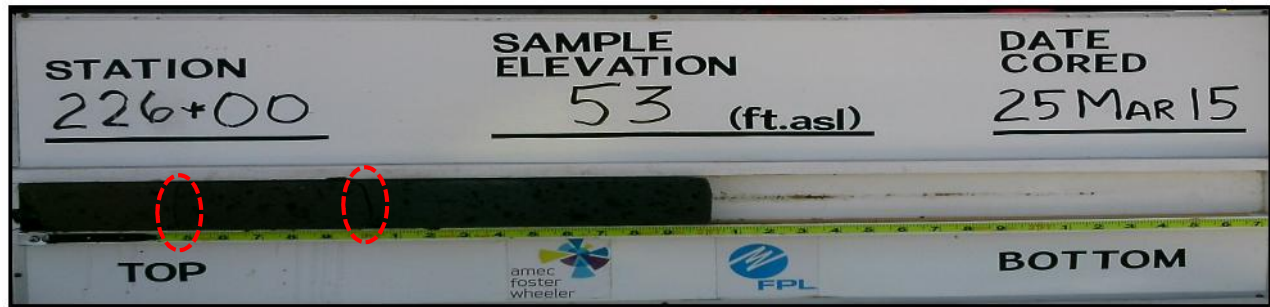
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 226+00



Core ID:	226+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

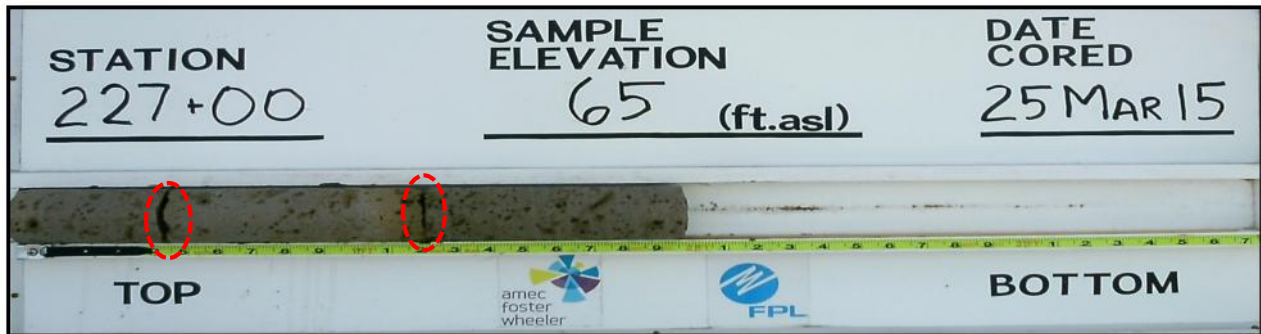
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

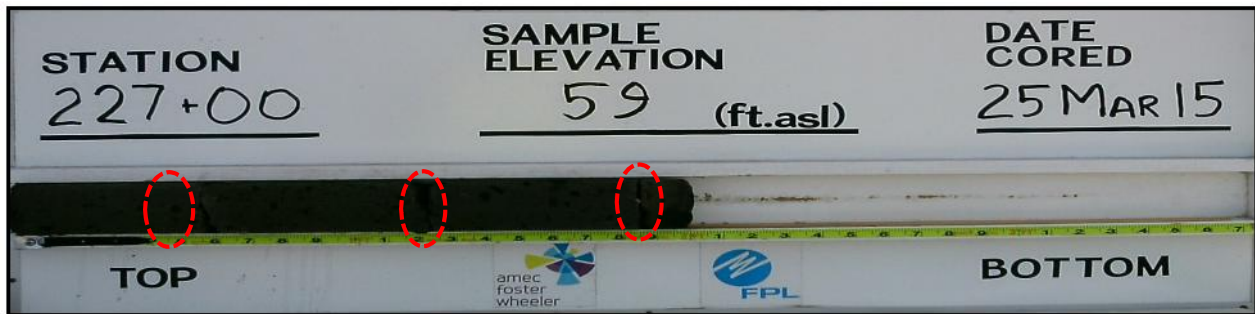
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 227+00



Core ID:	227+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.25
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 227+00



Core ID:	227+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

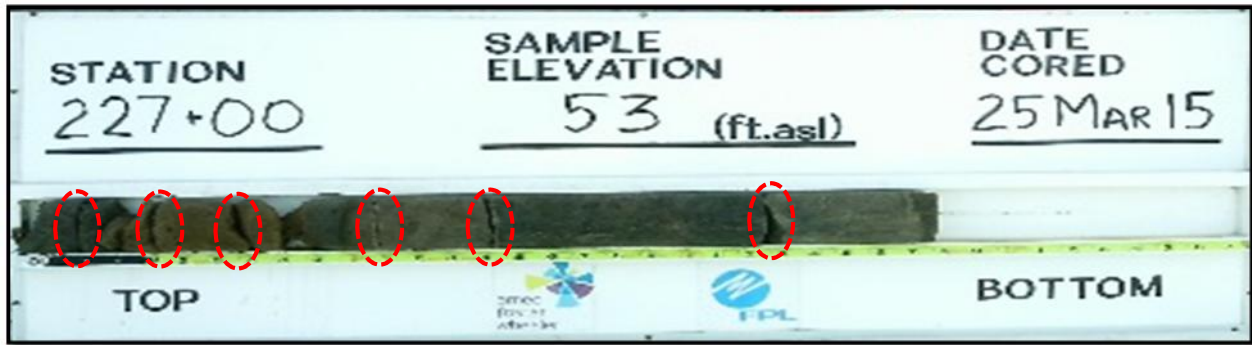
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 227+00



Core ID:	227+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.75
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.85 feet. Broken pieces from 0.2 to 0.45 and from 0.65 to 0.85 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

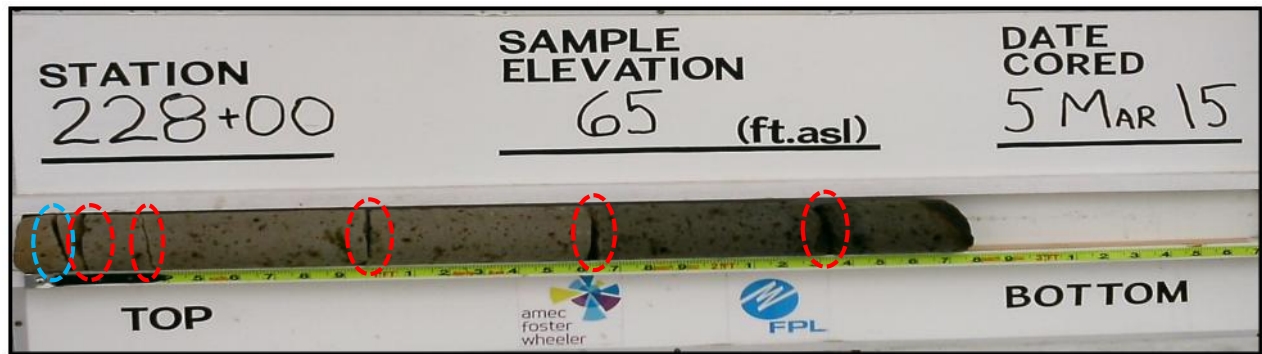


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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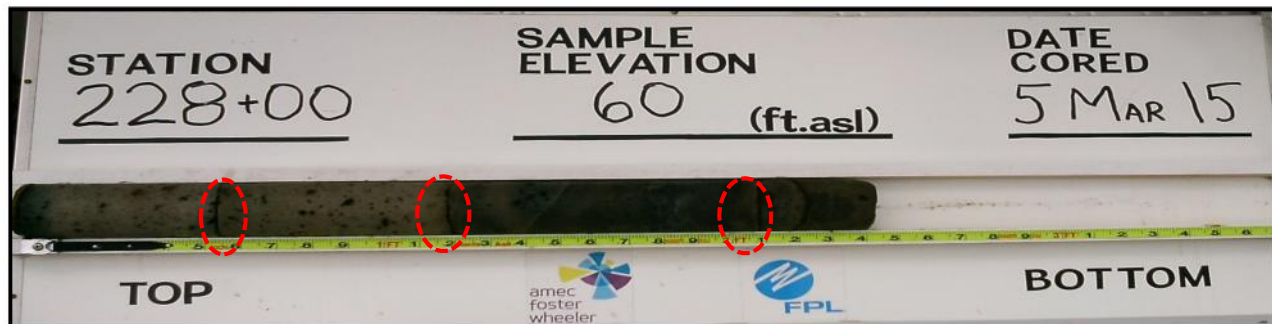
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 228+00



Core ID:	228+00 (top)	Date Cored:	3/5/15
Core Elevation:	65' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.7
RQD (%):	98	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

Location: STA 228+00



Core ID:	228+00 (middle)	Date Cored:	3/5/15
Core Elevation:	60' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.4	SC Thickness (ft):	3.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

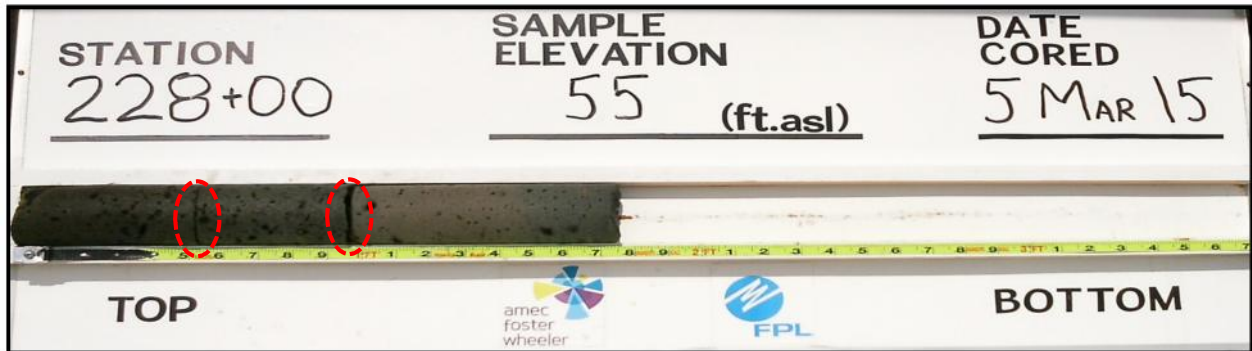
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 228+00



Core ID:	228+00 (bottom)	Date Cored:	3/5/15
Core Elevation:	55' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

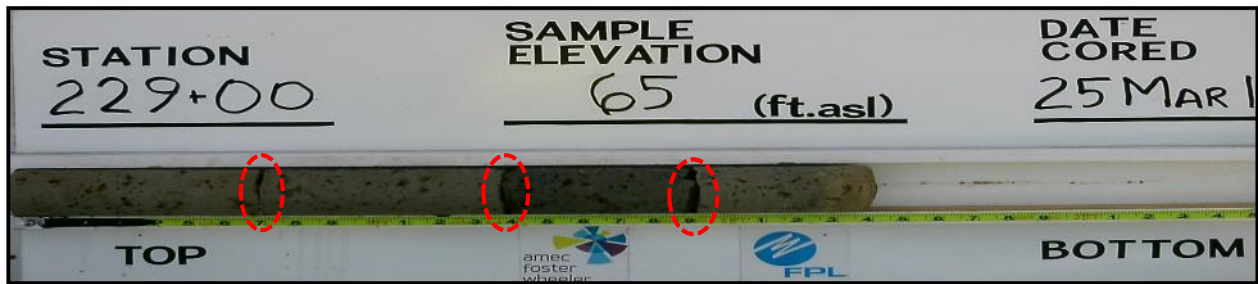


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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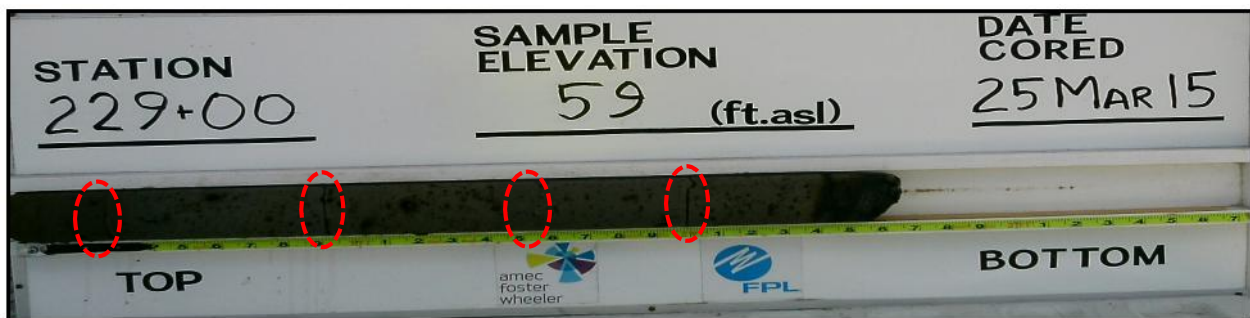
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 229+00



Core ID:	229+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.37	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 229+00



Core ID:	229+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.83
RQD (%):	87	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.4 to 2.55 feet.		

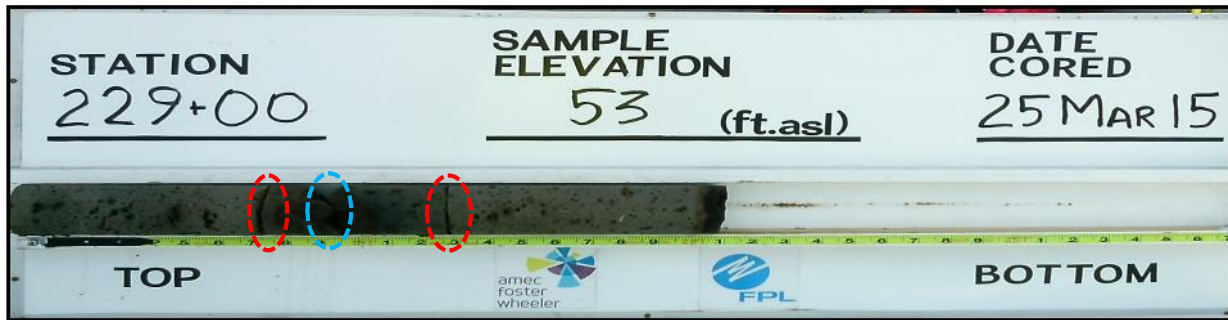
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 229+00



Core ID:	229+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.5
RQD (%):	73	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

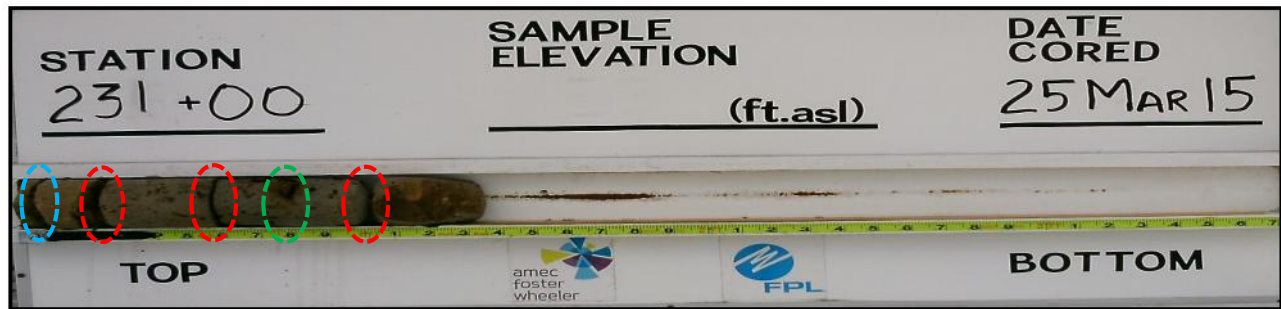


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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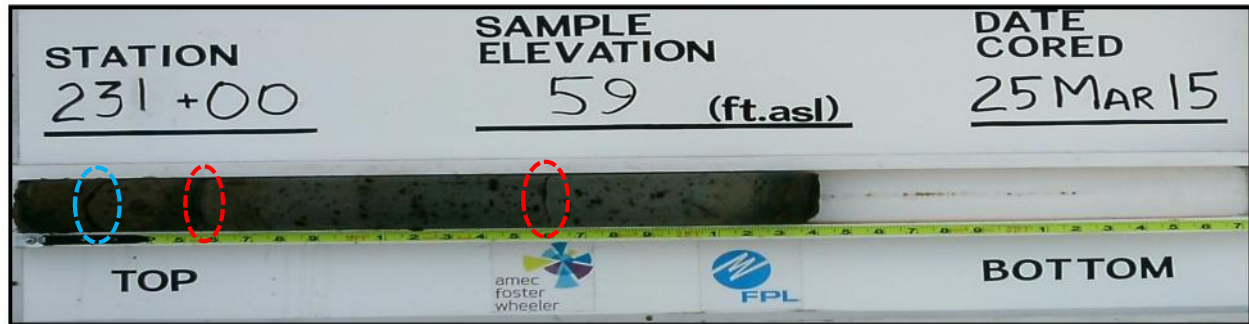
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 231+00



Core ID:	231+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.35	SC Thickness (ft):	2.33
RQD (%):	73	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.25 feet. Wood piece at 0.8 feet. Core fractured laterally from 1.0 to 1.35 feet.		

Location: STA 231+00



Core ID:	231+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.67
RQD (%):	87	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.55 feet. Insitu soil from 2.2 to 2.35 feet.		

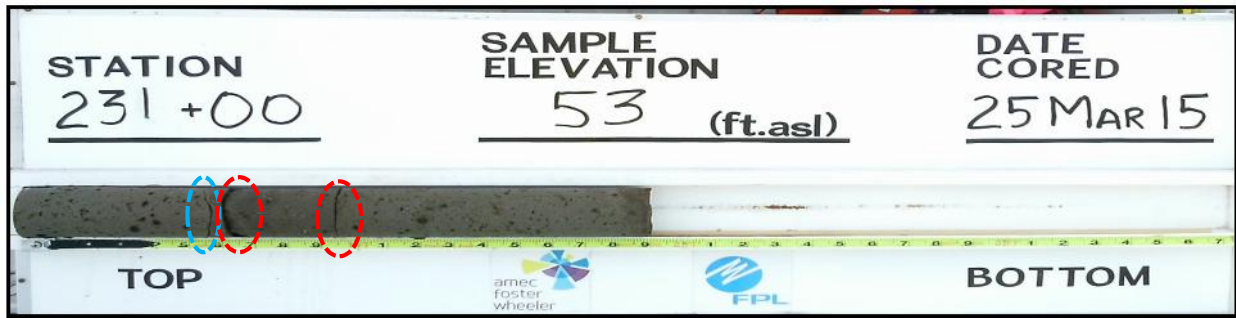
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 231+00



Core ID:	231+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.7 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

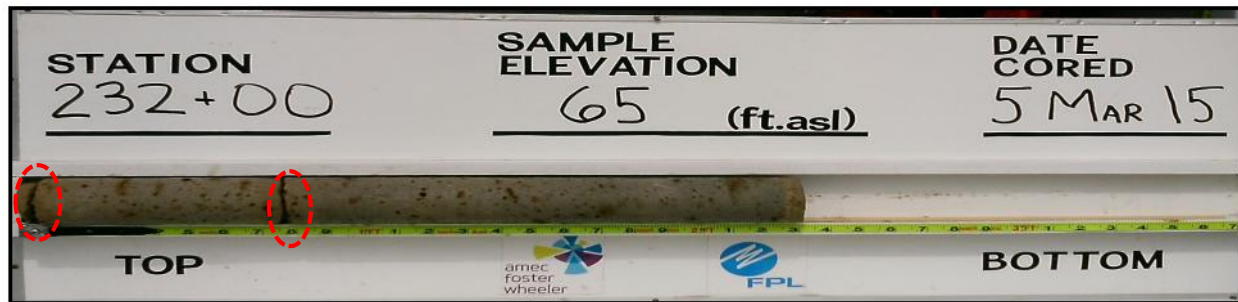


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Project #: 300906.***.3
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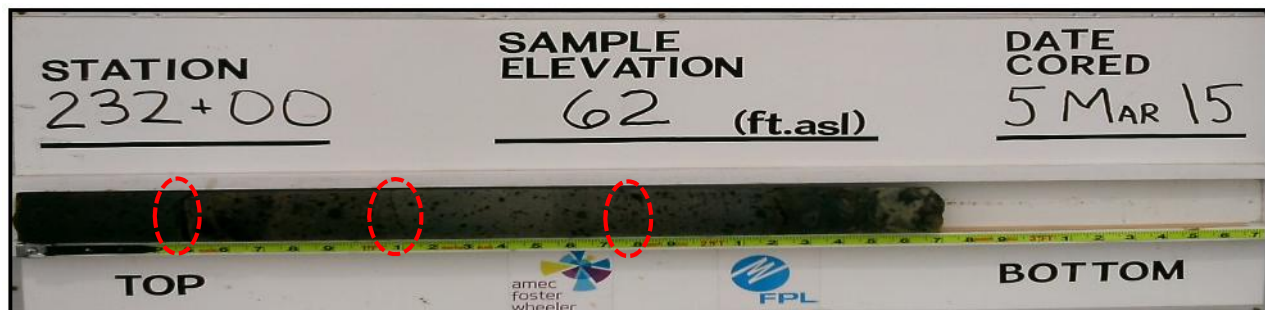
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 232+00



Core ID:	232+00 (top)	Date Cored:	3/5/15
Core Elevation:	65' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.3
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.1 feet.		

Location: STA 232+00



Core ID:	232+00 (middle)	Date Cored:	3/5/15
Core Elevation:	62' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.17	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Two voids noted at 0.6 feet. In-situ soil from 2.17 to 2.7 feet.		

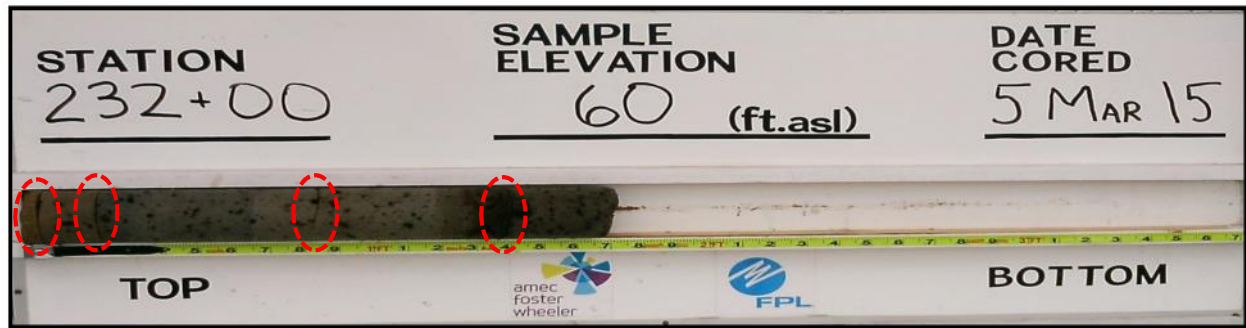
Manatee Cooling Pond Soil-Cement Core Logs



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Location: STA 232+00






Core ID:	232+00 (bottom)	Date Cored:	3/5/15
Core Elevation:	60' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	1.7	SC Thickness (ft):	3.0
RQD (%):	82	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

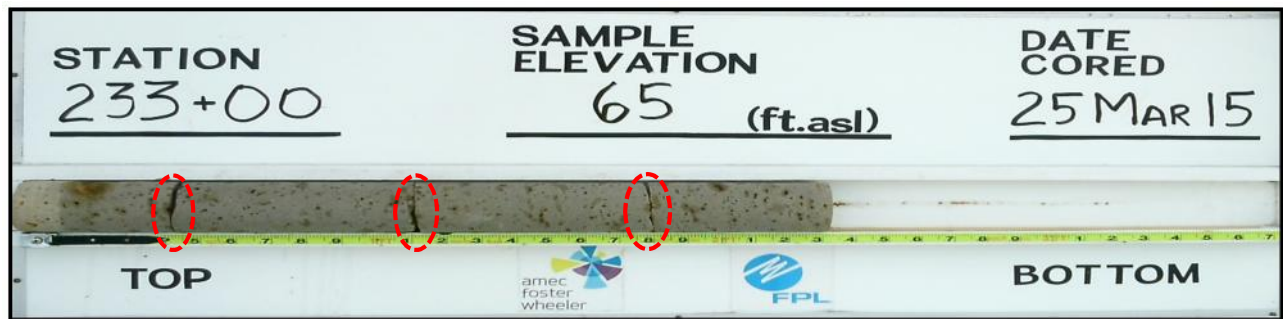


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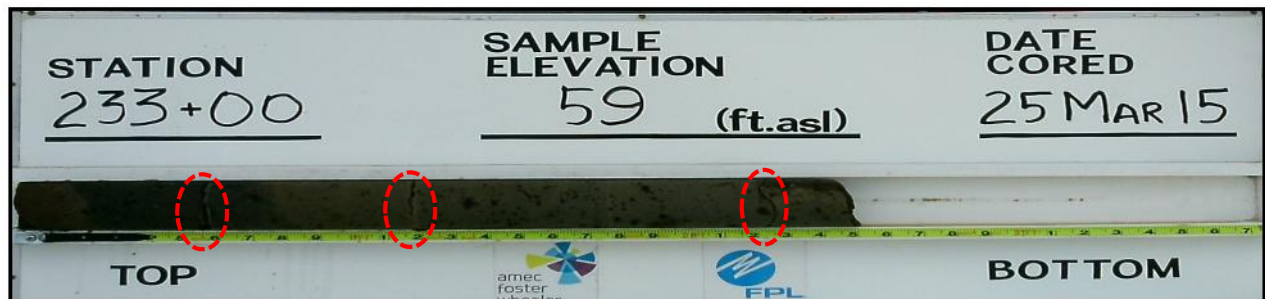
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 233+00



Core ID:	233+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 233+00



Core ID:	233+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.45	SC Thickness (ft):	3.0
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.4 feet.		

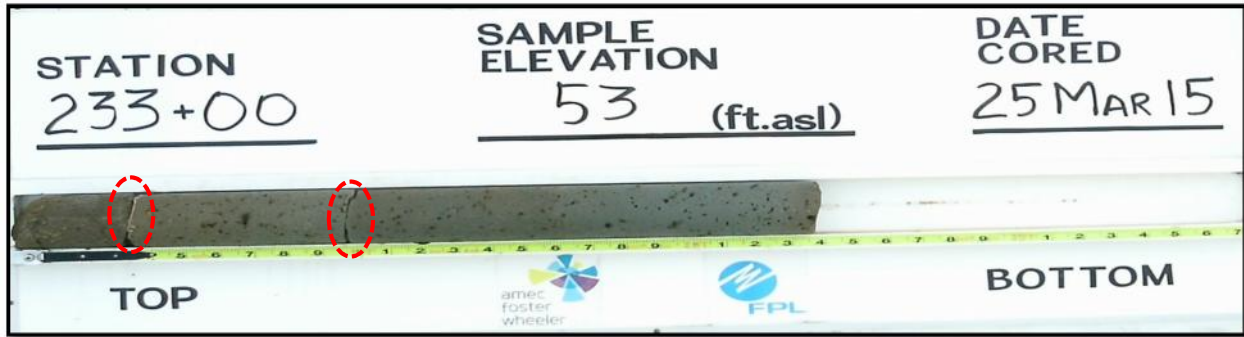
Manatee Cooling Pond Soil-Cement Core Logs



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Location: STA 233+00



Core ID:	233+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.35	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.35 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

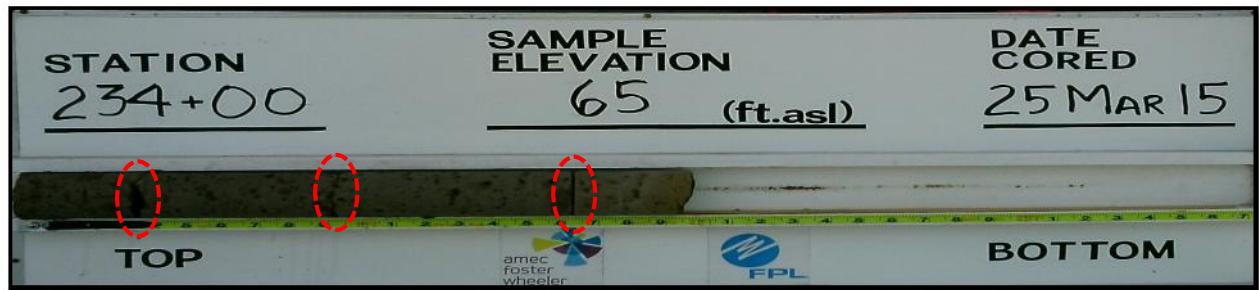


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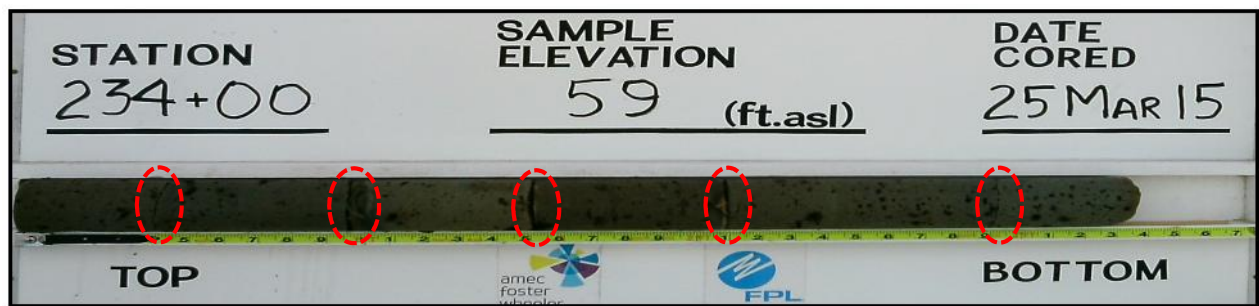
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 234+00



Core ID:	234+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 234+00



Core ID:	234+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	3.3	SC Thickness (ft):	3.67
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

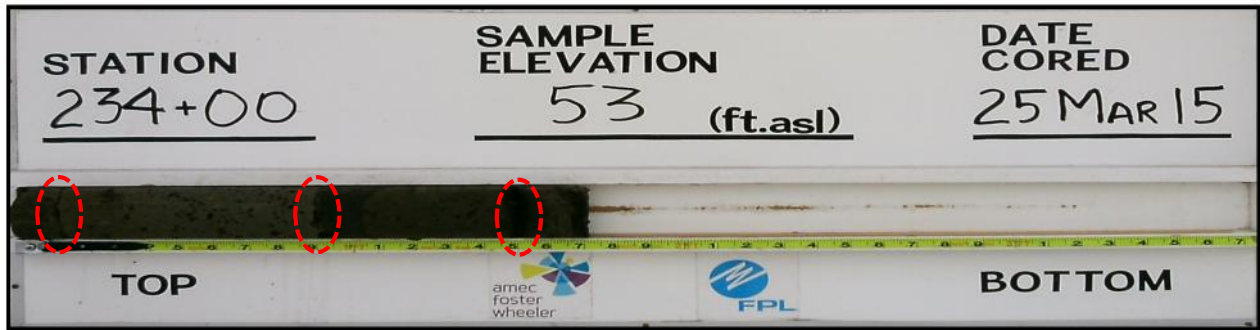
Manatee Cooling Pond Soil-Cement Core Logs



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Location: STA 234+00



Core ID:	234+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	1.5	SC Thickness (ft):	2.165
RQD (%):	90	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.15 feet. Insitu soil from 1.5 to 1.7 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

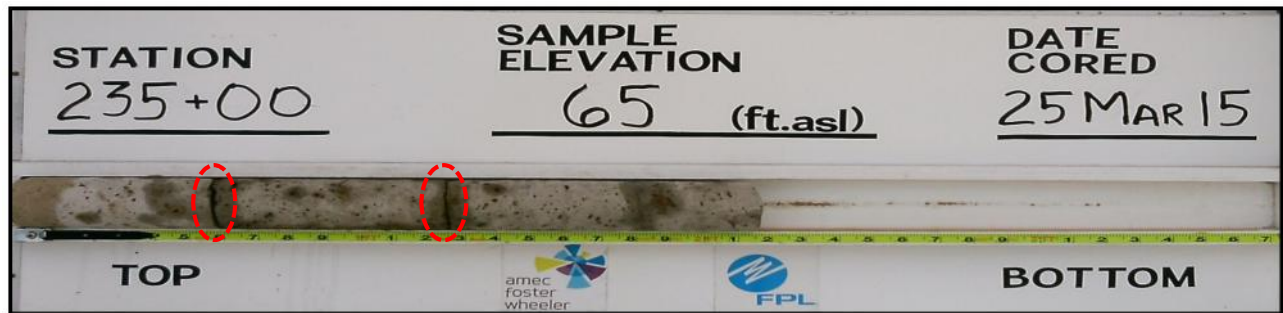


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Project #: 300906.***.3
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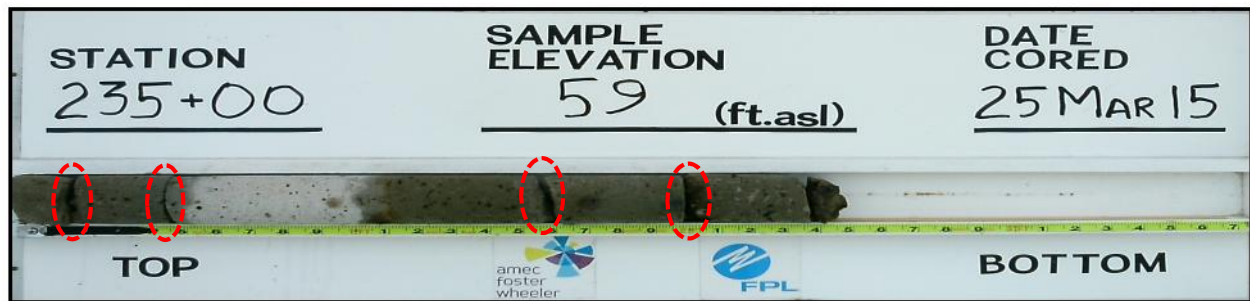
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 235+00



Core ID:	235+00 (top)	Date Cored:	3/25/15
Core Elevation:	65' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 235+00



Core ID:	235+00 (middle)	Date Cored:	3/25/15
Core Elevation:	59' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.35	SC Thickness (ft):	3.5
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

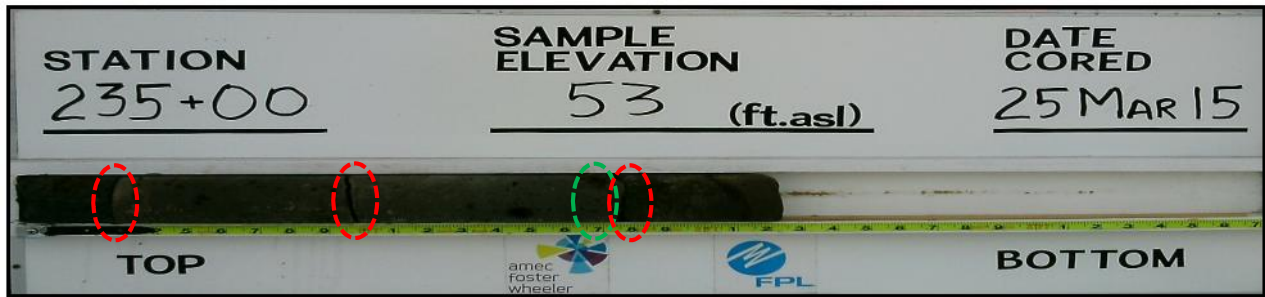
Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 235+00



Core ID:	235+00 (bottom)	Date Cored:	3/25/15
Core Elevation:	53' ASL	Date Photographed:	3/25/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.5
RQD (%):	86	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.3 feet. Piece of wood at 1.65 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

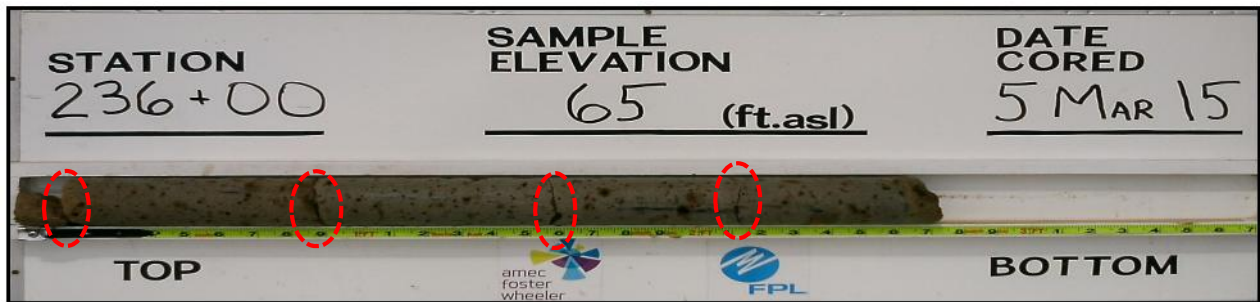


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Project #: 300906.***.3
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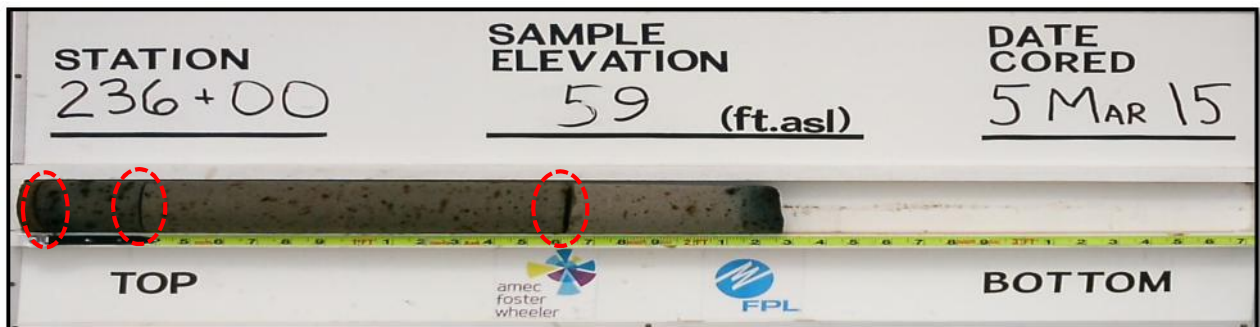
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 236+00



Core ID:	236+00 (top)	Date Cored:	3/5/15
Core Elevation:	65' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.92
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

Location: STA 236+00



Core ID:	236+00 (middle)	Date Cored:	3/5/15
Core Elevation:	59' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.58
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

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Location: STA 236+00



Core ID:	236+00 (bottom)	Date Cored:	3/5/15
Core Elevation:	53' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.58
RQD (%):	93	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.15 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

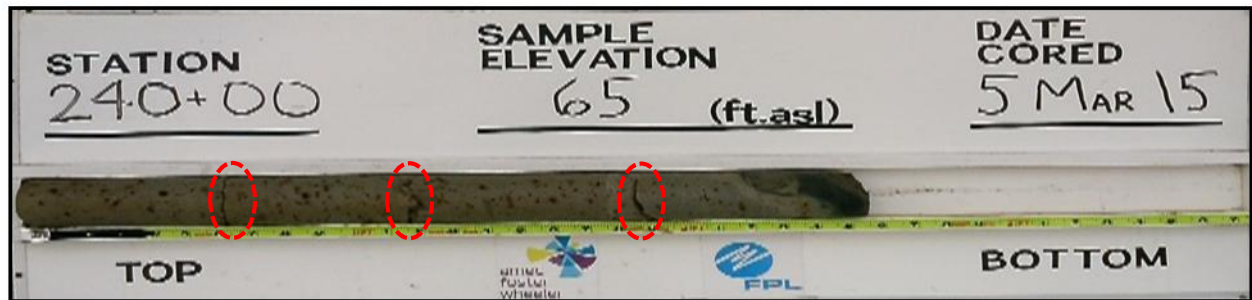


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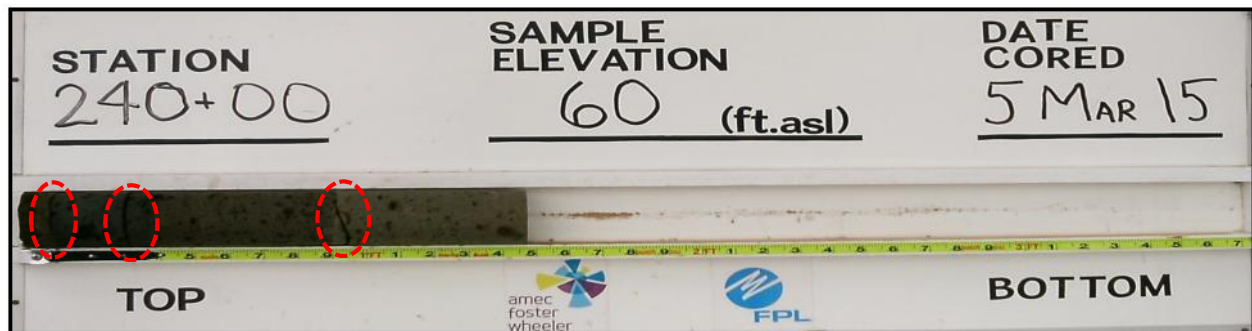
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 240+00



Core ID:	240+00 (top)	Date Cored:	3/5/15
Core Elevation:	65' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 240+00



Core ID:	240+00 (middle)	Date Cored:	3/5/15
Core Elevation:	60' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	1.47	SC Thickness (ft):	2.5
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

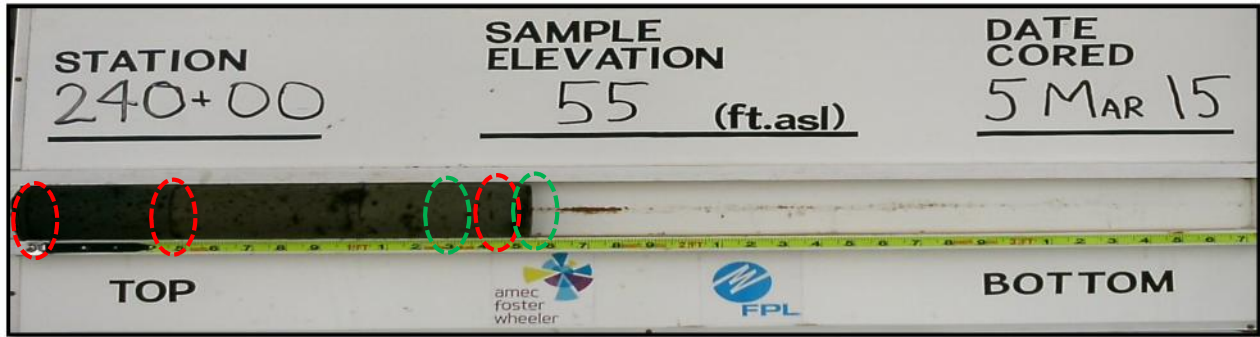
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 240+00



Core ID:	240+00 (bottom)	Date Cored:	3/5/15
Core Elevation:	55' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	1.52	SC Thickness (ft):	2.83
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Wood branches at 1.3 and 1.52 feet.		

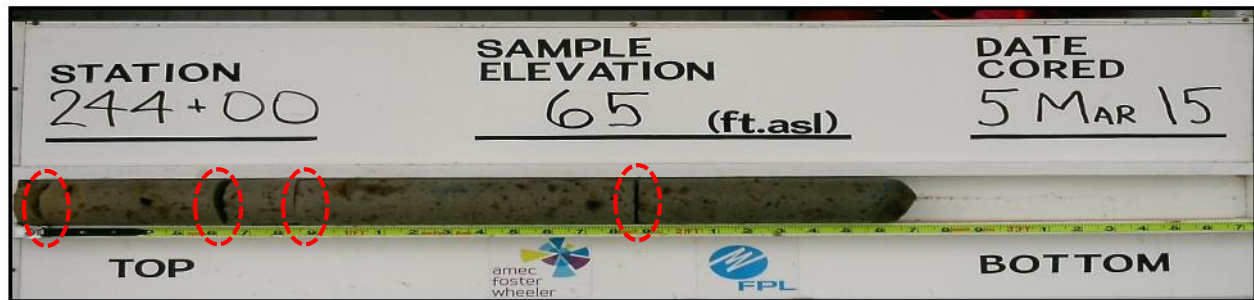
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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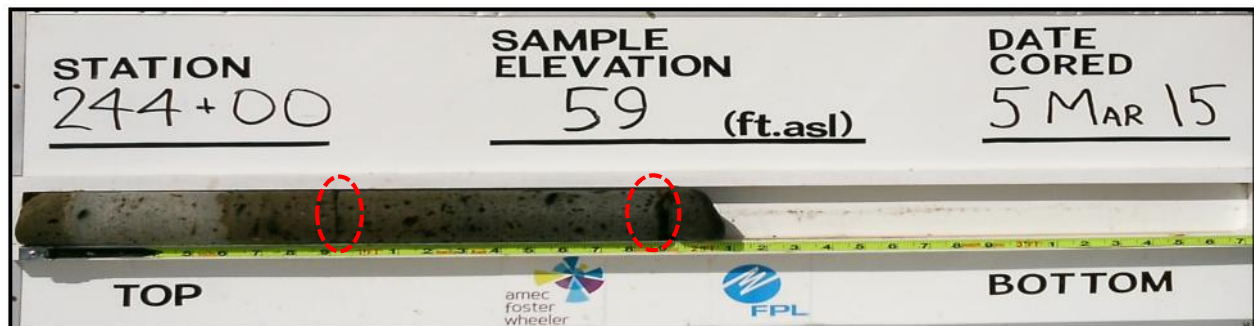
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 244+00



Core ID:	244+00 (top)	Date Cored:	3/5/15
Core Elevation:	65' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.65	SC Thickness (ft):	2.75
RQD (%):	88	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Location: STA 244+00



Core ID:	244+00 (middle)	Date Cored:	3/5/15
Core Elevation:	59' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.58
RQD (%):	90	Void Depth (ft):	N/A
Notes:	Wood stick located at break at 1.85 feet.		

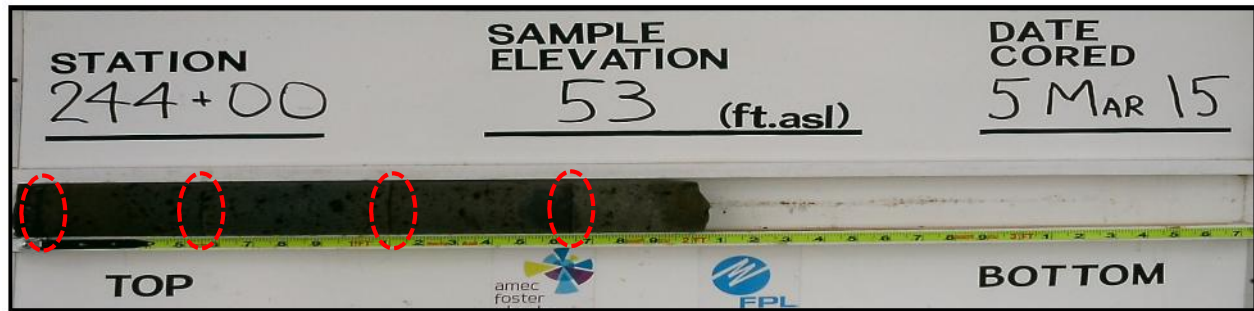
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 244+00



Core ID:	244+00 (bottom)	Date Cored:	3/5/15
Core Elevation:	53' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

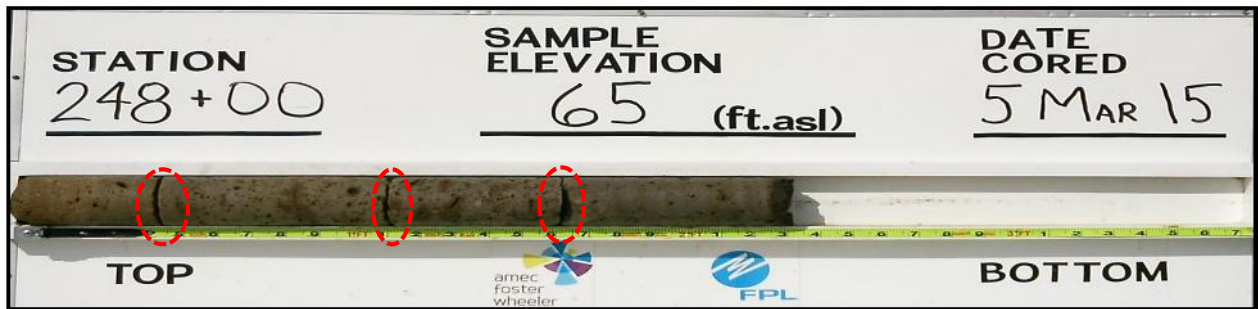
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

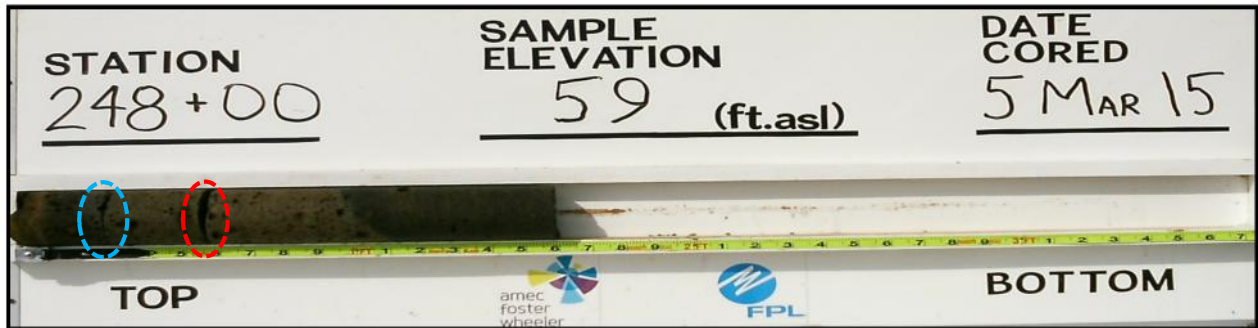
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 248+00



Core ID:	248+00 (top)	Date Cored:	3/5/15
Core Elevation:	65' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.3
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 248+00



Core ID:	248+00 (middle)	Date Cored:	3/5/15
Core Elevation:	59' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	1.6	SC Thickness (ft):	2.16
RQD (%):	64	Void Depth (ft):	N/A
Notes:			

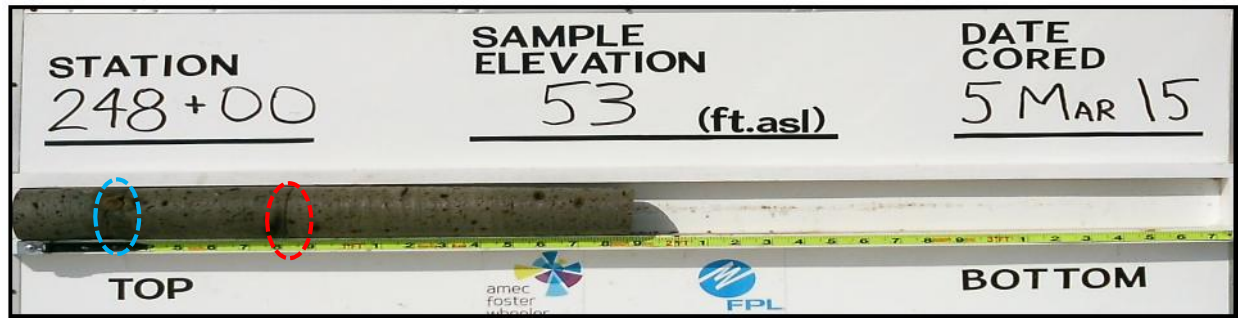
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 248+00



Core ID:	248+00 (bottom)	Date Cored:	3/5/15
Core Elevation:	53' ASL	Date Photographed:	3/5/15
Recovered Length (ft):	1.85	SC Thickness (ft):	2.67
RQD (%):	84	Void Depth (ft):	N/A
Notes:	Wood stick located in fracture at 0.3 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

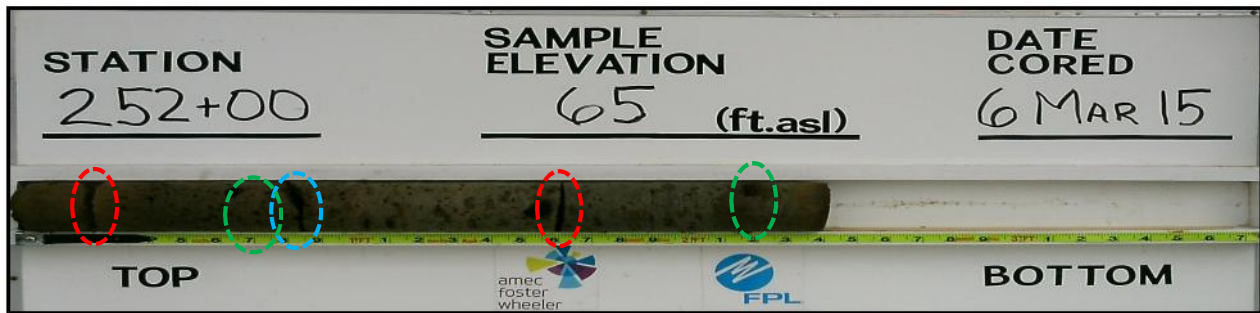


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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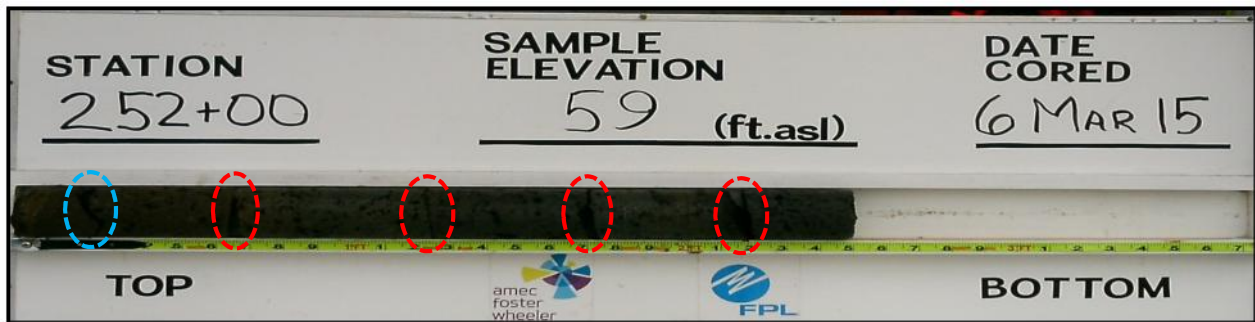
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 252+00



Core ID:	252+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.5
RQD (%):	90	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.25 feet. Small void at 0.65 feet. Wood plant part in break at 0.85 feet. Wood plant part at 2.15 feet.		

Location: STA 252+00



Core ID:	68+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.58
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet. Pitting noted on the exterior of the core only.		

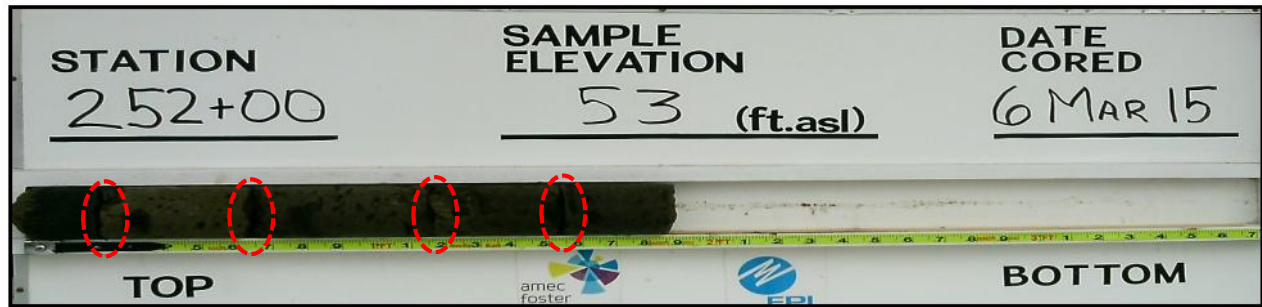
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 252+00






Core ID:	252+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.85	SC Thickness (ft):	2.0
RQD (%):	89	Void Depth (ft):	N/A
Notes:	Entire core sample is soft. Wood plant part in break at 0.2 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

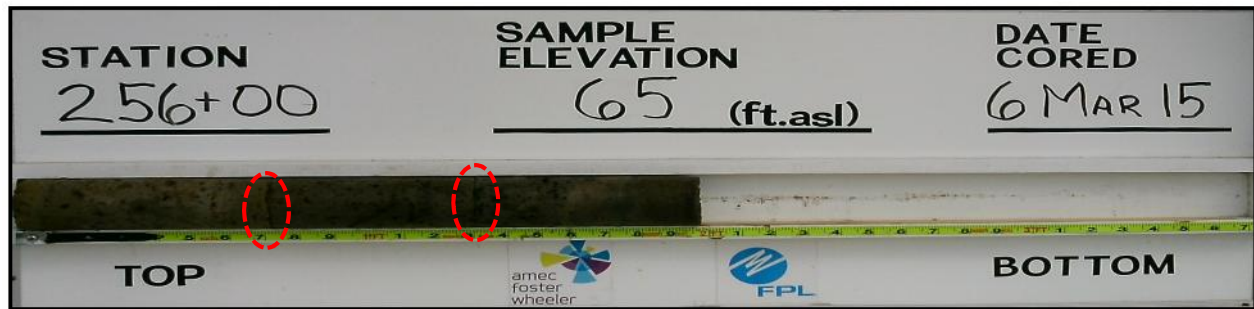


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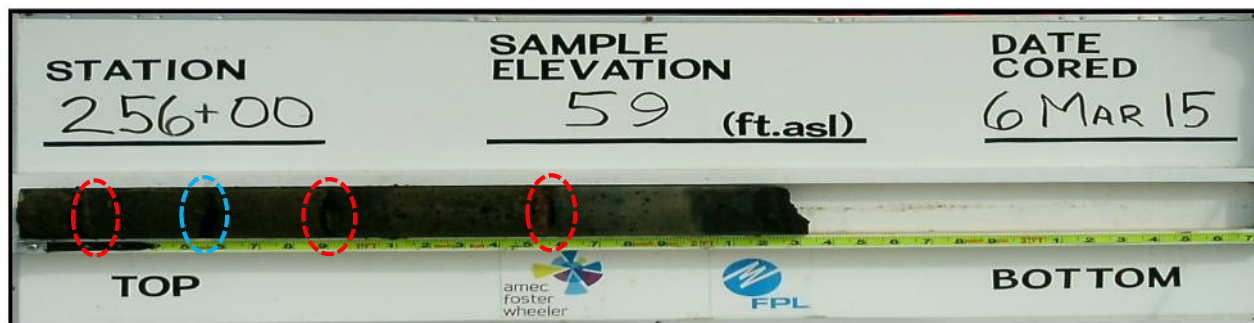
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 256+00



Core ID:	256+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.96	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 256+00



Core ID:	256+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.67
RQD (%):	65	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet and from 0.55 to 0.9 feet. Wood plant part noted in break at 1.55 feet. In-situ soil from 2.0 to 2.3 feet.		

Manatee Cooling Pond

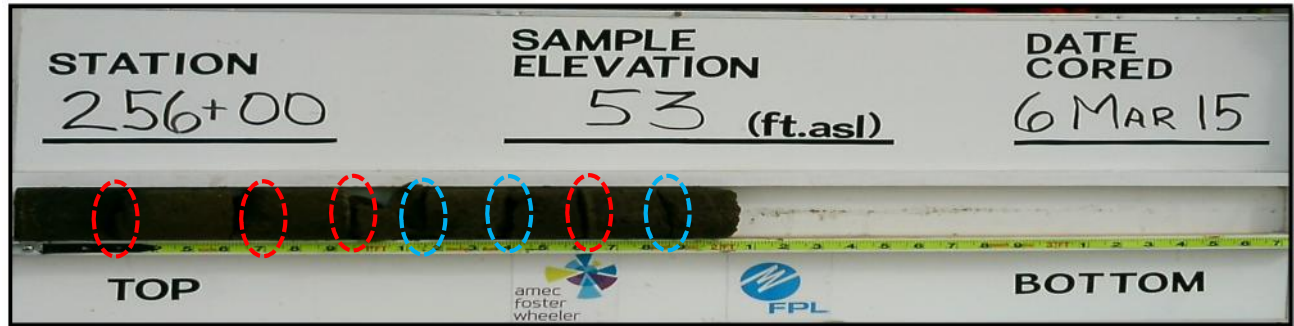
Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 256+00



Core ID:	256+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.25
RQD (%):	0	Void Depth (ft):	N/A
Notes:	Complete recovered core soft to very soft.		

Manatee Cooling Pond Soil-Cement Core Logs

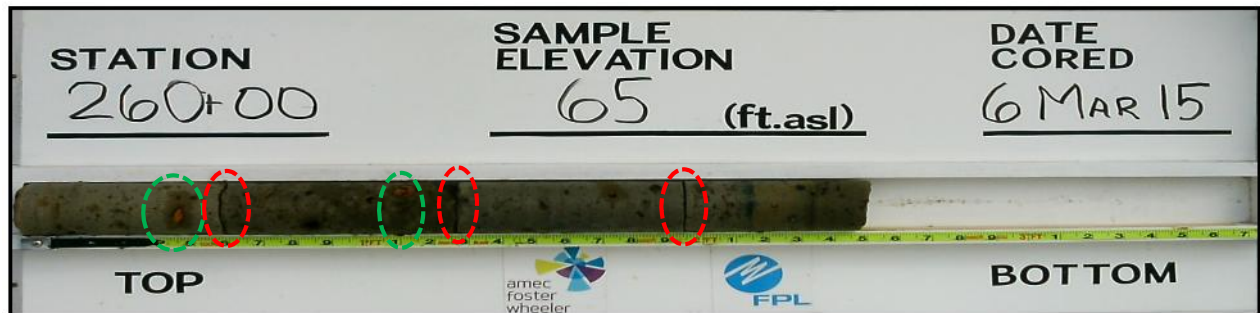


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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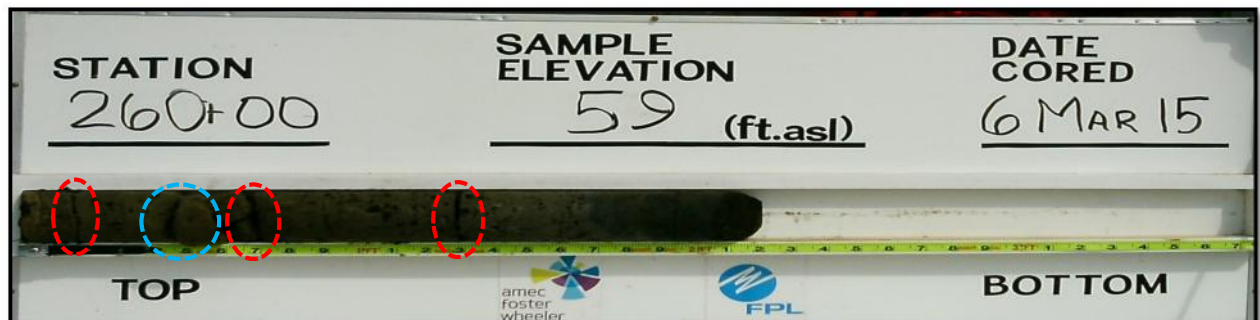
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 260+00



Core ID:	260+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Wood noted at 0.47 and 1.1 feet.		

Location: STA 260+00



Core ID:	260+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.25
RQD (%):	76	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.5 feet.		

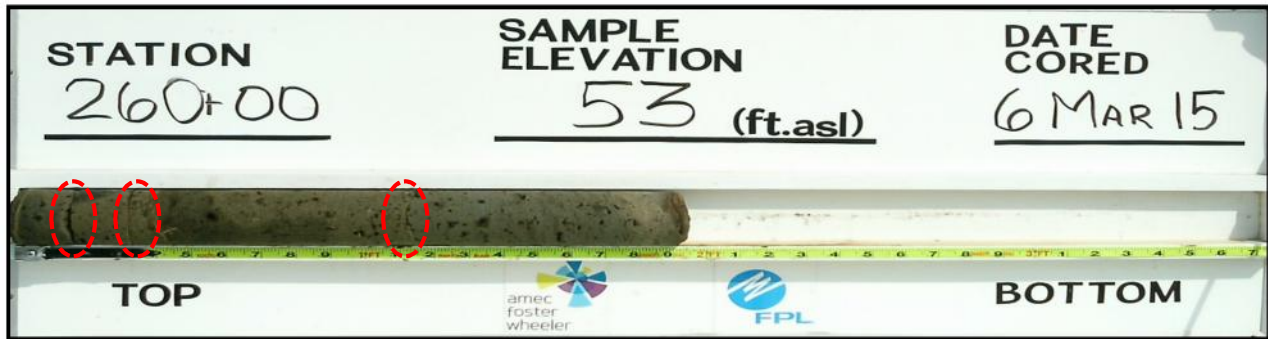
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 260+00



Core ID:	260+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.165
RQD (%):	83	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.32 feet.		

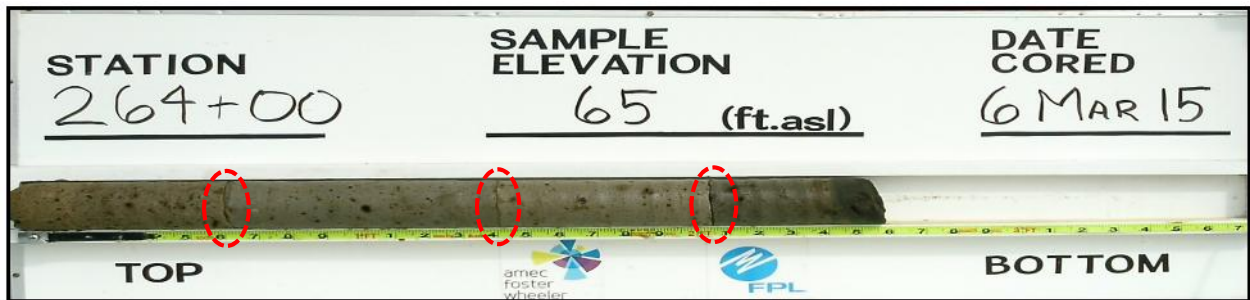
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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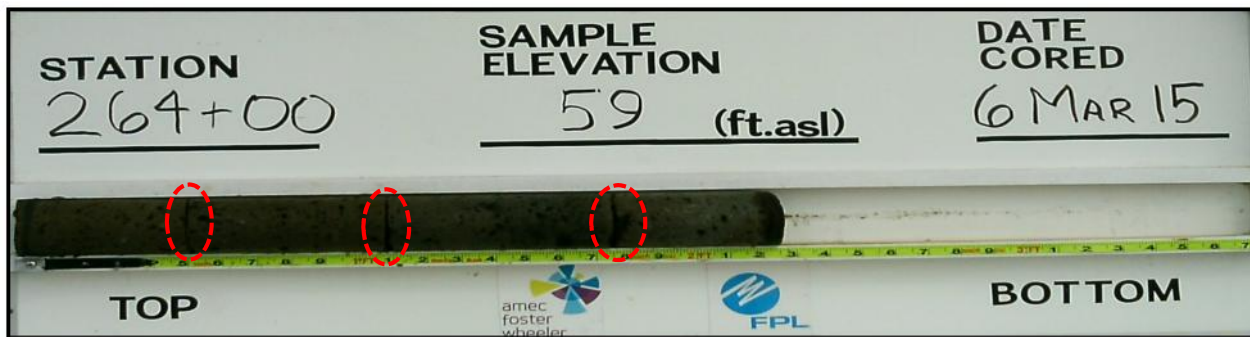
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 264+00



Core ID:	264+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.55
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 264+00



Core ID:	264+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.3
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Pitting noted on the exterior of the core only.		

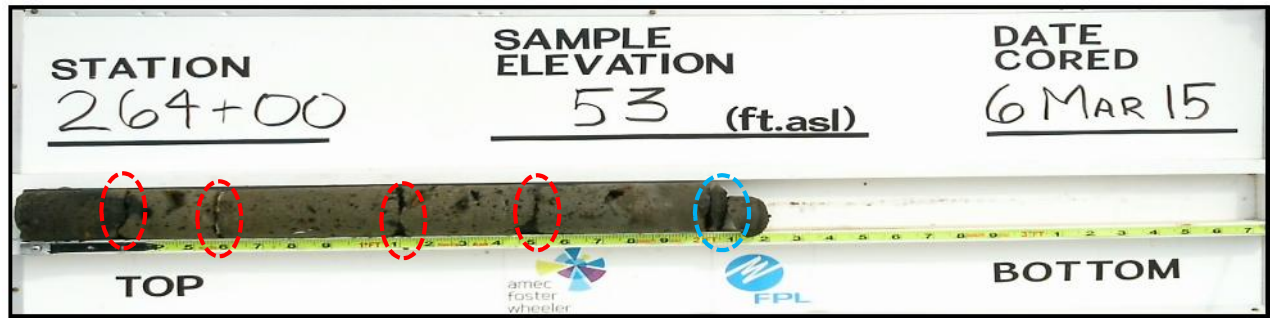
Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 260+00



Core ID:	260+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.165
RQD (%):	85	Void Depth (ft):	N/A
Notes:	Complete recovered core is soft.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

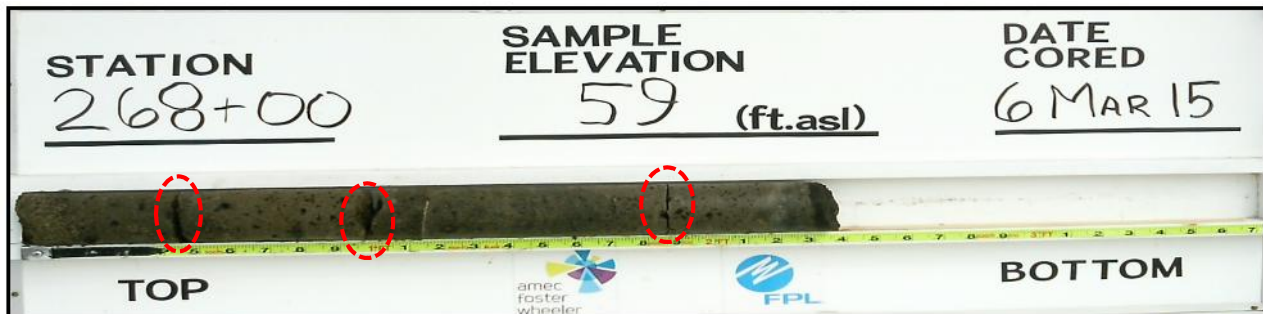
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 268+00



Core ID:	268+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.13	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 268+00



Core ID:	268+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

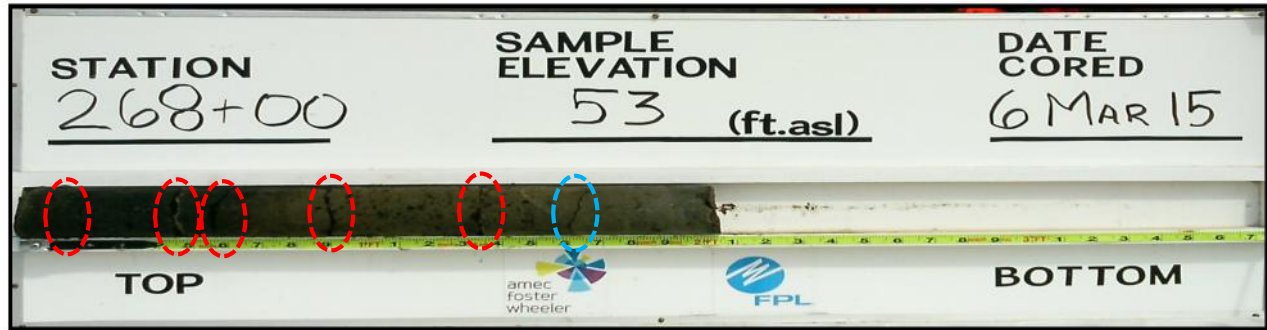
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 268+00






Core ID:	268+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.05
RQD (%):	63	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.9 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

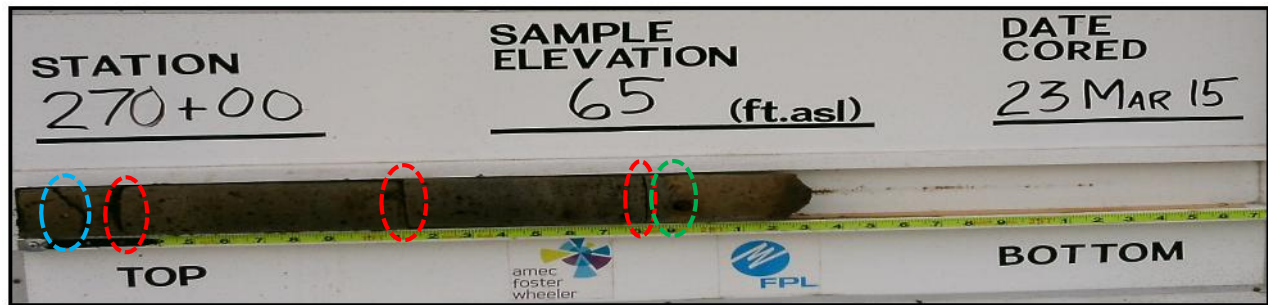


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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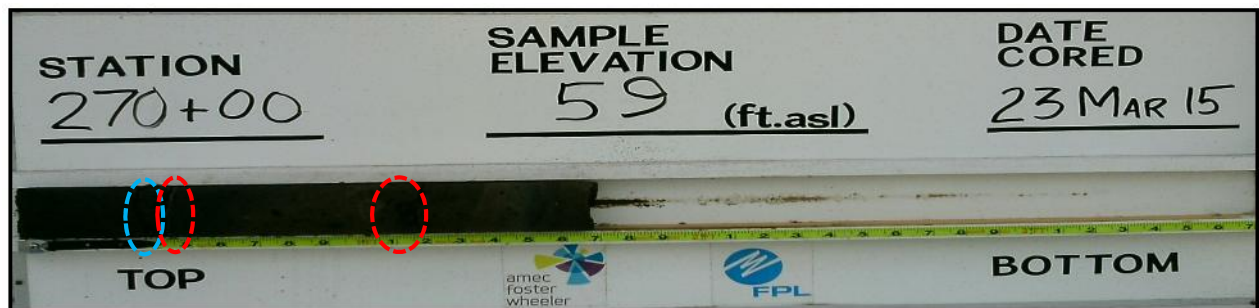
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 270+00



Core ID:	270+00 (top)	Date Cored:	3/23/15
Core Elevation:	65' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.33
RQD (%):	86	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Fractured pieces from 1.9 to 2.45 feet.		

Location: STA 270+00



Core ID:	270+00 (middle)	Date Cored:	3/23/15
Core Elevation:	59' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.65	SC Thickness (ft):	1.75
RQD (%):	97	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.7 feet.		

Manatee Cooling Pond

Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 270+00



Core ID:	270+00 (bottom)	Date Cored:	3/23/15
Core Elevation:	53' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.42
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Insitu soil 2.05 to 2.13 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

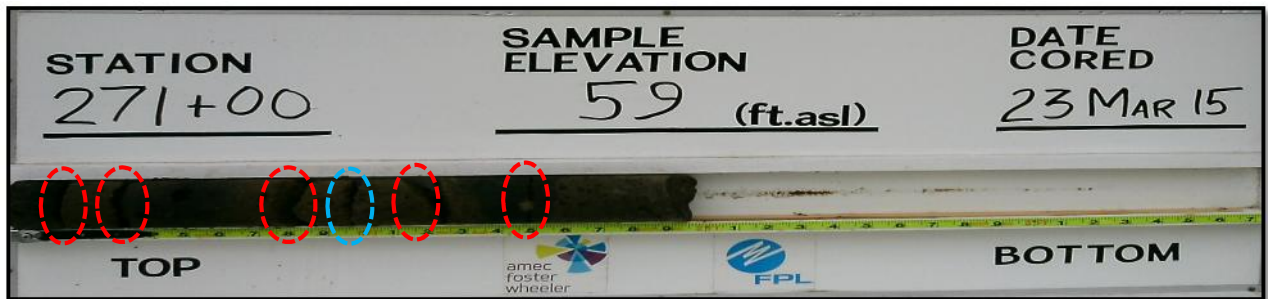
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 271+00



Core ID:	271+00 (top)	Date Cored:	3/23/15
Core Elevation:	65' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.88	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Fractured pieces from 1.9 to 2.45 feet.		

Location: STA 271+00



Core ID:	271+00 (middle)	Date Cored:	3/23/15
Core Elevation:	59' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.92	SC Thickness (ft):	2.08
RQD (%):	49	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 1.48 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 271+00



Core ID:	271+00 (bottom)	Date Cored:	3/23/15
Core Elevation:	53' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.08	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 272+00



Core ID:	272+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.7
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Wood noted in break at 0.5 feet.		

Location: STA 272+00



Core ID:	272+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.87	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

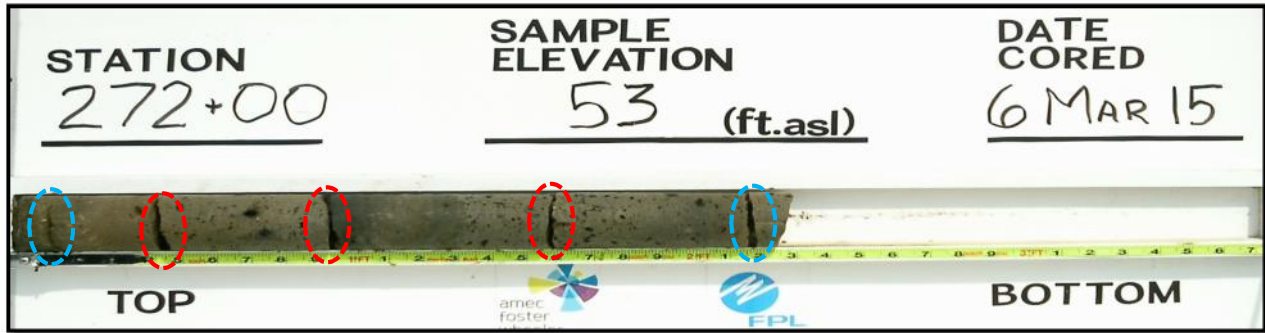
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 272+00



Core ID:	272+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.25
RQD (%):	75	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

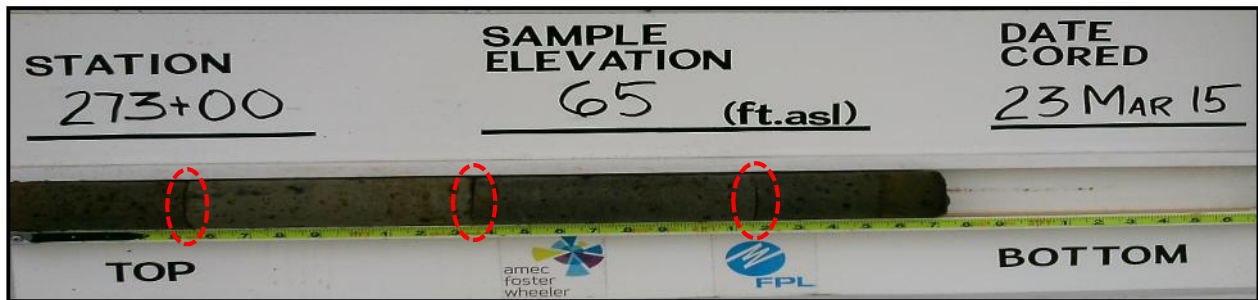


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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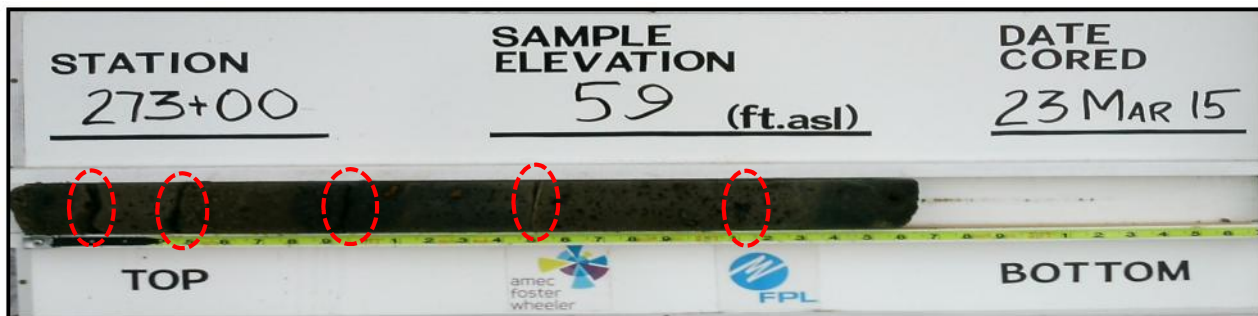
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 273+00



Core ID:	273+00 (top)	Date Cored:	3/23/15
Core Elevation:	65' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 273+00



Core ID:	273+00 (middle)	Date Cored:	3/23/15
Core Elevation:	59' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.57	SC Thickness (ft):	2.67
RQD (%):	82	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.2 feet and from 0.45 to 1.1 feet. Soft material between 0.2 to 0.45 feet.		

Manatee Cooling Pond

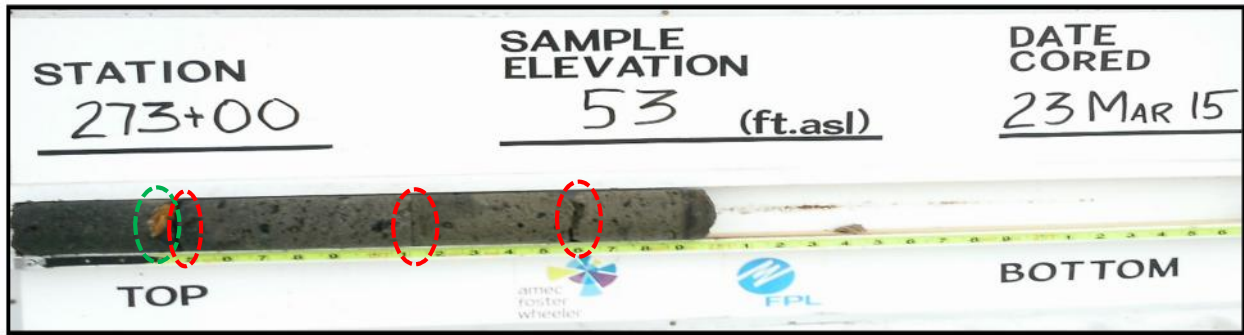
Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 273+00






Core ID:	273+00 (bottom)	Date Cored:	3/23/15
Core Elevation:	53' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

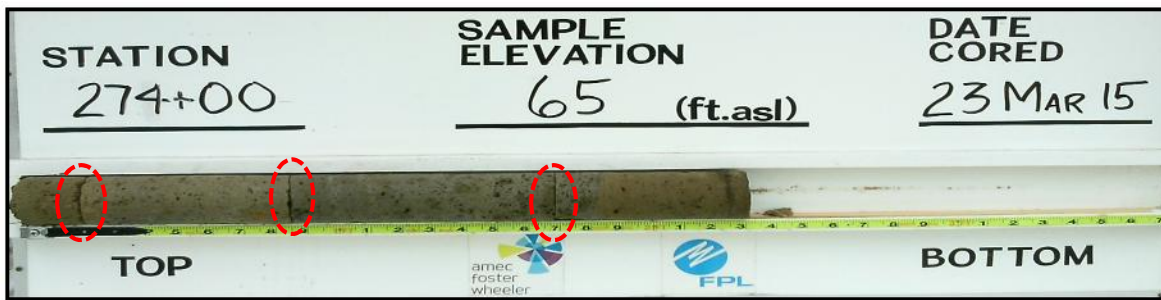
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 274+00



Core ID:	274+00 (top)	Date Cored:	3/23/15
Core Elevation:	65' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.5
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

Location: STA 274+00



Core ID:	274+00 (middle)	Date Cored:	3/23/15
Core Elevation:	59' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.7	SC Thickness (ft):	2.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Soft fill material between 1.05 and 1.1 feet.		

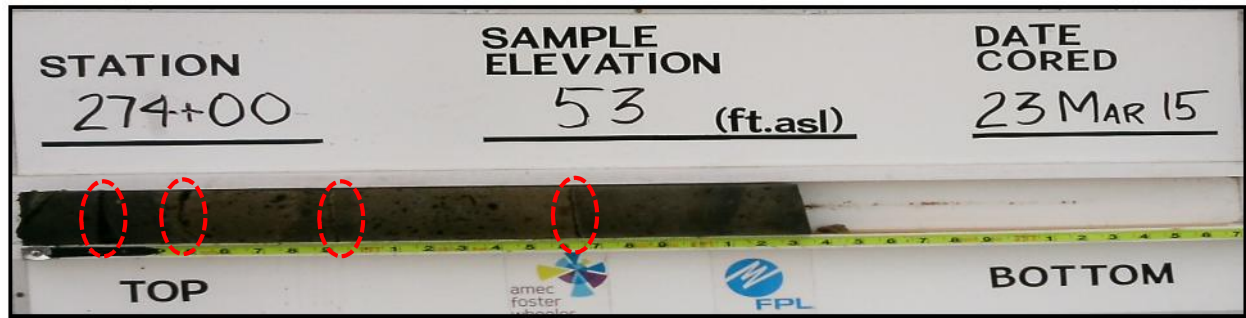
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 274+00



Core ID:	274+00 (bottom)	Date Cored:	3/23/15
Core Elevation:	53' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.5
RQD (%):	78	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

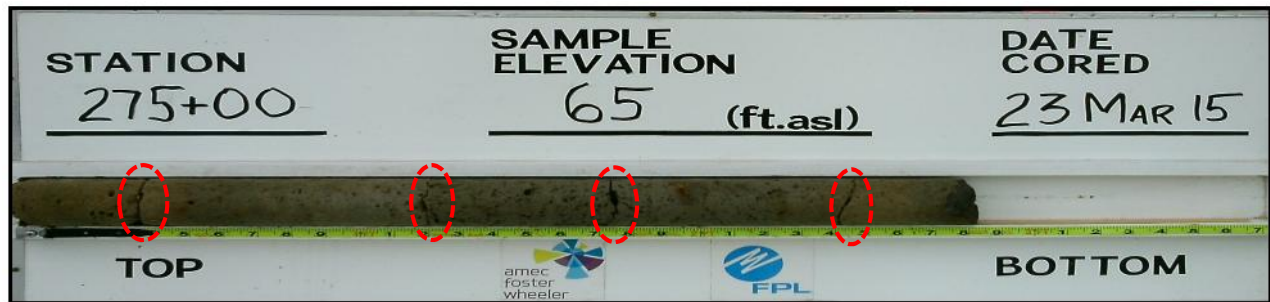


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

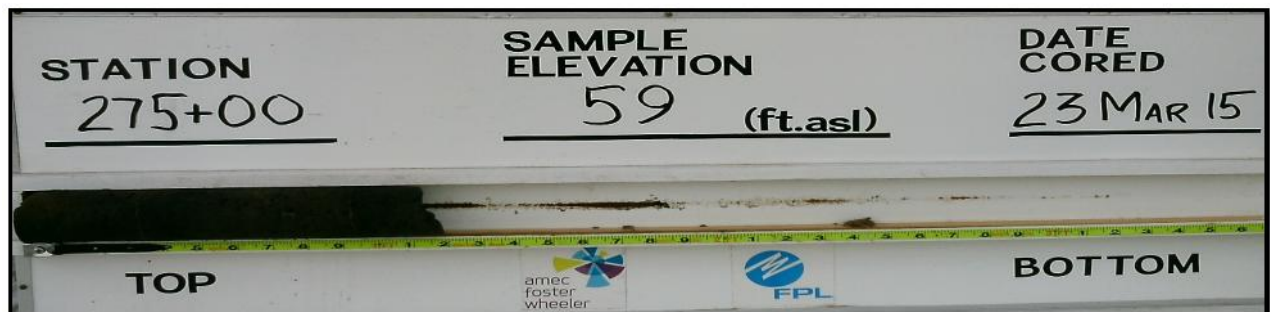
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 275+00



Core ID:	275+00 (top)	Date Cored:	3/23/15
Core Elevation:	65' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.8	SC Thickness (ft):	3.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.38 feet.		

Location: STA 275+00



Core ID:	275+00 (middle)	Date Cored:	3/23/15
Core Elevation:	59' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.15	SC Thickness (ft):	1.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 275+00



Core ID:	275+00 (bottom)	Date Cored:	3/23/15
Core Elevation:	53' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.5	SC Thickness (ft):	2.0
RQD (%):	87	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.2 feet. Soft material from 0.2 to 1.08 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 278+00



Core ID:	278+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.75
RQD (%):	90	Void Depth (ft):	N/A
Notes:			

Location: STA 278+00



Core ID:	278+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.02	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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wheeler

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 278+00



Core ID:	278+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.1	SC Thickness (ft):	1.42
RQD (%):	90	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.39 feet. Wood piece at 0.8 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

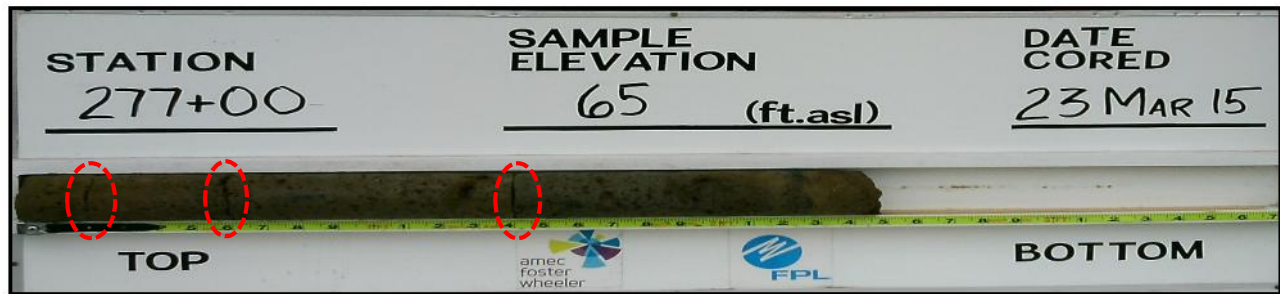


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wheeler

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

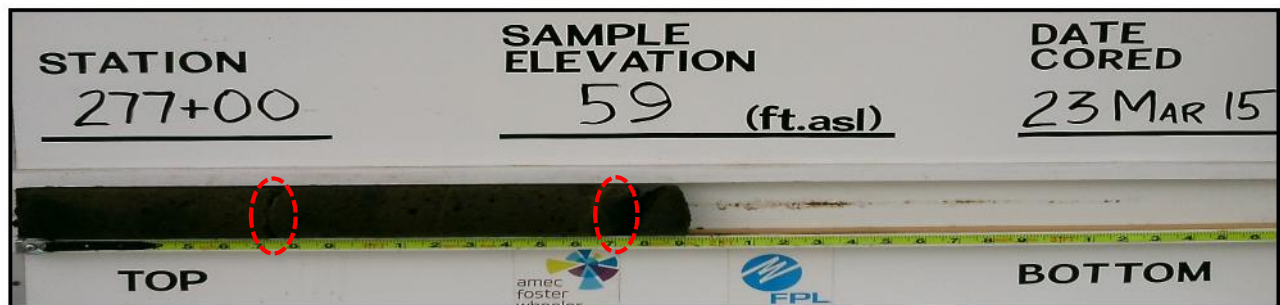
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 277+00



Core ID:	277+00 (top)	Date Cored:	3/23/15
Core Elevation:	65' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.43	SC Thickness (ft):	2.58
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.45 feet.		

Location: STA 277+00



Core ID:	277+00 (middle)	Date Cored:	3/23/15
Core Elevation:	59' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.08
RQD (%):	89	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.74 feet. Very soft material from 1.7 to 1.9 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 277+00






Core ID:	277+00 (bottom)	Date Cored:	3/23/15
Core Elevation:	53' ASL	Date Photographed:	3/23/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.42
RQD (%):	80	Void Depth (ft):	N/A
Notes:	Wood piece at 0.18 feet. Soft material 0.2 to 0.75 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

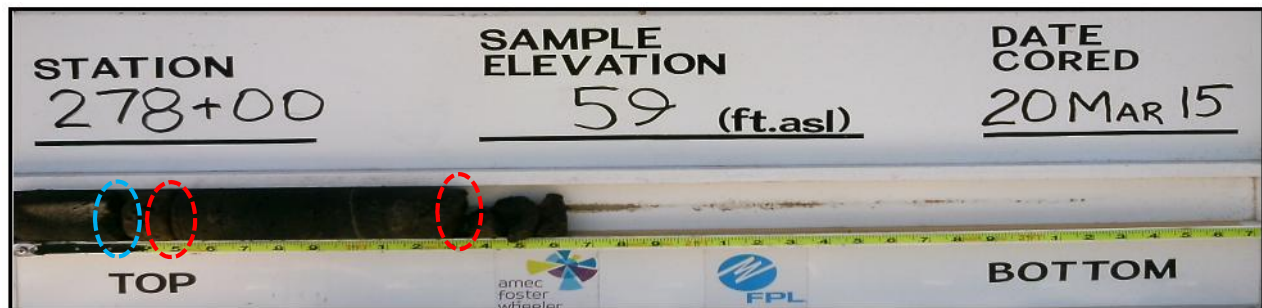
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 278+00



Core ID:	278+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.58
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Fractured pieces from 1.9 to 2.45 feet.		

Location: STA 278+00



Core ID:	278+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.6	SC Thickness (ft):	1.67
RQD (%):	31	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.3 feet. Very soft material from 0.3 to 0.5 feet. Fragments from 1.3 to 1.6 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 278+00



Core ID:	278+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.6	SC Thickness (ft):	1.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.4 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

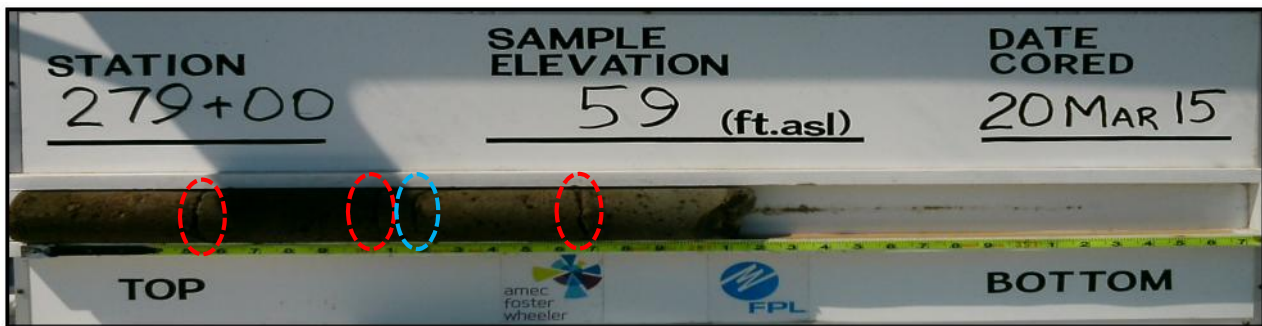
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 279+00



Core ID:	279+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.35
RQD (%):	89	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.25 feet. Soft material from 0.25 to 0.64 feet.		

Location: STA 279+00



Core ID:	279+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.1	SC Thickness (ft):	2.165
RQD (%):	94	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.55 feet. Soft material from 0.55 to 1.07 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 279+00






Core ID:	279+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.94	SC Thickness (ft):	2.165
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0.58 to 1.28 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

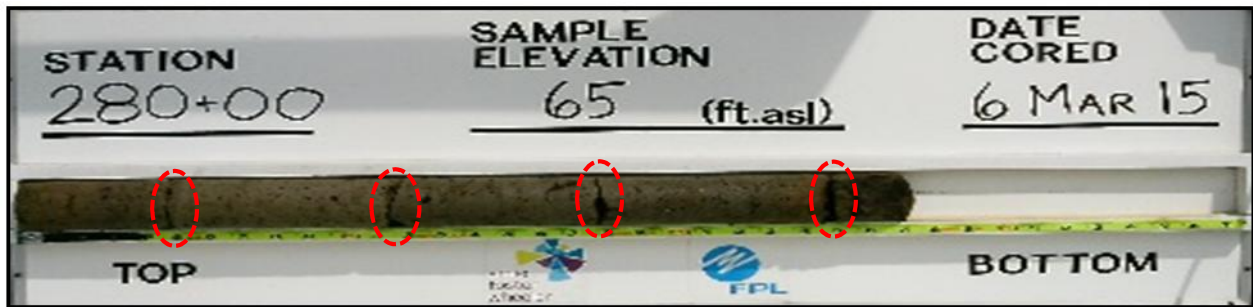


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 280+00



Core ID:	280+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.7
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

Location: STA 280+00



Core ID:	280+00 (middle)	Date Cored:	3/6/15
Core Elevation:	59' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.65	SC Thickness (ft):	1.92
RQD (%):	44	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.95 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 280+00



Core ID:	280+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	53' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.8	SC Thickness (ft):	1.6
RQD (%):	81	Void Depth (ft):	N/A
Notes:			

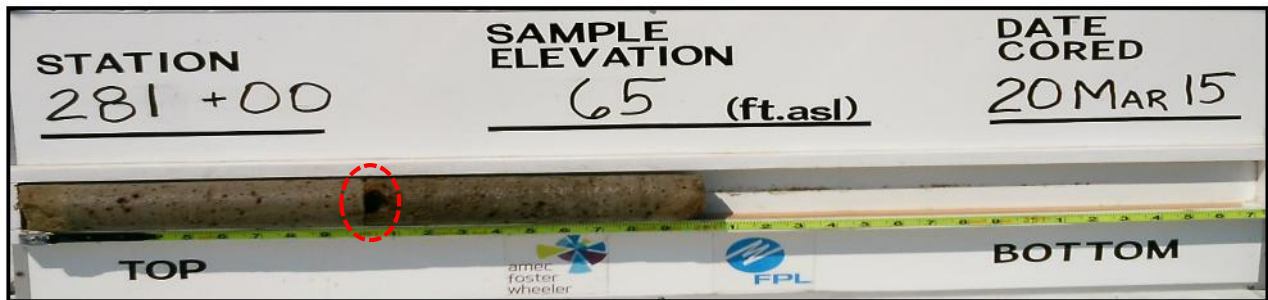
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 281+00



Core ID:	281+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.165
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Small void with rotting vegetation at 1.0 feet.		

Location: STA 281+00



Core ID:	281+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.25	SC Thickness (ft):	1.33
RQD (%):	50	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.62 feet. Very soft material from 0.62 to 1.25 feet.		

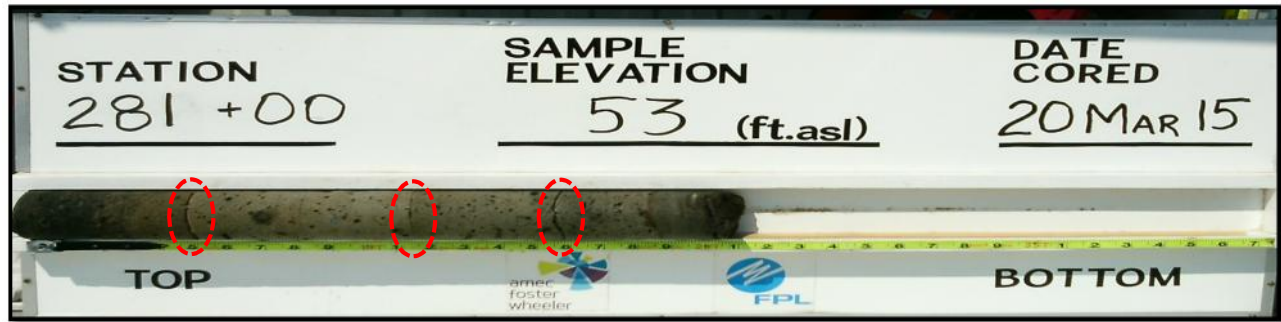
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 281+00



Core ID:	281+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.08
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

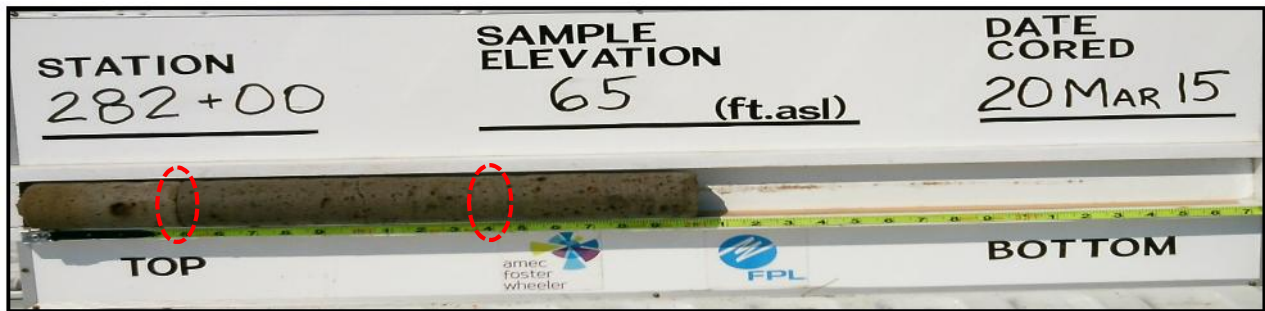
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

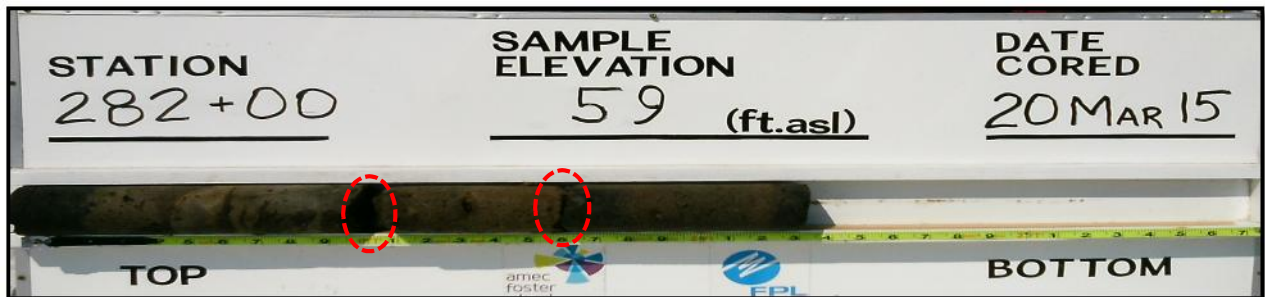
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 282+00



Core ID:	282+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 282+00



Core ID:	282+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

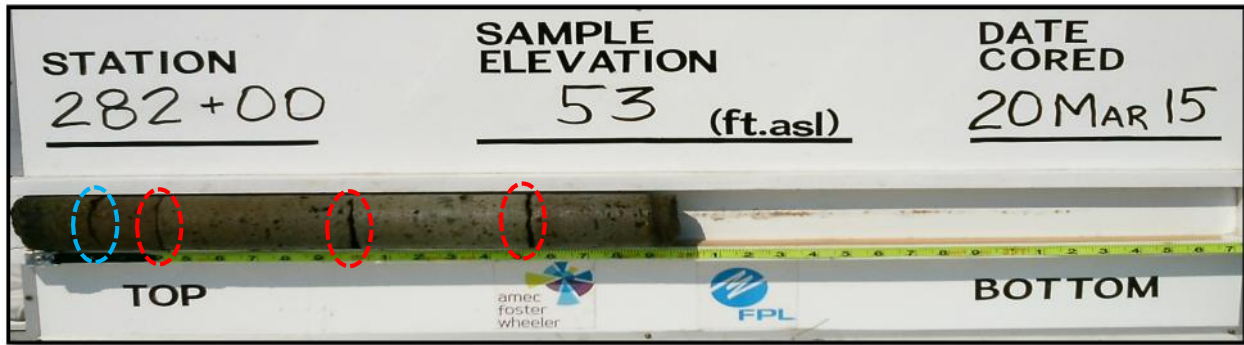
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 282+00



Core ID:	282+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.0
RQD (%):	78	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.43 feet.		

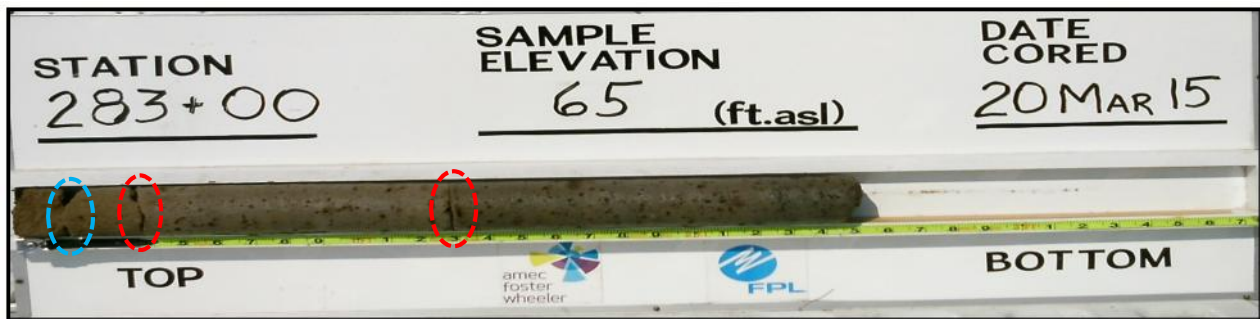
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 283+00



Core ID:	283+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.58
RQD (%):	92	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.4 feet.		

Location: STA 283+00



Core ID:	283+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.9	SC Thickness (ft):	2.0
RQD (%):	87	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.83 feet.		

Manatee Cooling Pond

Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 283+00



Core ID:	283+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.0
RQD (%):	91	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.5 feet. Very soft material from 0.5 to 0.98 feet. Soft material from 0.98 to 1.75 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

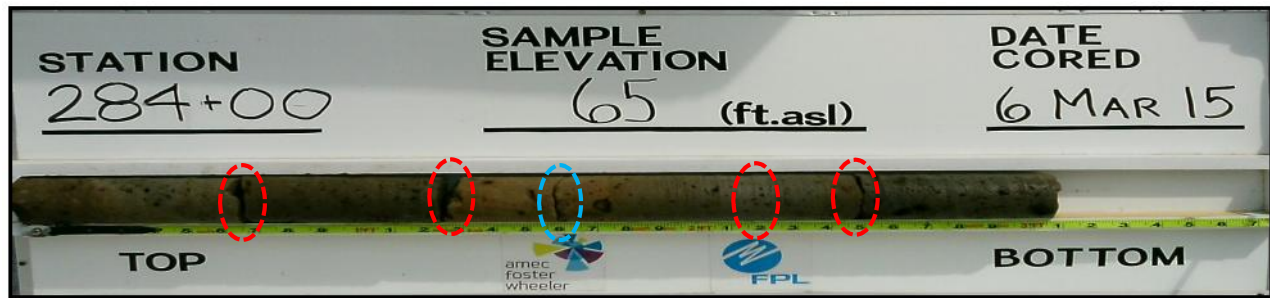


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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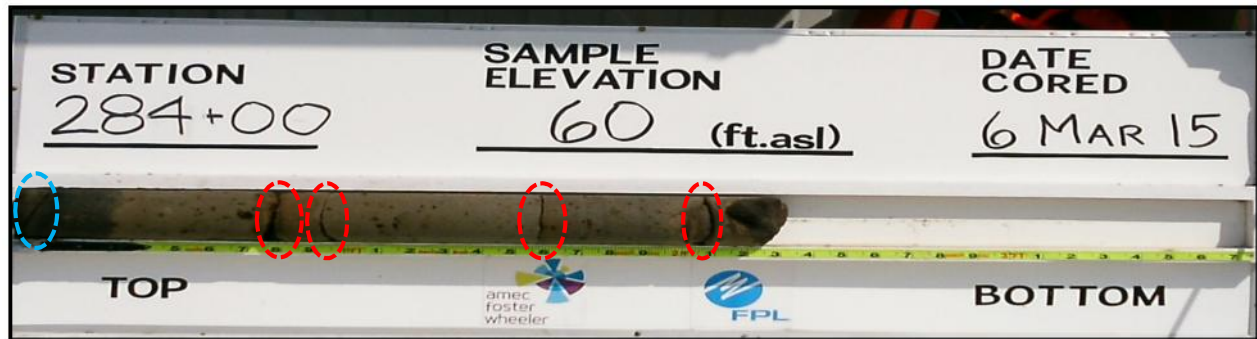
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 284+00



Core ID:	284+00 (top)	Date Cored:	3/6/15
Core Elevation:	65' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.05
RQD (%):	84	Void Depth (ft):	N/A
Notes:	Soft material from 1.25 to 1.75 feet.		

Location: STA 284+00



Core ID:	284+00 (middle)	Date Cored:	3/6/15
Core Elevation:	60' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.9
RQD (%):	77	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1, 0.75 to 0.95, and 2.05 to 2.25 feet.		

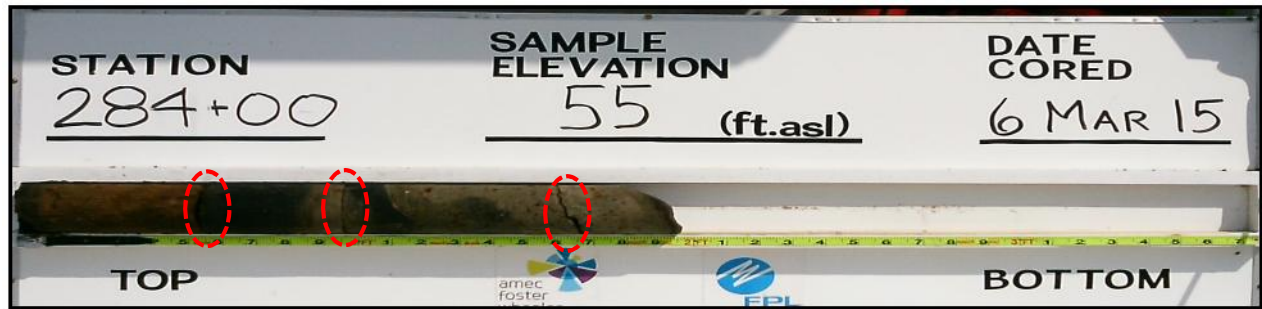
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 284+00



Core ID:	284+00 (bottom)	Date Cored:	3/6/15
Core Elevation:	55' ASL	Date Photographed:	3/6/15
Recovered Length (ft):	1.8	SC Thickness (ft):	2.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.55 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

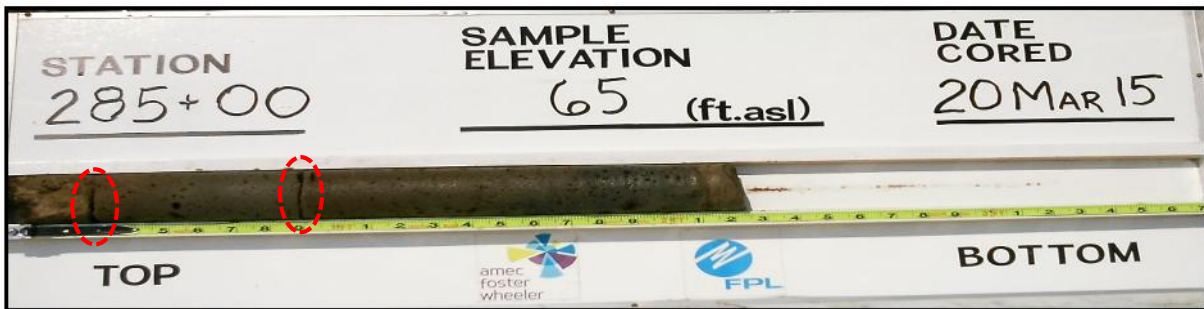


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 285+00



Core ID:	285+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.25
RQD (%):	86	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.45 feet.		

Location: STA 285+00



Core ID:	285+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.03	SC Thickness (ft):	2.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 1.65 to 2.03 feet.		

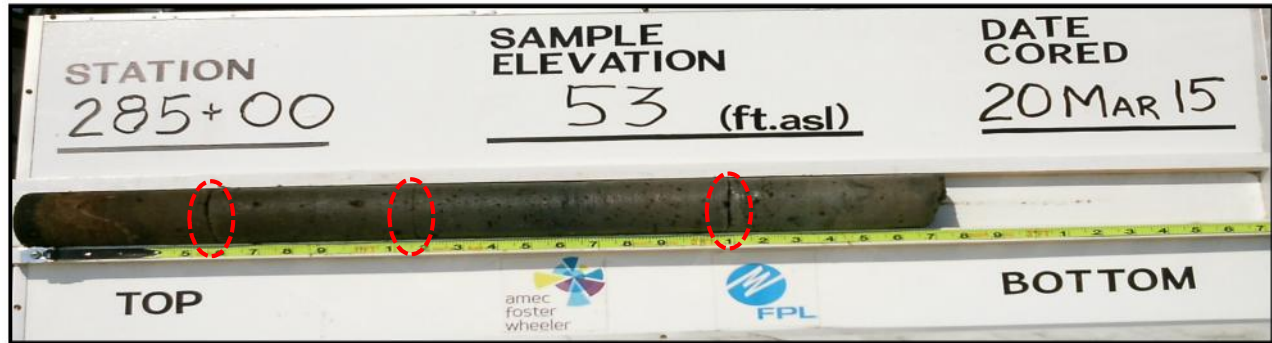
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 285+00



Core ID:	285+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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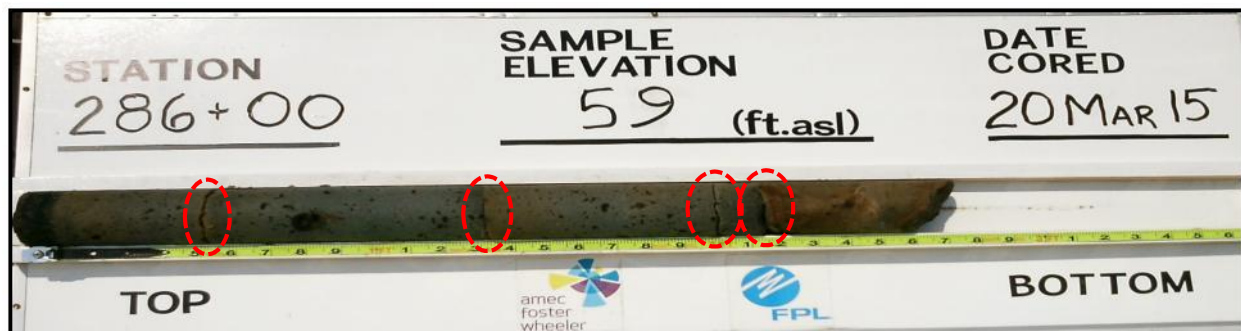
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 286+00



Core ID:	286+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.25
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.2 feet.		

Location: STA 286+00



Core ID:	286+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 2.14 to 2.6 feet.		

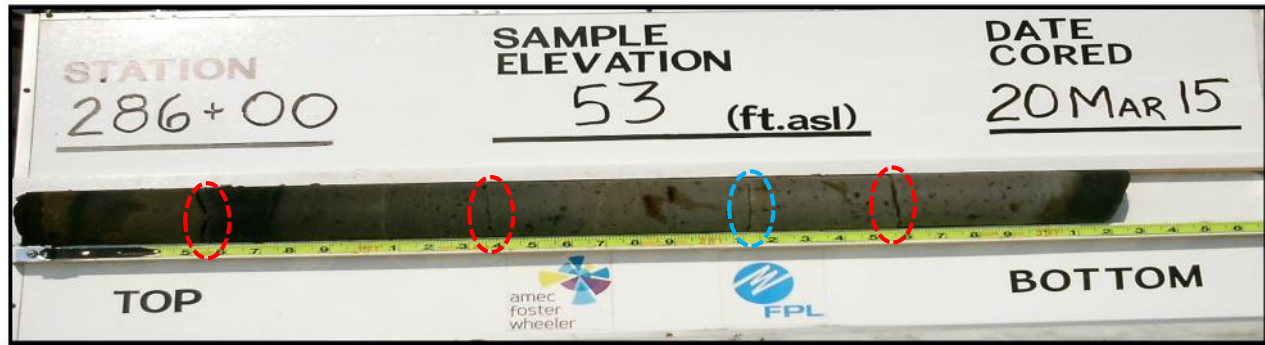
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 286+00



Core ID:	286+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	3.2	SC Thickness (ft):	3.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.54 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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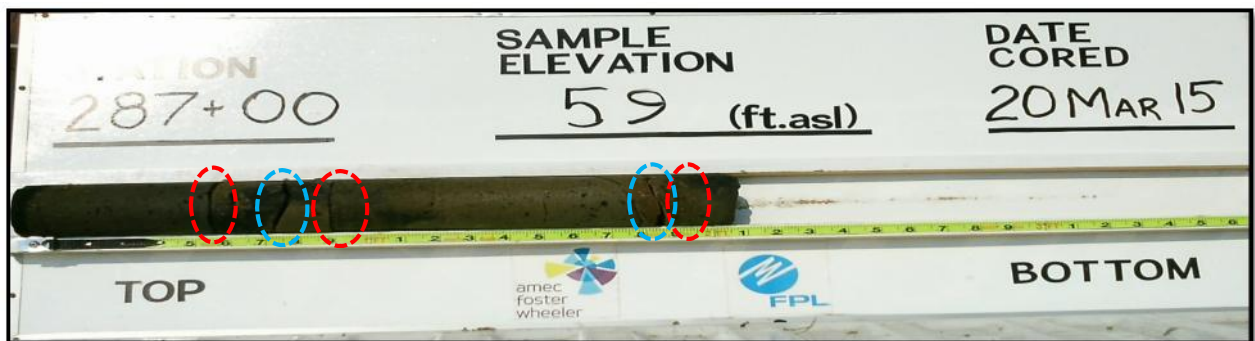
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 287+00



Core ID:	287+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.22	SC Thickness (ft):	2.25
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.35 feet. Soft material from 0.35 to 2.22 feet.		

Location: STA 287+00



Core ID:	287+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.25
RQD (%):	84	Void Depth (ft):	N/A
Notes:	Very soft material from 0.55 to 0.9 and 1.83 to 2.05 feet.		

Manatee Cooling Pond

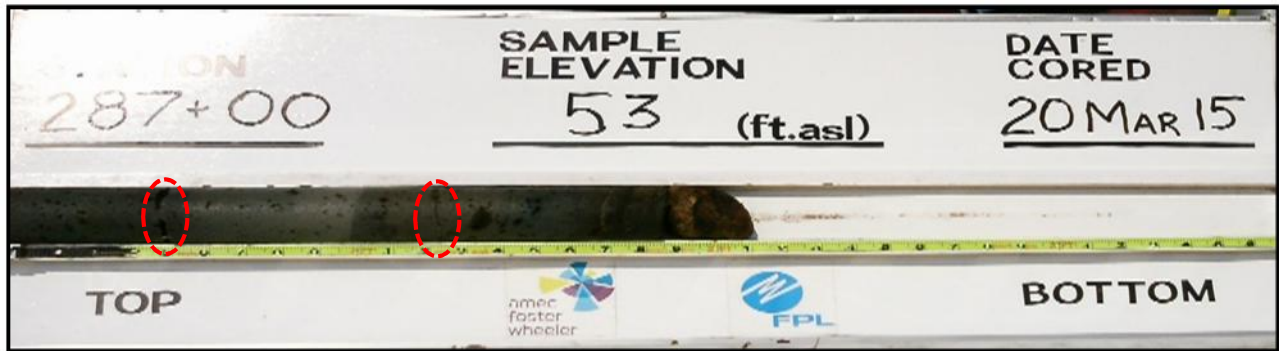
Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 287+00



Core ID:	287+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	1.85	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 1.85 to 2.05 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

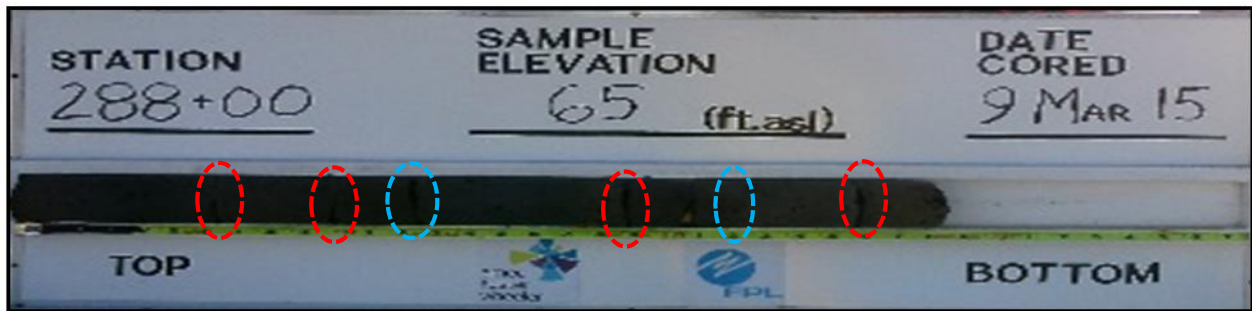


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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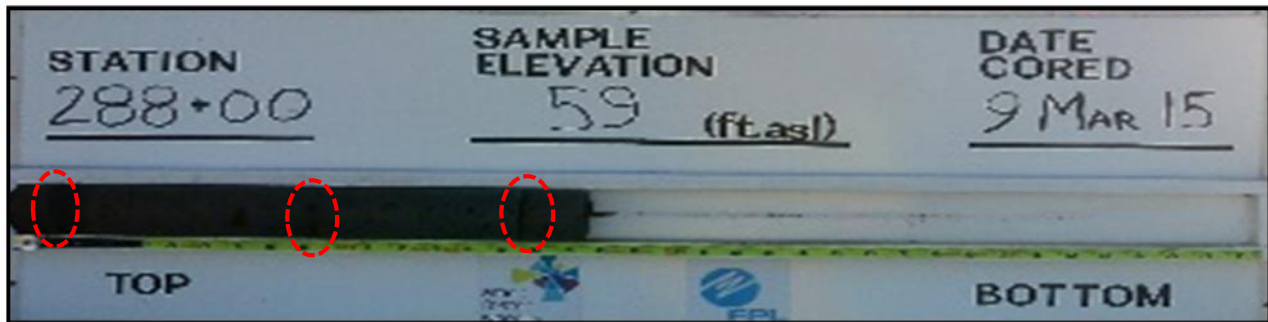
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 288+00



Core ID:	288+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.8	SC Thickness (ft):	32.8
RQD (%):	75	Void Depth (ft):	N/A
Notes:			

Location: STA 288+00



Core ID:	288+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	1.75	SC Thickness (ft):	2.67
RQD (%):	80	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.15 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 288+00



Core ID:	288+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.2	SC Thickness (ft):	2.33
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

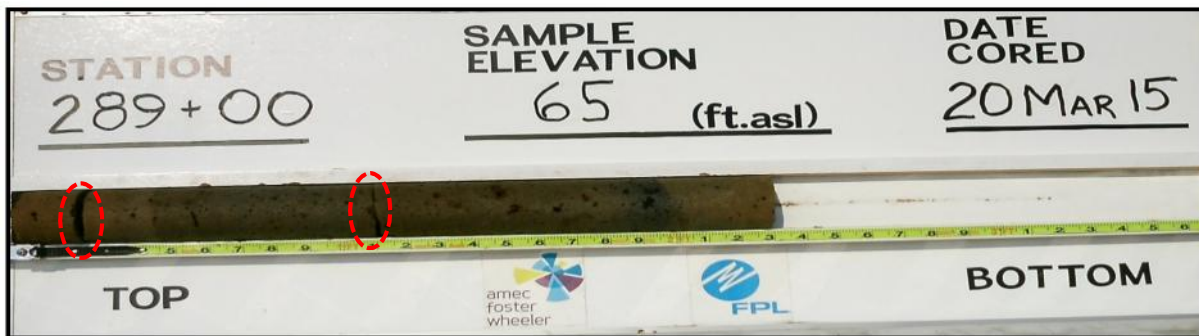


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 289+00



Core ID:	289+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.33
RQD (%):	89	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.25 feet. Soft material from 0.25 to 2.3 feet.		

Location: STA 289+00



Core ID:	289+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.35	SC Thickness (ft):	2.67
RQD (%):	89	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.25 feet. Soft material from 0.25 to 2.35 feet.		

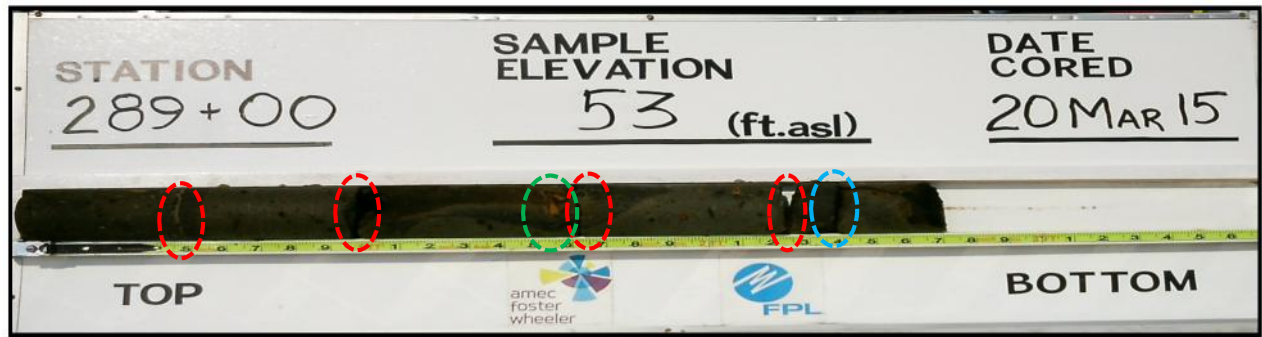
Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 289+00



Core ID:	289+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	75	Void Depth (ft):	N/A
Notes:	Entire core sample comprised of soft material. Lateral fracture from 0.97 to 1.3 feet and from 2.35 to 2.7 feet. Woods parts at 1.55 feet.		

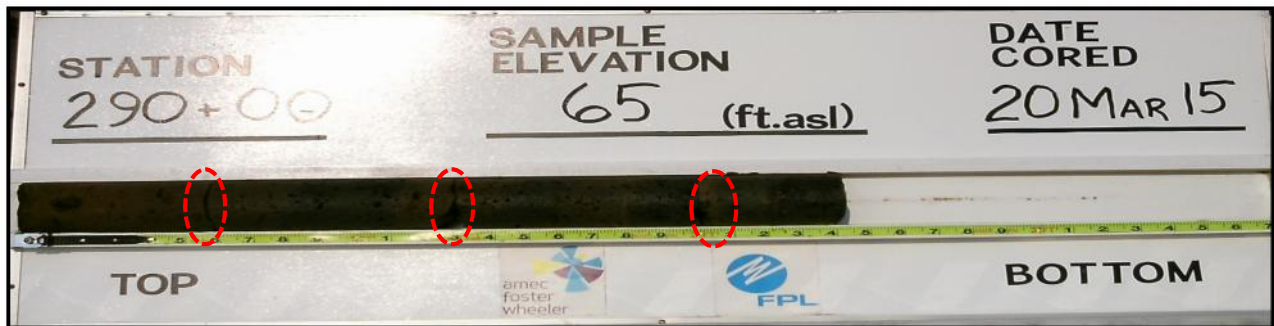
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

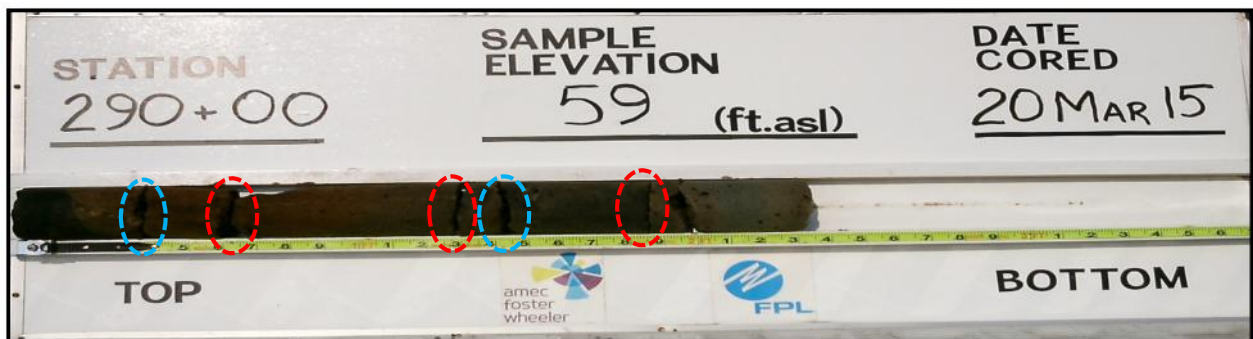
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 290+00



Core ID:	290+00 (top)	Date Cored:	3/20/15
Core Elevation:	65' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.42
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 290+00



Core ID:	290+00 (middle)	Date Cored:	3/20/15
Core Elevation:	59' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.5
RQD (%):	70	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 2.0 feet. Soft material between 2.0 to 2.3 feet.		

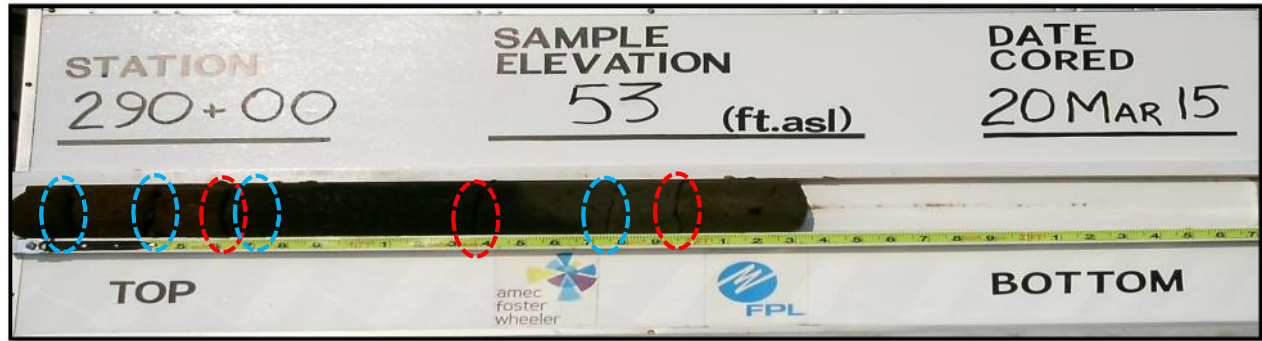
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 290+00



Core ID:	290+00 (bottom)	Date Cored:	3/20/15
Core Elevation:	53' ASL	Date Photographed:	3/20/15
Recovered Length (ft):	2.3	SC Thickness (ft):	2.42
RQD (%):	60	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 0.6 feet. Soft material 0.6 to 1.35 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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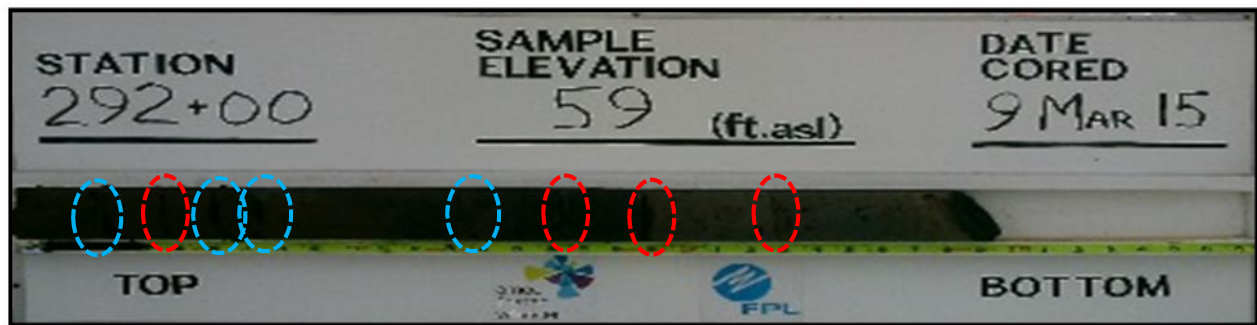
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 292+00



Core ID:	292+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	1.35	SC Thickness (ft):	2.6
RQD (%):	77	Void Depth (ft):	N/A
Notes:			

Location: STA 292+00



Core ID:	292+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	5.9	SC Thickness (ft):	3.0
RQD (%):	2.85	Void Depth (ft):	N/A
Notes:	Very soft material from 0 to 1.0 feet.		

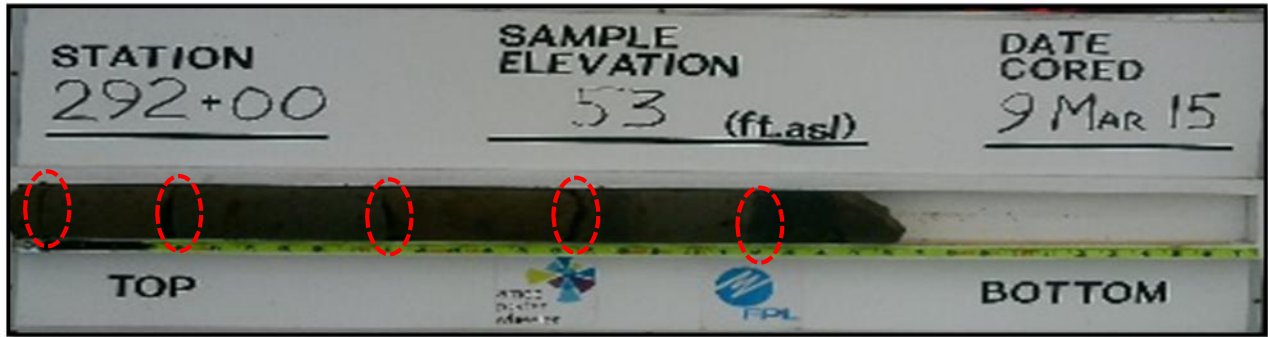
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
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Location: STA 292+00






Core ID:	292+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.67
RQD (%):	90	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Very soft material from 1.1 to 1.65 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

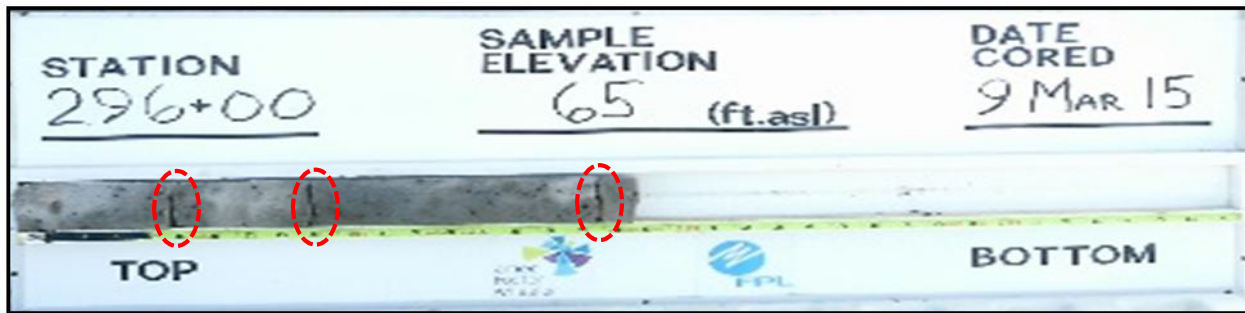


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 296+00



Core ID:	296+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	1.85	SC Thickness (ft):	1.85
RQD (%):	92	Void Depth (ft):	N/A
Notes:			

Location: STA 296+00



Core ID:	296+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.7
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
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Location: STA 296+00



Core ID:	296+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

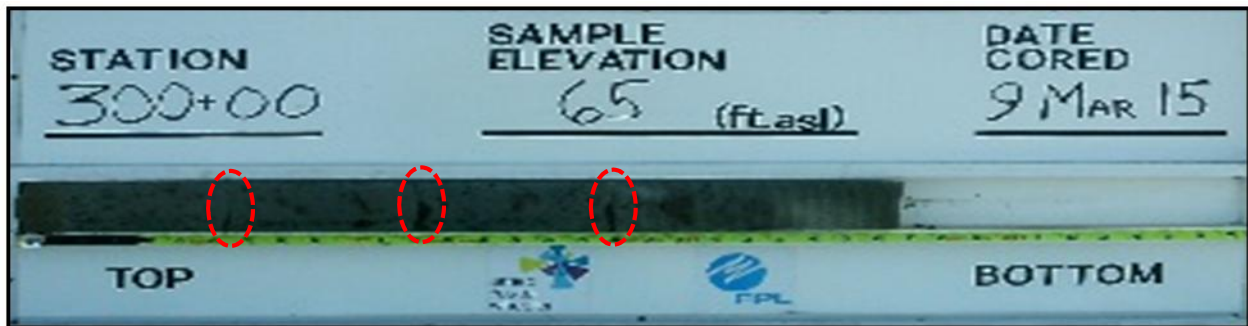


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 300+00



Core ID:	300+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.92
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 300+00



Core ID:	300+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	1.95	SC Thickness (ft):	2.0
RQD (%):	84	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 and 1.25 to 1.47 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
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Location: STA 300+00






Core ID:	300+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.5	SC Thickness (ft):	2.75
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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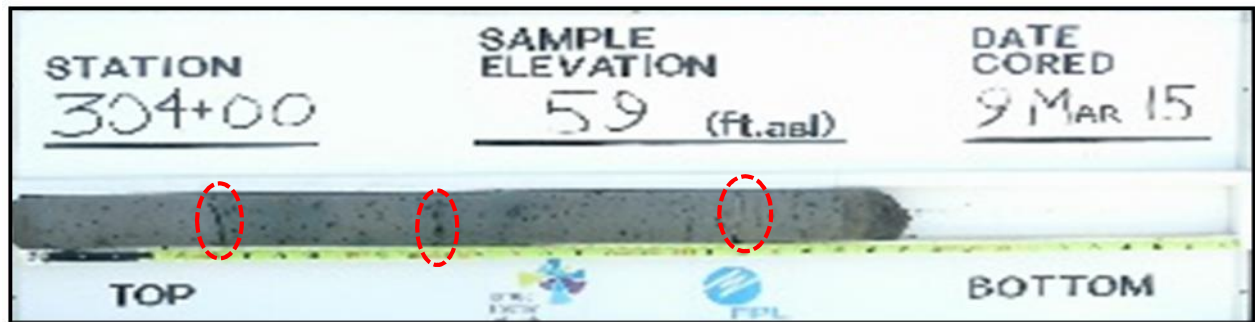
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 304+00



Core ID:	304+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.85	SC Thickness (ft):	2.85
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 304+00



Core ID:	304+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.55	SC Thickness (ft):	2.83
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.55 to 2.6 feet.		

Manatee Cooling Pond

Soil-Cement Core Logs



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Location: STA 304+00



Core ID:	304+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.0	SC Thickness (ft):	2.58
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.35 feet. Insitu soil from 2.0 to 2.15 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

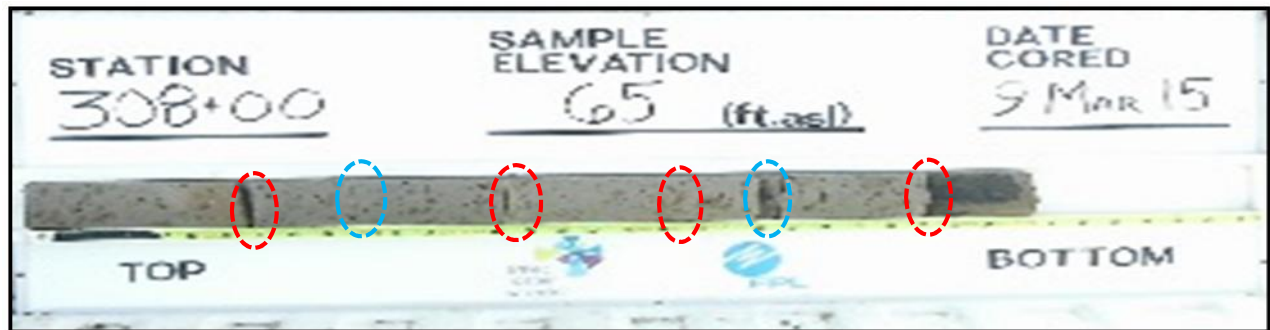


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 308+00



Core ID:	308+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	3.0	SC Thickness (ft):	3.0
RQD (%):	85	Void Depth (ft):	N/A
Notes:	Soft material from 2.67 to 3.0 feet.		

Location: STA 308+00



Core ID:	308+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.83
RQD (%):	86	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Insitu soil from 2.2 to 2.45 feet.		

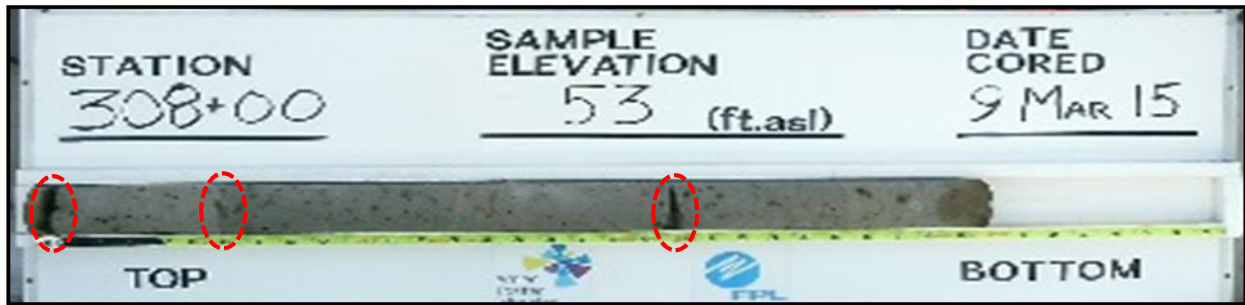
Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
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Location: STA 308+00



Core ID:	308+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.95	SC Thickness (ft):	3.33
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

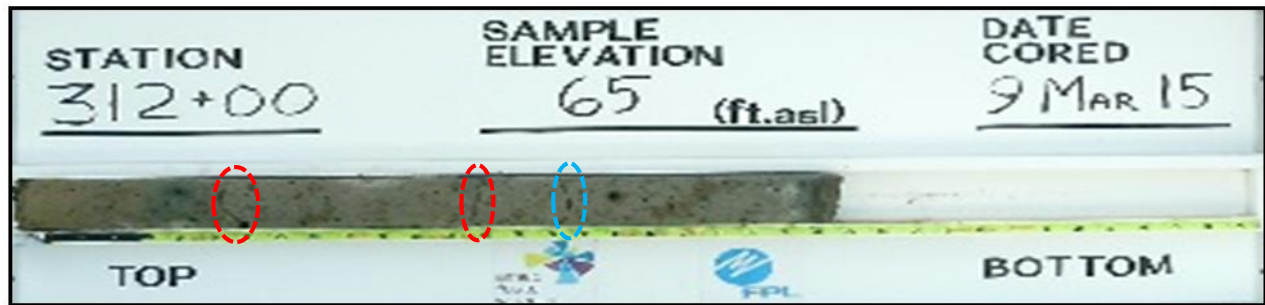


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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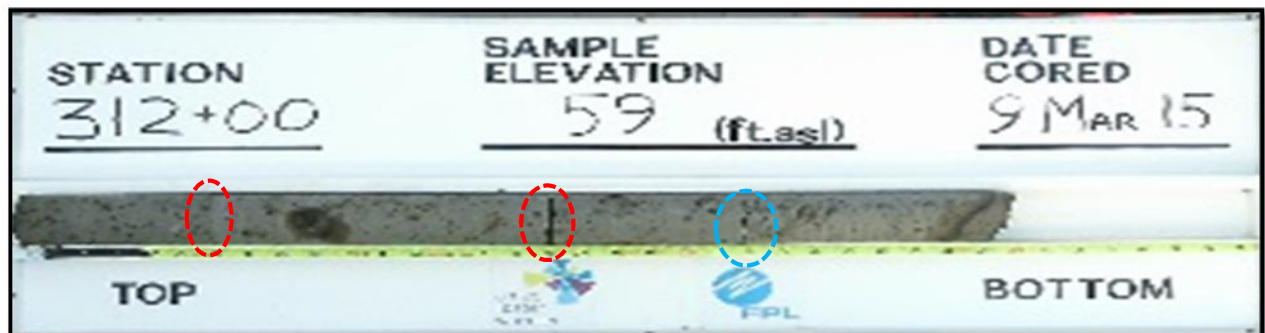
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 312+00



Core ID:	312+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.4	SC Thickness (ft):	2.6
RQD (%):	90	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

Location: STA 312+00



Core ID:	312+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.95	SC Thickness (ft):	3.165
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



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Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 312+00



Core ID:	312+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.77	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.77 to 2.87 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

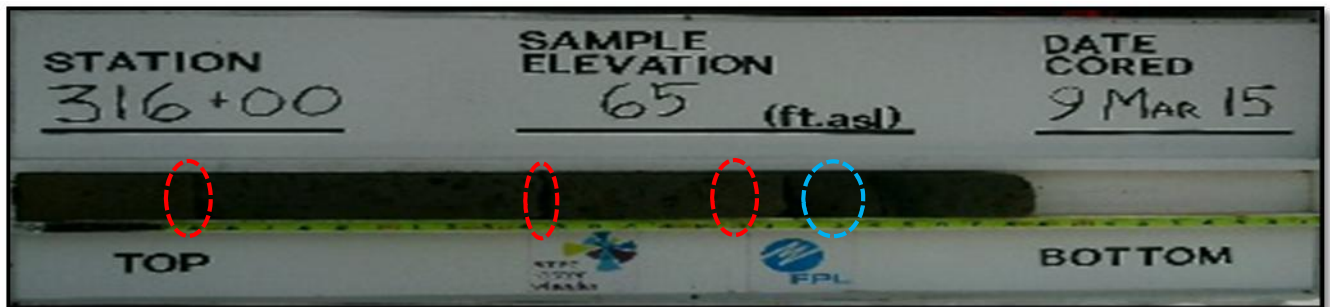


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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 316+00



Core ID:	316+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	89	Void Depth (ft):	N/A
Notes:			

Location: STA 316+00



Core ID:	316+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.25	SC Thickness (ft):	2.4
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Insitu soil from 2.25 to 2.4 feet.		

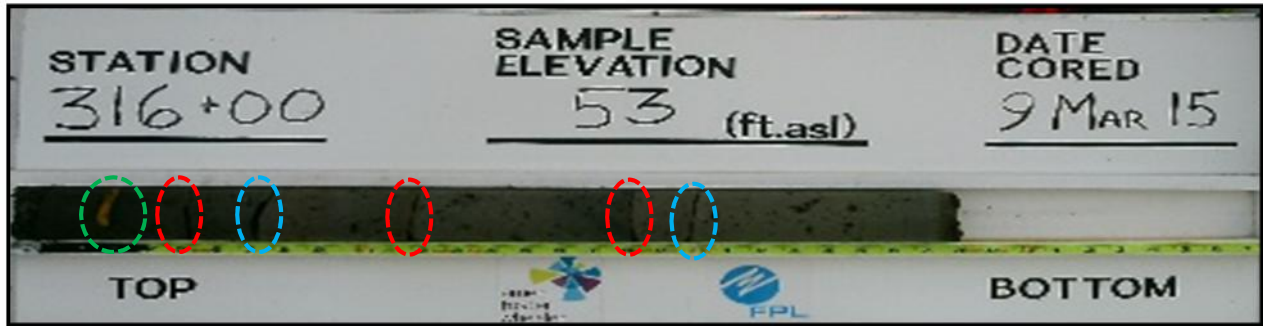
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 316+00






Core ID:	316+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.75	SC Thickness (ft):	2.83
RQD (%):	87	Void Depth (ft):	N/A
Notes:	Wood piece embedded at 0.3 feet.		

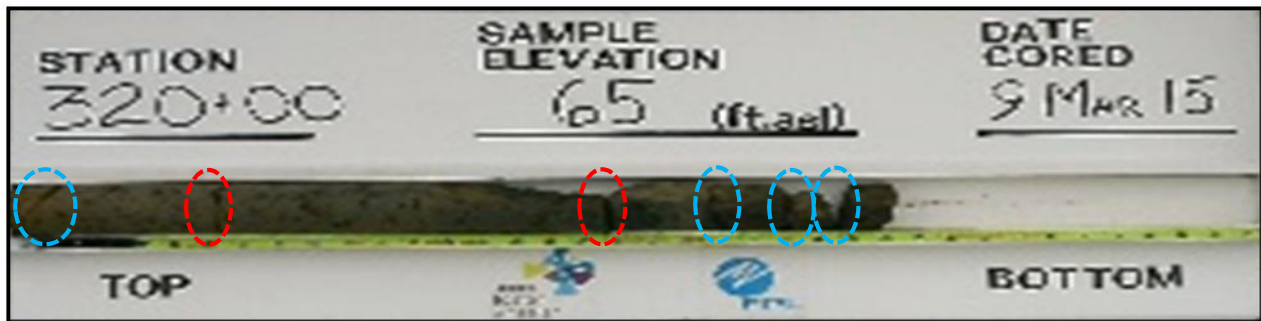
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

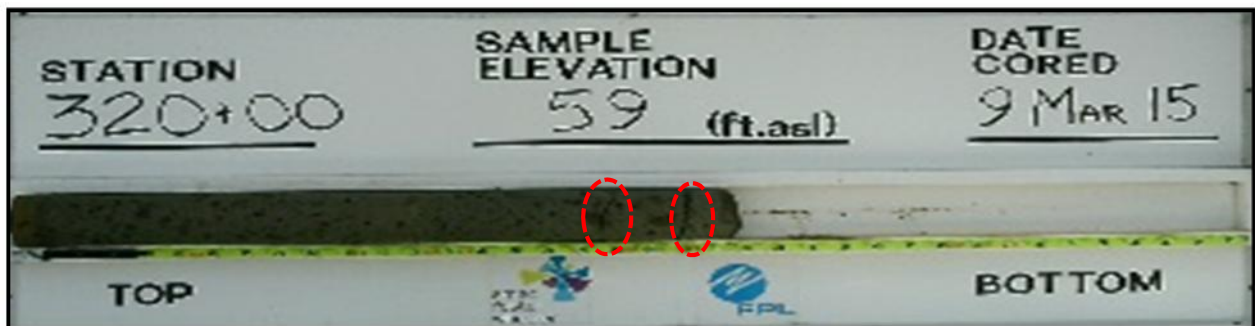
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 320+00



Core ID:	320+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.6	SC Thickness (ft):	3.26
RQD (%):	38	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

Location: STA 320+00



Core ID:	320+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.15	SC Thickness (ft):	2.5
RQD (%):	81	Void Depth (ft):	N/A
Notes:			

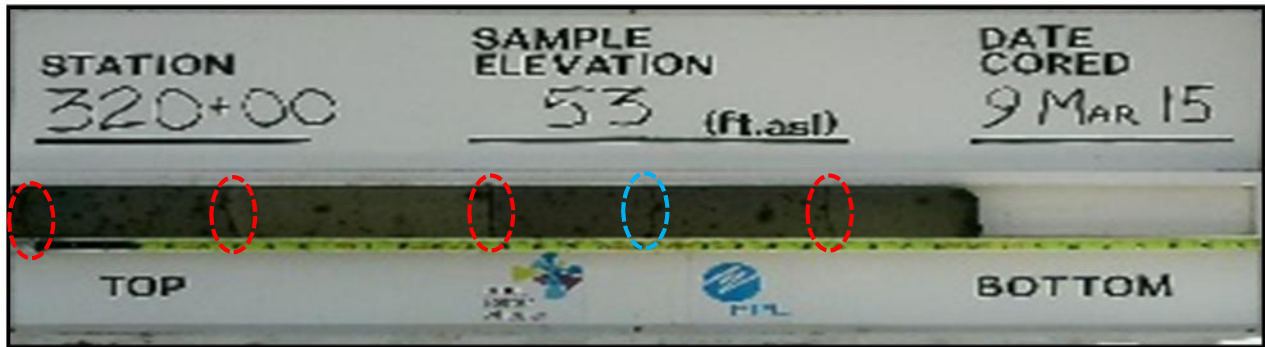
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 320+00



Core ID:	320+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.9	SC Thickness (ft):	3.0
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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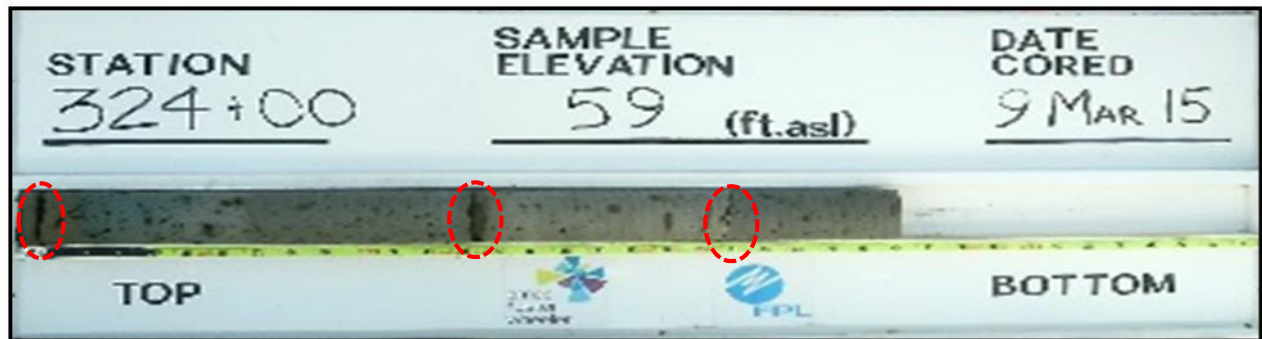
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 324+00



Core ID:	324+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.8	SC Thickness (ft):	2.8
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 324+00



Core ID:	324+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 324+00



Core ID:	324+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.6	SC Thickness (ft):	2.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 328+00



Core ID:	328+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.98	SC Thickness (ft):	2.98
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 328+00



Core ID:	328+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.9	SC Thickness (ft):	3.0
RQD (%):	76	Void Depth (ft):	N/A
Notes:	Overall condition of core heavily and deeply pitted on the exterior only. Voids left from decayed wood at 0.1 and 2.5 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 328+00






Core ID:	328+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.8	SC Thickness (ft):	3.165
RQD (%):	79	Void Depth (ft):	N/A
Notes:	Piece of wood embedded from 1.77 to 1.95 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

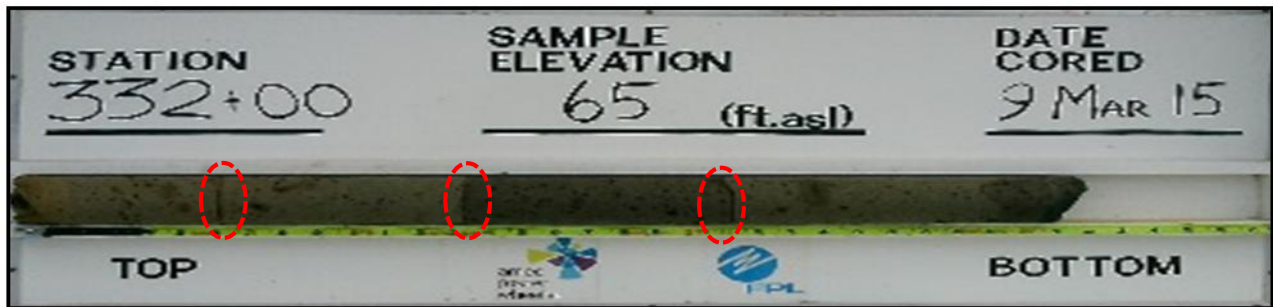


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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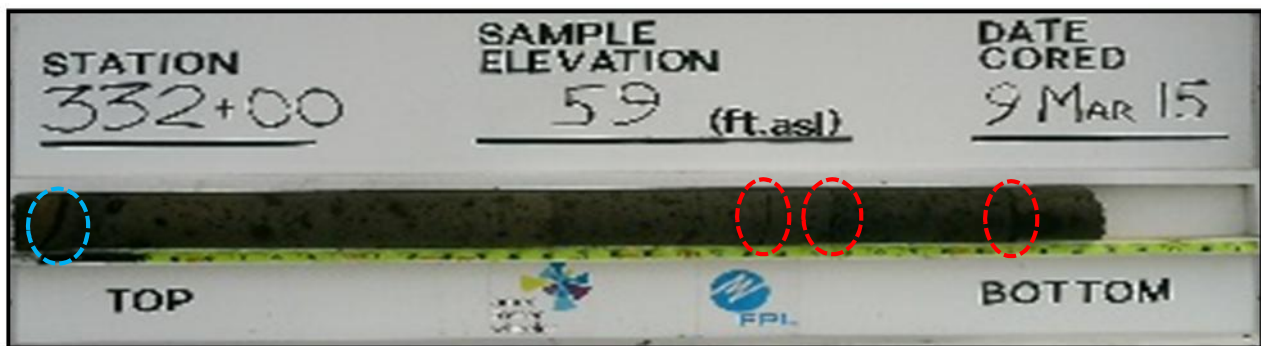
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 332+00



Core ID:	332+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	3.05	SC Thickness (ft):	3.05
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 332+00



Core ID:	332+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	3.25	SC Thickness (ft):	3.25
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

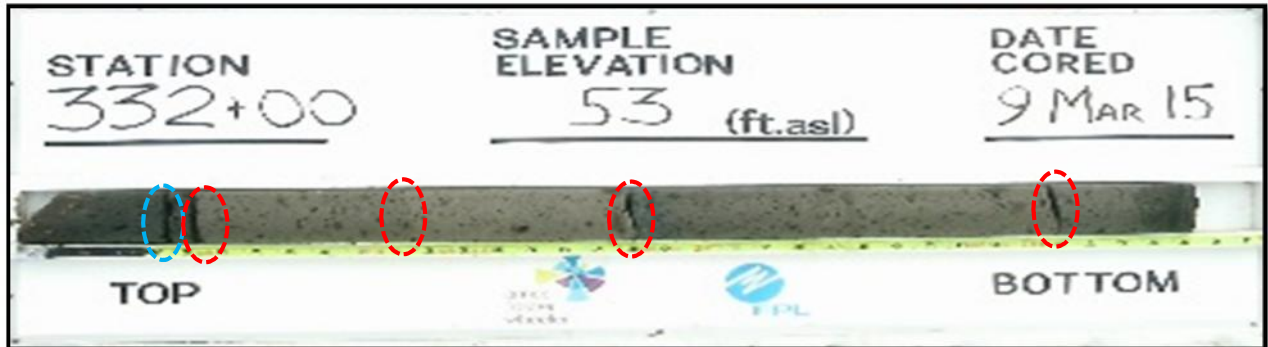
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

**amec
foster
wheeler**

Location: STA 332+00






Core ID:	332+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	3.5	SC Thickness (ft):	3.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

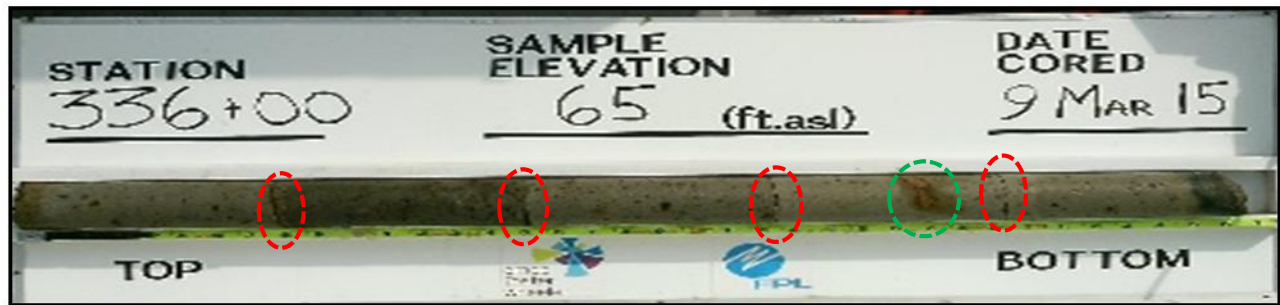
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

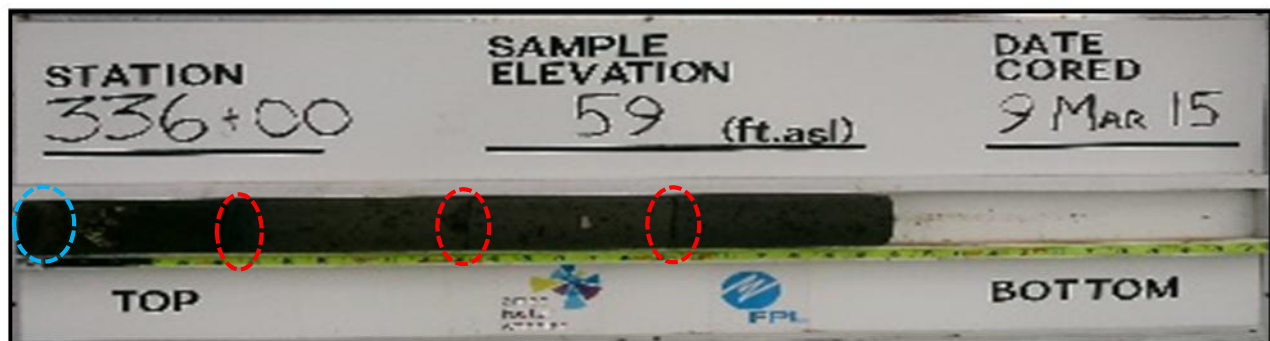
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 336+00



Core ID:	336+00 (top)	Date Cored:	3/9/15
Core Elevation:	65' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	3.6	SC Thickness (ft):	3.6
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 336+00



Core ID:	336+00 (middle)	Date Cored:	3/9/15
Core Elevation:	59' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.55	SC Thickness (ft):	3.33
RQD (%):	75	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond

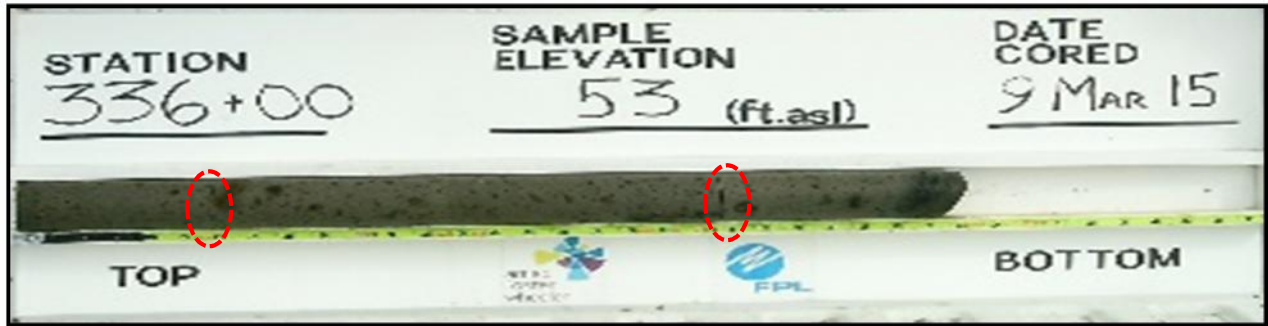
Soil-Cement Core Logs



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wheeler

Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 336+00






Core ID:	334+00 (bottom)	Date Cored:	3/9/15
Core Elevation:	53' ASL	Date Photographed:	3/9/15
Recovered Length (ft):	2.7	SC Thickness (ft):	3.0
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

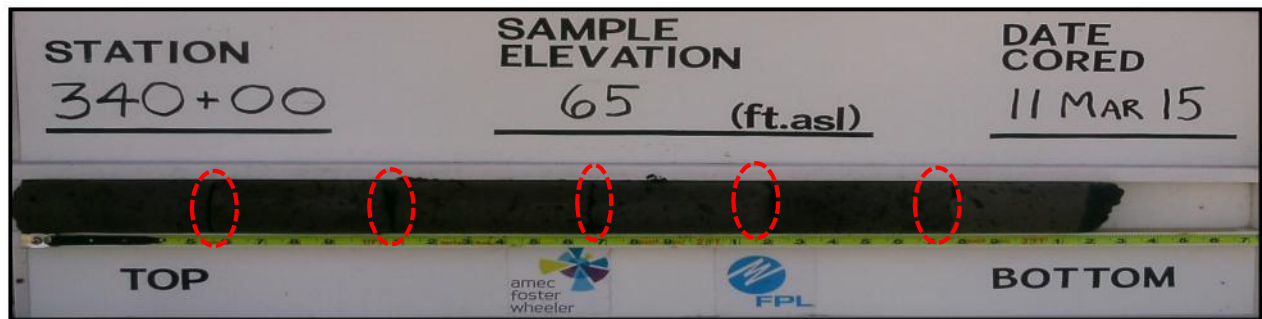


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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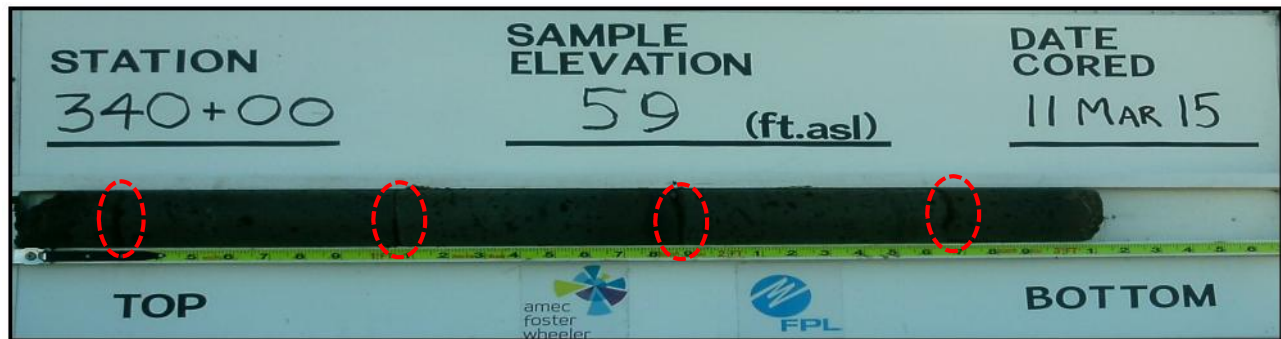
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 340+00



Core ID:	340+00 (top)	Date Cored:	3/11/15
Core Elevation:	65' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	3.15	SC Thickness (ft):	3.15
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 340+00



Core ID:	340+00 (middle)	Date Cored:	3/11/15
Core Elevation:	59' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	3.07	SC Thickness (ft):	3.3
RQD (%):	99	Void Depth (ft):	N/A
Notes:			

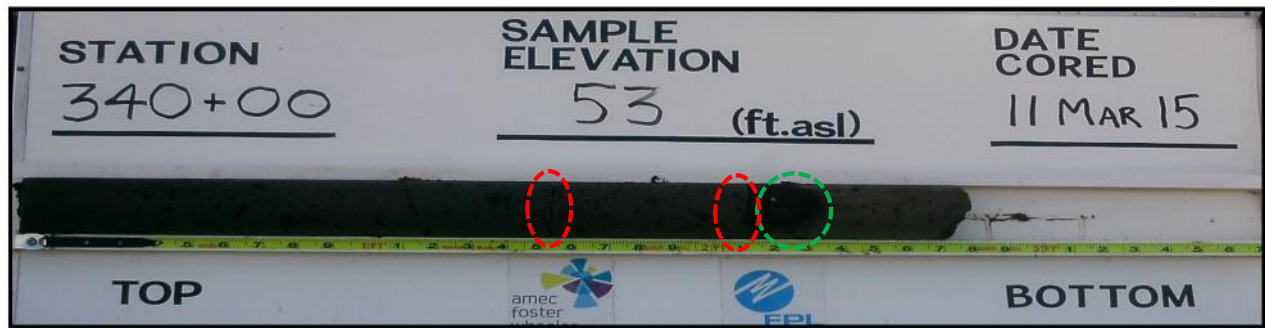
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 340+00



Core ID:	340+00 (bottom)	Date Cored:	3/11/15
Core Elevation:	53' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.9
RQD (%):	100	Void Depth (ft):	N/A
Notes:	Decaying wood from 2.1 to 2.3 feet.		

Manatee Cooling Pond Soil-Cement Core Logs

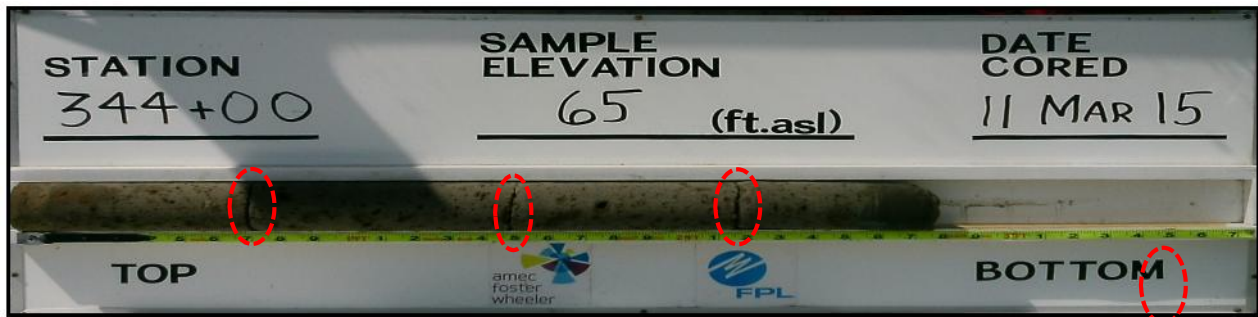


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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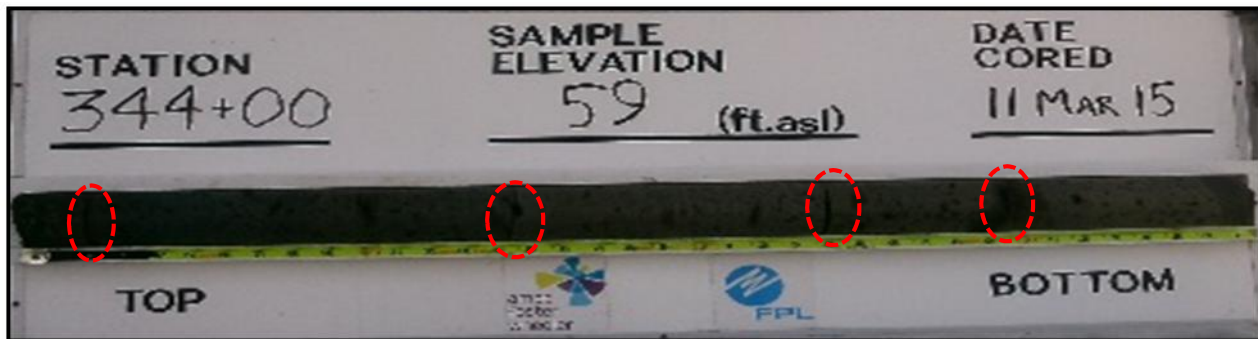
Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 344+00



Core ID:	344+00 (top)	Date Cored:	3/11/15
Core Elevation:	65' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.7
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Location: STA 342+00



Core ID:	344+00 (middle)	Date Cored:	3/11/15
Core Elevation:	59' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	3.7	SC Thickness (ft):	3.7
RQD (%):	95	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.2 feet.		

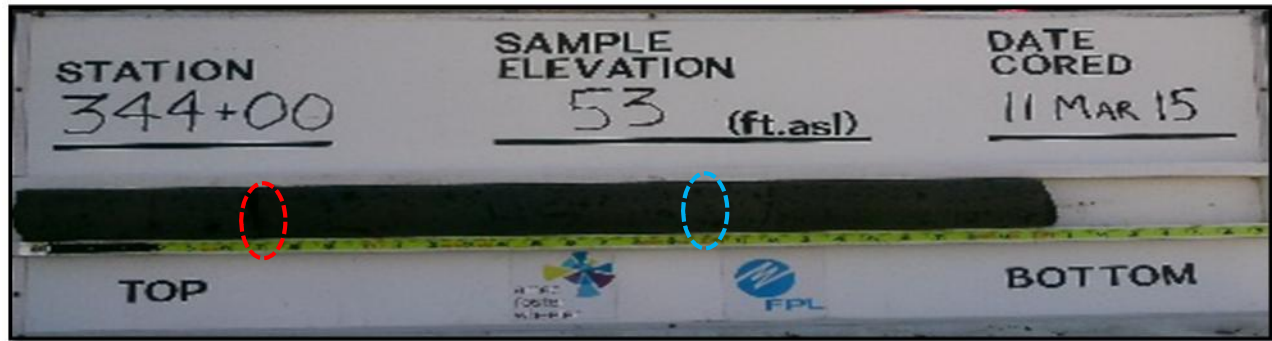
Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 344+00



Core ID:	344+00 (bottom)	Date Cored:	3/11/15
Core Elevation:	53' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	3.03	SC Thickness (ft):	3.5
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs

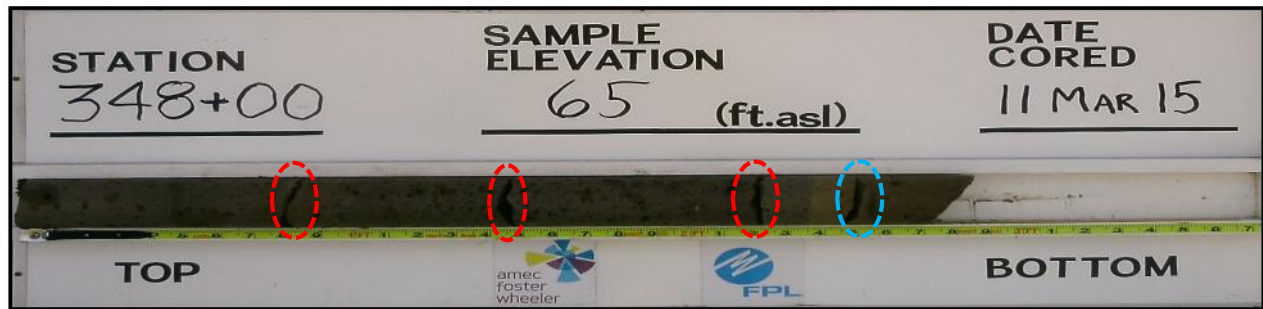


Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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wheeler**

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 348+00



Core ID:	348+00 (top)	Date Cored:	3/11/15
Core Elevation:	65' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.7	SC Thickness (ft):	2.75
RQD (%):	91	Void Depth (ft):	N/A
Notes:			

Location: STA 348+00



Core ID:	348+00 (middle)	Date Cored:	3/11/15
Core Elevation:	59' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.2	SC Thickness (ft):	3.16
RQD (%):	82	Void Depth (ft):	N/A
Notes:	Fractured pieces between 1.8 and 2.2 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

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Location: STA 348+00






Core ID:	348+00 (bottom)	Date Cored:	3/11/15
Core Elevation:	53' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.05	SC Thickness (ft):	2.05
RQD (%):	93	Void Depth (ft):	N/A
Notes:			

Manatee Cooling Pond Soil-Cement Core Logs



Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Legend	
	Mechanical Break
	Fracture
	Debris or other foreign object (see notes for description)

Location: STA 352+00



Core ID:	352+00 (top)	Date Cored:	3/11/15
Core Elevation:	65' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.45	SC Thickness (ft):	2.67
RQD (%):	61	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Fractured pieces from 1.9 to 2.45 feet.		

Location: STA 352+00



Core ID:	352+00 (middle)	Date Cored:	3/11/15
Core Elevation:	60' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	3.4	SC Thickness (ft):	3.58
RQD (%):	99	Void Depth (ft):	N/A
Notes:	Soft material from 0 to 0.1 feet. Soft fill material between 1.05 and 1.1 feet.		

Manatee Cooling Pond Soil-Cement Core Logs



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Project: Manatee FPL Cooling Pond
Project #: 300906.***.3
Amec FW Staff: Derek Richcreek

Location: STA 352+00



Core ID:	352+00 (bottom)	Date Cored:	3/11/15
Core Elevation:	55' ASL	Date Photographed:	3/11/15
Recovered Length (ft):	2.77	SC Thickness (ft):	3.16
RQD (%):	100	Void Depth (ft):	N/A
Notes:			

APPENDIX E

Soil-Cement Strength Test Results

Compressive Strength Test Results
Florida Power and Light (FPL) Manatee Plant Cooling Pond - Soil Cement Cores

STA	Loc	Diameter 1	Diameter 2	Avg Dia (in)	Length (in)	height/dia mter Ratio	Load (lbs)	Area (in ²)	Compressive Strength (psi)	Correction Factor	Corrected (ASTM C42) (psi)
152+00	Top	2.75	2.75	2.750	5.43	1.975	11520	5.9396	1940	1.00	1940
152+00	Top	2.73	2.73	2.730	5.45	1.996	8700	5.8535	1486	1.00	1486
190+00	Top	2.6	2.6	2.600	6.38	2.454	4880	5.3093	919	1.00	919
200+00	Top	2.71	2.71	2.710	5.45	2.011	3510	5.7680	609	1.00	609
202+00	Top	2.75	2.75	2.750	5.50	2.000	4930	5.9396	830	1.00	830
203+00	Top	2.75	2.75	2.750	6.25	2.273	4470	5.9396	753	1.00	753
212+00	Top	2.709	2.718	2.714	5.518	2.034	2750	5.7829	476	1.00	476
216+00	Top	2.73	2.73	2.730	5.39	1.974	5210	5.8535	890	1.00	890
236+00	Top	2.73	2.73	2.730	5.53	2.026	6270	5.8535	1071	1.00	1071
252+00	Top	2.732	2.717	2.725	4.909	1.802	3930	5.8299	674	1.00	674
252+00	Top	2.74	2.74	2.740	5.52	2.015	5380	5.8965	912	1.00	912
264+00	Top	2.7	2.7	2.700	5.42	2.007	3450	5.7255	603	1.00	603
280+00	Top	2.7	2.7	2.700	5.5	2.037	8990	5.7255	1570	1.00	1570
300+00	Top	2.73	2.73	2.730	5.5	2.015	5800	5.8535	991	1.00	991
316+00	Top	2.72	2.72	2.720	5.5	2.022	6130	5.8107	1055	1.00	1055
352+00	Top	2.75	2.75	2.750	5.52	2.007	3720	5.9396	626	1.00	626
40+00	Top	2.756	2.753	2.755	5.599	2.033	13450	5.9590	2257	1.00	2257
52+00	Top	2.71	2.71	2.710	3.54	1.306	6210	5.7680	1077	0.96	1034
52+00	Top	2.74	2.74	2.740	5.52	2.015	7580	5.8965	1286	1.00	1286
80+00	Top	2.7	2.7	2.700	3.27	1.211	2520	5.7255	440	0.93	409
96+00	Top	2.76	2.76	2.760	5.46	1.978	7780	5.9828	1300	1.00	1300
116+00	Mid	2.75	2.75	2.750	3.74	1.360	12180	5.9396	2051	0.96	1969
116+00	Mid	2.75	2.75	2.750	2.66	0.967	8640	5.9396	1455	0.87	1266
152+00	Mid	2.752	2.745	2.749	5.465	1.988	9370	5.9331	1579	1.00	1579
175+00	Mid	2.6	2.6	2.600	3.00	1.154	560	5.3093	105	0.93	98
190+00	Mid	2.69	2.69	2.690	5.88	2.186	400	5.6832	70	1.00	70
200+00	Mid	2.74	2.74	2.740	5.44	1.985	4480	5.8965	760	1.00	760
200+00	Mid	2.73	2.73	2.730	5.4	1.978	5650	5.8535	965	1.00	965
202+00	Mid	2.61	2.61	2.610	6.05	2.318	4010	5.3502	750	1.00	750
203+00	Mid	2.75	2.75	2.750	6.25	2.273	2900	5.9396	488	1.00	488
216+00	Mid	2.719	2.711	2.715	5.513	2.031	1060	5.7893	183	1.00	183
216+00	Mid	2.73	2.73	2.730	5.49	2.011	3350	5.8535	572	1.00	572
236+00	Mid	2.59	2.59	2.590	5.44	2.100	6110	5.2685	1160	1.00	1160
252+00	Mid	2.781	2.784	2.783	4.193	1.507	5000	6.0808	822	0.98	806
252+00	Mid	2.73	2.73	2.730	4.46	1.634	4070	5.8535	695	0.98	681
256+00	Mid	2.704	2.65	2.677	3.34	1.248	520	5.6284	92	0.93	86
264+00	Mid	2.724	2.727	2.726	5.112	1.876	3370	5.8342	578	1.00	578
264+00	Mid	2.74	2.74	2.740	5.43	1.982	9020	5.8965	1530	1.00	1530
280+00	Mid	2.71	2.71	2.710	2.87	1.059	570	5.7680	99	0.93	92
300+00	Mid	2.75	2.75	2.750	3.22	1.171	7240	5.9396	1219	0.93	1134
316+00	Mid	2.74	2.74	2.740	5.05	1.843	4950	5.8965	839	1.00	839
328+00	Mid	2.723	2.726	2.725	3.786	1.390	2970	5.8299	509	0.96	489

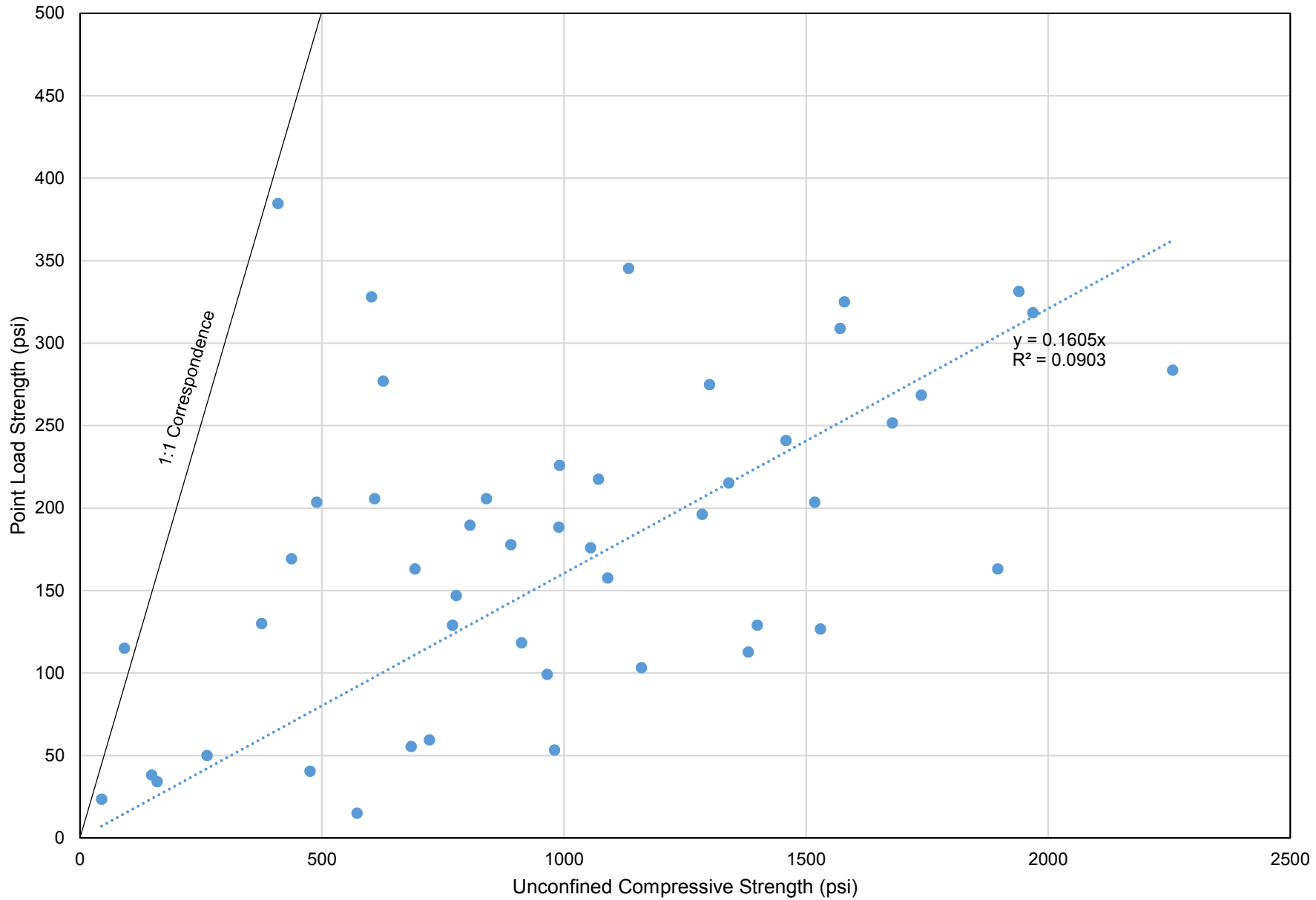
STA	Loc	Diameter 1	Diameter 2	Avg Dia (in)	Length (in)	height/diameter Ratio	Load (lbs)	Area (in ²)	Compressive Strength (psi)	Correction Factor	Corrected (ASTM C42) (psi)
352+00	Mid	2.71	2.71	2.710	5.34	1.970	7730	5.7680	1340	1.00	1340
52+00	Mid	2.74	2.74	2.740	5.42	1.978	8600	5.8965	1459	1.00	1459
56+00	Mid	2.730	2.729	2.730	3.722	1.364	4750	5.8513	812	0.96	779
56+00	Mid	2.735	2.726	2.731	5.553	2.034	5740	5.8556	980	1.00	980
80+00	Mid	2.75	2.75	2.750	5.45	1.982	7600	5.9396	1280	1.00	1280
80+00	Mid	2.75	2.75	2.750	5.42	1.971	8310	5.9396	1399	1.00	1399
88+00	Mid	2.716	2.724	2.720	5.479	2.014	9750	5.8107	1678	1.00	1678
96+00	Mid	2.74	2.74	2.740	5.5	2.007	8950	5.8965	1518	1.00	1518
116+00	Bot	2.76	2.76	2.760	5.45	1.975	8260	5.9828	1381	1.00	1381
152+00	Bot	2.75	2.75	2.750	3.1	1.127	11100	5.9396	1869	0.93	1738
180+00	Bot	2.7	2.7	2.700	5.5	2.037	4450	5.7255	777	1.00	777
180+00	Bot	2.75	2.75	2.750	2.9	1.055	4140	5.9396	697	0.93	648
190+00	Bot	2.7	2.7	2.700	5.00	1.852	325	5.7255	57	1.00	57
202+00	Bot	2.75	2.75	2.750	7.00	2.545	3090	5.9396	520	1.00	520
203+00	Bot	2.75	2.75	2.750	5.50	2.000	4350	5.9396	732	1.00	732
216+00	Bot	2.67	2.67	2.670	3.3	1.236	270	5.5990	48	0.93	45
224+00	Bot	2.75	2.748	2.749	5.476	1.992	4060	5.9352	684	1.00	684
236+00	Bot	2.7	2.7	2.700	5.5	2.037	2150	5.7255	376	1.00	376
240+00	Bot	2.745	2.748	2.747	3.925	1.429	4270	5.9245	721	0.96	692
252+00	Bot	2.723	2.713	2.718	3.55	1.306	580	5.8021	100	0.96	96
252+00	Bot	2.74	2.74	2.740	4.46	1.628	1580	5.8965	268	0.98	263
256+00	Bot	2.704	2.65	2.677	2.2922	0.856	960	5.6284	171	0.87	148
264+00	Bot	2.67	2.67	2.670	4.69	1.757	4310	5.5990	770	1.00	770
280+00	Bot	2.74	2.74	2.740	2.55	0.931	1080	5.8965	183	0.87	159
300+00	Bot	2.73	2.73	2.730	2.86	1.048	2750	5.8535	470	0.93	437
316+00	Bot	2.732	2.731	2.732	4.391	1.608	1740	5.8599	297	0.98	291
316+00	Bot	2.74	2.74	2.740	5.46	1.993	6430	5.8965	1090	1.00	1090
328+00	Bot	2.683	2.682	2.683	3.943	1.470	4250	5.6516	752	0.96	722
352+00	Bot	2.67	2.67	2.670	5.5	2.060	5540	5.5990	989	1.00	989
96+00	Bot	2.74	2.74	2.740	5.44	1.985	11180	5.8965	1896	1.00	1896

Point Load Test Results and UCS Correlation
Florida Power and Light (FPL) Manatee Plant Cooling Pond - Soil Cement Cores

STA	Point Load Reading at Break (psi)			Corrected Strength Index (psi)			Lab UCS (psi)			UCS vs Point Load Correlation		
	Top	Middle	Bottom	Top	Middle	Bottom	Top	Middle	Bottom	Top	Middle	Bottom
40+00	772	1012		284	372		2257			7.96		
44+00	516	870		190	320							
48+00	624	511		229	188							
52+00	534	656	606	196	241	223	1286	1459		6.55	6.05	
56+00	893	145	743	328	53	273		980			18.40	
60+00	554	995	737	204	366	271						
64+00	827	511	679	304	188	249						
68+00	606	775	554	223	285	204						
72+00	685	850	696	252	312	256						
76+00	624	1108	896	229	407	329						
80+00	1047	351	635	385	129	233	409	1399		1.06	10.85	
84+00	441	200	281	162	73	103						
88+00	624	685	519	229	252	191		1678			6.67	
92+00	734	571	615	270	210	226						
96+00	748	554	444	275	204	163	1300	1518	1896	4.73	7.46	11.62
100+00	656	1036	835	241	381	307						
104+00	725	806	519	266	296	191						
108+00	609	438	708	224	161	260						
112+00	734	534	638	270	196	234						
116+00	725	867	307	266	318	113		1969	1381		6.18	12.24
120+00	693	661	412	255	243	151						
124+00	896	801	780	329	294	287						
128+00	766	737	664	281	271	244						
132+00	1015	603	951	373	222	349						
136+00	980	960	658	360	353	242						
140+00	943	766	812	346	281	298						
144+00	679	412	481	249	151	177						
148+00	618	545	867	227	200	318						
152+00	902	885	731	331	325	269	1940	1579	1738	5.85	4.86	6.47
156+00	635	885	804	233	325	295						
160+00	766	748	708	281	275	260						
164+00	560	757	267	206	278	98						
169+00	728	273	84	267	100	31						
172+00	455	406	769	167	149	282						
175+00								98				
176+00	629	270	528	231	99	194						
180+00	339	470	400	125	173	147			777			5.29
184+00	548	365	380	201	134	140						
188+00	528	360	360	194	132	132						
190+00							919	70	57			
192+00	482	455		177	167							
196+00	650	676	148	239	248	54						
200+00	560	270	403	206	99	148	609	965		2.96	9.73	
202+00							830	750	520			
203+00							753	488	732			
208+00		508			187							
212+00	110		93	40		34	476			11.77		
216+00	484	41	64	178	15	24	890	572	45	5.01	38.00	1.91
224+00			151			55			684			12.33
228+00			389			143						
236+00	592	281	354	217	103	130	1071	1160	376	4.93	11.23	2.89
240+00			444			163			692			4.24
252+00	322	516	136	118	190	50	912	806	263	7.71	4.25	5.26
256+00		261	104		96	38			148			3.88
260+00	908	461	142	334	169	52						
264+00	893	345	351	328	127	129	603	1530	770	1.84	12.07	5.97
268+00	583		676	214		248						

STA	Point Load Reading at Break (psi)			Corrected Strength Index (psi)			Lab UCS (psi)			UCS vs Point Load Correlation		
	Top	Middle	Bottom	Top	Middle	Bottom	Top	Middle	Bottom	Top	Middle	Bottom
276+00	656	183	191	241	67	70						
280+00	841	313	93	309	115	34	1570	92	159	5.08	0.80	4.66
300+00	615	940	461	226	345	169	991	1134	437	4.39	3.28	2.58
304+00	563	629		207	231							
316+00	479	560	429	176	206	158	1055	839	1090	6.00	4.08	6.92
320+00	560		615	206		226						
328+00	525	554	162	193	204	60		489	722		2.40	12.13
344+00	325			119								
348+00	551		525	202		193						
352+00	754	586	513	277	215	188	626	1340	989	2.26	6.23	5.25

Point Load Strength vs UCS



APPENDIX F

Topographic Map Detailed Segments



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

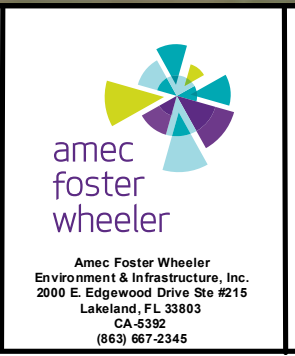
- ✕ Stations
- ▲ Repair

Scale and Orientation:

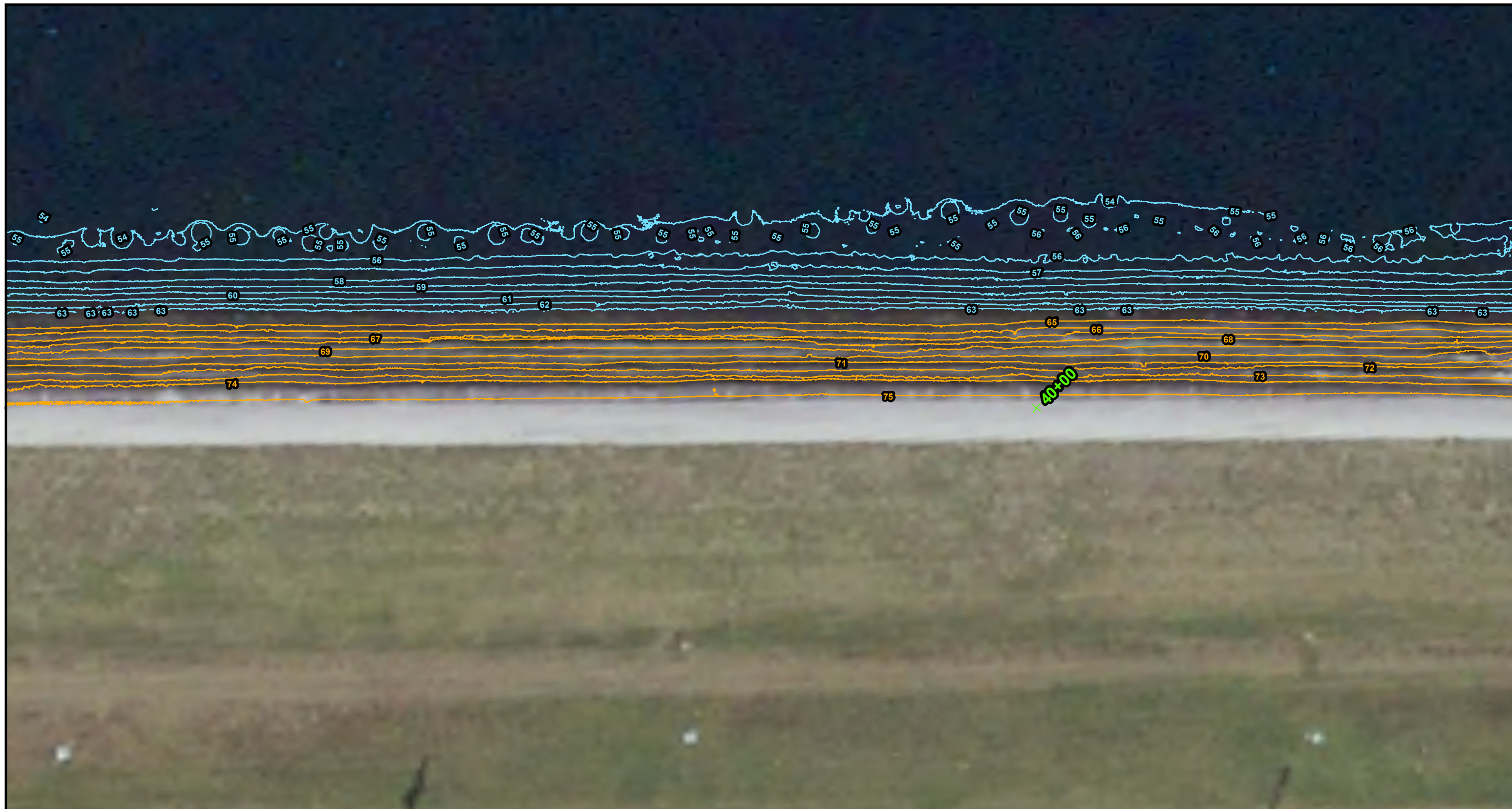
N

0 15 30

1" = 30 Feet



Appendix F
Figure 1
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

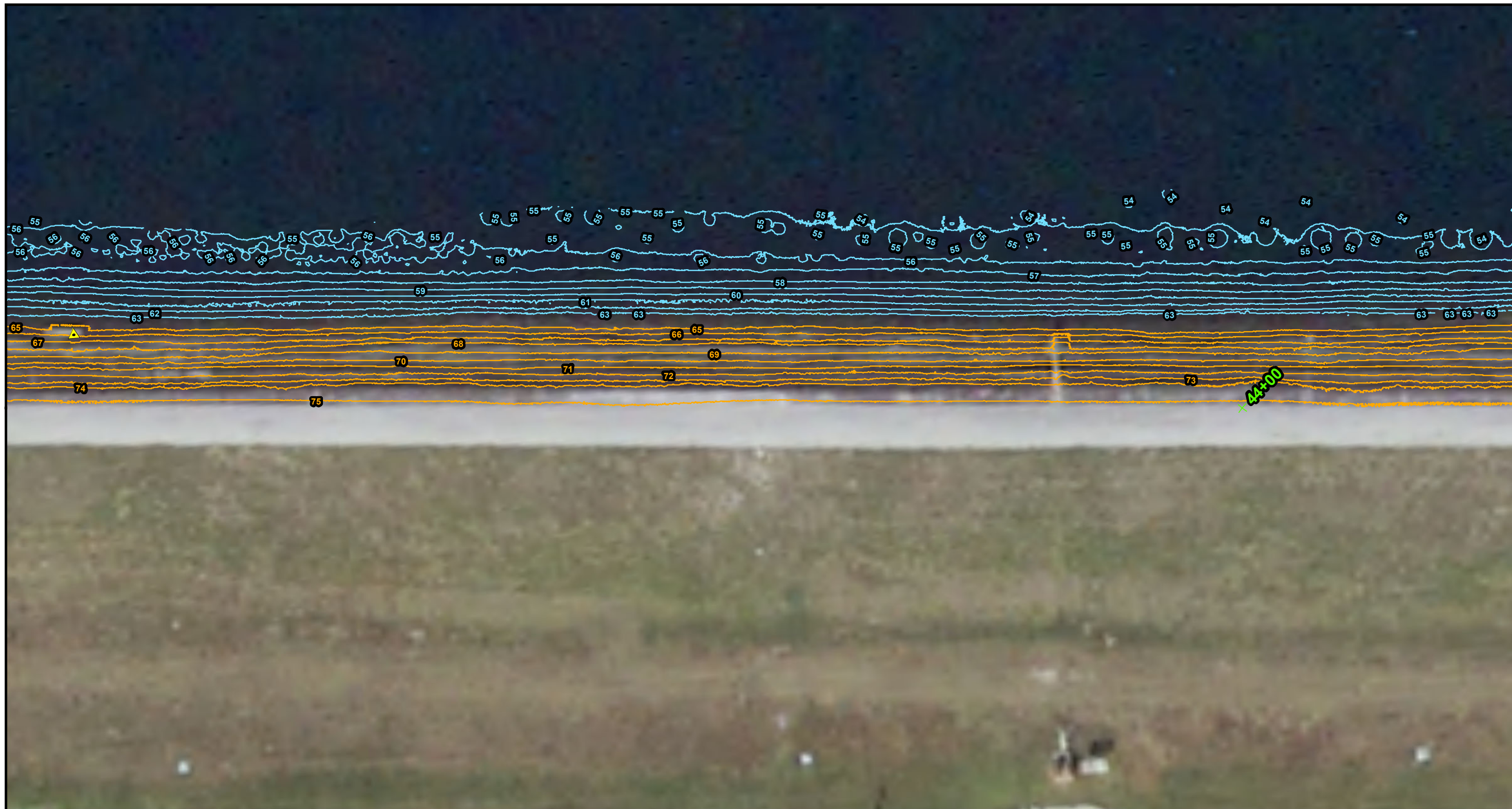
- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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**Appendix F
Figure 2
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida**



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- × Stations
- ▲ Repair

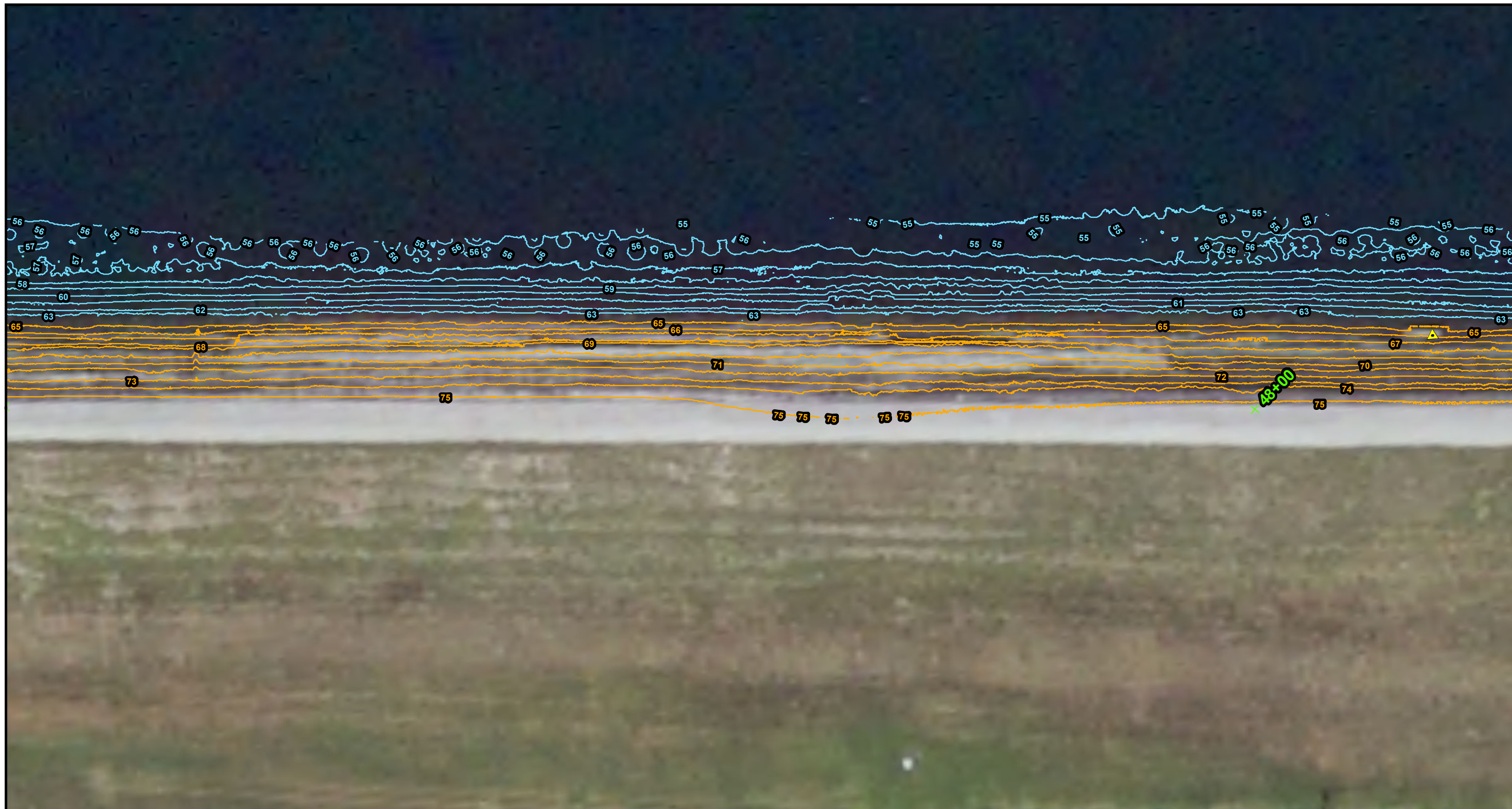
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 3
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 4
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

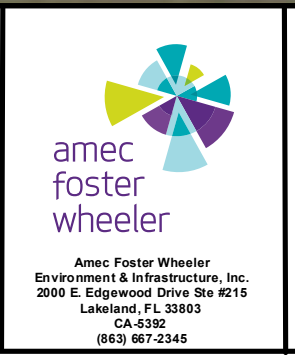
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

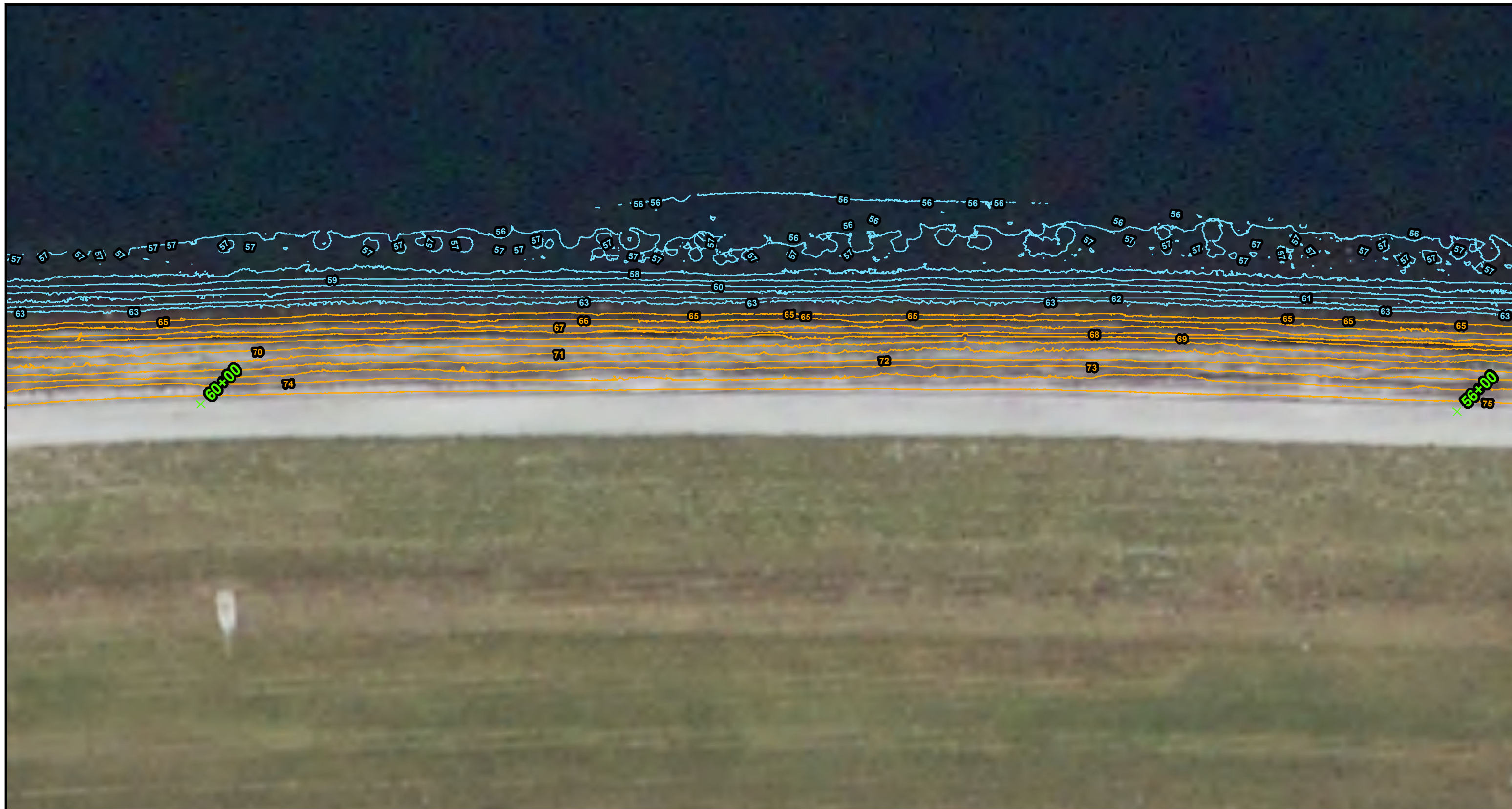
- ✕ Stations
- ▲ Repair

Scale: 0 15 30
1" = 30 Feet

North Arrow: N



Appendix F
Figure 5
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

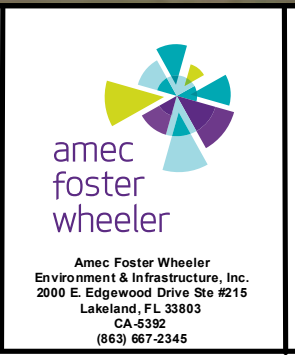
- ✕ Stations
- ▲ Repair

Scale and Orientation:

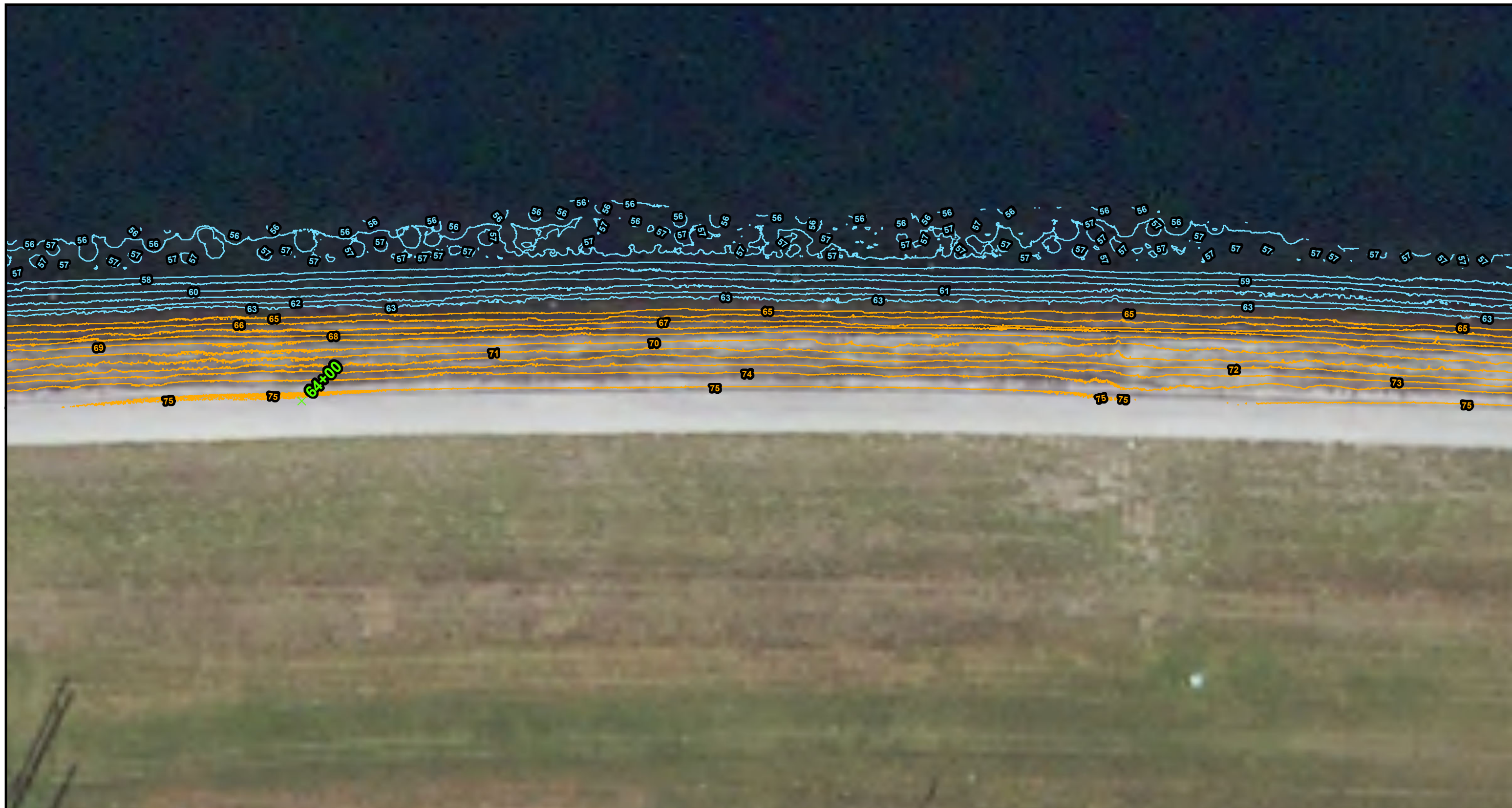
N

0 15 30

1" = 30 Feet



Appendix F
Figure 6
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB

File Path: V:\300906_Manatee_Cooling_Pond\MXD\Report\Contour_Profiles\MapBook.mxd



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

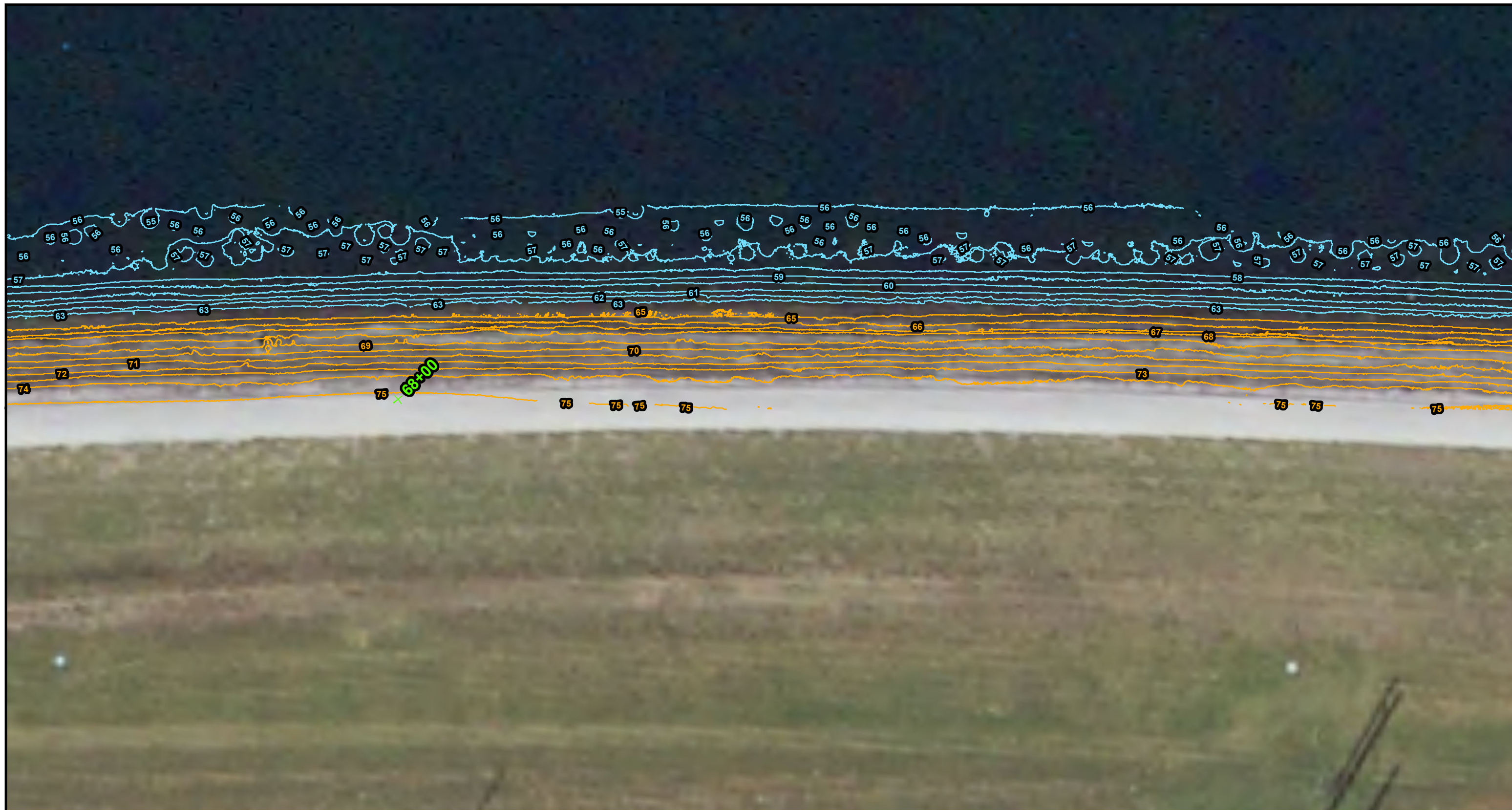
0 15 30

1" = 30 Feet

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Appendix F
Figure 7
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

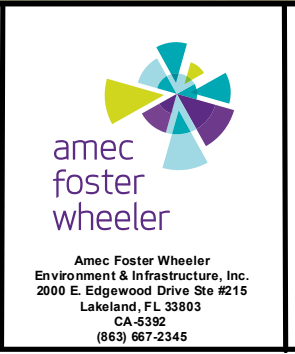
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

Scale: 0 15 30
1" = 30 Feet

North Arrow: N



Appendix F
Figure 8
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

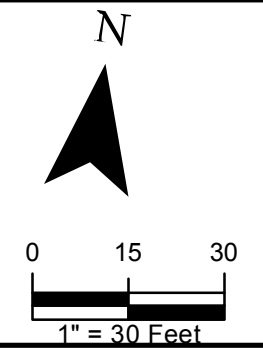
- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- ✕ GPS Stations
- ▲ Repair



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Appendix F
Figure 9
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 10
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

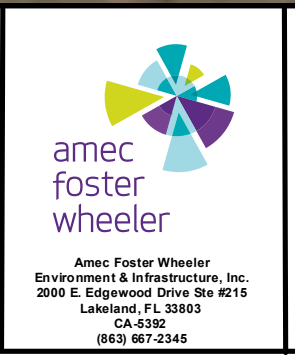
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



Appendix F
Figure 11
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

Scale and Orientation:

N

0 15 30

1" = 30 Feet

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Appendix F
Figure 12
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

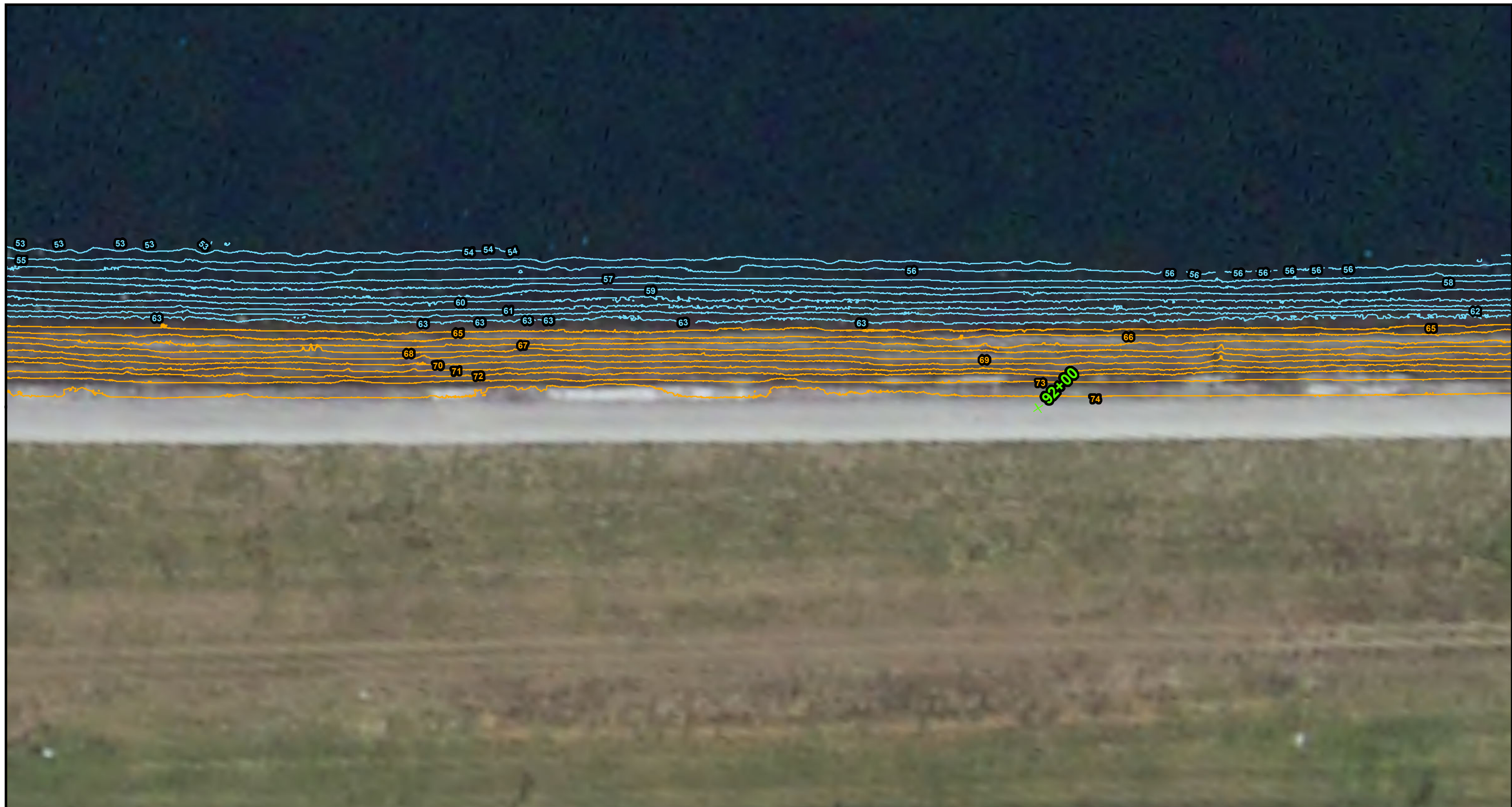
- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 13
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

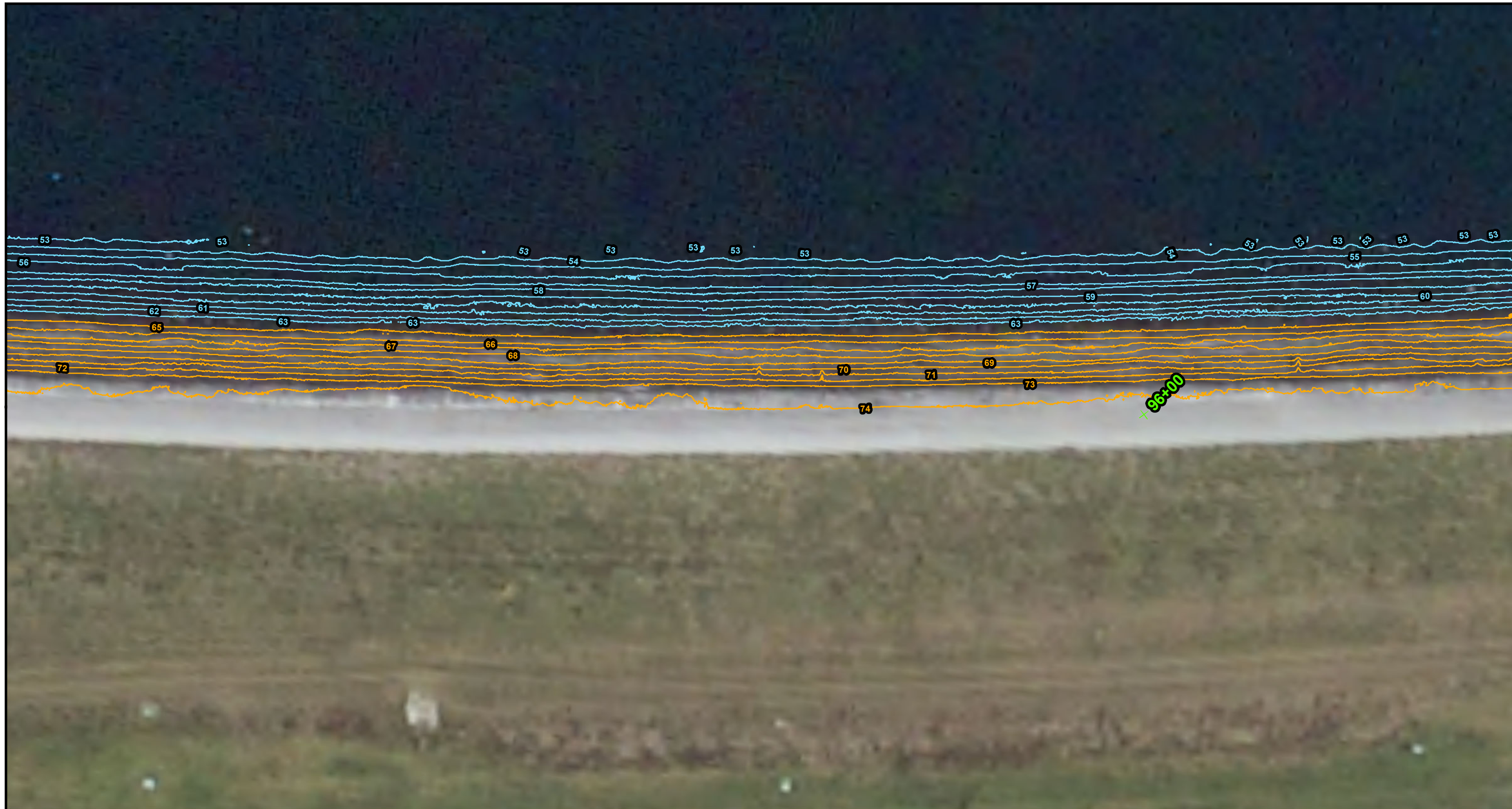
0 15 30

1" = 30 Feet

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Appendix F
Figure 14
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

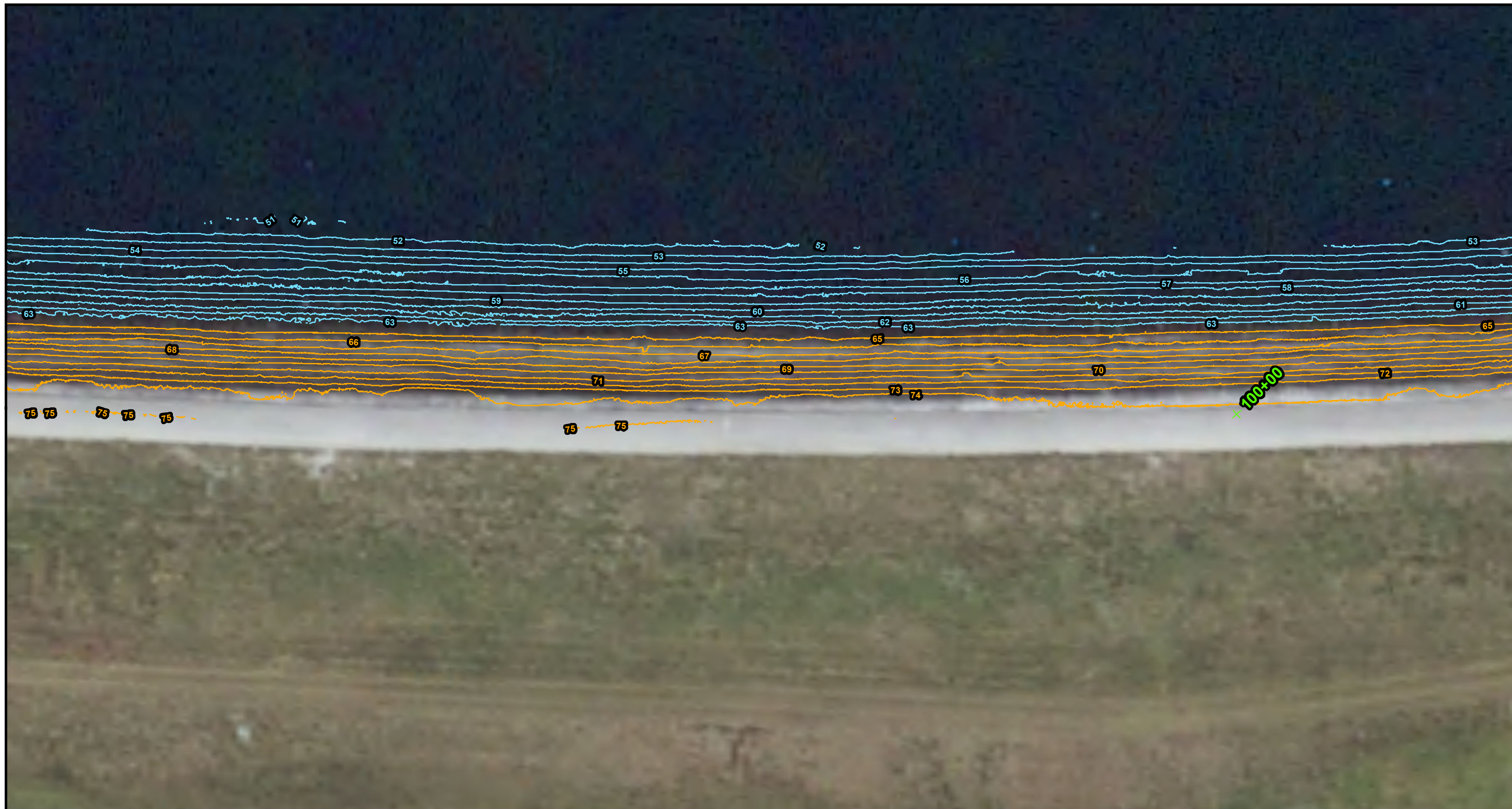
- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 15
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

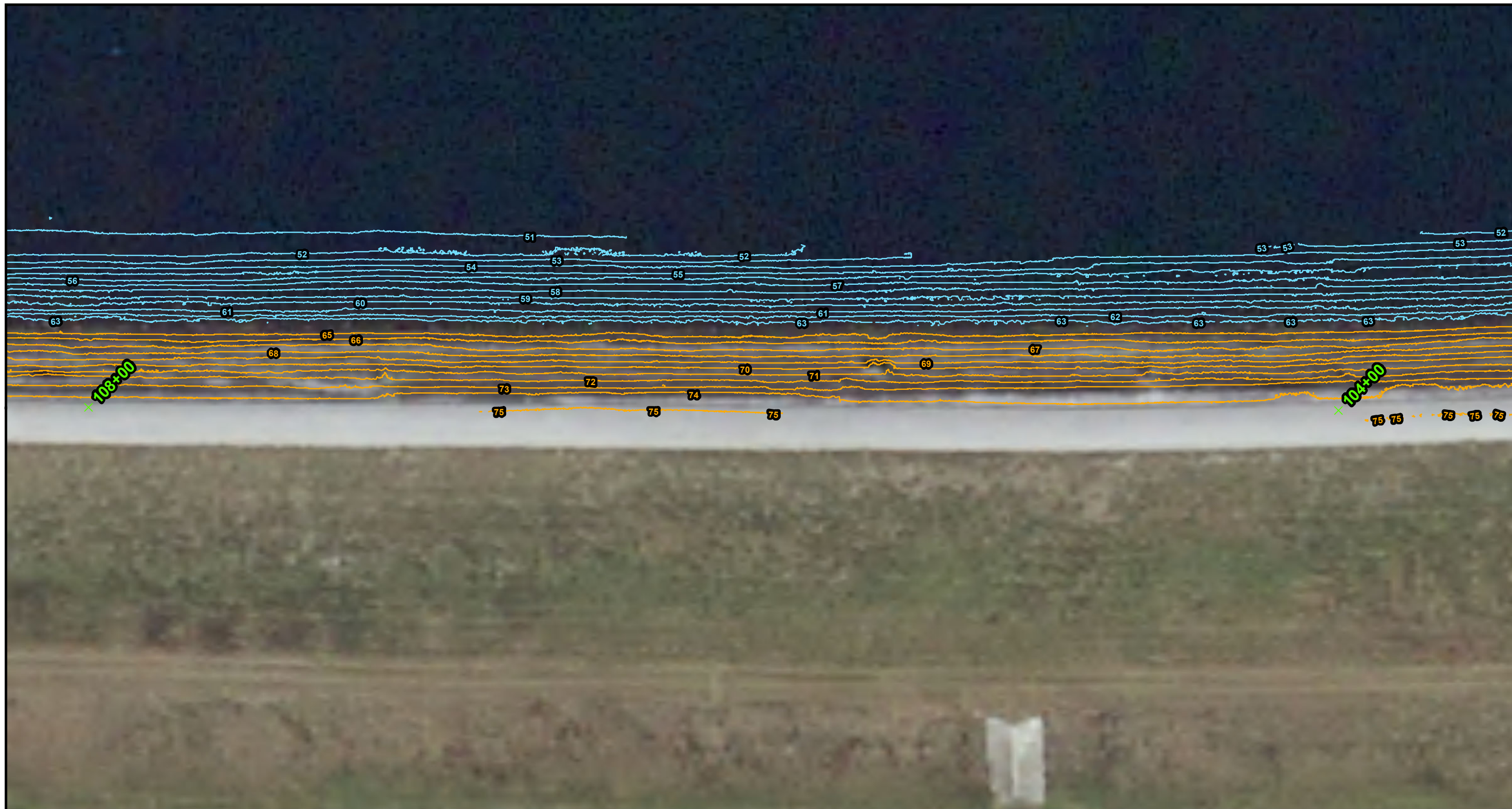
- × Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 16
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

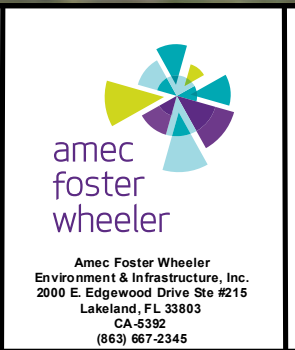
- ✕ Stations
- ▲ Repair

Scale and Orientation:

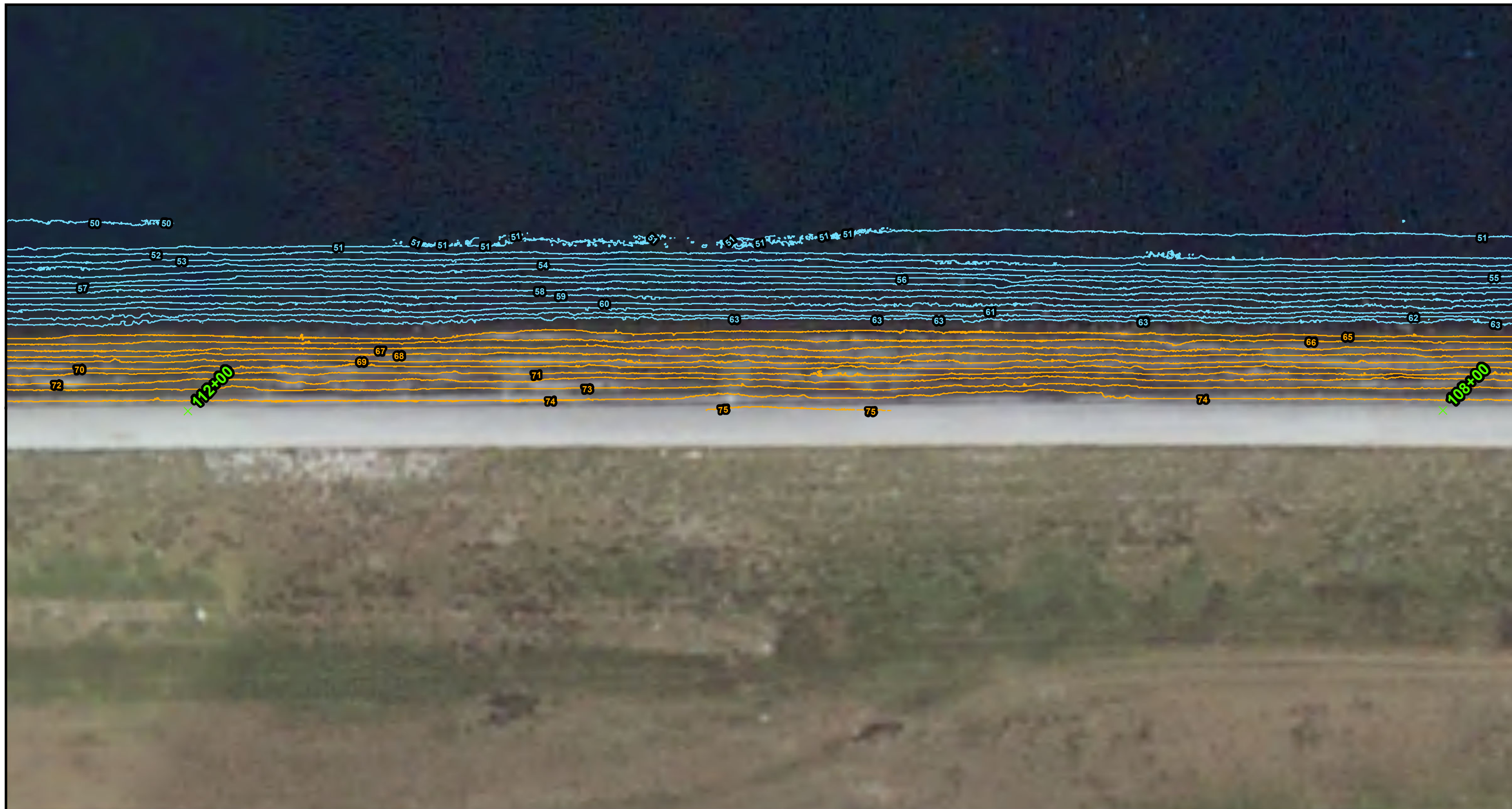
N

0 15 30

1" = 30 Feet



Appendix F
Figure 17
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

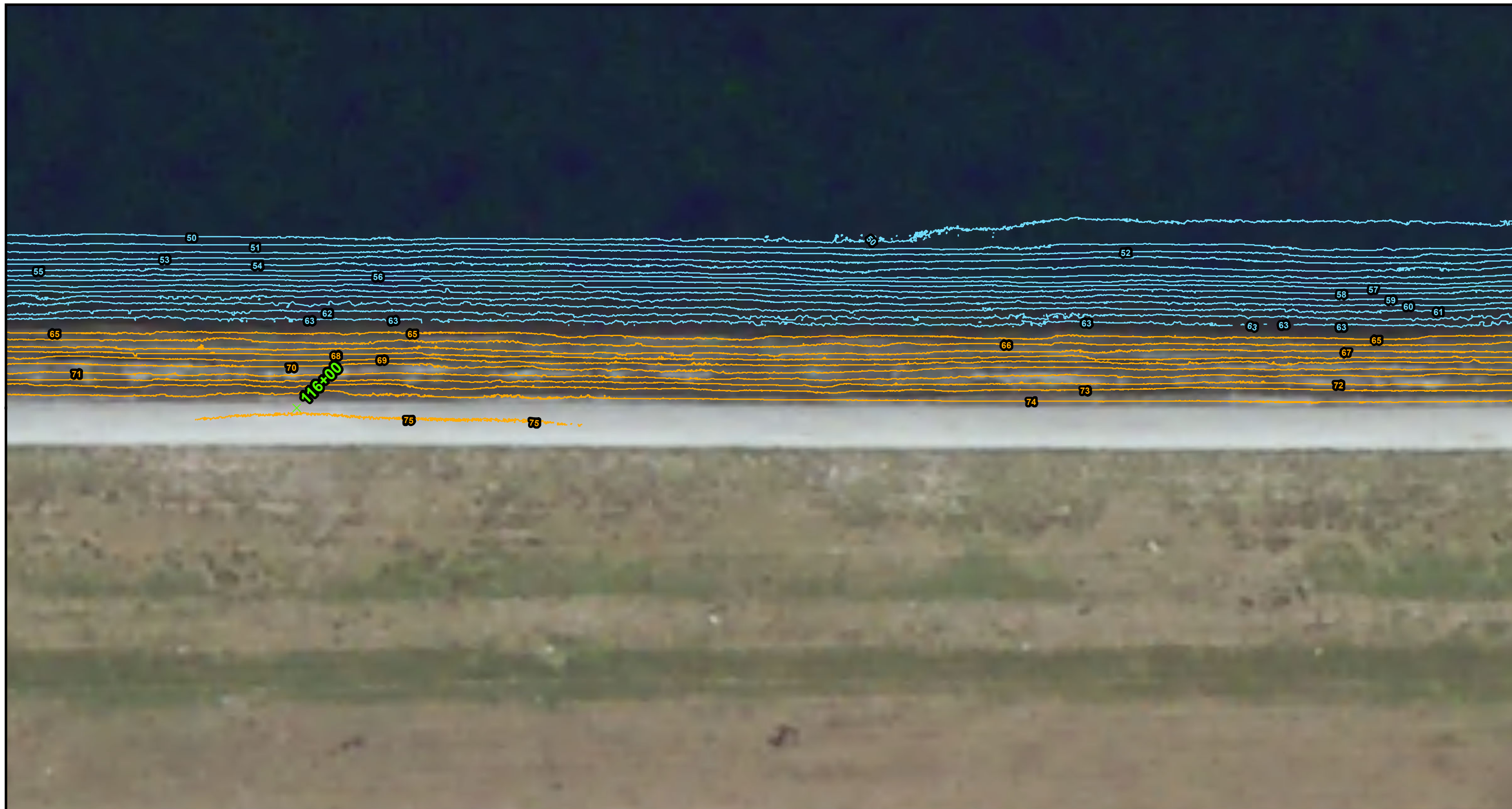
- × Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 18
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
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Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

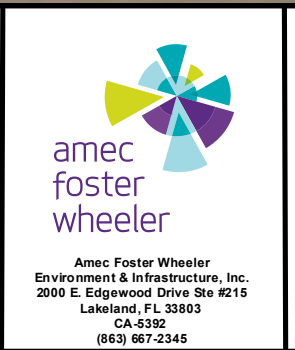
GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30

1" = 30 Feet



Appendix F
Figure 19
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 20
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

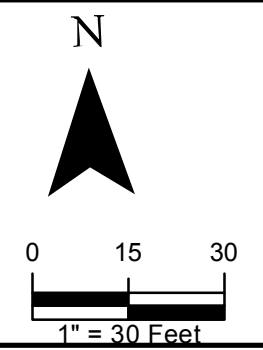
- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

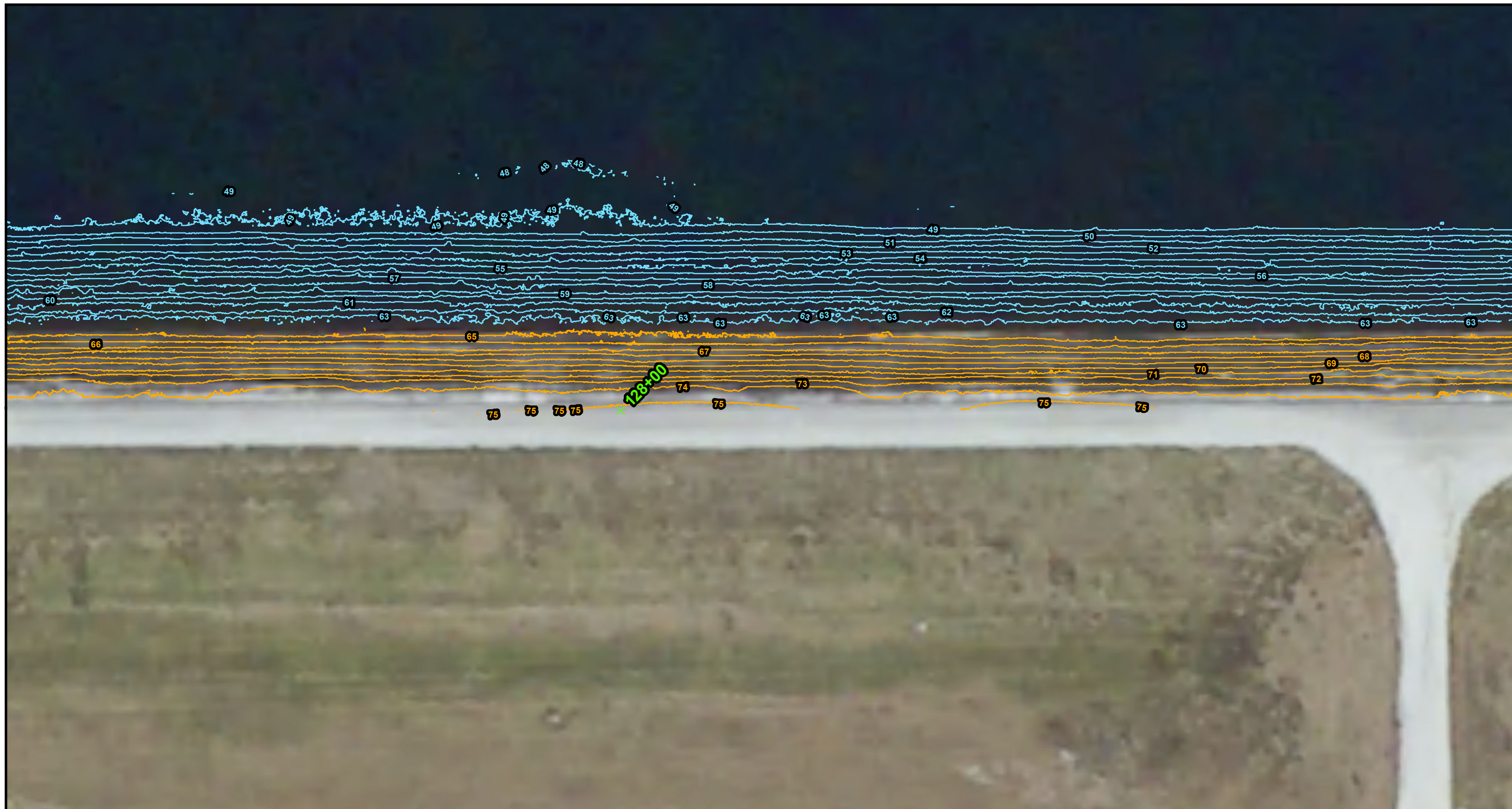
- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- x GPS Stations
- ▲ GPS Repair



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**Appendix F
Figure 21
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida**



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 22
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 23
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

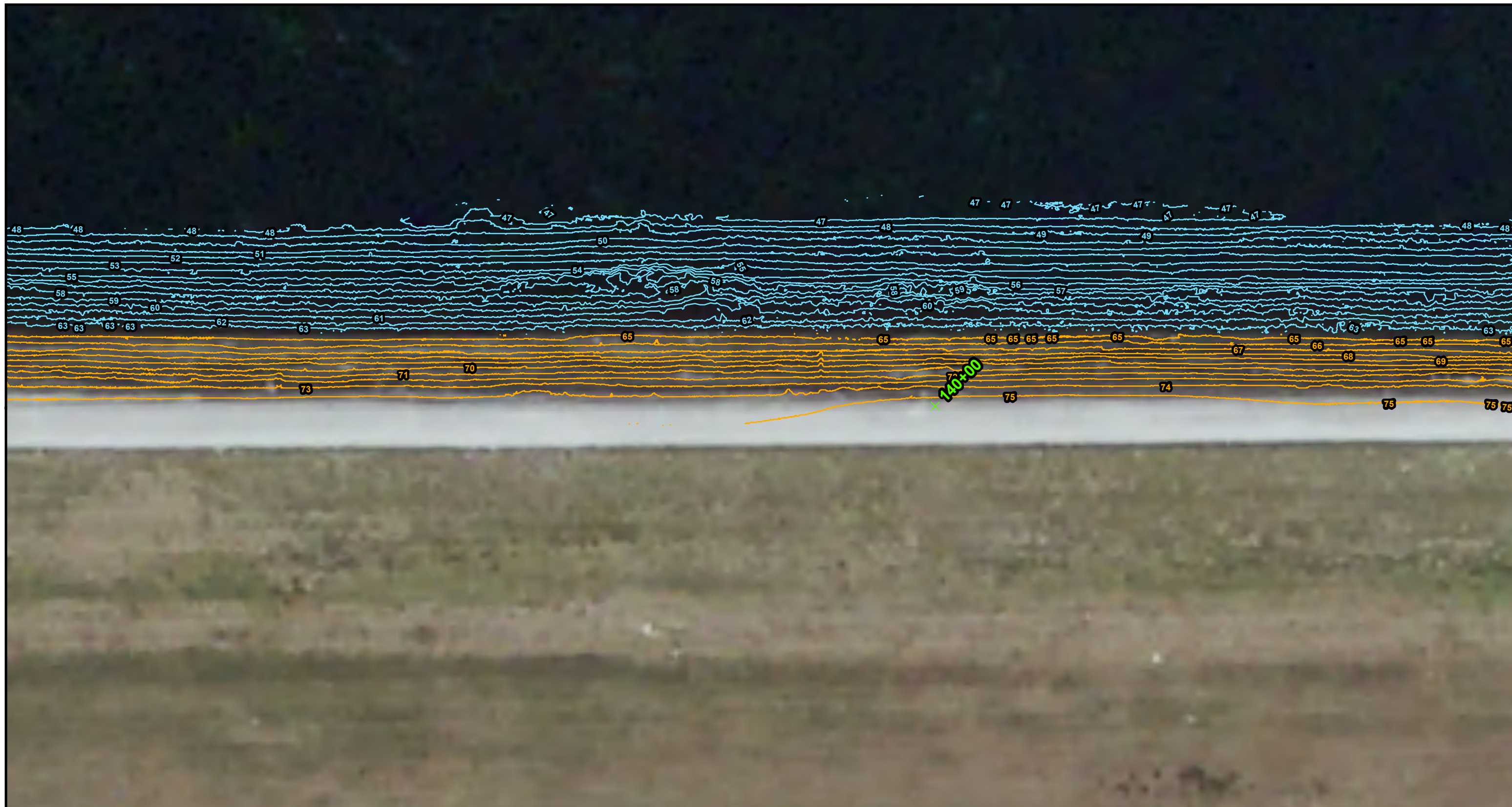
0 15 30

1" = 30 Feet

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Appendix F
Figure 24
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

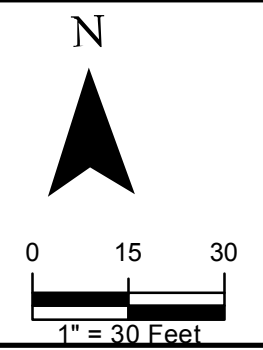
- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

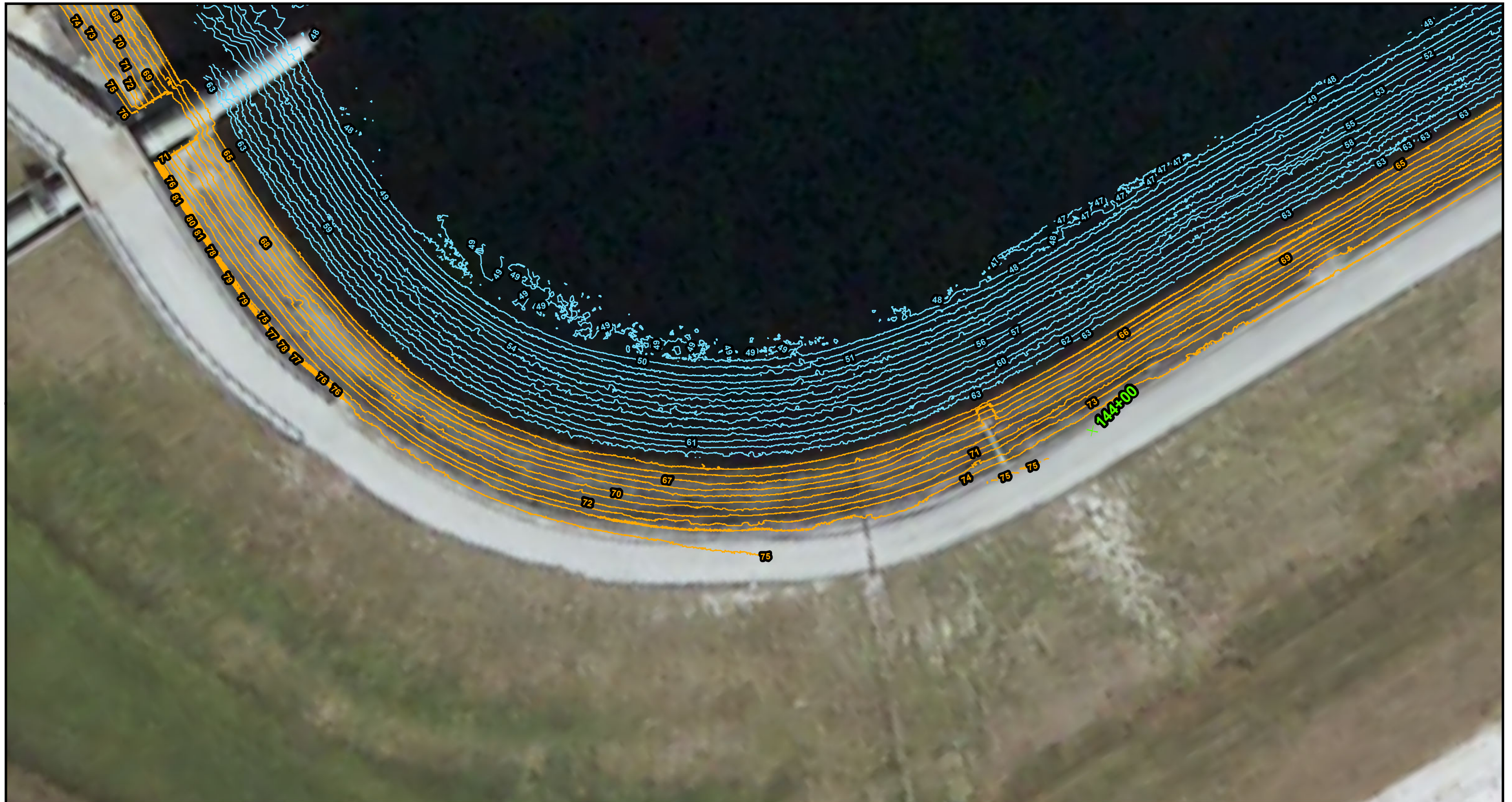
- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- x GPS Stations
- ▲ Repair



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Appendix F
Figure 25
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
 Revised: AB
 Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- × Stations
- ▲ Repair

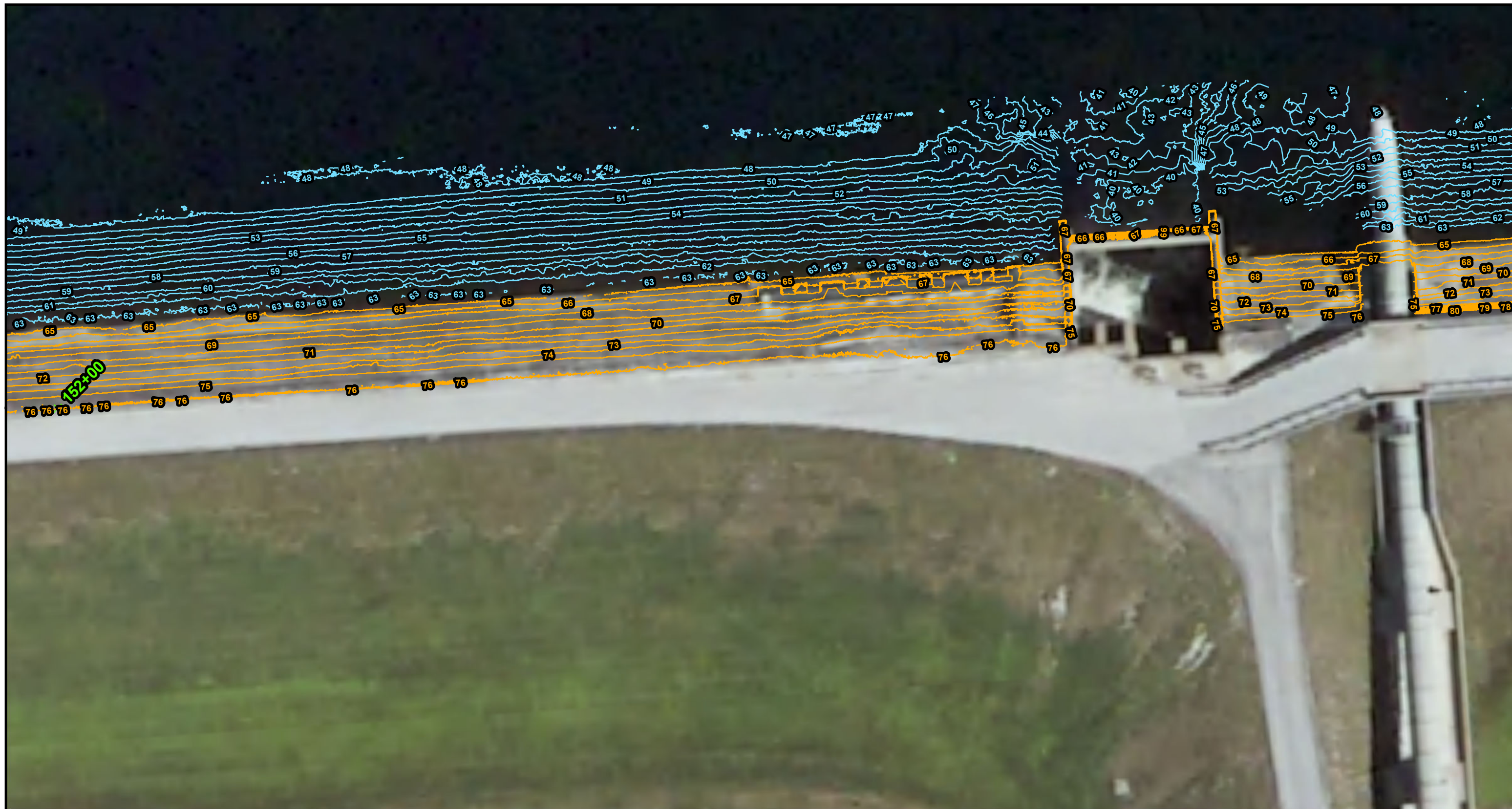
North arrow pointing up.

Scale bar: 0, 15, 30 feet. Below the bar, it reads "1" = 30 Feet".

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Appendix F
Figure 26
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

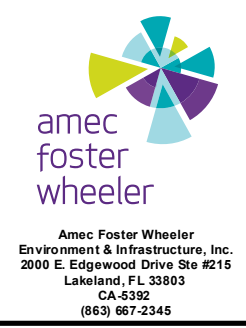
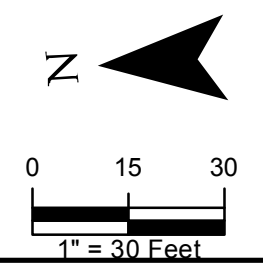
- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/2015
Revised: AB
Checked By: JB

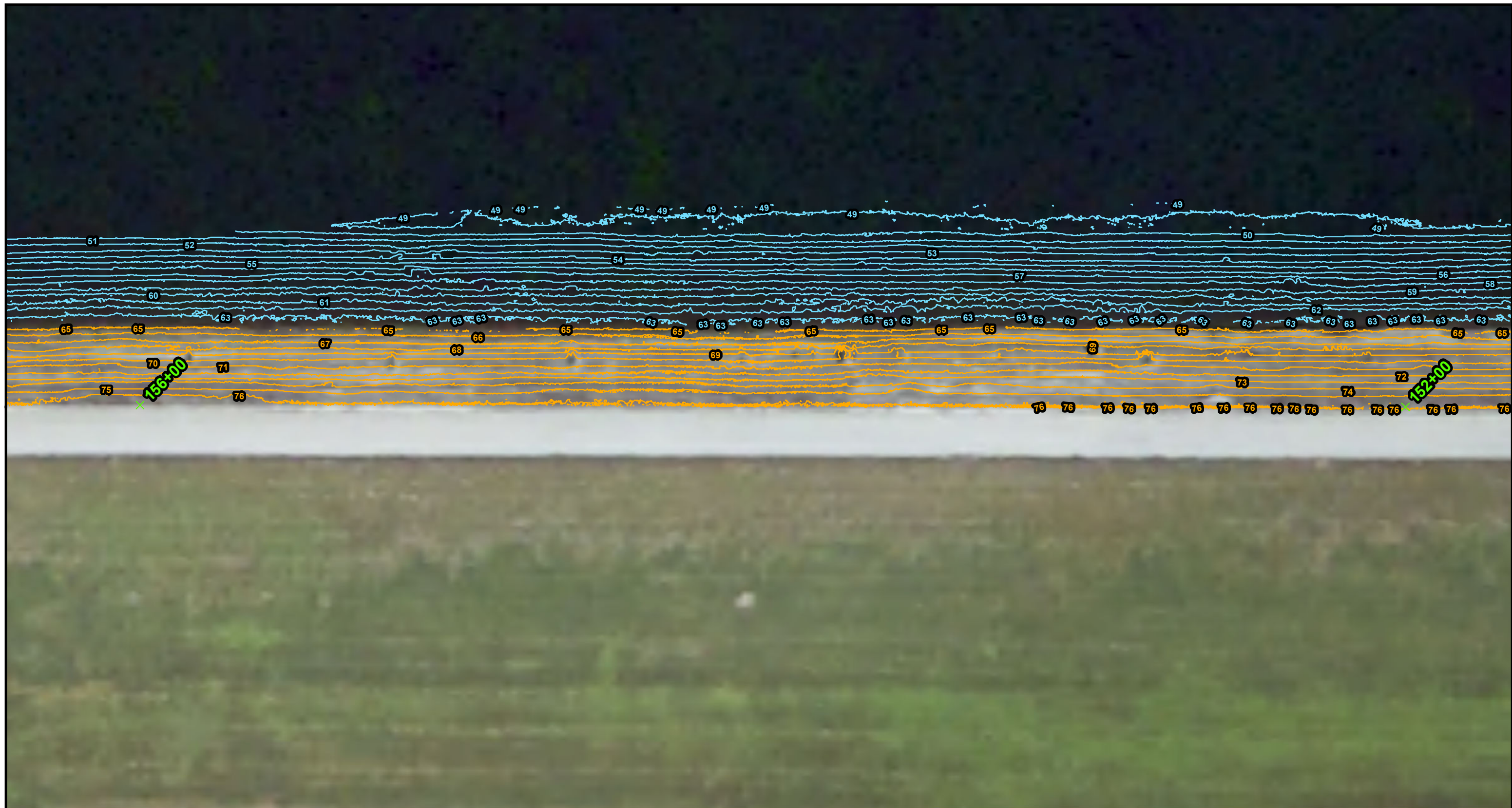


Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- ✕ GPS Stations
- ▲ Repair



Appendix F
Figure 27
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

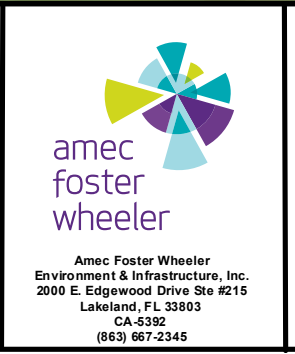
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

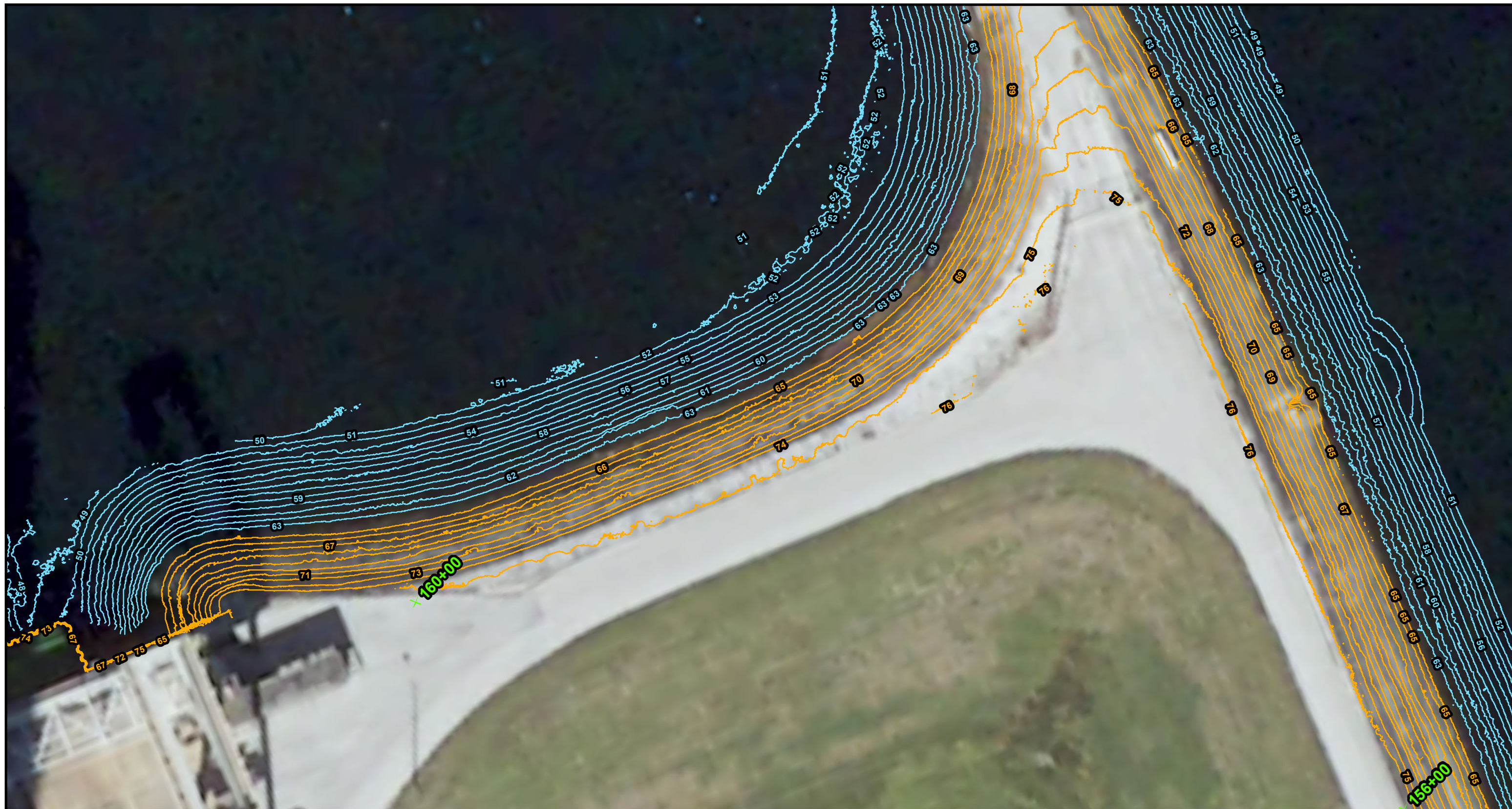
- ✕ Stations
- ▲ Repair

North arrow pointing up and slightly right.

Scale bar: 0, 15, 30 feet. Below the bar: 1" = 30 Feet



Appendix F
Figure 28
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

0 15 30
1" = 30 Feet

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Appendix F
Figure 29
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 30
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

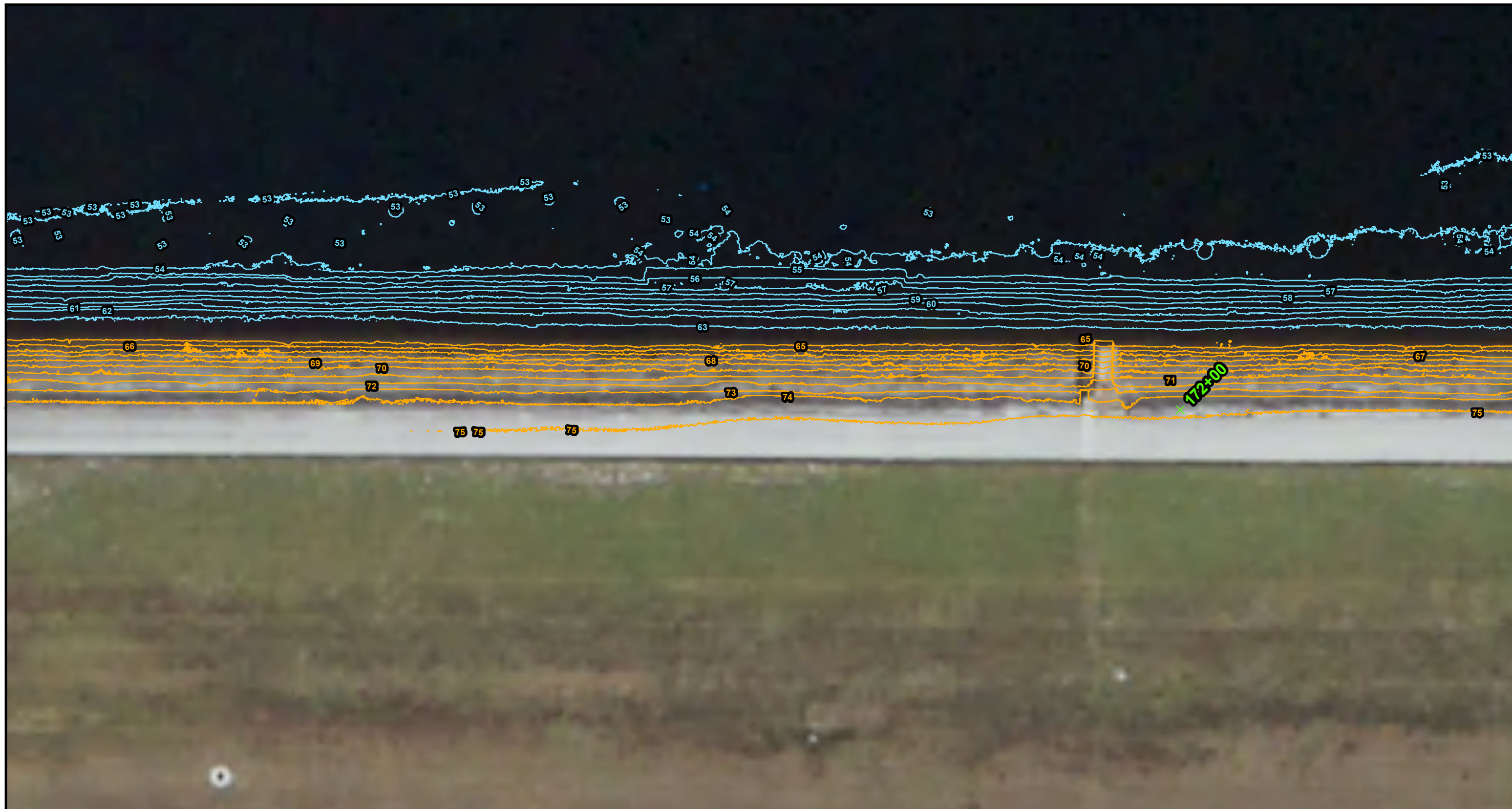
GPS Locations

- ✕ Stations
- ▲ Repair

North arrow and scale bar: 0, 15, 30 feet. 1" = 30 Feet

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Appendix F
Figure 31
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

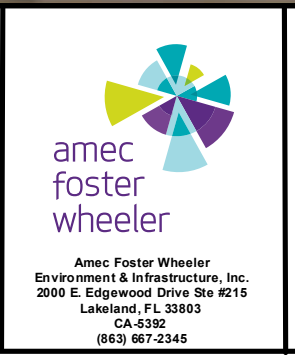
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

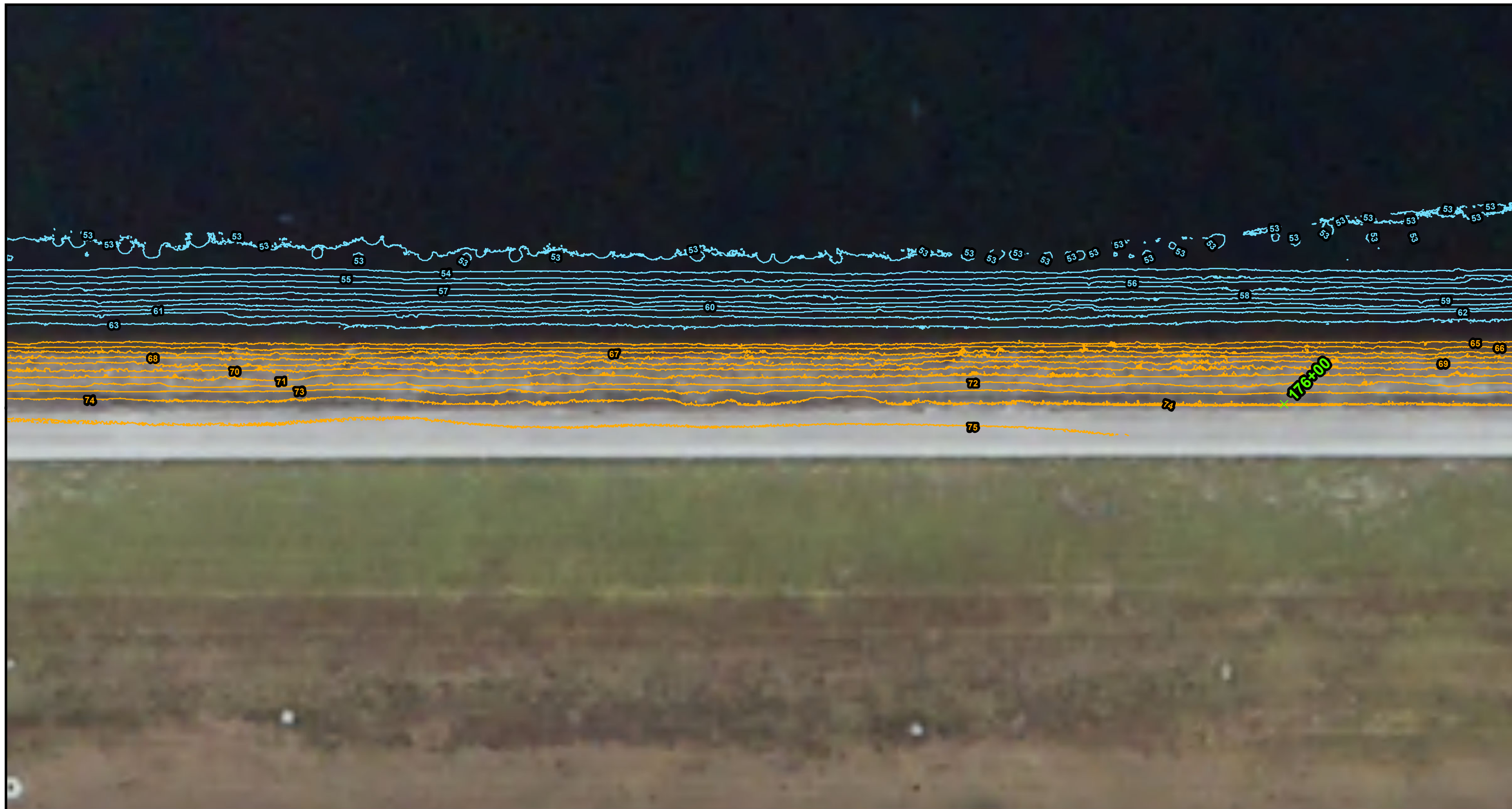
- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



Appendix F
Figure 32
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

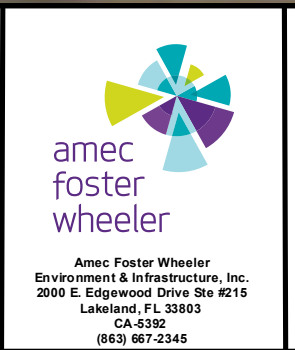
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

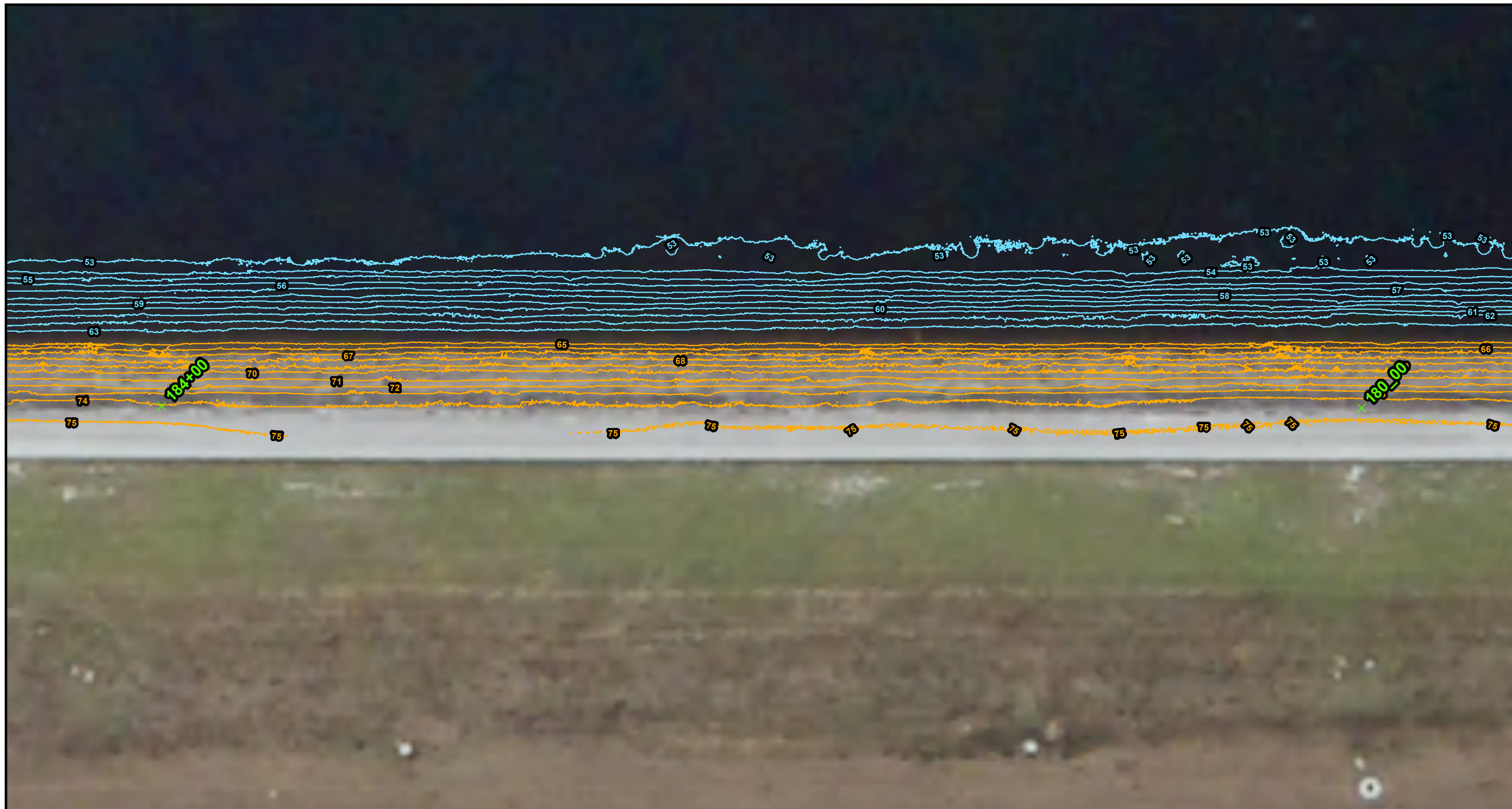
- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



Appendix F
Figure 33
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

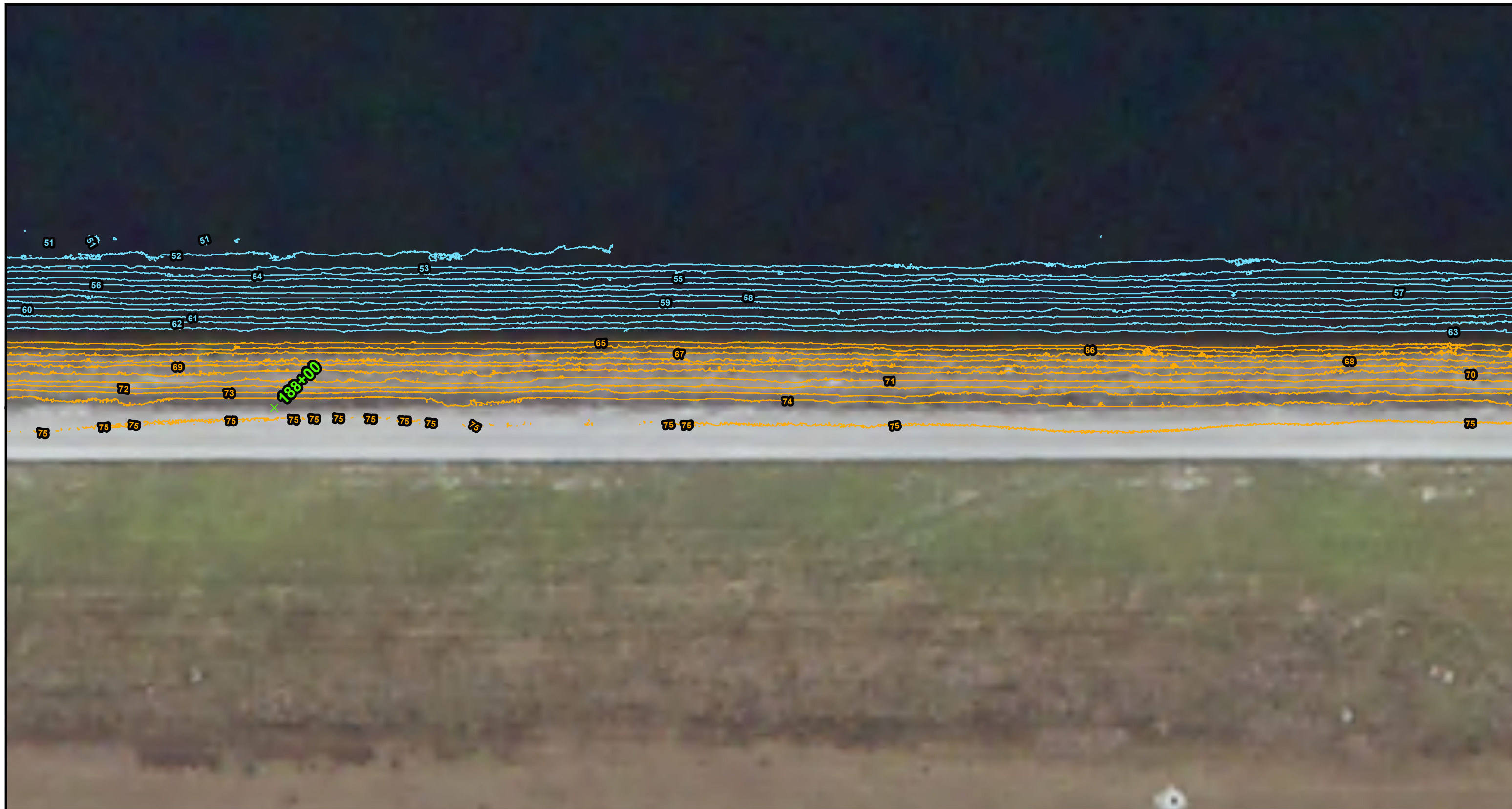
0 15 30

1" = 30 Feet

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Appendix F
Figure 34
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

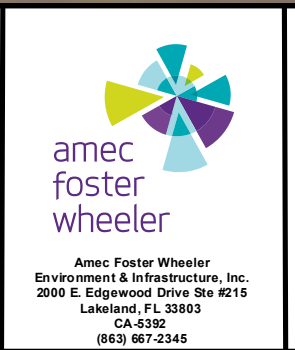
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

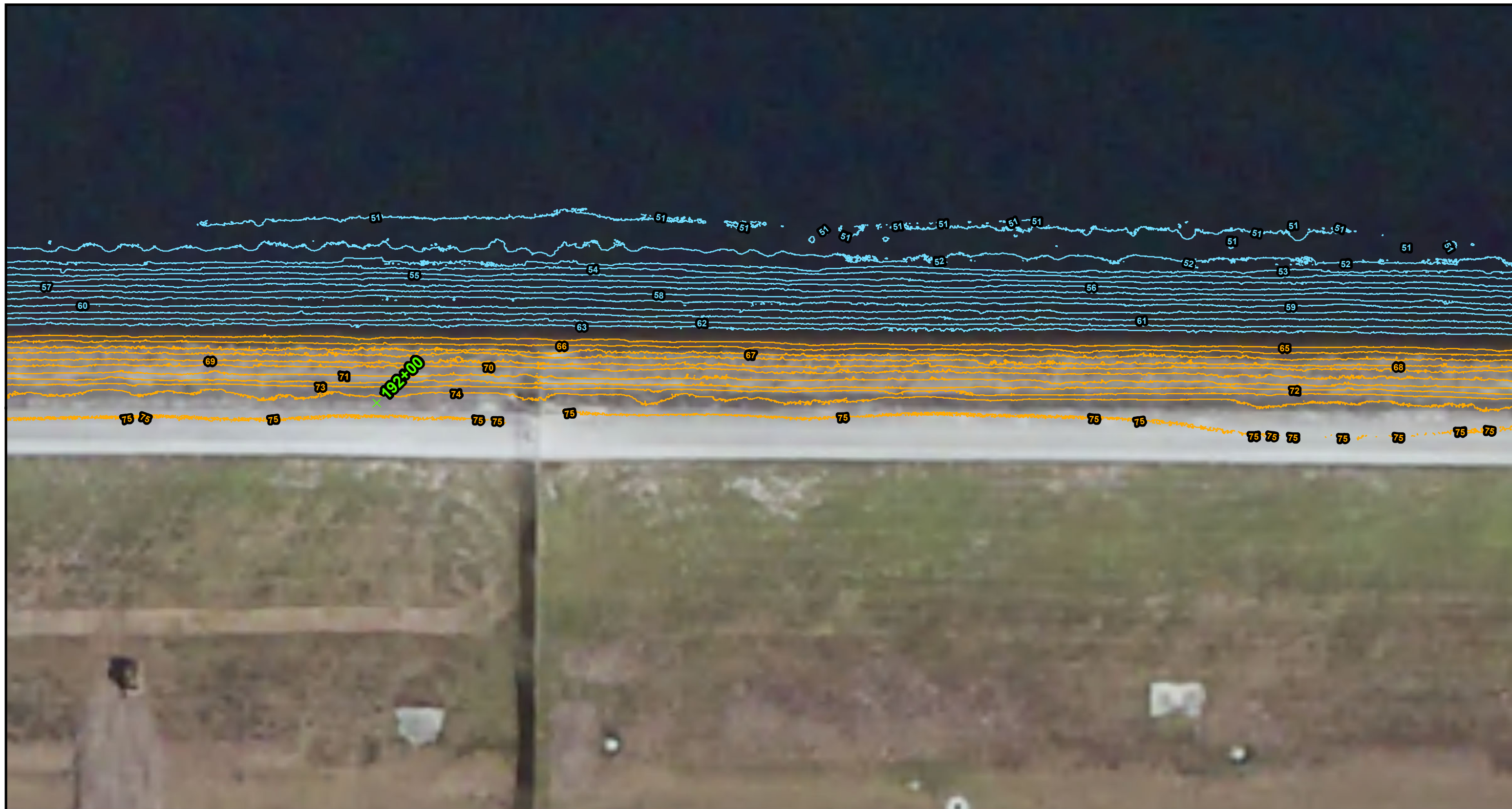
- ✕ Stations
- ▲ Repair

Scale: 0 15 30
1" = 30 Feet

North Arrow: N



Appendix F
Figure 35
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

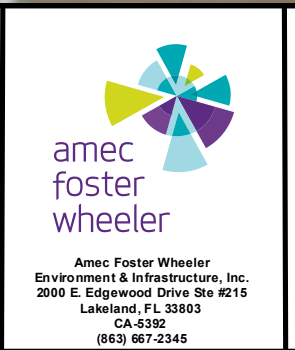
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



Appendix F
Figure 36
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

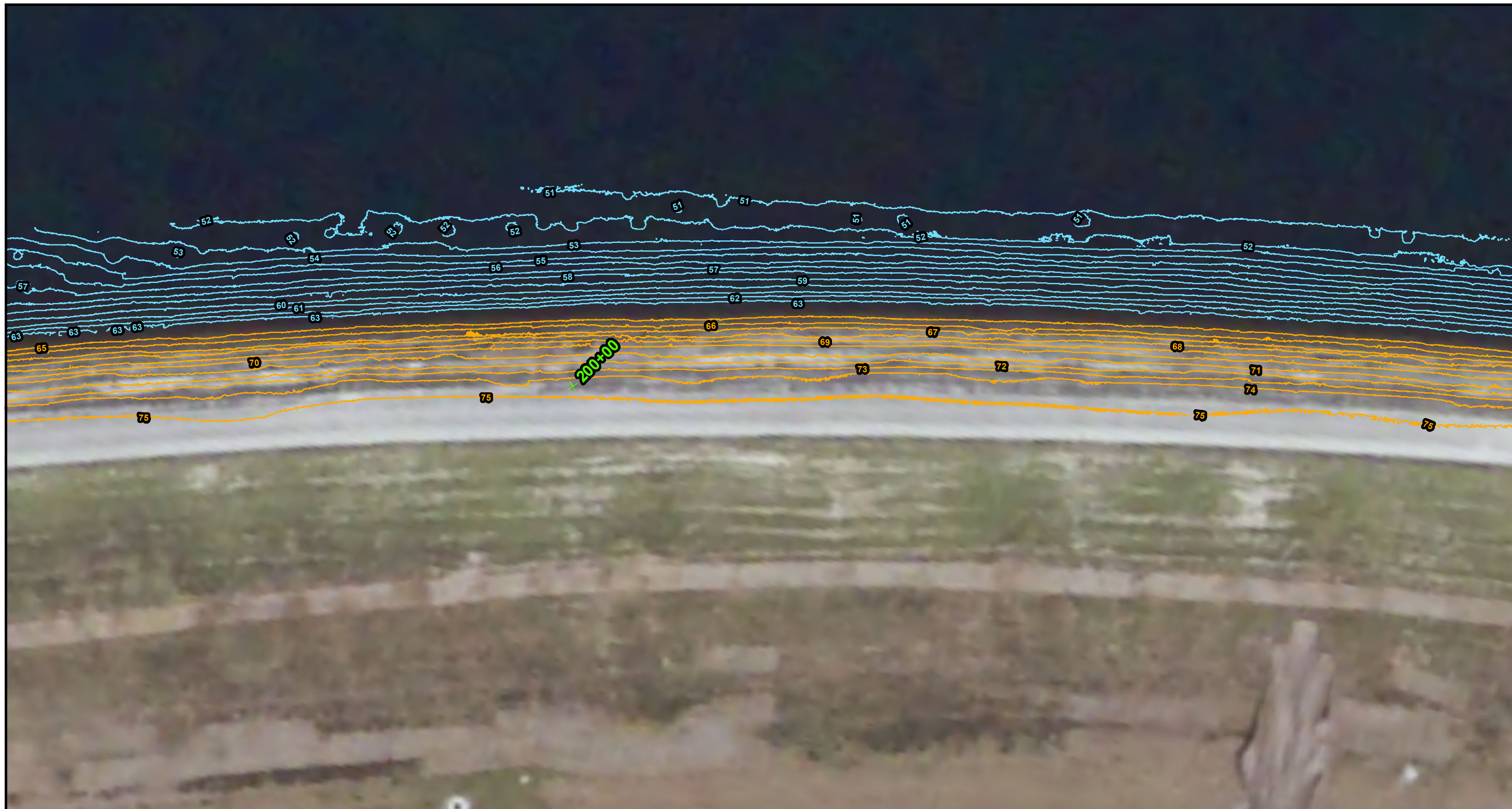
0 15 30

1" = 30 Feet

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Appendix F
Figure 37
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/2014
Revised: AB
Checked By: JB



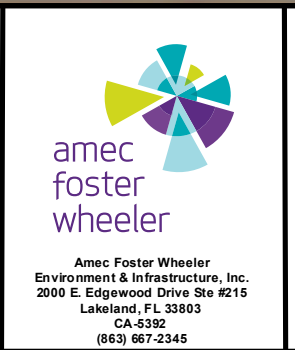
Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

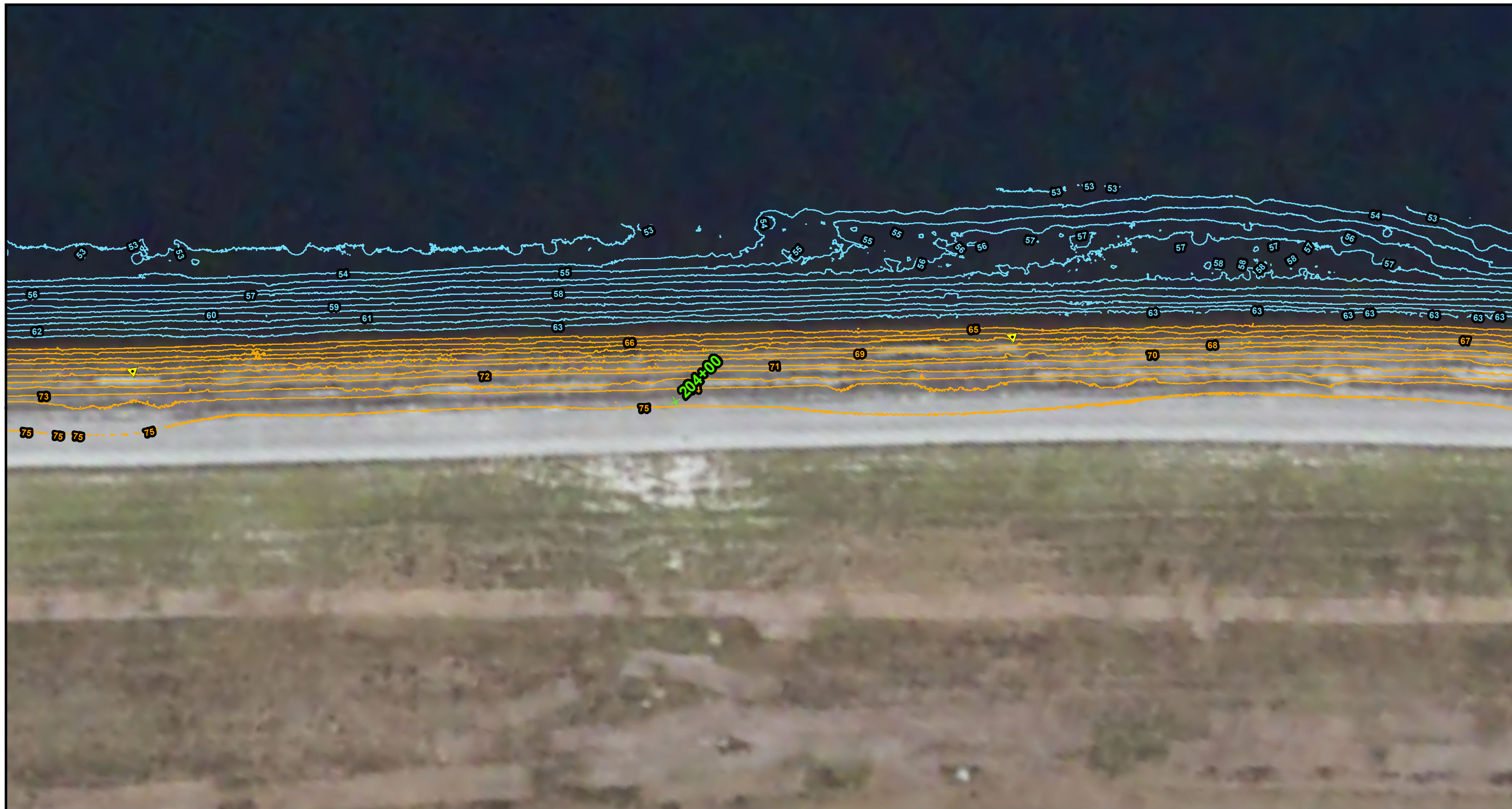
GPS Locations

- ✕ Stations
- ▲ Repair

0 15 30
1" = 30 Feet



**Appendix F
Figure 38
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida**



Notes:

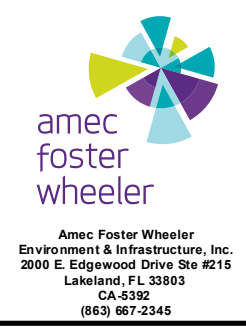
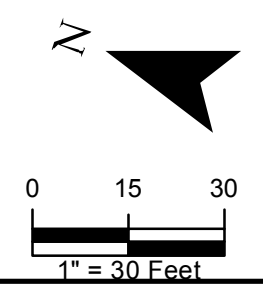
- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB

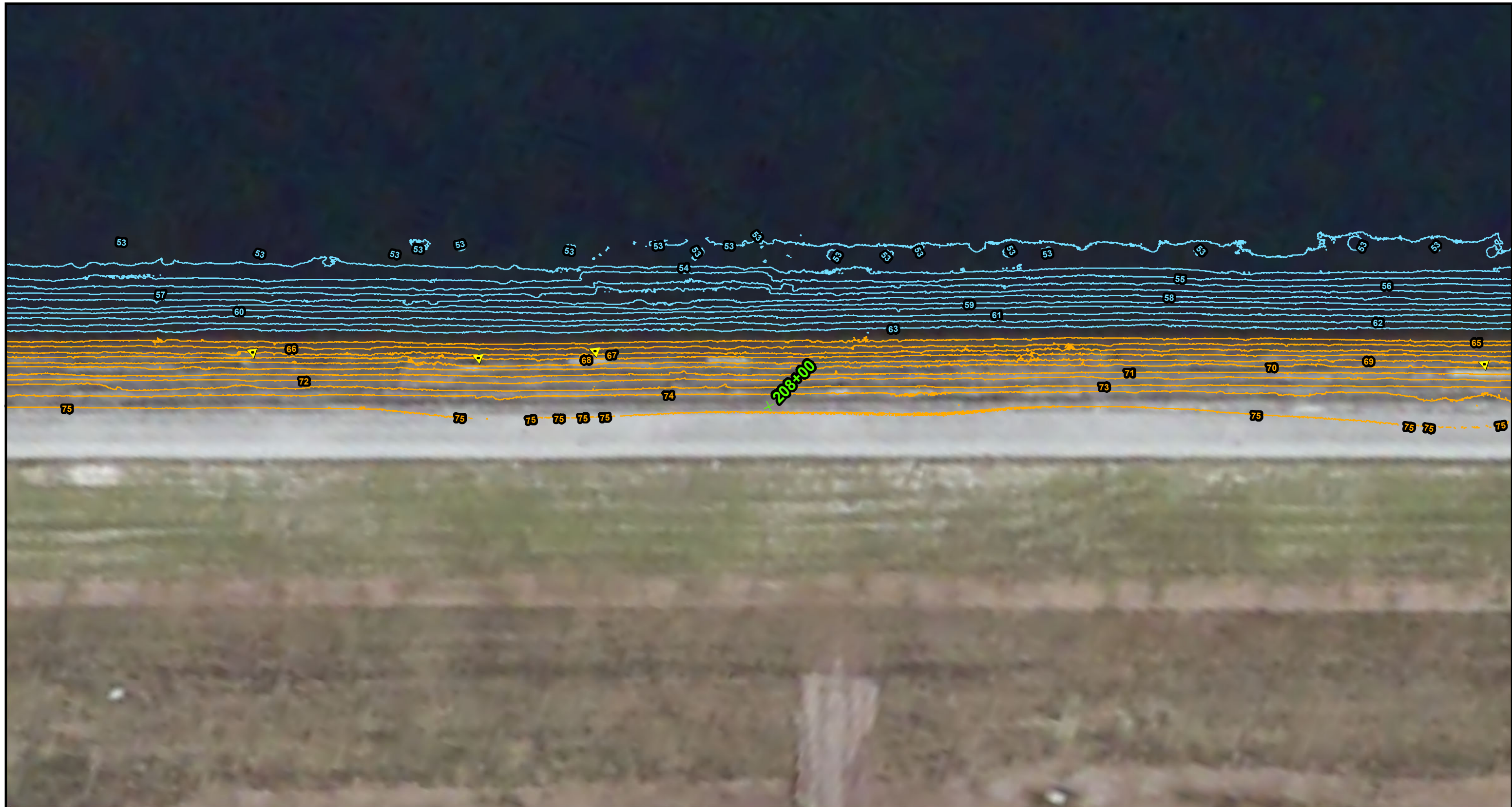


Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- x GPS Stations
- ▲ GPS Repairs



Appendix F
Figure 39
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



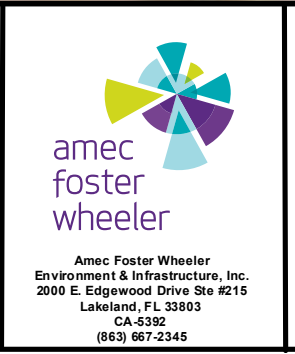
Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

North arrow and scale bar (0, 15, 30 feet).
1" = 30 Feet



**Appendix F
Figure 40
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida**



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

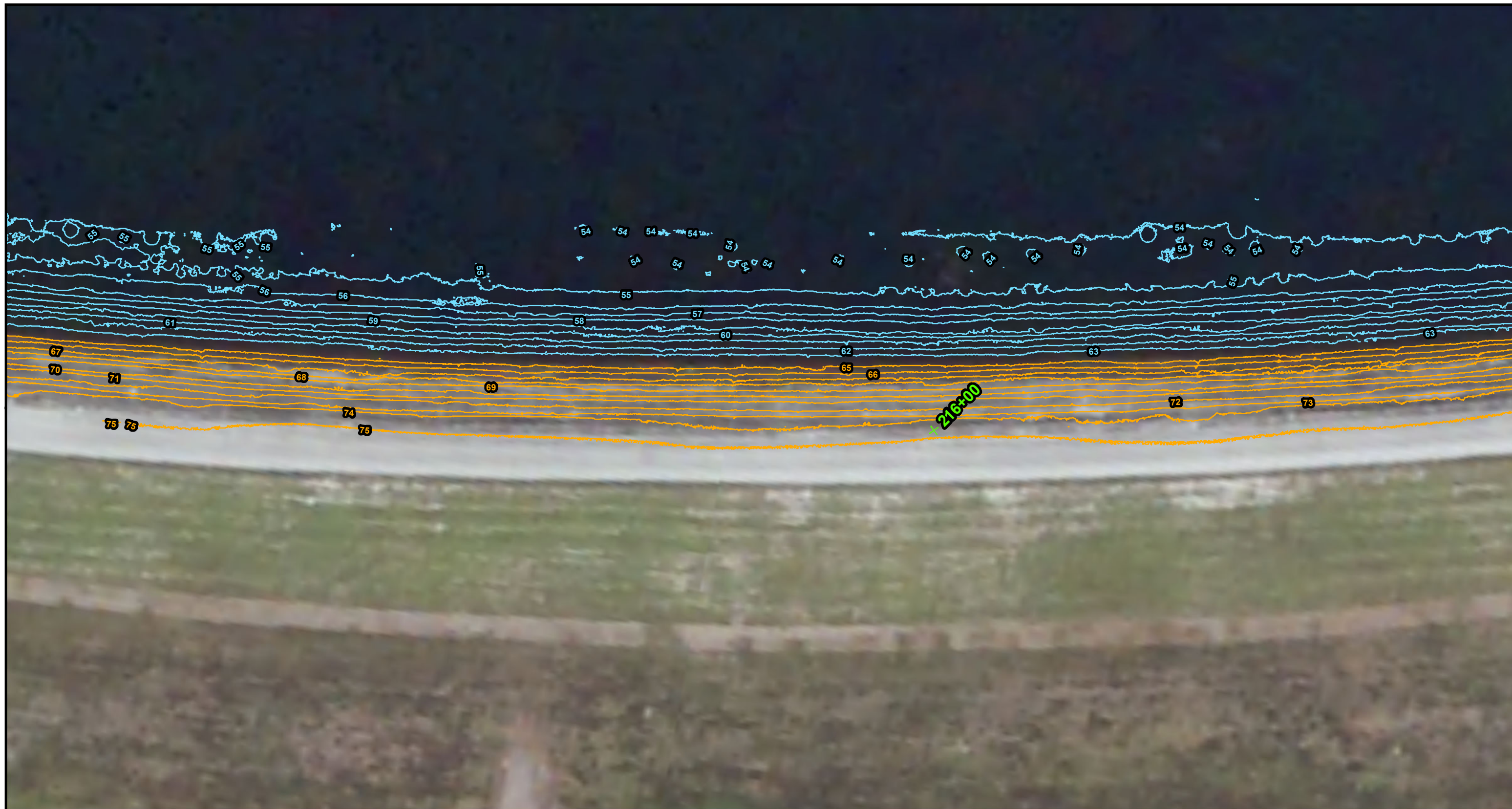
0 15 30

1" = 30 Feet

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Appendix F
Figure 41
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

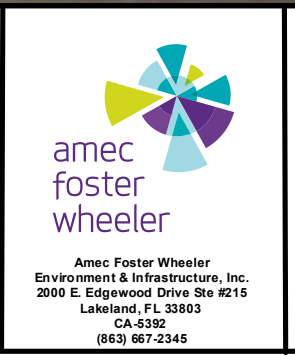
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

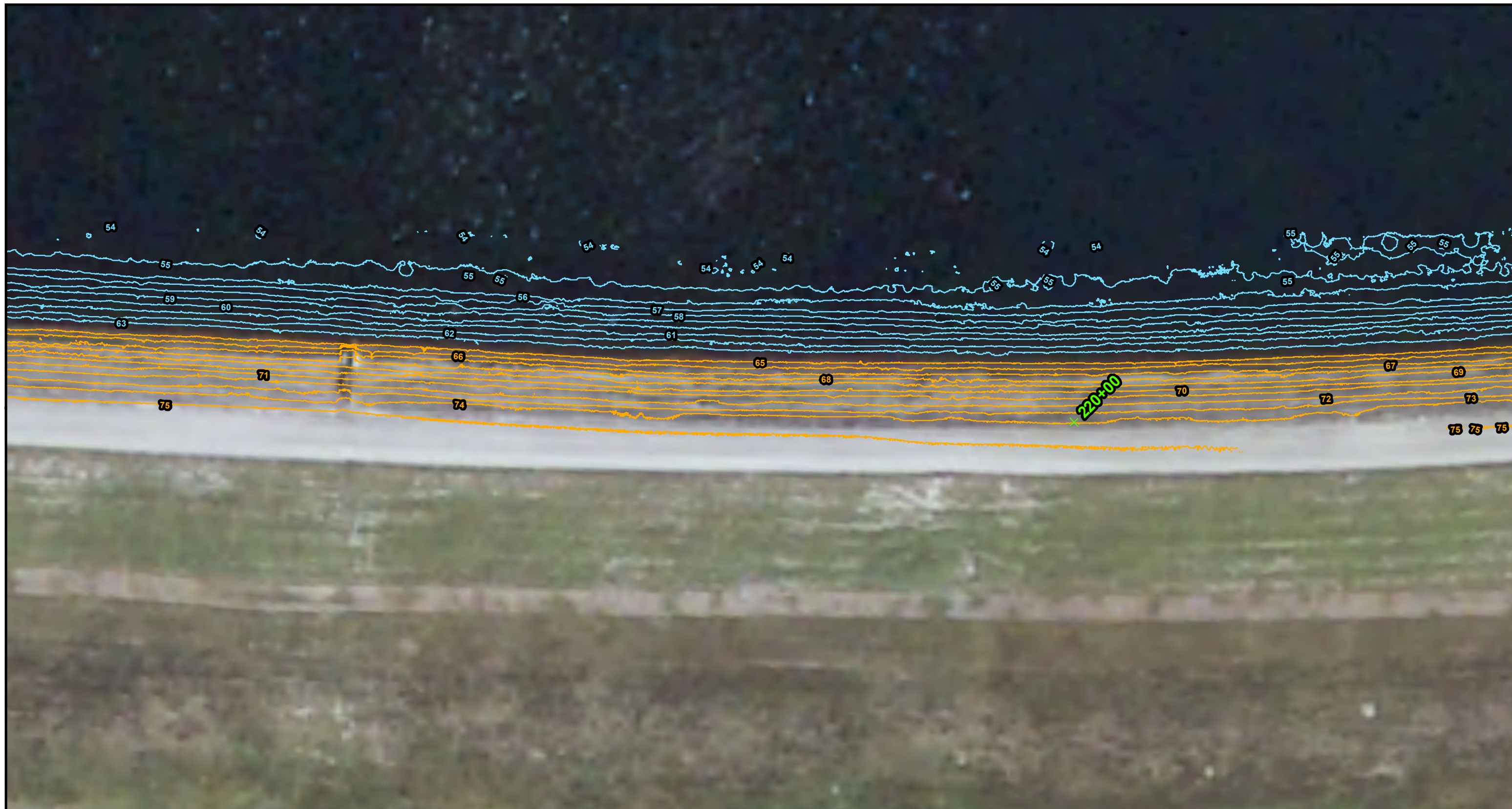
- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



Appendix F
Figure 42
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

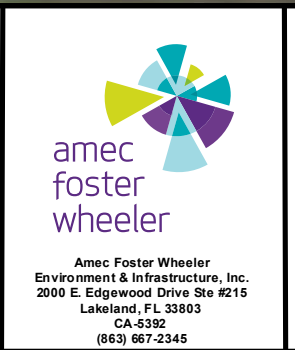
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

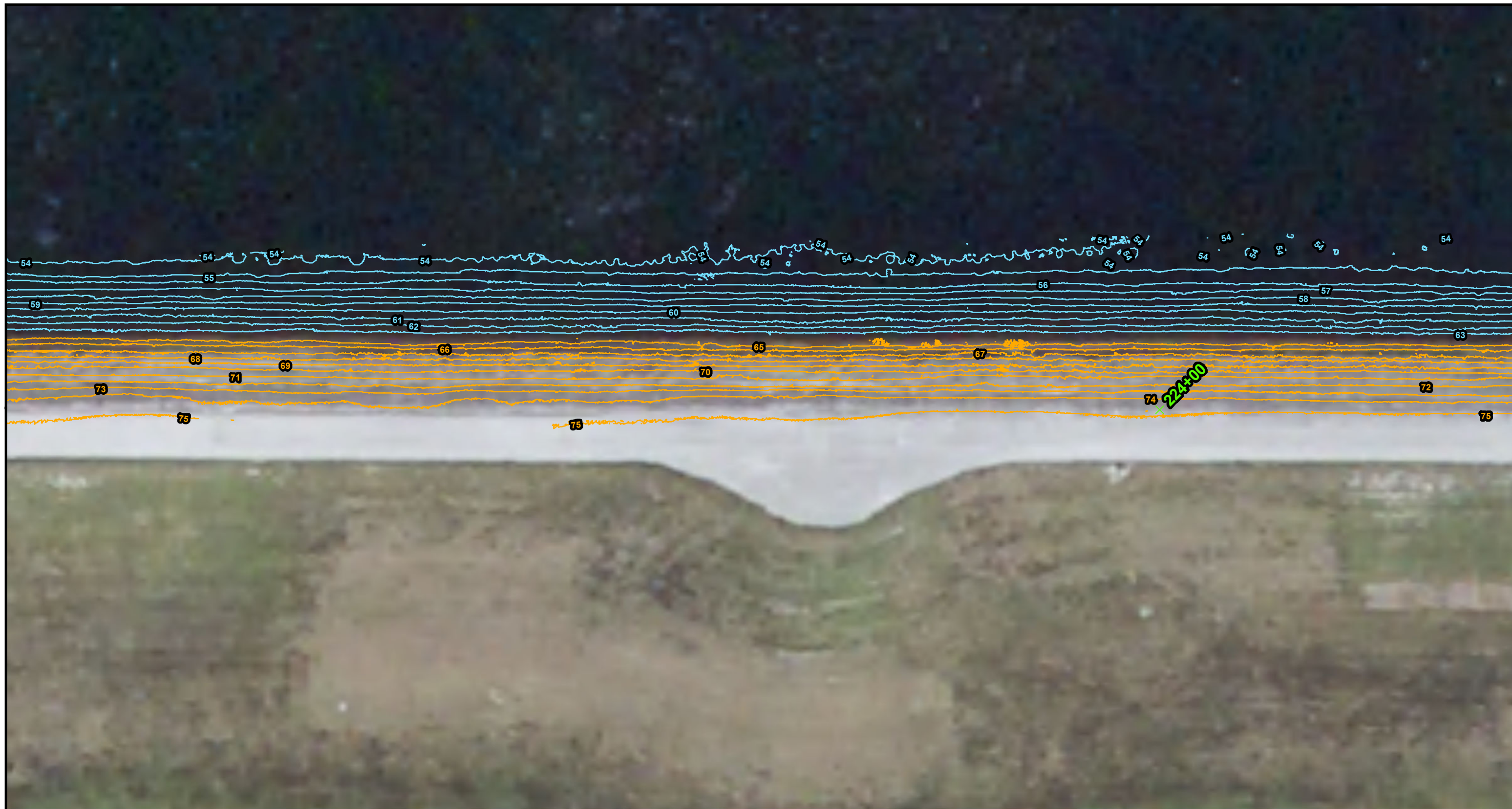
- ✕ Stations
- ▲ Repair

Scale: 0 15 30
1" = 30 Feet

North Arrow: N



Appendix F
Figure 43
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

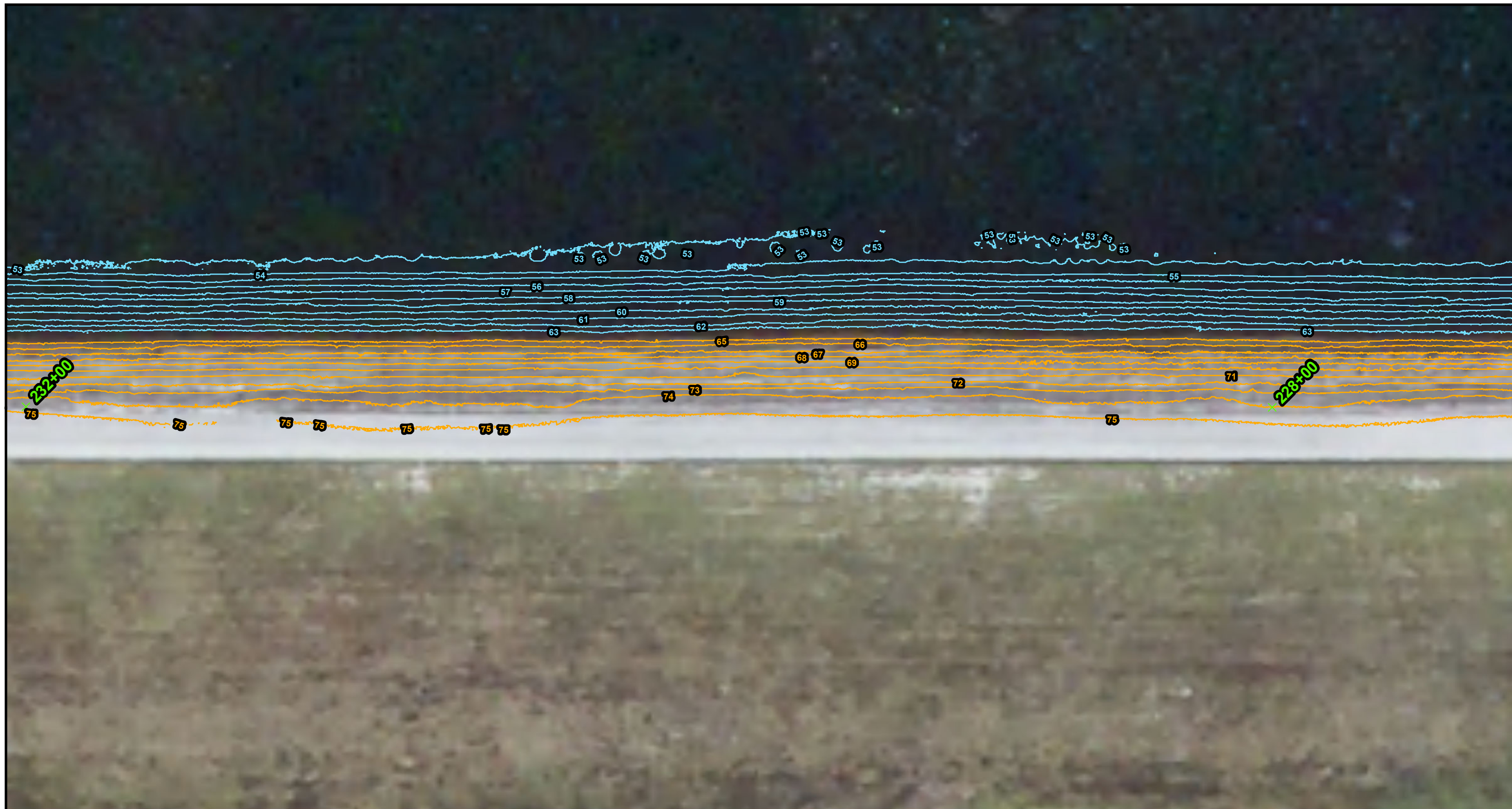
- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N

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Appendix F
Figure 44
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
 Revised: AB
 Checked By: JB



Explanation of Features

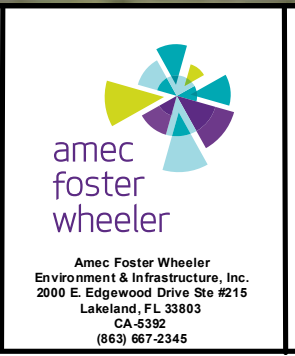
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

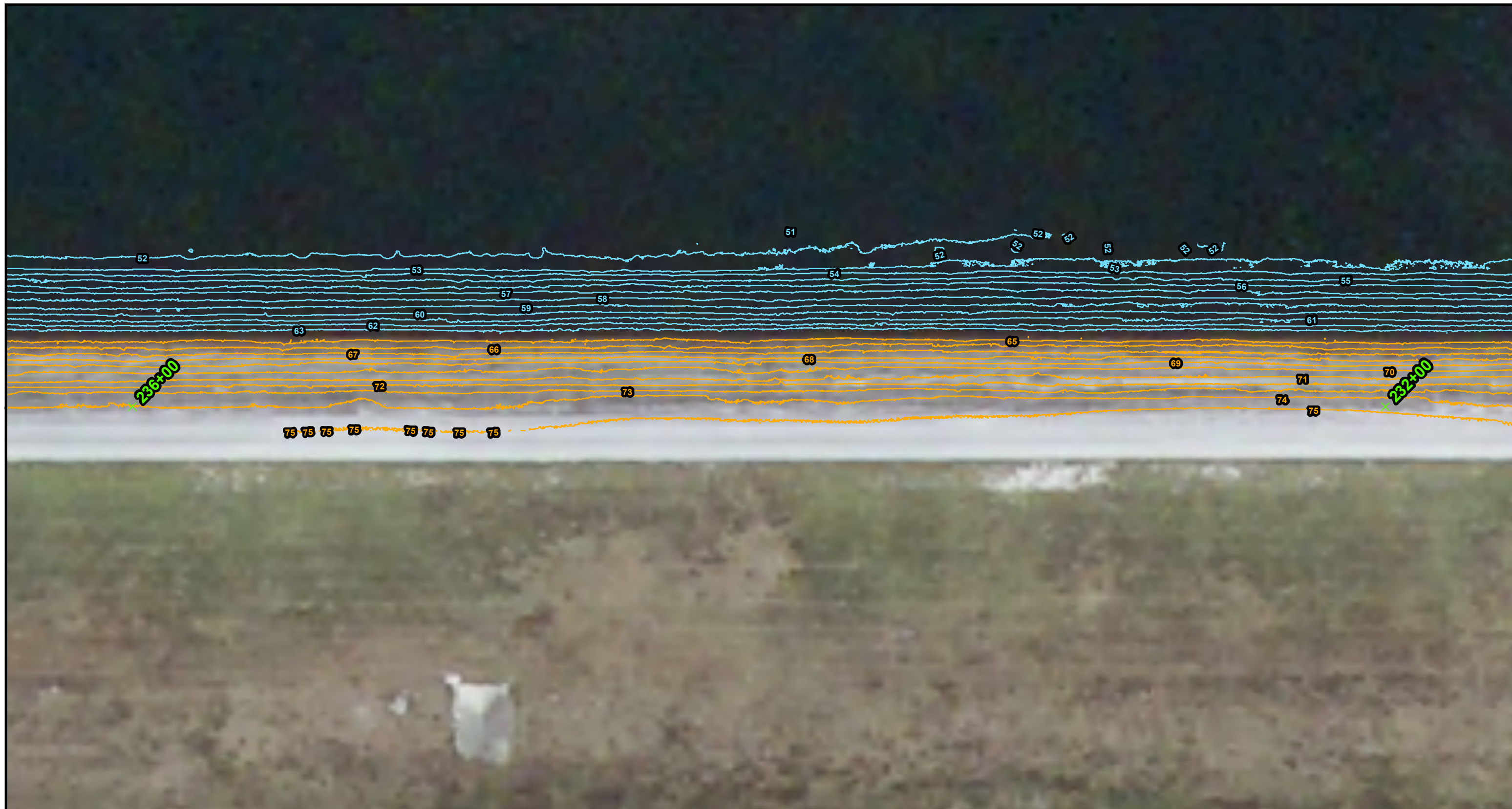
- ✕ Stations
- ▲ Repair

North arrow pointing up and slightly right.

Scale bar: 0, 15, 30 feet. 1" = 30 Feet



Appendix F
Figure 45
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

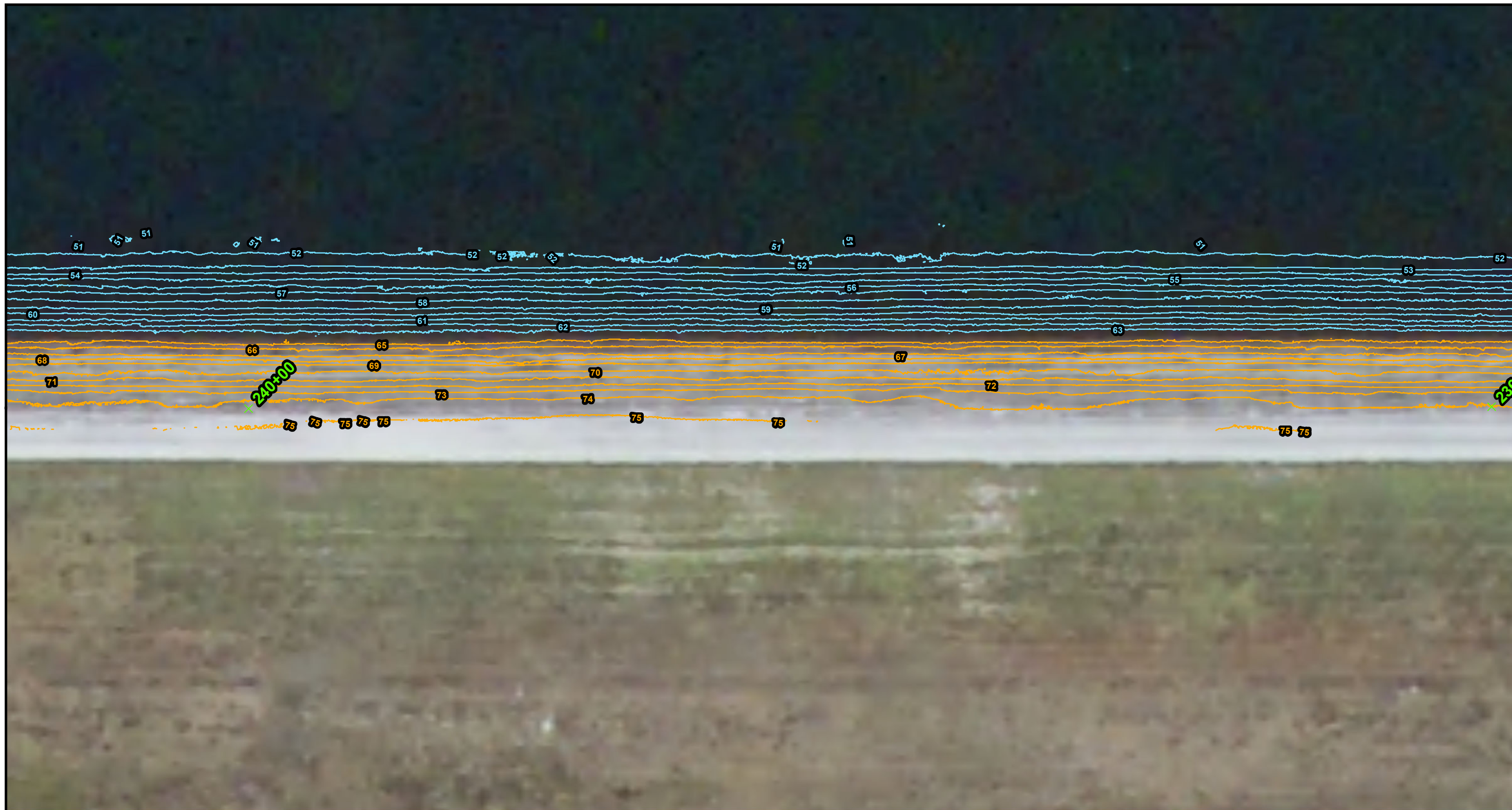
- ✕ Stations
- ▲ Repair

North arrow and scale bar: 0 15 30
1" = 30 Feet

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Appendix F
Figure 46
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

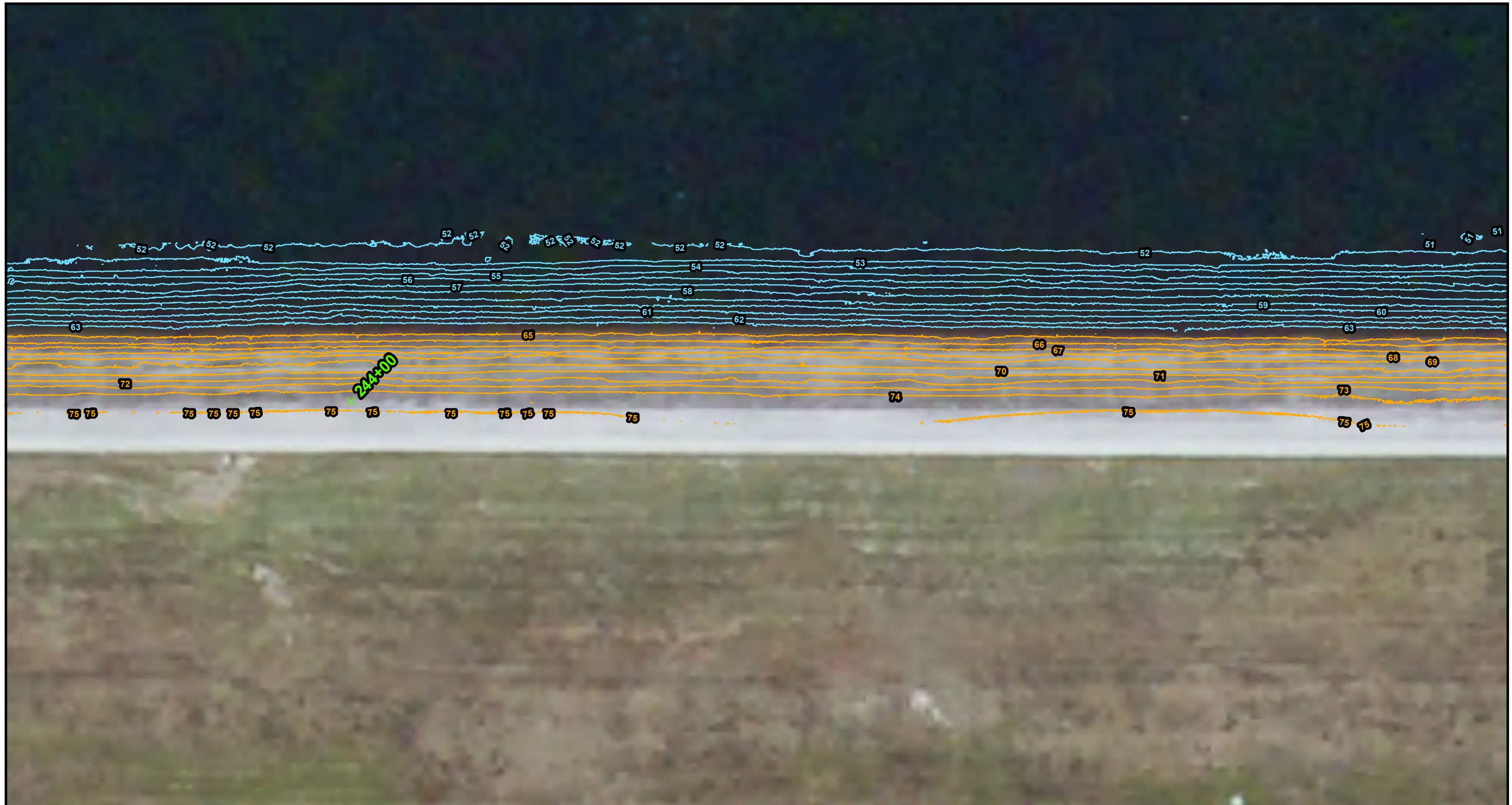
N

0 15 30

1" = 30 Feet

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Appendix F
Figure 47
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

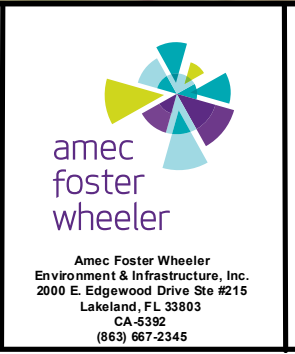
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

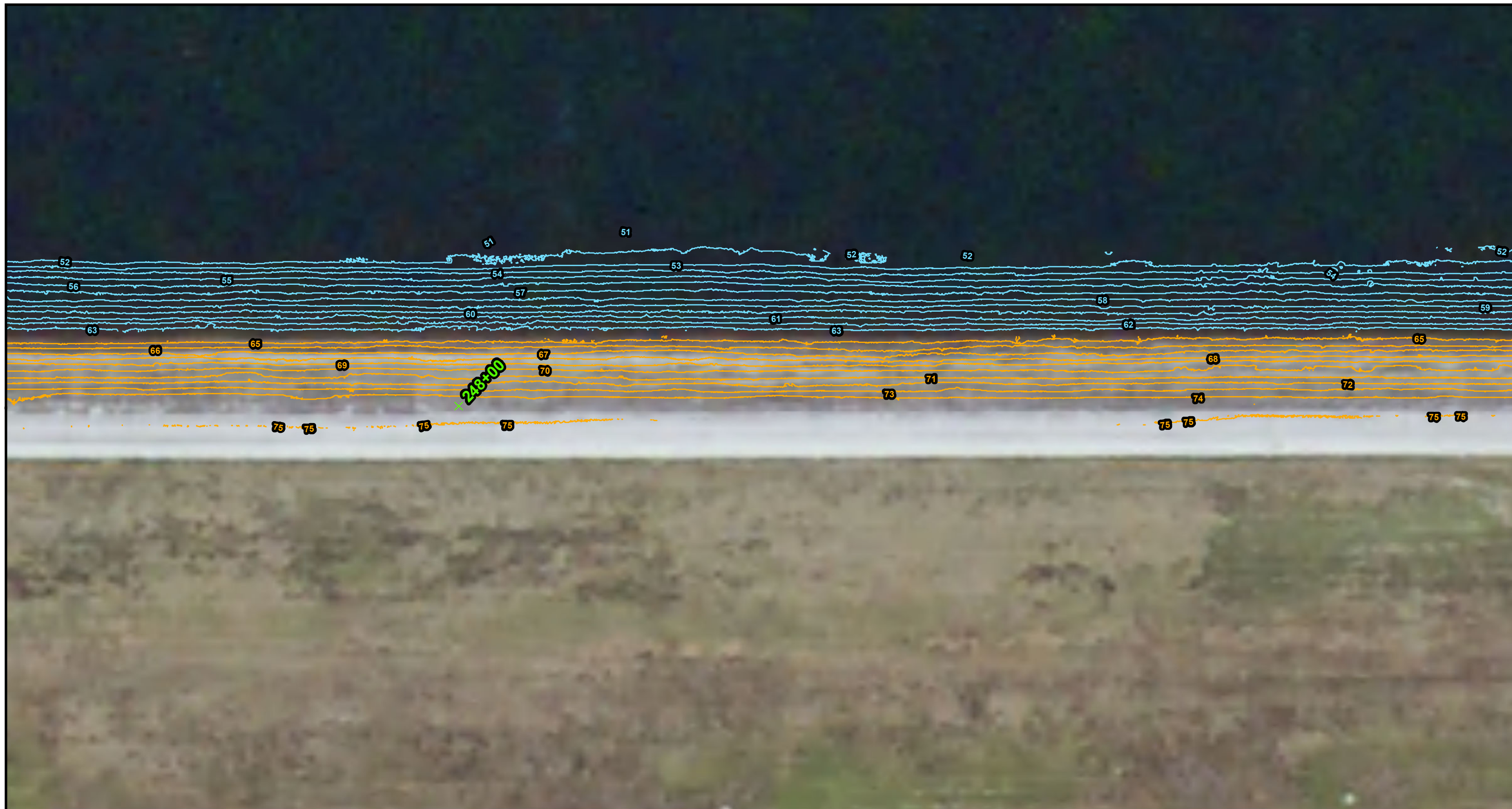
- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



**Appendix F
Figure 48
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida**



Notes:

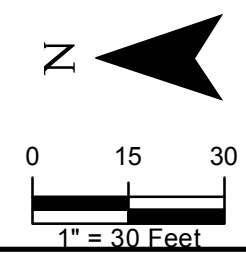
- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- X GPS Stations
- ▲ GPS Repairs



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Appendix F
Figure 49
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- × Stations
- ▲ Repair

North arrow pointing up and slightly right.

Scale bar: 0, 15, 30 feet. Below the bar: 1" = 30 Feet

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Appendix F
Figure 50
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

North arrow pointing up and slightly right.

Scale bar: 0, 15, 30 feet. Below the bar: 1" = 30 Feet

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Appendix F
Figure 51
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



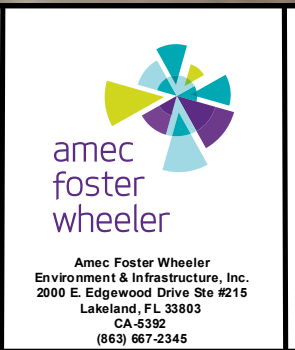
Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

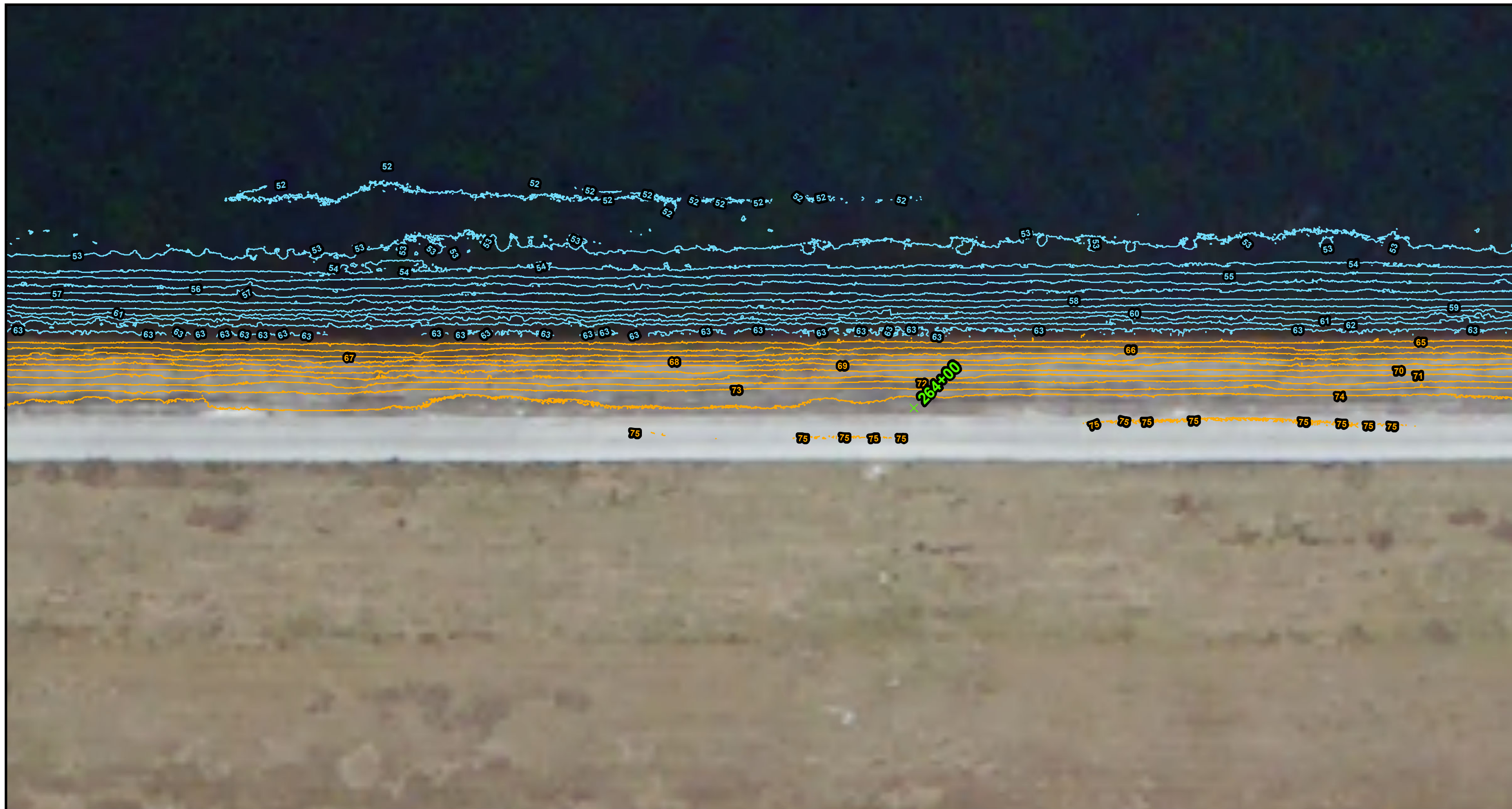
GPS Locations

- ✕ Stations
- ▲ Repair

North arrow and scale bar: 0, 15, 30 feet. 1" = 30 Feet



Appendix F
Figure 52
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features


- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

Scale: 0 15 30
1" = 30 Feet

North Arrow: N



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Appendix F
Figure 53
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

North arrow pointing up and slightly right.

Scale bar: 0, 15, 30 feet. Below the bar, it reads "1" = 30 Feet".

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Appendix F
Figure 54
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

North arrow pointing up and slightly right.

Scale bar: 0, 15, 30 feet. Below the bar, it reads '1" = 30 Feet'.

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Appendix F
Figure 55
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30

1" = 30 Feet

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Appendix F
Figure 56
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

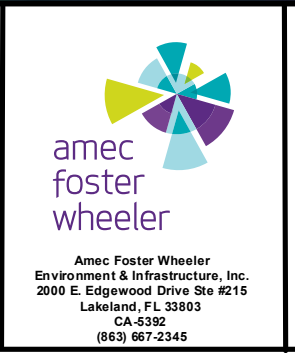
GPS Locations

- ✕ Stations
- ▲ Repair

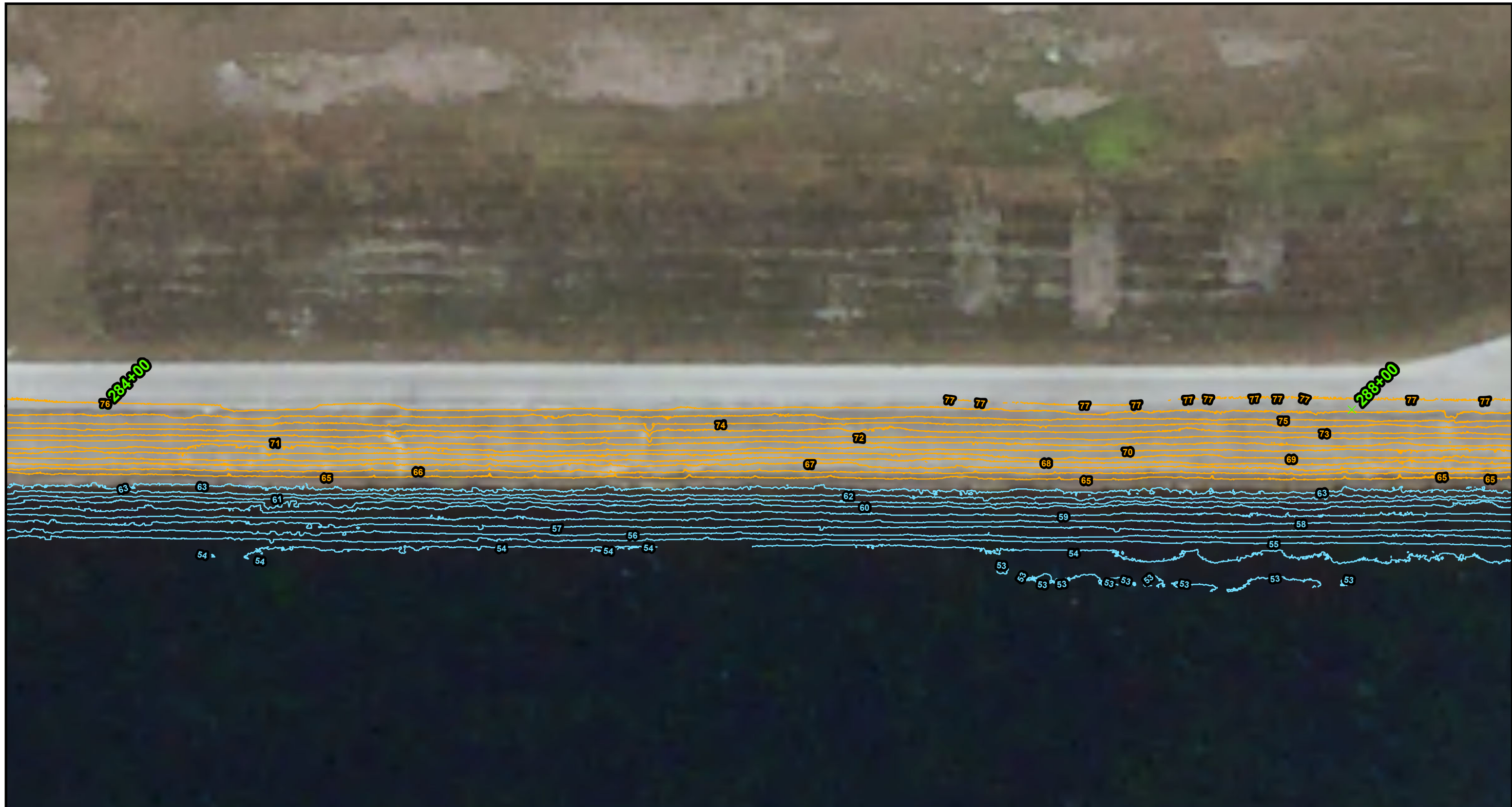
N

0 15 30

1" = 30 Feet



Appendix F
Figure 57
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

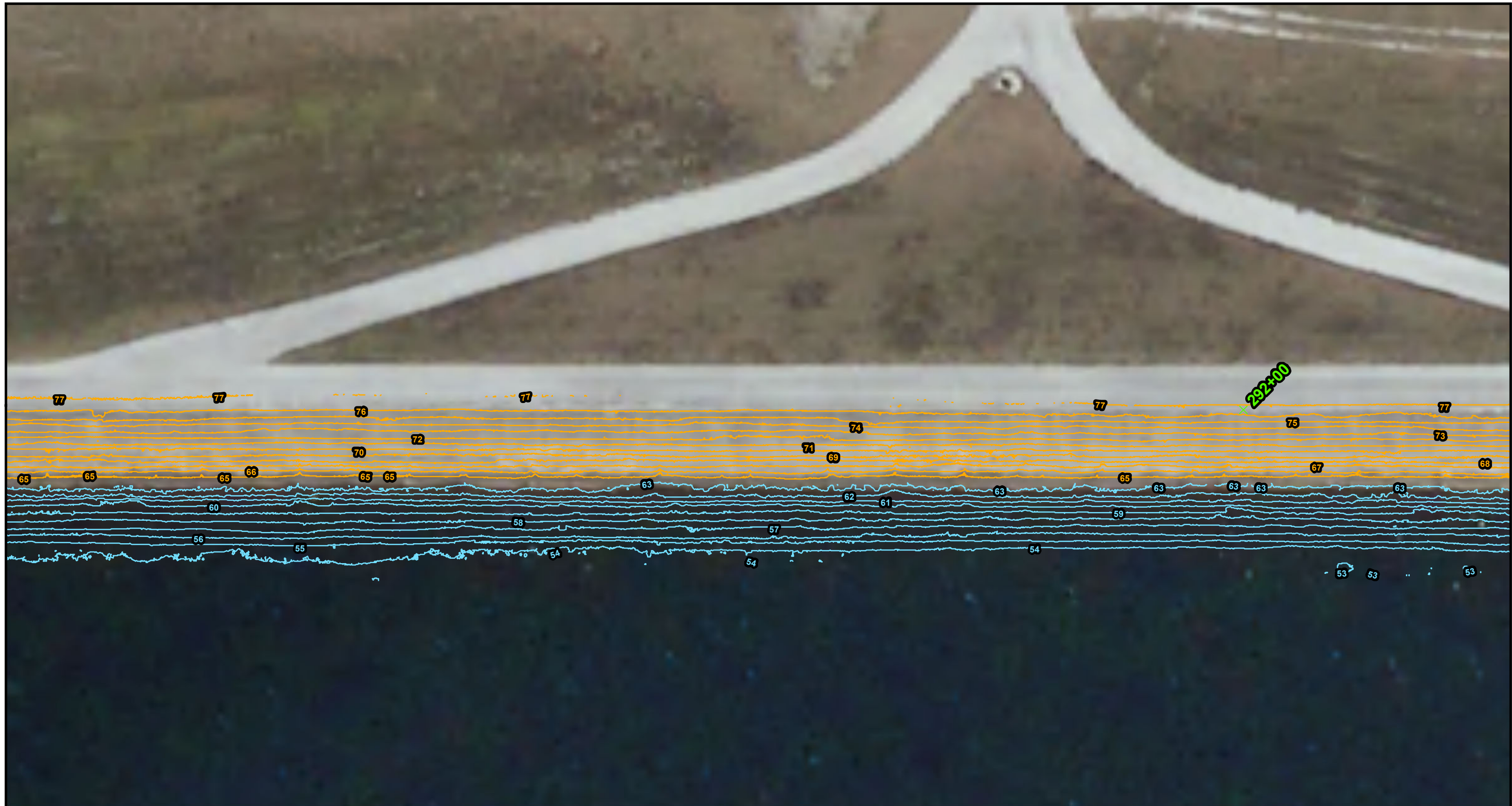
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 58
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 59
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

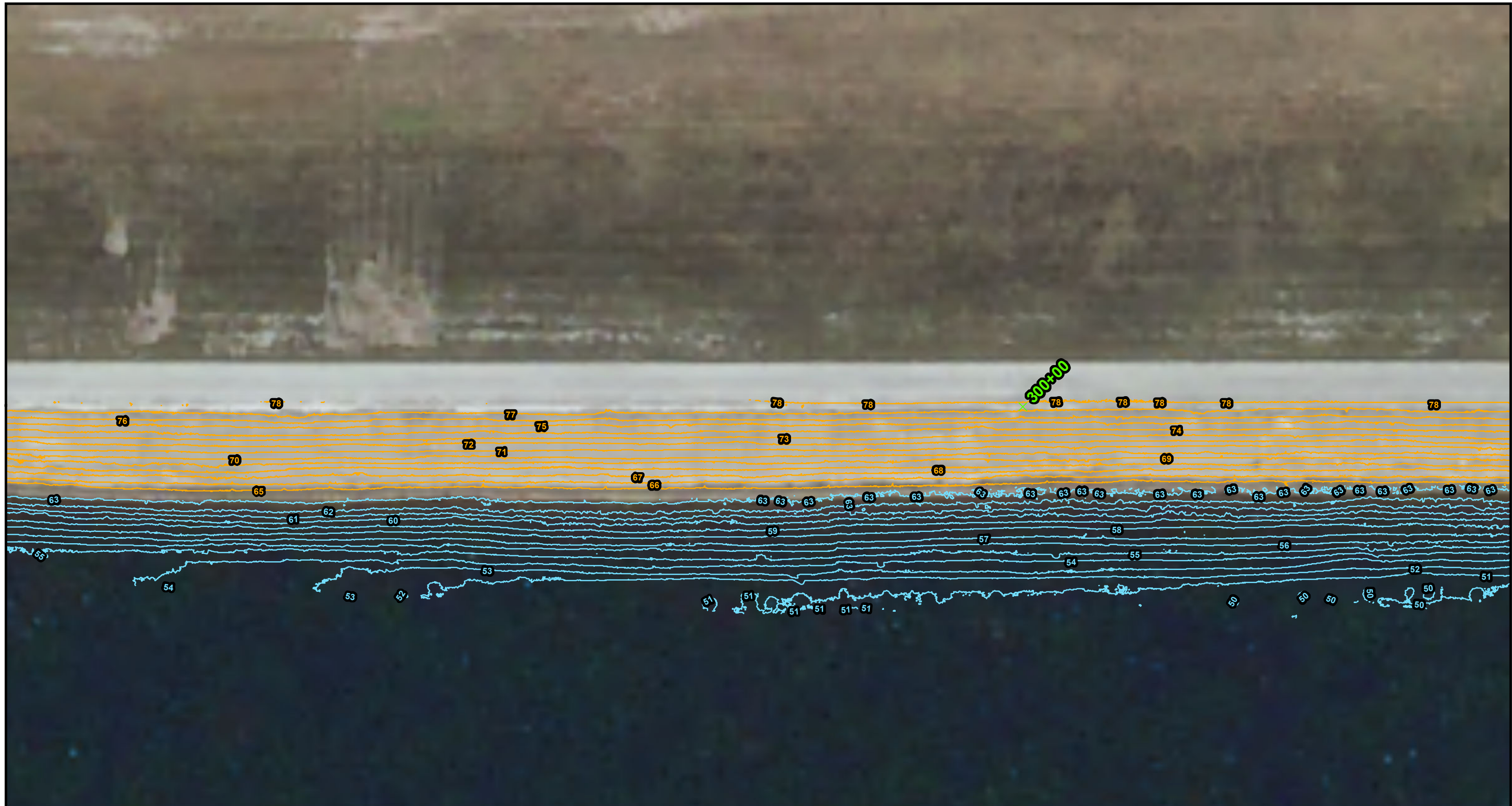
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 60
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

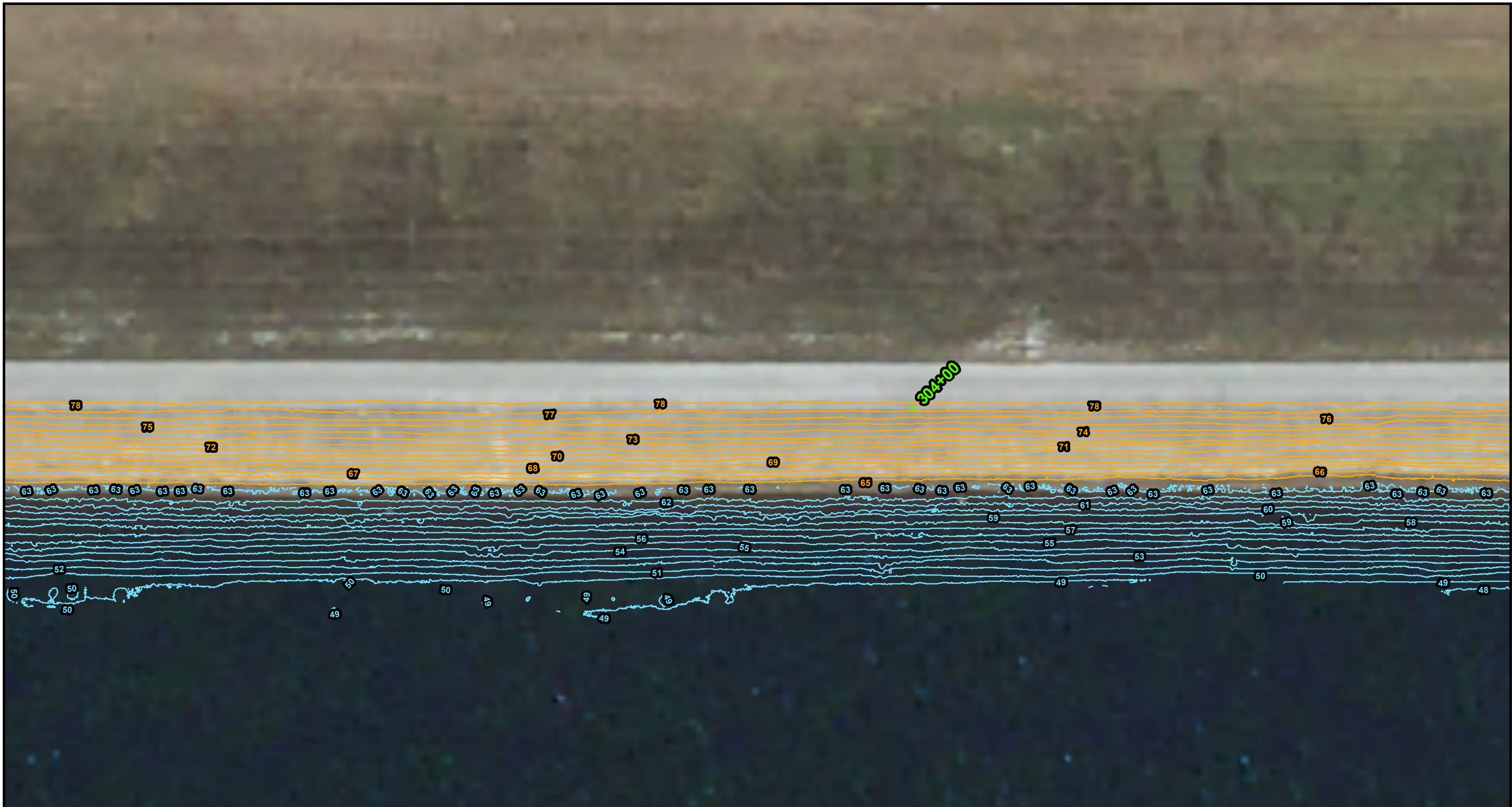
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 61
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

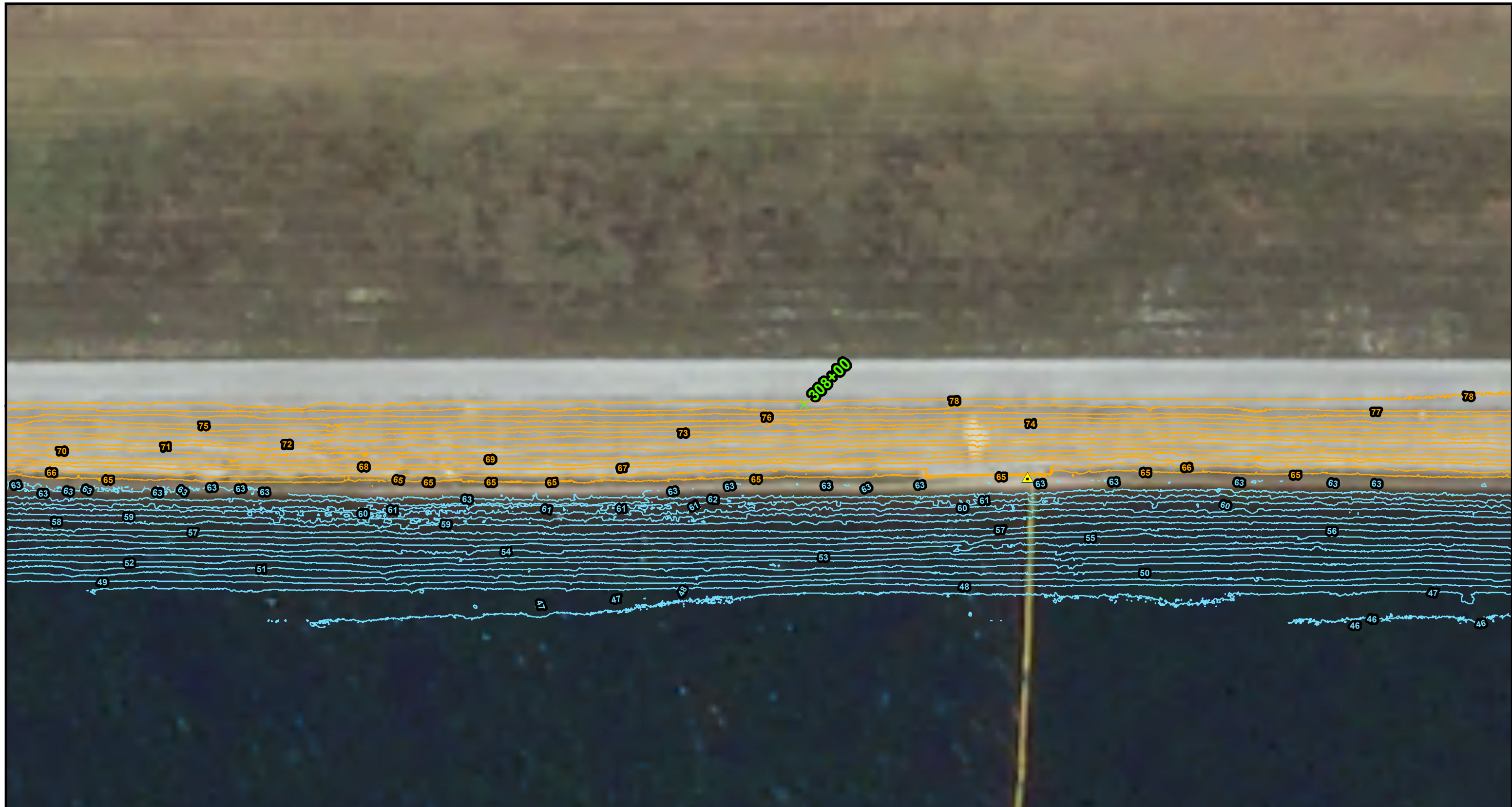
- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 62
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- × Stations
- ▲ Repair

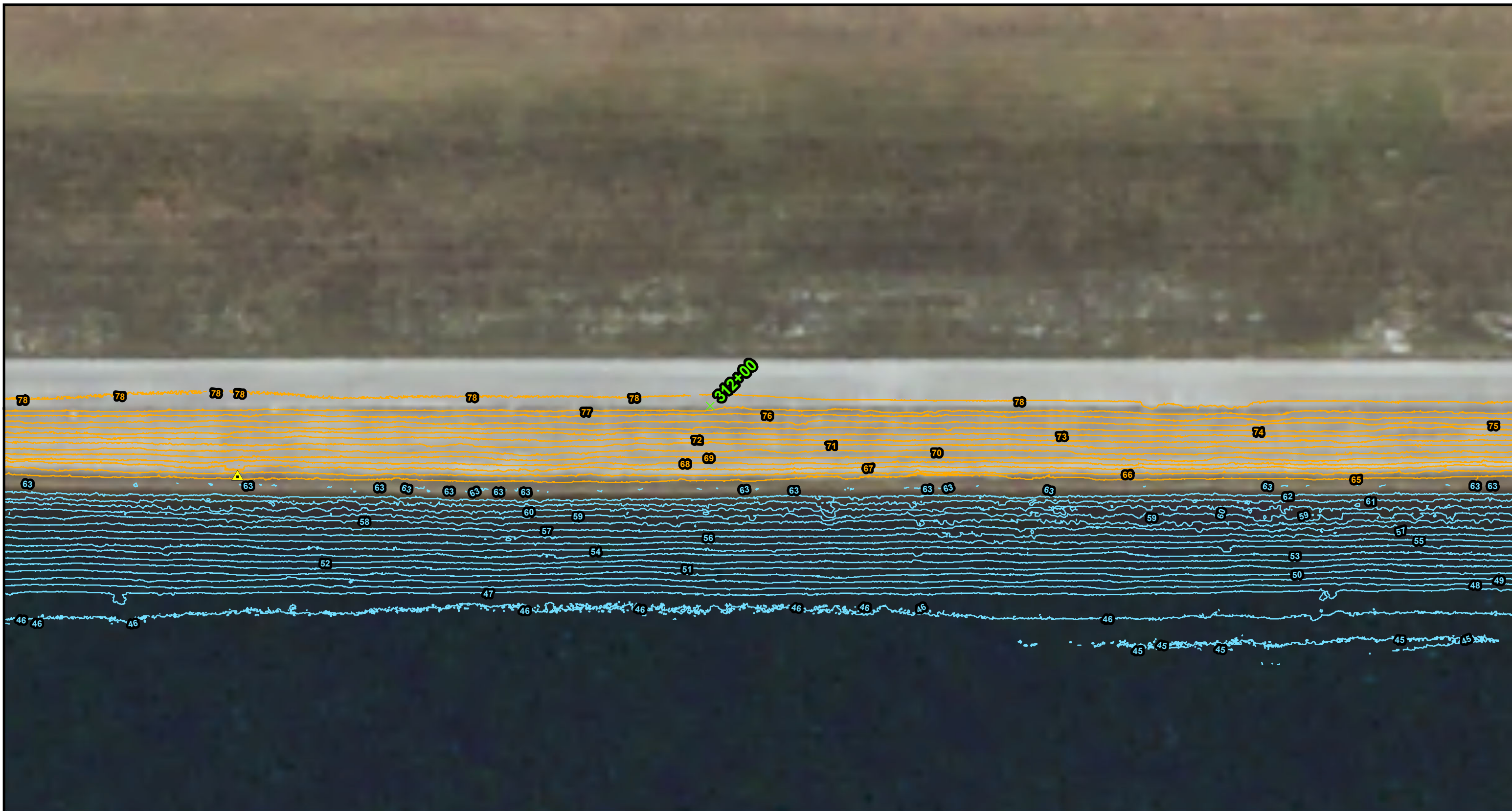
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 63
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

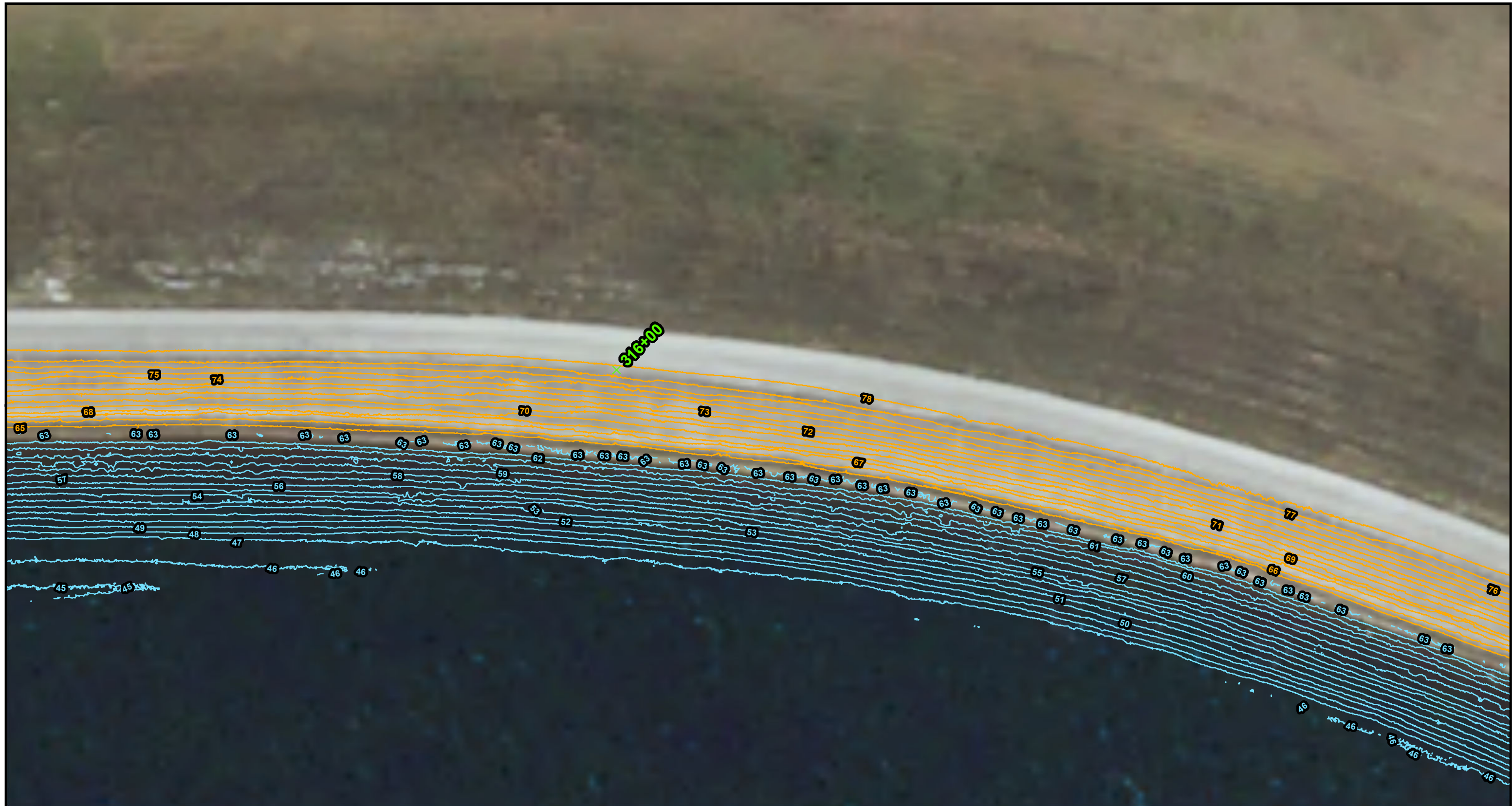
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 64
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

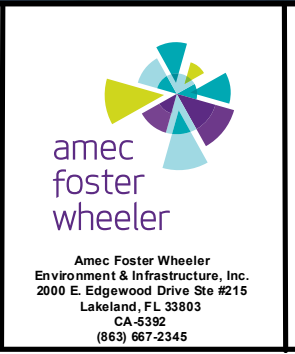
- ✕ Stations
- ▲ Repair

Scale and Orientation:

N

0 15 30

1" = 30 Feet



Appendix F
Figure 65
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/2015
 Revised: AB
 Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

0 15 30
1" = 30 Feet

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Appendix F
Figure 66
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

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Appendix F
Figure 67
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

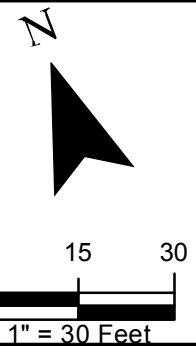
- 1- Project No.: 300906
- 2- Data Sources -
GFY & ACA
Contours derived from LiDAR and Sonar DTMs
(NAVD 88 feet)
- 3- This map is intended to be
used for planning purposes
only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours
- ✕ GPS Stations
- ▲ Repair



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Appendix F
Figure 68
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- × Stations
- ▲ Repair

N

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Appendix F
Figure 69
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

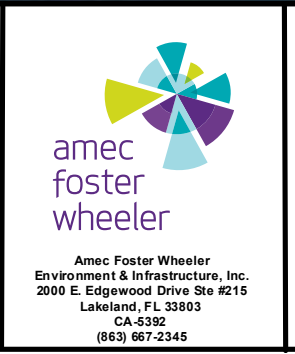
- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

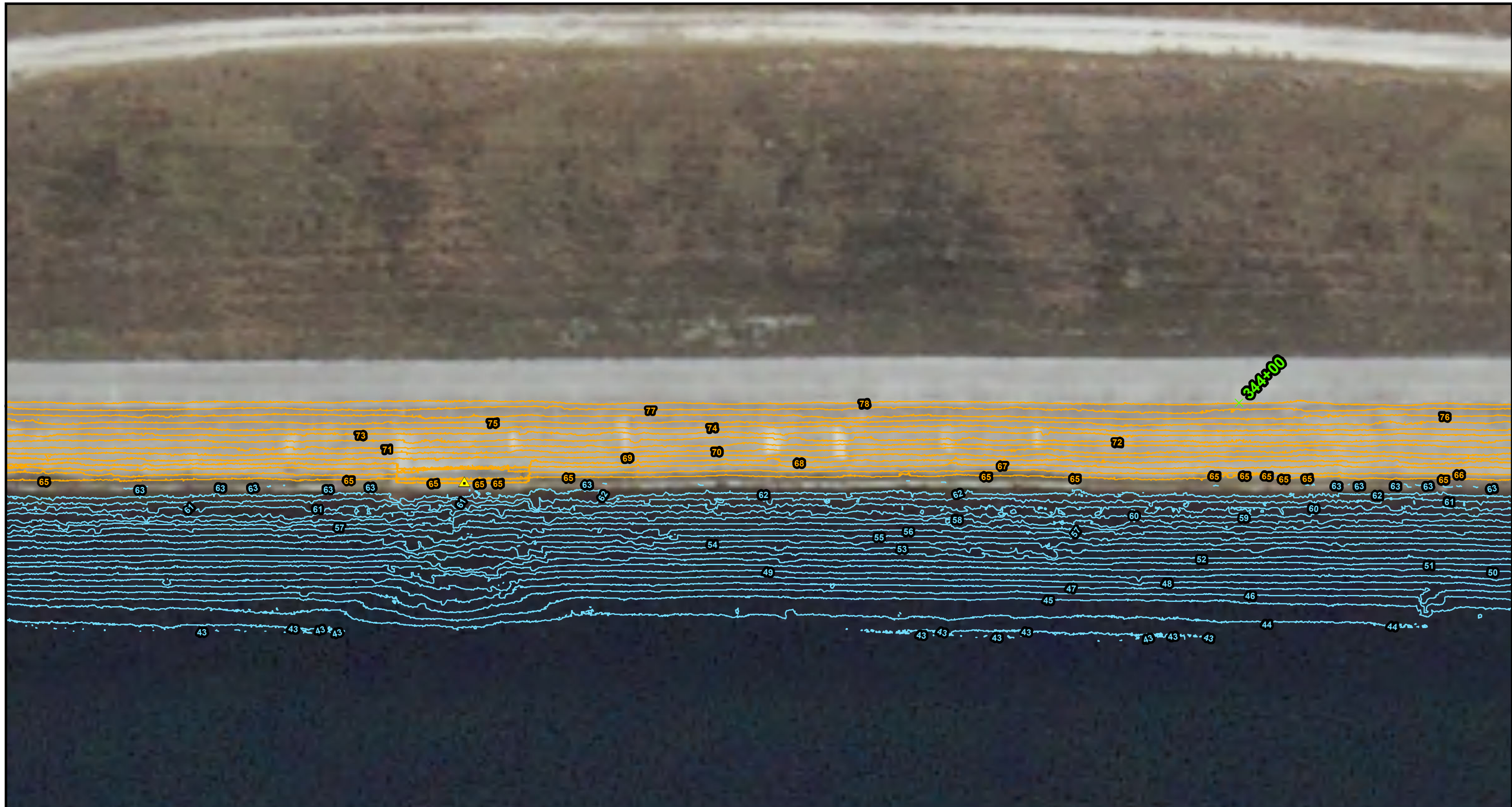
- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N



Appendix F
Figure 70
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

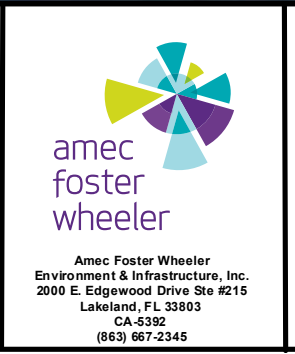
GPS Locations

- ✕ Stations
- ▲ Repair

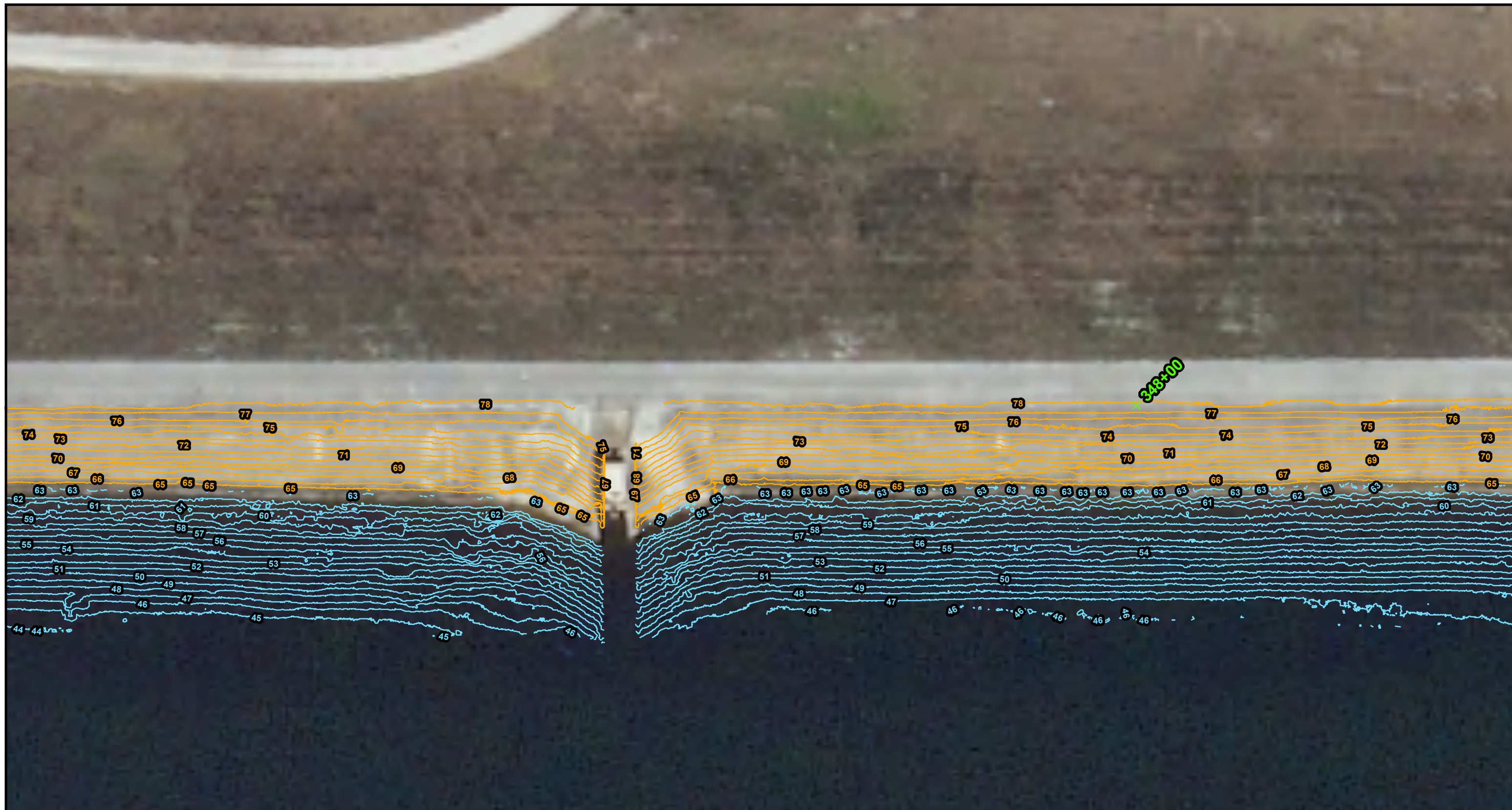
Scale and Orientation:

0 15 30
1" = 30 Feet

N



Appendix F
Figure 71
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

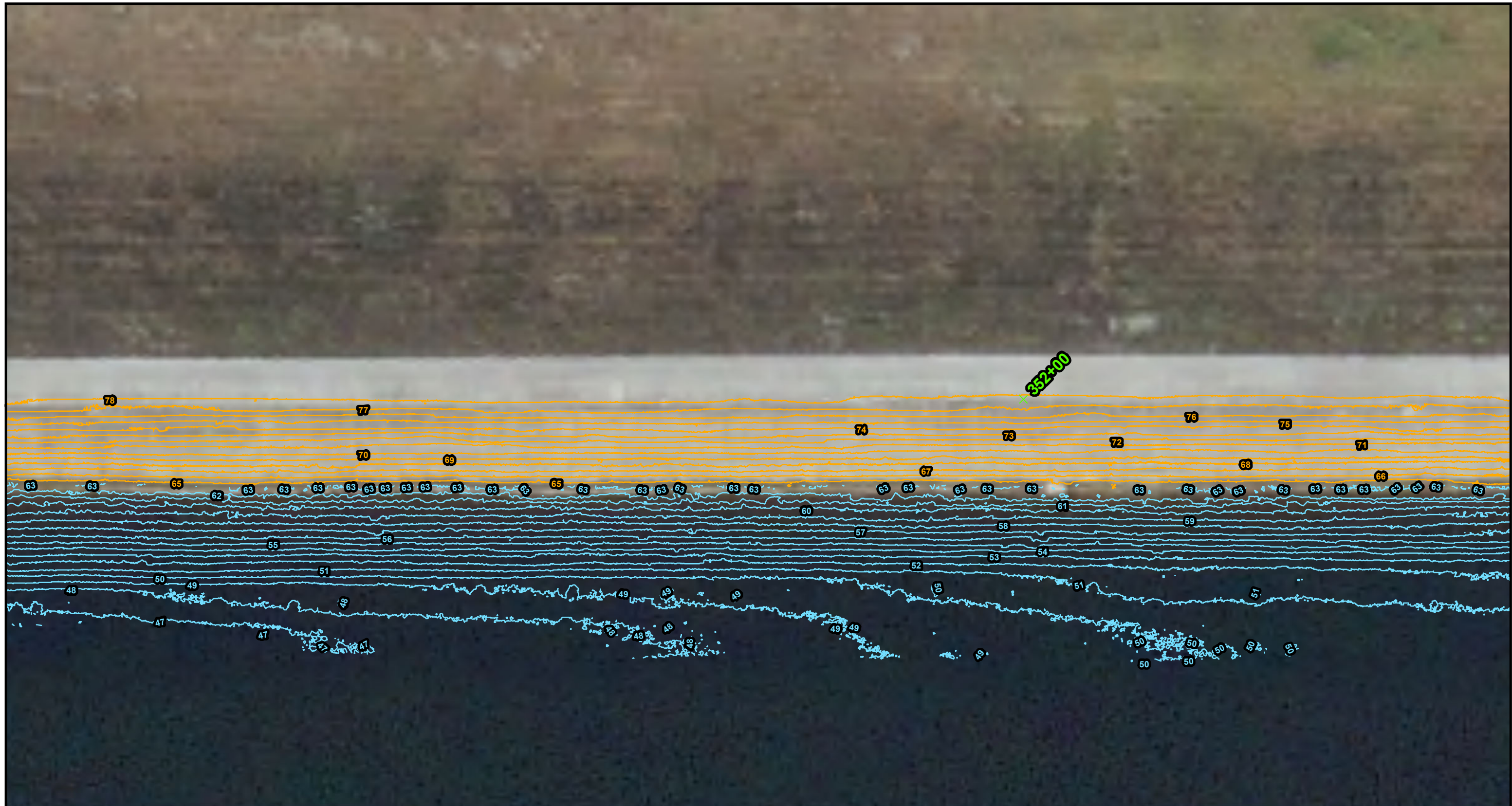
0 15 30

1" = 30 Feet

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Appendix F
Figure 72
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

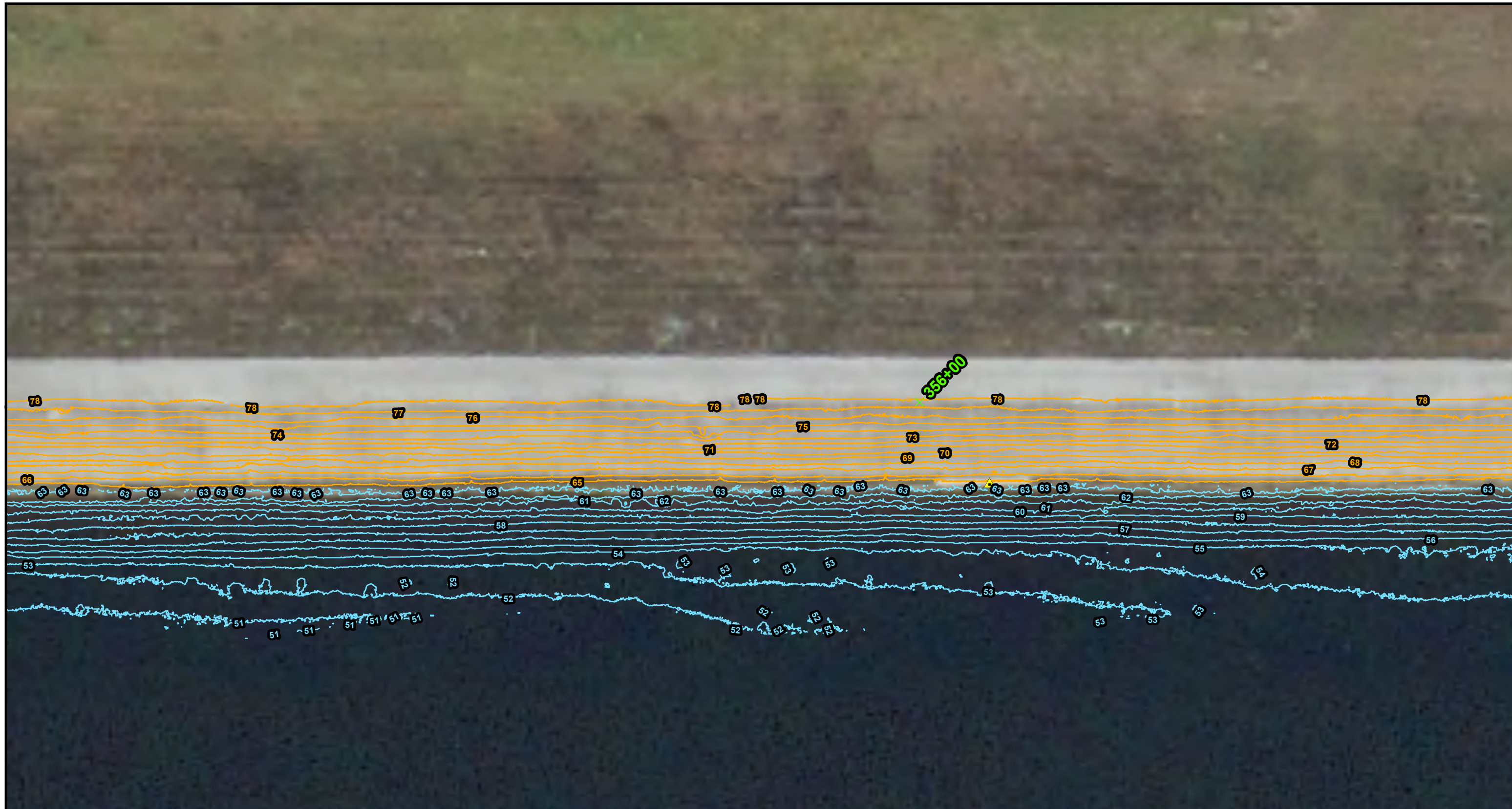
N

0 15 30

1" = 30 Feet

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Appendix F
Figure 73
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

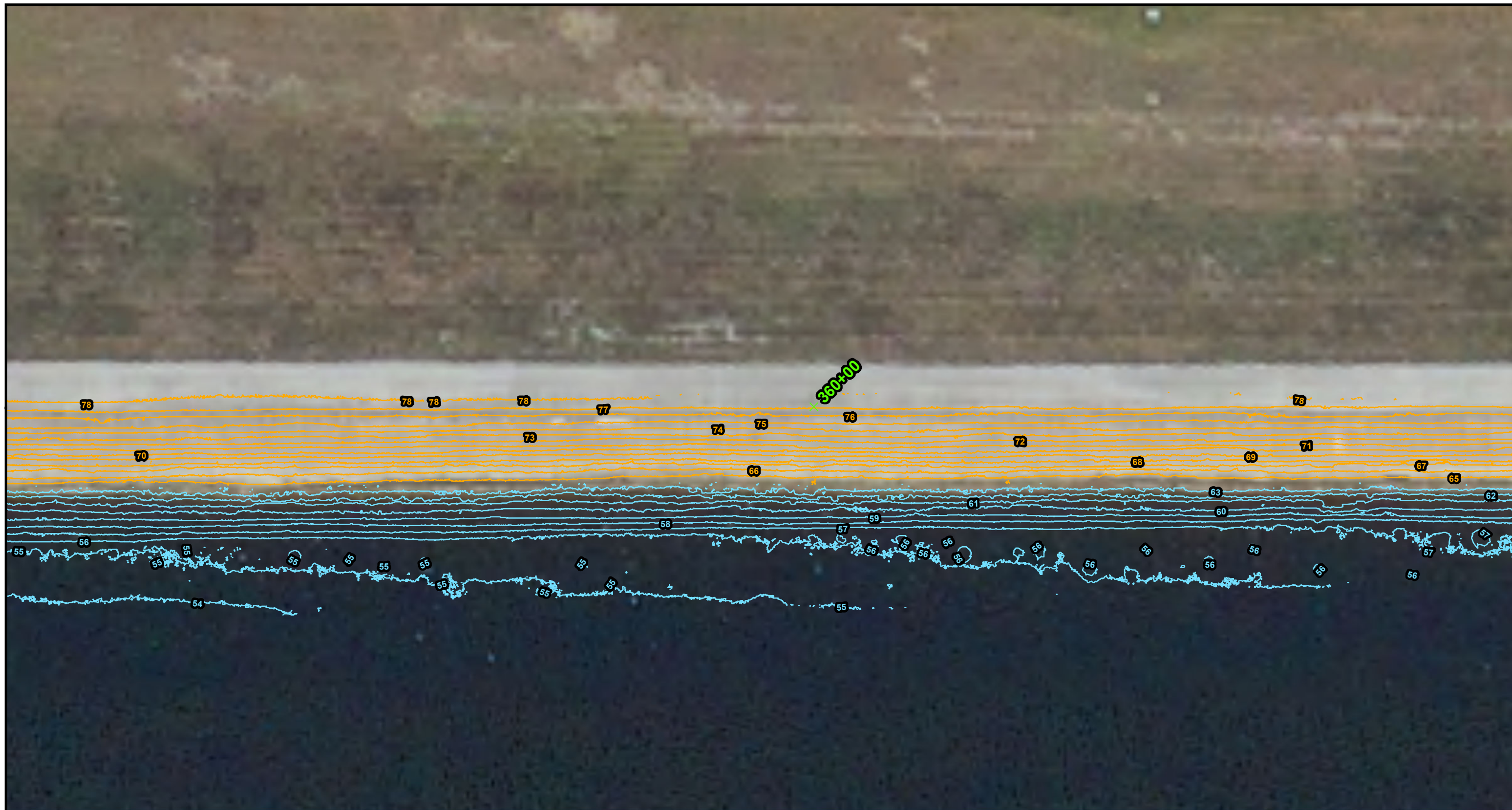
N

0 15 30
1" = 30 Feet

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Appendix F
Figure 74
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDar and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

Scale: 1" = 30 Feet

North Arrow: N

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Appendix F
Figure 75
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida



Notes:

- 1- Project No.: 300906
- 2- Data Sources - GFY & ACA
Contours derived from LiDAR and Sonar DTMs (NAVD 88 feet)
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 04/29/20145
Revised: AB
Checked By: JB



Explanation of Features

- LiDAR derived 1ft contours
- Sonar derived 1ft contours

GPS Locations

- ✕ Stations
- ▲ Repair

N

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Appendix F
Figure 76
Topographic Contours
Manatee Cooling Pond
Manatee County, Florida

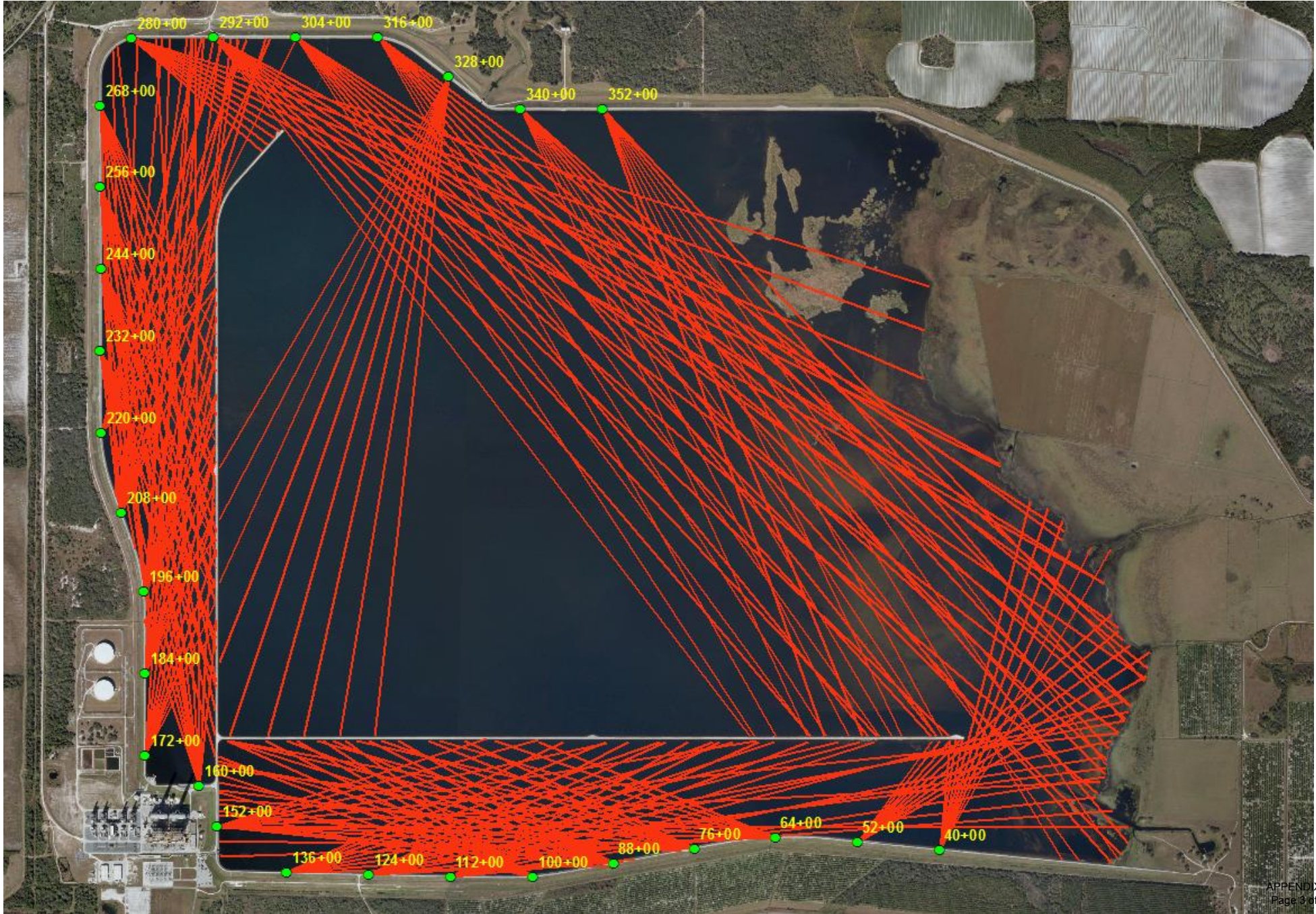
APPENDIX G

Compiled Condition Assessment Parameter Data

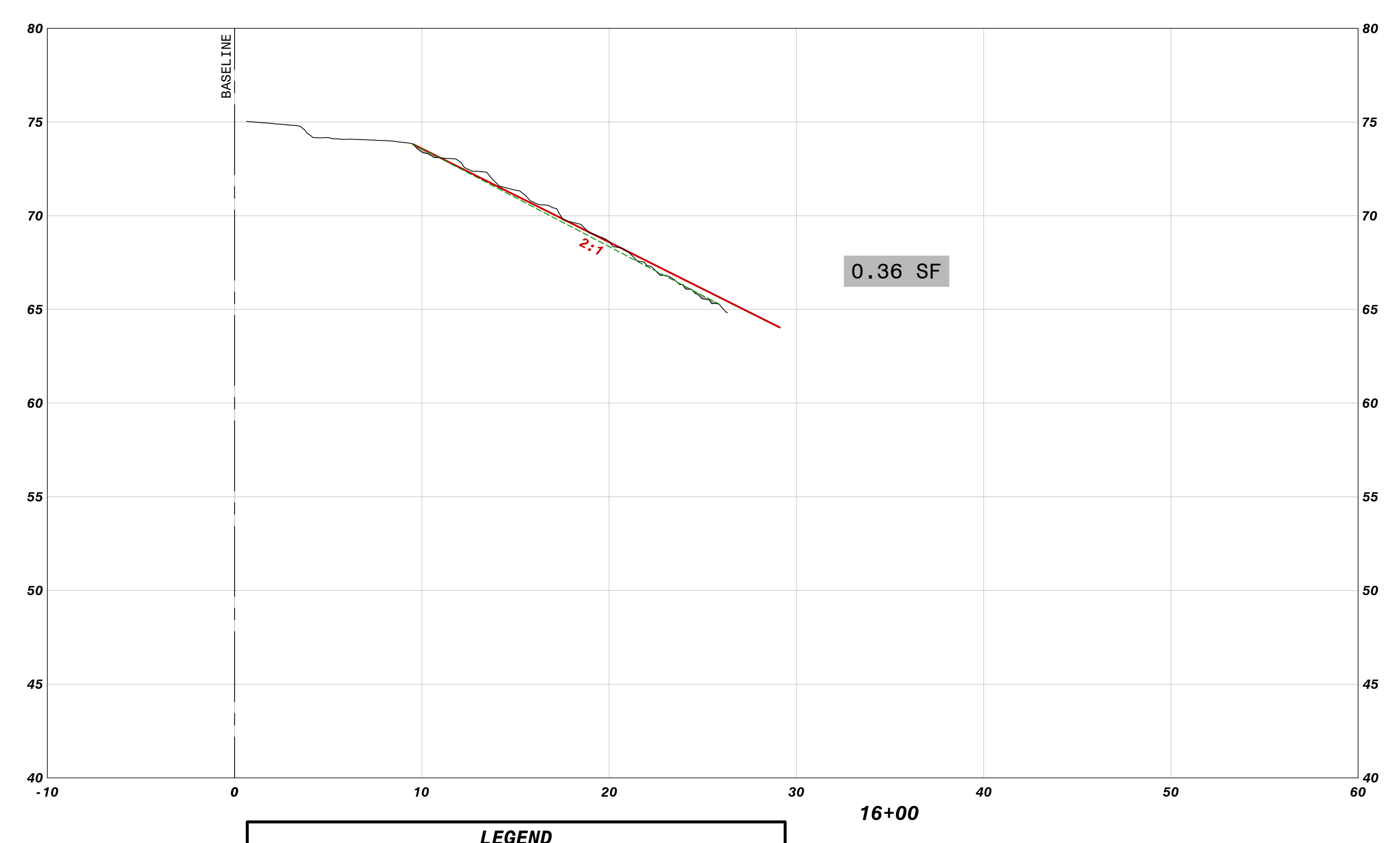
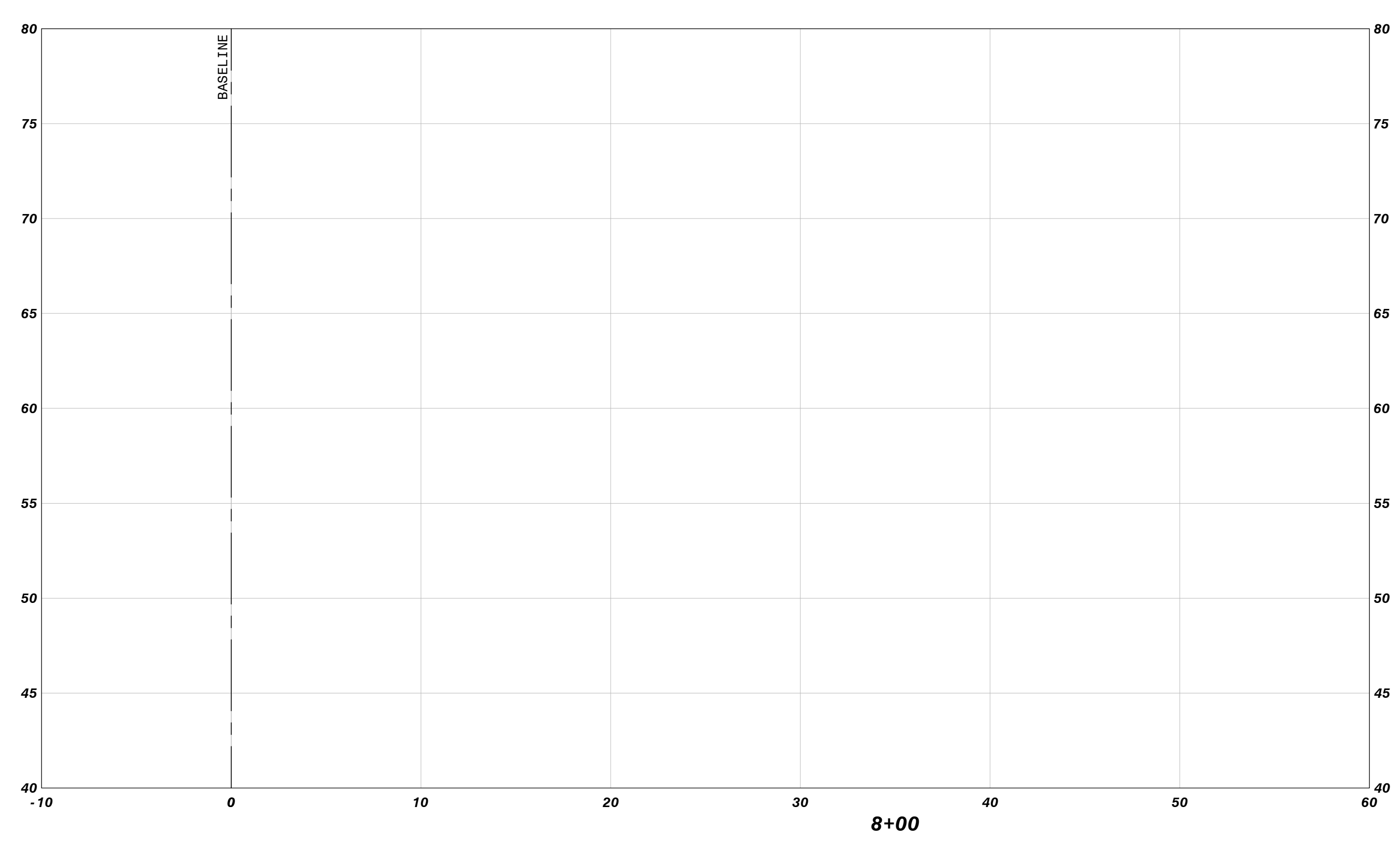
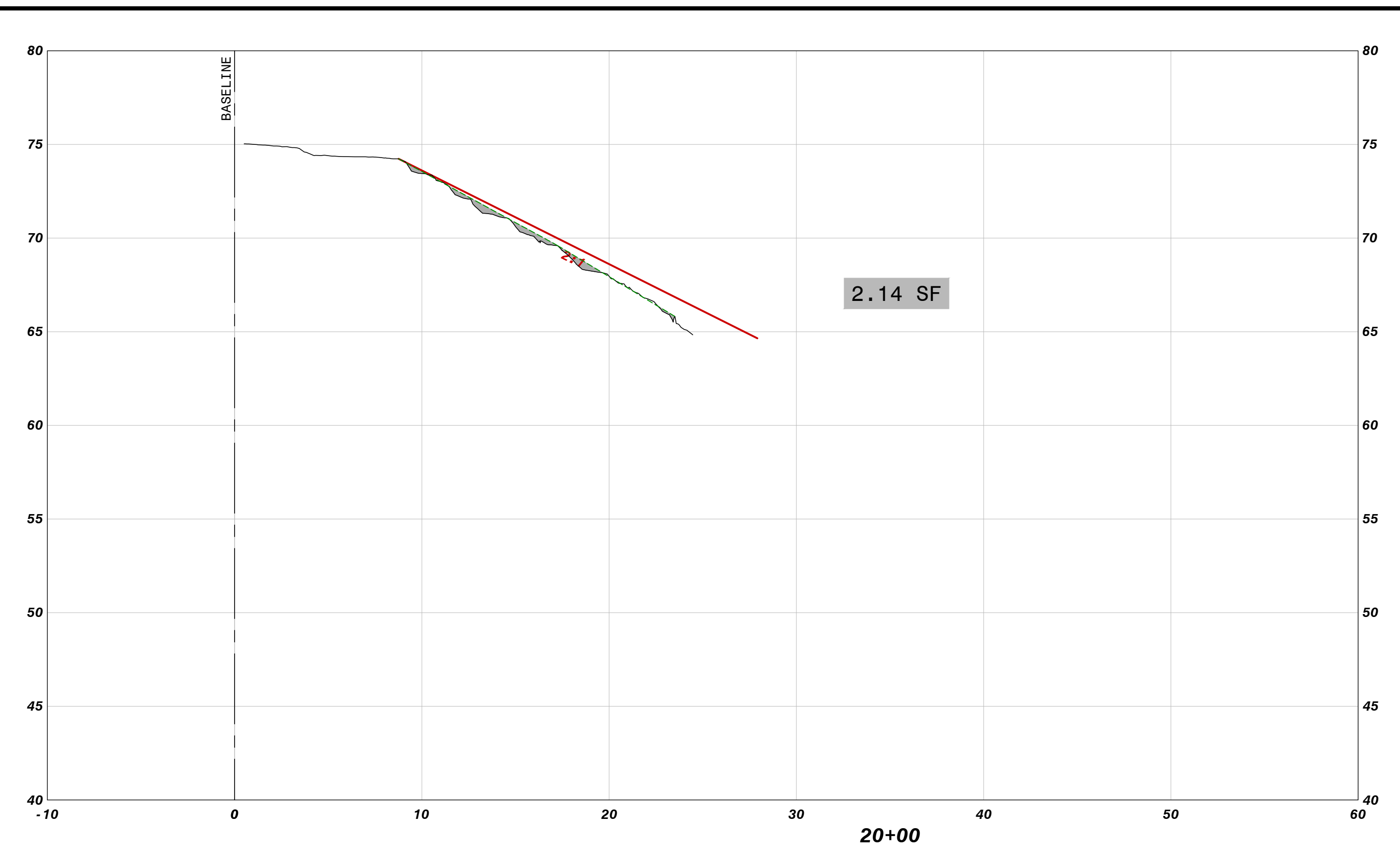
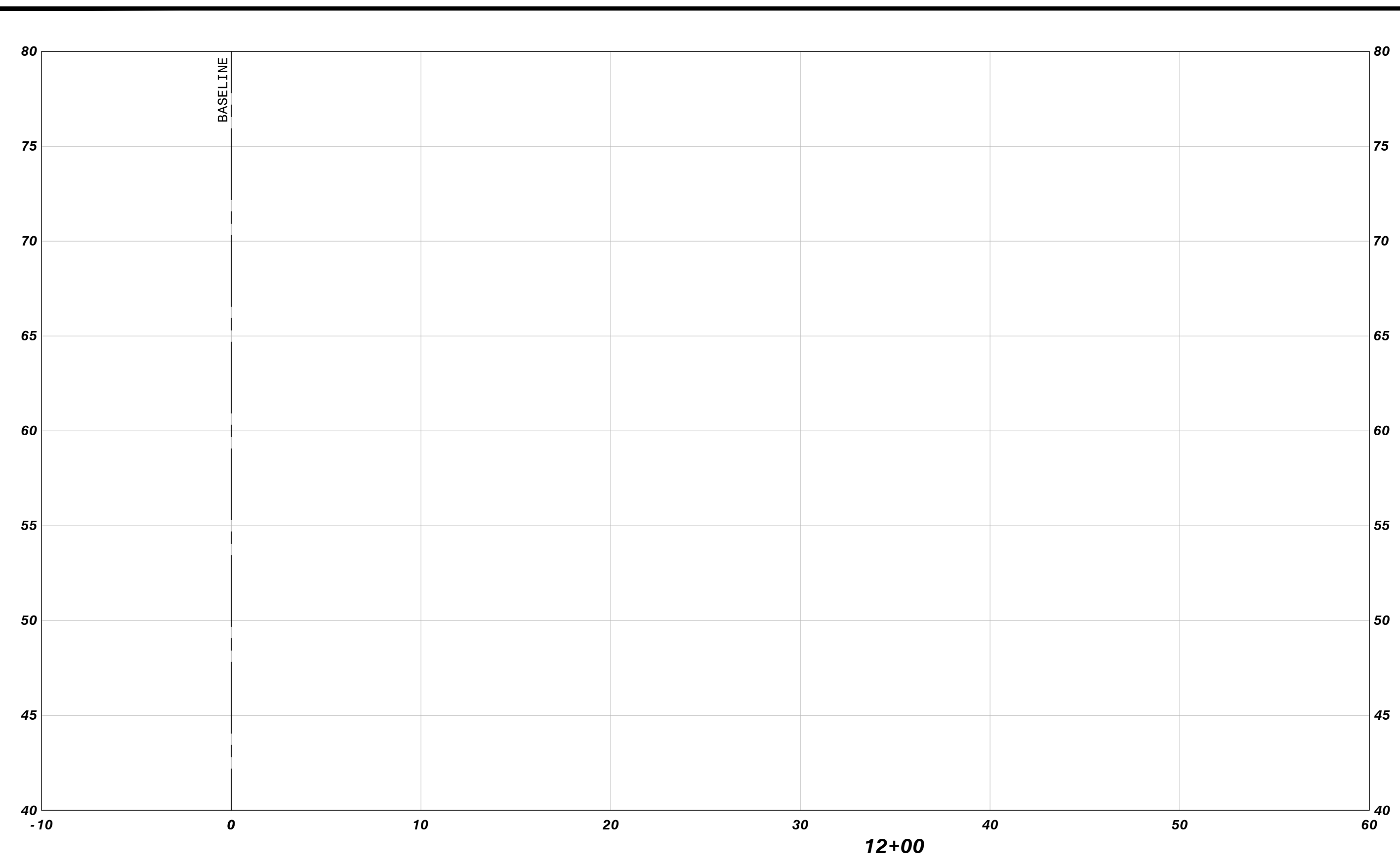
STA	Area below projected slope (sq.ft.)	Averaged Calculated Fetch Length (ft.)
40+00	13.68	3918.3
44+00	11.15	
48+00	10.55	
52+00	15.52	3616.72
56+00	10.45	
60+00	8.09	
64+00	11.79	6690.09
68+00	8.76	
72+00	5.55	
76+00	6.78	5931.58
80+00	17.45	
84+00	13.72	
88+00	14.9	5178.61
92+00	12.01	
96+00	16.28	
100+00	11.59	4378.72
104+00	11.81	
108+00	6.15	
112+00	10.71	6416.18
116+00	18.02	
120+00	6.35	
124+00	9.56	7197.1
128+00	11.33	
132+00	6.74	
136+00	23.01	7974.59
140+00	25.44	
148+00	22.1	
152+00	18.82	8284.69
156+00	13.98	
160+00	8.72	6741.06
164+00	14.24	
169+00	4.37	
172+00	14.96	5120.81
176+00	7.71	
180+00	8.38	
184+00	2.37	5424.79
188+00	3.85	
192+00	15.91	
196+00	8.48	4501.75
200+00	14.32	
204+00	16.78	

STA	Area below projected slope (sq.ft.)	Averaged Calculated Fetch Length (ft.)
208+00	11.31	6291.55
212+00	5.53	
216+00	10.57	
220+00	8.38	4780.95
224+00	8.51	
228+00	5.36	
232+00	15.02	4280.23
236+00	9.38	
240+00	18.7	
244+00	15.29	5042.18
248+00	11.75	
252+00	17.55	
256+00	10.06	6273.47
260+00	12.1	
264+00	17.68	
268+00	21.69	6373.98
272+00	14.09	
276+00	20.25	
280+00	26.15	8631.14
284+00	9.59	
288+00	19.74	
292+00	25.08	14853.59
296+00	10.98	
300+00	22.19	
304+00	20.18	14274.44
308+00	20.09	
312+00	11.45	
316+00	20.55	13610.96
320+00	7.48	
324+00	29.83	
328+00	23.28	8969.7
332+00	16.5	
336+00	15.61	
340+00	20.51	11843.84
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348+00	22.82	
352+00	13.43	11303.45
360+00	9.45	
364+00	9.45	

Fetch Length Diagram



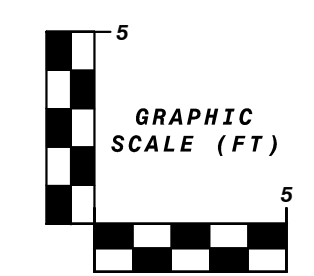
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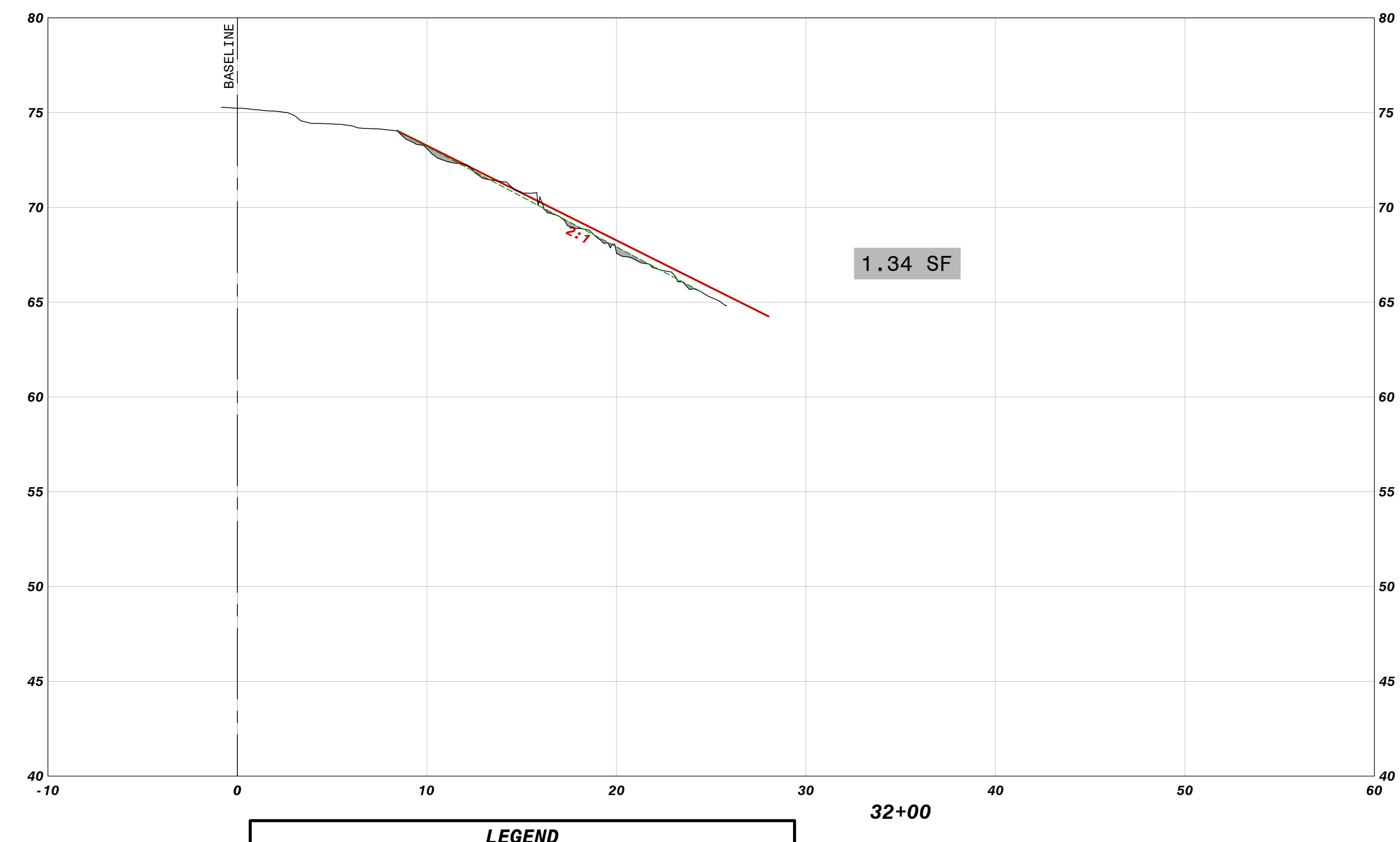
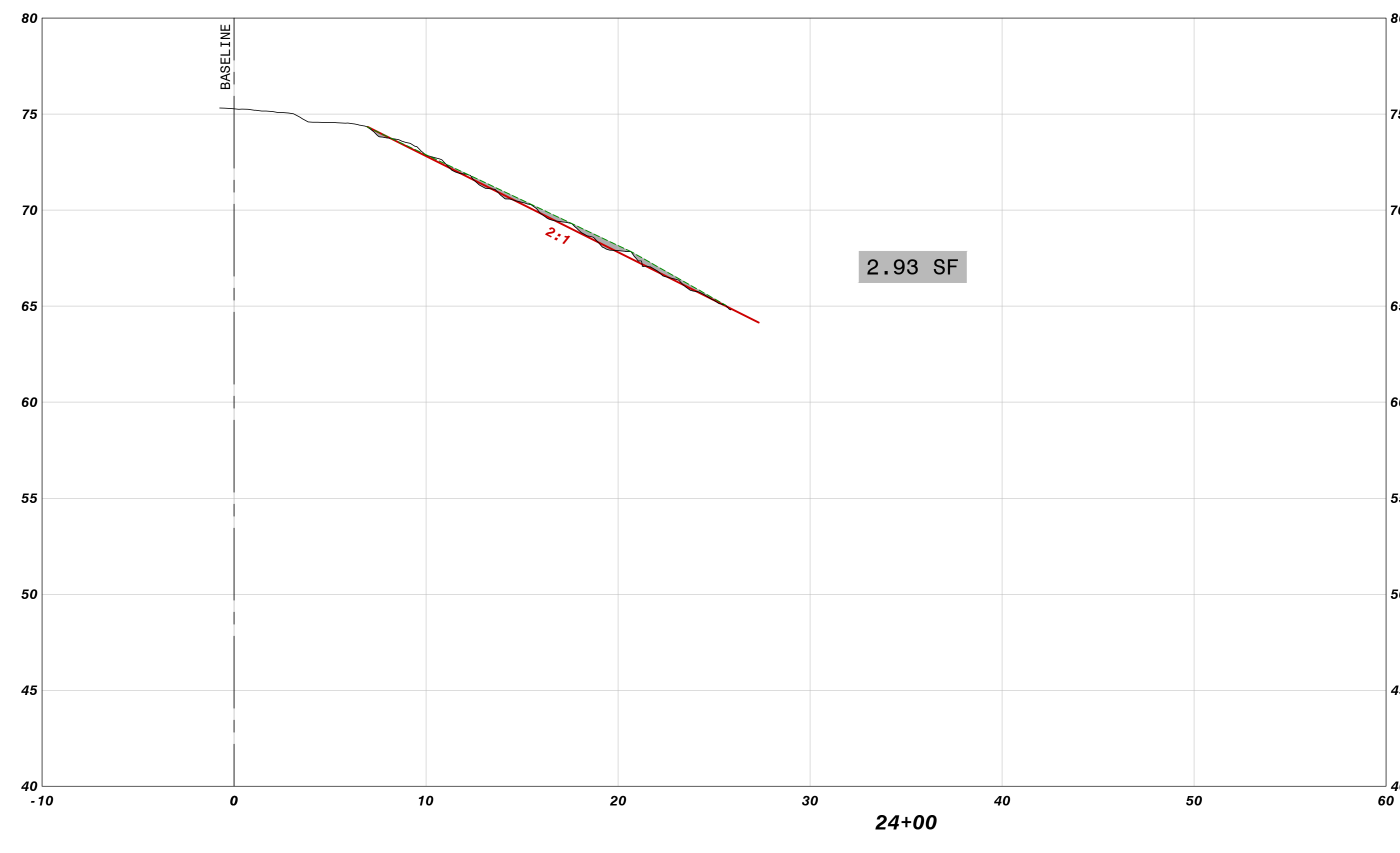
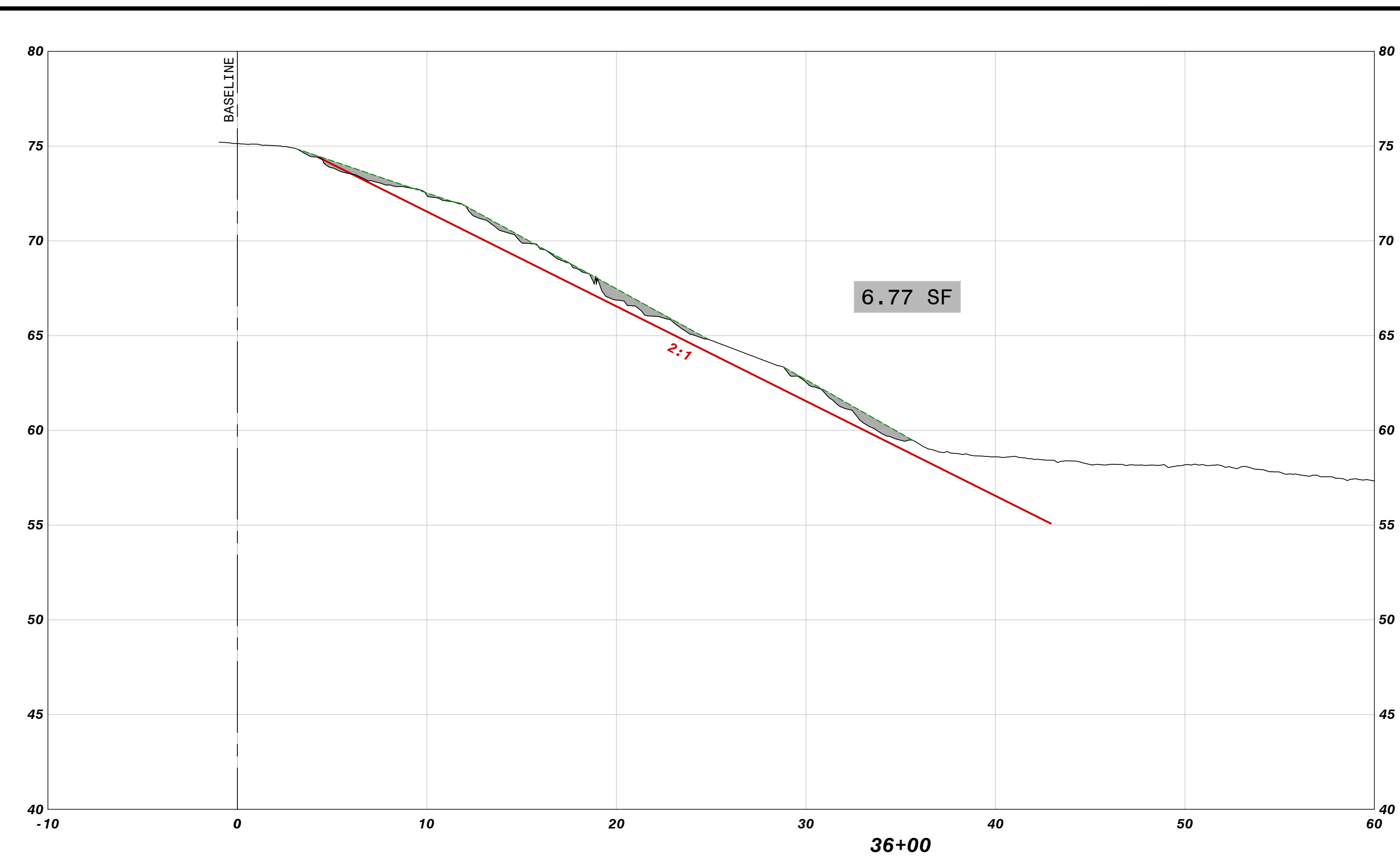
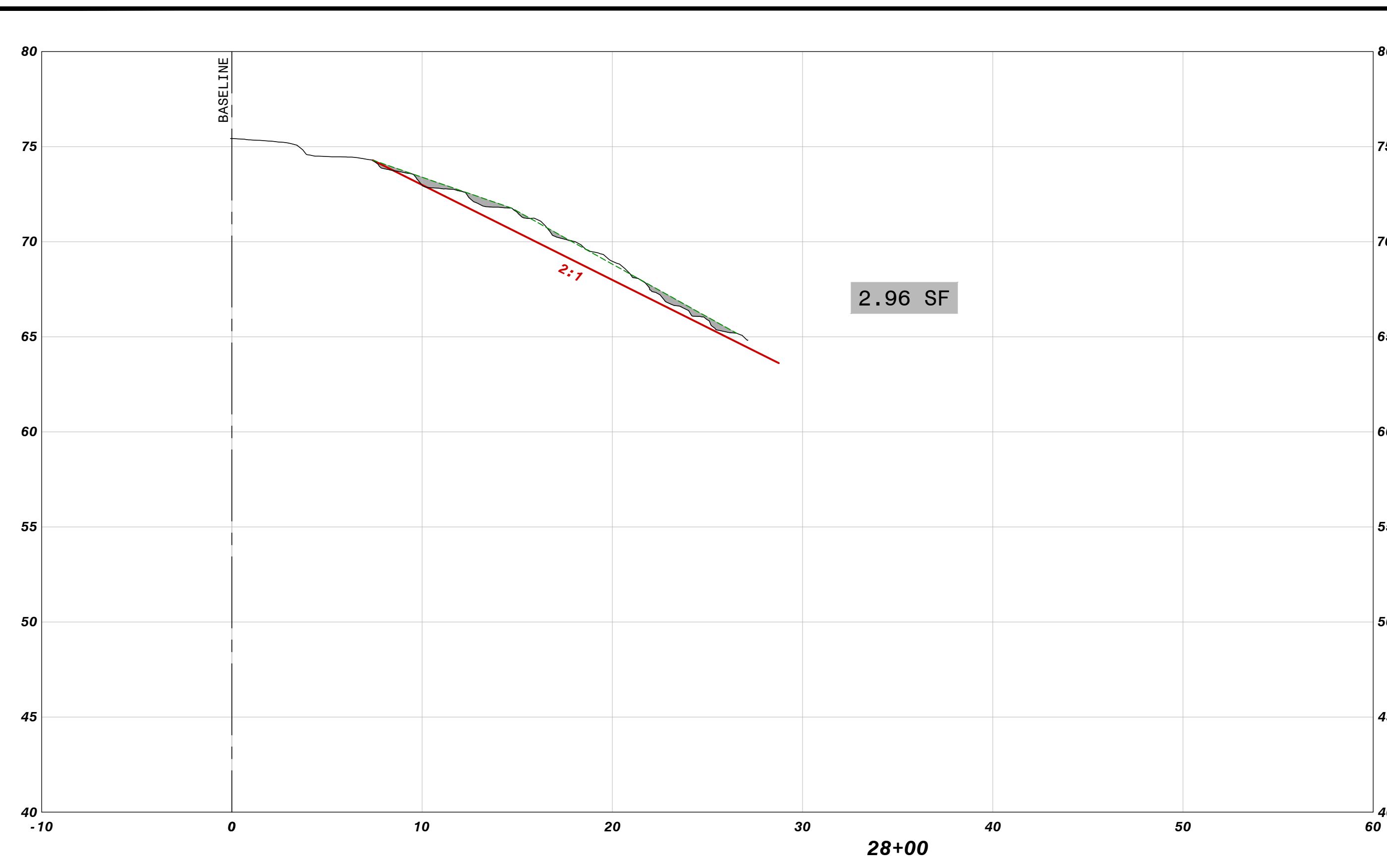
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



<p>MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY</p> <p>SOIL CEMENT CROSS SECTIONS STA 8+00 TO STA 20+00 PARRISH, FLORIDA</p>	<p>amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Ft. Worth, TX 76176 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392</p>
DATE: June 17, 2015	NO. DATE REVISION
DRAWN BY: MAJ	
CHECKED BY: JAB	
PROJECT NO.: 300906	
JEFF BERISWILL, P.E. FLA. REG. NO. 41823	
DATE:	
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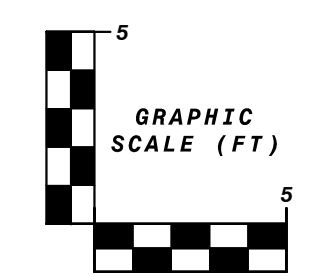
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- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
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 COMBINED LIDAR & SONAR; APRIL 2015



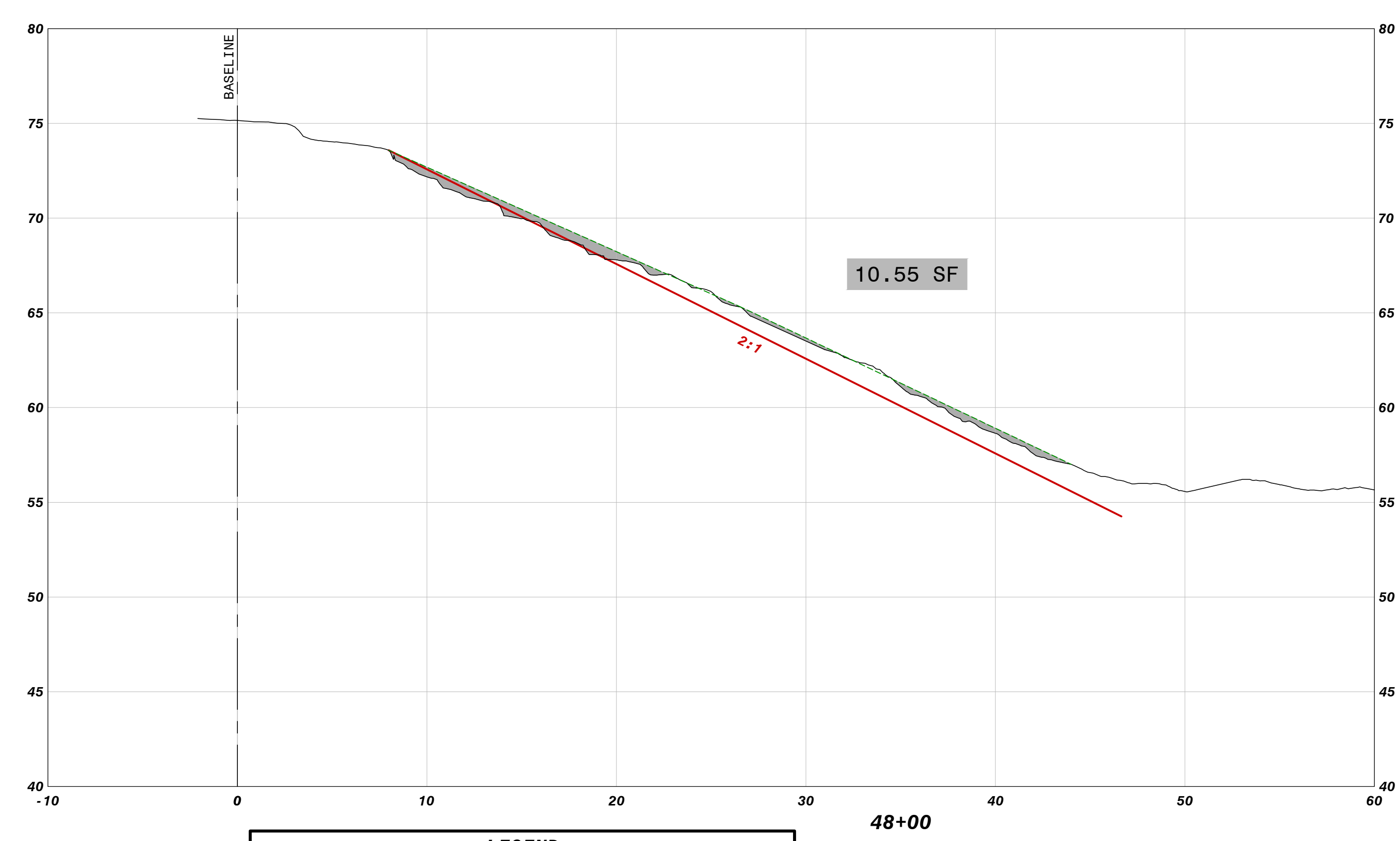
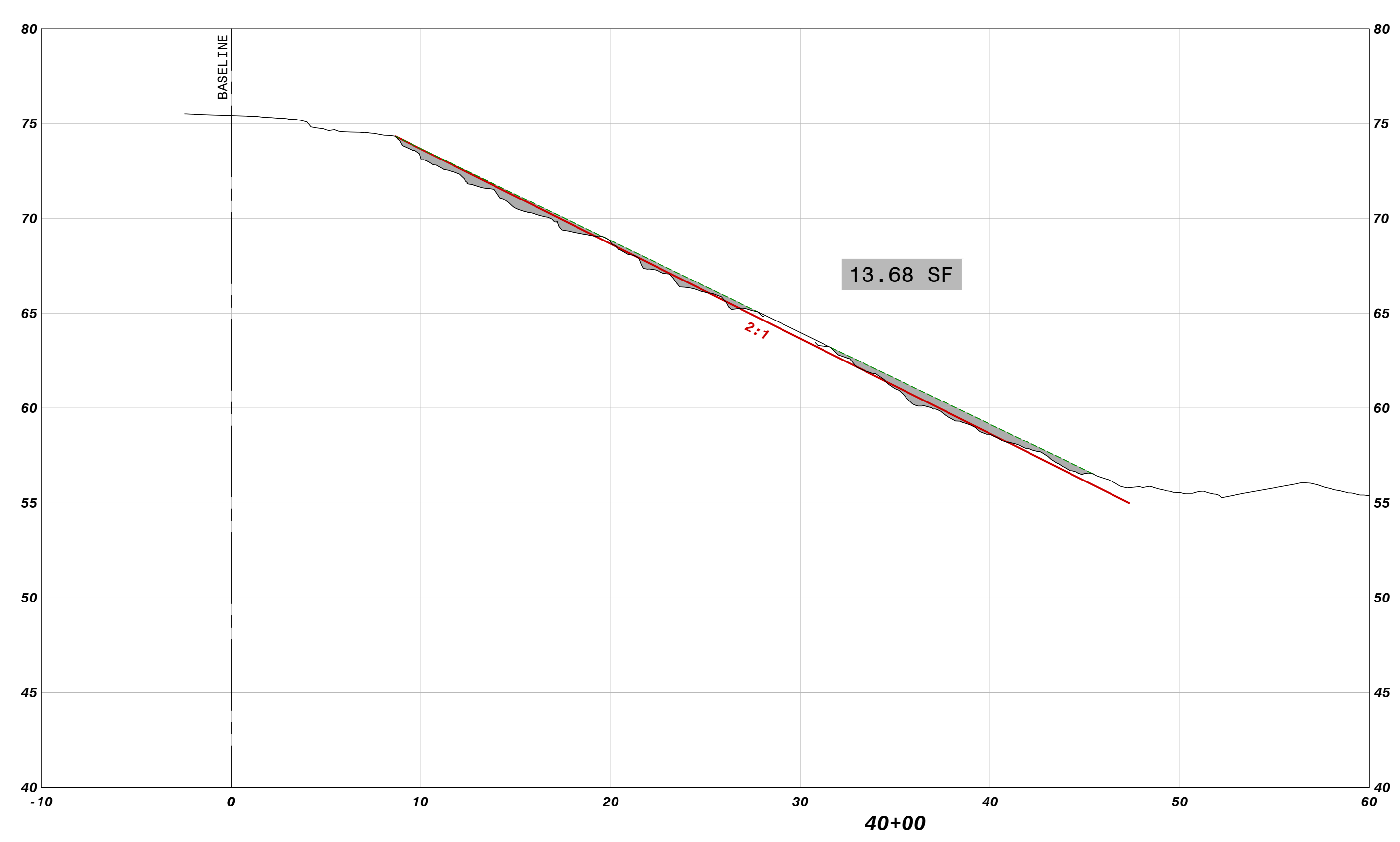
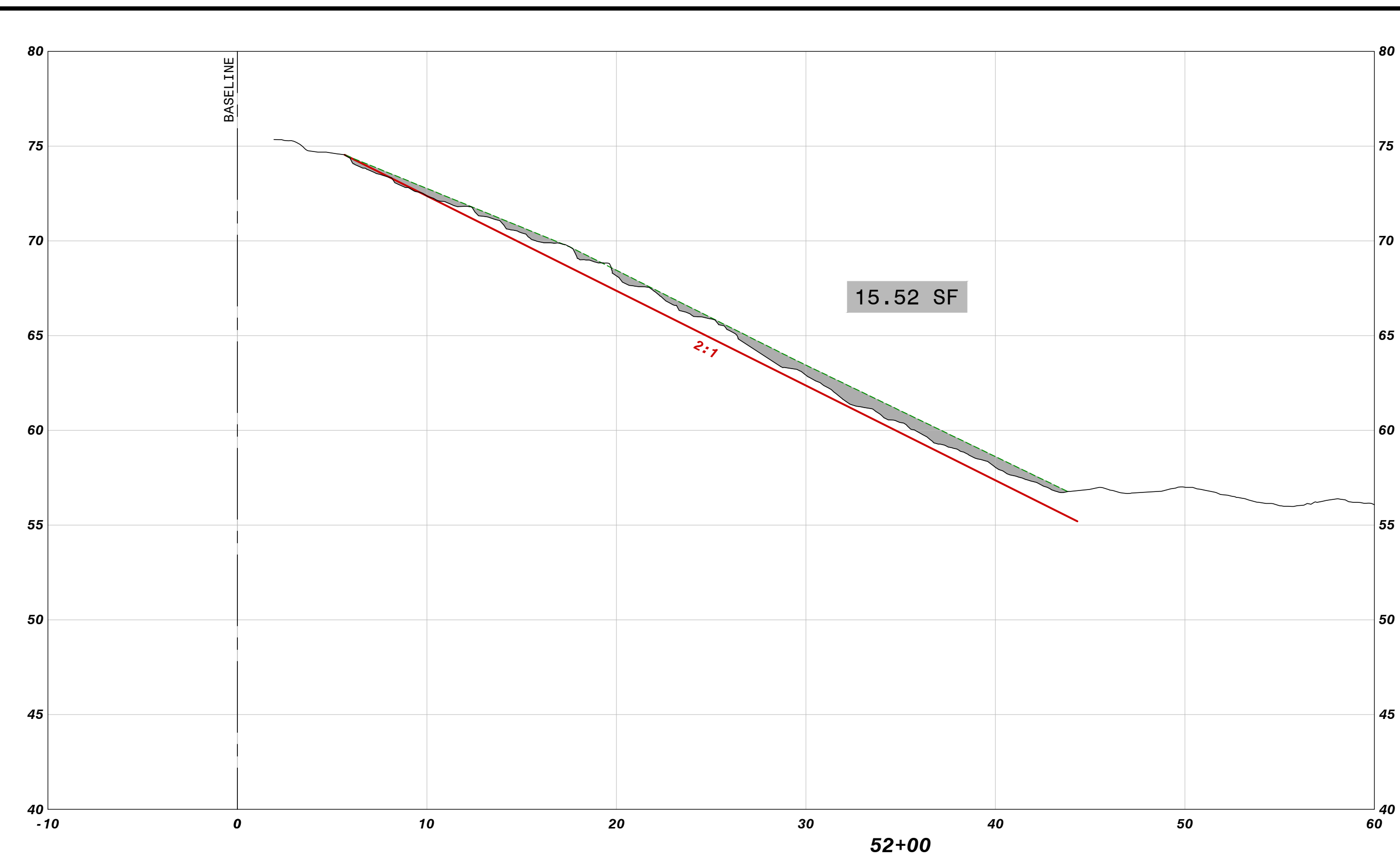
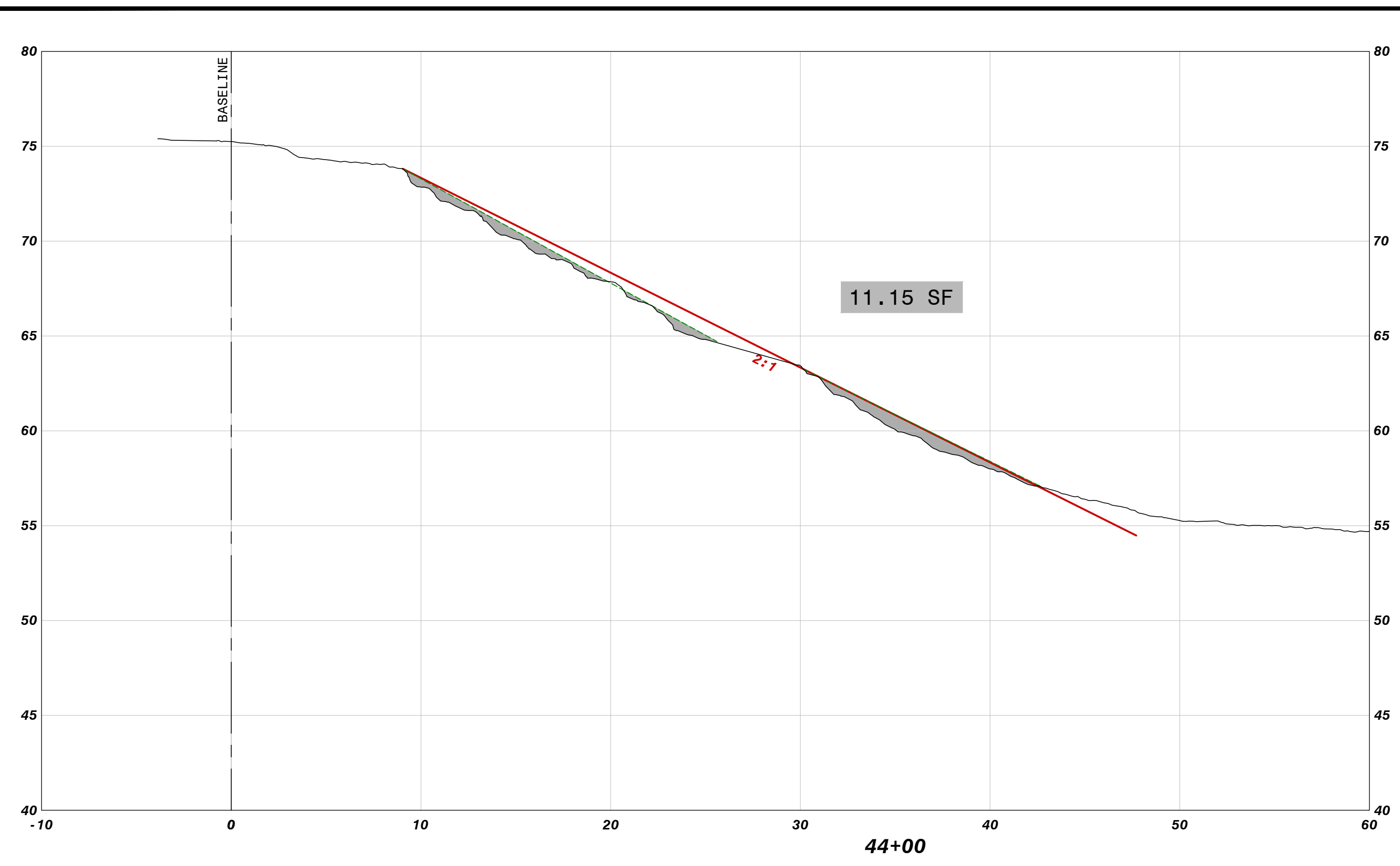
NO.	DATE	REVISION
 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392		

MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 24+00 TO STA 36+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERISWILL, P.E.
 FLA. REG. NO. 41823
 DATE:

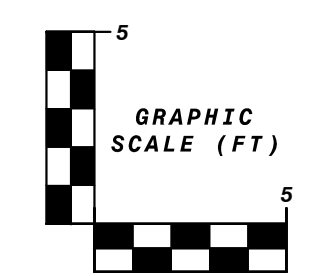
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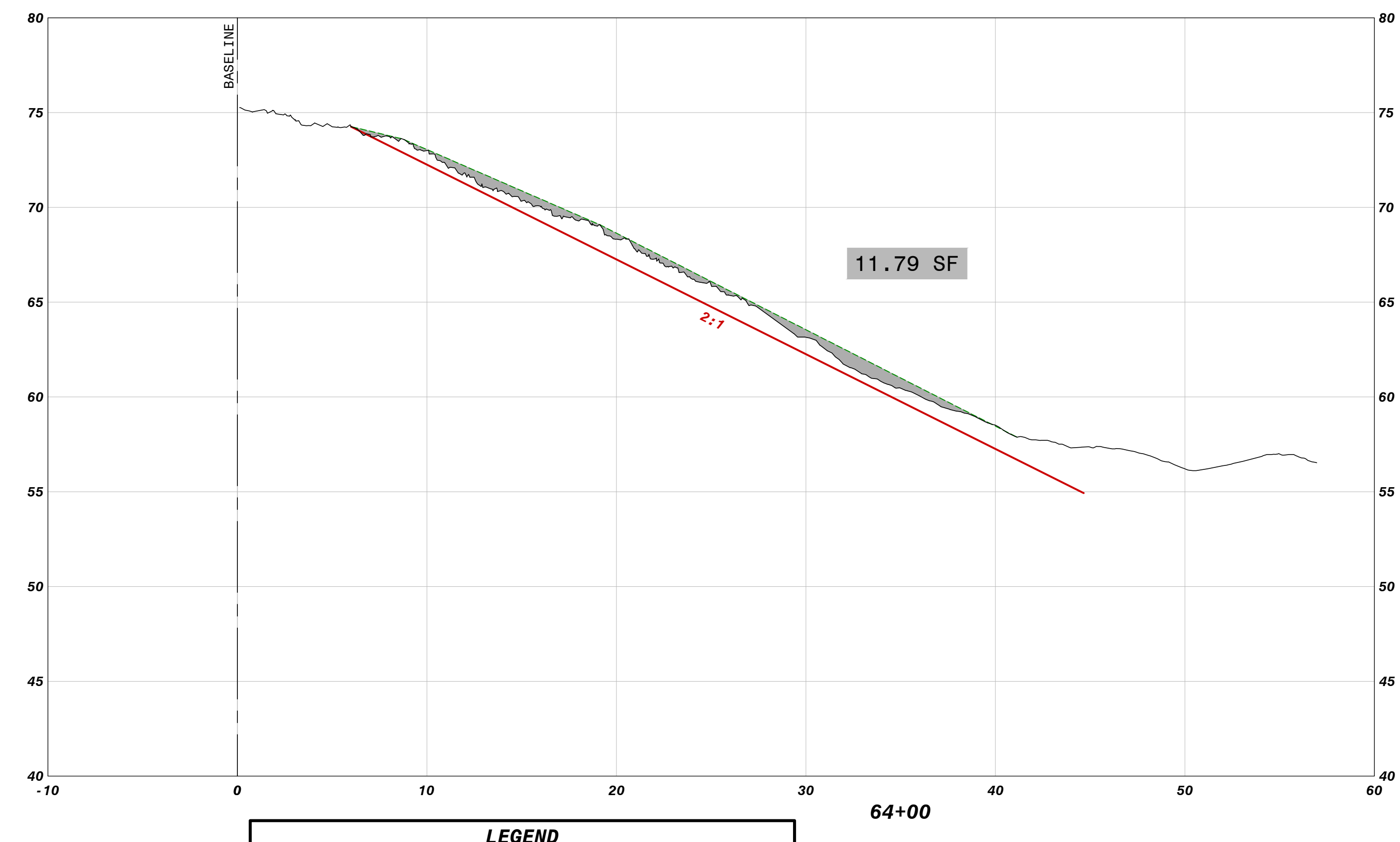
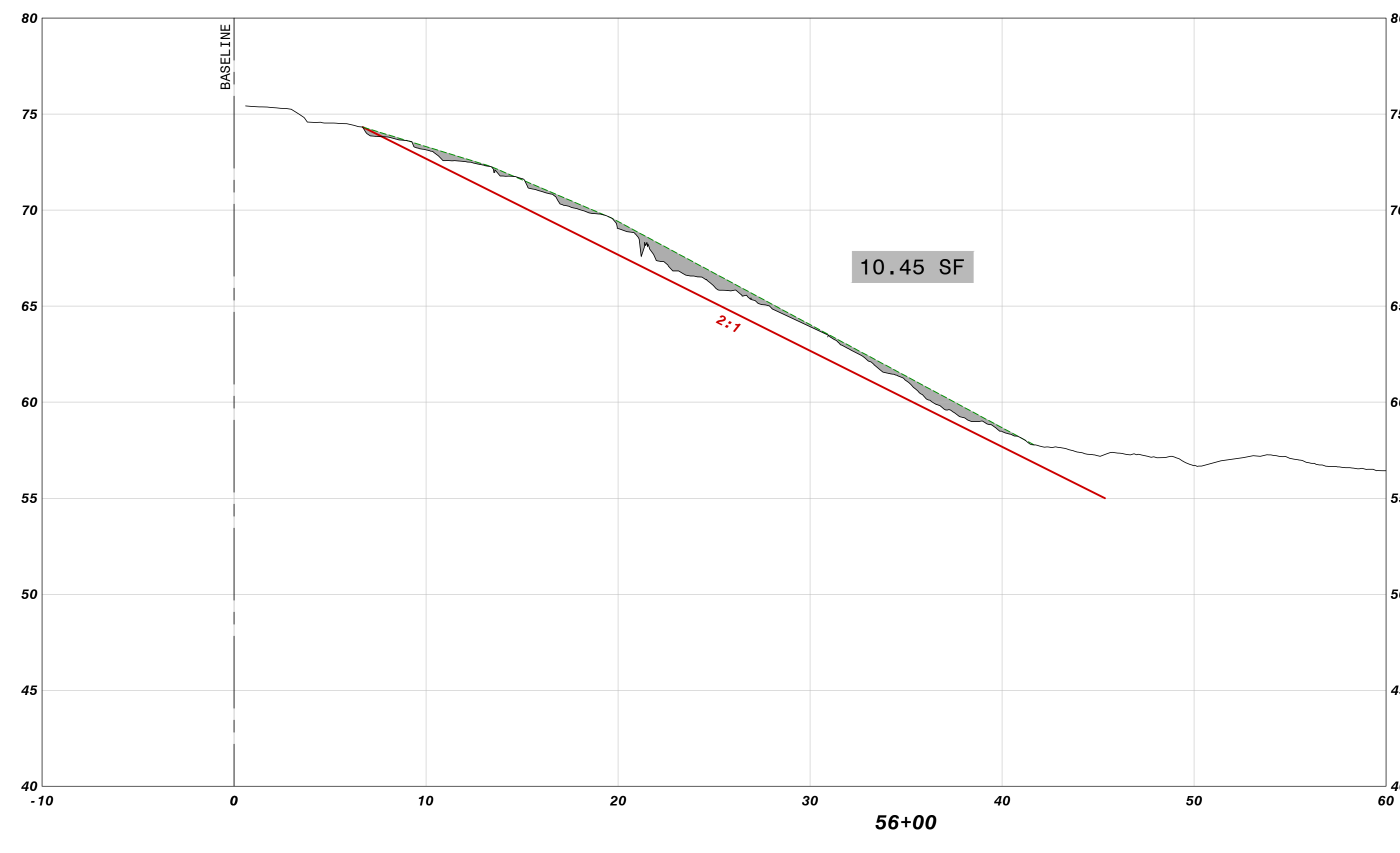
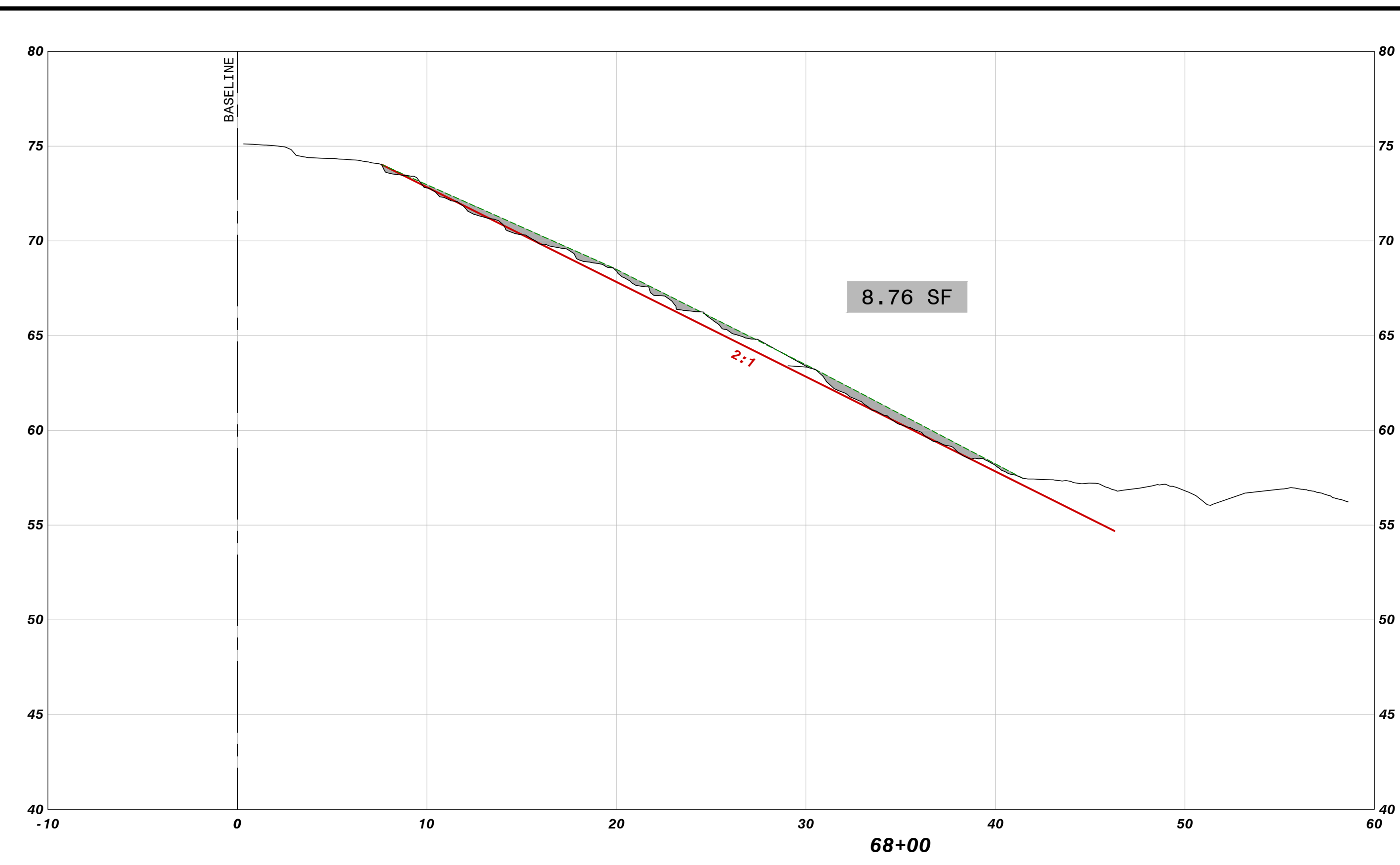
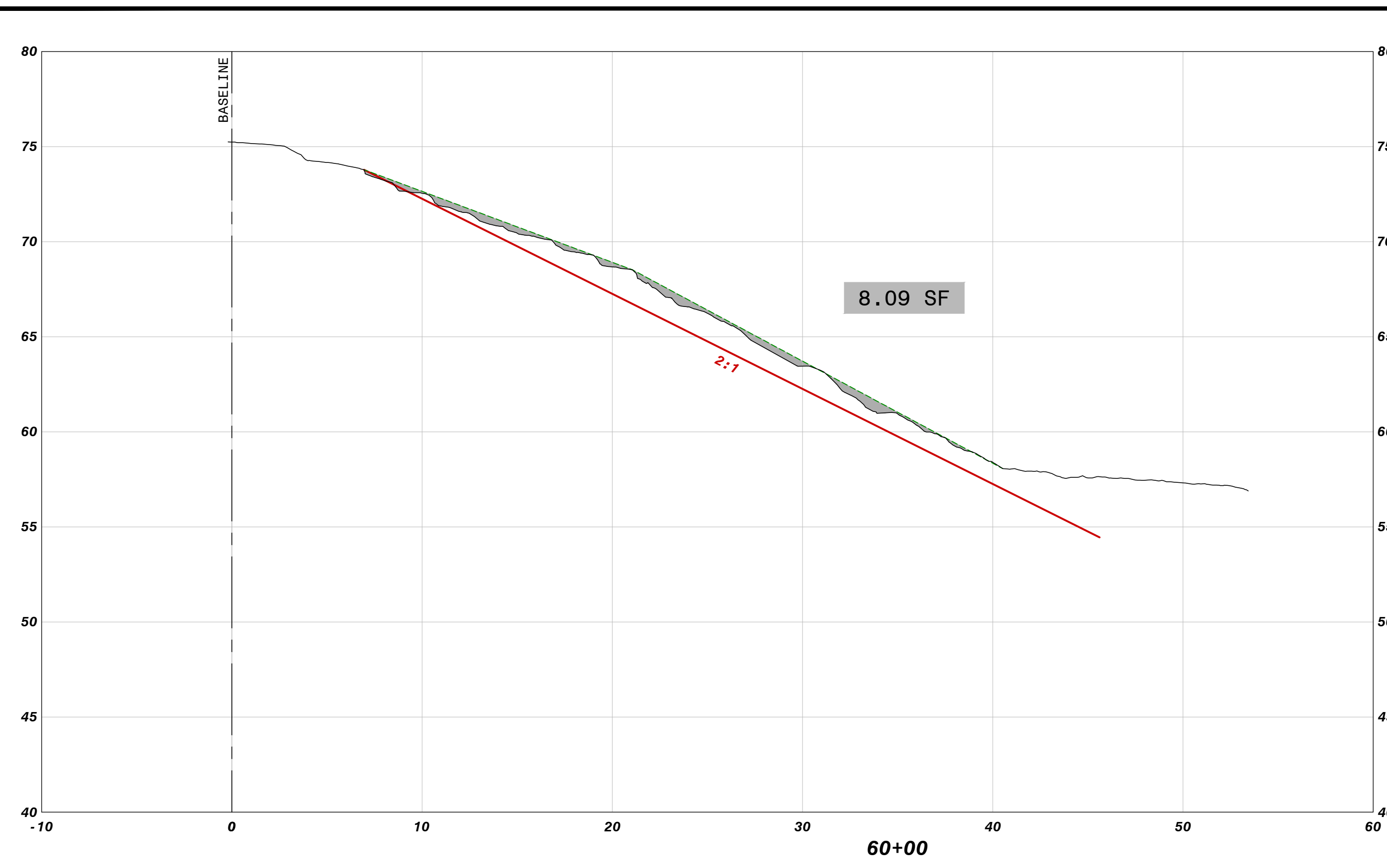
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



<p>MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY</p> <p>SOIL CEMENT CROSS SECTIONS STA 40+00 TO STA 52+00 PARRISH, FLORIDA</p>	<p>amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392</p>						
<p>DATE: June 17, 2015</p> <p>DRAWN BY: MAJ</p> <p>CHECKED BY: JAB</p> <p>PROJECT NO.: 300906</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	REVISION			
NO.	DATE	REVISION					
<p>JEFF BERTSWILL, P.E. FLA. REG. NO. 41823</p> <p>DATE:</p>							
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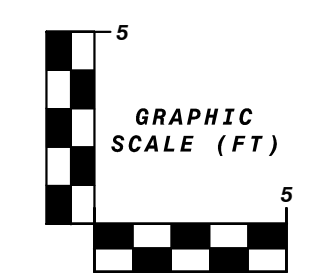
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- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

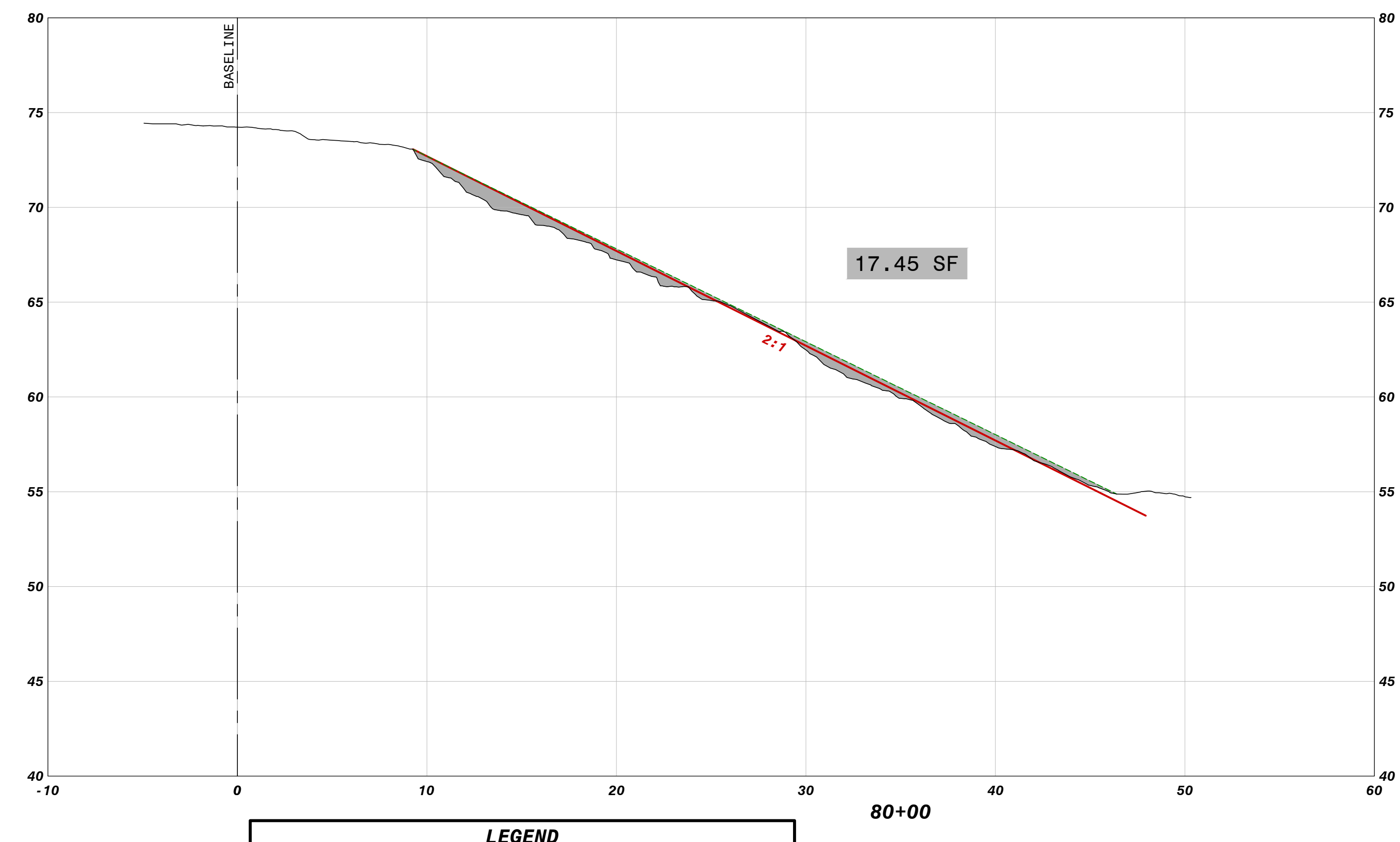
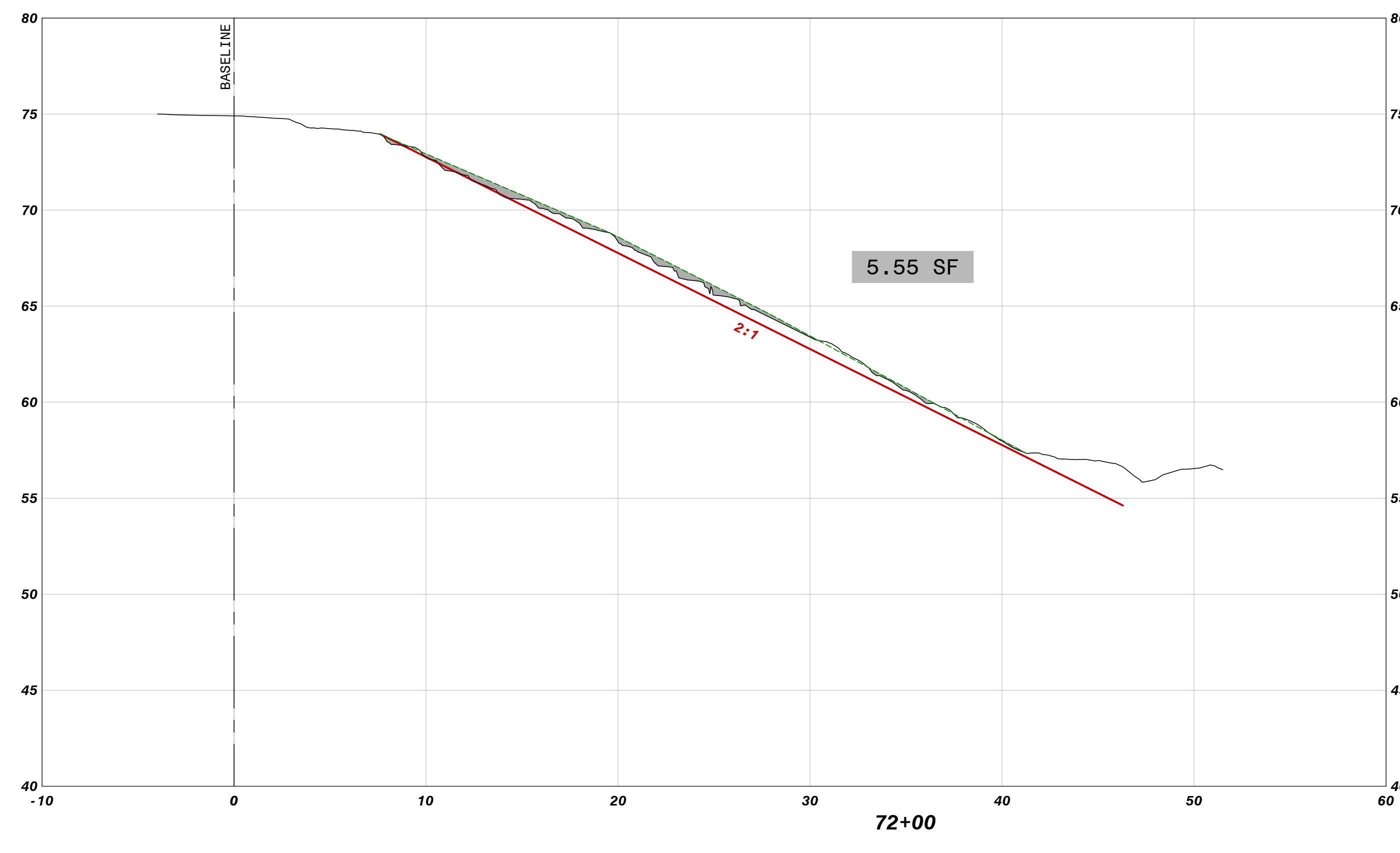
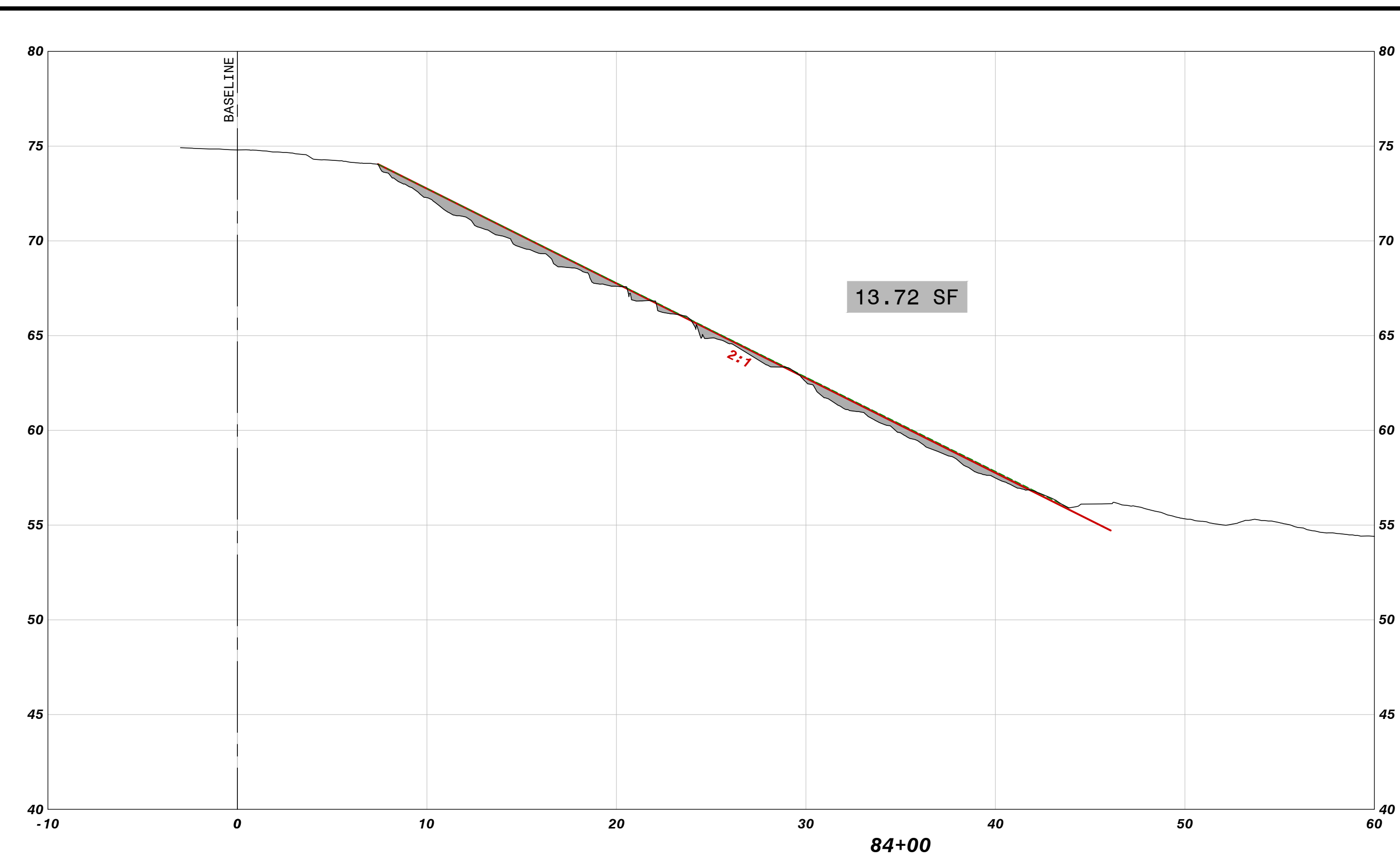
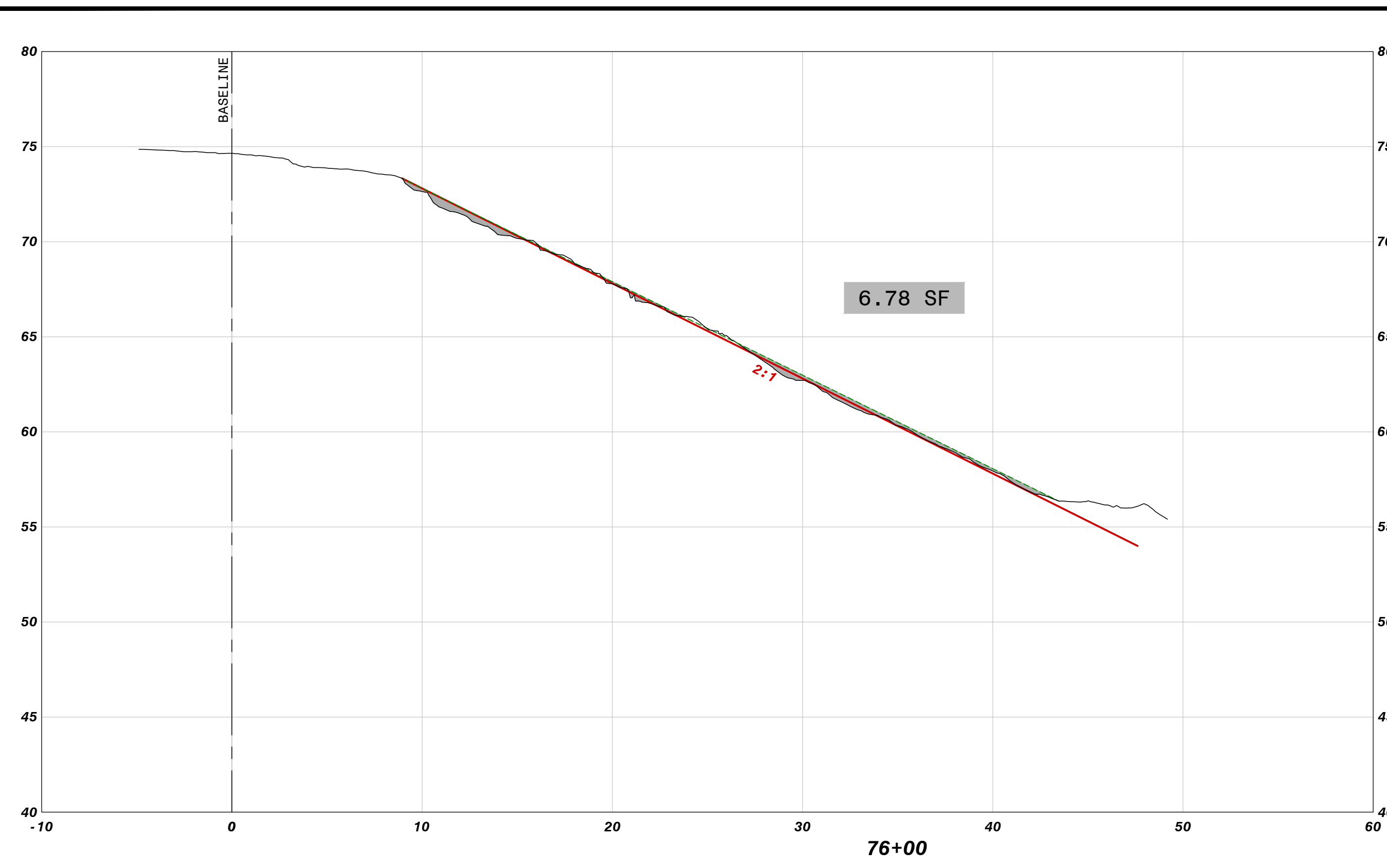
amec foster wheeler
 Amec Foster Wheeler
 Environment & Infrastructure, Inc.
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 Irving, TX 75039
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MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 56+00 TO STA 68+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
 FLA. REG. NO. 41823
 DATE:
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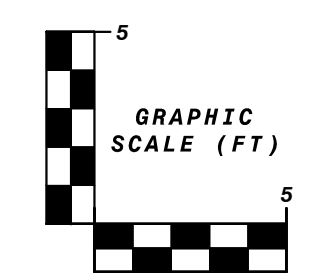
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

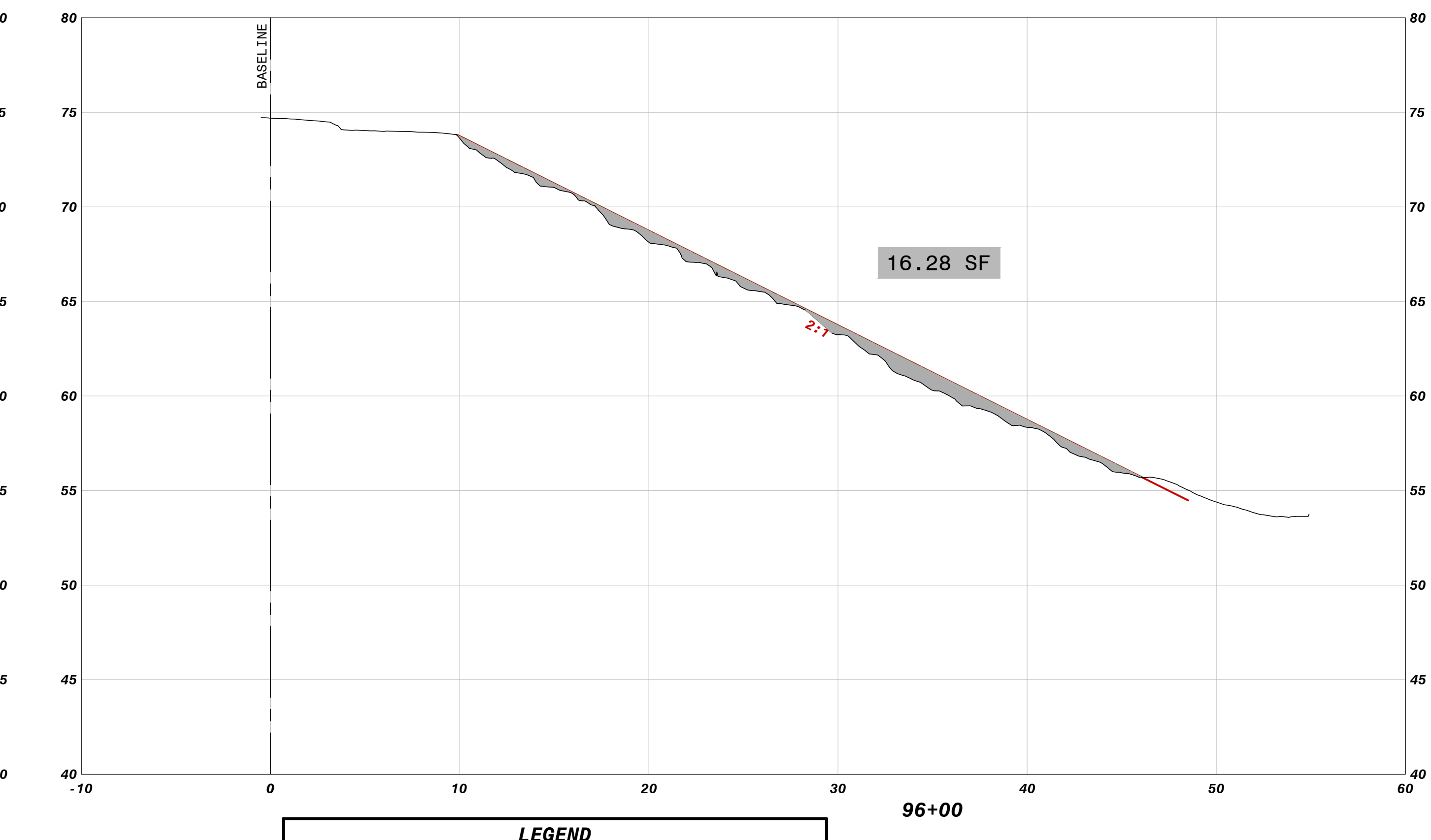
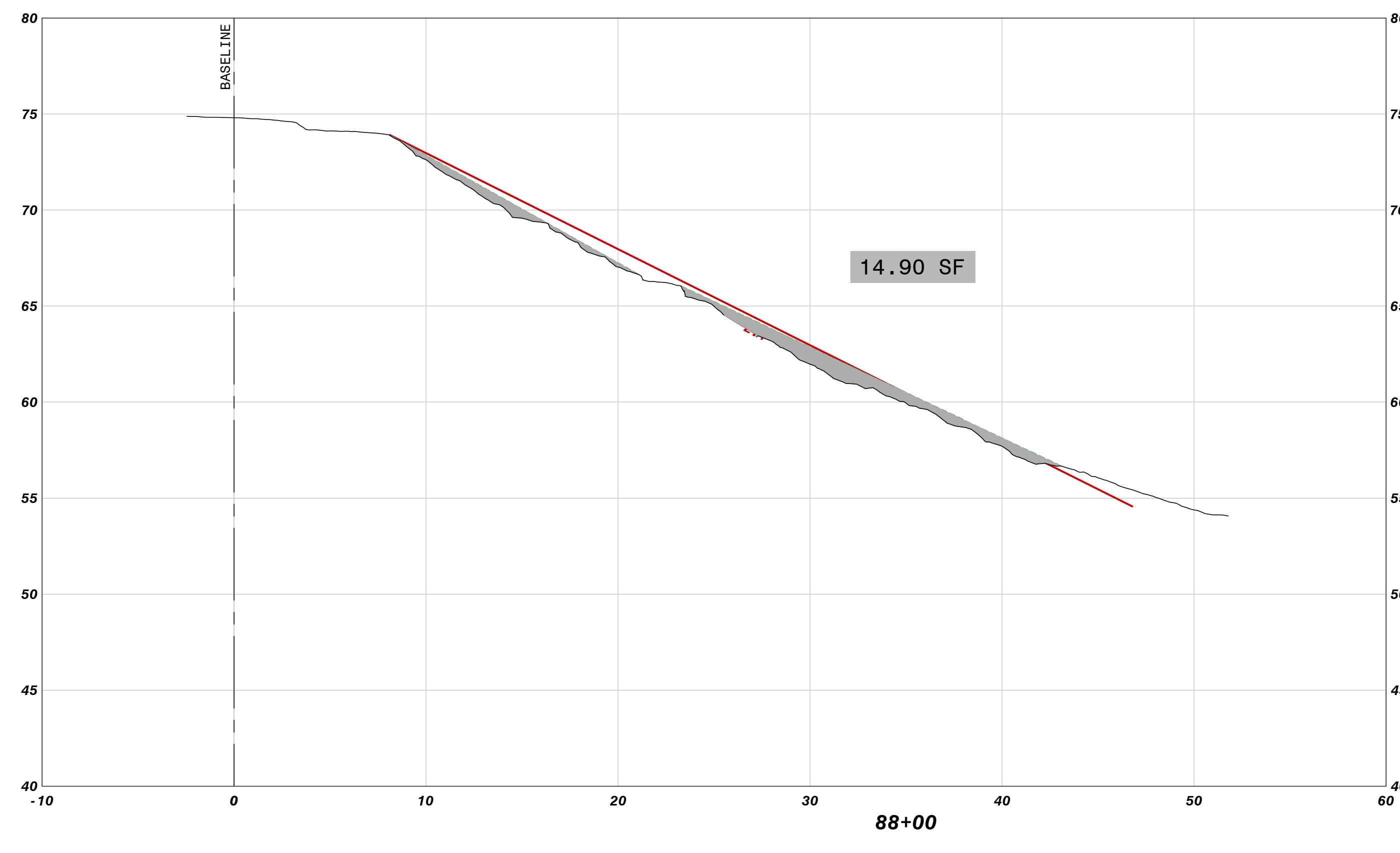
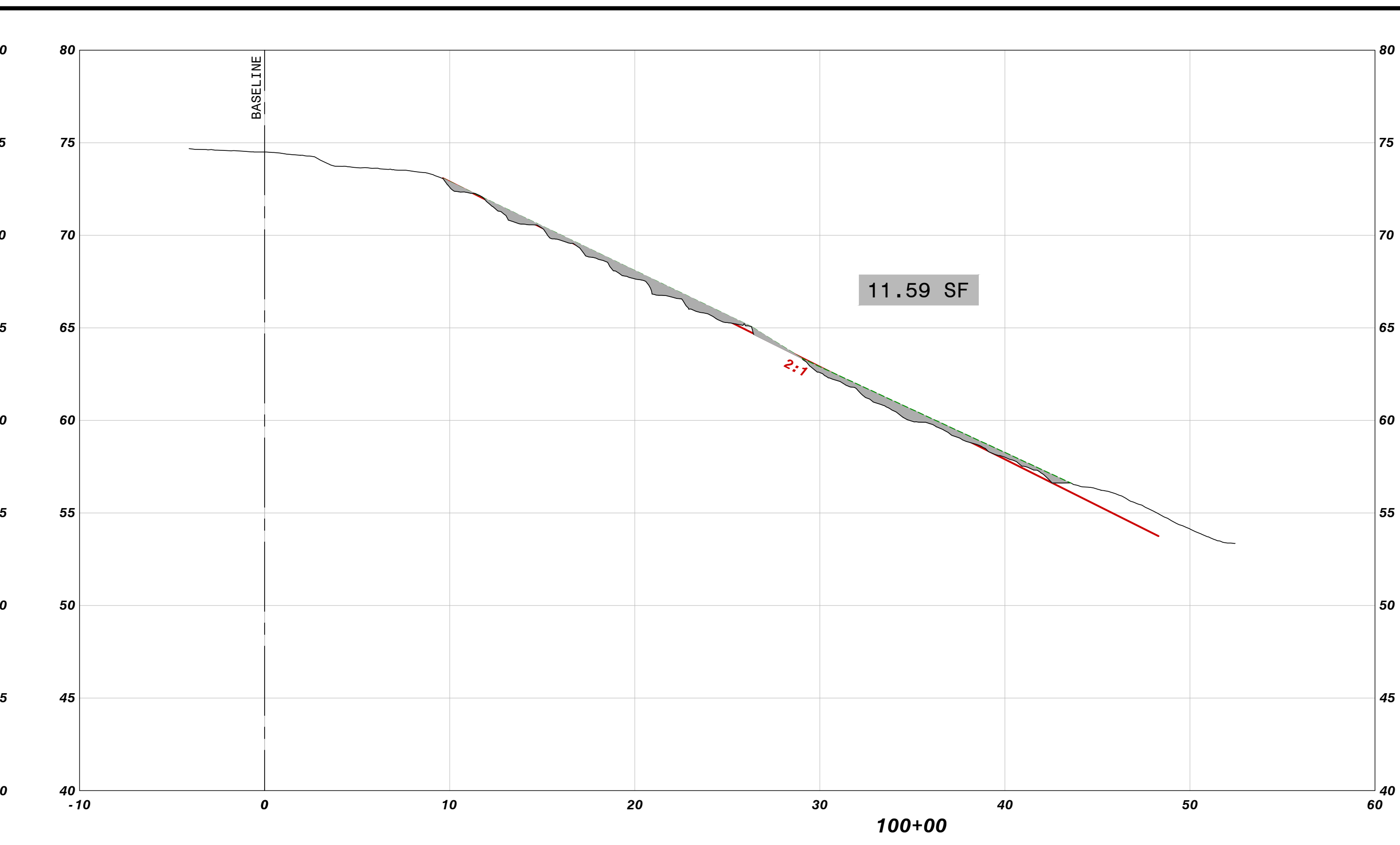
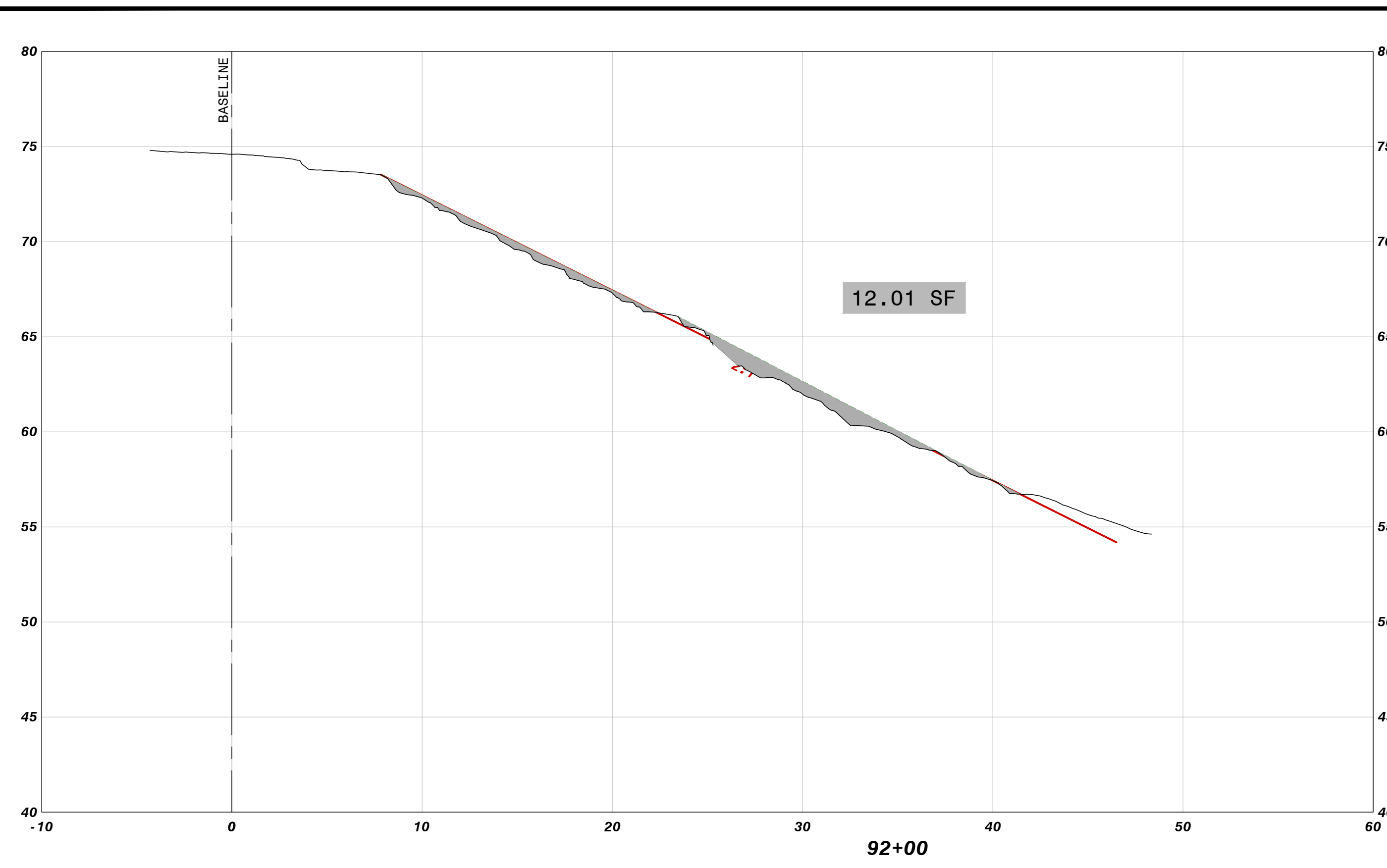
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 Irving, TX 75039
 Phone: 1.863.667.2345 Fax: 1.863.667.2667
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MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 72+00 TO STA 84+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
 FLA. REG. NO. 41823
 DATE:
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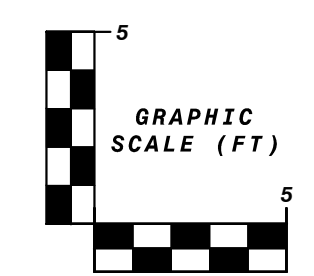
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



<p>amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 El Camino Real, Suite 300 Palo Alto, CA 94303 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	REVISION			
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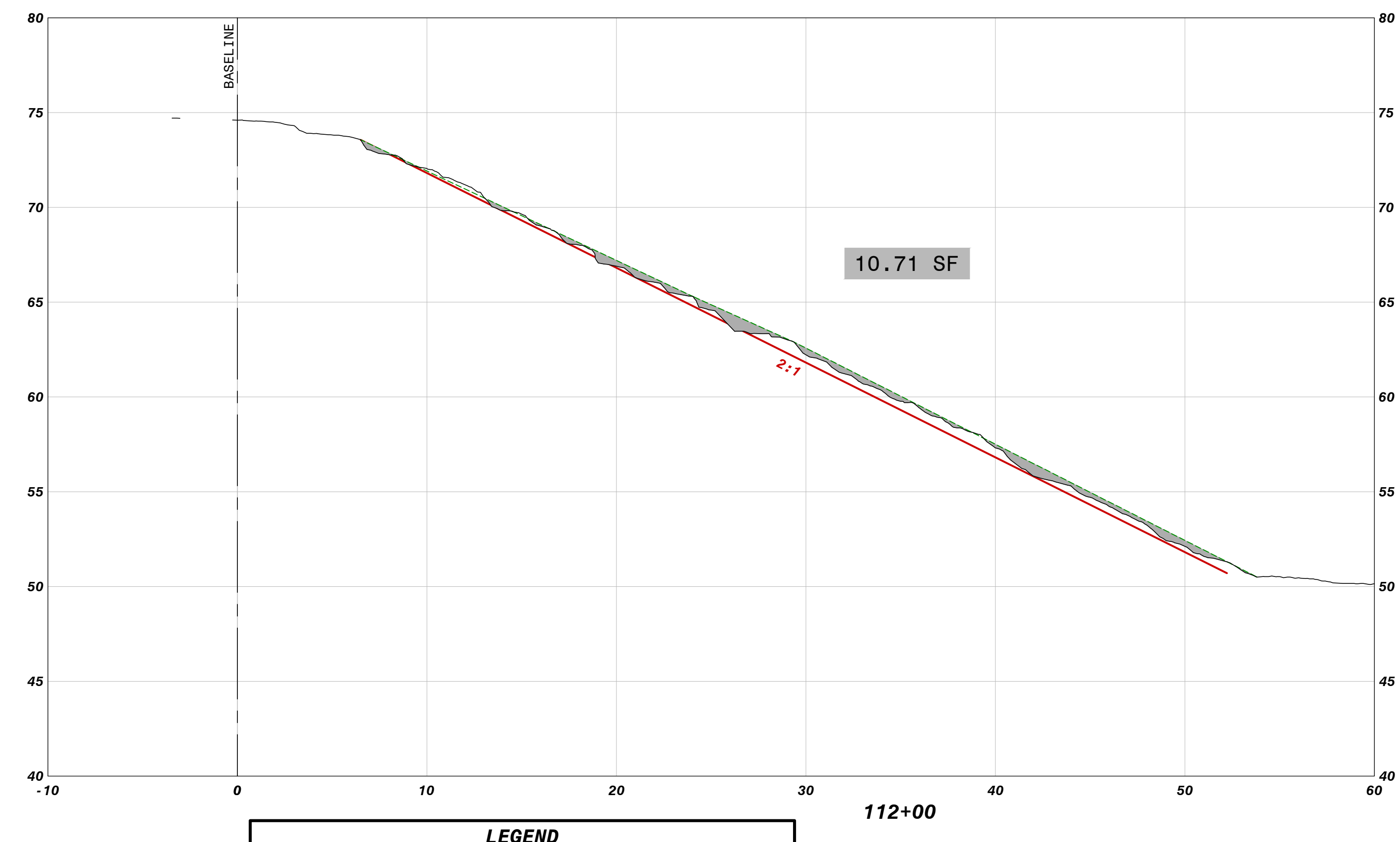
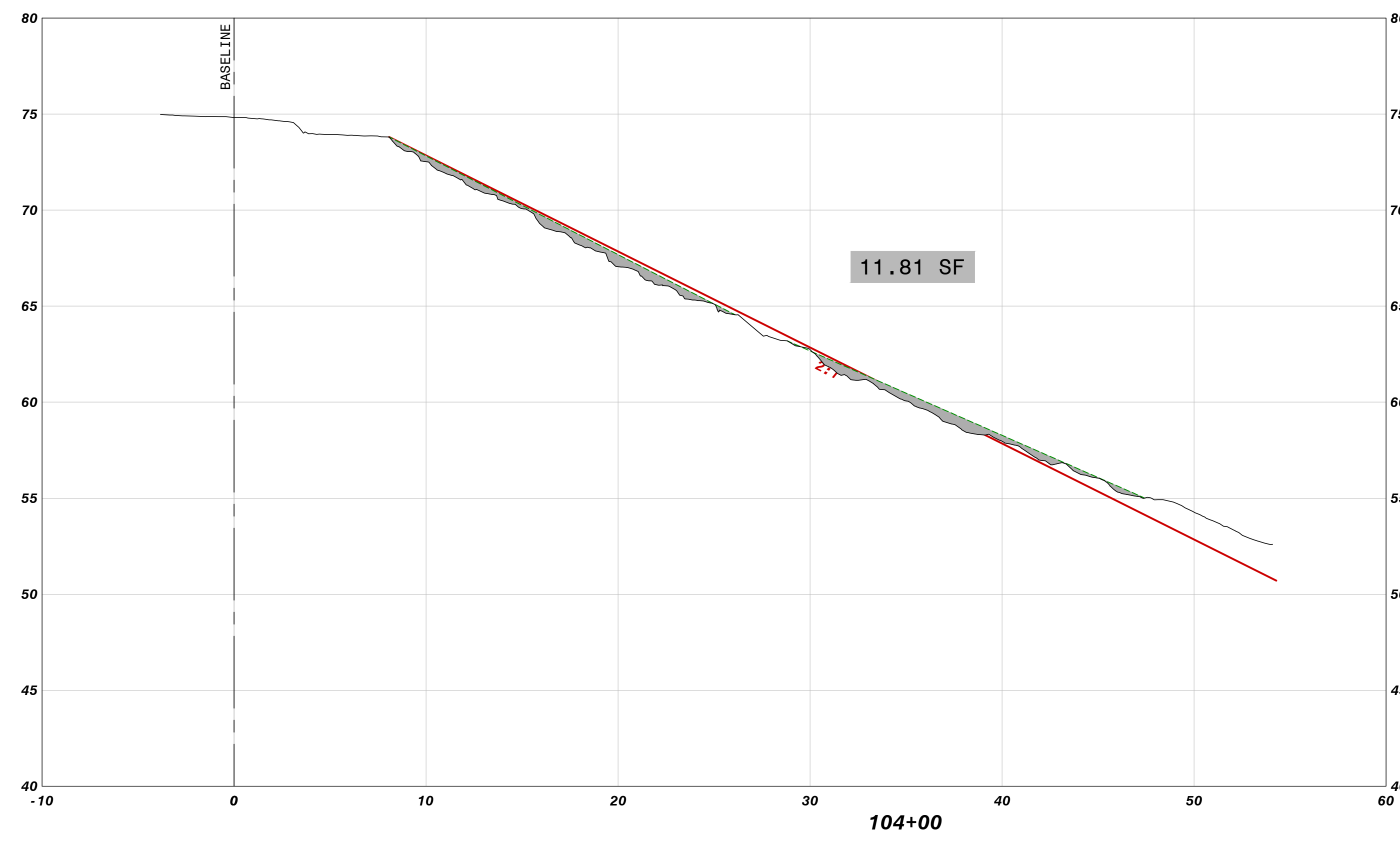
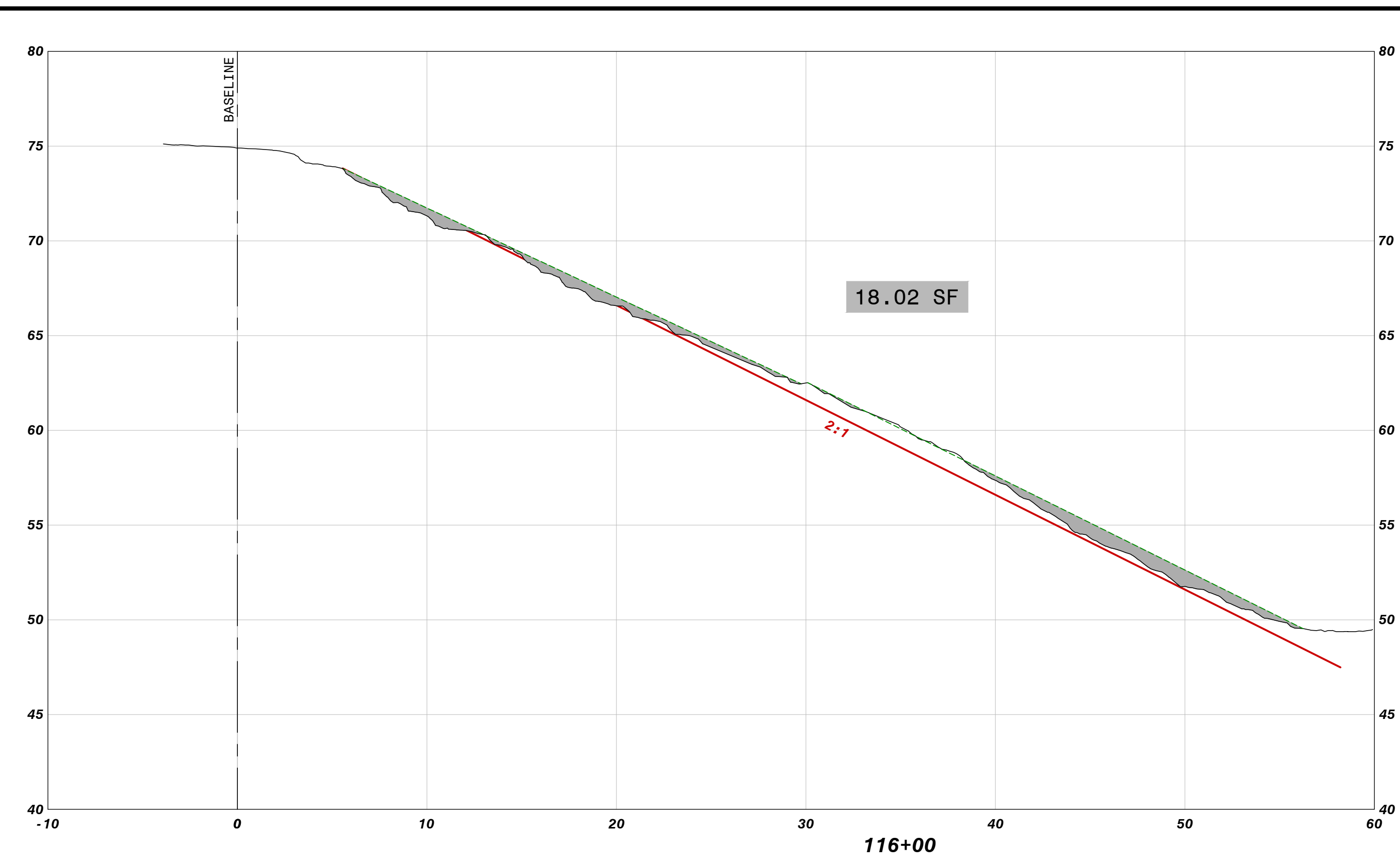
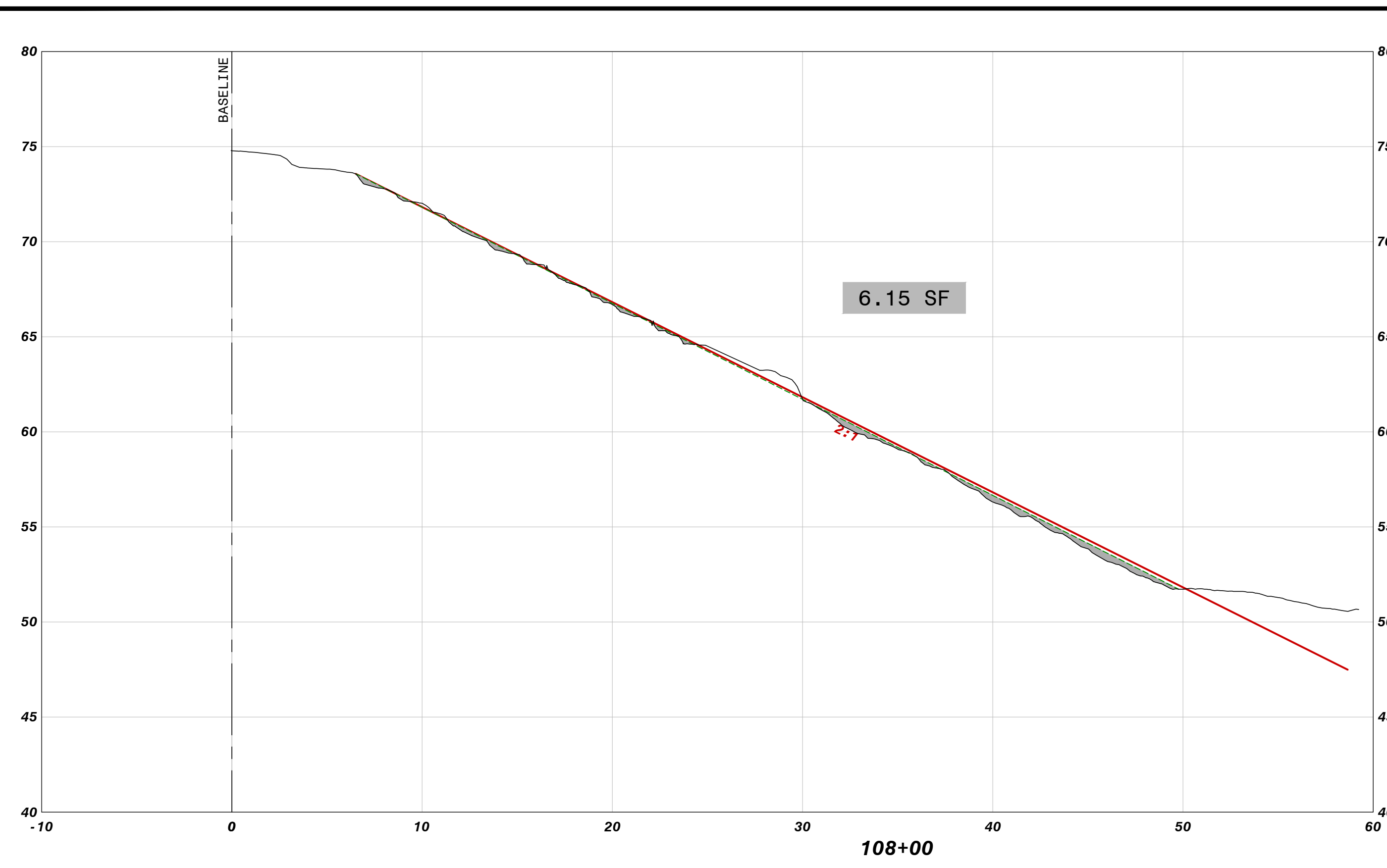
MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY

SOIL CEMENT CROSS SECTIONS
STA 88+00 TO STA 100+00
PARRISH, FLORIDA

DATE: June 17, 2015
DRAWN BY: MAJ
CHECKED BY: JAB
PROJECT NO.: 300906

JEFF BERISWILL, P.E.
FLA. REG. NO. 41823
DATE:

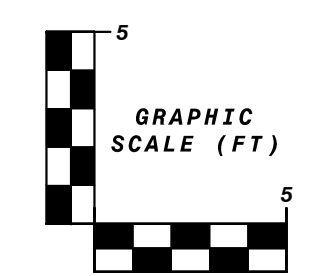
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
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REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

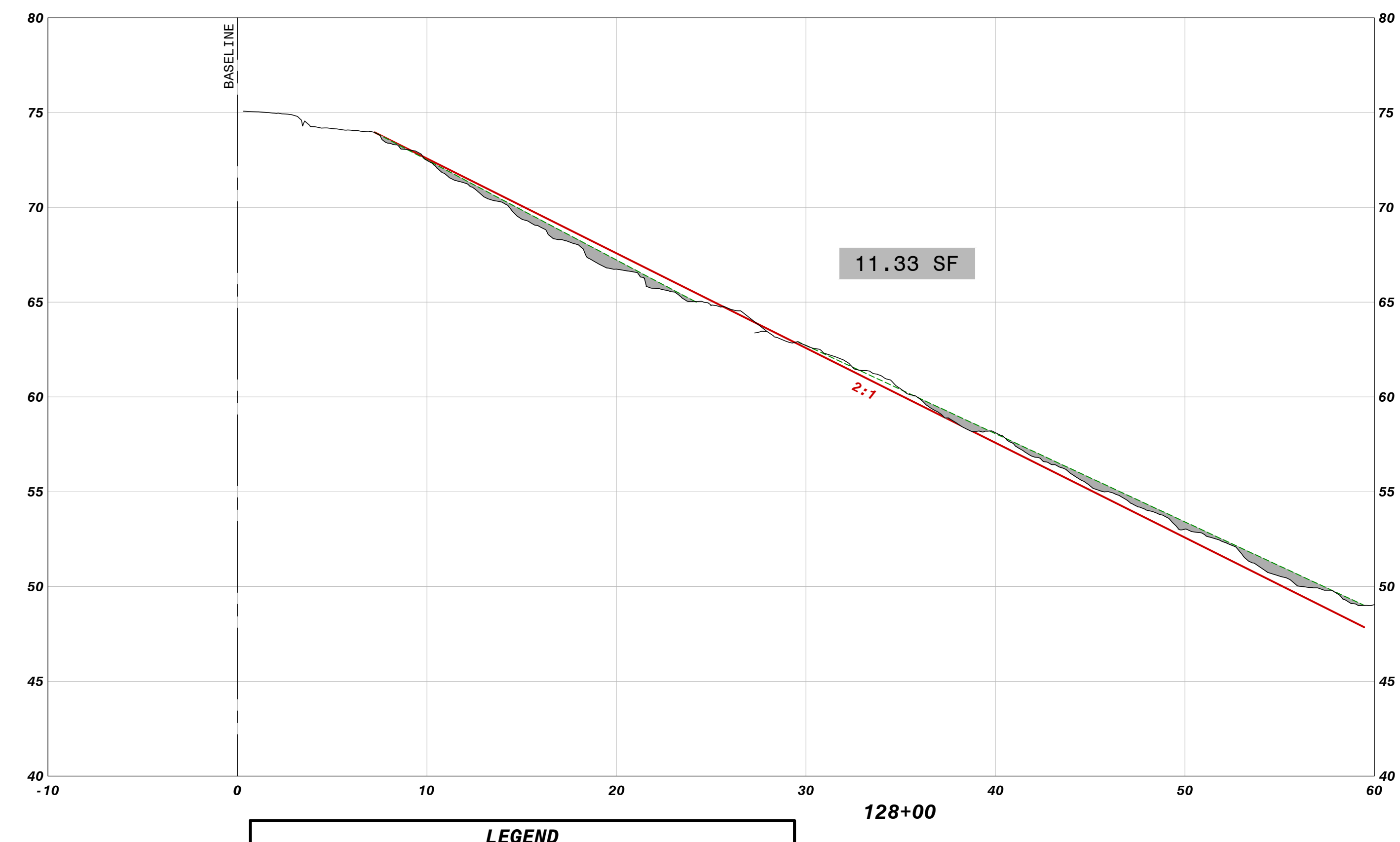
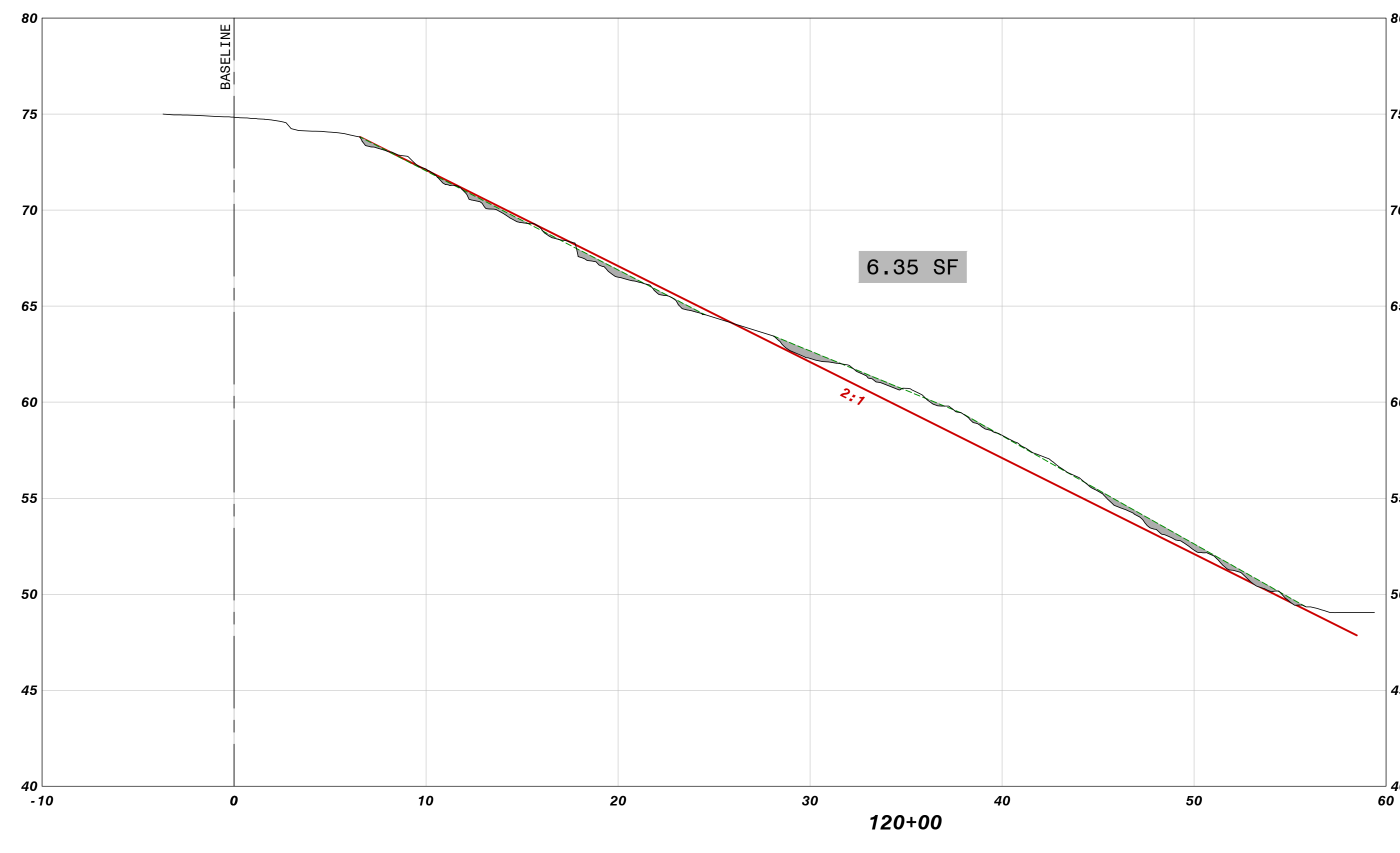
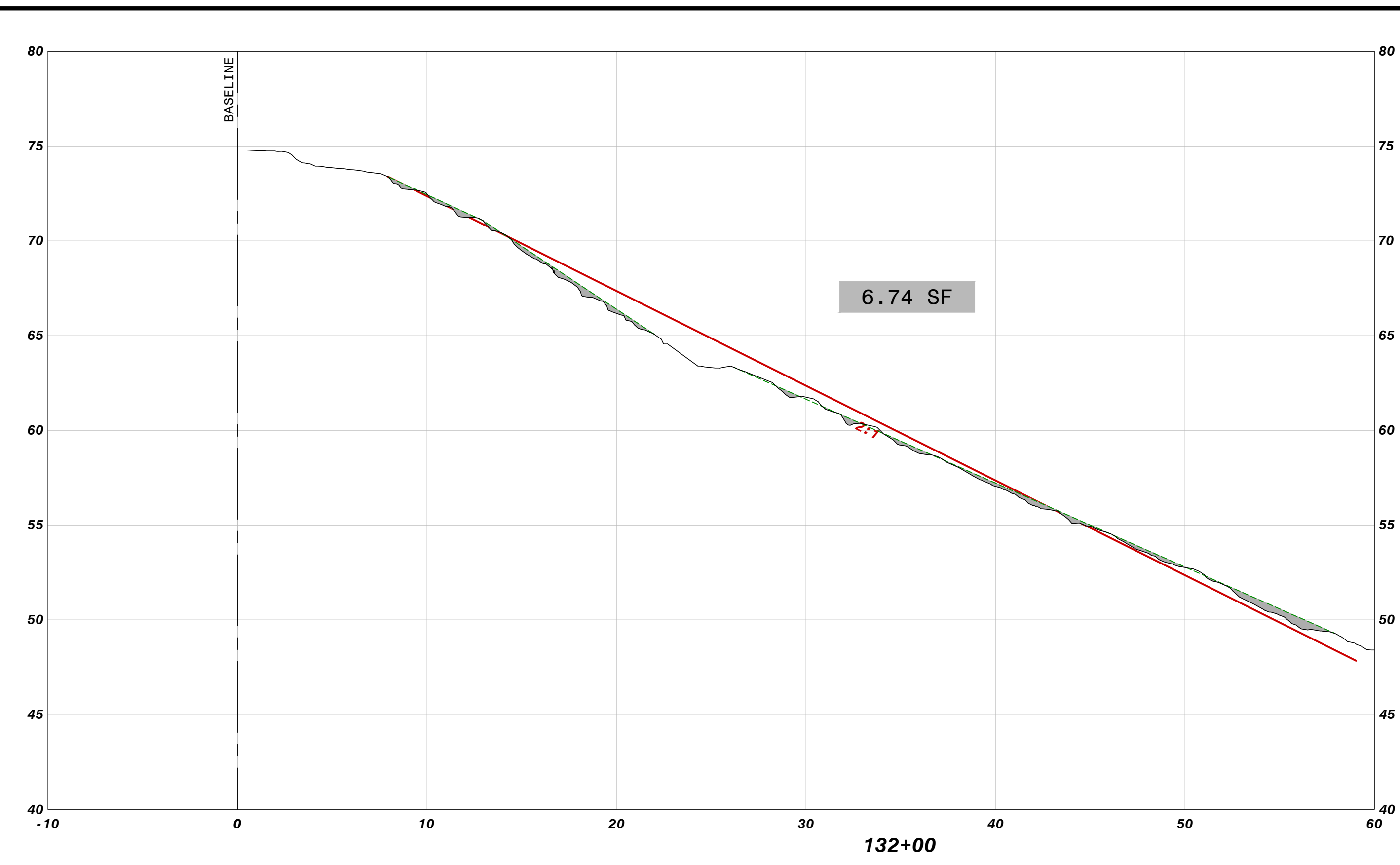
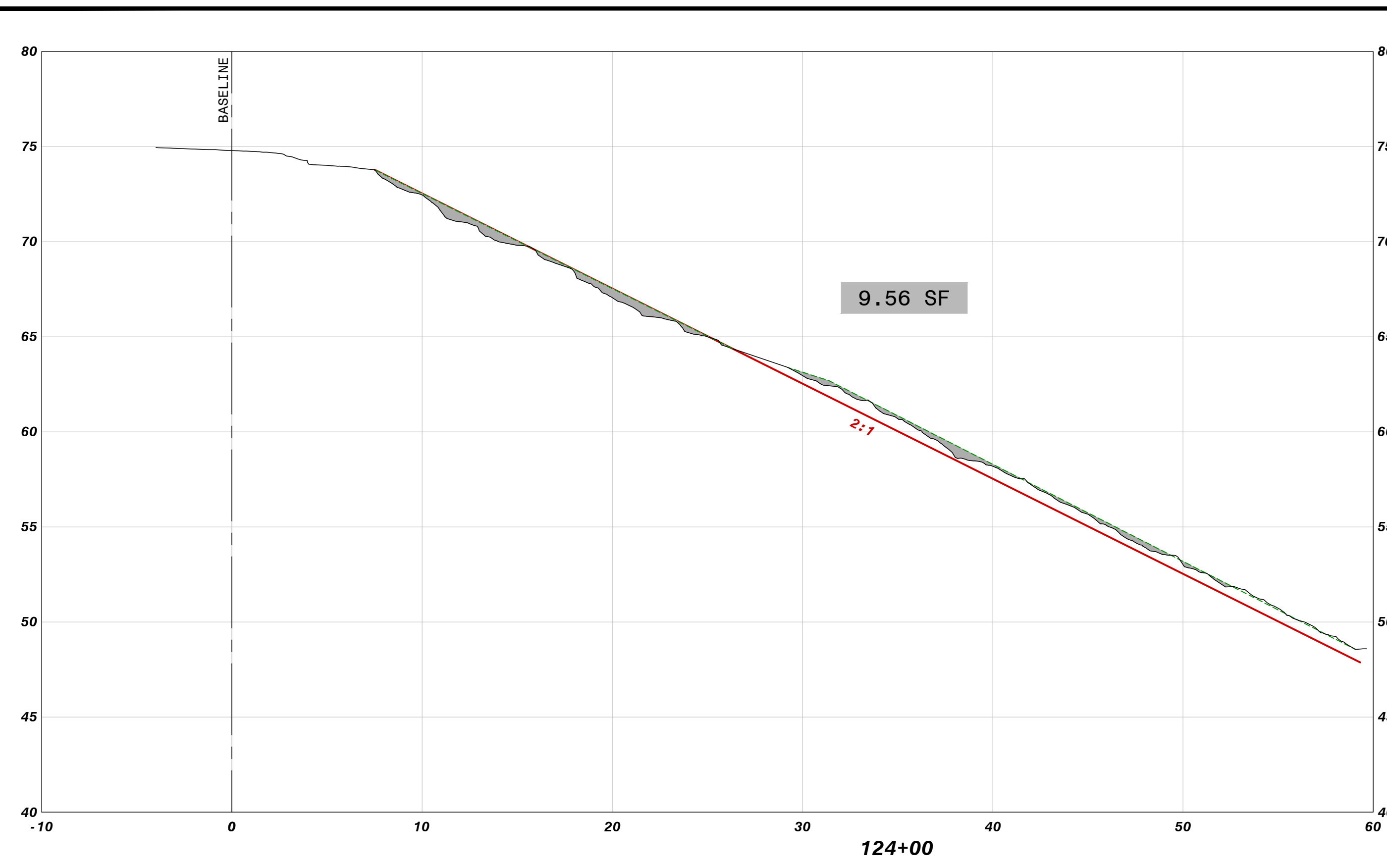
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 Amec Foster Wheeler
 Environment & Infrastructure, Inc.
 2000 E. Las Colinas Blvd., Suite 300
 Irving, TX 75039
 Phone: 1.863.867.2345 Fax: 1.863.867.2667
 www.amecfcw.com CA-5392

MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 104+00 TO STA 116+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
 FLA. REG. NO. 41823
 DATE:
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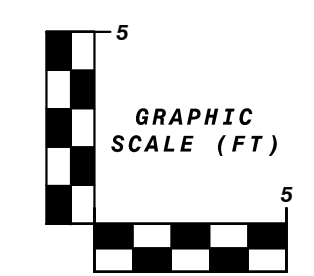
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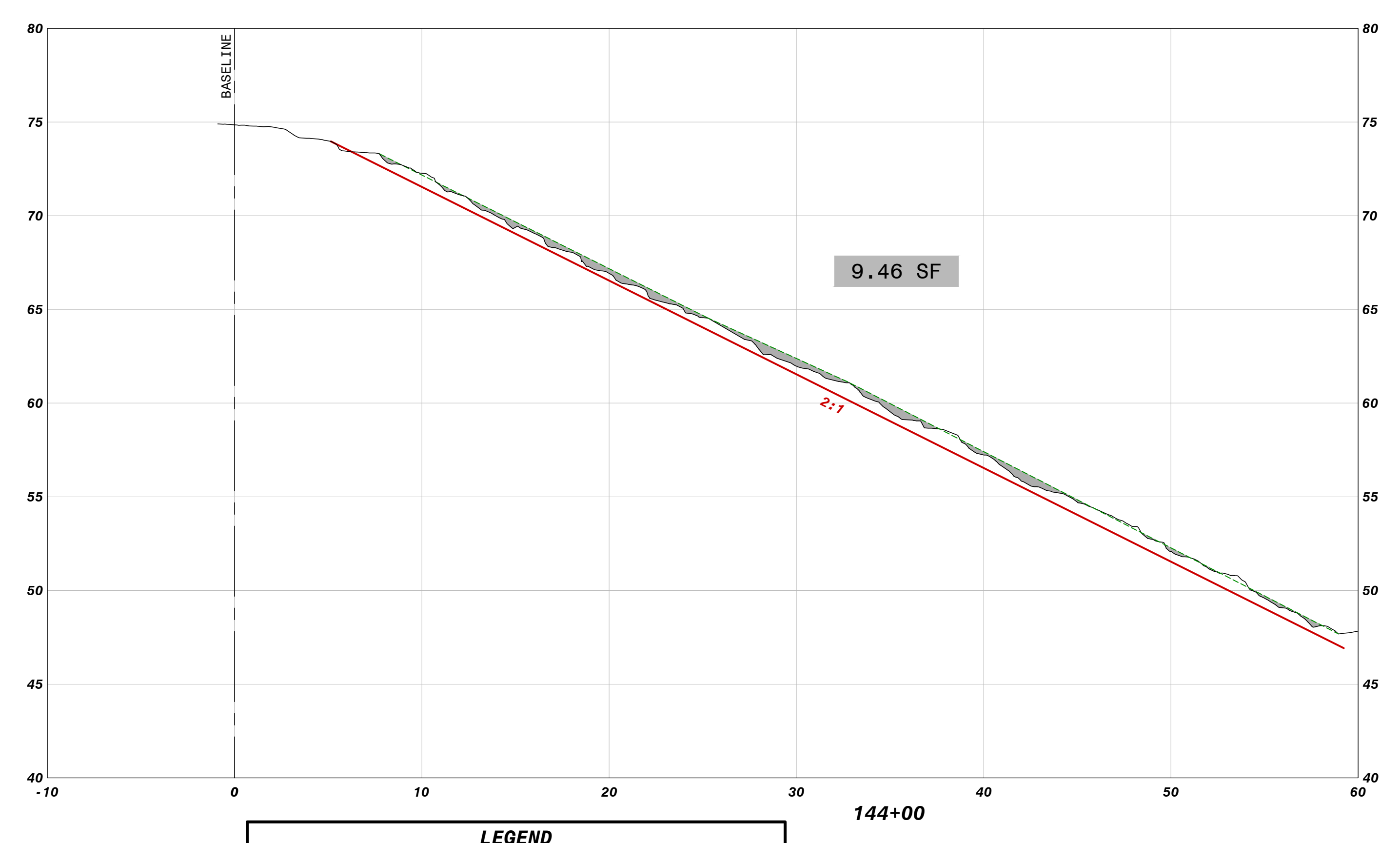
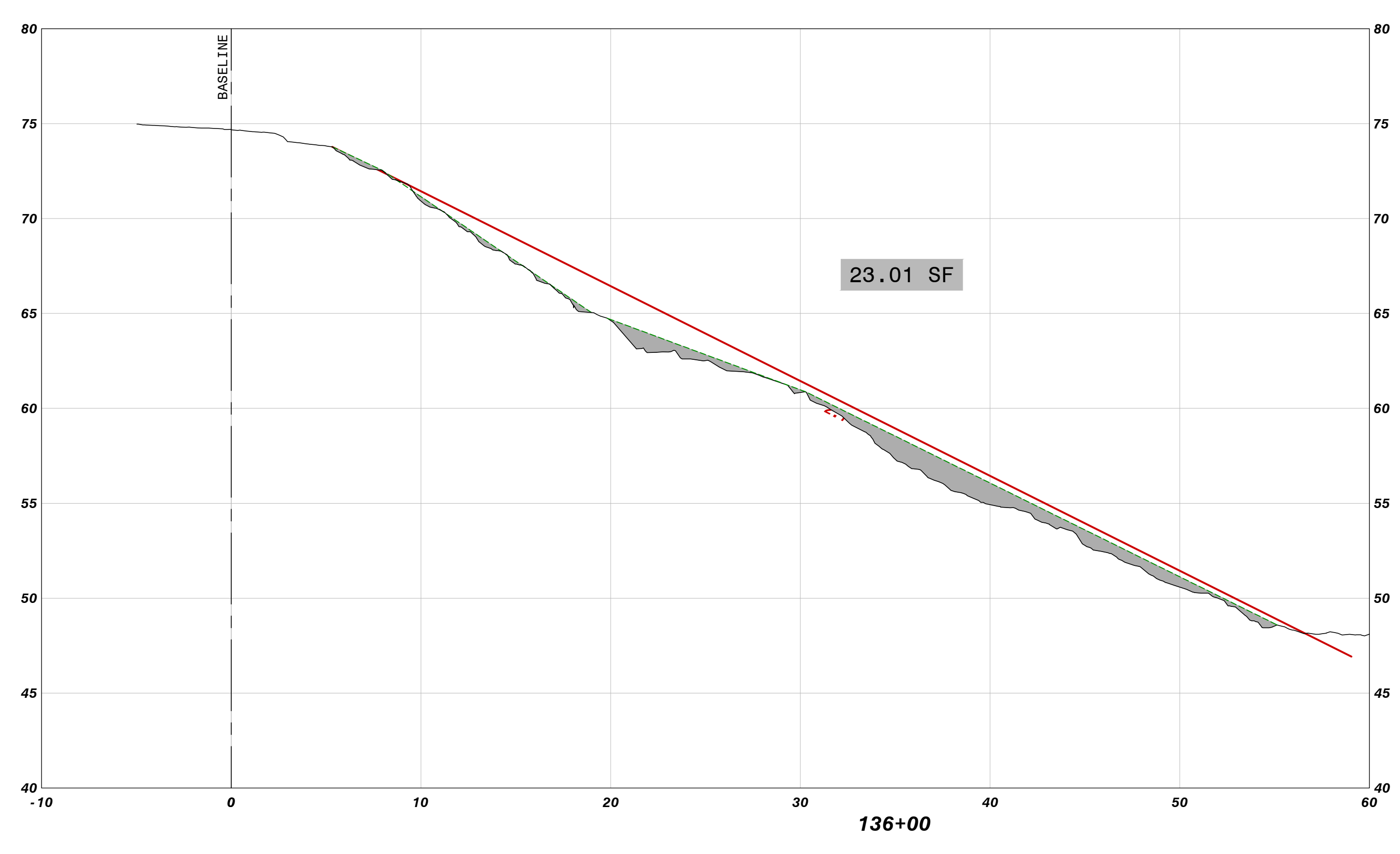
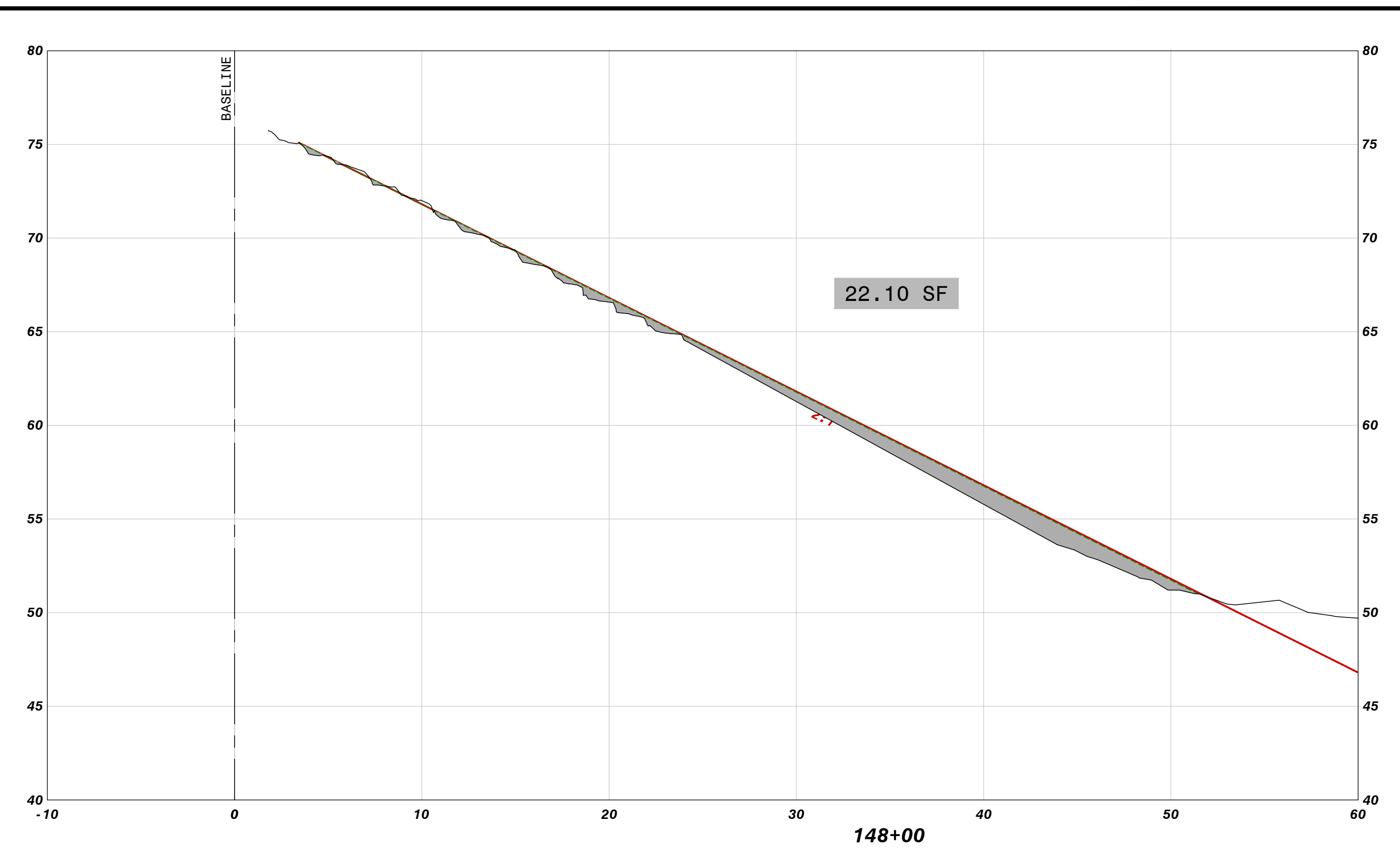
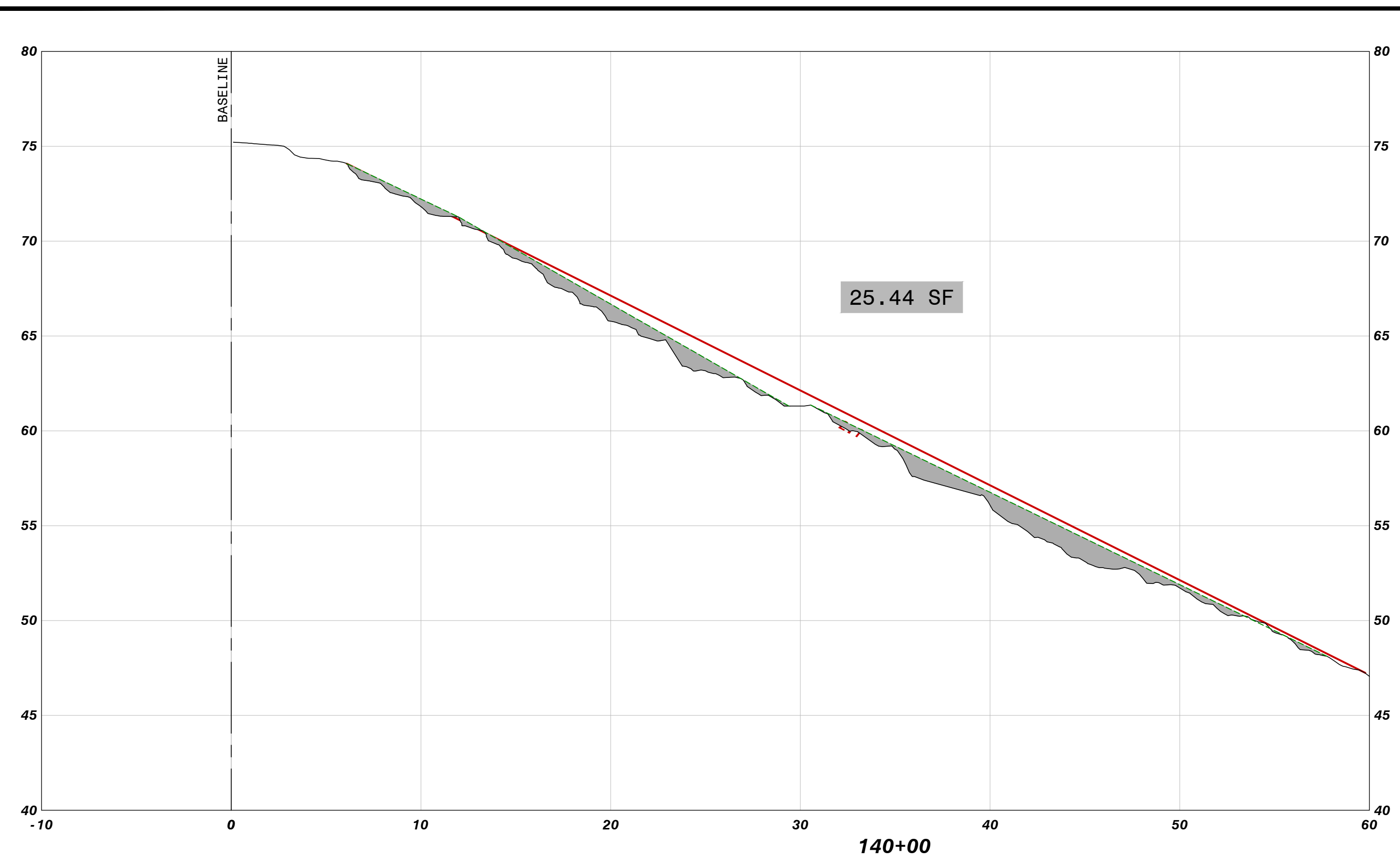
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- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392							NO.	DATE	REVISION	
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 120+00 TO STA 132+00 PARRISH, FLORIDA										
DATE: June 17, 2015										
DRAWN BY: MAJ										
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JEFF BERISWILL, P.E. FLA. REG. NO. 41823										
DATE:										
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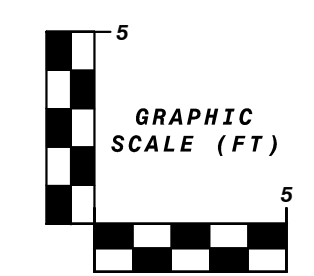
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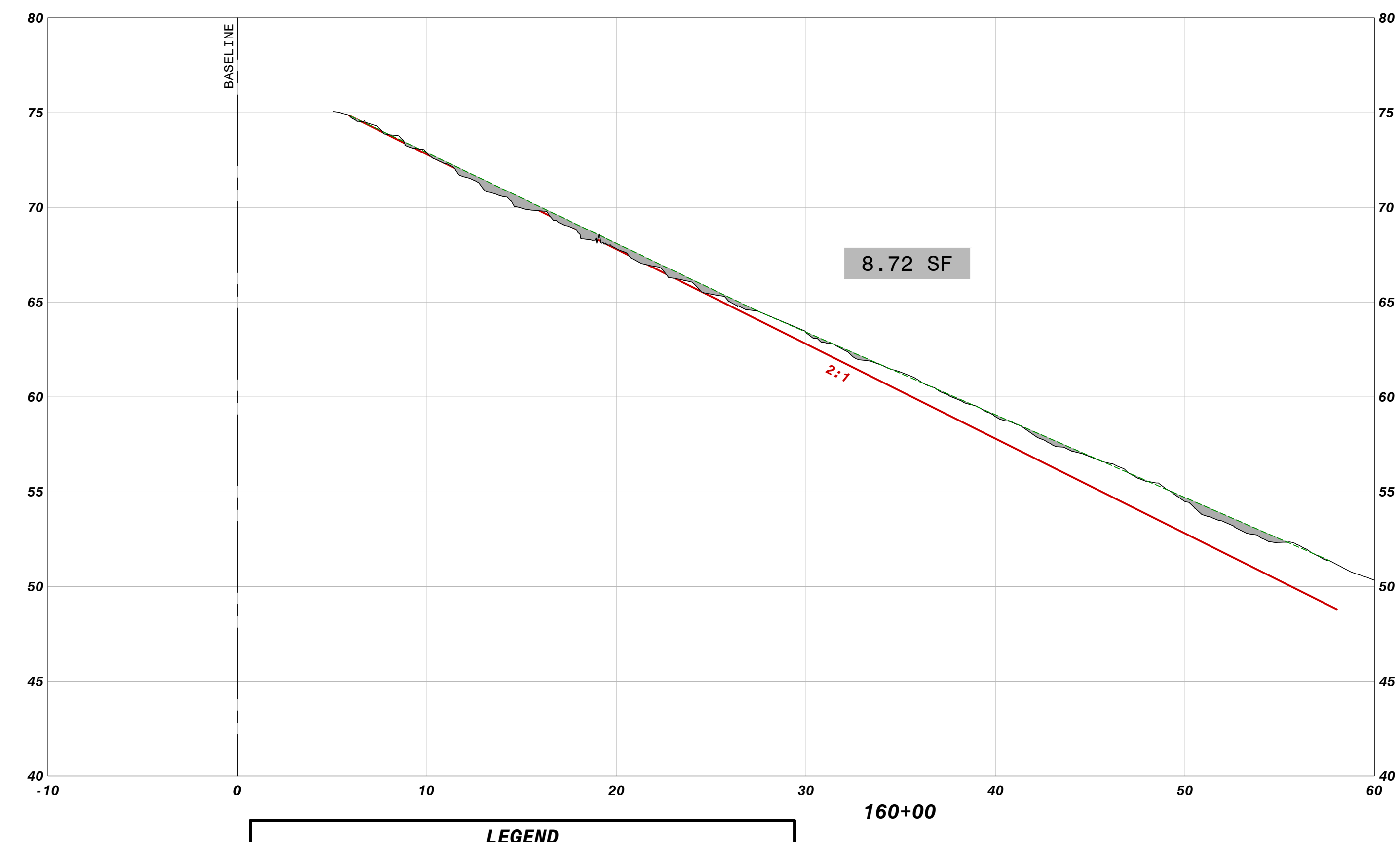
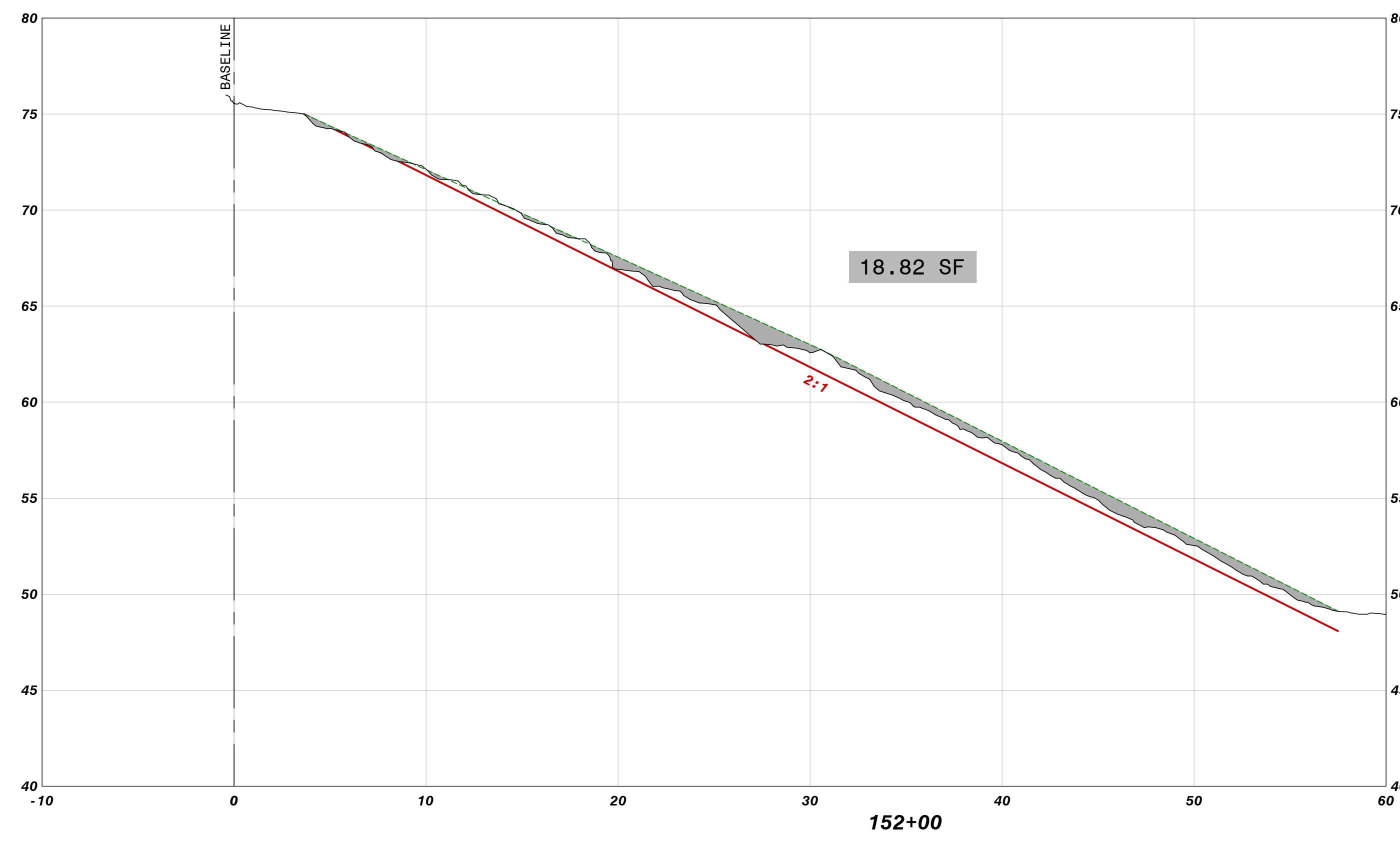
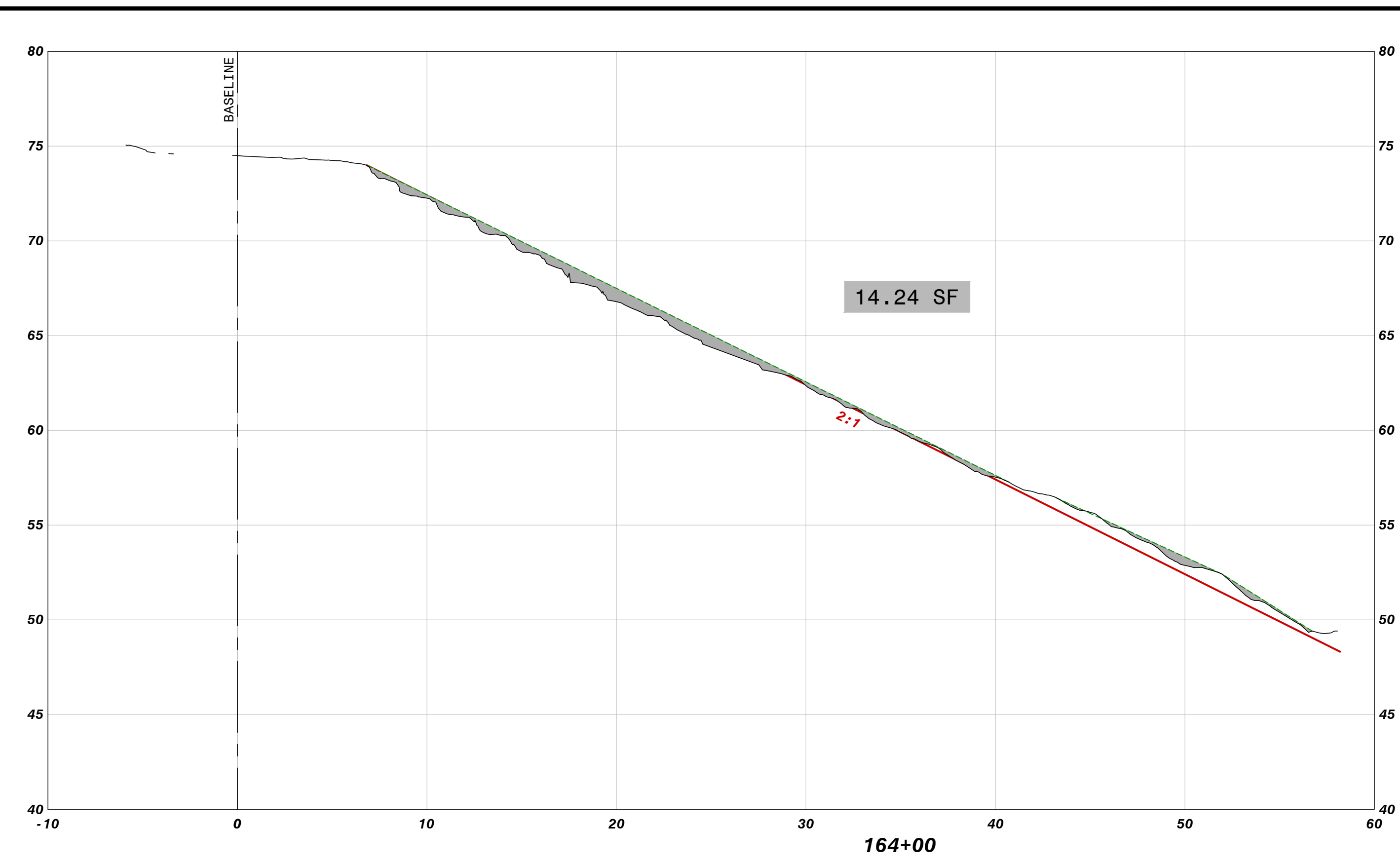
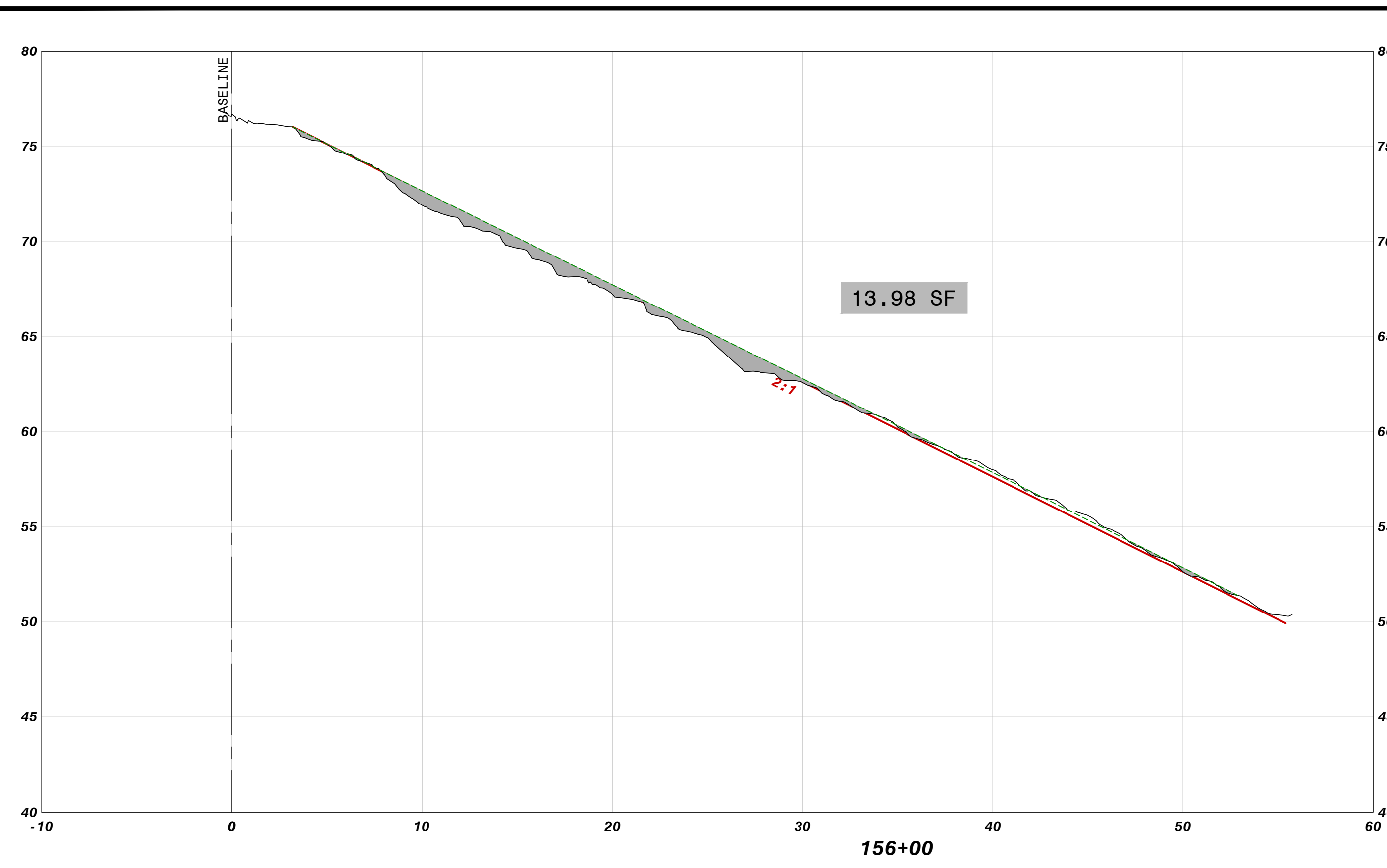
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- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



							NO. DATE REVISION
amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392							
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 136+00 TO STA 148+00 PARRISH, FLORIDA							
DATE: June 17, 2015							
DRAWN BY: MAJ							
CHECKED BY: JAB							
PROJECT NO.: 300906							
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823							
DATE:							
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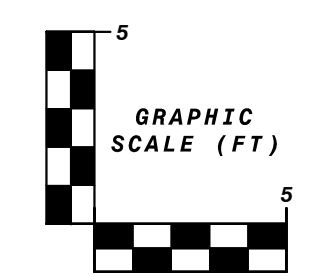
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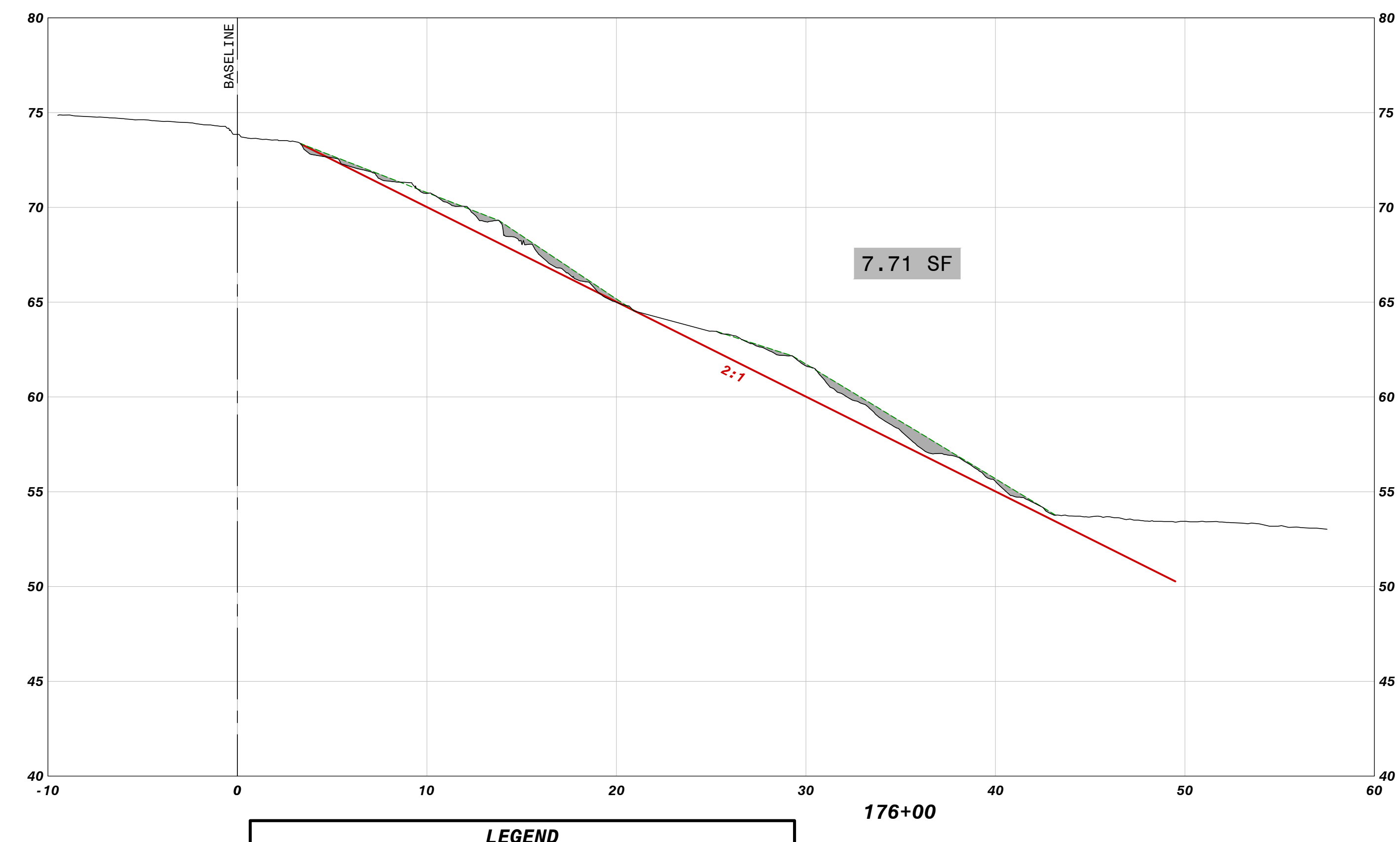
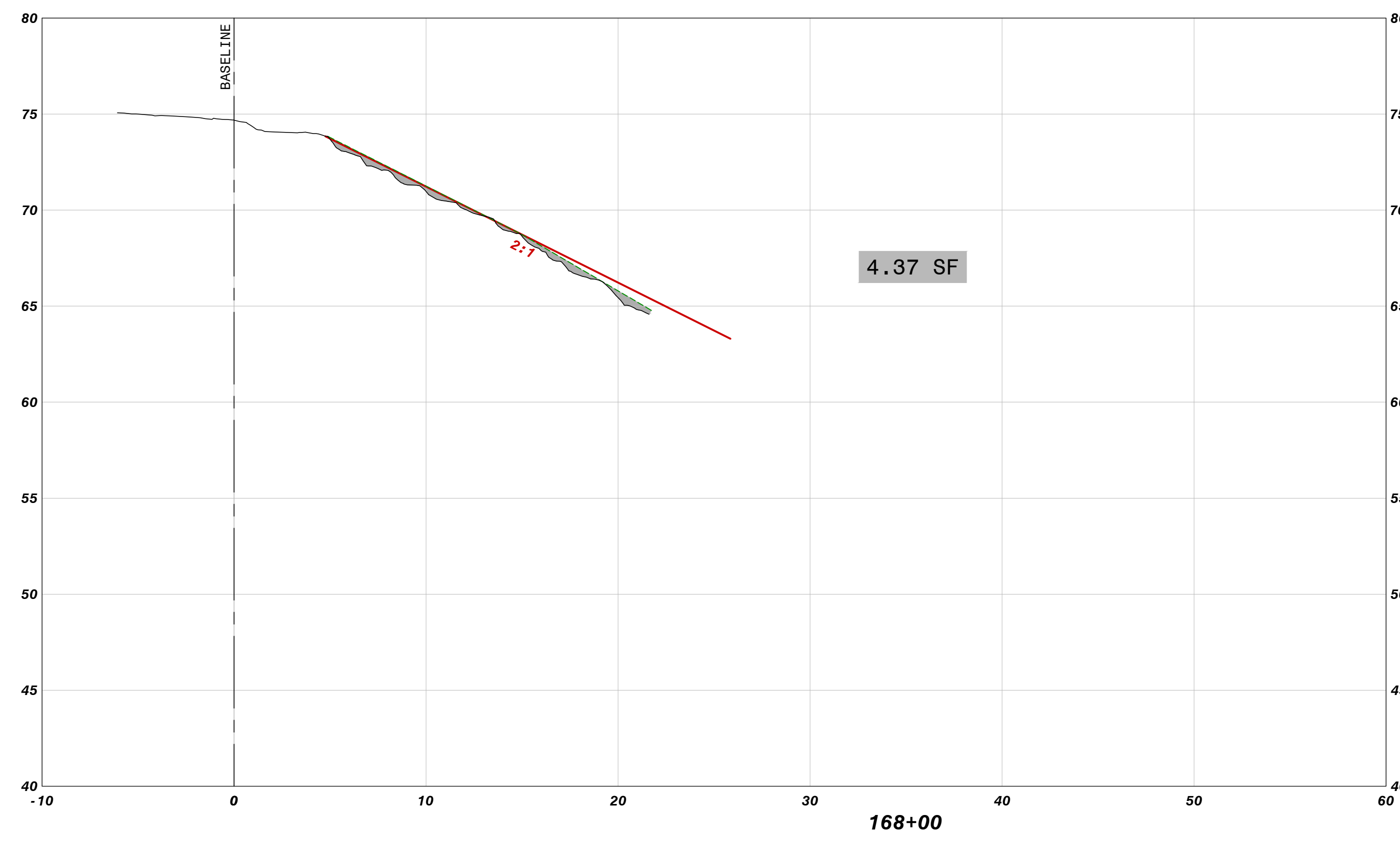
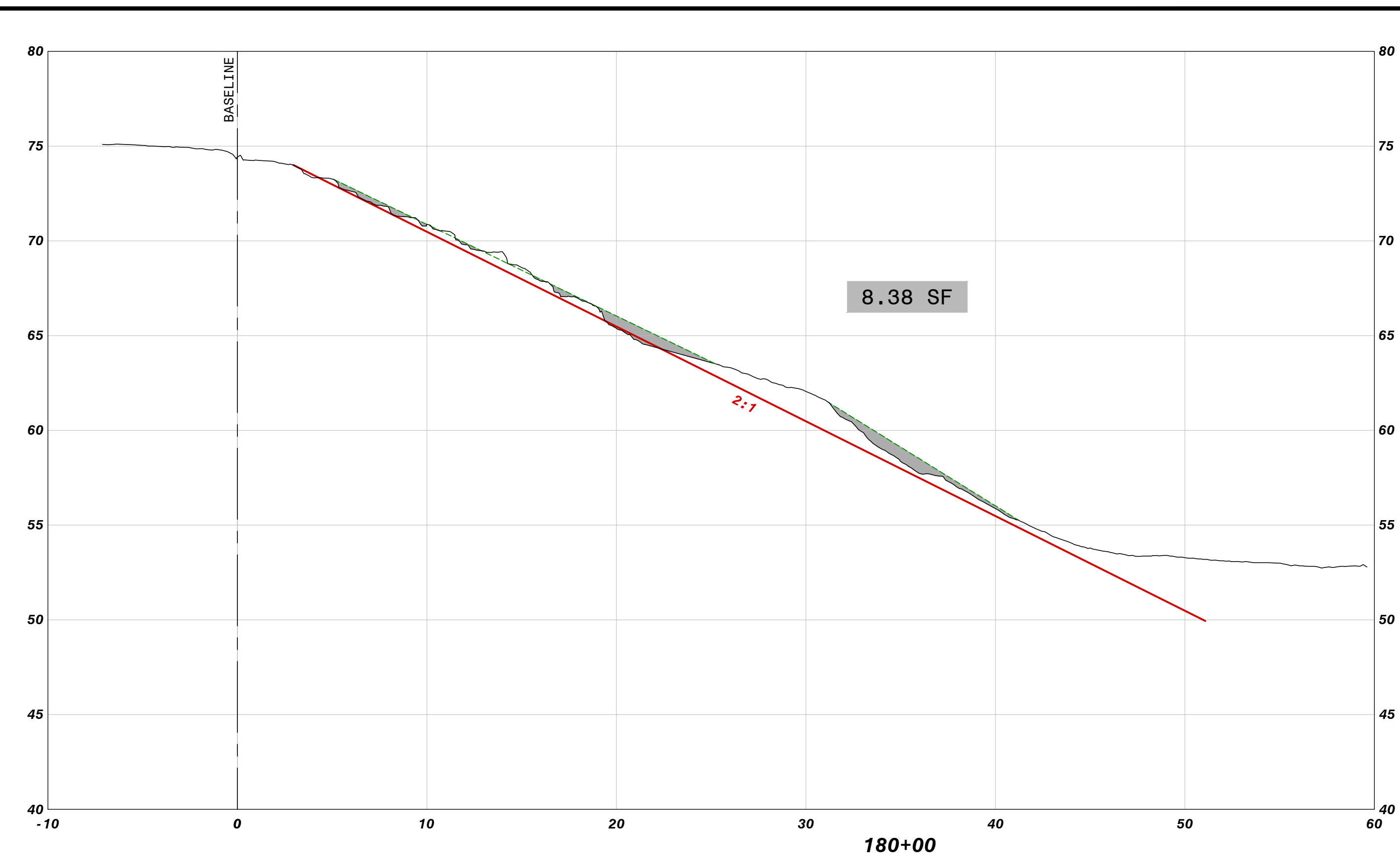
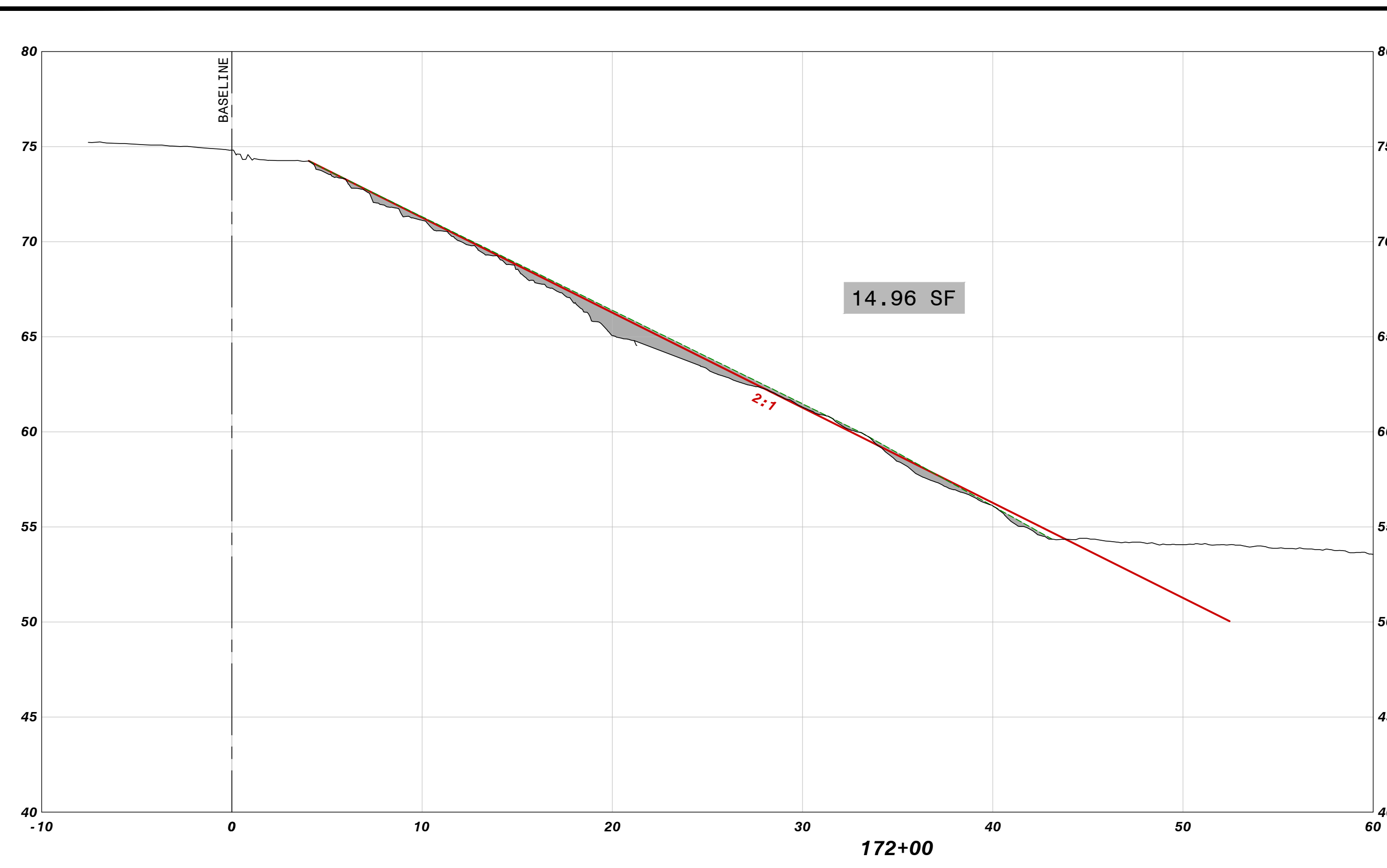
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- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



 Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 El Camino Real, Suite 300 San Diego, CA 92108 Phone: 619.444.2345 Fax: 619.444.2667 www.amec.com CA-5392	
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY	SOIL CEMENT CROSS SECTIONS STA 152+00 TO STA 160+00 PARRISH, FLORIDA
DATE: June 17, 2015 DRAWN BY: MAJ CHECKED BY: JAB PROJECT NO.: 300906	
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823 DATE:	
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NO.	REVISION

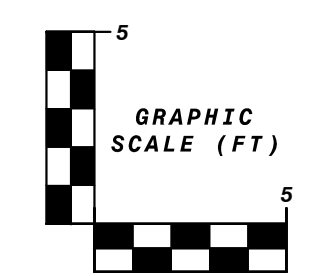
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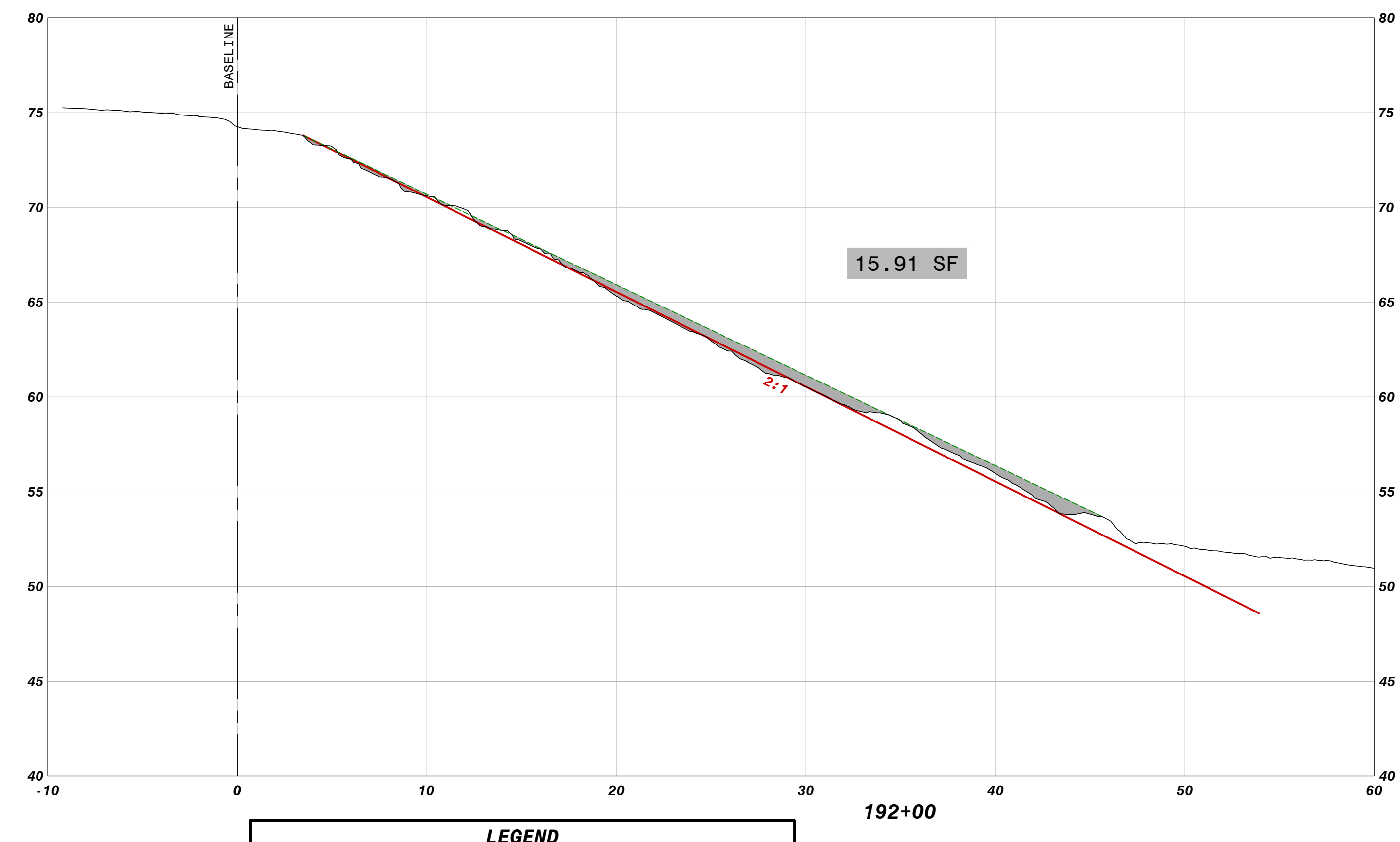
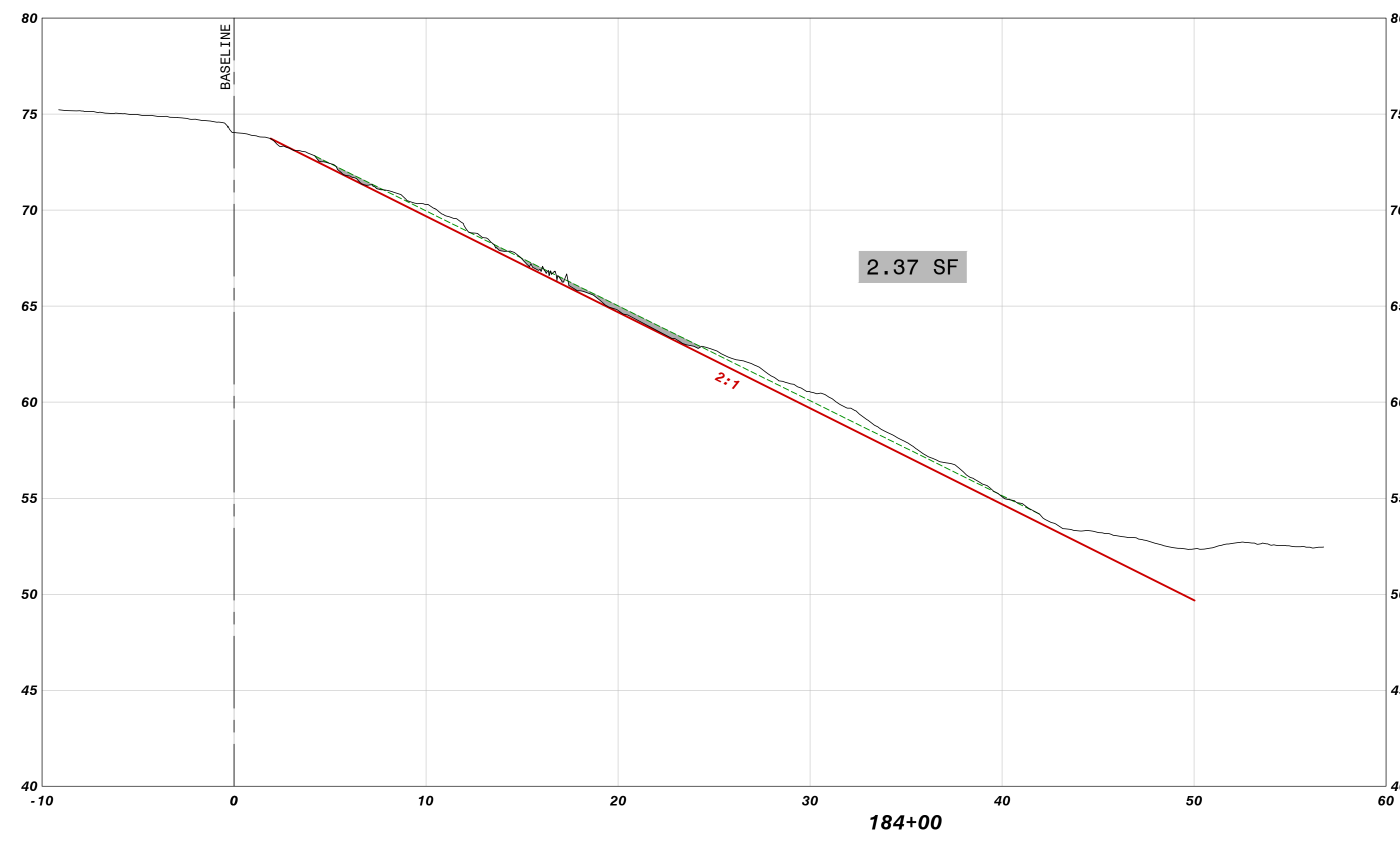
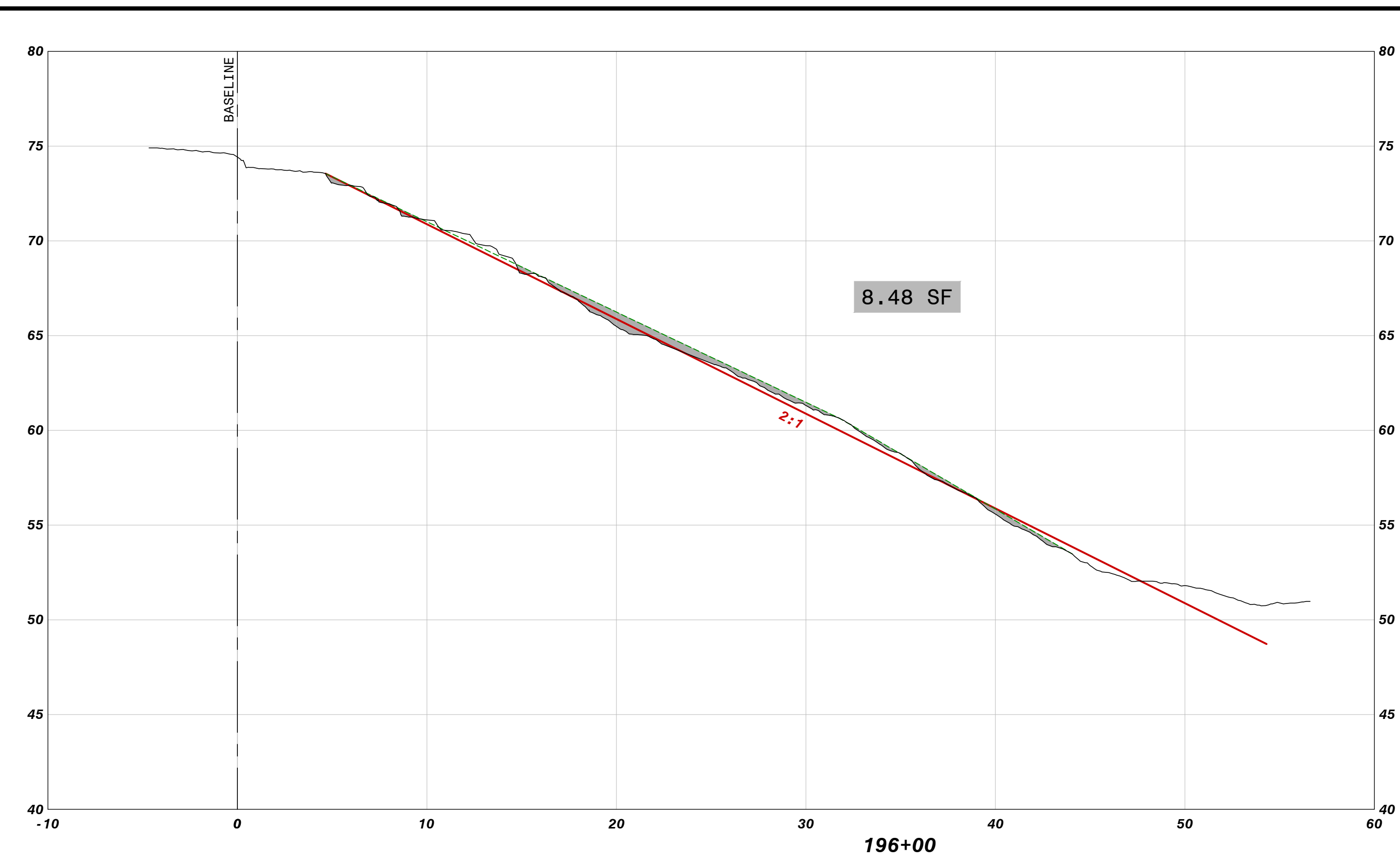
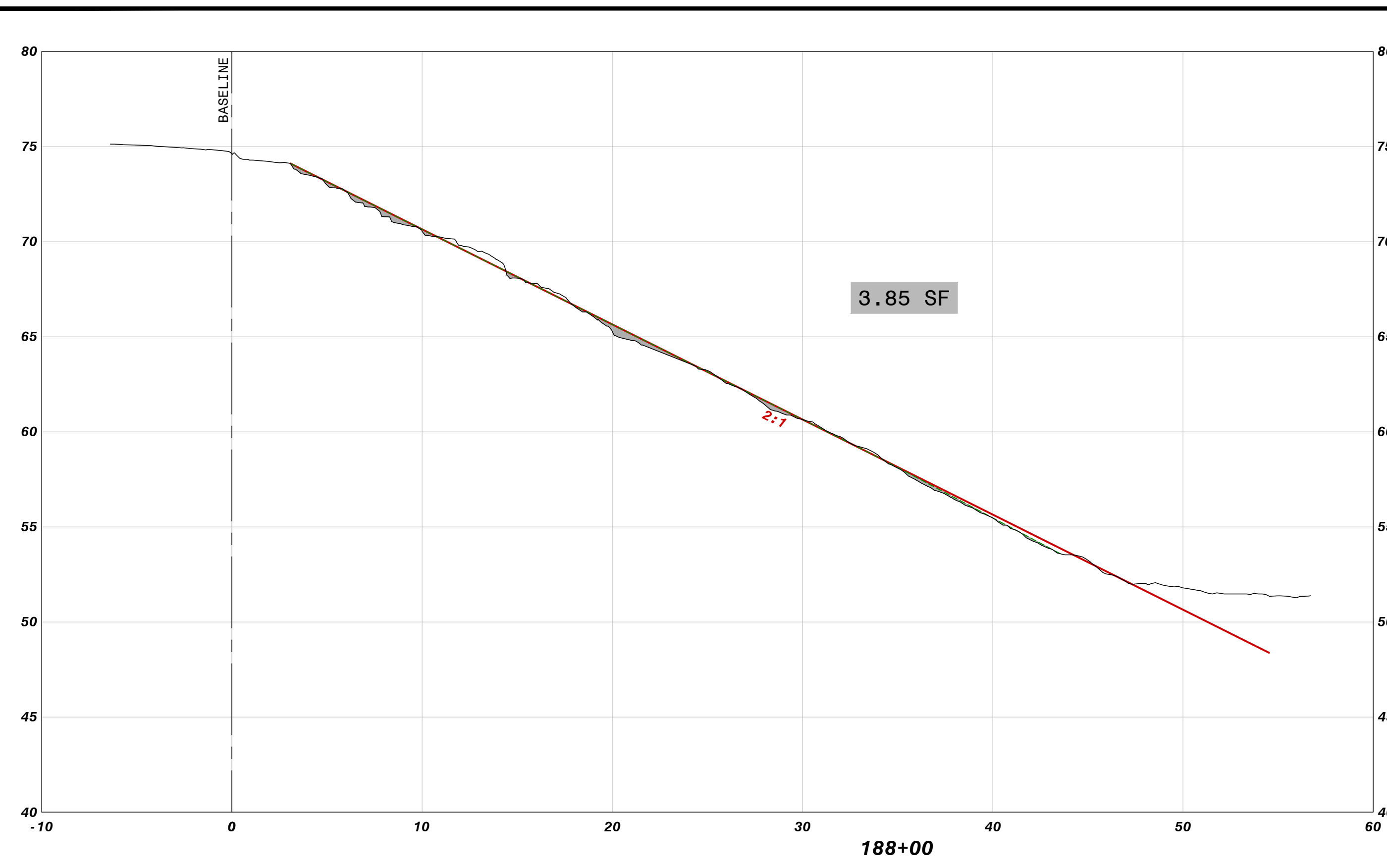
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392		NO.	DATE	REVISION
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 168+00 TO STA 180+00 PARRISH, FLORIDA				
DATE: June 17, 2015				
DRAWN BY: MAJ				
CHECKED BY: JAB				
PROJECT NO.: 300906				
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823				
DATE:				
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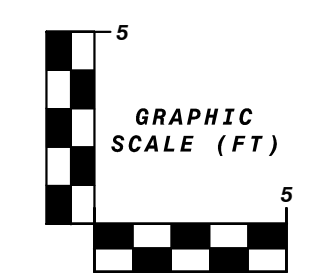
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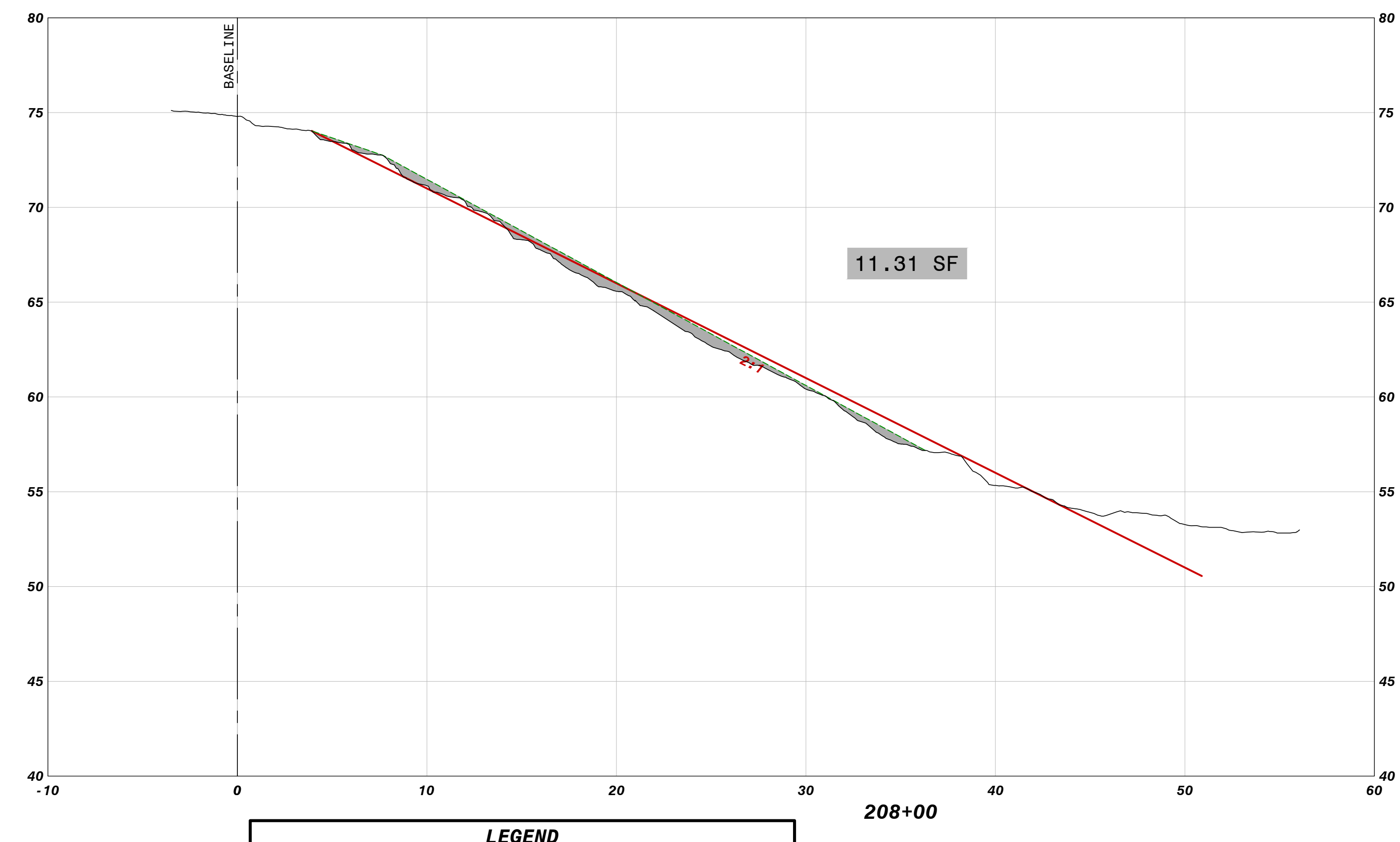
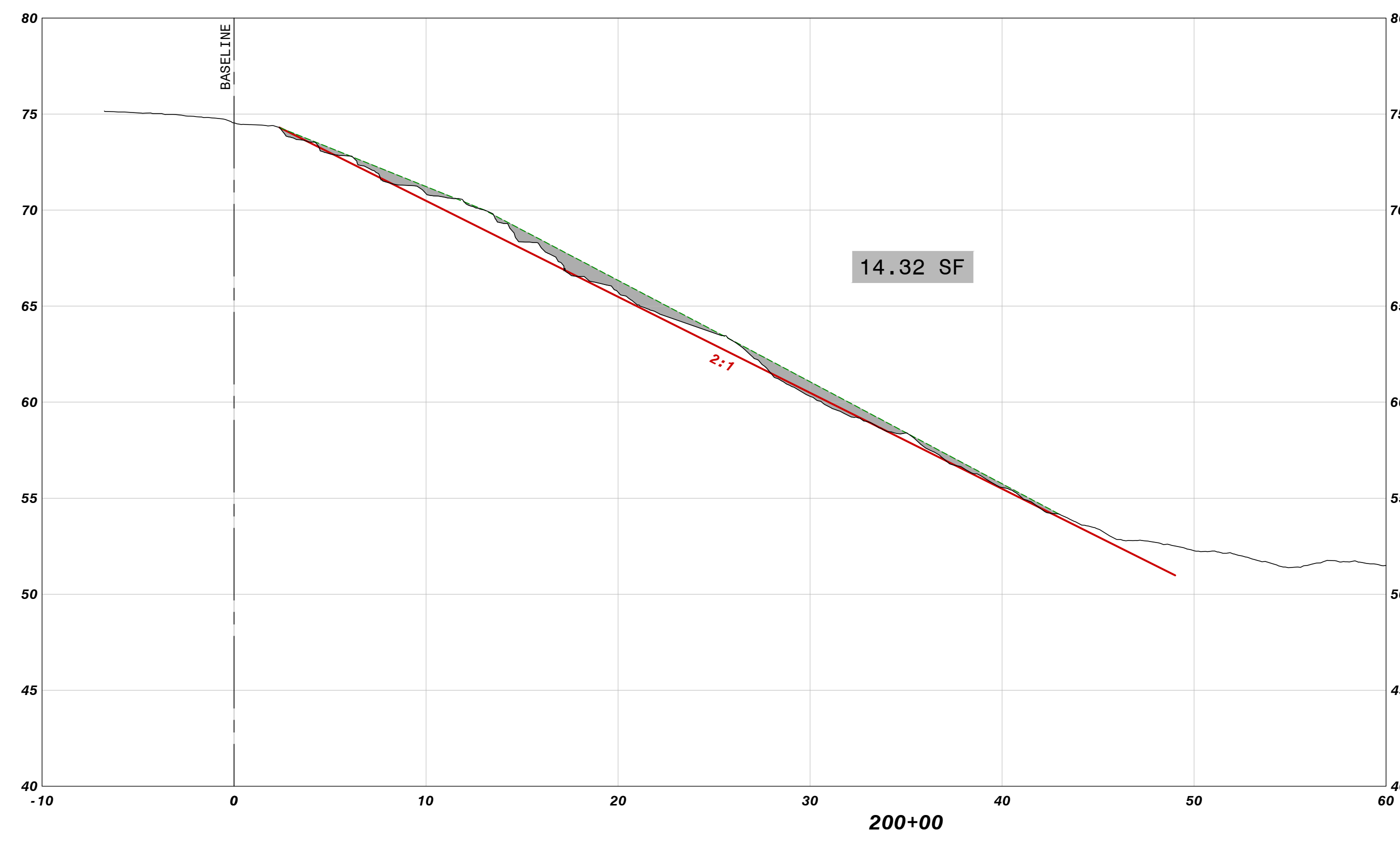
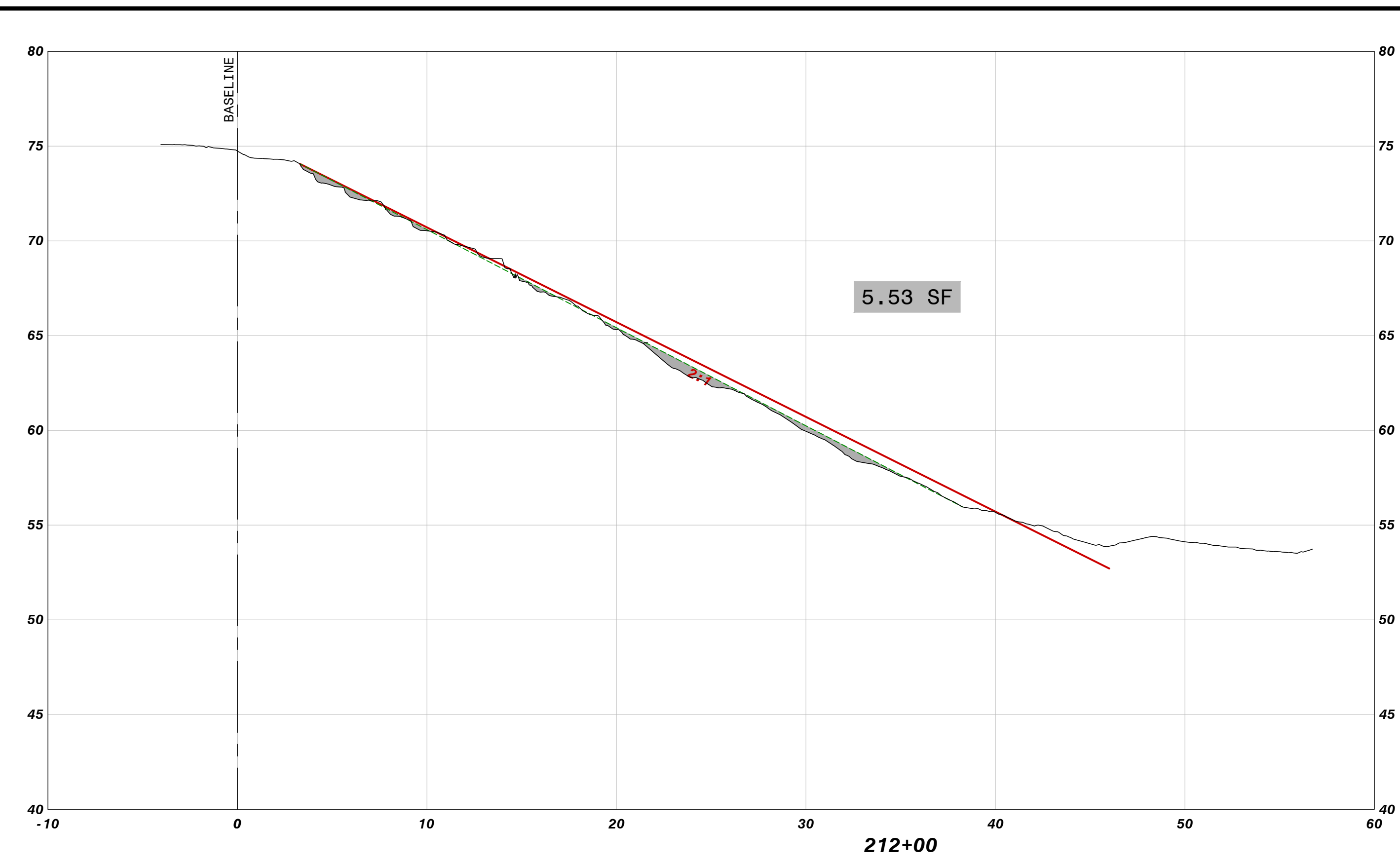
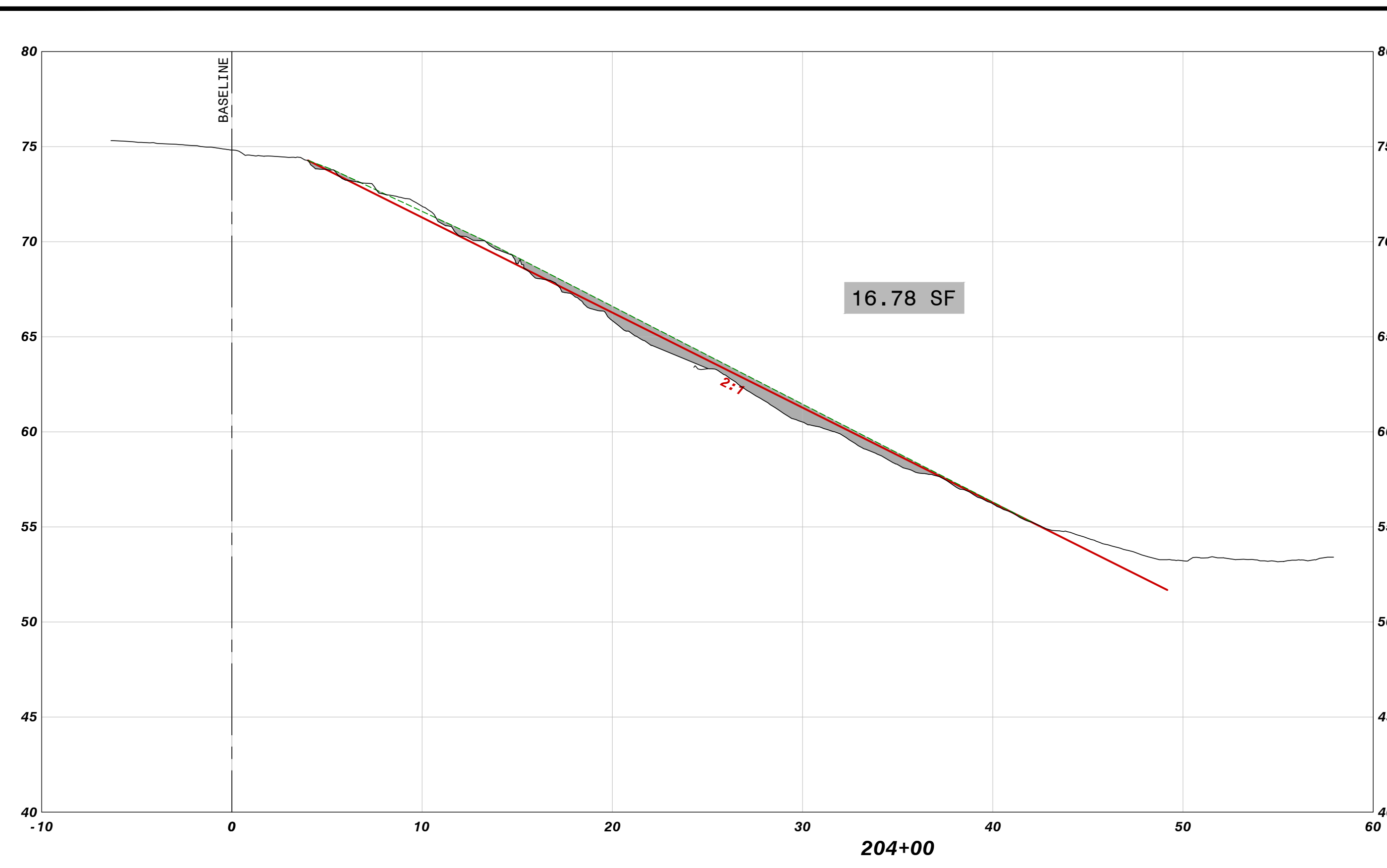
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- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 El Camino Real, Suite 300 San Diego, CA 92108 Phone: 619.444.2345 Fax: 619.444.2667 www.amec.com CA-5392							
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 184+00 TO STA 196+00 PARRISH, FLORIDA							
DATE: June 17, 2015							
DRAWN BY: MAJ							
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PROJECT NO.: 300906							
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DATE:							
12							

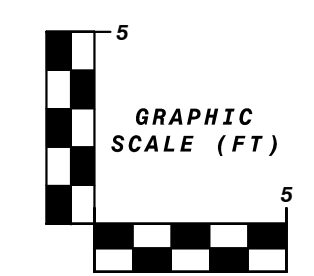
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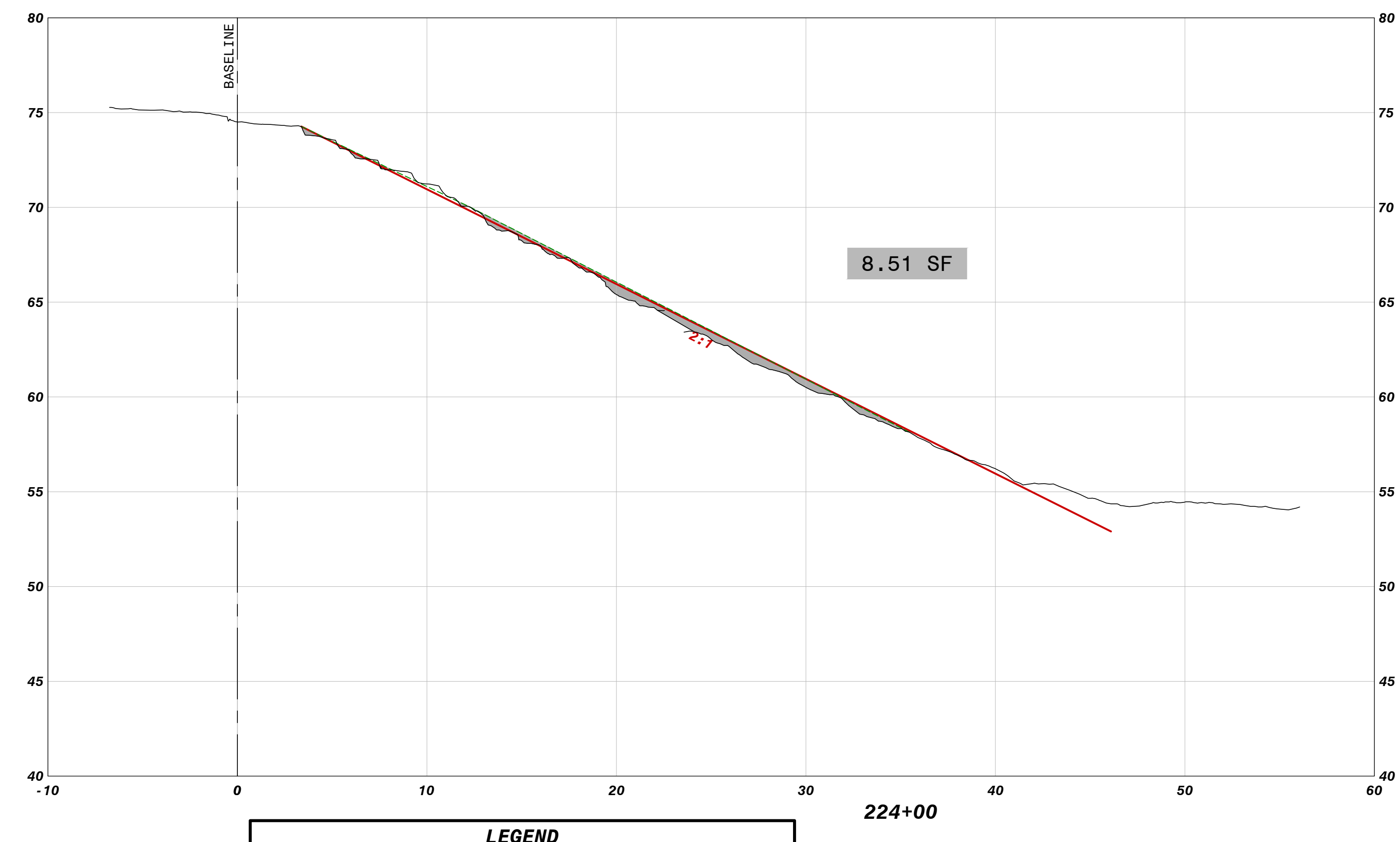
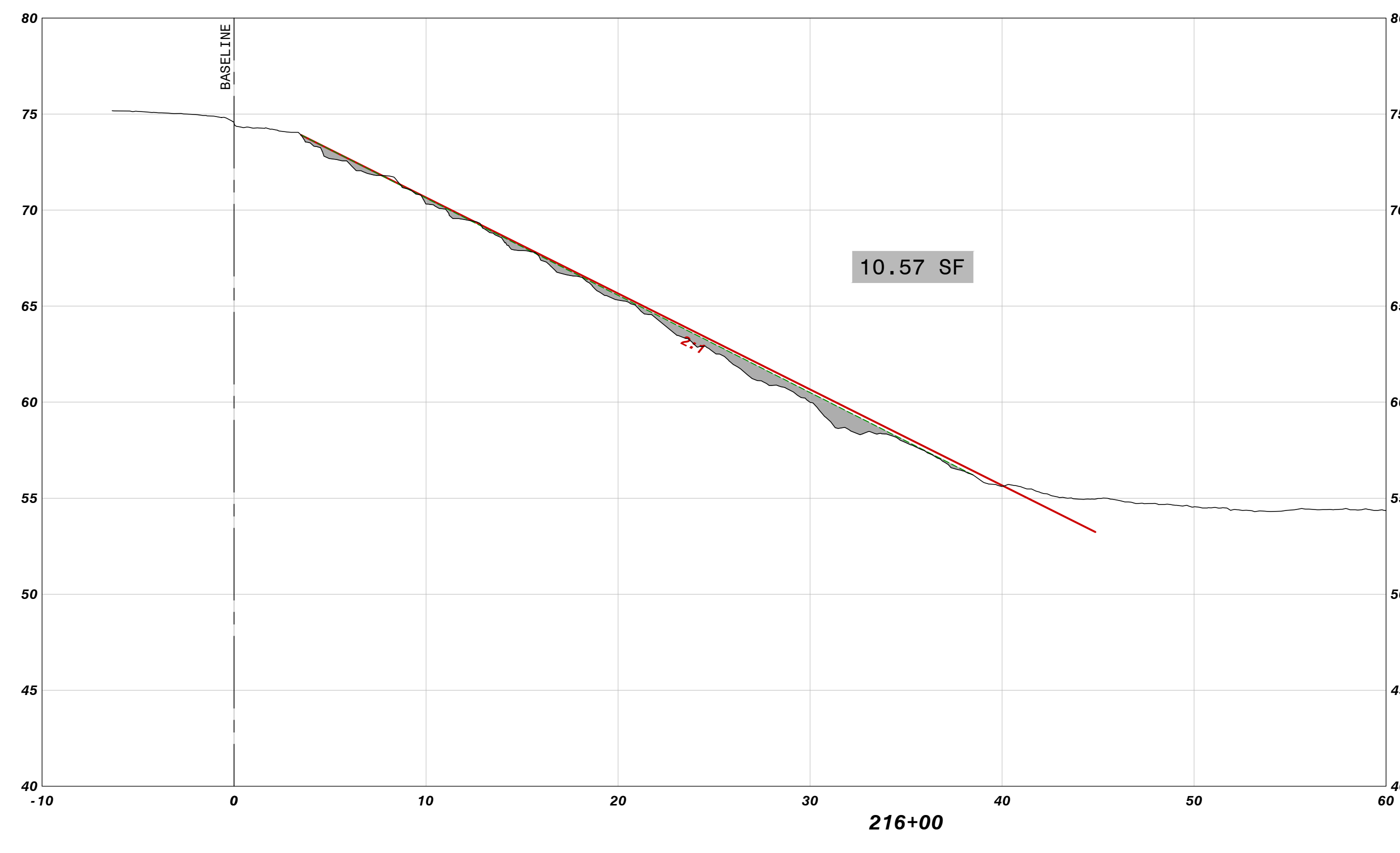
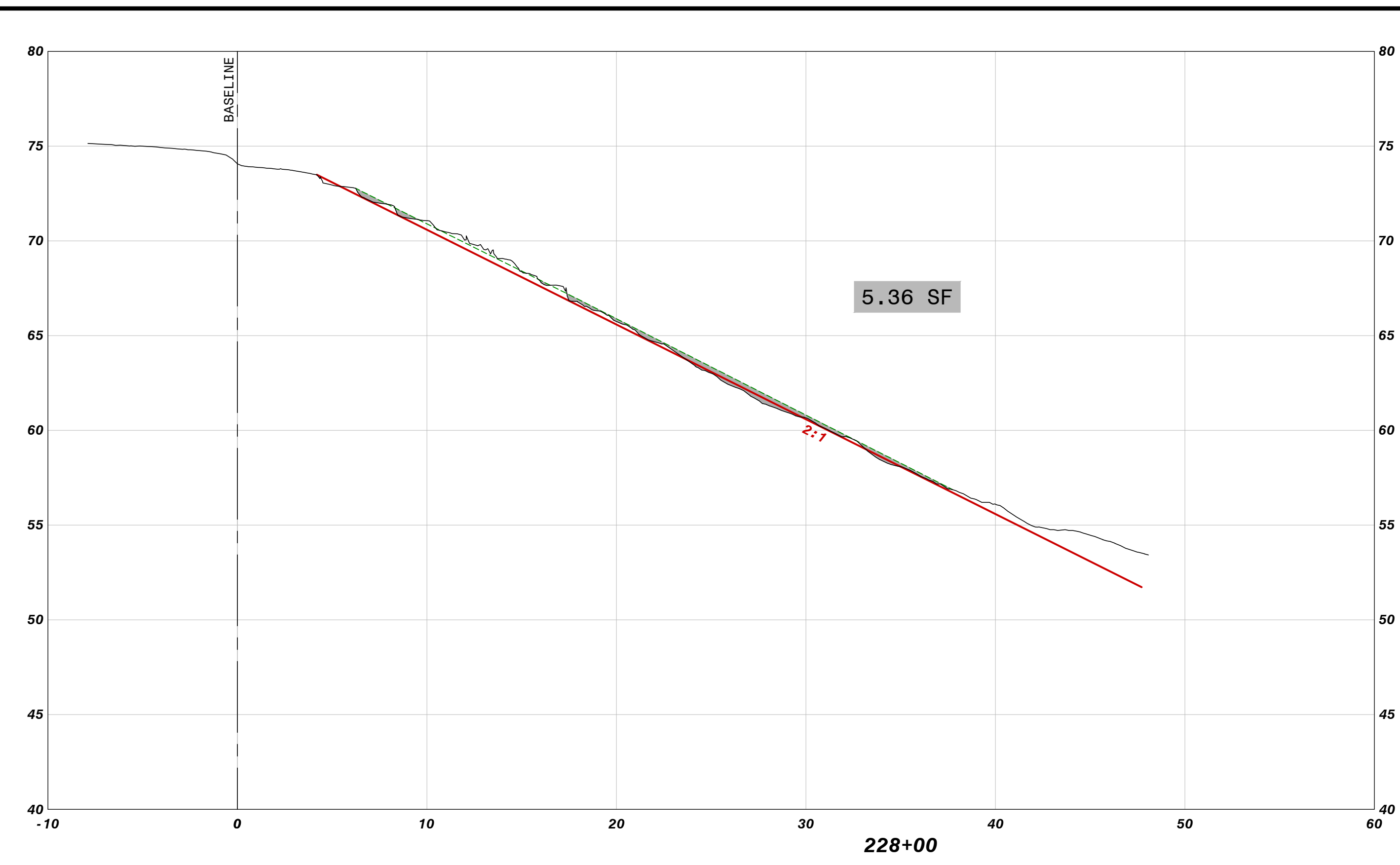
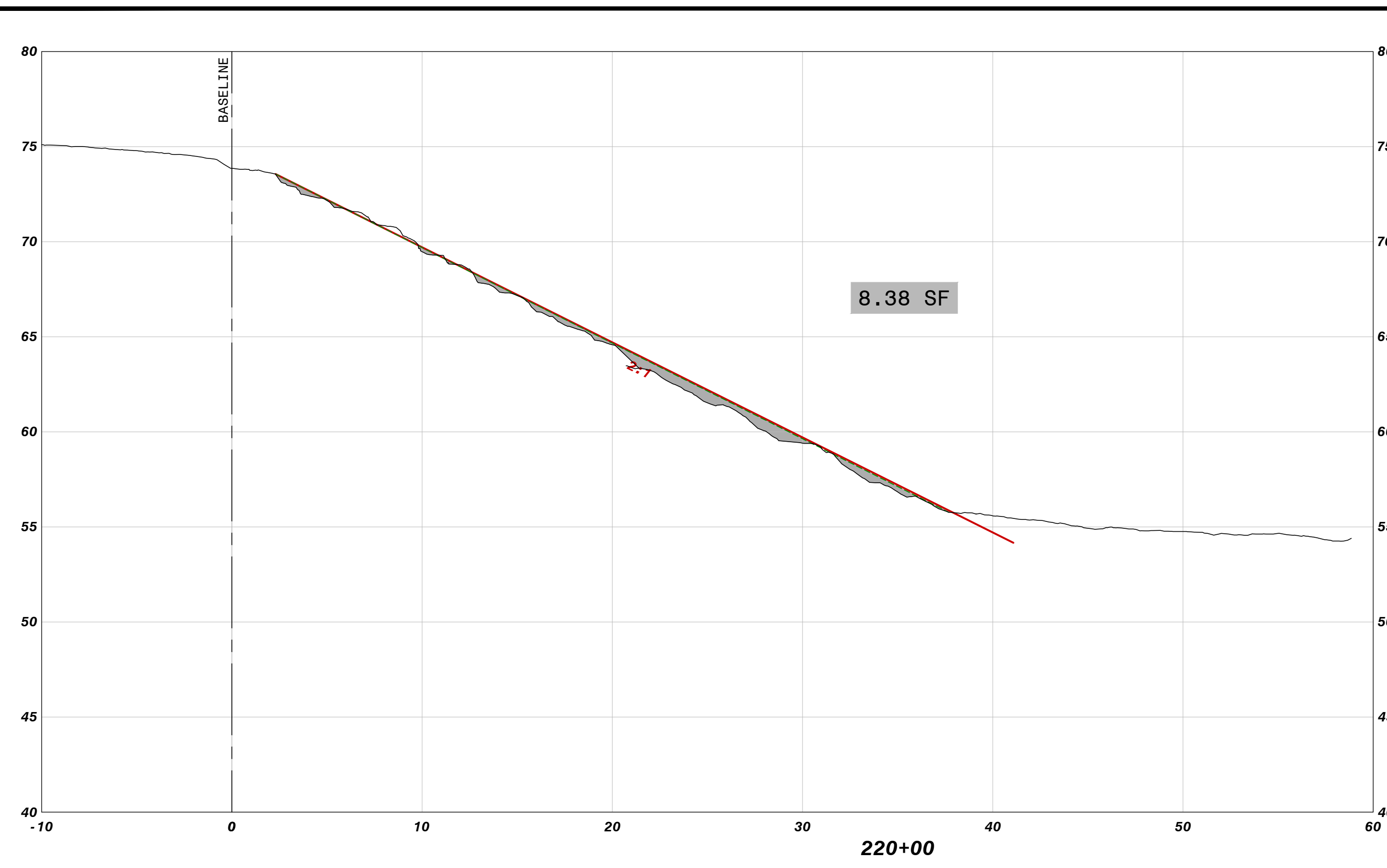
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392							NO.	DATE	REVISION	
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 200+00 TO STA 212+00 PARRISH, FLORIDA										
DATE: June 17, 2015										
DRAWN BY: MAJ										
CHECKED BY: JAB										
PROJECT NO.: 300906										
JEFF BERISWILL, P.E. FLA. REG. NO. 41823										
DATE:										
13										

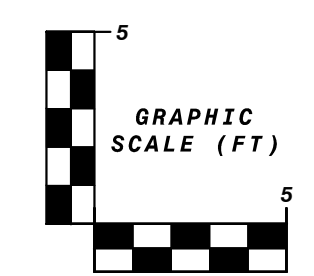
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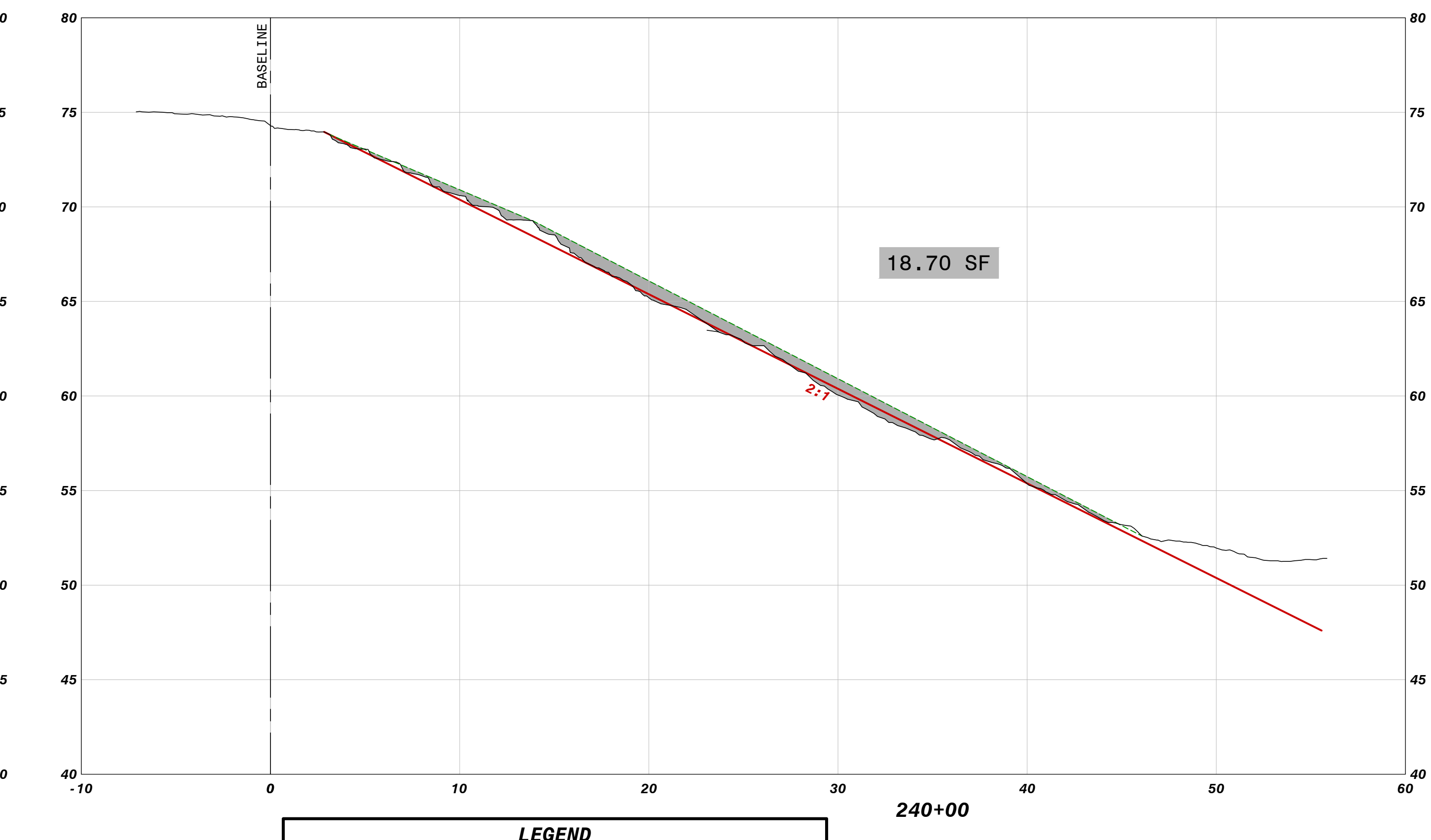
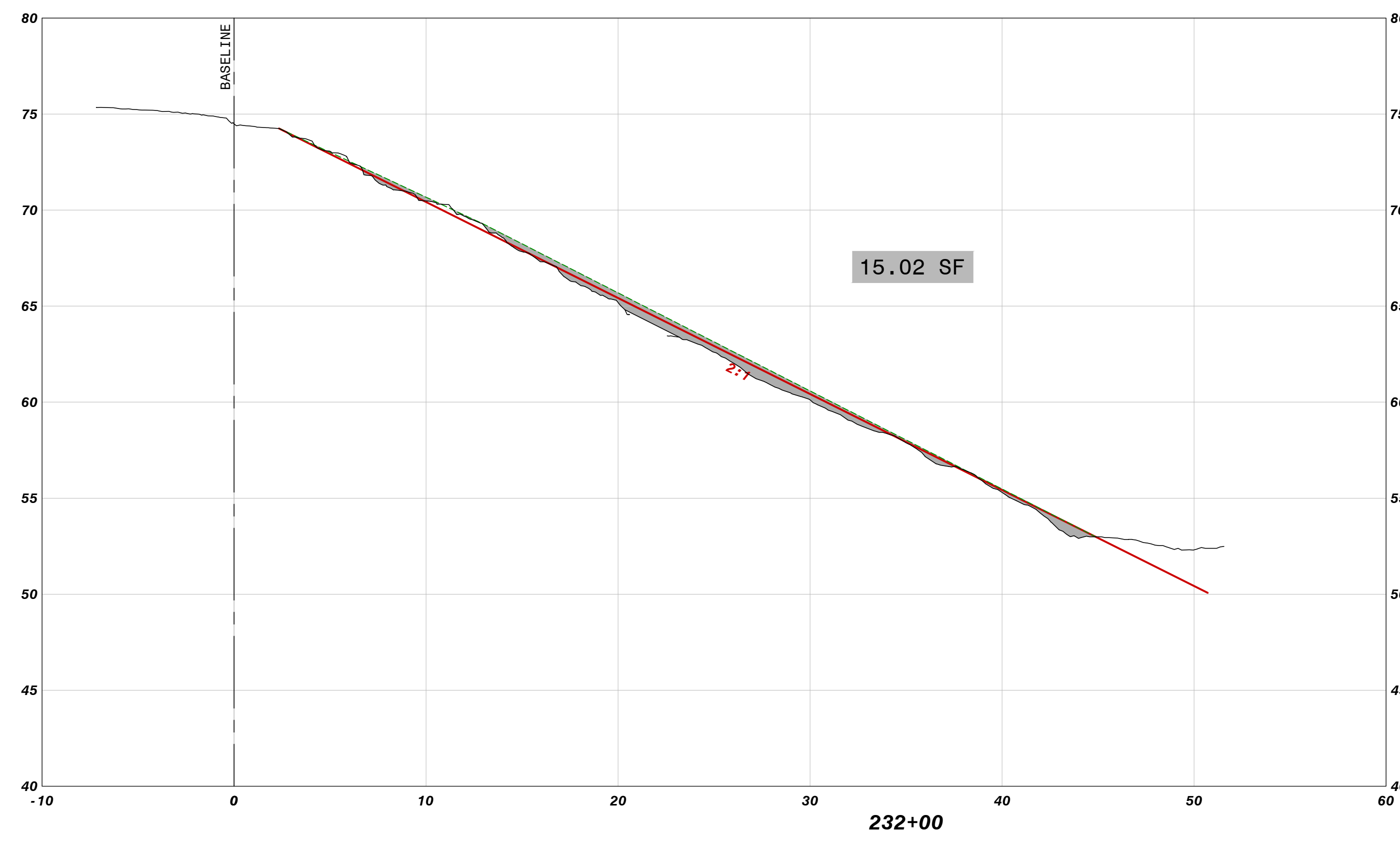
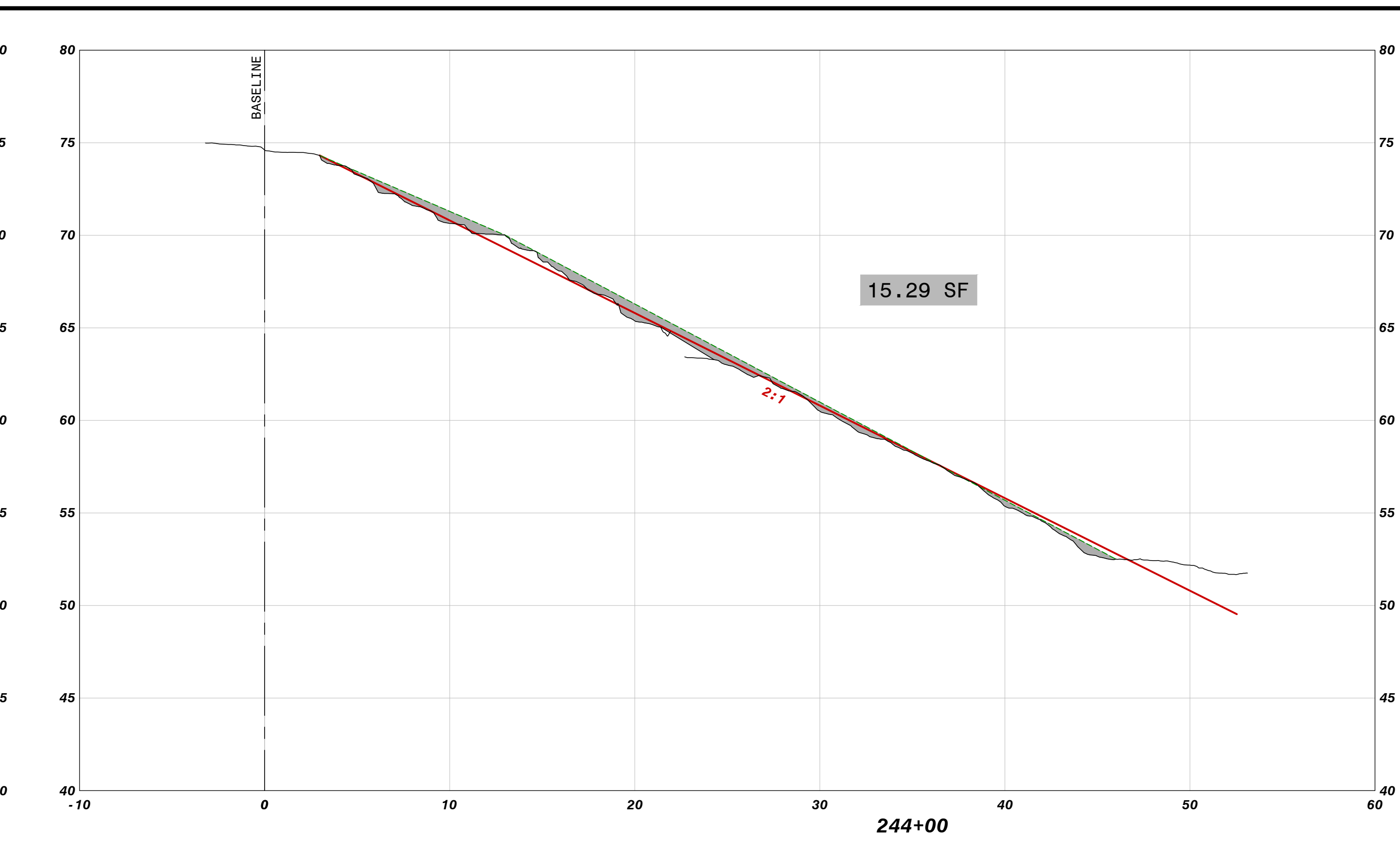
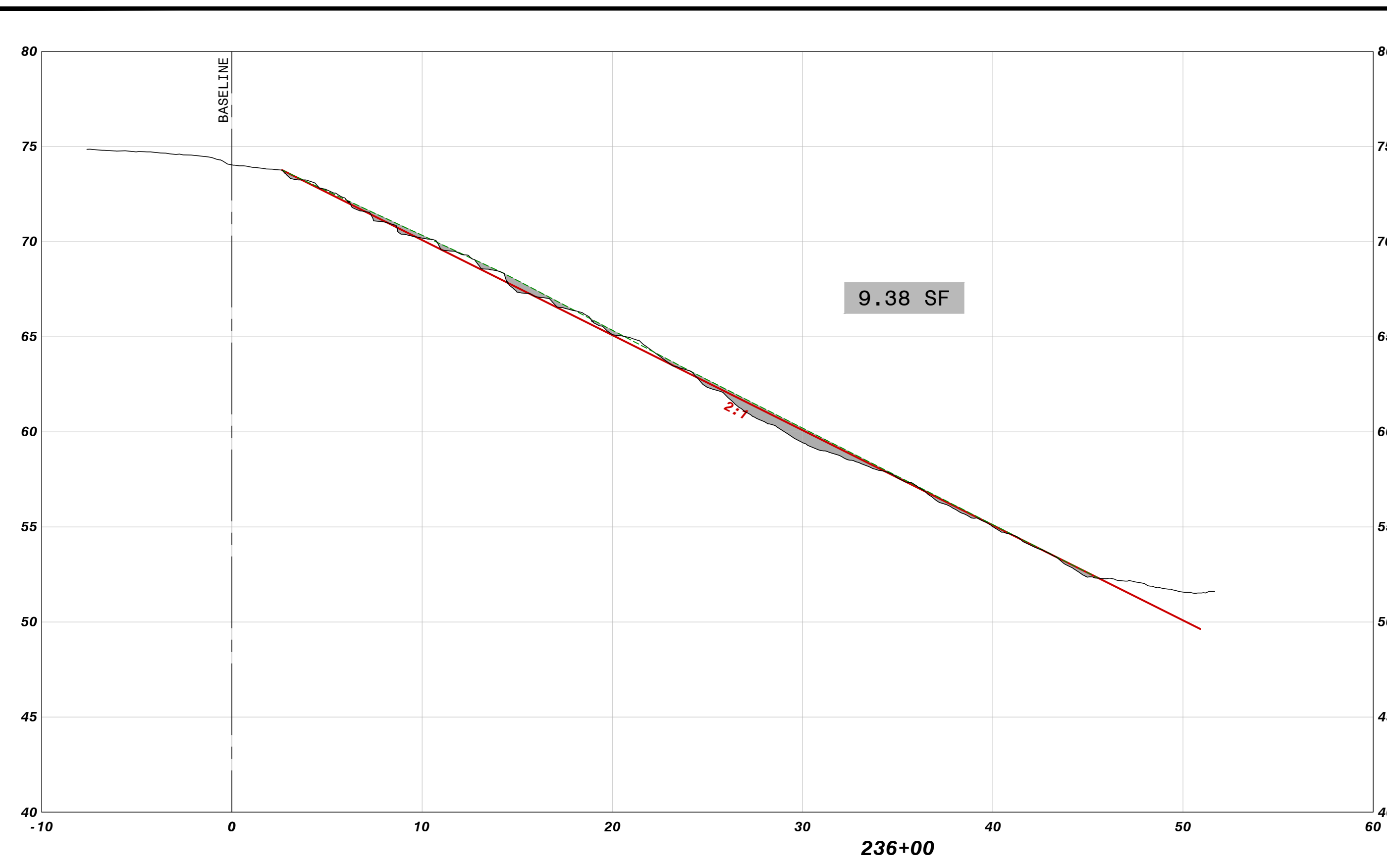
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 863.667.2345 Fax: 1.863.667.2667 www.amectw.com CA-5392							
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 216+00 TO STA 228+00 PARRISH, FLORIDA							
DATE: June 17, 2015							
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PROJECT NO.: 300906							
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823 DATE:							
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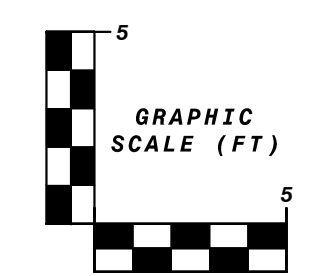
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- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



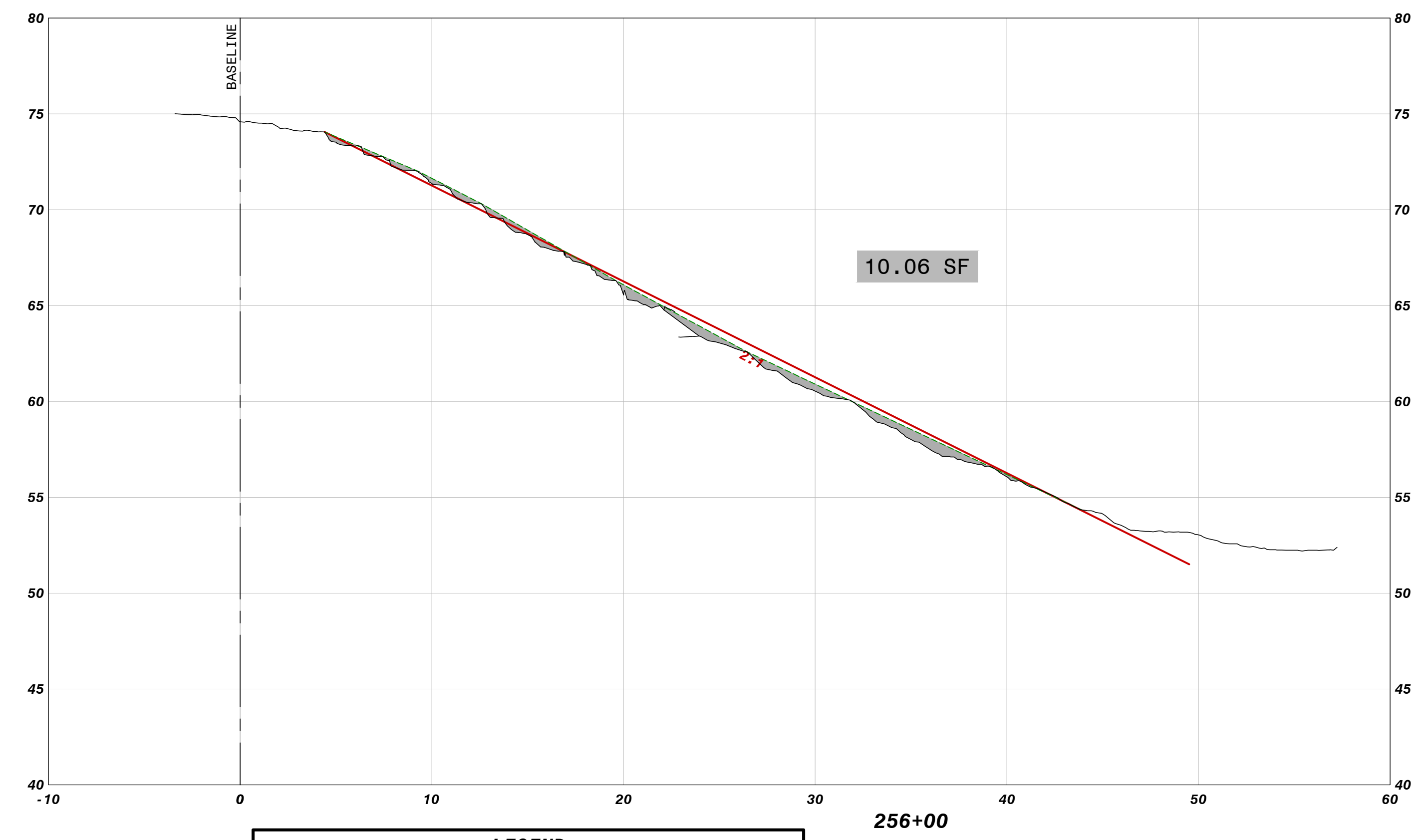
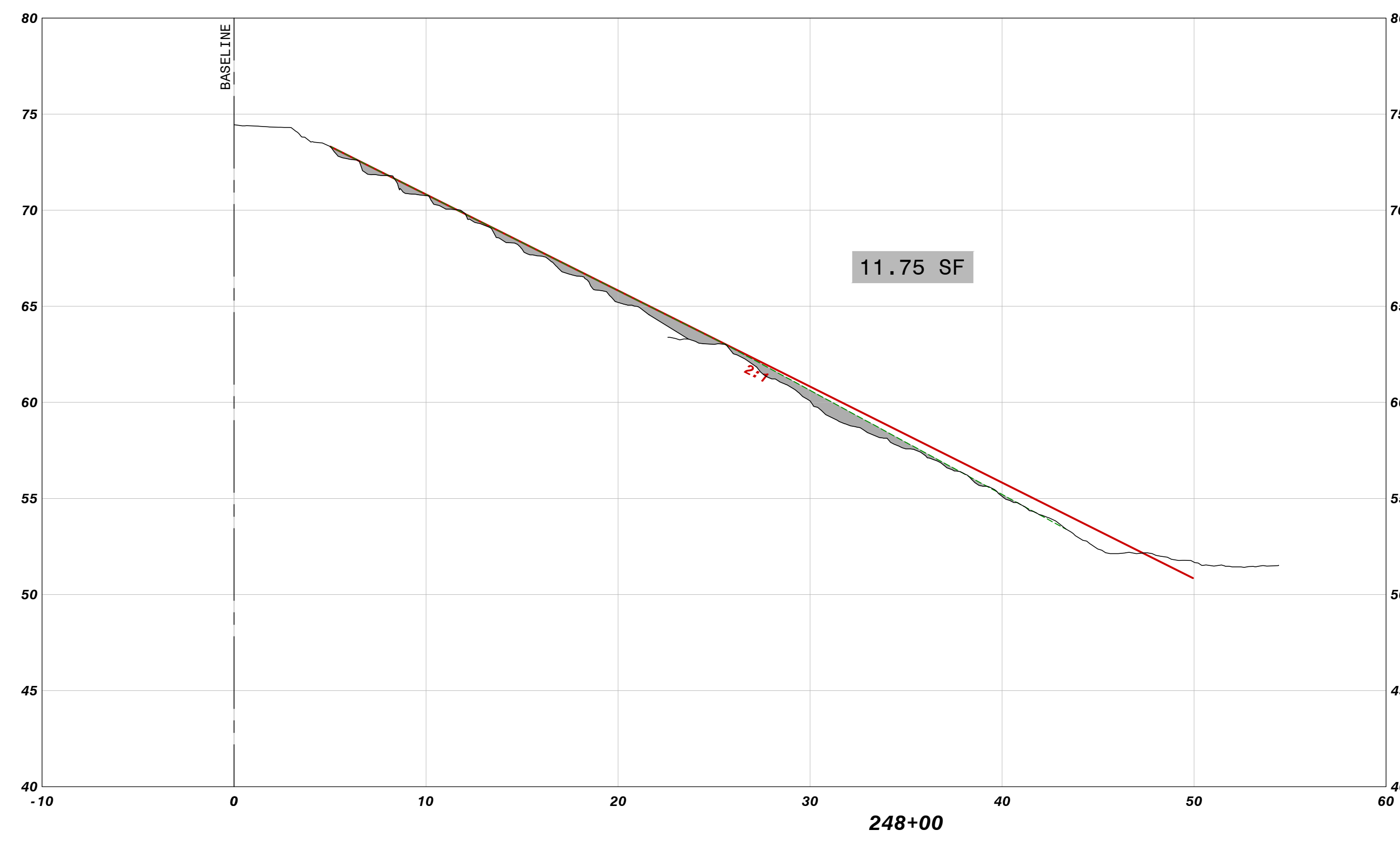
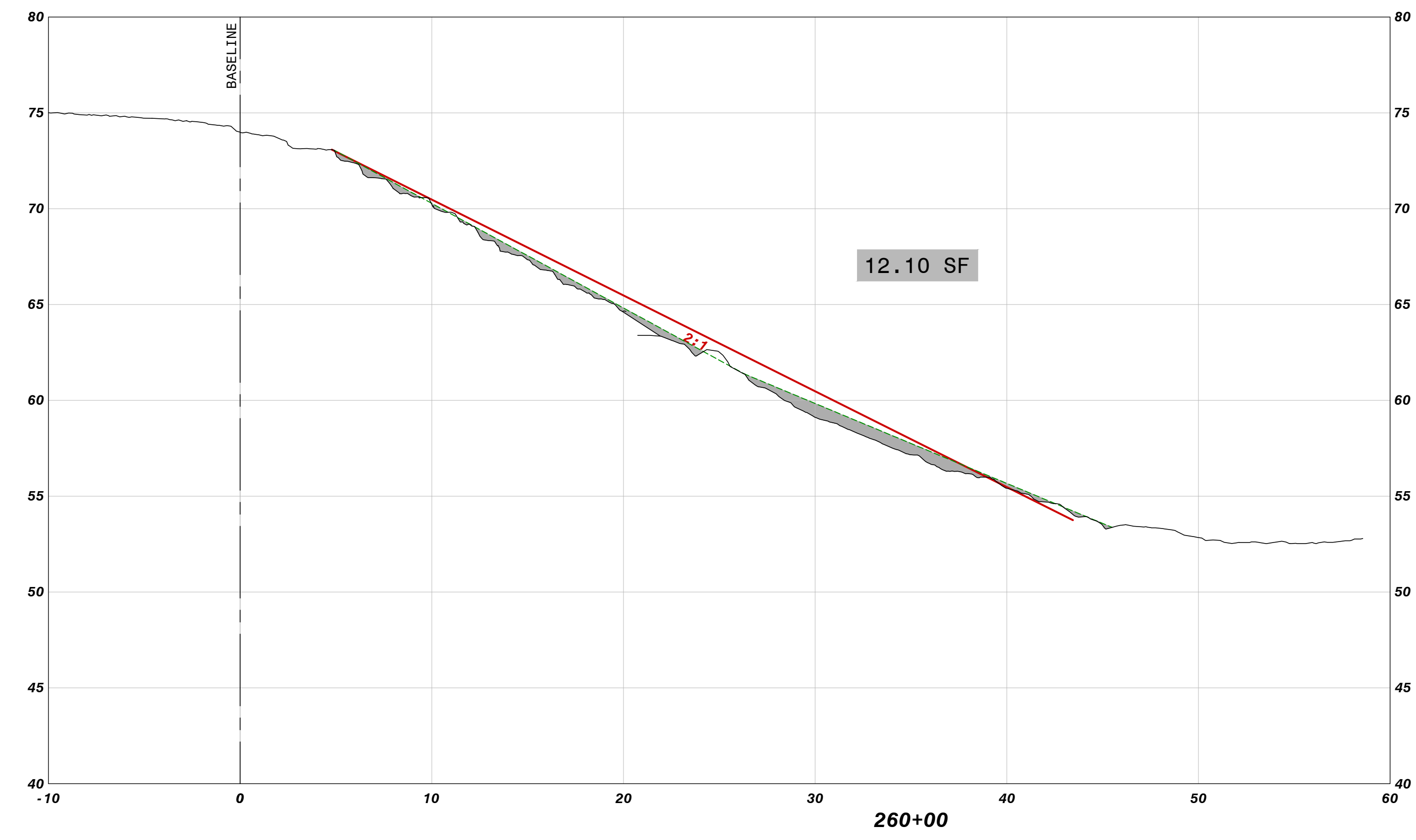
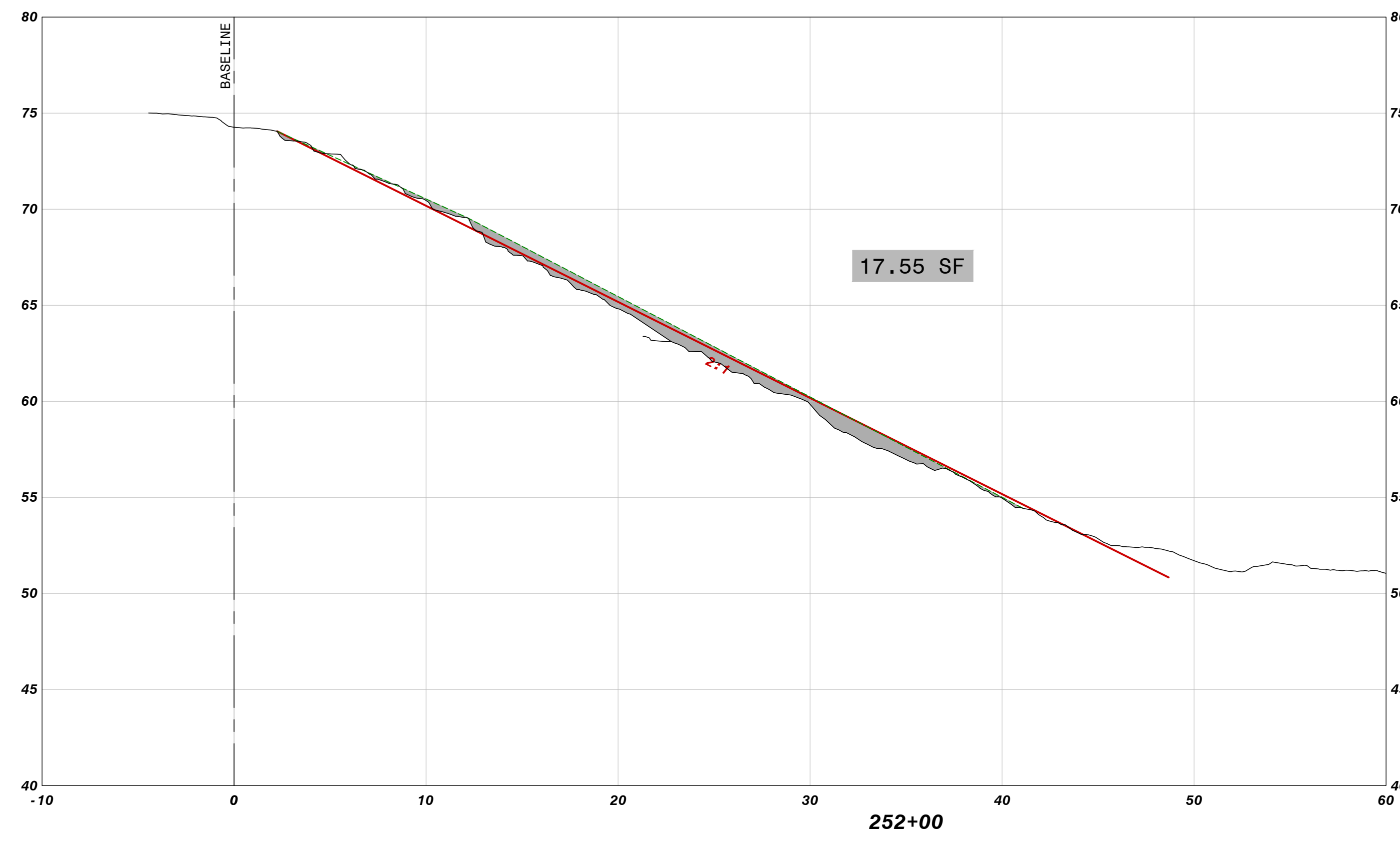
<p>amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Frisco, TX 75034 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">NO.</th> <th style="width: 50%;">DATE</th> <th style="width: 50%;">NO.</th> <th style="width: 50%;">REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	NO.	REVISION				
NO.	DATE	NO.	REVISION						

MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 232+00 TO STA 244+00
PARRISH, FLORIDA

DATE: June 17, 2015
DRAWN BY: MAJ
CHECKED BY: JAB
PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
FLA. REG. NO. 41823
DATE:

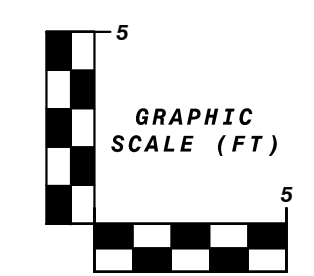
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- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
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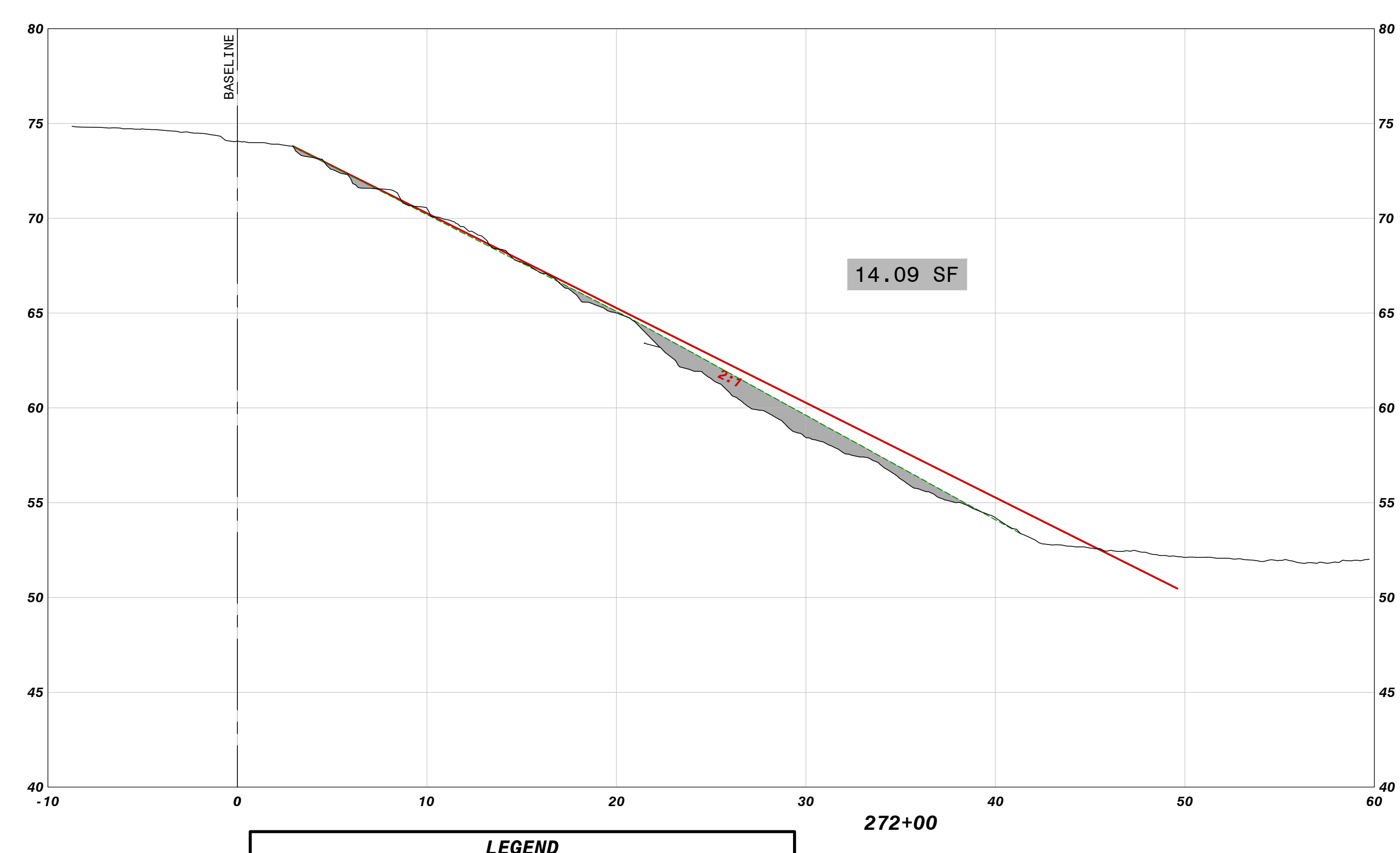
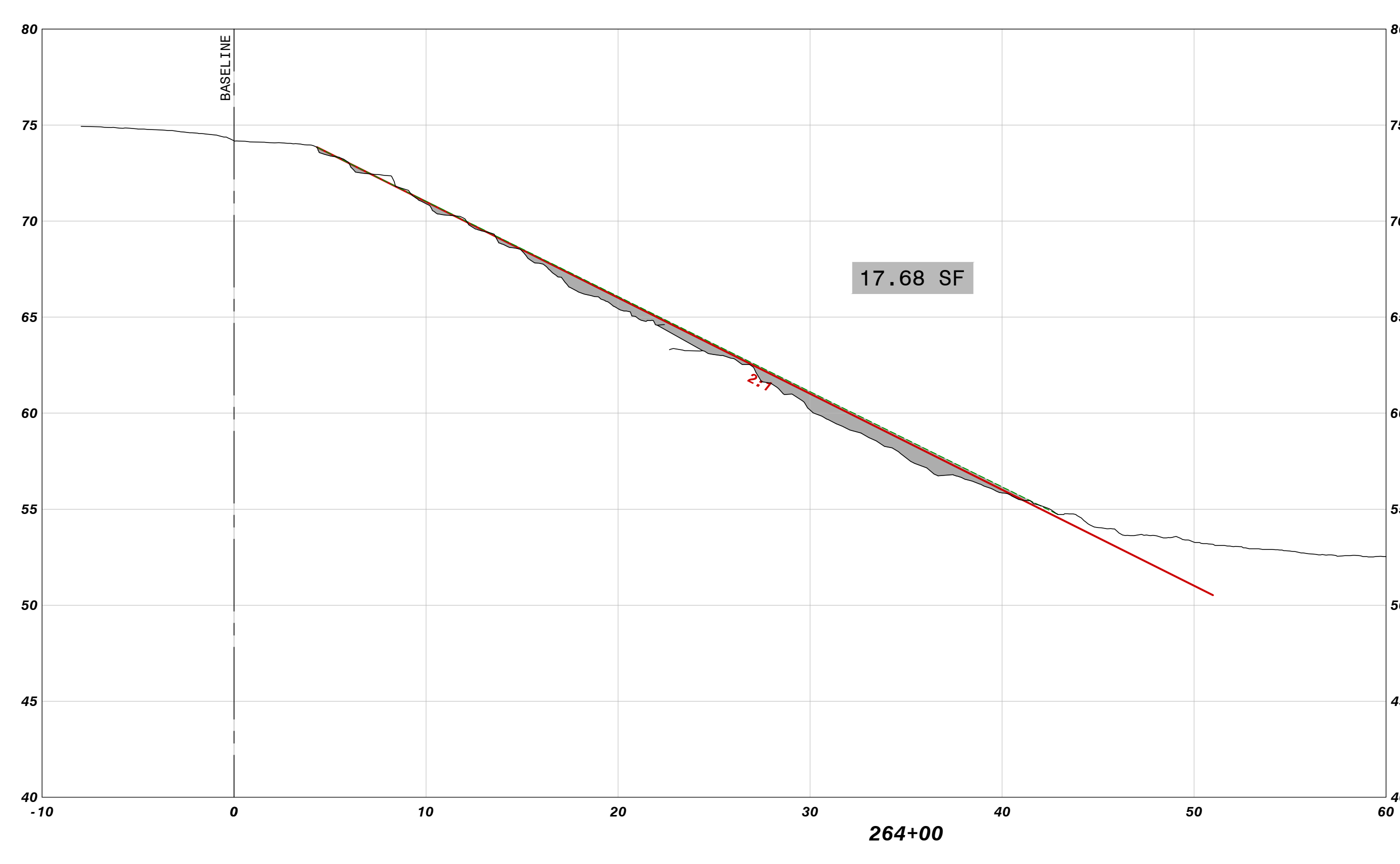
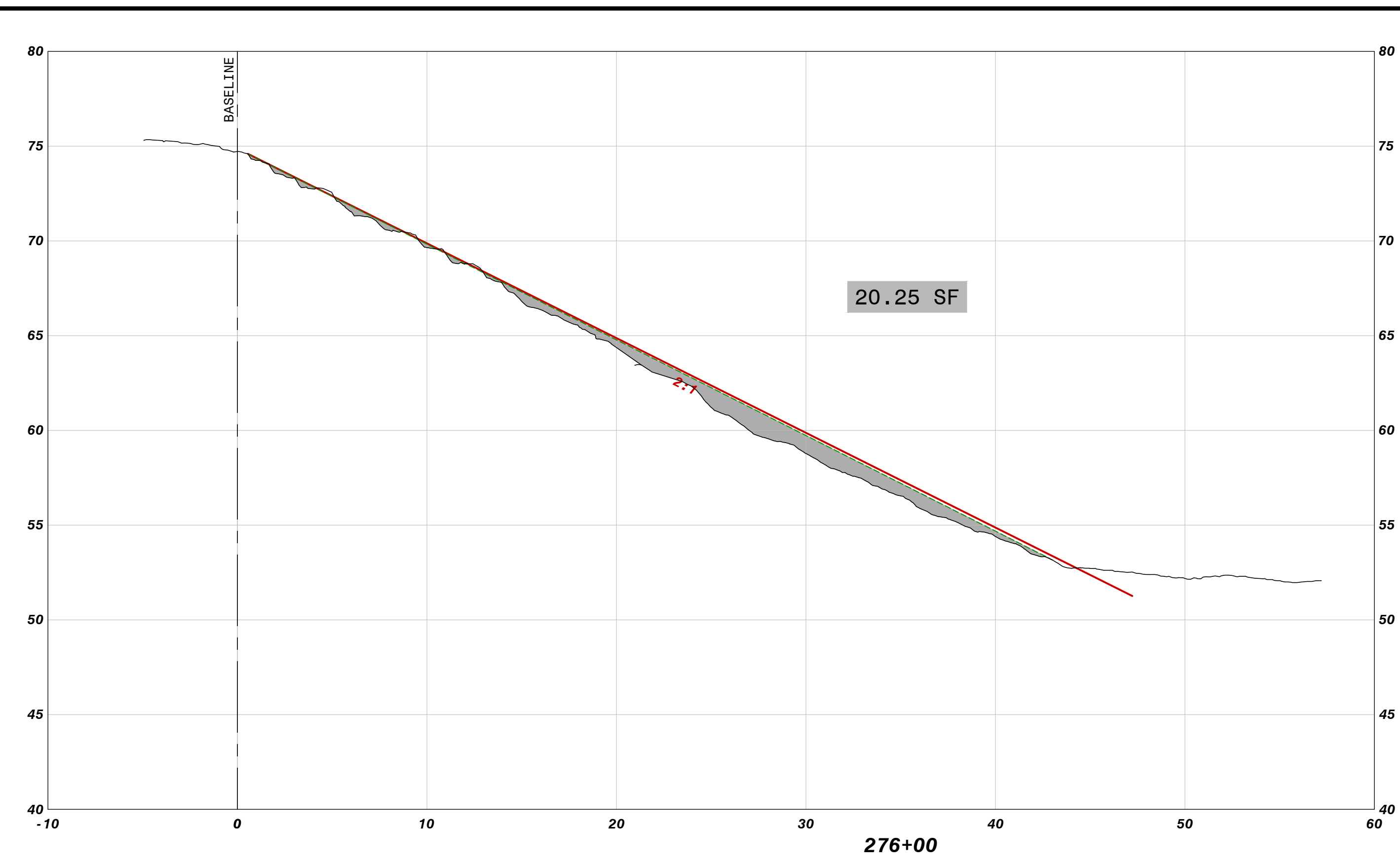
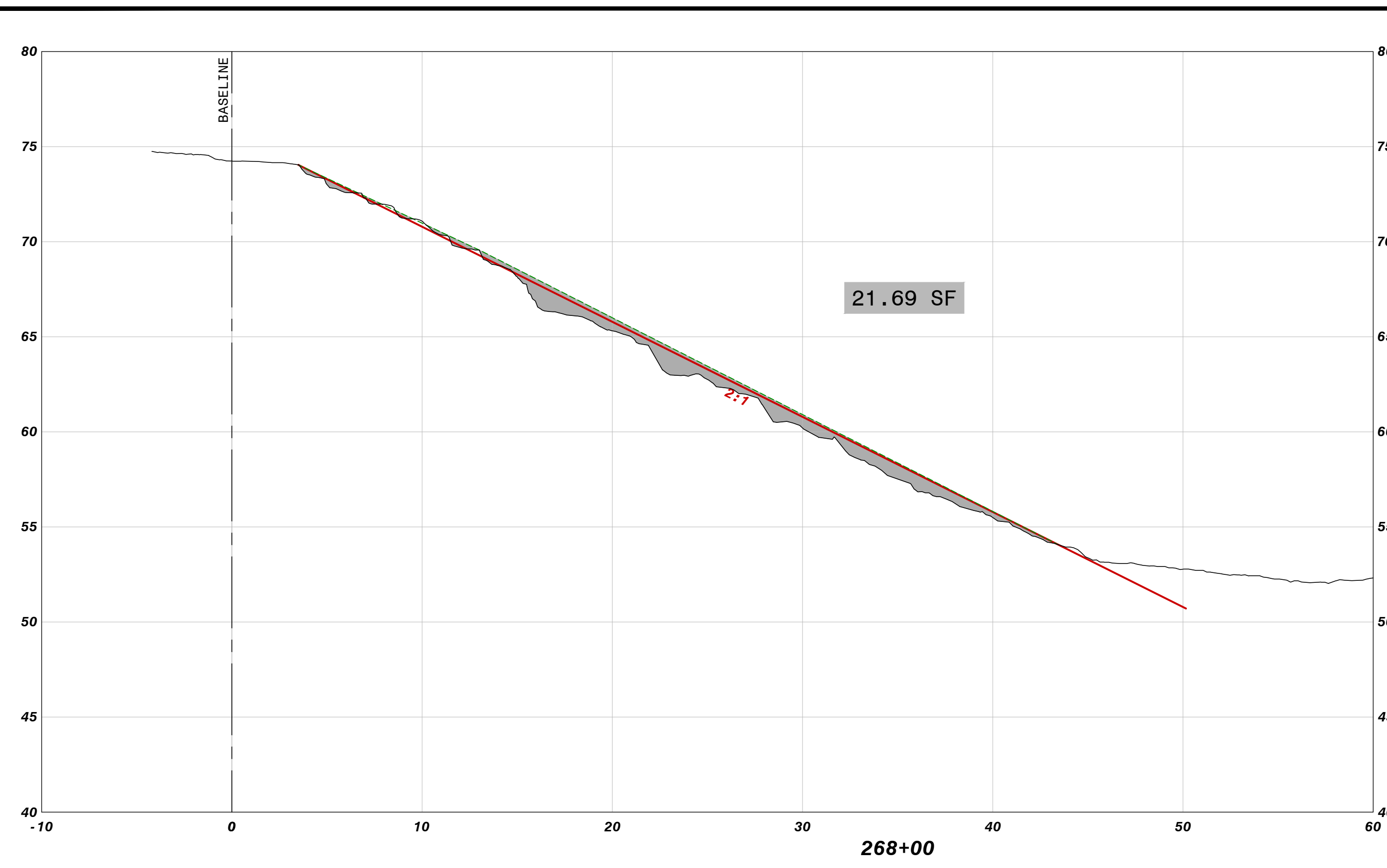
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EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



<p>MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY</p> <p>SOIL CEMENT CROSS SECTIONS STA 248+00 TO STA 260+00 PARRISH, FLORIDA</p>	<p>amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Ft. Worth, TX 76176 Phone: 817.863.8672/2945 Fax: 817.863.8672/2667 www.amectw.com CA-5392</p>
<p>DATE: June 17, 2015</p> <p>DRAWN BY: MAJ</p> <p>CHECKED BY: JAB</p> <p>PROJECT NO.: 300906</p>	
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NO.	DATE	REVISION

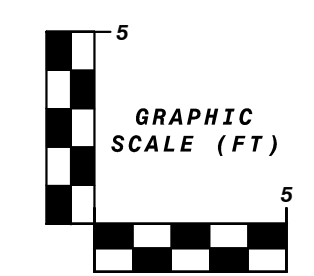
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

amec foster wheeler

Amec Foster Wheeler
Environment & Infrastructure, Inc.
2000 E. Las Colinas Blvd., Suite 300
Ft. Worth, TX 76116
Phone: 863.667.2345 Fax: 1.863.667.2667
www.amectw.com CA-5392

MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY

SOIL CEMENT CROSS SECTIONS
STA 264+00 TO STA 276+00
PARRISH, FLORIDA

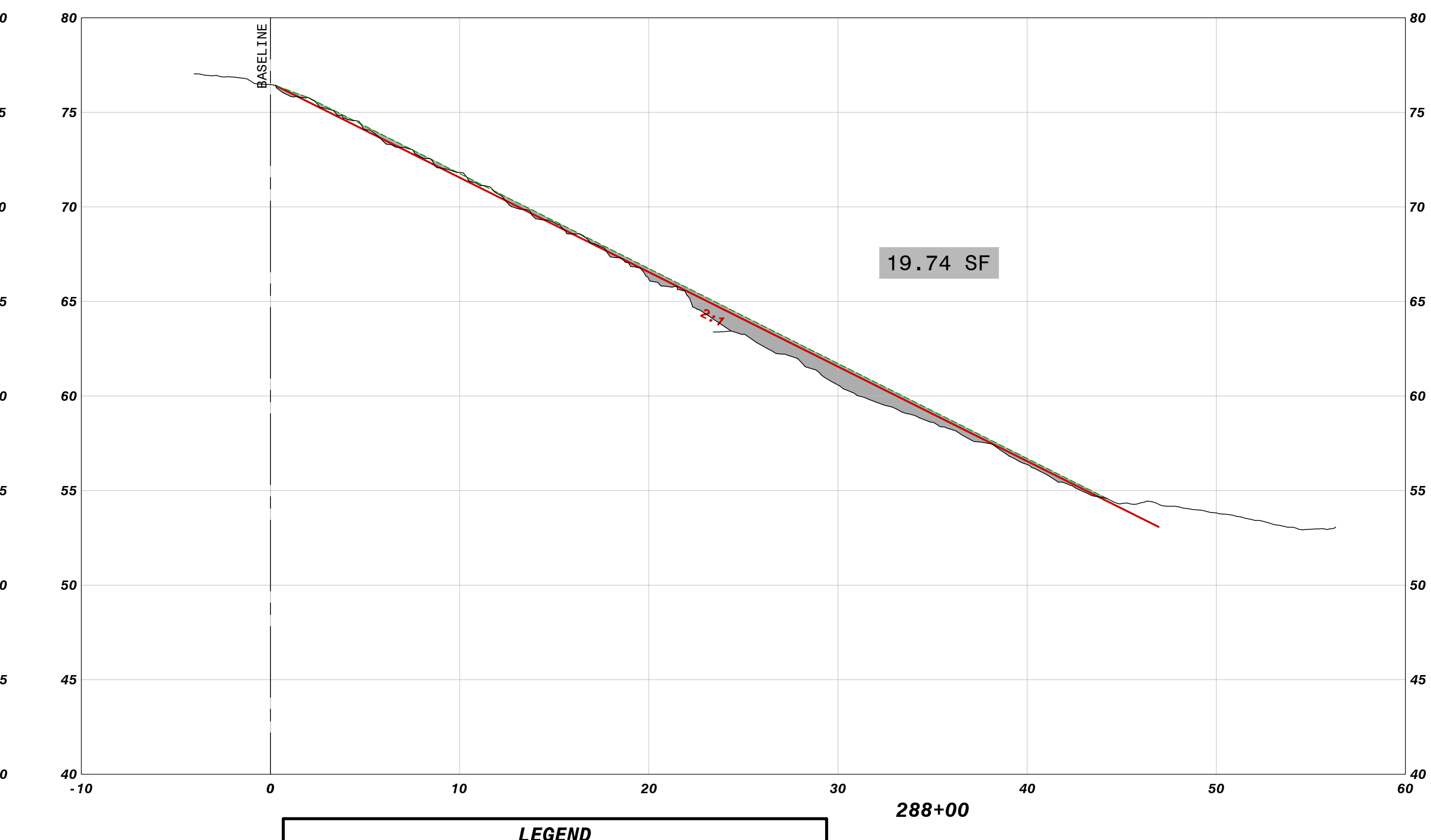
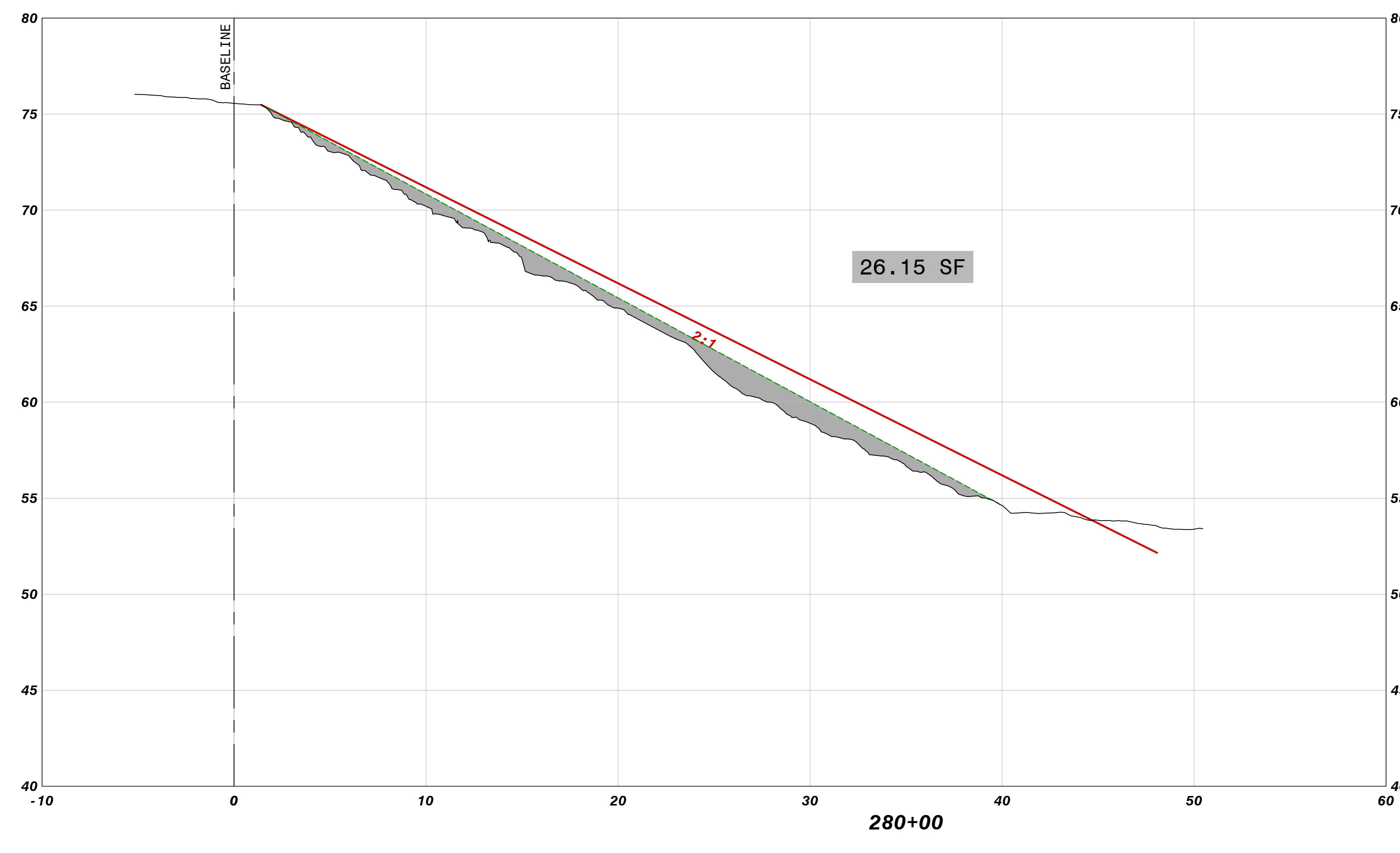
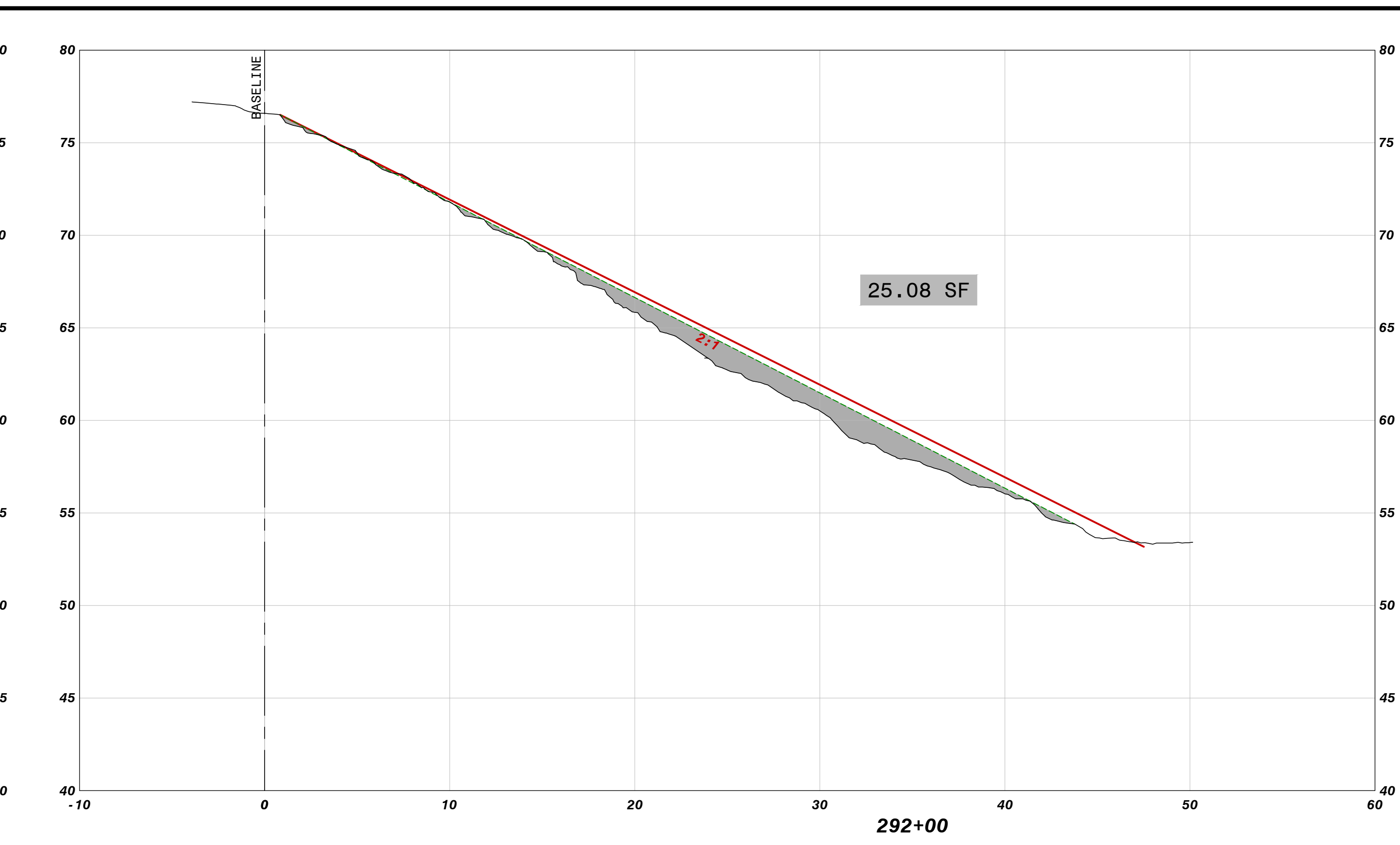
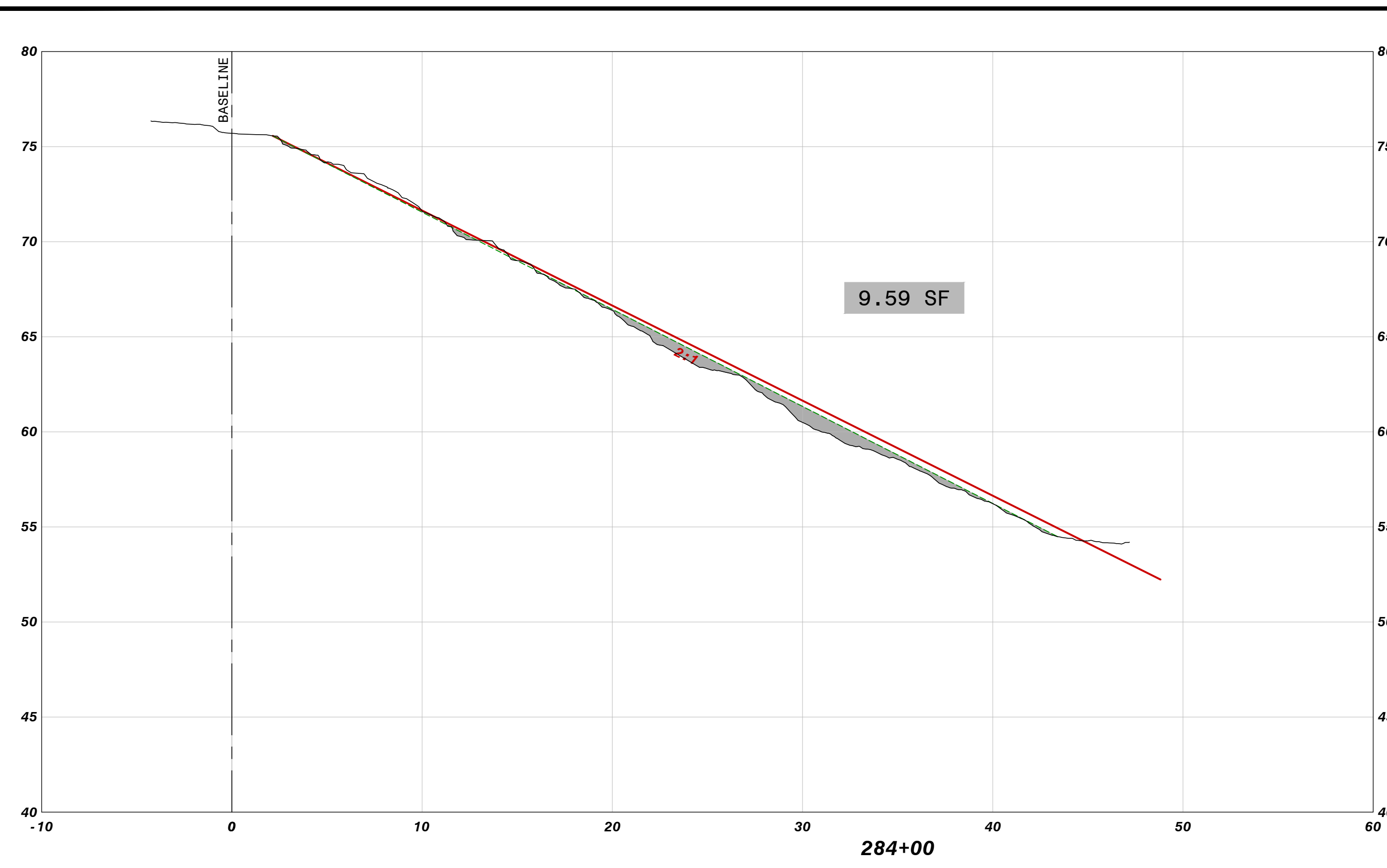
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DRAWN BY: MAJ
CHECKED BY: JAB
PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
FLA. REG. NO. 41823

DATE:

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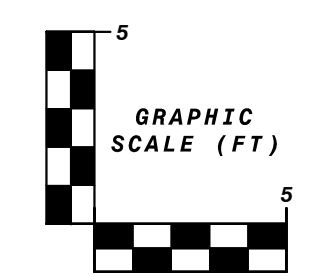
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



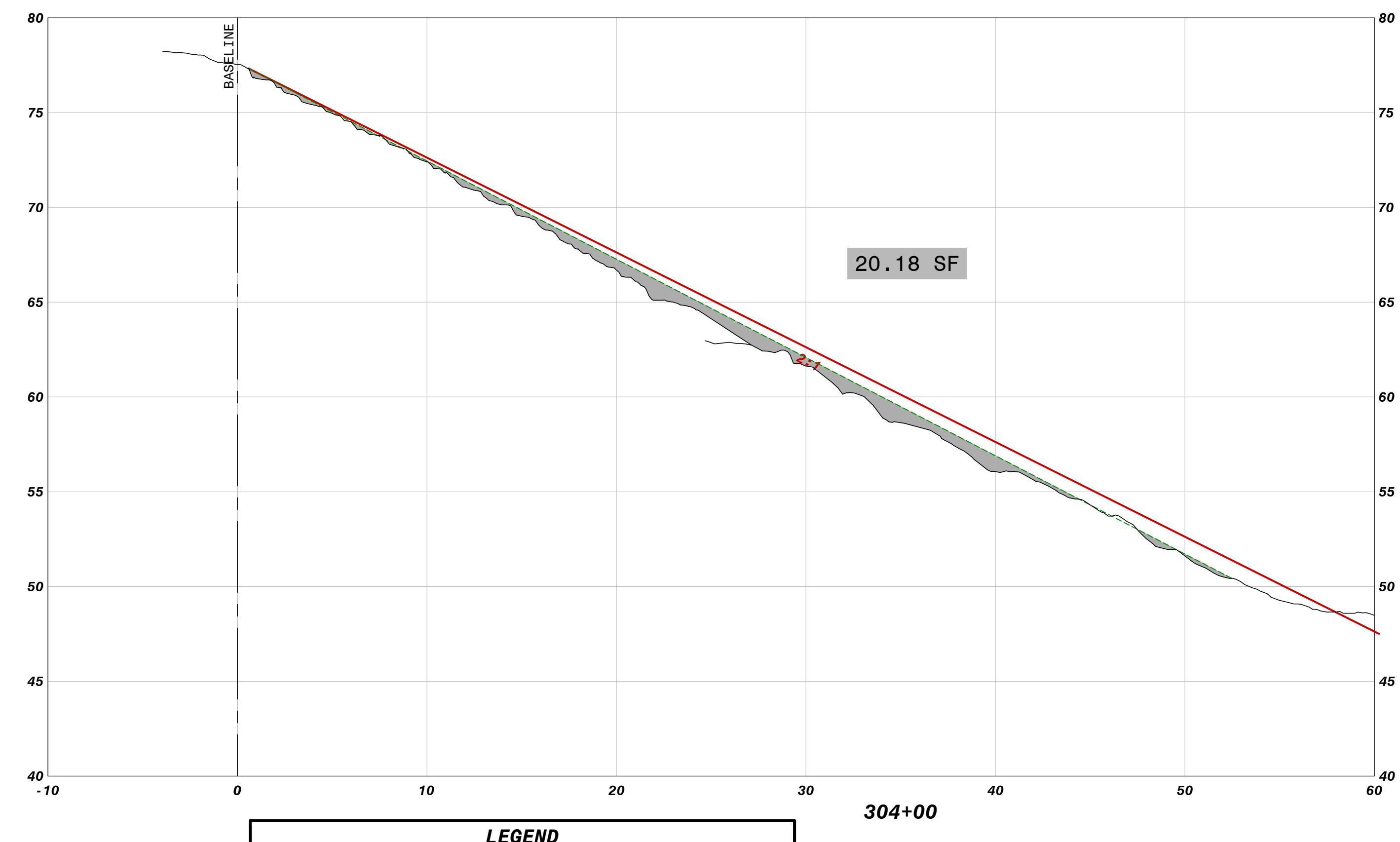
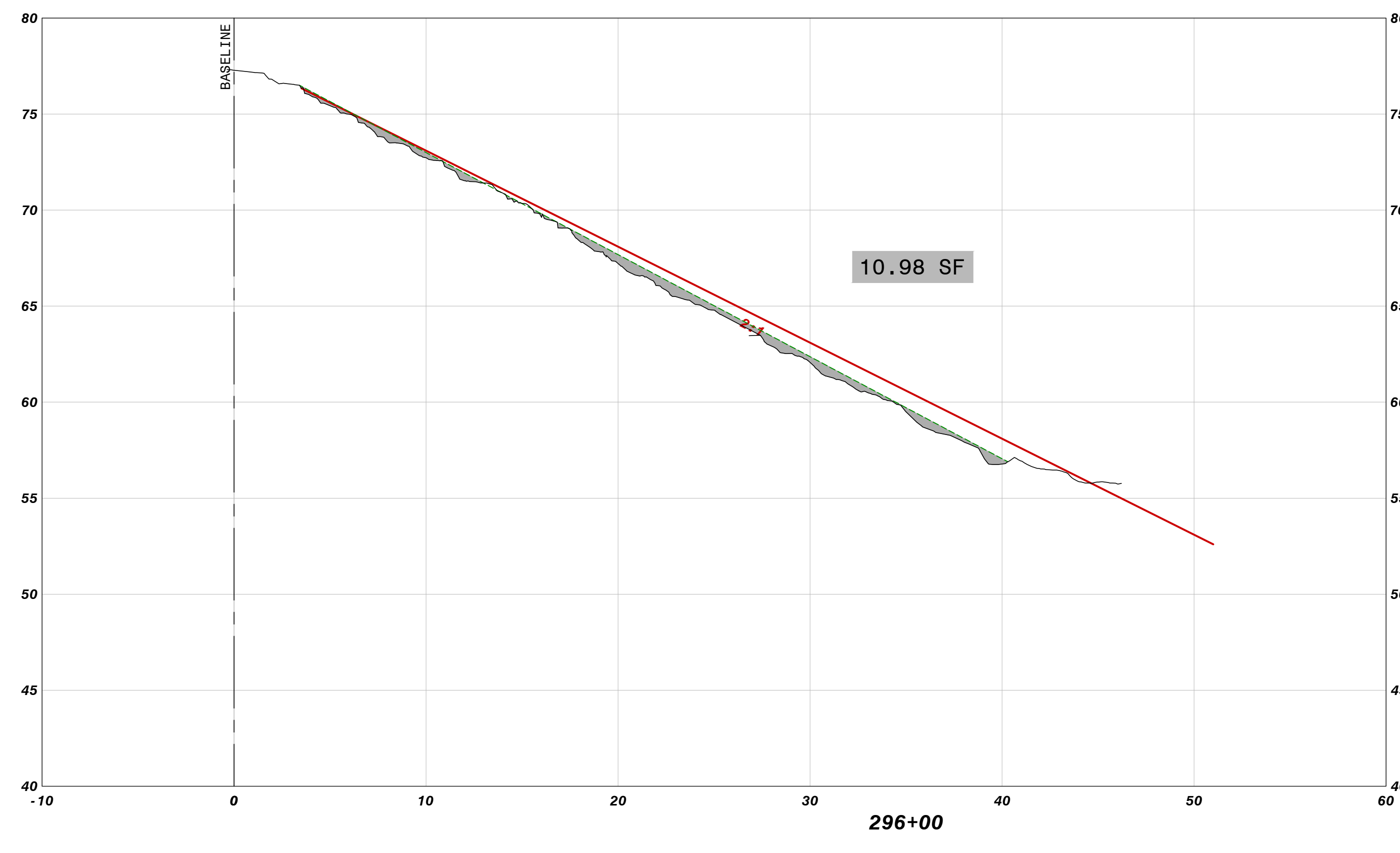
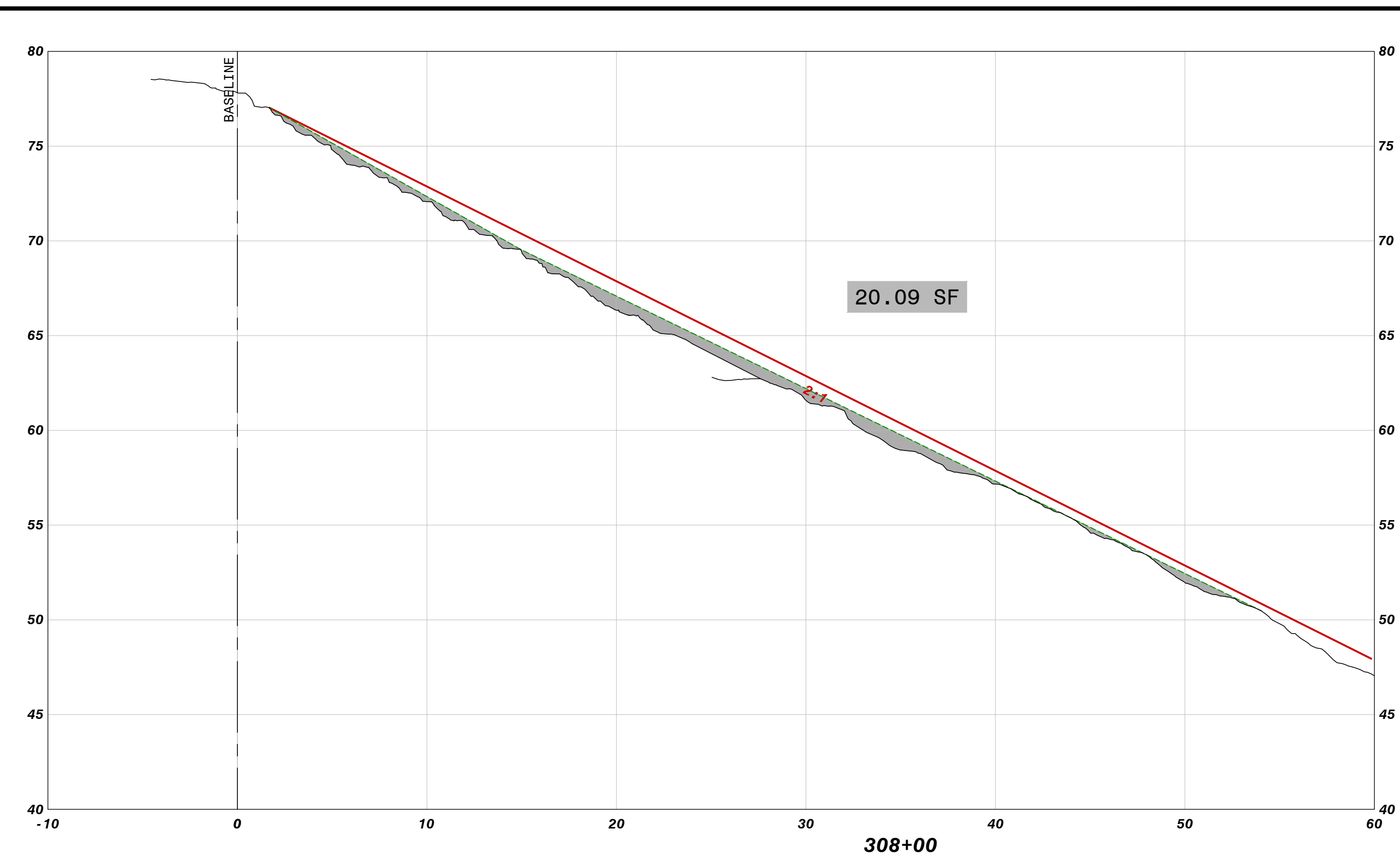
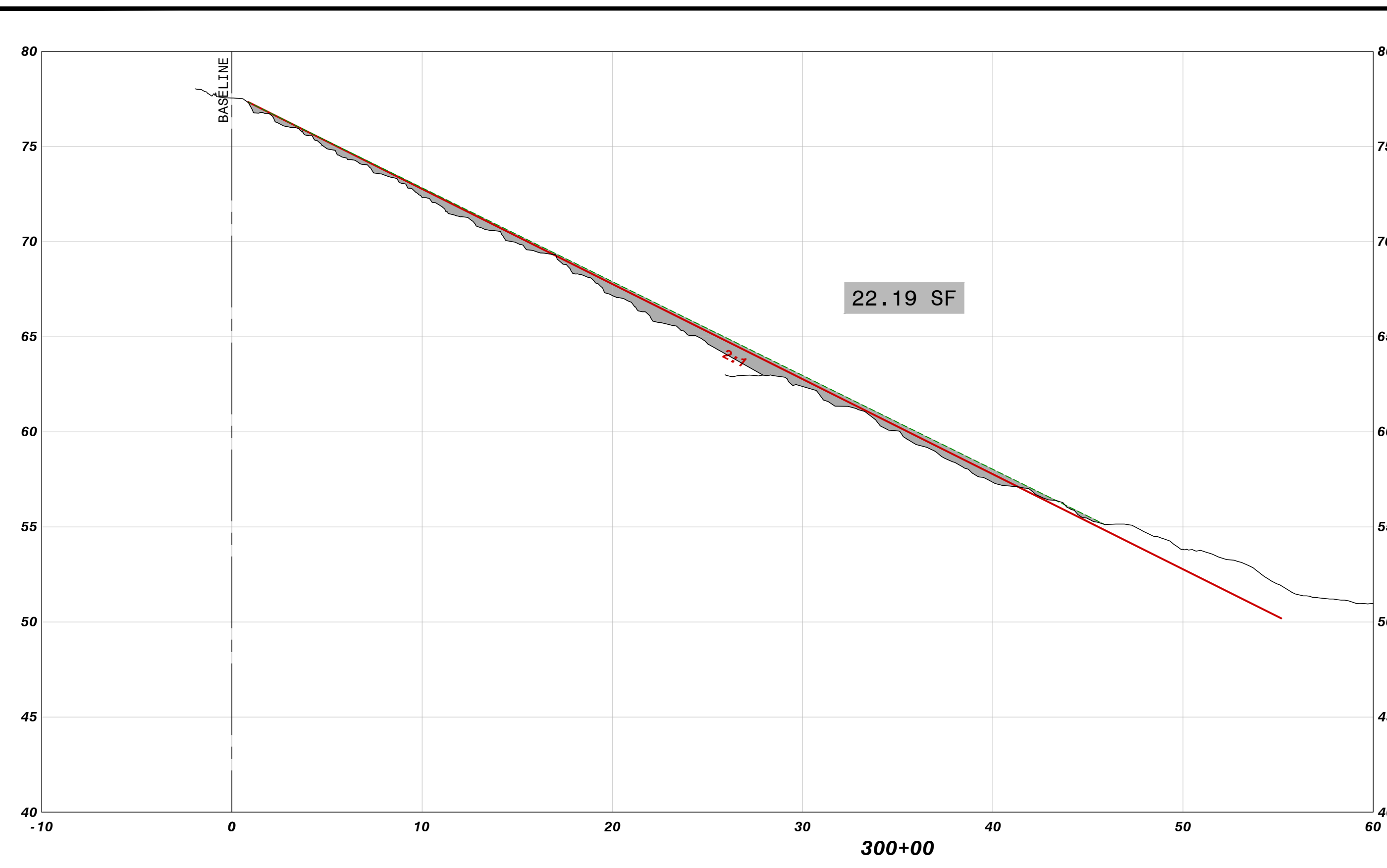
 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392	NO. DATE REVISION
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MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 280+00 TO STA 292+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
 FLA. REG. NO. 41823
 DATE:
18

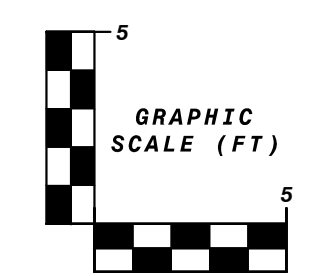
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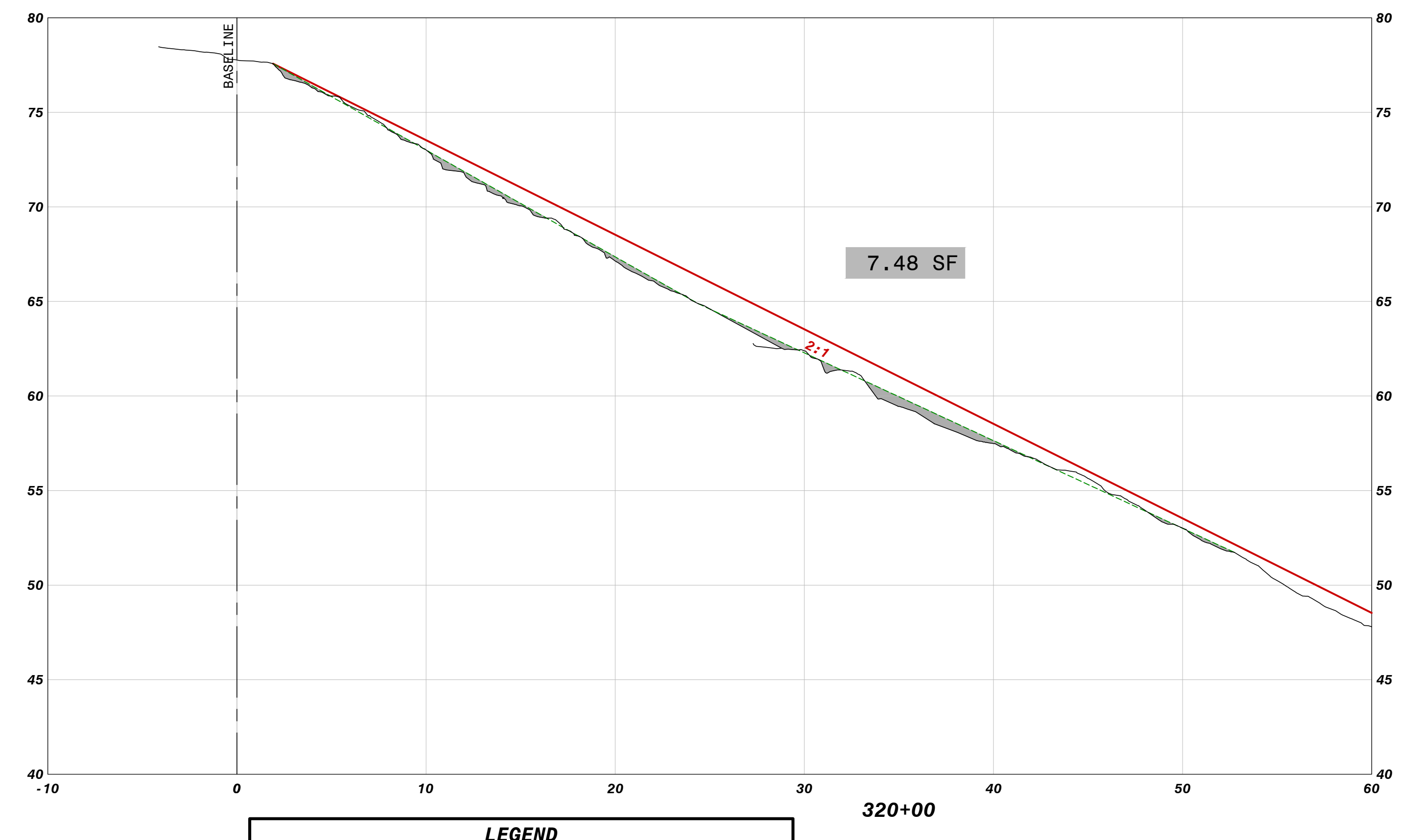
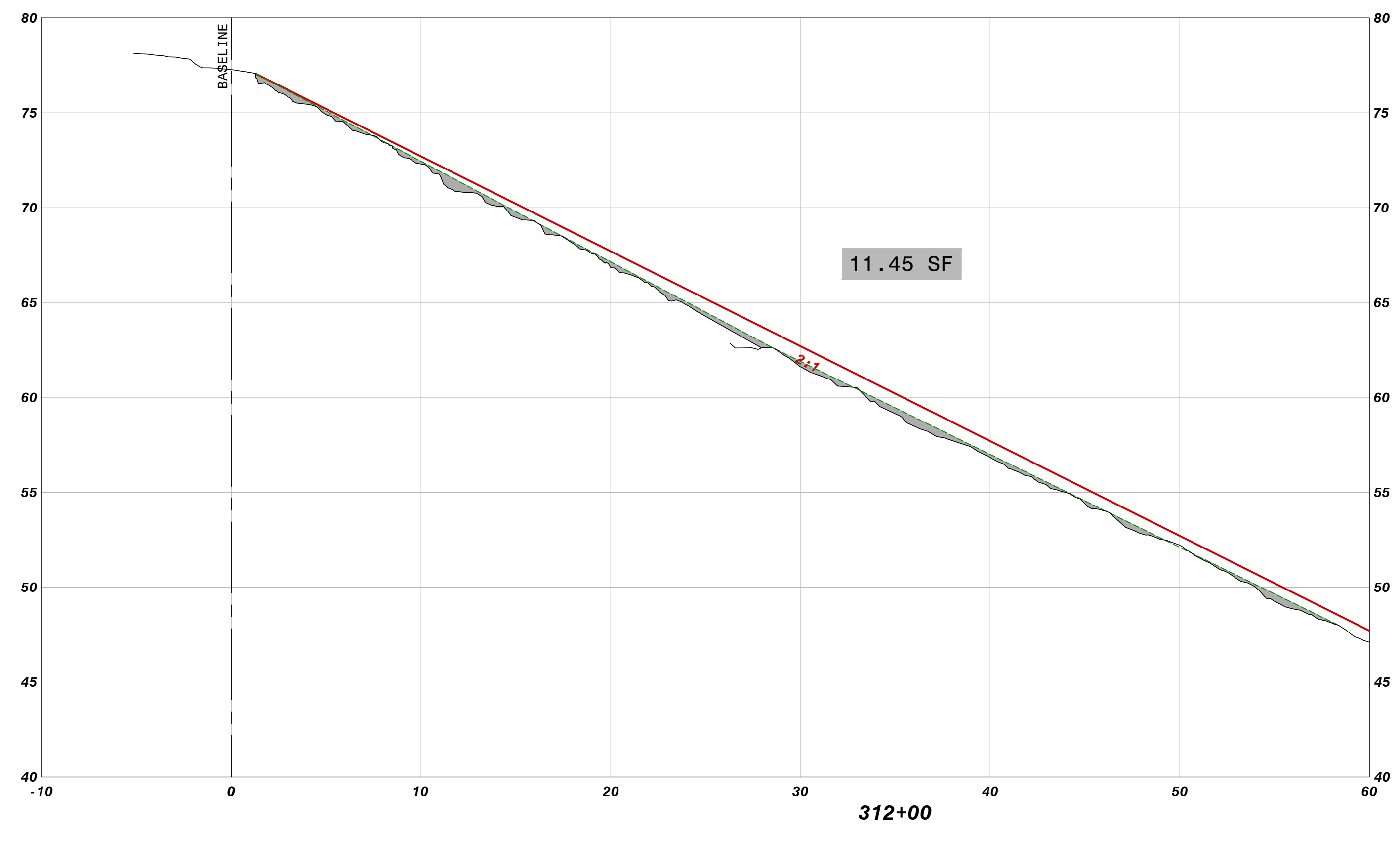
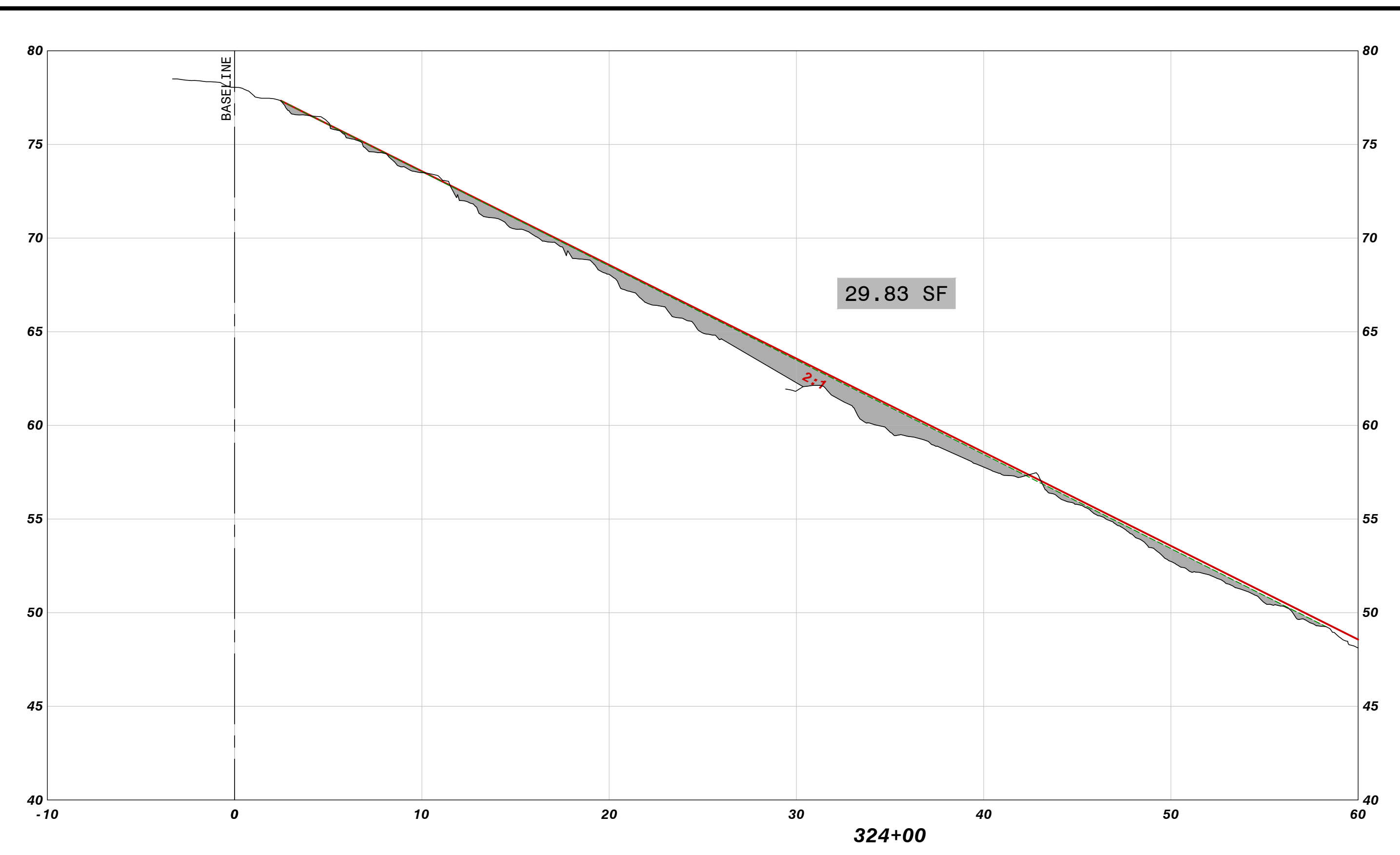
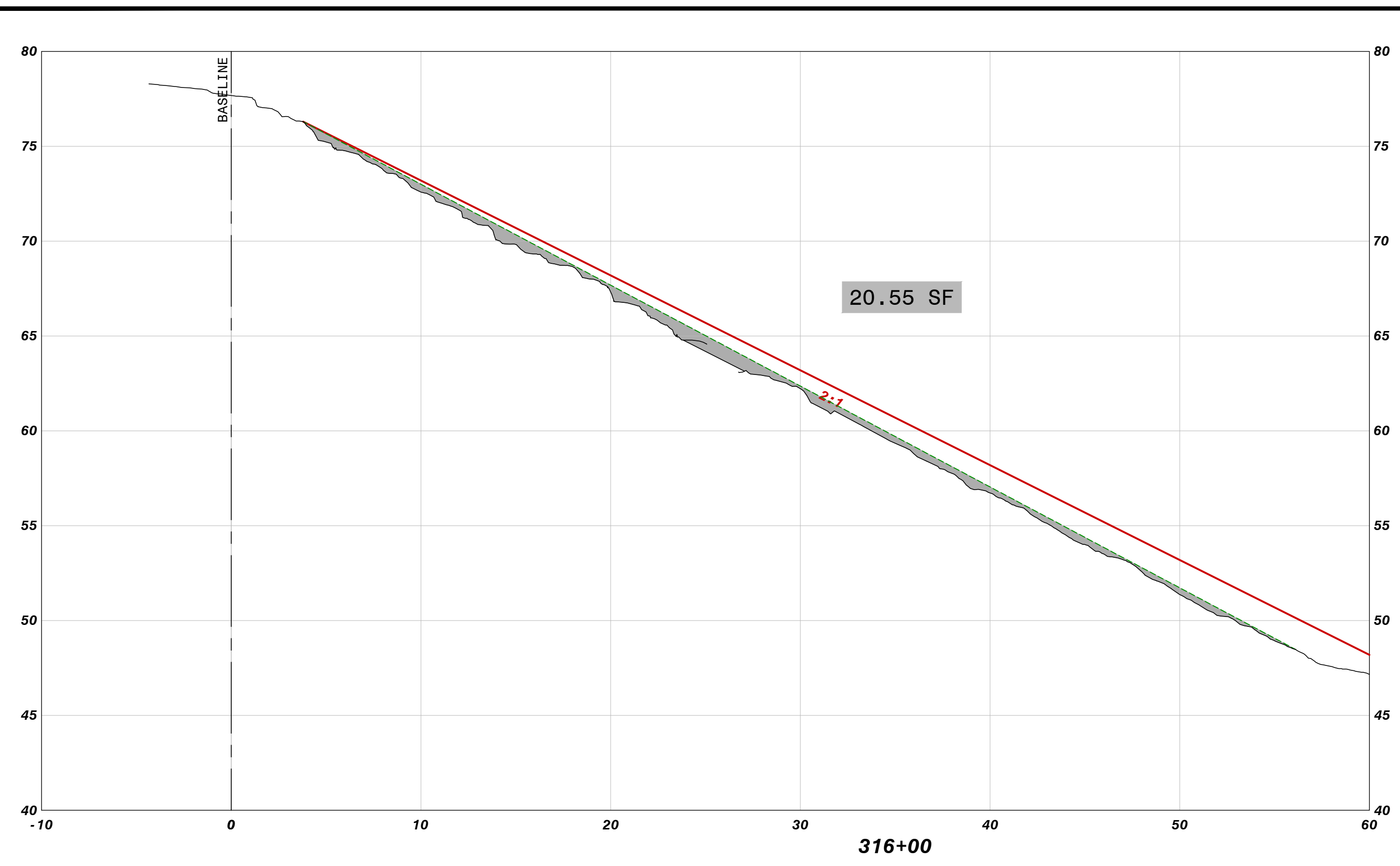
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- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



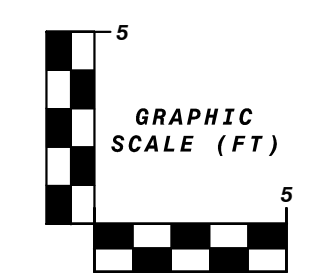
 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 El Camino Real, Suite 300 San Diego, CA 92108 Phone: 619.444.2345 Fax: 619.444.2667 www.amecfcw.com CA-5392							NO.	DATE	REVISION	
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DATE: June 17, 2015										
DRAWN BY: MAJ										
CHECKED BY: JAB										
PROJECT NO.: 300906										
JEFF BERISWILL, P.E. FLA. REG. NO. 41823										
DATE:										
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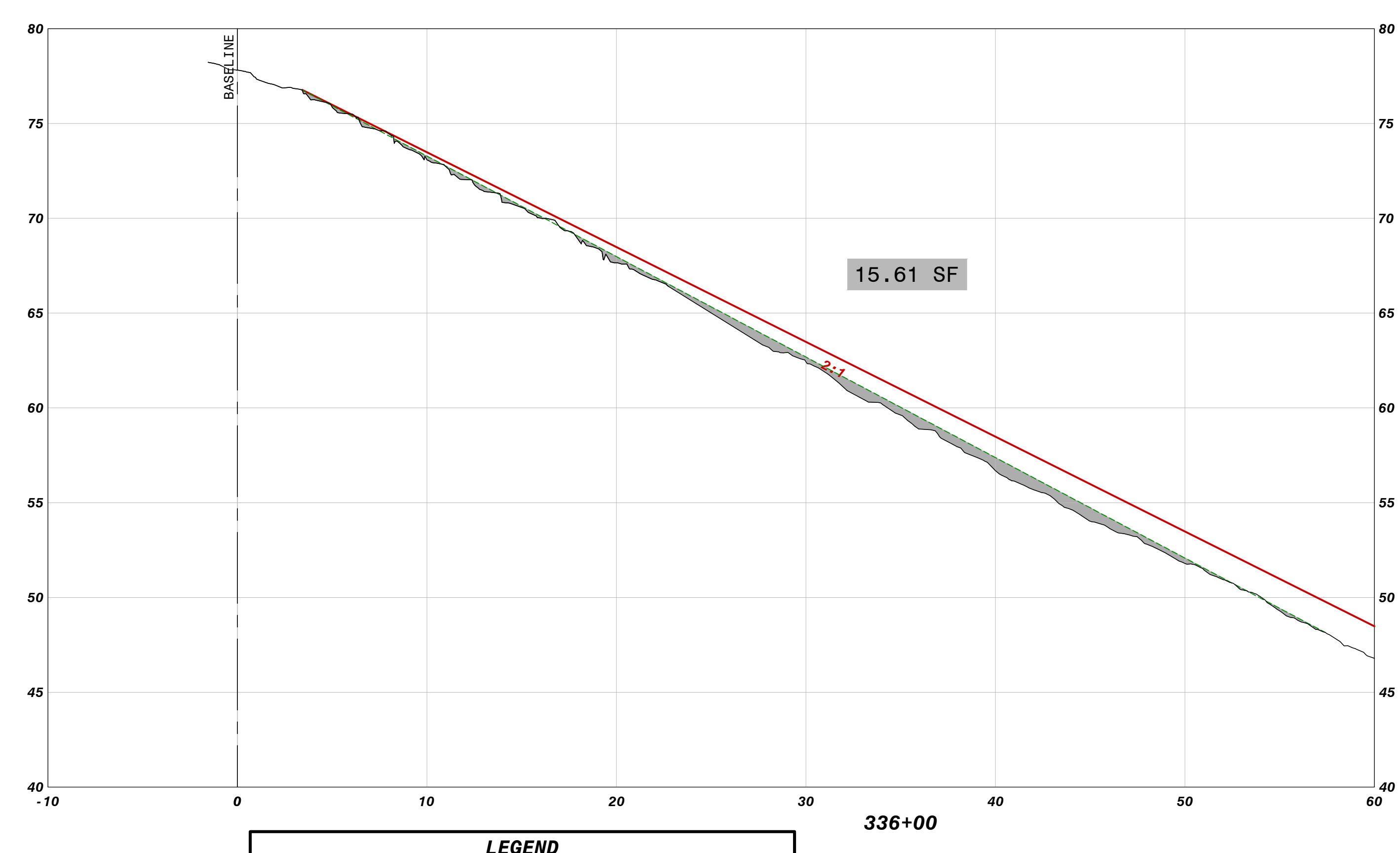
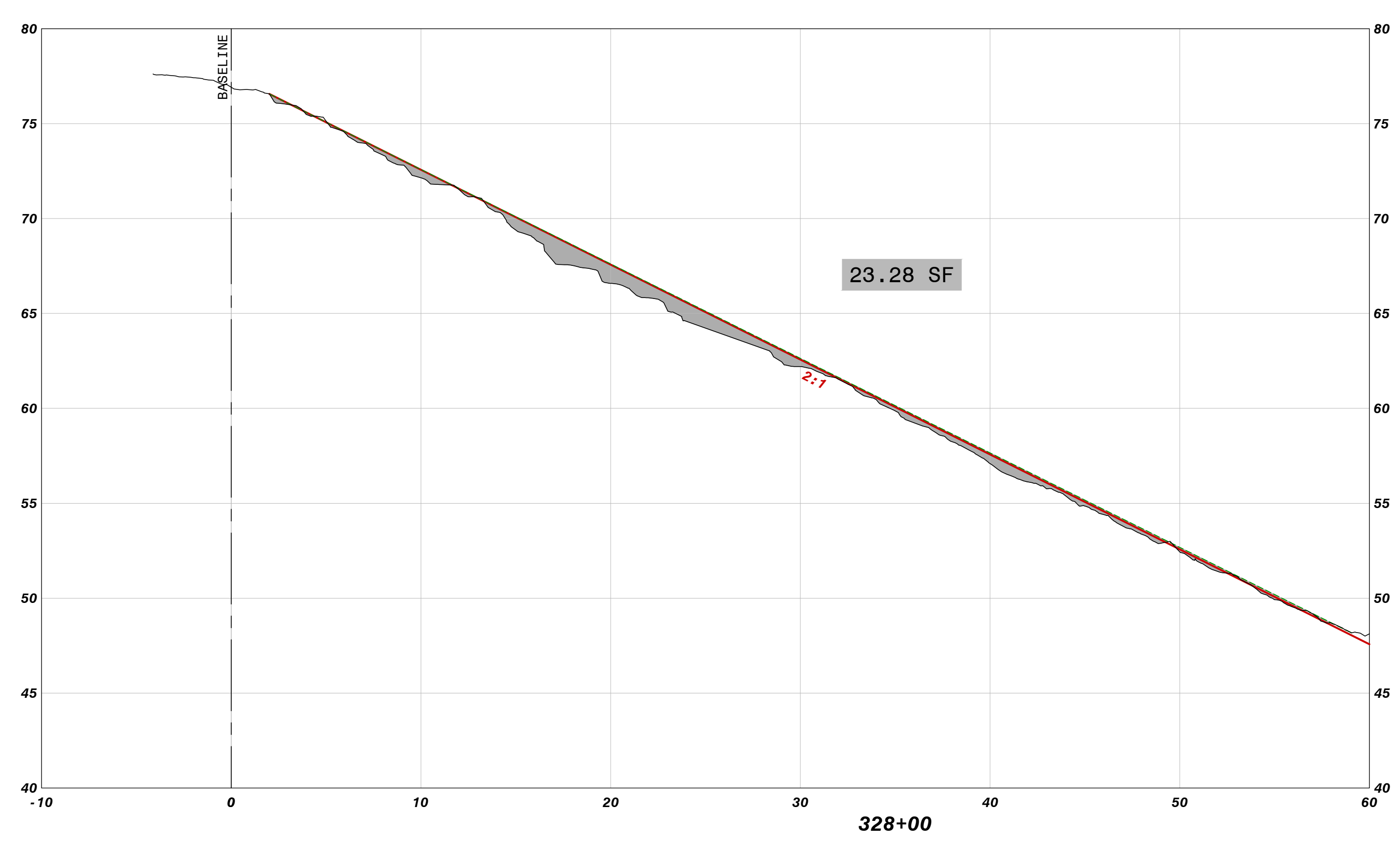
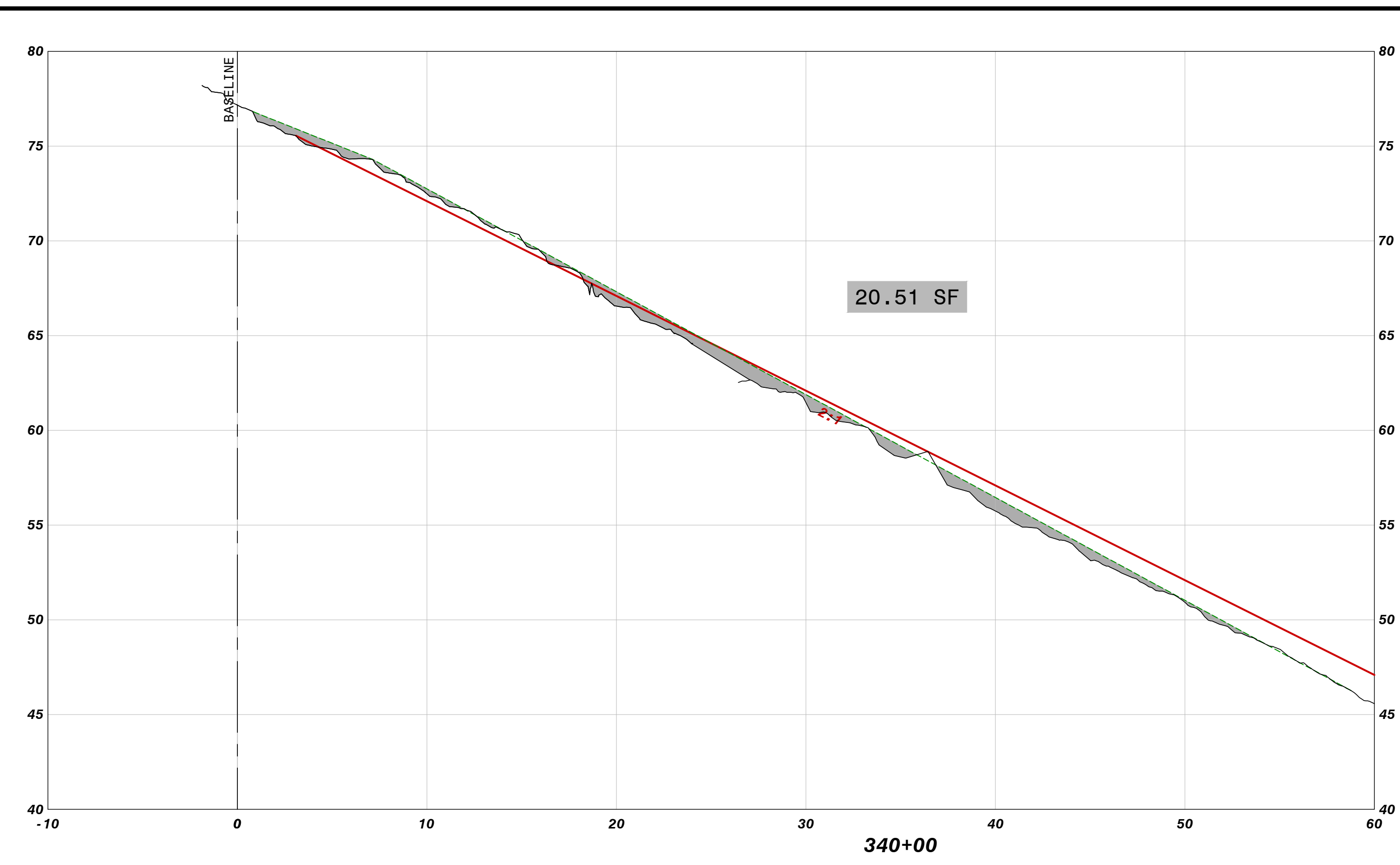
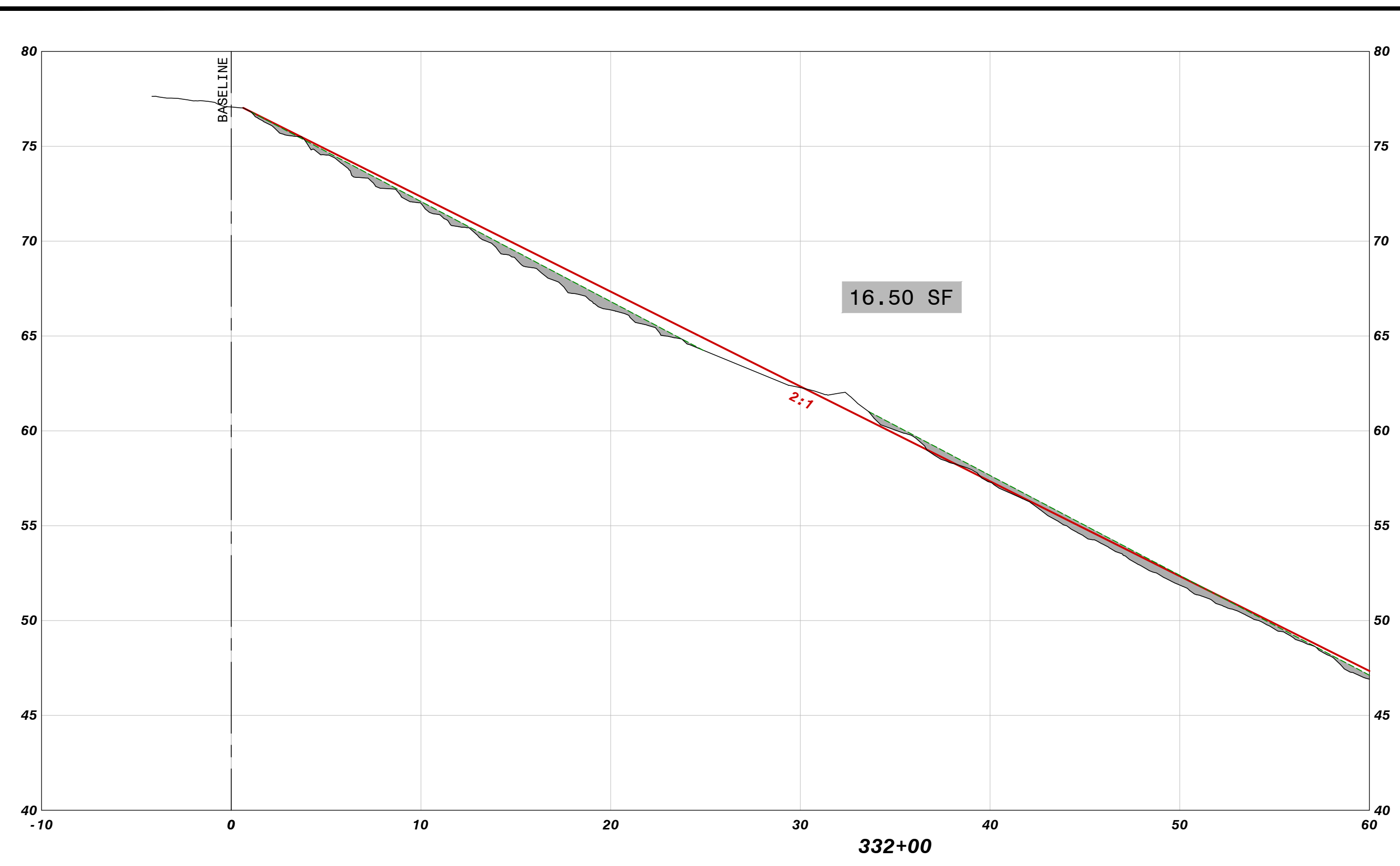
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	ORIGINAL DESIGN SLOPE
	PROJECTED SLOPE ALONG HIGH POINT OF STEPS
	AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392		NO.	DATE	REVISION
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 312+00 TO STA 324+00 PARRISH, FLORIDA				
DATE: June 17, 2015				
DRAWN BY: MAJ				
CHECKED BY: JAB				
PROJECT NO.: 300906				
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823				
DATE:				
20				

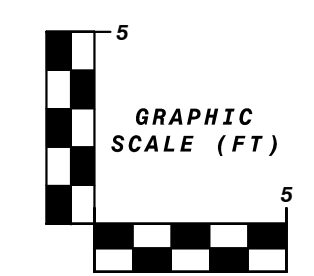
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



<p>amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 El Camino Real, Suite 300 Palo Alto, CA 94303 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	REVISION			
NO.	DATE	REVISION					

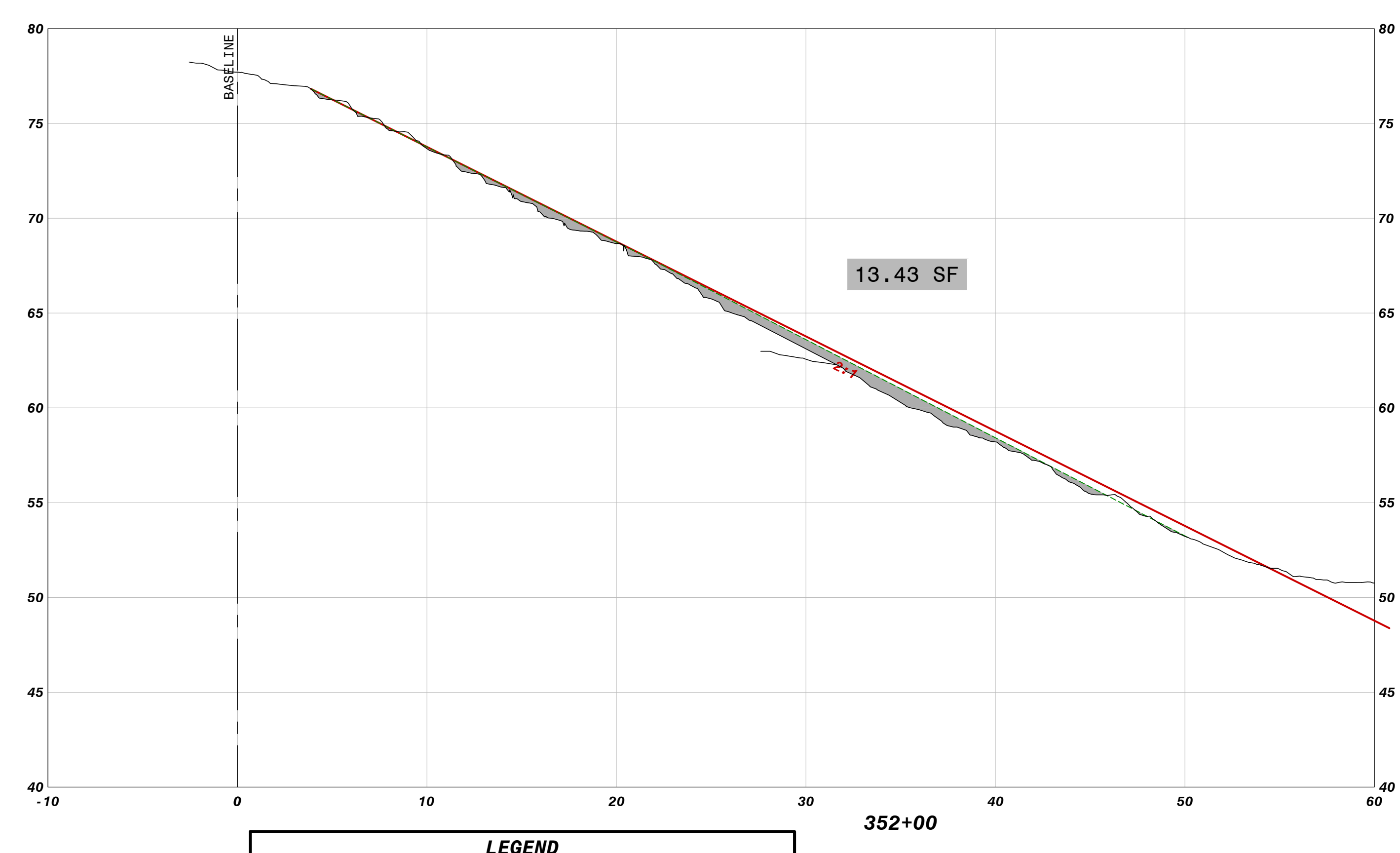
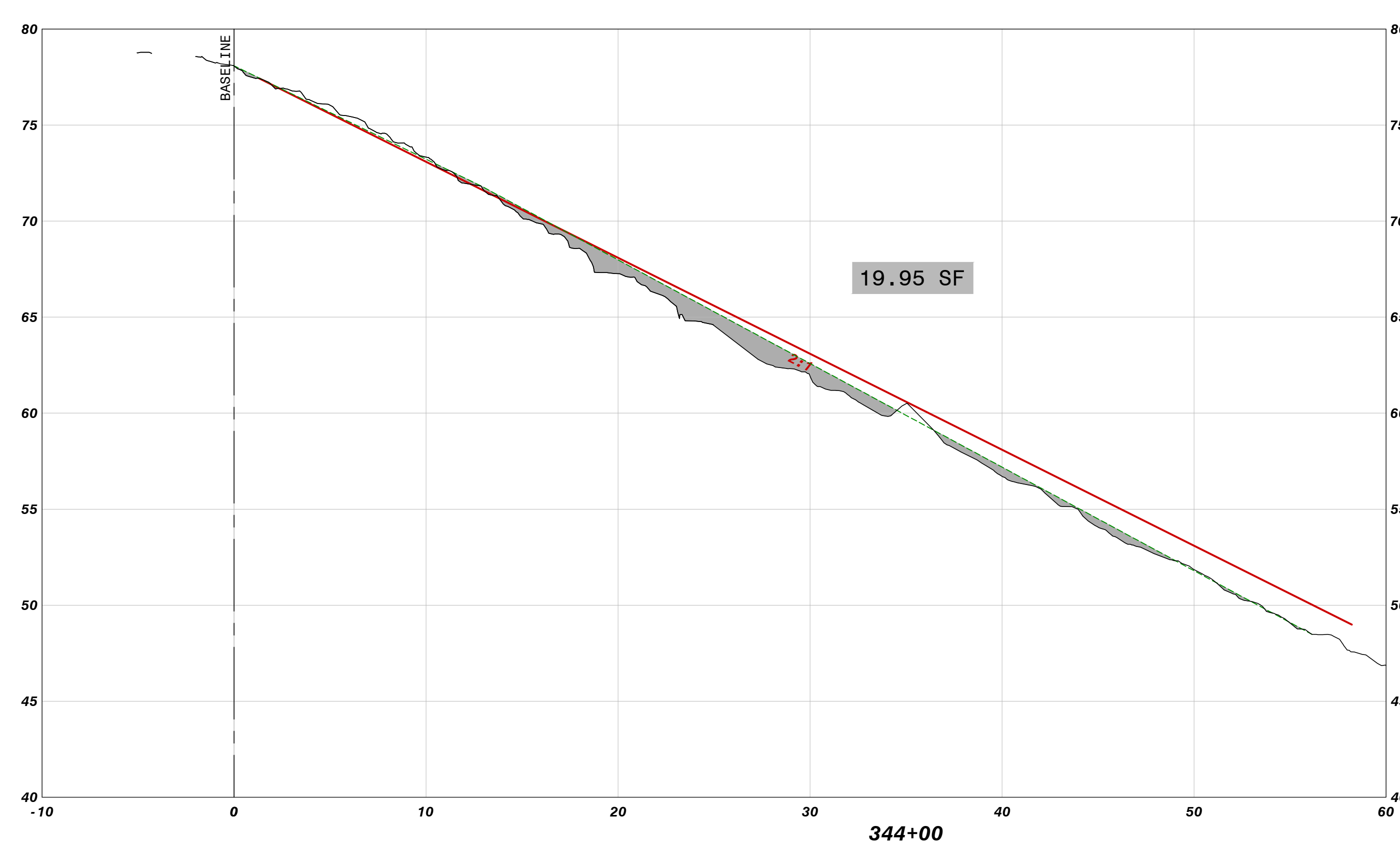
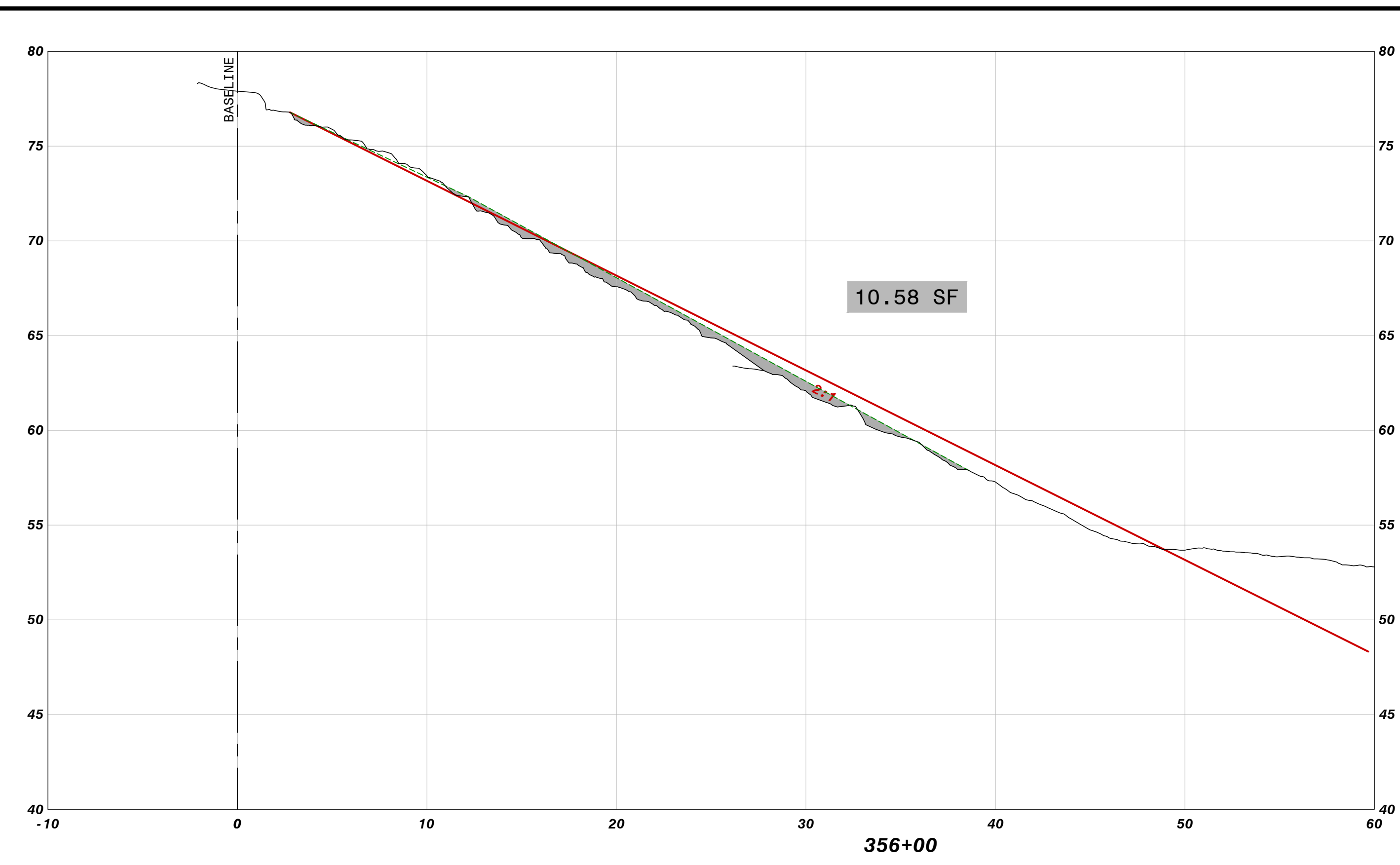
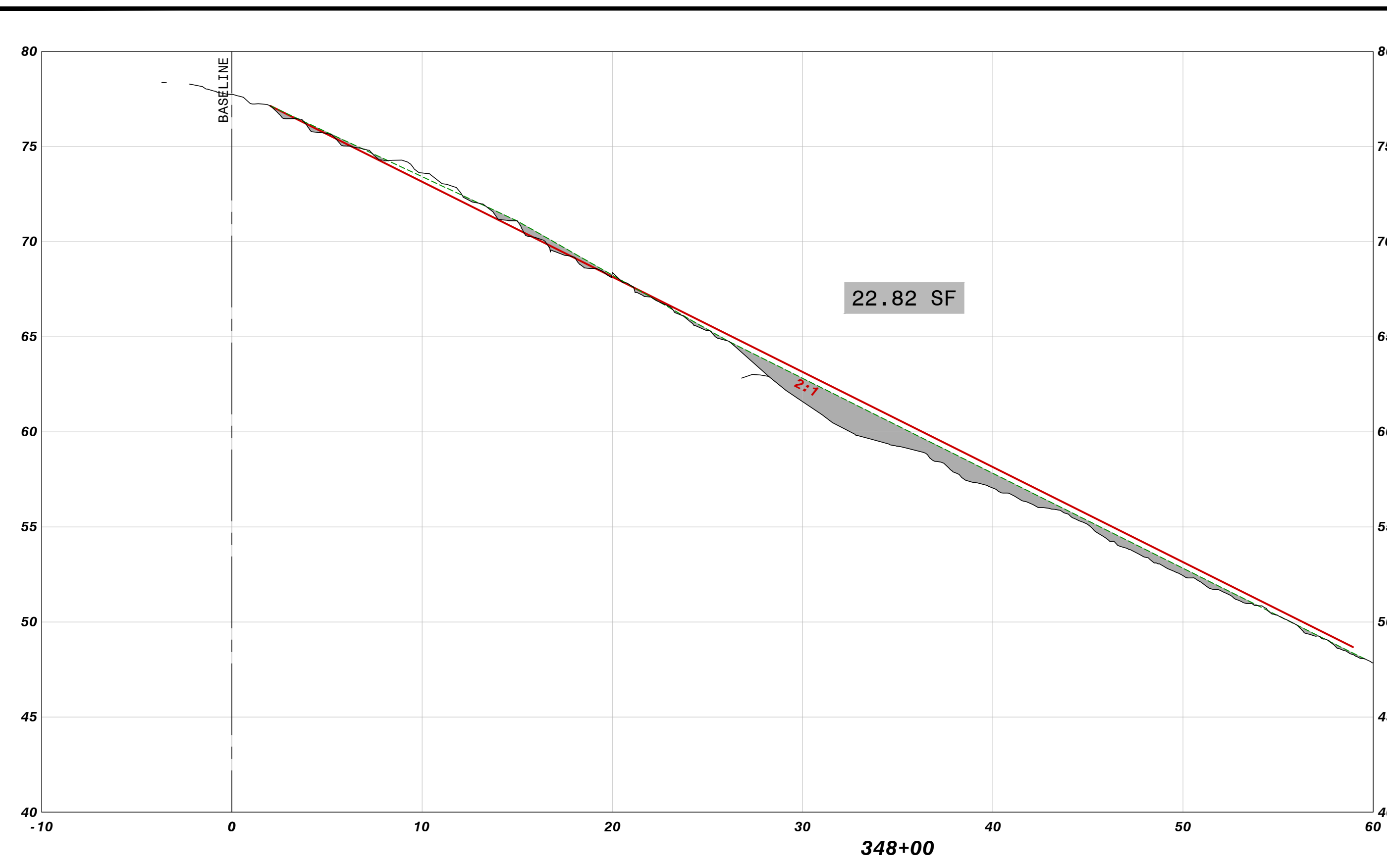
MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY

SOIL CEMENT CROSS SECTIONS
STA 328+00 TO STA 340+00
PARRISH, FLORIDA

DATE: June 17, 2015
DRAWN BY: MAJ
CHECKED BY: JAB
PROJECT NO.: 300906

JEFF BERISWILL, P.E.
FLA. REG. NO. 41823
DATE:

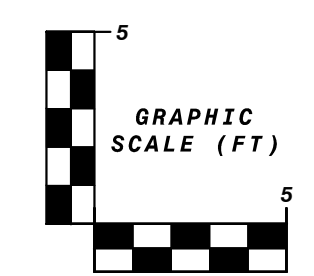
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

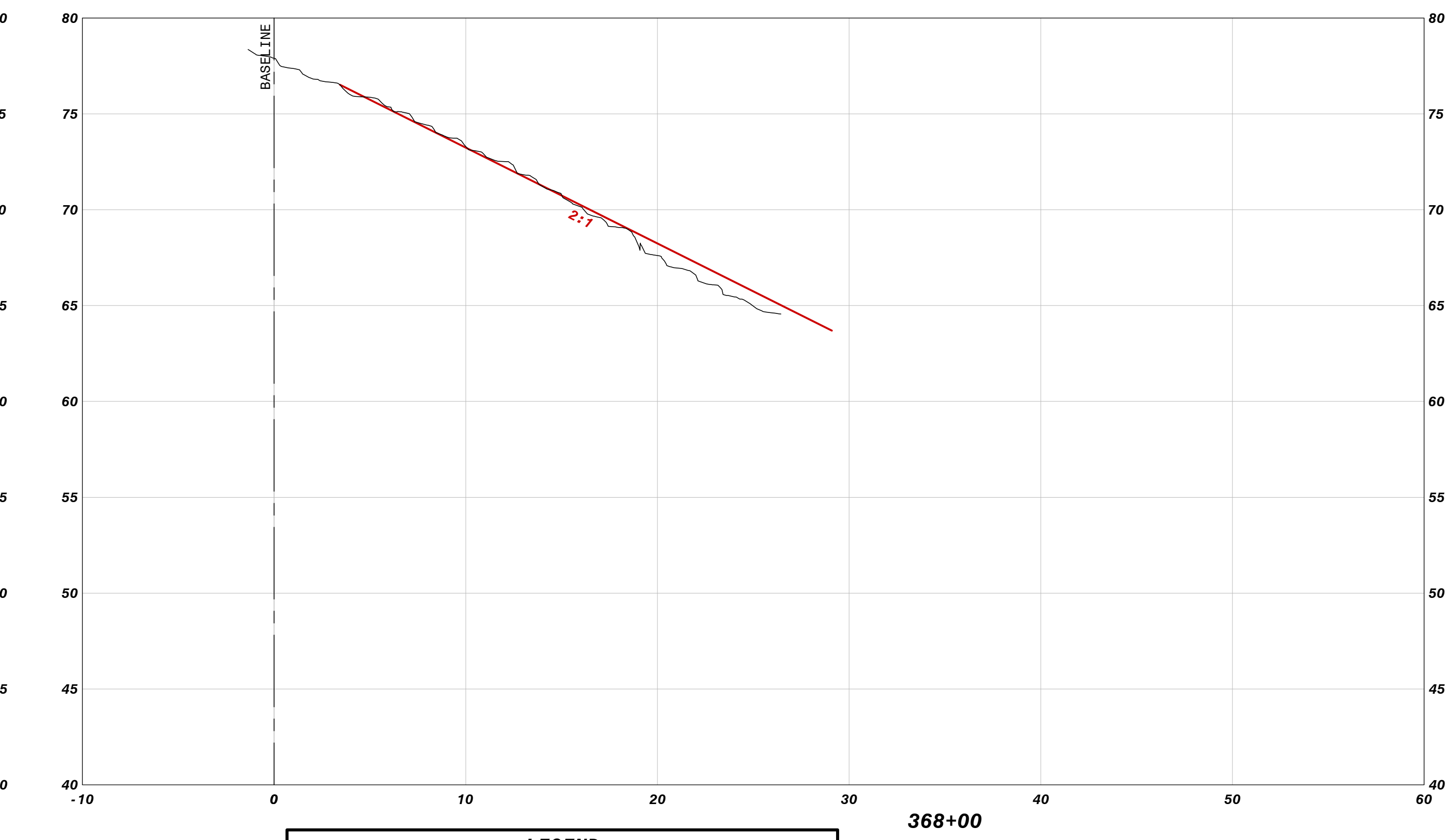
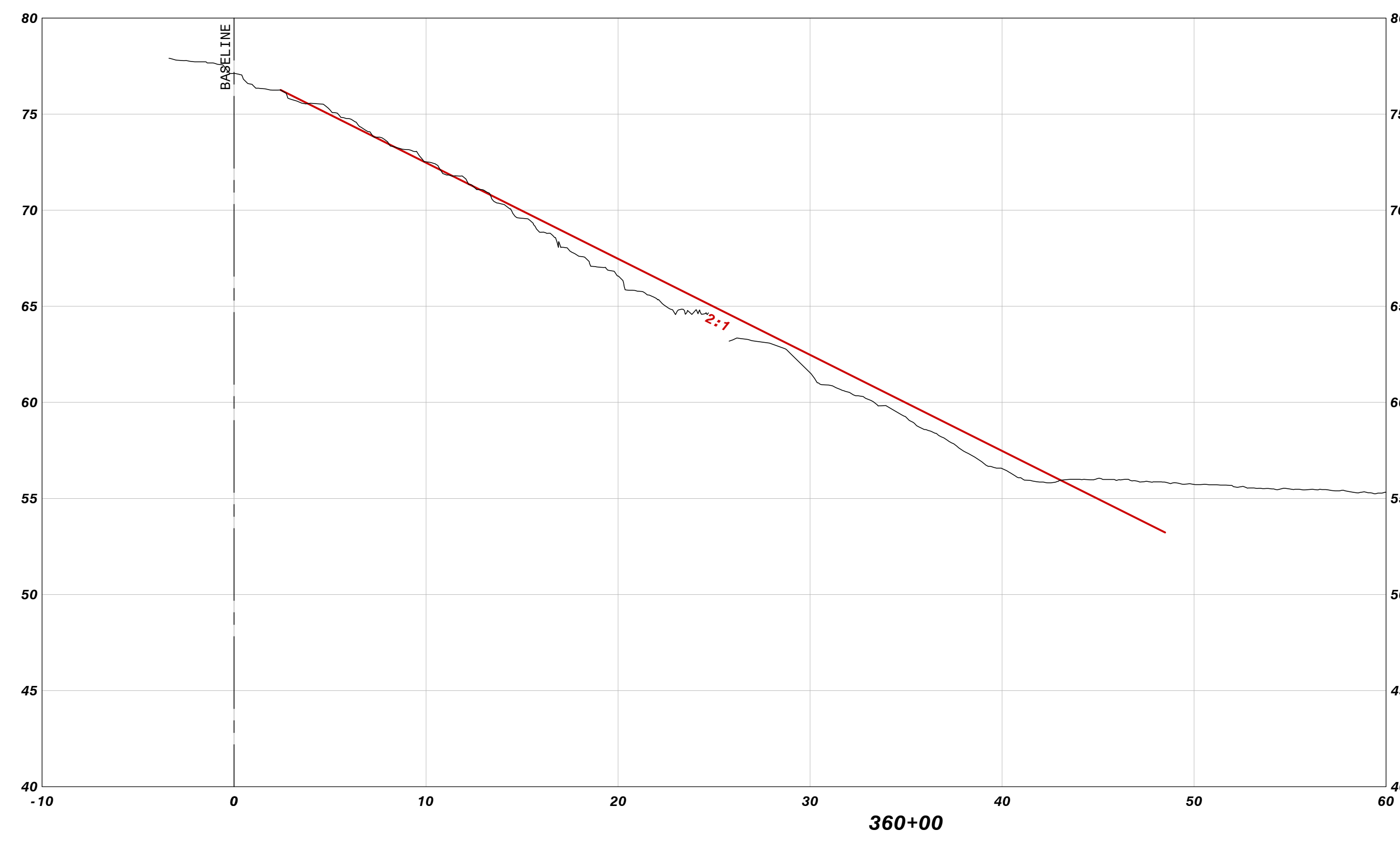
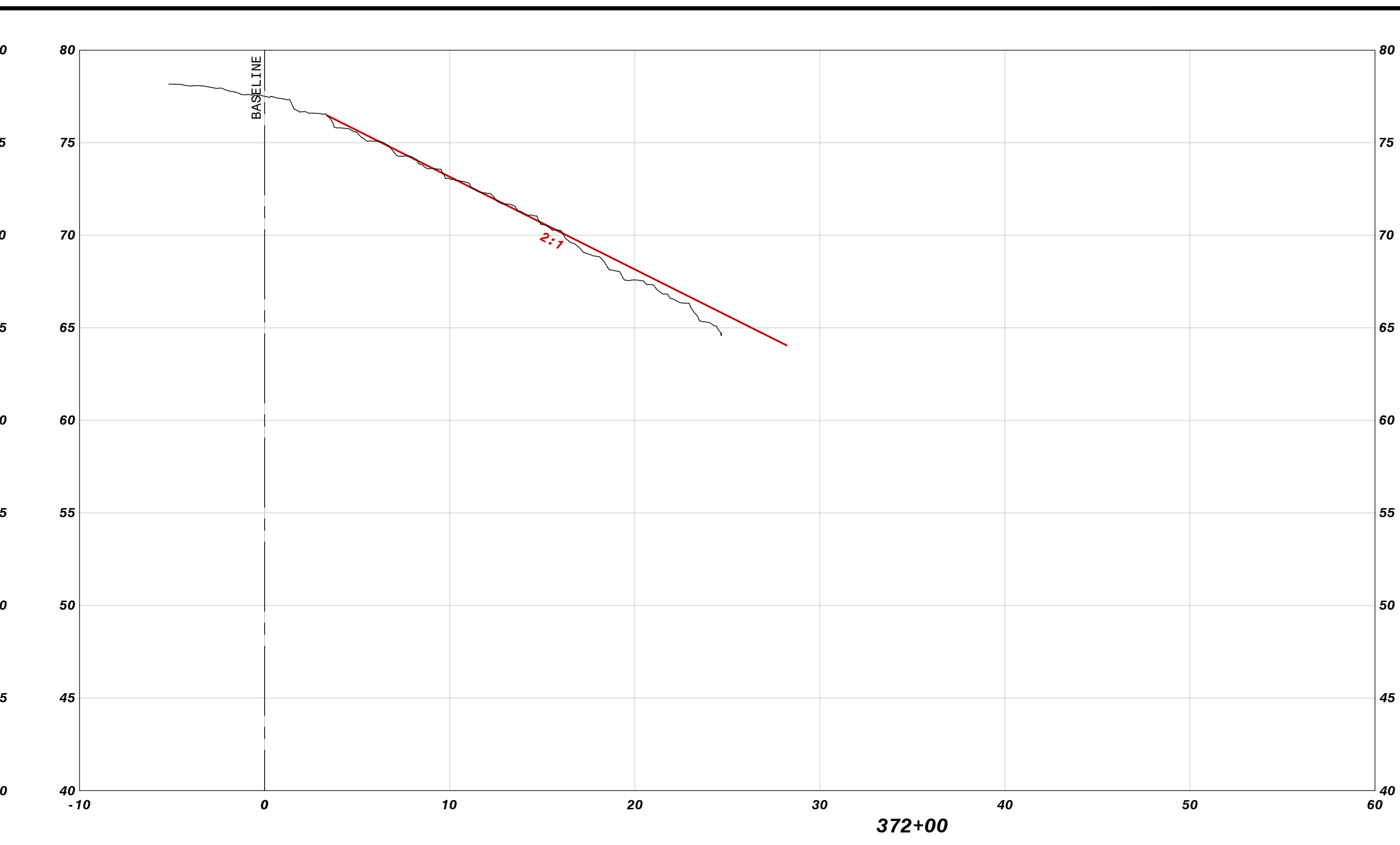
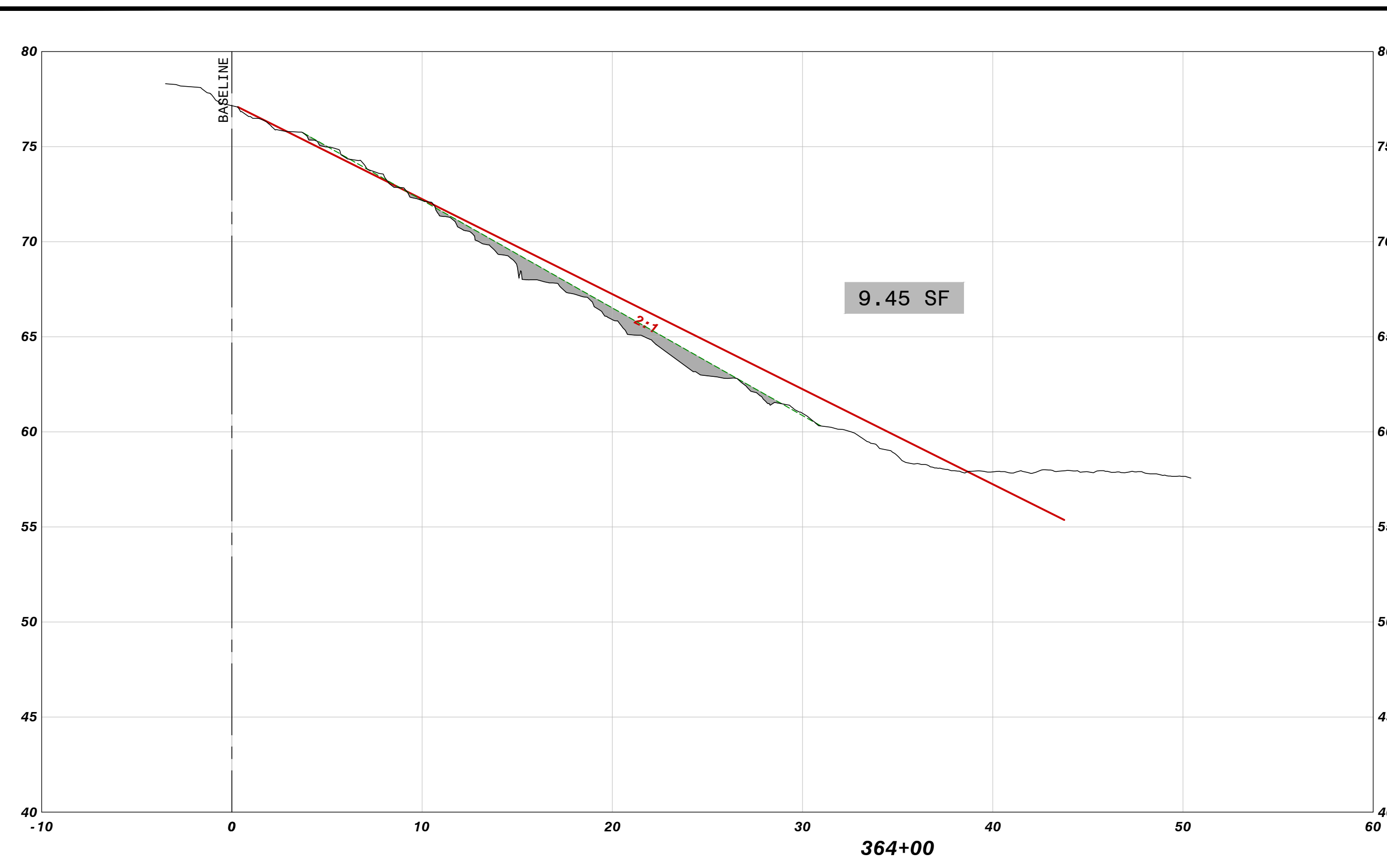
amec foster wheeler
 Amec Foster Wheeler
 Environment & Infrastructure, Inc.
 2000 E. Bayshore Blvd., Suite 300
 Palm Beach Gardens, FL 33418
 Phone: 1.863.867.2345 Fax: 1.863.867.2667
 www.amectw.com CA-5392

MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 344+00 TO STA 356+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

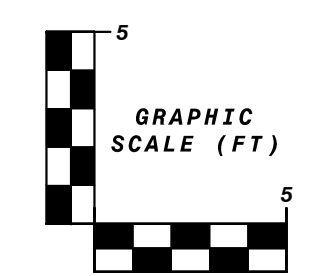
JEFF BERISWILL, P.E.
 FLA. REG. NO. 41823
 DATE:

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LEGEND	
	EXISTING GRADE
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	PROJECTED SLOPE ALONG HIGH POINT OF STEPS
	AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

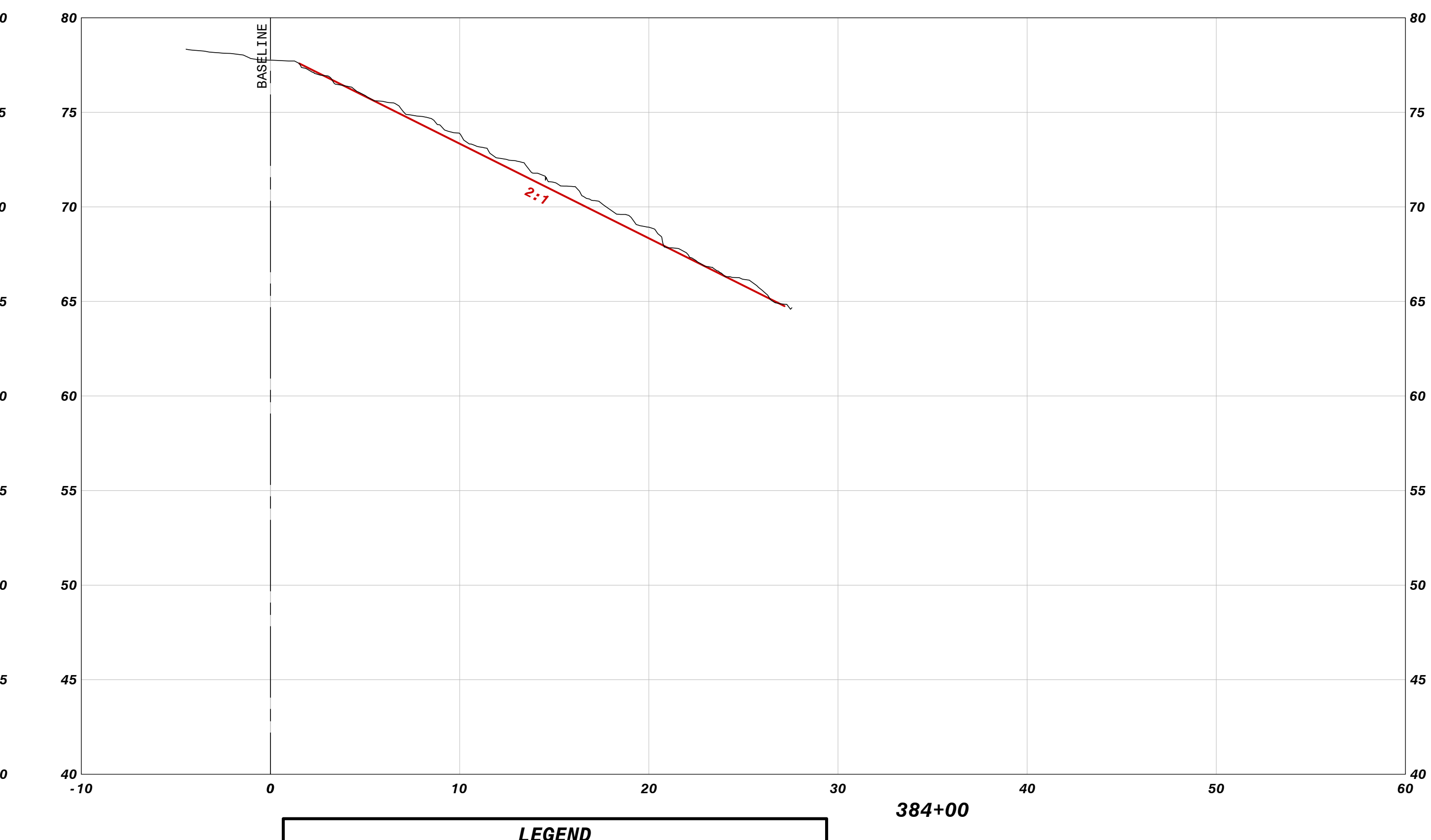
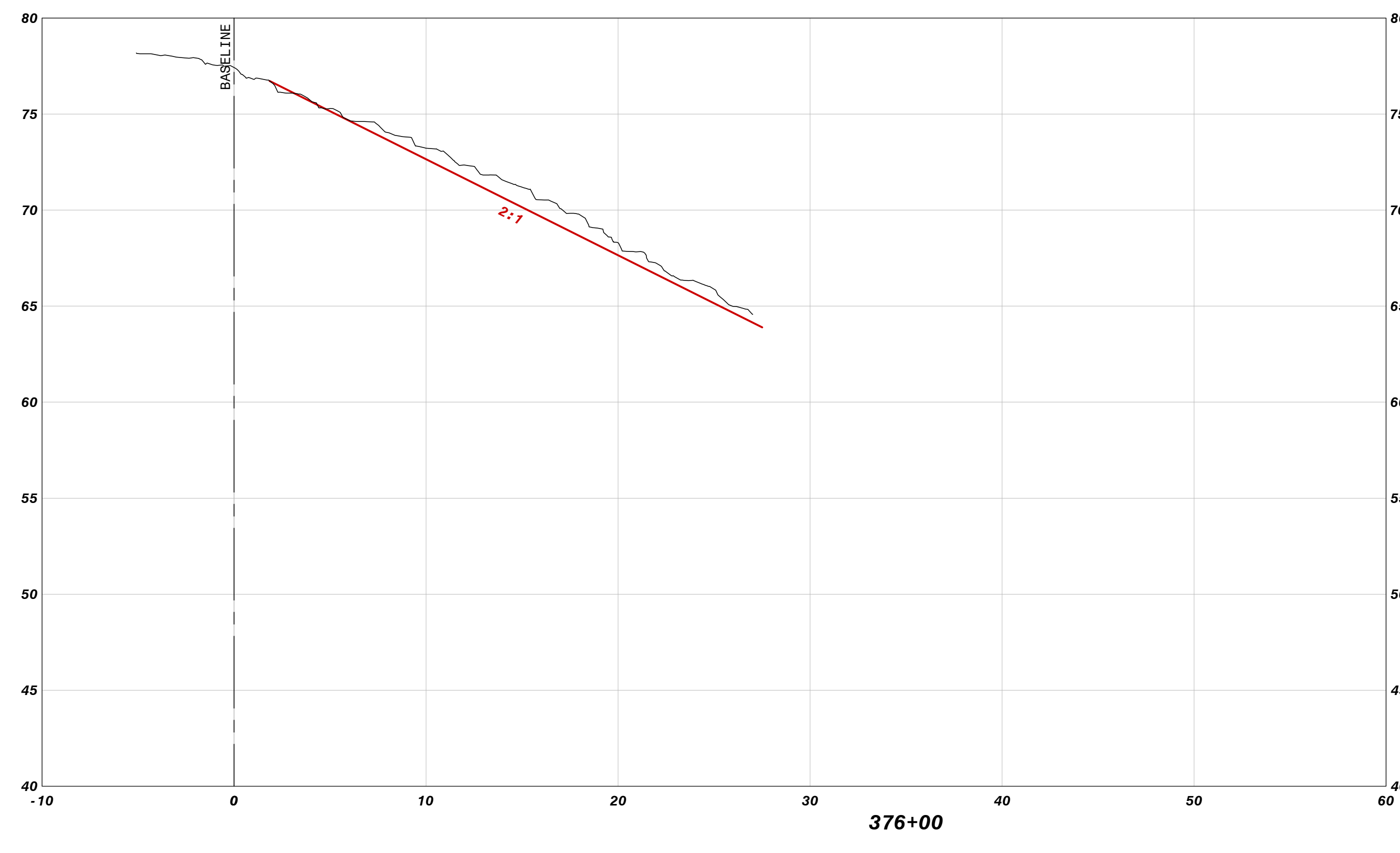
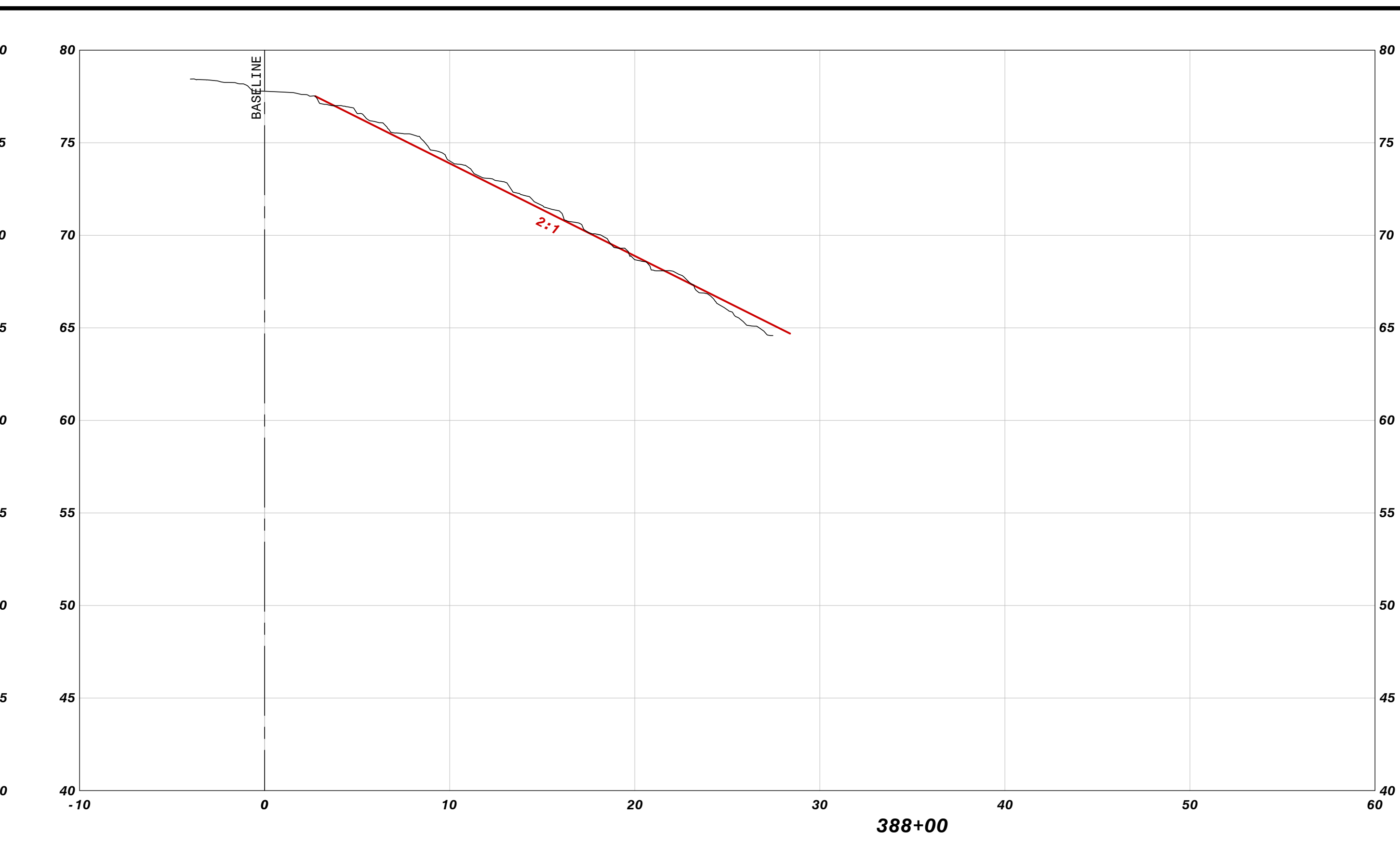
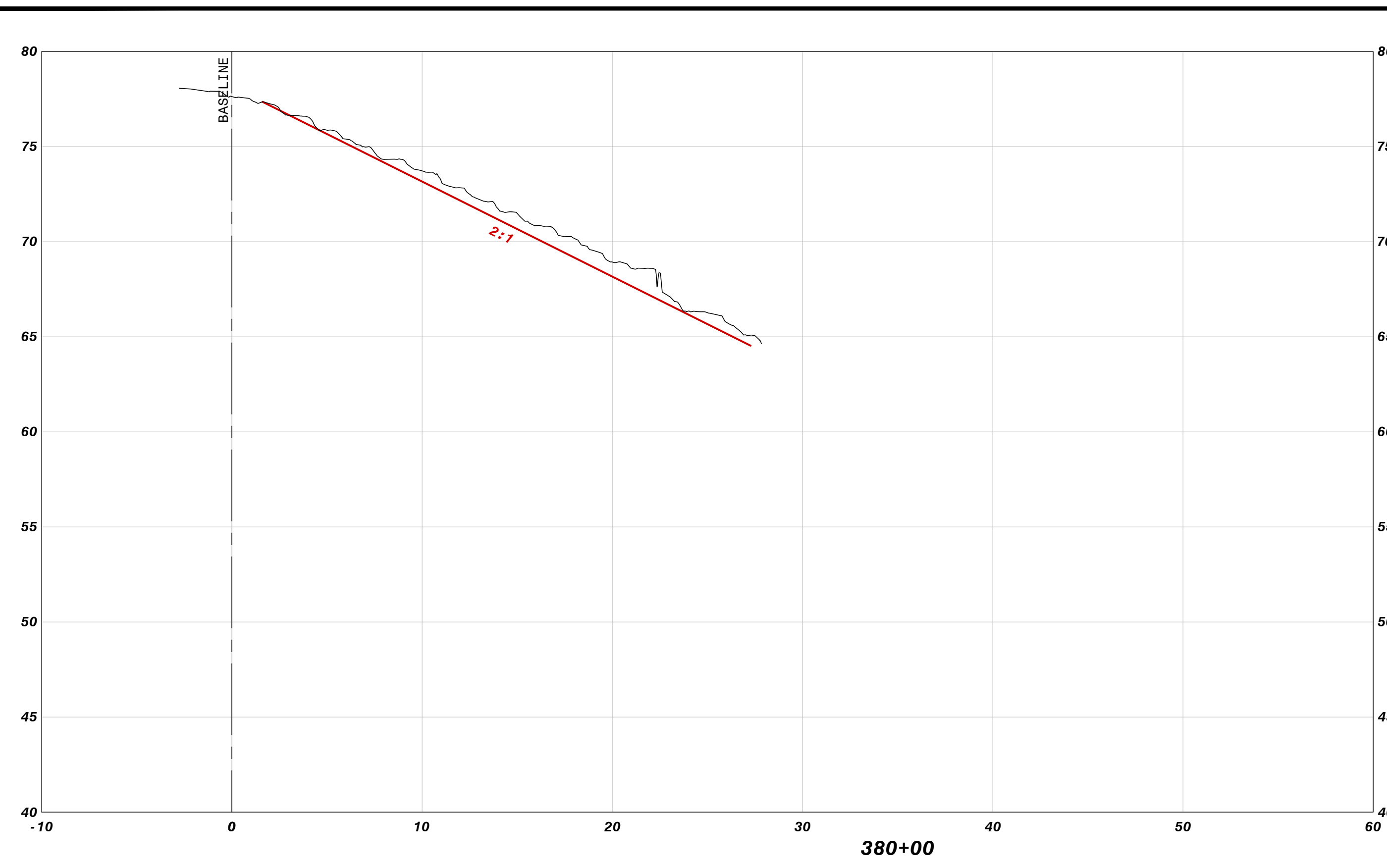
amec foster wheeler
 Amec Foster Wheeler
 Environment & Infrastructure, Inc.
 2000 E. Las Colinas Blvd., Suite 3300
 Irving, TX 75039
 Phone: 1.863.867.2345 Fax: 1.863.867.2667
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MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY
SOIL CEMENT CROSS SECTIONS
STA 360+00 TO STA 372+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
 FLA. REG. NO. 41823
 DATE:

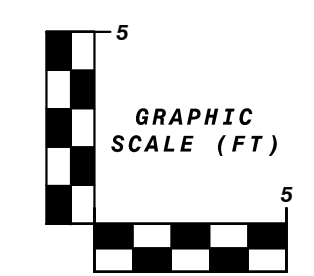
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
 EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
 COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

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 2000 E. Las Colinas Blvd., Suite 300
 Irving, TX 75039
 Phone: 1.863.867.2345 Fax: 1.863.867.2667
 www.amectw.com CA-5392

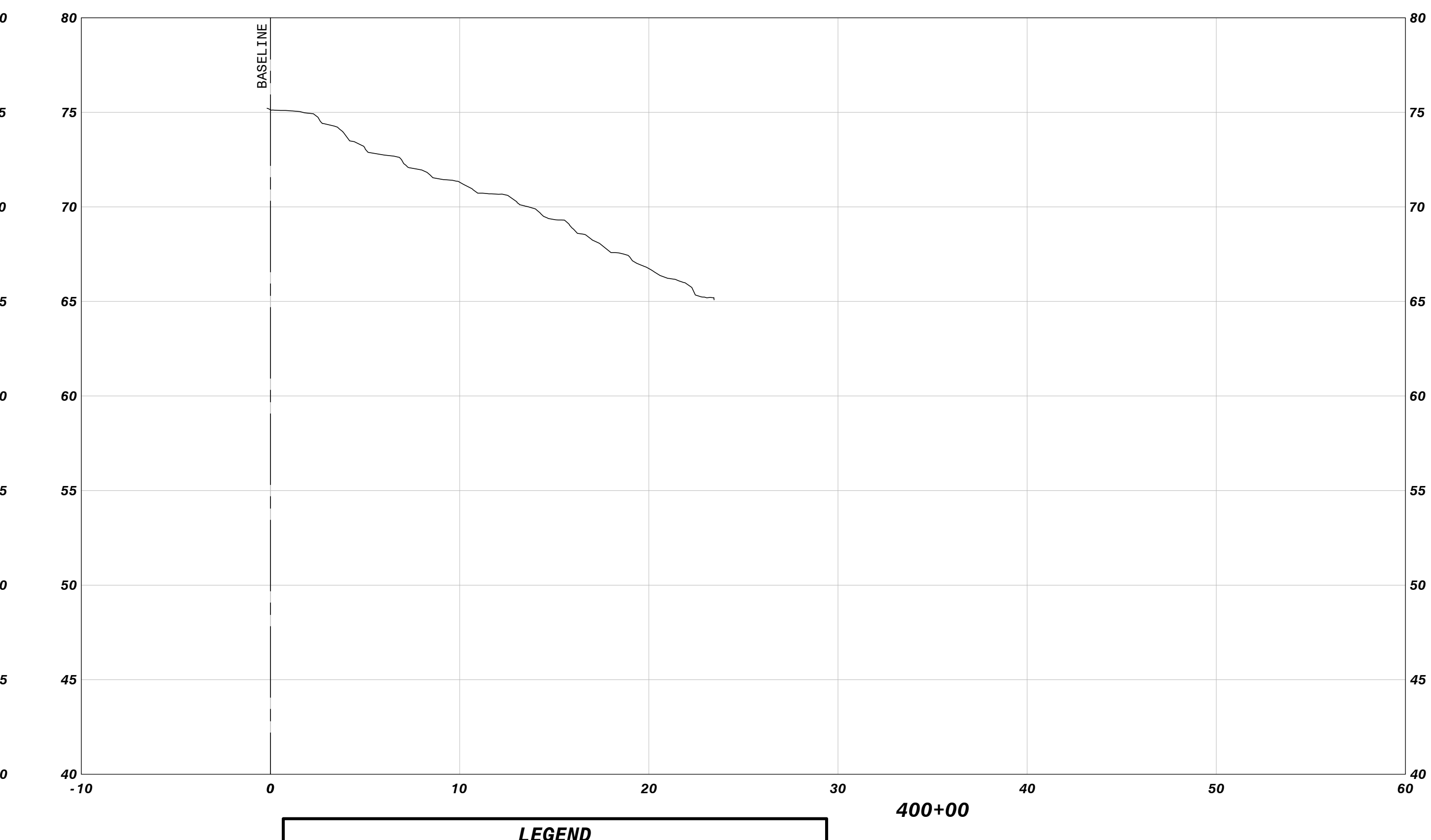
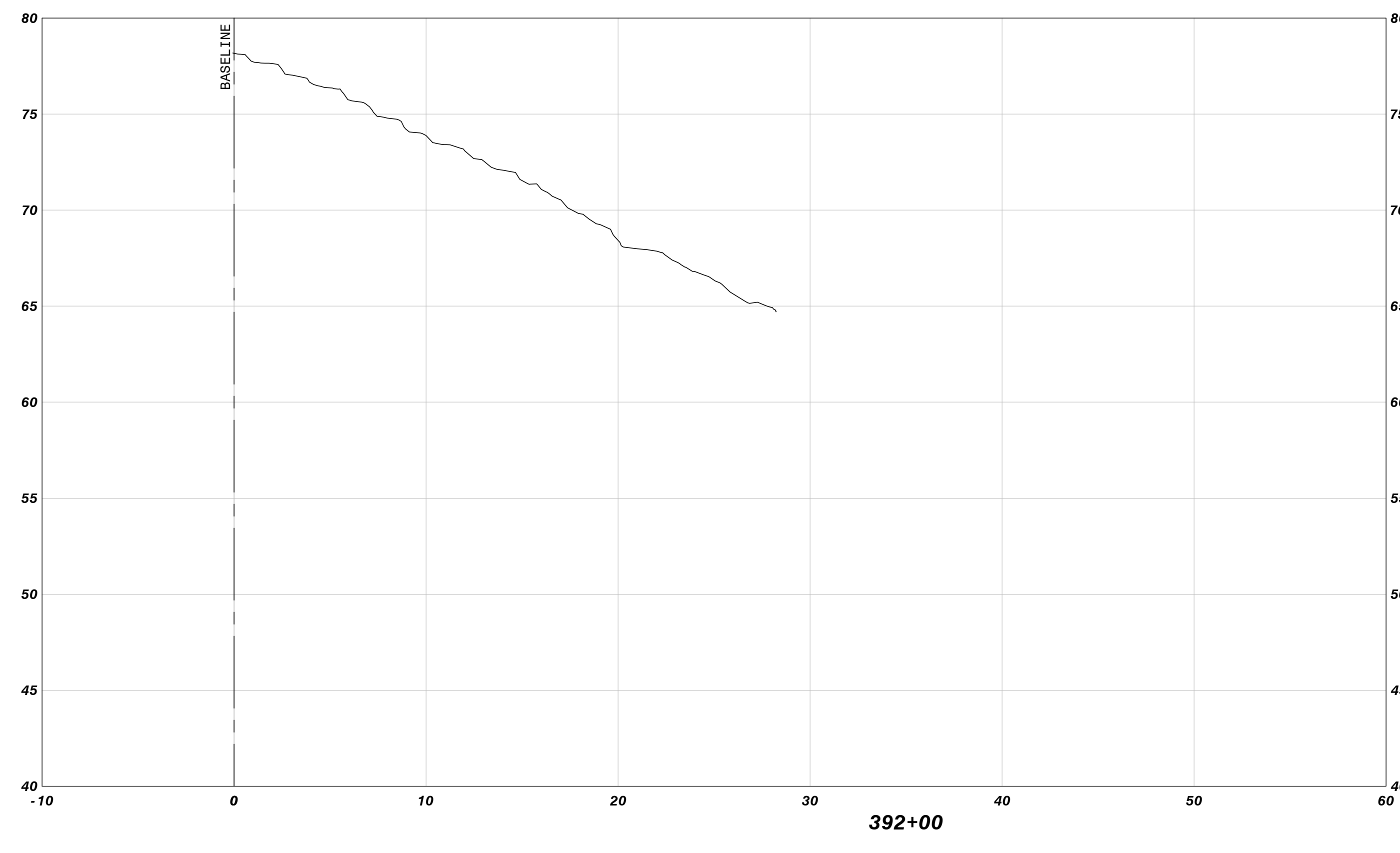
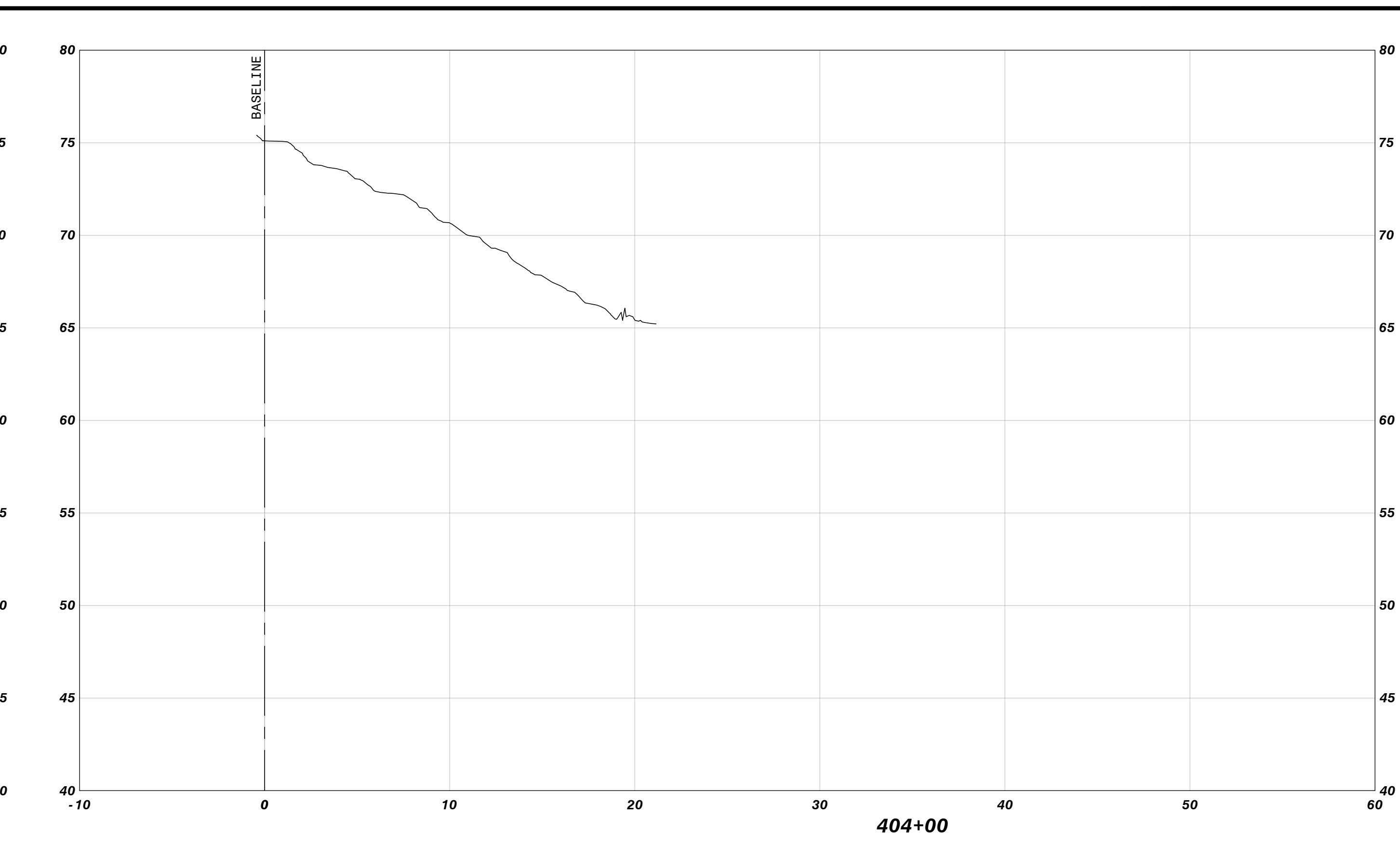
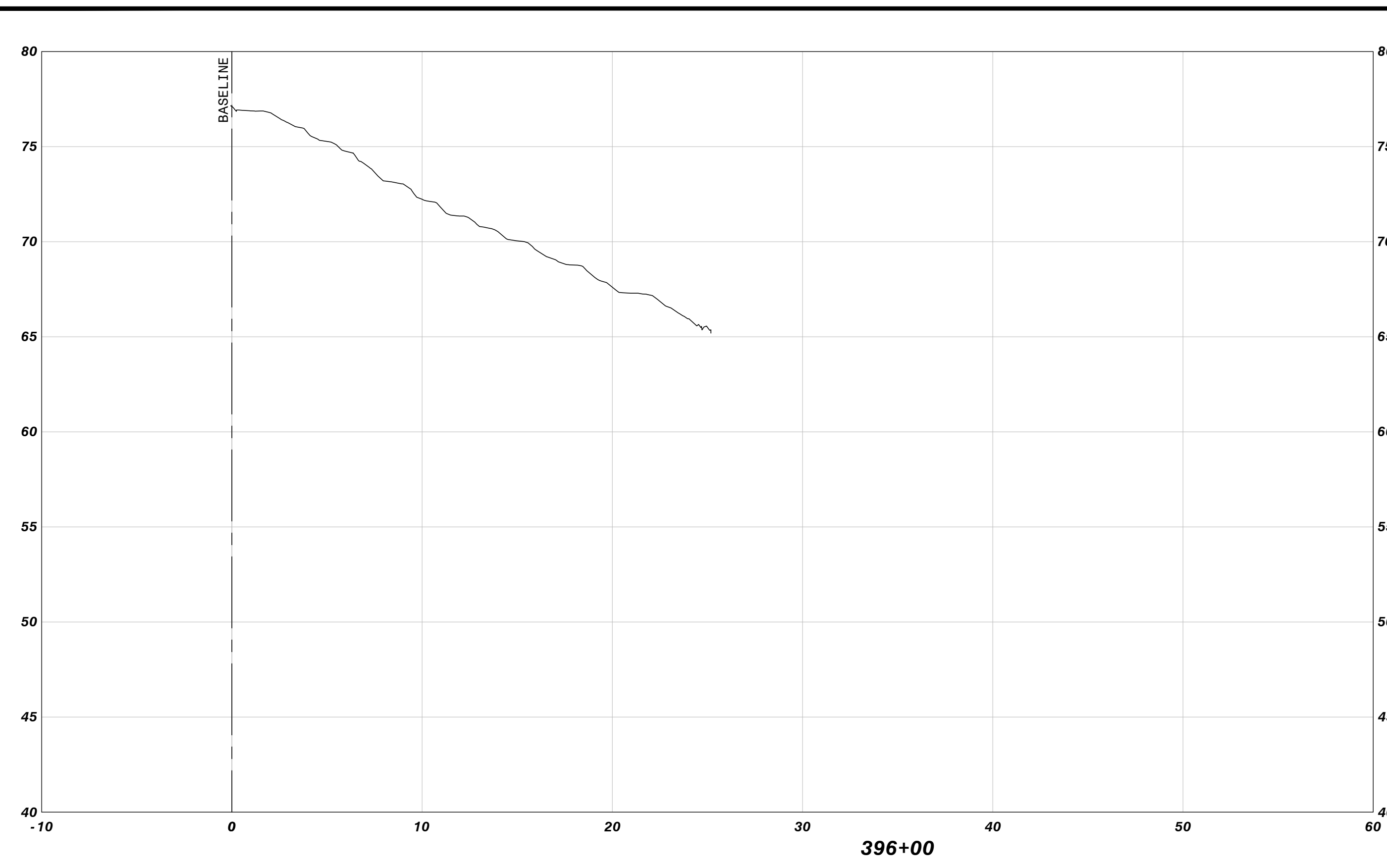
MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY

SOIL CEMENT CROSS SECTIONS
STA 376+00 TO STA 388+00
PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERISWILL, P.E.
 FLA. REG. NO. 41823
 DATE:

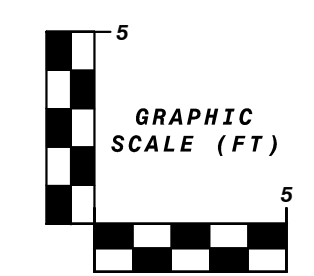
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
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 COMBINED LIDAR & SONAR; APRIL 2015





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Amec Foster Wheeler
 Environment & Infrastructure, Inc.
 2000 El Camino Real, Suite 300
 San Diego, CA 92108
 Phone: 1.863.867.2345 Fax: 1.863.867.2667
 www.amectw.com CA-5392

NO.	DATE	REVISION

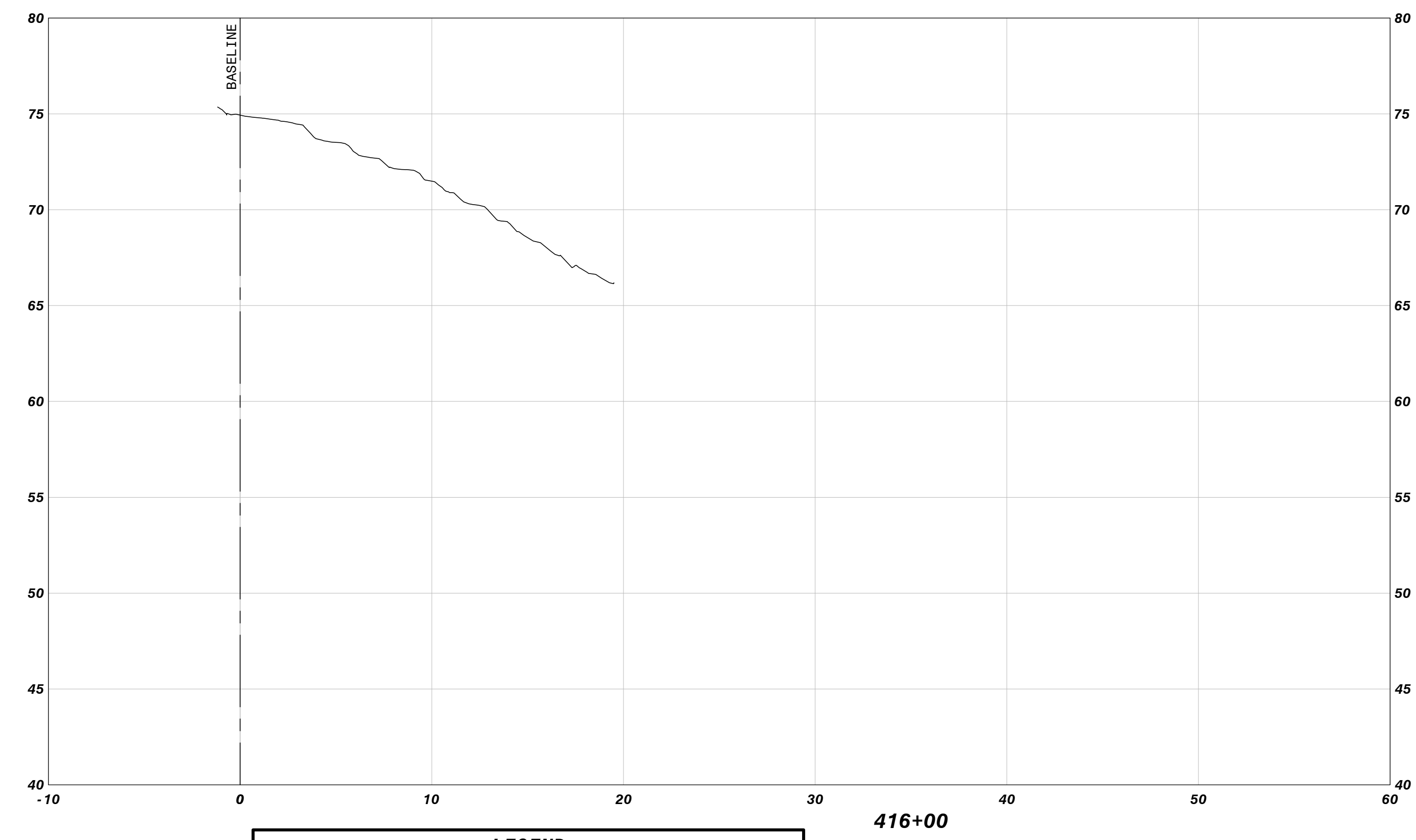
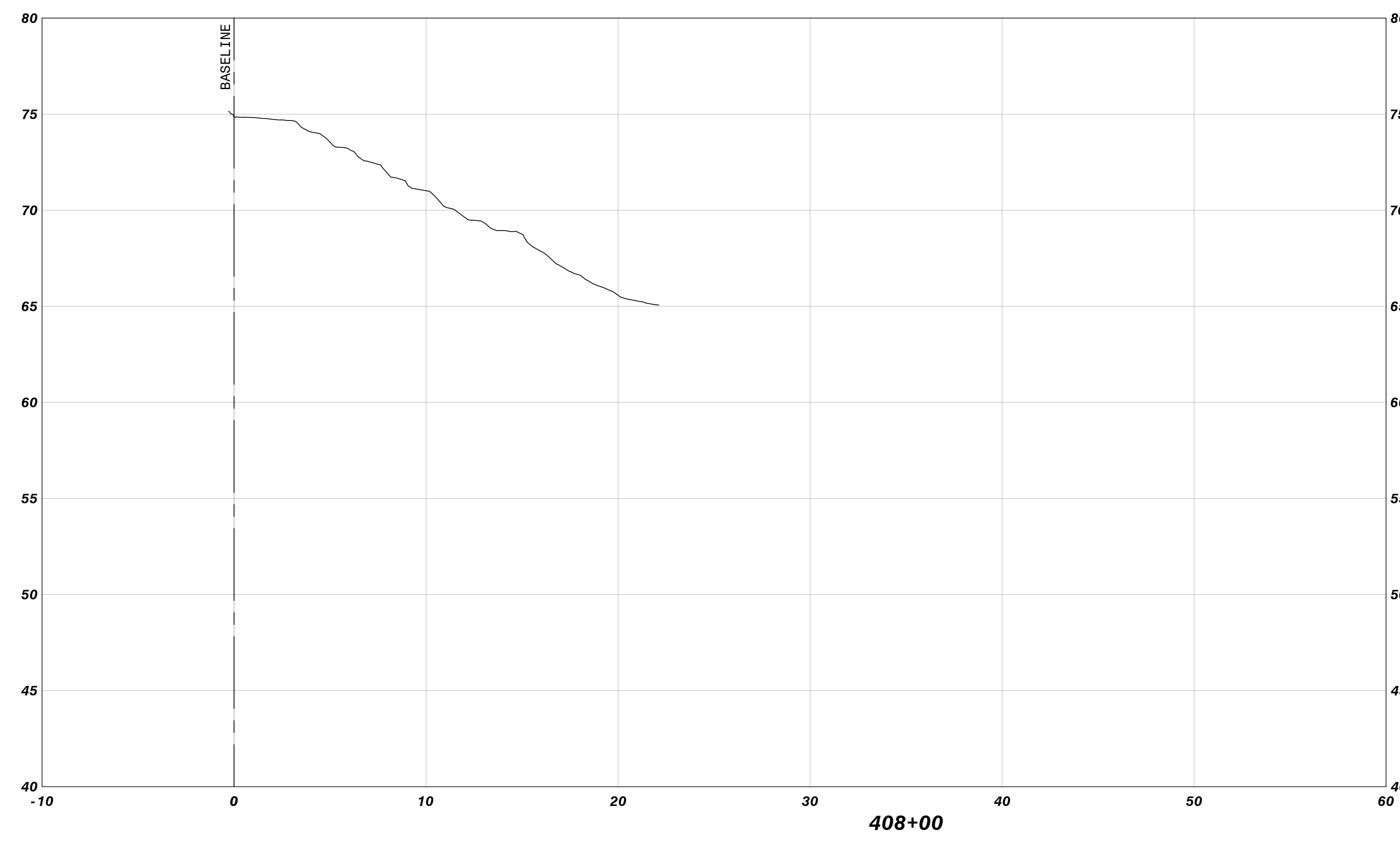
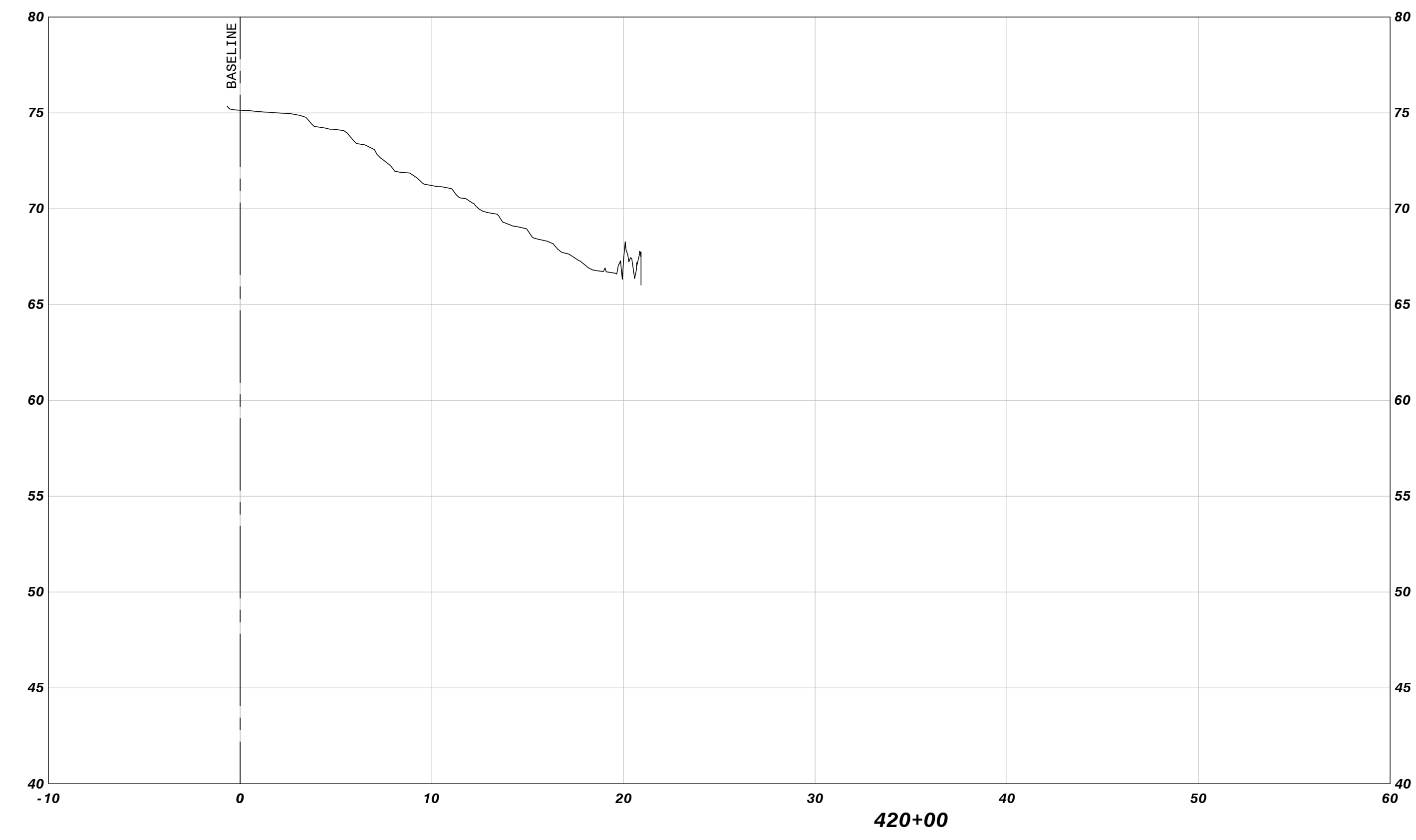
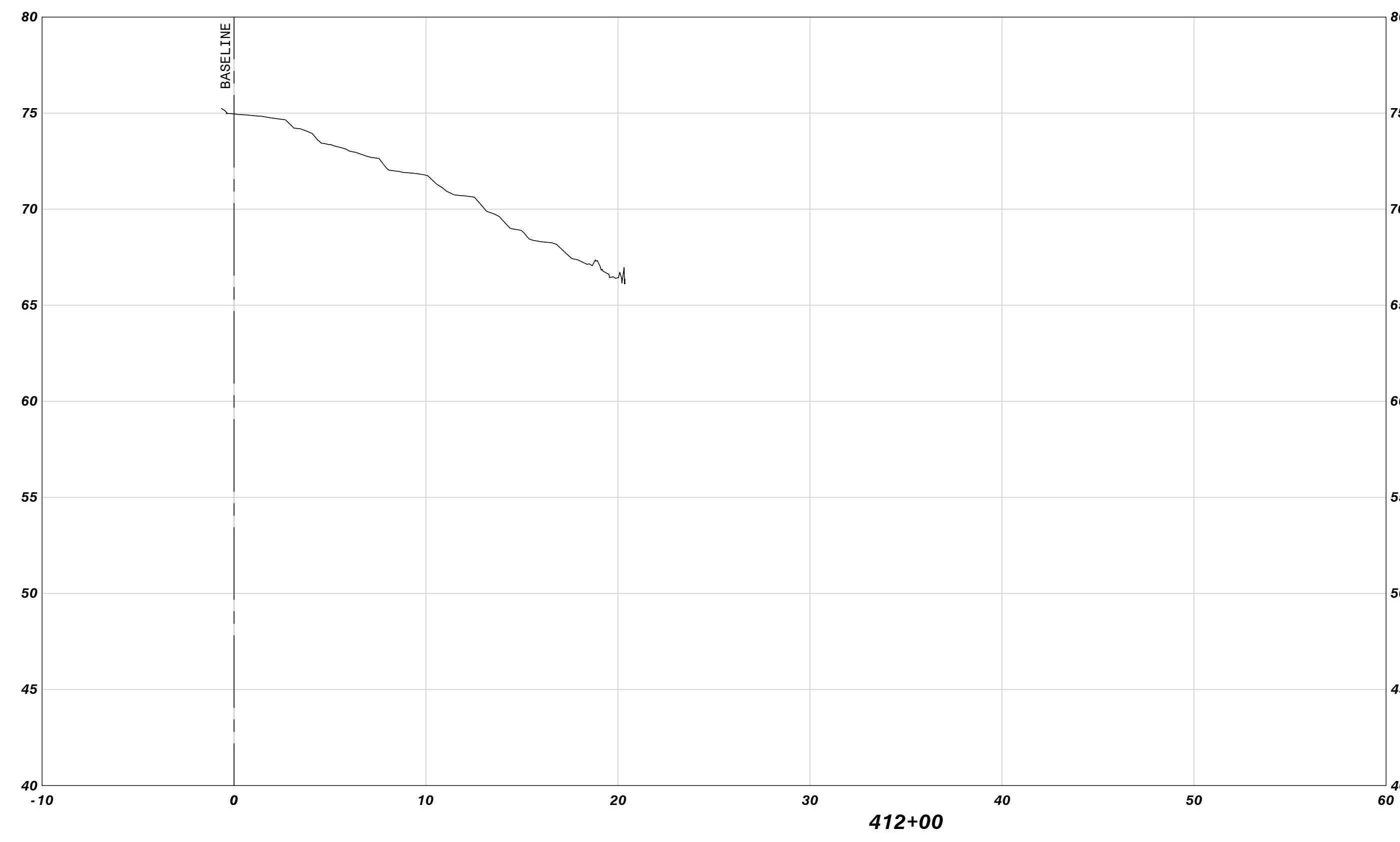
MANATEE COOLING POND
 FLORIDA POWER & LIGHT COMPANY

SOIL CEMENT CROSS SECTIONS
 STA 392+00 TO STA 404+00
 PARRISH, FLORIDA

DATE: June 17, 2015
 DRAWN BY: MAJ
 CHECKED BY: JAB
 PROJECT NO.: 300906

JEFF BERISWILL, P.E.
 FLA. REG. NO. 41823
 DATE:

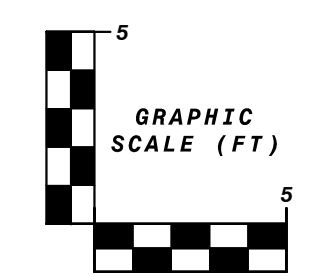
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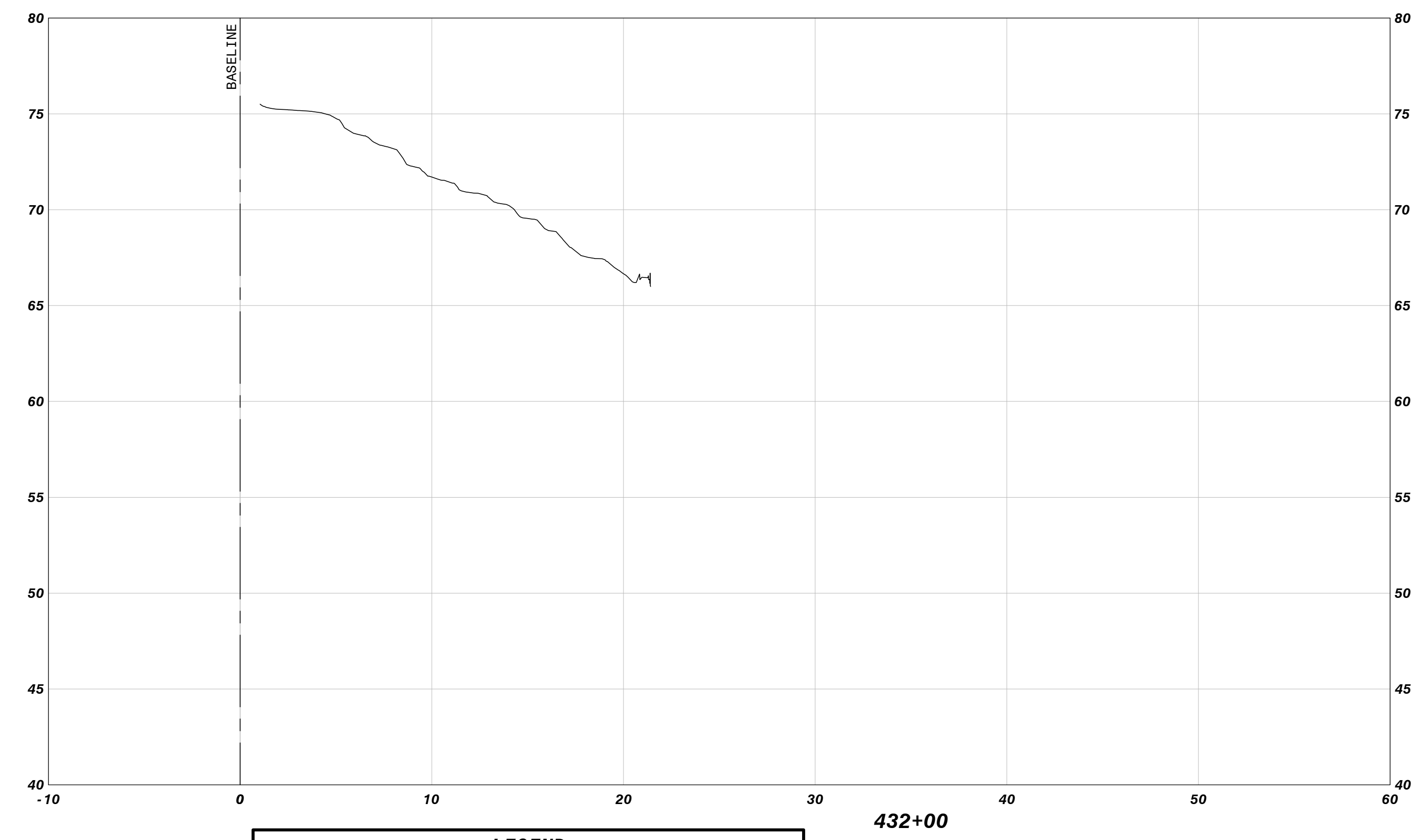
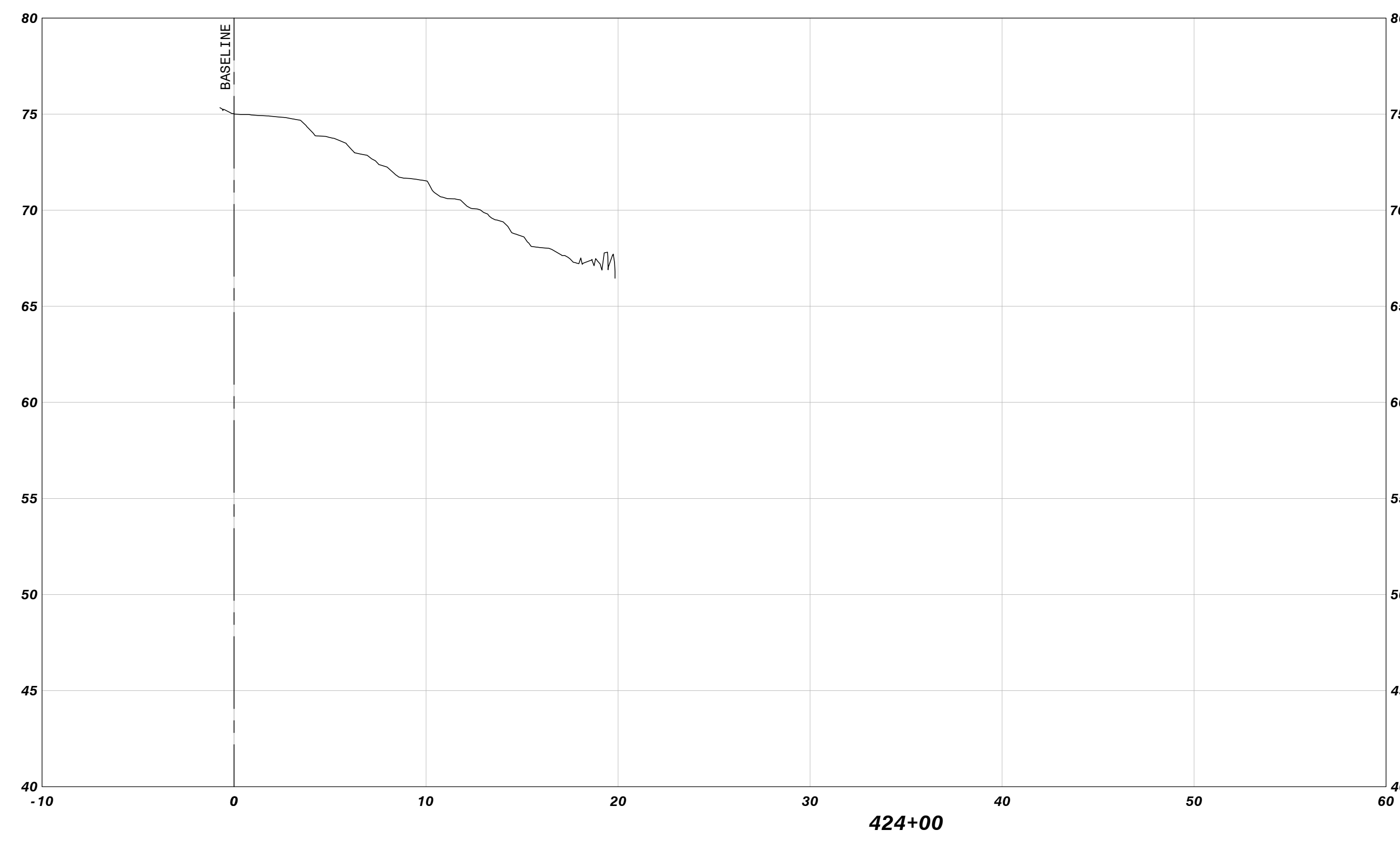
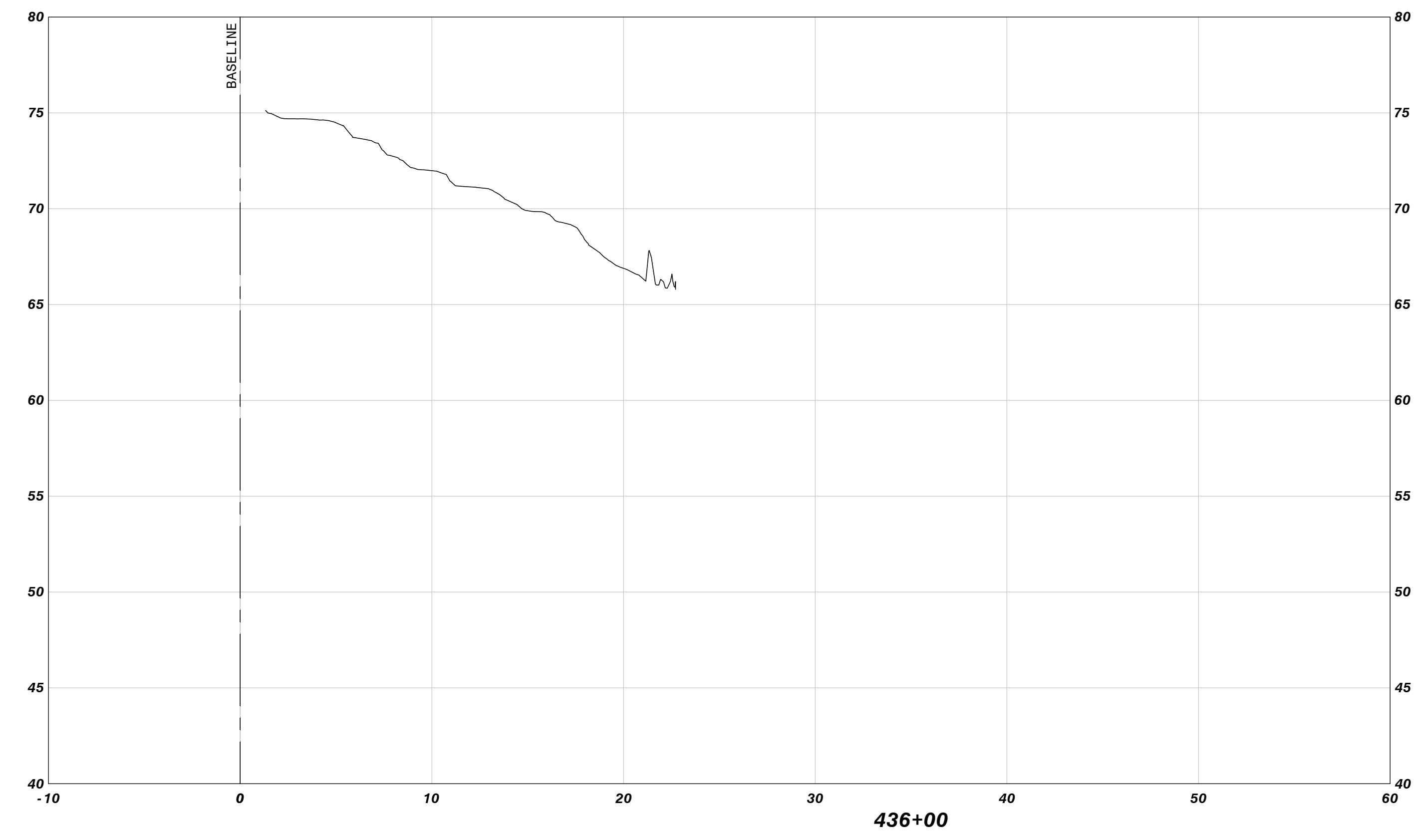
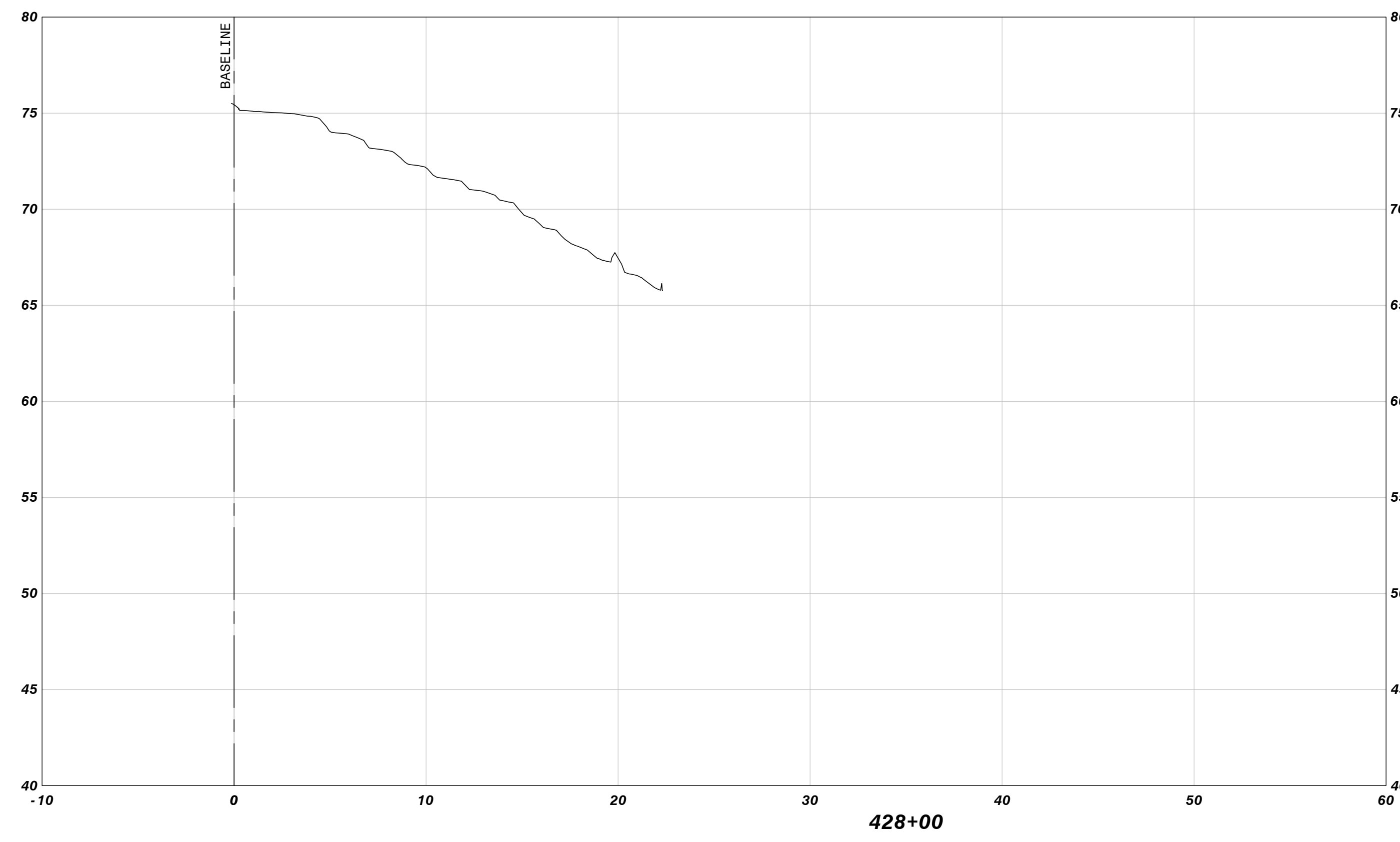
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler Amec Foster Wheeler Environment & Infrastructure, Inc. 2000 E. Las Colinas Blvd., Suite 300 Irving, TX 75039 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392							
MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 408+00 TO STA 420+00 PARRISH, FLORIDA	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">NO.</th> <th style="width: 20%;">DATE</th> <th style="width: 20%;">REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	REVISION			
NO.	DATE	REVISION					
DATE: June 17, 2015 DRAWN BY: MAJ CHECKED BY: JAB PROJECT NO.: 300906							
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823 DATE:							
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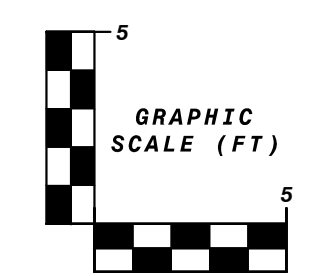
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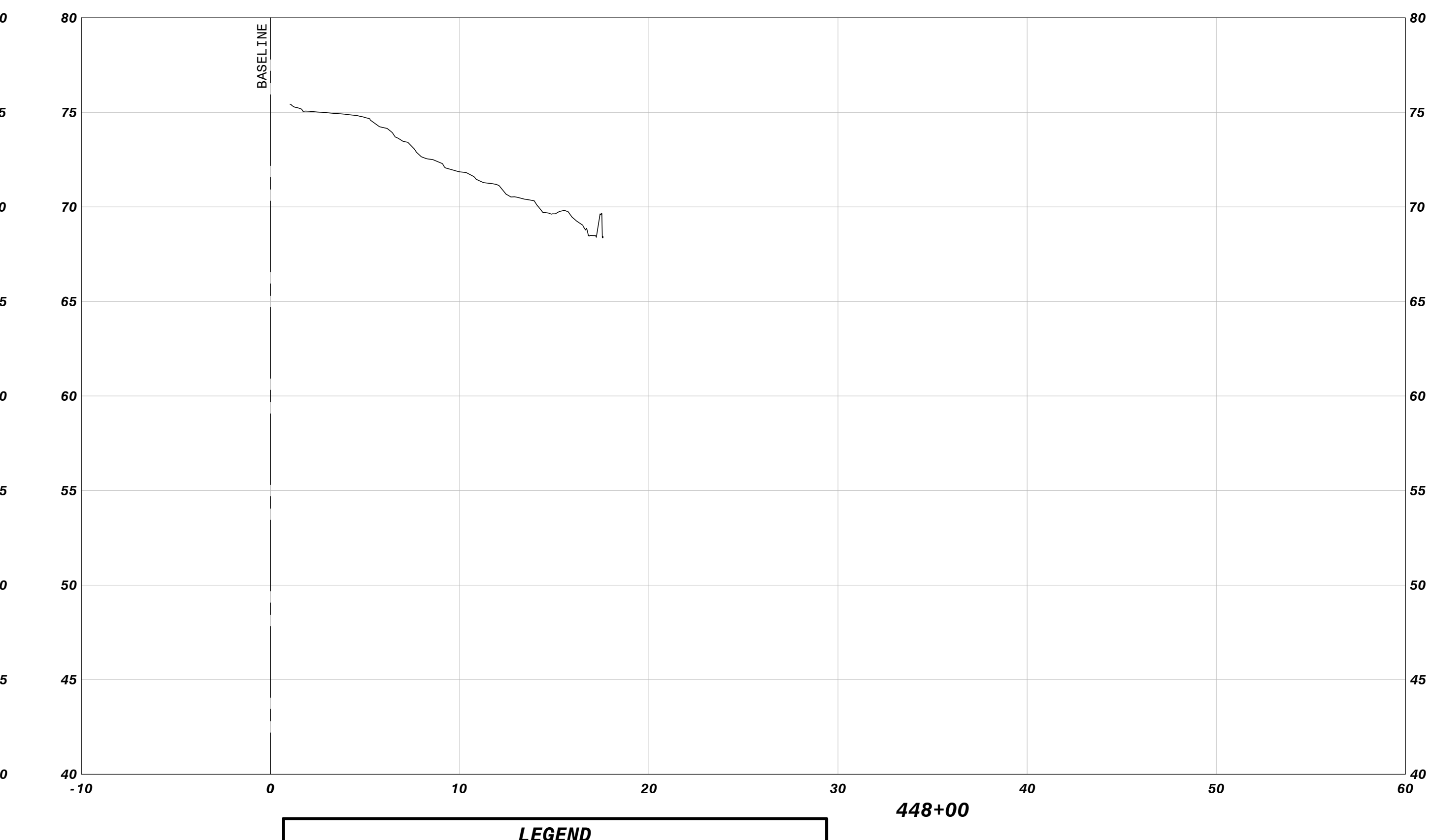
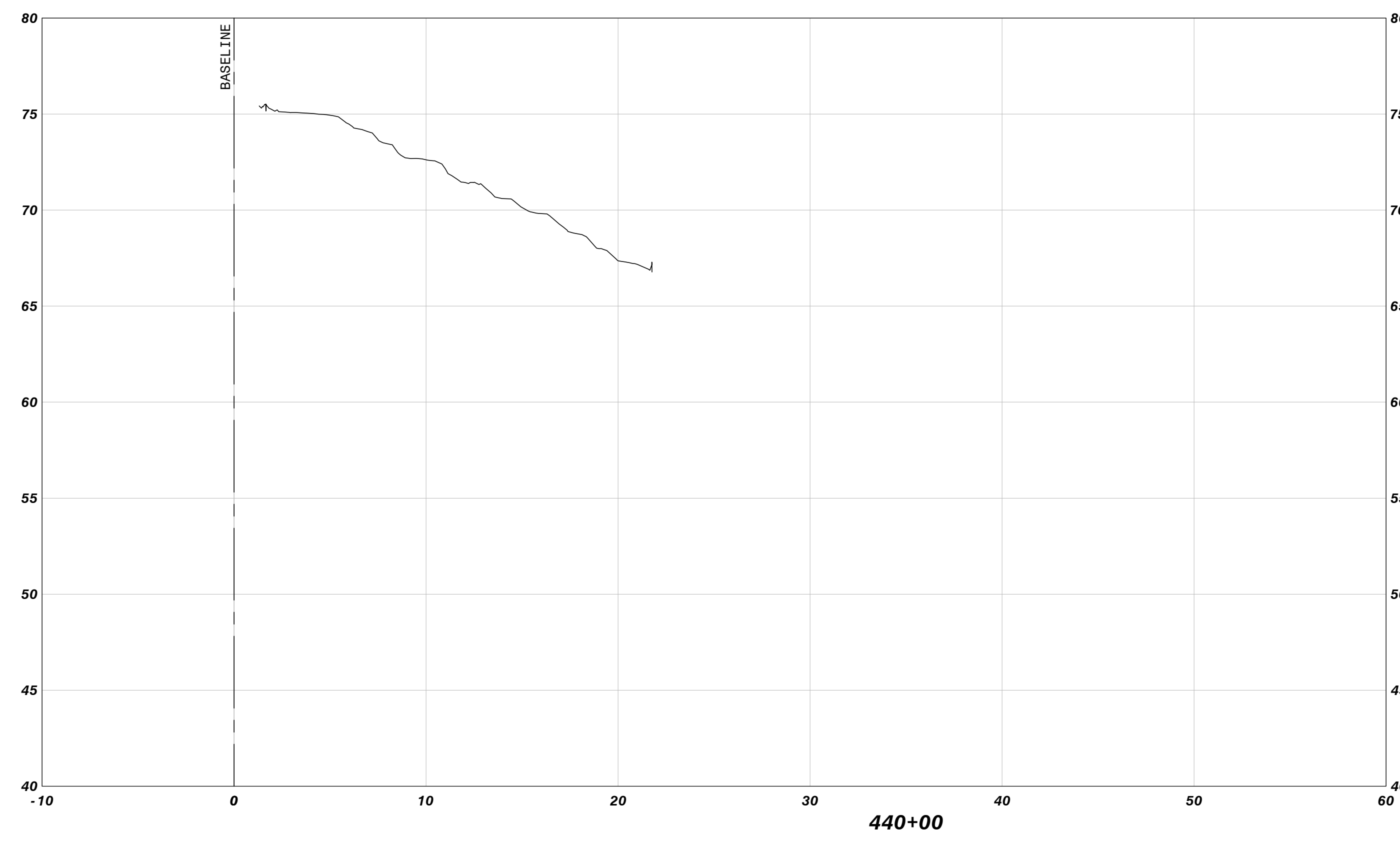
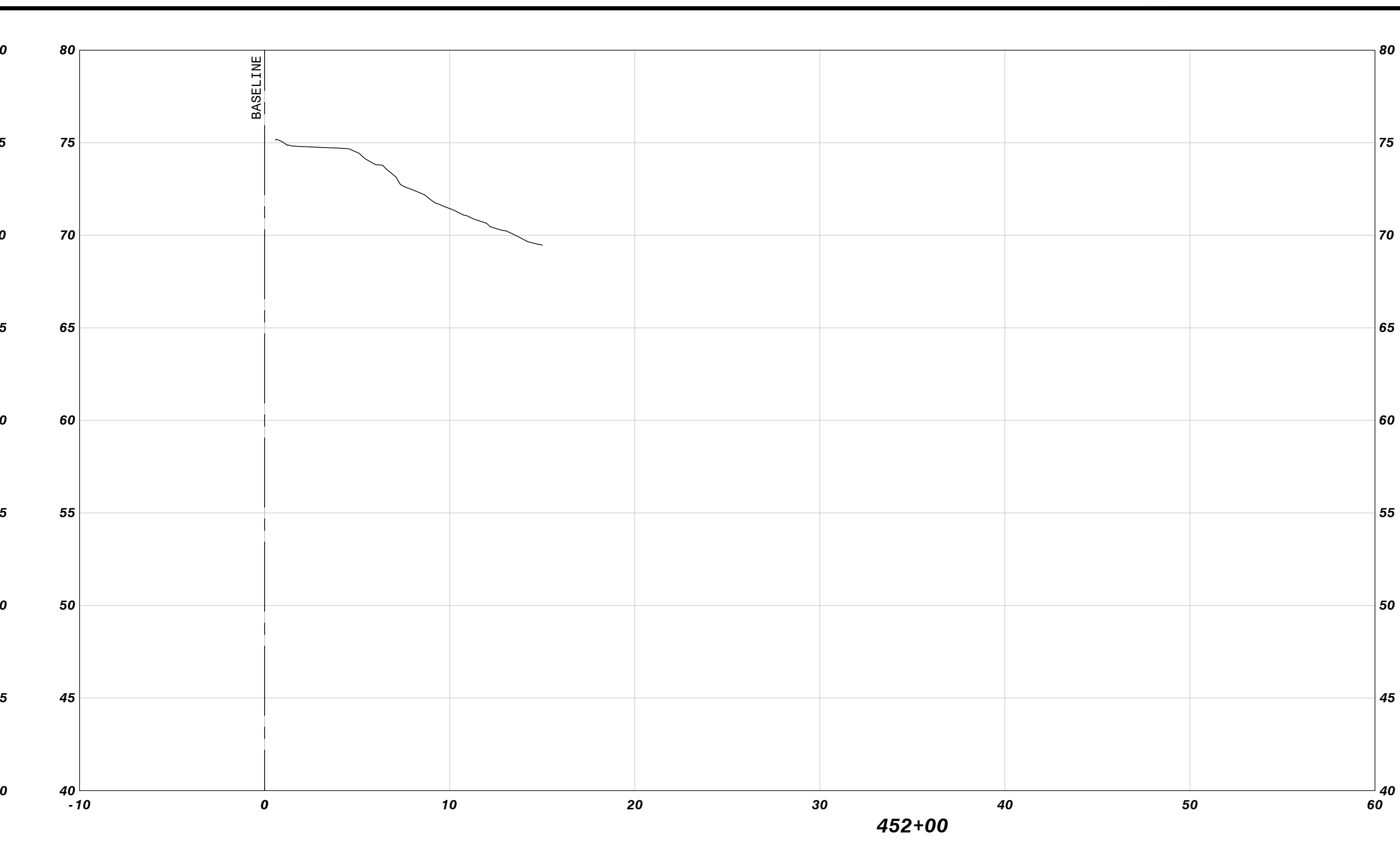
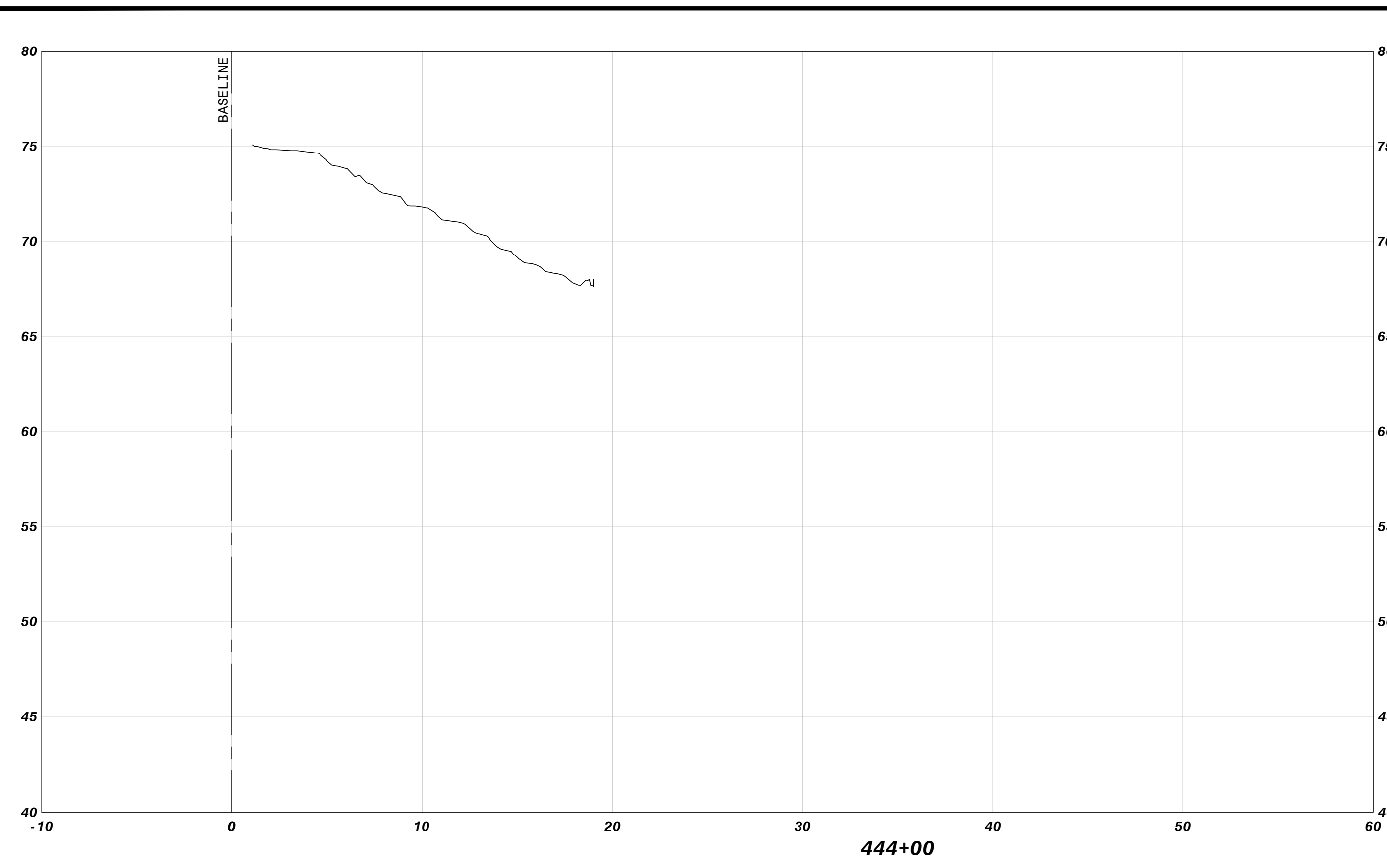
- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



 amec foster wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc. <small>2000 El Camino Real, Suite 300 Palo Alto, CA 94303 Phone: 1.863.867.2345 Fax: 1.863.867.2667 www.amectw.com CA-5392</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DATE	REVISION			
NO.	DATE	REVISION						
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DATE: June 17, 2015 DRAWN BY: MAJ CHECKED BY: JAB PROJECT NO.: 300906								
JEFF BERTSWILL, P.E. FLA. REG. NO. 41823 DATE:								
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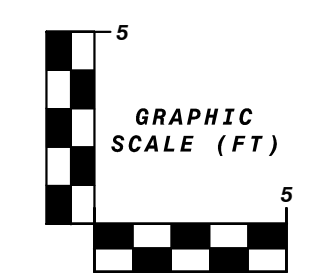
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LEGEND

- EXISTING GRADE
- ORIGINAL DESIGN SLOPE
- PROJECTED SLOPE ALONG HIGH POINT OF STEPS
- AREA BENEATH PROJECTED SLOPE

REFERENCE:
EXISTING TOPOGRAPHY BASED ON GEORGE F. YOUNG & ASSOCIATES
COMBINED LIDAR & SONAR; APRIL 2015



NO.	DATE	REVISION

amec foster wheeler

Amec Foster Wheeler
Environment & Infrastructure, Inc.
2000 E. Las Colinas Blvd., Suite 300
Ft. Worth, TX 76106
Phone: 1.863.867.2345 Fax: 1.863.867.2667
www.amectw.com CA-5392

MANATEE COOLING POND
FLORIDA POWER & LIGHT COMPANY

SOIL CEMENT CROSS SECTIONS
STA 440+00 TO STA 452+00
PARRISH, FLORIDA

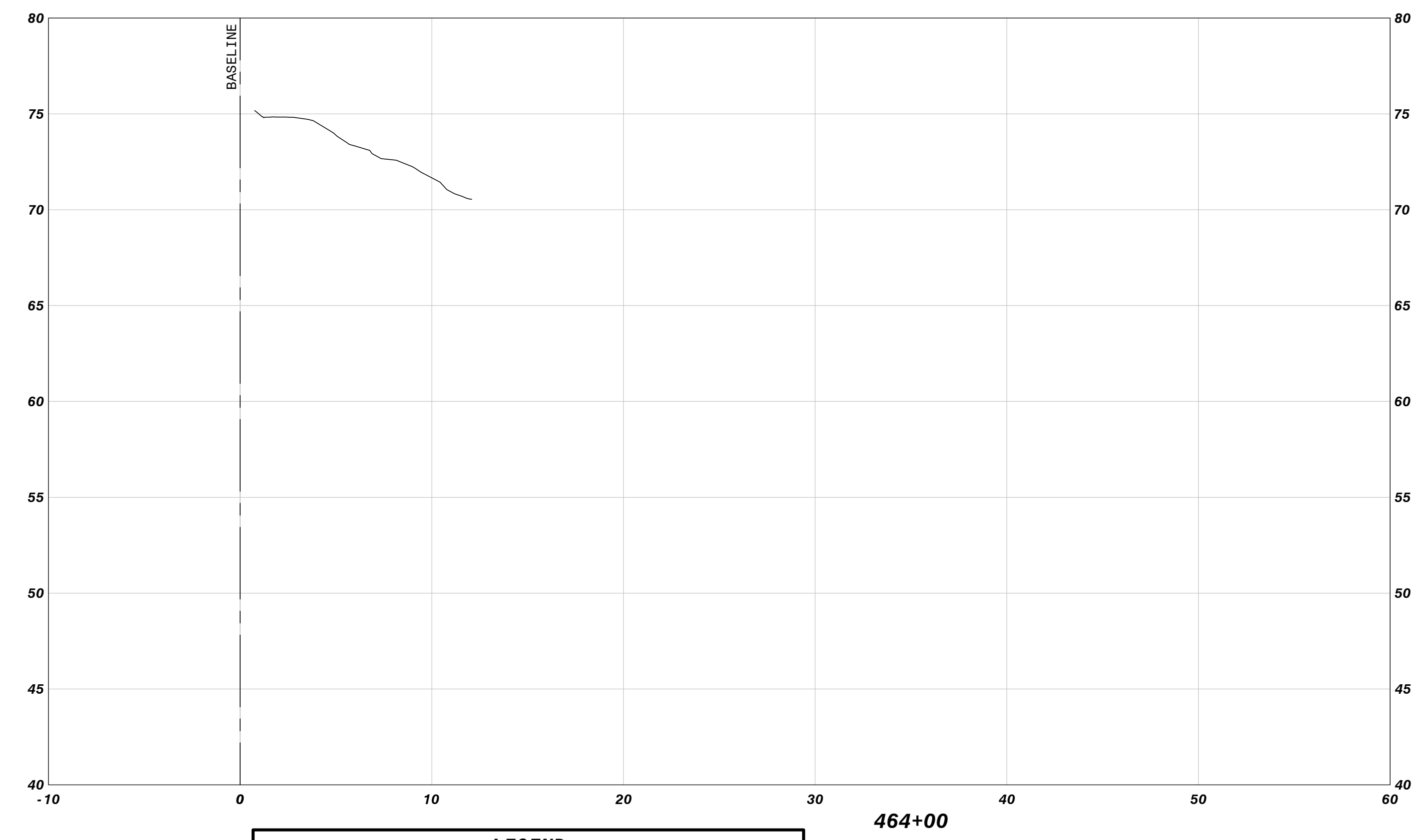
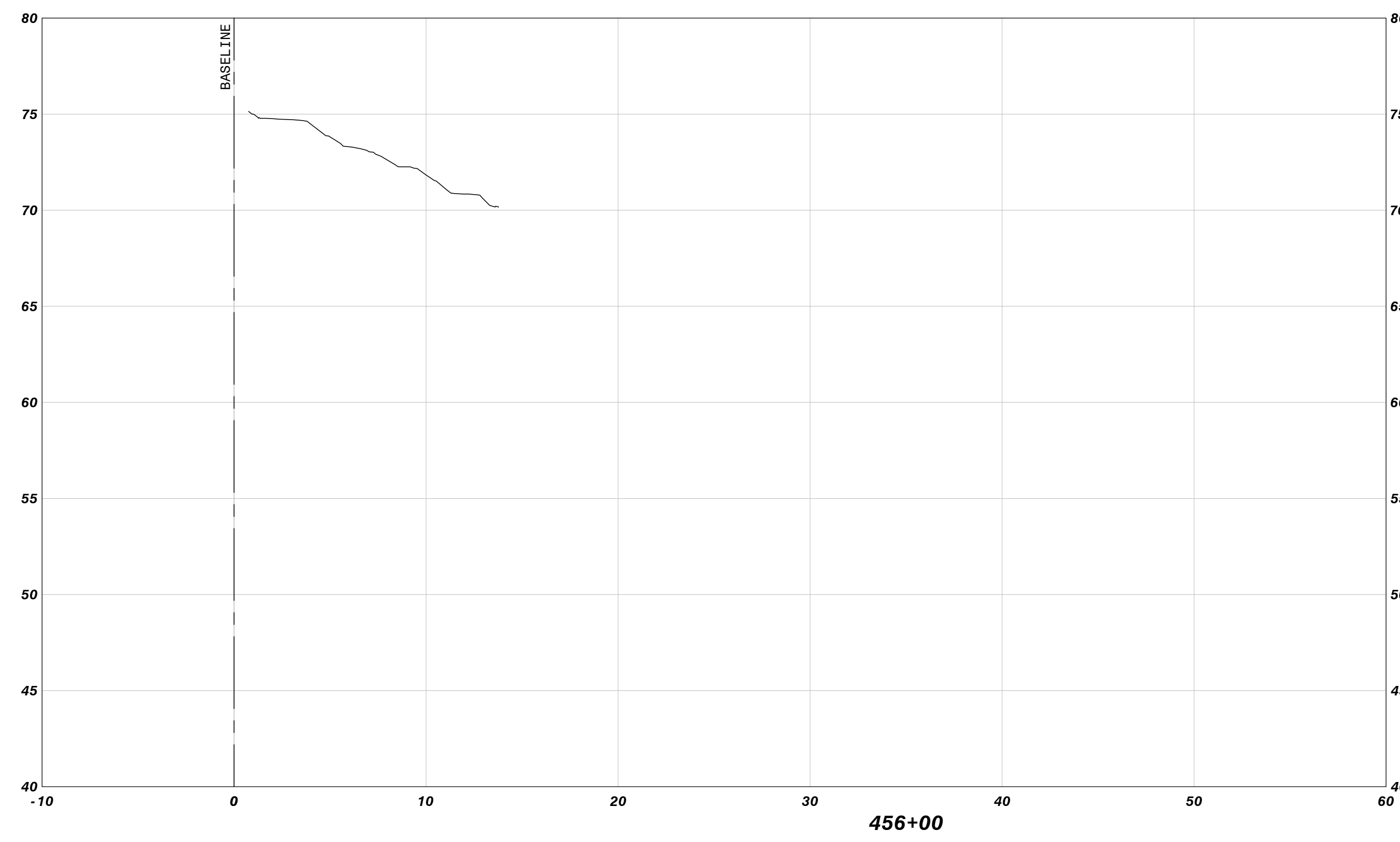
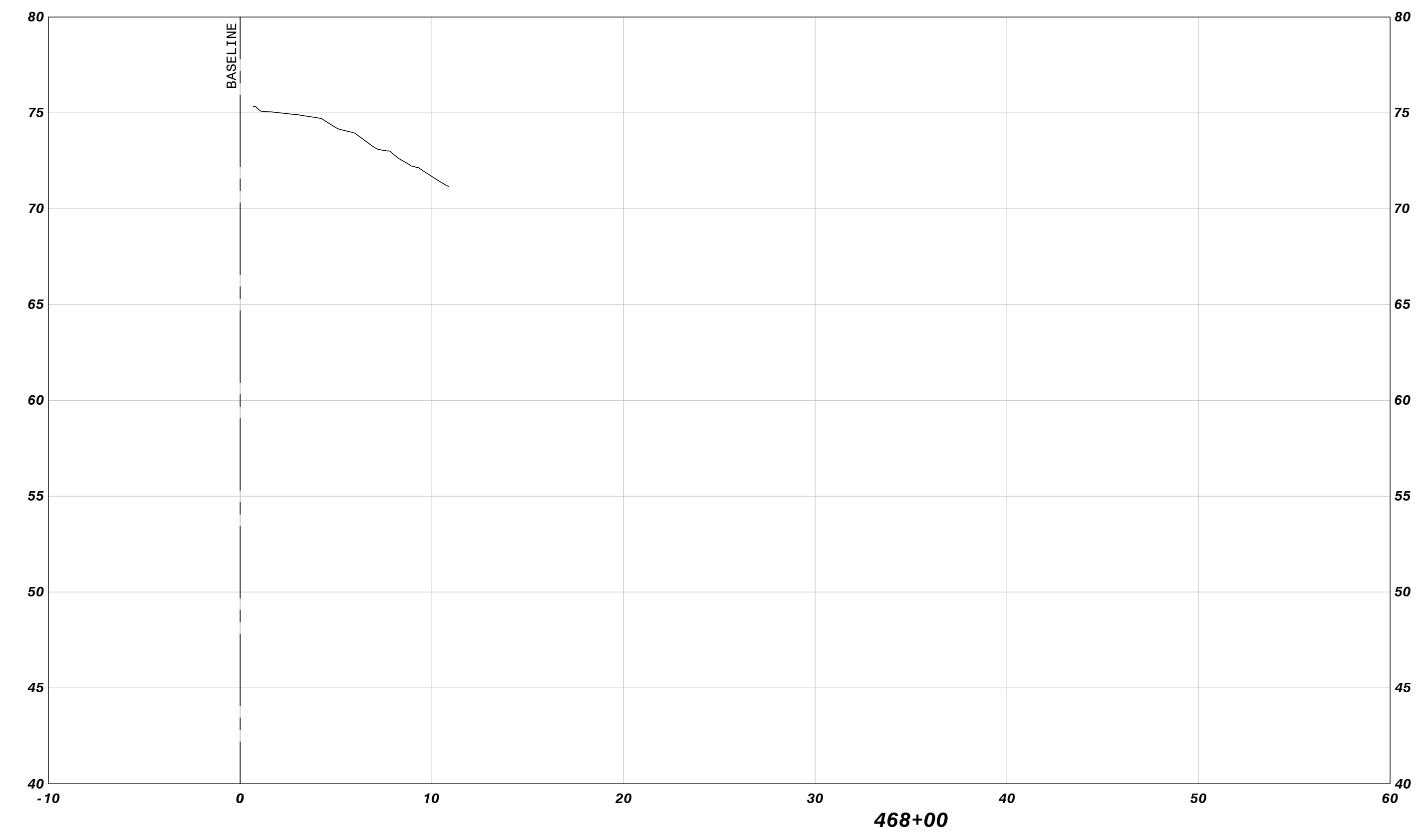
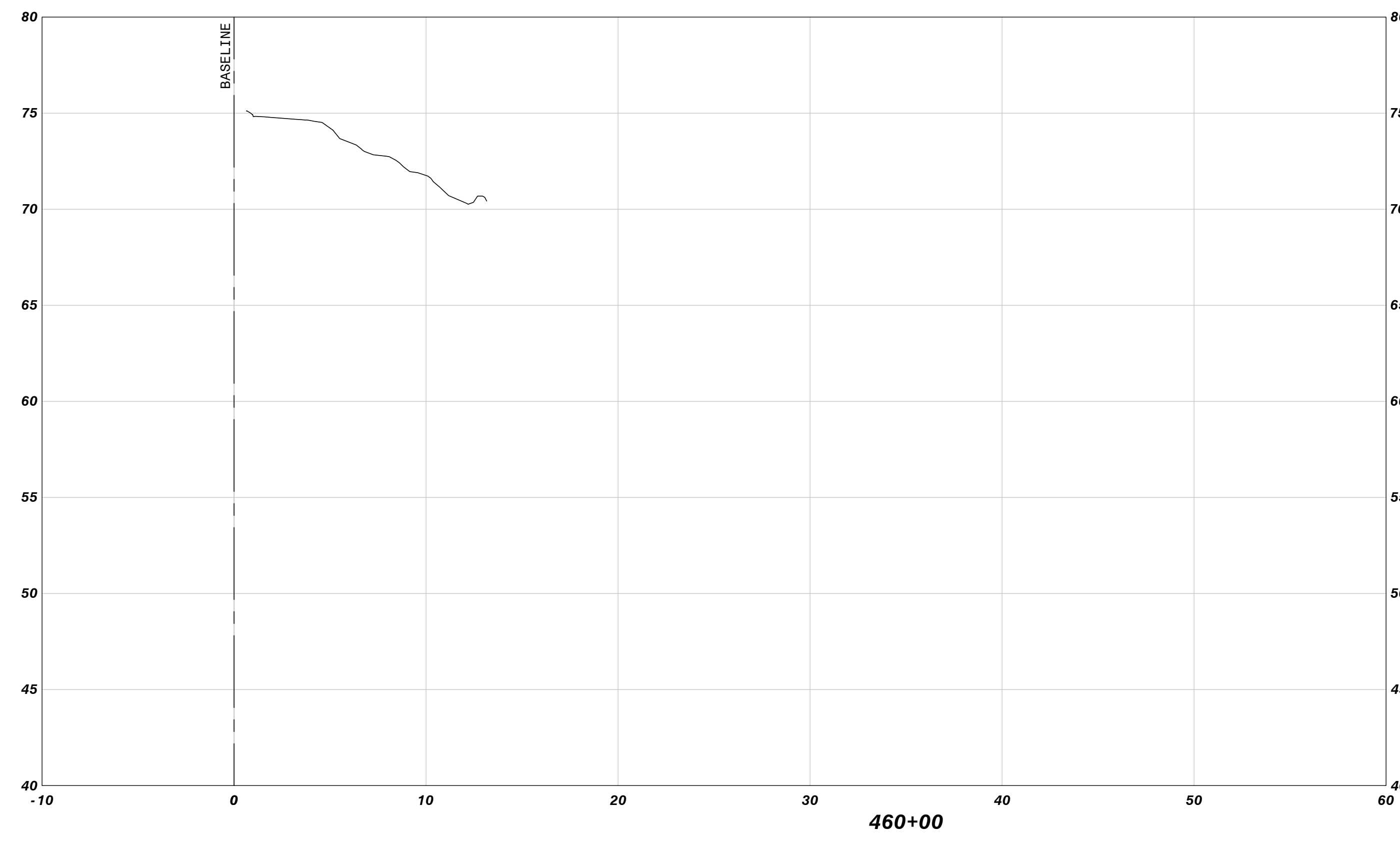
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PROJECT NO.: 300906

JEFF BERTSWILL, P.E.
FLA. REG. NO. 41823

DATE:

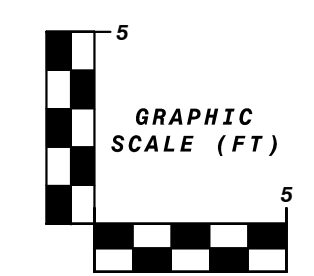
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	ORIGINAL DESIGN SLOPE
	PROJECTED SLOPE ALONG HIGH POINT OF STEPS
	AREA BENEATH PROJECTED SLOPE

REFERENCE:
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 COMBINED LIDAR & SONAR; APRIL 2015



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MANATEE COOLING POND FLORIDA POWER & LIGHT COMPANY SOIL CEMENT CROSS SECTIONS STA 456+00 TO STA 468+00 PARRISH, FLORIDA			
DATE: June 17, 2015 DRAWN BY: MAJ CHECKED BY: JAB PROJECT NO.: 300906			
JEFF BERISWILL, P.E. FLA. REG. NO. 41823 DATE:			
29			

STA	Coring Information								
	Top Third SC Thickness	Top Third Recovered Core Length (ft)	Top Third SC RQD	Middle Third SC Thickness	Mid Third Recovered Core Length (ft)	Middle Third SC RQD	Bottom Third SC Thickness	Bot Third Recovered Core Length (ft)	Bottom Third SC RQD
40+00	3.50	3.50	88	3.16	3.00	100			
44+00	3.71	3.71	100	2.50	2.50	94			
48+00	2.60	2.60	76	2.90	2.90	100			
52+00	3.20	3.20	95	2.60	2.60	85	2.92	2.22	87
53+41	3.00	2.75	81	3.16	2.90	100	2.75	2.22	88
53+80	3.00	2.80	100	2.92	2.65	100	2.58	2.50	100
56+00	2.55	2.55	66	2.92	2.75	93	2.55	2.55	91
60+00	3.30	3.30	48	3.15	3.15	97	2.50	2.18	89
64+00	3.15	3.15	100	3.10	3.10	90	2.50	2.10	78
68+00	3.40	3.40	91	2.90	2.90	83	3.33	3.22	96
72+00	2.90	2.90	91	2.90	2.90	100	2.65	2.65	85
76+00	3.05	3.05	88	3.20	3.20	100	3.50	2.88	98
80+00	2.96	2.96	100	2.80	2.80	86	3.08	2.55	100
84+00	3.10	3.10	94	3.15	3.15	90	3.10	3.10	100
88+00	2.96	2.95	100	2.51	2.51	92	2.80	2.80	100
92+00	3.16	3.16	100	2.60	2.60	88	2.73	2.73	95
93+00	3.00	2.75	100	2.33	2.00	100	3.00	2.75	100
96+00	2.80	2.80	100	2.40	2.40	100	2.82	2.82	74
100+00	2.80	2.80	100	2.02	2.02	29	2.90	2.90	97
104+00	2.25	2.25	100	2.50	2.50	92	2.83	2.45	100
108+00	2.88	2.88	95	3.05	3.05	89	2.51	2.51	90
109+00	3.33	2.75	100	2.92	2.55	100	2.75	2.30	93
112+00	1.70	1.70	100	3.16	2.55	100	3.25	2.80	74
116+00	2.43	2.43	100	3.10	3.10	82	2.30	2.30	100
120+00	2.40	2.40	100	4.00	4.00	100	3.00	2.15	99
124+00	2.82	2.82	99	3.00	3.00	100	2.30	2.30	70
128+00	2.00	2.00	90	2.97	2.55	100	2.00	1.75	91
132+00	2.80	2.80	84	3.00	2.70	100	2.50	2.10	99
136+00	2.85	2.85	100	2.50	2.50	100	2.60	2.60	99
140+00	2.55	2.55	100	2.90	2.90	93	2.67	2.25	100
144+00	2.75	2.60	86	2.75	2.60	92	3.67	3.40	100
148+00	2.75	2.75	100	3.10	3.10	100	3.83	2.95	100
152+00	3.05	3.05	93	3.25	2.96	91	3.75	2.62	100
156+00	2.50	2.15	100	2.70	2.70	100	3.00	1.90	100
160+00	3.00	3.00	86	1.55	1.55	95	2.90	2.90	100

STA	Coring Information								
	Top Third SC Thickness	Top Third Recovered Core Length (ft)	Top Third SC RQD	Middle Third SC Thickness	Mid Third Recovered Core Length (ft)	Middle Third SC RQD	Bottom Third SC Thickness	Bot Third Recovered Core Length (ft)	Bottom Third SC RQD
164+00	2.75	2.70	100	3.50	2.15	99	2.75	2.75	100
165+00	2.50	2.25	100	2.85	2.85	100	4.00	4.00	100
166+00	2.67	2.60	92	3.33	2.90	100	3.50	3.15	99
169+00	2.10	2.10	76	2.83	1.45	69	2.50	1.60	100
170+00	2.17	1.95	100	2.50	2.25	79	3.00	2.55	98
171+00	2.83	1.95	90	2.75	2.41	100	1.50	1.15	74
172+00	1.50	1.25	99	2.83	2.60	88	2.50	1.75	75
173+00	2.58	2.25	89	2.42	2.40	88	2.17	1.85	91
174+00	2.50	2.25	100	2.00	1.57	100	2.00	1.70	86
175+00	2.50	2.35	98	2.67	2.25	100	1.67	1.45	0
176+00	2.25	2.25	100	2.15	2.15	65	2.00	1.80	66
177+00	1.83	1.40	99	3.00	2.62	85	2.00	1.78	100
178+00	2.42	2.15	100	3.00	2.70	78	2.00	1.65	36
179+00	2.50	2.12	88	2.33	1.95	92	2.67	2.15	81
180+00	2.92	2.50	94	2.16	0.00	0	1.30	1.10	77
181+00	2.08	1.99	100	3.00	2.55	77	3.00	1.50	76
182+00	1.76	1.75	100	3.00	2.60	100	2.50	2.00	87
183+00	2.00	1.90	100	3.00	2.75	78	3.33	2.90	81
184+00	2.50	2.50	89	2.65	2.65	99	2.33	1.50	51
185+00	2.33	2.13	85	2.08	1.92	49	2.67	2.05	82
186+00	2.35	2.15	100	2.67	2.27	100	2.67	2.40	79
187+00	2.00	1.88	88	3.00	2.75	99	2.33	2.00	88
188+00	2.90	2.90	100	3.00	2.40	83	2.75	2.30	78
189+00	2.67	2.50	94	3.00	2.83	92	1.58	1.25	74
190+00	2.42	2.40	100	3.00	2.60	19	2.00	1.85	92
191+00	2.60	2.50	100	2.67	2.40	100	2.50	2.00	95
192+00	3.00	2.70	94	2.67	1.90	100	2.33	0.00	0
193+00	3.00	2.83	96	2.00	1.82	84	3.00	2.20	94
194+00	2.50	2.45	100	1.50	1.25	100	2.17	2.05	80
195+00	2.75	2.75	100	2.75	2.75	100	2.50	2.20	100
196+00	2.40	2.40	100	2.80	2.80	100	2.75	1.95	68
197+00	2.83	2.50	70	2.67	2.05	100	3.00	2.70	92
198+00	2.50	2.25	100	2.67	2.40	100	3.00	2.40	100
199+00	2.00	1.75	100	3.08	2.15	100	2.92	2.50	92
200+00	3.05	3.05	100	2.75	2.30	100	2.92	2.75	100
201+00	3.00	1.95	99	2.92	2.67	99	3.33	3.05	100
202+00	2.75	2.40	88	2.67	2.60	73	2.58	2.10	100

STA	Coring Information								
	Top Third SC Thickness	Top Third Recovered Core Length (ft)	Top Third SC RQD	Middle Third SC Thickness	Mid Third Recovered Core Length (ft)	Middle Third SC RQD	Bottom Third SC Thickness	Bot Third Recovered Core Length (ft)	Bottom Third SC RQD
203+00	3.00	2.95	98	2.67	2.35	98	2.83	2.40	100
204+00	2.75	2.20	100	3.00	2.60	100	3.00	2.46	99
205+00	3.00	2.30	97	2.67	2.40	100	2.58	2.30	80
206+00	2.83	2.17	86	2.67	2.25	100	2.83	2.35	100
207+00	3.00	2.45	100	2.58	2.05	84	1.92	1.50	60
208+00	2.20	2.20	85	2.90	2.70	91	2.92	2.50	95
209+00	3.25	3.00	100	2.50	2.20	69	2.83	2.30	80
209+50				2.50	2.20	91	3.16	2.55	89
210+00	3.00	2.90	83	2.58	1.70	42	2.42	2.00	93
210+50				2.75	1.70	82	2.58	2.05	100
211+00	3.00	2.65	100	1.83	1.70	74	2.50	1.95	93
211+50				3.00	2.20	89	2.33	2.10	76
212+00	2.83	2.50	100	3.00	2.90	79	2.00	0.90	88
212+50				3.67	3.00	93	3.25	2.50	76
213+00	2.75	2.45	92	1.83	1.40	34	2.35	2.33	91
213+50				2.58	2.10	76	2.58	2.15	88
214+00	2.83	2.70	94	2.58	2.35	56	2.75	2.60	74
214+50				1.92	1.45	86	2.58	1.30	38
215+00	3.08	2.95	80	1.25	1.00	65	1.83	0.92	38
215+50				1.58	1.00	100	2.50	1.40	69
216+00	2.83	2.65	100	2.58	2.33	98	2.33	2.10	45
216+50				3.58	2.60	78	2.58	1.40	39
217+00	2.67	2.27	100	2.00	1.55	39	2.33	2.10	100
217+50				2.58	1.55	58	1.83	1.10	55
218+00	3.25	1.66	100	2.50	1.91	73	2.58	2.30	67
218+50				2.50	1.90	89	3.00	2.20	90
219+00	2.33	1.70	82	2.83	2.45	70	2.58	2.30	91
219+50				3.00	2.40	75	2.92	2.35	87
220+00	2.60	2.60	100	3.00	0.50	0	2.50	0.90	0
220+50				2.50	2.12	88	2.67	1.98	100
221+00	2.50	2.05	100	3.00	2.70	91	2.33	2.13	100
221+50				3.33	2.75	95	2.42	2.10	70
222+00	2.00	1.65	100	2.00	1.70	100	2.00	1.42	79
222+50				2.67	2.00	91	2.83	2.55	80
223+00	2.33	1.87	100	2.67	2.05	100	2.00	1.70	50
223+50				2.42	2.05	87	2.00	0.60	0
224+00	2.50	2.30	87	2.83	1.75	100	2.50	1.25	44

STA	Coring Information								
	Top Third SC Thickness	Top Third Recovered Core Length (ft)	Top Third SC RQD	Middle Third SC Thickness	Mid Third Recovered Core Length (ft)	Middle Third SC RQD	Bottom Third SC Thickness	Bot Third Recovered Core Length (ft)	Bottom Third SC RQD
224+50				2.42	2.15	100	2.75	2.45	89
225+00	2.08	1.85	89	3.00	2.80	75	2.67	1.80	100
225+50				2.67	2.59	94	2.75	2.53	89
226+00	2.42	1.90	100	2.92	2.75	84	2.80	2.00	100
226+50				2.92	2.55	100	2.58	2.35	100
227+00	2.25	1.95	100	2.50	2.00	100	2.75	2.75	100
227+50				2.60	2.43	99	2.50	2.42	99
228+00	2.70	2.70	98	3.50	2.40	100	2.83	1.75	100
228+50				2.75	2.40	100	3.08	2.63	100
229+00	2.50	2.37	100	2.83	2.40	87	2.50	2.05	73
229+50				2.67	2.50	100	2.83	2.50	100
230+00	2.00	1.80	90	3.00	2.60	40	2.17	1.90	100
230+50				2.83	2.00	100	2.58	2.42	95
231+00	2.33	1.35	73	2.67	2.35	87	2.00	1.90	100
232+00	2.30	2.30	100	3.00	2.17	100	3.00	1.70	82
233+00	2.83	2.30	100	3.00	2.45	92	3.00	2.35	100
234+00	2.00	1.95	100	3.67	3.30	100	2.17	1.50	90
235+00	2.33	2.15	100	3.50	2.35	91	2.50	2.20	86
236+00	2.92	2.70	99	2.58	2.25	99	2.58	2.10	93
240+00	2.83	2.50	100	2.50	1.47	93	2.83	1.52	99
244+00	2.75	2.65	88	2.58	2.05	90	2.50	2.00	100
248+00	2.30	2.30	100	2.16	1.60	64	2.67	1.85	84
249+00				2.50	2.25	91	3.16	3.00	100
250+00				2.50	2.10	95	2.75	2.40	100
251+00				2.92	2.50	100	2.67	2.18	99
252+00	2.50	2.40	90	2.58	2.50	92	2.00	1.85	89
253+00				2.08	2.00	96	2.92	2.50	100
254+00				2.75	2.30	100	2.16	1.73	100
255+00				2.08	1.70	100	1.33	1.20	100
256+00	2.00	1.96	100	2.67	2.00	65	2.25	2.00	0
257+00				2.00	1.75	100	2.25	1.47	100
258+00				2.25	1.75	100	2.33	1.53	45
259+00				2.00	1.55	74	2.67	2.40	100
260+00	2.80	2.45	100	2.25	2.10	76	2.17	1.90	83
261+00				2.33	1.75	100	2.33	1.87	100
262+00				2.33	1.40	100	2.58	2.15	99
263+00				2.16	1.90	100	2.50	2.00	88

STA	Coring Information								
	Top Third SC Thickness	Top Third Recovered Core Length (ft)	Top Third SC RQD	Middle Third SC Thickness	Mid Third Recovered Core Length (ft)	Middle Third SC RQD	Bottom Third SC Thickness	Bot Third Recovered Core Length (ft)	Bottom Third SC RQD
264+00	2.55	2.55	100	2.30	2.25	100	2.17	2.00	85
265+00				2.25	2.07	100	2.67	2.00	90
266+00				2.58	2.30	99	2.50	2.15	98
267+00				2.25	1.95	100	2.33	1.90	100
268+00	2.33	2.13	100	2.50	2.35	100	2.05	2.05	63
269+00				2.50	2.20	84	2.42	2.10	76
270+00	2.33	2.20	86	1.75	1.65	97	2.42	2.05	99
271+00	2.00	1.88	100	2.08	1.92	49	3.00	2.08	100
272+00	2.70	2.70	100	2.00	1.87	100	2.25	2.25	75
273+00	2.83	2.70	100	2.67	2.57	82	2.50	1.95	100
274+00	2.50	2.30	91	2.00	1.70	100	2.50	2.30	78
275+00	3.33	2.80	100	1.50	1.15	100	2.00	1.50	87
276+00	2.75	2.25	90	2.33	2.02	100	1.42	1.10	90
277+00	2.58	2.43	92	2.08	1.90	89	2.42	2.00	80
278+00	2.58	2.55	100	1.67	1.60	31	1.60	1.60	100
279+00	2.35	2.35	89	2.17	2.10	94	2.17	1.94	100
280+00	2.70	2.70	91	1.92	1.65	44	1.90	1.80	81
281+00	2.17	2.00	100	1.33	1.25	50	2.08	2.05	100
282+00	2.50	2.00	100	2.33	2.30	100	2.00	1.95	78
283+00	2.58	2.45	92	2.00	1.90	87	2.00	1.75	91
284+00	3.05	3.05	84	2.90	2.25	77	2.60	1.80	100
285+00	2.25	2.20	86	2.50	2.03	100	3.00	2.70	100
286+00	2.25	2.20	99	2.83	2.60	100	3.33	3.20	100
287+00	2.25	2.22	100	2.25	2.05	84	2.33	1.85	100
288+00	2.80	2.80	75	2.67	1.75	80	2.33	2.20	100
289+00	2.33	2.30	89	2.67	2.35	89	3.00	2.70	75
290+00	2.42	2.40	100	2.50	2.30	70	2.42	2.30	
292+00	2.60	1.35	77	3.00	2.90	85	2.67	2.55	90
296+00	1.85	1.85	92	2.70	2.70	99	2.60	2.60	100
300+00	2.92	2.60	100	2.00	1.95	84	2.75	2.50	99
304+00	2.85	2.85	100	2.83	2.55	100	2.58	2.00	100
308+00	3.00	3.00	85	2.83	2.45	86	3.33	2.95	99
312+00	2.60	2.40	90	3.17	2.95	100	3.00	2.77	100
316+00	2.80	2.80	89	2.40	2.25	100	2.83	2.75	87
320+00	3.26	2.60	38	2.50	2.15	81	3.00	2.90	99
324+00	2.80	2.80	100	2.60	2.60	99	2.60	2.60	100
328+00	2.98	2.98	100	3.00	2.90	76	3.16	2.80	79

STA	Coring Information								
	Top Third SC Thickness	Top Third Recovered Core Length (ft)	Top Third SC RQD	Middle Third SC Thickness	Mid Third Recovered Core Length (ft)	Middle Third SC RQD	Bottom Third SC Thickness	Bot Third Recovered Core Length (ft)	Bottom Third SC RQD
332+00	3.05	3.05	100	3.25	3.25	93	3.50	3.50	100
336+00	3.60	3.60	100	3.33	2.55	75	3.00	2.70	100
340+00	3.15	3.15	100	3.30	3.07	99	2.90	2.70	100
344+00	2.70	2.70	100	3.70	3.70	95	3.50	3.03	100
348+00	2.75	2.70	91	3.16	2.20	82	2.05	2.05	93
352+00	2.67	2.45	61	3.58	3.40	99	3.16	2.77	100