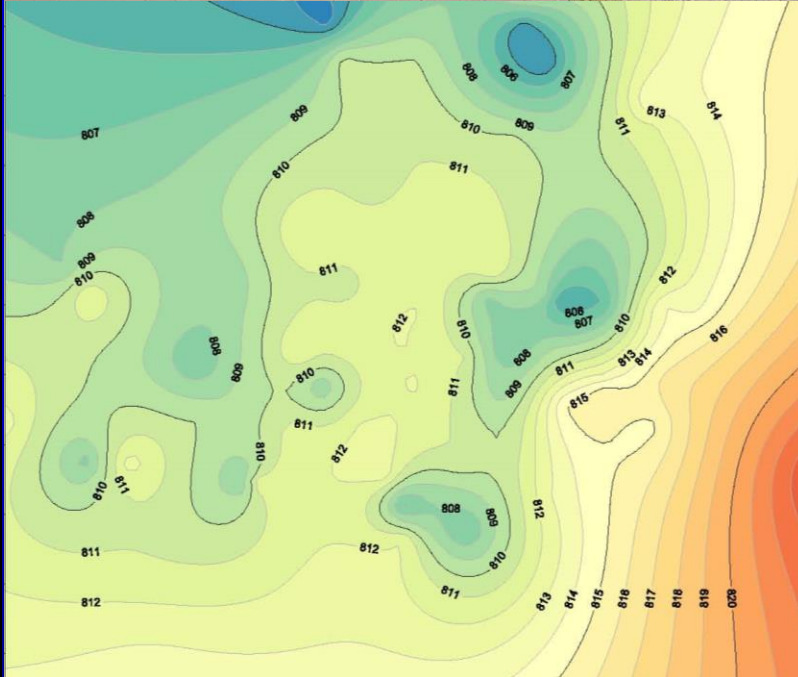


# Estimation of Depth of Fill Materials Fairfield County Jail/Public Safety Facility 335 Lincoln Avenue Lancaster, Ohio



Submitted to:  
Fairfield County  
Board of Commissioners  
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Lancaster, Ohio 43130

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## **RELIABILITY OF REPORT - DISCLAIMER**

Conclusions reached in this report are based upon the objective data available to the CONSULTANTS at the time of forming their opinions and as presented in the report. The accuracy of the report depends upon the accuracy of these data. Every effort is made to evaluate the information by the methods that generally are recognized to constitute the state of the art at the time of rendering the report and conclusions, and the conclusions reached herein represent our opinions. Subsurface conditions are known to vary both in space and time, and there is inherent risk in the extrapolation of data.

THE CONSULTANTS are not responsible for actual conditions proved to be materially at variance with the data that were available to them and upon which they relied, as presented in the report.

The opinions, conclusions and recommendations shown in the report are put forth for a specific and proposed purpose and for the specific site discussed. The CONSULTANTS are not responsible for any other application, whether of purpose or location, of our opinions, conclusions and recommendations other than as specifically indicated in the report.

## EXECUTIVE SUMMARY

On July 7, 2014, Bennett & Williams completed a Limited Phase II Environmental Site Assessment for the proposed Fairfield County Jail/Public Safety Facility at 334 West Wheeling Street, Lancaster, Ohio (new address 335 Lincoln Avenue) (Bennett & Williams, 2014). This investigation corroborated previous information that fill depths of 5 to 18.5 feet (consisting primarily of foundry sand with varying quantities of glass, brick, ceramic, slag, wire, and fragments of sandstone, limestone and shale) are present under the proposed building footprint. Due to the proximity of the Miller Park Wellfield, this report recommended that the fill materials be “cased off” prior to deeper subsurface penetration for foundation pilings.

Although 45 borings had been drilled on the site during previous investigations, the depth of fill under the building footprint needed to be further refined in order to determine the length of casing necessary at each of the foundation piling locations to “seal off” the fill materials. On September 1 and 2, 2015, 40 additional borings were installed under the building footprint at targeted locations to fill in data gaps. The borings were drilled through the fill and just into the underlying natural materials.

Using the available 85 borings, a contour map was created of the estimated elevation of the bottom of fill/top of natural materials. Profiles through the foundation pilings were created. Using elevations of the top of the foundation pilings provided by the architects, estimated lengths of casings necessary to “seal off” the fill materials and “seat” the casings into the underlying natural materials were calculated. Although these estimated lengths of casing have been determined using best available information and professional judgement, it will still be necessary to field verify that natural materials have been encountered.

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# SECTION 1 INTRODUCTION

## 1.0 Project Background

On July 7, 2014, Bennett & Williams completed a Limited Phase II Environmental Site Assessment for the proposed Fairfield County Jail/Public Safety Facility at 334 West Wheeling Street, Lancaster, Ohio (new address 335 Lincoln Avenue) (Bennett & Williams, 2014). The primary purpose of this investigation was to conduct an initial subsurface environmental sampling and analysis program to develop information about the chemical characteristics of the existing undocumented fill materials underlying the proposed footprint of the new Fairfield County Jail/Public Safety Facility. During drilling of the borings, the investigation confirmed that between 8 to 11 feet of fill (consisting primarily of foundry sand with varying quantities of glass, brick, ceramic, slag, wire, and fragments of sandstone, limestone and shale) are present under the proposed building footprint. It was noted that previous subsurface borings have indicated that the fill overlies the entire site in depths ranging from 5 to 18.5 feet. Due to the concentrations of constituents in the fill and the proximity of the Miller Park Wellfield, this report recommended that the direct transport of fill materials downward into underlying natural materials be minimized. Further this report recommended that if foundation depths exceeded the depth of the fill, that the fill materials be “cased off” prior to deeper subsurface penetration.

Subsequent to the issuance of this report, additional information on the depth of fill materials at the site was collected as part of two separate field activities. First, Geotechnical Consultants, Inc. (GCI) performed additional subsurface activities in December 2014 as part of a geotechnical investigation for foundation design (GCI, 2015). The eleven additional borings that were installed confirmed the range of known depths of fill encountered during previous investigations. Second, Bennett & Williams installed two nested monitoring wells in March 2015 in response to a request by the City of Lancaster. Fill depths encountered during these field activities also were within the previously reported range of fill depths.

On May 5, 2015, in response to a request by the City of Lancaster, Bennett & Williams prepared and submitted six cross sections (three north-south and three east-west) designed to show the site geology (Bennett & Williams, 2015c). These cross sections also showed the depth of the fill materials at each of the borings used to create the cross section as well as interpreted depths of fill between the borings. These cross sections were created using the available 45 well logs for the site including:

- 1) 14 borings installed by Solar Testing (Solar, 1999) (Two borings were terminated in fill.);
- 2) 6 borings installed by Geotechnical Consultants, Inc. (GCI, 2011);
- 3) 10 borings installed by Bennett & Williams (Bennett & Williams, 2014);

- 4) 11 borings installed by Geotechnical Consultants, Inc. (GCI, 2015);
- 5) 2 monitoring wells installed by the City of Lancaster as part of their source water protection program in 1995 (Both wells had the same amount of fill and were located adjacent to each other.); and
- 6) 2 monitoring wells installed by Bennett & Williams in (Bennett & Williams, 2015a).

Boring logs for these wells are included in Appendix A.

In April 2015, Bennett & Williams prepared a Risk Mitigation Work Plan for the Proposed Fairfield County Jail/Public Safety Facility that reiterated the voluntary actions to be taken by Fairfield County to minimize potential environmental issues at the site (Bennett & Williams, 2015b). Due to the proximity of the Miller Park Wellfield and the importance of protection of the aquifer, Fairfield County proposed voluntary measures designed to minimize any impact to the aquifer both during and after construction of the proposed construction of the Fairfield County Jail/Public Safety Facility. These measures included “casing off” the fill materials as part of the construction of the auger cast piles to minimize the downward transport of fill materials into the aquifer. Consequently, the architects included provisions in the bid specifications that the fill materials were to be cased off prior to drilling the portion of the auger cast piles in native materials.

## **1.1 Project Scope**

Initially, it was envisioned that the contractor would need to determine the depth of fill at each auger cast piling location, and that the depth and materials would be field verified by Bennett & Williams. However, based on discussions with the drilling contractor and the County, the County requested that preliminary target depths of the bottom of the fill materials be developed by Bennett & Williams for each of the 489 auger cast pile locations prior to initiation of the installation of the auger cast piles. To facilitate construction, target depths of fill were converted to depths of casing needed to “case off” the fill, based on information about the elevation of the top of casing provided by the architect.

## **1.2 Project Approach**

Existing information from the 45 borings previously installed at the site by three different contractors for geotechnical and environmental purposes were used to develop initial contours of the preliminary depths of the bottom of the fill materials. From these initial contours, areas were preliminarily identified where additional information was needed (e.g., data gaps) to further refine the estimated elevations of the bottom of the fill materials. Additional borings were drilled in these preliminary locations through the fill until native materials were encountered. Once that information was collected, additional boring locations were chosen to refine the initial drilling.



Once drilling was completed, the data was re-contoured using the additional data points. A revised preliminary contour map of elevations of the bottom of fill based on known geologic and historical information as well as measured depths was prepared. Using the top of casing elevations for the alternate foundation design, the target thicknesses of fill that need to be cased off during construction were determined. Additionally, preliminary lengths of casing needed at each piling location to extend from the surface through the fill and one to two feet into the underlying native materials were estimated. Recognizing that the anticipated thicknesses of fill are based on spatially interpolated data, field verification is necessary at each location during surface casing installation.

## SECTION 2 FIELD ACTIVITIES

### 2.0 Drilling and Sampling

Based on the preliminary contour maps of the elevation of the bottom of the fill prepared from the existing 45 boring logs, 25 preliminary locations (B-11 through B-35) were chosen for drilling activities. All locations drilled during this investigation were located under the building footprint where the pilings are to be located. These initial locations were adjusted in the field, where necessary, based on proximity to structures, utility lines and or overhead electrical lines. Figure 1 shows the location of the existing borings as wells as the borings drilled during this field event. On August 27, 2015, the locations were marked and Jason Westfield, City of Lancaster and OUPS were called. Pictures from the field activities are found in Appendix B. Figure B-1 (Appendix B) shows the markings used to identify boring locations.

Drilling commenced on September 1, 2015 and was completed on September 2, 2015. The first two borings (BW-19 and BW-13) were drilled using a 4-inch OD solid stem auger powered by a CME-75 drilling rig operated by Wrights Drilling. The auger was advanced to a pre-determined target depth (based on the preliminary cross sections) by slowly drilling, stopping the augers without rotation, and removing the auger from the borehole. Target depths were chosen to minimize penetration into the underlying natural materials. The goal was to drill a maximum of two feet into the natural materials. This goal was accomplished in all but six borings, where fill depths were shallower than targeted and the boring extended slightly deeper into the underlying natural materials. Figures B-2 and B-3 show drilling using solid stem augers. The cuttings on the auger were used for identification of the depth of fill and description of the materials underlying the fill. Appendix C contains logs of the boreholes installed during this investigation to determine depth of fill materials. Figure B-4 shows the retracted solid stem auger with cuttings. Figure B-5 shows an example of the dark, organic soils encountered under the fill in portions of the site.

The third boring (BW-12) was drilled with the same technique, but the target depth of 8.5 feet was not deep enough to encounter the underlying native materials. In this boring, a split spoon attached to drilling rods was placed in the bottom of the open hole and advanced with an automatic hammer having force equivalent to 140 pound weight being dropped 30 inches. The split spoon was recovered, but native materials had not yet been encountered. Hollow stem augers and a pilot bit were used to drill to 10.5 feet, where the pilot bit was removed and a split spoon collected as before. This time, no recovery in the split spoon was made. This boring was abandoned and a new boring was placed approximately two feet north of the original boring. This replacement boring was drilled using a solid stem auger. All remaining borings were drilled using a solid stem auger with good results.

After the initial 25 borings were installed, 15 additional boring locations (B-36 through B-50) (Figure 1) were chosen to fill in data gaps where depths to fill were more variable. These borings were also installed using the solid stem drilling method described above. Once the

boring was completed, cuttings were used to fill the boreholes. In the few instances where there were not enough cuttings to fill the borehole, the top of the borehole was filled with existing loose material onsite from decaying concrete. Augers and other equipment used during the drilling process were decontaminated at the end of the job using high pressure steam. All decontamination water was containerized in a portable water trough. Upon completion of decontamination, the water was poured into an existing drum onsite containing decontamination water from the drilling of the monitoring wells. Figure B-6 shows the portable water trough being emptied into the drum.

In summary, 40 additional borings were drilled to better define the depth of fill materials at the site. These boreholes, in addition to the pre-existing 45 available drilling logs, and other available information, were used to estimate depth of fill as described in Section 3.

## **SECTION 3**

### **ESTIMATION OF DEPTH OF FILL AT PILING LOCATIONS**

#### **3.0 Estimation of Depth of Fill/Top of Natural Materials**

The surface elevation of each of the 85 boring locations was either taken from available surveyed elevations on well logs or estimated using a one-foot contour map of the existing site provided by the architects. The depth to the bottom of the fill materials was then converted to mean sea level (amsl) by subtracting the depth of fill encountered during drilling from the surface elevation. Preliminary contours of the bottom of fill elevations were created by importing the data into SURFER®, a contouring and three-dimensional surface mapping and plotting program, by Golden Software. Modifications were then made, as necessary to take additional geologic factors in to consideration. Figure 2 shows the shaded relief contour map of the bottom of fill/top of natural materials. Figure 3 shows the shaded relief contour map with the locations of borings where depth to natural materials was measured. Figure 4 shows a three-dimensional view of the bottom of fill/top of natural materials.

It should be noted that historical information from Sanborn maps indicated that the Hocking River flowed from north to south across the site prior to the relocation and channelization of the river to its current location between 1884 and 1889 (Bennett & Williams (2014). However, because there were not many landmarks that are coincident with the Sanborn maps, the exact trace of the former river channel were previously estimated. It was thought that the additional borings installed as part of this investigation might reveal the location of the former river channel (as opposed to the lower-lying swampy deposits along the river). In fact, the previous borings had indicated that the river flowed north – opposite of what was known to be the direction of flow in the river. Alas, even with the drilling of 85 borings in the area, the channel of the river could not be definitively defined, although the low-lying areas were evident on the eastern side of the property. However, the deeper north-south oriented “holes” observed on the eastern portion of the site appeared to be the most likely location of the former river channel, although the westward swing of the river could not be located. Based on our investigation, the variable depths of fill are a combination of the filling of the deeper river channel as well as the “sinking” or “pushing” of fill materials downward into the soft, underlying deposits during filling and/or drilling activities.

#### **3.1 Estimation of Fill Depth/Top of Natural Material at Piling Locations**

Drawings with numbered piling locations were obtained from the architect and superimposed on the surface generated by Surfer®. Figure 5 shows the location of the 489 pilings that was provided by the architect, along with the designation of four different construction areas, A, B, C, and D. Figures 6 through 9 show the labelling associated with each piling within Areas A, B, C, and D, respectively. Figure 10 shows the location of the pilings superimposed on the contour map of the bottom of fill/top of natural materials. Location nomenclature has been left off due to space limitations.

Elevations of the bottom of fill/top of natural materials at each of the piling locations were interpolated based on the contour map. The profile tool in Surfer® was used to create profiles between pairs of contour locations. Elevations of depth of fill/top of natural materials were recorded off the profile graphs to an accuracy of 0.1 feet. Table 1 shows the estimated elevation of the bottom of fill/top of natural materials in feet amsl for each of the piling locations.

Surfer® was also used to generate north-south and east-west profiles through multiple piling locations. Appendix D contains the traces of the profiles on the surface as well as the cross sectional profiles. These profiles were used to assist in interpretation and determination of depths of casing needed to “case off” the fill materials.

### **3.2 Estimation of Length of Casing to Bottom of Fill/Top of Natural Materials**

The architects provided a revised foundation plan indicating the top of caisson elevations with the accepted alternate foundation design. In general, each of the four areas, A, B, C, and D are built to a different general elevation, with some caisson elevations having a different elevation within each of the areas. The estimated length of casing necessary to reach the bottom of fill/top of natural materials at each piling location was calculated by subtracting the depth of bottom of fill/top of natural materials from the foundation plan top of caisson elevation. Table 1 shows the estimated length of casing to reach the bottom of fill/top of natural materials.

### **3.3 Estimation of Length of Casing Necessary to “Case Off” the Fill Materials**

In order to adequately “case off” the fill materials at the site and to minimize the potential for fill materials to be carried down into the aquifer by drilling activities, it is necessary not only to “case off” the fill materials, but also to “seat” the casing into the underlying natural materials. This is typically accomplished by advancing the protective casing one to two feet into the underlying materials and grouting a surface casing in place. Once the grout has been allowed to “set”, the piling can be completed by drilling through the protective casing and into the underlying materials without transporting the fill materials downward.

The final calculation involved adding between one and two feet of casing length to the casing lengths calculated in Section 3.2 above. The additional length of casing was chosen based on calculations of a fraction of a foot, proximity to variable depths of fill, anticipated depths of fill, and types of materials encountered below the fill. Table 1 contains the estimated length of casing needed to “case off” the fill materials. Although these estimated lengths of casing have been determined using best available information and professional judgement, it still will be necessary to field verify that natural materials have been encountered. If they have not, it will be necessary to advance the casing another two feet deeper. The possible additional casing lengths allow for inaccuracies in rounding and/or interpretation.

### 3.4 Summary

As part of the process to determine the depth of fill under the proposed building footprint, a total of 85 borings (45 existing and 40 new) were used to create a contour map of the bottom of fill/top of underlying natural materials. Based on elevations of the top of 489 caissons for the accepted alternate foundation design supplied by the architect, the estimated length of casing needed for each piling location to “case off” the fill materials and “seat” the surface casing into the underlying natural materials was determined. These estimated depths of fill and concomitant estimated lengths of casing are provided in Table 1. These estimated lengths of casing will be used to field check installation of the casings and to check depths of encountered subsurface materials. Based on rounding allowances, interpretive allowances, and estimation of the current surface elevation, it is estimated that all elevations are accurate to within approximately one foot. Consequently, field verification may involve setting surface casings as much as two feet lower in the field.

Respectfully submitted,  
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## **SECTION 4 REFERENCES**

- Bennett & Williams, July 7, 2014. Limited Phase II Environmental Site Assessment for the Proposed Fairfield County Jail/Public Safety Facility, 334 West Wheeling Street, Lancaster, Ohio, prepared for the Fairfield County Commissioners, 601 pp.
- Bennett & Williams, April 28, 2015a. Installation and Sampling of Monitoring Wells MW-9S and MW-9D, Fairfield County Jail/Public Safety Facility, 334 West Wheeling Street, Lancaster, Ohio, prepared for the Fairfield County Commissioners, 156 pp.
- Bennett & Williams, April 28, 2015b. Risk Mitigation Work Plan for the Proposed Fairfield Jail/Public Safety Facility, 334 West Wheeling Street, Lancaster, Ohio, prepared for the Fairfield County Commissioners, 67 pp.
- Bennett & Williams, May 5, 2015c. Response to the March 3, 2015 City of Lancaster Comments on the January 20, 2015 Fairfield County Submission Responding to the Lancaster Interim Policy for Development within the Wellhead Protection Zones, Proposed Fairfield County Jail/Public Safety Facility, 345 Lincoln Avenue, Lancaster, Ohio, prepared for the Fairfield County Commissioners, 1169 pp.
- Geotechnical Consultants, Inc., 2011. Subsurface Exploration and Preliminary Geotechnical Engineering Report, Proposed Fairfield County Justice Center-MSMJ Site, 342 West Wheeling Street, Lancaster, Ohio, prepared for the Fairfield County Commissioners and Wachtel & McAnally Architects/Planners, dated June 10, 2011, 34 pp.
- Geotechnical Consultants, Inc., 2015. Final Subsurface Exploration and Geotechnical Engineering Report, Proposed Fairfield County Justice Center-MSMJ Site, 342 West Wheeling Street, Lancaster, Ohio, prepared for the Fairfield County Commissioners and Wachtel & McAnally Architects/Planners, dated January 15, 2015, 60 pp.
- Solar Testing Laboratories, Inc., 1999. Geotechnical Investigation for 342 West Wheeling Street, 4.01 Acre Site, Proposed Juvenile Detention Center, Lancaster, Ohio, prepared for the Fairfield County Board of Commissioners, c/o Fairfield County Sanitary Engineer, dated February 19, 1999, 59 pp.

Table 1. Estimation of depths of fill and lengths of casing needed to “case off” the fill materials and “seat” the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
A1	808.0	96'-4"	818.16	10.16	12
A2	810.0	96'-4"	818.16	8.16	10
A3	810.5	96'-4"	818.16	7.66	9.5
A4	810.5	96'-4"	818.16	7.66	9.5
A5	810.5	96'-4"	818.16	7.66	9.5
A6	809.3	96'-4"	818.16	8.86	10.5
A7	810.9	96'-4"	818.16	7.26	9
A8	811.4	96'-4"	818.16	6.76	8.5
A9	810.6	96'-4"	818.16	7.56	9.5
A10	810.2	96'-4"	818.16	7.96	10
A11	810.0	96'-4"	818.16	8.16	10
A12	809.8	96'-4"	818.16	8.36	10
A13	809.2	96'-4"	818.16	8.96	11
A14	808.3	96'-4"	818.16	9.86	12
A15	808.9	96'-4"	818.16	9.26	11.5
A16	810.4	96'-4"	818.16	7.76	9.5
A17	809.1	96'-2.5"	818.04	8.94	11
A18	809.4	96'-4"	818.16	8.76	11
A19	809.9	96'-4"	818.16	8.26	10.5
A20	810.1	96'-4"	818.16	8.06	10
A21	809.9	96'-4"	818.16	8.26	10
A22	809.5	96'-4"	818.16	8.66	10.5
A23	809.3	96'-4"	818.16	8.86	10.5
A24	809.6	96'-4"	818.16	8.56	10.5
A25	810.0	96'-4"	818.16	8.16	10
A26	810.9	96'-4"	818.16	7.26	9
A27	811.8	96'-4"	818.16	6.36	8.5
A28	811.5	96'-4"	818.16	6.66	9
A29	811.0	96'-4"	818.16	7.16	9
A30	810.8	96'-4"	818.16	7.36	9.5
A31	808.7	96'-4"	818.16	9.46	11.5
A32	808.8	96'-4"	818.16	9.36	11.5
A33	808.8	96'-4"	818.16	9.36	11.5
A34	808.8	96'-4"	818.16	9.36	11.5
A35	808.6	96'-4"	818.16	9.56	11.5
A36	808.3	96'-4"	818.16	9.86	12
A37	808.5	96'-4"	818.16	9.66	11.5
A38	809.2	96'-4"	818.16	8.96	11
A39	810.1	96'-4"	818.16	8.06	10
A40	810.6	96'-4"	818.16	7.56	9.5
A41	811.0	96'-4"	818.16	7.16	9.5
A42	810.8	96'-4"	818.16	7.36	9.5
A43	810.8	96'-4"	818.16	7.36	9.5
A44	810.6	96'-4"	818.16	7.56	9.5
A45	810.5	96'-2"	818	7.50	9.5
A46	810.3	96'-2"	818	7.70	9.5



Table 1 (continued). Estimation of depths of fill and lengths of casing needed to “case off” the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
A47	808.5	96'-4"	818.16	9.66	12
A48	808.4	96'-4"	818.16	9.76	12
A49	808.3	96'-4"	818.16	9.86	12
A50	808.3	96'-4"	818.16	9.86	12
A51	808.0	96'-4"	818.16	10.16	12
A52	807.6	96'-4"	818.16	10.56	12.5
A53	807.5	96'-4"	818.16	10.66	12.5
A54	808.6	96'-4"	818.16	9.56	11.5
A55	810.0	96'-4"	818.16	8.16	10
A56	810.0	96'-4"	818.16	8.16	10
A57	809.9	96'-4"	818.16	8.26	10
A58	809.9	96'-4"	818.16	8.26	10
A59	810.1	96'-4"	818.16	8.06	10
A60	810.2	96'-2"	818	7.80	9.5
A61	809.8	96'-4"	818.16	8.36	10.5
A62	808.2	96'-4"	818.16	9.96	12
A63	808.2	96'-4"	818.16	9.96	12
A64	808.1	96'-4"	818.16	10.06	12
A65	807.7	96'-4"	818.16	10.46	12.5
A66	808.1	96'-4"	818.16	10.06	12
A67	808.1	96'-4"	818.16	10.06	12
A68	808.2	96'-4"	818.16	9.96	12
A69	808.5	96'-4"	818.16	9.66	11.5
A70	808.6	96'-4"	818.16	9.56	11.5
A71	808.8	96'-4"	818.16	9.36	11.5
A72	809.1	96'-4"	818.16	9.06	11
A73	809.4	96'-4"	818.16	8.76	11
A74	809.4	96'-4"	818.16	8.76	11
A75	809.2	96'-4"	818.16	8.96	11
A76	808.9	96'-4"	818.16	9.26	11.5
A77	808.7	96'-4"	818.16	9.46	11.5
A78	809.2	96'-4"	818.16	8.96	11
A79	809.8	96'-4"	818.16	8.36	10.5
A80	810.2	96'-2"	818	7.80	9.5
A81	808.7	96'-4"	818.16	9.46	11.5
A82	808.7	96'-4"	818.16	9.46	11.5
A83	808.7	96'-4"	818.16	9.46	11.5
A84	809.5	96'-4"	818.16	8.66	11
A85	809.5	96'-4"	818.16	8.66	11
A86	809.6	96'-4"	818.16	8.56	10.5
A87	809.6	96'-4"	818.16	8.56	10.5
A88	810.0	96'-4"	818.16	8.16	10.5
A89	809.9	96'-4"	818.16	8.26	10.5
A90	810.5	96'-4"	818.16	7.66	9.5
A91	810.6	96'-4"	818.16	7.56	9.5
A92	810.5	96'-4"	818.16	7.66	9.5

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
A93	810.2	96'-4"	818.16	7.96	10
A94	810.0	96'-4"	818.16	8.16	10.5
A95	810.1	96'-4"	818.16	8.06	10
A96	810.6	96'-4"	818.16	7.56	9.5
A97	810.7	96'-4"	818.16	7.46	9.5
A98	811.3	96'-4"	818.16	6.86	9
A99	811.3	96'-4"	818.16	6.86	9
B1	810.5	96'-4"	818.16	7.66	10
B2	810.5	96'-4"	818.16	7.66	10
B3	810.7	98'-10"	820.66	9.96	12
B4	811.0	96'-4"	818.16	7.16	9
B5	811.2	98'-10"	820.66	9.46	11.5
B6	810.7	98'-10"	820.66	9.96	12
B7	810.1	98'-10"	820.66	10.56	13
B8	810.3	98'-10"	820.66	10.36	12.5
B9	811.3	98'-10"	820.66	9.36	11.5
B10	810.8	98'-10"	820.66	9.86	12
B11	810.7	96'-4"	818.16	7.46	9.5
B12	811.0	97'-8"	819.5	8.50	10.5
B13	811.4	98'-10"	820.66	9.26	11
B14	811.6	98'-10"	820.66	9.06	11
B15	810.6	98'-10"	820.66	10.06	12
B16	811.5	98'-7"	820.41	8.91	11
B17	811.2	96'-4"	818.16	6.96	9
B18	810.6	98'-10"	820.66	10.06	12
B19	809.2	98'-10"	820.66	11.46	13.5
B20	809.0	98'-10"	820.66	11.66	14
B21	810.2	98'-10"	820.66	10.46	12.5
B22	811.2	99'-2"	821	9.80	11.5
B23	811.6	98'-7"	820.41	8.81	11
B24	811.0	96'-4"	818.16	7.16	9
B25	810.8	96'-4"	818.16	7.36	9.5
B26	811.0	98'-10"	820.66	9.66	12
B27	811.4	98'-10"	820.66	9.26	11
B28	811.6	98'-10"	820.66	9.06	11
B29	811.4	98'-10"	820.66	9.26	11
B30	810.0	98'-10"	820.66	10.66	13
B31	810.0	98'-10"	820.66	10.66	13
B32	811.4	99'-2"	821	9.60	11.5
B33	811.9	98'-7"	820.41	8.51	10.5
B34	810.9	96'-4"	818.16	7.26	9.5
B35	810.8	98'-10"	820.66	9.86	12
B36	811.4	98'-10"	820.66	9.26	11.5
B37	811.9	98'-10"	820.66	8.76	10.5
B38	811.7	98'-10"	820.66	8.96	11
B39	811.1	98'-10"	820.66	9.56	11.5

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
B40	810.6	98'-10"	820.66	10.06	12
B41	810.4	98'-10"	820.66	10.26	12.5
B42	810.6	98'-10"	820.66	10.06	12
B43	811.3	98'-10"	820.66	9.36	11.5
B44	811.8	98'-10"	820.66	8.86	11
B45	811.1	98'-10"	820.66	9.56	11.5
B46	811.3	98'-10"	820.66	9.36	11.5
B47	811.6	98'-10"	820.66	9.06	11
B48	811.9	98'-10"	820.66	8.76	10.5
B49	811.5	98'-10"	820.66	9.16	11.5
B50	811.5	98'-10"	820.66	9.16	11.5
B51	811.7	98'-10"	820.66	8.96	11
B52	812.3	98'-10"	820.66	8.36	10.5
B53	812.2	98'-2"	820	7.80	10
B54	811.6	97'-11"	819.75	8.15	10
B55	810.2	97'-11"	819.75	9.55	12
B56	811.9	98'-2"	820	8.10	10
B57	811.4	98'-10"	820.66	9.26	11.5
B58	811.6	98'-10"	820.66	9.06	11
B59	811.8	98'-10"	820.66	8.86	11
B60	812.0	98'-10"	820.66	8.66	10.5
B61	812.0	98'-10"	820.66	8.66	11
B62	812.2	98'-10"	820.66	8.46	10.5
B63	812.1	98'-2"	820	7.90	10
B64	812.3	98'-10"	820.66	8.36	10.5
B65	812.1	98'-2"	820	7.90	10
B66	811.7	98'-10"	820.66	8.96	11
B67	811.8	98'-10"	820.66	8.86	11
B68	811.9	98'-10"	820.66	8.76	11
B69	812.0	98'-10"	820.66	8.66	11
B70	812.0	98'-10"	820.66	8.66	11
B71	811.9	98'-10"	820.66	8.76	11
B72	811.9	98'-10"	820.66	8.76	11
B73	812.0	98'-10"	820.66	8.66	11
B74	812.0	98'-2"	820	8.00	10.5
B75	811.9	99'-2"	821	9.10	11
B76	810.7	97'-11"	819.75	9.05	11.5
B77	807.5	97'-11"	819.75	12.25	14.5
B78	810.8	98'-2"	820	9.20	11.5
B79	811.8	98'-10"	820.66	8.86	11
B80	812.0	98'-10"	820.66	8.66	11
B81	812.0	98'-10"	820.66	8.66	11
B82	811.7	98'-10"	820.66	8.96	11
B83	811.1	98'-10"	820.66	9.56	11.5
B84	809.8	97'-11"	819.75	9.95	12
B85	811.6	98'-10"	820.66	9.06	11

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
B86	811.6	98'-10"	820.66	9.06	11
B87	811.6	98'-10"	820.66	9.06	11
B88	811.7	98'-10"	820.66	8.96	11
B89	811.7	98'-10"	820.66	8.96	11
B90	811.8	98'-10"	820.66	8.86	11
B91	811.8	98'-10"	820.66	8.86	11
B92	811.8	98'-10"	820.66	8.86	11
B93	811.9	98'-10"	820.66	8.76	11
B94	811.8	98'-10"	820.66	8.86	11
B95	811.6	98'-10"	820.66	9.06	11
B96	811.5	98'-10"	820.66	9.16	11
B97	810.9	98'-10"	820.66	9.76	12
B98	810.8	98'-10"	820.66	9.86	12
B99	810.8	98'-10"	820.66	9.86	12
B100	811.0	98'-10"	820.66	9.66	12
B101	811.1	98'-10"	820.66	9.56	11.5
B102	811.3	98'-10"	820.66	9.36	11.5
B103	811.2	98'-10"	820.66	9.46	11.5
B104	811.0	98'-10"	820.66	9.66	12
B105	811.0	98'-10"	820.66	9.66	12
B106	811.3	98'-7.5"	820.45	9.15	11
B107	810.8	98'-7.5"	820.45	9.65	11.5
B108	809.9	97'-11"	819.75	9.85	12
B109	808.0	97'-11"	819.75	11.75	14
B110	808.5	98'-2"	820	11.50	14
B111	810.6	98'-10"	820.66	10.06	12
B112	811.0	98'-7.5"	820.45	9.45	11.5
B113	810.9	98'-7.5"	820.45	9.55	11.5
B114	810.2	97'-11"	819.75	9.55	11.5
B115	808.4	98'-2"	820	11.60	14
B116	807.2	98'-2"	820	12.80	15
B117	810.8	98'-10"	820.66	9.86	12
B118	810.8	98'-10"	820.66	9.86	12
C1	810.0	98'-10"	820.66	10.66	13
C2	809.3	98'-10"	820.66	11.36	13.5
C3	809.6	98'-10"	820.66	11.06	13.5
C4	810.2	98'-10"	820.66	10.46	12.5
C5	810.1	101'-4"	823.17	13.07	15.5
C6	811.8	98'-10"	820.66	8.86	11
C7	811.0	98'-10"	820.66	9.66	12
C8	808.6	98'-10"	820.66	12.06	14.5
C9	811.6	98'-10"	820.66	9.06	11
C10	809.5	98'-10"	820.66	11.16	13.5
C11	807.9	98'-10"	820.66	12.76	15
C12	807.9	98'-10"	820.66	12.76	15
C13	808.7	99'-8"	821.5	12.80	15

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
C14	809.0	101'-4"	823.17	14.17	16.5
C15	809.2	101'-4"	823.17	13.97	16
C16	809.6	101'-4"	823.17	13.57	16
C17	810.5	101'-4"	823.17	12.67	15
C18	808.5	98'-10"	820.66	12.16	14.5
C19	807.2	99'-8"	821.5	14.30	16.5
C20	807.7	101'-4"	823.17	15.47	17.5
C21	808.5	101'-4"	823.17	14.67	17
C22	809.3	101'-4"	823.17	13.87	16
C23	810.0	99'-8"	821.5	11.50	13.5
C24	810.1	99'-8"	821.5	11.40	13.5
C25	810.4	99'-8"	821.5	11.10	13
C26	810.5	99'-8"	821.5	11.00	13
C27	810.5	98'-10"	820.66	10.16	12.5
C28	809.9	101'-4"	823.17	13.27	15.5
C29	809.2	98'-10"	820.66	11.46	13.5
C30	808.4	100'-1"	821.91	13.51	16
C31	808.0	100'-1"	821.91	13.91	16
C32	807.4	101'-4"	823.17	15.77	18
C33	809.2	101'-4"	823.17	13.97	16
C34	809.3	98'-10"	820.66	11.36	13.5
C35	808.8	101'-4"	823.17	14.37	16.5
C36	808.4	101'-4"	823.17	14.77	16.5
C37	807.4	101'-4"	823.17	15.77	18
C38	807.5	101'-4"	823.17	15.67	18
C39	807.9	99'-8"	821.5	13.60	16
C40	808.7	101'-4"	823.17	14.47	16.5
C41	809.5	101'-4"	823.17	13.67	16
C42	810.1	101'-4"	823.17	13.07	15.5
C43	810.6	101'-4"	823.17	12.57	15
C44	810.9	101'-4"	823.17	12.27	14.5
C45	811.1	101'-4"	823.17	12.07	14
C46	811.2	101'-4"	823.17	11.97	14
C47	811.3	101'-4"	823.17	11.87	14
C48	811.1	99'-8"	821.5	10.40	12.5
C49	808.7	98'-10"	820.66	11.96	14
C50	808.2	98'-10"	820.66	12.46	14.5
C51	807.6	101'-4"	823.17	15.57	18
C52	807.1	101'-4"	823.17	16.07	18.5
C53	805.8	101'-4"	823.17	17.37	19.5
C54	806.1	101'-4"	823.17	17.07	19.5
C55	807.5	101'-4"	823.17	15.67	18
C56	808.5	101'-4"	823.17	14.67	16.5
C57	809.1	101'-4"	823.17	14.07	16
C58	810.0	101'-4"	823.17	13.17	15
C59	810.6	101'-4"	823.17	12.57	14.5

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
C60	812.1	101'-4"	823.17	11.07	13
C61	812.0	99'-8"	821.5	9.50	11.5
C62	812.9	101'-4"	823.17	10.27	12
C63	812.8	99'-8"	821.5	8.70	10.5
C64	812.0	101'-4"	823.17	11.17	13
C65	814.0	101'-4"	823.17	9.17	11
C66	814.5	101'-4"	823.17	8.67	10.5
C67	814.0	101'-4"	823.17	9.17	11
C68	813.7	101'-4"	823.17	9.47	11.5
C69	813.5	101'-4"	823.17	9.67	11.5
C70	813.5	99'-8"	821.5	8.00	10
C71	808.5	99'-4"	821.16	12.66	15
C72	808.3	98'-10"	820.66	12.36	14.5
C73	806.9	101'-4"	823.17	16.27	18.5
C74	805.8	101'-4"	823.17	17.37	19.5
C75	806.2	101'-4"	823.17	16.97	19
C76	807.4	101'-4"	823.17	15.77	18
C77	808.2	101'-4"	823.17	14.97	17
C78	809.2	101'-4"	823.17	13.97	16
C79	810.4	101'-4"	823.17	12.77	14.5
C80	810.9	101'-4"	823.17	12.27	14
C81	814.1	100'-4"	822.17	8.07	10
C82	812.8	101'-4"	823.17	10.37	12.5
C83	814.8	101'-4"	823.17	8.37	10.5
C84	808.1	101'-4"	823.17	15.07	17
C85	808.3	101'-4"	823.17	14.87	17
C86	807.0	101'-4"	823.17	16.17	18.5
C87	806.2	101'-4"	823.17	16.97	19
C88	806.3	101'-4"	823.17	16.87	19
C89	807.9	101'-4"	823.17	15.27	17
C90	809.8	101'-4"	823.17	13.37	15.5
C91	811.6	101'-4"	823.17	11.57	13.5
C92	814.9	101'-4"	823.17	8.27	10
C93	815.7	101'-4"	823.17	7.47	9.5
C94	815.7	101'-4"	823.17	7.47	9.5
C95	814.9	101'-4"	823.17	8.27	10
C96	814.6	101'-4"	823.17	8.57	10.5
C97	808.8	101'-4"	823.17	14.37	16.5
C98	806.8	101'-4"	823.17	16.37	18.5
C99	813.3	101'-4"	823.17	9.87	12
C100	815.3	101'-4"	823.17	7.87	10
C101	814.9	101'-4"	823.17	8.27	10
C102	808.8	101'-4"	823.17	14.37	16.5
C103	808.5	101'-4"	823.17	14.67	17
C104	808.3	101'-4"	823.17	14.87	17
C105	808.2	101'-4"	823.17	14.97	17

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
C106	807.6	101'-4"	823.17	15.57	18
C107	810.9	101'-4"	823.17	12.27	14
C108	814.5	101'-4"	823.17	8.67	10.5
C109	815.0	101'-4"	823.17	8.17	10
C110	814.9	101'-4"	823.17	8.27	10
C111	815.2	101'-4"	823.17	7.97	10
C112	809.6	101'-4"	823.17	13.57	16
C113	812.2	101'-4"	823.17	10.97	13
C114	814.8	101'-4"	823.17	8.37	10.5
C115	815.1	101'-4"	823.17	8.07	10.5
C116	815.3	101'-4"	823.17	7.87	10
C117	810.5	101'-4"	823.17	12.67	15
C118	811.1	101'-4"	823.17	12.07	14
C119	815.4	101'-4"	823.17	7.77	9.5
C120	815.2	101'-4"	823.17	7.97	10
C121	815.4	101'-4"	823.17	7.77	9.5
C122	812.2	101'-4"	823.17	10.97	13
C123	812.7	101'-4"	823.17	10.47	12.5
C124	814.0	101'-4"	823.17	9.17	11.5
C125	815.5	101'-4"	823.17	7.67	9.5
C126	815.9	101'-4"	823.17	7.27	9
C127	815.8	101'-4"	823.17	7.37	9.5
C128	815.6	101'-4"	823.17	7.57	9.5
C129	814.0	101'-4"	823.17	9.17	11.5
C130	814.8	101'-4"	823.17	8.37	10.5
C131	816.0	101'-4"	823.17	7.17	9
C132	816.2	101'-4"	823.17	6.97	9
C133	813.0	101'-4"	823.17	10.17	12
C134	813.9	101'-4"	823.17	9.27	11
C135	814.3	101'-4"	823.17	8.87	11
C136	814.6	101'-4"	823.17	8.57	10.5
C137	815.4	101'-4"	823.17	7.77	9.5
C138	813.3	101'-4"	823.17	9.87	12
C139	813.7	101'-4"	823.17	9.47	11.5
C140	814.6	101'-4"	823.17	8.57	10.5
C141	815.3	101'-4"	823.17	7.87	10
C142	816.0	101'-4"	823.17	7.17	9.5
C143	816.5	101'-4"	823.17	6.67	9
C144	816.9	101'-4"	823.17	6.27	8.5
C145	817.1	101'-4"	823.17	6.07	8.5
C146	817.1	101'-4"	823.17	6.07	8.5
D1	809.3	98'-10"	820.66	11.36	13.5
D2	809.6	98'-10"	820.66	11.06	13.5
D3	810.0	98'-10"	820.66	10.66	13
D4	810.5	97'-8"	819.5	9.00	11
D5	810.9	96'-8"	818.5	7.60	10

Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
D6	811.4	96'-4"	818.16	6.76	9
D7	811.8	96'-4"	818.16	6.36	8.5
D8	809.4	98'-10"	820.66	11.26	13.5
D9	809.9	98'-10"	820.66	10.76	13
D10	810.4	98'-10"	820.66	10.26	12
D11	810.7	98'-10"	820.66	9.96	12
D12	811.0	98'-10"	820.66	9.66	11.5
D13	811.5	98'-10"	820.66	9.16	11
D14	811.8	96'-4"	818.16	6.36	8.5
D15	809.7	98'-10"	820.66	10.96	13
D16	811.6	96'-4"	818.16	6.56	8.5
D17	809.1	98'-10"	820.66	11.56	14
D18	810.1	98'-10"	820.66	10.56	12.5
D19	810.1	98'-10"	820.66	10.56	13
D20	810.0	98'-10"	820.66	10.66	13
D21	810.0	98'-10"	820.66	10.66	13
D22	810.1	98'-10"	820.66	10.56	13
D23	810.3	98'-10"	820.66	10.36	12.5
D24	810.5	98'-10"	820.66	10.16	12.5
D25	810.7	98'-10"	820.66	9.96	12
D26	810.8	98'-10"	820.66	9.86	12
D27	811.1	98'-10"	820.66	9.56	12
D28	811.3	98'-10"	820.66	9.36	11.5
D29	811.4	96'-4"	818.16	6.76	9
D30	811.3	96'-4"	818.16	6.86	9
D31	811.1	96'-4"	818.16	7.06	9.5
D32	809.4	98'-10"	820.66	11.26	13.5
D33	810.6	98'-10"	820.66	10.06	12.5
D34	810.6	98'-10"	820.66	10.06	12.5
D35	810.6	98'-10"	820.66	10.06	12.5
D36	810.7	98'-10"	820.66	9.96	12
D37	810.8	98'-10"	820.66	9.86	12
D38	811.2	98'-10"	820.66	9.46	11.5
D39	811.3	98'-10"	820.66	9.36	11.5
D40	811.3	98'-10"	820.66	9.36	11.5
D41	809.4	98'-10"	820.66	11.26	13.5
D42	810.4	98'-10"	820.66	10.26	12.5
D43	810.6	98'-10"	820.66	10.06	12.5
D44	810.6	98'-10"	820.66	10.06	12.5
D45	810.7	98'-10"	820.66	9.96	12
D46	810.7	98'-10"	820.66	9.96	12
D47	810.6	98'-10"	820.66	10.06	12
D48	810.6	98'-10"	820.66	10.06	12
D49	811.1	98'-10"	820.66	9.56	12
D50	811.4	98'-10"	820.66	9.26	11.5
D51	811.5	98'-10"	820.66	9.16	11.5



Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
D52	810.7	98'-10"	820.66	9.96	12
D53	810.8	98'-10"	820.66	9.86	12
D54	809.6	98'-10"	820.66	11.06	13.5
D55	810.2	98'-10"	820.66	10.46	12.5
D56	810.4	98'-10"	820.66	10.26	12.5
D57	810.7	98'-10"	820.66	9.96	12
D58	810.9	98'-10"	820.66	9.76	11.5
D59	810.9	98'-10"	820.66	9.76	11.5
D60	810.9	98'-10"	820.66	9.76	12
D61	810.9	98'-10"	820.66	9.76	12
D62	811.2	98'-10"	820.66	9.46	11.5
D63	811.6	98'-10"	820.66	9.06	11.5
D64	811.7	98'-10"	820.66	8.96	11
D65	811.7	98'-10"	820.66	8.96	11
D66	809.7	98'-10"	820.66	10.96	13
D67	810.1	98'-10"	820.66	10.56	12.5
D68	810.9	98'-10"	820.66	9.76	12
D69	810.9	98'-10"	820.66	9.76	12
D70	810.9	98'-10"	820.66	9.76	12
D71	811.0	98'-10"	820.66	9.66	12
D72	811.1	98'-10"	820.66	9.56	12
D73	811.2	98'-10"	820.66	9.46	11.5
D74	811.5	98'-10"	820.66	9.16	11.5
D75	811.7	98'-10"	820.66	8.96	11
D76	811.9	98'-10"	820.66	8.76	11
D77	811.9	98'-10"	820.66	8.76	11
D78	809.3	98'-10"	820.66	11.36	13.5
D79	809.8	98'-10"	820.66	10.86	13
D80	810.1	98'-10"	820.66	10.56	13
D81	810.3	98'-10"	820.66	10.36	12.5
D82	810.3	98'-10"	820.66	10.36	12.5
D83	810.6	98'-10"	820.66	10.06	12.5
D84	810.7	98'-10"	820.66	9.96	12
D85	811.0	98'-10"	820.66	9.66	12
D86	811.1	98'-10"	820.66	9.56	12
D87	811.4	98'-10"	820.66	9.26	11.5
D88	811.8	98'-10"	820.66	8.86	11
D89	811.8	98'-10"	820.66	8.86	11
D90	808.9	98'-10"	820.66	11.76	14
D91	809.1	98'-10"	820.66	11.56	14
D92	809.2	98'-10"	820.66	11.46	13.5
D93	809.6	98'-10"	820.66	11.06	13.5
D94	810.2	98'-10"	820.66	10.46	12.5
D95	810.9	98'-10"	820.66	9.76	12
D96	811.2	98'-10"	820.66	9.46	11.5
D97	811.4	98'-10"	820.66	9.26	11.5

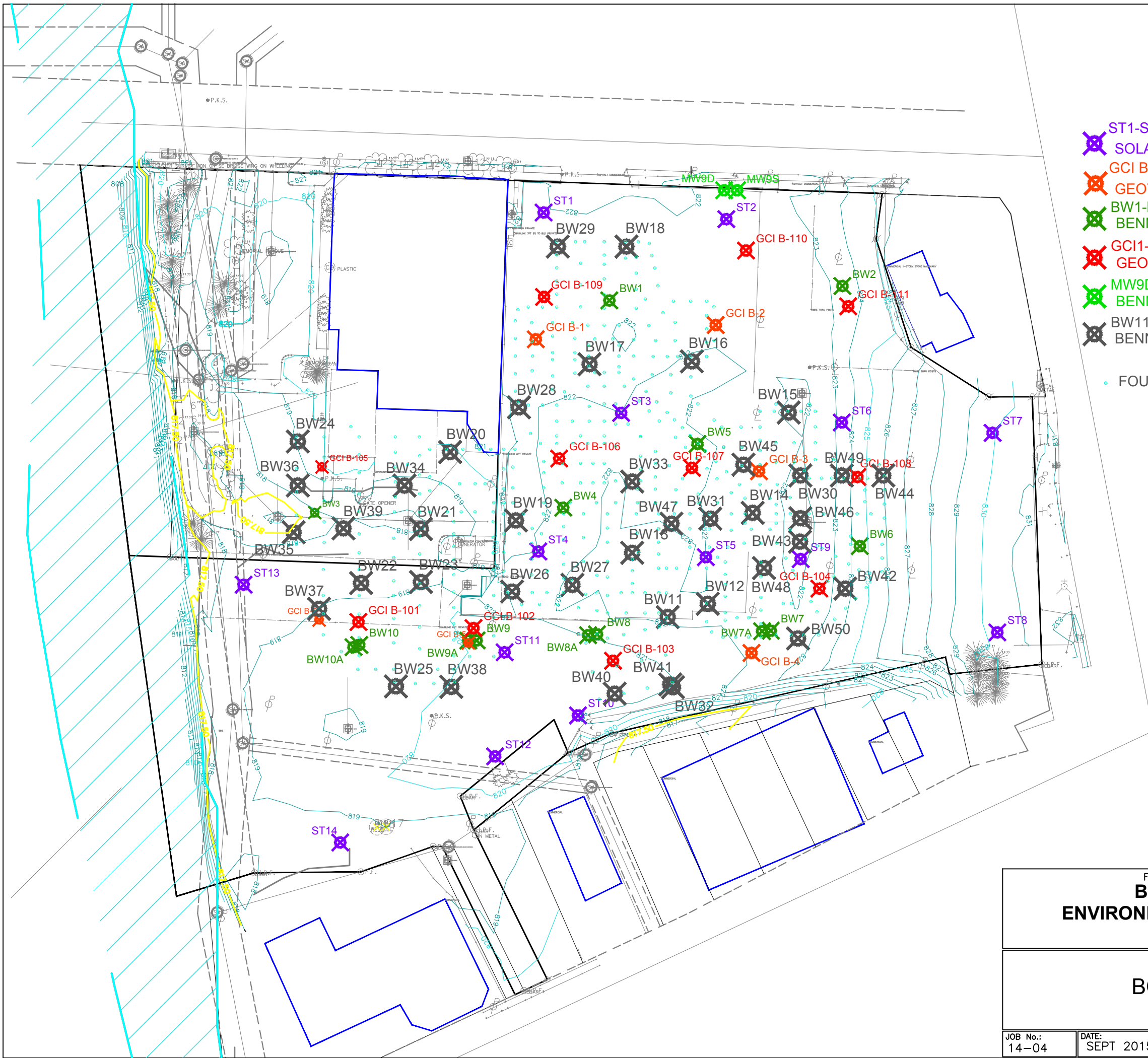
Table 1 (continued). Estimation of depths of fill and lengths of casing needed to "case off" the fill materials and "seat" the casing in the underlying materials.

<b>Piling Number</b>	<b>Estimated Elevation of Bottom of Fill (feet amsl)</b>	<b>Architect's "Top of caisson" (referenced to internal datum of 100)</b>	<b>Architect's "Top of caisson" (feet amsl)*</b>	<b>Estimated Depth of Fill from "Top of caisson" (feet)</b>	<b>Estimated Depth of Protective Casing Needed to "Case Off" Fill Materials and "Seat" Casing into Underlying Natural Materials (feet)**</b>
D98	811.7	98'-10"	820.66	8.96	11
D99	811.8	98'-10"	820.66	8.86	11
D100	811.2	98'-10"	820.66	9.46	11.5
D101	811.8	98'-10"	820.66	8.86	11
D102	811.8	98'-10"	820.66	8.86	11
D103	809.7	98'-10"	820.66	10.96	13
D104	810.4	98'-10"	820.66	10.26	12.5
D105	810.8	98'-10"	820.66	9.86	12
D106	811.1	98'-10"	820.66	9.56	12
D107	811.1	98'-10"	820.66	9.56	12
D108	811.4	98'-10"	820.66	9.26	11.5
D109	811.6	98'-10"	820.66	9.06	11.5
D110	811.8	98'-10"	820.66	8.86	11
D111	811.8	98'-10"	820.66	8.86	11
D112	811.5	98'-10"	820.66	9.16	11.5
D113	809.2	98'-10"	820.66	11.46	13.5
D114	810.9	98'-10"	820.66	9.76	11.5
D115	811.2	98'-10"	820.66	9.46	11.5
D116	811.4	98'-10"	820.66	9.26	11.5
D117	811.8	98'-10"	820.66	8.86	11
D118	808.9	98'-10"	820.66	11.76	14
D119	809.8	98'-10"	820.66	10.86	13
D120	810.5	98'-10"	820.66	10.16	12.5
D121	810.7	98'-10"	820.66	9.96	12
D122	810.8	98'-10"	820.66	9.86	12
D123	809.2	98'-10"	820.66	11.46	13.5
D124	810.6	98'-10"	820.66	10.06	12.5
D125	811.4	98'-10"	820.66	9.26	11.5
D126	811.0	98'-10"	820.66	9.66	12

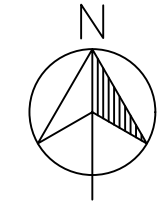
\*Architect provided elevation of 100 datum as 821.83 feet amsl. All elevations are from FAIRFIELD COUNTY JAIL FOUNDATION - ZPLAN G-3 9-22-15.zip received 9-25-15.

\*\*Estimated casing lengths in 1/2 foot lengths can be extended to the next greatest whole number.

Casing lengths are estimated and may need to be extended by a two-foot increment during field verification.



- ✖ ST1-ST14
- ✖ SOLAR TESTING LABORATORIES 2-19-99
- ✖ GCI B-1-GCI B-6
- ✖ GEOTECHNICAL CONSULTANTS INC. 6-10-2011
- ✖ BW1-BW10A
- ✖ BENNETT & WILLIAMS 3-20-2014
- ✖ GCI1-GCI11
- ✖ GEOTECHNICAL CONSULTANTS INC. 12-10-2014
- ✖ MW9D-MW9S
- ✖ BENNETT & WILLIAMS 3-30-2015
- ✖ BW11-BW50
- ✖ BENNETT & WILLIAMS 9-2-2015
- FOUNDATION PILES



FOR THE BEST ADVICE ON EARTH  
**BENNETT & WILLIAMS**  
**ENVIRONMENTAL CONSULTANTS, INC.**  
 98 County Line Road West, Suite C  
 Westerville, Ohio 43082  
 (614) 882-9122

## BORING LOCATIONS

JOB No.: 14-04	DATE: SEPT 2015	DWG FILE: New boreholes.dwg	OWN BY: MRS
			FIGURE: 1

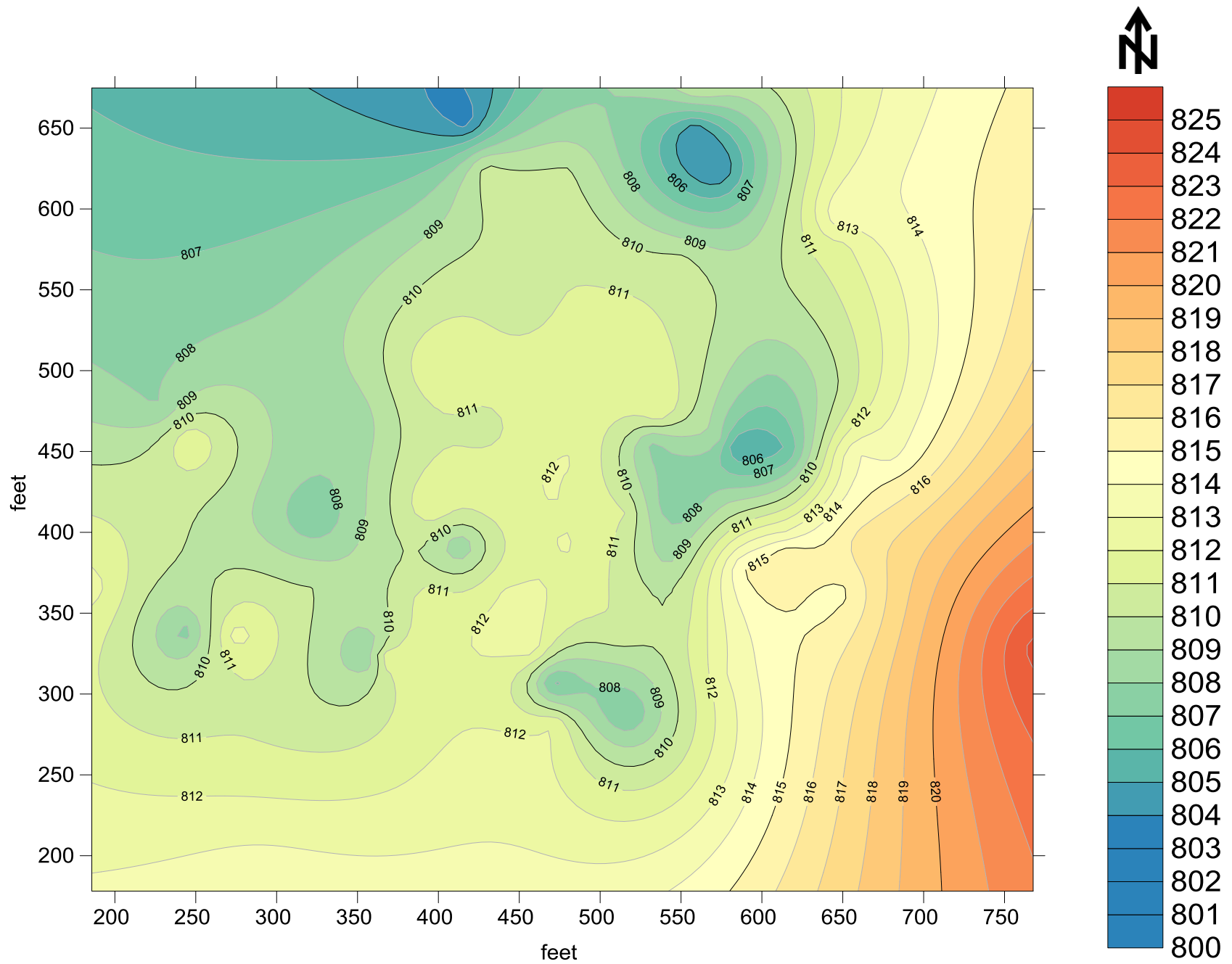


Figure 2. Shaded relief contour map of the bottom of fill/top of natural materials.

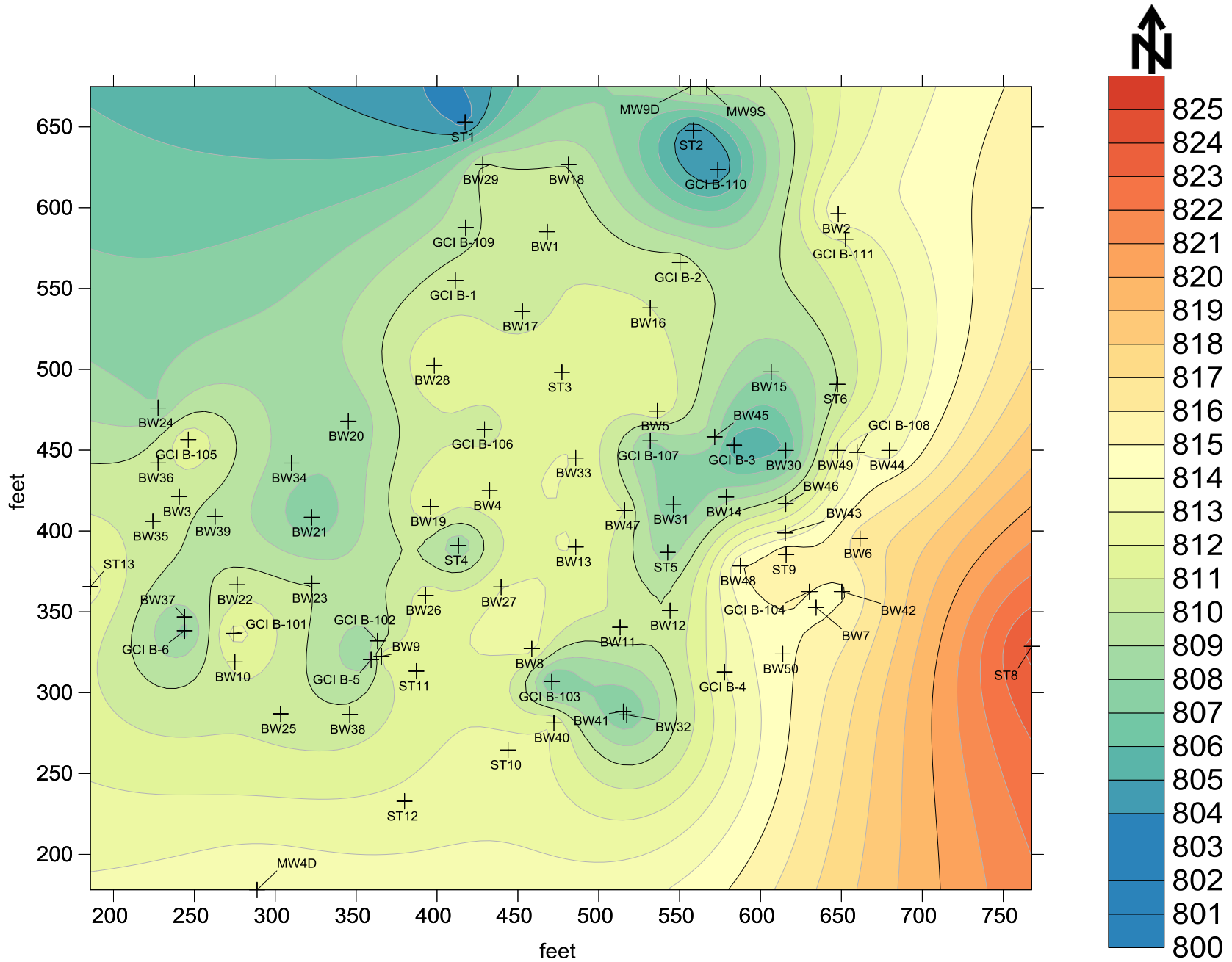


Figure 3. Shaded relief contour map of the bottom of fill/top of natural materials with boring locations.

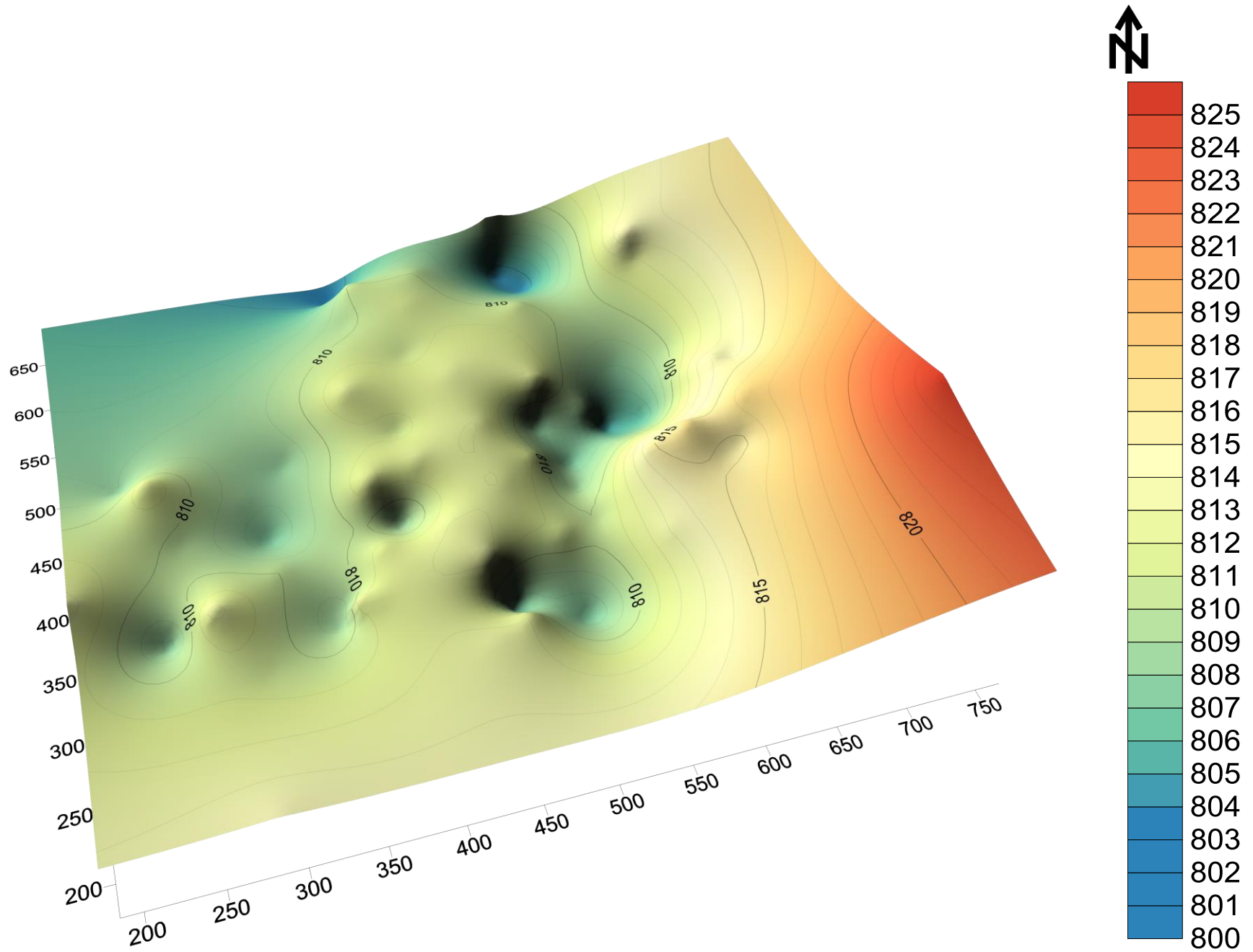
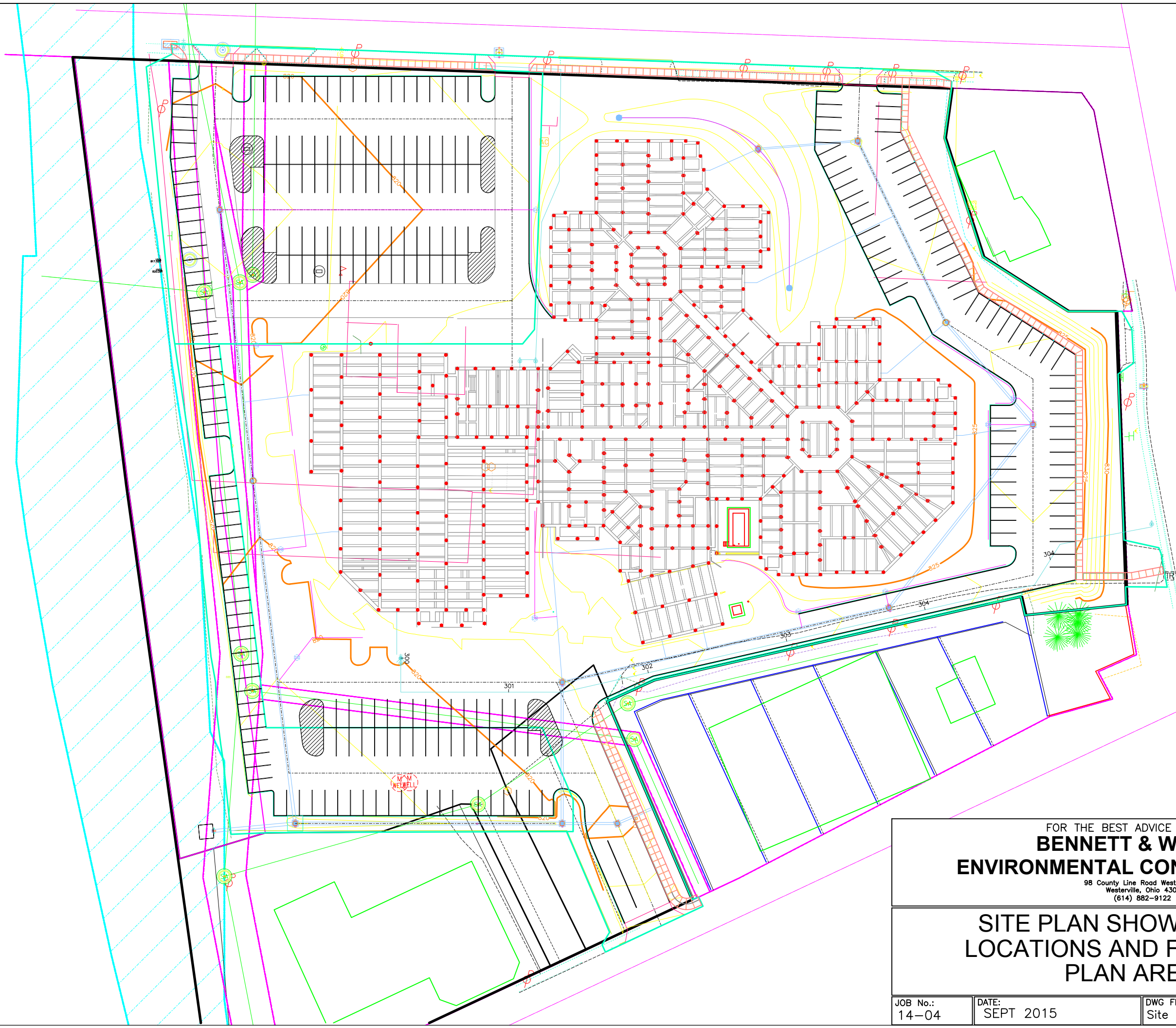
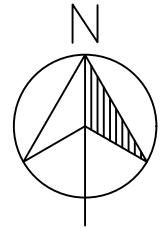
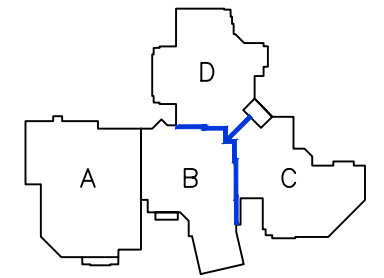


Figure 4. Three-dimensional view of the bottom of fill/top of natural materials.

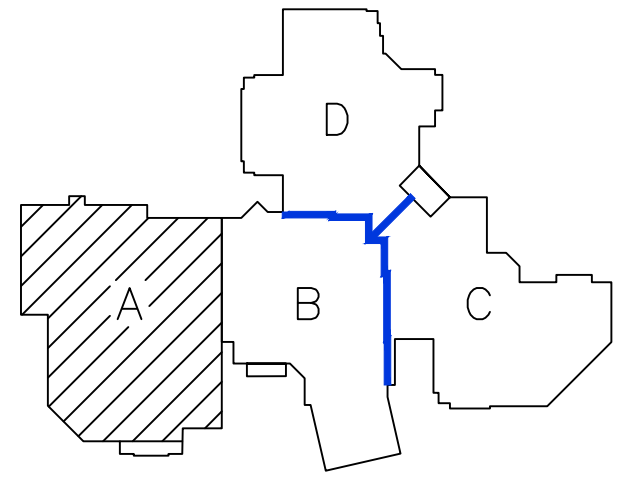
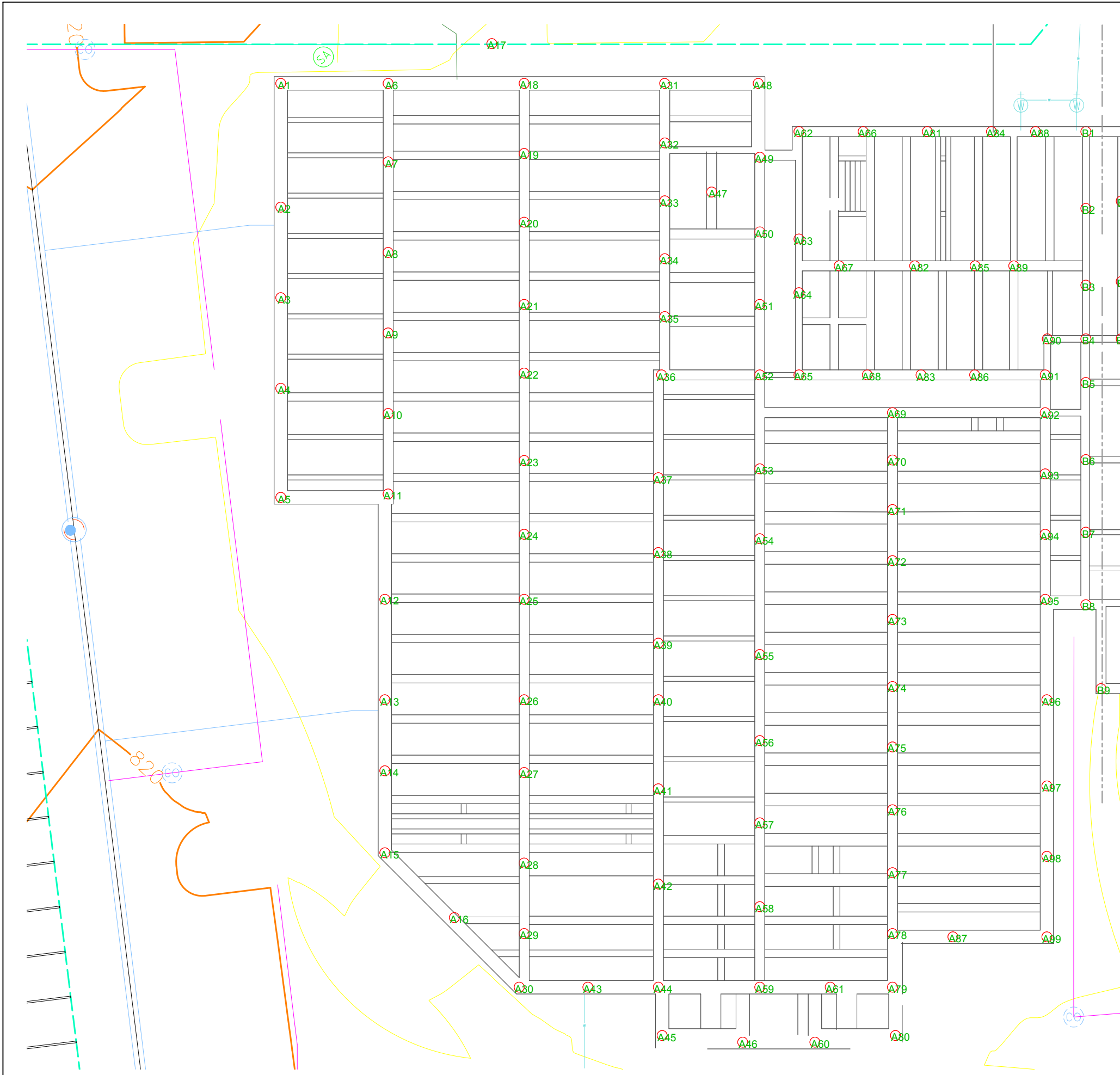


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### SITE PLAN SHOWING PILING LOCATIONS AND FOUNDATION PLAN AREAS

JOB No.: 14-04	DATE: SEPT 2015	DWG FILE: Site with piles.dwg	DWN BY: MRS	FIGURE: 5
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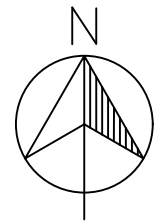
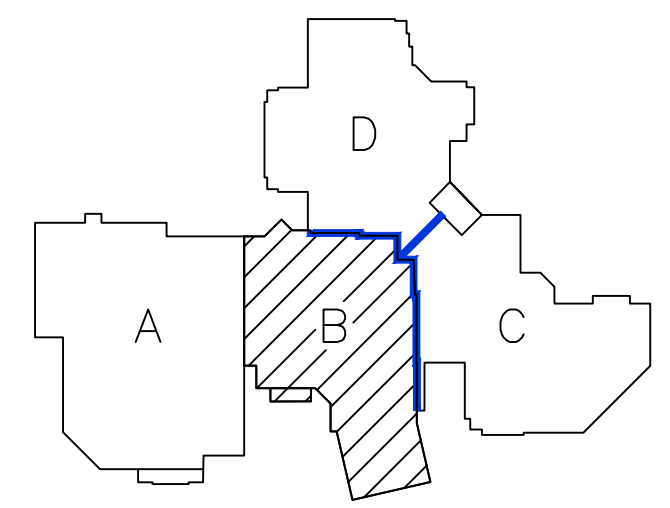


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 (614) 862-9122

**FOUNDATION PLAN AREA A  
 WITH LABELED PILING LOCATIONS**

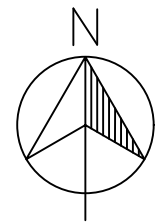
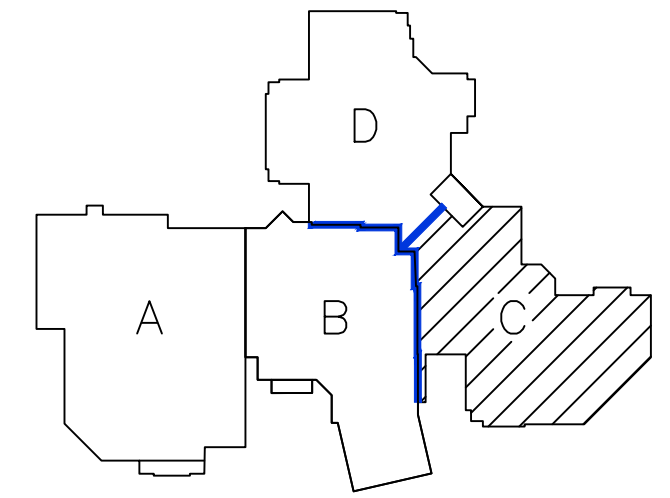
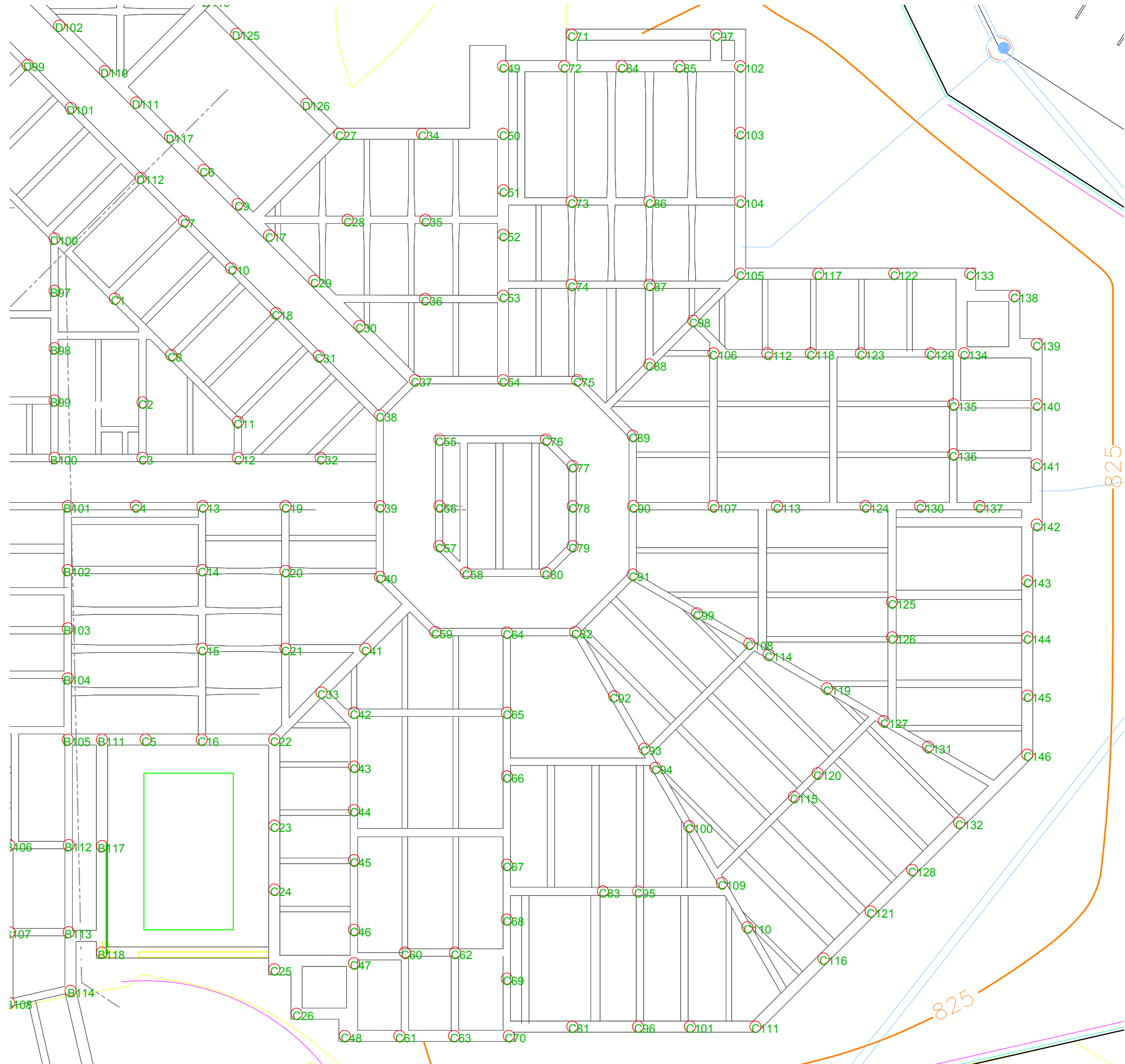
JOB No.: 14-04	DATE: SEPT 2015	DWG FILE: Site with piles.dwg	DWN BY: MRS
			FIGURE: 6





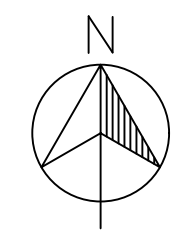
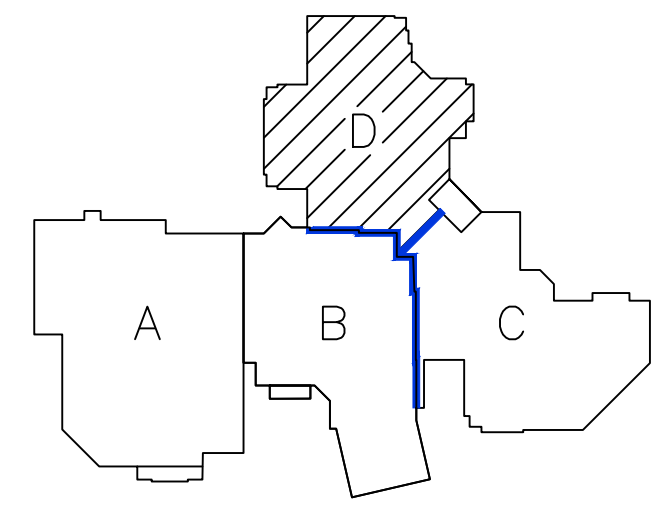
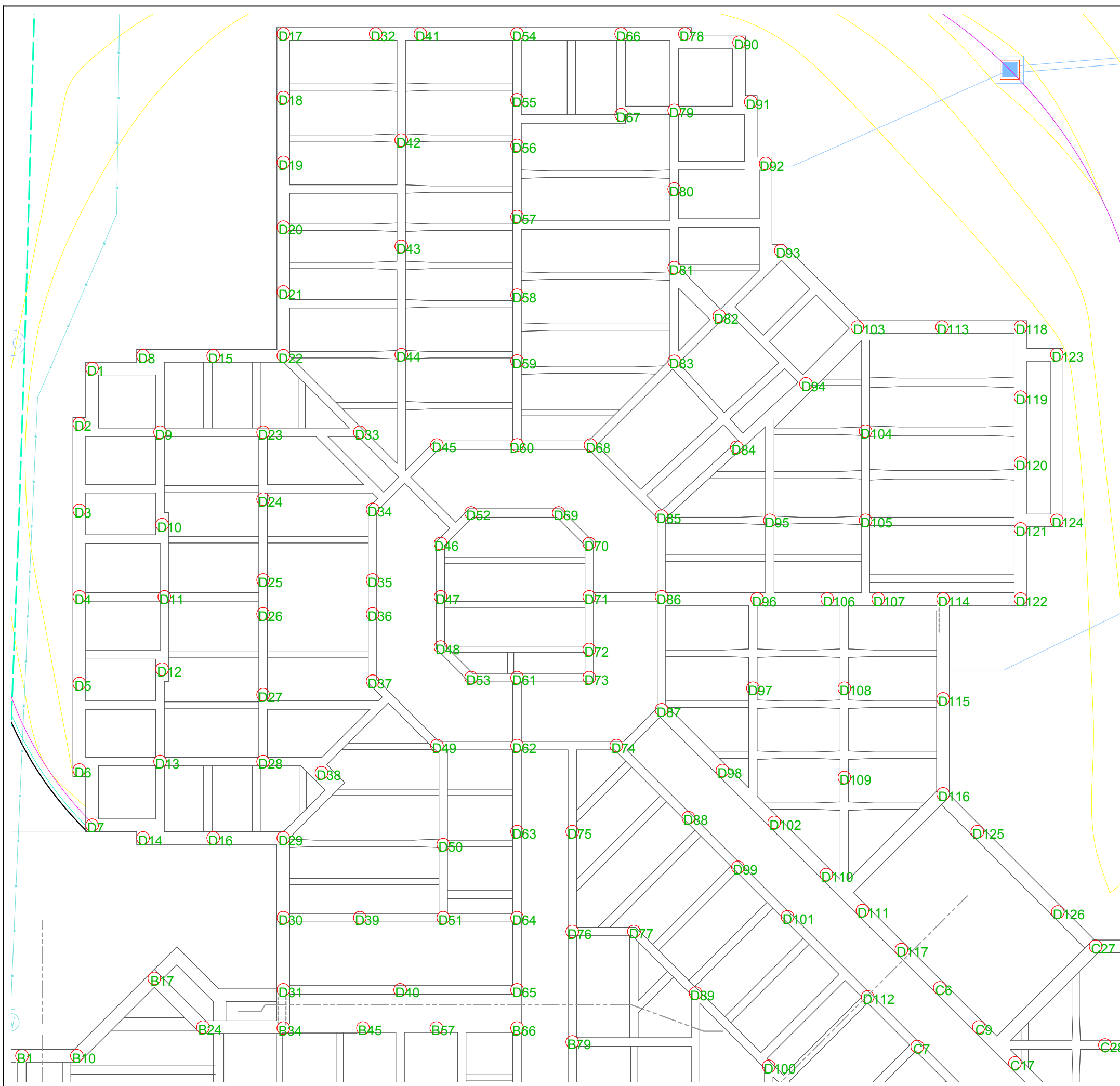
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**BENNETT & WILLIAMS**  
**ENVIRONMENTAL CONSULTANTS, INC.**  
98 County Line Road West, Suite C  
 Westerville, Ohio 43082  
 (614) 882-9122

**FOUNDATION PLAN AREA B  
 WITH LABELED PILING LOCATIONS**



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**FOUNDATION PLAN AREA C  
 WITH LABELED PILING LOCATIONS**



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**FOUNDATION PLAN AREA D  
 WITH LABELED PILING LOCATIONS**

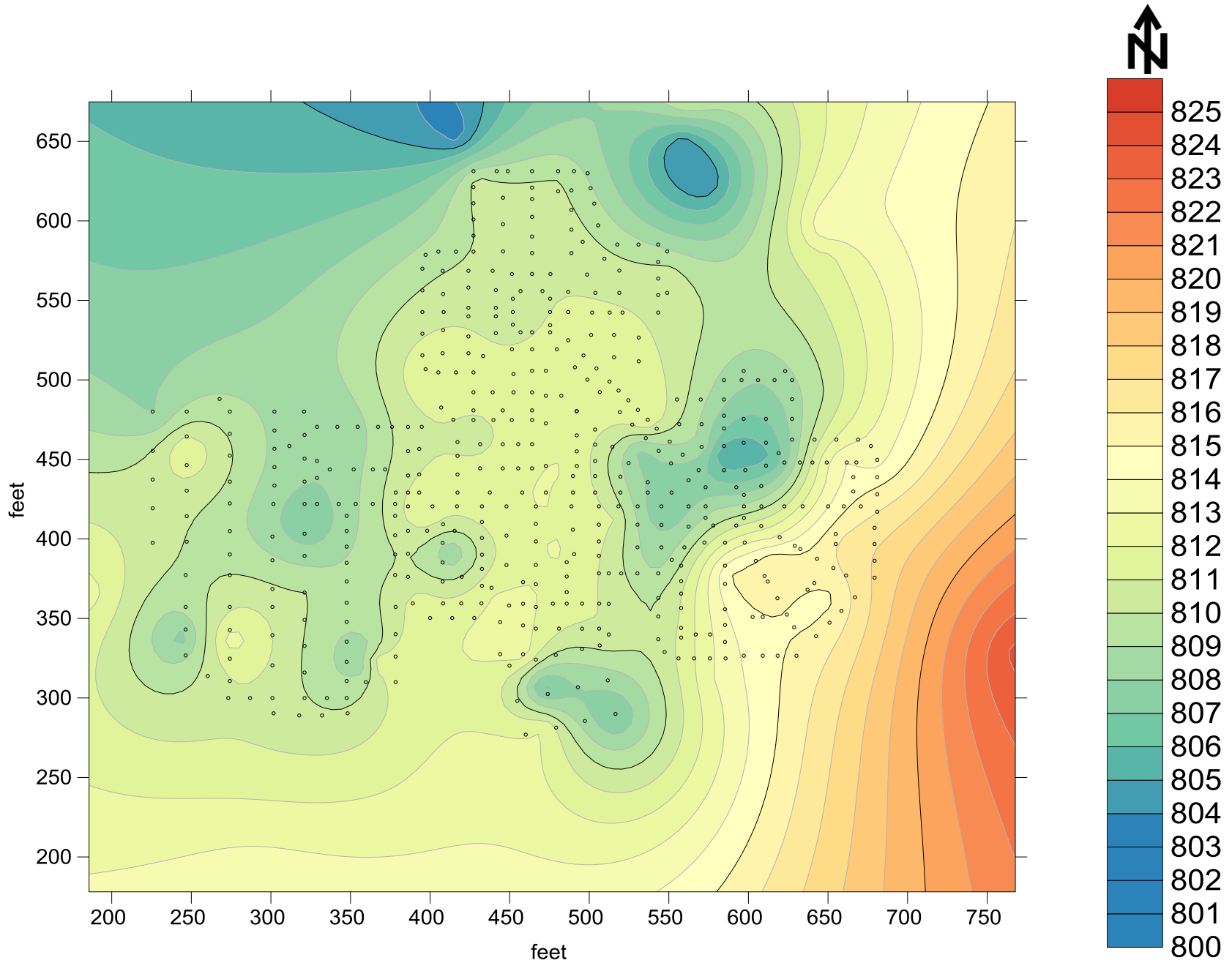


Figure 10. Shaded relief contour map of the bottom of fill/top of natural materials showing location of pilings.

## **Appendix A**

### **Boring Logs from Previous Field Investigations**

**Solar Testing Logs B-1 Through B-14**  
**Solar Testing (1999)**

**SOLAR TESTING LABORATORIES, INC.**  
 4299 Reynolds Drive  
 Hilliard, Ohio 43026  
 PH. (614) 777-6013 FX. (614) 777-6160



# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: D.Henderson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: E. Chipukaizer SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

## DEPTH TO GROUNDWATER OBSERVATIONS

DEPTH UPON ENCOUNTER: 13 FEET  
 DEPTH UPON COMPLETION (  $\nabla$  ): (None) FEET  
 DATE AFTER COMPLETION \_\_\_\_\_  
 DEPTH TO GROUNDWATER \_\_\_\_\_  
 TECHNICIAN INITIALS \_\_\_\_\_

BORING NO: B-1 (1 OF 2)

DRILL START/END: 2-6-99

WELL		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS		GRADATION		STANDARD PENETRATION RESISTANCE (N)		WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF														
BENT.		ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SYMBOL	% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 $\mu$ )	DRY UNIT WEIGHT (pcf)	ATERBERG LIMITS			SHEAR KSF					
GROUT																	PL — MC% — LL			UNCONFINED UNCONFINED UNCONFINED UNCONFINED UNCONFINED UNCONFINED UNCONFINED					
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## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: D.Henderson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: E. Chipukaizer SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-1 (2 OF 2)
DEPTH UPON ENCOUNTER: 13	FEET	
DEPTH UPON COMPLETION ( $\nabla$ ): (None)	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	2" S.S. SHELBY CUTTINGS		3" S.S. NX CORE BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF							
	BENT.	GROUT	SOLID PVC	SLOTTED PVC			FILTER PACK	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE		BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 μ)	PL	MC%	LL	UNCONFINED
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																				
					BOTTOM OF FILL @ 18.5'	18.5																		
					Black, ORGANIC SILT WITH SAND, Trace Gravel, Damp/Wet, Soft (ML) PID= 0 PPM ORGANIC CONTENT= 6% Bottom of Boring at 20 Feet.	20.0																		





# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: D. Henderson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: E. Chipukaizer SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS	
DEPTH UPON ENCOUNTER: 13 FEET	
DEPTH UPON COMPLETION ( $\nabla$ ): 11 FEET	
DATE AFTER COMPLETION	
DEPTH TO GROUNDWATER	
TECHNICIAN INITIALS	

BORING NO: B-2 (1 OF 3)  
 DRILL START/END: 2-6-99

WELL BENT. GROUT SOLID PVC SLOTTED PVC FILTER PACK COMP.	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF				
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (sf)	% GRAVEL	% COARSE SAND		% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 $\mu$ )	DRY UNIT WEIGHT (pcf)	PL	MC%	LL
$\nabla$		0			CONCRETE, APPROXIMATELY 6"	0.5														
			S-1	X	Brown/Black, FILL MATERIAL, Damp, Medium Dense (VISUAL) PID= 0 PPM GRAVEL, SAND, AND QUARTZ/SILICA FOUND IN THE SAMPLE															
			S-2	X	Trace Silty Sand (VISUAL) PID= 51 PPM GRAVEL, BRICK FRAGMENTS, AND SLAG FOUND IN THE SAMPLE; WOOD FRAGMENTS IN AUGAR CUTTINGS FROM 3'-16'										54					
		5	S-3	X	Black, Moist, Medium Stiff (VISUAL) PID= 5 PPM SOME CLAY AND ORGANICS															
			S-4	X	Loose (VISUAL) PID= 1 PPM BRICK FRAGMENTS, RUBBER, AND ORGANICS FOUND IN THE SAMPLE															
		10																		
			S-5	X	CAVE @ 13.5' Wet, Loose (VISUAL) PID= 2 PPM WIRE, RUBBER, SAND, GRAVEL AND ORGANICS FOUND IN SAMPLE															
		15																		

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: D. Henderson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: E. Chipukaizer SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-2 (2 OF 3)
DEPTH UPON ENCOUNTER: 13 FEET	DEPTH UPON COMPLETION (▼): 11 FEET	DRILL START/END: 2-6-99
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF												
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND		% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 µ)	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6	8	10			
COMP.					BOTTOM OF FILL @ 18'	18.0																						
	20		S-6	X	Brown, SANDY LEAN CLAY, Few Gravel, Wet, Soft (VISUAL) PID= 0 PPM SMALL SILT SEAM FOUND IN SAMPLE Dark Gray, SILTY SAND, Trace Gravel, Damp/Wet, Loose (VISUAL) ORGANICS FOUND IN SAMPLE	19.0																						
	25		S-7	X	Wet, Medium Dense (VISUAL) PID= 1 PPM ORGANICS AND CRUSTACEAN SHELLS FOUND IN SAMPLE; ORGANIC CONTENT=6%																							
	30		S-8	X	Dark Gray, CLAYEY SAND, Damp, Very Dense (VISUAL) PID= 0 PPM SAMPLE HAS LESS ORGANICS THAN ABOVE SAMPLE	28.5																						

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: D. Henderson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: E. Chipukaizer SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-2 (3 OF 3)	
DEPTH UPON ENCOUNTER: 13	FEET	DRILL START/END: 2-6-99	
DEPTH UPON COMPLETION (▼): 11	FEET		
DATE AFTER COMPLETION			
DEPTH TO GROUNDWATER			
TECHNICIAN INITIALS			

WELL <input checked="" type="checkbox"/> BENT. <input type="checkbox"/> GROUT <input type="checkbox"/> SOLID PVC <input type="checkbox"/> SLOTTED PVC <input type="checkbox"/> FILTER PACK <input checked="" type="checkbox"/> COMP.	<input checked="" type="checkbox"/> 2" S.S. SHELBY NX CORE <input checked="" type="checkbox"/> 3" S.S. CUTTINGS BX CORE		BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF																				
	ELEVATION	DEPTH						SAMPLE NO.	SAMPLE TYPE	% GRAVEL	% COARSE SAND	% MEDIUM SAND			% FINE SAND	% SILT	% CLAY (< 5 µ)	PL	MC%	LL	UNCONFINED			UNDRAINED UNCONFINED		UNCONSOLIDATED UNDRAINED												
																					10	20	30	40	10	20	30	40	2	4	6	8	10					
35		S-9	X	11-14-18 32	16	33.5 Gray, SANDY LEAN CLAY, Trace Gravel, Damp, Very Stiff (VISUAL) PID= 0 PPM 35.0	//						●	●																								
						Bottom of Boring at 35 Feet																																



# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: D. Henderson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: E. Chipukaizer SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-3 (1 OF 2)
DEPTH UPON ENCOUNTER: 10	FEET	DRILL START/END: 2-6-99
DEPTH UPON COMPLETION ( $\nabla$ ): 12	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	BENT.	2" S.S. SHELBY NX CORE	3" S.S. CUTTINGS BX CORE	GROUT	SOLID PVC	SLOTTED PVC	FILTER PACK	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF												
																	% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT		% CLAY (< 5 μ)	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6	8	10						
▼	COMP.								0						CONCRETE, APPROXIMATELY 5"	0.4																						
										S-1	X	5-5-4 9	8		Brown and Tan, SILTY SAND, Little Gravel, Damp, Loose (VISUAL) PID= 1 PPM TRACE OF BRICK AND SHALE FRAGMENTS FOUND IN THE SAMPLE (FILL)																							
										S-2	X	10-9-11 20	8			4.5																						
									5						Gray, FILL MATERIAL, Damp, Medium Dense (VISUAL) PID= 1 PPM SAND, GRAVEL, CINDERS, BRICK FRAGMENTS, ORGANICS, AND ROOFING MATERIAL FOUND IN THE SAMPLE (VISUAL) PID= 0 PPM GLASS, AND METAL FOUND IN THE SAMPLE																							
										S-3	X	5-6-7 13	8																									
										S-4	X	2-6-9 15	8		(VISUAL) PID= 0 PPM BRICK FRAGMENTS, SAND, AND SLAG FOUND IN SAMPLE ENCOUNTERED WATER @ 10' BOTTOM OF FILL @ 10'																							
									10						Black, SANDY LEAN CLAY, Damp, Soft (VISUAL) PID= 0 PPM																							
										S-5	X	2-2-2 4	8																									
									15																													

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-4 (1 OF 4)
DEPTH UPON ENCOUNTER: 23.5 FEET	DEPTH UPON COMPLETION ( $\nabla$ ): 21 FEET	DRILL START/END: 2-6-99
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF									
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND		% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 μ)	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6	8	10
COMP.	0				CONCRETE, APPROXIMATELY 5"	0.4																			
			S-1	X	Reddish Brown, SILTY SAND, Damp, Medium Dense (VISUAL) PID= 1 PPM SAND, SLAG, AND GRAVEL FOUND IN THE SAMPLE (FILL)																				
			S-2	X	Black, Damp, Dense (VISUAL) PID= 1 PPM CONCRETE FRAGMENTS FOUND IN THE SAMPLE; CONCRETE RUBBLE INCREASED N. VALUE (FILL)																				
			S-3	X	Reddish Brown, Loose (VISUAL) PID= 0 PPM GRAVEL, AND SLAG FOUND IN THE SAMPLE (FILL)																				
			S-4	X	Gray, Black and Tan, (VISUAL) PID= 0 PPM SLAG, CINDERS, AND GRAVEL FOUND IN THE SAMPLE (FILL)																				
					BOTTOM OF FILL @ 14'	14.0																			
			S-5	X	Grayish Brown to Black, SANDY ORGANIC CLAY, Damp, Soft (OH) PID= 0 PPM ORGANICS PRESENT IN SAMPLE; ORGANIC CONTENT=5%									87											

(continued next page)

## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-4 (2 OF 4)
DEPTH UPON ENCOUNTER: 23.5	FEET	DRILL START/END: 2-6-99
DEPTH UPON COMPLETION (▼): 21	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION						STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF																								
										% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 μ)		DRY UNIT WEIGHT (pcf)	PL	MC%	LL	UNCONFINED UNDRAINED																							
										10	20	30	40	10	20						30	40	2	4	6	8	10																	
▼ COMP.	20		S-6	⊗	3-3-8 11	15		18.5 Black, <b>SANDY LEAN CLAY</b> , Trace Gravel, Damp, Stiff (VISUAL) PID= 0 PPM ORGANICS PRESENT IN THE SAMPLE; SHELLS FOUND IN THE SAMPLE	[Symbol]									64																										
		25		S-7	⊗	3-4-7 11	14		23.5 Gray, <b>SANDY ORGANIC SILT</b> , Wet, Dense (OL) PID= 0 PPM	[Symbol]	1	13	0	22	51	13																												
		30		S-8	⊗	3-7-10 17	14		28.5 Brown and Gray, <b>SILTY SAND</b> , Few Gravel, Wet, Medium Dense (VISUAL) PID= 0 PPM	[Symbol]																																		

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

**DEPTH TO GROUNDWATER OBSERVATIONS**  
 DEPTH UPON ENCOUNTER: 23.5 FEET  
 DEPTH UPON COMPLETION (  $\nabla$  ): 21 FEET  
 DRILL START/END: 2-6-99  
 DATE AFTER COMPLETION: 

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 DEPTH TO GROUNDWATER: 

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 TECHNICIAN INITIALS: 

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WELL BENT. GROUT SOLID PVC SLOTTED PVC FILTER PACK COMP.	2" S.S. SHELBY NX GORE	3" S.S. CUTTINGS BX CORE	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF														
												% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 $\mu$ )	PL	MC%	LL	2	4	6	8	10									
				35	S-9		1-2-2 4	16		Gray, SILT, Wet, Loose (ML) PID= 0 PPM	34.5	2	11	0	1	72	14																			
				40	S-10		14-16-19 35	15		Gray, Tan, SILTY SAND, Few Gravel, Damp, Medium Dense (VISUAL) PID= 0 PPM	39.0																									
				45	S-11		20-50-31 81	16		Gray, POORLY GRADED SAND WITH SILT, Wet, Very Dense (SP-SM) PID= 0 PPM	43.5	0	1	47	46	6																				

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Partly Cloudy, 35F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-4 (4 OF 4)
DEPTH UPON ENCOUNTER: 23.5	FEET	DRILL START/END: 2-6-99
DEPTH UPON COMPLETION (▼): 21	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL BENT. GROUT SOLID PVC SLOTTED PVC FILTER PACK COMP.	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF									
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND		% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 μ)	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6	8	10
▼ COMP.	50	55	60	S-12	13-14-19 33	16	Trace Gravel (VISUAL) PID= 0 PPM																		
							Bottom of Boring at 50 Feet																		

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-5 (1 OF 4)
DEPTH UPON ENCOUNTER: 13.5	FEET	DRILL START/END: 2-8-99
DEPTH UPON COMPLETION (▼): (None)	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL BENT. <input type="checkbox"/> GROUT <input type="checkbox"/> SOLID PVC <input type="checkbox"/> SLOTTED PVC <input type="checkbox"/> FILTER PACK <input type="checkbox"/>	2" S.S. SHELBY NX CORE <input type="checkbox"/>	3" S.S. CUTTINGS BX CORE <input type="checkbox"/>	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF										
												% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 µ)	PL	MC%	LL	2	4	5	8	10					
COMP. ▼				0						Black, SILTY SAND, Damp, Loose (VISUAL) PID= 1 PPM SHALE FRAGMENTS, AND PLASTIC FOUND IN THE SAMPLE (FILL)																						
					S-1	X	2-2-2 4	2		Gray Black (VISUAL) PID= 0 PPM SHALE AND BRICK FRAGMENTS FOUND IN THE SAMPLE (FILL)																						
				5	S-2	X	2-3-2 5	2		Black, Trace Gravel, Damp, Medium Dense (VISUAL) PID= 3 PPM SLAG AND BRICK FRAGMENTS FOUND IN THE SAMPLE (FILL)																						
					S-3	X	8-10-8 18	6		Black and Tan, Loose (VISUAL) PID= 0 PPM ORGANICS PRESENT IN THE SAMPLE; SHALE FRAGMENTS, SLAG, AND SMALL STONE FOUND IN THE SAMPLE; HITTING COBBLE @ 10' (FILL)																						
				10	S-4	X	1-2-2 4	2		ENCOUNTERED WATER @ 13.5' BOTTOM OF FILL @ 13.5' Dark Gray, Few Gravel, Medium Dense (VISUAL) PID= 0 PPM ORGANIC CONTENT= 7%																						
				15	S-5	X	9-8-10 18	8																								

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS			
DEPTH UPON ENCOUNTER: 13.5	FEET		
DEPTH UPON COMPLETION (▼): (None)	FEET		
DATE AFTER COMPLETION			
DEPTH TO GROUNDWATER			
TECHNICIAN INITIALS			

BORING NO: B-5 (2 OF 4)  
 DRILL START/END: 2-8-99

WELL	CORING			SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF									
	ELEVATION	DEPTH	SAMPLE NO. / SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND			% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 μ)	PL MC% LL			UNCONFINED UNCONFINED UNCONFINED UNDRAINED UNCONFINED UNDRAINED					
									10	20			30	40	10	20	30	40	2	4	6	8	10		
▼ COMP.																									
	20	S-6	13-21-31 / 52	8	Dark Brown, POORLY GRADED SAND WITH SILT AND GRAVEL, Damp, Very Dense (VISUAL) PID= 0 PPM LIMESTONE AND SHALE FRAGMENTS FOUND IN THE SAMPLE	18.5											52								
	25	S-7	8-11-8 / 19	6	Dark Gray, Damp/Wet (VISUAL) PID= 1 PPM SMALL SHALE FRAGMENT FOUND IN THE SAMPLE																				
	30	S-8	6-11-16 / 27	7	Dark/Gray, SANDY LEAN CLAY, Few Gravel, Damp, Very Stiff (VISUAL) PID= 0 PPM	28.5																			
													141												

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## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-5 (3 OF 4)
DEPTH UPON ENCOUNTER: 13.5	FEET	DRILL START/END: 2-8-99
DEPTH UPON COMPLETION ( $\nabla$ ): (None)	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF											
										% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 $\mu$ )	PL	MC%	LL											
<input checked="" type="checkbox"/> BENT.	<input checked="" type="checkbox"/> 2" S.S. SHELBY	<input checked="" type="checkbox"/> 3" S.S. CUTTINGS																													
<input type="checkbox"/> GROUT	<input type="checkbox"/> SOLID PVC	<input type="checkbox"/> SLOTTED PVC																													
<input type="checkbox"/> FILTER PACK																															
<input checked="" type="checkbox"/> COMP.																															
	35		S-9		13-15-14 29	10		Dark Gray, WELL GRADED SAND WITH SILT AND GRAVEL, Damp, Medium Dense (VISUAL) PID= 0 PPM SHALE FRAGMENTS IN SAMPLE																							
	40		S-10		16-13-13 26	8		(VISUAL) PID= 0 PPM																							
	45		S-11		15-20-31 51	8		(SW-SM) PID= 0 PPM		28	16	30	17	9																	

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST.    JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO.    OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson    DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale    SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F    UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-5 (4 OF 4)	
DEPTH UPON ENCOUNTER: 13.5	FEET	DRILL START/END: 2-8-99	
DEPTH UPON COMPLETION ( $\nabla$ ): (None)	FEET		
DATE AFTER COMPLETION			
DEPTH TO GROUNDWATER			
TECHNICIAN INITIALS			

WELL	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF						
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND			% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 $\mu$ )	PL	MC%	LL	UNCONFINED	UNDRAINED UNCONFINED	UNCONSOLIDATED UNDRAINED
<input checked="" type="checkbox"/> COMP.																							
	50		S-12	X	12-16-32 48	8	(VISUAL) PID= 0 PPM																
	55		S-13	X	21-23-26 49	8	(SW-SM) PID= 0 PPM	15	17	41	15	12											
	60						Bottom of Boring at 55 Feet																



# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-6 (1 OF 4)
DEPTH UPON ENCOUNTER: 13.5	FEET	DRILL START/END: 2-8-99
DEPTH UPON COMPLETION ( $\nabla$ ): 15	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	2" S.S.		3" S.S.		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF								
	BENT.	SHELBY NX CORE	CUTTINGS BX CORE				% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT		% CLAY (< 5 $\mu$ )	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	UNCONFINED	UNDRAINED UNCONFINED	UNCONSOLIDATED UNDRAINED				
ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)						10	20	30	40	10	20	30	40	2	4	6	8	10
COMP.	0																							
	S-1		X	2-2-4 6	4	4.25	Black, FILL MATERIAL, Trace Gravel, Damp, Medium Dense (VISUAL) PID= 1 PPM SILTY CLAY WITH SAND FOUND IN THE SAMPLE																	
	S-2		X	3-1-1 2	3		Loose (VISUAL), PID= 1 PPM GLASS AND BRICK FRAGMENTS FOUND IN THE SAMPLE																	
	S-3		X	1-3-2 5	2		Medium Dense (VISUAL) PID= 0 PPM																	
	S-4		X	3-2-3 5	8		(VISUAL) PID= 1																	
							ENCOUNTERED WATER @ 13.5' BOTTOM OF FILL @ 13.5'																	
	S-5		X	3-6-9 15	8	.75	Dark Gray, SILTY CLAYEY SAND WITH GRAVEL, Wet, Medium Dense (VISUAL) PID= 1 PPM LARGE STONES PRESENT IN SAMPLE																	

(continued next page)



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**GEOLOGIC DRILLING LOG**

PROJECT: 342 W. WHEELING ST.    JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO.    OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson    DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale    SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F    UNITS: English

**DEPTH TO GROUNDWATER OBSERVATIONS**

DEPTH UPON ENCOUNTER:	13.5	FEET
DEPTH UPON COMPLETION ( $\nabla$ ):	15	FEET
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

**BORING NO: B-6 (2 OF 4)**

DRILL START/END: 2-8-99

WELL	2" S.S. SHELBY NX CORE	3" S.S. CUTTINGS BX CORE	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (fsp)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF					
												% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 $\mu$ )	PL	MC%	LL	2	4	6	8	10
COMP.																											
				20	S-6	X	4-6-3 9	6		Dark Yellowish Brown, <b>SILTY GRAVEL WITH SAND</b> , Loose (GM) PID= 1 PPM MOD GRADED/GRAVELS ARE SUBROUNDED-SUBANGULAR; SAMPLE IS COARSER THAN OVERLYING SAMPLE		47	16	15	6	14	2										
				25	S-7	X	15-14-17 31	14		Grayish Brown, <b>WELL GRADED SAND WITH SILT</b> , Dry, Dense (VISUAL) PID= 1 PPM SAMPLE IS POORLY GRADED																	
				30	S-8	X	15-18-30 48	12	+4.5	Dark Gray, <b>SANDY LEAN CLAY</b> , Trace Gravel, Damp, Hard (VISUAL) PID= 1 PPM								133									

(continued next page)

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## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

<b>DEPTH TO GROUNDWATER OBSERVATIONS</b>		<b>BORING NO:</b> B-6 (3 OF 4)
DEPTH UPON ENCOUNTER:	13.5 FEET	DRILL START/END: 2-8-99
DEPTH UPON COMPLETION (▼):	15 FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL	ELEVATION	DEPTH	SAMPLE NO	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF										
										% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT		% CLAY (< 5 µ)	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6	8	10				
▼ COMP.																													
		35	S-9		13-38-50 88	10		Dark Gray, WELL GRADED SAND WITH SILT AND GRAVEL, Wet, Very Dense (VISUAL) PID= 1 PPM DRILLING IS QUICK THROUGH SILTY SAND LAY	33.5																				
		40	S-10		13-20-18 38	18		Dense (SW-SM) PID= 1 PPM COARSER THAN OVERLYING SAMPLE			19	16	33	20	12														
		45	S-11		23-38-50 88	10		Very Dense (VISUAL) PID= 1 PPM COARSER THAN OVERLYING SAMPLE																					

(continued next page)

GDL WHEEL.GPJ SOLAR.GDT 2/24/99



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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

**DEPTH TO GROUNDWATER OBSERVATIONS**  
 DEPTH UPON ENCOUNTER: 13.5 FEET  
 DEPTH UPON COMPLETION ( ): 15 FEET  
 BORING NO: B-6 (4 OF 4)

DATE AFTER COMPLETION  
 DEPTH TO GROUNDWATER  
 TECHNICIAN INITIALS

DRILL START/END: 2-8-99

WELL	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION						STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF											
									% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 µ)		DRY UNIT WEIGHT (pcf)	PL	MC%	LL	▲ UNCONFINED	△ UNCONFINED	■ UNCONSOLIDATED UNCONFINED								
									10	20	30	40	10	20									30	40	2	4	6	8	10	
<input type="checkbox"/>																														
<input checked="" type="checkbox"/>		50	S-12		25-25-44 69	18	Dark Gray, <b>SILTY SAND</b> , Wet, Very Dense (SM) PID= 1 PPM HAVE A 5' SAND HEAVE @ 50' Bottom of Boring at 50 Feet	48.5  50.0		0	2	50	34	14		69														
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GDL, WHEL, GFJ, SOLAR, GDT, 2/24/99

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS BORING NO: B-7 (1 OF 1)  
 DEPTH UPON ENCOUNTER: (None) FEET  
 DEPTH UPON COMPLETION (  $\nabla$  ): (None) FEET  
 DRILL START/END: 2-8-99  
 DATE AFTER COMPLETION  
 DEPTH TO GROUNDWATER  
 TECHNICIAN INITIALS

WELL	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF							
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE						% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT		% CLAY (< 5 $\mu$ )	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6	8	10	
COMP.		0						ASPHALT, APPROXIMATELY 0.21'-0.25'	0.3																	
			S-1	X	3-4-6 / 10	3		Very Dark Gray, SILTY SAND WITH GRAVEL, Damp, Medium Dense (VISUAL) PID= 1 PPM SLAG FRAGMENTS FOUND IN THE SAMPLE (FILL)																		
		5	S-2	X	4-3-4 / 7	1		(VISUAL) PID= 0 PPM (FILL)																		
			S-3	X	3-1-1 / 2	6		Grayish Brown, SANDY SILTY CLAY, Few Gravel, Damp, Very Soft (VISUAL) PID= 1 PPM A SLAG FRAGMENT FOUND IN THE SAMPLE (FILL)	6.0																	
			S-4	X	4-2-2 / 4	8	.5	Brown, SANDY SILT, Trace Gravel, Damp/Wet, Soft (VISUAL) PID= 3 PPM A GLASS FRAGMENT IS FOUND IN SAMPLE (FILL)	8.5																	
		10						Bottom of Boring at 10 Feet	10.0																	
		15																								

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## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Sunny, 48F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-8 (1 OF 1)
DEPTH UPON ENCOUNTER: (None)	FEET	DRILL START/END: 2-8-99
DEPTH UPON COMPLETION ( $\nabla$ ): (None)	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

**WELL**  
 2" S.S.  3" S.S.  
 BENT.  SHELBY  CUTTINGS  
 NX CORE  BX CORE

**GROUT**  
 SOLID PVC  
 SLOTTED PVC  
 FILTER PACK

COMP.

ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF							
									% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 µ)	PL	MC%	LL							
									10	20	30	40	10			20	30	40	2	4	6	8	10			
	0						ASPHALT, APPROXIMATELY 2" Black, SANDY SILT WITH GRAVEL, Damp, Medium Dense (VISUAL) PID= 0 PPM SAMPLE INTERBEDDED WITH DARK YELLOWISH BROWN SILT (POSSIBLE FILL) 0.2																			
	1	S-1		5-9-10 19	10		(VISUAL) PID= 0 PPM SAMPLE INTERBEDDED WITH DARK YELLOWISH BROWN SILT (POSSIBLE FILL)																			
	5	S-2		8-6-6 12	8		(VISUAL) PID= 1 PPM (POSSIBLE FILL)																			
	6						BOTTOM OF POSSIBLE FILL @ 6' 6.0																			
	7	S-3		16-6-1 7	6		Black, CLAYEY SAND WITH GRAVEL, Damp, Loose (VISUAL) PID= 2 PPM																			
	10	S-4		2-1-1 2	6		Dark Brown, Very Loose (VISUAL) PID= 1 PPM SANDSTONE GRAVELS FOUND IN SAMPLE 10.0																			
	10						Bottom of Boring at 10 Feet																			

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F UNITS: English

**DEPTH TO GROUNDWATER OBSERVATIONS**  
 DEPTH UPON ENCOUNTER: (None) FEET  
 DEPTH UPON COMPLETION (  $\Psi$ ): (None) FEET  
 DATE AFTER COMPLETION \_\_\_\_\_  
 DEPTH TO GROUNDWATER \_\_\_\_\_  
 TECHNICIAN INITIALS \_\_\_\_\_

**BORING NO: B-9 (1 OF 1)**  
 DRILL START/END: 2-9-99

**WELL**  
 BENT.  
 GROUT  
 SOLID PVC  
 SLOTTED PVC  
 FILTER PACK  
 COMP.

2' S.S. SHELBY NX CORE  
 3' S.S. CUTTINGS BX CORE

ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (hsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF									
									% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 μ)	PL	MC%	LL	2	4	6	8	10				
																									PL MC% LL			
0							ASPHALT, APPROXIMATELY 2" GRAVEL LAYERS BETWEEN .25" TO 1" 0.2' Black, SILTY SAND WITH GRAVEL, Damp, Medium Dense (VISUAL) PID= 0 PPM SMALL FRAGMENTS OF SLAG FOUND IN THE SAMPLE; LARGE GRAVELS FOUND AT THE BOTTOM OF SAMPLE (FILL)																					
		S-1	[X]	10-14-9 / 23	8		Dark Brown (VISUAL) PID= 0 PPM RIG IS BOUNCING AND HITTING HARD SURFACE @ 2.5' (FILL) BOTTOM OF FILL @ 6' 6.0	[diagonal lines]																				
		S-2	[X]	11-10-15 / 25	10		Gray, SANDY SILTY CLAY, Few Gravel, Damp, Stiff (VISUAL) PID=0	[diagonal lines]																				
		S-3	[X]	4-7-3 / 10	14	1.0	Trace Gravel, Medium Stiff (VISUAL) PID= 0 PPM	[diagonal lines]																				
		S-4	[X]	3-2-5 / 7	13	1.5																						
		S-5	[X]	13-18-16 / 34	13		DROVE TWICE; 1ST NO RECOVERY; 2ND LARGE GRAVEL IS RETRIEVED IN SPLIT SPOON																					
	15						Bottom of Boring at 15 Feet 15.0																					

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-10 (1 OF 4)
DEPTH UPON ENCOUNTER: 23.5	FEET	DRILL START/END: 2-9-99
DEPTH UPON COMPLETION ( $\nabla$ ): 16.8	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL BENT. GROUT SOLID PVC SLOTTED PVC FILTER PACK COMP.	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF							
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (lb)	% GRAVEL	% COARSE SAND		% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 $\mu$ )	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6
COMP.	0																						
		0.4		S-1	5-6-2 8	10	ASPHALT, APPROXIMATELY 5" GRAVEL LAYERS BETWEEN .25" TO 1" Black, SILTY SAND, Damp, Loose (VISUAL) PID= 0 PPM SLAG FRAGMENTS PRESENT IN THE SAMPLE (POSSIBLE FILL)	0.4															
		3.5		S-2	4-6-6 12	14	Dark Yellowish Brown, SANDY SILTY CLAY, Trace Sand, Damp, Stiff (VISUAL) PID= 0 PPM (POSSIBLE FILL)	3.5															
		6.0		S-3	10-6-4 10	14	Black, SILTY SAND, Damp, Medium Dense (VISUAL) PID= 0 PPM SHALE FRAGMENTS FOUND IN THE SAMPLE (POSSIBLE FILL) BOTTOM OF POSSIBLE FILL @ 8.5'	6.0															
		8.5		S-4	5-3-2 5	11	Black to Dark Gray, SANDY ORGANIC CLAY, Trace Gravel, Damp, Medium Stiff (VISUAL) PID= 0 PPM ORGANIC CONTENT= 14%	8.5															
	15		S-5	3-4-3 7	15	Very Dark Gray to Black (VISUAL) PID= 0 PPM ORGANIC CONTENT= 9%																	

(continued next page)

GDL\_WHEL.GPJ\_SOLAR.GDT\_2/24/99

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**GEOLOGIC DRILLING LOG**

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS	
DEPTH UPON ENCOUNTER: 23.5	FEET
DEPTH UPON COMPLETION (▼): 16.8	FEET
DATE AFTER COMPLETION	
DEPTH TO GROUNDWATER	
TECHNICIAN INITIALS	

BORING NO: B-10 (2 OF 4)  
 DRILL START/END: 2-9-99

WELL	2" S.S.	3" S.S.
<input checked="" type="checkbox"/> BENT.	<input checked="" type="checkbox"/> SHELBY	<input checked="" type="checkbox"/> CUTTINGS
<input checked="" type="checkbox"/> GROUT	<input checked="" type="checkbox"/> NX CORE	<input checked="" type="checkbox"/> BX CORE
<input type="checkbox"/> SOLID PVC		
<input type="checkbox"/> SLOTTED PVC		
<input type="checkbox"/> FILTER PACK		
<input checked="" type="checkbox"/> COMP.		

BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (f/sf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL

GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS PL MC% LL	SHEAR KSF ▲ UNCONFINED △ UNDRAINED UNCONFINED ■ UNCONSOLIDATED UNDRAINED
% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT				

ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (f/sf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (<5 µ)	DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS PL MC% LL	SHEAR KSF ▲ UNCONFINED △ UNDRAINED UNCONFINED ■ UNCONSOLIDATED UNDRAINED
20	18.5	S-6		4-6-8 14	12	2.0	Dark Gray, SANDY LEAN CLAY, Trace Gravel, Damp, Stiff (VISUAL) PID= 0 PPM								119	•	•	
							ENCOUNTERED WATER @ 23.5'											
25	23.5	S-7		10-9-9 18	9		Dark Grayish Brown, SILTY SAND WITH GRAVEL, Wet, Medium Dense (VISUAL) PID= 0 PPD									•	•	
30	28.5	S-8		11-18-27 35	10		Dark Grayish Brown, SILTY SAND, Wet, Dense (SM) PID= 0 PPM		11	16	27	28	18			•	•	

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# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST.                          JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO.                                        OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson    DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale                                      SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F                                        UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-10 (3 OF 4)
DEPTH UPON ENCOUNTER: 23.5	FEET	
DEPTH UPON COMPLETION (▼): 16.8	FEET	DRILL START/END: 2-9-99
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

**WELL**  
 2" S.S.     3" S.S.  
 BENT.     SHELBY     CUTTINGS  
 NX CORE     BX CORE

GROUT  
 SOLID PVC  
 SLOTTED PVC  
 FILTER PACK

BLOW COUNTS /  
N VALUES

INCHES OF  
SAMPLE RECOVERY

HAND  
PENETROMETER  
(tsf)

SOIL DESCRIPTION /  
(CLASSIFICATION) /  
REMARKS

SYMBOL

GRADATION				
% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT
% CLAY (< 5 μ)	DRY UNIT WEIGHT (pcf)			

STANDARD  
PENETRATION  
RESISTANCE  
(N)

WATER CONTENT  
&  
ATTERBERG LIMITS

PL    MC%    LL

SHEAR  
KSF

▲ UNCONFINED  
△ UNDRAINED UNCONFINED  
■ UNCONSOLIDATED UNDRAINED

▼ COMP.			
ELEVATION	DEPTH	SAMPLE NO	SAMPLE TYPE
35	S-9	25-24-22 46	18
40	S-10	20-25-34 59	10
45	S-11	11-15-13 28	14

33.5

Dark Grayish Brown, **SILTY SAND WITH GRAVEL**, Wet, Dense (VISUAL)  
 PID= 0 PPM  
 ADD BENTONITE SLURRY TO PREVENT SAND HEAVE @ 35'

(VISUAL)  
 PID= 0 PPM  
 ADD BENTONITE SLURRY @ 40'; ORGANIC CONTENT= 6%

Medium Dense (VISUAL)  
 PID= 0 PPM  
 ADD BENTONITE SLURRY @ 45'

(continued next page)


**SOLAR TESTING LABORATORIES, INC.**  
 4299 Reynolds Drive  
 Hilliard, Ohio 43026  
 PH. (614) 777-6013 FX. (614) 777-6160



# GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-10 (4 OF 4)	
DEPTH UPON ENCOUNTER: 23.5	FEET	DRILL START/END: 2-9-99	
DEPTH UPON COMPLETION (▼): 16.8	FEET		
DATE AFTER COMPLETION			
DEPTH TO GROUNDWATER			
TECHNICIAN INITIALS			

WELL	2" S.S.		3" S.S.		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF			
	BENT.	SHELBY NX CORE	CUTTINGS BX CORE				% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT		% CLAY (< 5 µ)	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	UNCONFINED	UNDRAINED UNCONFINED
<input checked="" type="checkbox"/> SOLID PVC <input type="checkbox"/> SLOTTED PVC <input type="checkbox"/> FILTER PACK <input type="checkbox"/> GROUT <input type="checkbox"/> BENT.	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY HAND PENETROMETER (tsf)													
COMP.																			
	50	50	S-12		15-24-30 54	14	48.5	Dark Grayish Brown, WELL GRADED SAND WITH SILT AND GRAVEL, Wet, Very Dense (VISUAL) PID= 1 PPM A LARGE STONE FOUND IN THE SAMPLE; ADD BENTONITE SLURRY @ 50'		32	10	32	19	7					
	55	55	S-13		18-17-26 43	12		Dense (VISUAL) PID= 0 PPM ADD BENTONITE SLURRY @ 55'											
	60	60	S-14		22-20-28 48	18	58.5	Dark Grayish Brown, SILTY SAND, Wet, Dense (SM) PID= 0 PPM		16	15	31	21	17					
							60.0	Bottom of Boring at 60 Feet											



**GEOLOGIC DRILLING LOG**

PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS		BORING NO: B-11 (1 OF 1)
DEPTH UPON ENCOUNTER: (None)	FEET	DRILL START/END: 2-9-99
DEPTH UPON COMPLETION (▼): (None)	FEET	
DATE AFTER COMPLETION		
DEPTH TO GROUNDWATER		
TECHNICIAN INITIALS		

WELL		2" S.S.		3" S.S.		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF						
BENT.	GROUT	SHELB	CUTTINGS	NX CORE	BX CORE			% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 µ)	PL	MC%	LL	UNCONFINED		UNDRAINED UNCONFINED		UNCONSOLIDATED UNDRAINED	
ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY			HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND			% SILT	% CLAY (< 5 µ)	DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	PL	MC%	LL	2	4	6
COMP.	0																							
	0						ASPHALT, APPROXIMATELY 2"																	
		S-1	X	3-7-9 16	12		Black Tan, SANDY LEAN CLAY, Trace Gravel, Dry, Very Stiff (VISUAL) (FILL) 1.5																	
	5	S-2	X	7-3-4 7	3		Black, Damp, Loose (VISUAL) PID= 1 PPM (FILL) GLASS FRAGMENTS ARE FOUND IN SAMPLE; INSUFFICIENT SAMPLE FOR MOISTURE CONTENT DETERMINATION (FILL) Very Loose (VISUAL) PID= 0 PPM (FILL)																	
		S-3	X	2-1-1 2	4		BOTTOM OF FILL @ 8.5'																	
	10	S-4	X	5-4-6 10	6	1.25	Grayish Brown, SANDY SILTY CLAY, Damp, Stiff (VISUAL) PID= 0 PPM																	
	10						Bottom of Boring at 10 Feet																	
	15																							

## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST.      JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO.      OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson      DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale      SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F      UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS:      BORING NO: B-12 (1 OF 1)  
 DEPTH UPON ENCOUNTER: (None)      FEET  
 DEPTH UPON COMPLETION (  $\nabla$  ): (None)      FEET      DRILL START/END: 2-9-99  
 DATE AFTER COMPLETION:        
 DEPTH TO GROUNDWATER:        
 TECHNICIAN INITIALS:     

WELL BENT. GROUT SOLID PVC SLOTTED PVC FILTER PACK	2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF							
	ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE			BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	% GRAVEL	% COARSE SAND		% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 $\mu$ )	DRY UNIT WEIGHT (pcf)	PL	MC%	LL	2	4	6
$\nabla$ COMP.		0																					
					ASPHALT, APPROXIMATELY 2" GRAVEL LAYERS BETWEEN .25" TO 1" THICK Black, SANDY LEAN CLAY, Damp, Stiff (VISUAL) (FILL)	0.2	0.2																
			S-1	X	4-5-8 13	5																	
					Black, SILTY SAND, Damp, Medium Dense (VISUAL) PID= 0 PPM (FILL)	1.5	1.5																
		5	S-2	X	13-14-8 22	8																	
					Few Gravel, Medium Dense (VISUAL) PID= 0 PPM (FILL)																		
			S-3	X	3-2-2 4	6																	
					Loose (VISUAL) PID= 1 PPM (FILL)																		
					BOTTOM OF FILL @ 8.5'	8.5	8.5																
		10	S-4	X	2-3-4 7	11	1.25																
					Grayish Brown, SANDY SILTY CLAY, Damp, Medium Stiff (VISUAL) PID= 0 PPM ORGANICS FOUND IN THE SAMPLE	10.0	10.0																
					Bottom of Boring at 10 Feet																		
		15																					

# SOLAR TESTING LABORATORIES, INC.



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## GEOLOGIC DRILLING LOG

PROJECT: 342 W. WHEELING ST.      JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO.      OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson      DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale      SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F      UNITS: English

### DEPTH TO GROUNDWATER OBSERVATIONS BORING NO: B-13 (1 OF 1)

DEPTH UPON ENCOUNTER: (None) FEET  
 DEPTH UPON COMPLETION ( ) (None) FEET  
 DATE AFTER COMPLETION:      /      /  
 DEPTH TO GROUNDWATER:      /      /  
 TECHNICIAN INITIALS:      /      /

DRILL START/END: 2-9-99

WELL		2" S.S. SHELBY NX CORE		3" S.S. CUTTINGS BX CORE		SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS							GRADATION						STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF				
ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SYMBOL	% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT	% CLAY (< 5 µ)	DRY UNIT WEIGHT (pcf)	10	20	30	40	PL	MC%	LL	2	4	6	8	10	
COMP.	0						ASPHALT, APPROXIMATELY 2" GRAVEL LAYERS BETWEEN .25"-1" THICK 0.2' Very Dark Brown, SILTY SAND, Few Clay, Damp, Medium Dense (VISUAL) PID= 0 PPM (FILL)																				
	5	S-1	⊠	4-8-3 11	14		Few Gravel, Loose (VISUAL) PID= 0 PPM (FILL)																				
	5	S-2	⊠	3-4-2 6	8		BOTTOM OF FILL @ 6' 6.0'																				
		S-3	⊠	1-1-2 3	7	1.0	Grayish Brown, SANDY LEAN CLAY, Damp, Soft (VISUAL) PID= 0 PPM																				
	10	S-4	⊠	3-4-6 10	7	1.5	Stiff (VISUAL) PID= 0 PPM																				
	10						Bottom of Boring at 10 Feet																				



**GEOLOGIC DRILLING LOG**

4299 Reynolds Drive  
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PROJECT: 342 W. WHEELING ST. JOB NO. C990031X10  
 CLIENT: FAIRFIELD CO. OWNER: FAIRFIELD CO.  
 DRILLER: A. Benson DRILLING EQUIPMENT: Mobile B51  
 GEOLOGIST: B. Martindale SAMPLING EQUIPMENT: 140lb Hammer @ 30" FF  
 WEATHER: Pleasant, 50F UNITS: English

DEPTH TO GROUNDWATER OBSERVATIONS BORING NO: B-14 (1 OF 1)  
 DEPTH UPON ENCOUNTER: (None) FEET  
 DEPTH UPON COMPLETION (  $\nabla$  ): (None) FEET DRILL START/END: 2-9-99  
 DATE AFTER COMPLETION  
 DEPTH TO GROUNDWATER  
 TECHNICIAN INITIALS

- WELL**  
 2" S.S.  3" S.S.  
 BENT.  SHELBY  CUTTINGS  
 GROUT  NX CORE  BX CORE  
 SOLID PVC  
 SLOTTED PVC  
 FILTER PACK

ELEVATION	DEPTH	SAMPLE NO.	SAMPLE TYPE	BLOW COUNTS / N VALUES	INCHES OF SAMPLE RECOVERY	HAND PENETROMETER (tsf)	SOIL DESCRIPTION / (CLASSIFICATION) / REMARKS	SYMBOL	GRADATION					DRY UNIT WEIGHT (pcf)	STANDARD PENETRATION RESISTANCE (N)	WATER CONTENT & ATTERBERG LIMITS			SHEAR KSF							
									% GRAVEL	% COARSE SAND	% MEDIUM SAND	% FINE SAND	% SILT			% CLAY (< 5 μ)	PL	MC%	LL	UNCONFINED / UNCONSOLIDATED						
0				3-6-9 15	10		Black, SILTY SAND, Trace Clay, Damp, Medium Dense (VISUAL) PID= 0 PPM BROKEN BRICK FRAGMENTS FOUND IN SAMPLE; SAMPLE OVERLAID BY SANDY CLAY AND BROKEN ROCK FRAGMENTS (FILL)							10	20	30	40	10	20	30	40	2	4	6	8	10
		S-1	X																							
		S-2	X	7-7-5 12	7		(VISUAL) PID= 0 PPM GLASS FRAGMENTS FOUND IN SAMPLE (FILL)																			
5																										
		S-3	X	4-6-4 10	5		Loose PID= 0 PPM WEATHERED SANDSTONE FOUND IN SAMPLE (FILL)																			
		S-4	X	2-2-1 3	2		Very Loose (VISUAL) PID= 0 PPM INSUFFICIENT MATERIAL FOR MOISTURE CONTENT DETERMINATION (FILL)																			
10							10.0 Bottom of Boring at 10 Feet																			
15																										

**Geotechnical Consultants, Inc. Logs B-1 Through B-6**  
**Geotechnical Consultants, Inc. (2011)**

# TEST BORING LOG

PROJECT NAME Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio BORING NO. B-1  
 CLIENT Fairfield County Commissioners PROJ. \_\_\_\_\_ SURF. ELEV. \_\_\_\_\_  
 NO. 11-G-16121 DATE DRILLED 3/3/2011

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<u>10.0</u> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30     Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50     Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +        Very Dense	15 - 30    Very Stiff
			30 +      Hard

LOCATION OF BORING      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.3	Concrete (4" thick) over Stone Base (3" thick)
								0.6	FILL: Black Foundry Sand, Few Slag, Trace Glass, Brick non-plastic; mostly fine to medium sand, little silt
		2.0-3.5	SS	3	4	6	Moist		
		4.0-5.5	SS	3	1	1	Moist		occasional layers with slightly plastic fines
5									
		8.5-10.0	SS	1	1	1	Moist to Wet		
10								11.0	Water Seepage at 9.5'
		13.5-15.0	SS	2	1	1	Wet		Dark Gray Organic Clay (OL/OH); moderately high to high plasticity; trace fine to medium sand, few wood/organics
15									for 13.5'-15' sample: Organic Content (L.O.I.) = 9.2% Natural Moisture Content = 57.5%
									few shells with depth
		18.5-20.0	SS	Wt. of Ham-mer			Wet	18.0	Gray Silty Sand /Silty Clayey Sand (SM/SC-SM); mostly fine to coarse sand; little fines that vary from non-plastic silt to slightly plastic silty clay, few to little gravel; little shells at top of deposit
20									occasional thin layers of gray lean clay with trace organics/shells
		23.5-25.0	SS	4	4	5	Wet	25.0	
25									
									BOTTOM OF BORING: 25.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

PROJECT NAME Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio BORING NO. B-2  
 CLIENT Fairfield County Commissioners PROJ. \_\_\_\_\_ SURF. ELEV. \_\_\_\_\_  
 NO. 11-G-16121 DATE DRILLED 3/3/2011

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<u>8.0</u> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30   Very Stiff
			30 +      Hard

**LOCATION OF BORING      See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.3	Concrete (3" thick) over Stone Base (3" thick)
								0.6	FILL: Brown and Gray Silty Fine to Coarse Sand, Few to Little Glass, Trace Slag, Brick, Stone; non-plastic
	--	2.0-3.5	SS	3	4	4	Moist to Wet		
	1.0	4.0-5.5	SS	2	3	4	Wet		<b>Water Seepage at 3.0'</b> occasional layers with slightly plastic fines (SC-SM) occasional layers of brown sandy clean clay with gravel (CL)
5									
	0	8.5-10.0	SS	1	1	1	Wet		stained soils, trace wood and topsoil with depth
10								11.5	Dark Gray Lean Clay (CL); moderately high plasticity, few shells, trace wood/organics with layers of non-plastic silty sand (SM), occasional cobbles
	0	13.5-15.0	SS	5	4	3	Wet		for 13.5'-15' sample: <i>Natural Moisture Content = 31.9%</i>
15									
	--	18.5-20.0	SS	1	1	1	Wet	20.0	Brown Silty, Clayey Sand with Gravel (SC-SM); fine to coarse sand, little to some gravel, little low plasticity silty clay
20									
	--	23.5-25.0	SS	12	14	12	Wet	25.0	
25									
									BOTTOM OF BORING: 25.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

PROJECT NAME Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio BORING NO. B- 3  
 CLIENT Fairfield County Commissioners PROJ. NO. 11-G-16121 SURF. ELEV. \_\_\_\_\_  
 DATE DRILLED 3/3/2011

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<u>9.5</u> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30    Very Stiff
			30 +      Hard

**LOCATION OF BORING**      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				From	To	To			
				0-6	6-12	12-18			
							0.3	Asphalt (3.5" thick)	
		2.0-3.5	SS	2	3	2		FILL: Brown and Gray Silty Fine to Coarse Sand, Trace Slag, Brick; non-plastic	
5		4.0-5.5	SS	2	1	1		stained soils, trace wood with depth	
10		8.5-10.0	SS	1	1	1		Moist to Wet <b>Water Seepage at 9.5'</b>	
15		13.5-15.0	SS	5	6	7		Wet	
20		18.5-20.0	SS	10	10	11		Wet Brown Silty, Clayey Sand with Gravel (SC-SM); fine to coarse sand, little to some gravel, little low plasticity silty clay for 18.5'-20' sample: <i>Natural Moisture Content = 13.5%</i>	
25		23.5-25.0	SS	10	11	13		Wet	
							26.0	Gray Sandy Lean Clay with Gravel (CL) - glacial till; moderate plasticity, some fine to coarse sand, few to little gravel with occasional layers of silty sand with gravel (SM)	
		3.5-4.5	SS	10	12	13		Moist	
		28.5-30.0					30.0	<b>BOTTOM OF BORING: 30.0'</b>	

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.





# TEST BORING LOG

PROJECT NAME Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio BORING NO. B- 4  
 CLIENT Fairfield County Commissioners PROJ. \_\_\_\_\_ SURF. ELEV. \_\_\_\_\_  
 NO. 11-G-16121 DATE DRILLED 3/3/2011

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<u>16.5</u> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30   Very Stiff
			30 +       Hard

**LOCATION OF BORING**      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				From	To				
				0-6	6-12	12-18			
							0.1	Asphalt (1.5" thick)	
		2.0-3.5	SS	2	0	0		FILL: Black Foundry Sand, Few Slag, Trace Glass, Brick non-plastic; mostly fine to medium sand, little silt	
5		4.0-5.5	SS	3	5	7			
10	1.0-2.0	8.5-10.0	SS	2	3	3	9.0	Brown Lean Clay (CL); low to moderate plasticity; few to little fine to coarse sand	
15		13.5-15.0	SS	7	8	9	12.5	Brown Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little gravel, few to little silt, trace sandstone fragments	
								for 13.5'-15' sample: Natural Moisture Content = 7.7%	
								<b>Water Seepage at 17.5'</b> with depth, coarser sand/gravel more/slightly plastic fines	
20		18.5-20.0	SS	8	10	11			
25		23.5-25.0	SS	8	9	10			
		28.5-30.0	SS	10	11	12	30.0	BOTTOM OF BORING: 30.0'	

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

PROJECT NAME Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio BORING NO. B- 5  
 CLIENT Fairfield County Commissioners PROJ. NO. 11-G-16121 SURF. ELEV. \_\_\_\_\_  
 DATE DRILLED 3/3/2011

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<u>12.5</u> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30   Very Stiff
			30 +      Hard

**LOCATION OF BORING**      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				From	To	12-18			
				0-6	6-12				
							0.1	Asphalt (1.0" thick)	
		2.0-3.5	SS	4	5	6		FILL: Black Foundry Sand, Few Slag, Trace Glass, Metal non-plastic; mostly fine to medium sand, little silt	
5		4.0-5.5	SS	2	1	1			
10		8.5-10.0	SS	2	2	3		occasional thin layers of stained lean clay	
							11.5	Dark Gray Lean Clay/Organic Clay (CL/OL); moderately high plasticity, trace fine to medium sand, few wood and shells	
15	0.5	13.5-15.0	SS	Wt. of Ham-mer				<b>Water Seepage at 12.5'</b> for 13.5'-15' sample: <i>Organic Content (L.O.I.) = 4.3%</i> <i>Natural Moisture Content = 43.5%</i>	
20		18.5-20.0	SS	1	1	1			
25		23.5-25.0	SS	3	7	10			
							24.5	Gray Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines	
		28.5-30.0	SS	8	11	12			
							30.0	BOTTOM OF BORING: 30.0'	

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

PROJECT NAME Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio BORING NO. B- 6  
 CLIENT Fairfield County Commissioners PROJ. NO. 11-G-16121 SURF. ELEV. \_\_\_\_\_  
 DATE DRILLED 3/3/2011

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<u>10.0</u> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30   Very Stiff
			30 +      Hard

**LOCATION OF BORING**      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				From	To	12-18			
								0.1	Asphalt (1.0" thick) FILL: Black Foundry Sand, Few Slag, Trace Glass non-plastic; mostly fine to medium sand, little silt
		2.0-3.5	SS	2	3	4	Moist		
		4.0-5.5	SS	2	1	1	Moist		
5									
		8.5-10.0	SS	3	3	4	Wet		Water Seepage at 7.5'
10									
								11.5	Brown Lean Clay with Organics (CL)
								13.5	Dark Gray Lean Clay (CL); moderately high plasticity, few shells, trace wood/organics with layers of non-plastic silty fine sand (SM)  for 13.5'-15' sample: <i>Natural Moisture Content = 37.9%</i>
15	0.5	13.5-15.0	SS	Wt. of Hammer			Wet		
		18.5-20.0	SS	1	2	2	Wet		
20									
								21.0	Gray Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines  shells at top of deposit
		23.5-25.0	SS	4	6	8	Wet		
25									
		28.5-30.0	SS	7	9	10	Wet		
								30.0	BOTTOM OF BORING: 30.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



**Bennett & Williams Logs BW-1 Through BW-10A**  
**Bennett & Williams (2014)**

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-1</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.25 HSA</u>
DATE STARTED	<u>3/20/2014</u>	STATIC WATER LEVEL	<u>10 Feet</u>
DATE COMPLETED	<u>3/20/2014</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Completed as temporary monitoring well.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0'-0.6' 1 inch of asphalt, 5 inches of concrete.		
		SS-1	0.8'	7 7		10YR5/6 Yellowish, brown, damp, sandy SILT; ≈3" possible slag and foundry sand, stained black @ 1.5', FILL.	0	1.5
		SS-2	1.2'	2 3 3 4		Between 2'-4', FILL contains red brick fragments, coarse sand (possible foundry sand).	0	1.0
	5	SS-3	.9'	2 2 2		5.5'-6.0' Coarse sand (foundry sand) FILL.	0	1.0
		SS-4	.6'	1 1 1 1		7.5YR5/3 Brown damp sandy SILT; wood in bottom of sample and spoon, FILL.	0	1.0
		SS-5	1.2'	0 1 1		Between 8'-10' Red brick fragments, sand, wood, FILL.	0	NA
	10	SS-6	1.5'	1 1 1		Wet @ 10' 10'-11' Black decaying wood + fine SILT, FILL.	0	<.05
				1 3		10YR5/2 Grayish, brown, damp, organic SILT, lacustrine deposition, appears in-situ. (OL)	0	<.05
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT <u>14-04 Fairfield Co. - Jail</u>	LOCATION <u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST <u>LINDA ALLER</u>	BORING NO. <u>BW-2</u>
DRILLING AGENCY <u>WRIGHTS DRILLING</u>	BORING TYPE <u>4.25 HSA</u>
DATE STARTED <u>3/20/2014</u>	STATIC WATER LEVEL <u>None - dry</u>
DATE COMPLETED <u>3/20/2014</u>	TOTAL DEPTH <u>10 Feet</u>
COMMENTS <u>Abandoned borehole</u>	

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0'-.7' Asphalt.		
		SS-1	1.4'	5 5		10YR4/2 Dark grayish brown, damp, sandy SILT with brick fragments, green shale fragments + coarse sand (foundry sand) FILL.	0	1.0
		SS-2	1.4'	1 2 3 5		5YR4/3 Reddish brown, damp, coarse to fine SAND, slag, brick fragments, wood, glass, gray shale pieces, FILL.	0	<.05
	5	SS-3	.7'	2 2 1 1		7.5YR4/2 Brown damp sandy SILT, top is foundry sand, bottom has a piece of metal, FILL.	0	<.05
		SS-4	1.3'	1 2 2		7.5YR3/2 Dark brown moist to slightly wet sandy SILT with gray shale fragments, FILL.	0	<.05
		SS-5	1.4'	1 5 3		7.5YR5/3 Brown moist medium SAND (45%), little fine sand (20%), little very fine sand (15%), little silt/clay (15%), few coarse sand (5%), appears in-situ. (SP)	0	NA
	10							
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT 14-04 Fairfield Co. - Jail LOCATION 324 W. Wheeling St., Lancaster, OH  
 GEOLOGIST LINDA ALLER BORING NO. BW-3  
 DRILLING AGENCY WRIGHTS DRILLING BORING TYPE 4.25 HSA  
 DATE STARTED 3/20/2014 STATIC WATER LEVEL None - dry  
 DATE COMPLETED 3/20/2014 TOTAL DEPTH 8 Feet  
 COMMENTS Abandoned borehole

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-4" Asphalt.		
				8		Limestone gravel used for asphalt bedding.		
		SS-1	1.3'	10		7.5YR3/2 Dark brown damp silty SAND, FILL.	0	NA
				10				
				2		7.5YR4/2 Brown damp SAND, FILL.		
		SS-2	1.2'	2		7.5YR4/4 Brown damp silty CLAY, FILL	0	2.5
				2		7.5YR4/4 Brown damp coarse SAND (foundry sand), FILL.		
				1		7.5YR3/2 Dark brown damp "mottled" red sand with clay/silt, FILL.		
	5	SS-3	.6'	2		7.5YR3/2 Dark brown damp "mottled" red sand with clay/silt, FILL.	0	NA
				1		Bottom 2" wet.		
				1				
				1				
		SS-4	1.2'	2		7.5YR3/1 Very dark gray and red, damp to moist, sandy, clayey SILT, pieces of ceramic tile, possible foundry sand, FILL.	0	NA
				2				
				2		10YR4/3 Brown damp to moist clayey SILT; vertical root hairs, lacustrine deposition; appears in-situ. No free water. (ML)		

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-4</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.25 HSA</u>
DATE STARTED	<u>3/20/2014</u>	STATIC WATER LEVEL	<u>10 Feet</u>
DATE COMPLETED	<u>3/20/2014</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Completed as temporary monitoring well.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-5" Concrete.		
		SS-1	1.0'	15 9 6		7.5YR3/1 Very dark gray damp "dirty" coarse SAND with slag, FILL.	0	NA
		SS-2	1.7'	4 6 9 5		Becomes finer + siltier with depth + exhibits red staining, foundry sand, FILL.	0	1.0
	5	SS-3	1.3'	5 2 2 1			0	<.05
		SS-4	1.3'	1 2 1 1		7.5YR4/4 Brown damp SAND, slag, green glass, pieces of metal (maybe wire) FILL.	0	<.05
		SS-5	.6'	5 10 2		7.5YR3/4 Dark brown moist (wet at bottom) sandy SILT, with mostly glass pieces and slag, FILL.	0	NA
	10	SS-6	1.6'	5 1 2 1 1		7YR4/1 Dark gray moist to wet clayey SILT; evidence of water movement along silt faces with very fine sand and lighter colored silt filling former root traces, in-situ. (ML)	0	1.0
	15							
	20							



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-5</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.25 HSA</u>
DATE STARTED	<u>3/20/2014</u>	STATIC WATER LEVEL	<u>None - dry</u>
DATE COMPLETED	<u>3/20/2014</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Abandoned borehole</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-3" Concrete.		
		SS-1	1.2'	3 10 6		7.5YR5/3 Brown damp sandy, clayey SILT with pieces of limestone, chert, sandstone, FILL.	0	1.0
		SS-2	1.1'	3 5 5 4		7.5YR6/6 Reddish yellow and 7.5YR3/1 Very dark gray, damp, sandy SILT + silty CLAY with brick pieces, slag, glass, limestone fragments + sandstone fragments, FILL.	0	<.05
	5	SS-3	1.2'	3 2 3 1		7.5YR5/3 Brown damp to moist sandy, silty CLAY and SAND (foundry sand) with glass pieces, FILL.	0	1.0
		SS-4	1.0'	1 1 2 1		7.5YR2.5/1 Black decaying organic, most likely wood. In 4.5YR4/2 Brown damp mottled clayey SILT, FILL.	0	1.0
		SS-5	1.1'	2 2 6 1		7.5YR6/3 Light brown damp clayey, sandy SILT with rock fragments, brick and glass, FILL.	0	.5
	10	SS-6	2.0'	1 1 2 1		7.5YR2.5/1 Black, damp SILT with decaying wood, FILL. 10YR5/1 Gray damp to moist clayey SILT, evidence of roots and structure, appears in-situ. (ML)	0	1.5
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-6</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.25 HSA</u>
DATE STARTED	<u>3/20/2014</u>	STATIC WATER LEVEL	<u>None - dry</u>
DATE COMPLETED	<u>3/20/2014</u>	TOTAL DEPTH	<u>14 Feet</u>
COMMENTS	<u>Abandoned borehole</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-4" Asphalt.		
		SS-1	1.1'	6		7.5YR4/1 Dark gray, mottled, orange/red damp, very thin sand (foundry sand) FILL.	0	<.05
				5				
				4				
		SS-2	1.6'	3		7.5YR6/2 Pinkish gray, damp SAND + sandstone fragments, partially lithified + friable (possible old concrete) FILL. Black damp foundry sand, FILL.	0	<.05
				2				
				20				
		SS-3	1.5'	3		10YR5/4 Yellowish brown, damp, broken sandstone fragments, FILL.	0	<.05
				10				
				8				
		SS-4	1.8'	5		7.5YR3/3 Dark brown, damp, very fine sandy clay SILT, FILL.	0	NA
				1				
				2				
		SS-5	1.3'	1		7.5YR4/4 Brown, sandy, clayey SILT with red staining, foundry sand, coal pieces, brick pieces, FILL.	0	NA
				2				
				1				
		SS-5	1.3'	2		7.5YR5/1 Gray damp SILT, soft, very fine sandy, slight iron staining, possible in-situ. (ML)	0	.5
				1				
				2				
	10	SS-6	.8'	2		7.5YR5/6 Strong brown, damp to moist fine SAND (45%), some medium sand (40%), few silt/clay (10%), few coarse sand (5%), in-situ. (SP)	0	.75
				7				
				6				
		SS-7	1.5'	9		7.5YR6/6 Brownish yellow, dry to damp, coarse SAND (30%), some medium sand (30%), little fine sand (25%), few very fine sand (10%), few silt/clay (5%), in-situ. (SP)	0	.75
				4				
				7				
				7				
				7				
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

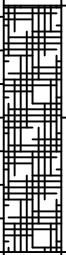
PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-7</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.25 HSA</u>
DATE STARTED	<u>3/21/2014</u>	STATIC WATER LEVEL	<u>None - dry</u>
DATE COMPLETED	<u>3/21/2014</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Abandoned borehole</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-6" Asphalt.		
		SS-1	.6'	2 3 7	[Cross-hatched pattern]	7.5YR4/4 Brown damp gravelly, sandy, clayey, FILL.	0	NA
		SS-2	1.1'	2 2 3 3	[Cross-hatched pattern]	7.5YR3/3 Very dark gray, damp, organic, sandy SILT, with glass fragments, sandstone fragments, metal pieces, possible foundry sand at bottom, FILL.	0	.5
	5	SS-3	1.5'	2 2 3 3	[Cross-hatched pattern]	7.5YR3/1 Very dark gray and 7.5YR5/4 Brown, damp, clayey, gravelly SILT with coal pieces, brick, sandstone pieces, FILL.	0	NA
		SS-4	1.8'	2 3 4 4	[Cross-hatched pattern]	7.5YR3/1 Very dark gray, damp, soft, clayey SILT, in-situ.	0	1.0
		SS-5	1.3'	2 2 3 4	[Diagonal hatched pattern]	10YR7/2 Light gray, mottled with 10YR5/6 Yellowish brown, damp to moist, silty CLAY, evidence of roots, horizontal structure, more strongly oxidized at top of interval, in-situ. No free water encountered. (CL)	0	1.0
	10							
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT <u>14-04 Fairfield Co. - Jail</u>	LOCATION <u>One foot west of BW-7</u>
GEOLOGIST <u>LINDA ALLER</u>	BORING NO. <u>BW-7A</u>
DRILLING AGENCY <u>WRIGHTS DRILLING</u>	BORING TYPE <u>2.25 HSA</u>
DATE STARTED <u>3/31/2014</u>	STATIC WATER LEVEL <u>None - dry</u>
DATE COMPLETED <u>3/31/2014</u>	TOTAL DEPTH <u>4 Feet</u>
COMMENTS <u>Abandoned borehole</u>	

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	0					0-4" Asphalt.	
						Blind drilled to 2 feet.	
		SS-1	1.2'	5 7 4 4		7.5YR3/1 Very dark gray damp, medium SAND (foundry sand), little silt/clay with gravel, brick fragments, slag, white ceramic pieces, FILL. No water encountered.	0 <.05
	5						
	10						
	15						
	20						

# BENNETT & WILLIAMS, ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	14-04 Fairfield Co. - Jail	LOCATION	324 W. Wheeling St., Lancaster, OH
GEOLOGIST	LINDA ALLER	BORING NO.	BW-8
DRILLING AGENCY	WRIGHTS DRILLING	BORING TYPE	2.25 HSA
DATE STARTED	3/21/2014	STATIC WATER LEVEL	None - dry
DATE COMPLETED	3/21/2014	TOTAL DEPTH	10 Feet
COMMENTS	Abandoned borehole		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-2" Asphalt.		
		SS-1	1.4'	4 10 7		7.5YR3/3 Dark brown damp, clayey SILT and SAND (foundry sand) with coal fragments, glass, slag, brick fragments and burned organic material, FILL.	0	1.5
		SS-2	1.8'	4 4 4 2		7.5YR2.5/2 Very dark brown + red stained, damp, clayey, sandy, silt matrix, with glass, brick fragments, slag, possible rubber piece (weathered), sandstone fragments; about 6" of fine sand in middle of sample, FILL.	0	1.5
	5	SS-3	1.0'	1 2 2 2		7.5YR4/2 Brown, damp, gravely, sandy, clayey SILT with sandstone fragments, slag and brick fragments; toward bottom, more sand, ceramic pieces, glass and slag, FILL.	0	1.0
		SS-4	.7'	2 2 2			0	<.05
		SS-5	1.9'	2 1 1 1			0	2.0
	10					10YR4/1 Dark gray, damp to moist, clayey SILT, soft, evidence of roots, structure, organic inclusions, oxidized in places in top 4", then reducing, in-situ. No free water encountered. (OL)		
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>One foot west of BW-8</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-8A</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>2.25 HSA</u>
DATE STARTED	<u>3/31/2014</u>	STATIC WATER LEVEL	<u>None - dry</u>
DATE COMPLETED	<u>3/31/2014</u>	TOTAL DEPTH	<u>6 Feet</u>
COMMENTS	<u>Abandoned borehole</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	0					0-2" Asphalt.	
						Blind drilled to 4 feet.	
	5	SS-1	1.0'	3 2 2 3		7.5YR3/1 Very dark gray, damp, medium SAND (foundry sand), little silt/clay with lots of glass pieces, slag, brick fragments, sandstone fragments, FILL. No water encountered.	.05
	10						
	15						
	20						

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-9</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.25 HSA</u>
DATE STARTED	<u>3/21/2014</u>	STATIC WATER LEVEL	<u>None - dry</u>
DATE COMPLETED	<u>3/21/2014</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Abandoned borehole</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-1.5" Asphalt.		
		SS-1	1.0'	6 8 8		7.5YR5/2 Brown damp, clayey, gravelly SAND, FILL.	0	<.05
		SS-2	1.1'	4 4 2 1		7.5YR3/2 Dark brown, damp SAND with silt/clay, slag; becomes sandier + gravellier with depth and has ceramic pieces, sandstone fragments and more slag; matrix is foundry sand, FILL.	0	0.5
	5	SS-3	.4'	2 2 3 3			0	<.05
		SS-4	1.0'	1 2 0 0		7.5YR5/4 Brown in 7.5YR4/2 Brown, wet, silty CLAY with predominantly glass pieces, FILL.	0	<.05
		SS-5	1.0'	1 2 2 3		7.5YR5/2 Brown, damp, foundry sand, FILL.		
	10					10YR4/3 Brown damp soft clayey SILT, water laid deposit, in-situ. No free water encountered. (ML)	0	1.5
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT <u>14-04 Fairfield Co. - Jail</u>	LOCATION <u>One foot west of BW-9</u>
GEOLOGIST <u>LINDA ALLER</u>	BORING NO. <u>BW-9A</u>
DRILLING AGENCY <u>WRIGHTS DRILLING</u>	BORING TYPE <u>2.25 HSA</u>
DATE STARTED <u>3/31/2014</u>	STATIC WATER LEVEL <u>None - dry</u>
DATE COMPLETED <u>3/31/2014</u>	TOTAL DEPTH <u>2 Feet</u>
COMMENTS <u>Abandoned borehole</u>	

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	0			4	▣	7.5YR6/4 Light brown damp sandy GRAVEL (bedding for asphalt that was not present due to surface erosion), little very fine sand/silt/clay, FILL.	
				4	▣		
		SS-1	1.0'	5	▣		
				6	▣		7.5YR3/1 Very dark gray, damp, silty SAND (foundry sand) slag, brick fragments, FILL. No water encountered.
	5						
	10						
	15						
	20						



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT <u>14-04 Fairfield Co. - Jail</u>	LOCATION <u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST <u>LINDA ALLER</u>	BORING NO. <u>BW-10</u>
DRILLING AGENCY <u>WRIGHTS DRILLING</u>	BORING TYPE <u>4.25 HSA</u>
DATE STARTED <u>3/21/2014</u>	STATIC WATER LEVEL <u>None - dry</u>
DATE COMPLETED <u>3/21/2014</u>	TOTAL DEPTH <u>8 Feet</u>
COMMENTS <u>Abandoned borehole</u>	

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	PID (ppm)	Penetrometer
	0					0-2" Asphalt.		
		SS-1	1.0'	4 4 4		7.5YR3/3 Very dark gray, damp, fine SAND (foundry sand) with slag and sandstone fragments, FILL.	0	<.05
		SS-2	1.6'	2 1 6 6		Becomes moist at 4'.	0	<.05
	5	SS-3	1.5'	4 4 6 6			0	<.05
		SS-4	1.0'	1 1 2 1			0	<.05
						10YR4/3 Brown, moist, soft, clayey SILT, water laid deposit, in-situ. No free water. (ML)		
	10							
	15							
	20							

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT <u>14-04 Fairfield Co. - Jail</u>	LOCATION <u>One foot west of BW-10</u>
GEOLOGIST <u>LINDA ALLER</u>	BORING NO. <u>BW-10A</u>
DRILLING AGENCY <u>WRIGHTS DRILLING</u>	BORING TYPE <u>2.25 HSA</u>
DATE STARTED <u>3/31/2014</u>	STATIC WATER LEVEL <u>None - dry</u>
DATE COMPLETED <u>3/31/2014</u>	TOTAL DEPTH <u>4 Feet</u>
COMMENTS <u>Abandoned borehole</u>	

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	0					0-2" Asphalt.	
						Blind drilled to 2 feet.	
		SS-1	1.3'	3		7.5YR3/3 Dark brown mixed with 7.5YR6/4 Light brown damp, very fine to medium SAND (foundry sand) few slag pieces, FILL. No water encountered.	<.05
				4			
				6			
	5						
	10						
	15						
	20						

**Geotechnical Consultants, Inc. Logs B-101 Through B-111**  
**Geotechnical Consultants, Inc. (2015)**

# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-101**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **819.5 ±**  
 NO. **11-G-16121** DATE DRILLED **12/15/2014**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION	Trace            Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few             5 to 10%	0 - 10            Loose	0 - 4            Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little          15 to 25%	10 - 30          Medium Dense	4 - 8            Medium Stiff
	Some          30 to 45%	30 - 50          Dense	8 - 15          Stiff
	Mostly        50 to 100%	50 +             Very Dense	15 - 30        Very Stiff
			30 +            Hard

**LOCATION OF BORING                      See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.2	Asphalt (2" thick) over Stone Base (5" thick)
								0.6	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, trace slag; non-plastic, fine to coarse sand, little silt with thin layers of lean clay (CL)
	--	2.0-3.5	SS	3	4	5	Moist		
	--	4.0-5.5	SS	4	6	4	Moist		
5								7.0	Heavily Stained Brown Lean Clay with Organics (CL/OL); moderate to moderately high plasticity; few sand, trace fine gravel
	0.75-1.0	8.5-10.0	SS	3	3	4	Moist		
10									
	0.25-0.5	13.5-15.0	SS	2	2	3	Very Moist to Wet		trace shells with depth <b>Water Seepage at 14.5'</b>
15								17.0	
								19.5	Stained Gray Lean Clay with Organics (CL/OL); moderate to moderately high plasticity, trace shells with layers of silt (ML)
20	0.25	18.5-20.0	SS	2	2	4	Very Moist to Wet		Stained Gray Silty Sand (SM); fine to coarse sand, little non-plastic silt, few/little gravel
									thinly bedded with layers of gray lean clay (CL) and silt (ML)
	1.0	23.5-25.0	SS	3	4	5	Wet		
25									
	0.25	28.5-30.0	SS	3	6	10	Very Moist to Wet	29.5	Gray Well-Graded Sand with Silt and Gravel (SW-SM); fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines
30									occasional cobbles
	--	33.5-35.0	SS	8	11	18	Wet		

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

*Continued Next Page*



# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio** BORING NO. **B-101**  
 CLIENT **Fairfield County Commissioners** PROJ. SURF. ELEV. **819.5 ±**  
 NO. **11-G-16121** DATE DRILLED **12/15/2014**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION	Trace            Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few             5 to 10%	0 - 10            Loose	0 - 4                Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little          15 to 25%	10 - 30         Medium Dense	4 - 8                Medium Stiff
	Some          30 to 45%	30 - 50          Dense	8 - 15              Stiff
	Mostly        50 to 100%	50 +             Very Dense	15 - 30            Very Stiff
			30 +                Hard

**LOCATION OF BORING                    See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION
				0-6	6-12	12-18			Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
									Gray Well-Graded Sand with Silt and Gravel (SW-SM); fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines  with layers of silty sand with gravel (SM)  occasional cobbles
40	--	38.5-40.0	SS	11	15	19	Wet		
45	--	43.5-45.0	SS	12	16	21	Wet		
50	--	48.5-50.0	SS	9	12	17	Wet		
55	--	53.5-55.0	SS	10	14	18	Wet		
60	--	58.5-60.0	SS	10	13	16	Wet		
65	--	63.5-65.0	SS	11	18	30	Wet		
	--	68.5-70.0	SS	13	22	37	Wet	70.0	BOTTOM OF BORING: 70.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street -**

BORING NO. **B-102**

**Lancaster, Ohio**

PROJ.

SURF. ELEV. **820.0 ±**

CLIENT **Fairfield County Commissioners**

NO. **11-G-16121**

DATE DRILLED **12/16/2014**

GROUND WATER OBSERVATION				Proportions Used			140 lb Wt. x 30" fall on 2" O.D. Sampler			
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION _____ FEET BELOW SURFACE AT 24 HOURS _____ FEET BELOW SURFACE AT _____ HOURS				Trace	Less than 5%		<b>Cohesionless Density</b>		<b>Cohesive Consistency</b>	
				Few	5 to 10%		0 - 10	Loose	0 - 4	Soft
				Little	15 to 25%		10 - 30	Medium Dense	4 - 8	Medium Stiff
				Some	30 to 45%		30 - 50	Dense	8 - 15	Stiff
				Mostly	50 to 100%		50* +	Very Dense	15 - 30	Very Stiff
									30 +	Hard
<b>LOCATION OF BORING See Boring Location Plan</b>										
DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION	
				0-6	6-12	12-18			Remarks include color, type of soil, etc. Rock-color, type, condition, hardness	
								0.5	Asphalt (6" thick) over Stone Base (8" thick)	
								1.2	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, trace glass, stone, topsoil; non-plastic, fine to coarse sand, little silt	
5	1.0-3.0	2.0-3.5	SS	2	2	3	Moist			
	--	4.0-5.5	SS	1	0	1	Moist		with thin layers of lean clay (CL)	
									stained lean clay/topsoil (CL/OL) layers with depth	
10	0.5	8.5-10.0	SS	2	2	3	Moist to Very Moist	11.0		
								12.5	Stained Brown Lean Clay (CL); moderate to moderately high plasticity; few sand, trace fine gravel	
15	0.25-0.5	13.5-15.0	SS	**	**	**	Moist to Very Moist		Heavily Stained Gray Lean Clay with Sand and Organics (CL/OL); moderate plasticity; little fine sand, trace shells <b>** weight of hammer</b>	
								17.5	Stained Gray Silty Sand (SM); fine to medium sand, little non-plastic silt; trace shells	
20	--	18.5-20.0	SS	3	5	7	Moist	21.0	with layers of silt (ML)	
									Gray Poorly Graded Sand with Silt and Gravel (SP-SM); fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines	
25	--	23.5-25.0	SS	6	7	6	Wet		with layers of stained silt (ML) in upper portion of deposit	
30	--	28.5-30.0	SS	7	7	6	Wet			
35	--	33.5-35.0	SS	8	7	6	Wet			
	--	38.5-40.0	SS	9	8	7	Wet	40.0	BOTTOM OF BORING: 40.0'	

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-103**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **821.0 ±**  
 NO. **11-G-16121** DATE DRILLED **12/16/2014**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>13.0</b> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	Cohesionless Density	Cohesive Consistency
_____ FEET BELOW SURFACE AT 24 HOURS	Few          5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little       15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some       30 to 45%	30 - 50    Dense	8 - 15    Stiff
	Mostly      50 to 100%	50 +       Very Dense	15 - 30   Very Stiff
			30 +      Hard

LOCATION OF BORING      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.3	Asphalt (3" thick) over Stone Base (9" thick)
	--	2.0-3.5	SS	3	4	2	Moist	1.0	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel and brick; non-plastic, fine to coarse sand, little silt
5	NR	4.0-5.5	SS	3	3	2	Moist		with thin layers of sandy lean clay with gravel (CL)
10	0.5	8.5-10.0	SS	1	2	2	Moist		stained lean clay/topsoil layers with depth
								11.5	
									Gray Sandy Silt (ML); non-plastic, little fine to coarse sand - Possible Fill
15	0.5-2.0	13.5-15.0	SS	2	4	5	Moist	14.5	
								15.0	Heavily Stained Gray Lean Clay/Topsoil (CL/OL)
								17.5	Gray Sandy Lean Clay with Gravel (CL) - glacial till; low to moderate plasticity, some sand, little gravel
20	--	18.5-20.0	SS	6	9	8	Wet		Gray Poorly Graded Sand with Silt and Gravel (SP-SM); fine to coarse sand, little to some gravel, few to little non-plastic silt to slightly plastic silty clay fines
									with layers of silty sand (SM), cobbles
25	--	23.5-25.0	SS	7	7	9	Wet		
30	--	28.5-30.0	SS	9	8	9	Wet		with layers of silt (ML)
35	4.5	33.5-35.0	SS	10	12	12	Wet to Moist		less gravel, more silt with depth
									with layers of gray glacial till (CL)
	--	38.5-40.0	SS	13	18	21	Wet	40.0	BOTTOM OF BORING: 40.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-104**  
 SURF. ELEV. **822.5 ±**  
 DATE DRILLED **12/15/2014**

PROJ. NO. **11-G-16121**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>15.0</b> FEET BELOW SURFACE AT COMPLETION	Trace            Less than 5%	<b>Cohesionless Density</b>	
_____ FEET BELOW SURFACE AT 24 HOURS	Few             5 to 10%	0 - 10            Loose	0 - 4            Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little          15 to 25%	10 - 30          Medium Dense	4 - 8            Medium Stiff
	Some           30 to 45%	30 - 50          Dense	8 - 15          Stiff
	Mostly         50 to 100%	50 +             Very Dense	15 - 30        Very Stiff
			30 +            Hard

**LOCATION OF BORING            See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.5	Asphalt (6" thick)
	--	2.0-3.5	SS	9	10	10	Moist		FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, trace glass, stone, wood; non-plastic, fine to coarse sand, little silt
5	--	4.0-5.5	SS	7	11	7	Moist		with thin layers of stained lean clay/topsoil (CL/OL)
								7.5	Brown Lean Clay (CL); moderate to moderately high plasticity; few sand, trace fine gravel
10	NR	8.5-10.0	SS	2	2	3	Moist		
								12.5	Brown Poorly Graded Sand with Silt (SP-SM); fine to coarse sand, few to little fine gravel, few non-plastic silt
15	--	13.5-15.0	SS	5	6	8	Moist		
								26.5	Gray Silty Sand with Gravel (SM); fine to coarse sand, few to little gravel, few to little non-plastic silt
20	--	18.5-20.0	SS	6	7	10	Wet		
									with occasional layers of gray glacial till (CL)
25	--	23.5-25.0	SS	6	8	6	Wet		
30		3.5-4.5	SS	6	10	12	Moist		
	--	33.5-35.0	SS	6	7	6	Wet		

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

*Continued Next Page*





# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-104**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **822.5 ±**  
 NO. **11-G-16121** DATE DRILLED **12/15/2014**

<b>GROUND WATER OBSERVATION</b>  <u>15.0</u> FEET BELOW SURFACE AT COMPLETION _____ FEET BELOW SURFACE AT 24 HOURS _____ FEET BELOW SURFACE AT _____ HOURS	<b>Proportions Used</b> Trace            Less than 5% Few                5 to 10% Little             15 to 25% Some              30 to 45% Mostly            50 to 100%	<b>140 lb Wt. x 30" fall on 2" O.D. Sampler</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>Cohesionless Density</b></td> <td style="width: 50%;"><b>Cohesive Consistency</b></td> </tr> <tr> <td>0 - 10            Loose</td> <td>0 - 4            Soft</td> </tr> <tr> <td>10 - 30        Medium Dense</td> <td>4 - 8            Medium Stiff</td> </tr> <tr> <td>30 - 50        Dense</td> <td>8 - 15          Stiff</td> </tr> <tr> <td>50 +            Very Dense</td> <td>15 - 30        Very Stiff</td> </tr> <tr> <td></td> <td>30 +            Hard</td> </tr> </table>	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>	0 - 10            Loose	0 - 4            Soft	10 - 30        Medium Dense	4 - 8            Medium Stiff	30 - 50        Dense	8 - 15          Stiff	50 +            Very Dense	15 - 30        Very Stiff		30 +            Hard
<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>													
0 - 10            Loose	0 - 4            Soft													
10 - 30        Medium Dense	4 - 8            Medium Stiff													
30 - 50        Dense	8 - 15          Stiff													
50 +            Very Dense	15 - 30        Very Stiff													
	30 +            Hard													

**LOCATION OF BORING            See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
									Gray Silty Sand with Gravel (SM); fine to coarse sand, little gravel, few to little non-plastic silt  with occasional layers of gray glacial till (CL)  occasional cobbles  more gravel with depth
40	--	38.5-40.0	SS	5	7	7	Wet		
45	--	43.5-45.0	SS	6	7	8	Wet		
50	--	48.5-50.0	SS	12	14	21	Wet		
55	--	53.5-55.0	SS	10	13	16	Wet		
60	--	58.5-60.0	SS	12	17	24	Wet		
65	--	63.5-65.0	SS	26	31	39	Moist	65.0	
BOTTOM OF BORING: 65.0'									

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-105**  
 SURF. ELEV. **819.0 ±**  
 DATE DRILLED **12/16/2014**

PROJ. NO. **11-G-16121**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>12.0</b> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	<b>Cohesionless Density</b>	<b>Cohesive Consistency</b>
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30    Very Stiff
			30 +       Hard

LOCATION OF BORING      See Boring Location Plan

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.3	Asphalt (3" thick) over Stone Base (12" thick)
								1.3	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, trace brick, wood, glass, slag; non-plastic, fine to coarse sand, little silt  with thin layers of lean clay (CL)
	--	2.0-3.5	SS	3	4	6	Moist		
5	0.5	4.0-5.5	SS	3	3	3	Moist		
								7.0	Heavily Stained Gray Lean Clay with Organics (CL/OL); moderate to moderately high plasticity; few fine sand, trace shells
10	1.0-1.5	8.5-10.0	SS	2	3	4	Moist		
									** <i>weight of hammer</i>
15	--	13.5-15.5	SS	**	**	1	Very Moist		
				2				16.5	<b>Water Seepage at 16.0'</b>
									Stained Gray Lean Clay (CL); moderate plasticity, trace shells
20	0.5-1.5	18.5-20.0	SS	2	4	5	Wet		thinly bedded with layers of non-plastic silty sand (SM) and silt (ML) and slightly plastic silty clay (CL-ML)
								22.0	
								24.0	Gray Silty Sand with Gravel (SM); fine to coarse sand, little gravel, little non-plastic silt
25	--	23.5-25.0	SS	5	7	8	Wet		Brown to Gray Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little to some gravel, few to little non-plastic silt to slightly plastic silty clay fines
30	---	28.5-30.0	SS	6	8	9	Wet		
35	--	33.5-35.0	SS	7	10	14	Wet		with cobbles
	---	38.5-40.0	SS	8	12	16	Wet	40.0	BOTTOM OF BORING: 40.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street -**  
**Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-106**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **822.0 ±**  
 NO. **11-G-16121** DATE DRILLED **12/16/2014**

GROUND WATER OBSERVATION						Proportions Used		140 lb Wt. x 30" fall on 2" O.D. Sampler					
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION _____ FEET BELOW SURFACE AT 24 HOURS _____ FEET BELOW SURFACE AT _____ HOURS						Trace	Less than 5%	Cohesionless Density		Loose		Cohesive Consistency	
						Few	5 to 10%	0 - 10	Medium Dense	0 - 4	Soft		
						Little	15 to 25%	10 - 30	Dense	4 - 8	Medium Stiff		
						Some	30 to 45%	30 - 50	Very Dense	8 - 15	Stiff		
						Mostly	50 to 100%	50 +		15 - 30	Very Stiff		
										30 +	Hard		
LOCATION OF BORING <b>See Boring Location Plan</b>													
DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness				
				0-6	6-12	12-18							
								0.3	Concrete (4" thick) over Stone Base (3" thick)				
								0.7	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel with stone, brick, glass, trace concrete fragments and topsoil; non-plastic, fine to coarse sand, little silt				
5	---	2.0-3.5	SS	1	1	2	Moist		with thin layers of lean clay (CL) <b>Water Seepage at 5.5'</b>				
	---	4.0-5.5	SS	4	17	4	Moist						
10	0.25	8.5-10.0	SS	1	2	1	Very Moist to Moist		More brick, stained/red lean clay layers with depth				
								11.5	Heavily Stained Gray Lean Clay/Topsoil (CL/OL); moderate to moderately high plasticity; trace wood				
15	0.0-0.25	13.5-15.0	SS	**	**	2	Moist to Very Moist		<b>** weight of hammer</b>				
20	0.25	18.5-20.0	SS	2	2	2	Wet		Stained Gray Silty Sand (SM); fine to coarse sand, little non-plastic silt, trace wood				
								21.0	with layers of lean clay (CL)				
25	---	23.5-25.0	SS	2	3	4	Wet		Stained Gray Lean Clay (CL); moderate to moderately high plasticity, few sand				
								25.5	thinly bedded with layers of silt (ML) and silty clay (CL-ML)				
30	0.25-0.5	28.5-30.0	SS	3	2	3	Very Moist to Wet		trace gravel with depth				
								36.0	Brown Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines; cobbles				
35	---	33.5-35.0	SS	3	3	3	Very Moist to Wet		BOTTOM OF BORING: 40.0'				
								40.0					

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-107**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **822.0 ±**  
 NO. **11-G-16121** DATE DRILLED **12/15/2014**

GROUND WATER OBSERVATION				Proportions Used			140 lb Wt. x 30" fall on 2" O.D. Sampler					
<b>12.0</b> FEET BELOW SURFACE AT COMPLETION _____ FEET BELOW SURFACE AT 24 HOURS _____ FEET BELOW SURFACE AT _____ HOURS				Trace      Less than 5% Few         5 to 10% Little       15 to 25% Some        30 to 45% Mostly      50 to 100%			<b>Cohesionless Density</b> 0 - 10      Loose 10 - 30     Medium Dense 30 - 50     Dense 50 +         Very Dense		<b>Cohesive Consistency</b> 0 - 4         Soft 4 - 8         Medium Stiff 8 - 15        Stiff 15 - 30       Very Stiff 30 +         Hard			
LOCATION OF BORING						See Boring Location Plan						
DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness			
				0-6	6-12	12-18						
								0.3	Concrete (3" thick)			
	---	2.0-3.5	SS	1	1	1	Moist		FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, trace stone, brick, glass, slag; non-plastic, fine to coarse sand, little silt			
5	1.5	4.0-5.5	SS	1	1	1	Moist		with thin layers of lean clay and sandy lean clay (CL)			
									<b>Water Seepage at 7.0'</b>			
10	0.25-1.0	8.5-10.0	SS	1	1	1	Moist		layers of topsoil/stained lean clay, trace wood (CL/OL) with depth			
15	0.5-1.0	13.5-15.0	SS	1	1	2	Very Moist to Moist	14.3	Heavily Stained Gray Lean Clay with Organics (CL/OL); moderate to moderately high plasticity; few fine sand, trace shells, roots			
									with layers of silt (ML)			
20	0.25-2.5	18.5-20.0	SS	6	4	7	Moist	19.5	Gray Sandy Lean Clay with Gravel (CL) - glacial till; low to moderate plasticity, some sand, little gravel			
								21.0	Gray Poorly Graded Sand with Silt and Gravel (SP-SM); fine to coarse sand, few to little gravel, few to little non-plastic silt to slightly plastic silty clay fines			
25	--	23.5-25.0	SS	5	4	6	Wet		with layers of gray glacial till (CL)			
30	--	28.5-30.0	SS	5	6	7	Wet		occasional cobbles			
35	--	33.5-35.0	SS	6	8	7	Wet					
	--	38.5-40.0	SS	9	10	15	Wet	40.0	BOTTOM OF BORING: 40.0'			

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/11/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-108**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **823.0 ±**  
 NO. **11-G-16121** DATE DRILLED **12/16/2014**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>12.0</b> FEET BELOW SURFACE AT COMPLETION	Trace            Less than 5%	<b>Cohesionless Density</b>	
_____ FEET BELOW SURFACE AT 24 HOURS	Few             5 to 10%	0 - 10            Loose	0 - 4            Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little          15 to 25%	10 - 30          Medium Dense	4 - 8            Medium Stiff
	Some           30 to 45%	30 - 50          Dense	8 - 15          Stiff
	Mostly         50 to 100%	50 +             Very Dense	15 - 30        Very Stiff
			30 +            Hard

**LOCATION OF BORING            See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.3	Asphalt (3" thick) over Stone Base (10" thick)
								1.1	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, stone, slag; trace brick, wood, glass, concrete; non-plastic, fine to coarse sand, little silt with thin layers of lean clay and sandy lean clay (CL)
	--	2.0-3.5	SS	6	7	4	Moist		
5	--	4.0-5.5	SS	1	2	2	Moist		
10	1.0-1.5	8.5-10.0	SS	2	2	3	Moist	10.0	Heavily Stained Gray Lean Clay/Topsoil (CL/OL); moderate to moderately high plasticity
								12.5	Brown Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines  <b>Water Seepage at 16.0'</b>  with layers of silty sand (SM)
15	--	13.5-15.0	SS	4	6	5	Moist		
20	--	18.5-20.0	SS	6	10	25	Wet		
25	--	23.5-25.0	SS	11	26	34	Wet		
30	4.5	28.5-30.0	SS	15	33	45	Very Moist to Wet	29.5	with layers of gray glacial till (CL)
									Gray Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, few to little gravel, little non-plastic silt to slightly plastic silty clay fines
35	--	33.5-35.0	SS	12	21	30	Wet		
	--	38.5-40.0	SS	14	25	34	Wet	40.0	BOTTOM OF BORING: 40.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street -**  
**Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-109**  
 PROJ. \_\_\_\_\_  
 SURF. ELEV. **821.5 ±**  
 NO. **11-G-16121** DATE DRILLED **12/15/2014**

GROUND WATER OBSERVATION				Proportions Used			140 lb Wt. x 30" fall on 2" O.D. Sampler			
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION _____ FEET BELOW SURFACE AT 24 HOURS _____ FEET BELOW SURFACE AT _____ HOURS				Trace	Less than 5%		Cohesionless Density		Cohesive Consistency	
				Few	5 to 10%		0 - 10	Loose	0 - 4	Soft
				Little	15 to 25%		10 - 30	Medium Dense	4 - 8	Medium Stiff
				Some	30 to 45%		30 - 50	Dense	8 - 15	Stiff
				Mostly	50 to 100%		50 +	Very Dense	15 - 30	Very Stiff
									30 +	Hard
LOCATION OF BORING				See Boring Location Plan						
DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness	
				0-6	6-12	12-18				
								0.3	Asphalt (3" thick) over Concrete (6" thick)	
								0.8	FILL: Brown Lean Clay, little sand, slag, trace coal, brick, concrete fragments, glass; moderate plasticity  with layers of dark gray/brown silty sand (SM)	
	3.0	2.0-3.5	SS	5	4	4	Moist			
5	2.5	4.0-5.5	SS	2	2	3	Moist			
10	--	8.5-10.5	SS	2	2	3	Moist to Very Moist		more frequent silty sand layers and layers of stained lean clay (CL/OL) with depth	
				4						
								12.0	<b>Water Seepage at 11.5'</b>	
									Heavily Stained Brown Lean Clay / Topsoil (CL/OL); low to moderate plasticity, few sand	
15	0.5-1.0	13.5-15.0	SS	2	2	2	Very Moist to Moist		with layers of silt (ML)	
								16.5		
									Stained Gray Silty/Clayey Sand (SM/SC); fine to medium sand, little to some slight to low plasticity fines, trace gravel, trace shells	
20	0.0	18.5-20.0	SS	3	4	5	Wet		with layers of lean clay (CL)	
								24.0		
25	0.25	23.5-25.0	SS	3	5	6	Wet		Gray Well-Graded Sand with Silt and Gravel (SW-SM); fine to coarse sand, some gravel, few to little non-plastic silt to slightly plastic silty clay fines	
30	--	28.5-30.0	SS	6	7	8	Wet			
	--	33.5-35.0	SS	6	6	7	Wet			

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Continued Next Page



# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-109**  
 SURF. ELEV. **821.5 ±**  
 DATE DRILLED **12/15/2014**

PROJ. NO. **11-G-16121**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler			
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION	Trace            Less than 5%	<b>Cohesionless Density</b>		<b>Cohesive Consistency</b>	
_____ FEET BELOW SURFACE AT 24 HOURS	Few              5 to 10%	0 - 10            Loose	0 - 4	Soft	
_____ FEET BELOW SURFACE AT _____ HOURS	Little            15 to 25%	10 - 30          Medium Dense	4 - 8	Medium Stiff	
	Some             30 to 45%	30 - 50          Dense	15 - 30	Very Stiff	
	Mostly           50 to 100%	50 +             Very Dense	30 +	Hard	

**LOCATION OF BORING                      See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
									Gray Well-Graded Sand with Silt and Gravel (SW-SM); fine to coarse sand, some gravel, few to little non-plastic silt to slightly plastic silty clay fines
40	--	38.5-40.0	SS	6	7	9	Wet		with layers of silty gravel with sand (GM) occasional cobbles
45	--	43.5-45.0	SS	7	9	10	Wet		
50	---	48.5-50.0	SS	8	10	12	Wet		with layers of silty sand with gravel (SM)
55	--	53.5-55.0	SS	9	12	16	Wet		more sand (becoming poorly graded) and less gravel with depth
60	--	58.5-60.0	SS	10	16	28	Wet		
65	--	63.5-65.0	SS	13	20	33	Wet		
	--	68.5-70.0	SS	12	24	43	Wet	70.0	BOTTOM OF BORING: 70.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-110**  
 SURF. ELEV. **822.0 ±**  
 NO. **11-G-16121** DATE DRILLED **12/16/2014**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler	
<b>11.0</b> FEET BELOW SURFACE AT COMPLETION	Trace      Less than 5%	Cohesionless Density	Cohesive Consistency
_____ FEET BELOW SURFACE AT 24 HOURS	Few        5 to 10%	0 - 10      Loose	0 - 4      Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little     15 to 25%	10 - 30    Medium Dense	4 - 8      Medium Stiff
	Some      30 to 45%	30 - 50    Dense	8 - 15     Stiff
	Mostly    50 to 100%	50 +       Very Dense	15 - 30    Very Stiff
			30 +       Hard

LOCATION OF BORING      **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.2	Concrete (2" thick) over Stone Base (4" thick)
								0.5	FILL: Brown and Gray Lean Clay (CL), little sand, gravel, stone, trace wood, brick; moderate plasticity
5	1.5-3.0	2.0-3.5	SS	3	3	3	Moist		with layers of dark gray/brown silty sand
	--	4.0-5.5	SS	1	1	2	Moist to Very Moist		<b>Water Seepage at 6.0'</b>
10	0.0-0.25	8.5-10.0	SS	1	1	2	Very Moist to Wet		stained lean clay / topsoil (CL/OL) layers and gray silty sand (SM) layers with depth
15	0.0	13.5-15.0	SS	3	2	1	Wet		
20	0.0-0.25	18.5-20.0	SS	**	**	**	Wet	18.0	Heavily Stained Gray Lean Clay with Sand and Organics (CL/OL); moderate plasticity; little fine sand, trace shells with thin layers of gray silty sand (SM)
									<b>** weight of hammer</b>
25	0.0-0.5	23.5-25.0	SS	2	3	3	Wet	24.0	Gray Silt (ML); few to little fine sand; non-plastic with thin layers of lean clay (CL)
								26.0	Gray Poorly Graded Sand with Silt and Gravel (SP-SM); fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines
30	2.5	28.5-30.0	SS	3	4	7	Wet to Moist	29.3	Gray Sandy Lean Clay with Gravel (CL) - glacial till; low to moderate plasticity; some sand, little gravel
								32.0	
35	--	33.5-35.0	SS	6	6	5	Wet		Gray Poorly Graded Sand with Silt and Gravel (SP-SM); fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines
	--	38.5-40.0	SS	6	8	11	Wet	40.0	BOTTOM OF BORING: 40.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.





# TEST BORING LOG

Casing Set on 12/10/2014

PROJECT NAME **Fairfield County Justice Center-MSMJ Site - 342 West Wheeling Street - Lancaster, Ohio**  
 CLIENT **Fairfield County Commissioners**

BORING NO. **B-111**  
 PROJ. \_\_\_\_\_ SURF. ELEV. **824.0 ±**  
 NO. **11-G-16121** DATE DRILLED **12/16/2014**

GROUND WATER OBSERVATION	Proportions Used	140 lb Wt. x 30" fall on 2" O.D. Sampler			
<b>12.0</b> FEET BELOW SURFACE AT COMPLETION	Trace Less than 5%	<b>Cohesionless Density</b>		<b>Cohesive Consistency</b>	
_____ FEET BELOW SURFACE AT 24 HOURS	Few 5 to 10%	0 - 10	Loose	0 - 4	Soft
_____ FEET BELOW SURFACE AT _____ HOURS	Little 15 to 25%	10 - 30	Medium Dense	4 - 8	Medium Stiff
	Some 30 to 45%	30 - 50	Dense	8 - 15	Stiff
	Mostly 50 to 100%	50 +	Very Dense	15 - 30	Very Stiff
				30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler			Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
				0-6	6-12	12-18			
								0.3	Asphalt (3" thick) over Stone Base (10" thick)
	--	2.0-3.5	SS	1	2	3	Moist to Wet to Moist	1.1	FILL: Dark Gray/Brown Silty Sand (SM); few to little gravel, brick, wood, glass, trace coal; non-plastic, fine to coarse sand, little silt  with thin layers of lean clay (CL)
5	--	4.0-5.5	SS	2	3	3	Moist		
10	0.5	8.5-10.5	SS	1	2	2	Very Moist		
				5				12.0	Brown Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little gravel, few to little non-plastic silt to slightly plastic silty clay fines
15	--	13.5-15.0	SS	3	4	6	Moist		
20	--	18.5-20.0	SS	12	14	15	Wet		slight hydrocarbon odor noted in 18.5'-20' sample
25	--	23.5-25.0	SS	12	17	19	Wet		staining, more plastic fines noted in 23.5'-25.0' sample
								27.0	Gray Poorly Graded Sand with Silt and Gravel (SP-SM); non-plastic, fine to coarse sand, little to some gravel, few to little non-plastic silt to slightly plastic silty clay fines
30	--	28.5-30.0	SS	12	16	38	Wet		with occasional gray till (CL) layers
35	--	33.5-35.0	SS	27	34	92	Wet		
	4.0-4.5	38.5-39.2	SS	58	50/2"		Moist	40.0	BOTTOM OF BORING: 40.0'

\* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



**City of Lancaster Monitoring Wells MW-4S and MW-4D**



## Water Well Log and Drilling Report

Ohio Department of Natural Resources  
 Division of Soil and Water  
 Phone: 614-265-6740 Fax: 614-265-6767

**Well Log Number:** 816585

View Image of Original Well Log

**ORIGINAL OWNER AND LOCATION**

**Original Owner Name:** CITY OF LANCASTER

**County:** FAIRFIELD

**Township:** HOCKING

**Section Number:**

**Address:** 225 MEMORIAL DR N

**Lot Number:**

**City:**

**State:** OH

**Zip Code:** 43130

**Location Number:**

**Location Map Year:**

**Location Area:**

**Latitude:** 39.7158

**Longitude:** -82.60696

**CONSTRUCTION DETAILS**

**Borehole Diameter:** 1:

**Borehole Depth:** 1: 29 ft.

**Depth to Bedrock:**

2:

2:

**Casing Diameter:** 1: 2 in.

**Casing Length:** 1: 19 ft.

**Casing Thickness:** 1:

2:

2:

2:

**Casing Height Above Ground:**

**Aquifer Type:** SAND & GRAVEL

**Date of Completion:**

**Total Depth:** 29 ft.

**Well Use:** MONITOR

**Driller's Name:** BELASCO DRILLING, INC.

**Screen Diameter:**

**Slot Size:**

**Screen Length:**

**Type:**

**Material:**

**Set Between:**

**Gravel Pack Material/Size:**

**Vol/Wt Used:**

**Method of Installation:**

**Placed:**

**Grout Material/Size:**

**Vol/Wt Used:**

**Method of Installation:**

**Placed**

**WELL TEST DETAILS**

**Static Water Level:**

**Test Rate:**

**Associated Reports**

**Drawdown:**

**Test Duration:**

**COMMENTS:**

**WELL LOG**

Formations	From	To
SAND	0	5
GRAY SILTY CLAY	5	22
GRAY SAND & GRAVEL	22	29

[Printing Tips](#) (opens in new window)

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[Well log questions](#) - [Web site questions](#) - [Web policies](#)

# WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources  
 Division of Water, 1939 Fountain Square Drive  
 Columbus, Ohio 43224 Phone (614) 265-6739

816585  
 94-599  
 Permit Number \_\_\_\_\_

COUNTY Franklin TOWNSHIP Hocking SECTION/LOT No. \_\_\_\_\_  
 (Circle One)  
 OWNER/BUILDER City of Lancaster PROPERTY ADDRESS 225 N. Memorial Dr. Lancaster  
 (Circle One or Both) Division of Water (Address of well location) (City)  
 LOCATION OF PROPERTY Lancaster - OH 48130

## CONSTRUCTION DETAILS

CASING (Length below grade) Borehole Diameter 8 1/4 in. GROUT  
 Diameter 2 in. Length 18.5 ft. Wall Thickness 2 1/2 in. Material Bentonite Volume used 50 lbs  
 Diameter \_\_\_\_\_ in. Length \_\_\_\_\_ ft. Wall Thickness \_\_\_\_\_ in. Method of installation Tremie  
 Type:  Steel  Galv.  PVC  Other \_\_\_\_\_  
 Threaded  Welded  Solvent  Other \_\_\_\_\_  
 Joints:  Threaded  Welded  Solvent  Other \_\_\_\_\_  
 Liner: NA Length \_\_\_\_\_ Type \_\_\_\_\_ Wall Thickness \_\_\_\_\_ in. Depth: placed from 28 ft. to 16.8' ft.  
 SCREEN  
 Type (wire wrapped, louvered, etc.) Slotted Material PVC Pitless Device  Adapter  Preassembled unit  
 Length 10 ft. Diameter 2 inch in. Use of Well Monitoring well  
 Rotary  Cable  Augered  Driven  Dug  Other \_\_\_\_\_  
 Set between 28.9 ft. and 18.9 ft. Slot old Date of Completion 7/27

## WELL LOG\*

INDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.  
 Show color, texture, hardness, and formation:  
 sandstone, shale, limestone, gravel, clay, sand, etc.

	From	To
<u>Fill - Subbase + Foundry sand</u>	<u>0</u>	<u>5'</u>
<u>Silty clay, grey, moist</u>	<u>5'</u>	<u>22'</u>
<u>Plastic</u>		
<u>Sand and gravel, grey wet</u>	<u>22'</u>	<u>29'</u>
<u>Water @ 22'</u>		

## WELL TEST

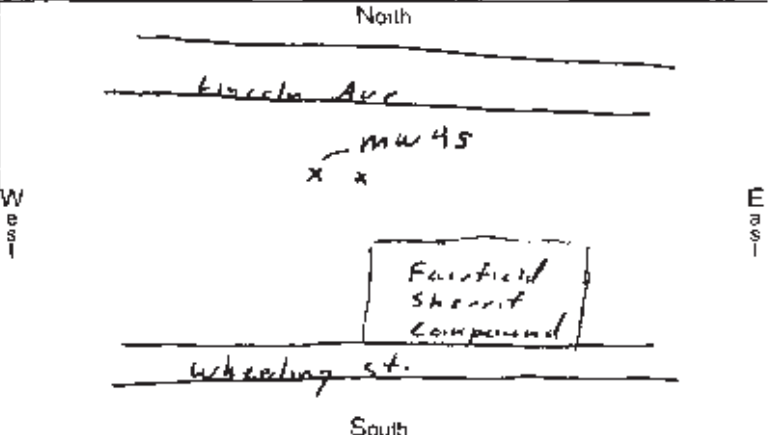
Bailing  Pumping  Other \_\_\_\_\_  
 Test rate \_\_\_\_\_ gpm Duration of test \_\_\_\_\_ hrs.  
 Drawdown \_\_\_\_\_ ft.  
 Measured from:  top of casing  ground level  Other \_\_\_\_\_  
 Static Level (depth to water) \_\_\_\_\_ ft. Date: \_\_\_\_\_  
 Quality (clear, cloudy, taste, odor) \_\_\_\_\_  
 \*(Attach a copy of the pumping test record, per section 1521.05, ORC)

## PUMP

Type of pump \_\_\_\_\_ Capacity \_\_\_\_\_ gpm  
 Pump set at \_\_\_\_\_ ft.  
 Pump installed by \_\_\_\_\_

## WELL LOCATION

Location of well in State Plane coordinates, if available:  
 Zone \_\_\_\_\_ x \_\_\_\_\_ y \_\_\_\_\_  
 Elevation of well \_\_\_\_\_ ft./m. Datum plain:  NAD27  NAD83  
 Source of coordinates:  GPS  Survey  Other \_\_\_\_\_  
 Sketch a map showing distance well lies from numbered state highways, street intersections, county roads, buildings or other notable landmarks.



(If additional space is needed to complete well log, use next consecutively numbered form.)  
 Drilling Firm Belasco Drilling Services  
 Address 1519 Alum Creek Dr.

I hereby certify the information given is accurate and correct to the best of my knowledge.  
 Signed [Signature]  
 Date \_\_\_\_\_





## Water Well Log and Drilling Report

Ohio Department of Natural Resources  
 Division of Soil and Water  
 Phone: 614-265-6740 Fax: 614-265-6767

**Well Log Number: 816586**

View Image of Original Well Log

**ORIGINAL OWNER AND LOCATION**

**Original Owner Name:** CITY OF LANCASTER

**County:** FAIRFIELD

**Township:** HOCKING

**Section Number:**

**Address:** 225 MEMORIAL DR N

**Lot Number:**

**City:**

**State:** OH

**Zip Code:** 43130

**Location Number:**

**Location Map Year:**

**Location Area:**

**Latitude:** 39.7158

**Longitude:** -82.60696

**CONSTRUCTION DETAILS**

**Borehole Diameter:** 1:

**Borehole Depth:** 1: 94 ft.

**Depth to Bedrock:**

2:

2:

**Casing Diameter:** 1: 2 in.

**Casing Length:** 1: 85 ft.

**Casing Thickness:** 1:

2:

2:

2:

**Casing Height Above Ground:**

**Aquifer Type:** GLACIAL TILL

**Date of Completion:** 10/2/1995

**Total Depth:** 94 ft.

**Well Use:** MONITOR

**Driller's Name:** BELASCO DRILLING, INC.

**Screen Diameter:**

**Slot Size:**

**Screen Length:**

**Type:**

**Material:**

**Set Between:**

**Gravel Pack Material/Size:**

**Vol/Wt Used:**

**Method of Installation:**

**Placed:**

**Grout Material/Size:**

**Vol/Wt Used:**

**Method of Installation:**

**Placed**

**WELL TEST DETAILS**

**Static Water Level:**

**Test Rate:**

**Associated Reports**

**Drawdown:**

**Test Duration:**

**COMMENTS:**

**WELL LOG**

Formations	From	To
SAND	0	5
GRAY SILTY CLAY	5	22
SAND & GRAVEL	22	90
GRAY TILL	90	94

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# WELL LOG AND DRILLING REPORT

Ohio Department of Natural Resources  
 Division of Water, 1939 Fountain Square Drive  
 Columbus, Ohio 43224 Phone (614) 265-6739

816586

Permit Number

94-599

COUNTY Fairfield TOWNSHIP Hocking SECTION/LOT No. \_\_\_\_\_  
 (Circle One)  
 OWNER/BUILDER City of Lancaster Division of Water PROPERTY ADDRESS 225 N. Memorial Dr Lancaster  
 (Circle One or Both) Prec. Loc. (Address of well location) Number Street Zip Code + 4  
 LOCATION OF PROPERTY Lancaster, OH 43130

## CONSTRUCTION DETAILS

**CASING** (Length below grade) Borehole Diameter \_\_\_\_\_ in.  
 Diameter 2 in. Length 85 ft. Wall Thickness 2 1/2 in. Material Bentonite Volume used 200 lbs  
 Diameter \_\_\_\_\_ in. Length \_\_\_\_\_ ft. Wall Thickness \_\_\_\_\_ in. Method of installation Tremie  
 Type:  Steel  Galv.  PVC  Other \_\_\_\_\_  
 Thru Depth: placed from 75 ft. to 2 ft.  
 Joints:  Threaded  Welded  Solvent  Other \_\_\_\_\_  
**GRAVEL PACK** (Filler Pack)  
 Material natural Volume used NA  
 Method of Installation collapse  
 Depth: placed from 96 ft. to 75 ft.  
 Liner: NA Length \_\_\_\_\_ Type \_\_\_\_\_ Wall Thickness \_\_\_\_\_ in.  
**SCREEN**  
 Type (wire wrapped, louvered, etc.) Static Material PVC  
 Length 10 ft. Diameter 2 in.  
 Set between 95.5 ft. and 85.5 ft. Slot .010  
**GROUT**  
 Pitless Device  Adapter  Preassembled unit  
 Use of Well Monitoring Well  
 Rotary  Cable  Augered  Driven  Dug  Other \_\_\_\_\_  
 Date of Completion 10/2/95

## WELL LOG\*

INDICATE DEPTH(S) AT WHICH WATER IS ENCOUNTERED.  
 Show color, texture, hardness, and formation:  
 sandstone, shale, limestone, gravel, clay, sand, etc.

	From	To
<u>Fill - Subbase + Foundation sand</u>	<u>0</u>	<u>5'</u>
<u>Silty clay, grey, moist, Plastic</u>	<u>5</u>	<u>22'</u>
<u>Sand + gravel, well (water @ 22')</u>	<u>22'</u>	<u>90'</u>
<u>Glacial till, green/grey</u>	<u>90'</u>	<u>94'</u>

## WELL TEST

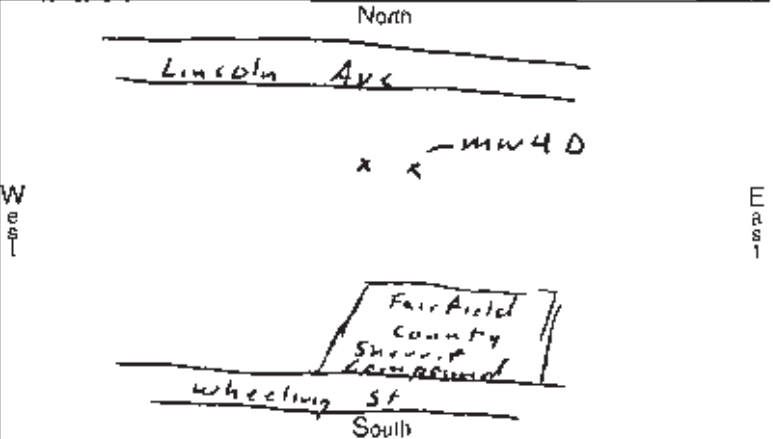
Bailing  Pumping\*  Other \_\_\_\_\_  
 Test rate \_\_\_\_\_ gpm Duration of test \_\_\_\_\_ hrs.  
 Drawdown \_\_\_\_\_ ft.  
 Measured from:  top of casing  ground level  Other \_\_\_\_\_  
 Static Level (depth to water) \_\_\_\_\_ ft. Date: \_\_\_\_\_  
 Quality (clear, cloudy, taste, odor) \_\_\_\_\_  
 \*(Attach a copy of the pumping test record, per section 1521.05, ORC)

## PUMP

Type of pump \_\_\_\_\_ Capacity \_\_\_\_\_ gpm  
 Pump set at \_\_\_\_\_ ft.  
 Pump installed by \_\_\_\_\_

## WELL LOCATION

Location of well in State Plane coordinates, if available:  
 Zone \_\_\_\_\_ x \_\_\_\_\_ y \_\_\_\_\_  
 Elevation of well \_\_\_\_\_ ft./m. Datum plain:  NAD27  NAD83  
 Source of coordinates:  GPS  Survey  Other \_\_\_\_\_  
 Sketch a map showing distance well lies from numbered state highways, street intersections, county roads, buildings or other notable landmarks.



(If additional space is needed to complete well log, use next consecutively numbered form.)  
 Drilling Firm Belasco Drilling Services  
 Address 1519 Alum Creek Dr.

I hereby certify the information given is accurate and correct to the best of my knowledge.  
 Signed [Signature]  
 Date \_\_\_\_\_



**Fairfield County Monitoring Wells MW-9S and MW-9D  
Bennett & Williams (2015)**

# BENNETT & WILLIAMS

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	14-04 FAIRFIELD JAIL	LOCATION	LANCASTER, OHIO
GEOLOGIST	LINDA ALLER	BORING NO.	9S
DRILLING AGENCY	WRIGHTS DRILLING	BORING TYPE	HSA
DATE STARTED	3/25/2015	STATIC WATER LEVEL	17.19FT BELOW GROUND IN MW
DATE COMPLETED	3/27/2015	TOTAL DEPTH	40FT
COMMENTS	8 1/4 HSA through fill; surface casing to 14ft; 4 1/4 HSA to 40ft; set well at 40ft		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	0	SS-1	.2	13		7.5YR7/2 Pinkish gray dry sandy gravel; aggregate from former building foundation: FILL.	NA
				3		7.5YR3/2 Dark brown damp to wet vf SAND (SP); FILL.	<.5
				3			
		SS-2	1.3	2		7.5YR4/4 Brown damp to wet clayey SILT (MH); FILL.	3.0
				2			
				1		5YR4/4 Reddish brown damp to wet red brick fragments and coal pieces; FILL.	
	5	SS-3	1.0	2		10YR2/1 Black organic wet to damp SILT with broken glass pieces (OL); FILL.	1.0
				1			
				1			
		SS-4	0	2			NA
				1			
				0			
		SS-5	.9	1		10YR2/1 Black damp to wet coal fragments, weathered; FILL.	1.0
				3			
				3			
	10	SS-6	.6	3		10YR4/2 Dark grayish brown wet mottled with 7.5YR5/6 Strong brown silty vf SAND, few (5%) coarse gravel (SM); FILL; water @ 10 feet.	<.5
				1			
				1			
		SS-7	1.4	2		2.5Y3/1 Very dark gray wet coarse SAND, few gravel, rounded; possible in-situ (SP).	<.5
				1			
				2			
		SS-8	1.8	1		10YR2/1 Black damp organic SILT; trace vf sand; wood (OL); possible alluvial deposits.	.75
				2			
				6			
		SS-9	1.6	2		2.5Y4/1 Dark gray wet clayey, sandy SILT; shell fragments throughout; sand is vf-medium (ML).	1.0
				2			
				2			
		SS10	2.0	0		2.5Y3/1 Very dark gray wet vf silty SAND; large wood pieces ~1 1/2 "; shell fragments; root hairs (SM).	<.5
				0			
				3			



# BENNETT & WILLIAMS

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	14-04 FAIRFIELD JAIL	LOCATION	LANCASTER, OHIO
GEOLOGIST	LINDA ALLER	BORING NO.	9S
DRILLING AGENCY	WRIGHTS DRILLING	BORING TYPE	HSA
DATE STARTED	3/25/2015	STATIC WATER LEVEL	17.19FT BELOW GROUND IN MW
DATE COMPLETED	3/27/2015	TOTAL DEPTH	40FT
COMMENTS	8 1/4 HSA through fill; surface casing to 14ft; 4 1/4 HSA to 40ft; set well at 40ft		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	20	SS11	1.4	3 6 7 10		2.5Y3/1 Very dark gray wet silty SAND, little gravel, subangular to rounded, primarily chert; wood pieces (SM).	1.5
		SS12	1.6	8 10 8 7		2.5Y3/2 Very dark grayish brown wet GRAVEL, some sand (30%), little silt and clay (20%)(GM). 2.5Y4/2 Dark grayish brown damp SILT, few rounded small gravel (ML).	<.5 2.0
	25	SS13	1.6	3 3 4		2.5Y4/1 Dark gray moist SILT; sightly dilatent; some intervals varved; wood piece (ML).	1.5
		SS14	1.7	4 10 4 2		10YR4/1 Dark gray wet coarse SAND, little vf-medium sand (15%), little silt/clay(15%)(SW). Note: Water rose approx. 13 ft on rods when drilled. 10YR4/1 Dark gray wet GRAVEL few coarse sand (10%), little vf-medium sand (15%), little silt/clay (15%)(GM).	.5
		SS15	1.8	1 3 10		10YR4/1 Dark gray moist clayey SILT; top of section is varved with vf sand between varves (ML).	.5
	30	SS16	.7	10 3 7 5 4		10YR4/1 Dark gray wet medium SAND, few fine gravel (10%), few coarse gravel (10%), little silt/clay (20%) (SM). 10YR4/1 Dark gray wet fine to coarse GRAVEL, little med-coarse sand (25%), little silt/clay (15%) (GM).	<.5
		SS17	1.5	3 6 12 20		10YR4/1 Dark gray wet coarse SAND, some fine-medium sand (30%), some fine-medium sand (30%), few silt/clay (5%) (SW). 10YR4/1 Dark gray wet SILT, varved (ML). 10YR4/1 Dark gray wet coarse GRAVEL, little fine gravel (20%), little vf-fine sand (20%), little silt/clay (20%) (GM).	<.5
	35	SS18	1.0	1 1 2 10		10YR4/2 Dark grayish brown medium SAND, few fine-coarse gravel, little coarse sand (15%), little vf-med sand (15%), few silt/clay (10%) (SP).	<.5
		SS19	1.0	2 2 4 6		10YR4/2 Dark grayish brown wet fine to medium SAND, little coarse sand (15%), few fine gravel (5%), little silt/clay (20%), dilatent (SM).	<.5
	40	SS20	1.5	1 2 6 9		10YR4 /2 Dark grayish brown wet fine GRAVEL, few coarse gravel (10%), little coarse sand (25%), little vf-med sand (25%), few silt/clay (5%) (GW).	<.5

# BENNETT & WILLIAMS

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	14-04 FAIRFIELD JAIL	LOCATION	LANCASTER, OHIO
GEOLOGIST	LINDA ALLER	BORING NO.	9D
DRILLING AGENCY	WRIGHTS DRILLING	BORING TYPE	HSA
DATE STARTED	3/25/2015	STATIC WATER LEVEL	18.2FT BELOW GROUND IN MW
DATE COMPLETED	3/30/2015	TOTAL DEPTH	90FT; WELL SET AT 85FT
COMMENTS	8 1/4 HSA through fill; surface casing to 15ft; 4 1/4 HSA to 90ft; set well at 85ft		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	0			12		10YR3/6 Dark yellowish brown damp vf SAND and silt (SM); FILL.	
		SS-1	0.7	3		10YR5/6 Yellowish brown damp SILT; weathered red brick fragments (ML); FILL.	.75
				3			
				2			
		SS-2	.25	1			2.0
				1			<.5
				1		7.5YR3/1 Very dark gray damp organic sandy SILT, weathered red brick fragments (OL); FILL.	
				1			
	5	SS-3	.5	1			<.5
				4			
				1			
		SS-4	1.4	0		10YR4/4 Dark yellowish brown damp to moist vf sandy SILT (ML); FILL.	1.0
				1			
				3		10YR3/1 Very dark gray damp to moist vf SAND; coal and brick fragments (SP); FILL.	1.0
				3			
		SS-5	1.6	1		10YR3/1 Very dark gray moist to wet mottled CINDERS and angular coarse gravel; FILL.	N/A
				2			
				2		10YR5/6 Yellowish brown damp mottled vf sandy SILT; occassional gravel; Cinders at bottom of sample (ML); FILL.	
	10			4			
		SS-6	.6	1		10YR5/3 Brown wet silty vf SAND, coarse sand and sandstone fragments, flaggy sandstone, angular (SM); FILL.	1.5
				2			
				5			
				5			
		SS-7	.2	3		10YR4/2 Dark grayish brown wet coarse SAND, little medium sand (15%), little vf-fine sand (15%), few fine gravel (5%); little silt/clay (15%); (SW); may be in-situ, but not enough recovery to determine.	<.5
				1			
				1			
				2			
	15	SS-8	2.0	2		10YR2/1 Black wet vf sandy SILT/silty sand; occassional pieces of wood ~ 1" x 1/8"; layers of vf sand; occassional rounded gravel; (ML); IN SITU; set surface casing 15 feet.	1.0
				3			
				4			1.5
				6			
		SS-9	1.6	3		2.5Y4/1 Dark gray damp clayey SILT; shell fragments, occassional medium sand layer ~ 1/32" thick; (MH).	2.5
				2			1.0
				2			.75
				2			
				1			
		SS10	1.8	3		2.5Y4/1 Dark gray damp to moist silty medium SAND, few gravel (5%); (SM).	<.5
				3			
				5			
	20						

# BENNETT & WILLIAMS

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT 14-04 FAIRFIELD JAIL LOCATION LANCASTER, OHIO  
 GEOLOGIST LINDA ALLER BORING NO. 9D  
 DRILLING AGENCY WRIGHTS DRILLING BORING TYPE HSA  
 DATE STARTED 3/25/2015 STATIC WATER LEVEL 18.2FT BELOW GROUND IN MW  
 DATE COMPLETED 3/30/2015 TOTAL DEPTH 90FT; WELL SET AT 85FT  
 COMMENTS 8 1/4 HSA through fill; surface casing to 15ft; 4 1/4 HSA to 90ft; set well at 85ft

ELEV.MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	20	SS11	1.8	1		2.5Y4/1 Dark gray wet SAND, little coarse gravel (15%), some silt/clay (35%); (SM).	<.5
				4			1.5
				8			<.5
				17			
		SS12	1.9	4		2.5Y4/1 Dark gray wet fine GRAVEL, few coarse gravel (10%), little medium-coarse sand (20%), few vf-fine sand (5%), little silt/clay (15%); (GW).	<.5
				5			4.0
				6			2.0
		SS13	1.8	2		2.5Y4/1 Dark gray damp to moist SILT thickly varved with vf sand layers between varves; dilatent in some intervals; (ML).	
	25			3			
				5			.75
		SS14	2.0	8		2.5Y4/1 Dark gray wet silty SAND and GRAVEL, coarser and less fines below 26 feet; (GM).	<.5
				12			
				9			
		SS15	1.5	4		2.5Y4/1 Very dark gray damp silty vf to medium SAND; few gravel (SM).	
				8			
				8			1.0
	30	SS16	1.3	2		10YR3/1 Very dark gray damp silty CLAY; TILL; coarse gravel, subrounded to rounded; (CL); Note: When sample removed, free water rose on rods ~10 feet.	1.5
				6			2.25
				10			3.5
		SS17	1.3	4		10YR3/1 Very dark gray wet clayey, sandy SILT; TILL; fine gravel rounded to subrounded; (MH).	2.0
				12			
				14			<.5
		SS18	1.3	2		2.5Y4/2 Dark grayish brown wet coarse SAND, little fn-coarse gravel (15%); little fn-med sand (15%); little vf-fine sand (15%); few silt/clay (5%); (SW).	<.5
	35			3			
				6			
		SS19	1.8	1		10YR4/1 Dark gray wet coarse SAND, few fine gravel (10%), little fn-medium sand (25%), few silt/clay (5%); (SW).	<.5
				2			
				8			
		SS20	2.0	1		2.5Y4/2 Dark grayish brown wet coarse SAND, some fine-medium sand (30%), little fine gravel (25%), silt/clay (5%); (SW); Note: difficulty removing spoon.	<.5
				2			
				4			
	40			8			

# BENNETT & WILLIAMS

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	14-04 FAIRFIELD JAIL	LOCATION	LANCASTER, OHIO
GEOLOGIST	LINDA ALLER	BORING NO.	9D
DRILLING AGENCY	WRIGHTS DRILLING	BORING TYPE	HSA
DATE STARTED	3/25/2015	STATIC WATER LEVEL	18.2FT BELOW GROUND IN MW
DATE COMPLETED	3/30/2015	TOTAL DEPTH	90FT; WELL SET AT 85FT
COMMENTS	8 1/4 HSA through fill; surface casing to 15ft; 4 1/4 HSA to 90ft; set well at 85ft		

ELEV.MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	40	SS21	2.0	6		Same as above; (SP); sand heaved 3 feet into augers when spoon removed.	<.5
				13			
				15			
				17			
		SS22	2.0	7		@43' becomes coarser - GRAVEL; (GW). 2.5Y4/1 Dark gray wet silty fine SAND; (SM).	<.5
				12			
				16			
				22			
	45	SS23	2.0	4		2.5Y4/1 Dark gray wet medium SAND, few coarse gravel (5%), few fine gravel (10%), little coarse sand (20%), little vf-fn sand (2%), few silt/clay (10%); (SW).	<.5
				8			
				16			
		SS24	.9	3			<.5
				5			
				8			
		SS25	2.0	12		2.5Y 4/1 Dark gray wet fine SAND; (SP).	<.5
				9			
				11			
	50	SS26	1.8	17		10YR5/4 Yellowish brown wet fine GRAVEL, rounded to subrounded, some medium-coarse sand (30%), little vf-fine sand (20%), few silt/clay (10%); (GW).	<.5
				19			
				18			
		SS27	2.0	11		10YR4/1 Dark gray wet coarse SAND, few fine gravel (10%), little fine to medium sand (25%), few silt/clay (5%); (SP); Note: could not remove spoon without washing with water.	<.5
				21			
				27			
				36			
	55	SS28	2.0	10		10YR4/1 Dark gray wet fine GRAVEL, some coarse sand (45%), few silt clay (5%); (GP).	<.5
				14			
				18			
		SS29	2.0	7		10YR4/1 Dark gray wet very fine sandy SILT; (ML).	<.5
				10			
				12			
				14			
		SS30	2.0	5		10YR3/2 Very dark grayish brown wet coarse SAND, little fine gravel (20%), some vf-medium sand (30%), few silt/clay (5%); (SW).	<.5
				15			
				18			
				24			
	60						

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	14-04 FAIRFIELD JAIL	LOCATION	LANCASTER, OHIO
GEOLOGIST	LINDA ALLER	BORING NO.	9D
DRILLING AGENCY	WRIGHTS DRILLING	BORING TYPE	HSA
DATE STARTED	3/25/2015	STATIC WATER LEVEL	18.2FT BELOW GROUND IN MW
DATE COMPLETED	3/30/2015	TOTAL DEPTH	90FT; WELL SET AT 85FT
COMMENTS	8 1/4 HSA through fill; surface casing to 15ft; 4 1/4 HSA to 90ft; set well at 85ft		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
	60	SS31	1.2	5 10 9 9		10YR4/1 Dark gray wet coarse SAND, some fine to coarse gravel (30%), some fine to medium sand (20%), few silt/clay (5%) (SW).	<.5
		SS32	2.0	6 18 24 27		10YR4/1 Dark gray wet coarse SAND; some vf-medium sand (35%), few fine gravel (10%), few silt/clay (5%); (SP).	<.5
				5		⊙ 64 feet, sand heaves 2 feet into augers.	
	65	SS33	2.0	10 15 18		⊙ 66 feet, becomes coarser and "dirtier".	<.5
				12			
		SS34	1.0	18 18 24		⊙ 68 feet, gravel content increased to 35%.	<.5
				6			
		SS35	2.0	14 18 27			<.5
	70			6			
		SS36	2.0	9 14 14			<.5
				10		10YR4/1 Dark gray wet clayey SILT; (ML); possible old overbank deposits, but cemented.	
		SS37	2.0	14 17 24		10YR4/1 Dark gray wet coarse SAND, some vf-medium sand (37%), few fine gravel (2%), few silt/clay (5%); (SP). NOTE: bottom .3 feet is coarser.	<.5
				5		5Y5/2 Olive gray wet medium GRAVEL, cemented, indurated; (GP).	
	75	SS38	2.0	11 18 25		10YR4/1 Dark gray wet coarse SAND, little fine gravel (2%), some vf-medium sand (37%), few silt/clay (5%); (GP). Note: becomes coarser with depth.	<.5
				17	2.5Y5/2 Grayish brown wet fine to coarse GRAVEL, little fine to medium sand (25%), few coarse sand (5%), little silt/clay (20%); (GW). Note: ⊙ 76 feet, evidence of gleying and oxidation in ~1" layers.	2.5	
		SS39	1.3	18 23 23		2.5	
				14			
		SS40	.9	19 24 27	2.5Y4/3 Olive brown GRAVEL, few medium to coarse sand (10%), little vf-fine sand (20%), little silt/clay (15%); (GW).	<.5	
	80						

# BENNETT & WILLIAMS

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT 14-04 FAIRFIELD JAIL LOCATION LANCASTER, OHIO  
 GEOLOGIST LINDA ALLER BORING NO. 9D  
 DRILLING AGENCY WRIGHTS DRILLING BORING TYPE HSA  
 DATE STARTED 3/25/2015 STATIC WATER LEVEL 18.2FT BELOW GROUND IN MW  
 DATE COMPLETED 3/30/2015 TOTAL DEPTH 90FT; WELL SET AT 85FT  
 COMMENTS 8 1/4 HSA through fill; surface casing to 15ft; 4 1/4 HSA to 90ft; set well at 85ft

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS	Penetrometer
80	SS41		2.0	18		10YR4/1 Dark gray wet silty medium SAND, coarsening to coarse sand with depth; (SP).	<.5
				20			
				20			
				20			
	SS42		.9	17		2.5Y5/2 Grayish brown coarse wet GRAVEL, little fine to medium gravel (20%), few coarse sand (10%), little silt/clay (20%); (GP); oxidized layer at 81.5 feet. 2.5Y5/2 Grayish brown wet silty vf SAND; (SP).	<.5
				28			
				50/5			
	SS43		1.3	18		10YR4/2 Dark grayish brown wet fine SAND, some medium sand (30%), few fine gravel (2%), few silt/clay (10%); (SW). Unable to remove sample without adding water.	<.5
				32			
				50/4			
	SS44		1.0	18		2.5Y5/2 Grayish brown wet silty vf SAND, few fine gravel; (SM).	<.5
				25			
35							
SS45		2.0	6		2.5Y4/2 Dark grayish brown wet medium SAND, little silt/clay (20%); (SM).	<.5	
			13				
			19				
			41				
90							
95							
100							

## **Appendix B**

### **Photographs from Field Activities (September 1 and 2, 2015)**



Figure B-1. Markings used to identify boring locations (August 27, 2015).



Figure B-2. Solid stem augers on ground waiting to be used in drilling (September 1, 2015).





Figure B-3. Drilling using solid stem augers (September 1, 2015).



Figure B-4. Cuttings on solid stem augers used to identify depth to bottom of fill materials (September 1, 2015).



Figure B-5. Example of dark organic in-situ soils underlying the fill in some locations (September 2, 2015).



Figure B-6. Emptying the container used to collect decontamination water from the augers into existing onsite barrel containing decontamination water (September 2, 2015).

## **Appendix C**

### **Boring Logs from the September 2015 Field Investigation**

BENNETT & WILLIAMS,  
 ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-11</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL
817	5					
812	10					10YR4/1 Dark gray, moist, SILT, slightly dilatent and weak, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-12</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger, Split spoon below</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12.5 Feet</u>
COMMENTS	<u>Drilled to 8.5' w/ SSA; removed augers; colleted 2 split spoons 8.5-12.5 feet.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL
817	5					
		SS-1	1.6'	3 2 1 3		10YR3/1 Very dark gray, damp, silty, very fine sand, foundry sand, glass pieces and wood fragments (FILL).
812	10					No recovery. Abandoned hole.
		SS-2	0'	4 4 3 2		
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-12A</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>13 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retraction augers and viewing material on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL
817	5					
812	10					
						10YR3/1 Very dark gray, moist SILT, weak and slightly dilatent (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.





PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-13</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL
817	5					
812	10					10YR3/2 Very dark grayish brown, moist, clayey SILT, weak, no dilatency, evidence of slight mottling, wood fragments, massive, looks like overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-14</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>15 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
-822.25	0					Foundry Sand with glass pieces, FILL.
-817.25	5					
-812.25	10					
	15					10YR3/2 Very dark grayish brown, wet, very fine sandy SILT, few pea gravel, weak, slightly dilatent, appears to be overbank deposits (MH).
	20					



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-15</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>16 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV.MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand with glass pieces, FILL.
817	5					
812	10					
	15					10YR3/1 Very dark gray, wet, some fine to medium GRAVEL (40%), little coarse sand (20%), little fine to medium sand (25%), little silt/clay (15%), possible old river channel (GW).
						10YR3/1 Very dark gray, moist, SILT, weak, no dilatency, appears to be overbank deposits (MH).
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-16</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, piece of wire wrapped around auger, FILL.
817	5					
812	10					2.5Y4/2 Dark grayish brown, moist, clayey SILT, weak, no dilatency, varved, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-17</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand and glass fragments, FILL.
817	5					
812	10					
						2.5Y3/2 Very dark grayish brown, moist SILT, weak, no dilatancy, wood fragments, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-18</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>14 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand and glass fragments, FILL.
817	5					
812	10					
						2.5Y3/2 Very dark grayish brown, moist, SILT to clayey silt, weak, no dilatency, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-19</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL.
817	5					
812	10					10YR3/1 Very dark gray, damp, clayey SILT, weak, no dilatency, massive (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-20</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>13 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
820	0					Foundry Sand, glass, pieces of wire, FILL.
815	5					
810	10					
						10YR5/4 Yellowish brown mottled with 10YR6/8 brownish yellow, moist, clayey SILT, soft, no dilatency, not organic (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-21</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
818	0					Foundry Sand, glass pieces and charcoal, FILL.
813	5					
808	10					
						10YR3/2 Very dark grayish brown mottled with 10YR5/6 yellowish brown, moist clayey SILT, soft, no dilatency, possible overbank deposits associated with the banks of a stream (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-22</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
819	0					Foundry Sand with glass pieces, FILL.
814	5					
809	10					10YR4/4 Dark yellowish brown, damp silty CLAY, medium strength, no dilatency, possibly the banks of a stream (CL).
	15					
	20					



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-23</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
819	0					Foundry Sand, glass pieces, FILL.
814	5					
809	10					10YR3/2 Very dark grayish brown, moist clayey SILT, weak, no dilatency, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-24</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
819	0					Foundry Sand, ceramic Ball mason jar cap, FILL.
814	5					
809	10					
						10YR5/6 Yellowish brown, damp, clayey SILT, soft/weak, no dilatency, possibly the bank of a stream (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-25</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
819.5	0					Foundry Sand, FILL.
814.5	5					
809.5	10					10YR4/6 Dark yellowish brown, damp, clayey SILT, weak, no dilatency, possibly the bank of a stream (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-26</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, slag and glass, FILL.
817	5					
812	10					
						10YR3/3 Dark brown, damp, silty CLAY, medium strength, no dilatency, (CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-27</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, glass pieces, FILL.
817	5					
812	10					10YR4/4 Dark yellowish brown, moist, silty CLAY, weak, no dilatency, pieces of wood, appears to be a river bank (CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-28</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>10 Feet</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, pieces of glass, FILL.
817	5					
812	10					10YR5/4 Yellowish brown, wet, clayey SILT, weak, no dilatency, (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-29</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>14 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
-822.25	0					Foundry Sand and glass fragments, FILL.
-817.25	5					
-812.25	10					
						2.5Y3/0 Very dark gray, moist, clayey SILT, weak, no dilatency, possible wood pieces, swampy deposits (MH).
-807.25	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT 14-04 Fairfield Co. - Jail LOCATION 324 W. Wheeling St., Lancaster, OH  
 GEOLOGIST LINDA ALLER BORING NO. BW-30  
 DRILLING AGENCY WRIGHTS DRILLING BORING TYPE 4.00" Solid Stem Auger  
 DATE STARTED 9/1/2015 STATIC WATER LEVEL None encountered  
 DATE COMPLETED 9/1/2015 TOTAL DEPTH 16.5 Feet  
 COMMENTS Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, pieces of glass and bricks, FILL.
817	5					
812	10					
807	15					
						10YR3/1 Very dark gray, damp, SILT, not dilatent (MH).
	20					



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-31</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>16 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, glass, pieces of wire, FILL.
817	5					
812	10					
807	15					10YR3/1 Very dark gray, moist, SILT, soft/weak, no dilatency, organic stains, wood, appears to be overbank deposits (MH).
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-32</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>16 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
821	0					FILL to 14' Foundry Sand and top 5' is 10YR4/4 Dark yellowish brown, silty Clay, FILL.
816	5					
811	10					
807						10YR3/1 Very dark gray, moist, SILT, no dilatency, weak, wood fragments, swampy deposits-organics, appears to be overbank deposits (MH).
806	15					
805						
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-33</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, possible roofing materials, FILL.
817	5					
812	10					5Y4/1 Dark gray, moist clayey SILT or silty CLAY, weak, no dilatency, appears to be overbank deposits (MH or CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-34</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/1/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/1/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
818.5	0					Foundry Sand, wire piece, FILL.
813.5	5					
808.5	10					
						10YR4/1 Dark gray mottled with 10YR5/8 yellowish brown, moist, silty CLAY, soft, no dilatency, possibly the bank of a stream (CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-35</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>11 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
817.5	0					Foundry Sand, small glass pieces, FILL.
812.5	5					10YR3/1 Very dark gray, damp, silty CLAY, medium strength, no dilatency, organics, possibly deposits along creek (CL).
						10YR5/6 Yellowish brown mottled with 10YR4/1 dark gray, damp silty CLAY, weak, no dilatency (CL).
807.5	10					2.5Y4/2 Dark grayish brown, damp to moist, silty CLAY, weak, no dilatency (CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-36</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>10.5 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
818.5	0					Foundry Sand, small glass pieces, FILL.
813.5	5					
808.5	10				<p>10YR3/2 Very dark grayish brown, damp, silty CLAY, weak, no dilatency (CL).</p> <p>10YR4/6 Dark yellowish brown, moist, clayey SILT, weak, no dilatency (MH).</p>	
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-37</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
819	0					Foundry Sand, small glass pieces, FILL.
814	5					
809	10					
						10YR5/6 Yellowish brown mottled with 10YR4/1 Dark gray, damp, silty CLAY, medium strength, no dilatency, possibly the bank of a stream (CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-38</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		


ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
820	0					Foundry Sand, glass pieces, FILL.
815	5					2.5Y3/2 Very dark grayish brown, moist, silty CLAY, weak, no dilatency, appears to be overbank deposits (CL).
810	10					
	15					
	20					



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

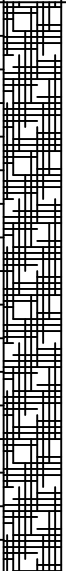

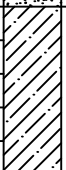
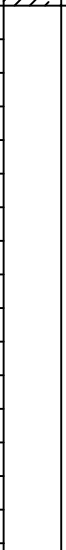
PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-39</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
818	0					Foundry Sand, glass pieces, FILL.
813	5					
808	10					10YR3/3 Dark brown, moist, silty CLAY, weak, no dilatency, appears to be the bank of a stream (CL).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-40</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
820.5	0					Foundry Sand, glass pieces, FILL.
815.5	5					2.5Y5/4 Light olive brown, damp, fine SAND, in-situ, oxidized (SP).
810.5	10					2.5Y3/2 Very dark grayish brown, moist, clayey SILT, weak, no dilatency, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-41</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>11 Feet</u>
COMMENTS	<u>Drilled to confirm BW-32; stopped before natural materials encountered.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
821	0					Foundry Sand, FILL.
816	5					
811	10					
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-42</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>9 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
823.75	0					Foundry Sand, FILL.
818.75	5					
813.75	10					© 9' 10YR3/2 Very dark grayish brown, moist, clayey SILT, no dilatency, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-43</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>12 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
821.75	0					Foundry Sand, glass pieces, FILL.
816.75	5					
811.75	10					10YR3/3 Dark brown, fine, wet, silty SAND (58%), silt/clay (40%), few fine, well rounded, quartz gravel (2%), possible old river channel (SP-SM).
	15					
	20					

# BENNETT & WILLIAMS, ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-44</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>13 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
826	0					Foundry Sand, FILL.
821	5					2.5Y4/4 Olive brown, damp to moist, clayey SILT, weak, no dilatency, appears to be overbank deposits (MH).
816	10					
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-45</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>16 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822.25	0					Foundry Sand with glass pieces, FILL.
817.25	5					
812.25	10					
807.25	15					5Y4/1 Dark gray, moist, clayey SILT, with about 5% fine gravel, weak, no dilatency, coarsens with depth to gravelly sand, possible old river channel (MH).
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-46</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>13 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
821.75	0					Foundry Sand with glass pieces and wire, FILL.
816.75	5					
811.75	10					10YR3/1 Very dark gray, moist, SILT, no dilatency, wood and roots, dark organic swampy deposits (MH).
	15					
	20					



# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-47</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>13 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL.
817	5					
812	10					10YR3/2 Very dark grayish brown, moist, clayey SILT, weak, no dilatency, appears to be overbank deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-48</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822	0					Foundry Sand, FILL.
817	5					10YR5/6 Yellowish brown, wet, silty fine, oxidized SAND, few angular small gravel (SP-SM).
812	10					10YR3/2 Very dark grayish brown, moist clayey SILT, weak, no dilatency, possibly the bank of a stream (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.




PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-49</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>14 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
823.5	0					Foundry Sand, FILL.
818.5	5					
813.5	10					2.5Y2/0 Black, moist, clayey SILT, weak, no dilatency, trace very fine sand, organic, swampy deposits (MH).
	15					
	20					

# BENNETT & WILLIAMS,

ENVIRONMENTAL CONSULTANTS, INC.

PROJECT	<u>14-04 Fairfield Co. - Jail</u>	LOCATION	<u>324 W. Wheeling St., Lancaster, OH</u>
GEOLOGIST	<u>LINDA ALLER</u>	BORING NO.	<u>BW-50</u>
DRILLING AGENCY	<u>WRIGHTS DRILLING</u>	BORING TYPE	<u>4.00" Solid Stem Auger</u>
DATE STARTED	<u>9/2/2015</u>	STATIC WATER LEVEL	<u>None encountered</u>
DATE COMPLETED	<u>9/2/2015</u>	TOTAL DEPTH	<u>10 Feet</u>
COMMENTS	<u>Lithologic descriptions made by drilling to depth, retracting augers and viewing materials on auger.</u>		

ELEV. MSL	DEPTH FT.	SAMPLE NO.	RECOVERY	BLOWS/6in	LEGEND	DESCRIPTION OF MATERIALS
822.75	0					Foundry Sand, FILL.
817.75	5					2.5Y5/2 Grayish brown mottled with 10YR5/6 yellowish brown, moist, silty CLAY, weak, no dilatency, laminated, very oxidized throughout, may have been a stream bank (CL).
812.75	10					
	15					
	20					

## **Appendix D**

### **Profiles of Estimated Elevations of Natural Materials (amsl)**

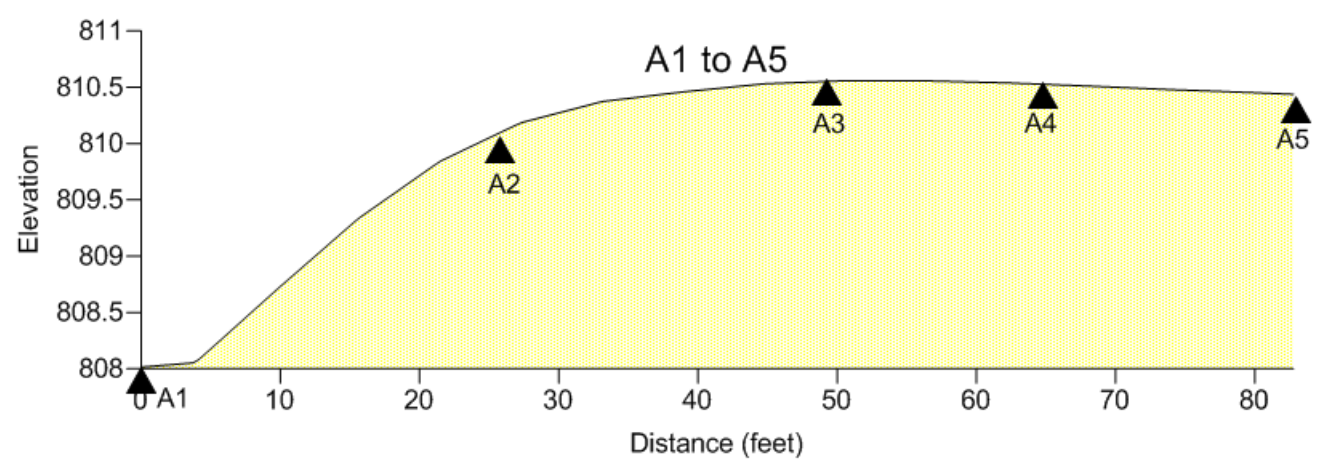
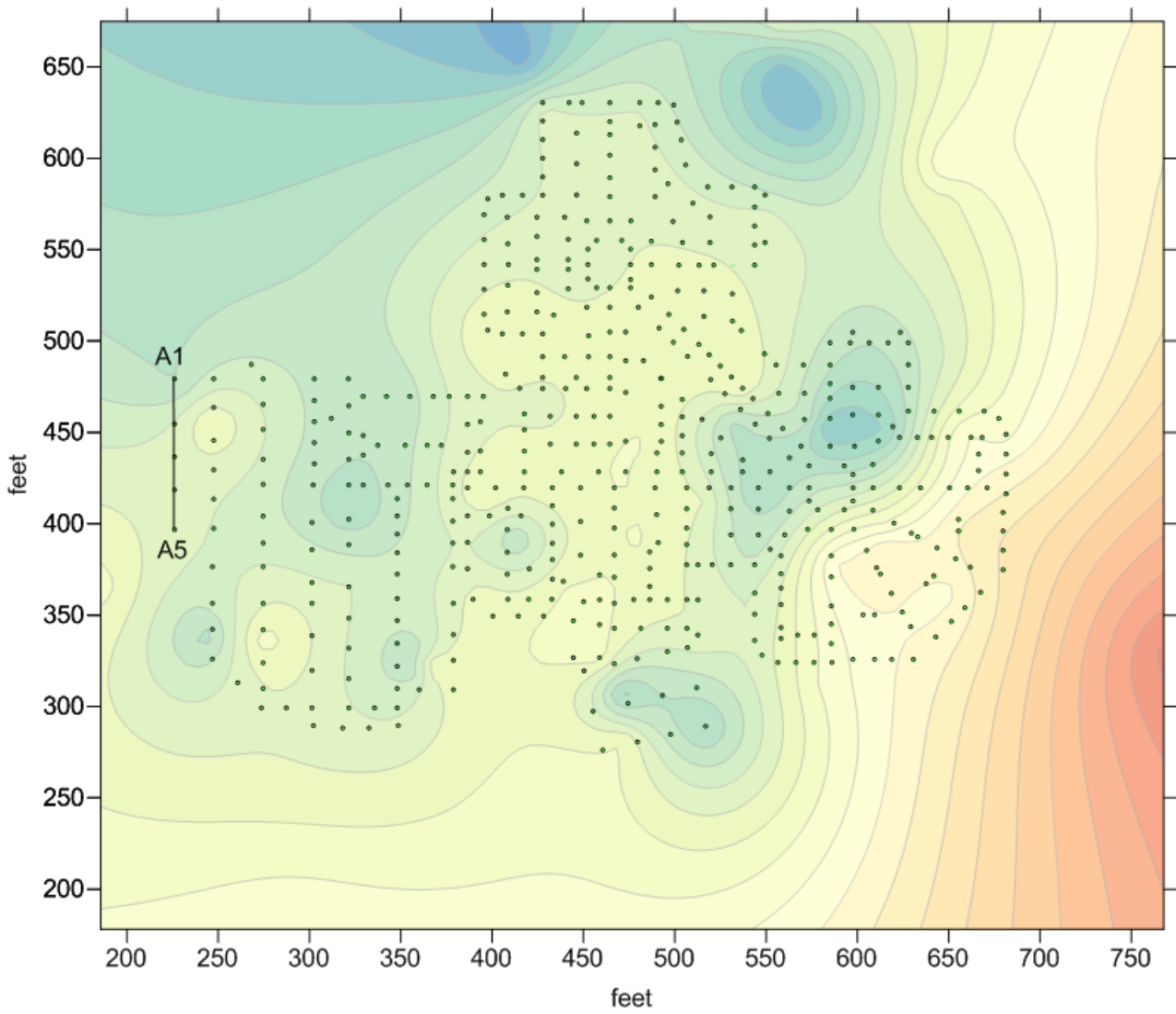


Figure D-1. Profile from A1 to A5.

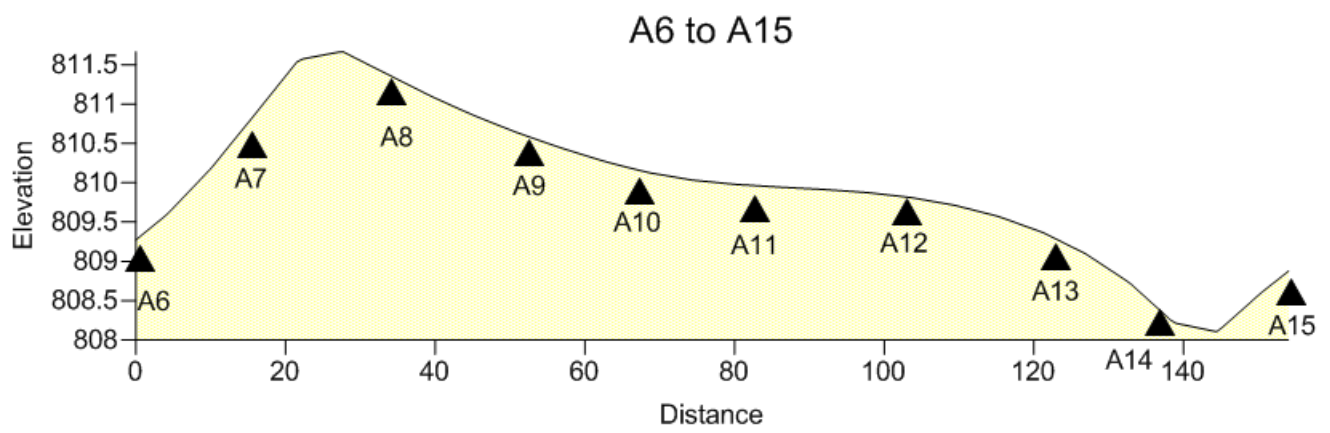
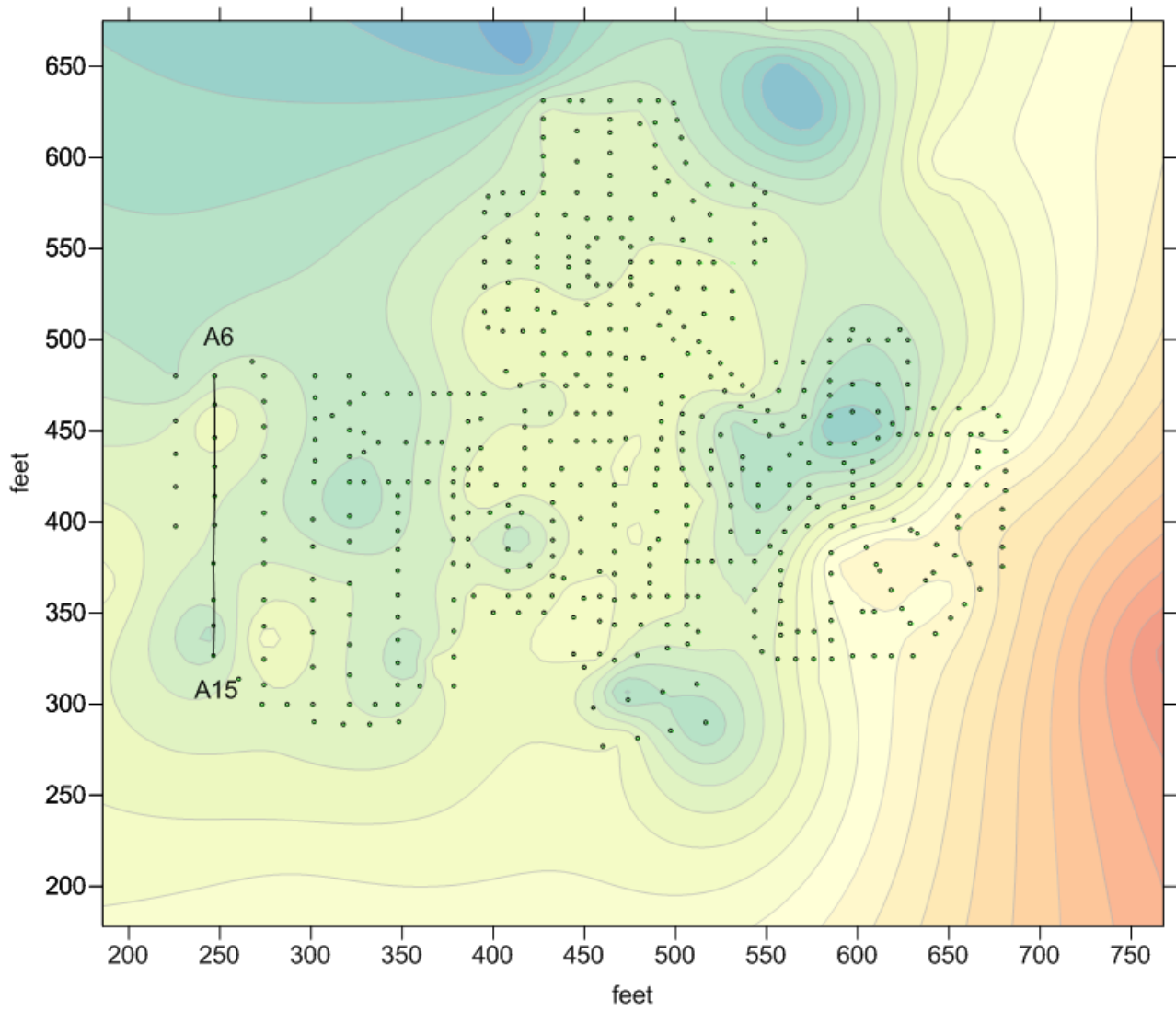


Figure D-2. Profile from A6 to A15.

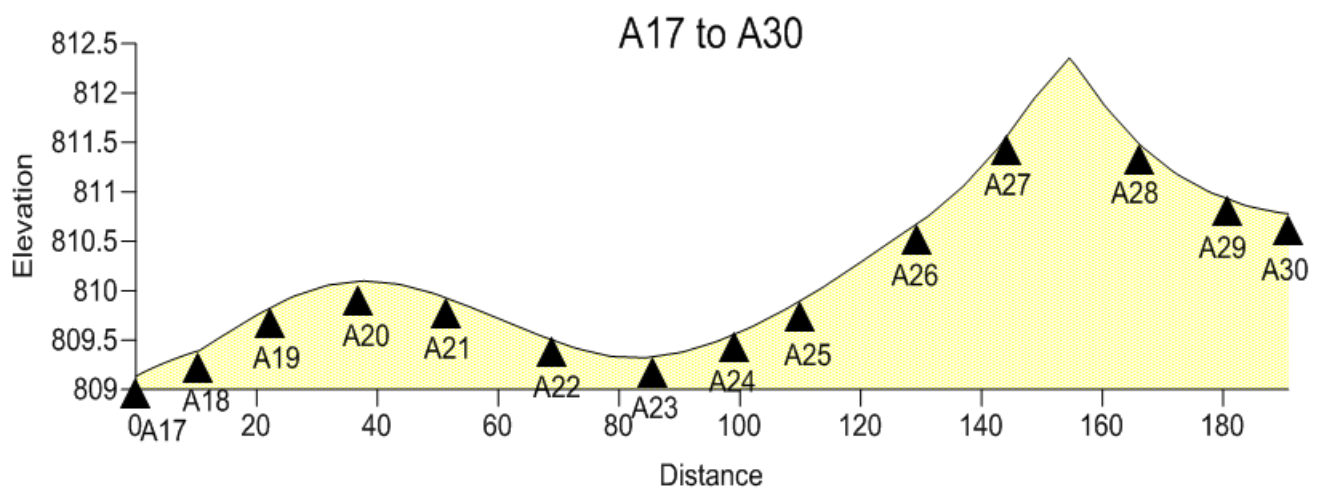
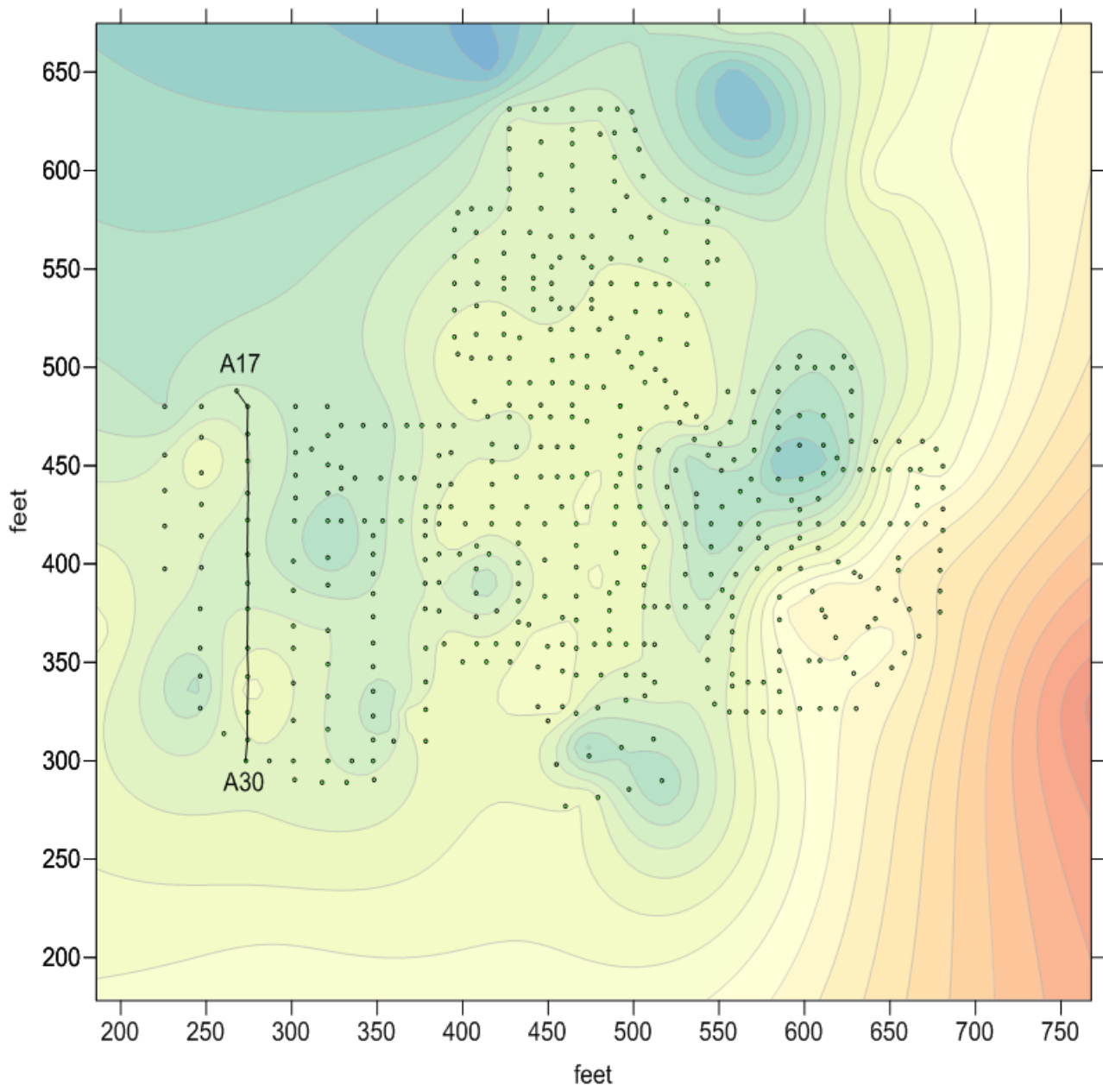


Figure D-3. Profile from A17 to A30.



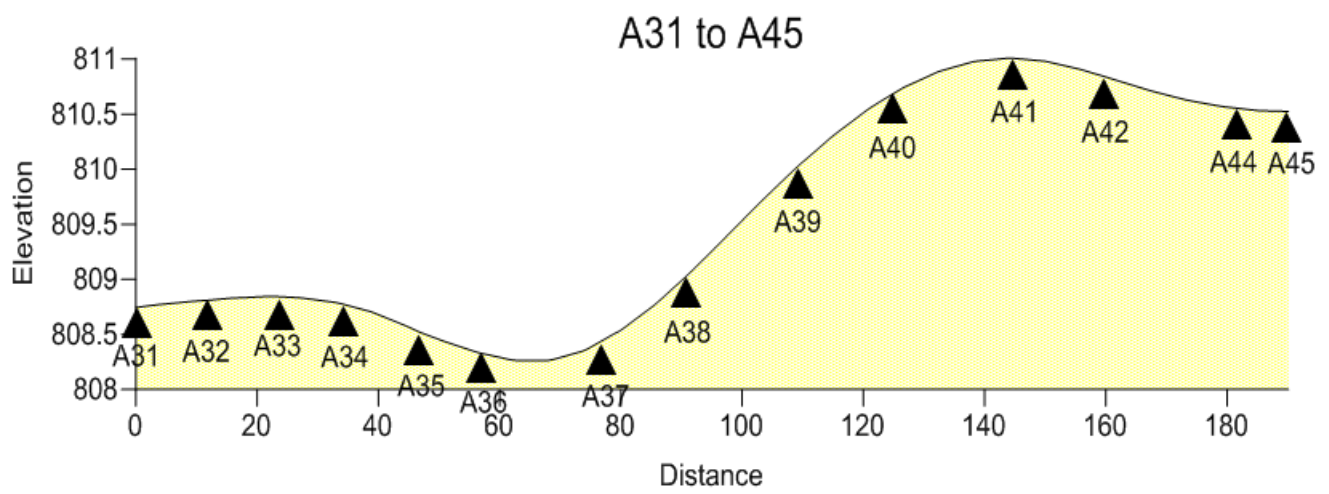
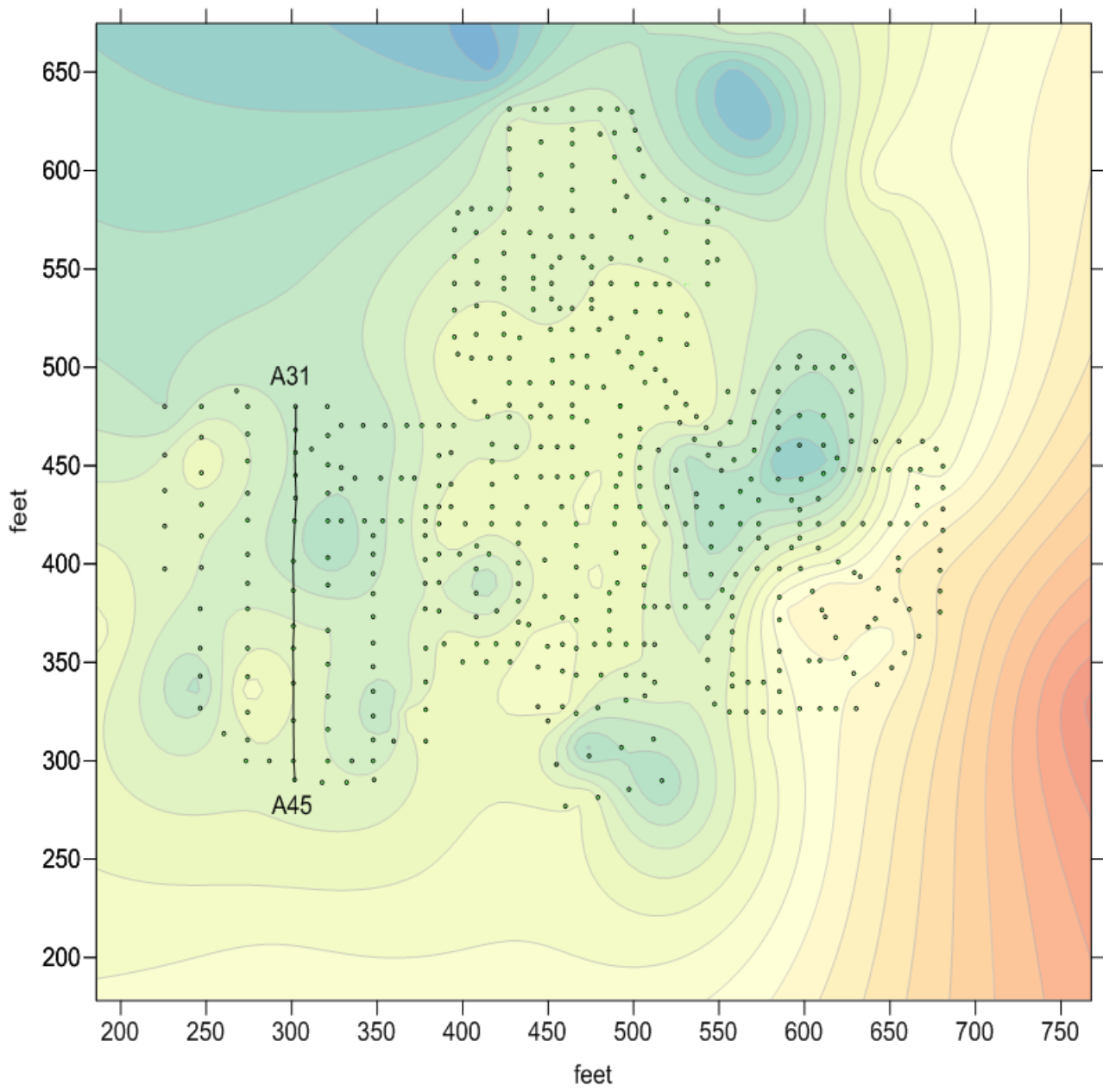


Figure D-4. Profile from A31 to A45.

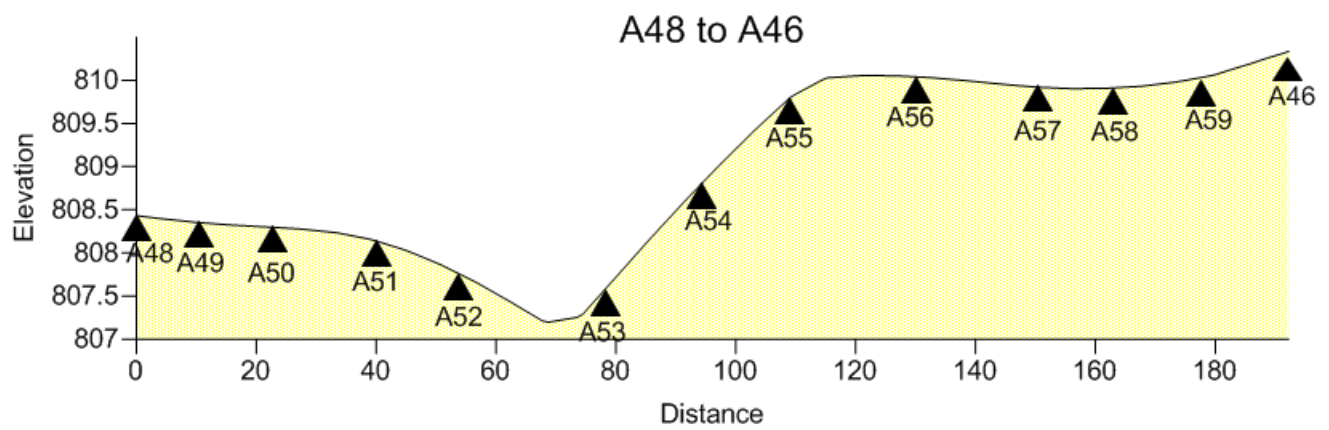
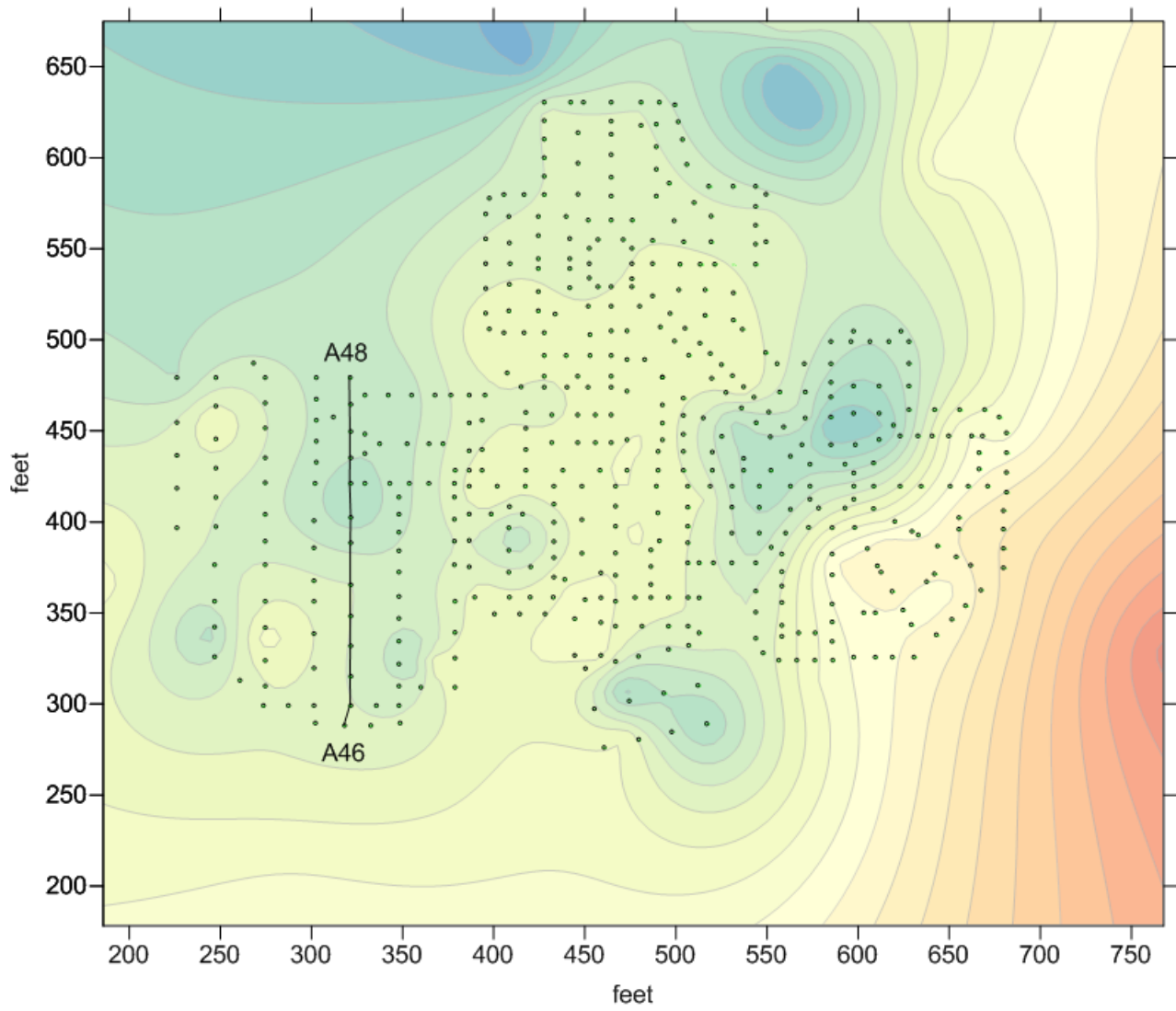


Figure D-5. Profile from A48 to A46.

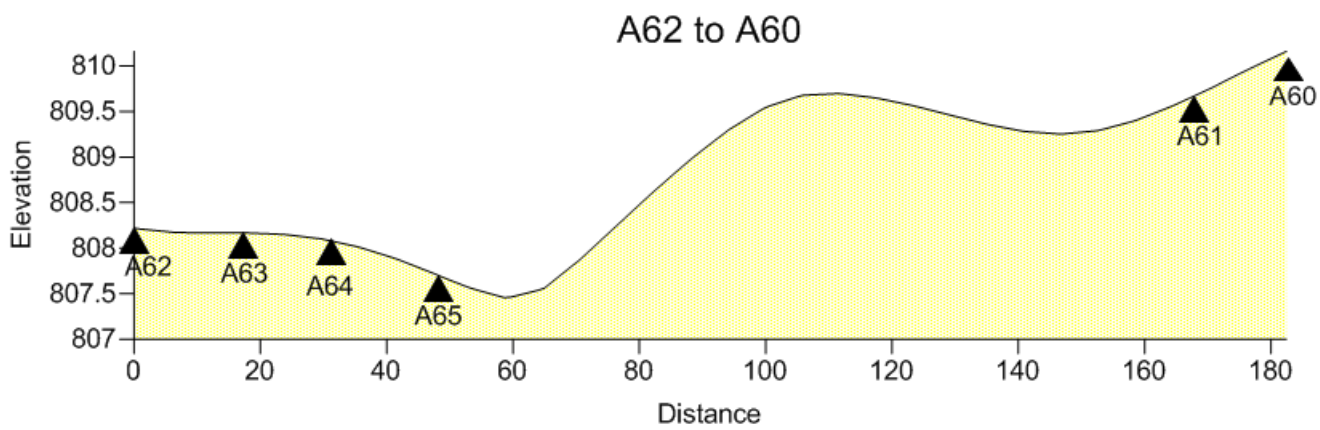
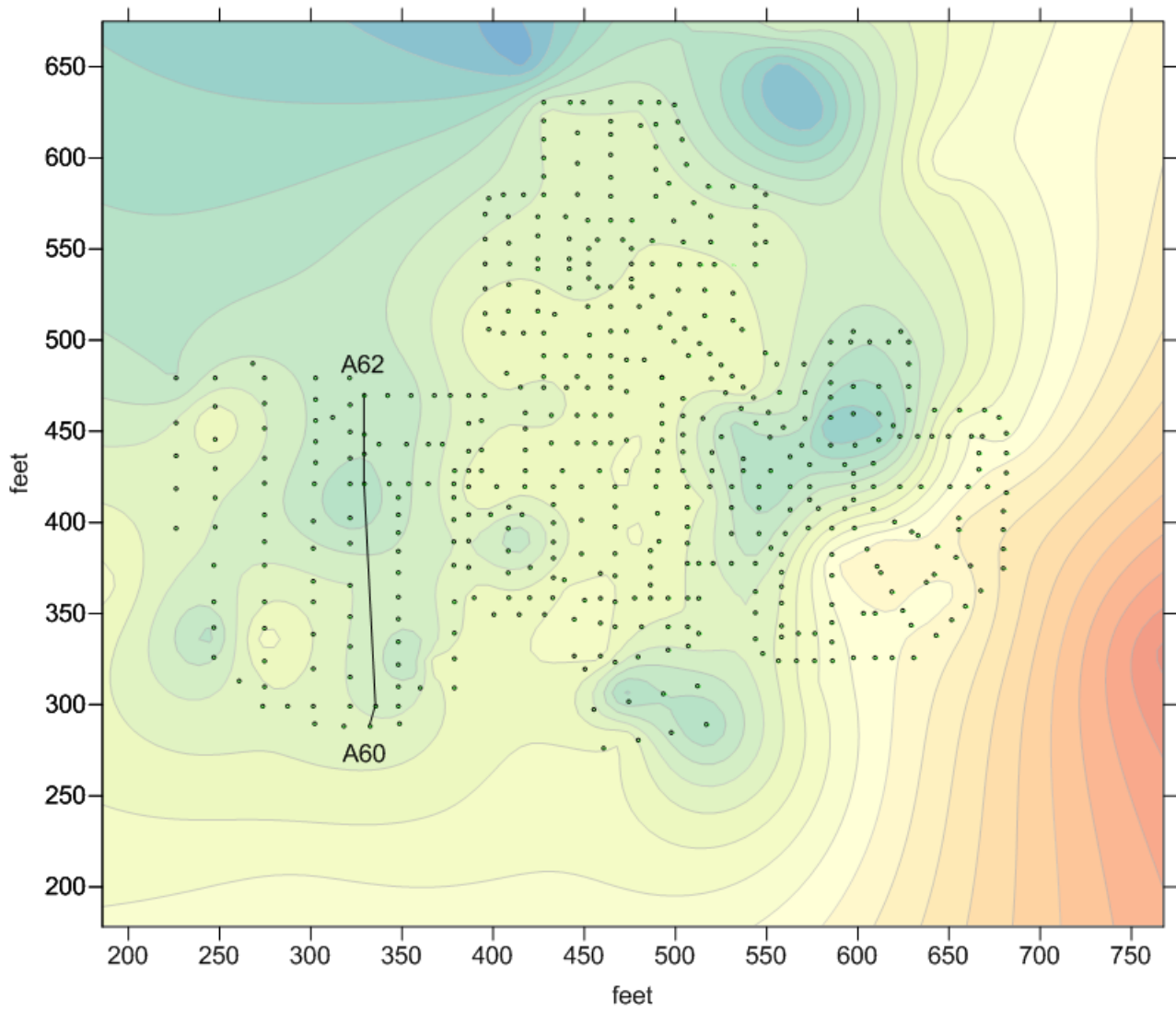


Figure D-6. Profile from A62 to A61.

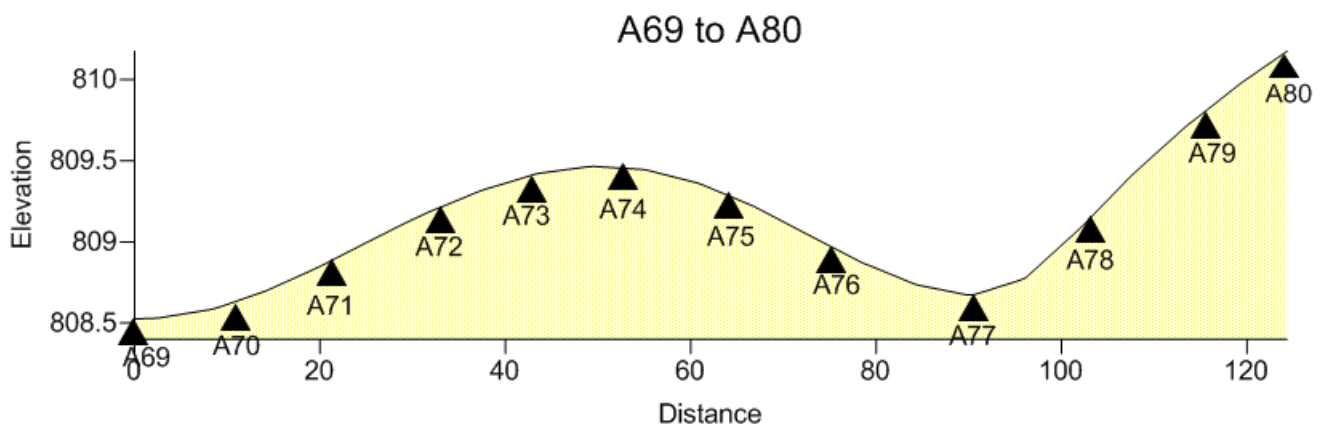
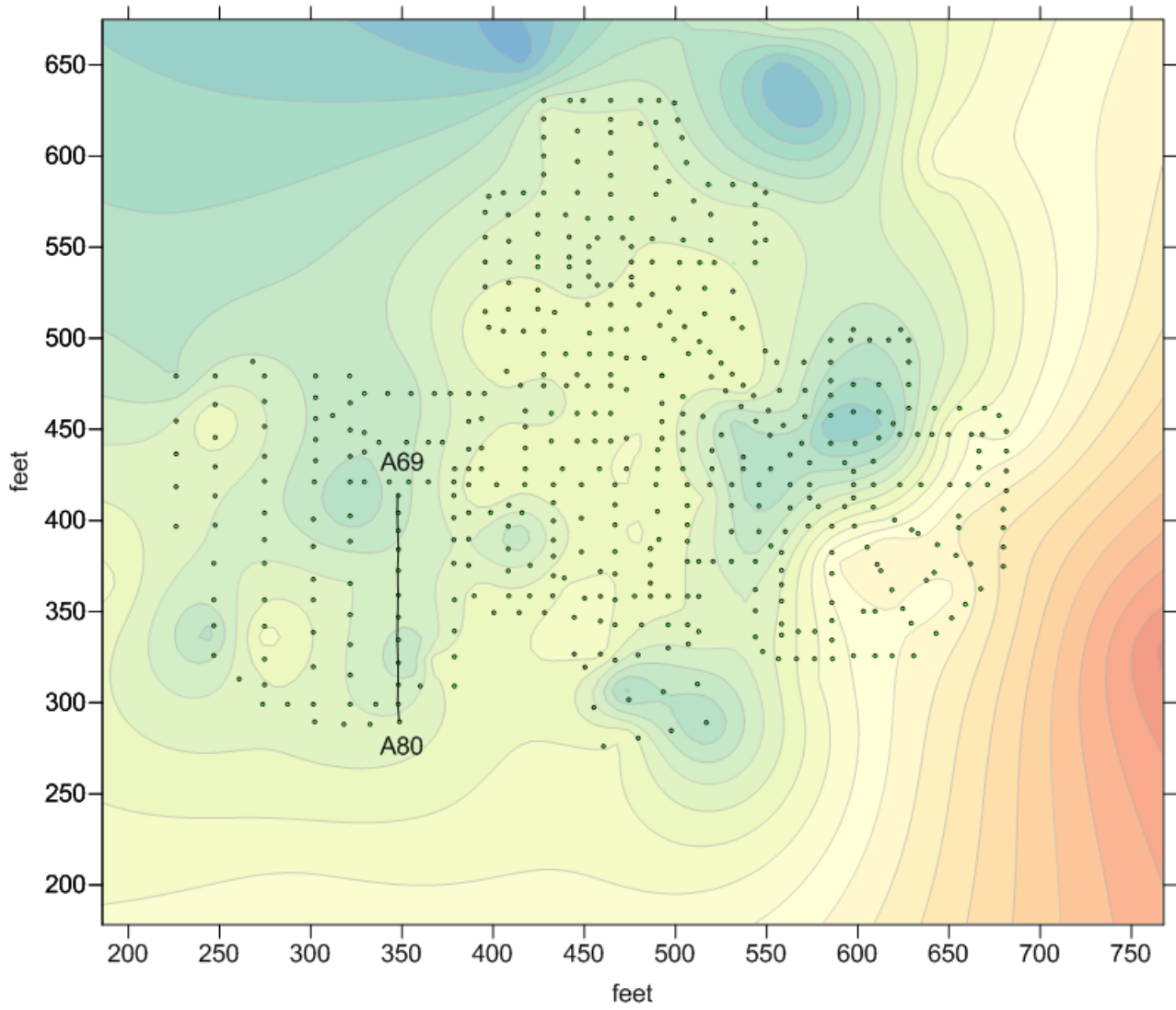


Figure D-7. Profile from A69 to A80.

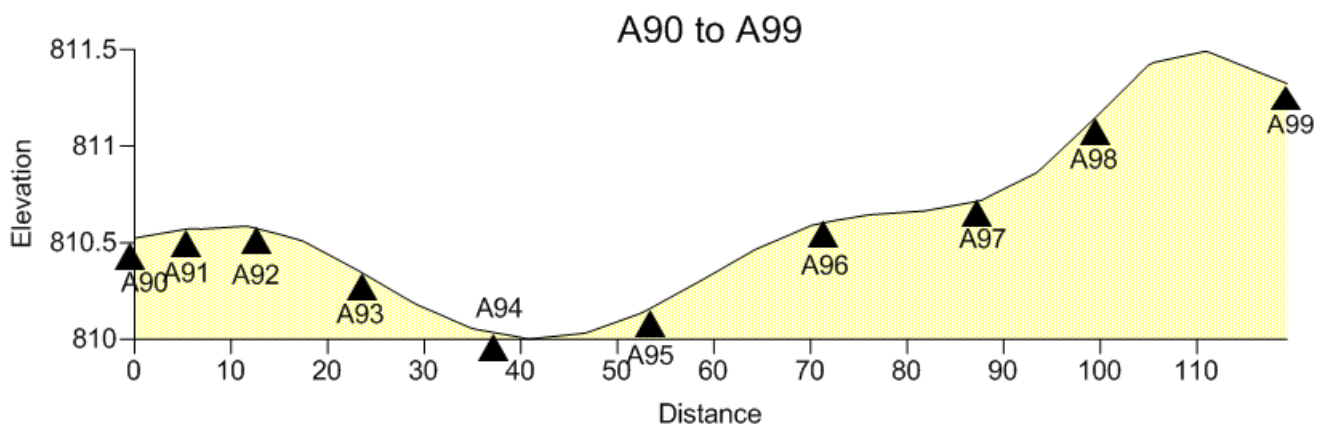
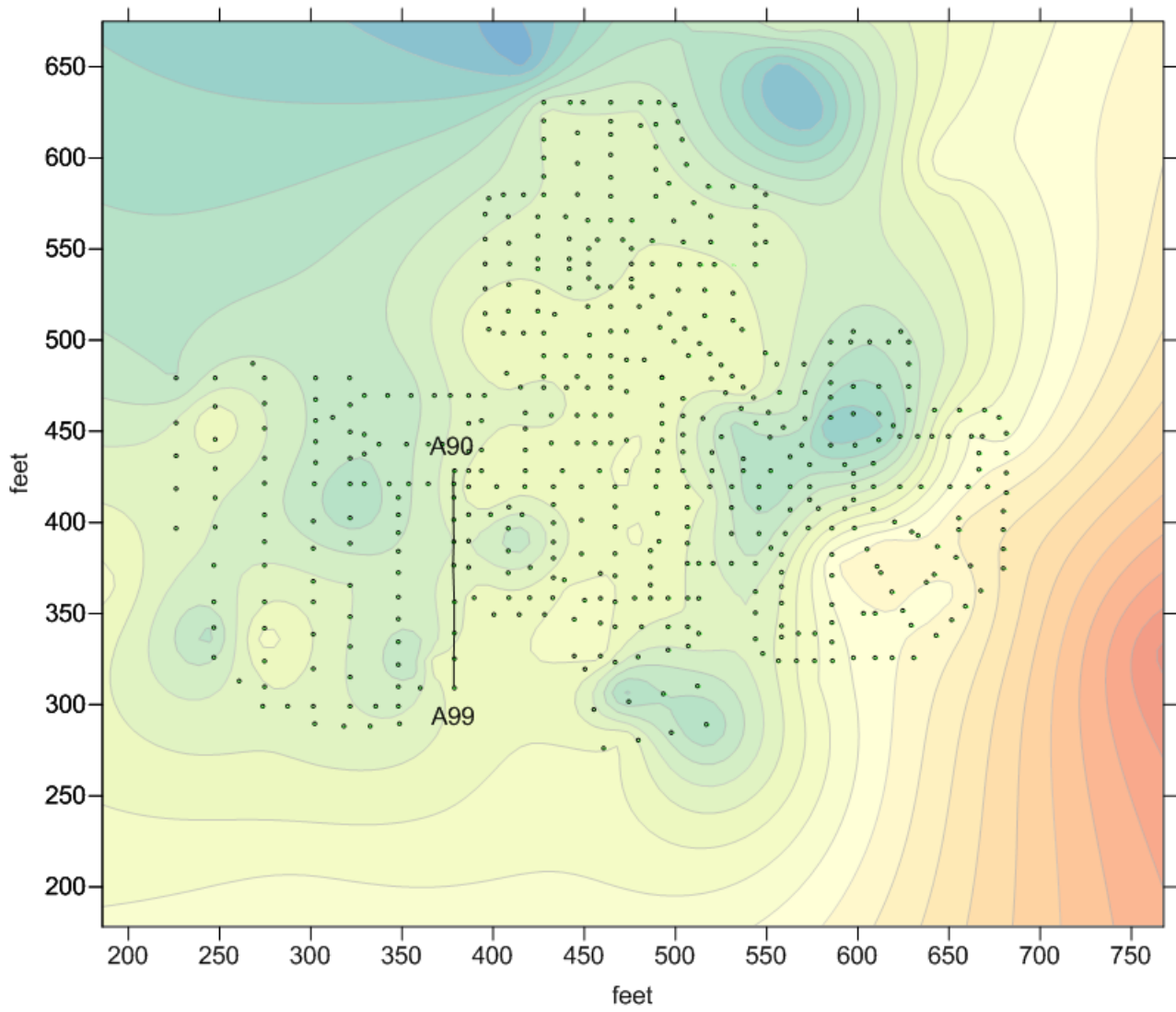


Figure D-8. Profile from A90 to A99.

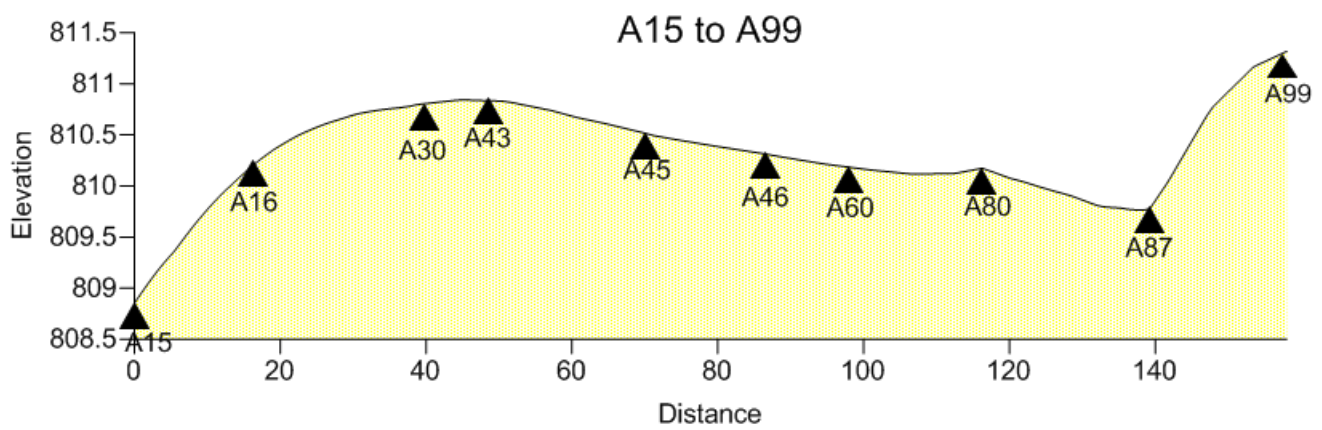
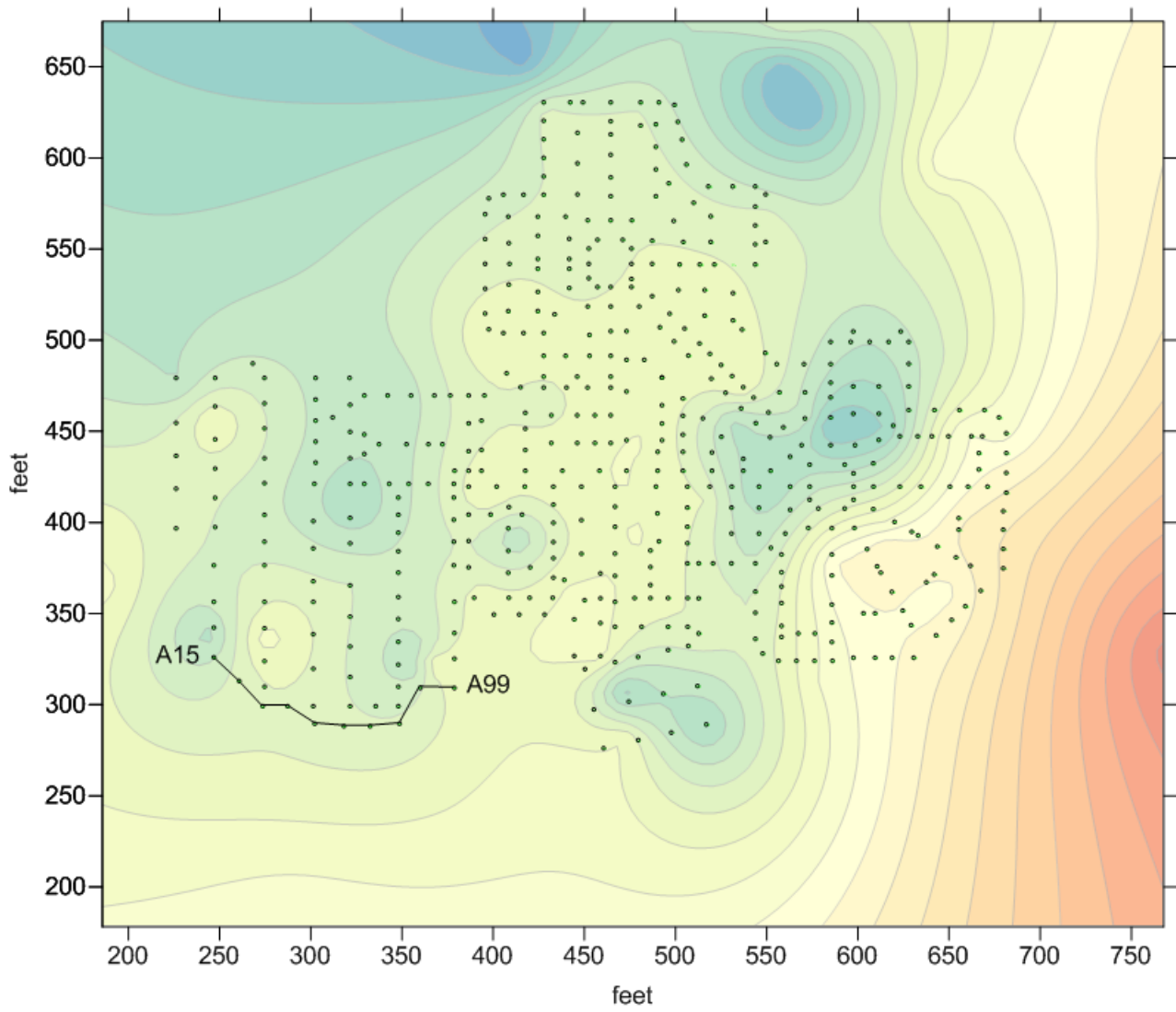
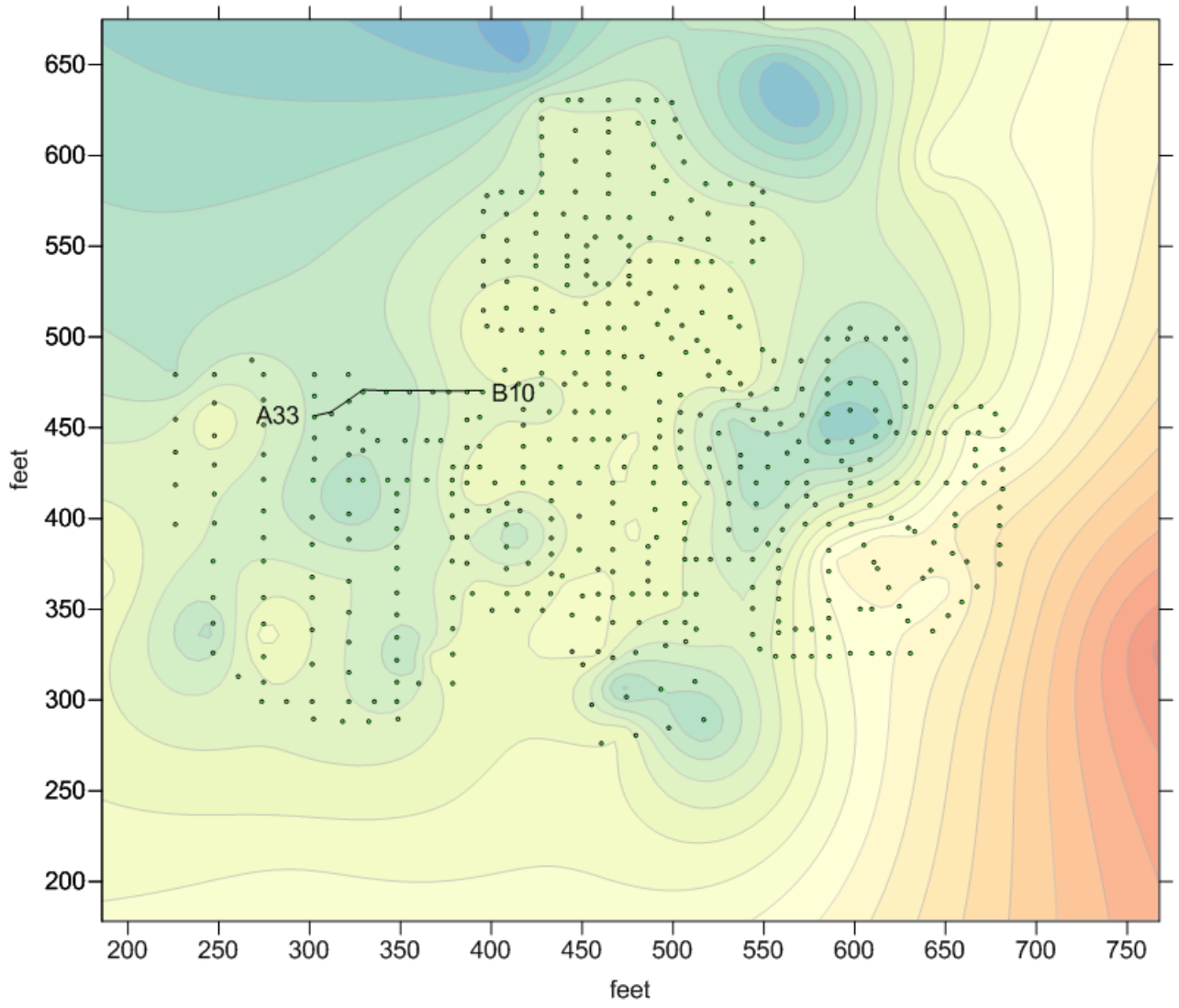


Figure D-9. Profile from A15 to A99.



A33 to B10

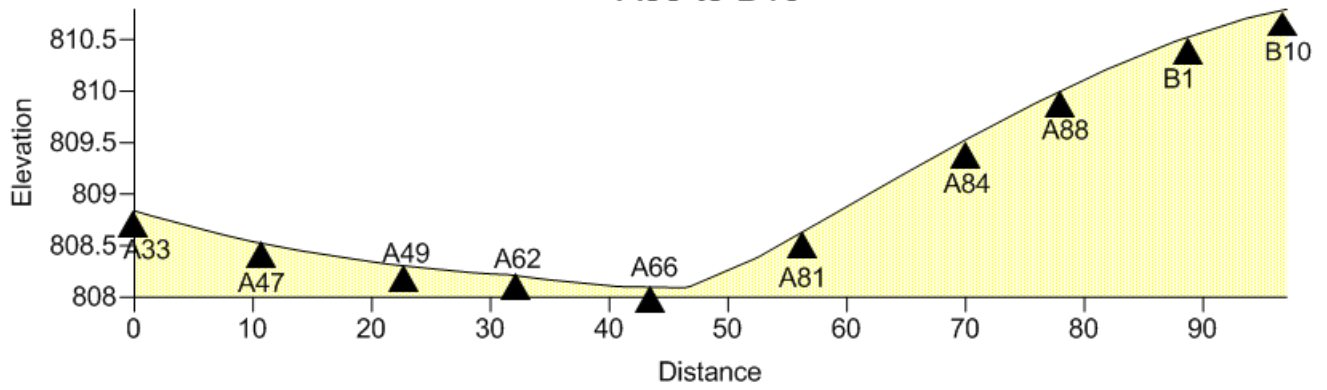


Figure D-10. Profile from A33 to B10.

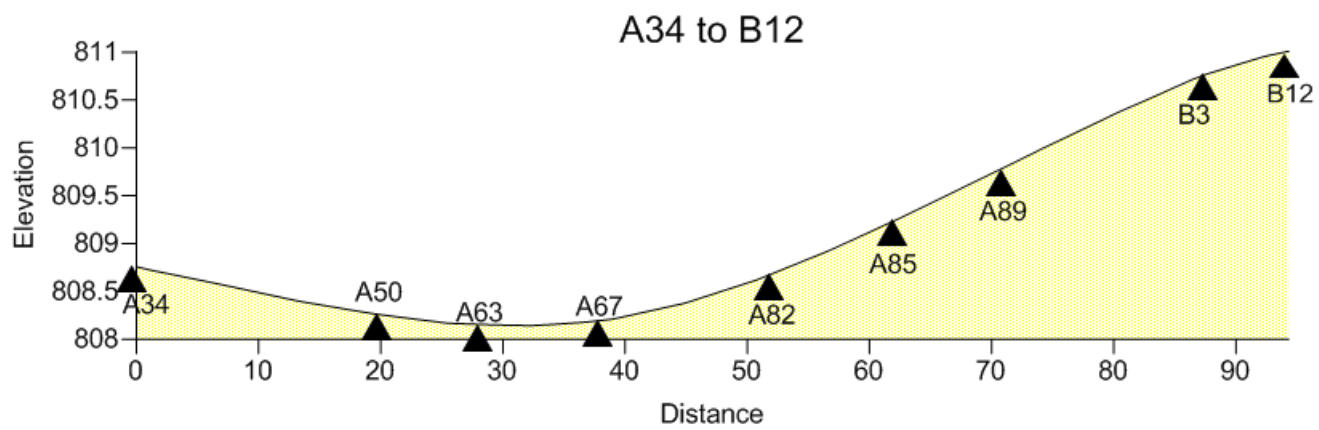
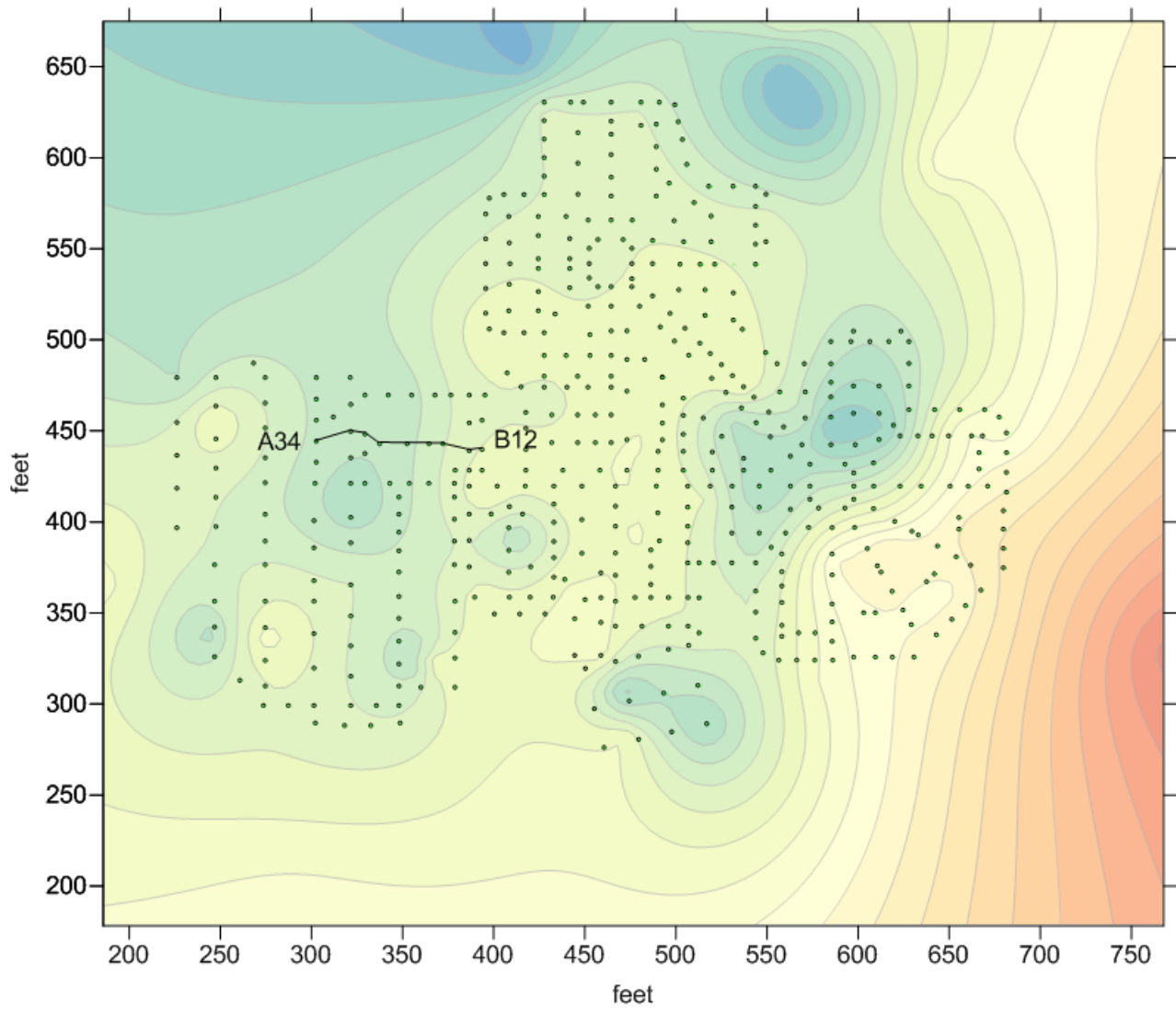


Figure D-11. Profile from A34 to B12.



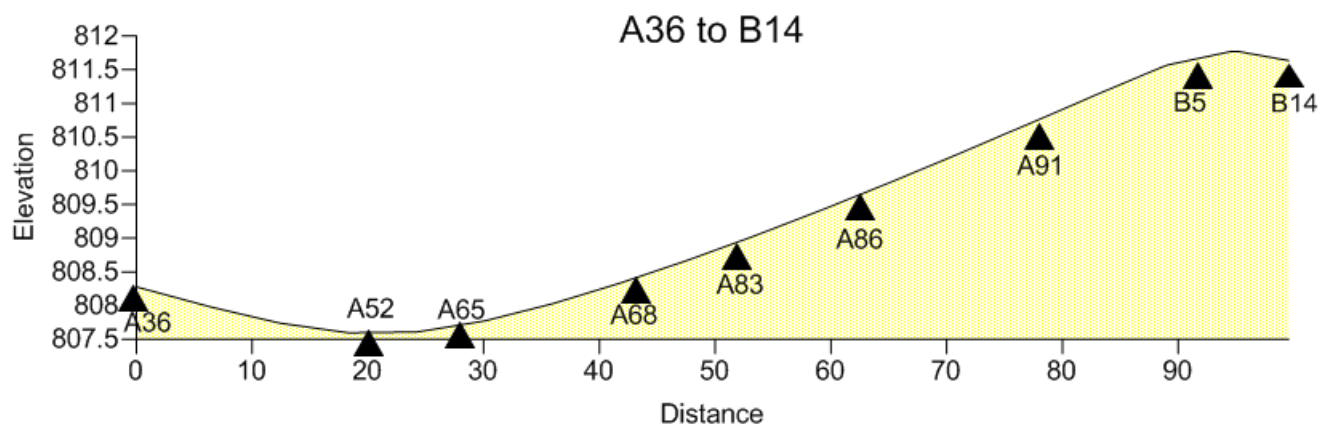
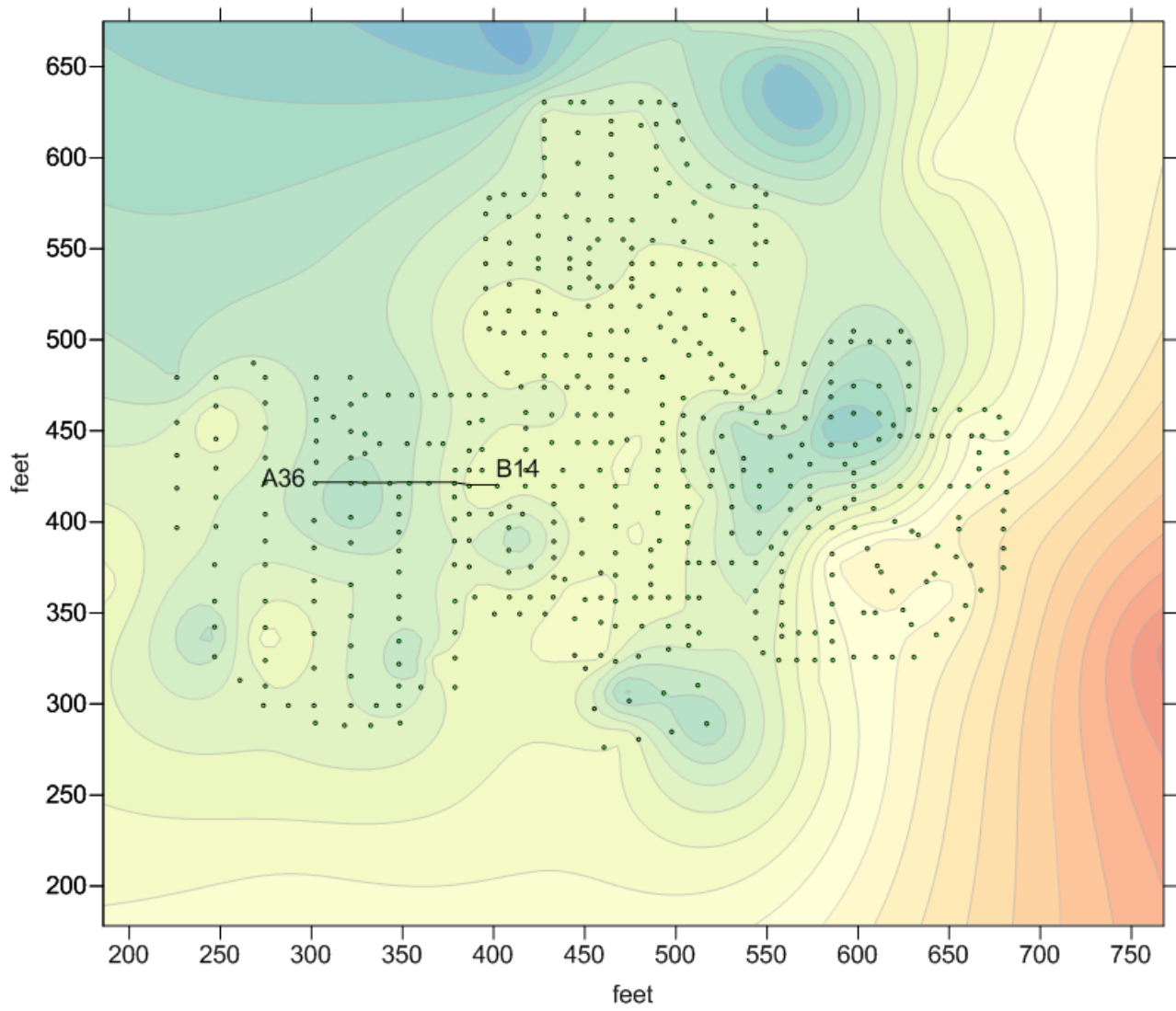


Figure D-12. Profile from A36 to B14.

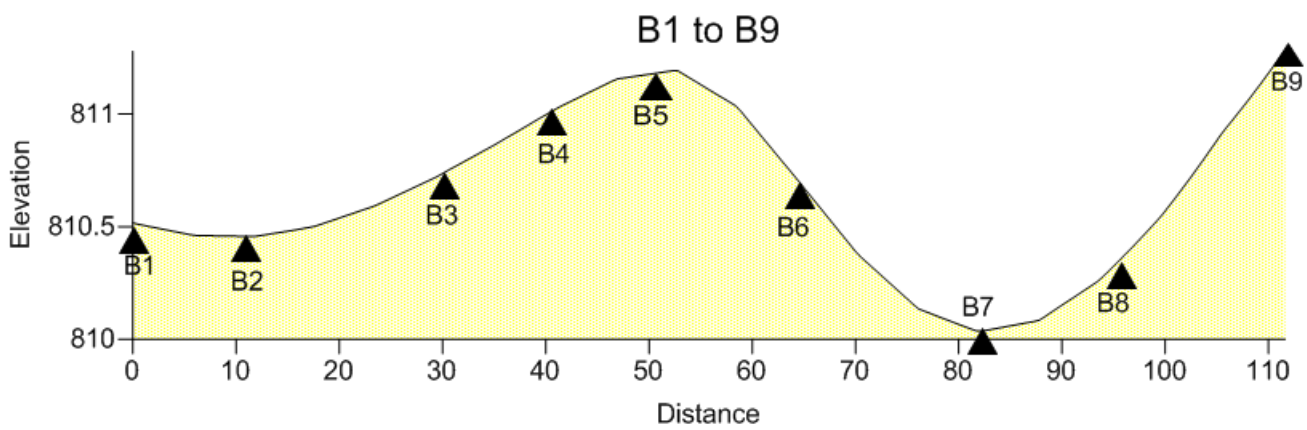
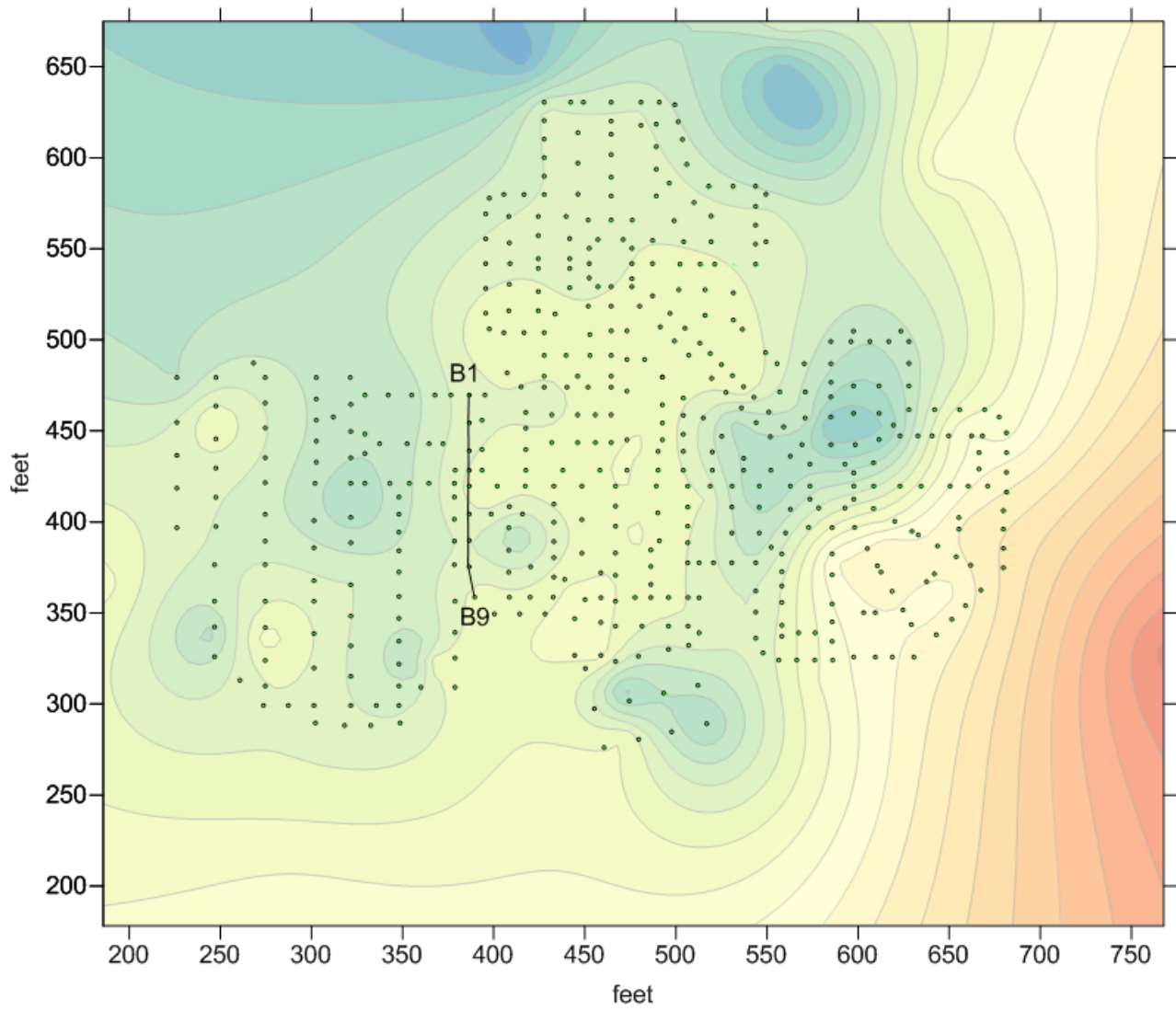


Figure D-13. Profile from B1 to B9.

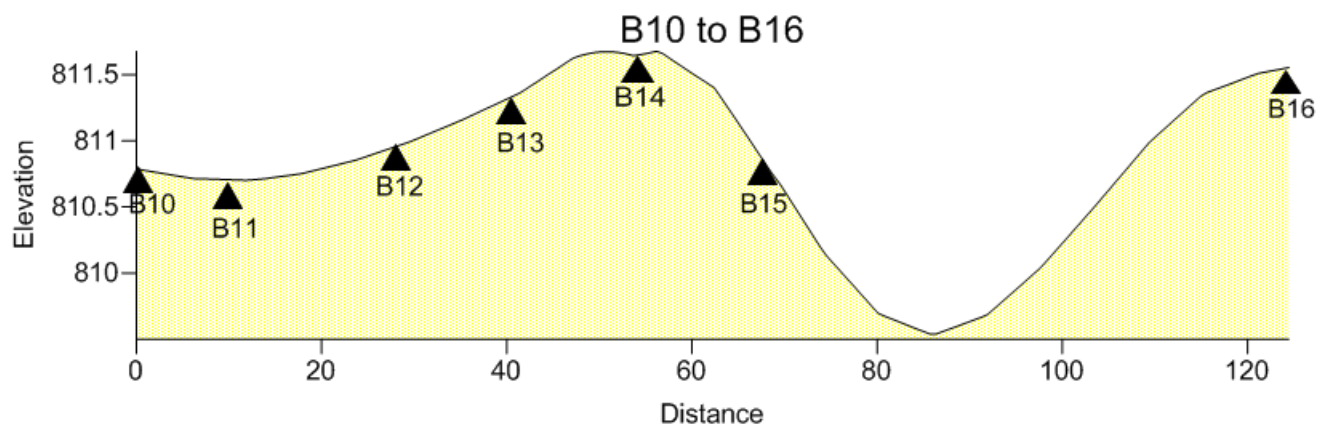
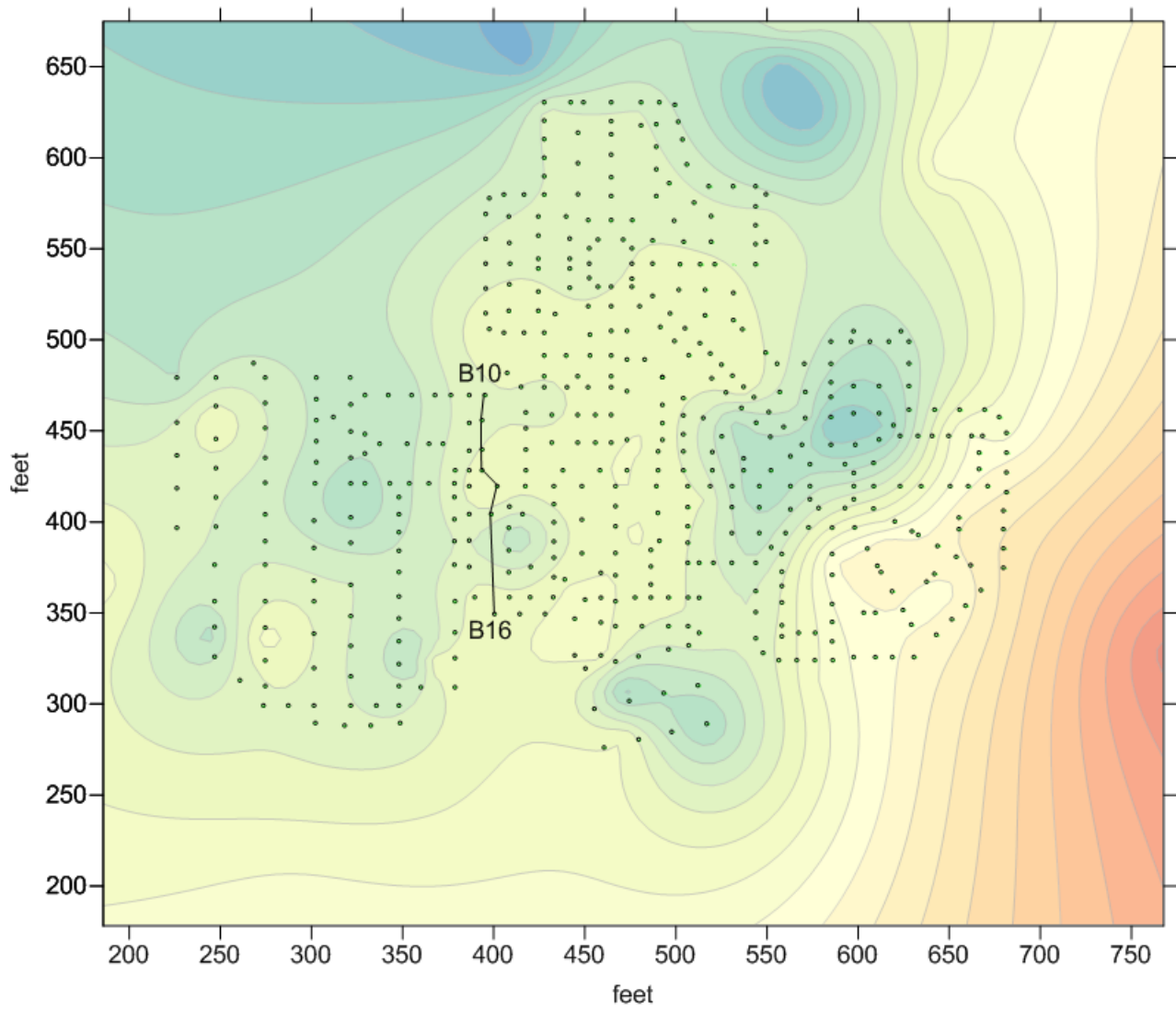


Figure D-14. Profile from B10 to B16.

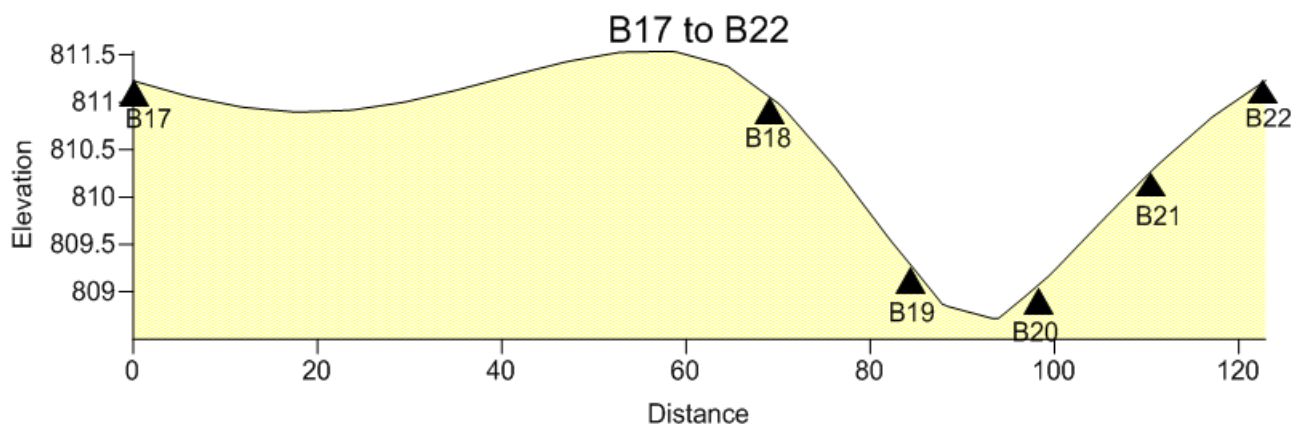
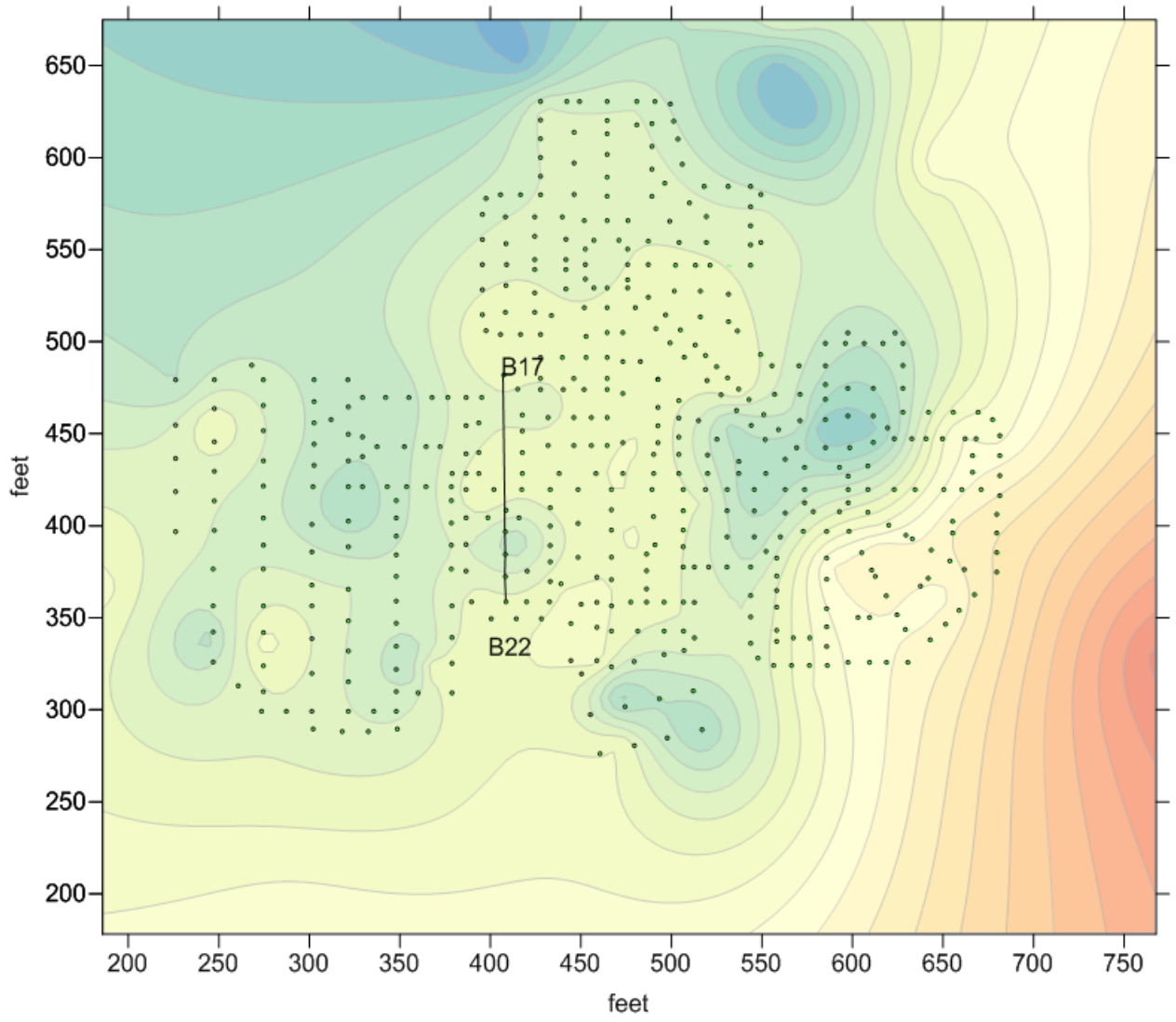


Figure D-15. Profile from B17 to B22.

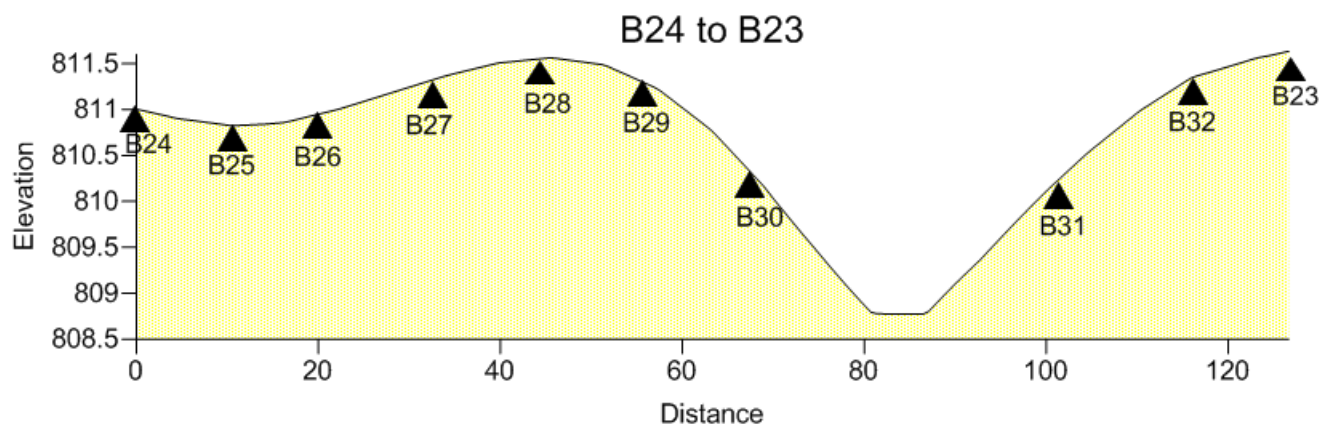
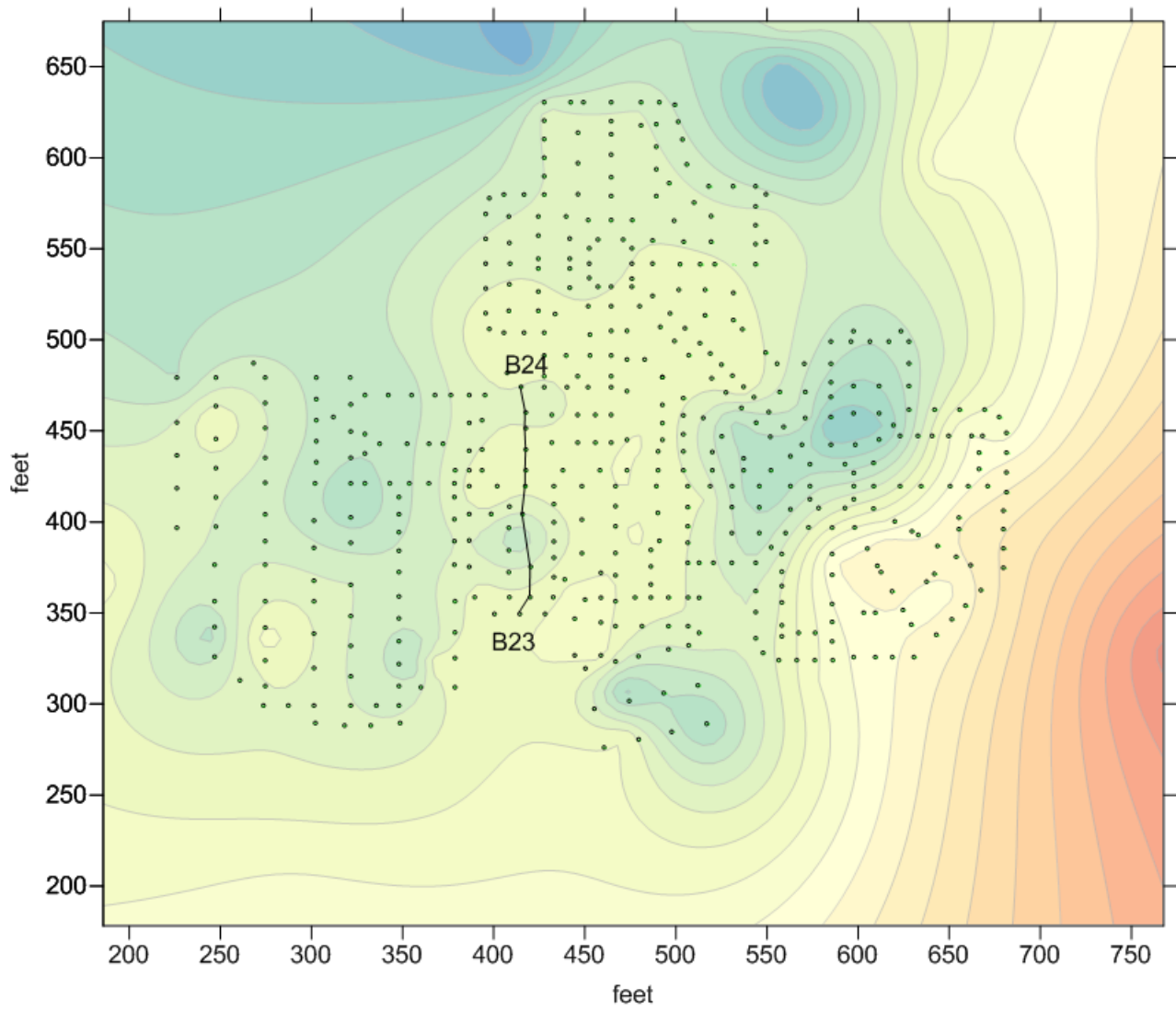


Figure D-16. Profile from B24 to B23.

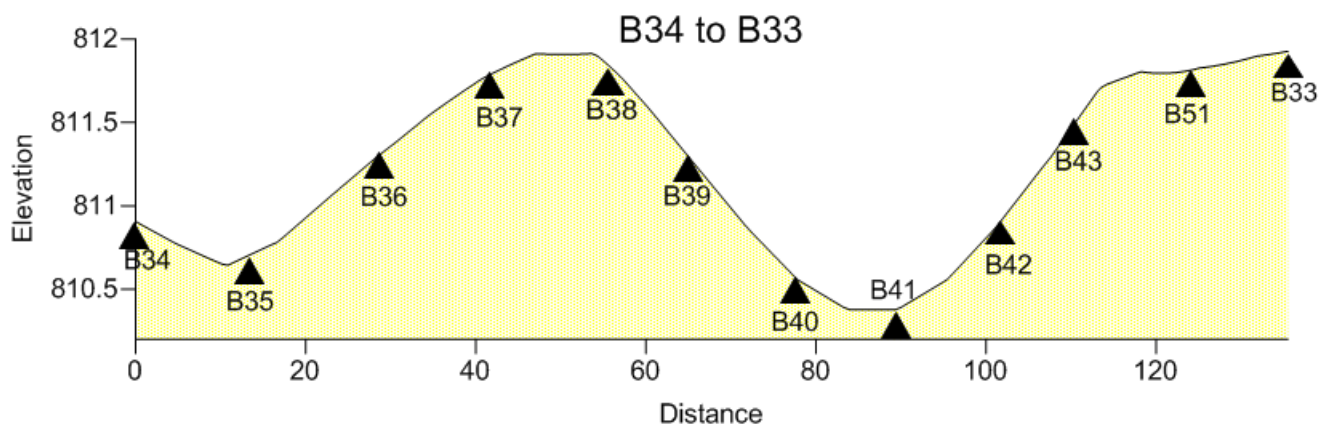
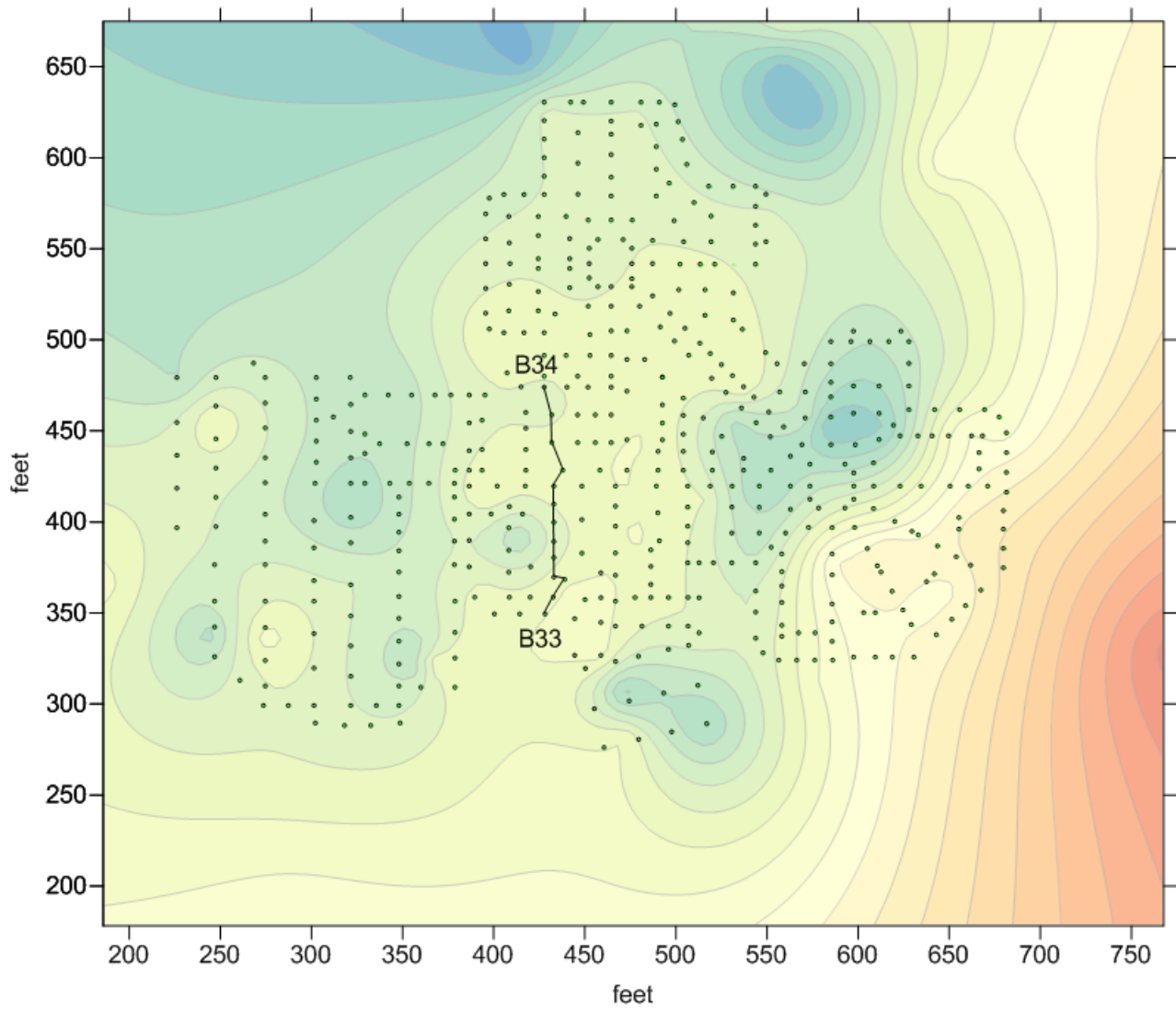


Figure D-17. Profile from B34 to B33.

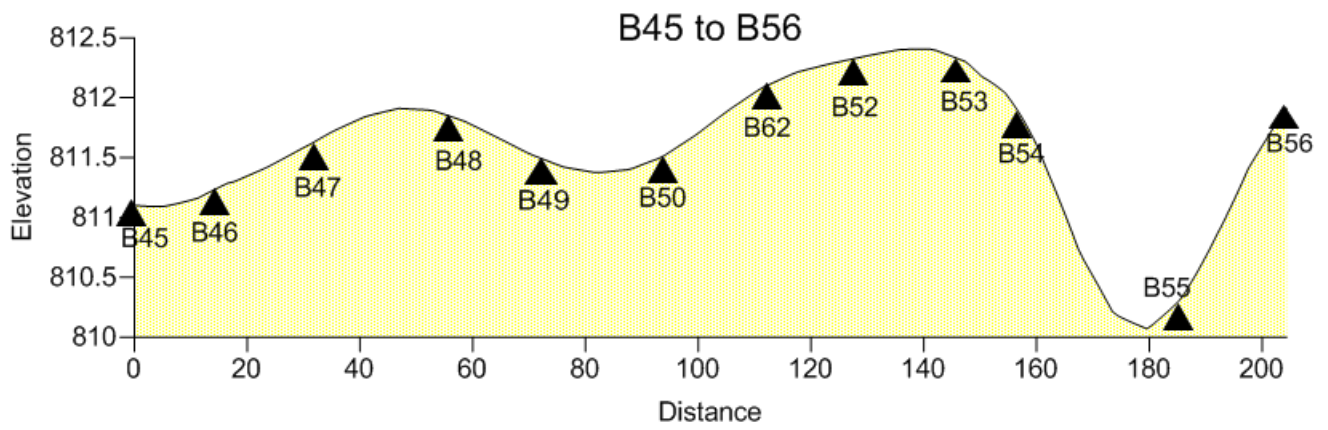
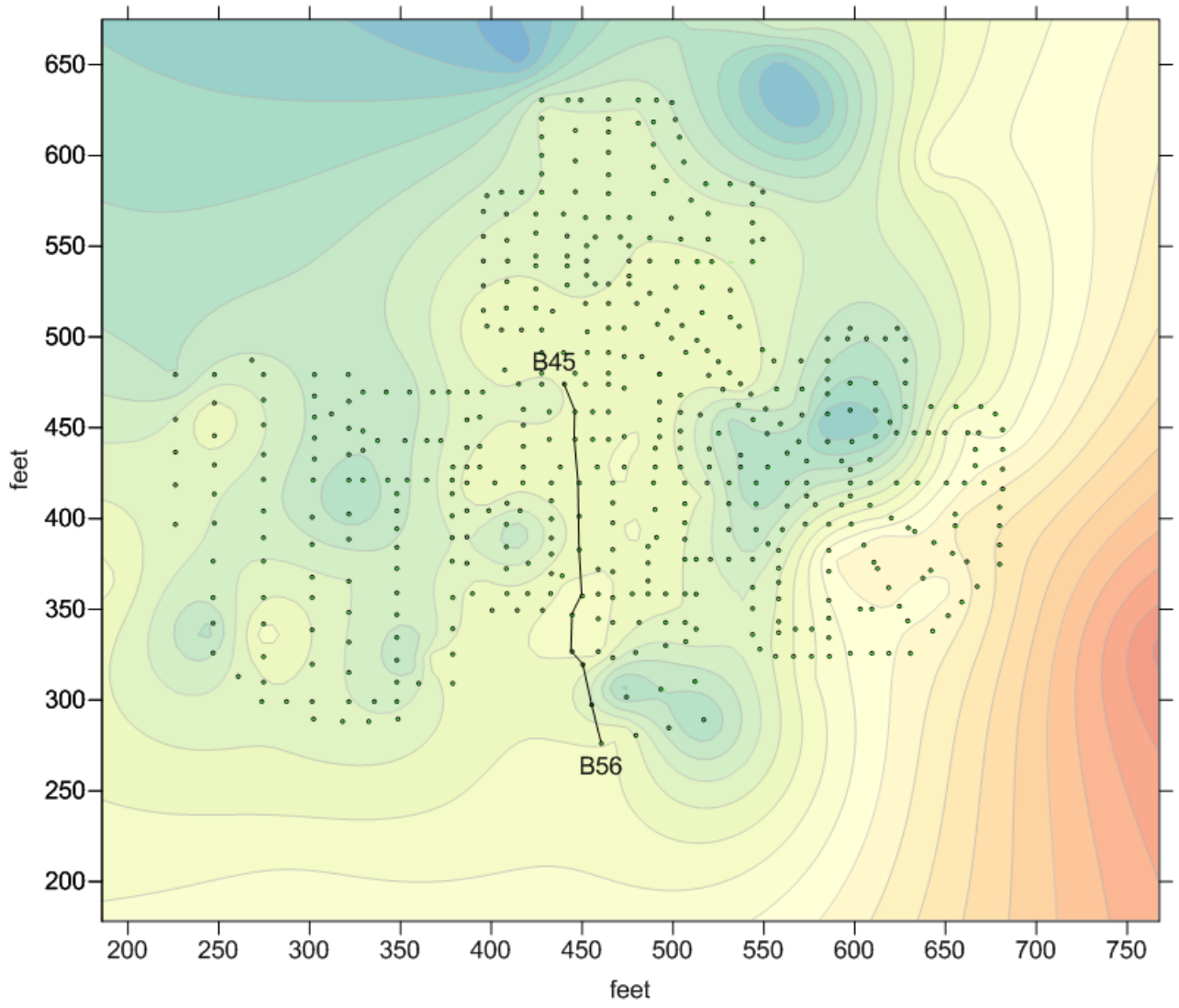


Figure D-18. Profile from B45 to B56.

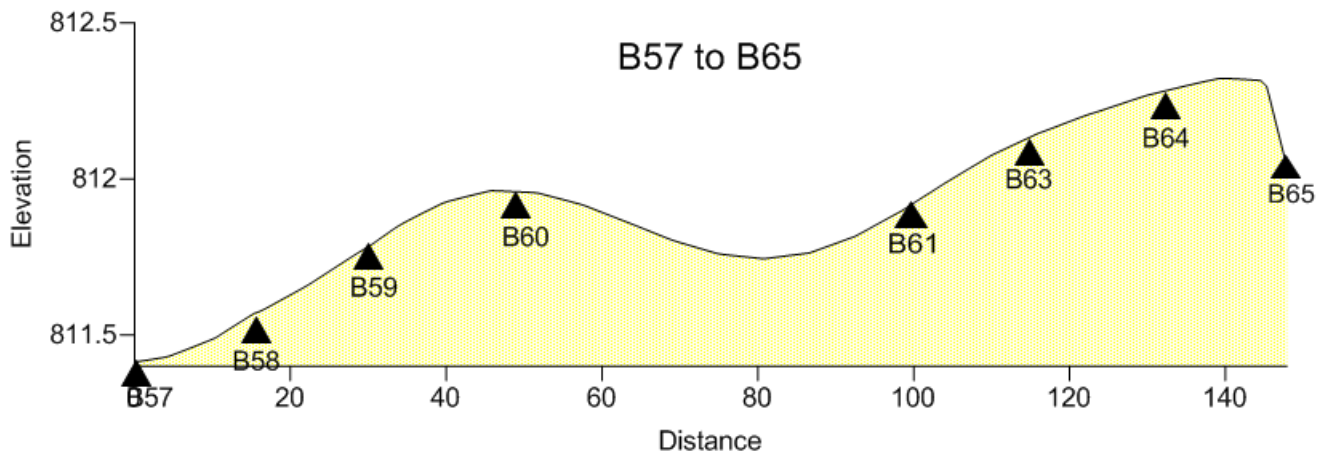
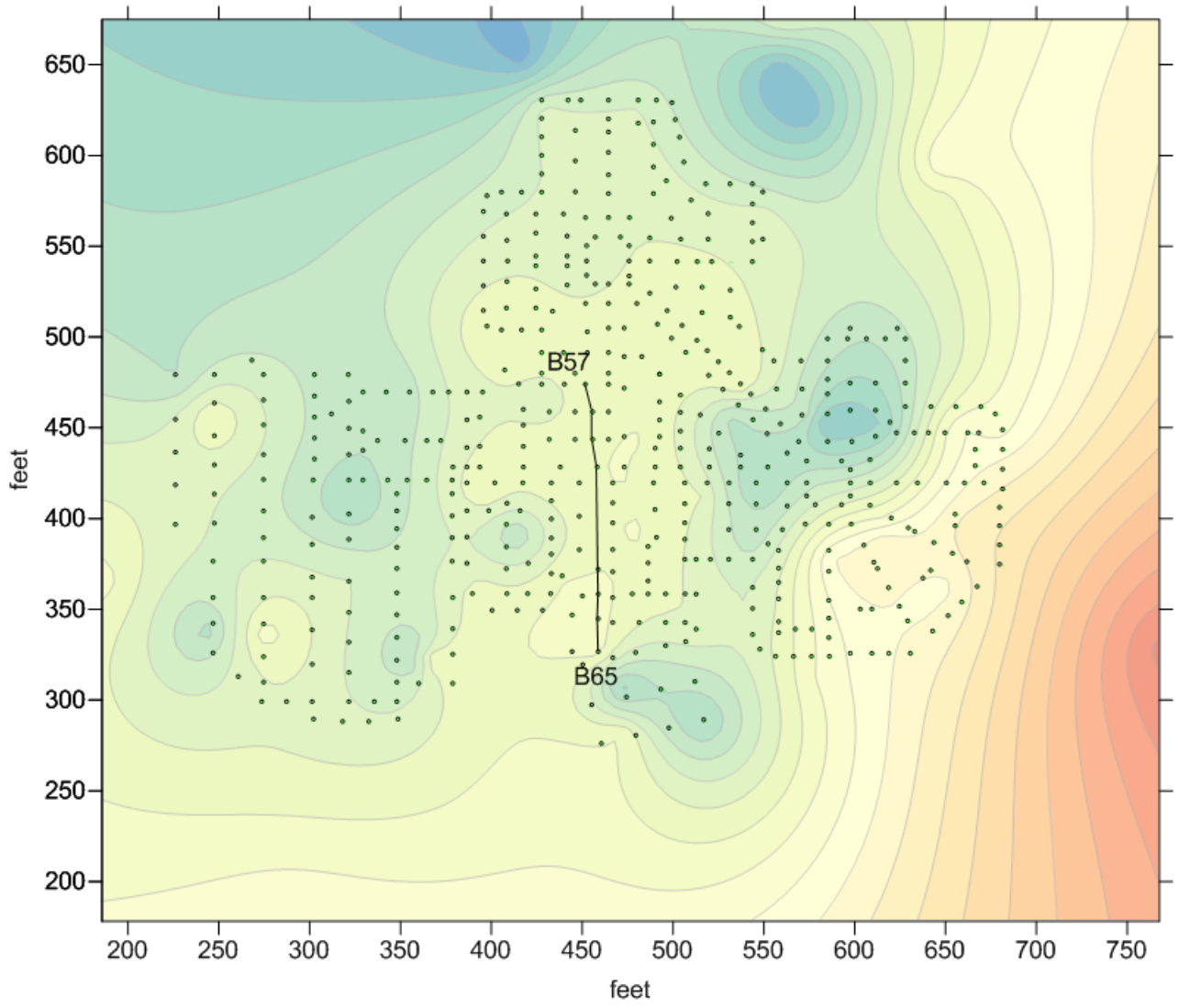


Figure D-19. Profile from B57 to B65.



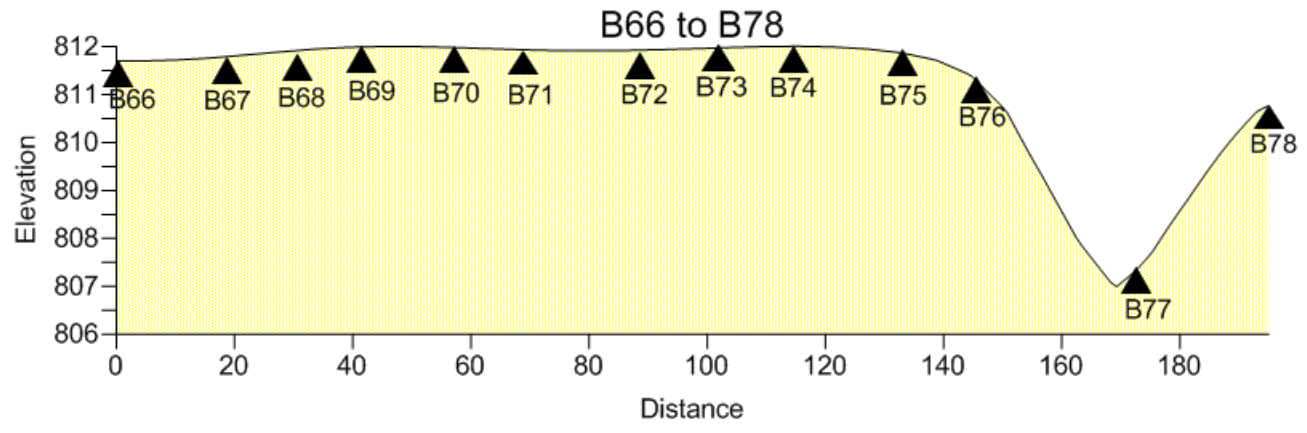
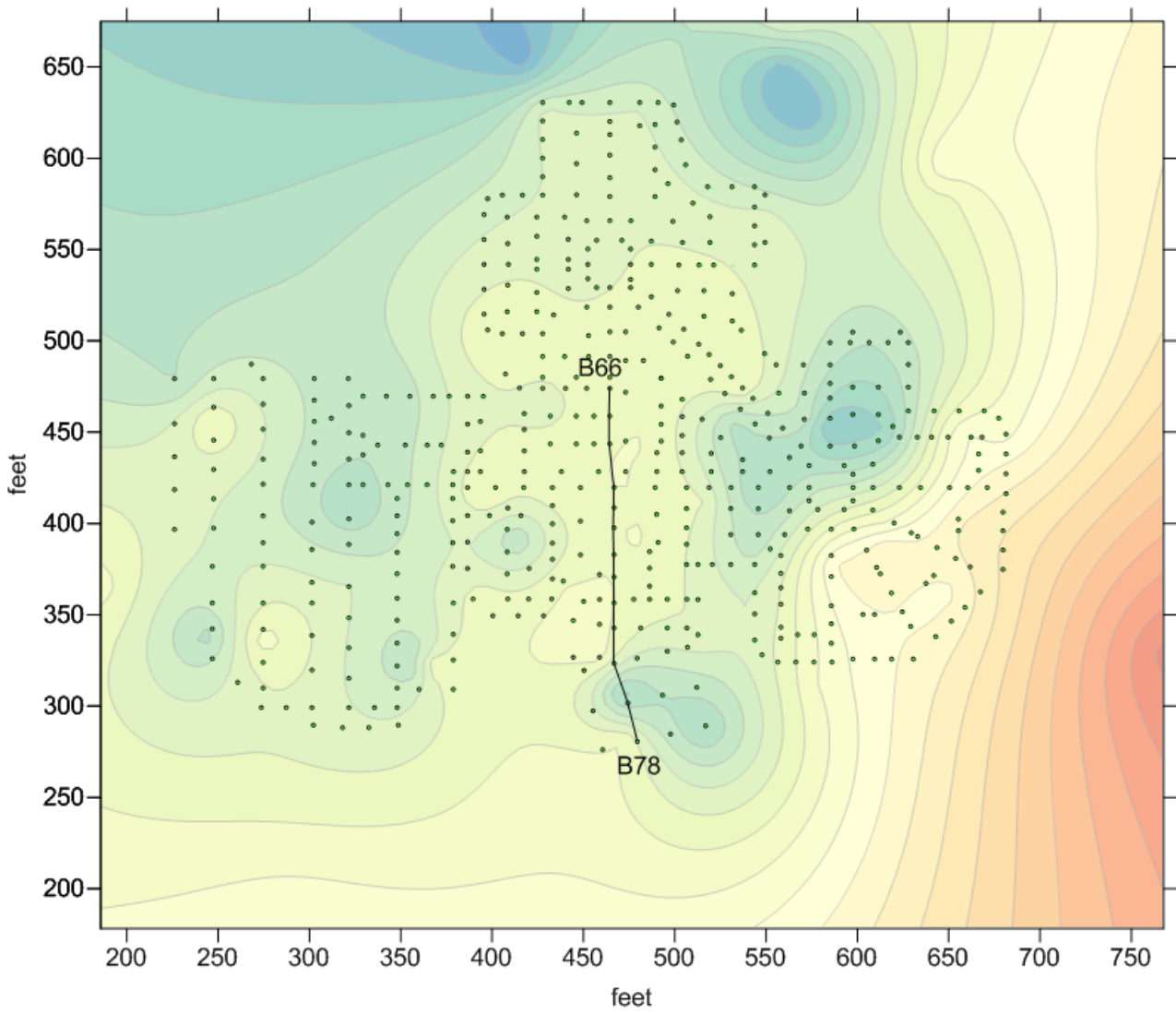


Figure D-20. Profile from B66 to B78.

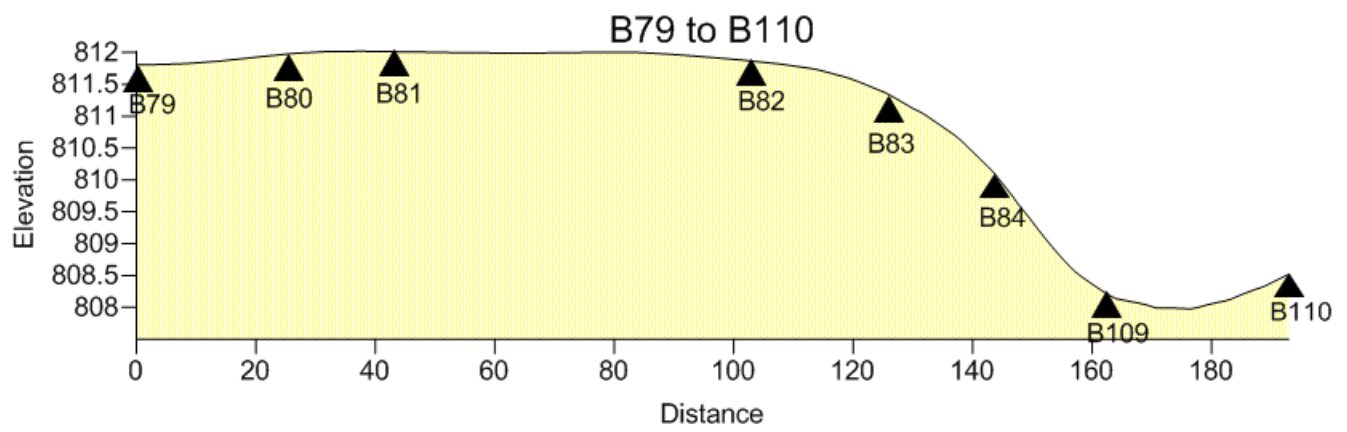
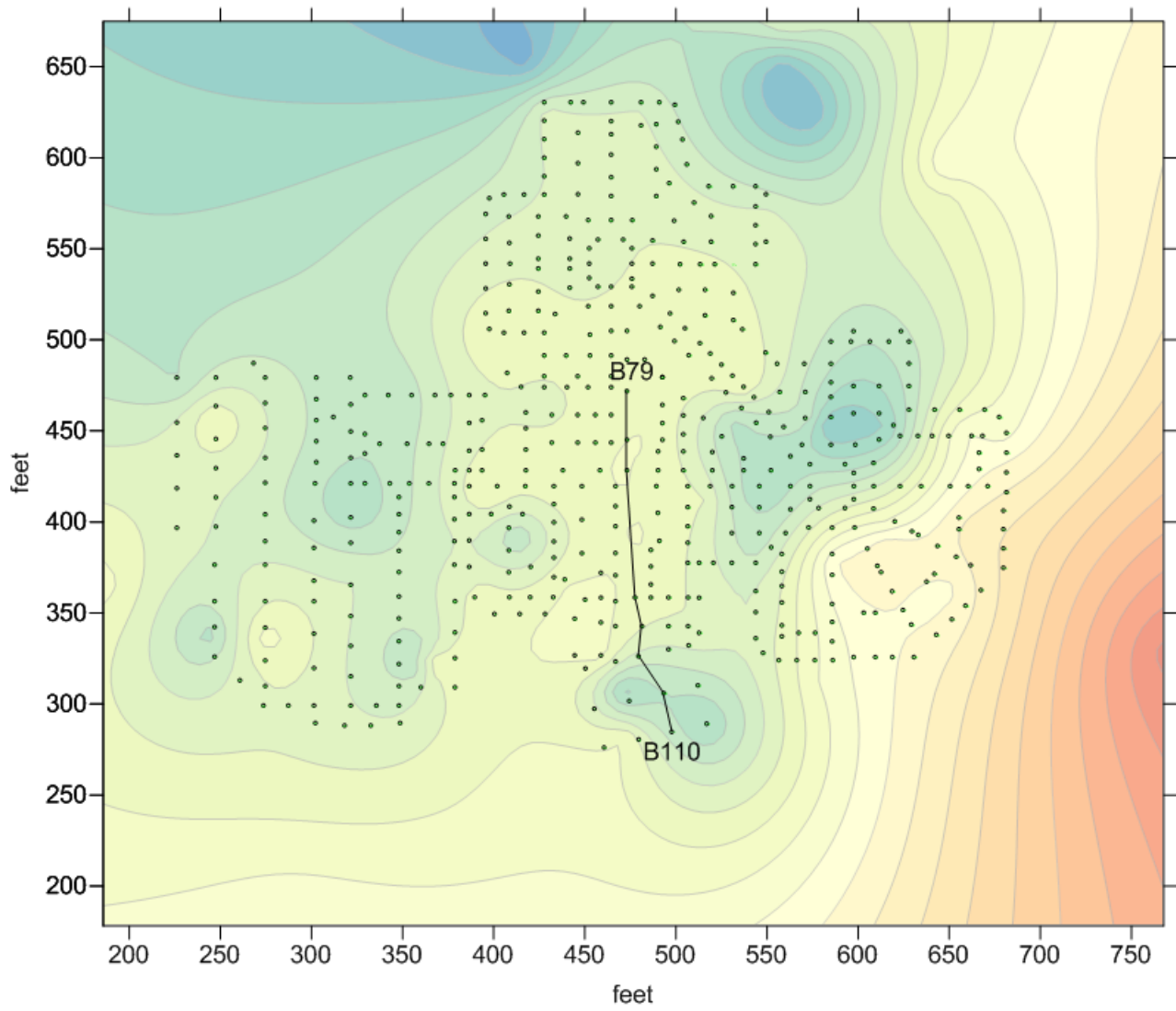


Figure D-21. Profile from B79 to B110.

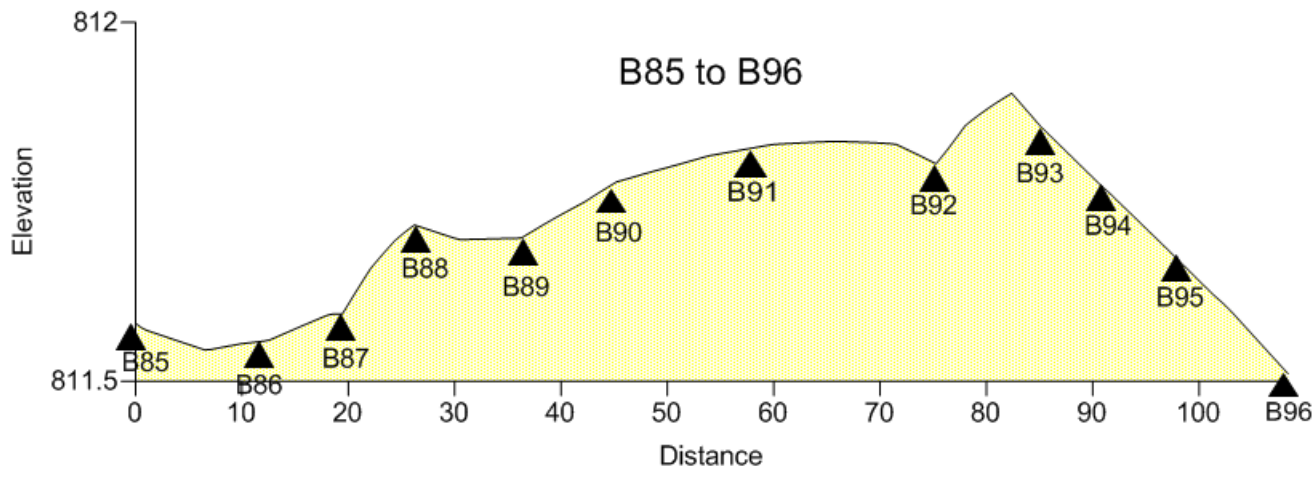
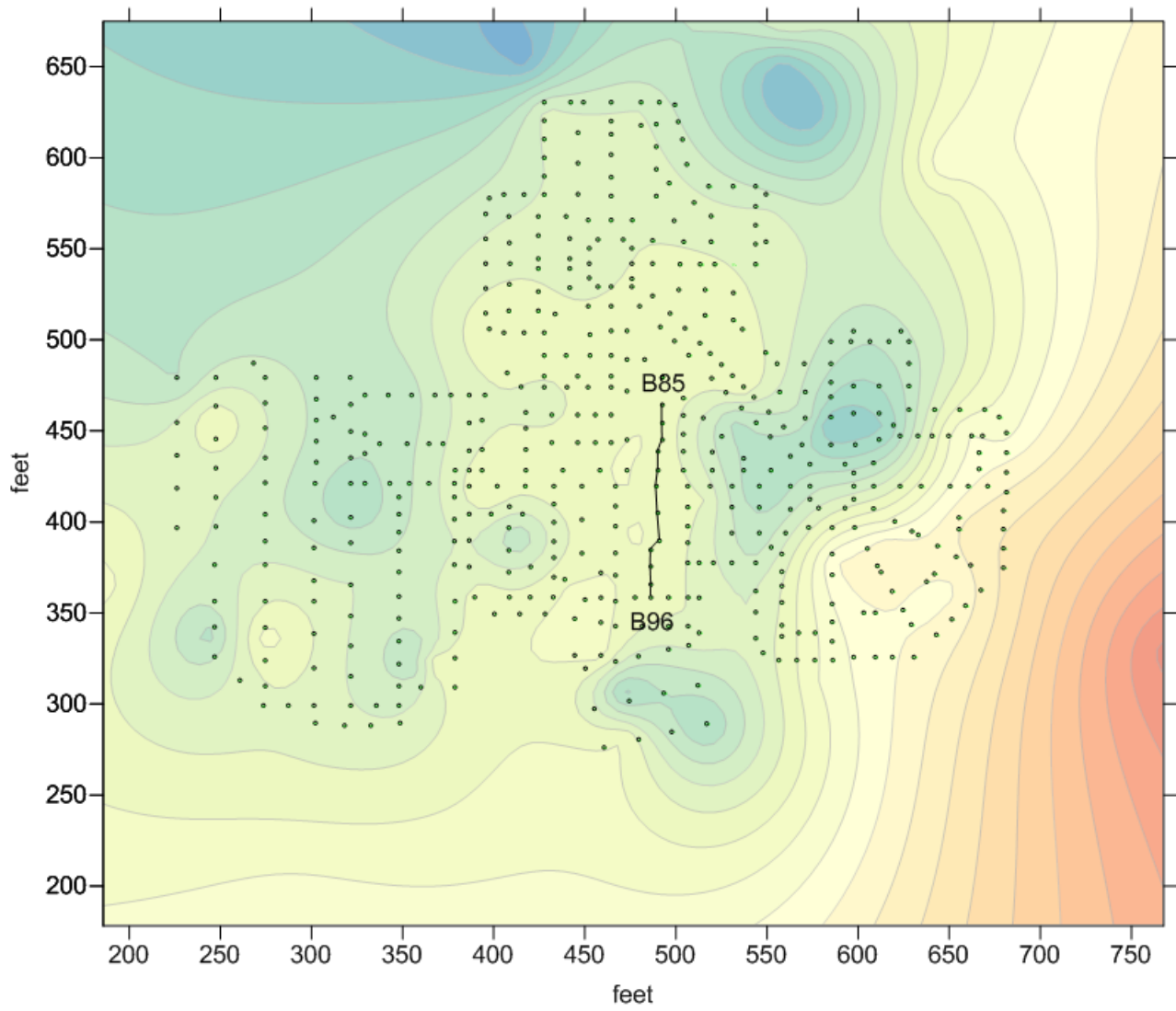
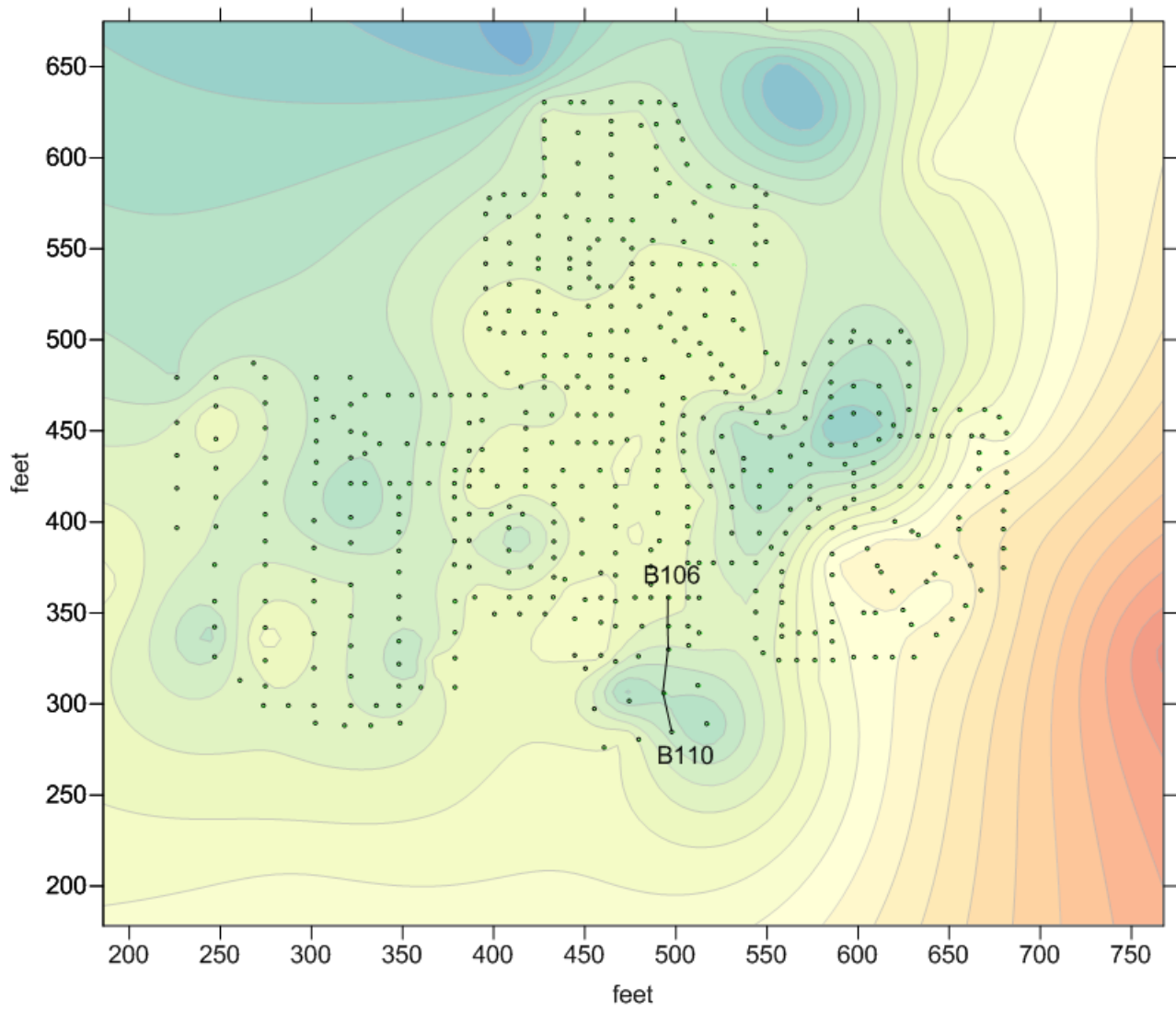


Figure D-22. Profile from B85 to B96.



B106 to B110

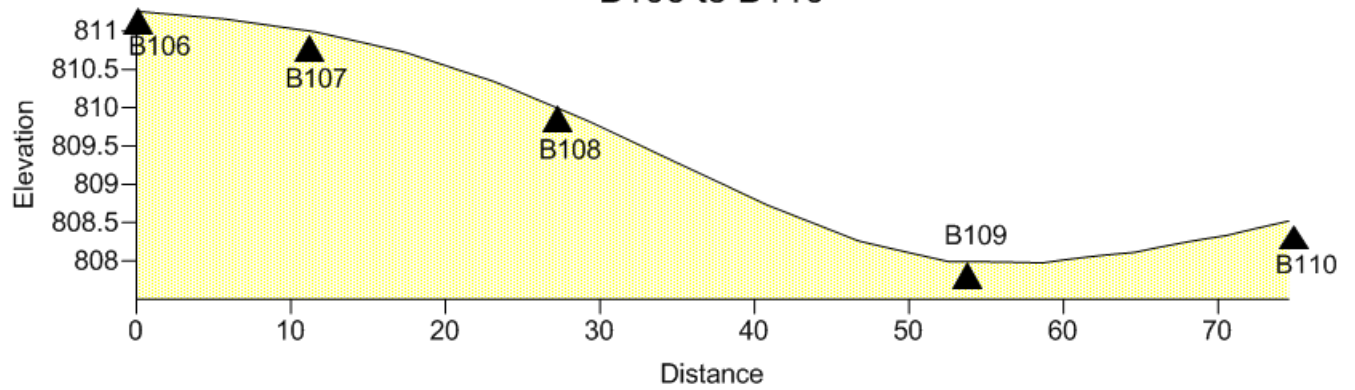


Figure D-23. Profile from B106 to B110.

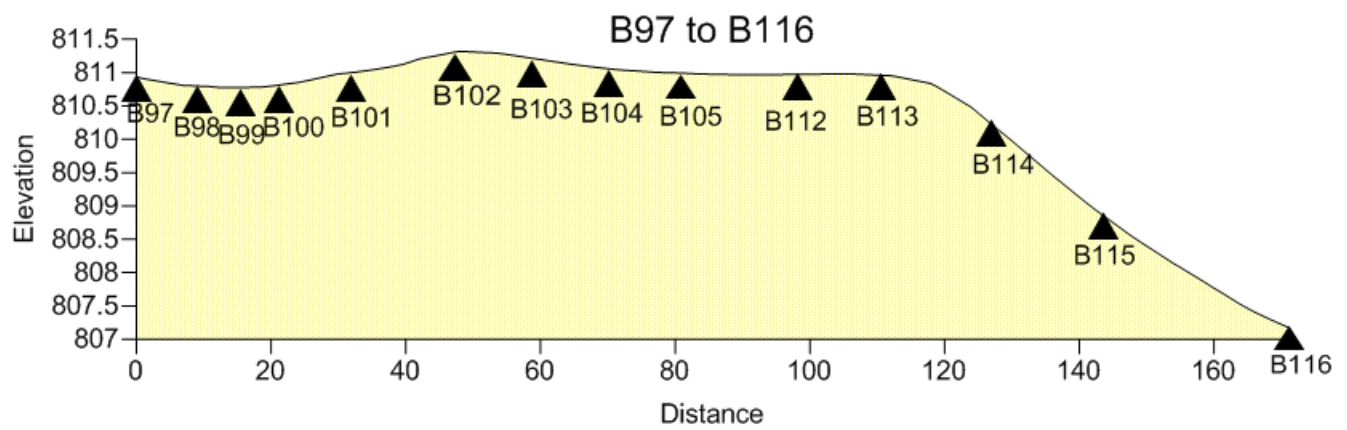
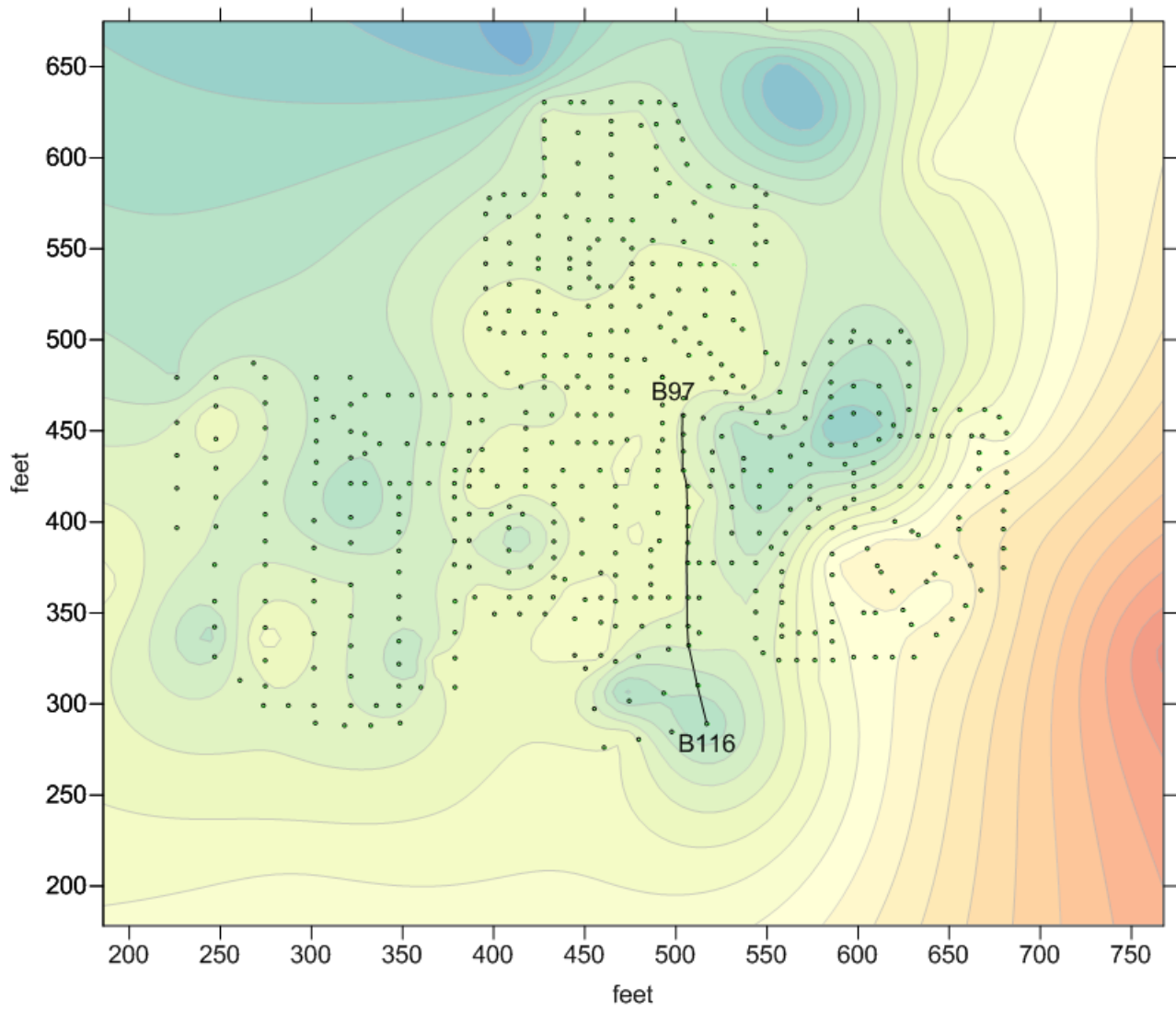


Figure D-24. Profile from B97 to B116.

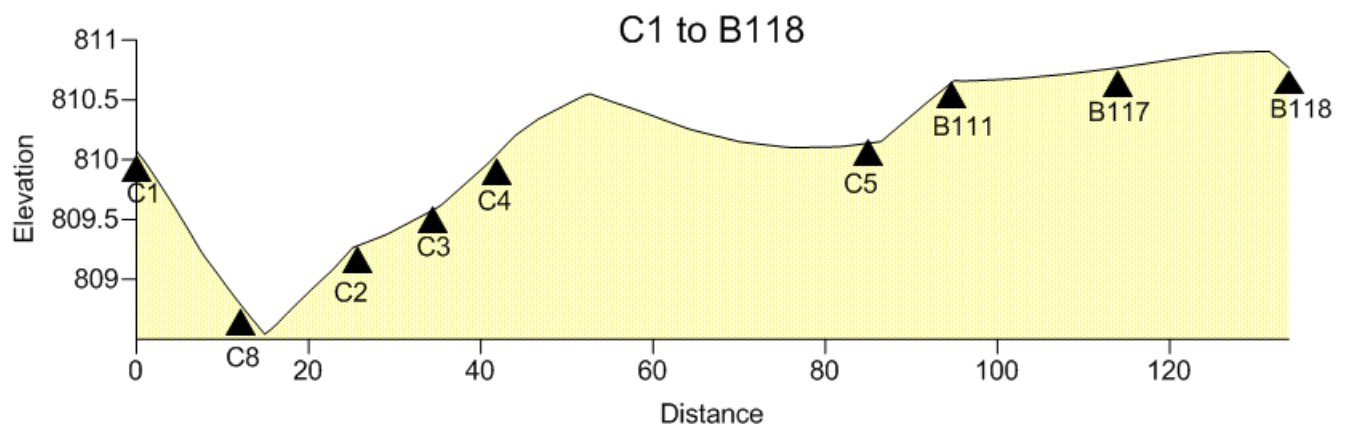
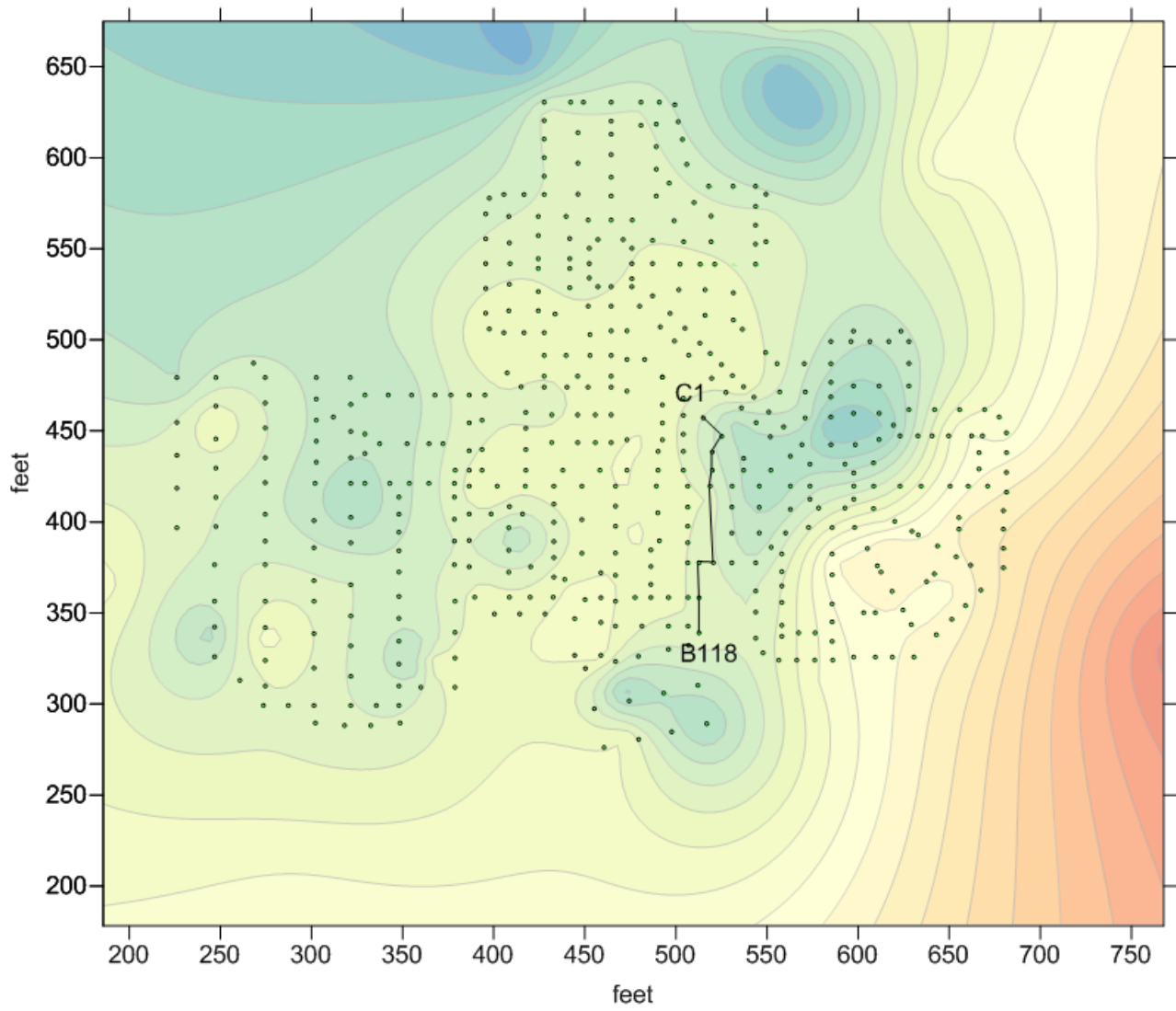


Figure D-25. Profile from C1 to B118.

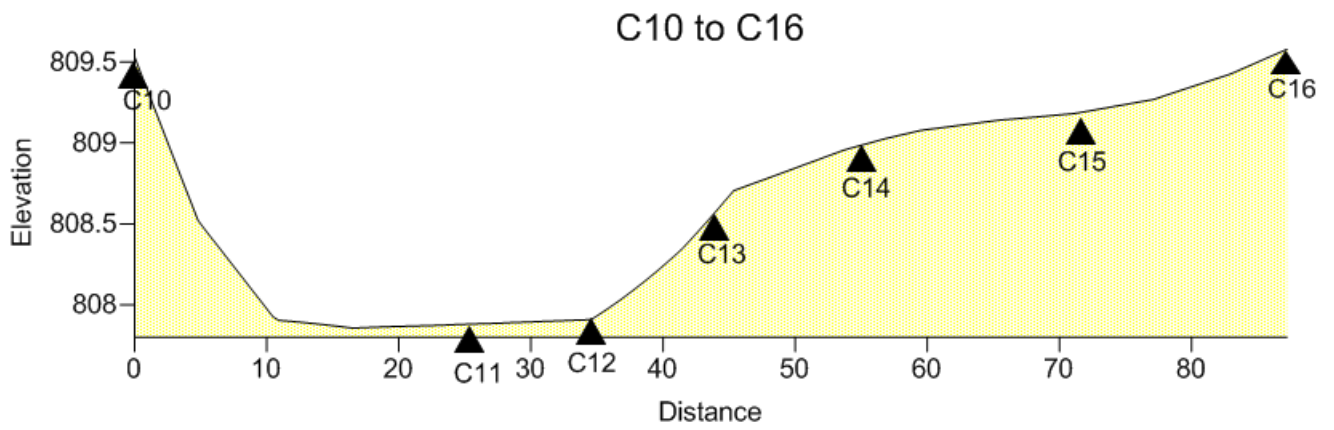
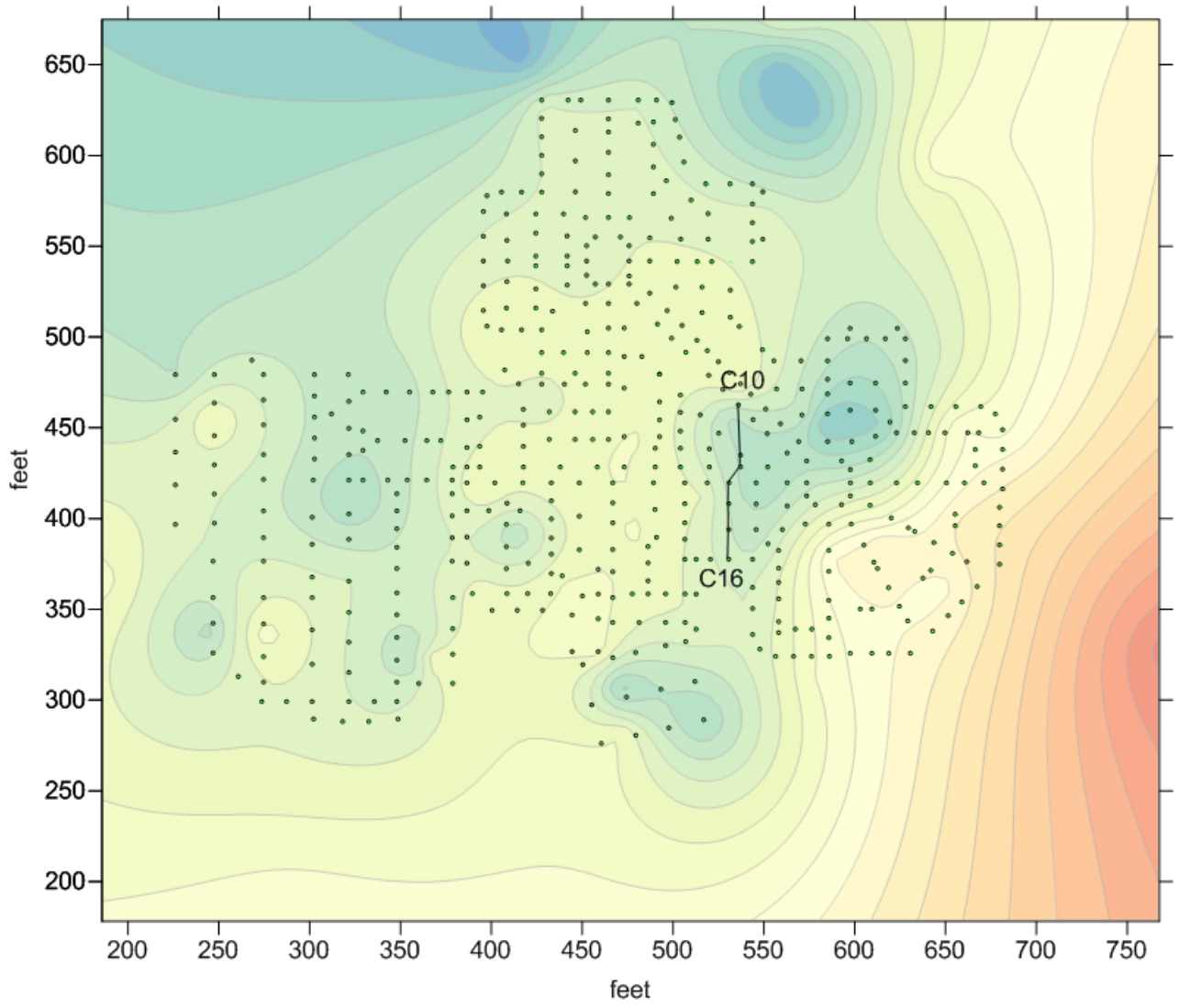


Figure D-26. Profile from C10 to C16.

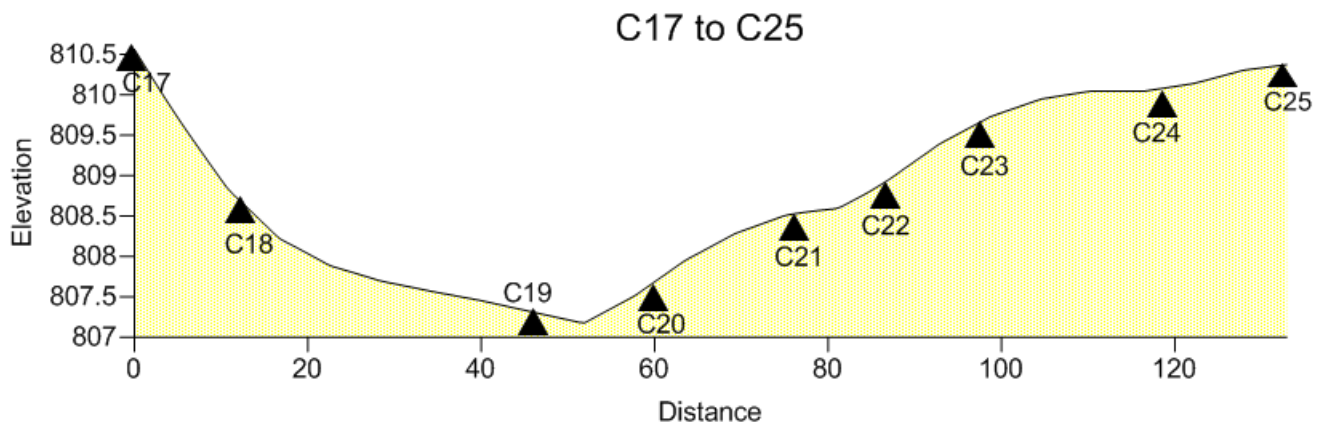
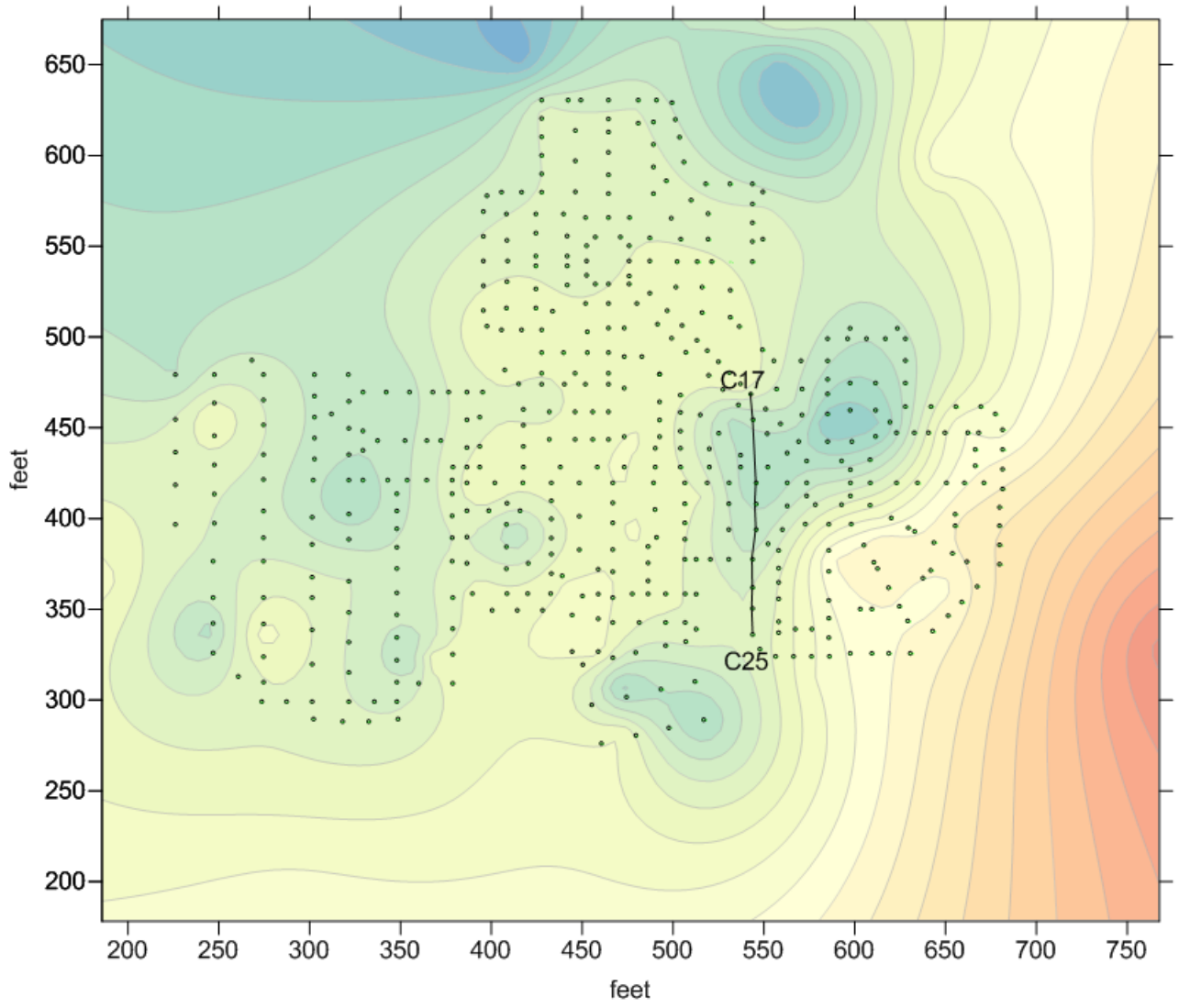


Figure D-27. Profile from C17 to C25.



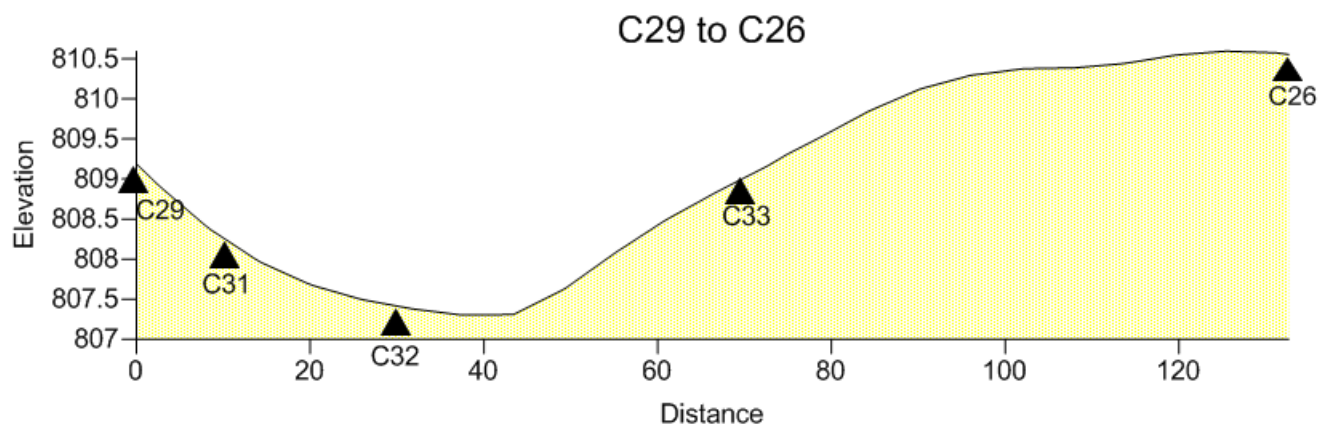
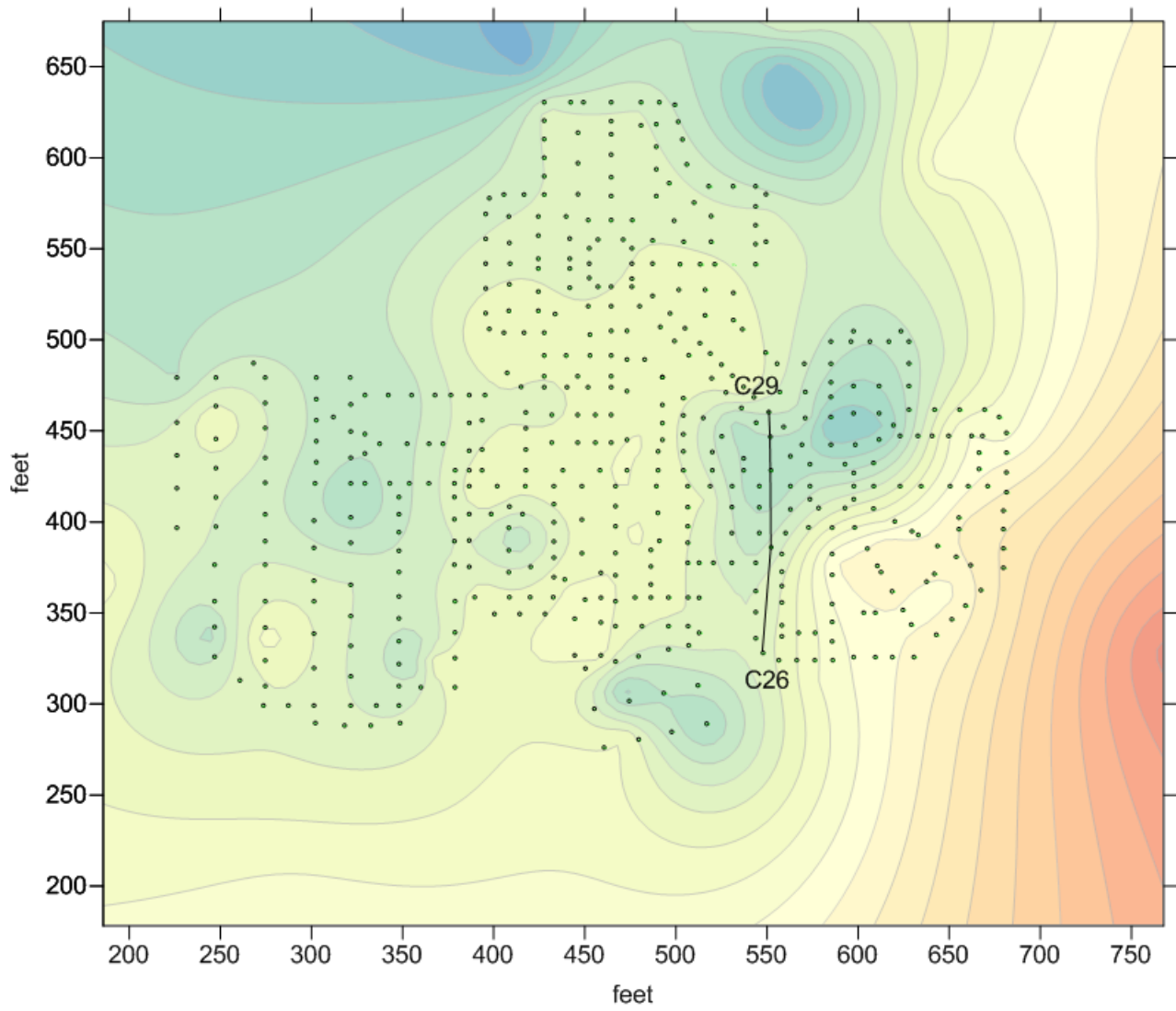


Figure D-28. Profile from C29 to C26.

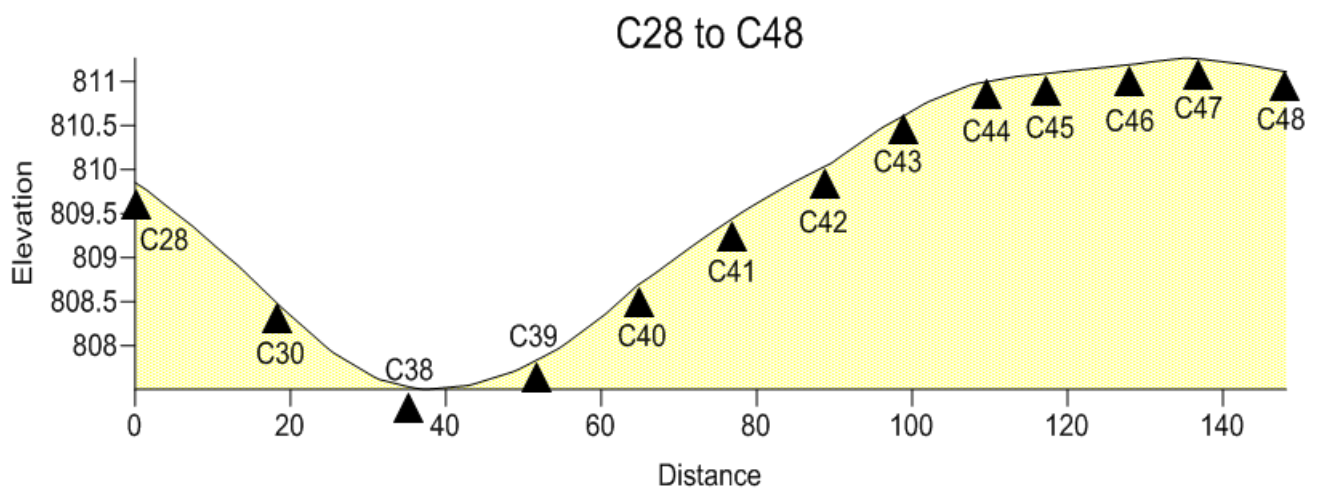
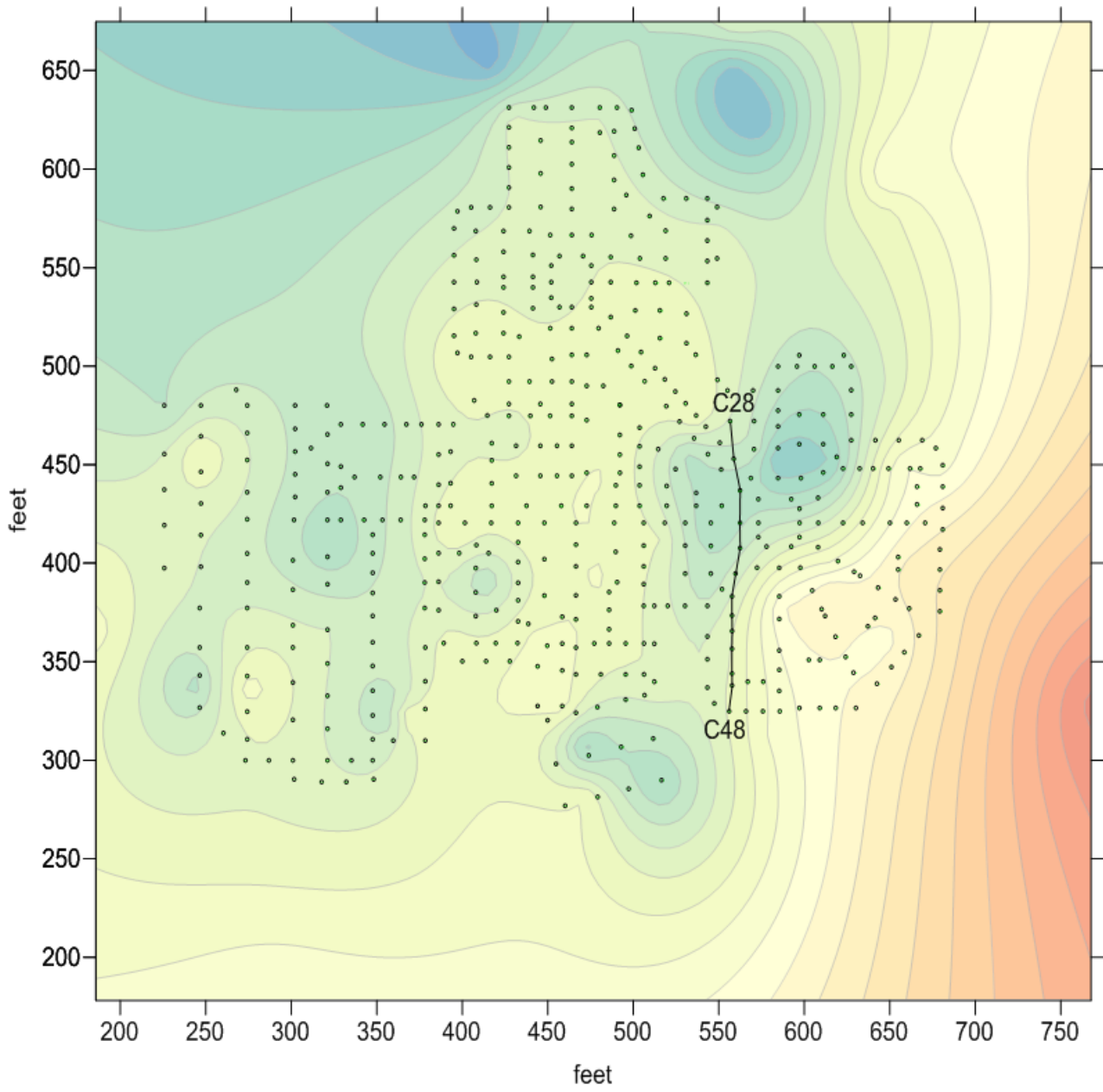


Figure D-29. Profile from C28 to C48.

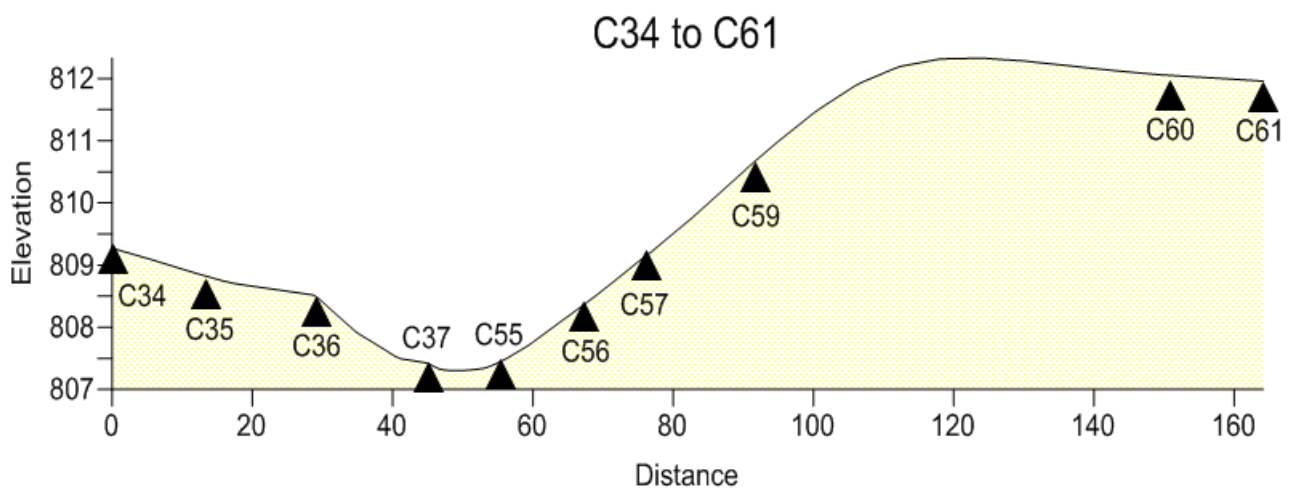
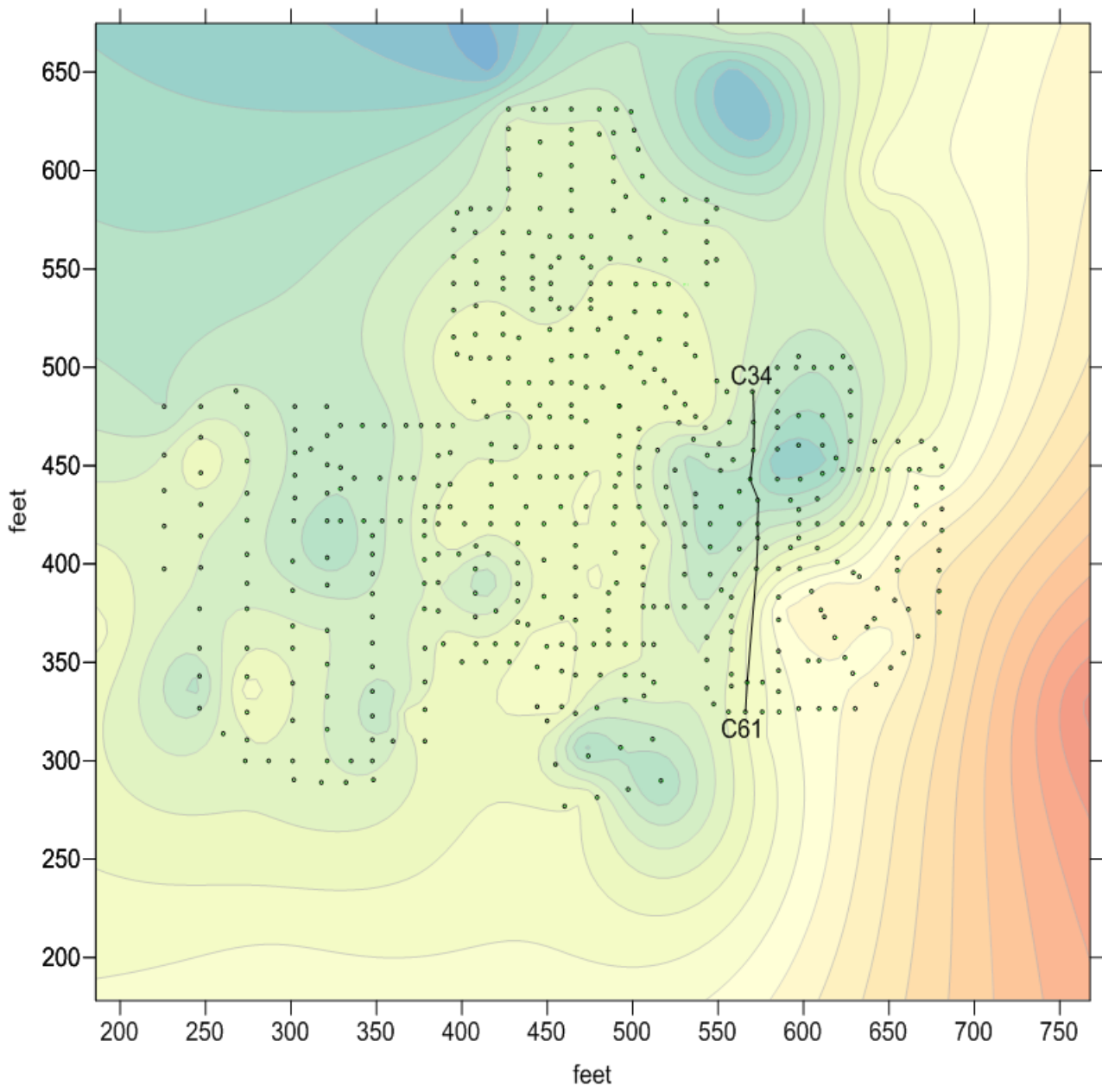


Figure D-30. Profile from C34 to C61.

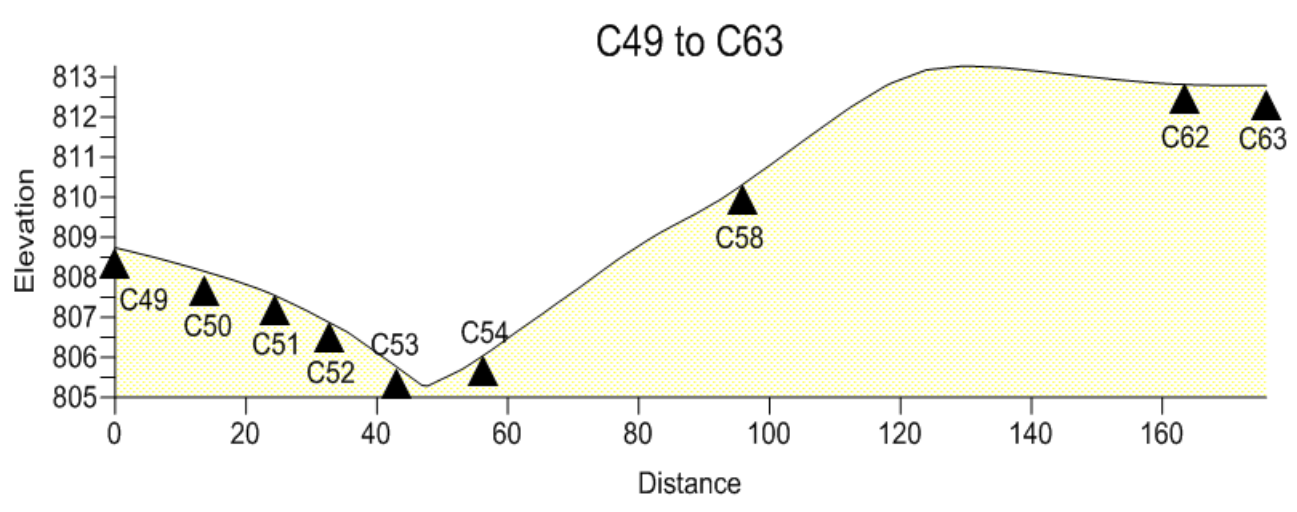
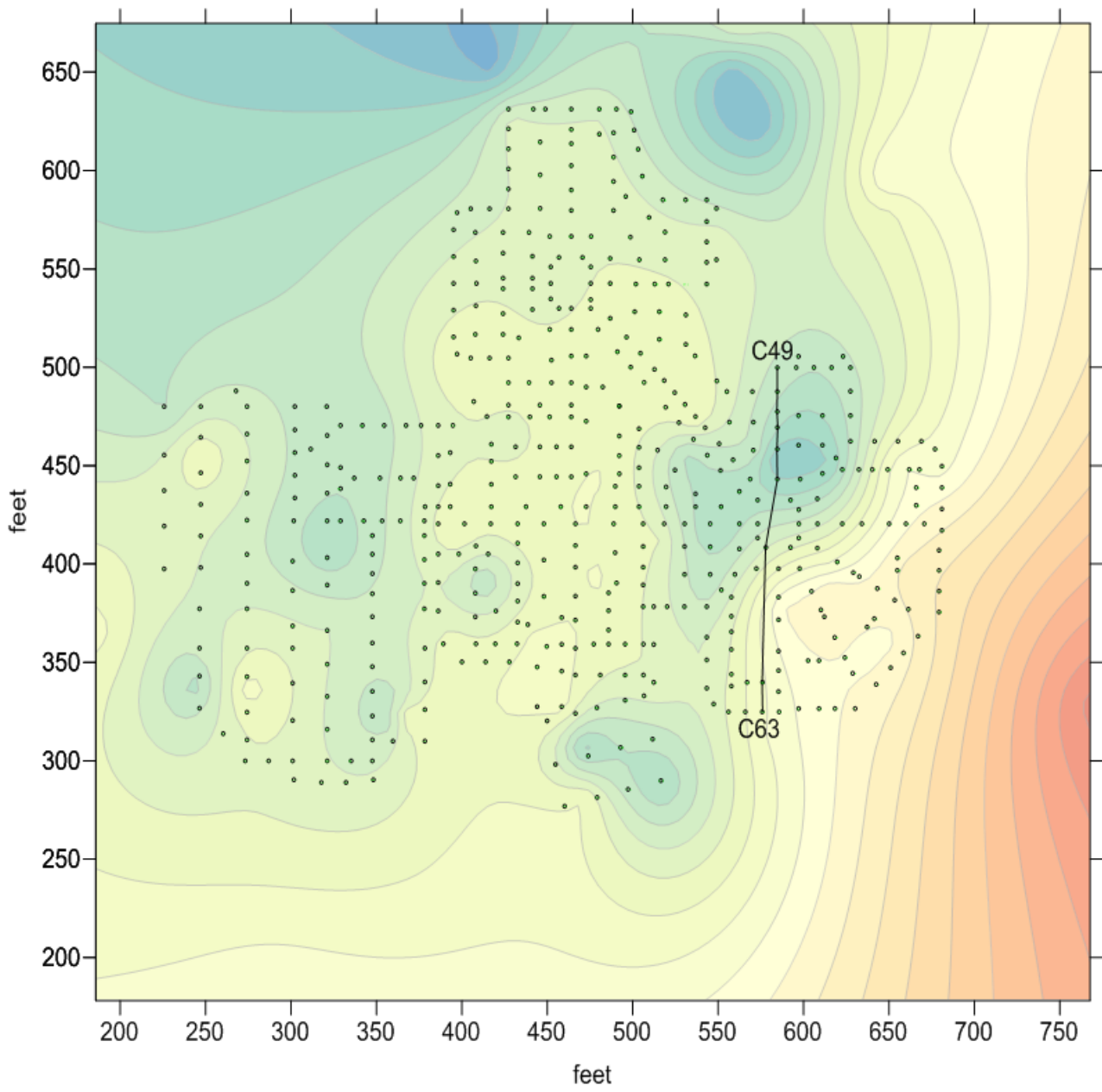


Figure D-31. Profile from C49 to C63.

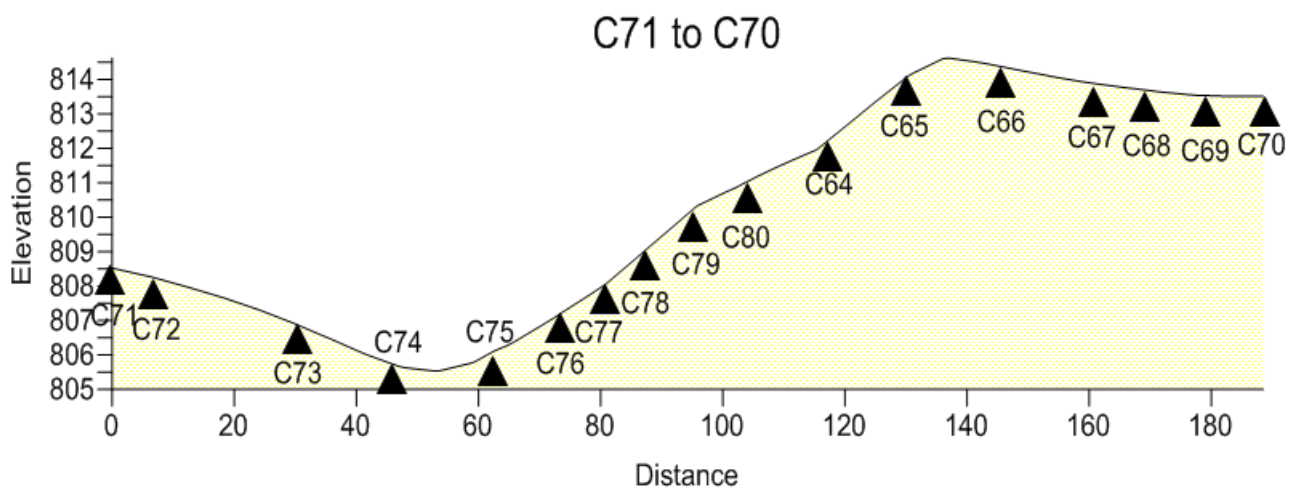
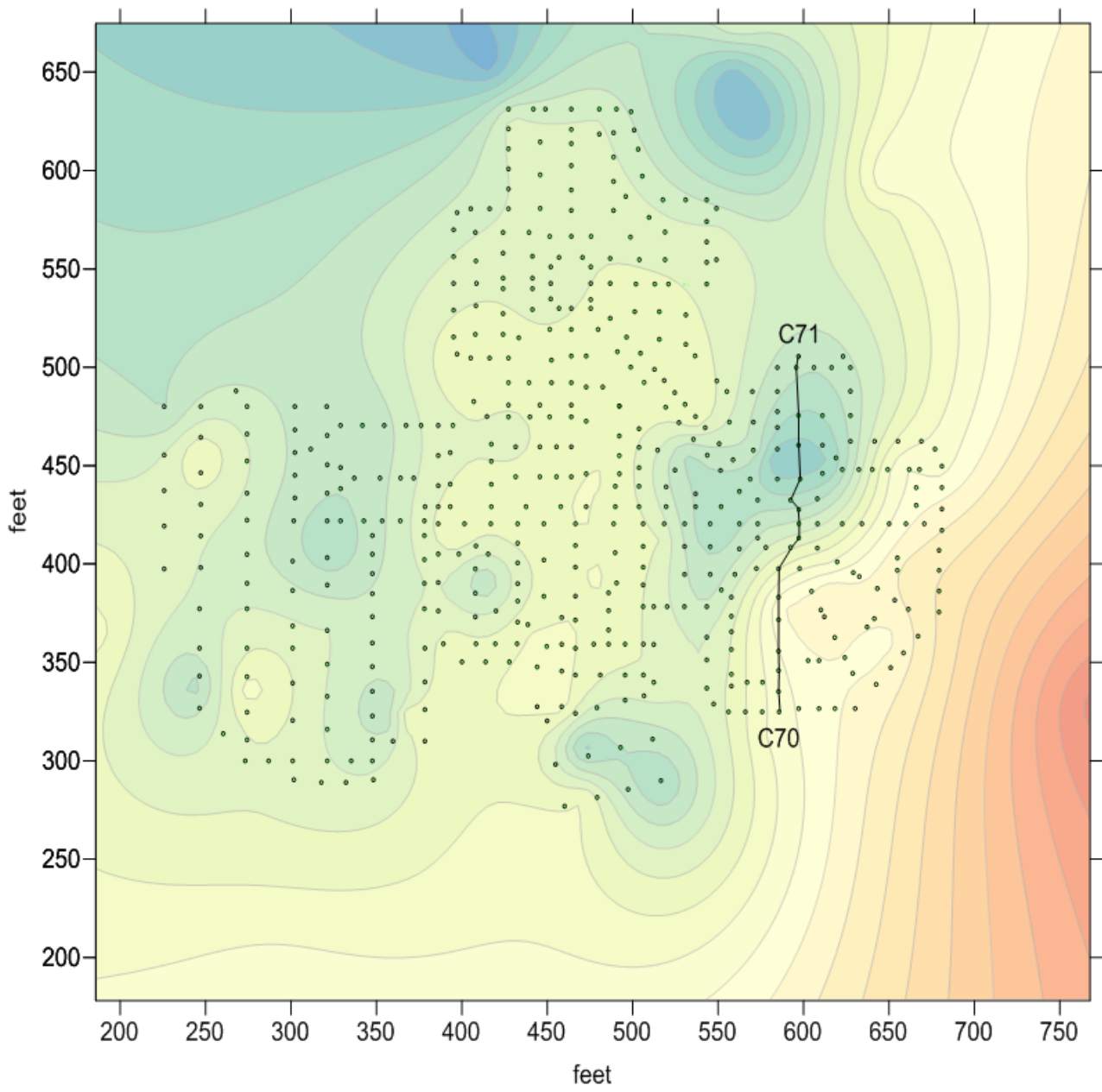
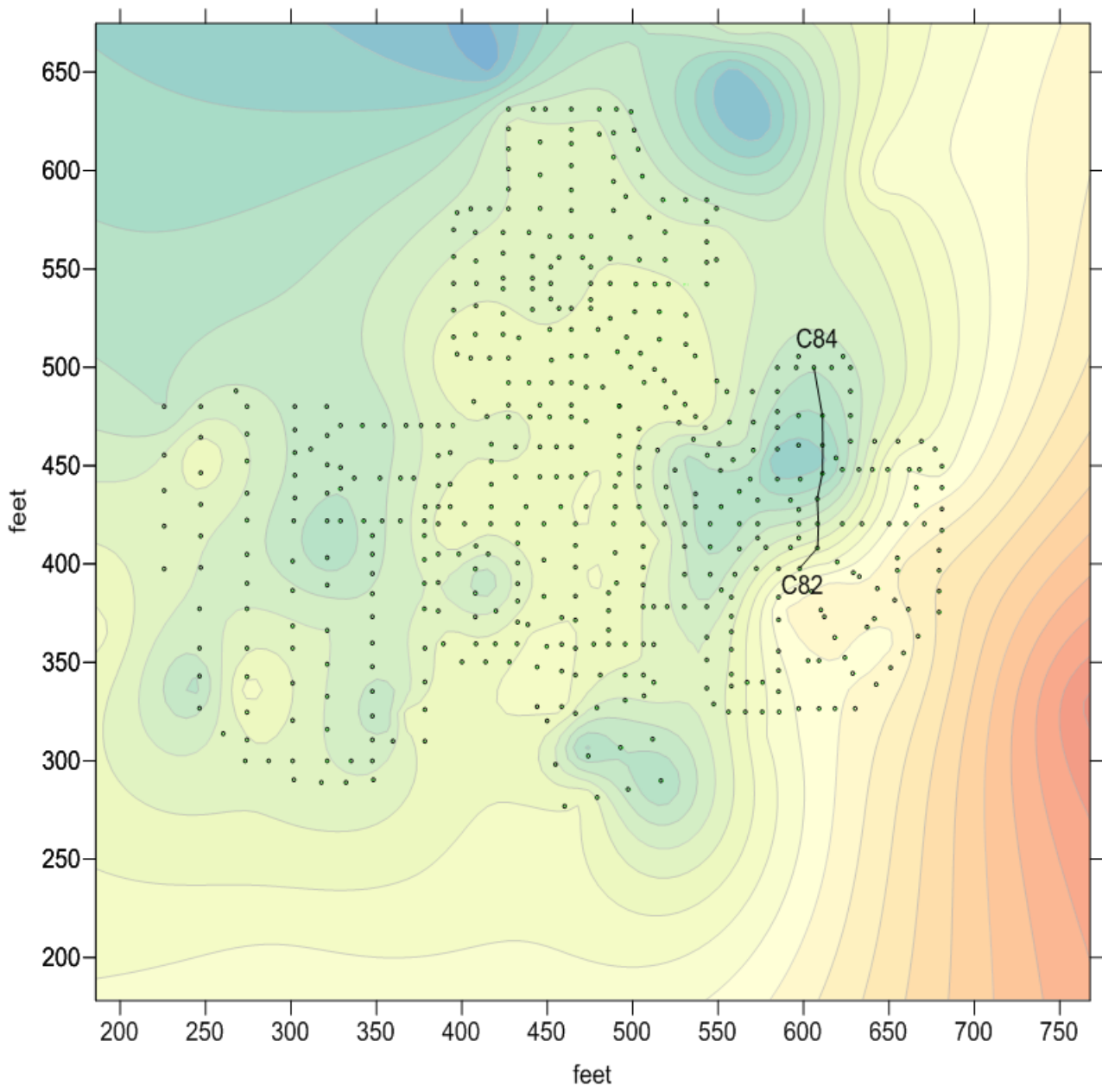


Figure D-31. Profile from C71 to C70.



C84 to C82

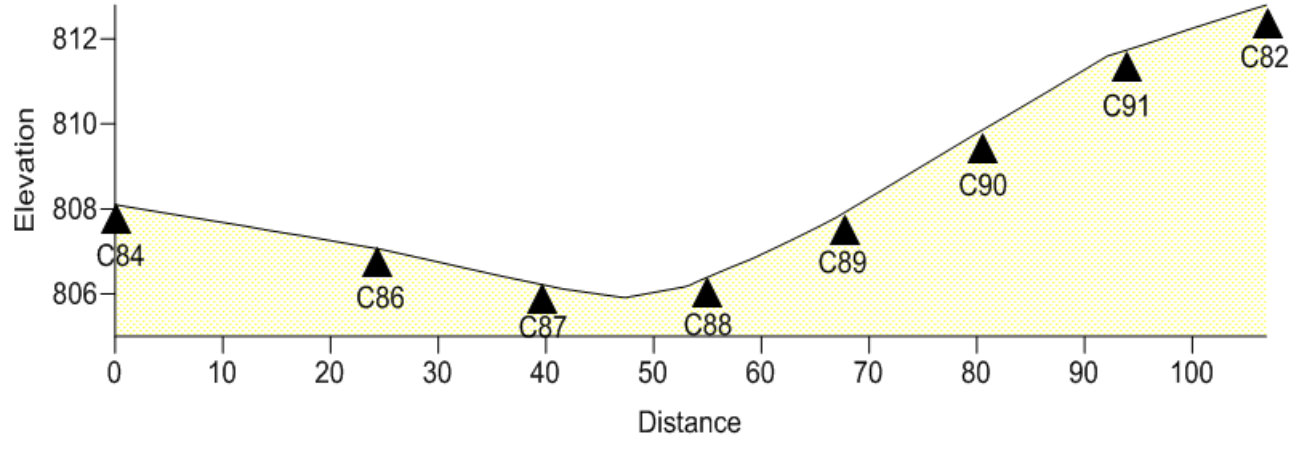


Figure D-32. Profile from C84 to C82.

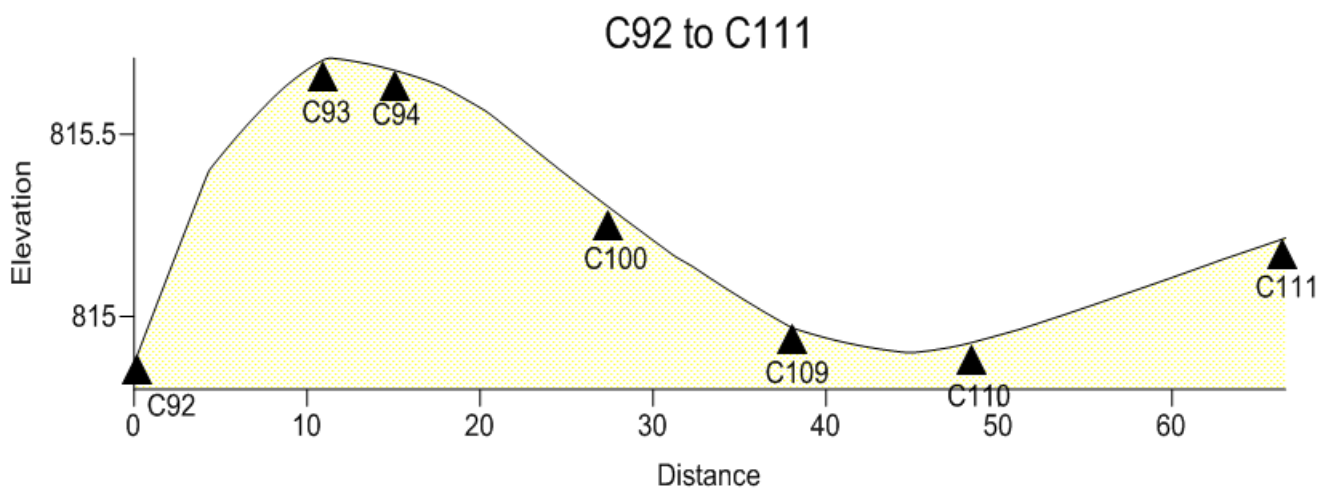
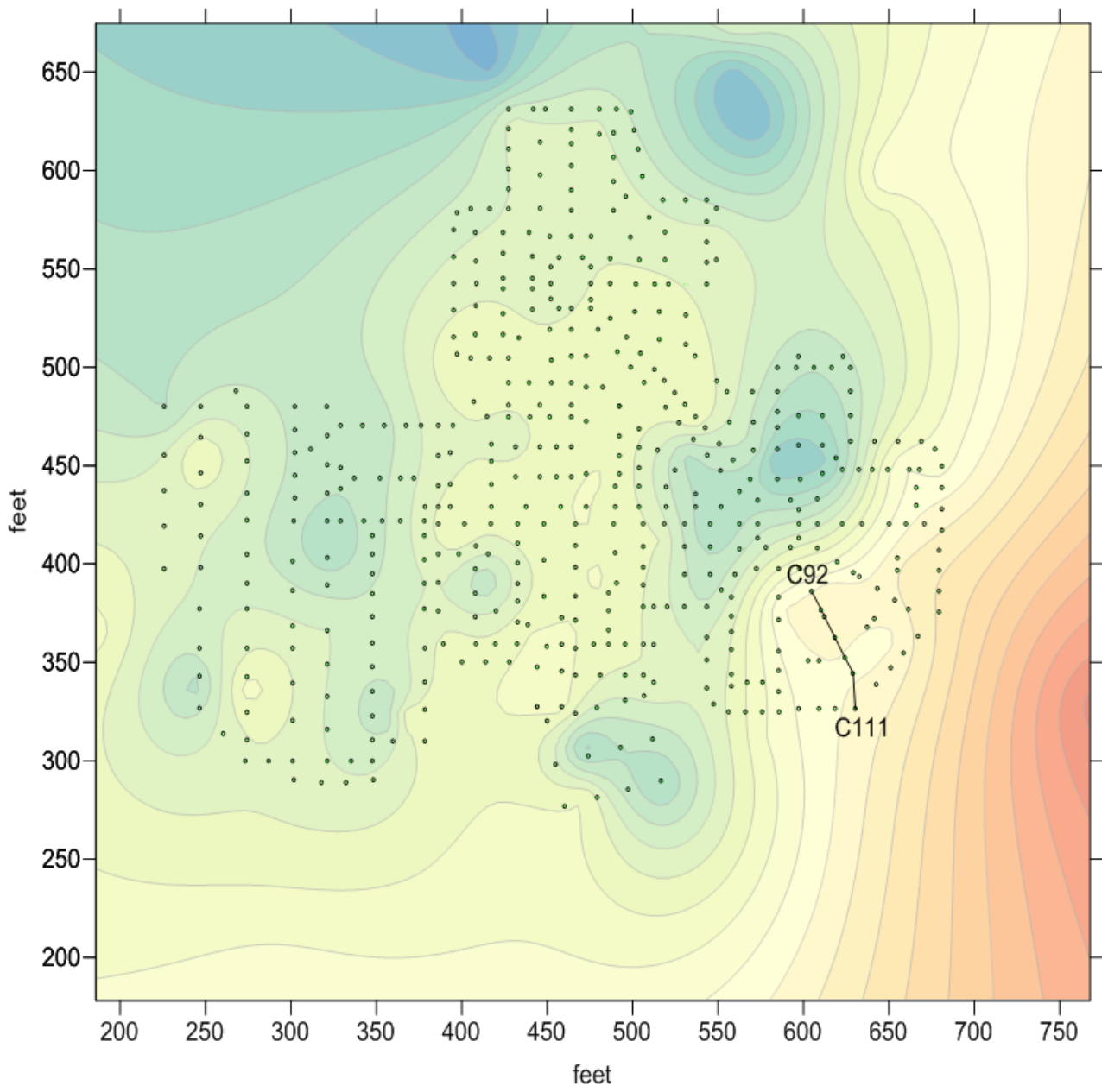


Figure D-33. Profile from C92 to C111.

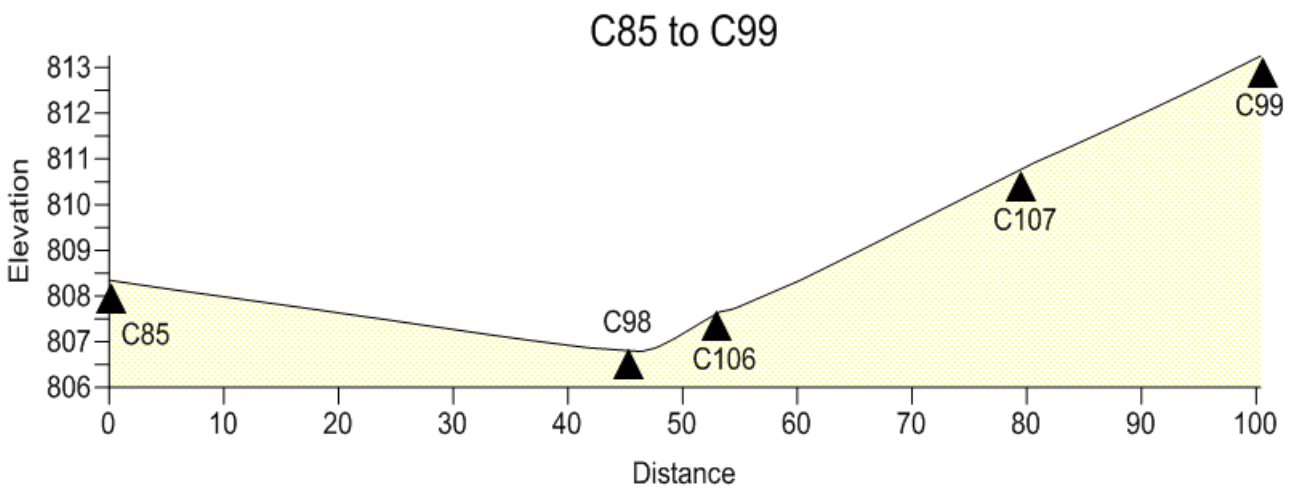
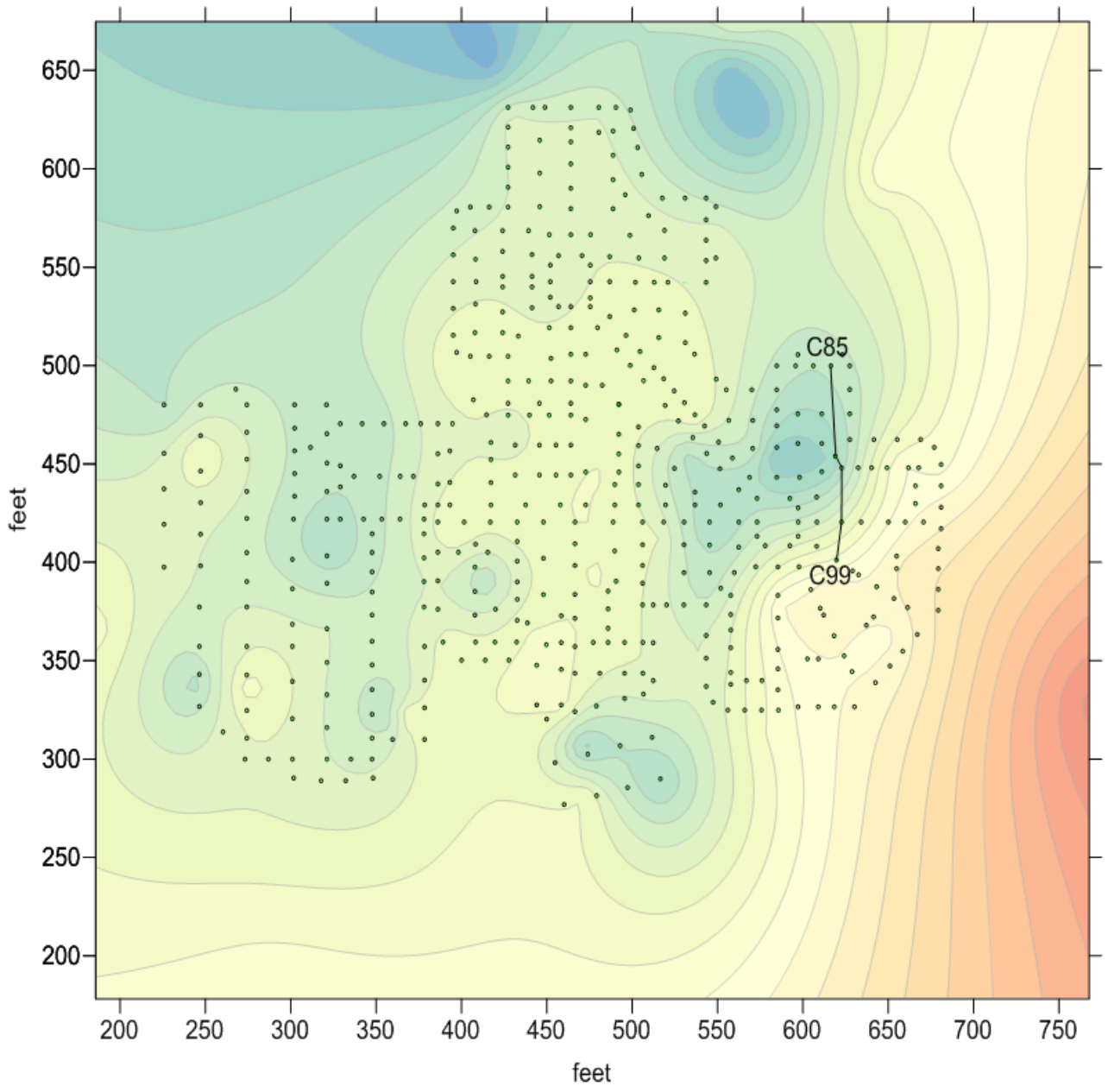
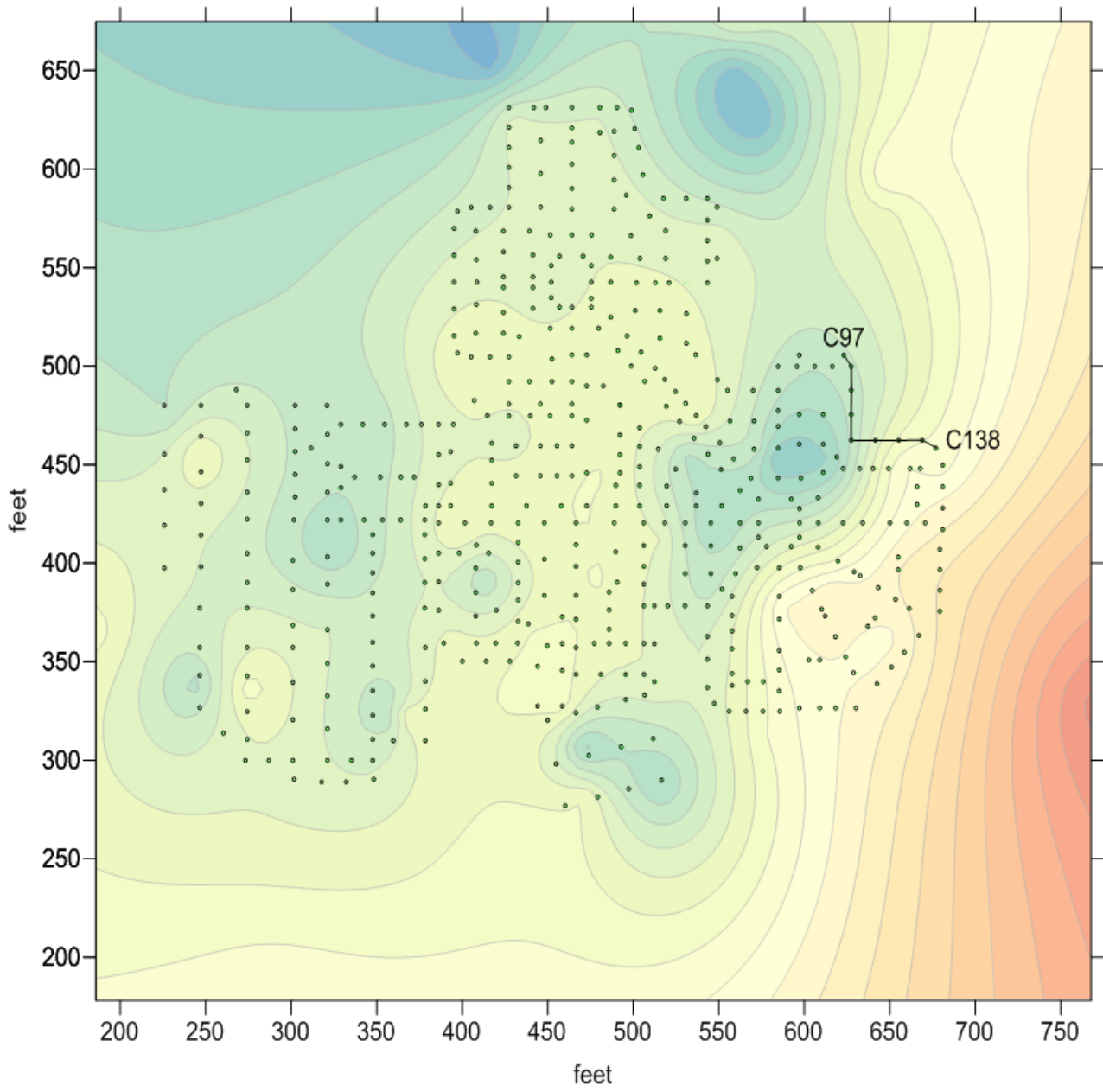


Figure D-35. Profile from C85 to C99.





C97 to C138

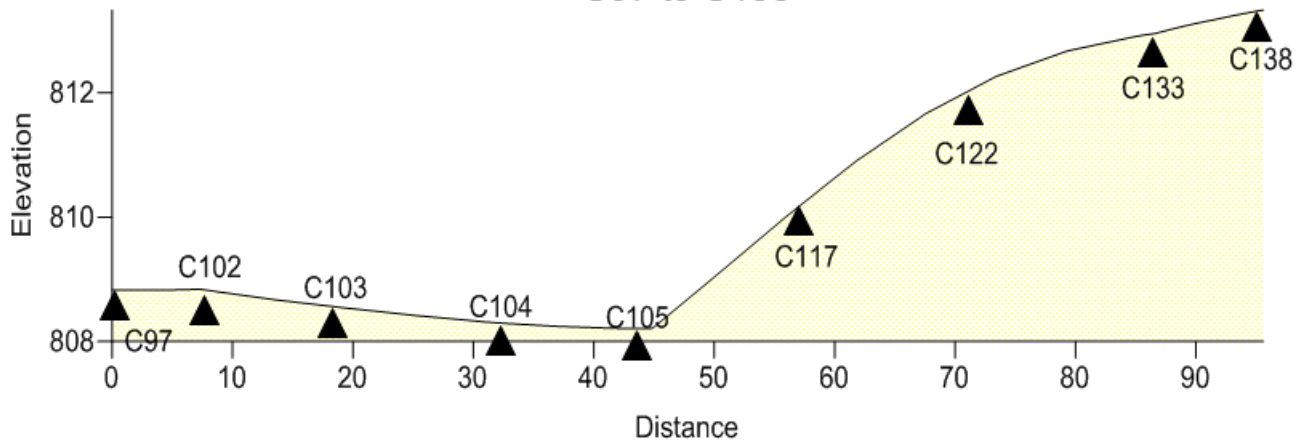


Figure D-36. Profile from C97 to C138.

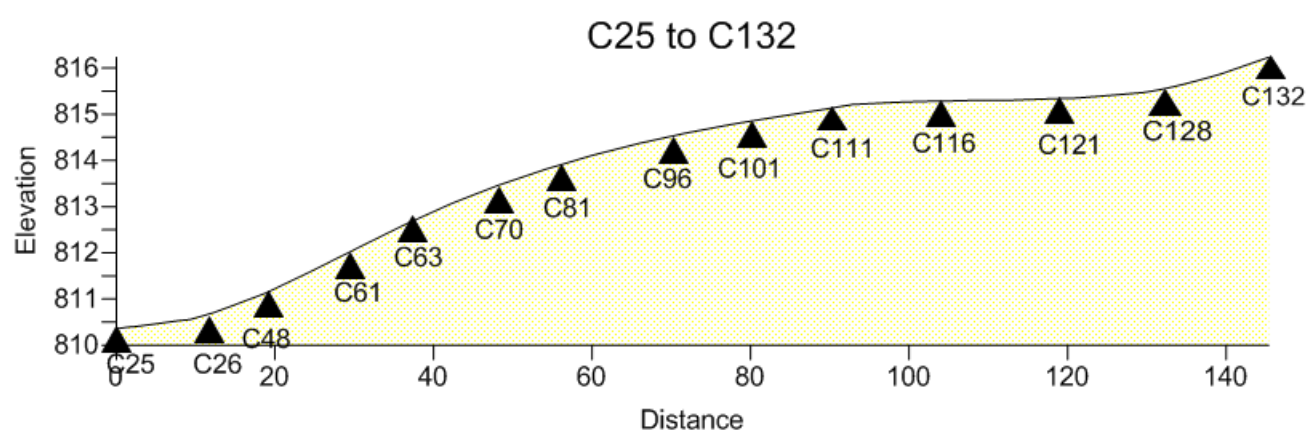
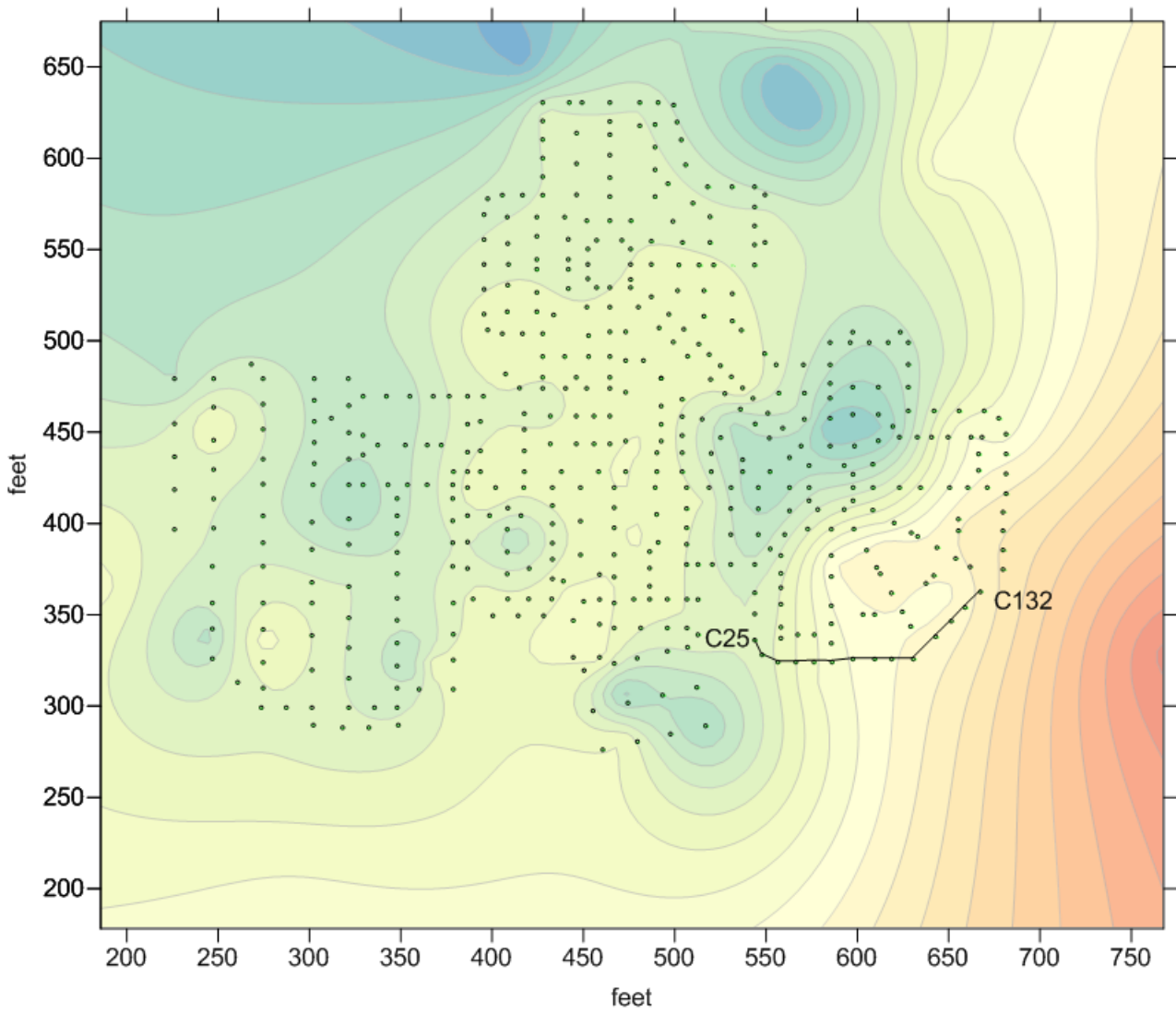


Figure D-37. Profile from C25 to C132.

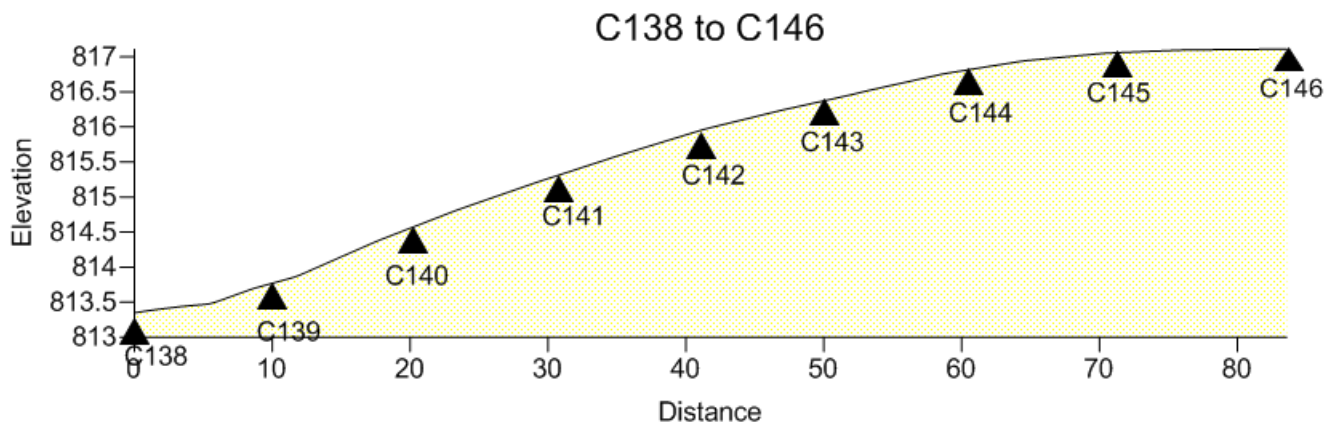
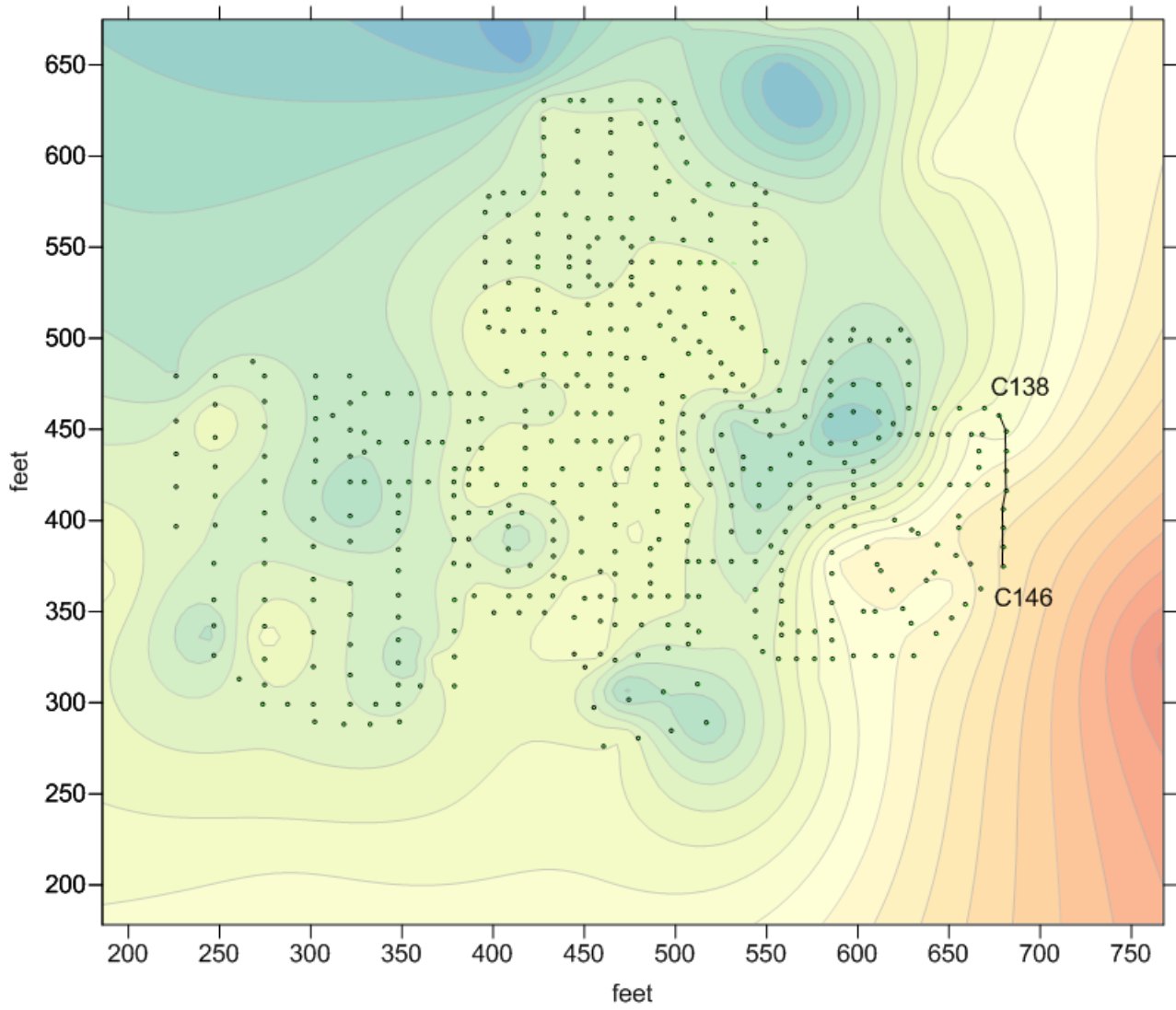


Figure D-38. Profile from C138 to C146.

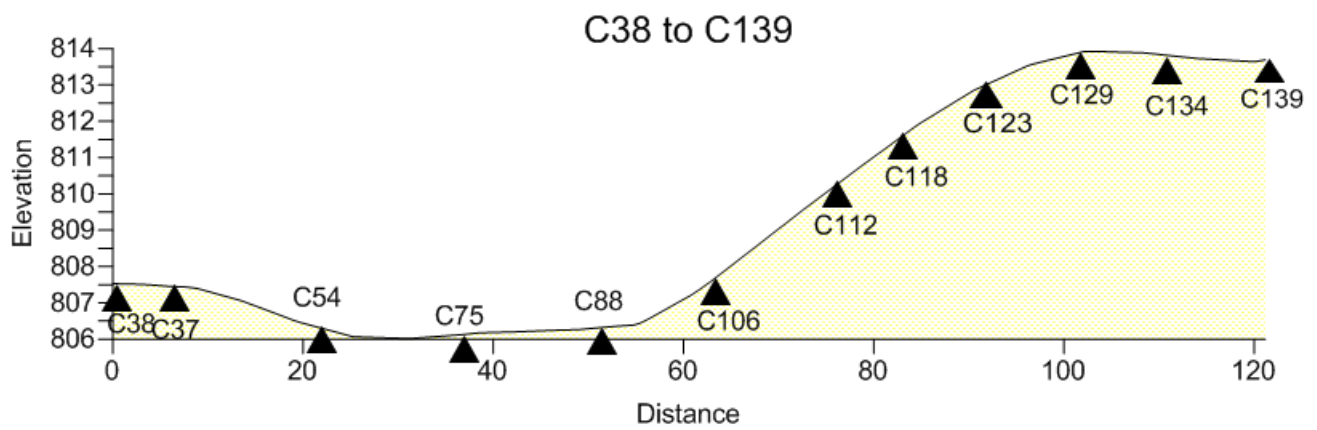
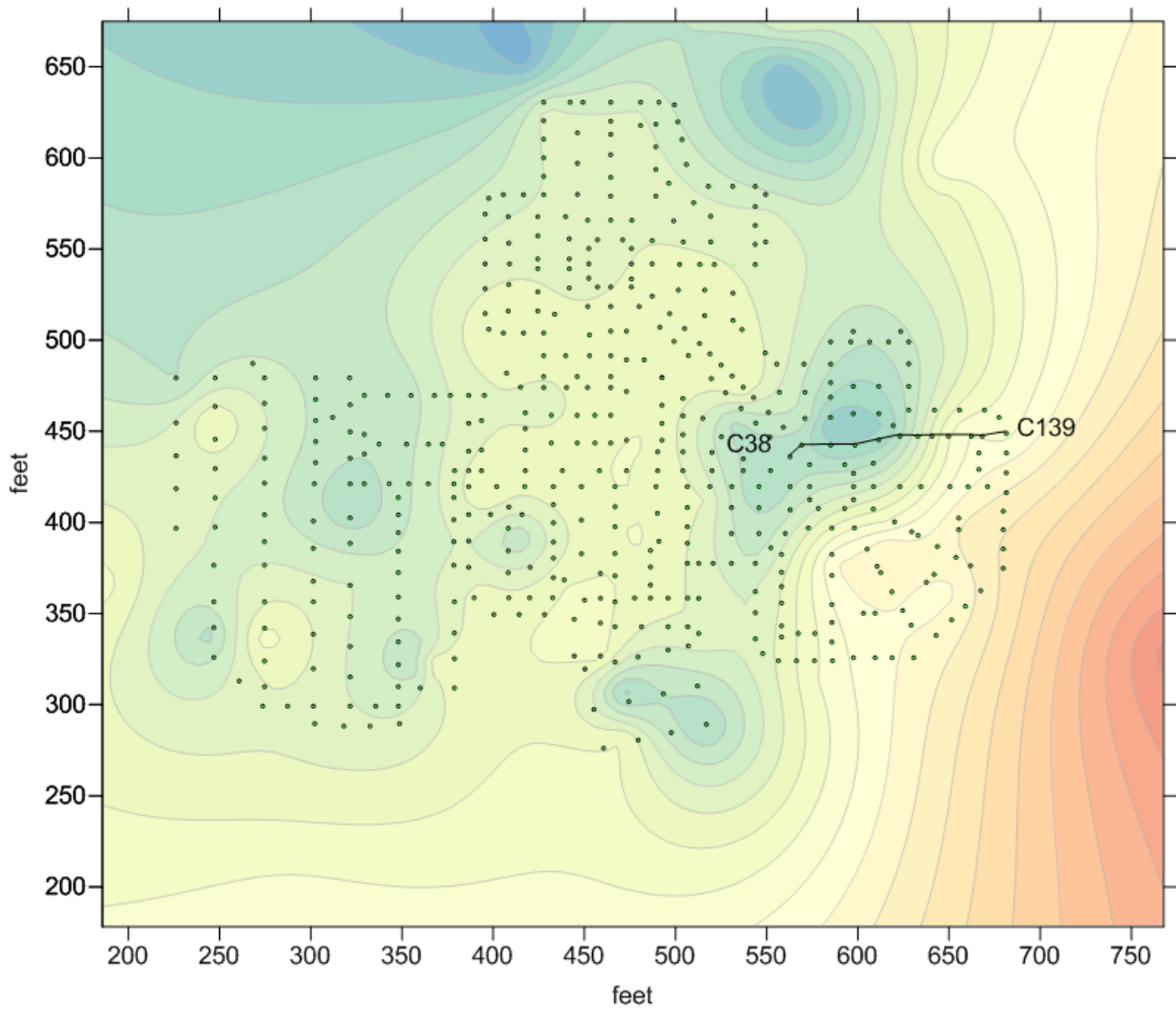


Figure D-39. Profile from C38 to C139.

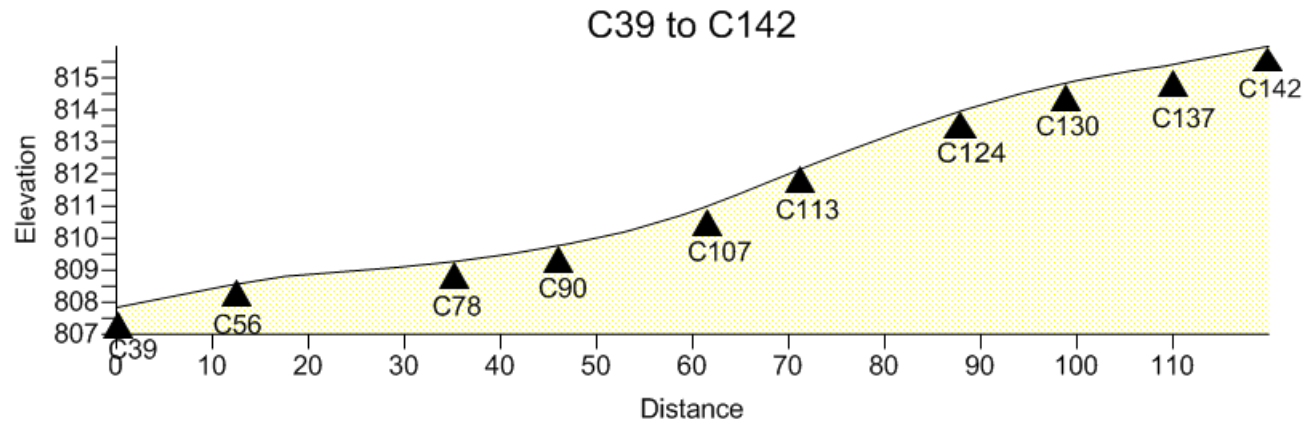
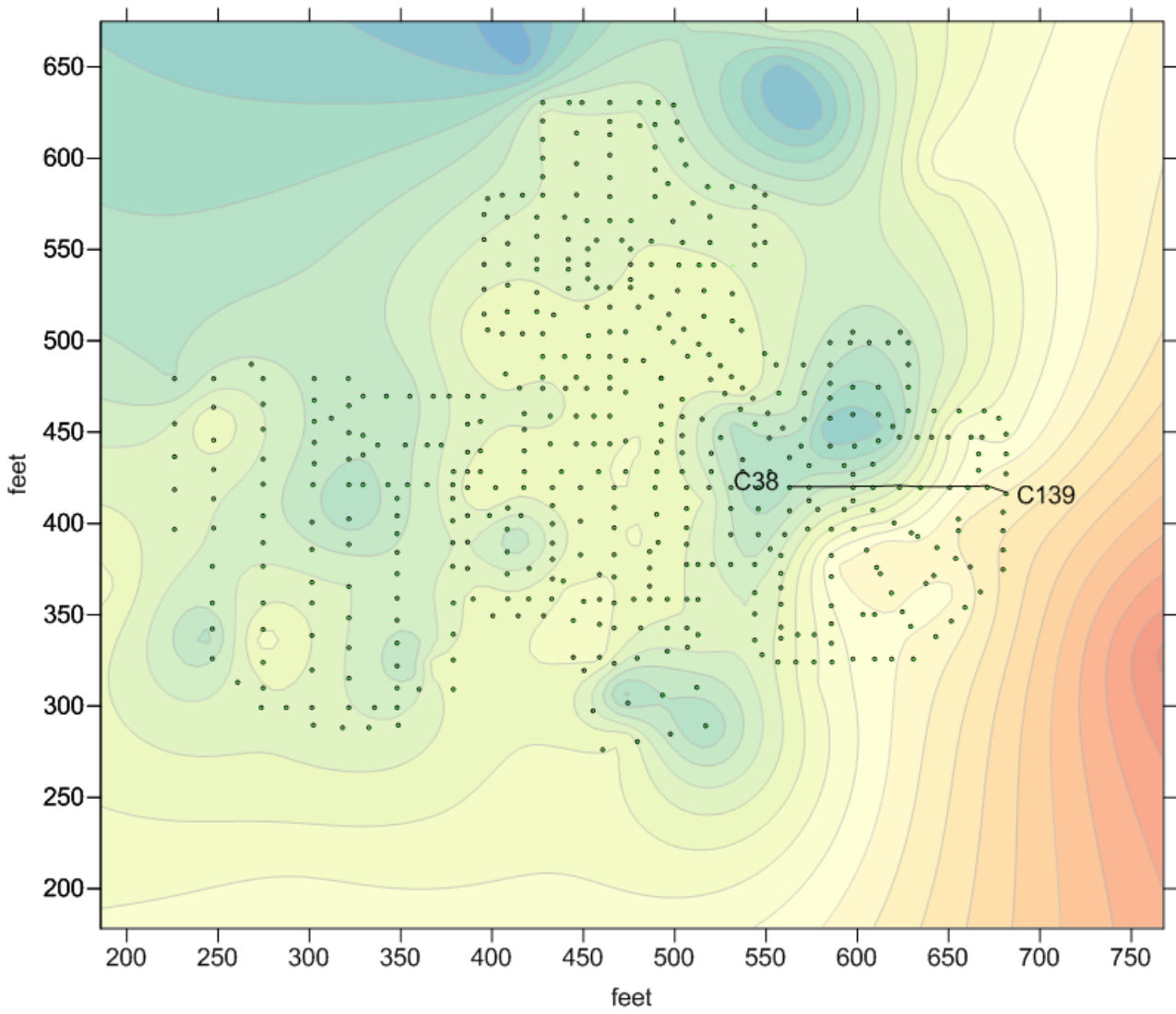


Figure D-40. Profile from C39 to C142.

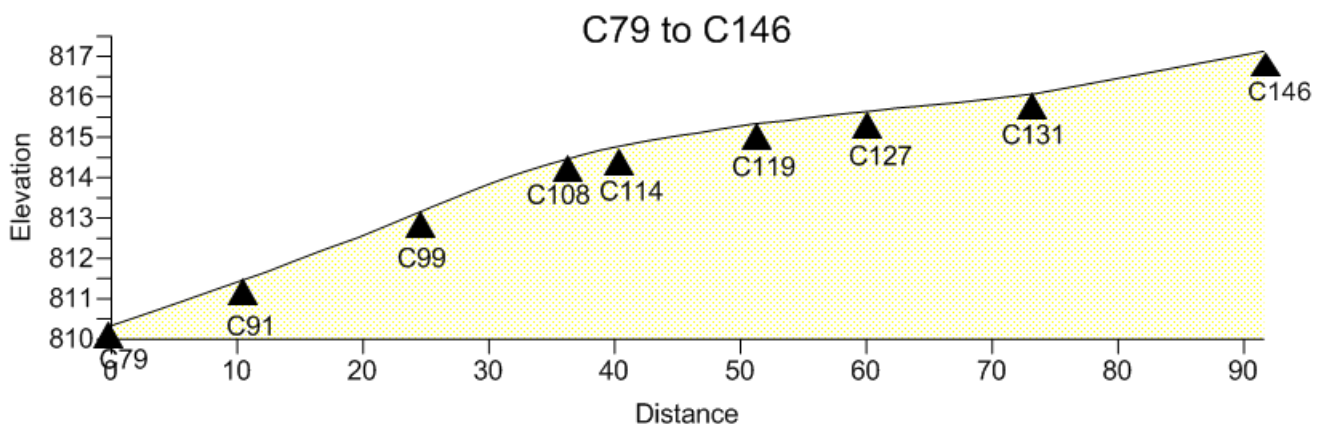
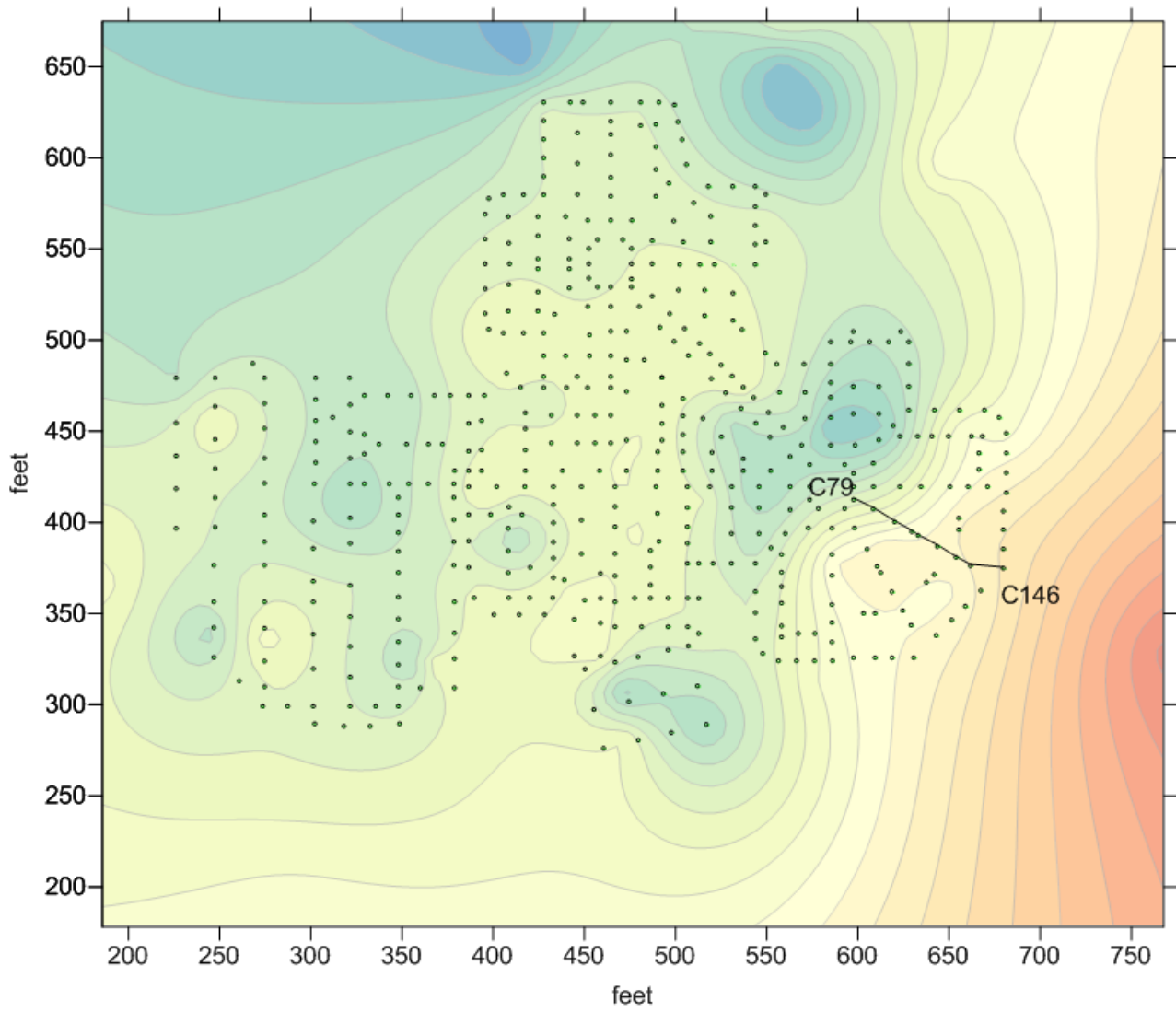


Figure D-41. Profile from C79 to C146.

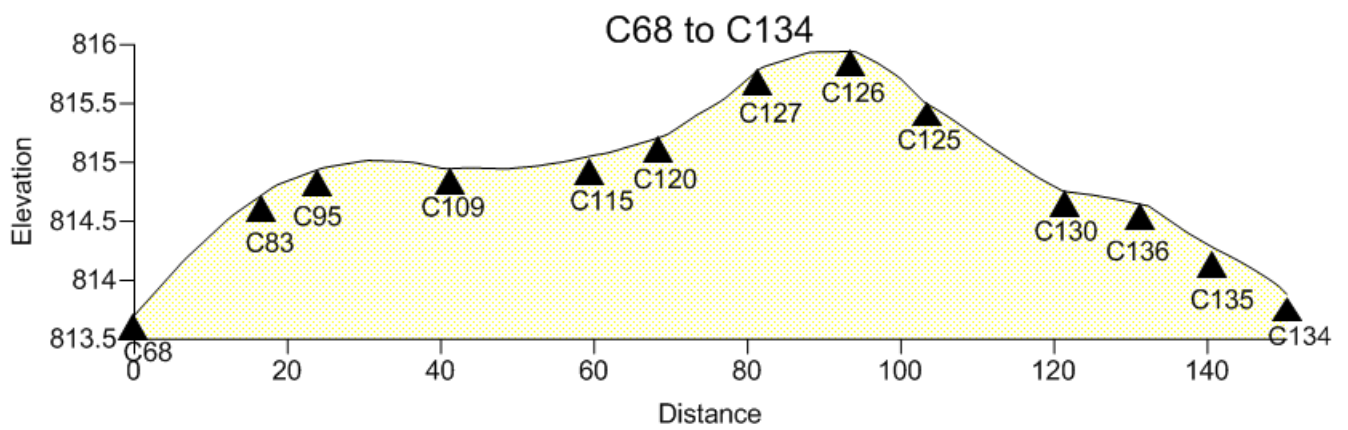
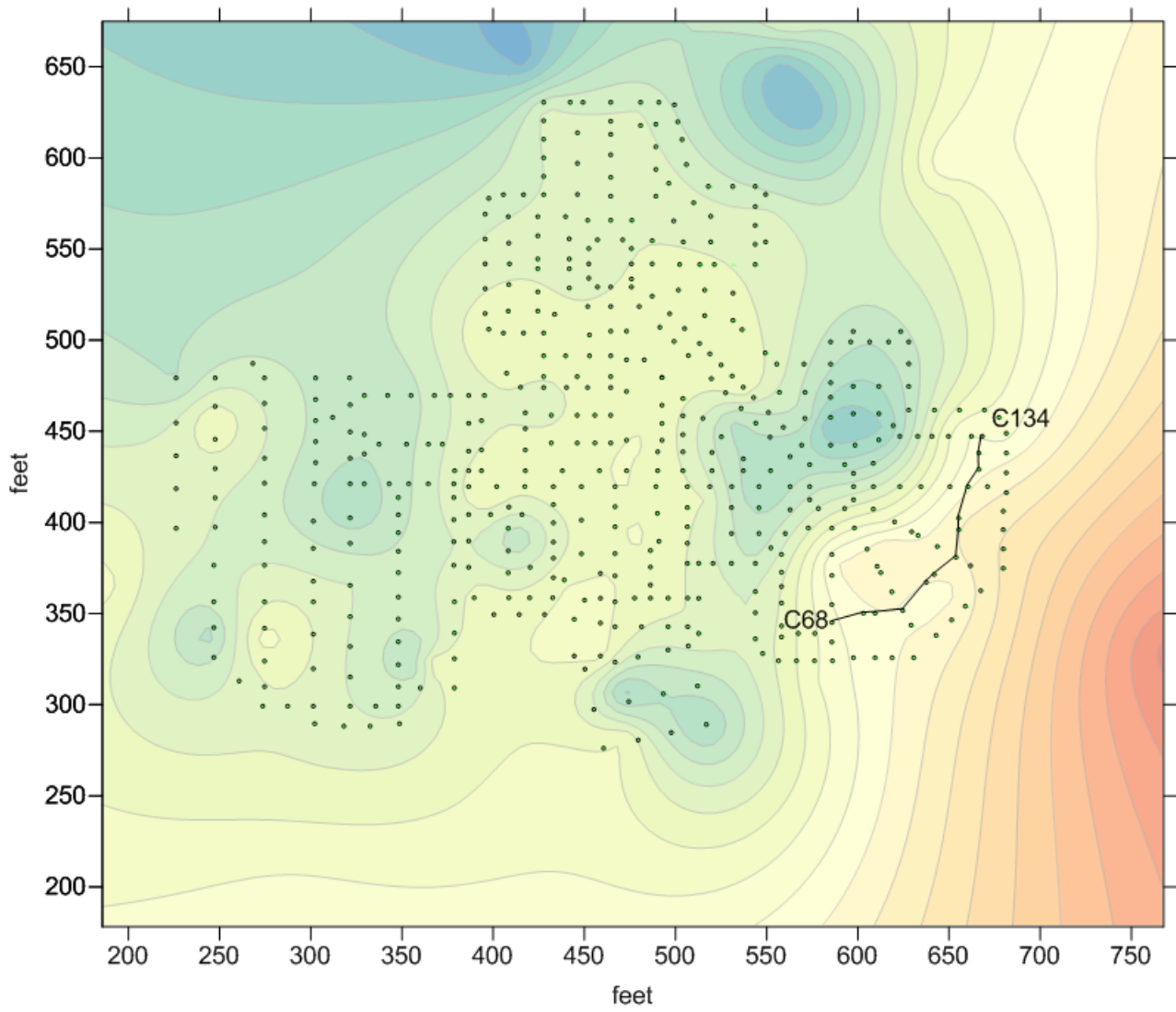
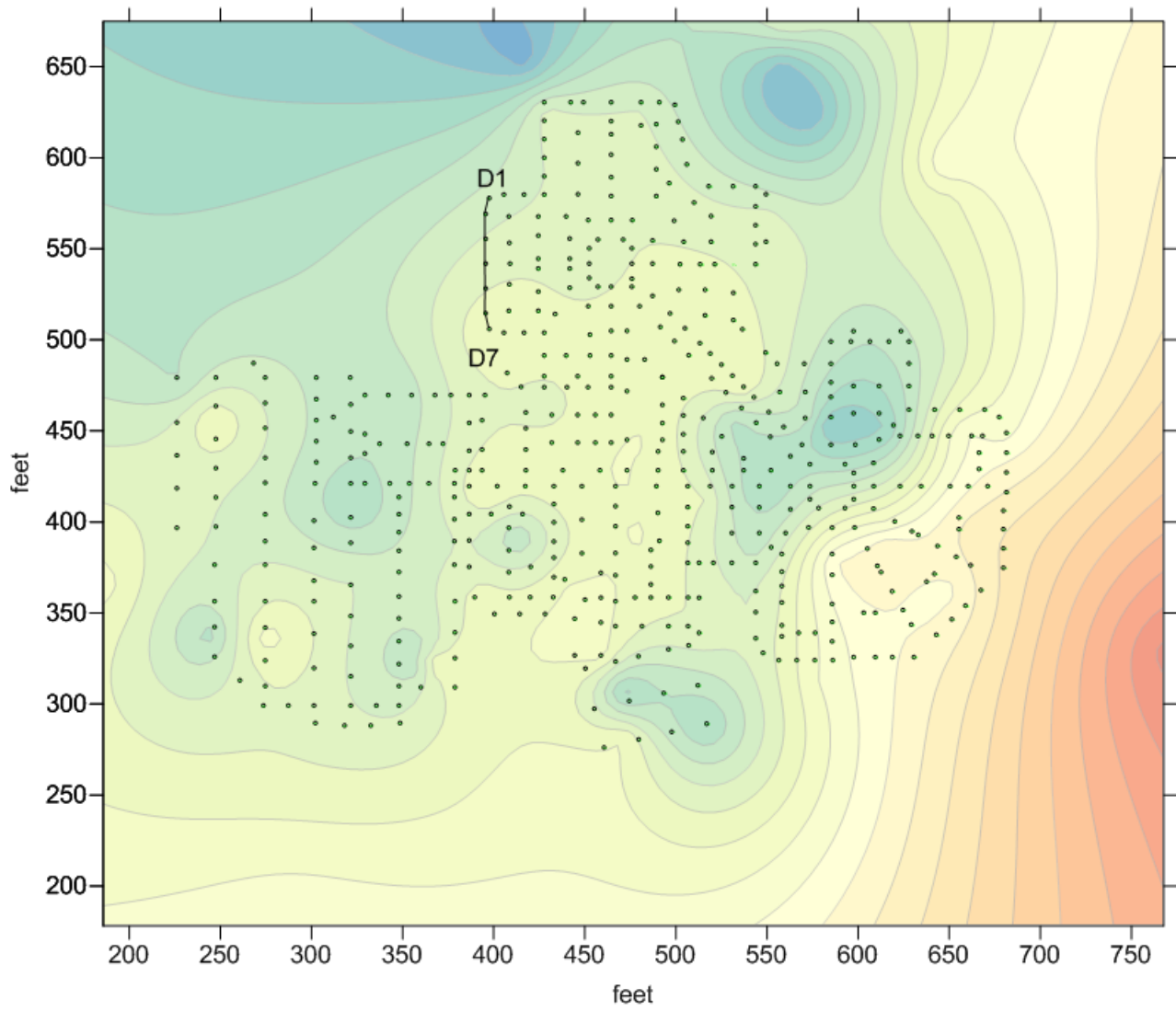


Figure D-42. Profile from C68 to C134.



D1 to D7

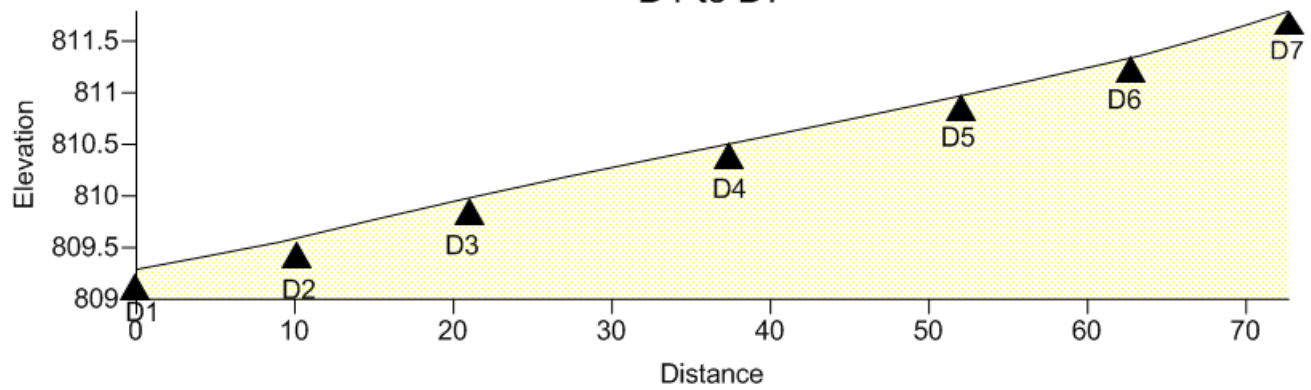


Figure D-43. Profile from D1 to D7.



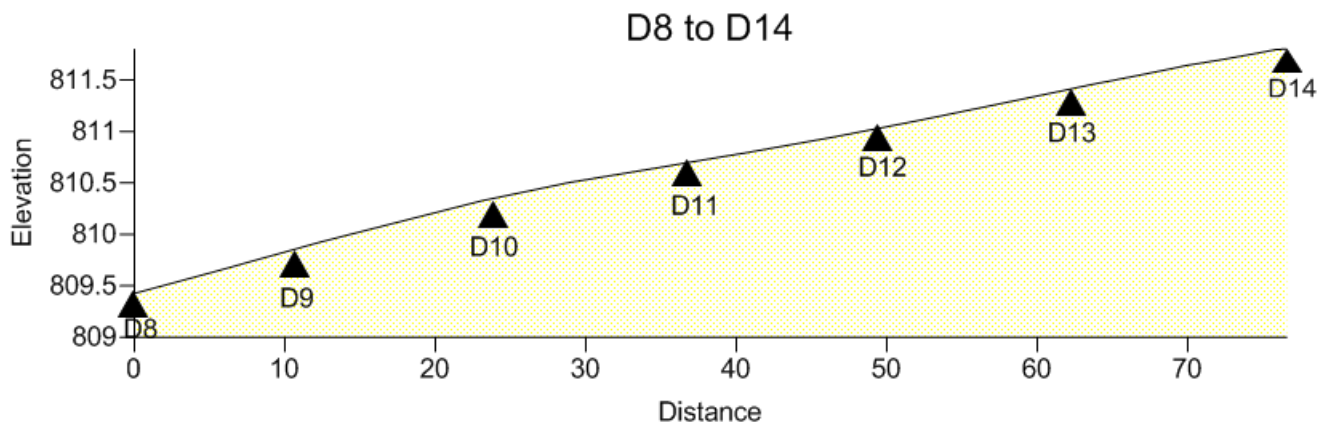
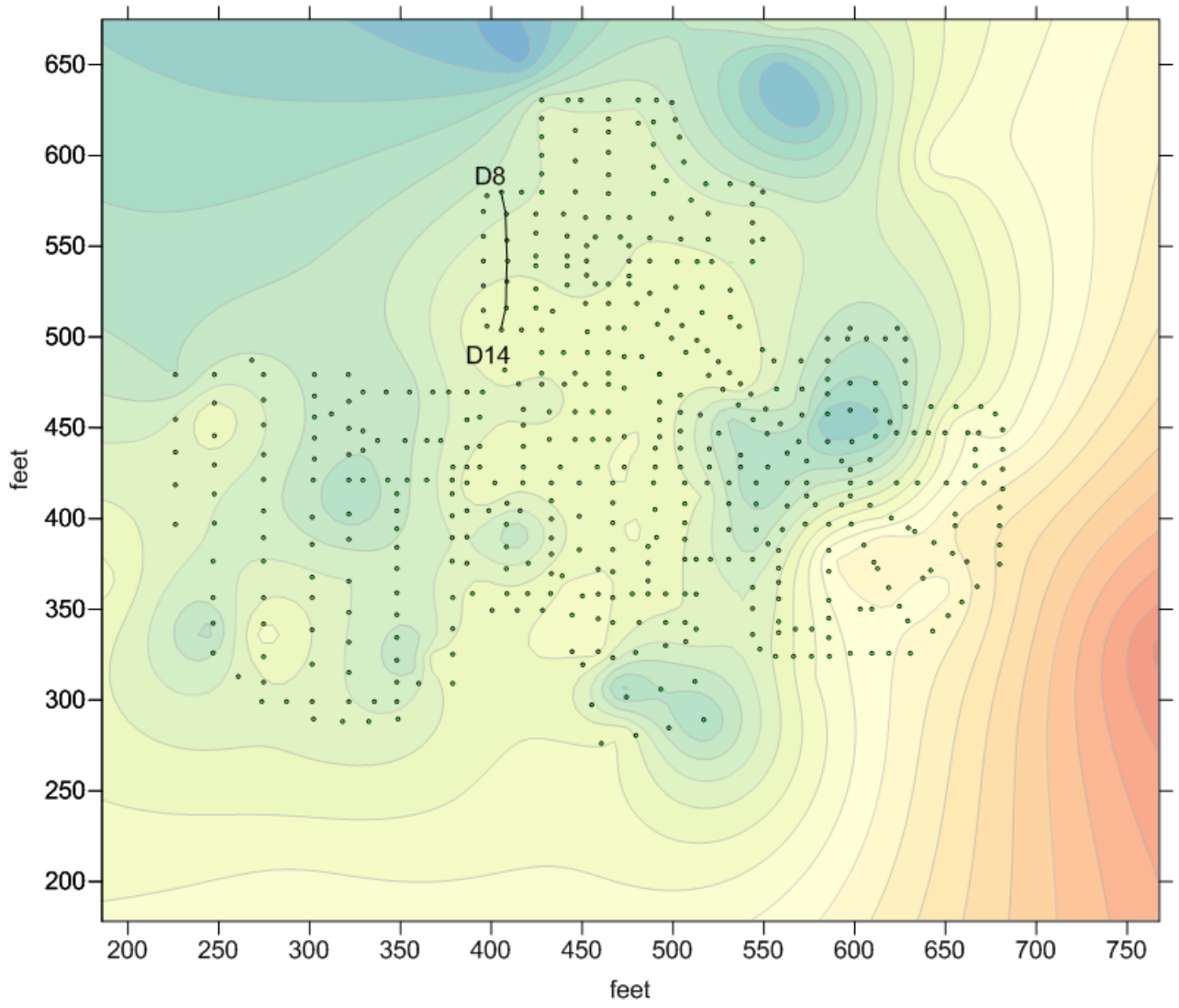


Figure D-44. Profile from D8 to D14.

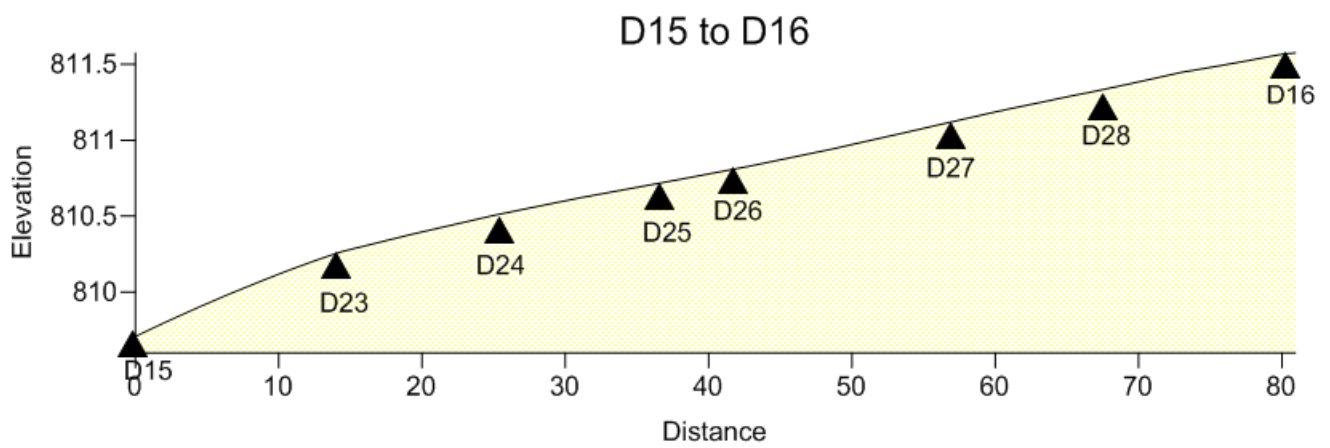
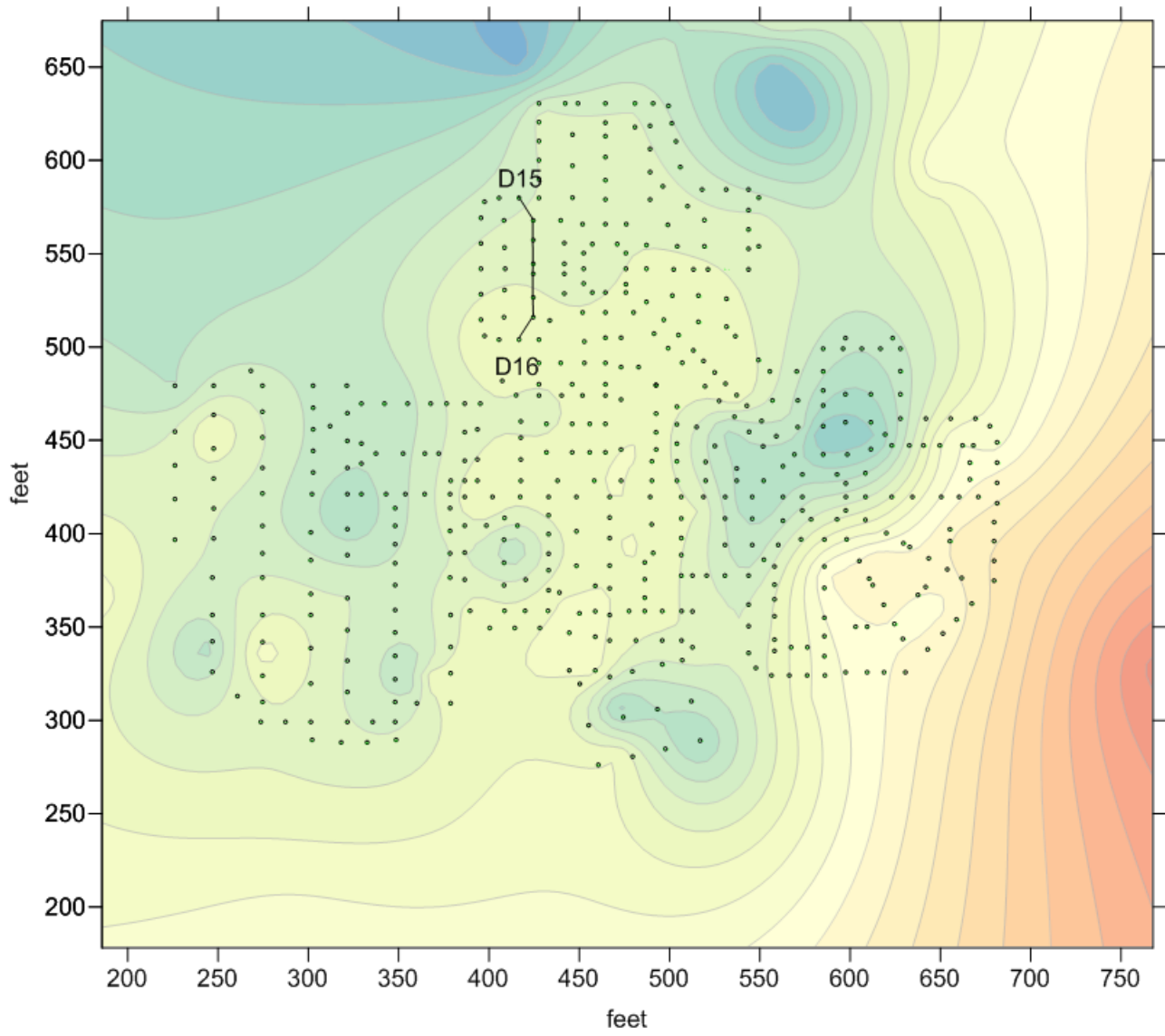


Figure D-45. Profile from D15 to D16.

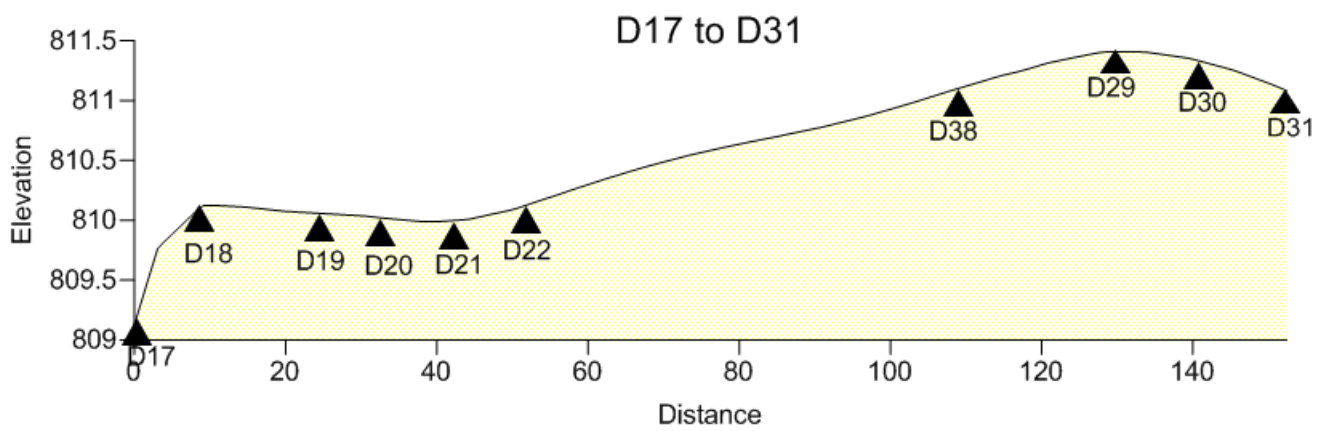
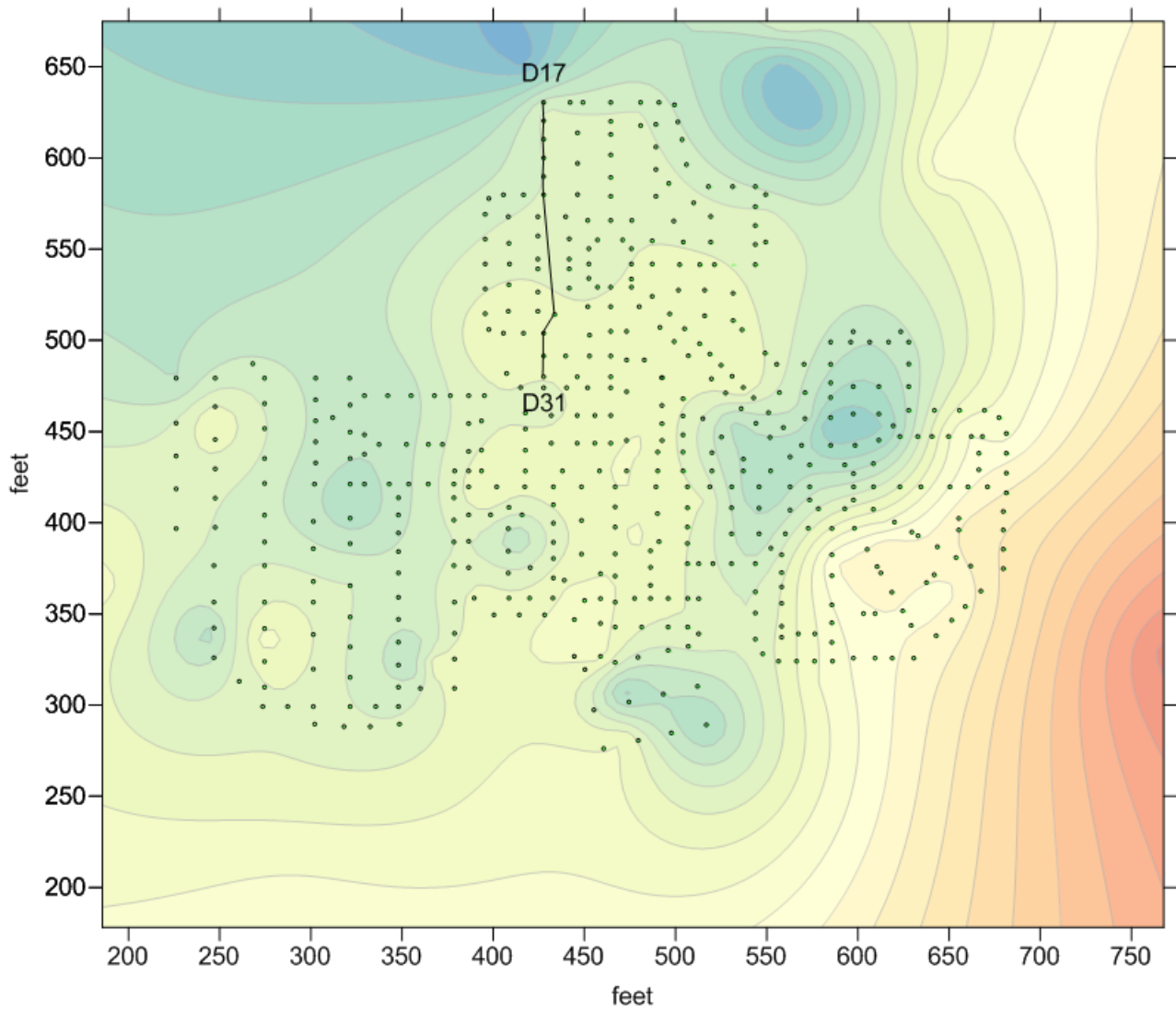


Figure D-46. Profile from D17 to D31.

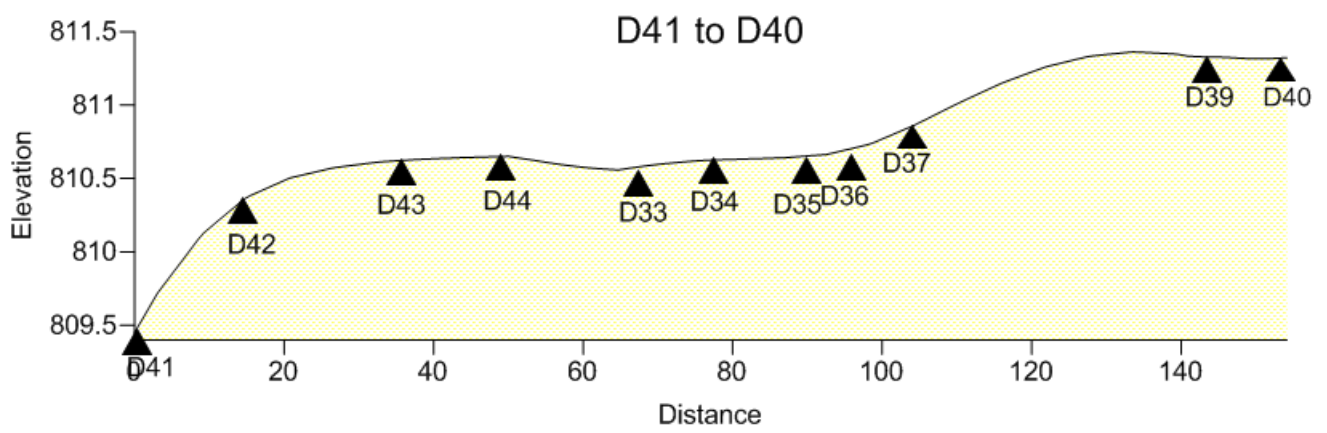
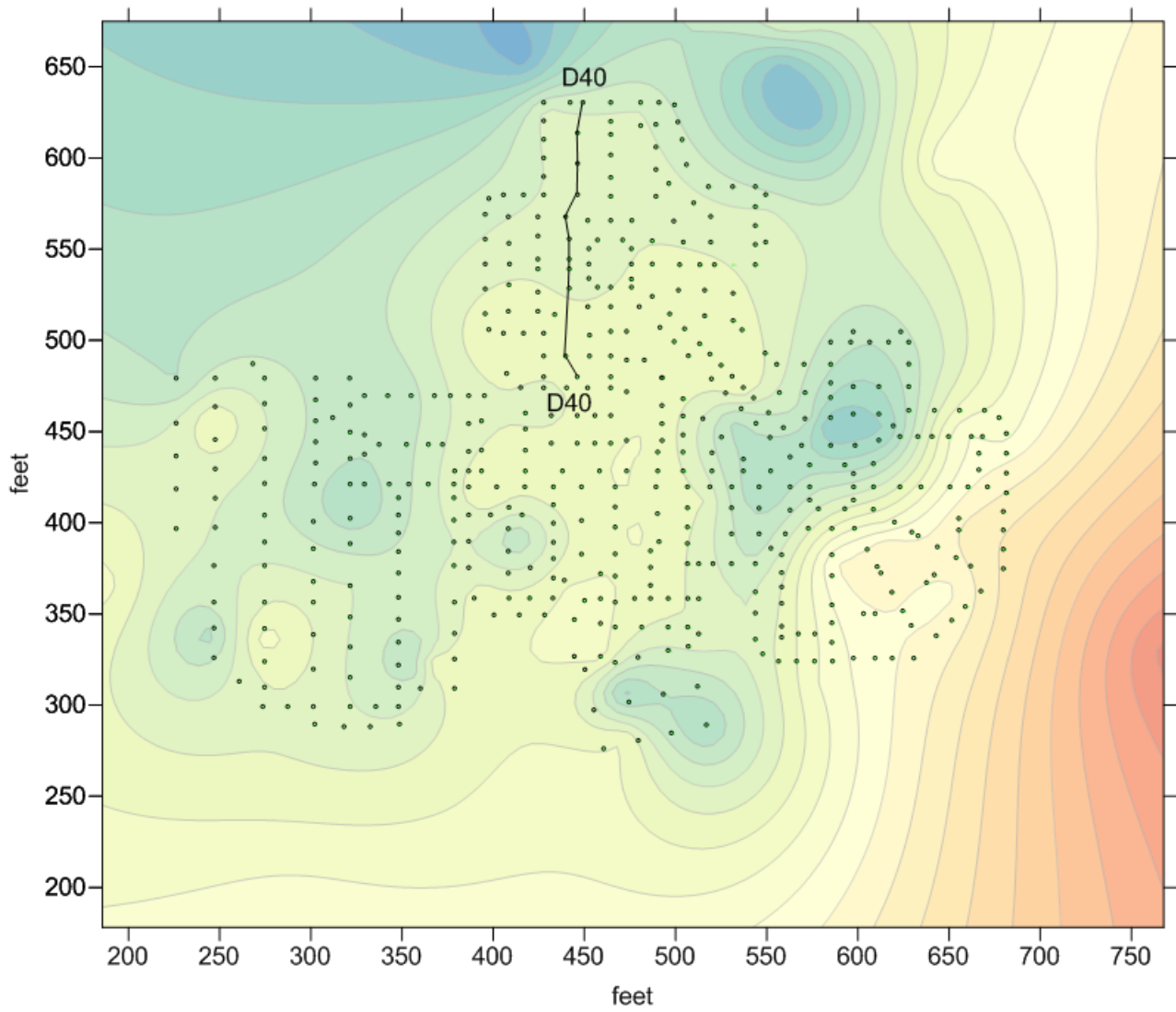


Figure D-47. Profile from D41 to D40.

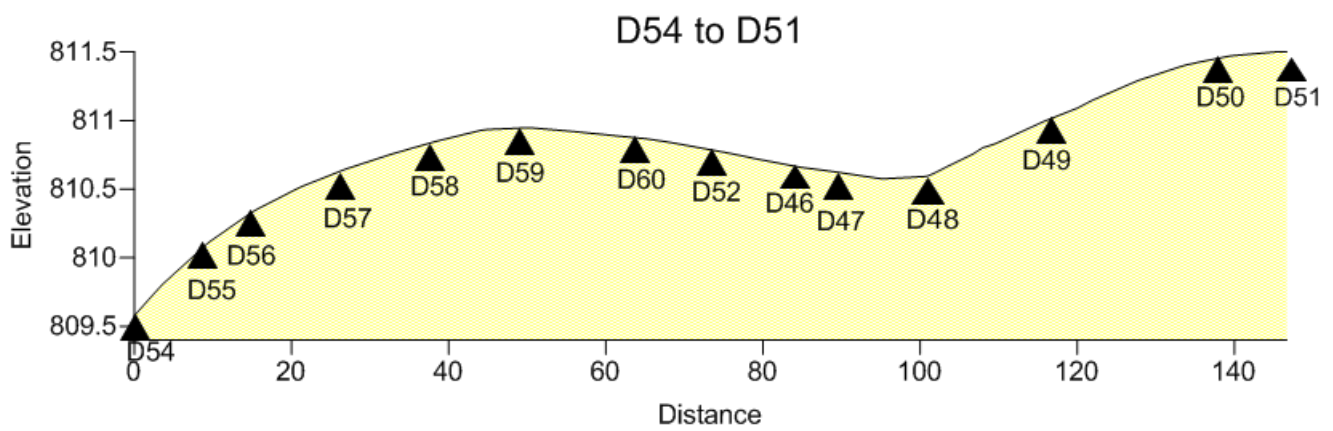
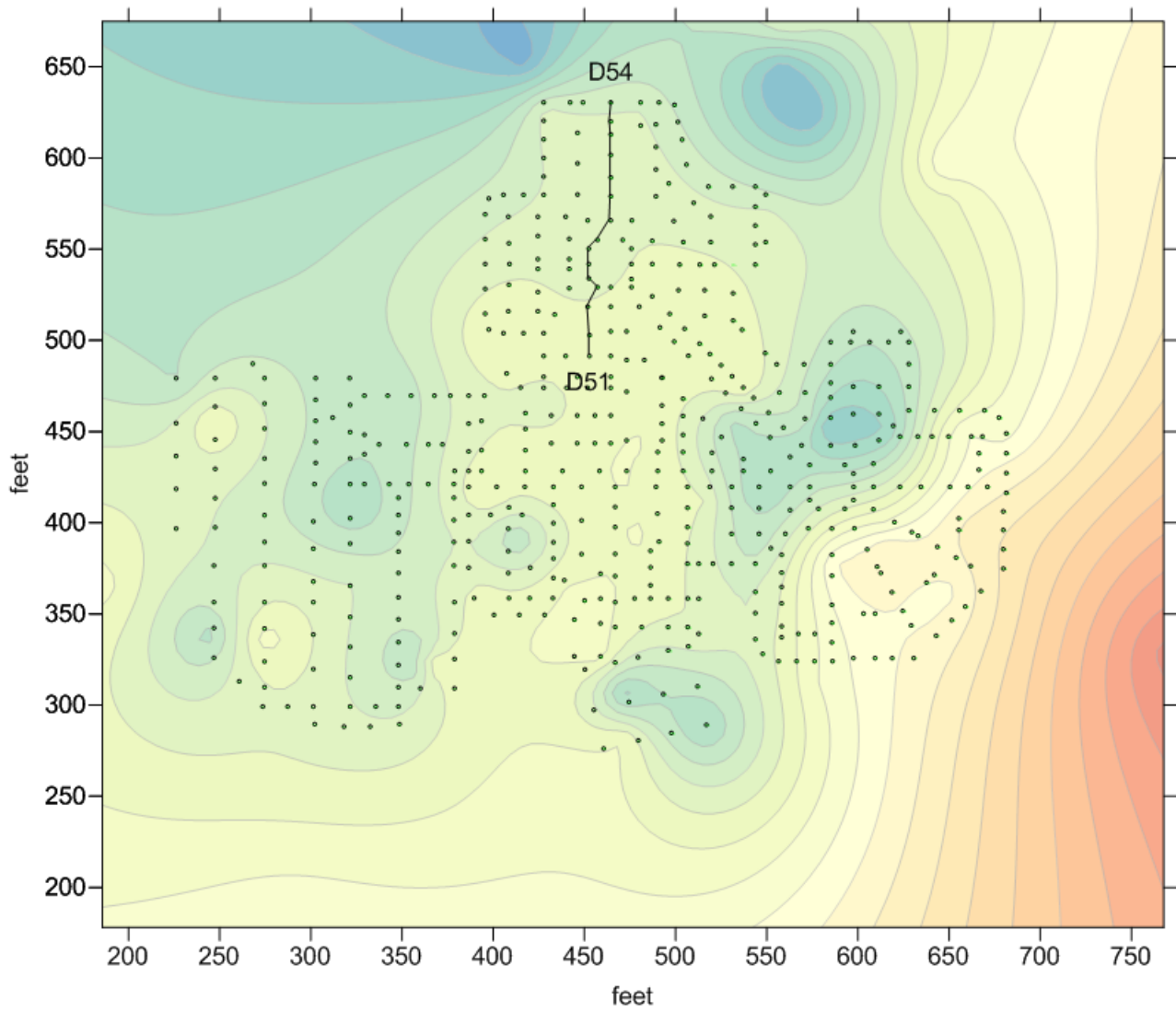


Figure D-48. Profile from D54 to D51.

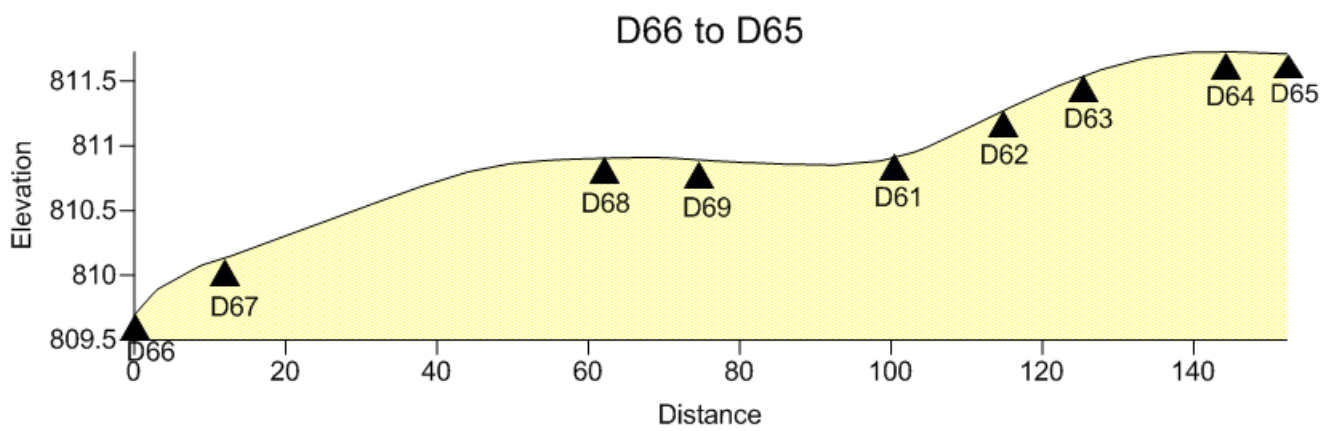
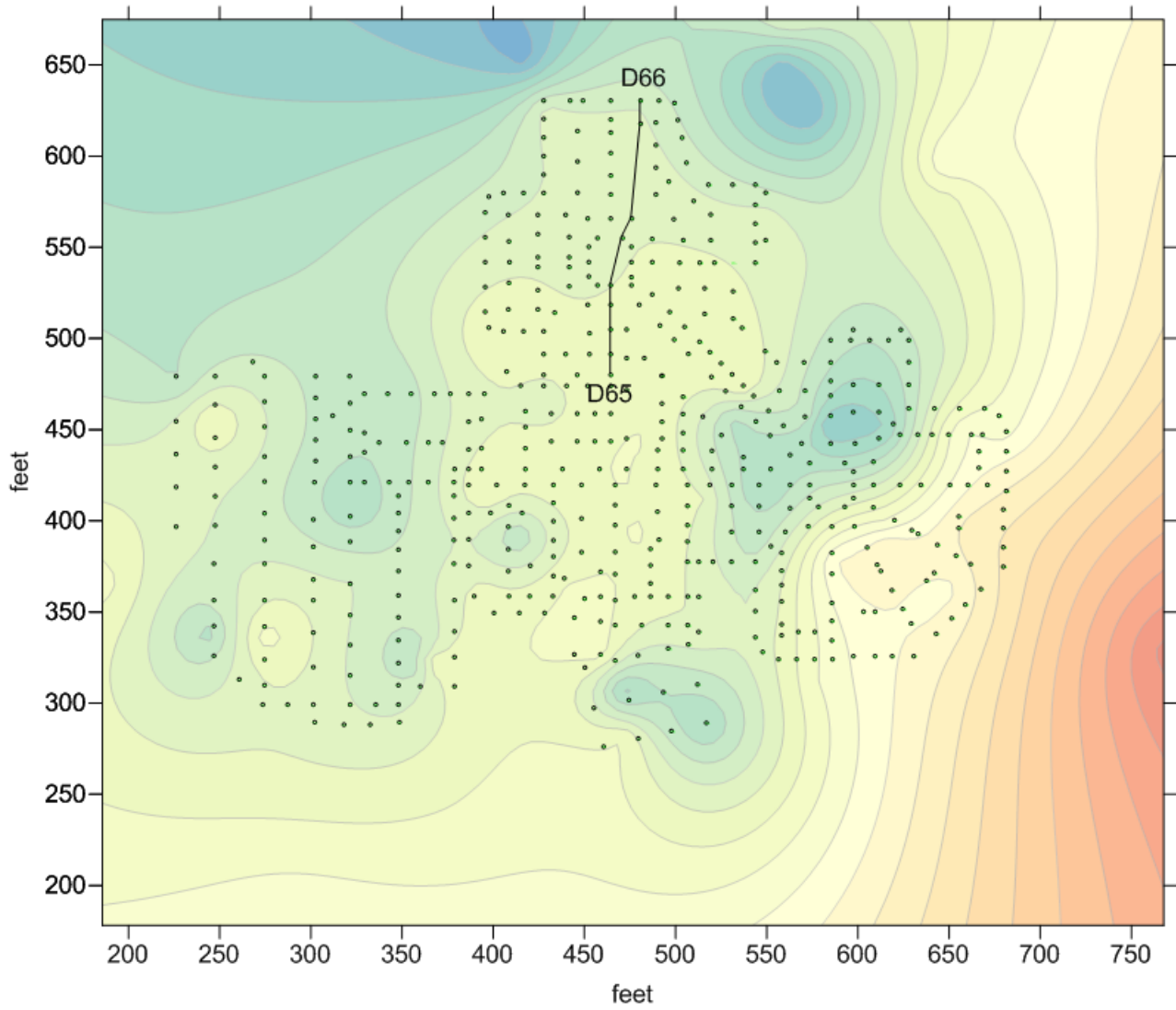


Figure D-49. Profile from D66 to D65.

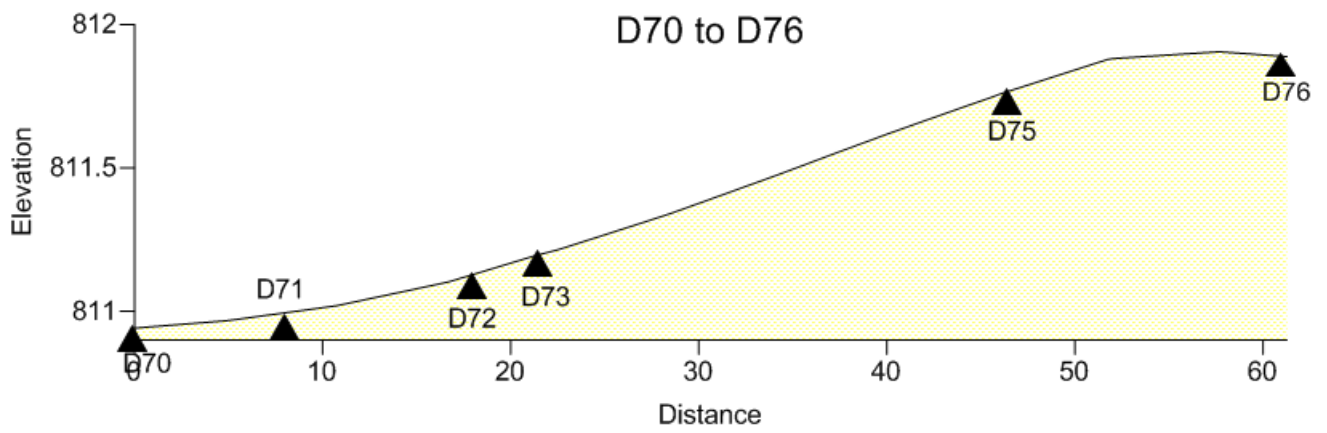
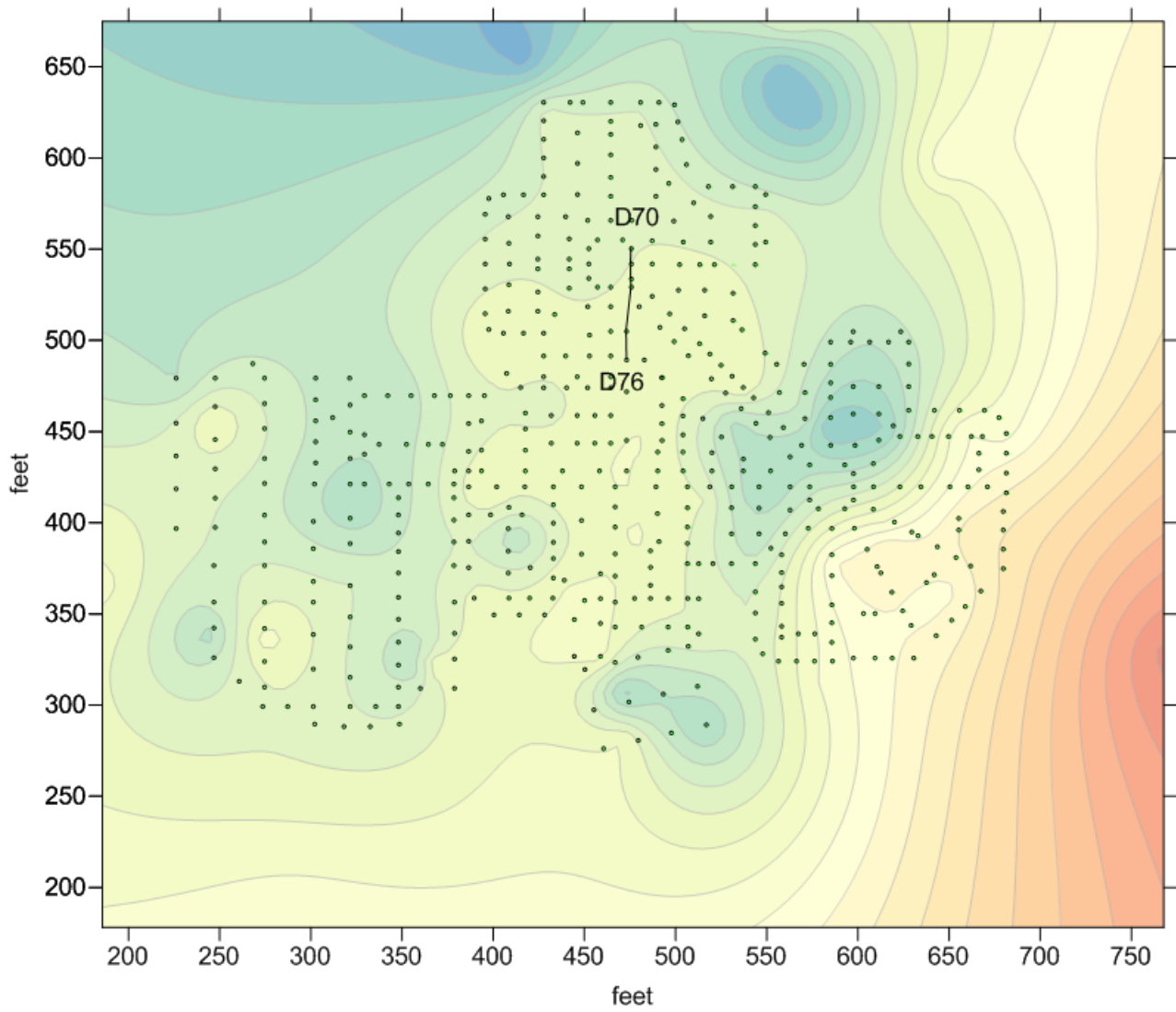


Figure D-50. Profile from D70 to D76.

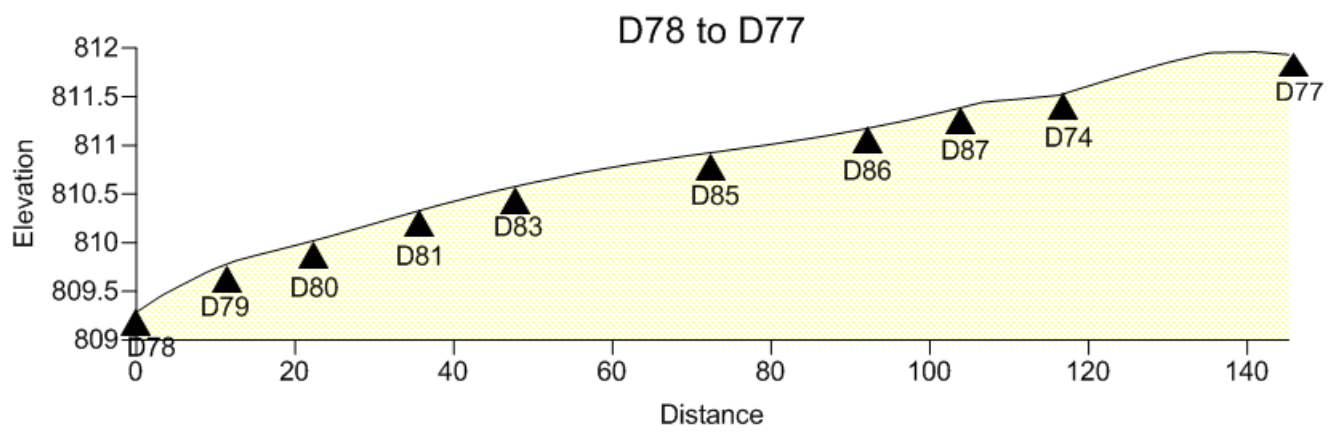
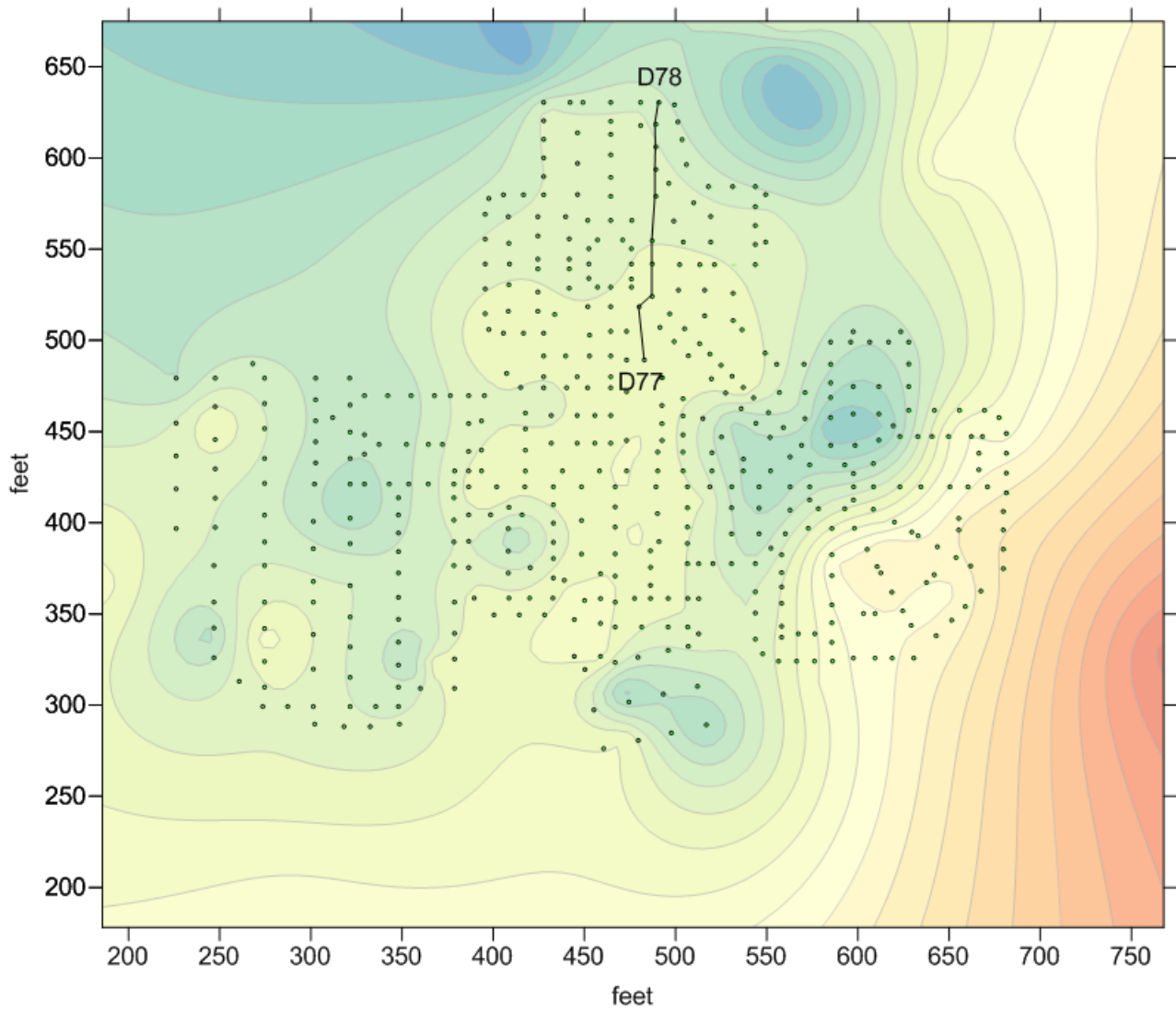


Figure D-51. Profile from D78 to D77.



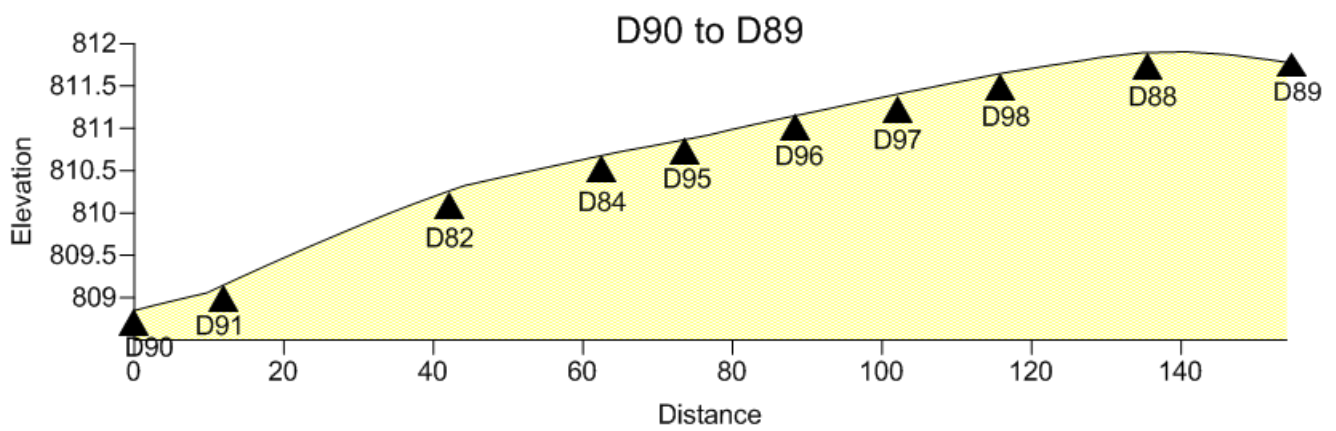
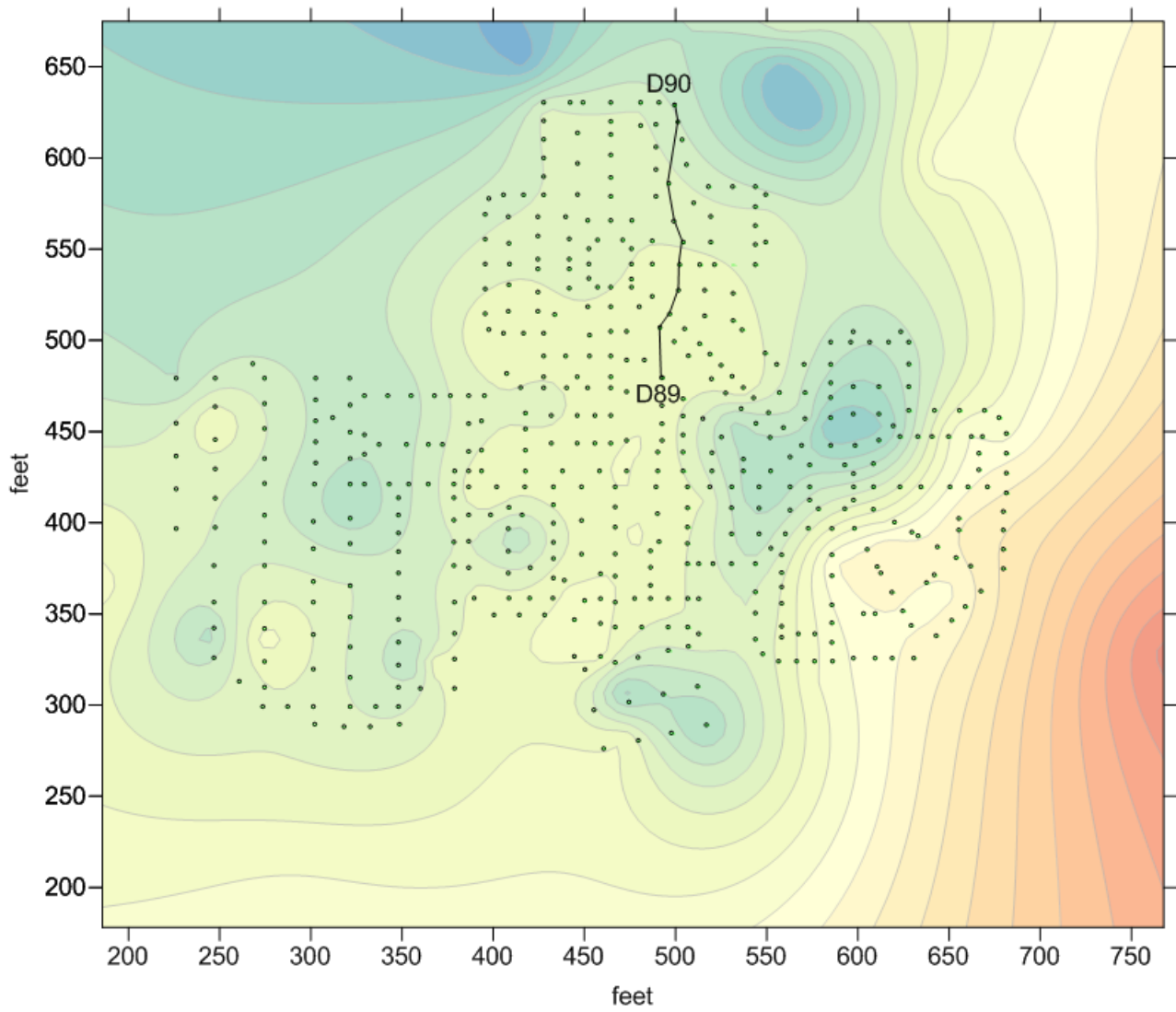


Figure D-52. Profile from D90 to D89.

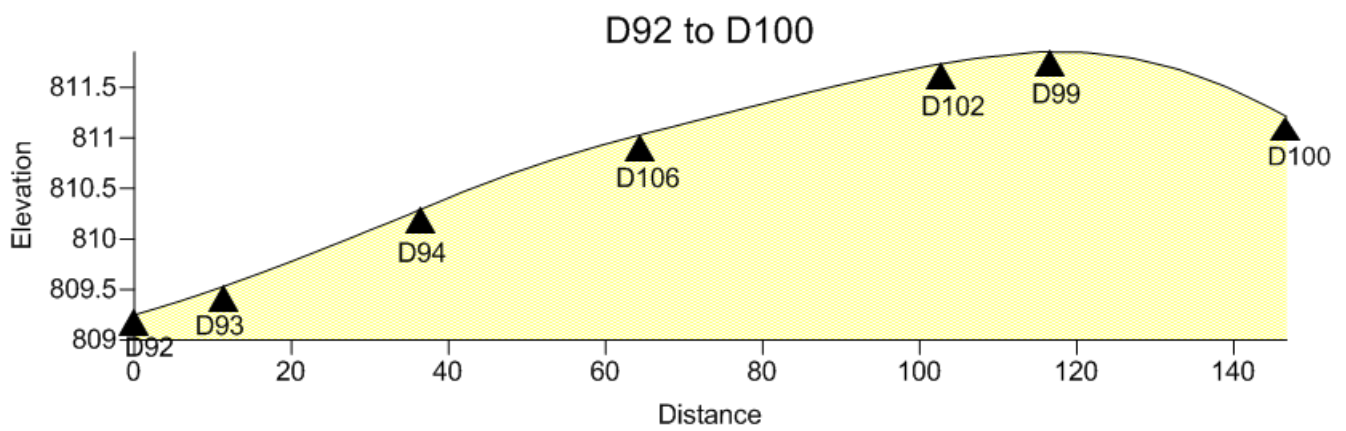
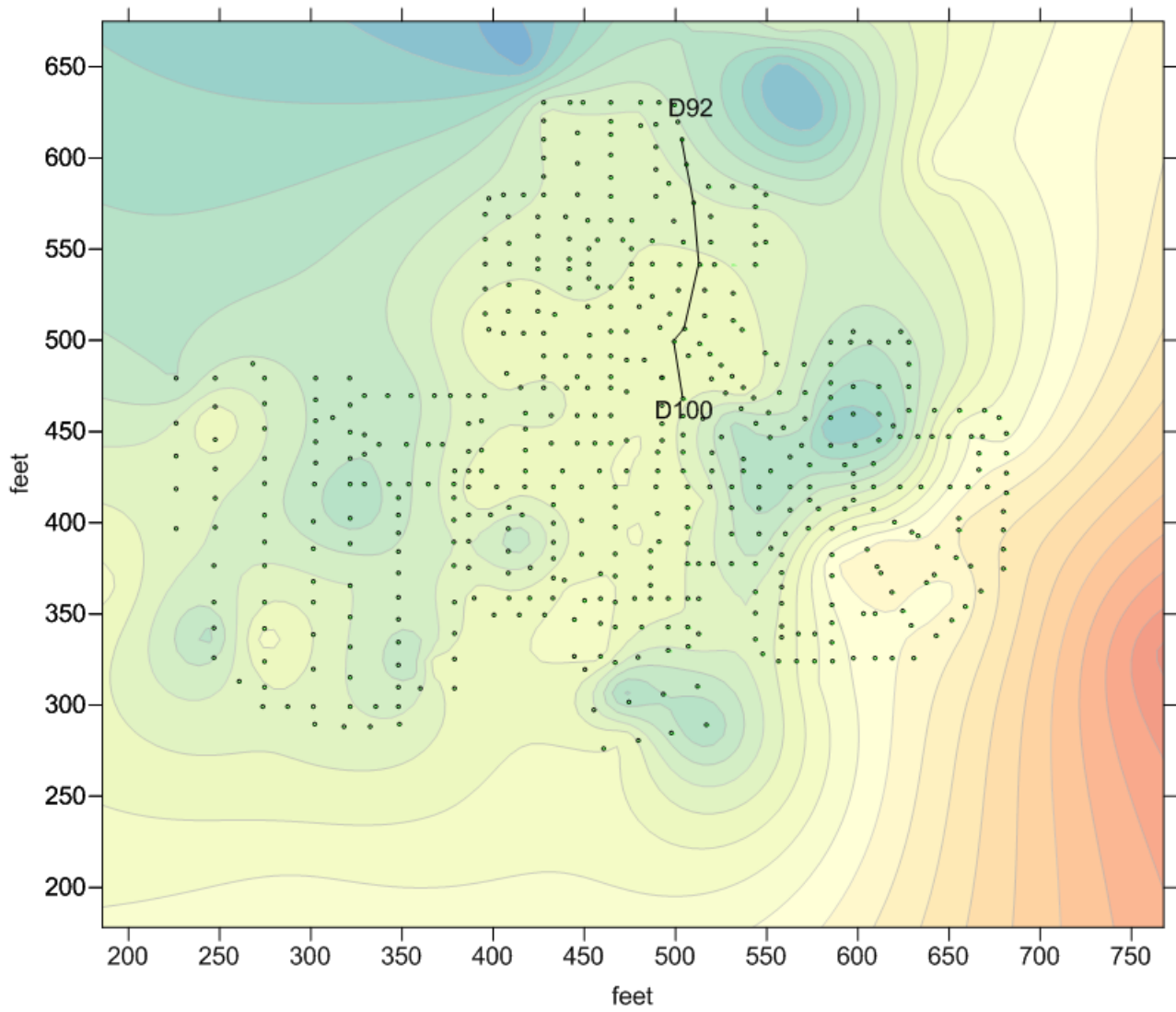


Figure D-53. Profile from D92 to D100.

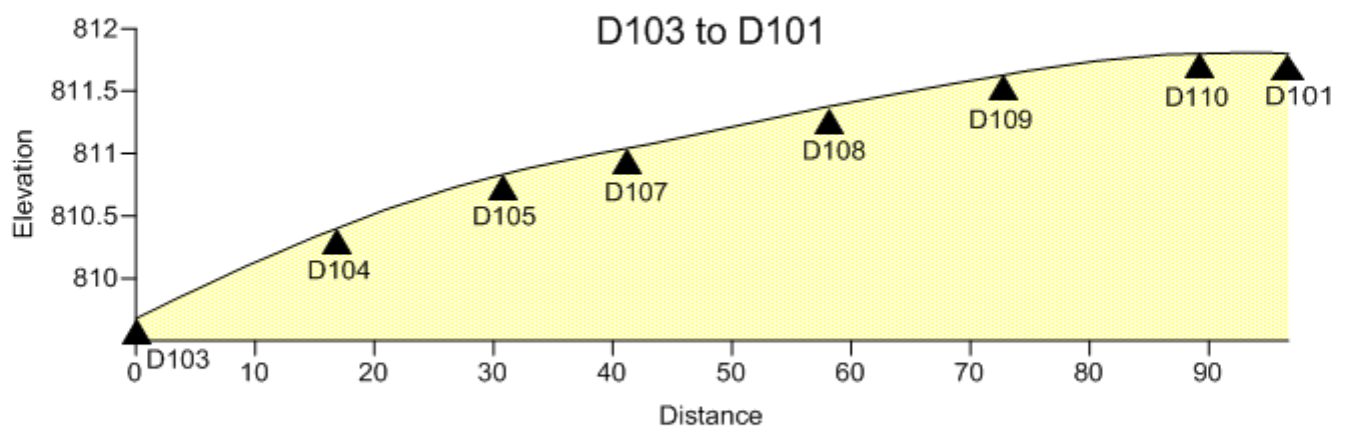
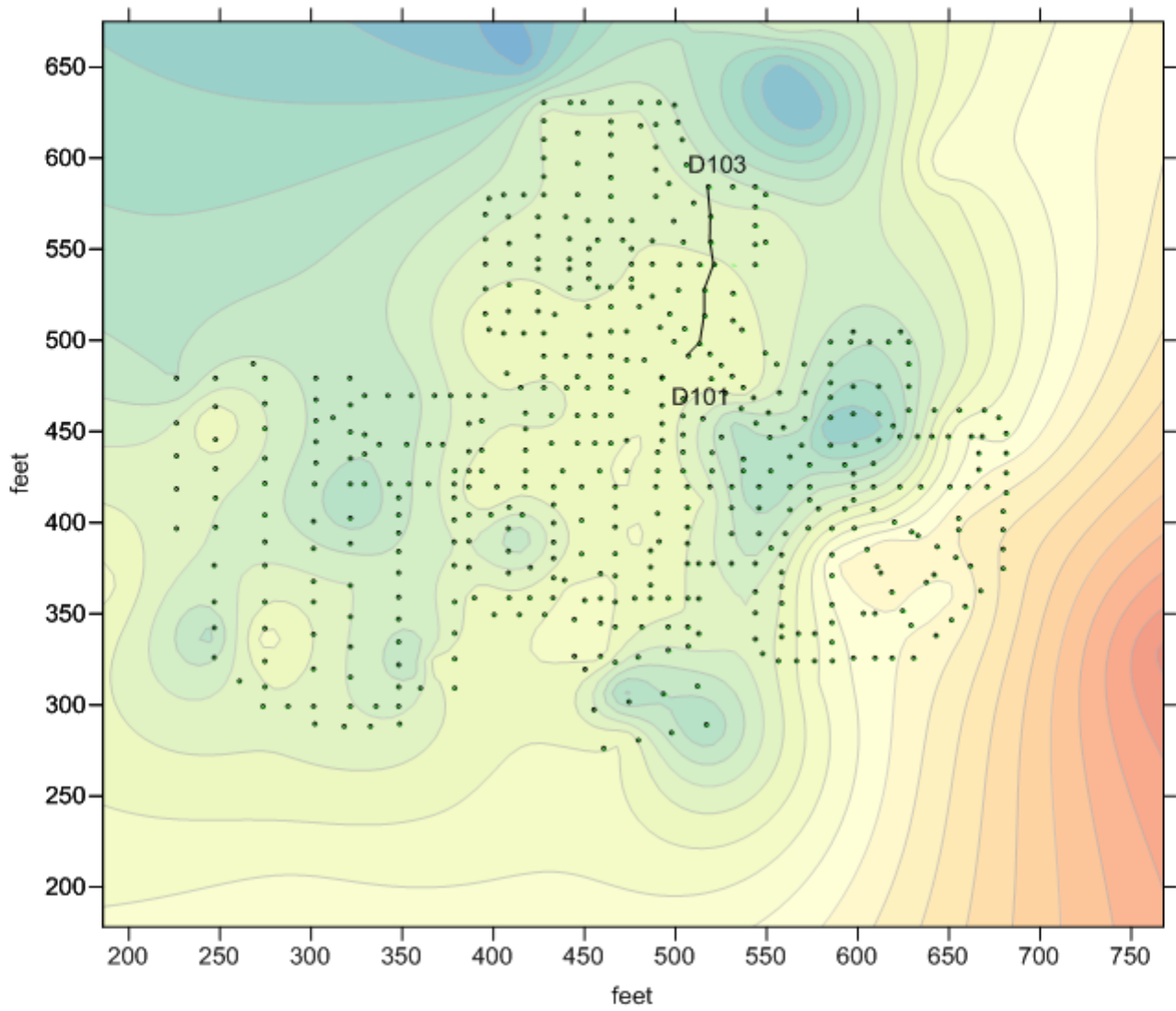


Figure D-54. Profile from D103 to D101.

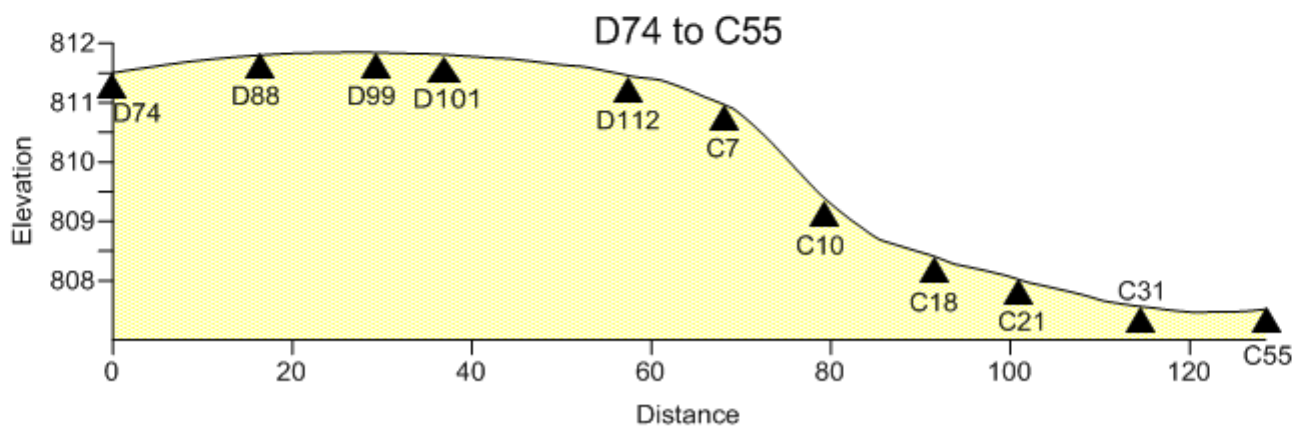
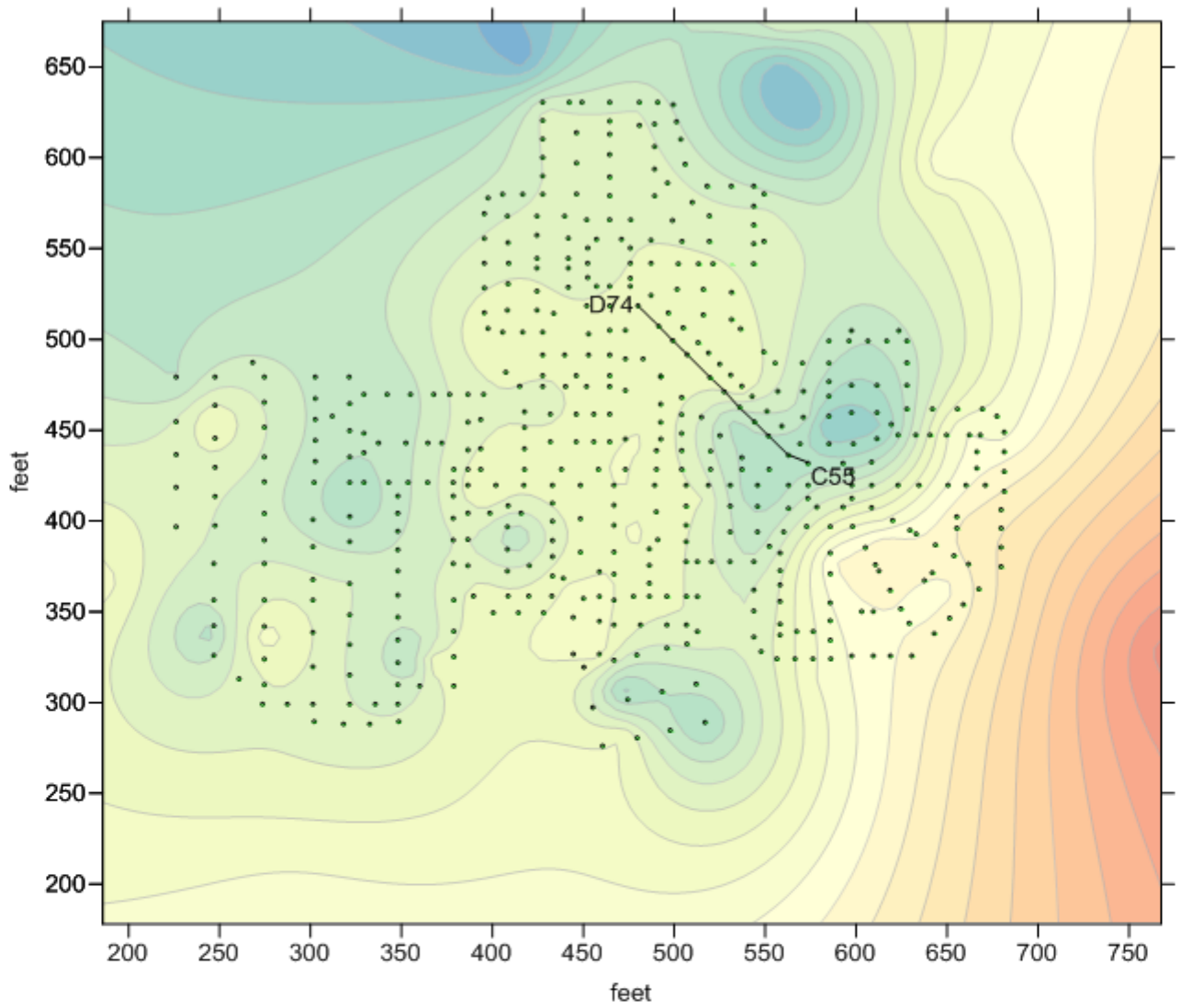


Figure D-55. Profile from D74 to C55.

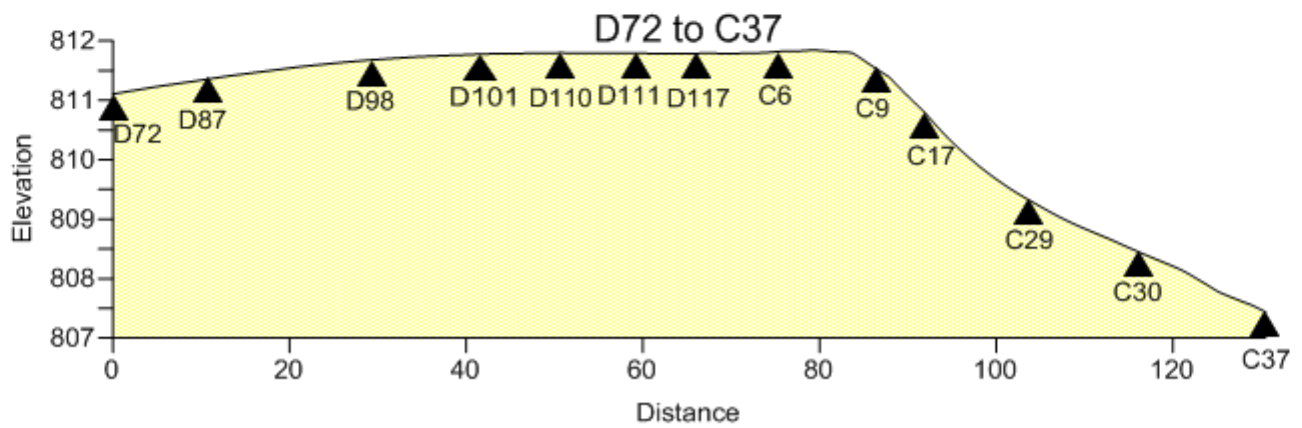
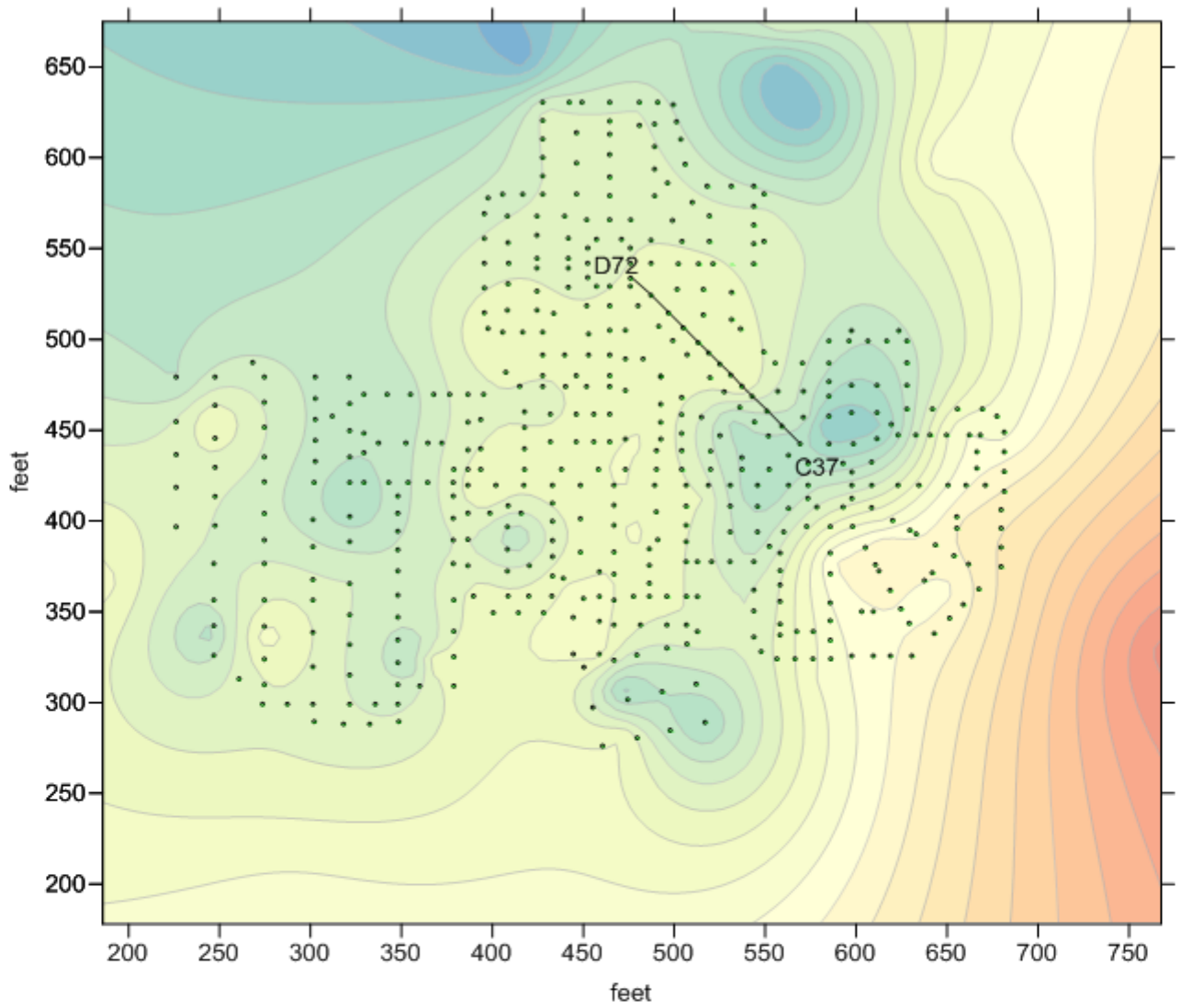


Figure D-56. Profile from D72 to C37.

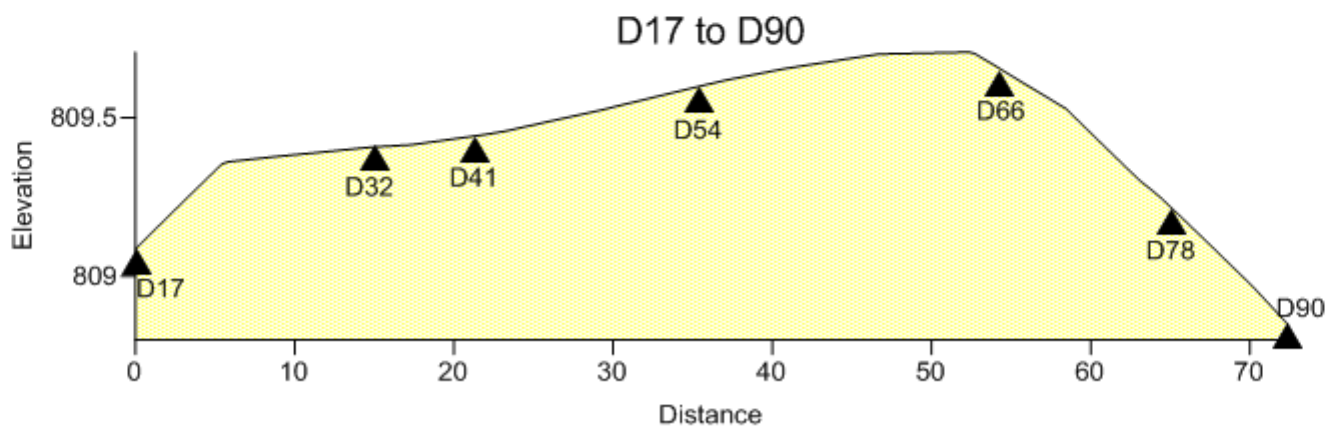
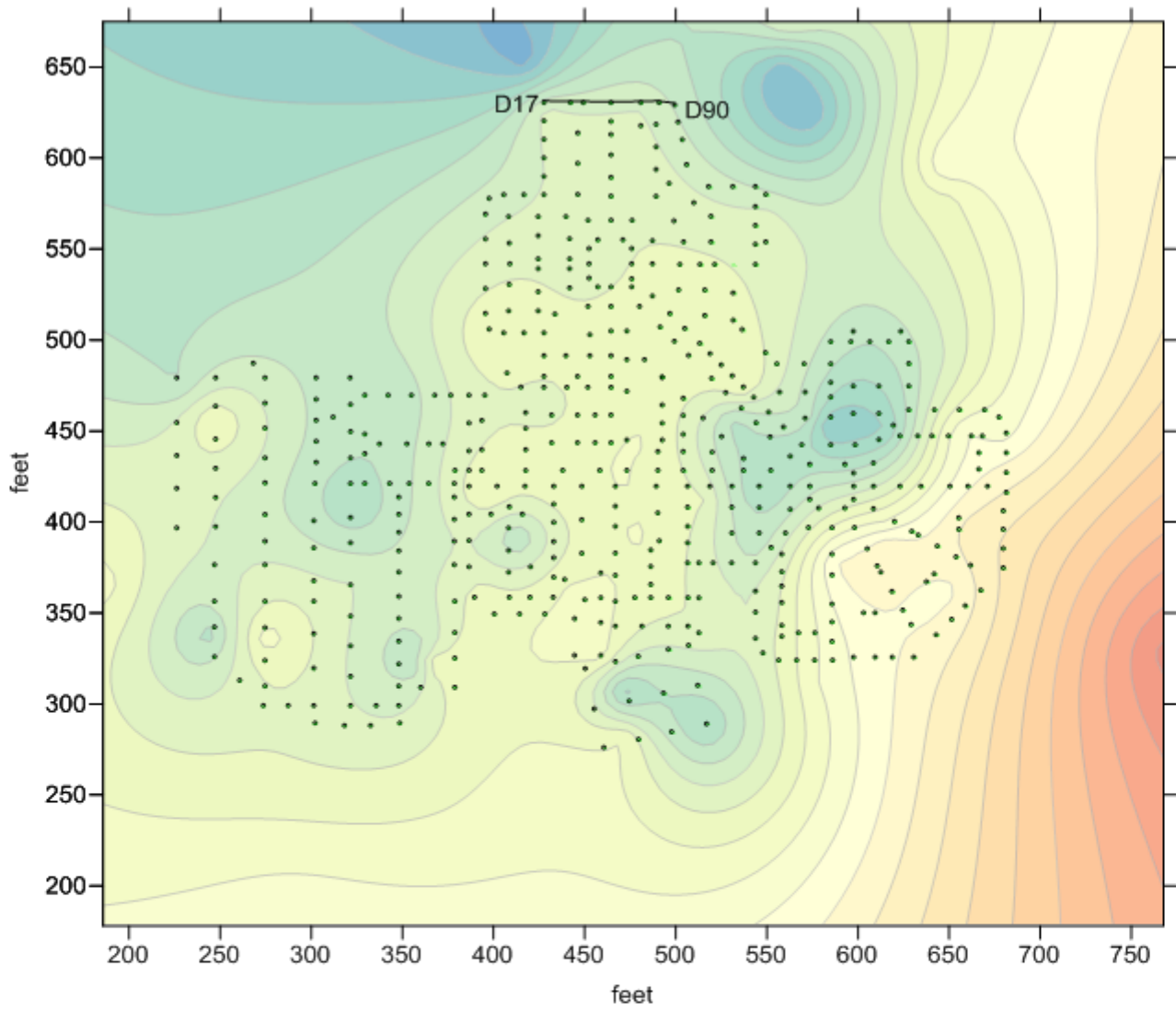


Figure D-57. Profile from D17 to D90.

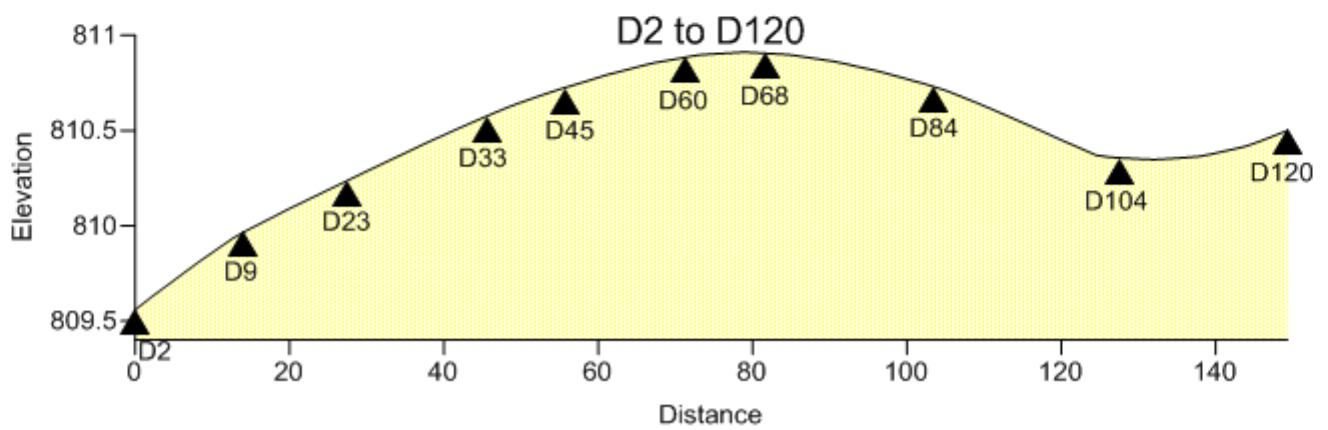
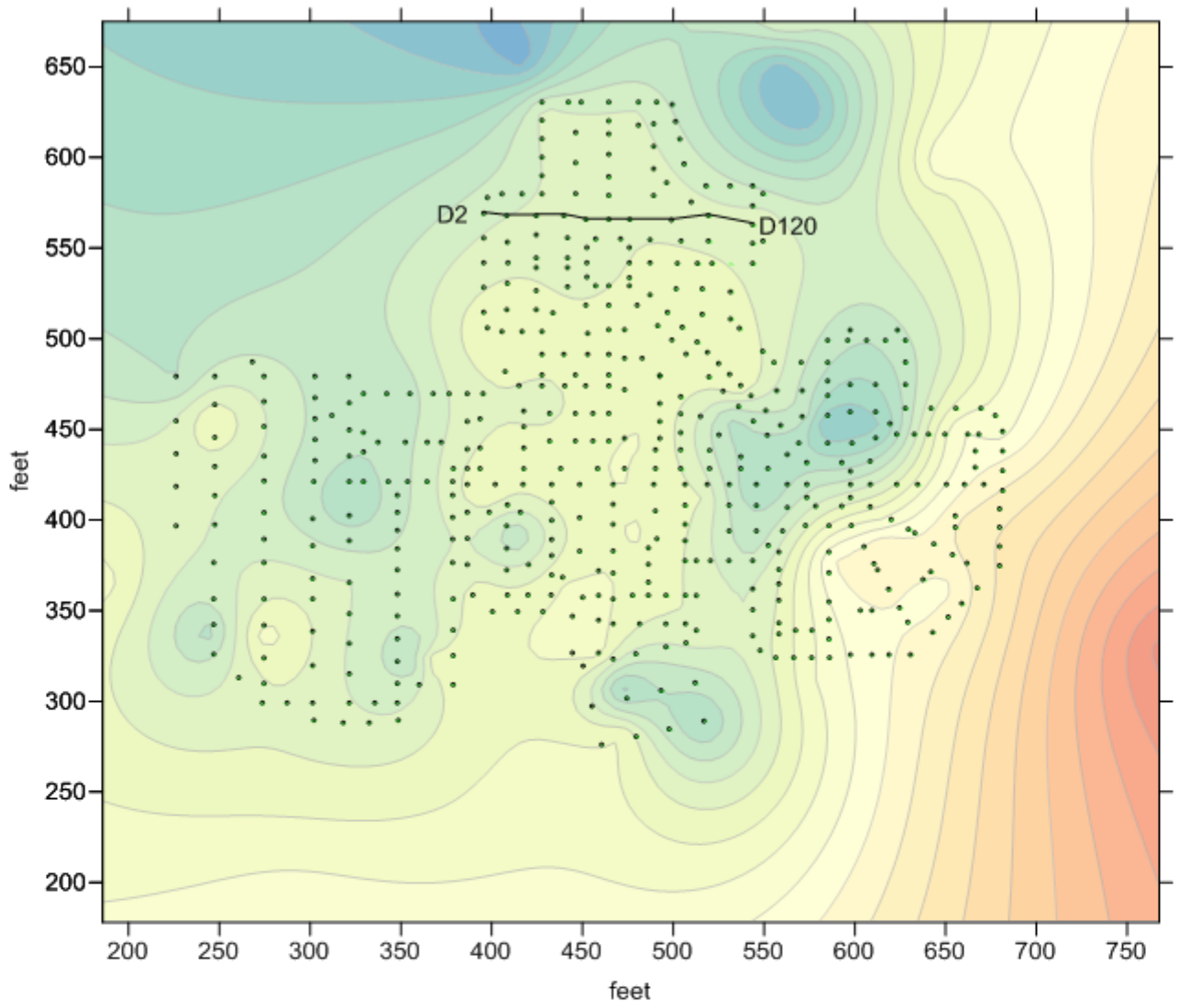


Figure D-58. Profile from D2 to D120.

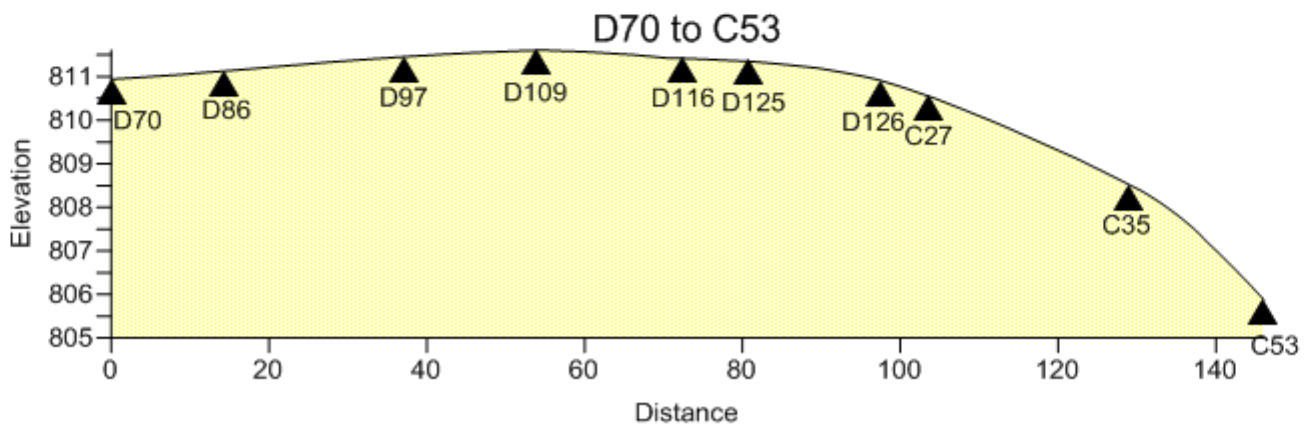
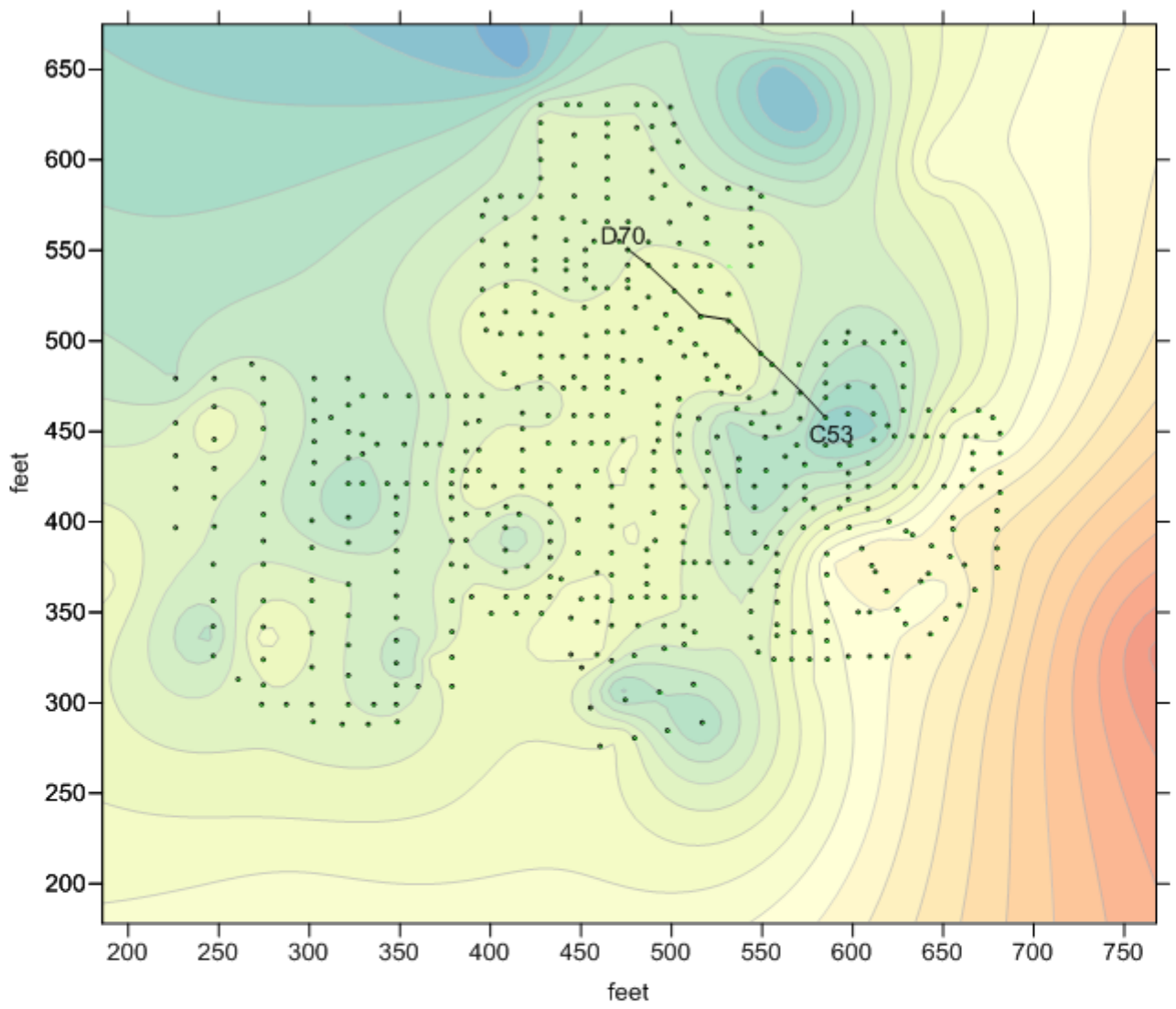


Figure D-59. Profile from D70 to C53.



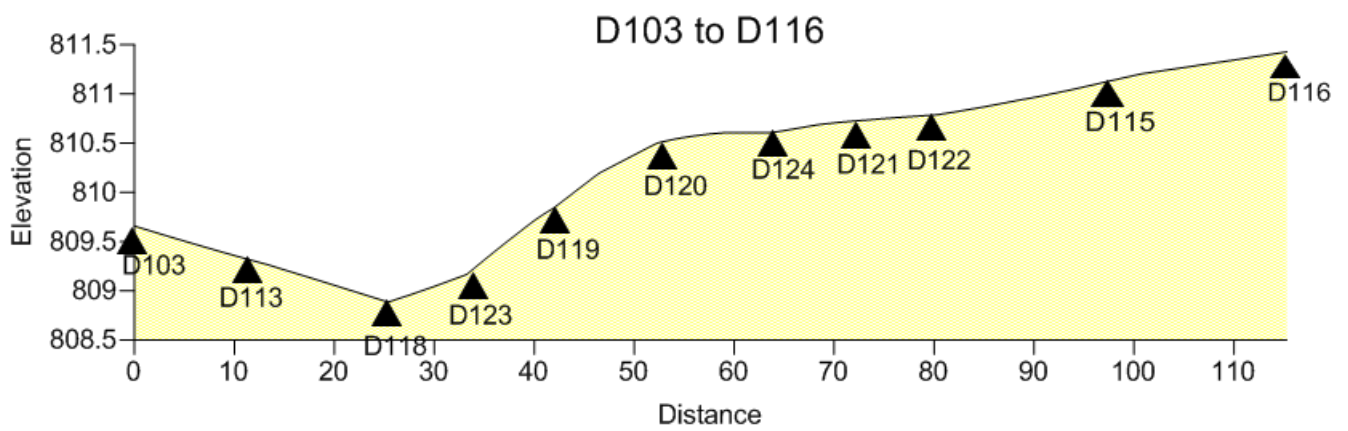
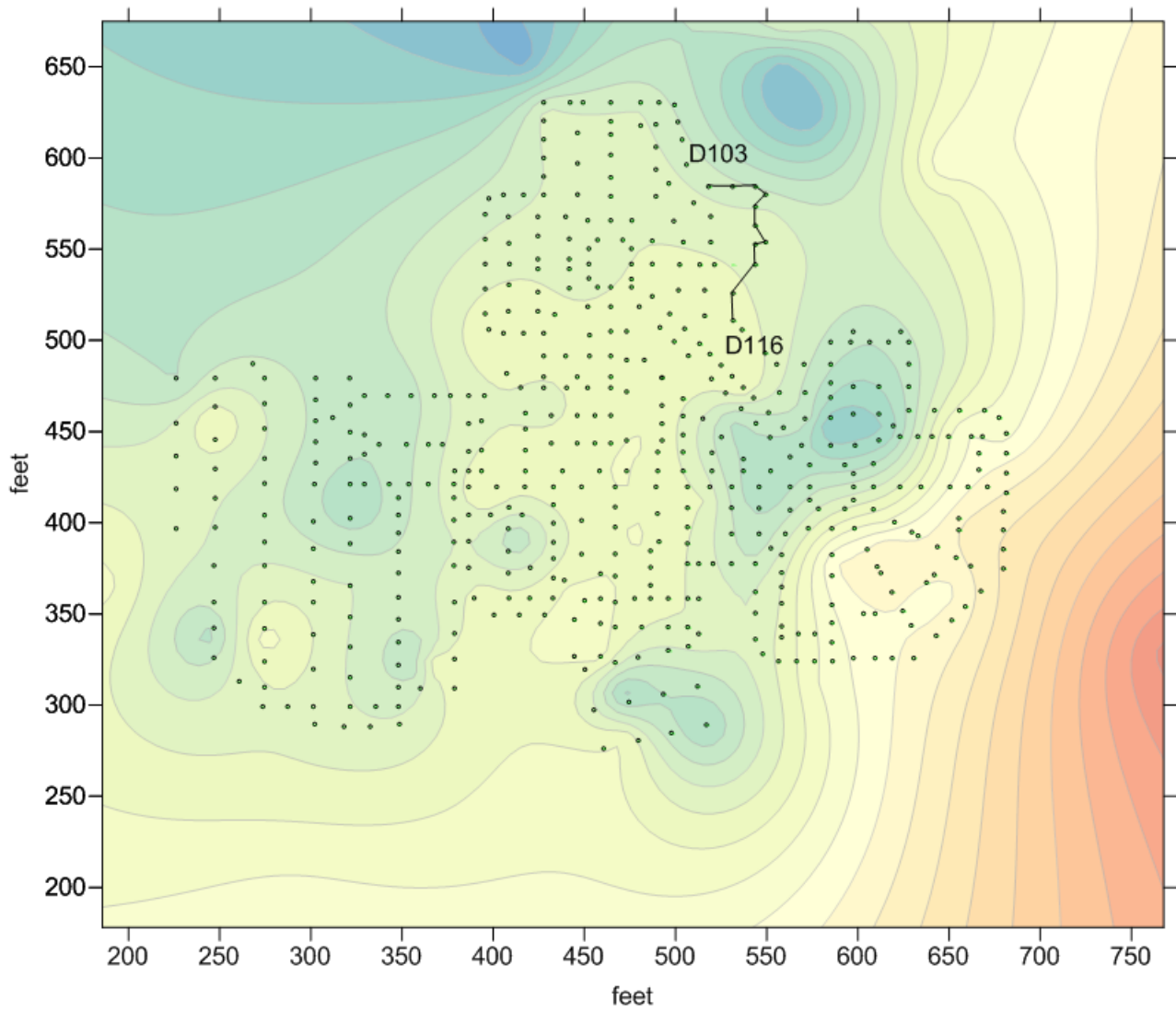


Figure D-60. Profile from D103 to D116.