KORESHAN STATE HISTORIC SITE MAPPING PROJECT: METHODS AND RESULTS

Prepared for

The Koreshan Unity Alliance, Inc.
Estero, Florida

AC-0016

By

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Introduction

A topographic survey and mapping project of Koreshan State Historic Site was conducted by Janus Research (formerly Piper Archaeology) for the Koreshan Unity Alliance, Inc. in January and February of 1993. The purpose of this project was to provide the Alliance and park personnel with a detailed map of the site that could be used in future park management as well as archaeological research and historic restoration. This report presents a description of the methods employed to conduct the survey and a summary of the results. Limitations, deviations from the proposed scope of work, and problems encountered are also discussed in order that the results can be properly evaluated. A map of the project area showing the locations of all historic structures and features at a scale of 1 cm = 6 meters accompanies this report as a separate document. A smaller topographic map of the property at a scale of 1 cm = 10 meters also accompanies this report.

This survey was conducted for use in archaeological and historical research and park management. No boundary or right-of-way survey was conducted. The survey and accompanying maps are not intended to be suitable for any purpose other than those so stated in this report.

The project was funded by a Special Category Grant from the Florida Department State's Division of Historical Resources. The contents and opinions expressed herein do not necessarily reflect the views and opinions of the Florida Department of State, nor does mention of trade names or commercial products constitute endorsement or recommendation by that agency.

Scope of Work

The specific goals of the project included:

1) A topographic survey of the park.
2) Location and dimensional measurements of all historic and archaeological features including buildings, bridges, concrete slabs, fountains, earthworks, trash or refuse areas, or other features of interest.
3) The establishment of a master grid system that can be used in future archaeological excavations.

In consultation with the Koreshan Unity Alliance, Inc. and Park Manager Valinda Subic, it was agreed that the work effort would focus on areas of immediate concern as identified by park personnel. These included the principal settlement area which contains 11 structures as well as associated roads, pathways, and other above ground features, and an area to the northwest that borders the Estero River. This last area is known historically to have contained houses occupied by members of the original Koreshan community (Figure 1). Park personnel had identified several refuse areas and isolated artifacts in this area and it

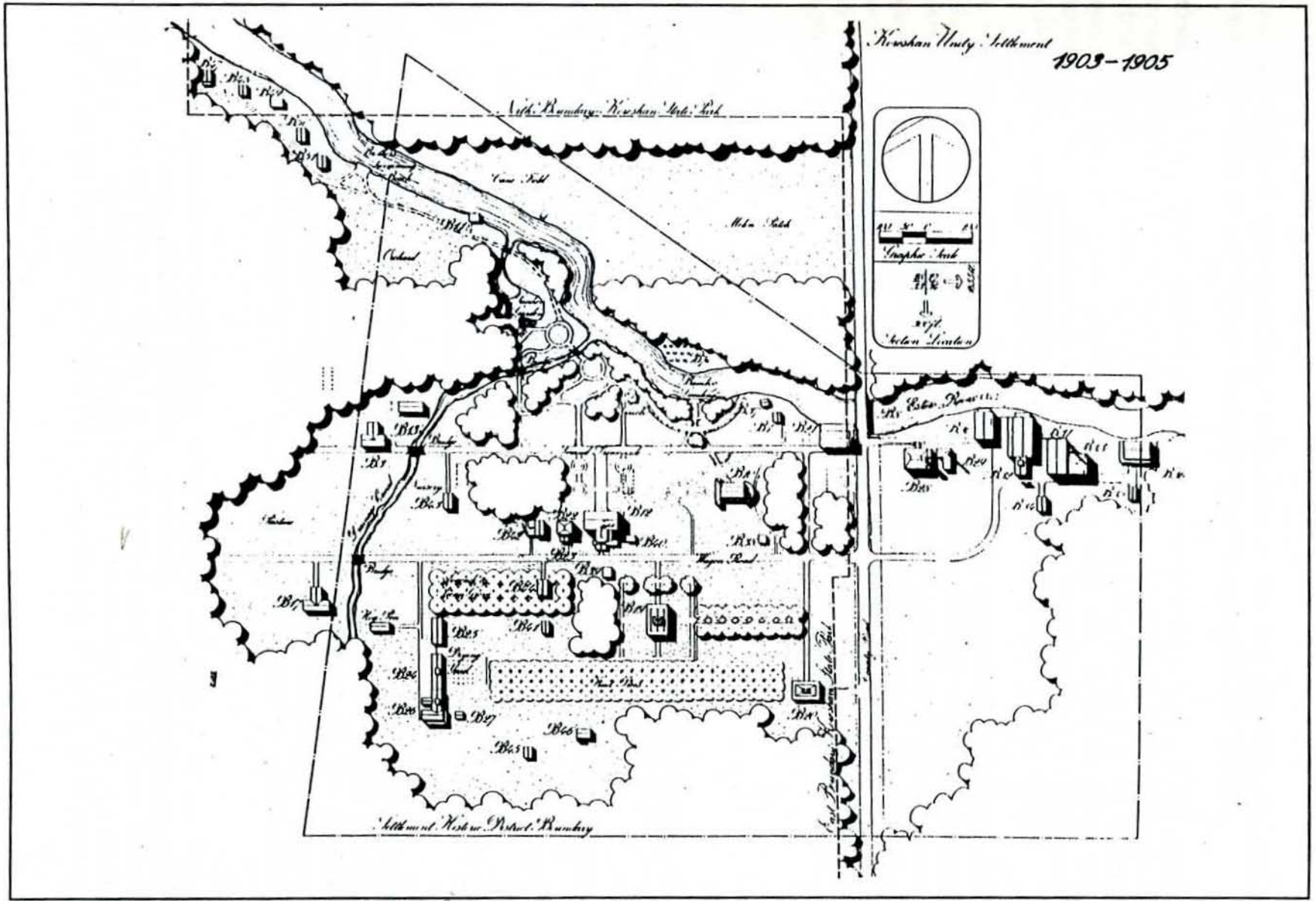

Figure 1: Map of Koreshan State Historic Site showing locations of historic structures ca. 1903-1905 (from Herbert and Reeves 1977).

was their desire to have their locations included on the final site map. No subsurface excavation was to be conducted of these or any other archaeological features.

Once these two primary areas of concern were mapped and gridded, it was planned to extend the survey effort to other parts of the park. The extent of these additional survey efforts would be limited by the time available, but it was expected that the southeastern quarter of the park, which consists of relatively open pine flatwoods, could easily be included. It was agreed that any areas that could not be included in this survey could be added at a future date by simply extending the grid system into unsurveyed areas.

It was the request of the Koreshan Unity Alliance (in consultation with the Lee County Planning Department) that the master grid system be established in meters to be consistent with standard archaeological methods. Consequently, all distance measurements and elevations were recorded in meters. In order to enable easy use of this report by non-archaeologists, all metric data (exclusive of grid coordinates) are accompanied in parentheses by their English equivalents. The elevation data in Appendix A are similarly presented in both meters and feet.

Previous Surveys

Several maps of the park were made available to Janus Research by park personnel and the Lee County Planning Department. These included the following:

1) A topographic map of the Koreshan settlement conducted in 1978 by Hole, Montes & Associates, Inc. (scale 1"=50 feet).
2) A plan drawing of the park and settlement area last revised in 1988 (scale 1"=200 feet).
3) A series of aerial photographs of the park taken between 1966 and 1990 (scale 1"=200 feet and 1"=400 feet).

Of these the 1978 topographic map appeared potentially to be the most useful. In addition to showing contour lines at one foot intervals, this map showed the locations of buildings, paths and roads within the settlement area. It was originally planned to use these data as a basis for developing an expanded map of the site with the new survey effort concentrating on those areas not shown on the earlier map. For a number of reasons, however, this plan was abandoned.

During an initial walkover reconnaissance of the property it was found that the 1978 map did not reflect existing conditions on the site. Specifically, the locations and dimensions of buildings, paths, and roads as depicted on the map were found to be different from those in the field, often significantly so. This discrepancy is no doubt due to the large amount of restoration activity that has occurred at the park over the past 15 years. In many cases this

has resulted in changes to the dimensions of some of the buildings. In addition, the road system of the settlement has been reconstructed to more closely resemble its historic condition resulting in a quite different alignment of roads and paths than is depicted on the 1978 map.

A second obstacle occurred when an attempt was made to obtain the original survey notes and data from Hole, Montes & Associates, Inc. No one currently employed at the company had worked on the 1978 survey and none of the survey data could be relocated. Without the survey notes, it would not have been possible to reestablish the original survey control points in the field. Without a common reference point, it would have been very difficult to accurately tie the present survey into the existing map. Therefore, it was decided in consultation with park personnel that a new map of the entire settlement area should be generated.

Equipment and Personnel

The locational mapping and the laying out of the grid system was accomplished using a GTS-10 Topcon transit with EDM (electronic distance measurement) capabilities. Use of this instrument was essential to ensure rapid and accurate distance readings. A Wild level was used to establish all elevations. The two person survey crew was equipped with portable two-way radios which also aided in reducing the amount of time necessary to set grid points.

Although the settlement area was relatively free of obstructing vegetation, the northwest section was extremely overgrown. This required that some vegetation be cut so that a line of sight could be established for the transit and prism. An attempt was made to restrict the cutting of vegetation to a minimum. In some cases, however, it was necessary to cut palm trees in order to avoid excessive time delays involved in moving and resetting the transit to circumvent obstructions. Frequent resetting of the transit also increases the potential for error when obstructed lines are reestablished from adjacent points.

Robert Austin served as overall project director and report author. The survey was conducted by Jerome Westphal assisted by Fred Steube. The Janus Research crew was also assisted by park personnel and volunteers. Park rangers worked to cut line and clear vegetation for the transit while volunteers conducted a walkover survey of the northwest area to locate and flag any historic features or artifacts for subsequent mapping. Hole, Montes & Associates, Inc. was most helpful in identifying the locations of nearby benchmarks and providing elevation data. The CADD map of the historic structures and features was produced by Keith Baggett. The topographic map of the settlement area was generated by Janus Research using the SURFER topographic mapping software.

Survey Methods

The sequence of tasks conducted during the survey consisted of 1) establishing a baseline from which all subsequent grid locations and horizontal measurements would be taken, 2) measurement and sketch maps of all existing buildings, paths, roadways and other above ground features within the Koreshan settlement area, 3) establishing a grid system at 50 meter intervals, 4) establishing the horizontal location of all buildings and features, and 5) establishing the elevation in meters above sea level of all grid locations and topographic features. Tasks 3, 4 and 5 often took place concurrently as the survey progressed particularly in the northwest section where refuse areas and other archaeological features were continually being discovered.

Site Grid and Topographic Survey

A legal description of the property was provided to Janus Research by the park staff. This description indicated that a concrete monument was located at the southeast corner of the property with a second monument located 985.22 feet to the north and 36 feet east of the first monument. An attempt was made to relocate both of these in the field. The first monument could not be relocated. A concrete monument was located in the approximate vicinity of that described for the second monument in the legal description, however there was a discrepancy of several feet with regard to its precise horizontal location in relation to the Koreshan property and U.S. 41. It is possible that this monument, which is a highway right-of-way marker, may have been moved when U.S. 41 was widened. Because of the discrepancy between the written description and the field location of the monument, it was decided to use U.S. 41 and the nearby bridge crossing the Estero River as reference points for locating the grid system in space.

A base line was established three meters west and parallel to the west edge of pavement of U.S. Highway 41. A temporary datum was established at the southwest corner of the bridge crossing the Estero River. Its elevation above sea level was established by transit using a nearby U.S.G.S. benchmark (No. TT-75WTM-1952) located on the south edge of Corkscrew Road about 300 feet east of the intersection of U.S. 41. The elevation recorded of this benchmark is 15.869 feet (4.84 meters) above sea level.

Once the primary base line was established, a second parallel line was set just inside the park boundary. This line is located at a distance of 50 meters (164 feet) from the primary base line. Once this second line was established, a series of grid points were set at 50 meter (164 feet) intervals extending from the southeast corner of the park north to the Estero River. Perpendicular grid lines were then established by turning west 90 degrees at each of the grid points and setting additional grid points every 50 meters. Exceptions to this were necessary in only a few instances, for example, when a grid point fell on or very close to a large tree or within an existing structure. When this occurred, the grid point was moved to the most convenient even meter interval.

A total of 13 grid lines and 88 grid points were established. All of the settlement area to a point 50 meters west of the machine shop was gridded. The 1000N line was extended westward to the campground and this was used as a baseline for extending the grid to the north into the heavily vegetated area along the river. In addition, the area of open flatwoods to the south of the settlement area was also completely gridded. A single grid line in this area (700N) was extended to the west for an additional distance of 250 meters (820 feet). This should enable the remainder of the park to be added to the existing map at a future date.

All grid locations were set with an 18 inch length of iron rebar which was hammered level with the ground surface. A hard yellow plastic cap was then placed over the top of the rebar. Each plastic cap has a number engraved on its top. These numbers correspond to a grid coordinate. So for example, grid point 52 is 1050N/650E. A list of all grid point numbers and their corresponding grid coordinates can be found in Appendix A-1. A second list (Appendix A-2) is arranged by grid coordinate. By reference to these lists, any grid point location can be identified in terms of its metric grid coordinate enabling easy location during future surveys or excavations.

Many, if not most, of the iron rebar will become obscured by soil accumulation and vegetation, particularly in the heavily vegetated areas. To aid in their relocation, five concrete monuments were set throughout the site. These measure 4 x 4 inches square, are about two feet in length, and were set so that about 4-8 inches extend above the ground surface making them easy to relocate. The monuments were placed so that at least two monuments could be seen along two perpendicular lines. The grid numbers and metric coordinates of these concrete monuments are listed in Table 1 and in Appendix A. With these monuments and the accompanying map, it will be possible to reestablish the locations of all grid points if they become obscured in the future.

Table 1: Locations of concrete monuments

Grid #	Metric Coordinates
6 (Site Datum)	1000N/1000E
11	900N/1000E
44	1000N/ 900E
50	1000N/ 700E
56	1150N/ 700E

The coordinate system was developed as follows. Grid point No. 6 was established as the permanent site datum and assigned the arbitrary metric coordinate 1000N/1000E. This datum point is marked by a concrete monument and is shown on the accompanying maps. This point was chosen as the permanent site datum for several reasons. First, the 1000N

line extends the full distance from the eastern property boundary to the campground in the west half of the park. Visibility is fairly good along this line in all directions making it easy to relocate grid point locations. The coordinate was set at a high value so that extension of the grid to the north and east can be accomplished in the future without the problem of dealing with negative numbers or having to use a quadratic coordinate system.

Elevations were established at the top of each iron pipe and at the top of each concrete monument. These elevation data are listed for each grid point in both meters and feet in Appendix A. In addition, numerous ground elevations were obtained throughout the park in order to develop the topographic map. In the northwest section these were systematically taken every 25 meters. Elsewhere, elevations were obtained at topographic breaks. The original notes of the present survey are on file at the offices of Janus Research in St. Petersburg.

It should be noted that during the course of the field work several set iron pipes were removed by individuals visiting the park. All of the pipe was reset and the coordinates and elevations reestablished. However, those grid points set in areas where visitor traffic is high should be periodically checked by park personnel to make sure that they have not been removed. Those that are removed should be reset by transit to insure their accuracy.

Mapping of Structures and Above Ground Features

All of the buildings on the site were mapped using the following procedure. Exterior dimensions were obtained using a 30 meter tape. In addition to the basic outline of each building, features such as porches, sidewalks, paths, fences, and associated concrete slabs were also measured. A sketch map of each building was drawn with the appropriate dimensions noted. This same procedure was used to map all paths, roads, and other features (e.g. fountains, cisterns, isolated slabs, etc.).

Once all of the features had been measured and drawn, their horizontal locations in space were established with the transit. This was accomplished by setting the transit over one of the established grid locations, establishing a back site along the grid line, and recording the distance and angle of at least three corners of each building or feature from this grid location. For circular or irregular features the distance and angle to the center point of each feature was determined.

In the outlying portions of the site there are many trash disposal areas as well as isolated artifacts. Due to the heavy vegetation, it was necessary to conduct a reconnaissance survey and mark the locations of each feature or artifact concentration so they could be accurately mapped. This was accomplished by having park personnel and volunteers traverse the area on foot in a systematic fashion searching for any surficial features or artifacts. When artifacts or features were encountered, their locations were marked with red flagging. Once the grid lines were set in this area, the transit was used to record the specific locations of

each identified feature using the method described above. The areal extent of diffuse scatters of refuse was roughly estimated on the basis of exposed artifacts. Further investigation of these areas may alter the exact dimensions of these features. The locations of all of these features, as well as the buildings, paths, road, etc., are shown on the large map accompanying this report.

Site Maps

Two maps were generated for this project. The first is a topographic map with contours at 25 centimeter (approximately 10 inch) intervals. The second map shows the following features:

1) All set grid locations (total = 88) with identifying grid numbers. Associated grid coordinates are listed in Appendix A.
2) All extant structures, roads, paths and other above ground features located within the surveyed areas.
3) All extant trash and refuse areas, isolated artifacts, or other culturally significant features identified during the survey. Because of the scale of the map (1 cm = 6 meters or about 1" = 60 feet) many of these locations are marked by symbols that are not to scale.

Two maps were necessary in order that details of the settlement area and archaeological features were not obscured by the contour lines. The large map of historic features consists of three separate sheets and a cover sheet with a copy of the map at a scale of 1 cm = 10 meters. The topographic map was produced at the same scale as the cover sheet for the historic features (i.e. 1 cm = 10 meters) in order to keep the map at a workable size. Since additional topographic work is planned at the site, this map should be considered preliminary and subject to change.

Conclusions and Recommendations

The project resulted in a detailed depiction of the existing structures and features within the main settlement area and identified several potential archaeological areas in the northwest portion of the park along the Estero River. Historic refuse appears to be relatively common in this area and at least two features that appear to be directly associated with the member's homes were discovered. The first is a possible privy pit and the second is a shell and artifact concentration which may represent a refuse area. No doubt additional features and artifacts are located in this area but are obscured by the dense vegetation. An archaeological survey of this area employing subsurface testing would increase the potential for discovering such features. Because there has been virtually no development of this area since it was abandoned by the Koreshans, the probability of recovering material remains of these residences and activities related to the use of the grove area is reasonably good. If these

archaeological remains are determined to be significant, then expansion of the National Register District boundaries should be contemplated. This cannot be done, however, until the area is adequately investigated with subsurface testing.

All of the western portion of the park remains to be surveyed. It is recommended that this be accomplished relatively soon so that the grid system can be extended and the broad scale mapping of the park can be completed. Since the purpose of this project was to provide baseline data for future research and planning, it would be advantageous to complete this before too much time lapses. As the survey moves away from the primary settlement area, the potential for purely archaeological (as opposed to architectural) resources increases. Identifying these areas should be a primary goal.

The broad scale topographic map of the park that was generated for this project can be further refined with additional survey work. The resolution of several topographic features would be increased if such work were performed. For example, the creek and drainage ditches appear as ill-defined linear depressions on the enclosed map. This is because the time necessary to obtain the number of transit shots necessary to precisely characterize these features would have compromised the completion of other necessary tasks. Thus, a decision was made to obtain a general depiction of the landscape a leave more detailed mapping for a future date. To obtain a more precise delineation of the creek and ditches will require that top and bottom elevations be obtained at several locations along their courses. Additional elevation shots may also be necessary in order to accurately represent the four landscape "mounds" in the settlement area.

As areas of the park are prepared for future archaeological work or restoration, detailed topographic data for these areas should also be obtained. It was beyond the scope of this project to obtain such data which requires that the areas to be surveyed be cleared of obstructing vegetation so that elevations can be taken at close intervals and at all topographic breaks. An example of this is in the Sunken Gardens area. Once the area has been cleared, and before any ground disturbing activities, additional topographic work should be conducted. These data can be added to the existing broad scale topographic data and eventually a detailed topographic map of the park can be produced.

Summary of Recommendations

1 - Complete topographic survey of the southwest portion of the park.
2 - Refine topographic features such as the creek and ditch.
3 - Conduct an archaeological survey with subsurface testing of the northwest section along the Estero River.
4 - Conduct test excavations of selected features to determine their content, integrity and structure.
5 - Evaluate significance of archaeological and historic features outside the present National Register District boundaries. If significant, consider expanding the District

boundaries to incorporate these resources.

6 - Conduct an auger survey of the settlement area (see Yentsch's report).

7 - Conduct an inventory of all plants, trees and shrubs within the settlement area (see Yentsch's report).

8 - Conduct a detailed topographic survey of the Sunken Gardens and conduct archaeological test excavations there prior to restoration (see Yentsch's report).

Tasks 1, 2 and 8 are perhaps of highest priority. The first two need to be completed in order to generate a final topographic map of the property. The last should be conducted prior to the restoration effort that is planned in the Sunken Garden area. Topographic mapping and test excavations can only be accomplished after clearing of weeds and other obstructing vegetation by park staff. Tasks 3-7 should be conducted as soon as possible after the topographic work has been completed. Tasks 3, 4 and 5 could be carried out together, however, to ensure that sufficient time and money are available to conduct these tasks, it would be best to consider them as separate projects. Tasks 4 and 5 could logically be combined into a single project.

APPENDIX A-1: GRID POINTS WITH ASSOCIATED METRIC COORDINATES AND ELEVATION DATA

Grid Point	Northing	Easting	Elev (m)	Elev (ft)
1	950	1100	3.43	11.25
2	950	1050	3.43	11.25
3	950	1000	3.36	11.02
4	950	925	3.26	10.70
5	1000	1050	2.91	9.55
6 (Site Datum)	1000	1000	3.27	10.73
7	1000	950	3.12	10.24
8	1000	1100	3.09	10.14
9	900	1100	3.36	11.02
10	900	1050	3.26	10.70
11 (Mono)	900	1000	3.67	12.04
12	900	950	3.05	10.01
13	900	900	3.06	10.04
14	950	950	3.39	11.12
15	850	1100	3.56	11.68
16	750	1100	4.05	13.29
17	750	1050	4.18	13.71
18	750	1000	4.12	13.52
19	750	950	4.20	13.78
20	750	900	3.95	12.96
21	750	850	4.33	14.21
22	800	900	3.84	12.60
23	800	950	3.74	12.27
24	800	1000	3.73	12.24
25	850	900	3.56	11.68
26	850	950	3.35	10.99
27	850	1050	3.38	11.09
28	850	1000	3.28	10.76
29	800	1100	2.97	9.74
30	801	1050	3.85	12.63
31	900	850	2.99	9.81
32	650	1100	4.47	14.67
33	650	1050	4.41	14.47
34	650	1000	4.52	14.83
35	650	950	4.23	13.88
36	650	900	4.53	14.86
37	650	850	4.55	14.93
38	700	1100	4.13	13.55

APPENDIX A-1 (Continued)

Grid Point	Northing	Easting	Elev (m)	Elev (ft)
39	700	1050	4.35	14.27
40	700	1000	4.39	14.40
41	700	950	4.47	14.67
42	700	900	4.28	14.04
43	700	850	4.45	14.60
44 (Mono)	1000	900	3.19	10.47
45	1000	850	2.13	6.99
46	1050	850	3.03	9.94
47	1050	805	3.49	11.45
48	1000	800	3.54	11.61
49	1000	750	3.46	11.35
50 (Mono)	1000	700	3.65	11.97
51	1000	650	3.45	11.32
52	1050	650	3.46	11.35
53	1050	700	3.30	10.83
54	1050	750	3.41	11.19
55	1100	700	3.38	11.09
56 (Mono)	1150	700	3.46	11.35
57	1200	700	3.06	10.04
58	1250	700	2.84	9.32
59	1293	700	1.97	6.46
60	1250	650	3.23	10.60
61	1300	650	3.05	10.01
62	1150	650	3.40	11.15
63	1200	650	3.48	11.42
64	1100	650	3.63	11.91
65	1150	750	3.28	10.76
66	1200	750	3.37	11.06
67	1250	750	2.51	8.23
68	1200	800	2.81	9.22
69	1150	800	3.17	10.40
70	1100	800	3.24	10.63
71	1150	850	2.87	9.42
72	1100	750	3.34	10.96
73	1100	850	3.29	10.79
74	1100	900	3.05	10.01
75	1125	900	2.97	9.74
76	1050	900	2.91	9.55
77	1100	950	3.17	10.40
78	1050	1000	2.57	8.43

APPENDIX A-1 (Continued)

Grid Point	Northing	Easting	Elev (m)	Elev (ft)
79	1050	950	2.91	9.55
80	949	900	2.77	9.09
81	950	850	2.54	8.33
82	850	850	3.18	10.43
83	800	850	3.77	12.37
84	700	800	4.28	14.04
85	700	750	4.60	15.09
86	700	700	4.67	15.32
87	700	650	4.69	15.39
88	700	600	4.50	14.76

Note: All elevations taken at top of stake.

APPENDIX A-2: METRIC COORDINATES WITH ASSOCIATED GRID POINT NUMBERS AND ELEVATION DATA

Grid Point	Northing	Easting	Elev (m)	Elev (ft)
37	650	850	4.55	14.93
36	650	900	4.53	14.86
35	650	950	4.23	13.88
34	650	1000	4.52	14.83
33	650	1050	4.41	14.47
32	650	1100	4.47	14.67
88	700	600	4.50	14.76
87	700	650	4.69	15.39
86	700	700	4.67	15.32
85	700	750	4.60	15.09
84	700	800	4.28	14.04
43	700	850	4.45	14.60
42	700	900	4.28	14.04
41	700	950	4.47	14.67
40	700	1000	4.39	14.40
39	700	1050	4.35	14.27
38	700	1100	4.13	13.55
21	750	850	4.33	14.21
20	750	900	3.95	12.96
19	750	950	4.20	13.78
18	750	1000	4.12	13.52
17	750	1050	4.18	13.71
16	750	1100	4.05	13.29
83	800	850	3.77	12.37
22	800	900	3.84	12.60
23	800	950	3.74	12.27
24	800	1000	3.73	12.24
29	800	1100	2.97	9.74
30	801	1050	3.85	12.63
82	850	850	3.18	10.43
25	850	900	3.56	11.68
26	850	950	3.35	10.99
28	850	1000	3.28	10.76
27	850	1050	3.38	11.09
15	850	1100	3.56	11.68
31	900	850	2.99	9.81
13	900	900	3.06	10.04
12	900	950	3.05	10.01

APPENDIX A-2 (Continued)

Grid Point	Northing	Easting	Elev (m)	Elev (ft)
11 (Mono)	900	1000	3.67	12.04
10	900	1050	3.26	10.70
9	900	1100	3.36	11.02
80	949	900	2.77	9.09
81	950	850	2.54	8.33
4	950	925	3.26	10.70
14	950	950	3.39	11.12
3	950	1000	3.36	11.02
2	950	1050	3.43	11.25
1	950	1100	3.43	11.25
51	1000	650	3.45	11.32
50 (Mono)	1000	700	3.65	11.97
49	1000	750	3.46	11.35
48	1000	800	3.54	11.61
45	1000	850	2.13	6.99
44 (Mono)	1000	900	3.19	10.47
7	1000	950	3.12	10.24
6 (Site Datum)	1000	1000	3.27	10.73
5	1000	1050	2.91	9.55
8	1000	1100	3.09	10.14
52	1050	650	3.46	11.35
53	1050	700	3.30	10.83
54	1050	750	3.41	11.19
47	1050	805	3.49	11.45
46	1050	850	3.03	9.94
76	1050	900	2.91	9.55
79	1050	950	2.91	9.55
78	1050	1000	2.57	8.43
64	1100	650	3.63	11.91
55	1100	700	3.38	11.09
72	1100	750	3.34	10.96
70	1100	800	3.24	10.63
73	1100	850	3.29	10.79
74	1100	900	3.05	10.01
77	1100	950	3.17	10.40
75	1125	900	2.97	9.74
62	1150	650	3.40	11.15
56 (Mono)	1150	700	3.46	11.35
65	1150	750	3.28	10.76
69	1150	800	3.17	10.40

APPENDIX A-2 (Continued)

Grid Point	Northing	Easting	Elev (m)	Elev (ft)
71	1150	850	2.87	9.42
63	1200	650	3.48	11.42
57	1200	700	3.06	10.04
66	1200	750	3.37	11.06
68	1200	800	2.81	9.22
60	1250	650	3.23	10.60
58	1250	700	2.84	9.32
67	1250	750	2.51	8.23
59	1293	700	1.97	6.46
61	1300	650	3.05	10.01

Note: All elevations taken at top of stake.