Phase II Archaeological Investigations

The testing methodologies employed during Phase II investigations of Site 7-NC-E-152 were derived from the findings of the earlier Phase I Archaeological Survey and were designed to evaluate the potential integrity and significance of associated subsurface artifact deposits. More specific objectives of fieldwork included the recovery a sufficient sample of cultural materials to allow the formulation of more complete interpretations regarding the spatial disposition of artifacts across the site, as well as the likely age and function of discreet components or activity areas within it. The study area for this investigation (Figure 2) was located immediately adjacent to (west of) Churchman's Road and encompassed a narrow, irregularly-shaped area bounded to the south by a small, first-order tributary stream, to the west by the projected maximum limits of construction disturbance, to the north by the maximum identified extent of the associated artifact scatter, and to the east by the banked berm of Churchman's Road. Measuring approximately 90 meters (ca. 300 feet) south to north, the study area extended out some 20 meters (65 feet) from the road edge in the south and narrowed to a width of about 10 meters (ca. 30 feet) in the extreme north. Subsurface examinations were performed within all portions of the study area excluding those areas where deeply mounded recent fill materials prevented ready access to intact soils (limited to the adjacent road berm and a small access ramp from Churchman's Road). All field testing was conducted in compliance with the standards established in the Delaware State Historic Preservation Office's *Guidelines for Architectural and Archaeological Surveys in Delaware* (1993).

Methodology

Phase II testing of the project area employed a testing strategy based on the excavation of a series of one-by-one meter square excavation units (EUs) along with a series of supplemental, close interval shovel test pits. Excavation units were placed within the site based upon the results of the Phase I testing results, with a series of EUs specifically clustered within identified high density sections of the site in order to target posited discreet occupations or activity areas, and the remainder distributed more uniformly throughout the remaining site areas.

All EUs were excavated by natural strata, and in 10-cm (4-inch) increments within layers, to a point at least 10 cm (4 inches) into sterile subsoil deposits. In an effort to maintain tight horizontal control over artifact distribution, and to better identify and document evidence for fine-grained artifact patterning, each arbitrary level within the EUs were excavated in 50 cm square quadrants. All excavated soil was screened through ¼-in. hardware cloth. Recovered artifacts were placed in plastic bags labeled with precise horizontal and vertical provenience information. Standardized forms were used to record data relating to the depths, Munsell color and texture, and artifact content for each soil stratum. The exposed stratigraphic profile within each EU was fully documented by means of hand-drawn maps and with black and white print, color slide, and digital photographs.

Additional shovel test excavation was employed to facilitate EU placement by generating a more detailed impression of artifact distribution within the site, as well as by establishing more accurate limits for the extent of identified higher density artifact clusters. All completed shovel test pits measured approximately 50 cm (ca. 18 in.) in diameter and were excavated by individual strata, to a point at least 10 cm (ca. 4 in.) into sterile subsoil. Soil removed from tests was screened through 1/4" hardware cloth to ensure uniform recovery of cultural materials, and all recovered artifacts were retained in plastic bags labeled with precise horizontal and vertical provenience information. Standardized forms were used to record data relating to depth of strata, soil Munsell color and texture, and artifact content for each test pit.

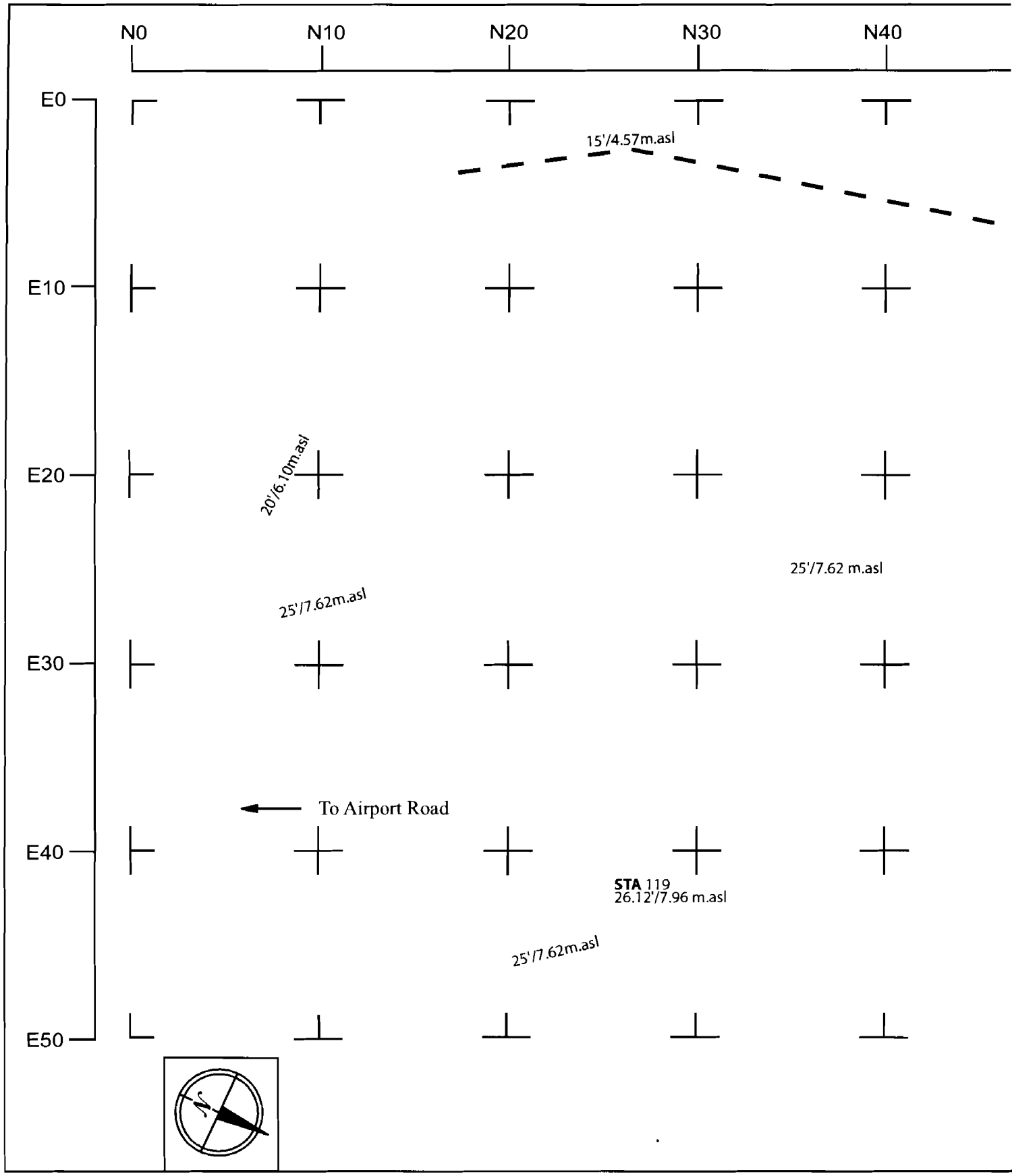
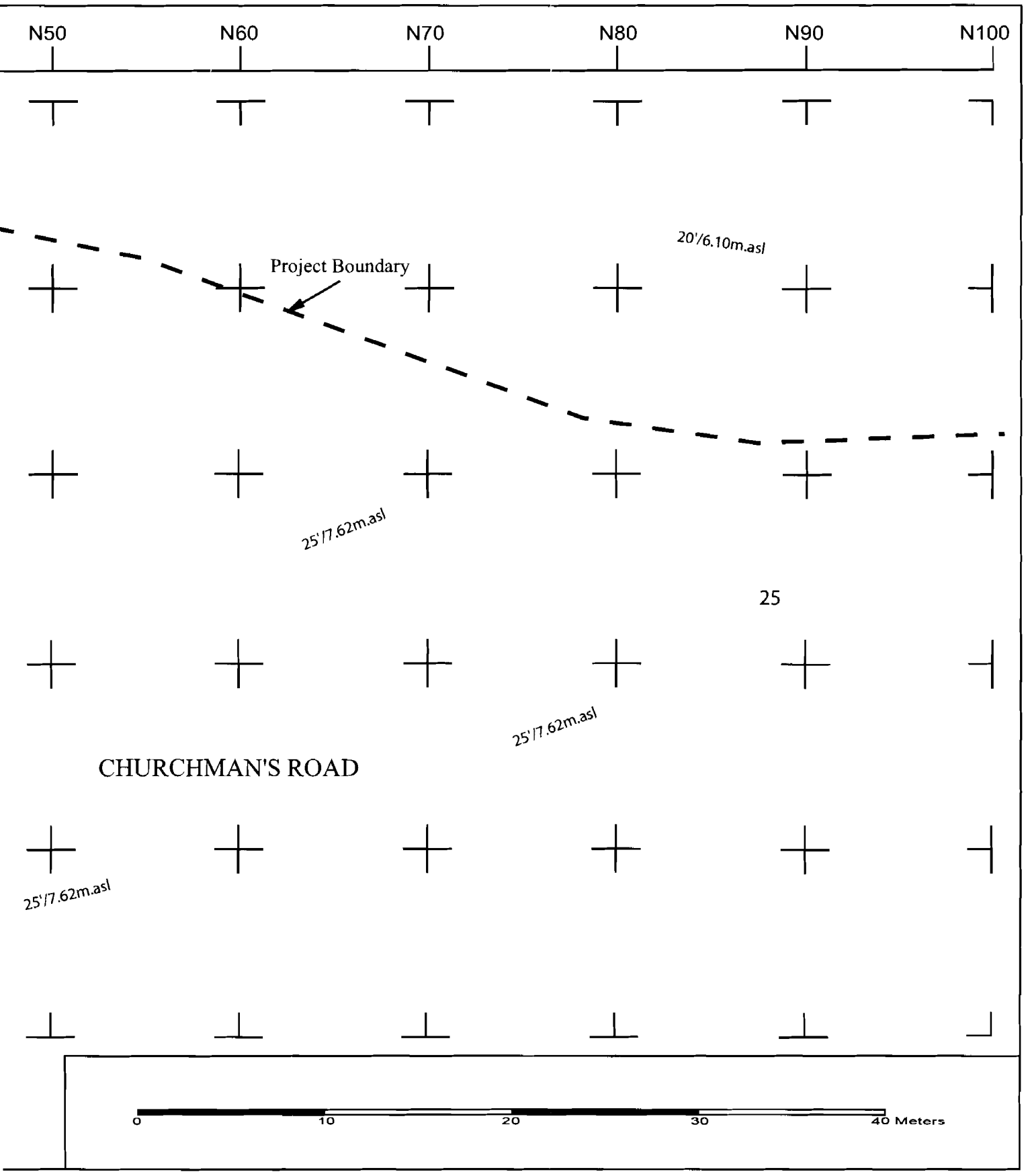


Figure 2: Phase II study area showing existing conditions (Source: WRA 2001).


N50
N60
N70
N80
N90
N100
20'/6.10m.asl
Project Boundary
25'/7.62m.asl
25
25'/7.62m.asl
CHURCHMAN'S ROAD
25'/7.62m.asl
0
10
20
30
40 Meters

Representative shovel test soil profiles were further recorded by means of documentary photographs and/or hand drawn profiles. All excavated shovel tests were backfilled immediately upon completion.

All artifacts recovered during this project were taken to KSK's Archaeological Laboratory facilities in Pennsauken, New Jersey for processing and analysis. At the lab, all artifacts were first thoroughly cleaned with water and allowed to air dry. Subsequent analysis of recovered materials consisted of documenting the raw material type, function, and where possible approximate age of each artifact, as well as the entering of all relevant analytical variables into a computerized database for eventual statistical characterization. Once analysis of the artifacts was completed, all items were prepared for eventual long term curation in accordance with the DESHPO's *Guidelines*.

In an effort to more accurately interpret site taphonomic factors and archaeological integrity soil strata exposed within selected EUs were subjected to detailed Geomorphological examination by Geoarchaeologist Dan Hayes, of Hayes and Monahan, Inc. The findings of his inspection are detailed in technical report contained in Appendix D and are discussed in the Interpretations and Conclusions section of this report.

Testing Results

Completion of the above testing program resulted in the excavation of 25 one by one meter (3 by 3 foot) excavation units and 27 systematically and opportunistically placed shovel tests (Figure 3). All considered Phase II investigations at Site 7-NC-E-152 produced an assemblage comprised of a total of 960 items (Appendix C), including artifacts of both prehistoric and historical manufacture. As shown in Table 1, prehistoric cultural materials constitute the single largest class of artifacts recovered and represent approximately 84.8% of the total assemblage (N=814). Native American artifacts are represented by pieces of lithic manufacturing debitage, a number of both formalized (diagnostic bifaces and unifacially-worked pieces) and expedient tool forms (utilized flakes, hammerstones, etc.), and quantities of fire-cracked rock. No prehistoric pottery was identified in any portion of the site. Historic materials include a variety of domestic and architectural objects potentially dating to the late eighteenth through twentieth centuries.

In terms of stratigraphy, unit excavation revealed, and geomorphological examination confirmed, that previous (Phase I) interpretations regarding the stratigraphic integrity of the site were to some degree incorrect. Instead of encountering undisturbed soils throughout the study area Phase II testing produced evidence that indicate upper soil horizons have been impacted by historic-era activities to varying extents and that site stratigraphy is somewhat more complex than previously thought.

The basic stratigraphic sequence encountered is now known to consist of an upper organic-rich horizon of varying thickness directly overlying undisturbed subsoil deposits. Though minor local variations have been noted, the uppermost stratum across the site generally consists of two distinct components: a westward thinning upper level that includes recent colluvial soils likely derived from the erosion of the adjacent Churchmans Road bed and berm (Ap1), and an underlying horizon that has experienced variable degrees of prior disturbance (Ap2). Variations within this lower horizon occur predictably across the site, with areas south of the dirt access ramp (Plate 1) showing the abrupt A/B horizon transition typical of plowed fields, and ground north of the ramp appearing to have been impacted to a less extensive degree. In this northern area the Ap2 horizon exhibits a comparatively indistinct interface with the underlying subsoil and appears to have been used less intensively for agricultural pursuits, or perhaps for a shorter period of time (Plate 2). Both parts of this upper stratum have been extensively impacted by both tree root development and the actions of burrowing animals (worms/rodents). Prehistoric and historic artifacts were recovered from both soil horizons within this upper stratum, though the largest proportion derived from the lower Ap2 component (Figures 4 and 5).

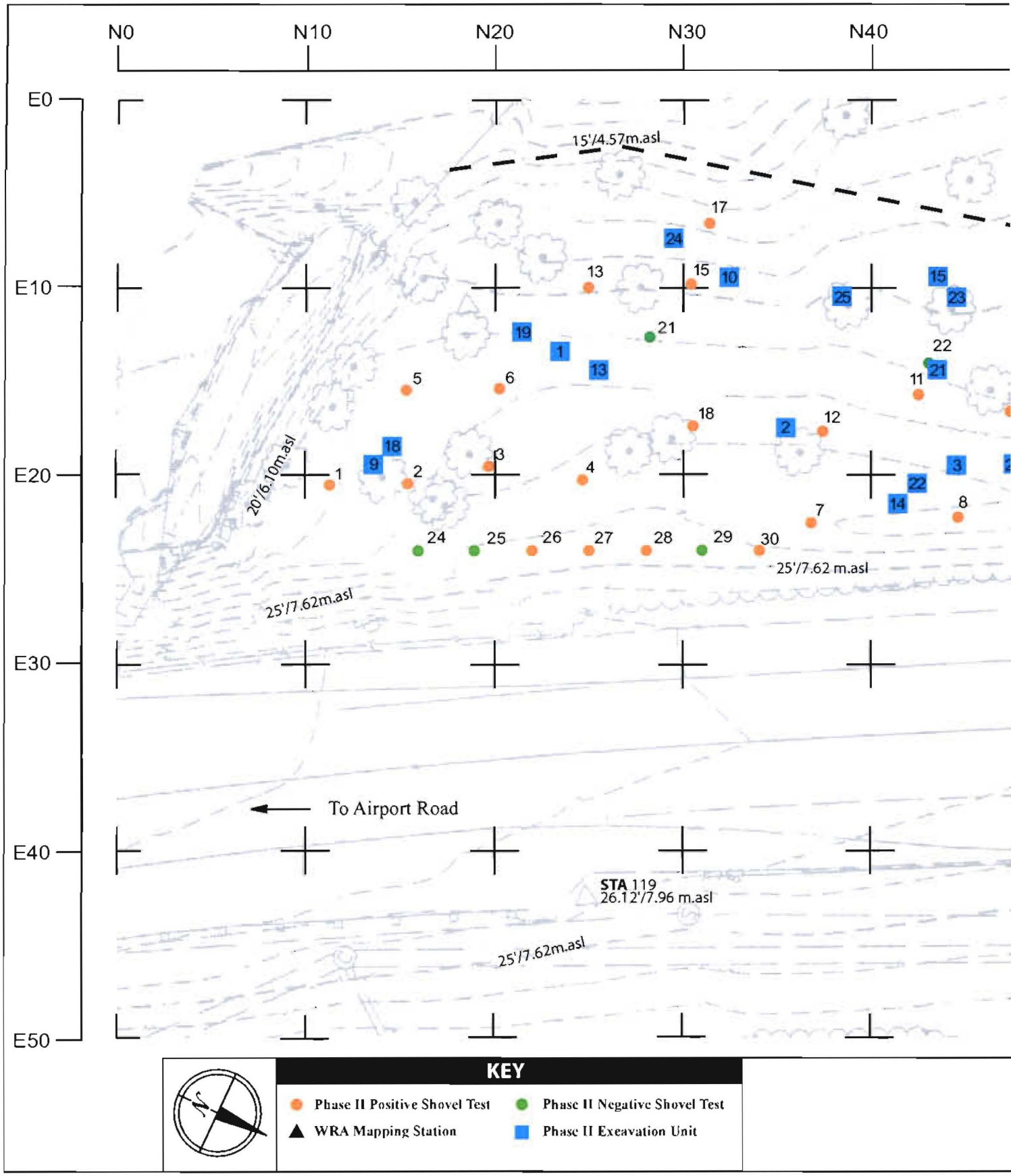
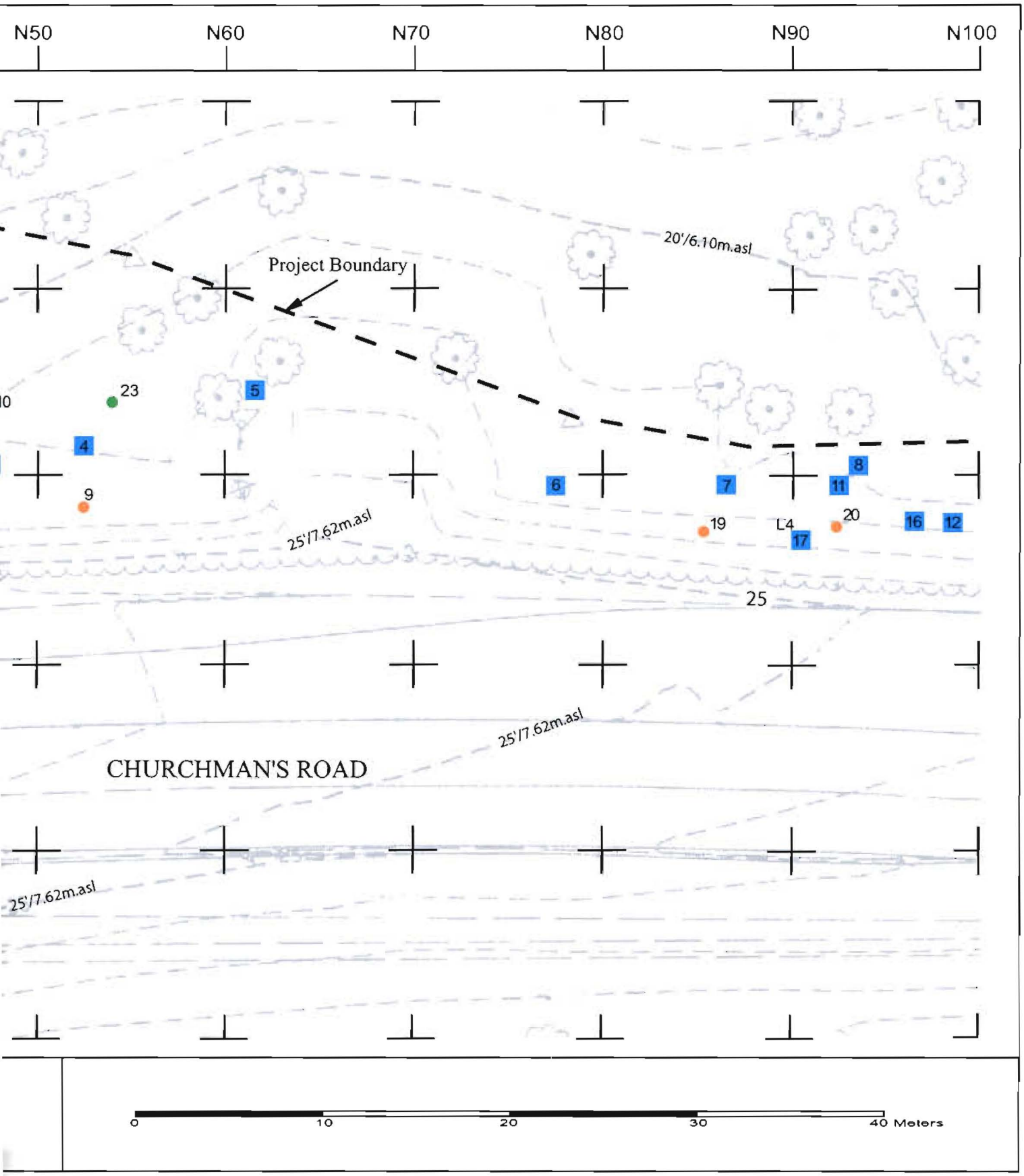


Figure 3: Locations of Phase II excavation units and supplemental shovel tests (Source: WRA 2001).


N50
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Project Boundary
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25'/7.62m.asl
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25'/7.62m.asl
CHURCHMAN'S ROAD
25'/7.62m.asl
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Plate 1: Excavation Unit 22, south profile.

Plate 2: Excavation Unit 16, south profile.

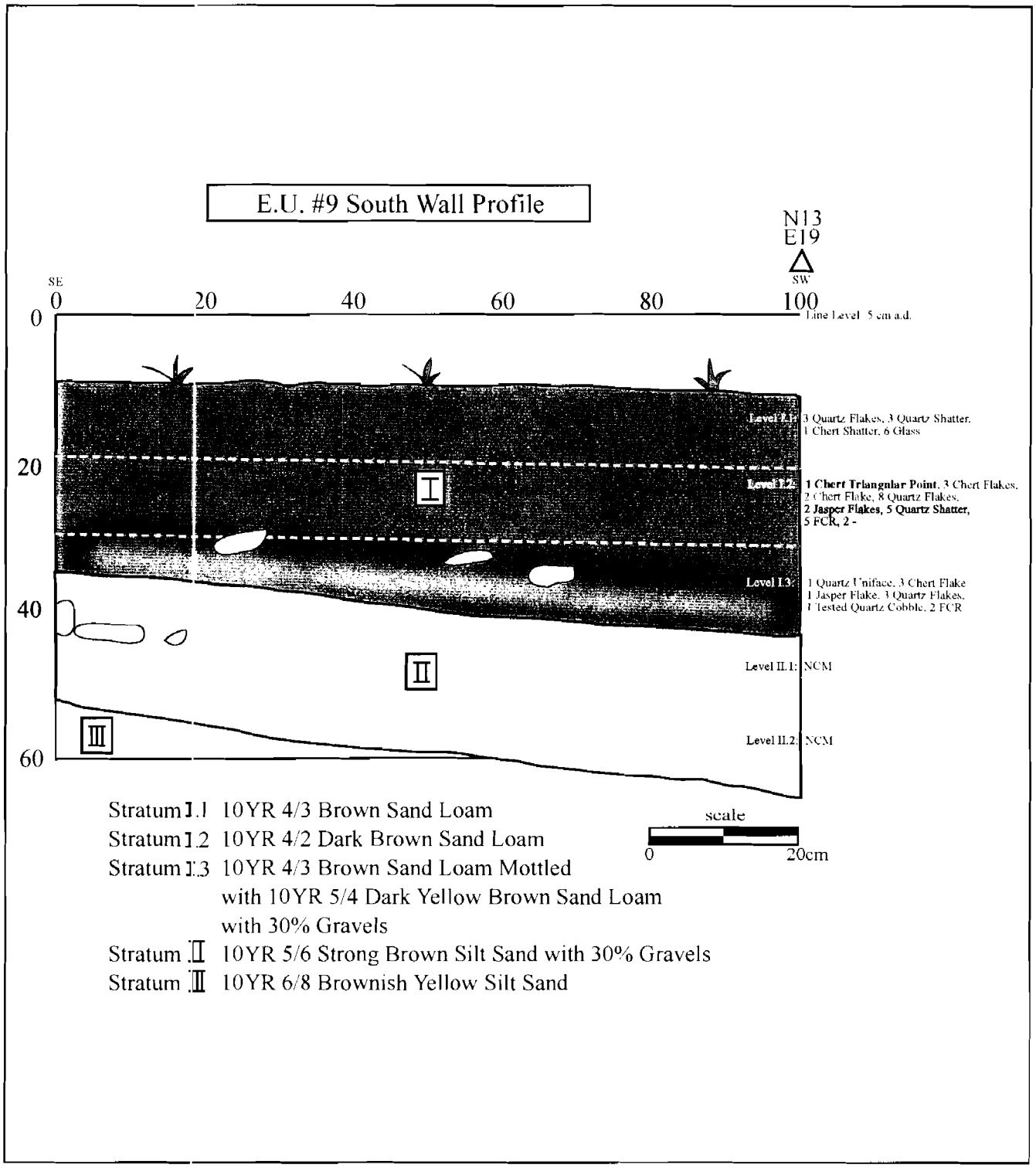


Figure 4: Excavation unit 9, south wall profile.

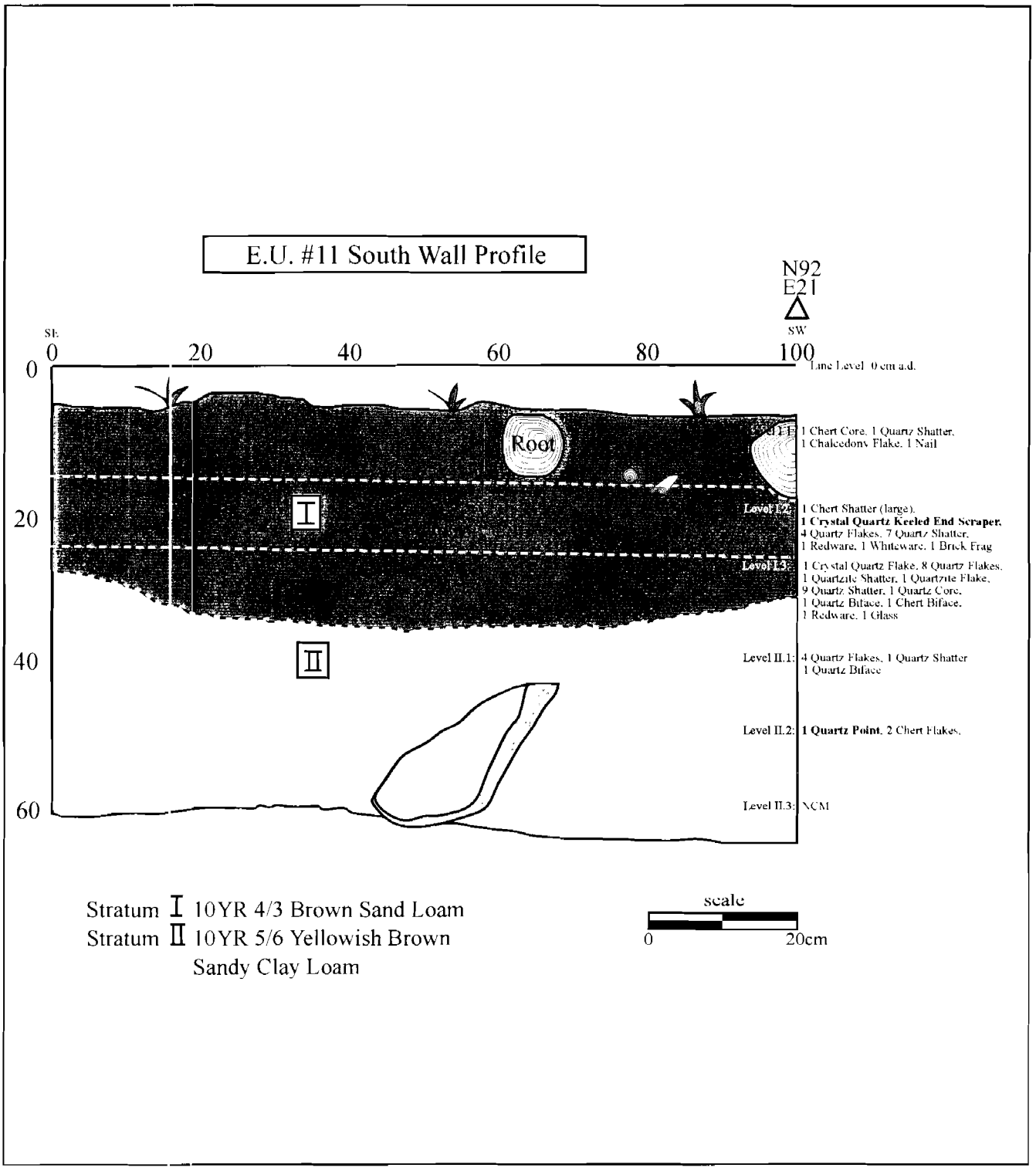


Figure 5: Excavation unit 11, south wall profile.

Table 1: Airport and Churchmans Road Phase II artifact summary.

Artifact Group	Description	Quantity	% of Sub-total (Total)
Prehistoric Lithics	Bifacial tools	22	2.7% (2.3%)
	Unifacial tools	6	0.7% (0.6%)
	Cobble and groundstone tools	30	3.7% (3.1%)
	Cores	10	1.2% (1.0%)
	Debitage	705	86.6% (73.4%)
	Fire-cracked rock	41	5.1% (4.4%)
Prehistoric Sub-total		**814**	**100.0% (84.8%)**
Ceramics	Creamware	3	2.4% (0.3%)
	Pearlware	7	5.6% (0.7%)
	Redware	28	22.2% (2.9%)
	Stoneware	5	4.0% (0.5%
	Whiteware	15	11.9% (1.6%)
	Other	2	1.6% (0.2%)
Glass	Vessel glass	9	7.1% (0.9%)
	Other	16	12.7% (1.7%)
Metal	Nails and other hardware	29	23.0% (3.0%)
	Other	2	1.6% (0.2%)
Other	Building materials	10	7.9% (1.0%)
Historic Sub-total		**126**	**100.0% (13.1%)**
Faunal		20	(2.1%)
Totals		**960**	**100.0%**

Subsurface deposits across the site also exhibit signs of variability, though the exact nature and horizontal expression of that variation occurs much less predictably than in the overlying stratum. Observed subsoil components include a discontinuous, truncated BE horizon immediately underlying the Ap2, as well as denser Bt horizon soils and substantially unweathered gravel and cobble sediments at greater depths below surface. As identified by Hayes (Appendix D), all soils found within the limits of Site 7-NC-E-152 have weathered from Pleistocene age sediments belonging to the Columbia Formation. Phase II testing determined subsoil deposits contained only very small quantities of artifacts. Where present, these cultural materials were almost entirely prehistoric in origin and were recovered from soils immediately below the Ap2 horizon.

Prehistoric artifact recovered from the site (Table 2) are represented by a large variety of lithic raw material types, including (in order of decreasing frequency) quartz, chert, quartz crystal, quartzite, jasper, ironstone, sandstone (predominantly hammerstones and fire-cracked rock), and chalcedony. Lithic debitage constitutes the single largest artifact category (N=705; 86.6%) and consists of items representing the full range of stone tool manufacture, from the initial testing of unmodified raw material to the refined flaking of finished, formalized tool forms. Of the identified manufacturing debris pieces of shatter make up more than 55% of this sub-assemblage, with thinning/secondary flakes and indeterminate flake fragments comprising the bulk of the remaining debitage (13.5 and 12.8%, respectively). Cores, tested cobbles, early reduction flakes, and finishing/tertiary flakes are only minimally represented. Hammerstones used in the reduction of raw material were present in modest numbers (N=22).

Table 2: Phase II prehistoric artifacts

Artifact Class	Description	Quartz	Crystal	Chert	Jasper	Ironstone	Quartzite	Chalced.	Other	Totals	
POINTS	Triangle			1	3					**4**	**(0.5%)**
	Notched	1								**1**	**(0.1%)**
	Stemmed			1						**1**	**(0.1%)**
	Unidentified	1								**1**	**(0.1%)**
BIFACES	Early-stage	1		1						**2**	**(0.2%)**
	Mid-stage	2		1	1					**4**	**(0.5%)**
	Late-stage				1					**1**	**(0.1%)**
	Unidentified	4	3	1						**8**	**(1.0%)**
UNIFACES	Endscraper		1							**1**	**(0.1%)**
	Other	2		1						**2**	**(0.2%)**
FLAKE TOOL	Retouched		1	1						**3**	**(0.4%)**
DEBITAGE	Cores	2		1			1			**4**	**(0.5%)**
	Block shatter (cortex)	149	3	8	5	1	5			**171**	**(21.1%)**
	Shatter	231	32	7	5	3	1			**279**	**(34.3%)**
	De-cortication flake	8	2	11	7	1				**29**	**(3.6%)**
	Early reduct. flake	3		1						**4**	**(0.5%)**
	Thinning flake	39	10	23	9	24	5			**110**	**(13.5%)**
	Finishing flake	2	1	4	1					**8**	**(1.0%)**
	Flake fragment	62	15	11	8	5	2	1		**104**	**(12.8%)**
	Tested cobble	6		1					1	**8**	**(1.0%)**
COBBLE TOOLS	Hammerstone	3				1	9		9	**22**	**(2.7%)**
	Mano						2		1	**3**	**(0.4%)**
	Other						2		1	**3**	**(0.4%)**
FCR		10			2		16		13	**41**	**(5.0%)**
TOTALS		**528 (64.8%)**	**68 (8.3%)**	**74 (9.1%)**	**42 (5.2%)**	**35 (4.2%)**	**43 (5.2%)**	**1 (0.1%)**	**25 (3.1%)**	**814**	**(100%)**

Formalized and simple flake tools from the site are represented by both bifacially and unifacially worked pieces. A total of 22 bifacial tools or tool fragments were recovered, including pieces abandoned in the early through late-stages of manufacture, as well as examples of seven (7) finished projectile points. Unifacially worked and simple retouched flake tools are present in only very small numbers (N=6) and include one finely made endscraper manufactured from quartz crystal (Plates 3 and 4). Of the recovered points, four (4) are triangles (three of jasper, one of chert) (Plate 5), one is side/corner notched (quartz) and heavily re-sharpened (Plate 6), one consists only of a straight sided stem fragment (chert), and one is a heavily re-sharpened, elongated lozenge-shaped piece with pronounced beveling along one edge.

In terms of the horizontal distribution of prehistoric artifacts, Phase II testing confirmed earlier Phase I suppositions that Native American cultural materials are present throughout the study area in the form of an expansive, generally light scatter of debitage, with at least four identified areas of significantly more concentrated artifact deposits (designated Clusters 1-4; Figure 6). The first three of these artifact clusters are located south of the access ramp, adjacent to a small tributary stream and in the more heavily plow-impacted section of the site, while the fourth lies at the extreme northern edge of the study area, in the part of the site that appears to have been less extensively disturbed. Spatially distinct, aerially limited, and non-overlapping, all of these concentrations are marked by the presence of one or more pockets of significantly higher artifact density within the larger cluster, and likely representing the remains of individual activity areas. Each of the four clusters is comprised of a very similar assortment of lithic artifacts dominated by quartz debitage, and includes a number of rejected bifaces. Potentially diagnostic projectile points were identified within the boundaries of Clusters 1 and 4, with the greatest number (and the majority of all recovered tools) deriving from the latter. Points associated with Cluster 1 include a single triangle as well as the straight-stemmed fragment, while Cluster 3 is associated with three triangles and the above notched and lozenge-shaped variants. The crystal endscraper is also associated with Cluster 3. The overwhelming majority of fire-cracked rock at the site (38 if 41 pieces; ca. 93%) was also recovered in direct association with these denser clusters.

Despite concentrating unit placement within areas of higher artifact density only a single possible subsurface feature was identified at the site. Identified in EU 23 (Figure 7), as the northern margins of Cluster 1, Feature 1 consisted of a small, deep basin-shaped pit that was effectively bisected by the west wall of the unit. Soils within the eastern half of the feature were removed and screened separately and produced a single probable hammerstone. No evidence of charcoal or other non-lithic artifacts were noted within the feature fill. Two additional possible features were also identified in the south wall of that same unit, though because of their heavily leeched-out appearance were only discovered after the unit had been completely excavated. Small and post-hole like in appearance, no prehistoric artifacts are known to have been associated with either stain.

Historic artifact deposits within the site form what appears to be an expansive and uniformly light scatter of debris, with individual pieces contained in both the Ap1 and Ap2 soil horizons. This assemblage is largely represented by fragmentary ceramic and glass domestic refuse, along with smaller quantities of architectural debris such as brickbats and nails (predominantly machine-cut). Potentially diagnostic ceramic sherds (N=60) are dominated by redwares (unglazed, black and brown glazed, trailed-slip decorated) and whitewares (plain, transfer-printed, and blue shell-edged), with significantly smaller quantities of Pearlware (undecorated, hand-painted), Creamware (undecorated), and Stoneware. Identifiable bottle glass is predominantly machine-made.

Plate 3: End view detail of crystal endscraper (Excavation unit 11).

Plate 4: Top view of crystal endscraper (Excavation unit 11).

Plate 5: Jasper triangle projectile point (Excavation unit 16).

Plate 6: Chert triangle projectile point (Excavation unit 9).

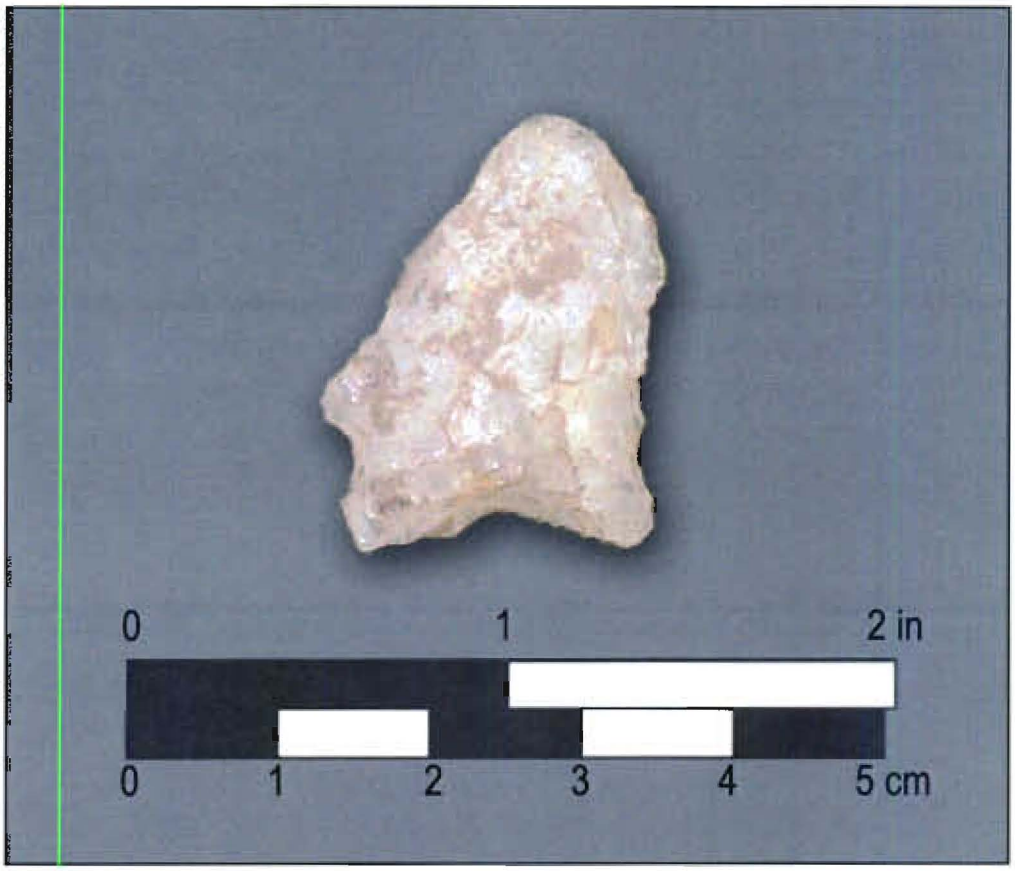


Plate 7: Quartz projectile point (Excavation Unit 12).

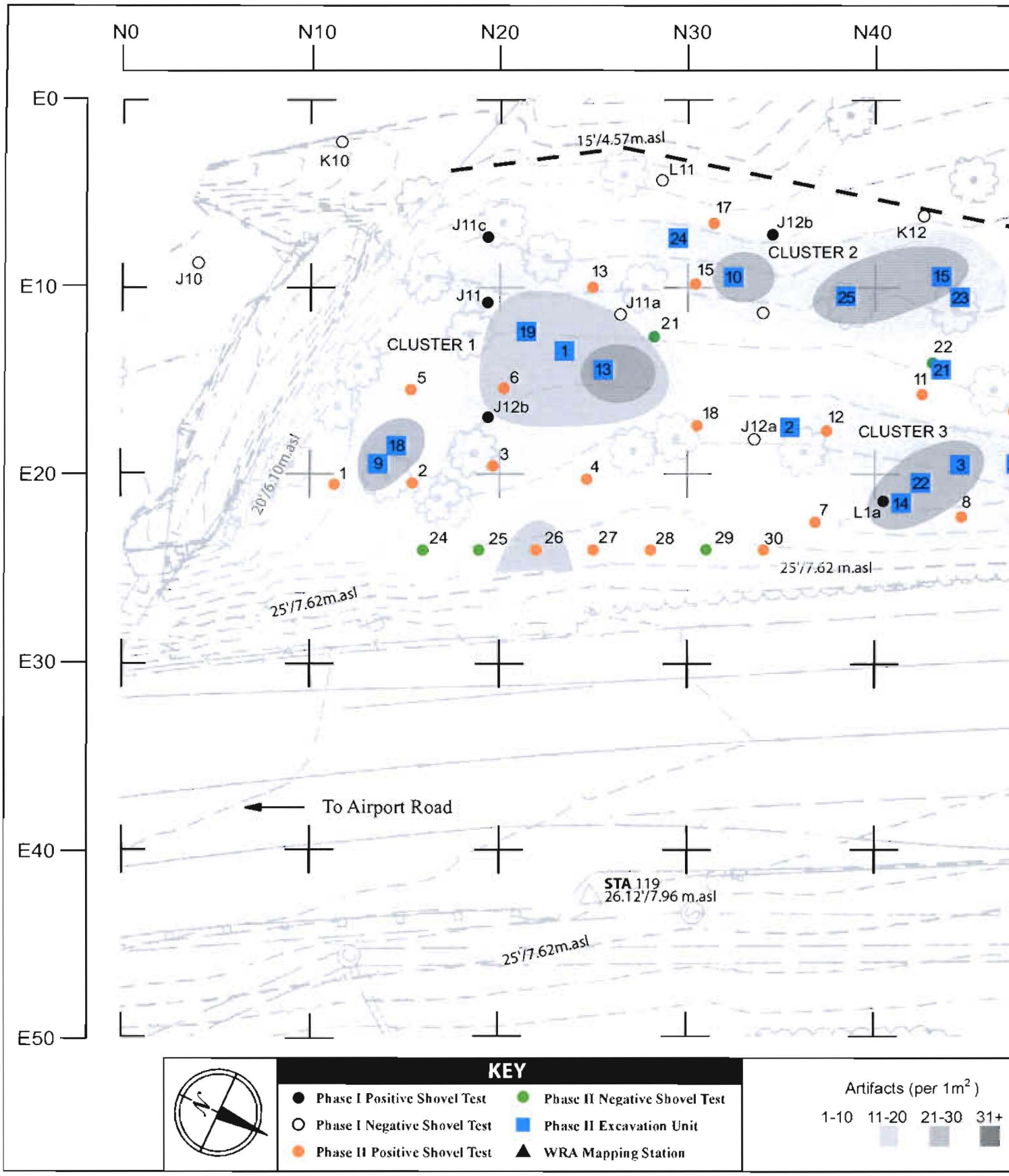
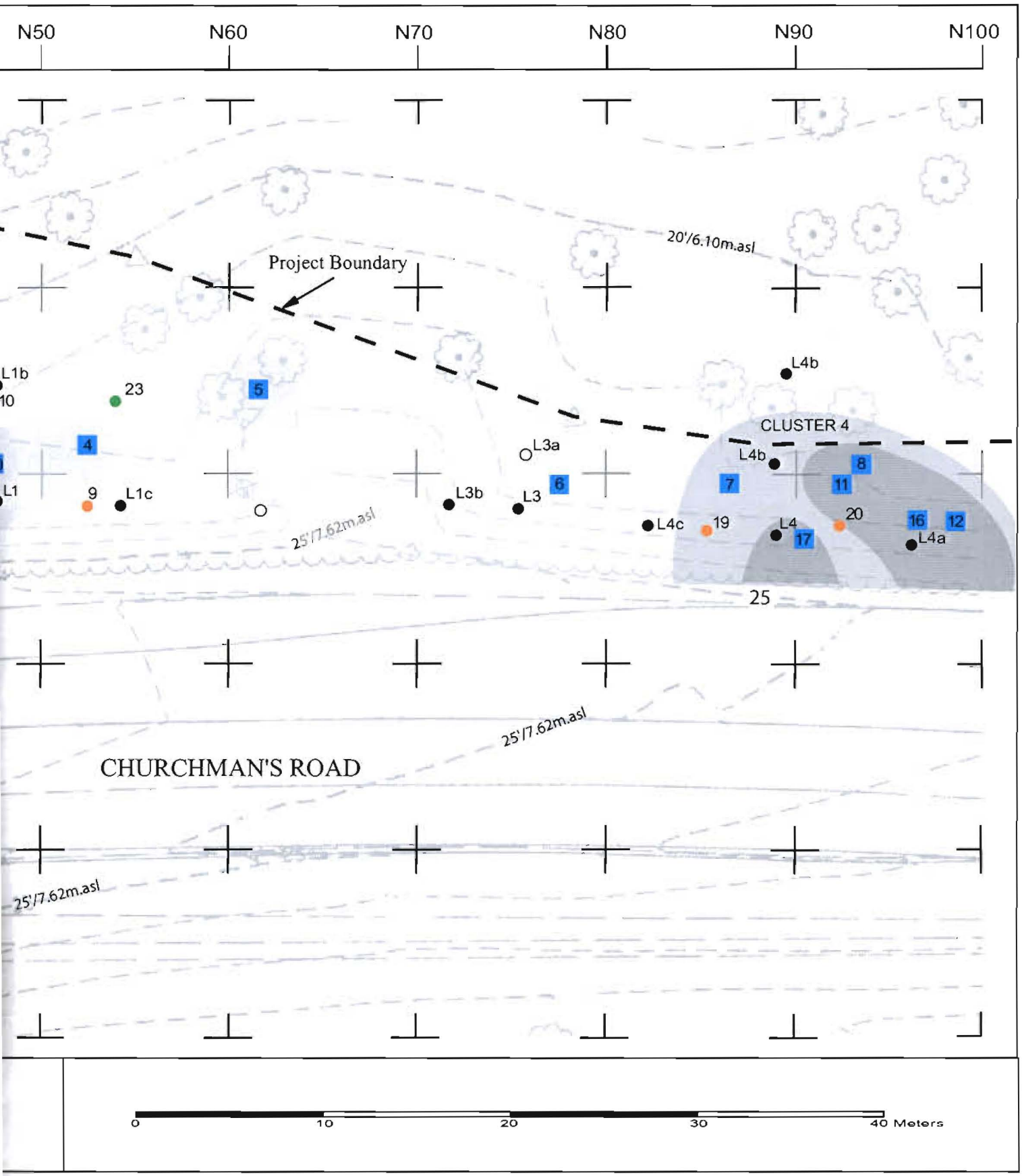


Figure 6: Horizontal distribution of Phase II prehistoric artifacts (Source: WRA 2001).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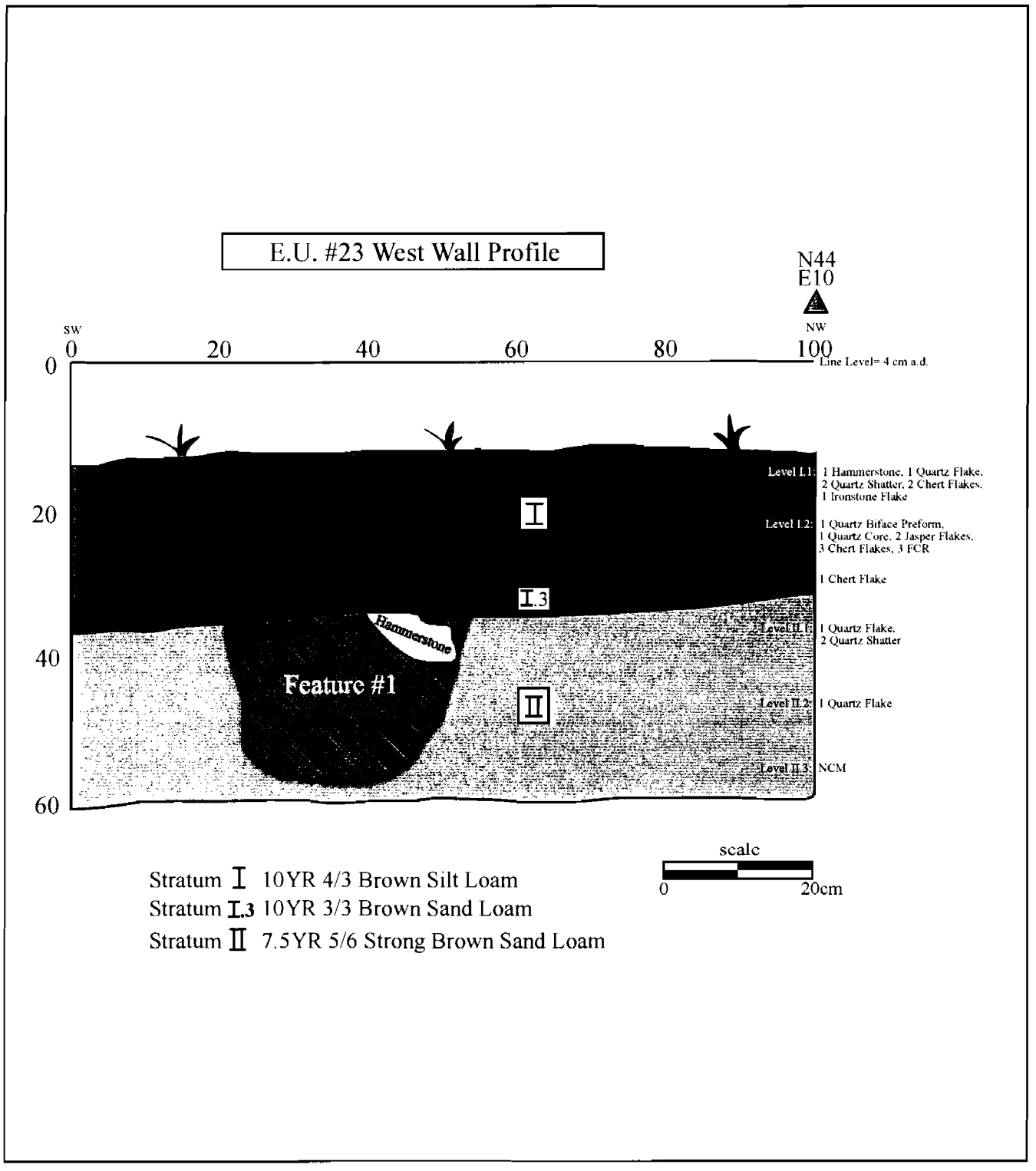

Figure 7: Excavation unit 23, west wall profile showing Feature 1.