

THE VIJAYANAGARA METROPOLITAN SURVEY: OVERVIEW OF THE 1997 SEASON

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Fieldwork of the Vijayanagara Metropolitan Survey (VMS) entails three components: (1) intensive survey in the eight sample blocks immediately surrounding the city core; (2) extensive survey in the remaining areas of the Vijayanagara Metropolitan Region; and (3) test excavations at several sites dating to the Vijayanagara period. In this paper, we report on our fieldwork in February-March 1997, which focused on the first two components of this research.

In addition to Professors Sinopoli and Morrison, the 1997 project participants included Robert Brubaker, Daniel M. Bass and Lynn Rainville of the University of Michigan, Jennifer L. Lundal of the University of Chicago, and Allison I. Ziff of La Crosse, WI, USA.

Intensive Survey

Survey Methodology

Intensive transect survey of a 50 per cent random sample in each of the eight blocks surrounding the Urban Core of Vijayanagara was initiated in 1988, with subsequent field seasons in 1990, 1992, 1994 and 1996. During February-March 1997 this phase of the project was fully completed. Survey was carried out in the southern portion of Block J, south of the Tungabhadra River (the northern portion of this block had been surveyed in 1996). The intensive survey covered a 50 per cent sample of the block in nine randomly selected 250-m wide sample transects (Transects 2, 5, 6, 7, 8, 11, 14, 15 and 17) (Figure 1). The transects were surveyed according to the methodology developed in previous field seasons (see

Morrison 1995 and Morrison and Sinopoli 1996). A crew of three to six individuals systematically walked each transect in a north-south orientation, with crew members spaced 20 m apart. This spacing allows recovery of even very small sites. All archaeological features identified by the survey team were noted (including small features such as isolated bedrock mortars or quarry marks that were not given site designations), and all archaeological sites were documented.

Sites identified were assigned a sequential site number and were located on the 1:25,000 base map series developed for the region; latitude and longitude locational information was recorded using a hand-held global positioning system (GPS). The VMS strategy for site recording is comprehensive, with information on each site recorded on standardized forms for eventual entry into a computerized database and Geographic Information System (GIS). Data are recorded on environmental setting (slope, vegetation, natural resources and water sources), modern land use and disturbances, artefact distributions and site plan and layout. Interpretations of site function and chronology are made. Sites are mapped and photographed in black and white and colour. Where relevant, systematic surface collections of artefacts are made. Nondiagnostic artifacts are sorted and counted in the field, while diagnostics are taken back to the field camp for more detailed morphological studies. After analysis, artefacts remain in the custody of the Karnataka Department of Archaeology and Museums and are stored in their Kamalapur facilities.

Block J Sites

The surveyed terrain of Block J is varied and encompasses much of the topographic variability evident across the Metropolitan Region. The northern boundary of the area surveyed in 1997 is the Tungabhadra River, with its many braided channels. Along the river shore, the low-lying terrain is marshy and covered by thick grasses, resulting in poor surface visibility. The Ramasagara canal emerges from the river in the eastern part of the block (Transect 13) and merges with the Turtha canal, which originated several kilometres to the west (on the far side of the Urban Core). Both of these Vijayanagara period canals remain in use today and have undergone modifications since their construction. To the south of the river are low-lying areas that are today the focus of wet agriculture (bananas, rice, sugarcane and vegetables). Several areas of high granitic outcrops are also found in the survey area, particularly in the southeastern portion of the surveyed area. These large areas of outcrops are easily accessible from the settlement of Bukkasagara and are presently the focus of intensive quarrying activities, which has no doubt resulted in the destruction or disturbance of a number of archaeological sites. Bukkasagara lies in the southeastern corner of the block. Still occupied, the town also contains several temples and a fort that date to the Vijayanagara period.

In the 1997 field season, a total of 43 archaeological sites were recorded in the southern section of Block J. These sites include a wide range of site types that span a long chronological range, from late prehistoric Iron Age or Early Historic times to Vijayanagara and post-Vijayanagara periods. In addition, four sites were recorded in Block O (to the south of Block J) and two sites were documented in Block S (the latter include VMS-258, a bastion in Kamalapura that was revisited in 1997). In Block J, sites were especially densely clustered on or along the edges of outcrop areas in the eastern third of the block. This is not surprising given that the lower-lying areas have been subject to intensive land modification related to recent agricultural activities, and were no doubt also farmed during Vijayanagara times.

In general, site density is much greater south of the river than in the portion of the block found to its north. This is probably a function of the southern zone's greater ease of access to the Vijayanagara Urban Core and its importance as a transport route linking the capital with the contemporary settlement at Kampli. There are, however, similarities between both sides of the river in site distributions, particularly in the relatively high densities of prehistoric sites identified. The numbers and kinds of sites recorded in the 1997 season are summarized in Table 1.

Vijayanagara Period Sites

Sites of the Vijayanagara period recorded in 1997 belong to a number of functional categories, including transport sites ($n = 12$), shrines and temples ($n = 8$), agricultural sites ($n = 4$), defensive and fortification sites ($n = 3$) and three sites of unknown function. In addition, the modern settlement of Bukkasagara overlays a substantial Vijayanagara period settlement of the same name. Given the considerable disturbance of the settlement site its original extent could not be documented, though its associated fort was recorded (VMS-655) and several temples within Bukkasagara were recorded in the 1988 field season (VMS-116, VMS-118, VMS-119). Summaries of sites by broad functional categories are presented below.

Transportation

Sites defining routes of movement across the Vijayanagara landscape comprise the most numerous category of sites recorded in the area surveyed in the 1997 season. Twelve transport-related sites were documented (see Table 2). Vijayanagara period roads take several forms. Sites VMS-627, VMS-640 and VMS-654 are each small sections of stone pavement, ranging from 20 to 50 m in preserved length and between 3 to 5 m in width. Site VMS-650 is a possible bridge defined by standing columns and a mounded area bordered by two parallel walls. The largest and most complex of the roads recorded was designated with two site numbers, VMS-631 and VMS-644. This raised roadbed winds

around the base of an outcrop in Transects 16 and 17, in places as much as 6 to 8 m above the fields which surround the outcrop. The road bed is defined by a terraced outer wall, constructed of large unmodified and split boulders and ranges in width from 3 to 5 m. At places, one or two inner walls support the raised road surface. Some Vijayanagara quarry marks are evident on boulders in this area, though the outcrop which the road surrounds is also the site of megalithic cemetery VMS-643 and VMS-645, and the builders of the road may have taken advantage of earlier alignments and building materials in their construction.

Temples and Shrines

Eight sites classed as temples, shrines or sacred sculptures were recorded in the 1997 field season (Table 3). Two of these are located in Block O. The first, VMS-607, is a displaced structure of two male devotees with hands folded in front of them, found in a modern structure; while the second, VMS-653, is a large boulder sculpted with an image of Ganesha and with small niches that is located along the main Vijayanagara-Kampli road (Plate 1). The largest temple complex recorded in the 1997 season is VMS-630. This Shaivite temple is still in worship and has undergone many modifications since its original construction early in the Vijayanagara period, as evidenced by the early style columns with disc-shaped capitals. The temple lies near the confluence of the Turtha and Ramasagara canals and is c. 150 m south of the Tungabhadra River. The raised road bed discussed above (VMS-631 and VMS-644) runs near the temple. Modern *mandapas* have been constructed to the west and southeast of the temple, and a later structure abuts the original construction on the north, attesting to the long history of this complex.

Agriculture

Only four sites clearly associated with agricultural activities were recorded in the surveyed area (see Table 4), though this low number does not include the Ramasagara and Bukkasagara canals that played a major role in determining the agricultural regimes of this

area which was dominated by wet farming. Perhaps most interesting of the agricultural sites documented is VMS-623, a 180-m long low reservoir embankment that spans a broad valley between two low outcrops. This earthen embankment is faced with up to eight steeply stepped courses of masonry on its southern side, and has a single sluice gate with a roughly dressed rectangular lintel. During the Vijayanagara period, the eastern end of the reservoir was breached by the Turtha canal, rendering the reservoir obsolete. In addition, a smaller masonry lined canal (VMS-625) diverged off from the Turtha canal and passed through the reservoir's defunct sluice channel. Both the Turtha canal and its feeder canal are still in use.

Defense/Fortification

Three sites recorded in the southern portion of Block J are related to Vijayanagara defensive practices (Table 5). A fourth site, VMS-648, a *mandapa* with sanctuary located atop a high outcrop in the southeast corner of the block, also no doubt had a defensive role, and afforded excellent visibility to the north and west. Site VMS-639 consists of a 61-m long alignment of up to five parallel rows of large boulders. The site lies along the northern edge of a low outcrop, north of a saddle in the outcrop that could afford easy passage across it. The linear alignments of large boulders, ranging up to 1.5 m across and 1 m high, with many set on edge, could have served to impede foot, animal and vehicle movement across the outcrop.

Site VMS-655 is a fort located on the low outcrop adjacent to the Vijayanagara period settlement of Bukkasagara (Figure 2). The 210 x 130 m fort makes opportunistic use of the hilly outcrop on which it is situated, and is bordered by segments of low, double-faced stone walls that form two contiguous enclosures around the central relatively flat terraces on top of the outcrop. The northern enclosure is located about four meters above the lower southern enclosure; access between them was through a gate (Feature 3) defined by two rectangular platforms that flank a 2-m wide paved passage. Ten circular bastions are located at irregular intervals around the site's

edges; these are usually constructed on top of large boulders, and are built of smaller quarried stones than the wall segments; which they may postdate. The upper enclosure of the fort contains a three-roomed structure (Feature 1) and a plastered cistern (Feature 2), as well as a crude stairway that extends up to the boulder ridge that defines the site's northern boundary. No surface features were evident in the southern enclosure.

Sites of Unknown Function

Table 6 lists four sites of unknown function recorded in 1997. These include sites that consist of displaced architectural elements of the Vijayanagara period (VMS-605), as well as small walls or terraces of unknown date.

Prehistoric and Early Historic Sites

Karnataka's Bellary and Raichur Districts are widely known for their many Neolithic, Iron Age (Megalithic) and Early Historic period sites. Numerous sites in this region have been documented by many generations of Indian archaeologists (e.g. Nagaraja Rao 1965 and 1971, Allchin 1963, Ansari and Nagaraja Rao 1969, Majumdar and Rajaguru 1966, among others). Although the primary focus of the VMS has been to document sites of the Vijayanagara period, when non-Vijayanagara sites (both earlier and later) are identified, they are recorded and documented according to the same protocols developed for Vijayanagara period remains. In general, prehistoric sites tend to be located close to the Tungabhadra River, often on outcrop areas in sight of the river. Given the proximity to the river of the 1997 VMS sample transects, it is therefore not surprising that several prehistoric sites were identified. The fourteen prehistoric sites recorded include thirteen found in Block J and one (VMS-604) in Block O; site types are summarized in Table 7. Most common are isolated megaliths. These include linear cairns, stone circles and other alignments, and "crack features" (locations where rocks have been wedged into cracks in outcrops to define mortuary spaces). VMS-634 located in Transect 11 is a c. 1.8 ha settlement area (Figure 3). The

site is located in a relatively flat open space amid an outcrop. Portions of the site have been disturbed by modern quarrying and ash mining, and its original extent cannot be determined. Surface densities of ceramics (Black and Red Ware, polished black ware, polished red ware) range from moderate to high; other materials observed on the surface and in pitted include bone, iron ore and slag, ground stone and a bead. The site was mapped and eighteen 1 x 1 m surface collection units were laid out systematically, along north-south transects that were spaced at 30 m intervals (with collection units along each transect spaced at 15 m intervals). Diagnostic collections of ceramics were also made for morphological study. VMS-633 is a rock-shelter located just to the northeast of the settlement site and associated with it; VMS-637 a small embankment wall at the edge of a valley to the south of the settlement may also have been associated with the prehistoric settlement.

Another interesting prehistoric remains recorded in 1997 include sites VMS-643, VMS-645 and VMS-647. Although in parts discontinuous (and hence given discrete site numbers), these three sites actually probably once comprised part of a single extensive megalithic cemetery that extended across two low outcrops and the low-lying area between them (though any remains that may once have existed in this lower area have been destroyed by later agricultural activities). Mortuary features in these sites include numerous stone alignments, including stone circles ranging from c. 2.5 to 10 m in diameter, rectangular alignments and a boundary wall that runs along the western base of the outcrop (Site VMS-645). These alignments are extensive, found in widely spaced flat areas along the outcrop, often with gaps of 30-40 m between them. A single linear cairn megalith was noted in site VMS-645.

Extensive Survey

A second component of the VMS is the extensive survey that has been carried out in the area beyond the eight blocks that have been subject to intensive random sample survey. In this outer portion of the Metro-

politan Region our focus has not been to document every archaeological site. Instead, in this area survey has focused on particular kinds of sites or regions that are of particular interest to the broader goals of project members. Such focused research has included Morrison's ongoing study of the network of irrigation reservoirs of the Daroji system on the southeastern edge of the Metropolitan Region. With a few exceptions, site numbers in the extensive survey area were arbitrarily begun at VMS-1000, so as not to overlap with numbers with numbers assigned in the intensively surveyed area.

In 1997, extensive survey focused on sites related to Vijayanagara's defensive infrastructure and on locating the defended boundaries of the Metropolitan Region. This work was carried out under the supervision of Robert Brubaker as part of his doctoral dissertation research. In 1997, we documented 38 sites of diverse types associated with bounding and securing the protection of the Metropolitan Region. These include hilltop *mandapas* or watch posts, fortification walls, alignments of large stone boulders (horse-stones) spread across valleys to impede horse or cart movement, and forts, typically located atop high outcrops in areas with excellent visibility of surrounding terrain. Sites recorded in 1997 are summarized in Table 8.

The diverse defensive sites documented are strategically placed both to protect and monitor possible routes of transport into the Vijayanagara capital, and to create a network of sites that are visually linked, a not inconsiderable challenge in the highly dissected landscape of the Metropolitan Region. Although the modern Tungabhadra Reservoir (to the west of Hospet) has destroyed many sites on the western and southwestern boundaries of the region, traces of fortification walls remain along the Chitradurga road to indicate their former location. The VMS has also been successful in identifying sites on the north, northeast, east and southeast edges of the Metropolitan Region that define the defended boundaries of the capital. These are not the seven concentric rings of walls reported by Niccolo Conti, a fifteenth-century Italian visitor to Vijayanagara, but instead consist of a number

of strategically placed walls, hilltop forts, watchtowers, and other features that made effective use of the rugged landscape, incorporating and spanning high hills.

Artefact Analysis

Ceramics collected at Vijayanagara period sites are analysed according to criteria established by Sinopoli (1993). All shards are sorted by ware and colour, and a range of attributes are measured on rim shards, to allow for functional and temporal classification. In 1997 approximately 134 rims from nine sites of the Vijayanagara period were measured. Shards from prehistoric sites are also subject to detailed analysis; body shards are weighed, and information on surface treatment and surface colour is recorded. Diagnostic shards are measured and drawn. More than 3,000 body shards and 340 rims from nine prehistoric sites were documented. Analysis of the ceramic data is currently underway.

Dr D.V. Gogte of Deccan College, Pune, an expert in archaeochemistry and ancient metallurgy, visited Vijayanagara for a brief period to advise on some of the metallurgical sites identified in previous seasons. Gogte will be conducting chemical analyses of small samples of slag, bloom and tuyeres from some of these sites.

Ethnoarchaeological Research

As part of our interest in craft production, in 1997 we continued our study of contemporary pottery producing workshops in the Metropolitan Region. Because of the brevity of our field season, only one workshop was visited. This workshop is located on the eastern edge of the village of Venkatapur to the northeast of Vijayanagara. A single adult male potter, his wife and children all assist in pottery manufacture and distribution in the workshop. As part of the ethnoarchaeological research, Sinopoli interviewed the male potter (his wife was visiting relatives) and observed him at work. Photographs of the workshop area were taken, and a sketch map prepared. Approximately two dozen vessels were purchased for more detailed analysis. A series of measurements

were taken on each vessel, and each was drawn. These data will be combined with data collected in previous seasons and in the subsequent Fall 1997 season in order to examine inter-workshop differences in production technology and final products. Such work will be useful in developing models for the study of ceramic variability during the Vijayanagara period.

Acknowledgements

We acknowledge with gratitude the Government of India and the Archaeological Survey of India for permission to conduct this research. Our thanks also to the Karnataka Department of Archaeology and Museums, and particularly to Dr D.V. Devaraj, Director, and Dr C.S. Patil, Deputy Director, and T.M. Manjunathaiah. Our most sincere gratitude to the American Institute of Indian Studies, and its Director-General and President Dr Pradeep Mehendiratta for supporting our research. Thanks also to Suri and Raghavan of the AIIS for their kind help.

Research of the VMS is supported by grants from the National Science Foundation (Morrison), the Wenner Gren Foundation for Anthropological Research and National Endowment for the Humanities (Sinopoli), the George F. Dales Foundation, the James B. Griffin Fund, Museum of Anthropology University of Michigan and the Department of Anthropology, University of Michigan (Brubaker). The University of Chicago has provided additional support to Morrison, and the University of Michigan has provided additional support to Sinopoli.

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Table 1. Intensive Survey: Sites Recorded

| Site | Block | Transect | Description |
|---------|-------|----------|--|
| VMS-604 | O | 5 | Rock-shelter with megalith |
| VMS-605 | J | 6 | Structural debris |
| VMS-606 | J | 8 | Structural remains with prehistoric pottery |
| VMS-607 | O | 13 | Sculpture |
| VMS-608 | J | 14 | Wall |
| VMS-609 | J | 14 | Road segment/stairway |
| VMS-610 | J | 14 | Terraced platform |
| VMS-615 | J | 14 | Megalith and associated features |
| VMS-616 | J | 13 | Rock-shelter with megalith |
| VMS-617 | J | 14 | Rock-shelter with megalith and associated features |
| VMS-618 | J | 13 | Terrace |
| VMS-619 | J | 14 | Megalithic stone circle and associated features |
| VMS-620 | J | 14 | Megalithic features |
| VMS-621 | J | 14 | Megalithic features |
| VMS-622 | J | 14 | Circular enclosure |
| VMS-623 | J | 15 | Reservoir |
| VMS-624 | J | 15 | Wall/road wall |
| VMS-625 | J | 15 | Canal: masonry faced |
| VMS-626 | J | 15 | Ramasagara canal |
| VMS-627 | J | 15 | Road segment |
| VMS-628 | J | 15 | Durga shrine |
| VMS-629 | J | 15 | Road segment and horse tie |
| VMS-630 | J | 15-16 | Temple complex |
| VMS-631 | J | 16 | Road |
| VMS-632 | J | 16 | Shrine |
| VMS-633 | J | 11 | Rock-shelter with ceramics and rock art |
| VMS-634 | J | 11 | Neolithic/Iron Age settlement |
| VMS-635 | J | 12-13 | Road |
| VMS-636 | J | 13 | Well |
| VMS-637 | J | 11 | Embankment/reservoir |
| VMS-638 | J | 11 | Platform |
| VMS-639 | J | 11 | Stone alignments (horse-stones) |
| VMS-640 | J | 17 | Road |
| VMS-641 | J | 17 | Shrine: pecked boulder (trident) |
| VMS-642 | J | 17 | Shrine: Hanuman |
| VMS-643 | J | 17 | Mortuary site |
| VMS-644 | J | 17 | Road |
| VMS-645 | J | 17 | Megalithic mortuary site |
| VMS-646 | J | 17 | Terrace wall and artifact scatter |
| VMS-647 | J | 17-18 | Megalithic mortuary site/enclosures |
| VMS-648 | J | 18 | <i>Mandapa</i> |
| VMS-649 | J | 17 | Megaliths |
| VMS-650 | J | 16 | Standing columns and walls (transport?) |
| VMS-651 | S | 18 | Gate (in wall VMS-123) |
| VMS-652 | O | 12-13 | Road Wall |
| VMS-653 | O | 2 | Ganesha sculpture on boulder |
| VMS-654 | J | 17 | Road segment |
| VMS-655 | J | 16 | Fort (Bukkasagara) |

Table 2. Sites Associated with Transport

| Site | Block | Transect | Description |
|---------|-------|----------|--|
| VMS-608 | J | 14 | Single course wall of large boulders (14.5 x 1 m) located along the base of an outcrop, may define transport route, associated with VMS-609. |
| VMS-609 | J | 14 | Stairway and cleared road segment (<i>c.</i> 18 x 1.5 m) extending up an outcrop to the northwest. Stairs are constructed of medium granite blocks, sheet-rock above them is worn and polished. |
| VMS-624 | J | 15 | 40-m long, single course wall located along the edge of an outcrop, incorporating large outcropping boulders, perhaps defining a transport route. |
| VMS-627 | J | 15 | 20 x 3-m long road segment along southern base of an outcrop; formal pavement of unmodified heavily worn medium to large boulders and area of worn sheet-rock to south. |
| VMS-629 | J | 15 | Road segment (96 m long) defined by two single course walls of large unmodified and split boulders, located along the edge of an outcrop area between Bukkasagara and the Turtha canal. A horse tie is pecked into the outcrop, <i>c.</i> 18 m from the southern end of the site. |
| VMS-631 | J | 16 | 1.25-km long road wall that winds around the base of an outcrop above an area of irrigated fields. The road is constructed of up to 8 courses of large unmodified boulders, many of which may have derived from the nearby megalithic cemetery sites VMS-543, VMS-545 and VMS-547. The date of this site is unknown; it may be a Vijayanagara period road following an earlier route or boundary wall. |
| VMS-635 | J | 12-13 | 250-m long x 27-m wide road segment paralleling the western edge of an outcrop. The road is defined by parallel double-faced walls constructed of one-two courses of unmodified medium boulders with earthen fill. |
| VMS-640 | J | 17 | 50 x 3 m road segment consisting of heavily worn pavement of small-large split stones; bordered on both sides by natural granite boulders, some of which may have been displaced to clear the route. |
| VMS-644 | J | 16-17 | 350 x 5 m road segment, continuation of VMS-631, similarly follows along the edge of a large outcrop. |
| VMS-650 | J | 16 | Possible bridge, consisting of 2 parallel three-course high north-south walls joined by a raised rubble fill and spaced 4.5 m apart. At the north end are three Vijayanagara columns. Located south of the Ramasagara canal and north of road VMS-644, with which it may be associated. |
| VMS-652 | O | 12-13 | Road wall parallel to the modern Kamalapura-Venkatapur road, with single-face wall construction of 1-2 courses of large unmodified and split boulders. |
| VMS-654 | J | 17 | 28 x 8-m long paved road segment; associated with VMS-640 to its south. |

Table 3. Shrines and Temples Recorded in 1997

| Site | Block | Transect | Description |
|----------------------|-------|----------|--|
| VMS-607 | O | 13 | Sculpted panel (0.5 x 0.6 m) of two male devotees with folded hands; in modern structure. |
| VMS-628 | J | 15 | Sculptures beneath a large overhanging boulder, include small (0.3 x 0.4 m) image of Durga slaying the buffalo demon, and <i>naga</i> stone. Currently in worship. |
| VMS-630 | J | 15-16 | Heavily modified temple complex located near the confluence of the Turtha and Ramasagara canals. Still in worship, though original construction dates to the early Vijayanagara period; Shaivite. |
| VMS-632 | J | 17 | 2 by 2 column <i>mandapa</i> located atop a high outcrop; no images present, but panel from lotus medallion ceiling lies nearby. |
| VMS-641 | J | 17 | Trident image (0.9 m high x 0.4 m wide) pecked into a large boulder along the modern Bukkasagara-Kampli road. |
| VMS-642 | J | 17 | Small Hanuman image (0.7 m high x 0.4 m wide) sculpted on large boulder along modern Bukkasagara-Kampli road, enclosed by modern structure. Sculpture is consistent with Vijayanagara period style. |
| VMS-648 | J | 18 | North-facing 4 by 3 column <i>mandapa</i> located on a 38 x 10 m terrace on high outcrop overlooking the Bukkasagara-Kampli road; sanctuary in northeast corner; may also have had defensive function given excellent visibility from this locale. |
| VMS-653 (Plate 1) | O | 2 | Ganesha sculpture and seven small niches pecked on to 3 x 2 m boulder. |

Table 4. Agricultural Sites Recorded in 1997

| Site | Block | Transect | Description |
|---------|-------|----------|---|
| VMS-618 | J | 13 | 25 x 22 m natural sandy terrace in outcrop area; bordered by a low wall of roughly piled cobbles on three sides. |
| VMS-623 | J | 15 | Reservoir embankment, 180 x 15 m, spanning a broad colluvial valley between two low outcrops; was superseded by Turtha canal, probably during Vijayanagara times. |
| VMS-625 | J | 15 | Masonry faced canal, c. 130 x 3 m, feeder channel from the Turtha canal; passes through the defunct sluice channel of reservoir VMS-623 which it replaced; faced with large unmodified rounded boulders and split blocks, of up to 8 courses. |
| VMS-646 | J | 17 | Terrace wall and artifact scatter; 48-m long terrace wall in a low dry-farmed valley between sites VMS-643 and VMS-645. Terrain is c. 1 m higher to east of the four course wall then to the west. |

Table 5. Sites Associated with Defense and Fortifications Recorded in 1997

| Site | Block | Transect | Description |
|-----------------------|-------|----------|--|
| VMS-610 | J | 14 | 4 x 5 m platform forming a small terrace on an outcrop overlooking a flat area to the west. unknown date. |
| VMS-639 | J | 11 | Stone alignments (horse-stones?), 61 x 10 m, up to 5 parallel alignments of large boulders oriented parallel to the base of an outcrop near a saddle across the outcrop. Constructed of large unmodified rounded boulders (up to 1.2 m high), many set on edge. Rows are spaced 1.0-1.5 m apart. |
| VMS-655 (Figure 2) | J | 16 | 210 x 130 m fort located on outcrop overlooking Bukkasagara settlement; fortification walls link large boulders along outcrop; 10 circular bastions spaced around perimeters of site. Several rectangular structures are found on two level terraces within the site, as is a large cistern. The southern lower terrace and northern upper terrace are linked by a large gate. |

Table 6. Sites of Unknown Function Recorded in 1997

| Site | Block | Transect | Description |
|---------|-------|----------|---|
| VMS-605 | J | 6 | Structural remains, Vijayanagara period architectural elements incorporated into modern structures, original functions unknown. |
| VMS-622 | J | 14 | Large semi-circular, single-course wall constructed at the northern edge of a large outcrop; 50 x 25 m, constructed of a single course of large unmodified stones; near prehistoric site VMS-621, date unknown. |
| VMS-636 | J | 13 | Small (6 x 4 m) informal wall terrace constructed of large unmodified and split boulders situated in an uncultivated flat area; located 20 m to the west of road VMS-635, with which it may have been associated. |
| VMS-638 | J | 11 | 4.5 x 4 m platform in irrigated area, 1 element high. |

Table 7. Prehistoric and Early Historic Sites Recorded in the 1997 Season

| Site | Block | Transect | Description |
|---------|-------|----------|---|
| VMS-604 | O | 5 | Rock-shelter with megalith |
| VMS-606 | J | 8 | Structural remains with prehistoric pottery |
| VMS-615 | J | 14 | Megalith and associated features |
| VMS-616 | J | 13 | Rock-shelter with megalith |
| VMS-617 | J | 14 | Rock-shelter with megalith and associated features |
| VMS-619 | J | 14 | Megalithic stone circle and associated features |
| VMS-620 | J | 14 | Megalithic features |
| VMS-621 | J | 14 | Megalithic features |
| VMS-633 | J | 11 | Rock-shelter with ceramics and rock-art |
| VMS-634 | J | 11 | Neolithic/Iron Age settlement (Figure 3) |
| VMS-637 | J | 11 | Embankment/reservoir (19 x 5 m) bounding southern end of large internal drainage basin in the valley to the south of settlement VMS-634 |
| VMS-643 | J | 17 | Mortuary site |
| VMS-645 | J | 17 | Megalithic mortuary site |
| VMS-647 | J | 17-18 | Megalithic mortuary site/enclosures |
| VMS-649 | J | 17 | Megaliths |

Table 8. Extensive Survey Sites Recorded in 1997

| Site | Block | Description |
|----------|--------|--|
| VMS-1020 | [O]W | Daroji fort |
| VMS-1025 | | Walls north of Sultanpur |
| VMS-1042 | [M]P | Fort on Tungabhadra island |
| VMS-1043 | K | Hilltop <i>mandapa</i> /watch post |
| VMS-1044 | K | Horse-stones |
| VMS-1045 | K | Fortification wall |
| VMS-1046 | P | Fortification wall |
| VMS-1047 | P | Fortification wall |
| VMS-1048 | K/P | Settlement |
| VMS-1049 | K | Road segment (east of VMS-VMS-1045) |
| VMS-1050 | K | Cobble wall west of VMS-VMS-1045 |
| VMS-1051 | K | Walls in pass |
| VMS-1052 | K | Wall segment north of VMS-VMS-1044 |
| VMS-1053 | K | Ramasagara fort |
| VMS-1054 | P | Walls atop outcrop |
| VMS-1055 | K | Wall |
| VMS-1056 | [O]A | Kampli fort |
| VMS-1057 | [N]D | Hire Jantakallu fort |
| VMS-1058 | [N]D | Hire Jantakallu shrine |
| VMS-1059 | [O]A | Chikka Jantakallu fort |
| VMS-1060 | [O]R | Fort (w of Daroju fort) |
| VMS-1061 | [O]R | Walls, at end of valley east of VMS-370 |
| VMS-1062 | [T]M | Lingadahalli bastion and tank |
| VMS-1063 | [T]H/N | Fortification wall, across pass northwest of Kodalu |
| VMS-1064 | [T]H | Fortification wall, across pass north of Kodalu |
| VMS-1065 | [T]H | Fortification wall, across pass northeast of Kodalu |
| VMS-1066 | [T]H/J | Fortification wall, long "Sultanpur" wall |
| VMS-1067 | [T]J | Fortification wall, northeast of VMS-1066 |
| VMS-1068 | [T]D | Fortification wall, across valley, 50 m east of Kudatini ash mound |
| VMS-1069 | [T]D | Fortification wall, across valley, north of Kudatini ash mound |
| VMS-1070 | [T]J | Fortification wall |
| VMS-1071 | [T]C | Fortification wall, across gap east-northeast of Toranagallu |
| VMS-1072 | [T]C | Fortification wall, across gap east of Toranagallu |
| VMS-1073 | [T]D | Fortification wall, running northwest-southeast across gap south of Suji Gudda |
| VMS-1074 | [M]Z | Fortification wall, southwest of Hospet |
| VMS-1075 | [M]T | Fort, Shivapur |
| VMS-1076 | [M]U | Bastion and inscription, southwest of Ningapur |
| VMS-1077 | [T]C | Fort and shrine, Toranagallu |

Note: Block designation not yet determined for some sites.

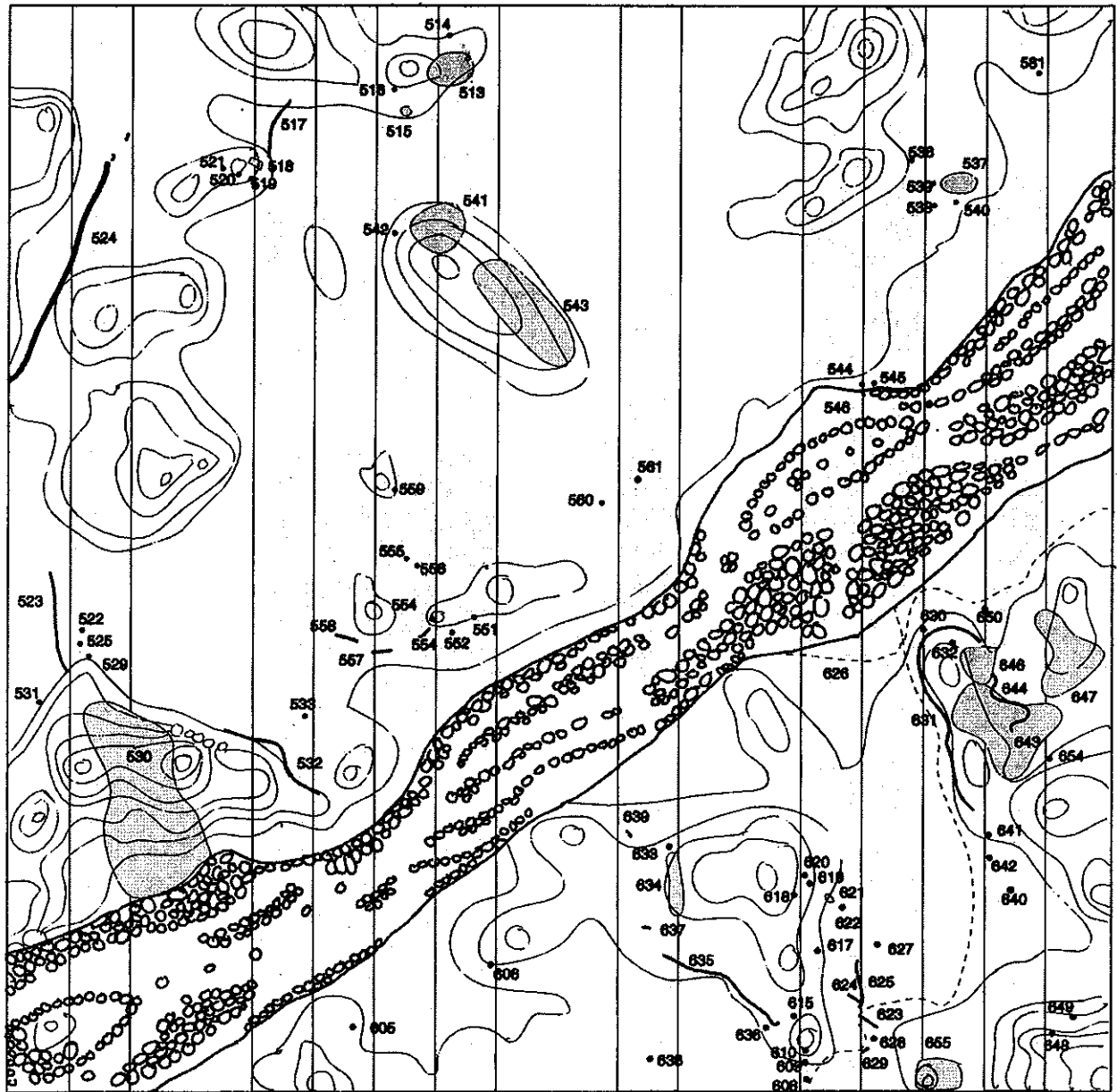


Figure 1. Block J, shaded areas indicate surveyed transects.

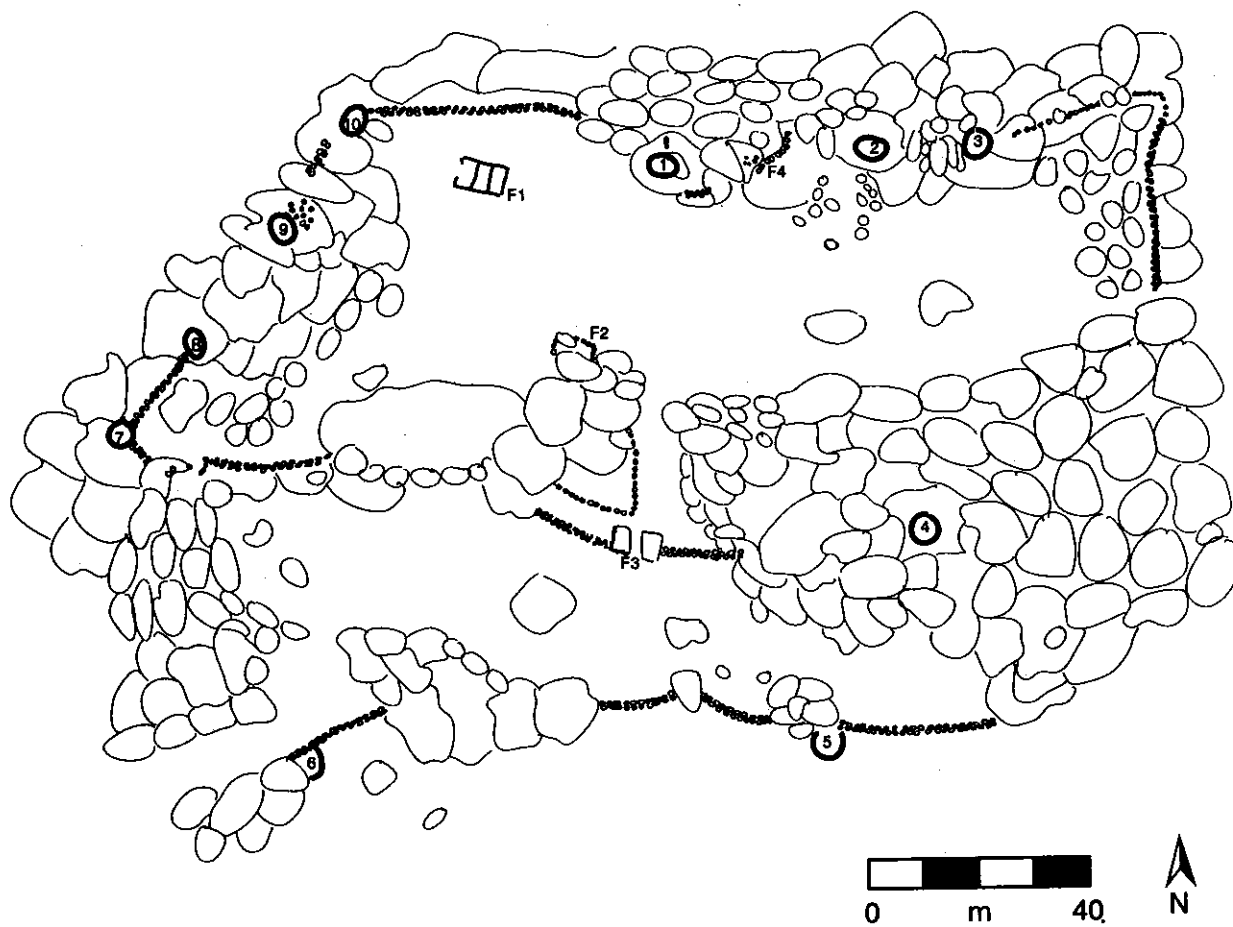


Figure 2. VMS-655, hilltop fort above Bukkasagara, with bastions numbered.

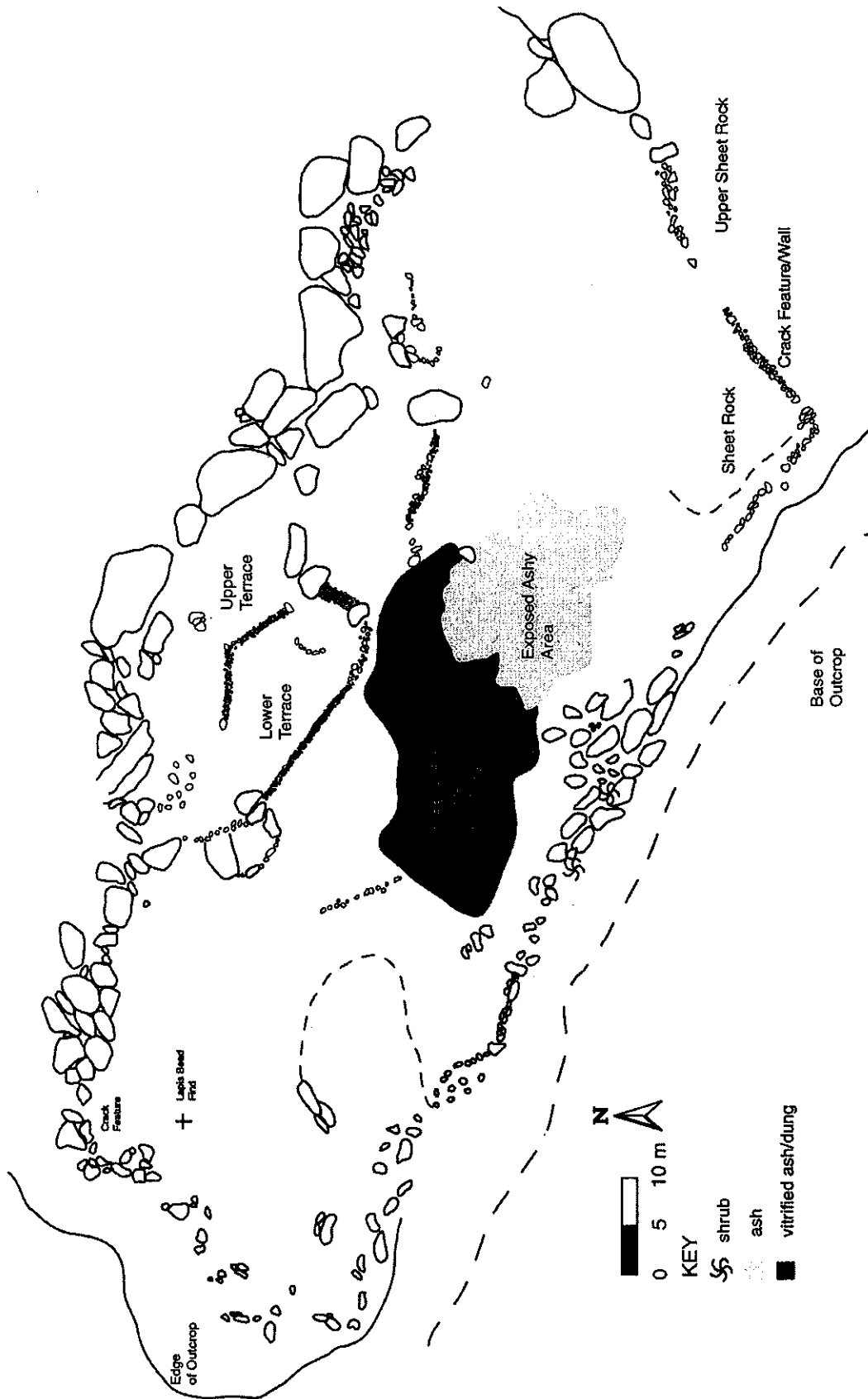


Figure 3. VMS-634, early historic settlement.

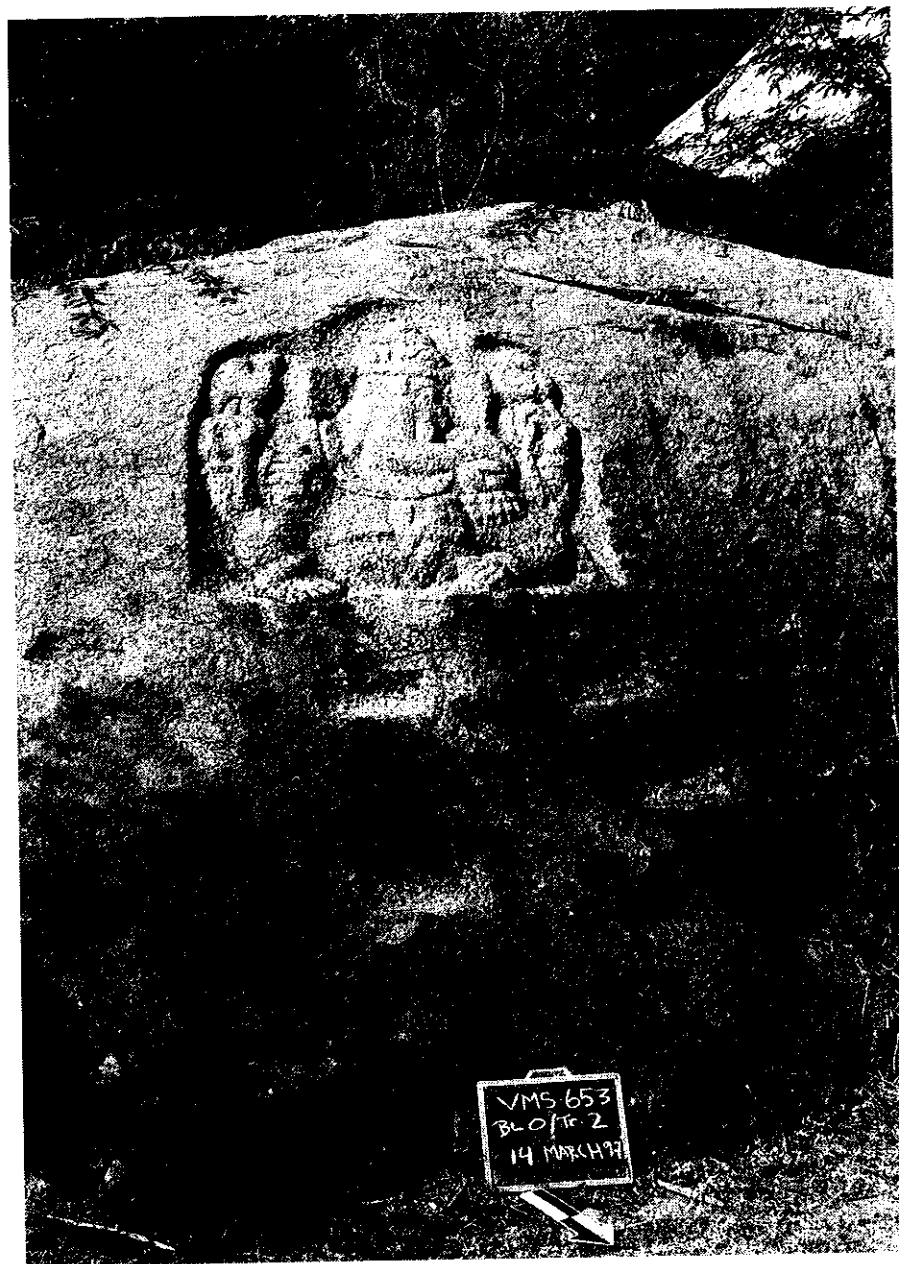


Plate 1. VMS-653, Ganesha image on boulder along road.