

## 2. ARCHAEOLOGICAL SURVEY IN THE VIJAYANAGARA METROPOLITAN REGION: 1990

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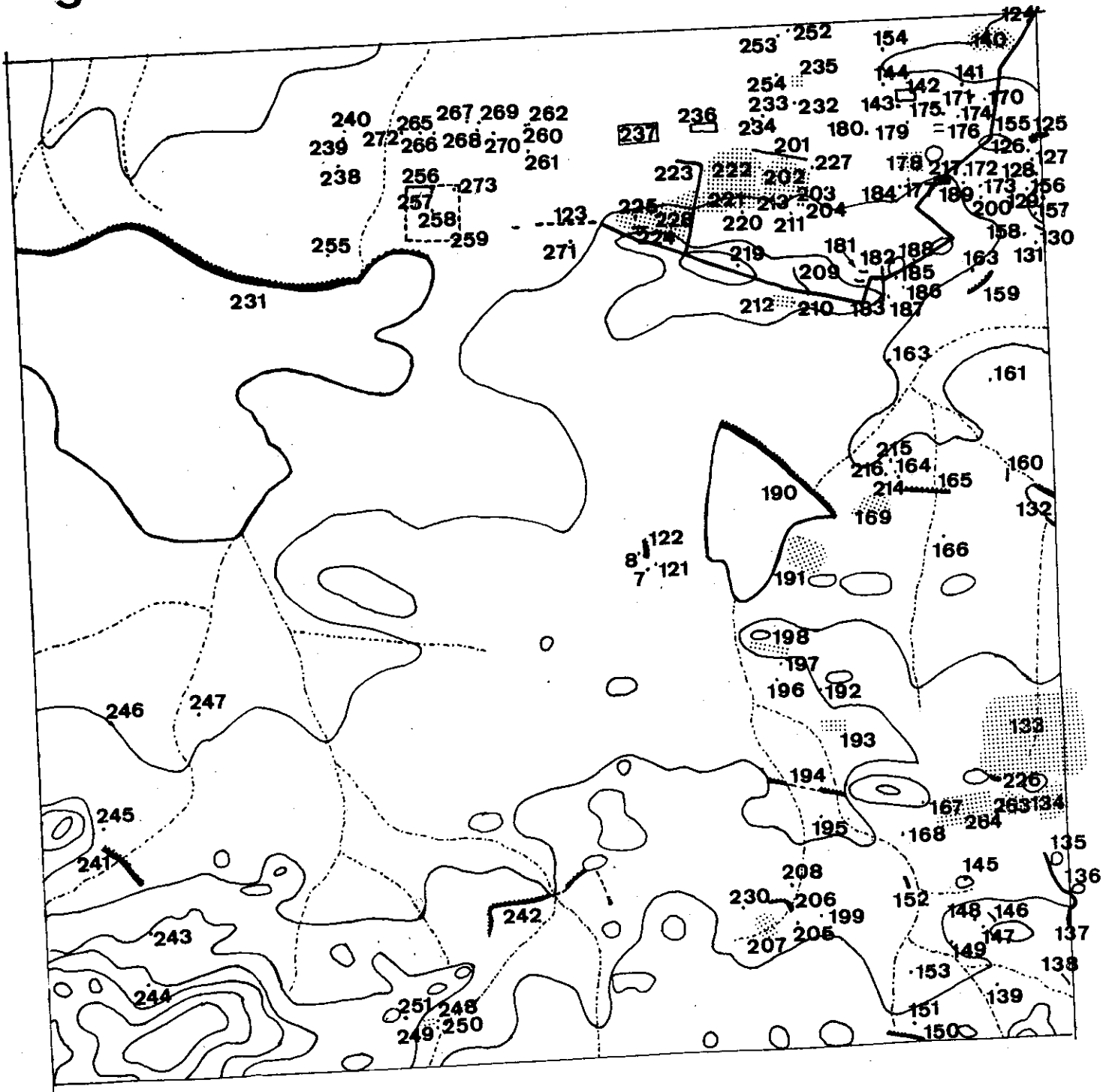
The Vijayanagara Metropolitan Survey is a project designed to explore the structure and content of the Vijayanagara landscape.<sup>1</sup> Our goal in this undertaking is to be able to infer from the archaeological distributions documented, as well from other sources, some dimensions of productive organization in the region in and around the city of Vijayanagara. We view production (pottery, metals, foodstuffs, etc.) as situated within other aspects of human social life. Production may be shaped by, among other things, the constraints of labour organization and availability, political and social dynamics, transportation, and environment. In order to understand how production at Vijayanagara was structured, all these factors will be considered, insofar as possible. Thus, we have been concerned in the survey with archaeological materials and distributions thought to inform on these factors. These include: the location, size, and layout of areas of settlement, the regional and local roadways, the character and location of agricultural land and agricultural features, temples, fortifications, and other cultural features. Topography, vegetation and soils are also factors under consideration. The following paper reports on some findings from the first half of the 1990 season, discussing overall patterns rather than providing great detail on each site.

The term "Vijayanagara landscape" is used in order to emphasize the point that the city of Vijayanagara itself, wherever we choose to draw a boundary around it, and its

surrounding region were all part of an interrelated, interdependent (though not closed to the outside) area. Further, the use of this area, whether for farming, commercial purpose, or settlement was complex and variable through time, making the distinction between city, suburb, and village rather arbitrary at times. Though we report results from the 1990 season in this paper in terms of "sites", as is traditional in archaeology, we are also aware that the boundaries of such sites are often arbitrary. Site numbers are a recording and reporting convenience; they should not obscure the intensive and at times essentially continuous nature of archaeological materials in the survey area. For details of survey design, sampling, and survey techniques, the reader may consult our report for the 1988 season.<sup>2</sup>

The Vijayanagara Metropolitan Survey is a systematic, regional survey of the immediate Vijayanagara landscape. The first phase of this project involves detailed examination of a fifty percent random sample of the eight "blocks"<sup>3</sup> of land around the built-up core of the city. The area within each block to be surveyed is divided into transects 250 metres east-west and 4500 metres north-south. Each transect within the fifty percent sample is covered on foot by crews spaced 20 metres apart. In some cases, the intensity of coverage may be even higher as crews move about to find passages through thorn barriers, bridges across canals, and other such impediments.

S



1 km

23. Vijayanagara Metropolitan Survey: Square S

Block O, located to the east of the city, was surveyed in 1988. This report covers the eastern half of block S, to the south and west of O, which will be completed in late 1990. To date, 109 sites have been documented in block S, of which 100 are located in the four sample transects 14, 16, 17, and 18. In comparison, the nine sample transects of block O contained only 98 recorded sites. In addition, sites in block S tend to be larger and more internally complex than those in block O, with significant differences in the distribution of settlement and the degree of "connection" via roadways being clear.

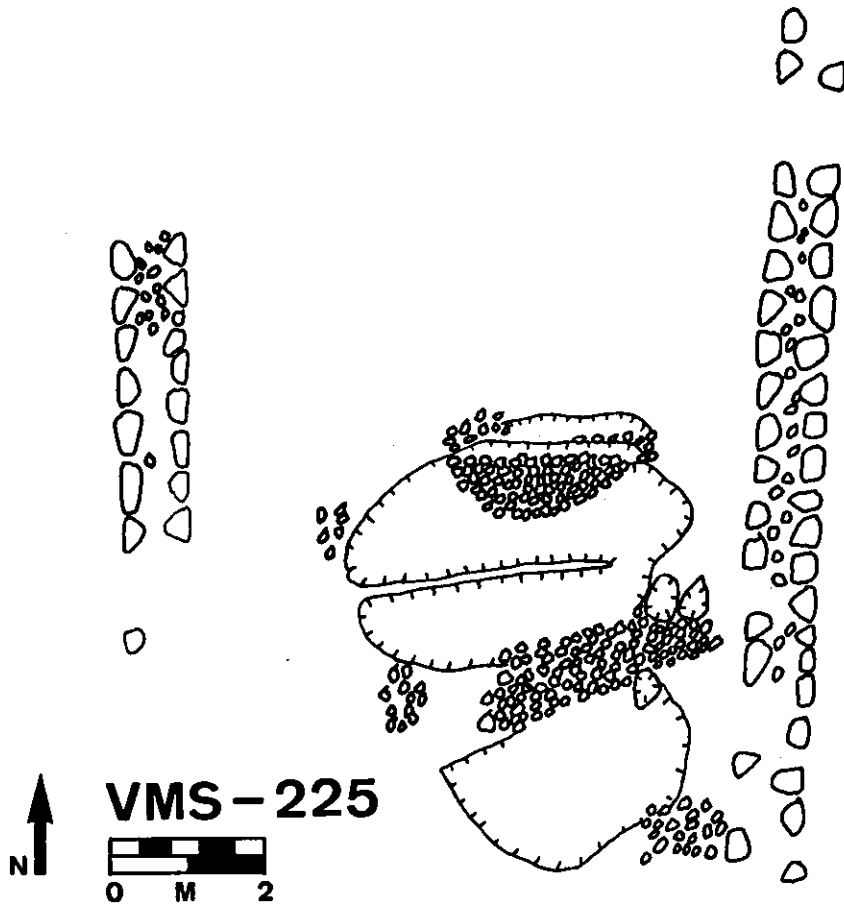
### BLOCK S

Survey block S is located to the south of the city of Vijayanagara, in an area of fairly low relief. Both red and mixed black and red soils occur in this area. The high granite outcrops of the Hampi-Daroji hills are virtually absent, with surface elevation rising gradually from north to south.

Two of the most striking cultural features of this area are the village of Kamalapuram and the large tank located to the west of the village. Both of these sites date back to the early Vijayanagara period.<sup>4</sup> Like block O, land in block S is fairly sharply demarcated by irrigation regime. In the former, permanent cultivation was restricted to land under the river-fed Turtha canal. In block S, permanent cultivation is possible via the direct effect of the Basavanna canal, which ends in the southwest portion of the block, and indirectly via Kamalapuram tank, which is supplied by the Raya canal as well as by seasonal runoff. Elsewhere dry and seasonally dry farming and grazing predominate.

The northern portion of block S lies just south of the well-built walls surrounding the city's Urban Core.<sup>5</sup> This area is itself enclosed within massive fortification walls (VMS-123), which incorporate 29 bastions, and numerous gateways and openings. The village of Kamalapuram lies within this walled area, as do other areas of settlement described below. In general, the finds enclosed within this circuit of walls might more aptly be termed the Urban Core of the city, given the extremely high density of structural and artifactual remains found there.

The location of permanent Vijayanagara period residences and commercial establishments appears to be confined to rather clearly demarcated areas or zones, very often set off by walls or other prominent physical features. This is not to say that no one lived outside the city walls or outside of nucleated villages. Quite the contrary, we have found abundant evidence for the use of the entire region, use which may involve shifts in residence for certain periods (harvesting, for example). The overall pattern of settlement in block S accords well with that from block O to the east and north, where nucleated settlement distribution predominated. There, many one-room structures (though with very limited artifact inventories) were noted within the city wall (VMS-10, continuous with VMS-123). Outside the wall were three nucleated villages (VMS-2, VMS-34 to 36, and VMS-101), two of which coincide, at least in part, with the location of contemporary villages. In block S, areas thought to relate to permanent and fairly dense settlement all lie within the city walls. We documented numerous structures



24. VMS 225

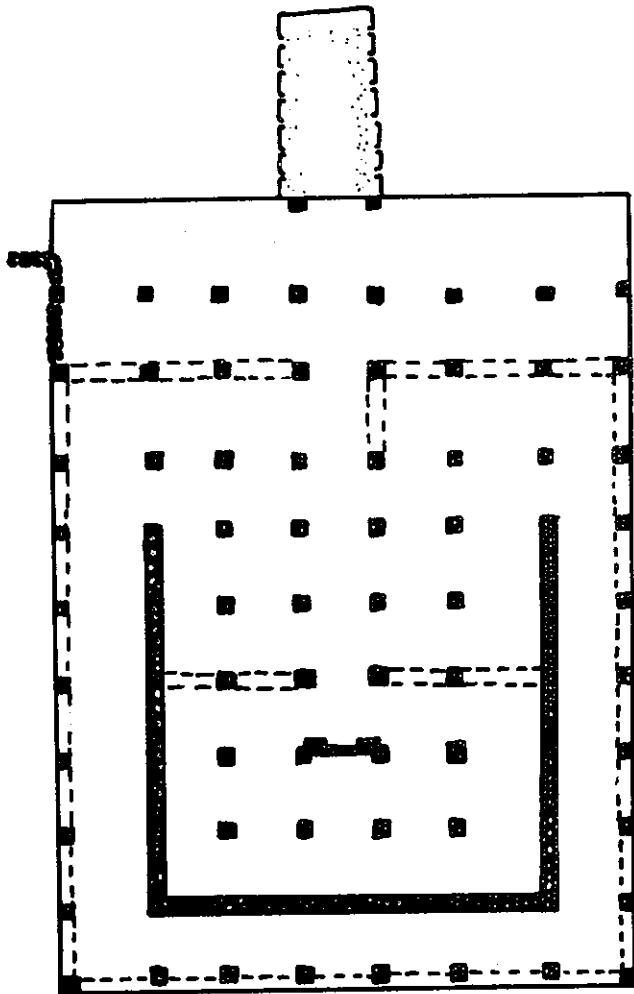
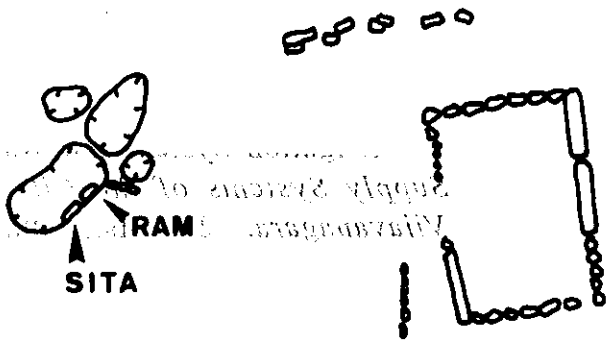
in this area, including *mandapa*, temples, and temple complexes, as well as rooms, platforms, walls, and terraces. As noted above, several road segments inside the city walls can be traced. One of these, VMS-225, may be the car street of the Pattabhirama temple. Within the walls are also many isolated sculptures and architectural elements, over 40 bedrock and block mortars, and 10 wells or cisterns, all occurring within a huge and very dense artifact scatter. Of particular interest is site VMS-179, an iron processing site.

Inscriptions indicate that there were at least two named settlements in this general area during the two hundred years of Vijayanagara occupation. Kamalapuram village has already been mentioned. Filliozat notes the occurrence of a second settlement in the area south-east of the city, named Varadadevi-Ammana-Pattana, after a queen of Achyuta Raya.<sup>6</sup> She describes two inscriptions relating to this town, one dated A.D. 1534 and the other 1539, both associated with the Pattabhirama temple. Archaeologically, there appears to have been nearly continuous settlement between Kamalapuram and Varadevi-Ammana-Pattana, assuming that the latter is located south and east of the Pattabhirama temple. A long wall, VMS-223, bisects the settled area inside the city wall. VMS-223 abuts the city wall on the south (the two are perpendicular to one another), extending to the north for 364 metres, to within 200 metres of the Pattabhirama temple. At this point, the wall makes a ninety degree turn to the west, continuing another ca. 160 metres. Ongoing study of archaeological materials in this area will no doubt help clarify the distribution and demarcation of settlement in this area.

## ROADWAYS

Twelve roadways or road segments were identified in the eastern four random transects of block S. VMS-137 is a long (over 450 metres long) raised causeway with masonry edges, between 8 and 16 metres wide. Where the road runs over sheetrock, fragments of cobble paving can still be seen. A masonry-lined reservoir, VMS-136, is built into the edge of this road. This road winds its way northward from the southeastern corner of block S. At present, its northern end is cut by the modern High Level canal; it may have been connected to either VMS-214 or VMS-160 to the north. A parallel road segment, VMS-152, runs approximately 700 metres to the east of VMS-137. This road is not constructed, as is 137, but consists simply of a long path cleared in the surrounding outcrop of small granite boulders, approximately 10 to 15 metres wide. Rubble walls are placed along the sides of the pathway where gaps in the natural boulder scatter occur.

The east-central portion of block S is dominated by three parallel tanks, VMS-190 (Hallakere), VMS-165, and VMS-132. The position of these features ensured that movement in this area was highly constrained. North-south passage would have to have been between the beds of the tanks, and east-west passage across the embankments. A north-south road segment VMS-160 is, in fact, located between tanks VMS-132 and VMS-165. This roadway, though badly disturbed by modern features, is well defined by two elevated platforms on either side of the circa 30 metres wide road surface. In this, it is similar to other bazaar streets found within the city walls. The platforms contain several internal features including stone rings, and a



**VMS-173**



26. VMS 173

routes existed in the past. The northeast portion of block S is, however, well connected by the Penukonda road, which runs northwest-southeast. This road, so-named because it runs through the monumental Penukonda gate complex (VMS- 217), can be traced both inside and outside the city wall. Outside the wall, on the east, several temples (VMS-129, VMS- 173, VMS-128), a cluster of small platforms (VMS-172), and a step-well (VMS-189) define the route of this road. Near the eastern edge of block S, one built segment of the Penukonda road can, be found. This short segment, approximately 30 metres wide, is bounded by walls on the north (VMS-130) and south (VMS-158). Perpendicular to the southern road wall (part of VMS-158) are several roughly aligned rows of unshaped or split boulders, irregularly placed and oriented. There are now 8-12 rows of these stones, the northernmost of which consists of upright slabs and split boulders. This feature may be a fragment of the "horse stones" mentioned by Paes<sup>7</sup> in about A.D. 1520, and by Abdur-Razzak in about 1443. Abdur-Razzak wrote,<sup>8</sup> "Around the first citadel are stones the height of a man, one half of which is sunk in the ground while the other half rises above it. These are fixed one beside the other in such a manner that no horse or foot soldier could boldly or with ease approach the citadel."

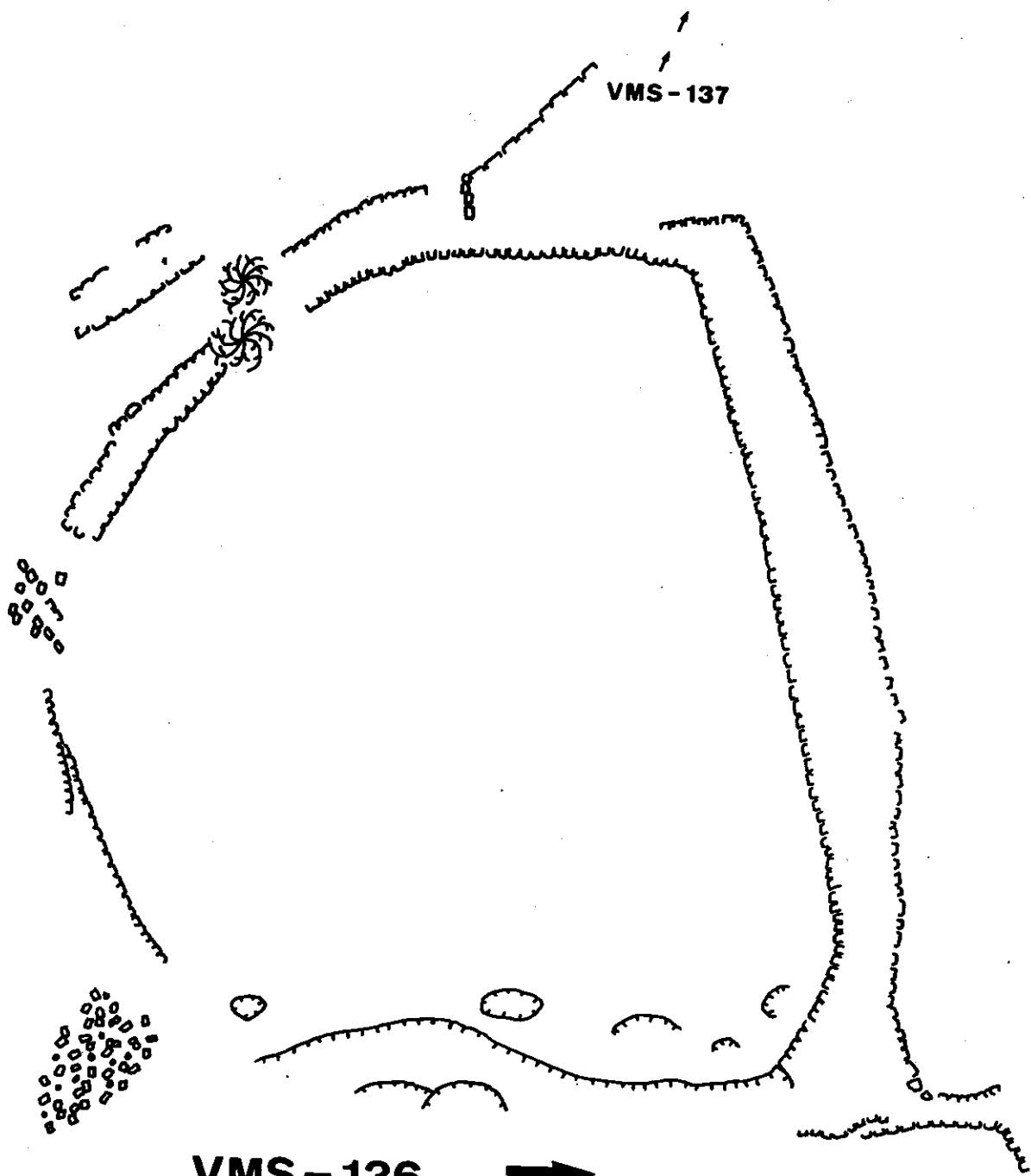
Inside the city wall, the Penukonda road becomes a well-defined bazaar street, with elevated platforms running along both sides (VMS-201). The foundation of a small Vaishnavite temple occurs on the north side of the street, as does a large pillared shrine. Two small *mandapas* (VMS-184) line the roadway between VMS-201 and the

Penukonda gate, a Hanuman shrine is situated in the road just inside the gate (VMS- 177).

Other road segments described in this season are located inside the city wall, within the areas of dense settlement. One of these, VMS-224, runs approximately east-west along the base of the high outcrop bearing the city wall. VMS-224 is defined by walls on both sides, and incorporates a small rock-cut well. The west end is a clear "dead end," stopping just short of the long north-south boundary or fortification wall (VMS-223), which dissects this zone of habitation. VMS-225 is a short road segment, partially paved as it runs over a low outcrop, which leads directly to the south entrance of the Pattabhirama temple. This road is in very poor condition, due to the construction of a modern road, canal, and to the encroachments of fields surrounding it.

## RELIGIOUS ARCHITECTURE

Block S contains a wide range of sculptures, shrines, temples, and temple complexes, at least 18 in the four surveyed transects. The largest is the Pattabhirama temple (in a transect not yet surveyed). Of those which could be identified, 5 are Saivite and 8 Vaishnavite, though these figures do not include the numerous isolated sculptures which dot the landscape. Within the city walls, the large temple complex VMS-142 is of particular interest. This walled complex contains a central and subsidiary shrine, both dominated by Vaishnavite iconography, as well as two small *mandapas*. Entrances to the walled area occur on east, north and south, though the northern entrance is the most elaborate, with an ornate gateway and *gopura*. An inscription on this gateway refers to a



VMS-136



27. VMS 136



donation of Achyutya Raya,<sup>9</sup> which accords well with the later Vijayanagara architectural style of the temple. Numerous small rubble-walled rooms also occur within the enclosure walls of VMS-142. In one of these is a large grinding machine. Just north and west of VMS-142 lies VMS-144, a smaller temple, also with predominately Vaishnavite iconography. Surrounding VMS-144 are a number of features including a well, columned platform, *mandapa*, and two other structures. Further west lies a small *mandapa* (outside the random sample), it may be possible to trace a roadway in this area leading to the eastern gateway of the Pattabhirama temple.

VMS-164 is a temple complex located along the road segment VMS-214 discussed above. This temple complex lies over 750 metres outside the walled zone. Though much less formally constructed than the VMS-142 complex, 164 is also walled, containing a central shrine, a small *mandapa*, and numerous rubble-walled rooms. Incorporated into the roughly-constructed enclosure wall is a simple gate consisting of two platforms on the north, and a more elaborate columned and roofed gateway on the east. In this case, the interior rooms appear to post-date the period of initial use of the temple.

Many more temples and shrines were recorded this season than could be described here. It is important to note, however, that not all of these are large, formal structures. There are a huge number of Naga stones, for example, throughout the survey area. Many of the religious structures described this season are located along roads - 14 of 18 - and 11 of the 18 are located inside the city

wall. Among the latter are several elaborate shrines associated with the Penukonda gateway complex (VMS-217). These shrines, like VMS-142, date to the 16th century, so that all of the large and ornate temples in this northeastern portion of block S can be assigned to the late Vijayanagara period.

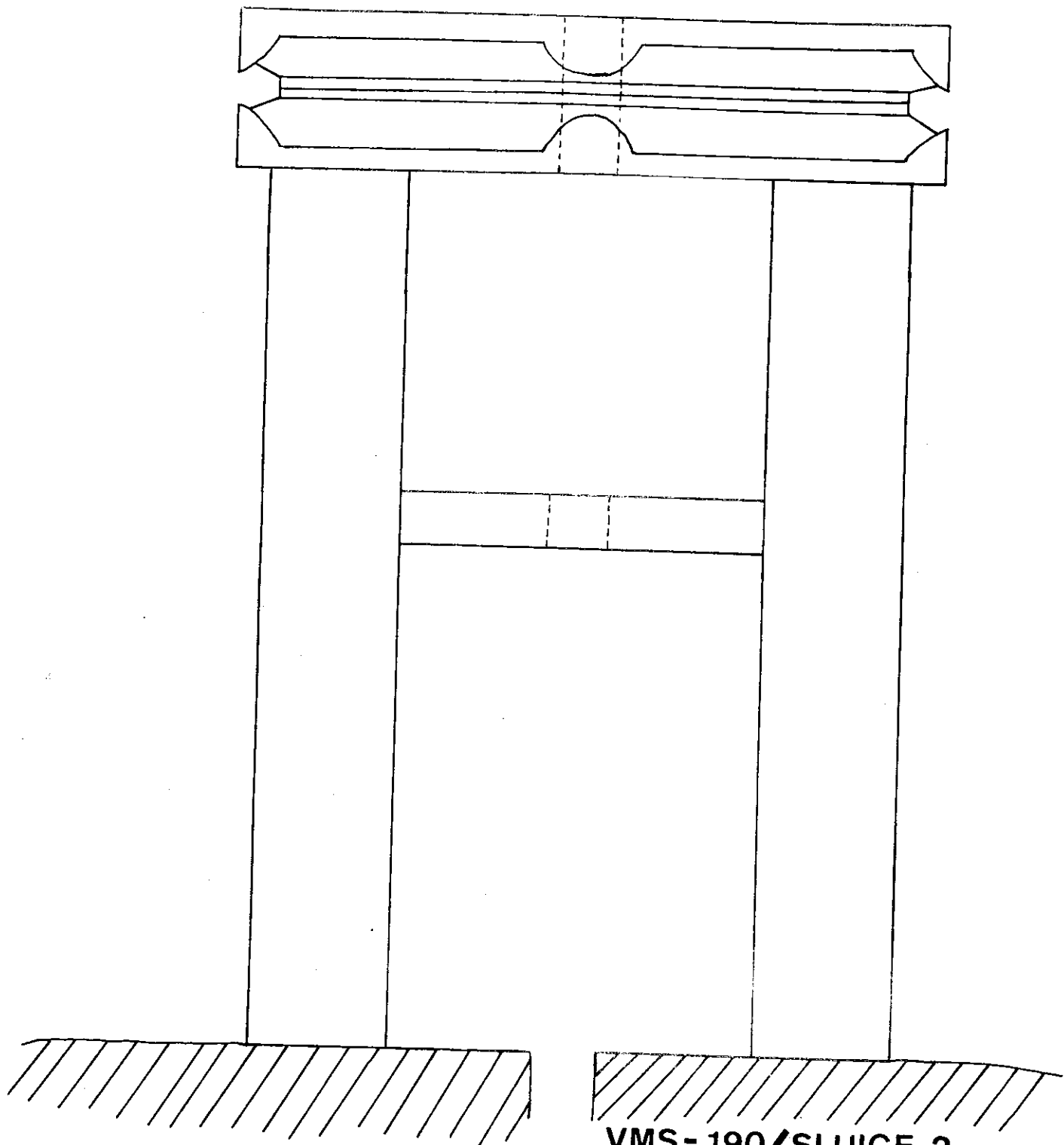
## WELLS AND CISTERNS

The category of wells and cisterns contains a very diverse set of features. These vary by function - wells tap the water table in order to facilitate access to that water, and cisterns store water. A wide variety of forms and degrees of elaboration are also present in the region in and around the city. Wells and cisterns may occur in a number of different and fairly consistently patterned situations. These situations include location along a road, near a temple, within a residential/commercial area, or below a tank, serving respectively for the use of travelers, ritual, domestic use, and irrigation. These are by no means mutually exclusive categories, and many wells served multiple purposes.

Of the 23 wells and cisterns recorded, 10 lie inside the city wall and 13 outside. Bearing in mind that a single well may be situated near several different features, 12 of the 23 are located along roads, 8 near temples, 10 in habitation areas, and 2 below tanks. This latter figure is very low compared to the number of irrigation-related wells to the east of the city and further south in the Daroji valley.

## IRON PRODUCTIONS

Two iron production sites were described in block S. One of these, VMS-121, is situated in the middle of the block, in an area



VMS-190/SLUICE 2



28. VMS-190/Sluice 2

not yet fully surveyed. The furnace of this site is still visible, though it has clearly been broken up. Portions of the furnace, chunks of iron, and slag are incorporated into the fill of the platform of a large, elevated Vijayanagara temple, VMS-7. Thus, the initial construction of this site dates to sometime before the construction of the temple. Stubs of what appear to be crucibles are still found in the furnace.

VMS-179 is located south of the large temple complex VMS-142. Like VMS-121, the artifact scatter consists of innumerable small chunks of iron, slag, and overfired red brick. Here, however, there are no *in situ* traces of the iron furnace. VMS-179 is situated along the possible route of a road running east-west past VMS-142, and, unusually, is not near any obvious source of water. This site cannot be clearly dated.

#### AGRICULTURAL FEATURES

Block S was fairly intensively farmed in Vijayanagara times, judging from the density of agricultural features. The block is dominated by the Kamalapuram tank (VMS-231) which, fed by the Raya canal, provided (and continues to provide) a year-round source of water for irrigation. Within the eastern portion of the block, runoff-dependent agricultural strategies must have prevailed. Twelve irrigation tanks were recorded in the four random transects discussed in this report. These tanks vary greatly in size, from VMS-230 which has an embankment of circa 36 metres long to VMS-125, which is approximately 728 metres long. Of interest is the relative lack of very small agricultural features, common in block O to the east of the city.<sup>10</sup> Instead, larger and more formal types of agricultural facilities predominate.

Just as an area of dense settlement is only with difficulty broken into separate "sites", an agricultural landscape presents many of the same problems. Tanks, for example, though physically separate, may be interconnected via channels or other forms of drainage. A very striking pattern of association between agricultural facilities can be seen in block S, where areally extensive terraces (VMS-133, VMS-134, VMS-191, VMS-205, VMS-207) cover many of the hillsides forming the runoff catchment for tanks below. These terraces are quite simply constructed, each wall usually no more than a single row of unmodified cobbles, but they form quite complex systems over large areas. Analysis of these features is continuing, but they seem to suggest more intensive use of the dry and rocky uplands than in block O. In one case (VMS-139), an isolated room is associated with a small series of check-dams, and in another (VMS-207), a small well is located amid agricultural terraces. Not all tanks are located in the flat areas below terraced outcrops, however. Several of the tanks recorded in the eastern portion of the block are situated within terrace systems and are an integral part of them. These include: VMS-206, amid the terraces of VMS-205; VMS-226 in the terraces of VMS-133, and VMS-230 in the terraces of VMS-207. In all, 12 sites relating to dry land agriculture (not including tanks) were recorded.

#### DISCUSSION

While results reported here are still preliminary, a picture has already begun to emerge of block S. The northern portions of the block, enclosed by massive fortification walls and densely settled, appear as an integral part of the city itself - no mere

suburb. This internal area is well-connected to areas on the east and particularly on the south by roads and paths, walls and roadways inside the city wall reveal some kind of internal division or boundary. The perennially irrigated land below the Kamalapuram tank is also largely enclosed within the city wall.

Outside the wall, agricultural features are densely clustered, leaving only fairly narrow passages between the beds of the numerous seasonal tanks. Within these passages, several roadways are lined by raised platforms and other structures, indicating that farming was not the sole activity in this region. In addition, at least one large temple complex (VMS-164) is located outside the protection of the city walls. As we continue to learn about block S and other areas to the south of the city, these general observations can be expanded and clarified, to form part of an integrated view of the city within its regional context.

#### ACKNOWLEDGEMENTS

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#### REFERENCES

1. Sinopoli C. M. and K.D. Morrison, 1991, "The Vijayangara Metropolitan Survey: the 1988 Season," in *Vijayanagara: Progress of Research 1987-88*, ed. D.V. Devaraj and Channabasappa S. Patil, Directorate of Archaeology and Museums, Mysore, pp. 55-69.
2. *Ibid.*
3. Fritz J.M., G. Michell, and M.S. Nagaraja Rao, 1984, *Where Kings and Gods Meet: The Royal Centre at Vijayanagara*, University of Arizona Press, Tucson.
4. Fritz J.M. and G. Michell, 1985, "Map Series," in *Vijayanagara: Progress of Research 1983-84*, ed. M.S. Nagaraja Rao, Directorate of Archaeology and Museums, Mysore.
4. Saletore R.N., 1982, *Vijayangara Art*, Sundeep Prakashan, Delhi, p. 187.
- Panchamukhi R.S., 1953, "Introduction," to *Virupaksha Vasantotsava Champu*,

- Kannada Research Institute, Sanskrit Classical Works Series, 1, Dharwar, p. 18.
5. Fritz, Michell and Nagaraja Rao, *Op.cit.*
  6. Filliozat V., 1973, *L'Epigraphic de Vijayanagar du Debut' 1977*, Publication de L'Ecole Francais d' Extreme Orient, Vol. 91, Paris.
  7. Sewell R., 1988 (reprint), *A forgotten Empire: Vijayangara*, Asian Educational Services, Delhi, p. 253.
  8. *Ibid*, p. 88.
  9. *Annual Report of South Indian Epigraphy*, 1904, No. 17.
  10. Morrison K.D., 1991, "Small Scale Agricultural Features: Three Vijayanagara Embankments," in *Vijayangara: Progress of Research 1987-88*, ed. D.V. Devaraj and Channabasappa S. Patil, Directorate of Archaeology and Museums, Mysore, pp. 81-84.