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## PVN OP 036 Excavation Report

Edward M. Schortman  
*Kenyon College*

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## Operation 36

Operation 36 consists of six surface-visible edifices (Strs. 2, 47-51) set onto, and slightly back from (south and east of), the edges of two adjoining depressions near the northern margins of La Sierra's North Cluster. Structures 47, 48, 49, and 51 occupy the southeast, northwest, northeast, and southwest corners of a patio while Strs. 2 and 50 lie immediately northeast of this aggregation. The depressions are oval-shaped, 1-1.2m deep, and run in a rough northwest-southeast line immediately north and west of the aforementioned buildings. The behavioral significance of these basins was not obvious from their surface forms and dimensions, and excavations were conducted here in 1990 to date their creation and infer their function(s). Operations 56, 31, 12, 16, and 54 bound Op. 36 on the north, east, southeast, southwest, and west, respectively. La Sierra's site core is approximately 165m south of Op. 36. The terrain encompassed by Op. 36 is fairly level, the land rising slightly away from the depressions, north-to-south and west-to-east. A total of ca. 235m<sup>2</sup> were cleared in the course of uncovering significant portions of Strs. 2, 49, 50, and 51 during the 1990 and 1995 field seasons. In addition to the architecturally-focused investigations, 18 test pits, each measuring 0.5m on a side and spaced 5m apart, were excavated in a line bisecting the long axes of the two adjoining depressions (the 4.5m<sup>2</sup> cleared in the course of digging these probes is included in the figure quoted above). The 1990 research was directed by E. Bell, the 1995 efforts being the responsibility of N. Gevock.

## Structure 2

Structure 2, the largest edifice included within Op. 36, appeared on the surface to consist of two distinct platforms joined by a low saddle. Excavations revealed that Str. 2 was a single, coherent building by the final construction stage, though it may well have begun as a pair of closely spaced but separate edifices. Situated 21m northeast of the Op. 36 patio, Str. 2 lies 12m in the same direction from Str. 50 and 10m north of Str. 1 in Op. 12. Its proximity to Str. 1 suggests that Str. 2 was part of the Op. 12 aggregate; alternatively, the edifice might have been integrated within a group that was largely obliterated by the construction of the adjoining access road, Strs. 110-112 in Op. 31 lying 10-22m to the northeast being remnants of that putative cluster. The close-spacing of constructions in the North Cluster renders the assignment of buildings to particular groups problematic and all divisions of the nearly continuous flow of architecture into operations arbitrary and this is certainly the case for Str. 2. The land on which Str. 2 was raised ascends gradually from north to south (rising 0.18m over 13m) and west to east (mounting ca. 0.3m over 12.15m). Approximately 94m<sup>2</sup> were cleared during the investigation of Str. 2 from January 30-March 24, 1995 (Subops. 36H and I). Digging was carried down to maximum depths of 1.44m below modern ground surface outside construction and 0.9m beneath ground level into architectural fill. Two construction phases, together with evidence for a significant change in how the building was used late in its occupation sequence, were revealed in this work which was directed by N. Gevock.

## Time Spans

<u>Time Span</u>	<u>Construction Phase</u>	<u>Units</u>	<u>Strata</u>	<u>Features</u>	<u>Date</u>
1	-	-	S.1,2	F.1	LCLII?
2	Str.2-2nd	U.1-4	-	-	LCLII?
3	Str. 1-1st	U.5-25, 28-34	-	-	LCLII, III?
4	Str. 1-1st	U.26,27	-	F.2-4	LCLII, III
5	-	-	S.3-4	F.5	-

## Time Span 1

Stratum 1, a fine-textured, hard-compacted, dark gray-brown (10YR 4/2) clay, was exposed to a maximum thickness of 0.45m at the bottom of the deepest probe (1x1m) dug in Str. 2's immediate vicinity (off the building's southern flank, adjoining U.12; the layer's base was not encountered). This earth level descends a scant 0.03m over the 1m north-to-south distance it was exposed. A pit with a diameter of 0.43m north-south was sunk 0.27-0.29 into S.1 (F.1). Feature 1 has fairly steeply sloping sides (reaching its full depth within 0.13m horizontal distance) and a flat bottom measuring 0.17m across. The full dimensions of F.1 were not ascertained as the entity was only identified in the east trench wall. Feature 1 appears to have been a purposeful construction though its functions are unknown. Burying S.1 and F.1 is a moderately fine-textured, hard-compacted, tan clay (S.2) that follows the same north-to-south descent of underlying S.1 (dropping 0.09m over 1m). Stratum 2 is 0.49 to 0.73m thick, achieving its greatest depth where it covers and fills in F.1. Artifacts and some cobbles are embedded within S.2, the latter being concentrated in the middle to upper portions of the level. Though no cultural materials are clearly associated with S.1, the presence of F.1 and the artifacts recovered from S.2 strongly indicate a human presence in the area prior to construction of Str. 2-2nd. Strata 1 and 2 were not definitely recognized elsewhere around Str. 2 where digging was too shallow to reveal these early layers.

## Time Span 2

Four fragments of construction (U.1-4) predating the ultimate building phase were identified in the course of clearing Str. 2. Units 1-4 share a similar stratigraphic relationship vis a vis TS.3 architecture but there is no evidence that they are precisely contemporary or parts of the same edifice. All TS.2 constructions were revealed as cobble lines exposed at the base of excavation and were not explored further, limiting what can be said about Str. 2-1st's immediate predecessor (s).

Unit 1 is covered by Str. 2-1st's fill (U.30), runs for 1.4m, and is aligned roughly 91

degrees. Unit 2 is in the same stratigraphic position as, and 0.85m northeast of, U.1, measures 1.5m long, and is oriented 86 degrees. Unit 4, also buried by U.30, is 1.3m south of U.1, was exposed over a distance of 0.8m, and is aligned 6 degrees. Unit 3 was revealed in the floor of Room 1 on Str. 2-1st's southern summit, ca. 5.5m east of U.2. This construction measures 3.1m long and is oriented 82 degrees. The architectural significance of the above entities is far from certain. Given the location of U.1, 2, and 4 on what was probably ancient ground surface later covered by Str. 2-1st, these stone lines may well be the remains of foundations that defined the perimeters of surface-level buildings. It is unlikely that U.1, 2, and 4 were components of a single edifice; they probably represent fragments of three diminutive constructions. How U.3 related to U.1, 2, and 4, if at all, and what purposes it served are not inferable at present. All TS.2 architecture is built of unmodified river cobbles set in a brown mud mortar.

### Time Span 3

Preservation of TS. 3 construction was, in general, poor, precluding detailed reconstructions of architectural relations and building history. What follows, therefore, is a simplified account of Str. 2-1st's construction sequence, lumping together elements that were probably added at different times. All that we can claim is that the picture outlined below probably applies to the edifice's final form, a form that was most likely the culmination of several undetected periods of renovation.

Structure 2-1st consists of two distinct segments laid out in an east-west line. They are linked on the north but separated by as much as 0.7m on the south. These elements may have begun as separate buildings that eventually coalesced into a single edifice, though this reconstruction is not established. The western segment is nearly rectangular measuring 8.4m north-south by 4.7m east-west and is bounded by cobble retaining walls that rise a reconstructed 1m in a single steep ascent (U.5, 6, 8, and 10). Remnants of what may have been a 0.5m-wide by 0.4m-high stone-faced terrace (U.7) fronts the building on the north. Unit 7 intersects U.6, the northern basal facing, at a point 0.85m short of the latter's northwest terminus, creating an inset corner that encompasses 0.6x0.85m. On the east, U.7 joins U.8, the apparent eastern platform facing that is overlapped by and incorporated within architecture associated with Str. 2-1st's eastern platform (U.13). This relationship implies that the latter was expanded westward after U.7 and 8 were already in place. A set of two barely discernible steps project 1.6m south of the western platform's southwest corner (U.11 and 12). The staircase is an inferred 1.8m wide, the risers ascending in intervals of 0.14m and 0.38m (basal [U.12] and second ascending steps [U.11], respectively) towards U.10, the southern basal wall. The U.12 tread is 0.5m wide, that backing U.11 measuring 1.1m across. There is a slight hint that a 0.25m-wide stone balustrade (U.32) flanked the steps on the east (the west side was not investigated). All fill, including that retained by the principal basal walls (U.30) as well as that backing U.7 (U.31) and underlying the southern steps (U.33), consists of densely packed river cobbles suspended in a brown earth matrix. The summit was revealed only in the 1m-wide north-south trench that cuts across the entire building. Based on this limited exposure, it appears that Str.2-1st's western step, terrace, and summit surfaces were earthen.

The eastern platform is, despite its irregular eastern and western outlines, nearly square, measuring 7.3m north-south by 7.5m east-west. The basal walls (U.13, 15, 22, 23, and 24) rise approximately 1m to the summit which consists of a single room that encompasses 2.9x4.7m (Room 1; measured across the center). On the north, a ca. 0.2m-high terrace (U.14) intervenes

between the basal riser (U.13) and the summit. The eastern facing (U.15 and 22) is by far the most irregular basal wall on the building. Unit 15 extends 1.7m south from its junction with U.13 at the platform's northeast corner until it encounters U.20, the 1m-wide stone balustrade that delimits the northern boundary of the eastern staircase. Unit 20 is roughly 3.35m long east-west and its northern facing continues westward to where it intersects U.8, the western platform's eastern basal wall. Given that U.13 overlaps U.8 by 0.5m and U.20 apparently abuts U.8, we would *guess* that U.20 is an earlier version of the eastern platform's northern basal facing, eventually superseded by the addition of U.13 and 14.

The eastern staircase is 1.85m wide and consists of three stone-faced risers (U.16, 17, and 18, in ascending order), the basal step even with U.20 and the platform's eastern facing. Each stair is 0.2-0.4m high, the treads varying from 2m wide (the lowest) to 0.6m across. Unit 21, a 0.6m-wide by 3.1m-long balustrade, bounds the stairs on the south and projects 0.6m east of U.16. Unit 22 then continues the platform's eastern basal facing 2.4m south from U.21, joining with U.23 to create the eastern platform's southeast corner. An enclosure set ca. 0.7m above ancient ground surface and paved with cobble (U.25) bounds the U.21 balustrade on the south (Room 2). This space, which covers 1.7x2.7m, is closed by an approximately 0.7m-high by 0.75m-wide cobble step-up to the summit on the west (U.28) that may well have doubled as a foundation for the superstructure's perishable upper walls. Room 2 appears to have been open on the east and south. No furniture or other architectural elements were detected within Room 2's confines.

The eastern stairs issue onto a 1.95x2.15m cobble surface (U.19) that may have been a landing formalizing passage through the 1.3m-wide doorway (between U.20 and 28) into Room 1. The remainder of the enclosure is surfaced with earth and lacks recognizable built-in furniture assignable to TS.3. Unit 29, a 1.4m-long cobble line that appears to continue the southern facing of the U.21 balustrade into Room 1, is 0.8m south of U.19 and may have been part of an effort to partition that summit compartment. The dimensions and significance of this entity remain as obscure now as they were in the field, however, and we will advance no further opinions concerning its architectural role(s).

A very limited portion (0.22m thick) of the eastern platform's architectural fill (U.34) was revealed in a probe dug beneath the summit. Unit 34 is a tan (brownish-yellow, 10YR-6/6) clay containing artifacts but relatively few stones.

By the conclusion of TS.3, Str. 2-1st was a ca. 1m high platform composed of two disparate elements; a western rectangular construction covering 4.7x8.4m and oriented roughly 1 degree and an eastern component that encompasses 7.3x7.5m and is aligned very approximately 358 degrees. Steps bounded by stone balustrades facilitate passage to the summits of both entities, a staircase projecting 1.6m south of the western platform's southwest corner while a set of three steps begin even with the eastern platform's east face and lead to a cobble-paved landing at the 1.3m-wide entrance to the eastern summit enclosure (Room 1). Almost all of the eastern platform was cleared, revealing a large summit compartment (Room 1, 13.6m<sup>2</sup>) and a smaller enclosure lying east of, and slightly below, the summit (Room 2, 4.6m<sup>2</sup>). The latter has a cobble floor while the former, aside from the paved landing (4.2m<sup>2</sup>), is surfaced with earth. No benches, shelves, or other built-in furniture was identified in either room, though it is entirely possible that any such constructions might have been dismantled during TS.4 when the summit was heavily modified. An insufficient amount of the western platform's summit was cleared to determine the nature and organization of its superstructure.

All walls and floors are fashioned primarily of unmodified river cobbles set in a brown

mud mortar. A few schist slabs were noted within the eastern stairs, especially in U.18, the uppermost step. Though far from clear, it seems plausible that the eastern platform was expanded 1.6m northward by the addition of U.13 and 14 sometime after the western platform had reached its ultimate northern and eastern extent (as represented by U.7 and 8).

#### Time Span 4

This interval is characterized by significant changes made to the summit of Str. 2-1st's eastern platforms. Two arcs (U.26 and 27) defined by curving stone lines are inserted into Room 1's floor now. Unit 26, the most thoroughly excavated of these constructions, has a diameter of roughly 1.8m and is built against the northwest corner of the U.19 landing. The cobbles delimiting U.26 at the level of the Room 1 floor mark the edges of a pit dug 0.55m into the summit floor. The walls of the basin slope down gradually on the west, dropping approximately 0.01m for every 0.01m of horizontal distance. The boundary is steeper on the east where the same depth is reached in half the horizontal distance. A dark grayish brown ash (10YR-4/2) mottled with charcoal and containing numerous small rocks and pottery sherds (F.2) fills the U.26 pit. Feature 2 is roughly 0.4m thick and is capped by a ca. 0.15m-thick level of heavily burned bajareque fragments (F.4). Firing had been so intense in the latter case that some of the wattle and daub pieces were vitrified. Based on the distribution of F.4 across the U.26 pit, it looks as though the entire element was originally roofed with this material. A 0.2m-thick (one stone wide, by-and-large), east-west running cobble line (F.3) bisects U.26's summit, resting on F.2. Feature 3's architectural significance is not clear, though it may have served as the foundation for a perishable upper construction.

Unit 27 was only cleared over a northwest-southeast distance of 1.3m ca. 0.7m west of U.26. Time did not permit excavation within the area defined by this arc and so we could not ascertain what sorts of material were associated with the construction. Extrapolating U.27's lines out tentatively suggests that this construction was larger than its eastern counterpart, measuring very approximately 2m across and probably continuing onto uninvestigated portions of the western platform's summit. Unit 27 is seemingly built over U.8's eastern face, the latter not being found in this area (though it is clear enough north and south of the arc). Construction of U.27 probably contributed to the disruption of U.8, indicating that the former's erection postdates the latter.

Two gaps were apparently cut at floor level into the western (U.8) and eastern (U.28) summit margins at this time. The former is 0.4m wide and located 1m north of Room 1's southwest corner. Its eastern counterpart is 0.8m north of the enclosure's southeast corner and measures 0.7m across. These gaps face each other across a distance of 2.7m, a line drawn between their center-points running 0.4m south of U.26 and 1.4m south of U.27. It is not certain that either gap penetrates the full width of the walls in question, disruptions to both U.8 and 28 being so severe as to render any decision on this issue moot.

All construction dating to TS.4 is fashioned of unmodified river cobbles set in a brown earth matrix. There is no clear tendency to orient the naturally flatter aspects of these rocks outward and the architecture in each case seems quite casual. Unit 26 and, possibly, U.27 are the remnants of pits whose use involved intense burning. The gaps cut into U.8 and 28, if they pierce completely through both walls, may have been fashioned to allow the passage of air needed to fuel the putative fires. Such activities do not seem compatible with the size and relative physical prominence of Str. 2-1st with its elaborate eastern entryway. Instead, we

would argue that the constructions described above were introduced after Str. 2-1st had been abandoned for an undetermined span of time (hence its poor state on preservation when excavated). For whatever reason, the ruin was judged appropriate for the conduct of a different set of activities than its original builders had envisioned, behaviors that could yield heat great enough to vitrify bajareque.

### Time Span 5

After Str. 2-1st was finally and completely forsaken, it was buried by the natural deposition of S.3 and 4, a moderately coarse, moderately hard-compacted soil that is distinguished by overlying S.4's darker brown color and greater concentration of small roots. Embedded within these earth levels is a dense to moderately dense collection of stones fallen from final-phase architecture (F.5).

### Structure 49

Structure 49 occupies the northeast corner of a patio delimited by Strs. 47-49 and 51. The building is also situated on the southern margin of a 1.2m-deep basin. As noted below, there is good evidence that this declivity was in existence when Str. 49-1st was occupied, two terraces flanking the building's north side (U.26 and 27) having been built on the basin's upper slopes. Ground surface in Str. 49's environs, therefore, is fairly level on all sides save the north where it drops off rapidly into the depression. Structure 51 is 6.7m to the southwest while Str. 49 appears to be joined to its nearest eastern neighbor, Str. 50. Approximately 75m<sup>2</sup> were dug in Subops. 36B and 36I, resulting in the complete exposure of Str. 49-1st's core building. Portions of architecture found in Str. 49-1st's immediate vicinity were also uncovered but time precluded a thorough investigation of these elements. Digging was carried down to maximum depths of 0.59m and 0.82m below modern ground surface outside construction on the south and north, respectively; architectural fill was not probed. Preservation of most architectural components was poor, this especially being the case for the building's interior. Because it was so difficult to recognize units and features among the considerable quantities of fallen debris, let alone reconstruct their temporal relations, we have simplified the presentation of the construction sequence. The two building phases outlined below must, therefore, be understood as the bare minimum required to account for the available data; almost certainly Str. 49-1st was the product of a more complex set of distinct construction efforts than is indicated here. Excavation of Str. 49 was pursued from May 16-June 4, 1990 under the direction of E. Bell.

### Time Spans

<u>Time Span</u>	<u>Construction Phase</u>	<u>Units</u>	<u>Strata</u>	<u>Features</u>	<u>Date</u>
1	-	-	S.2	-	LCLI, II?
2	Str.49-2nd Str.36-Sub1	U.2 U.1	-	-	LCLII?



3	Str.49-1st	U.3-29	S.1	F.1, 2	LCLII, III
4	-	-	S.2, 3	F.3	-

### Time Span 1

At least 0.16m of S.2, an orange-brown soil containing numerous artifacts, especially sherds and bajareque fragments, was found to underlie architecture (U.24) on Str. 49-1st's southwest side (S.2's base was not found). This relationship suggests that the natural deposition of S.2 began prior to Str. 49's construction at a time when there was already human settlement nearby. The base of the northern depression was not encountered in Subops. 36B and I (though it was identified in the test-pits dug across the basin), so we cannot ascertain the relationship between Str. 49 and this declivity. It *appears*, however, that Str. 49-1st's northern terraces (U.26 and 27) are set up above the pit base, implying that at least this version of the edifice was erected after, possibly well after, the declivity had been dug and begun to fill in.

### Time Span 2

Remnants of architecture pertaining to constructions predating Str. 49-1st are found off the building's southeastern flank (U.1) and a room contained by the later edifice (U.2). Unit 1 is a cobble line uncovered for a distance of 1.6m and oriented roughly 15 degrees. Resting ca. 0.1m beneath Str. 49-1st's southeastern wall (U.5), U.1 seems to be part of a cobble foundation that defined an undetermined side of a surface-level building (Str.36-Sub1) pertaining to TS.2. Unit 1 is at least 0.18m wide.

Unit 2 was exposed within what would later become the confines of Str. 49-1st's Room 4. This cobble line was revealed for a distance of 2.1m. Unit 2 is roughly 0.25m wide and is aligned at a markedly different azimuth (ca. 294 degrees) from the Str. 49-1st components that surround it. Though it is difficult to reconstruct Room 4's floor level, U.2 certainly does not protrude much above, and was probably flush with, the living surface contained within the enclosure. This stratigraphic relationship, coupled with U.2's divergent orientation, leads us to argue that the element in question is a component of an earlier version of the principal building (tentatively designated Str. 49-2nd). Most likely, U.2 is a segment of a footing incorporated within a surface-level building that was largely razed during TS.3 construction. Units 1 and 2 could conceivably be parts of the same edifice, though this notion was not evaluated in the field.

Both U.1 and 2 are fashioned of unmodified river cobbles set in a brown mud mortar. Insufficient expanses of these constructions were unearthed to reveal more information on their architectural forms.

### Time Span 3

Structure 49-1st is an extensive building that appears to have been elevated on the southwest but built into ground surface on the north. These two flanks also differ in the formality of their architectural elements. The southwest is marked by a series of entry features leading northeastward towards what seems to have been the principal enclosure within the edifice, Room 3. The southwestern basal facing (U.3) ascends 0.32m and ends on the northwest

and southeast in inset corners that measure 0.35x0.8m and 0.55x1.4m (the latter is poorly preserved and its dimensions are inferred from subtle [read, barely discernible] remains). Fronting this wall is a 0.28m-high by 0.9m-wide step (U.24) that is bounded on the northwest and southeast by variably long stone blocks. The southeastern example (U.22) is 0.5m across by 1.22m long while its northwestern counterpart (U.23) projects at least 1.85m southwest from U.3 (its width and southwestern terminus were not identified). Both constructions are 0.22m high. The broad surface backing the U.24 riser is paved with a combination of pebbles and schist slabs (U.29).

Units 22-24 combine to facilitate and channel passage onto the extensive southwestern terrace which covers ca. 11m<sup>2</sup>. This terrace runs 2m back (northeast) from U.3 to the next ascending riser (U.6, 0.22m high). The southwestern terrace is defined by the U.3 and 6 ascents on the southwest and northeast as well as by the broad U.4 and 5 walls on the northwest and southeast. The former measures 0.85m across but is preserved to only 0.09m high. Unit 5 is roughly 0.9m wide and rises 0.35m. Built into the northern corner of the southwest terrace is a 0.18m-high, stone-faced bench (U.7) that is 0.9m wide by 2.1m long (measured across the center). Unit 7 faces southwestward over the U.3 terrace riser. The only other extant architectural elements found on the southwestern terrace are U.8 and 9, rectangular cobble blocks that define the northwestern and southeastern sides of an entry feature in line with the approximate center of the southwestern steps (U.22-24). Unit 8 is 0.5m wide and extends 1.3m southwest from U.6; it had been heavily damaged since last used and the 0.04m preserved height is almost certainly not its original dimension. Unit 9 is 0.4m wide, 0.34m high, and projects 1m southwest from U.6. Though most of the southwestern terrace is surfaced with earth, the 0.65x1.3m delimited by U.6, 8, and 9 is at least partially paved with four to five cut blocks that were in a fragmented state when found (U.10). It appears that the masonry had been broken in place. This damage may have been a consequence of repeated use, though it is hard to imagine that simply walking over the stones would produce this result. More likely, the breakage was deliberate.

Passing between U.8 and 9 and up the 0.22m-high ascent of U.6 leads to a 1.2m-wide by, very approximately, 1.7m-long cobble pavement (U.11) that ends on Room 3's southwestern margin. Flanking U.11 on the northwest and southeast are Rooms 1 and 2. Both are earthen-floored compartments bounded on all sides save the southwest by low cobble footings (U.4, 12-14, preserved 0.08-0.23m high) and they lack extant built-in furniture. The southwestern flank in each case seems to have been open, overlooking U.6. Room 1 encompasses 1.25x3m and may have been accessed both from U.11 on the southeast and through a 0.4m-wide gap between the U.12 and 16 foundations in the enclosure's north corner. The latter passage would have afforded direct access to Room 3. Room 2 covers 1x1.4m and there seems to have been a 0.4m-wide passage set into its eastern corner. The putative doorway in Room 2 only seems to lead to a 0.4x1.5m space sandwiched in between the southeastern room's footing (U.14) and Str. 49-1st's southeastern perimeter wall (U.5).

Room 3 is an extensive (ca. 1.3x5m) earthen-floored compartment that seems to have been the destination to which the various entry features were leading (U.22-24, 8-11). The western and northeastern perimeter foundations (U.5, 16, 21, and 25) of Room 3 define an irregular boundary, varying considerably in orientation. These discrepancies tentatively suggest that the compartment was created in the course of several construction episodes during which the space was gradually enclosed by footings measuring 0.22-0.8m across and standing 0.12-0.38m high. Set in the approximate center of the room, facing the long northeast-southwest trending

entryway, is a 0.4m high stone-faced bench (U.15). Built against the northeastern foundation (U.21), U.15 is approximately 1m wide by 1.9m long (its northwestern and southeastern ends were not clear and so the length given above is no more than an approximation).

Room 4 backs Room 3 on the north, U.21 acting to separate the two compartments. The former enclosure is roughly L-shaped, the main body of the compartment running nearly east-west and the leg projecting northward from the figure's east end. Overall, Room 4 encompasses 4.3m<sup>2</sup>. Those foundations bordering Room 4 on the west, north, and east (U.16-20) appear to have been added in segments and are oriented very differently from most of Str. 49-1st's architectural features southwest of U.21. This pattern suggests that Room 4 was created piecemeal relatively late in the construction sequence. Units 16-20 are 0.2-0.8m wide and stand 0.15-0.26m high. Room 4's earthen floor, which may have been tilted slightly downslope to the north, supported no extant built-in constructions. There is a 0.3m-wide gap in Room 4's northern perimeter between U.17 and 18. This interruption seems too narrow to have been a doorway and may be related somehow (possibly as a vent) to activities conducted around F.1.

Located immediately north of Room 4, in the area defined by U.16, 17, and 18, is a bajareque concentration measuring 0.6x0.7m. The wattle-and-daub fragments are overlain by a level of fine-textured gray ash that continues southward and eastward for roughly 0.9m (all glossed as F.1). The significance of this concentration is unclear. It most likely represents the remains of a wattle-and-daub construction set within a space that was sheltered on the east and south (U.18 and 17) by foundations and the walls they supported but was largely open on the north and west. The ash included in F.1 implies that it is the remnant of an oven.

A second bajareque concentration (F.2), this one covering 0.87x1.4m, lies 0.5m south of the U.24 step and adjoins U.22. Feature 2 may continue further south than the 0.87m figure indicates, excavation stopping before the bajareque's southern limit was reached. The architectural significance of this concentration is unknown.

Units 26 and 27 are 0.57m- and 0.22m-high cobble terraces that run more-or-less parallel to each other 1.5m and 2.32m north of Str. 49-1st. A 0.5x0.75m indentation marks U.27's northern face; no comparable element was found in U.26. These constructions are set well up on the southern margin of the northern depression and were seemingly built to slow erosion below Str. 49-1st into the basin. A fine-textured, gray ash (S.1) extends from the base of U.26, over U.27 and continues at a downward slope, descending 0.83m across 3.21m south-to-north into the pit. Stratum 1 is exposed to maximum thickness of 0.23m (the base was not found) and appears to represent debris generated by activities that occurred further upslope, probably on and around Str. 49-1st. This patterning suggests that the behaviors in question involved a considerable amount of burning *and*, by the end of TS.3, at least part of the northern basin was being used as a trash receptacle. The putative F.1 "oven" is the most likely source of S.1.

Unit 28 is a cobble line that was uncovered for a distance of 1.2m, lying 0.25m east of U.20 and 1.5m north of U.25. Based on its depth, U.28 appears to be contemporary with neighboring components of Str. 49-1st construction, though it is not clearly linked to any of them. Possibly, U.28 is part of a foundation for yet another enclosure built adjacent to (east of) Room 4 and bounded by U.20, 25, and 28 on the west, south, and north. *If so*, the compartment would have measured 1.7m north-south (across the center) and been open on the east.

Overall, Str. 49-1st is a building that stands 0.72m above ancient ground surface on the southwest, but apparently rests directly on an ascending ground level on the north, covers 7x7.6m (measured across the center), and is oriented approximately 283 degrees, 30 minutes (southwestern portion) and 359 degrees (on the north). Entrance to Str. 49-1st was from the

southwest where a series of access features channeled passage over steps (projecting minimally 1.85m southwest of the first ascending terrace), through a narrow corridor paved with fragmented masonry blocks (U.8-10), and onto a stone floor (U.11) that led directly to the largest enclosure, Room 3. The latter covers 6.5m<sup>2</sup> and contains a 0.14m-high stone-faced bench measuring 1m across by, approximately, 1.9m long. The bench faces directly into the entry corridor. Bordering U.11 on the northwest and southeast are two earthen-floored rooms that encompass 3.8m<sup>2</sup> (Room 1 on the northwest) and 1.4m<sup>2</sup> (Room 2). Both could be entered from U.11 and are equipped with 0.4m-wide doorways that connect Rooms 1 and 3 and Room 2 with a small (0.6m<sup>2</sup>) cubicle on the southeast. Room 4, an L-shaped compartment lying immediately north of Room 3, covers 4.3m<sup>2</sup> and lacks built-in furniture. Another enclosure, measuring 1.7m across north-south, may have adjoined Room 4 on the east. Though it is difficult to determine, Rooms 1-4 and the putative eastern compartment appear to have been built directly on ground surface. The 11m<sup>2</sup> encompassed by the first ascending southwestern terrace appears to have been raised above this level at least on the southwest. In addition to U.8-10, this terrace supported a 0.18m-high stone-faced bench that measures 0.9x2.1m. The southwestern terrace is also characterized by inset corners on its southwestern and southeastern margins.

A bajareque oven may have been in operation just north of Room 4, the latter's foundations helping to shield the construction on the east and south. Two stone-faced terraces 0.57m and 0.22m high are 1.5m and 2.32m north of Str. 49-1st. These entities are built into the upper margins of the northern depression and probably served to slow erosion down the relatively steep slope bounding Str. 49-1st on this side. An ash deposit overlying and extending 2.41m north of these terraces may well have derived from the putative oven noted earlier. Identification of this debris within the basin suggests that at least part of the northern declivity was being used as a trash container by the end of TS.3.

Except where noted otherwise (U.10), Str. 49-1st's facings, footings, and pavements were fashioned primarily of unmodified river cobbles the naturally flatter aspects of which were directed outwards. Cut blocks are the sole material used to make U.10 and a few pieces of masonry are incorporated in U.4, 13, and 24. Schist slabs appear in the U.11 and 29 floors and some are included in U.7 and 27. Horizontal coursing of the larger rocks is variably manifest in Str. 49-1st's walls, most being so badly preserved that assessing the presence and prevalence of this feature was thwarted. Chinking stones appear to have been used to fill in the spaces among the more sizable cobbles in most cases. The southern faces of U.15 and 21 were built over at least part of their extents using vertically set cobbles backed by horizontally placed stones. This technique may have been restricted in U.21 to that portion backing the U.15 bench--once again, post-occupation disturbances made establishment of this point difficult. Rock sizes ranged from 0.04x0.07m to 0.16x0.67m, with most falling towards the middle of that continuum, i.e., 0.12x0.28m. A brown mud mortar was used as a binding agent in each unit.

#### Time Span 4

Stratum 2's deposition resumed after Str. 49-1st was abandoned, this layer eventually being covered over most of its exposed extent by S.3, a moderately fine-textured, dark brown soil containing numerous small roots. Strata 2 and 3 are almost certainly components of the same soil level distinguished by the latter's greater organic content resulting from proximity to modern ground surface. Together, S.2 and 3 accumulated to a maximum observed depth of 0.7m and blanketed all but the uppermost elements of Str. 49-1st. Embedded within S.2 and 3

(as well as S.1) is a variably dense concentration of stones fallen from final-phase architecture (F.3). Feature 3 rocks are plentiful within Str. 49-1st's confines, decreasing to light densities away from the building. Feature 3 was noted for distances of at least 3m southwest of Str. 49-1st and 3.5m north of the basal northern terrace (U.27). The F.3 stones are found at increasing depths within the northern depression, following the general south-to-north descent defined by the ash level (S.1) within the pit (see above).

### Structure 50

Structure 50 lies northeast of, and outside, the patio defined by Strs. 47-49 and 51, adjoining Str. 49 and roughly 11m west/southwest of Str. 2. The land surrounding Str. 50 is fairly level, ascending 0.21m over 9m north-to-south. The depression, above whose southern margin Str. 49 was erected, lies approximately 5m to the northwest. Excavations conducted in Subops. 36C and J resulted in the clearing of ca. 36m<sup>2</sup>, exposing the entirety of Str. 50's core platform along with the remains of two surface-level rooms built south and southwest of the main building. Digging was carried down to maximum depths of 0.72m below modern ground surface outside construction and 0.48m beneath ground level into architectural fill. A single clear building phase was recognized in the course of these investigations, albeit one in which Str. 50 underwent significant renovations. The work described herein was conducted from May 16-June 4, 1990 under the direction of E. Bell.

### Time Spans

<u>Time Span</u>	<u>Construction Phase</u>	<u>Units</u>	<u>Strata</u>	<u>Features</u>	<u>Date</u>
1	-	-	S.1	-	LCLI, II
2	Str. 50-1st	U.1-18	-	-	LCLII, III
3	-	-	S.1	F.1	-

### Time Span 1

At least 0.38m of S.1, a brown to dark brown soil, underlies Str. 50-1st construction (S.1's base was not revealed in our excavations). Consequently, S.1's natural deposition must have begun prior to the raising of that platform in TS.2. Recovery of artifacts from the lower portions of S.1 indicates a human presence in the immediate vicinity prior to TS.2.

### Time Span 2

Structure 50-1st consists of a modest platform against which surface-level rooms were built on the south, north, and west. The platform is faced on all sides by single, stone-faced, vertical ascents (U.2-5) that rise ca. 0.45m to the summit. On the south, it appears that U.5 replaced an earlier, comparably tall, basal wall (U.1), its addition enlarging the building's north-south dimension by roughly 0.45m. The northern and southern basal walls were built on more-

or-less level terrain; the ancient ground surface appears to have risen east-to-west, however, as U.2's base is 0.26m above that of U.4. Units 1-5 contain a fill composed of cobbles scattered throughout a brown soil matrix (U.16). The summit is divided into two compartments by U.6-8. Units 6 and 7 are 0.36-0.44m-wide by 0.13-0.28m-high cobble foundations that run north and east from the summit margins to intersect at U.8. The latter is a circular arrangement of cobbles the center of which is left open and, when dug, was filled with a soft-compacted brown soil. Unit 8's outer diameter is roughly 1m while the inner circle is 0.35m across. Most likely, U.8 is the support for a central post (ca. 0.35m diameter) that sustained the superstructure's roof. An analogous construction is represented by U.37 in Str. 60 (Op. 19). The western summit enclosure, Room 1, measures 1.4m on a side and has an earth floor. Its eastern counterpart, Room 2, encompasses 0.7x1.54m and is paved with a mixture of cobbles and pebbles (U.17). Unit 17 may continue north of U.7 into the cramped space delimited by U.3, 4, 7, and 8 (ca.0.4x1.2m). The latter area seems too small to have been a room. Instead, U.7 may have been raised within a preexisting, stone-floored eastern compartment that originally measured 1.54x1.6m. Unit 7 was then added, not to subdivide this space into two enclosures, but to create a shelf that stood ca. 0.13m above U.17 and measured 1x1.2m.

Room 3, a tamped-earth-floor enclosure covering 1.04x1.5m, is built off the southwest corner of the Str. 50-1st platform. This compartment is bounded by foundations (U.9-12), measuring 0.2-0.6m across by 0.09-0.24m high, set directly on ancient ground surface. Room 3's northeast flank is delimited by the platform's southern basal wall (U.5). The northern footing (U.9) is the least substantial component of Room 3, being only one stone wide (0.2m). Unit 9 also does not run a straight course, extending 0.5m south from its junction with U.5 and then turning to run 0.86m east to intersect the eastern foundation (U.10). The result of this dog-leg is the creation of a 0.5x0.62m inset in the northern portion of Room 3. Unit 12, the western foundation, projects 1.65m south of Room 3. This extension, together with Room 3's southern footing (U.11), define a space measuring 1.65x1.8m open on the east and south. A large number of artifacts were recovered from the tamped earth floor bounded by U.11 and 12 south of Room 3, suggesting that this area served as a distinct activity area.

Room 4 was fashioned by the simple expedient of enclosing a portion of the space between Strs. 50-1st and 49-1st by low cobble foundations measuring 0.3-0.35m across. The southern limit of Room 4 is defined by U.13 which extends 1.2m northwest from U.12 and stops a scant 0.2m shy of Str. 49-1st's southeastern perimeter wall (U.5). Unit 14 is an L-shaped footing that runs 0.8m east from Str. 49-1st's U.5 before turning south for 0.65m. The earthen-floored space enclosed by U.12-14 and Str. 49-1st's U.5 covers roughly 2.1m<sup>2</sup> and could have been entered through a 0.7-0.8m-wide doorway on the north between U.2 and 14. Unit 18, a 0.1m-high by 0.5m-wide cobble wall cuts east-west between U.12 and Str. 49-1st's U.5, 0.3m north of U.13. The architectural significance of U.18 is not obvious. It is unlikely to have been the northern wall of a cubicle measuring only 0.3m across. More plausibly, U.18 may have been the northern face of a 0.1m-high shelf encompassing 0.8x1.2m, U.13 marking the back of that construction.

Unit 15 is a low, 0.4m-wide cobble wall, built on ancient ground level, that projects 1.3m north from U.3, 1.2m west of that facing's intersection with U.4. This element may be a footing that bounds an earthen-floored, surface-level room on the west. The southern side of the putative enclosure would be demarcated by U.3 while the north and east may have been left open. Alternatively, additional excavation in these directions might have encountered other components of the tentatively identified surface-level room.

Structure 50-1st's platform is 0.45m high, covers 3x4.5m, and is aligned roughly 103 degrees. The superstructure was divided into two compartments arranged in an east-west line, the roof supported, in part, by a sizable (ca. 0.35m diameter) center post packed round with, and shored up by, cobbles. The western enclosure measures 2m<sup>2</sup> while its eastern neighbor encompasses 2.5m<sup>2</sup> and has a 0.13m high shelf built into its northern wall. The shelf is 1m wide by 1.2m long. Surrounding the platform on, at least, the south, west, and north are the remnants of surface-level rooms. Room 3, lying immediately to the south, covers 1.9m<sup>2</sup> and is bounded on the south by an activity area bordered by cobble foundations on the north and west but apparently open to the east and south. Both Room 3 and its southern neighbor have tamped earth floors on which sizable numbers of artifacts were found. Room 4 is bounded by Strs. 49-1st and 50-1st on the northwest and southeast, the southwestern and northeastern limits demarcated by low cobble foundations. This enclosure covers 2.1m<sup>2</sup> and has what was probably a 0.1m-high shelf that measures 0.8x1.2m built against the southern wall. North of Str. 50-1st's platform there may have been another room or activity area bounded on the west and south by a low cobble foundation and the platform's northern basal facing, respectively. Like the activity area south of Room 3, this northern space rests on ancient ground surface and may have been open on two sides (east and north in this case).

The Str. 50-1st complex almost certainly grew up over a protracted period. The rooms and activity areas built against the platform were erected after the latter was in place. Rooms 3 and 4, in particular, must have been built after the southern addition to the platform's basal wall was completed (U.5 sealing the earlier U.1 facing, see above) as both incorporate U.5 in their constructions. This observation also indicates that the platform itself underwent renovations over time. It is even possible that Str. 50-1st's core began its use-life as a surface-level building. The eastern 1.4m of U.3, the northern facing, is narrower than the rest of the wall and seems to have been built of generally smaller stones than is the case in the other platform facings. It may be that the above segment seals an earlier doorway, thus accounting for the discrepancies in construction. Transformations of surface-level edifices into platforms are attested to elsewhere in the Naco valley, though this modification is only suggested, not established, for Str. 50-1st.

All facings, foundations, and floors associated with Str. 50-1st are built primarily of unmodified river cobbles set in a brown mud mortar. The naturally flatter aspects of these rocks are directed outwards in the footings and basal walls and there is a tendency to arrange the larger rocks into horizontal courses. Chinking stones are used to fill in the interstices among the more sizable stones, though they are not equally common everywhere; these small pebbles are especially prevalent in U.4 where they also serve as a foundation for the larger rocks. Cut blocks are rare within Str. 50-1st architecture, though one piece of masonry was found protruding 0.2m east from U.10. Rock sizes range from 0.04x0.05m to 0.1x0.46m, with most occupying the middle of that spread, clustering around 0.1x0.2m.

### Time Span 3

After Str. 50-1st's abandonment, S.1 resumed deposition, eventually reaching a maximum observed thickness of 0.72m (the base was not encountered). Stratum 1 buries all but the highest elements of Str. 50-1st's platform. Embedded in the upper portions of S.1 are stones fallen from final-phase architecture (F.1). Feature 1 stones are found in moderate to light concentrations over Str. 50-1st and for 3.85m south and 1.14m north of the building.

## Structure 51

Structure 51 occupies the southwestern corner of the patio delimited by Strs. 47-49 and 51, ca. 6.7m southwest of Str. 49 and 15m south-southeast of Str. 48. The terrain surrounding Str. 51 rises 0.57m over 7.1m from north to south and it appears that this building was built into a comparable rise in antiquity. As noted below under TS.1, there is reason to believe that the ascent was the product of gradual trash accumulation. Clearing of about 25m<sup>2</sup> from May 16 to June 4, 1990 within Subops. 36A and 36F resulted in the exposure of roughly two-thirds of Str. 51-1st's basal walls along with approximately the eastern third of the summit and an unknown proportion of the steps that project northward into the patio. Digging was pursued to maximum depths of 1.59m below modern ground surface outside construction and 0.48m beneath ground level into architectural fill. A single building phase was identified in the course of this work which was directed by E. Bell.

## Time Spans

<u>Time Span</u>	<u>Construction Phase</u>	<u>Units</u>	<u>Strata</u>	<u>Features</u>	<u>Date</u>
1	-	-	S.1-8	-	LCLI, II
2	Str. 51-1st	U.1-15	S.7	F.1	LCLII, III
3	-	-	S.7, 9, 10	F.2	-

## Time Span 1

Time Span 1 appears to have been a protracted interval during which at least 0.96m of soil was deposited south of Str. 51-1st's eventual construction site. The first of these levels, S.1, is a fine-textured, hard-compacted, orange-brown soil throughout which are scattered pockets of lime that are 0.03-0.05m in diameter. Stratum 1 slopes up 0.28m over 1.04m south to north and was exposed to a maximum thickness of 0.66m (the base was not encountered). Strata 2-4 are lenses discontinuously distributed throughout S.1. Stratum 2, the lowest of these entities, is a fine-textured, light gray ash that extends 0.65m north from the south trench wall and has a maximum thickness of 0.06m where it enters the southern excavation limit. Stratum 2 is 0.11-0.16m above the base of excavation and is succeeded in the stratigraphic sequence by S.3, a fine-textured ash intermixed with carbon fragments and containing a dense concentration of flat-laid ceramics at its base. Stratum 3 projects 0.98m north from the south trench margin and expands in thickness from north to south; the layer's maximum thickness of 0.12m is reached at its southern exposed limit. Variations in S.3's thickness result from the gradual south-to-north ascent of the entity's base, the top remaining more-or-less level across the entire 0.98m that the layer is revealed north-south. Strata 2 and 3 are separated by only 0.01m on the south. Stratum 4 is a 0.02m-thick lens of sand mixed with lime that extends 0.14m south from the north wall of the deep probe dug into S.1. This layer is 0.08m below S.3.



Capping S.1 on the south is S.5, a very fine-textured gray ash containing sizable quantities of artifacts. Stratum 5 is 0.02-0.08m thick, conforms to the underlying slope of S.1, rising 0.2m across 1.04m south-to-north, and ends on the north against S.6. The latter is a light tan sandy soil that contains relatively few artifacts. Stratum 6 blankets S.5 by 0.05-0.17m over all of its revealed 1.04m north-south extent; north of that point, S.6 drops down to replace S.5 on the upward ascent towards the Str. 51-1st construction site. Over this 2.1m, therefore, S.6 first ascends dramatically, following the contours of S.1 and 5 which it covers for 1.04m, and then begins a more gradual upward slope (rising 0.22m over the first 1.04m south-to-north and then 0.11m across the remaining 1.06m in the same direction). Stratum 6 was also found underlying Str. 51-1st's basal northern construction (U.9) by at least 0.15m (its base was not encountered here). On this flank, however, the complex earth stratigraphy seen further south was not identified, in part because digging was not pursued to a sufficient depth to locate S.1-5. A lens of fine-textured, gray ash was identified ca. 0.3m below U.7 on the north (not portrayed on the section). Only 0.04m of this deposit was exposed. The above-noted lens may be a northward continuation of S.7-- the two are similar in composition and at about the same level, but they were not linked through excavation. The stratigraphic situation is not clear on the east. Here, excavations encountered very large quantities of artifacts, especially sizable pottery sherds, extending for at least 6m beyond construction. This deposit may represent a continuation of S.7, though we remain unclear concerning the matrix in which the artifacts were found.

Restricted excavation is not the only factor in the observed divergence in stratigraphic sequences. South of Str. 51-1st, S.6 is covered by S.7, a very fine-textured, soft-compacted, light gray soil in which large quantities of artifacts, especially sizable pottery sherds, are found. Stratum 7's deposition was interrupted over part of its extent by the introduction of a substantial lens of S.6. This layer is ca. 0.22m thick and measures 2.58m north-south. Contained within the S.6 lens is a deposit of very fine-textured light gray ash (S.8) that protrudes 0.05m above the base of excavation and was exposed for a north-south extent of 0.2m. Stratum 8 is located at the northern revealed margin of the S.6 lens. Stratum 7 is deposited around and over the S.6 intrusion. We estimate that 0.54m of S.7, in which the S.6 deposit is found, was laid down in TS.1 prior to Str. 51-1st's erection. Excavations north of Str. 51-1st yielded no signs of S.7 though digging on the west uncovered S.7 extending for 2.37m away from final-phase architecture (U.2). In the latter area, S.7 was only exposed to a maximum depth of 0.1m and rose 0.14m across 1.2m east-to-west.

The stratigraphy revealed south of Str. 51-1st suggests a prolonged human occupation here prior to that building's construction. Human presence in the area may have intensified, or the investigated zone was transformed into a major trash dump, late in TS.1 (represented by the extensive S.7 deposit). The large quantities of ash and artifacts recovered south of Str. 51-1st support this interpretation. It may be that S.7 was the product not of gradual debris accumulation, but was purposefully introduced as fill to raise the living surface south and west of Str. 51-1st (the base of that platform's southern facing [U.1] is 0.49m higher than that of its basal northern architecture [U.9]). Similar uses of ash are inferred in Op.31 to the northeast. Whatever the cause of S.7's original deposition, it continued to be laid down south of Str. 51-1st throughout the succeeding two time spans.

## Time Span 2

Structure 51-1st is a platform the flanks of which are defined by ca. 0.4-0.6m-high basal facings (U.1, 2, and 4) on all sides save the north. Here, the basal wall (U.3) may have stood 1.08m high and is fronted by four stone-faced steps (U.7-12). The bottom-most riser (U.12) is 0.12m high, 0.55m wide, and runs for at least 0.5m east-west (the western margins of all the steps save the highest element, composed of U.6, 7, and 15, were not found). Unit 11 bounds this step on the east, running back (south) to intersect the next riser (U.9) 1.4m west of that step's northeast corner. Unit 9 stands 0.06m above S.6 and seems to have been sealed behind the U.11/12 step on the north, probably not protruding above the latter. Unit 9 runs east-west for, minimally, 2.1m, its eastern margin (U.10) running back (south) 0.52m to the U.8 riser. The latter is 0.16m tall and fronts a tread that is 0.91m wide. Unit 8 was not well preserved, being traced over an east-west extent of only 0.8m. Its eastern boundary is obscure but probably lines up with U.10, extending back (south) to intersect the next step (U.7) at a point 1.1m west of U.7's northeast corner. Unit 7 rises a reconstructed 0.44m above U.8's tread and leads up to a 0.9-1.35m wide earthen surface. The step's eastern boundary wall (U.6) joins the platform's northeast corner while the small fragment of the western facing (U.15, exposed for 0.5m long north-south) junctions with U.3, 1.35m east of the basal facing's northwest corner. The step-up to Str. 51-1st's summit (U.3), in turn, stands an inferred 0.3m above the surface backing U.7.

The western and eastern flanks were not sufficiently cleared to reveal how many terraces, if any, intervened between the basal wall and the summit. On the south, U.1 was succeeded by a 0.13m-high stone facing (U.5), located 0.46m north of the basal facing. Unit 5 apparently marked the southern summit margin. Superstructure architecture had been severely disrupted and summit clearing was limited to roughly the eastern third of Str. 51-1st's top. Here, a ca. 0.2m-high cobble foundation measuring 0.35-0.4m across was located (U.13). Unit 13 has a rough S-shape, running 0.6m west from the eastern summit limit at which point it turns and extends an equivalent distance southward before changing direction yet again, continuing at least 0.85m to the west (the western terminus was not identified). Most likely, U.13 is a footing that bounded one or more rooms within Str. 51-1st's superstructure. The dimensions and nature of these putative enclosures cannot be reliably inferred from the available data. Structure 51-1st's fill (U.14) consists of stones suspended in a dark brown soil matrix.

Feature 1 is a rough stack of cobbles noted in the west excavation wall 0.34m south of U.1 (measured from U.1's southern face to the presumed northern limit of F.1). No obvious wall was encountered during excavations in this area. The regular placement of the F.1 stones and their stratigraphic position (extending down and up to U.1's base and top) tentatively suggest that these rocks may be the remnants of a casual construction added on to Str. 51-1st near the end of TS.2. Feature 1 may have been part of a southern basal facing that replaced U.1, expanding Str. 51-1st 0.66m to the south. The 0.34m between U.1 and F.1 is filled with S.7. Accumulation of S.7 apparently persisted throughout TS.2. This interpretation is indicated by the disposition of stone debris tumbled from final-phase architecture in TS.3 (F.2). The F.2 rocks sit in S.7 roughly 0.1m above the level to which S.7 had collected by the conclusion of TS.1. Assuming that this construction debris came to rest on or near the ground surface exposed during Str. 51-1st's use-life, then the location of F.2 implies that approximately 0.1m of S.7 was laid down between TS.1 and the beginning of TS.3. There is no sign of S.7 north of Str. 51-1st and this layer does not seem to have been augmented west of the building during TS.2.

Structure 51-1st is a 0.53-1.08m-high stone-faced, stone-and-earth filled, platform that measures 4.1x5.85m (not including the northern steps and F.1) and is aligned roughly 8 degrees. The building is ascended on the north by four steps that project ca. 3m from the platform into the

patio and extend progressively eastward north-to-south towards the platform. The stone-faced risers are 0.06-0.44m high, though the second ascending stair may only have been visible where it was not covered by the basal step. The latter was apparently added fairly late in the construction sequence and obscured the second riser. Treads are 0.52-1.35m across and are surfaced with earth. A single, 0.13m-high, terrace intervenes between the southern basal facing and the summit, the patterning of any terraces that might have existed on the east and west is unknown. Very little superstructure architecture was cleared, the summit apparently having supported a building composed of earthen-floored rooms bounded by cobble foundations. The platform may have been expanded 0.66m southward by the addition of a basal facing (F.1) that encased its predecessor (U.1) late in TS.2. Artifact-rich gray ash continued to collect against the building's southern facing during this interval, though this material may not derive from activities conducted on Str. 51-1st.

Foundations, steps, and basal walls are built of unmodified river cobbles the naturally flatter aspects of which are directed outwards. Unit 3, however, incorporates a few cut blocks among the cobbles. Post-abandonment dislocation of building stones has been so extensive that it is difficult to infer architectural style. There seems to have been a tendency to arrange the larger cobbles within horizontal courses in some of the taller walls (i.e., the platform facings), some chinking stones being packed around the more sizable rocks. We are not certain how widespread this practice of coursing was. A brown mud mortar was used as a binding agent in all floorings, facings, and stair risers.

### Time Span 3

After abandonment, S.7 continued to accumulate against Str. 51-1st's southern side, eventually reaching a total thickness of 0.77m (maximum). By the time deposition of S.7 ceased, the layer covered all but the uppermost 0.1m of U.1. There is no evidence that S.7 reached comparable depths on Str. 51-1st's other flanks. Here, a moderately coarse-textured, dark brown soil was laid down naturally over S.7 (on the west) and S.6 (on the north). This earth layer is divided into two components based on the greater concentration of small roots in the upper level (S.10) and heightened density of small ceramic sherds in the lower segment (S.9). Together, S.9 and 10 blanket underlying soil levels by 0.27-0.57m and covered all but the uppermost Str. 51-1st stones. Embedded within S.9 and 10 are rocks fallen from final-phase architecture (F.2). These stones are densely concentrated over Str. 51-1st's summit, declining in frequency for at least 0.5m north and 3.84m south of Str. 51-1st.

### Test Pits

Eighteen probes measuring 0.5m on a side were dug on the long (northwest-southeast) axes of the two adjoining oval-shaped depressions on Op. 36's northern margin. The larger, southeastern basin covers roughly 30 across while its northwestern counterpart is ca. 12m distant and encompasses ca. 20m; both are currently 1-1.2m deep. Eleven test pits (Subops. 36D, E, G, H, K-Q), each spaced roughly 5m apart, were excavated within the southeastern depression beginning well up on its southeastern edge and continuing for 28m onto the level terrain bordering the declivity on the northwest. The remaining seven pits (Subops. 36R-X), also spaced 5m apart, spanned the northwestern basin. Digging was carried to 0.8 to 1.4m below modern ground surface, the latter figure representing the maximum depth that could be achieved

within the confines of a 0.5x0.5m pit. Our primary objective for this excavation program was to determine when these depressions had been dug, there still being considerable doubt in our minds that they pertained to La Sierra's prehistoric occupation. Secondly, we hoped to reconstruct the original dimensions of these basins. The work was over seen by E. Bell from April 29 through May 21, 1990.

Time Spans (Southeastern Depression)

<u>Time Span</u>	<u>Strata</u>	<u>Activity</u>	<u>Date</u>
1	S.1	Natural Soil Deposition	LCLI, II
2	S.2	Infilling of Depression	LCLII
3	S.3	Possible Downcutting and Continued Infilling	LCLII, III?

Time Span 1

Stratum 1, a dark yellowish brown to dark brown (10YR 5/5, 5/4, 4/4, 4/6, 4/3, 3/3, 3/4 and 5/5) fine-textured clay, is found underlying S.2 and 3 by, minimally, 0.1m on the basin's northwestern slope and extending from modern ground level down to a depth of at least 0.8m on the southeastern margin (S.1's base lies beyond excavation limits). This layer is unencumbered by later materials for at least 11.2m northwest from the depression's southeastern margin (Subops. 36D, E, and G); it does not reappear in the next two test pits in the series (Subops. 36H and K), both of which reached depths of 1.3-1.4m beneath ground level. Stratum 1 is again encountered 17.3m to the northwest (Subop. 36 L) where its top is 1.1m below modern ground surface. The layer is not found in the next probe (Subop. 36M, dug 1m below ground level) but is identified 11m further upslope and to the northwest (Subop. 36N) where it is 0.7m beneath current ground level, approximately 1m above its nearest southeastern exposure. Modern ground surface rises ca. 0.7m over this distance. Though dug to depths of 1m, none of the remaining three test pits (Subops. 36O-Q) to the northwest came upon S.1.

Stratum 1, therefore, initially descends 0.5m over 11m southeast-northwest, in keeping with the general slope of the Southeast Depression's southeastern margin, and then drops at least 1.4m across at least 11m in the same direction. Subsequently, S.1 rises, very approximately, 0.8m over 6.3m and 1m across an additional 11m southeast-northwest but does not reappear further northwest. The three northwestern-most test pits (Subops. 36O-Q) should have been deep enough to reach the top of this level *if* it continued at the same elevation to the northwest.

Stratum 1's undulating surface cannot be reconstructed in any detail from the limited exposures sunk along the Southeast Depression's center-line. Replacement of this layer to considerable depths by S.2 and 3 in Subops. 36H and K indicates that something occurred to interrupt S.1's distribution in this area. It is not until Subop. 36N, ca.38.75m to the northwest, that S.1 regains the same elevation it exhibited on the declivity's southeastern edge in Subop. 36D. There is no evidence for any natural process that might have caused this break in S.1's horizontal distribution and the most likely interpretation is that the clay was removed by human

action over an area measuring, roughly, 39m northwest-southeast. This digging reached depths of ca. 2m below the basin's margins near its center, the deepest portion concentrated in a space encompassing roughly 17.3m across northwest-southeast. The purpose of these excavations was, most likely, to acquire the clay that borders and underlies the modern declivity.

Recovery of artifacts from throughout S.1 on the southeast (Subop. 36D, E, and G) points to a human presence in the vicinity while this clay was being deposited. Stratum 1's manifestations further to the northwest in Subops. 36L and N did not yield cultural material, though both represent very limited exposures. It may be, however, that S.1 was laid down over a protracted period and its deeper segments were introduced prior to substantial settlement in this portion of La Sierra. The forgoing interpretation presumes that S.1's upper portions on the northwest were dug away in antiquity, replaced by S.2 and 3 during a long episode of infilling; on the southeast, S.1 may have been left largely intact, still containing artifacts introduced during the late accumulation of this clay. In fact, S.1's deposition may not be restricted to TS.1 on the southeast, but may have collected throughout the entire reconstructed sequence in this zone.

### Time Span 2

The next interval witnesses the introduction of S.2, a dark yellowish brown to dark brown (10YR 3/3, 3/4, 4/4, and 4/6) sand mixed with varying quantities of gravel that was exposed to thicknesses of 0.3-0.4m where it covers S.1 (S.2 is at least 0.5m thick in Subop.36O, its base lying beyond excavation limits here). Inclusions increase in numbers and size from northwest to southeast, being largely absent in Subops. 36Q and P, large and frequent in Subop. 36L, the last S.2 exposure on the southeast. This level is most prevalent on the northwest where it is found over a distance of 29.5m (from Subops. 36L-Q). Stratum 2 is first encountered on the northwestern edge of the test pit series at 0.77m below modern ground surface (Subop. 36Q). It then descends 0.15m over 5.5m northwest-southeast (Subop. 36P) before gradually and consistently rising 0.35m across the next 11.5m to the southeast (Subops. 36O and N). Throughout Subops. N-Q, S.2 is blanketed by S.3. This is not the case in Subop. 36M, 5.5m southeast and 0.3m downslope from Subop. 36N. Here, S.2 occupies the entire exposed column from ground level to 1m beneath surface. Stratum 2 last appears in the next test pit to the southeast (Subop. 36L) where it is 1.22m below the level identified in Subop. 36N (11m upslope) and 1.2m beneath the layer's top (i.e., ground surface) in Subop. 36M.

The combination of sand and river-rounded pebbles in S.2 implies that this level is of riverine origin, possibly deposited during floods from nearby *quebradas*, or seasonal stream channels. The general absence of cultural material within S.2 further hints at a natural source for this sand and gravel.

### Time Span 3

Stratum 3, a yellowish brown to dark brown (10YR 3/3, 3/4, and 5/6) clay containing varying sizes of sand particles, overlies S.2 in Subops. 36 L and N-Q by 0.3-0.8m and is found throughout the exposed sequence of 1.3m and 1.4m in Subops. 36H and K near the depression's center (S.3's base was not found in the last two cases). As inferred from the above observations, and indicated in discussions of TS.1 and 2, S.3's distribution across the exposed portions of the Southeastern Depression is discontinuous. It consistently overlies S.2 on the northwest for at least 18.25m (Subops. 36N-Q), is absent from Subop. 36M, 5.5m to the southeast, and reappears

11m further in that direction in Subop. 36L. Stratum 3 then reaches its greatest revealed thicknesses in the next two probes to the southeast (Subops. 36K and H) but is not identified in the three southeastern-most test pits, Subops. 36G, E, and D (Subops. 36G and H are located 4.35m apart).

Several interpretations could be offered for this distribution, though neither can be established based on the available data. In one scenario, S.3 fills in two depressions cut into S.2, these declivities measuring roughly 17.5m (minimally) and 19.5m across northwest-southeast, separated by ca. 6.5m of undisturbed S.2. Alternatively, the lower portions of S.2 may have been introduced first into the Southeast Depression, subsequently covered completely by S.3. A later event removed approximately 6.5m of S.3 (measured northwest-southeast) that was later replaced by continued deposition of S.2. In either case, both S.2 and 3 seem to have been laid down within the Southeastern Depression during a period of infilling after the basin had been dug and abandoned.

Stratum 3 contains varying quantities of artifacts, particularly dense deposits of material, primarily large pottery sherds, being found within Subops. 36H, K, and Q. In the first two cases, cultural remains were concentrated between 0.6-1.4m below modern ground surface while in Subop. 36Q the objects were found primarily between 0.4-0.6m beneath ground level. The presence, and in some cases, the prevalence, of artifacts in S.3 suggests that trash jettisoned from nearby buildings was washing down into the basin during TS.3. The sizable vessel fragments found within the three identified concentrations implies that some of the objects incorporated in S.3 were purposefully tossed into the depression, their large sizes indicative of relatively quick burial. The Southeast Depression, therefore, may well have been used as a receptacle for debris generated by activities conducted around its margin as well as a collecting place for objects that only gradually, and over long periods of time, worked their way down its slopes.

#### Time Spans (Northwestern Depression)

<u>Time Spans</u>	<u>Strata</u>	<u>Activities</u>	<u>Date</u>
1	S.1	Natural Soil Deposition	LCLII
2	S.2, 3	Natural Soil Deposition	LCLII, III
3	S.3-5	Natural Soil Deposition	LCLII, III?

#### Time Span 1

The first activity recognized in the Northwest Depression is the laying down of S.1, a brown to very dark brown (10YR 2/2, 3/4, and 5/3) sand incorporating differing quantities of gravel. Inclusions become more frequent and larger from southeast to northwest in the test pit sequence. Stratum 1 was exposed to thicknesses of 0.1-0.3m in the bottoms of Subops. 36S-W in the declivity's center and on its northwestern and southeastern slopes. The top of this layer is found at 0.82-1.15m below current ground surface, the greatest depth reached in the approximate center of the basin (Subop. 36U). Like its counterpart in the Southeast Depression (S.2), S.1

usually contains no cultural material. A striking exception is attested to in Subop. 36V where large quantities of artifacts, especially ceramic sherds, were found throughout the 0.3m exposed portion of the layer and may well have continued deeper (excavations were terminated before the artifacts ran out). The reason for this divergence from the norm is not known. Given that the artifact concentration extends 0.3m into overlying S.3, it may be that the objects found within S.1 had percolated downwards from a later deposit. This interpretation does not account for the sizable quantities of cultural material found throughout the revealed portion of S.1.

Like the Southeast Depression's S.2, S.1 appears to derive from floods of a nearby watercourse. Given the northwest-southeast decline in included gravels, the source of the inundations may lie in the former direction. Most likely, S.1 and 2 were laid down as parts of the same flooding episodes following the excavation of both declivities. *If* this is the case, then we did not pursue excavations deep enough in the Northwest Depression to encounter the clay that presumably lies beneath the sand. The earliest material encountered here, therefore, would be contemporary with the Southeast Depression's TS.2.

### Time Span 2

Overlying S.1 in Subops. 36S and T on the southeastern slope is a 0.22-0.4m thick deposit of fine-textured, dark brown (10YR 3/4) clay (S.2). Stratum 2 is found at depths of 0.5-0.6m below modern ground level, increases in thickness from northwest to southeast, and contains some artifacts. Further to the northwest in Subops. 36U-W, S.1 is covered by 0.5-0.65m of S.3, a dark brown to very dark brown (10YR 2/2, 3/3, and 4/3) clay that contains fine-textured sand. Stratum 3 within these test pits is 0.5m beneath current ground surface and consistently increases in thickness from northwest to southeast towards the basin's center. Strata 2 and 3 may be components of the same soil that exhibits a gradual increase in sand inclusions from southeast to northwest. Artifacts are found in all three manifestations of S.3, being particularly dense for at least 0.3m on either side of the S.1/3 interface in Subop. 36V and in S.3's top 0.1m within Subop. 36W. The latter concentration is also associated with a few small cobbles, the only possible building stones identified in any of the 18 test pits. The sherds and rocks incorporated in the Subop. 36W exposure of S.3 may well be debris fallen from a nearby building the presence of which was not detected in other probes. Stratum 3 is found throughout the 1.4m revealed in Subop. 36X on the declivity's northwestern margin. Artifacts were retrieved from all levels within this exposure, but are particularly concentrated at depths ranging from ground level to 0.6m below surface. On the southeastern basin edge (Subop. 36R), S.3 also comes very close to ground surface, reaching from 0.13-0.8m below that level. Unlike its northwestern analogue, however, the manifestation of S.3 in Subop. 36R was culturally sterile. Stratum 3 in both areas was apparently laid down over a protracted interval spanning TS.2 and 3. How much of the layer pertains to TS.2 and how much to its successor could not be determined.

Stratum 2 seemingly represents a lengthy period during which the Northwestern Depression was gradually filled in by the natural deposition of fine-textured soils. The artifacts dispersed throughout S.2 and 3 probably were washed down from the declivity's margins and are apparently not the results of purposeful trash disposal. The especially dense concentration of cultural materials spanning the S.1/3 divide in Subop. 36V may be an exception while the rich artifact deposit at S.3's top in Subop. 36W most likely represents debris fallen from a nearby building raised on the basin's northwestern edge.

### Time Span 3

As noted above, S.3 continued to accumulate throughout TS.3 on the basin's northwestern and southeastern edges (seen in Subops. 36R and X). Elsewhere, S.2 and 3 are covered by a fine-textured, black (10YR 2/1) clay (S.4) that extends from ground surface to 0.5-0.6m beneath that level. Stratum 4 contains some artifacts, though the uppermost 0.2-0.4m in Subops. 36T and V have no cultural material. A concentration of medium to small cobbles occupies the topmost 0.1m of S.4 in Subops. 36T and U in the depression's center; otherwise, stones are largely absent from this layer. Stratum 3 in Subop. 36R is capped by 0.13-0.2m of very dark brown (10YR 2/2) coarse-textured sand containing small pebbles (S.5). No comparable entity was identified elsewhere in the Op. 36 test pits. A few artifacts were scattered throughout S.5. The scant cultural remains retrieved from S.4 and 5 probably washed into the Northwest Depression over the centuries following La Sierra's abandonment, their numbers declining through time as the site was increasingly overgrown and rates of erosion declined.

The appearance of clay blanketing sand (S.2- 4 over S.1) suggests that those natural forces that produced the extensive clay deposits underlying and surrounding La Sierra resumed operation after a period of flooding. There is no clear evidence that the clays laid down in TS.2 and 3 were mined by La Sierra's prehistoric inhabitants; S.2-4 may have filled in a large borrow pit created and abandoned at some earlier date.

### Summary

Though not identical, the activity sequence in the Southeast and Northwest Depression exhibits a similar pattern. Both declivities were apparently dug in antiquity to obtain the clay found underlying later deposits in the southeastern basin (we can only presume that the same clay extends into the area covered by the Northwest Depression, blanketed by S.1). After reaching considerable depths (roughly 2m below ancient ground surface in the Southeast Depression) both pits were filled in by sand that was probably deposited during an episode(s) of intense flooding. Introduction of these riverine deposits might well have rendered further clay mining uneconomical. The considerable effort required to remove the detritus of inundations was not an attractive option when other clay sources were easily available just below the surface within and around La Sierra. The depressions now seem to have been converted into trash receptacles and were gradually filled with this debris as well as soil that gradually eroded in from the surrounding terrain. Even after roughly a millenium, these processes have not obliterated the depressions the centers of which are still 1-1.2m below modern ground surface. Such persistence is eloquent testimony to the original sizes of these open-pit mines.

### Chronological Summary

The earliest use of Op. 36 attested to in our excavations dates to the Early Classic (Late Classic I). Diagnostic ceramics dating to this span are found near Strs. 49, 50, 51, and in the clay underlying the Southeastern Depression. Late Classic I materials are invariably mixed with numerically dominant Late Classic II objects in the above areas. This association suggests that either the deposits in question pertain to a transition between the above periods or a relatively



small Late Classic I occupation was swamped by materials derived from its immediate successor. Whatever the status of these alternatives, it appears that little time separates the two intervals and we will refer to them together as 'Late Classic I, II.' Though no architecture can be unequivocally assigned to Late Classic I, II, there are signs that occupation in Op. 36 was substantial during these years. The deep trash deposit found off Str. 51's southern flank, much of which was apparently laid down now, points to a significant and enduring settlement nearby. If, as we suppose, most of the rise into which Str. 51-1st was built consists of debris jettisoned during Late Classic I, II, then Op. 36 was truly a focus of major occupation during this span. There are also signs that the Southeastern and Northwestern Depression were excavated over the course of the period in question. Not only are materials characteristic of Late Classic I, II found in the Southeast Depression's clay but trash dating to Late Classic II is associated with the first strata to fill these basins. The above pattern is most clearly seen in the Southeastern Depression where only Late Classic II diagnostics were identified in layers immediately overlying the clay. A few Late Classic III items were included with numerically predominant Late Classic II diagnostics in soils that we *presume* occupy an analogous stratigraphic position within the Northwest Depression (the clay level was not encountered in this basin). The Late Classic III diagnostics may have derived from higher levels.

All of the investigated edifices reached their final forms during Late Classic II, III. Based on the paucity of Late Classic III markers in relevant deposits at Strs. 49-1st, 50-1st, and 51-1st, the preceding edifices may have been erected relatively early within this span. Both the Southeast and Northwest Depressions continued to fill in with soil and debris now, though the sedimentation process certainly persisted well after occupation in Op. 36 ceased. Use of Op. 36 into Late Classic III is possible, though markers for this time period are not very common; if settlement extended into Late Classic III, it was not substantial nor was it clearly linked to any uncovered construction. There is no evidence of settlement at Op. 36 during the Early and Late Postclassic, both the investigated buildings and nearby basins having been largely abandoned by this time.

Settlement at Op. 36 seems to have been relatively short-lived but intense (compare the sequence with that reconstructed for neighboring Op. 12). The first recognized occupation (Late Classic I, II) is associated with a significant trash deposit and the excavation of two extensive depressions. The immediately following span (Late Classic II, III) sees the erection of four substantial edifices. The aforementioned declivities were seemingly abandoned by this time, now functioning primarily as trash containers. Late Classic III occupation is not well represented, and Op. 36 may have supported no more than a scattered population by this interval. The area was probably abandoned before the onset of the Postclassic.