CHAPTER 5

Methodology of Excavation

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Introduction

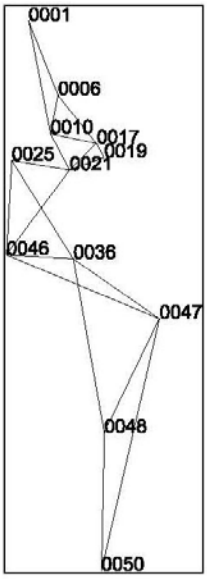
All excavations were supervised by JK and JAV, who on a daily basis defined the procedure, besides placing the grid system. Before initiating the excavations and once the grid was placed, Dr. Monsees proceeded with a gradiometric survey. The indication or not of anomalies in the subsoil defined interest areas for undertaking excavations. The excavation levels were arbitrary, of 20 cm each, with the exception of the first lot where the 20 cm could be exceeded or decreased, as it served to level the ground. If natural strata were identified, they would be excavated as such, depending on the particular circumstances. Whenever architectural traits were found, excavations were modified from vertical to horizontal ones, horizontally exploring the extension of the trait before going deeper. The material removed from the pit was sifted using a mesh of ¼ inch and placed in plastic bags, according to the lot; each bag was given a tag with the corresponding excavation data (Operation, Sub-operation and lot); the materials were sorted in different bags that contained ceramics, obsidian, lithics, charcoal, taxcal and others.

Immediately after returning from the field the excavated material was taken to the lab (see figures 5-2, 5-3, 5-4, 5-5 for the cards used during the 2004 season). This process was used to verify the data annotated in the field. For additional details on the cards and their practical use for storing and data handling, see Chapter 16.

For the absolute control of our references concerning elevations above sea level and UTM spatial positionings we have used Benchmarks, Datums and Subdatums. They are defined and listed in this chapter:

- Benchmarks (BM): This is how we refer to 12 permanent reference points established in the 2003 season by Dr. William Poe through the use of the Trimble 4000SSE Geodetic Surveyor and Trimble 4000 SE GIS Surveyor instruments (see Annex I) with a horizontal precision of less than 1 cm of error and a relative vertical precision in meters above sea level. They are expressed in UTM and MSNM (MASL, *meters above sea level*). The 12 points work as the spinal column in the site mapping. The BMs that PACH cemented in concrete with nails across the site amounted to a total of 50, of which only 12 now have a precise location established by instruments. These 12 points are distributed as follows:

Pt.	North[m]	East[m]	MASL	Ortom. [m]	Lat.	Long.
1	1617973.581	669048.916	923.002	923.542	N 14°37'47.53206"	W 91°25'49.44451"
6	1617552.483	669215.485	891.961	892.511	N 14°37'33.79321"	W 91°25'43.97581"
10	1617333.339	669172.466	875.928	876.491	N 14°37'26.67259"	W 91°25'45.46404"
17	1617276.653	669434.329	867.540	868.098	N 14°37'24.76914"	W 91°25'36.72681"
19	1617197.294	669477.489	866.650	867.209	N 14°37'22.17728"	W 91°25'35.30301"
21	1617125.241	669281.556	865.688	866.255	N 14°37'19.87709"	W 91°25'41.86687"
25	1617180.196	668953.578	863.268	863.841	N 14°37'21.73902"	W 91°25'52.81370"
36	1616621.490	669301.775	825.053	825.636	N 14°37'03.48189"	W 91°25'41.30784"
46	1616643.574	668923.492	827.989	828.581	N 14°37'04.28557"	W 91°25'53.94298"
47	1616280.877	669790.076	809.925	810.506	N 14°36'52.28914"	W 91°25'25.07043"
48	1615631.138	669477.474	759.801	760.412	N 14°36'31.21902"	W 91°25'35.66624"
50	1614847.696	669461.348	719.089	719.725	N 14°36'05.73166"	W 91°25'36.38635"
GUAT	1614480.619	767173.488	1521.572	1519.880	N 14°35'25.44851"	W 90°31'12.63839"



- Datum (D): This is how we refer to stations with absolute reference values, as of a Benchmark. They are expressed in UTM and MSNV, and are used to provide control over the excavation data of the different operations. In general, a Datum is the reference that governs all vertical measurements in any given operation;
- Subdatum (SD): They refer to the auxiliary control points of a Datum. Whenever the datum appears too far apart from a group of pits it is transferred to a substation, adding or reducing the vertical value accordingly. For example, Subdatum 3 in Operation 4 equals 0.20 m above the value of Datum 4.

Methodology used in Mound 15

The operation on Mound 15 has been abbreviated in PACH terminology as Operation 4. For Mound 15, JK picked the area in the reticule and established the grid. The southwest corner was used as benchmark No. 4 to provide an accurate UTM horizontal and vertical location; this work was accomplished by Juan Pablo Herrera, who also linked benchmark (BM) No. 6, of already known measures, with BM 4, allowing the establishment of a 20 x 20 m grid marked with flags on the four corners; this initial grid was divided in suboperations of 2 x 2 m each, numbered from 1 to 100. This area, which comprises 400 m2 (100 units of 4 m2 each) constitutes de initial grid *(retícula inicial)* (RI) for the excavation of Mound 15. When the need to expand the excavation to neighboring areas not included within the initial central area became evident, and to identify those new pits, we continued with the numbering used in the initial grid (RI) according to the orientation of the new suboperations. Thus, the RI shows the numbering of suboperations 1-100; to the east of the RI numbers go from 101 to 200; to the north, from 201 to 300; to the northwest, from 301 to 400, to the south, from 401 to 500, to the southeast, from 501 to 600, to the south of the latter, from 601 to 700, and to the west of the preceding ones, from 701 to 800 [Fig. 5-1]. Operations are described according to their numbering in an ascending order. For details to facilitate the search of data, see the illustrations of Chapters 6 and 7. The excavations at Mound 15 including those at Structure 15-1, jointly with the water conduits, took the first half of the 2004 season. The traits excavated within Mound 15 were correlatively numbered, with no differentiation between the excavations of the DBL (Structure 15-1) and the MCV (canals). The list of traits (see below) comprises both excavations.

By means of benchmark 4 at Mound 15 (defined with the total station), subdatums were derived to place them closer to the pits that were to be worked, and thus, during the excavation of each pit, the elevations of the four corners at the beginning of each lot were taken, to obtain a relationship and to understand the variety of the heights in the entire mound. When the pits were completed, we proceeded to create profiles and drawings of the excavations.

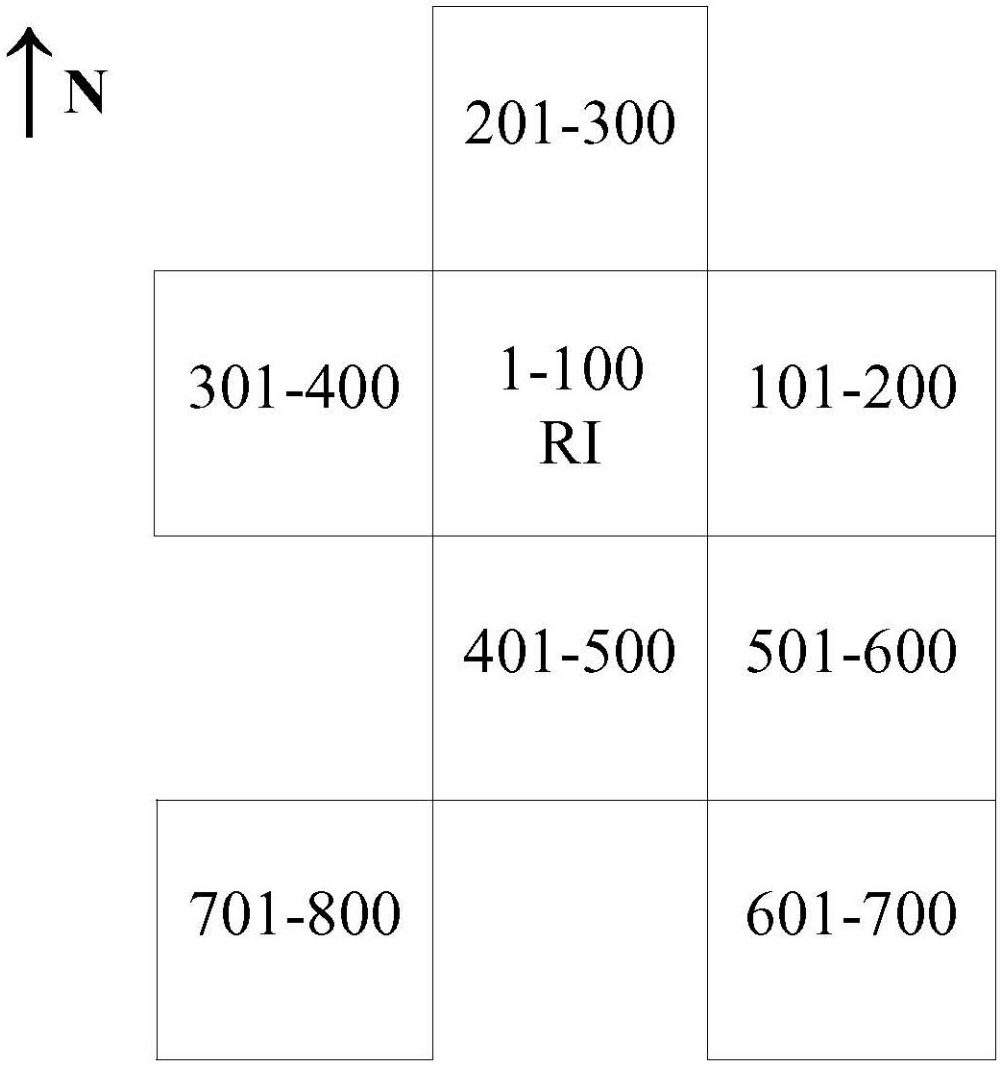


Fig. 5-1. Grid scheme, Operation 4.

Methodology used in Mound 5

In the PACH nomenclature, the operation on Mound 5 was abbreviated as Operation 14. A number of traits discovered during 2003 showed architectural remains of a permanent nature, with characteristics that indicated the need of a more extended research. The extensive grid excavation was also used in Operation 14, just as it has been described for Mound 15. The excavations were initiated after the gradiometric prospection conducted by Dr. Monsees, who studied an area on and around the stone alignments discovered during the past season, located at a depth of around 1 m from the surface and towards the east of the hill. Using the total station, the

permanent benchmark, BM 50 was the reference for all the vertical heights, whereby the Datums and Subdatums were established. The first grid of 20 x 20 m was outlined by triangulation and with the use of flags and metric tape, and whenever the excavation required it, additional 20 x 20 m grids were established around the original one. If our estimations are correct, it comprises most of the area we presently know as Mound 5, taking into account the depositional processes, the taphonomies, and the disturbances caused by plowing or other factors of human and natural alteration along the millenia.

Once the gradiometric survey was completed and locations with high concentration were identified, the excavations revealed stone walls, the north wall emerging as the first feature, followed by the east wall. Following a Cartesian method of excavation – as opposite to other methods used in the lowlands, where extended architectural constructions are excavated without an accurate control of the location of materials- the excavators were instructed to proceed towards the west on the wall, and towards the south on the east wall, thus obtaining accurate measurements controlled by the total station as of Datum 50. In addition to the horizontal search of features to delimit the platform, and at least in one occasion, a contemporary floor was found with the seat of the wall stones. Vertical investigations were carried out at the center of the platform, resulting in the discovery of a trait of burnt clay. Future investigations are contemplated regarding this precise trait, as everything is referenced in heights as of Datum 50.

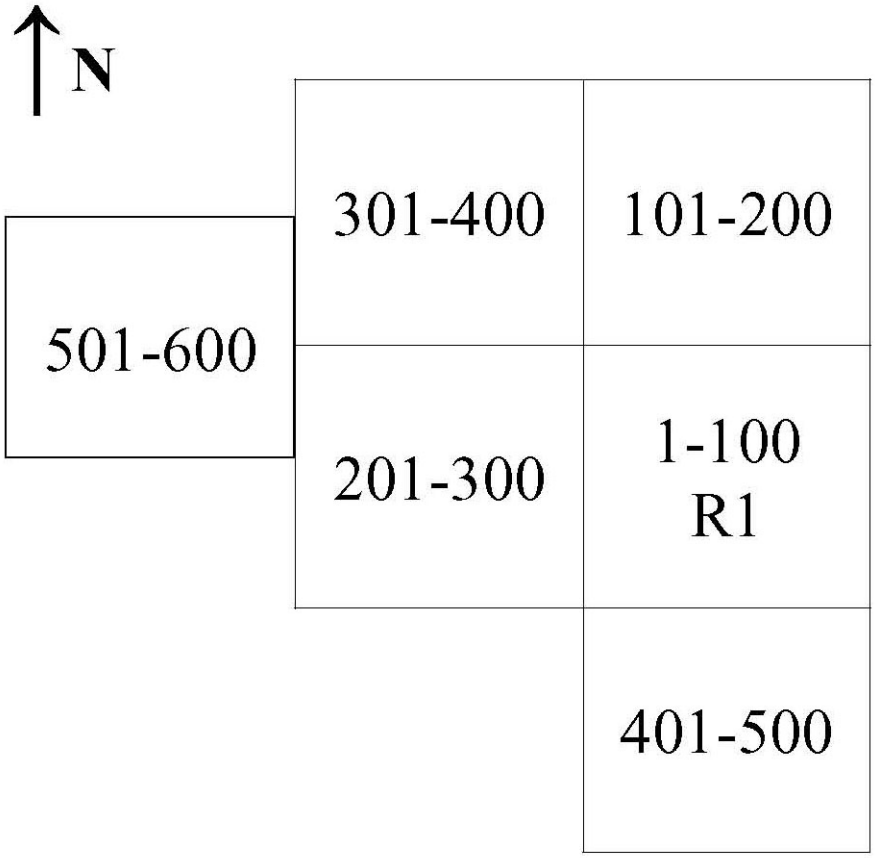


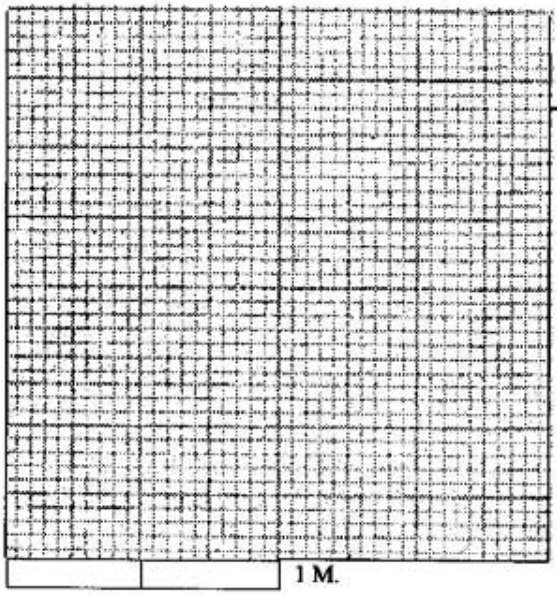
Fig. 5-2. Grid scheme, Operation 14.

PROYECTO ARQUEOLOGICO CHOCOLA
FICHA DE CAMPO N.2 UNIDAD DE EXCAVACION 2X2 M.

FECHA:	RESPONSABLE:			
OPERACIÓN	SUBOPERACION	LOTE	MC	ESTRUCTURA
DATUM / BANCO DE MARCA O REFERENCIA PARA LA ELEVACION				
PROFUNDIDAD DE ESQUINAS DEL POZO				
NO	SO	NE	SE	

DESCRIPCION

Fotografias anexas: SIGUE ATRAS



NUMERO DE BOLSAS CUENTA DE MATERIALES:	
CERAMICA	OTROS MATERIALES
OBSIDIANA	
MICA	
JADE	MUESTRA PARA FECHAMIENTO
PIEDRA TALLADA	
HUESO	MUESTRA BOTANICA
VIDRIO	
METAL	

Fig. 5-3. Field card, PACH 2004.

Ficha de laboratorio

<u>Cuenta de materiales</u>

Instrucciones:

Una vez el lote esté seco, reembolsado y reetiquetado , usted podrá llenar esta ficha con la cantidad de materiales por lote. No deje sin llenar la casilla **MC (muestra de campo)**

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Operación:	**Suboperacion:**	**Lote:**	**MC:**	EXCAVADOR:
CERAMICA:	MICA:	PIEDRA TALLADA:		METAL:
OBSIDIANA:	JADE:	VIDRIO:		OTROS:

Fig. 5-4. Laboratory card, PACH 2004.

PACH 2004 MUESTRA DE CAMPO (CADA LOTE) 1

FECHA	MUESTRA DE CAMPO	NUMERO PP	RASGO	ESTRUCTURA	CUARTO	OPERACION	UNIDAD O SUBOPERACION	LOTE	ELEVACION INICIAL	ELEVACION FINAL	RESPONSABLE	COMMENTARIO

Fig. 5-5. Card of field sample, PACH 2004.

PACH 2004: FICHA DE DESCRIPCIÓN DE ESTRATUM

<table>
<tr><td colspan="3">RESPONSABLES:</td><td colspan="3">FECHA:</td></tr>
<tr><td>Estructura:</td><td colspan="2">Cuarto:</td><td>Rasgo:</td><td colspan="2">Otro:</td></tr>
<tr><td colspan="2">CODIGO MUNSELL:</td><td>Lleno cultural?:</td><td colspan="3">Lleno no-cultural?:</td></tr>
<tr><td colspan="3" rowspan="2">Color de suelo:

Textura de suelo:</td><td>Deposito primario ☐</td><td>Alluvial ☐</td><td>Colluvial ☐</td></tr>
<tr><td>Redeposito☐</td><td>Aeolian ☐</td><td>Otro ☐</td></tr>
<tr><td>Ancha maxima:</td><td>Ancha minima:</td><td>Ancha media:</td><td colspan="3">Cemidor: ¼" ☐ ⅛" ☐ Ambos:☐ Otro:☐

Perfil dibujado? Si ☐ No ☐</td></tr>
<tr><td colspan="6">Ubicación y estratums asociados:</td></tr>
<tr><td colspan="6">Descripción del matriz de suelo (tipo de suelo, textura, consolidación, % inclusiones de rocas, frecuencia de artefactos, y otras caracterizaciones pertinentes: se usa guia del suelos)</td></tr>
<tr><td colspan="6">Disturbio (deflación, bioturbación, etc.)</td></tr>
</table>

Fig. 5-6. Layer card, PACH 2004.