

# FROM THE GROUND TO THE AIR TO THE COMPUTER: RE-CONCEPTUALIZING THE SITE PLAN FOR THE ARCHAEOLOGICAL SITE OF AL HUMAYMAH

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In 2022, Al Humaymah Excavation Project began creating a new site plan to contextualize better past archaeological work at Al Humaymah and to show the site's potential for future work. This preliminary report presents an introduction to the site and our methodology for creating the new site plan.

The archaeological site of Al Humaymah in southern Jordan contains important remains from the Nabataean, Roman, Byzantine, and early Islamic periods, as well as some evidence of later occupation up to the second half of the twentieth century (Oleson 2010: 50-62). According to a foundation myth preserved in Stephanus of Byzantium's *Ethnika* (Oleson 2010: 50-53), a Nabataean prince named Aretas, son of King Obodas, founded the town of Huwwārah here in the 1<sup>st</sup> BC under divine guidance. The Nabataean royal family would have been attracted by the site's excellent water catchment and its location on important trade routes, including those between Petra and their Red Sea ports of Ayla and Leuke Kome, as well as those heading further south to the lands of southern Arabia (through their border town at Hegra) (Oleson and Reeves: forthcoming). Huwwārah's strategic advantages of control over trade routes and an abundant water supply must likewise have motivated the decision of the Roman Emperor Trajan or his governor, Gaius Claudius Severus, to build a fort here soon after they converted the Nabataean Kingdom into the Roman Province of Arabia in the early 2<sup>nd</sup> century AD. The only forts currently known from that period are those at the large legionary headquarters at Bostra, the mid-sized fort at

*Hauarra* (the Roman version of the site name), and the small fort at Hegra. Situated in a sparsely populated desert but connected to Bostra (six days distant) via the primary north-south artery of the *Via Nova Traiana*, the fort at Huwwārah probably served as a southern base from which soldiers could be redeployed, as necessary, to Petra, Ayla, Leuke Kome, and Hegra. In the provincial reorganizations of the late third/early fourth century, Huwwārah's fort received a much smaller garrison and lost its significance as a supply base as it was now one of many small military bases located about a day apart in this region. By the early fifth century, the fort had been abandoned, but the site continued to thrive as indicated by the construction of at least five churches (Oleson and Schick 2013) and the town's high assessment in the Bi'r As Sabi' (Beer Sheva) Edict (Oleson 2010: 55). In the mid-seventh century, after the region came under Islamic control, Al Humaymah (as the site was then called) was purchased by the Abbasid family, who plotted the overthrow of the Umayyad caliphate from their *qaṣr* and mosque, located on the southeastern side of the settlement (Oleson 2010: 60-62). The site's Roman bath was likely reused at this time, and other structures across Al Humaymah were reconfigured for new domestic occupation (Oleson 2010: 61; Reeves 2019: 121). Most of this occupation came to an end in the mid-eighth century after the Abbasid family left for Damascus and an earthquake damaged the site. Around this time, the aqueduct ceased functioning and the *Hajj* route shifted east so that Al Humaymah was no longer a stop. Over

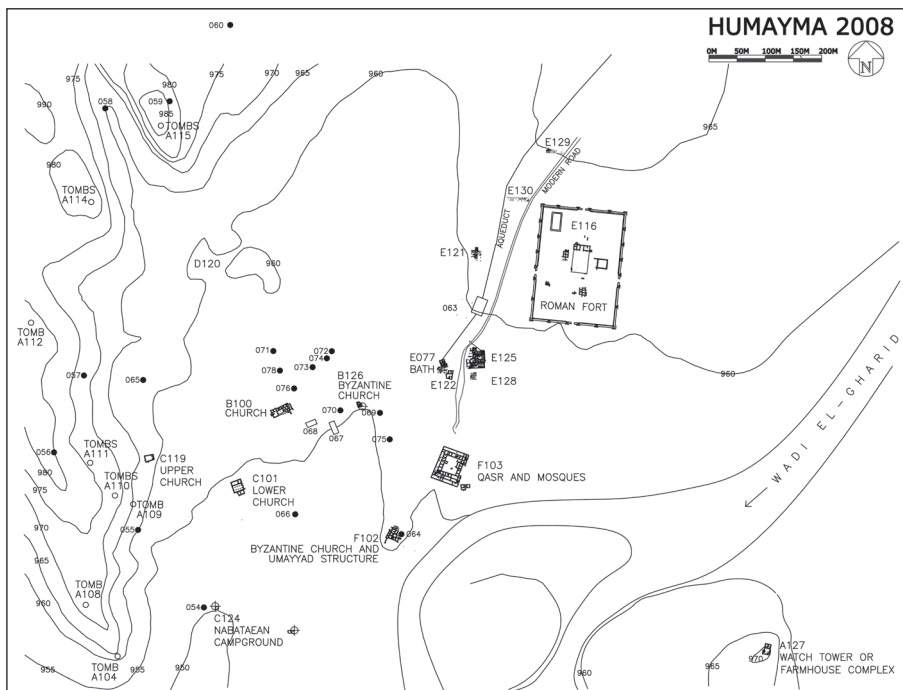
the next 12 centuries, the site was never again a significant settlement, but there is some evidence of small-scale occupation in the Abbasid, Fatimid, Ayyubid, Mamluk, Ottoman, and modern (Hashemite) periods (Oleson 2010: 1, 61-62; Oleson and Schick 2013: 13-16, 96, 163, 535, 554; Reeves *et al.* 2017: 116). Occupation amongst the ruins ended in 1979 when the archaeological site was created (Graf 1983: 659).

Archaeological work has been carried out at the site since the late 1970s, first as preliminary surveys (Graf 1979; Eadie 1984), then by the Al Humaymah Hydraulic Project (1986-1989; Oleson 2010), and finally by the Al Humaymah Excavation Project (led J.P. Oleson in 1991-2005 and M.B. Reeves in 2008-2014; Oleson and Schick 2013; Oleson *et al.*: forthcoming; Oleson, Reeves and Foote 2015; Reeves *et al.* 2009, 2017, 2018). Six plans of the main site were produced by these projects: Graf 1983: 658, Map 3; Eadie 1984: 215, fig. 3; Oleson 1990: 287, fig. 2; Blétry-Sébé 1990: 315; Oleson *et al.* 1993: 463, fig. 2; Reeves *et al.* 2009: 230 (**Fig. 1**), as well as two plans including features in the site's hinterland: Oleson 2010: 28, fig. 2.7; Reeves *et al.* 2018: 142 (**Fig. 2**). In accordance with the goals of the projects, these site maps only included buildings and features surveyed or excavated. Thus, for example, **Fig. 1**

shows hydraulic works, tombs, the Nabataean campground, the Roman fort, the Roman-early Islamic bath, Byzantine churches, and the Abbasid *qasr*, whereas **Fig. 2** shows quarries and graffiti sites. The only aforementioned map that does not place its emphasis on extensively studied or excavated buildings and features is the one produced by Blétry-Sébé (1990), which resulted from a preliminary ground survey of exposed wall lines across the site in 1989. Despite its inclusion of otherwise unillustrated buildings, this map was not incorporated into any subsequent site plan.

The differences in plans produced by the teams led by Oleson, Reeves, Eadie and Graf (who plotted what they had studied) versus Blétry-Sébé (who plotted wall lines visible during her ground survey) reflect scholarly decisions. The particular elements of the site included in **Fig. 1** versus **Fig. 2** likewise reflect decisions by investigators regarding what to emphasize.

A third approach was taken by Kennedy and Riley (1990: 147), whose map of Al Humaymah includes all the wall lines, field boundaries, and the mid-twentieth century construction discernible in a 1953 vertical photograph taken by the Hunting Air Survey. That 1953-based plan of the site succeeds in offering a better sense of the overall density of the ruins and patterns in their placement, but it lacks



1. Main site plan with areas excavated and surveyed by the Al Humaymah Excavation Project up to 2008.

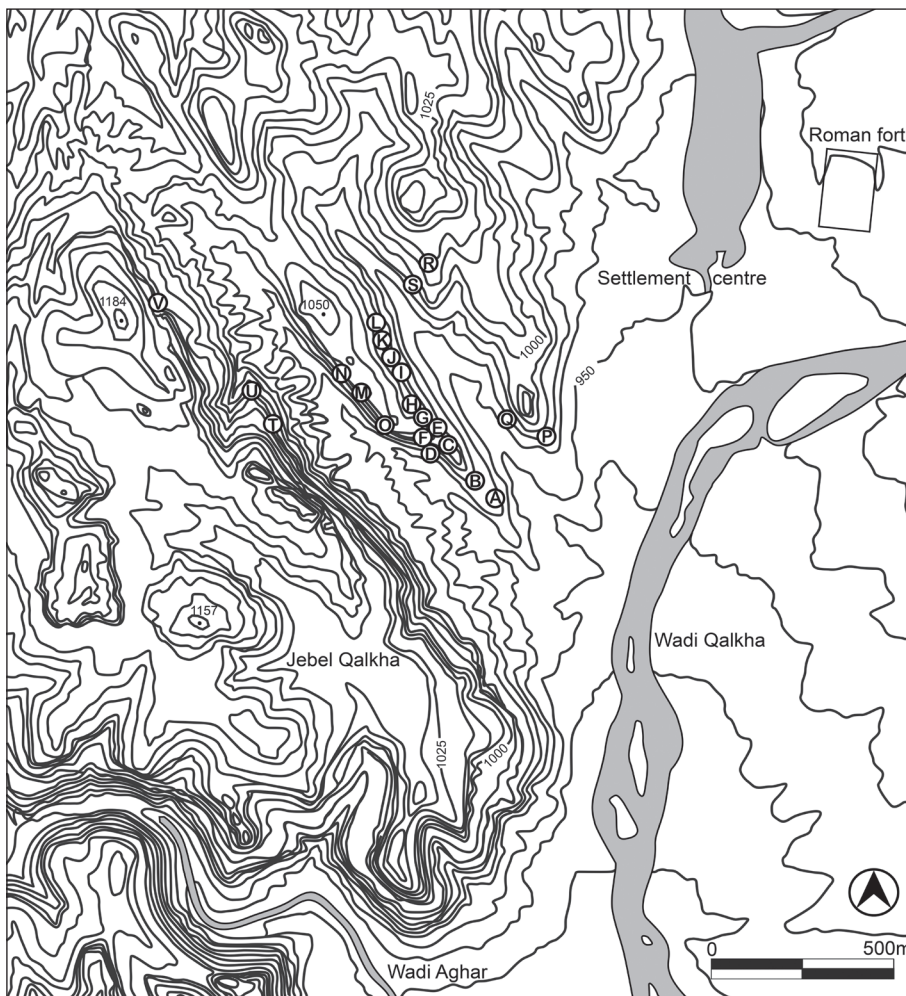
important details produced by the groundwork carried out since the late 1970s (including many entire structures).

The locations of those excavations and focused surveys have, however, been marked on more recent aerial photographs in the Al Humaymah Excavation Project's subsequent publications (Figs. 3, 4; Oleson 2010; Oleson and Schick 2013; Reeves forthcoming).

The goal of the present mapping project, begun in 2022, is to combine the strengths of the previous approaches in creating a new comprehensive site plan. This new plan will include all previously excavated and surveyed structures, significant modern landmarks (e.g. roads, the mid-twentieth century school, and the visitor's center), and other wall lines visible in satellite imagery and aerial photography. The satellite imagery to be used include the Esri World Imagery basemap as well as those from Google and Bing. Aerial photographs to be consulted include tethered balloon images created for the

Al Humaymah Excavation Project by J. Wilson Myers and Eleanor Myers in 1992 (e.g. Fig. 3, Oleson *et al.* 1993: 488) as well as helicopter and plane images supplied by APAAME (The Aerial Photographic Archive for Archaeology in the Middle East) (Fig. 4) and Jane Taylor (e.g. Oleson *et al.* 2015: 1).

The new Al Humaymah site plan will be created using ArcGIS Pro and will combine all aforementioned sources into a geo-referenced map of the site. Using the Esri World Imagery basemap as a base layer, we will overlay shapefiles from the project's 2008 AutoCAD generated map of the excavated and surveyed structures. Initial work on this step has already revealed that, while the orientations of the structures in the AutoCAD drawings are fine, the relative placement of some of these structures is incorrect, a distortion previously suspected for several years. We will use the satellite imagery to correct the relative placement of the drawn structures and will then overlay and trace those



2. Topographic plan showing location of petroglyph and quarry sites surveyed by the Al Humaymah Excavation Project in 2014.

excavated since 2008. With the placement of excavated areas brought up to date, we plan to add visible wall lines of unexcavated structures, modern buildings, and roads to the plan using satellite imagery with the aid of aerial photographs. We will also extend the boundaries of the site plan, particularly to the west, in order to include additional surveyed sites. We will then add topographic contour lines from the 1957 Hashemite Kingdom of Jordan 1:25,000 topographic map, and more recent satellite imagery.

Harvey will take the lead in creating this updated and more complete plan, which promises not only to provide a more accurate reflection of the excavated and visible remains at Al Humaymah, but also to help contextualize struc-

tures in upcoming publications. It is also hoped that this new plan will aid future research at Al Humaymah by contributing to a better understanding of the site's organization, significance, and potential for future archaeological investigations.

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3. 1992 balloon photograph with locations marked for excavated churches (B100, B126, C101, C119, F102), Abbasid qasr (F103), and Nabataean campground (C124). (Courtesy of John Oleson.)



4. 2016 helicopter photograph facing east with labels added for buildings and features studied by the Al Humaymah Excavation Project. (APAAME\_20160919\_DLK-0097. Photographer: David Kennedy. Courtesy of APAAME. Labels added by M. B. Reeves.)

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