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Barbara J. Hickman

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Archaeological Testing at an Eolian Depression along U.S. 281 in Brooks County, Texas

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ARCHAEOLOGICAL TESTING
AT AN EOLIAN DEPRESSION ALONG
U.S. 281 IN BROOKS COUNTY, TEXAS
CSJ 0255-04-051, 0255-04-065,
0255-04-049, 0255-05-023

by

Barbara J Hickman

Frank A. Weir, Ph.D.
Principal Investigator

Texas State Department of Highways
and Public Transportation
Highway Design Division
Austin, Texas

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ABSTRACT

An eolian depression within the proposed right-of-way for U.S. Highway 281 was examined in subsurface testing by an archaeologist with the State Department of Highways and Public Transportation. Using both mechanical and manual methods, two trenches and a test unit were dug at the topographic feature to evaluate the location's potential for cultural resources. No historical or prehistoric artifacts were identified, and in the absence of archaeological materials, no further work is recommended for the eolian feature.

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INTRODUCTION

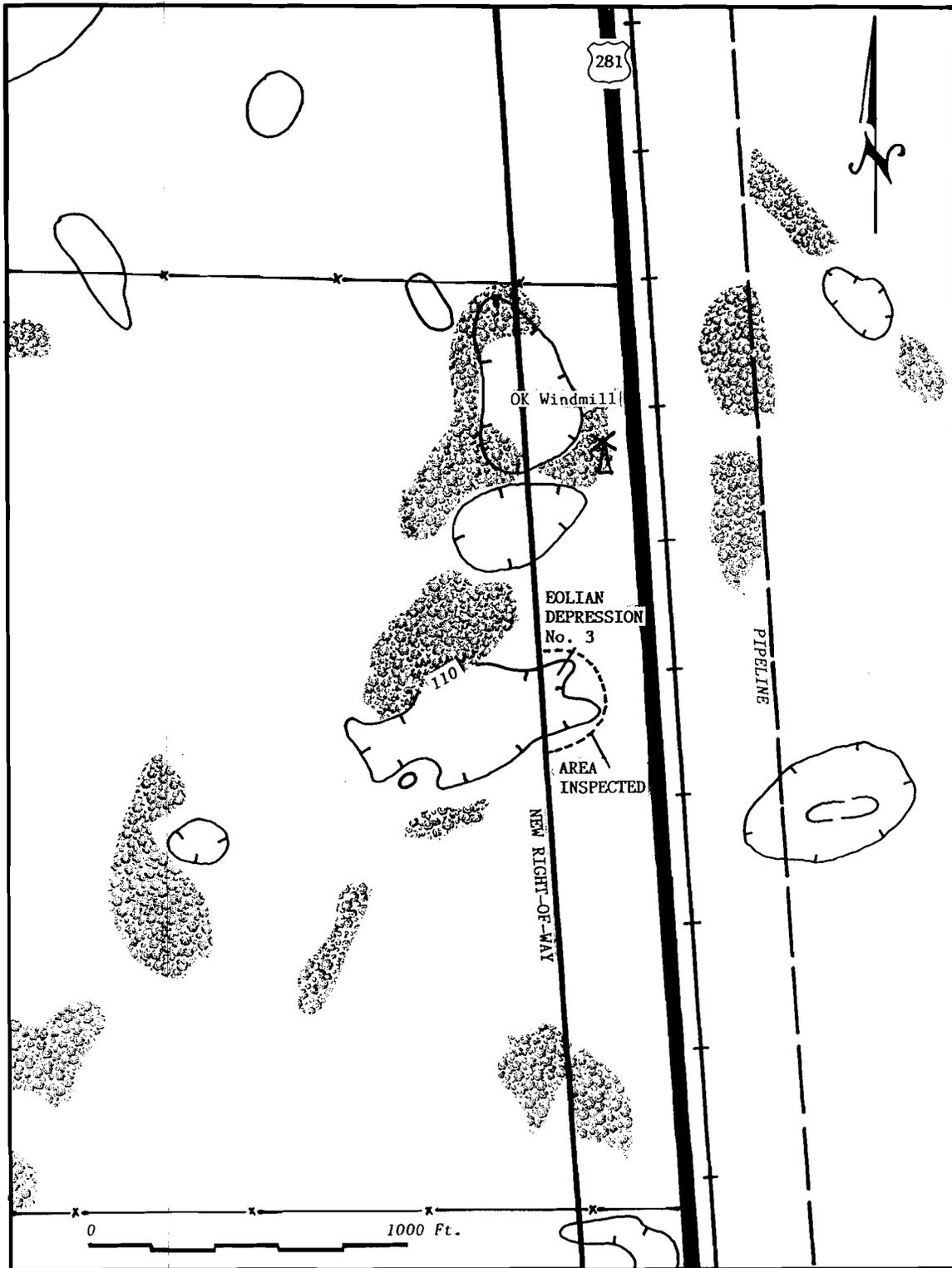
On March 4-5, 1991, an archaeologist from the State Department of Highways and Public Transportation (SDHPT) conducted subsurface testing at a location south of Falfurrias, Texas (Figure 1). The SDHPT archaeologist met Salvador Mercado, resident engineer from Hebbronville, at the eolian depression on the west side of U.S. Highway 281 across from the Border Patrol station. Also present was a backhoe crew from the SDHPT office in Falfurrias, composed of Johnny Carbajal, Ray Nino, and Rudy Perez.

The topographic eolian feature is partially located within the U.S. Highway 281 right-of-way (ROW) expansion. Less than one-quarter of the depression lies within the ROW boundary fence. Although no cultural resources were ever identified at the location, testing was recommended at the time of the original surface inventory in 1980, based on excavations west of Falfurrias (Tribble 1980:12).

In March, April, and June, 1980, James Tribble of the Texas A&M University Cultural Resources Laboratory surveyed a 400 ft. (121.9 m) wide ROW along the western edge of U.S. 281 and a 100 ft. (30.5 m) corridor east of the highway. The survey transect extended from FM 3066 at Baluarte Creek south of Falfurrias to the Brooks/Hidalgo County line, a distance of 28.4 miles (45.8 km). No prehistoric or historic sites were located in the survey east of the highway, but three sites were recorded in the western ROW. The cultural resources include Trosada Well, the Halfway Tree, and an isolated lithic artifact (Figure 2).

Trosada Well, 41BK5, is an historic water well with an associated containment structure. The Halfway Tree, given a trinomial site number of

FIGURE 1. Location of Eolian Depression South of Falfurrias, Texas.



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41BK6, is a huge live oak which marks the midpoint between Falfurrias and Encino. The assumed prehistoric site 41BK7 consisted of one chert "tool" found at Chorro Windmill. In addition, Tribble identified four possible "bogs" or eolian depressions in the proposed ROW; he recommended that more analysis was needed for the topographic features, given the potential for buried cultural remains.

Archaeologists from the SDHPT resurveyed the proposed ROW on March 25, 1981 and inspected the seven localities identified in Tribble's report. Site 41BK5, the Trosada Well, was deemed not eligible to the National Register of Historic Places (NRHP), as was 41BK7, the isolated artifact. The live oak tree (41BK6) is outside the proposed project ROW and will not be affected by construction.

The first depression, listed as 4.6 km (2.8 mi.) north from the Brooks/Hidalgo County line, was ascertained to be a 1920s era borrow pit refilled in 1959. The SDHPT letter of April 14, 1981 to the Texas Historic Commission describes the fourth depression, situated 39.7 km (23.4 mi.) north of the county line, as wholly outside the ROW and not affected by the project. Testing was considered necessary at depression number three, however.

A letter from Dr. Laverne Herrington of the Texas Historical Commission dated April 29, 1981 gave concurrence for a testing program at the third eolian depression 37.8 km (23.4 mi.) north of the Brooks/Hidalgo County line. The actual testing plans were delayed until February, 1991, when the Environmental Section of the SDHPT was notified of the impending construction contract scheduled for April, 1991.

The following sections briefly detail the scope of work and testing results at the topographic locality.

ENVIRONMENTAL SETTING

Blair (1950:102) has described the South Texas region as the Tamaulipan Province. The semiarid climate and high temperatures combine to produce a harsh landscape dominated by thorny brush. Vegetation observed at the location is restricted to *tasajillo*, prickly pear cactus, mixed bunch grasses, forbs, and wildflowers. The closest stand of trees is at the OK Windmill about 200 meters to the north.

The depression held no water during the visit. The closest drainage is Baluarte Creek 5.1 mi. (8.2 km) north, and Baluarte is only ephemeral. Moisture resulting from rainfall tends to sink into the sand rather than collecting in streams. The depression appears to contain water briefly after the infrequent rains, judging from the surface evidence. Small sand crab shells were visible on the floor of the depression. The only living fauna seen were the numerous small lizards which populate the sand sheet.

The surface geology is marked by loose, fine-grained sand of Holocene deposition (McGraw 1984:5). Most of the deposition occurs as an unconsolidated sand sheet rather than dunal forms. The semistabilized areas of sand are anchored in place by the vegetation. A low angle sand sheet in the form seen at this location is texturally homogeneous with somewhat regular lamina in deposition caused by wind ripples (Ahlbrandt and Fryberger 1982:34). Scouring by wind tends to form these slightly blown out depressions where moisture collects temporarily.

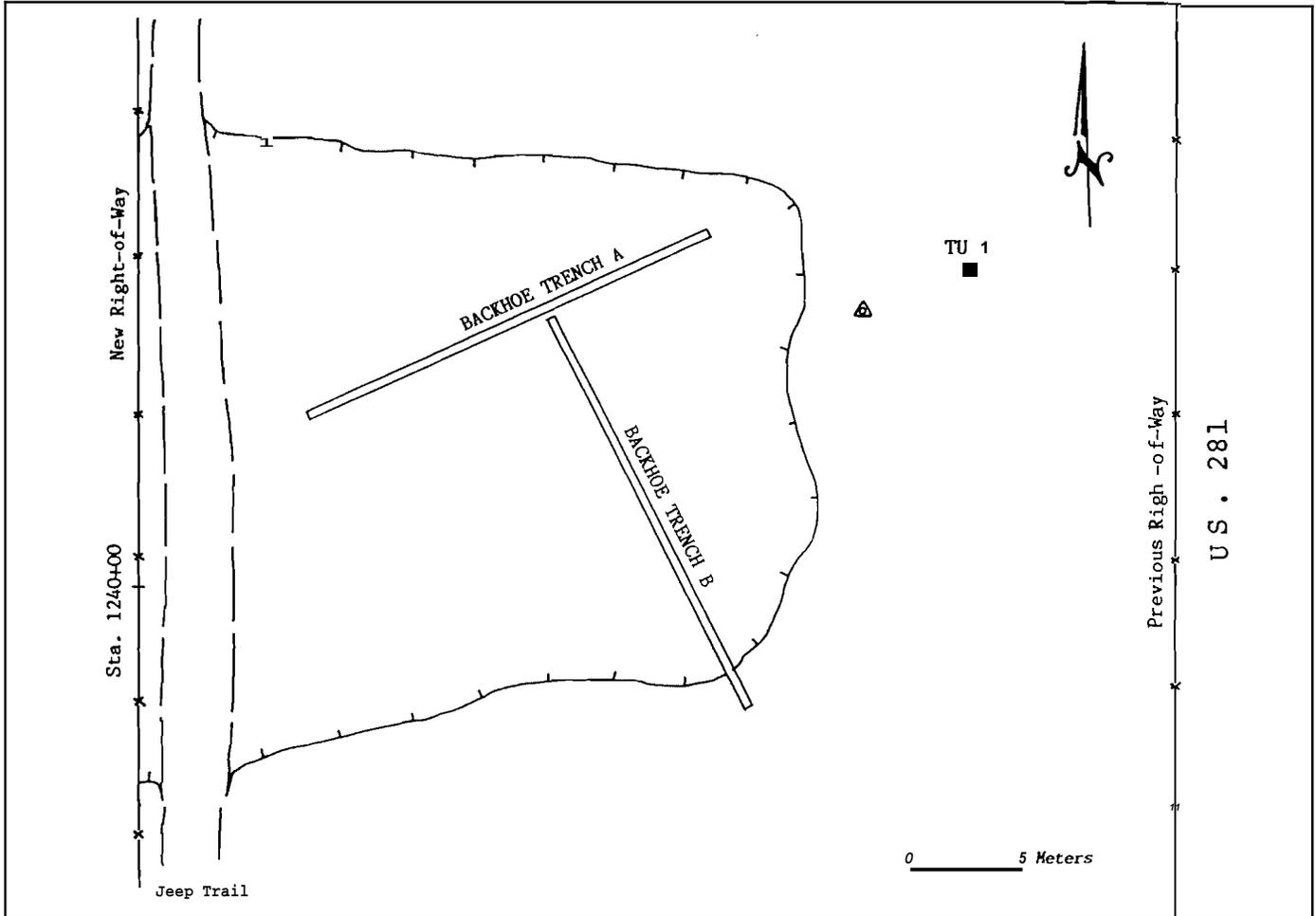
METHODOLOGY AND RESULTS

Plans for testing at the depression involved the use of both backhoe trenches and a hand dug test unit. Before work began, the surface area at the location was closely examined to determine placement of the subsurface units. No cultural materials were found on the ground surface to indicate the presence of an archaeological site. The location showed extensive disturbance from heavy equipment used by the landowner in constructing the new fence. A backhoe trench (BHT) was cut northeast to southwest across the floor of the depression; the resulting 19 m long trench was labeled "A". Testing was conducted only within the eolian feature lying east of the new ROW fence. Another 19 m trench, BHT B, was placed perpendicularly to BHT A, trending northwest to southeast (Figure 3). Backhoe Trench B sampled not just the depression floor, but extended up to the grassy bank of the slope. The width of each trench averaged **50** cm across. Test Unit 1, a 1x1 m square, was dug by hand east of BHT A in the grassy, semistabilized sand sheet.

The backhoe trenches were dug with the archaeologist standing next to the machinery, monitoring soil removal from the trench. The backhoe operator was instructed to make shallow cuts, allowing the archaeologist to identify cultural materials such as hearths or stone alignments while still relatively intact below the surface. Ordinarily, trenches are dug to a sterile level of clay or bedrock, but these two trenches were dug only to a depth of **2** meters to maintain safe trench walls without scaffolding. A true sterile layer appears to be much deeper than is accessible with a narrow backhoe cut.

No stains or other cultural features were observed in the trench profiles. Some of the backdirt from the trenches was screened through a **.25**

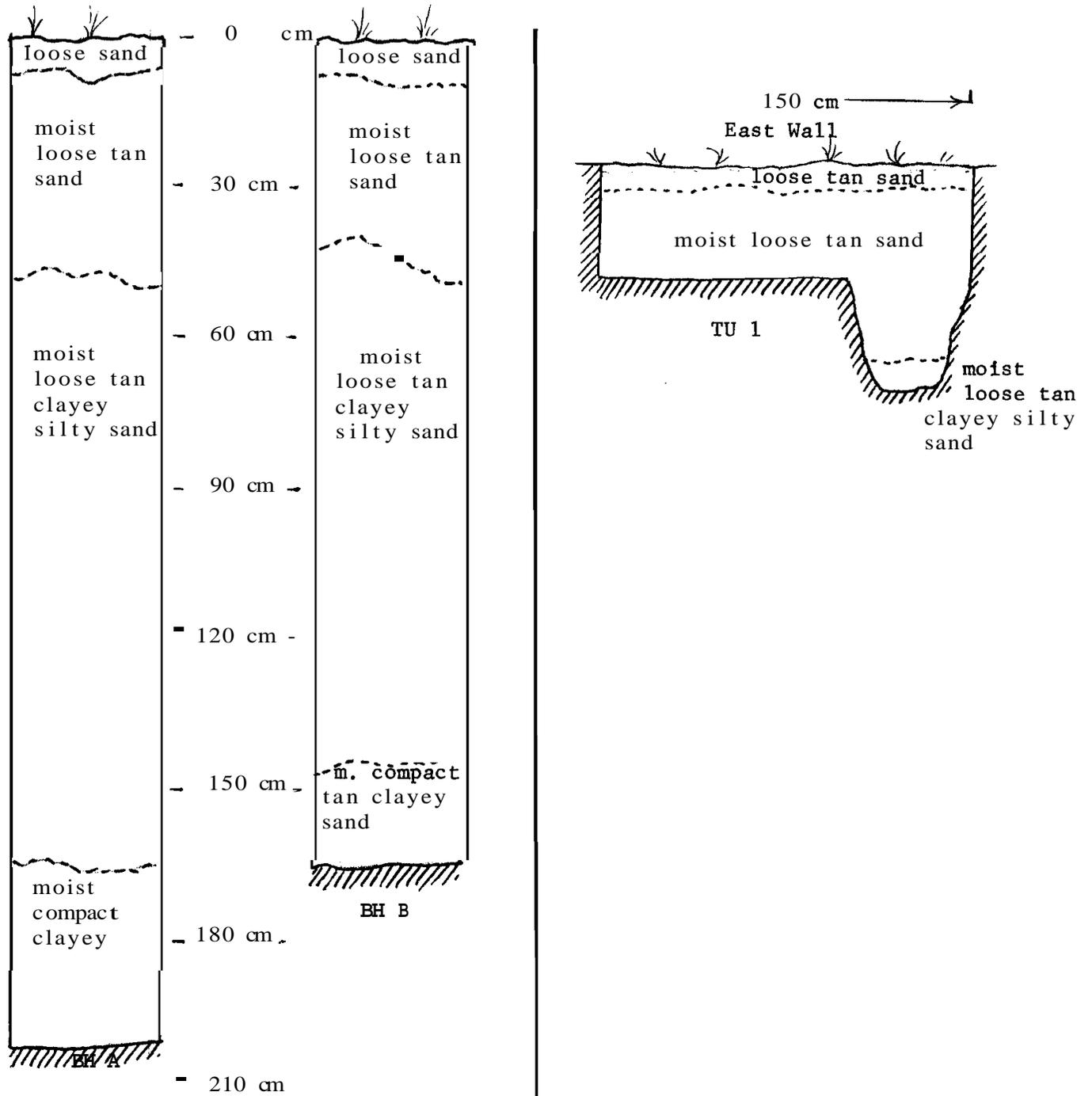
FIGURE 3. Site Map of Eolian Depression, Showing Backhoe Trenches and Test Unit



in. mesh without success. No artifacts were seen in the fill. Lithic materials were absent even in gravel form. The soil was uniformly loose, tan sand which became darker from moisture in deeper strata. Below approximately 1.5 m, clay increased in the sandy fill. Large nodules of caliche were unearthed at the lower levels of the trenches. Backhoe Trench B closely resembled BHT A in all respects, including the lack of cultural material. A close inspection of the trench walls revealed little difference in stratigraphic profile; the fill tended to be homogenous (Figure4).

The soil in Test Unit 1 was shoveled through a .25 in. wire mesh screen. Each level was dug in 10 cm increments; at the floor of a level, a unit level record form was completed, and a photograph of the unit was taken. The 1x1 m unit was fully excavated to 30 cm without finding a single piece of cultural material in the fill. The fill was a uniformly loose, tan sand with no mottling or staining. Small nodules of caliche were found, but no lithic materials were present, including gravel. Wall profiles in the test unit revealed little differentiation in soil composition. Soil samples were collected in TU 1, and the SE quad of the square was dug down to 60 cm to allow soil sample retrieval from the lower strata. At 60 cm the soil had a higher clay content, but the fill was still an uncompacted sand.

FIGURE 4. Soil Profiles from BHT A, BHT B, and TU 1.



RECOMMENDATIONS

Due to the complete absence of cultural materials at the eolian depression, no further work is recommended for the locality. The absence of artifacts and lithic raw materials or any evidence of human occupation suggest that the depression cannot be considered an archaeological site. Although eolian depressions may have evidence of human occupation elsewhere in Brooks County, testing indicates that no archaeological site exists at this location.

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