

**ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS
FOR THE MISSION ROAD REALIGNMENT PROJECT,
SAN ANTONIO, TEXAS**

Joseph H. Labadie

With Contributions by

**Anne A. Fox,
David D. Turner, and
I. Wayne Cox**

**Center for Archaeological Research
The University of Texas at San Antonio
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ABSTRACT

The Mission Road Realignment Project proposes to relocate the current position of Mission Road, which transects the original Mission Concepción quadrangle, farther west and in the vicinity of the road's 18th-century location. Archaeological testing conducted by the Center for Archaeological Research sought to determine if significant cultural resources would be adversely impacted by the road relocation project. Intensive testing established that no significant remains were located within or adjacent to the proposed right-of-way.

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The project would also like to thank the National Park Service Rangers for their help during the two weeks of field work. The project gratefully acknowledges the "surgeon's touch" that was employed by the backhoe operator from Wright's Backhoe Service.

Official visitors during field work included Betty Bueche from Los Compadres de las Misiones, Jose Machado and Edna Rivas from Capital Projects Management, City of San Antonio, and an 8th-grade class from Page Middle School in San Antonio.

INTRODUCTION

Mission Nuestra Señora de la Purísima Concepción de Acuña (41 BX 12) is designated a State Archeological Landmark, a National Historic Landmark, and is listed on the National Register of Historic Places (Scurlock and Fox 1977:11). In 1978, the San Antonio Missions National Historical Park was established by the National Park Service (NPS), and Mission Concepción was then placed within the NPS jurisdiction.

The investigations were conducted by the Center for Archaeological Research (CAR), The University of Texas at San Antonio (UTSA), under contract with the National Park Service. The project was initiated in 1985 (John W. Rinehart, letter dated September 20, 1985), but was put on hold. The project was reinitiated in 1987 (John W. Rinehart, letter dated January 26, 1987) and was carried out during February 2-12, 1987. Thomas R. Hester (director of the CAR-UTSA) served as the principal investigator for the project.

Jack D. Eaton (CAR-UTSA associate director) and Anne A. Fox were coprincipal investigators. Anne A. Fox was the overall project director, and Joseph H. Labadie was field director. These investigations were conducted in advance of the Mission Road Realignment Project to comply with Section 106 of the National Historic Preservation Act of 1966 (as amended) and its implementing regulations 36CFR800.

The Mission Road Realignment Project (Fig. 1), as proposed in plans submitted by the NPS (Southwest Region), was designed to relocate Mission Road from its current position and all underground utilities to the west. The existing Mission Road transects the western portion of the old quadrangle of Mission Concepción. The new right-of-way will roughly follow the original location of Mission Road that was abandoned in the late 19th century.

During the late 1950s or early 1960s, much of the current project area had been repeatedly scraped with a bulldozer by one of the Fathers from St. Joseph's

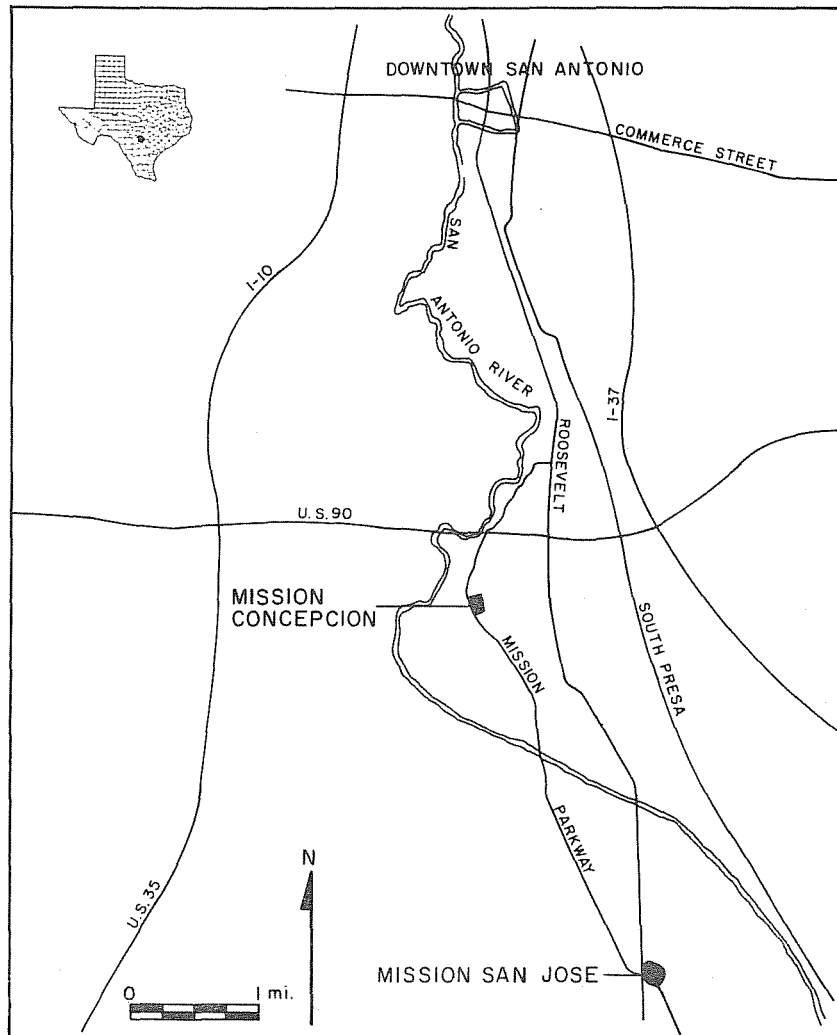


Figure 1. Location of the Mission Road Realignment Project.

Orphanage. The bulldozer filled in portions of the original rock quarry, at least one acequia, and essentially removed all surface remnants of walls and other archaeological features west of Mission Road. These activities had made it very difficult for previous archaeological testing (Scurlock and Fox 1977) to locate and identify the exact location of the west wall of the original mission quadrangle.

Various historical documents (see Historical Background section) suggested that at least one, and possibly as many as three, acequias and/or laterals had been filled by bulldozing. Because of the surface scraping, it was anticipated that very little (if any) original ground surface existed, and any historical features to be found would be intrusive features, such as an acequia.

HISTORICAL BACKGROUND

(Anne A. Fox)

MISSION CONCEPCION

The following summary has been compiled from a number of sources, concentrating primarily on events that pertain to the area in question. For a more complete history of the mission, we recommend Father Marion Habig's (1968) book; *The Alamo Chain of Missions, A History of San Antonio's Five Old Missions*.

Mission Nuestra Señora de la Purísima Concepción de Acuña was founded in the late 17th century in the western part of what is now Nacogdoches County in east Texas. When the Presidio de Nuestra Señora de los Dolores de los Tejas was abandoned in 1729, Mission Concepción was moved to the Colorado River, then in 1731 was moved again to the San Antonio River south of the settlement of San Antonio de Bexar (Habig 1968:123-124). The site chosen had previously been occupied, probably by Mission San José y San Miguel de Aguayo. By this time, Mission San José had moved downstream (Habig 1968:86), but the mission acequia was probably still in operation.

After the site was chosen, temporary buildings were constructed, and the work of the mission began. By 1745, a stone wall had been constructed to surround the mission compound, and a new stone church was under construction (Habig 1968:128-129). Stone for these improvements was taken from a quarry outside the southwest corner of the mission compound (Ivey and Thurber 1984:3-56-357). The mission fields were irrigated by a branch of the main acequia that ran through the compound (Habig 1968:133).

The mission was partially secularized in 1794, at which time part of the mission property was divided

among the remaining Indian families (Habig 1968:141). Final secularization did not take place until 1824, when the mission church was signed over to the care of the Rev. Francisco Maynes, the military chaplain of San Antonio and pastor of San Fernando Cathedral. Local Spanish residents had moved into the area in the early part of the century and established farms which they irrigated from the acequia and its branches. The property outside the west wall of the mission was sold by the Mexican government to Ygnacio Chavez in 1823, and the other land surrounding the mission was also sold at about this same time (Ivey and Thurber 1984:3-61). In the mid-18th century, Mission Concepción had been a large and thriving mission with Indian quarters around the outer walls and various other auxiliary structures. By 1820, only the church and *convento* were still standing, surrounded by "heaps of rubbish" (Hatcher 1919:59).

The Republic of Texas in 1841 confirmed title of the mission churches and some of the surrounding land to the Catholic church (Habig 1968:148). However, it was not until 1855 that the Society of Mary occupied the mission, restored the church, and operated a farm to supply their newly opened school in San Antonio (Schmitz 1931:41-44, 47). In 1859, the Society of Mary actually assumed ownership of the mission and the surrounding land (*ibid.*:45-46). The brothers continued to live there for 10 years, after which the mission was leased to a succession of local citizens until, in 1911, the Society of Mary relinquished title to the diocese (Schmitz 1931:47).

Mission Road was rerouted in 1890 to cut through the center of what had once been the compound (BCDR Vol. 54:85). By this time, there may not have been anyone alive that remembered the original location of the surrounding walls.

In 1912, St. John's Orphanage for boys on the grounds of the Santa Rosa Infirmary was destroyed by fire. The following year, it was replaced by St. Peter's Orphanage on the land to the west of Mission Concepción. When a new wing for girls was added in 1929, the name was changed to St. Peter's-St. Joseph's Home (Wangler 1974:44).

The Concepción acequia was used intermittently into the early years of the 20th century. It appears on many 19th-century maps and deed plats. Sometime in the 1920s or 1930s it was filled in, and its location, in fact even its presence, was gradually forgotten. A religious grotto was constructed in the old quarry, various playing fields were constructed for the orphanage, and the area was graded until all evidence of the mission wall ruins and the acequia was completely obliterated (Richard Garay, personal communication).

The church at Mission Concepción has continued in use to the present as a parish church. The site has gradually become a popular tourist attraction as one of the four San Antonio missions. In 1978, the San Antonio Missions National Historical Park was established (Cisneros 1980), administered by the National Park Service. With the moving of the Mission Road outside the original wall lines, the integrity of the mission boundaries will at last be restored.

THE PAJALACHE OR CONCEPCION ACEQUIA (I. Wayne Cox)

The exact date of construction of the Concepción acequia has never been reliably established. It is claimed by some to be the oldest of the venerable irrigation systems to service the city (Corner 1890:43; Arneson 1921:123). A construction date of 1729 is based on the establishment of Mission Nuestra Señora de la Purísima Concepción de Acuña at its present location (Habig 1968:123). The initial establishment of the acequia may have been even earlier if its purpose was to provide irrigation for the first site of Mission San José y San Miguel de Aguayo, established one league south of the Villa de Bejar in March 1720 (Heusinger 1951:3). Others consider the acequia for San Antonio de Valero (the Alamo) to be the oldest (Holmes 1962:7; Burkholder 1976:8; Buck 1980:5). By 1724, the Alamo acequia had reached a point within one league of the mission (Barker 1929:36-38). The fact that the Alamo ditch crossed the Concepción ditch in a "canoa," or hollowed log, at the intersection of Mill and Garden Streets (now near the juncture of South Alamo and South St. Mary's Streets), would seem to indicate that the Concepción ditch predated the Alamo acequia south of the mission (Corner 1890:43; Burkholder 1976:9). The "canoa" was later replaced by a "substantial arched stone aqueduct, which exists now, only the arches have remained buried since the disuse of the Pajalache" (Corner 1890:43). In fact, the first acequia was initiated from San Pedro Springs when the villa and presidio were established by Governor Alarcon in 1718 (Celiz 1935:86), but the exact location of this early effort has not been established.

The Concepción acequia began at the dam built across the river a short distance above the town ford at the present crossing of Presa Street. From the dam a deep cut, some 20 feet deep, followed the line of Garden Street (now South St. Mary's Street) to Grove Avenue, where it veered toward the west and ran just east of Mission Concepción (Corner 1890:43; *San Antonio Express* July 29, 1893; Schuhart n.d.). It then followed to the east of Mission Road until its return to the San Antonio River south of Riverside Drive.

This was, of course, the primary channel of the acequia; throughout its coarse lesser ditches, or laterals, the waters provided both irrigation and drinking water to property owners on both sides. These irrigation ditches served as the municipality's primary source of water for its first century and a half. Even after the establishment of the Municipal Water Works in 1878, several of the acequias continued to provide areas of the city with water (Sibley 1973:131). One of the acequias, the Espada, remains in use at the present time.

The Concepción acequia became the first of the major irrigation systems to be abandoned. In 1869, a number of citizens petitioned for the immediate removal of the dam because it created "too great an obstruction to the river current and a nuisance to the city during flood times" (Corner 1890:43). Their petition was upheld by the Texas Supreme Court, and a proposal for its removal was placed before the city council and approved (*City Council Minutes* Volume D March 23, 1870). The following month a recommendation for the "speedy filling up of the Concepcion ditch" was presented and approved (*City Council Minutes* Volume D April 11, 1870). In order not to deprive the downstream users of all water, a portion of the Alamo acequia was diverted, near the old aqueduct at Alamo and Martines Streets, into a smaller channel to the east of Presa Street to Labor Street. There it crossed to the west of Presa Street and continued to a point north of Grove Avenue, where it turned westward to join the old Concepción ditch (Corner 1890:43; Schuhart n.d.). This new routing continued to service the area with water until the Alamo acequia was abandoned sometime after 1893 (Everett 1975:13). However, the acequia probably remained an open ditch for several years after the turn of the century, since there would have been no reason to expend the time or expense to fill it in. The date of the final obliteration of the ditch is currently unknown.

RESEARCH DESIGN

Testing within and adjacent to the proposed right-of-way of Mission Road sought to address five specific research questions that had been raised from previous resource management projects at Mission Concepción. These questions were:

1. Did the somewhat linear alignment of trees along the northern NPS property line coincide with the location of an acequia?

2. Scurlock and Fox (1972) noted a gullylike feature, possibly an acequia, in their test units 42 and 43. Could this feature extend eastward to within the proposed right-of-way? Was it an acequia?

3. Several deed records (cf. Ivey n.d.:Fig. 1) suggested the potential location for a third acequia within the current right-of-way. It would be located just east of the present-day NPS parking lot for visitors to Mission Concepción. If present, the acequia would most probably be a small lateral from the larger Pajalache ditch which connected all the missions. This ditch would have begun north of the mission, and the water would have run downhill to the west for about 1/4 mile (and across the proposed right-of-way) before emptying into the San Antonio River.

4. Were there any significant structural remains, associated with Mission Concepción, located in the vicinity of the former west wall or within the right-of-way?

5. A previously unpublished photograph of Mission Concepción, taken in about 1880, was made available to this project. Could our project identify the exact location where the photograph was taken? If so, could an estimate for a point where a depicted acequia might traverse the right-of-way be calculated?

SURVEY INVESTIGATIONS

FIELD PREPARATION

Prior to the commencement of the CAR-UTSA archaeological field work, the center line for the new right-of-way had been surveyed and staked by a private contractor. The overall width of the new right-of-way (60 feet), to include the precise location of the shoulders, sidewalks, and utility easement, had also been staked and flagged in various colors. Survey station numbers began at the north end of the project area (1 + 00) and extended south (14 + 00) to where the new right-of-way joins the existing Mission Road right-of-way.

The CAR-UTSA investigations utilized a previous east-west archaeological base line established by Scurlock and Fox (1977). This base line was re-established by setting up a transit over the northeast corner (WO NO) of the mission quadrangle well. The former base line terminated at W70 NO but was extended to W130 NO, which transected the current project area and terminated very near the westernmost NPS property boundary. A second base line, oriented along magnetic north-south, was laid out along the center line for the new right-of-way and crossed the east-west base line at W120 NO. These two base lines were then used to grid the entire project area into squares measuring one meter each which provided the basic unit for the field referencing system. Grid-unit designations were referenced to the southeast corner of each unit. Units were also given sequential letter

designations (Fig. 2) which simplified paperwork and referencing.

The archaeological testing consisted of both hand and machine excavations. Locations for specific testing units within and adjacent to the new right-of-way were based on archival research conducted in advance of the actual field work. Any identified cultural resources were to be evaluated for potential eligibility for nomination to the National Register of Historic Places or to be designated as a State Archeological Landmark.

A series of 11 hand-excavated units (1 m²) was placed along the base lines. Each unit was dug in 10 cm arbitrary levels, screened through 1/4-inch hardware cloth, and bagged and catalogued by unit-level. Hand-excavated units sought to identify any structural remnants or deposits that would be disturbed within the 60-foot right-of-way.

The four machine-excavated trenches (A-D) were dug with great care in an effort to search three specific areas for acequias and/or laterals. Each bucket of earth was visually inspected by a crew member for the presence of cultural materials but was not screened.

All field methods employed during this project conform to the Council of Texas Archeologists' (CTA 1981) standards for field investigations and to standard archaeological methods and techniques as defined by Hester, Heizer, and Graham (1975). A scaled site plan map was drawn using a plane table and alidade. Floor plan and trench wall profile drawings were made for each unit and trench. Black and white and 35-mm color slide photographs were taken throughout the project to document the progress and extent of testing. All collections were accessioned, catalogued, and are permanently curated at the CAR-UTSA. All original field notes, maps, sketches, and photographs are also on file at the CAR-UTSA.

RESULTS OF FIELD WORK

The results from the 15 test units (four trenches and 11 hand-excavated 1-m² units) are described.

MACHINE-EXCAVATED UNITS

Trench A

Trench A sought to determine if the acequialike feature noted by Scurlock and Fox (1977) extended to or transected the proposed right-of-way. Trench A (Fig. 2) was excavated to a maximum depth of about 2.58 m. Trench dimensions were about 12 m in length

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by 0.75-0.80 m in width. A total of five stratigraphically discrete zones (see Fig. 3) was identified.

Zone 1 (0-0.12 m): This zone consisted of a black clayey topsoil (10 YR 2/1) and humic layer that included numerous small pieces of land snail shell, travertine, and caliche pebbles. A few modern aluminum pull-tabs and sherds of thin, brown glass (beer bottles) were the only cultural materials noted in the backdirt. The soil contact between Zones 1 and 2 was fairly distinct and occurred at roughly the same depth (0.10-0.12 m) across the length of the trench profile.

Zone 2 (0.12-1.15 m): This zone consisted of very dark grayish brown (10 YR 3/2) clayey loam that included proportionately larger chunks of travertine and caliche pebbles. Zone 2 ranged from 0.30 to 1.10 m in thickness. Zone 2 contained several small (0.03-0.15 m thick) unconnected lenses of dark yellowish brown (10 YR 4/4) travertine and one dark black (10 YR 2/1) lens that included large chunks of wood charcoal. Cultural materials within this zone were limited to 20th-century construction debris (iron rebar, red brick, rusty metal and wire, chunks of mortar, and stone copings similar to those used to construct St. Joseph's Orphanage). Zone 2 would appear to be the product of the bulldozing activities during the late 1950s to early 1960s. The soil contact between Zones 2 and 3 was very uneven (0.34-1.15 m below the ground surface) and weakly defined.

Zone 3 (0.34-1.60 m): This zone consisted of a yellowish brown (10 YR 5/4) clayey sand that included several localized pockets and chunks of yellowish sand. The thickness of Zone 3 ranged from 0.10 to 0.50 m. The proportion of sand to clay in this zone was much greater than in Zone 2. Small caliche pebbles and chunks of partially consolidated travertine were

evident throughout this zone and provided a somewhat mottled appearance. Cultural materials were totally absent. This zone appeared to be natural and without disturbance from bulldozing. Soil contact between Zones 3 and 4 was distinct and fairly even although restricted to only a portion of the 12 m profile in Trench A. Contact between these zones ranged from 1.30 to 1.40 m below the ground surface.

Zone 4 (1.30-1.40 m): Zone 4 consisted of a thin localized layer of dark brown (10 YR 3/3) clayey alluvium that is restricted to about a 1 m section of the overall 12 m profile. This zone is sandwiched between a yellowish sandy soil zone (Zone 3) and partially consolidated travertine (Zone 5). Cultural materials were totally absent as were caliche pebbles and gravels.

Zone 5 (0.34-2.25 m): Zone 5 consisted of damp, partially consolidated yellowish (10 YR 7/6) travertine which ranged in thickness from 0.50 to 1.90 m. Cultural materials were totally absent. Zone 5 is best described as a homogeneous zone of travertine without any type of intrusions.

Trench B

Trench B (see Fig. 2) was excavated to a depth just over 3 m, the maximum obtainable depth for the type of backhoe machine utilized. The trench was about 20 m in length and ranged from 0.75 to 0.80 m in width. Visual inspection of the trench profile clearly indicated that several meters of bulldozed fill had been shoved into a basin-shaped depression in a travertine gully or acequia. Unfortunately, the night after this trench was excavated a critical portion of the profile collapsed, and the trench was half filled before a scaled drawing had been completed. Therefore, a second

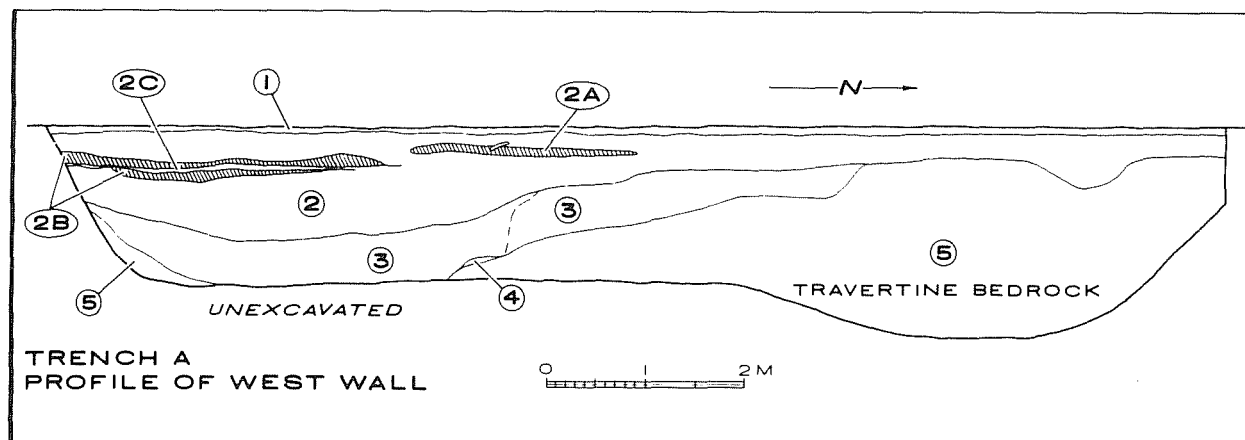


Figure 3. Trench A, Profile of West Wall.

trench (Trench C) was excavated about 5 m east of Trench B. It was decided that, for the safety of crew members, Trench C would not be excavated as deeply.

Trench C

Trench C was excavated to a depth of 2.20 m. The trench was about 11 m in length and ranged from 0.70 to 0.80 m in width. A total of 10 stratigraphic zones was evident in the completed trench profile (see Fig. 4).

Zone 1 (0-0.11 m): Zone 1 consisted of a black (10 YR 2/1) clayey soil and humic layer. Brown glass (beer bottle) and light green ribbed glass (Coca Cola bottle) were the only cultural materials identified *in situ*. Zone 1 ranged in thickness from 0.04 to 0.11 m. Contact between Zones 1 and 2 was sharply defined.

Zone 2 (0.05-0.45 m): Zone 2 consisted of a localized lens of very pale brown (10 YR 7/3) sand that is most probably the product of bulldozing.

Zone 3 (0.10-0.40 m): Zone 3 is also most probably the product of recent bulldozing. This zone consisted of a localized lens of dark reddish brown (5 YR 3/2) loosely compacted soil that included small pieces of wood. Zone 3 ranged from 0.10 to 0.30 m in thickness. Contact between Zones 3 and 4 was clearly defined.

Zone 4 (0.25-0.60 m): Zone 4 also consisted of a localized lens that was not represented across the entire profile. Soil matrix consisted of a light tan (10 YR 7/2) clayey loam. Zone 4 ranged in thickness from 0.05 to 0.62 m. Contact between Zones 4 and 5 was clearly defined.

Zone 5 (0.03-0.62 m): Zone 5 consisted of a dark reddish brown (5YR 3/2) clayey loam that included numerous small caliche pebbles, gravel, and chunks of weakly consolidated travertine. Cultural materials were few and were mainly limited to construction materials. This zone ranged in thickness from 0.12 to 0.50 m.

Zone 6 (0.18-0.65 m): Zone 6 consisted of a very dark grayish brown (10 YR 3/2) clayey loam apparently deposited by bulldozing. Cultural materials were densely compacted throughout the entire zone. Artifacts included a wide range of construction materials (metal, wood, bricks, mortar, window glass, solidified roofing tar) and domestic items (whiteware ceramics, beverage and medicine bottles, children's toys, a leather ball, a leather shoe, and a tricycle frame without wheels). All identifiable items are of 20th-century manufacture and were most probably deposited by the orphanage. Zone 6 ranged from 0.22 to 0.52 m in thickness. Contact between Zones 6 and 7 was weakly defined across the length of the vertical profile.

Zone 7 (0.20-1.30 m): Zone 7 also appeared to be the product of bulldozing. It differed from Zone 6 in soil color and artifact density. This zone had relatively few artifacts and consisted of a dark grayish brown (10 YR 2/2) soil matrix that included a higher proportion of sand than was present in Zone 6. Zone 7 ranged in thickness from 0.20 to 0.55 m. Contact between Zones 7 and 8 was poorly defined across the length of the profile.

Zone 8 (0.65-1.50 m): Zone 8 appears to be the deepest of the artificial strata created by bulldozing. Soils within Zone 8 consisted of a dark grayish brown

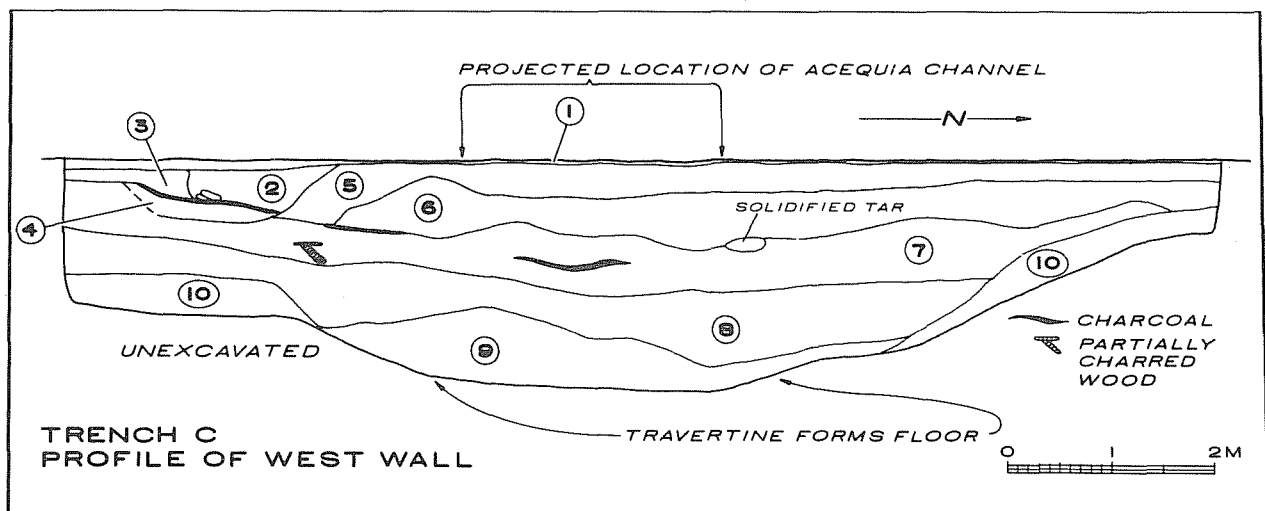


Figure 4. Trench C, Profile of West Wall.

(10 YR 4/2) clayey loam that included small (1-2 cm) gravels. Cultural materials were restricted to the contact between Zones 7 and 8. Cultural materials consisted of concrete and brick rubble intermixed with small amounts of travertine. This zone ranged from 0.20 to 0.70 m in thickness. Contact between Zones 8 and 9 was sharp and well defined across the profile.

Zone 9 (1.40-2.00 m): Zone 9 consisted of a yellowish brown (10 YR 5/4) sandy clay matrix that was culturally sterile. This zone would appear to be naturally formed and ranged in thickness from 0.10 to 0.60 m in thickness. Contact with Zone 10 was readily identifiable.

Zone 10 (1.10-2.20 m): Zone 10 was the lowest stratigraphic unit recognized in Trench C. It consisted of damp, light gray (10 YR 7/2) to light yellowish (10 YR 6/4) partially consolidated travertine. This zone was culturally sterile.

Trench D

Trench D was the northernmost test unit within the proposed right-of-way. The trench was located so that if the existing alignment of trees denoted the presence of a buried acequia, Trench D would transect it at a perpendicular angle. Trench D was machine excavated to a maximum depth of 1.50 m. The trench was about 17 m in length and ranged in width from 0.70 to 0.75 m. The vertical soil profile consisted of essentially undifferentiated soils from top to bottom except for the southernmost 3 m of profile. Evidence for bulldozing was restricted to the northernmost portion of the profile. This trench was fairly shallow relative to Trenches A, B, and C due to the presence of densely compacted travertine at about 1.40-1.50 m across the length of the trench. The backhoe bucket was unable to penetrate more than about 0.50 m into the travertine. A total of four principal stratigraphic zones was noted in Trench D.

Zone 1 (0-0.19 m): Zone 1 consisted of a dark black (10 YR 2/1) clayey soil and humic zone. Land snail shell fragments, brown glass (beer bottles), and green glass (7-UP bottle) fragments were the only items of interest noted in Zone 1.

Zone 2 (0.19-0.50 m): Zone 2 consisted of a very dark grayish brown (10 YR 3/2) clayey loam that included small chunks of travertine and caliche pebbles intermixed with bulldozing fill.

Zone 3 (0.50-0.90 m): Zone 3 consisted of a pale brown (10 YR 7/3) sand with occasional pieces of 20th-century construction items. Artifact densities in Zones 2 and 3 were very low in comparison with the same stratigraphic zones in Trenches B and C.

Zone 4 (0.90-1.50 m): Zone 4 consisted of densely compacted light yellowish (10 YR 6/4) sterile travertine.

HAND-EXCAVATED UNITS

A total of eleven 1-m² units was hand excavated at various grid locations within and adjacent to the proposed right-of-way (see Table 1). These units sought to establish if any significant deposits, foundations or some other type of structural remnants were present within the right-of-way. Due to the previously noted bulldozing, it was anticipated that very little (if any) original ground surface existed and that any historical features to be found would be intrusive features (acequias, wells, post molds).

TABLE 1. GRID COORDINATES FOR
HAND-EXCAVATED UNITS

Unit	Grid Location
A	W120 N6
B	W119 N6
C	W120 S6
D	W128 S1
E	W121 S20
F	W121 S23
G	W121 S25
H	W120 S40
I	W129 S18
J	W140 S18
K	W117 S1

Excavation was relatively uneventful. No structural remains or intrusive features were identified. Most excavated units suggested that, where present, occupational debris would be associated with the historic occupation of Mission Concepción and would be from 0.10 to 0.20 m below the modern ground surface. The greatest depth achieved in any one unit before encountering sterile travertine was 0.43 m (Unit C, W120 S6). Great care was taken in excavating the lowest stratigraphic zone before terminating in sterile bedrock (travertine). Except for a couple of chert flakes and a single undecorated bone-tempered body sherd (*Leon Plain* or *Goliad* ware), there was no evidence for Late Prehistoric or Spanish colonial occupation in the test units.

In general terms, all recovered artifacts from the hand-tested units are essentially identical in range and variation to the ones identified (but not collected) in

the machine-excavated Trenches B and C. Stratigraphic profiles and floor plan maps were completed by excavators for each unit-level. Descriptions of the 11 stratigraphic profiles are omitted here due to the nearly identical vertical zonations already presented in the discussion of Trenches A, B, and C.

GENE'S MAGIC BOX (David D. Turner)

BACKGROUND

Archaeological projects are, by definition, rather expensive propositions. Archaeologists are thus constantly seeking less expensive, but no less efficient methods of field research. An inexpensive and surprisingly simple technique of using common photographic equipment as a "time window" has been developed by photographer-archaeologist Eugene Prince of the Lowie Museum, University of California at Berkeley. Prince's method has particular value to historical archaeologists. A black and white slide or a transparency copy of an old photograph of a structure is placed on the focus plate of a camera. When looking through the view finder of the camera, the user sees the old scene superimposed on the modern landscape. Using a zoom lens to duplicate the old camera's focal length and depth of field, the user can locate the vantage point from which the original photograph was taken. Once this vantage point has been established and the old landscape "registered" with the current landscape, the user can pinpoint any nonextant structures which are shown in the "ghost" image.

The camera can act as a transit while standard measurement procedures are used. The camera user can guide people moving through the "ghost" landscape to specific points for marking and later excavations. The potential for historical archaeology in particular and cultural resource management work in general is as limitless as the available supply of photographs. This "time window" ensures a more efficient use of field time by permitting investigative teams to focus on specific structures or structural elements.

This technique has been successfully used twice. The first use pinpointed the location of buildings, fences, roads, and outbuildings in an investigation of a mining town built in Nevada in the 1870s. The second successful usage was during the summer of 1986 at the Flowerdew Hundred plantation site, in Tidewater, Virginia, where the south anchorage of Ulysses S. Grant's pontoon bridge, erected in June 1864, was located. This historically significant bridge had been

dismantled after the Army of the Potomac had crossed the James River and laid siege to Petersburg.

There is a great deal of potential for display and interpretive uses with this method. A clear sheet of acrylic or plastic could be used to "sandwich" a large transparency. This display, placed at the old vantage point, would show visitors how the land and the structures have changed since the original photograph was taken. Such a display would be an inexpensive initial investment as well as a low maintenance display. This writer has not seen such a completed display, since this aspect of the technique is still under experimentation.

The method has value to other professionals besides archaeologists. Architects, engineers, and administrators can obtain a more accurate understanding of the extent of buried but potentially significant historic remains. It follows, therefore, that its use could help prevent construction delays and the unnecessary destruction of archaeological resources.

Because the method is so surprisingly simple and inexpensive, it has great value as a low cost efficient research tool. However, the advantages of the technique for archaeologists are coupled with at least three specific responsibilities:

1. Future proposals for documentary research should include searches of photographic files and collections;
2. Future historic projects that require field research should also investigate the photographic documents before beginning excavation;
3. Archaeologists should also consider making photographic records of their work in such a manner that this technique can assist future archaeological projects at the same site or in the area.

APPLICATION AT MISSION CONCEPCION (Joseph H. Labadie)

A previously unpublished 8- x 10-inch black and white photograph of Mission Concepción taken about 1880 was made available to this project. The vantage point for this photograph was the vicinity of the southwest corner of the original mission quadrangle. The photograph clearly indicates that an acequia had once extended in a relatively straight line from the north side of the mission church towards the southwest corner of the quadrangle wall. At the time this photograph was taken, running water was evident in the ditch.

A 35-mm camera with color slide film was used to photograph the 8- x 10-inch print. Once developed, the film transparency was removed from the slide carrier and placed directly on the glass element of a

top-viewing Minolta camera. Then, when viewed through the reattached eye piece, the 35-mm transparency was superimposed on whatever subject upon which the camera was focused. From this point, it was just a matter of aligning two or more vantage points from the 1880s photograph with the modern landscape.

The best results for alignment were achieved by using the north and south corners of the mission church. The original vantage point for the 1880s photograph was relocated to within less than one meter. Once accomplished, the location for the pictured acequia was staked off. The angle at which this ditch ran across the quadrangle was then extended to transect the center line for the proposed right-of-way.

Machine-excavated Trenches B and C substantiated the accuracy of the projected point of intersection with the current right-of-way. The results of this experiment using "Gene's Magic Box" technique would also suggest that the gullylike feature noted in test units 42 and 43 excavated by Scurlock and Fox (1977) is the same ditch depicted in the 1880s photograph used by this project.

ARTIFACT ANALYSIS

The 536 artifacts recovered during hand excavations were classified using standard laboratory procedures (see Table 2). They were analyzed within the context of existing chronologies which have been developed over the years from the many historical archaeological projects conducted by the CAR-UTSA in downtown San Antonio and the surrounding areas. Both technological and descriptive analytic methods were used as part of this study.

Artifacts were categorized according to the major material used in their construction (glass, metal, ceramic); the analysis of these classes focused mainly on the technology used to manufacture the item. Industrial or machine-produced items have telltale marks or indicators left by the type of machine used to produce the item. In many cases, the introduction of a particular method or model of machinery has already been pinpointed to within a decade through historical research and/or patent office records. A no-earlier-than date can then be ascribed for a particular process, meaning that the artifact could not have been made before a certain date. For example, the crown bottle cap, today most commonly used on the returnable soda-pop bottles, was first patented by William Painter in 1891 (Munsey 1970:105).

Descriptive analysis works well when technological analysis does not supply the needed answers. For example, the shape alone for a particular vessel (or

color) may indicate the bottle's original contents (perfume, snuff, ink, medicine). Late 19th-century glass containers frequently have embossed lettering molded into the glass which states contents, manufacturer, distributor, or place of origin for the product. In such cases, historical research can more accurately date the bottle than can an analysis of the technology used to make the bottle.

CERAMICS

A total of 12 ceramic sherds was recovered. These represent several varieties of very late 19th-century to early and middle 20th-century ceramics. Ceramic types in the collection are whitewares, stonewares (with Bristol glaze), and *Goliad* ware. Vessel forms represented are plates, cups, and saucers. Most sherds were too generic in form for exact identifications other than simple descriptions of paste, glaze, and decorative technique. A short description of several of the more diagnostic items follows.

One ironstone sherd (Fig. 5,e) has a maker's mark "O.P.CO. Syracuse China." This backstamp has been used by the Onondaga Pottery Company, Syracuse, New York, since 1897 (Barber 1904).

Two whiteware, green-striped rim sherds (Fig. 5,a,b) and a cream pitcher (Fig. 5,f) are of a variety known as "hotelwares" and are nearly identical to specimens recovered at the Hot Wells Hotel and Resort in San Antonio (see Fox and Highley 1985:Fig. 14,a). These sherds probably date to about 1900-1925; they continue to be made today (Fox and Highley 1985).

GLASS

A total of 314 glass sherds was recovered. Sherds were sorted according to color (brown, blue, aqua, clear, white). Complete specimen forms represented within the assemblage include bottles (soda, beer, whiskey, wine [Fig. 5,g], medicine, ink [Fig. 5,c], snuff), window glass, marbles, and canning jars. The majority of the glass sherds (237) are thin brown glass, most probably from mid- to late-20th-century beer bottles. A brief description of several of the more diagnostic items follows.

A clear glass medicine bottle fragment with embossed lettering "3 RIVERS *" was produced at the Three Rivers Glass Company (Three Rivers, Texas) which opened about 1931 and closed in 1937 (Viola Adloff, personal communication, 1987).

A fragmentary cobalt blue glass container, a clear glass paste jar (Fig. 5,h), and a brown glass medicine bottle (Fig. 5,i) have screw-top closures. Screw-top closures were not widely used until about 1900 (Munsey

TABLE 2. PROVENIENCE AND NUMBER OF ARTIFACTS RECOVERED DURING HAND EXCAVATIONS

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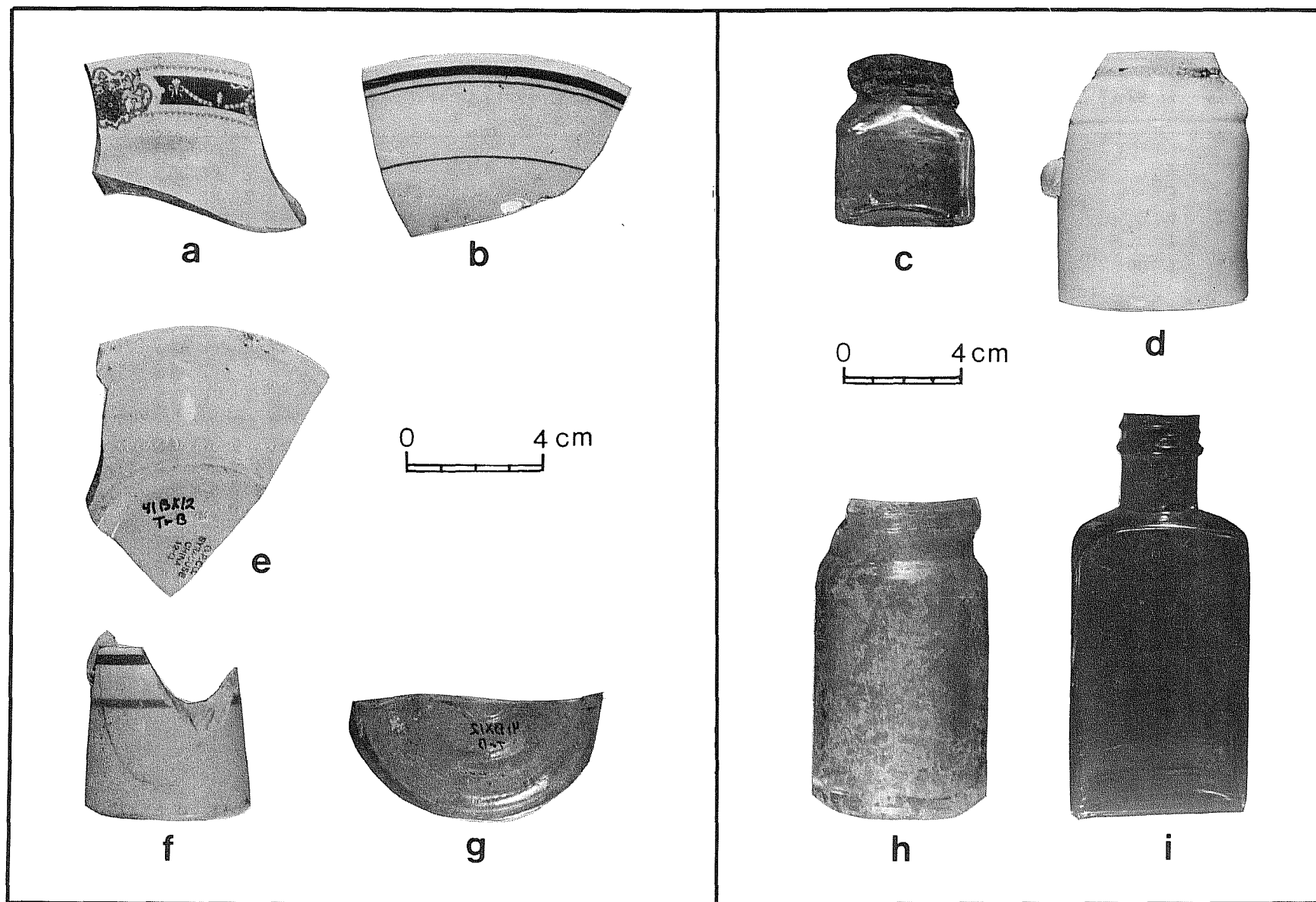


Figure 5. *Selected Artifacts Recovered at Mission Concepción.* a, hotelware, polychrome design; b, hotelware, green bands; c, ink bottle, screw cap; d, white glass ointment jar; e, ironstone bowl, Onandaga China Co., Syracuse, N.Y., ca. 1871-1900; f, hotelware cream pitcher; g, wine bottle base, olive green; h, paste jar, clear glass; i, screw top medicine bottle, brown glass.

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1970). Blue or cobalt colored glass typically was used for medicines, cosmetics, soda water, and specialties from the 1890s to 1960s (Lorrain 1968).

A clear glass medicine bottle with "OWENS" embossed on the base of the vessel was manufactured by the Owens Illinois Glass Company. The company began manufacturing glass containers in 1919 (Toulouse 1971:403).

A white glass ointment container (Fig. 5,d) with "INGRA . . . CREAM" embossed on the shoulder of the vessel originally contained Ingrams Milkweed Cream (Fike 1987).

METAL

The various types of construction materials found throughout the project area were placed in the metal category. These materials include roofing tar, slate and composition shingles, wire and cut nails, and other unidentifiable items.

SUMMARY

Intensive archaeological testing both within and adjacent to the proposed right-of-way for the Mission Road Realignment Project failed to locate any significant deposits or structural remains that would be adversely impacted or impaired by this project. This project has corroborated assumptions that much of the area in the vicinity of the former location of the west wall of the mission quadrangle was destroyed by bulldozing. No evidence for the presence of *in situ* prehistoric or early historic occupational debris or structural remnants were found by this project.

A backhoe excavated about 40 m of four 0.75-m-wide trenches that ranged from 1.50 to over 3.0 m in depth below the modern ground surface. All trenches exhibited one or more of four basic cultural-bearing strata of which only one had the potential to contain 18th-century or 19th-century occupational debris. Eleven hand-excavated 1-m² units provided little additional data that had not already been gained via the machine-excavated trenches. A total of 536 artifacts was recovered by this project during hand excavations, only three are indicative of 18th-century and/or 19th-century occupation. The overwhelming majority of specimens have an early to middle 20th-century manufacturing date.

Three potential locations for buried acequias/laterals were tested; only one proved to be correct. Trenches B and C (Trench B collapsed before profiling was completed) transected a feature that has been interpreted to be an acequia dug into the

travertine bedrock. It is possible that references to a later acequia in this same area may have used this same feature for irrigation of lands outside the quadrangle's west wall, between the wall and the San Antonio River. There was no physical evidence to indicate if what was found was the later acequia, the earlier one, or a combined acequia reusing the older route. This was not expected, since it was customary throughout the Spanish and later periods to divert the water from the ditches each year in February in order to clean them thoroughly (Glick 1972:45), insuring that there would be little artifactual evidence of the date of construction or operation remaining within the below-surface portion of the ditch. Also, the distance of the proposed roadway from the wall of the mission and any related activities makes the probability of finding mission-related artifacts in the acequia at this location very low. This fact is confirmed by the paucity of artifactual materials found in the test units in the vicinity.

A study of the drawings for the proposed realignment of Mission Road indicated that construction would not involve removal of more than the top 70 cm or so of the fill in the area and would not seriously disturb what is left of the acequia below ground (Fig. 4).

We have, therefore, not recommended any further investigations in the area in advance of construction. If future work is planned in the vicinity of this acequia at any point along its route, we urge that archaeological investigations be done to confirm its shape in cross section and its exact location.

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