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A CULTURAL RESOURCE INVENTORY OF THE TOLICHA PEAK GRAVEL PIT PROJECT AREA

NELLIS AIR FORCE RANGE
NYE COUNTY, NEVADA

By

Kathleen Ann Bergin
Principal Investigator

December, 1991

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Funded by Nellis Air Force Base, Nevada

Report Available through National
Technical Information Service (NTIS),
Washington, D.C.

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ENVIRONMENTAL SOLUTIONS, INC.

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Submitted By:

Environmental Solutions, Inc.
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Irvine, California 92718

December, 1991

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U.S. Department of the Interior
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Funded by Nellis Air Force Base, Nevada

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Technical Information Service (NTIS),
Washington, D.C.

The views and conclusions contained in this document should not be interpreted as necessarily representing the official policies or interpretations, either expressed or implied, of the U.S. Government.

ABSTRACT

Environmental Solutions, Inc. conducted archival research and an intensive pedestrian survey for historic properties within the Tolicha Peak Gravel Pit project area within the Nellis Air Force military reservation. Encompassing approximately 96,624 m² (24 acres), the project area is situated along the southern perimeter of the Nellis North Range northwest of the town of Beatty in Nye County, Nevada. The research efforts resulted in the conclusion that the project area is devoid of cultural properties. The U.S. Air Force can make a Determination of No Effect to complete the Section 106 Compliance process under the National Historic Preservation Act of 1966, as amended, (36 CFR Part 800) for the Tolicha Peak Gravel Pit project.

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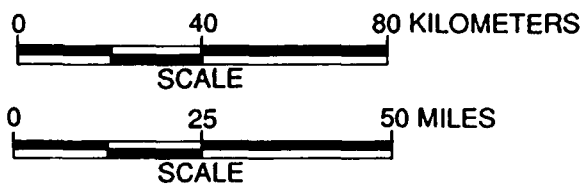
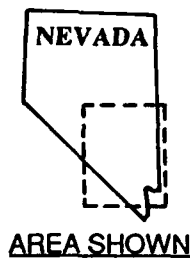
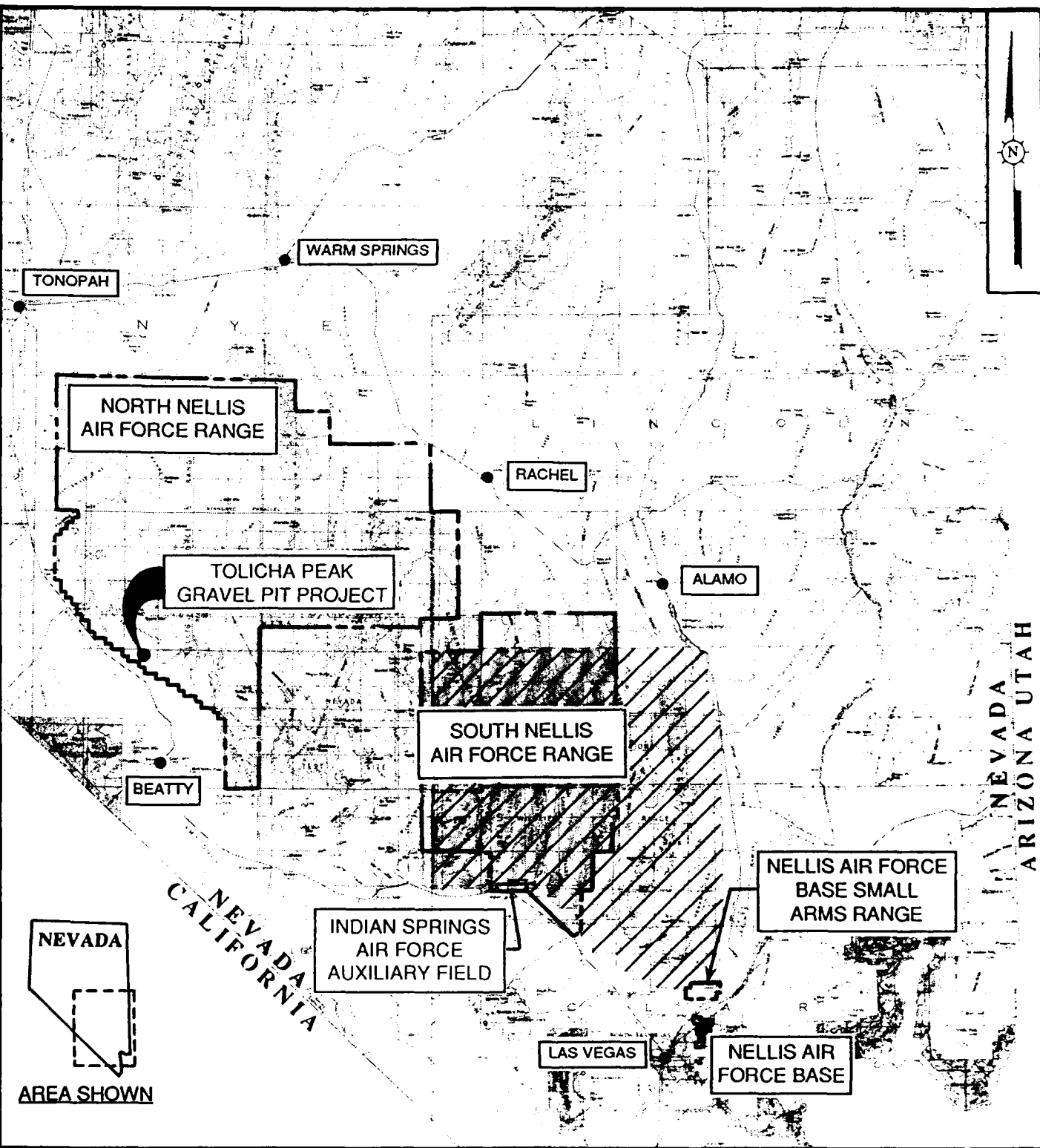
1.0 INTRODUCTION

Environmental Solutions, Inc. conducted an intensive pedestrian survey for archaeological, historical, and other types of cultural properties within an existing gravel pit and a proposed gravel pit extension area on Nellis Air Force Range property in Nevada. The survey area lies within the Nellis Air Force military reservation which covers over 12,150 km² (three million acres) in Nye, Lincoln, and Clark counties, Nevada (Figure 1.1). The Tolicha Peak Gravel Pit project is situated about 22 miles northwest of the town of Beatty, Nevada, and 12 miles southeast of Scotty's Junction, Nevada (Figure 1.2). The project location is at the southern periphery of the Nellis North Range south of Range 76, in Nye County (Figure 1.3). Access to the survey area is by a paved road that trends northeastward from Highway 95. The survey area can be located on the DMATC 1:50,000 Springdale quadrangle (Figure 1.3) or the U.S.G.S. Springdale 15' topographic quadrangle (Appendix A). A legal description for the survey area is Township 9 South, Range 46E, portions of Sections 3 and 4 (projected). Access to the project area is made from U.S. Highway 95.

The Tolicha Peak Gravel Pit project required archival research and the survey of an approximate 488X198 m area, incorporating 96,624 m² (24 acres). On 11 February 1991, the survey was completed by two archaeologists walking parallel linear transects at 20 m intervals. Kathleen Bergin served as Principal Investigator and Project Archaeologist. Anne DuBarton provided survey support. Mr. Jerry Dunning accompanied the archaeological research team in his role as U.S. Air Force Security Escort. No archaeological or other cultural properties were encountered during the survey.

The Tolicha Peak Gravel Pit project was sponsored by the U.S. Air Force (USAF), Nellis Air Force Base (NAFB), Nevada. It was administered by the National Park Service, Western Region, as Delivery Order No. CX8001-0-0011 under the basic contract for archaeological services at Nellis Air Force Base, Contract No. CX8000-0-0011. Ms. Mellownee Bassett served as Contracting Officer. Technical direction was provided by the Contracting Officer's Representative (COR), Mr. Mark Rudo, with the Interagency Archeological Services Branch of the National Park Service.

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NOTE: CROSS-HATCHED AREA IS THE DESERT NATIONAL WILDLIFE RANGE.

REFERENCE: U.S.G.S. 1:500,000 MAP OF THE STATE OF NEVADA. COMPILED IN 1962 AND REVISED IN 1984.

FIGURE 1.1

PROJECT REGION

TOLICHA PEAK GRAVEL PIT PROJECT
NELLIS AIR FORCE BASE PROGRAM

ENVIRONMENTAL SOLUTIONS, INC.

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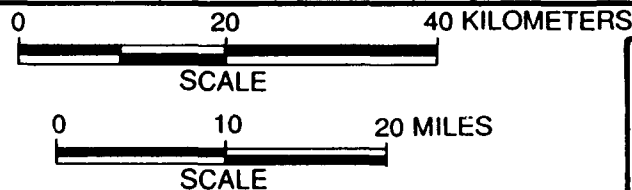
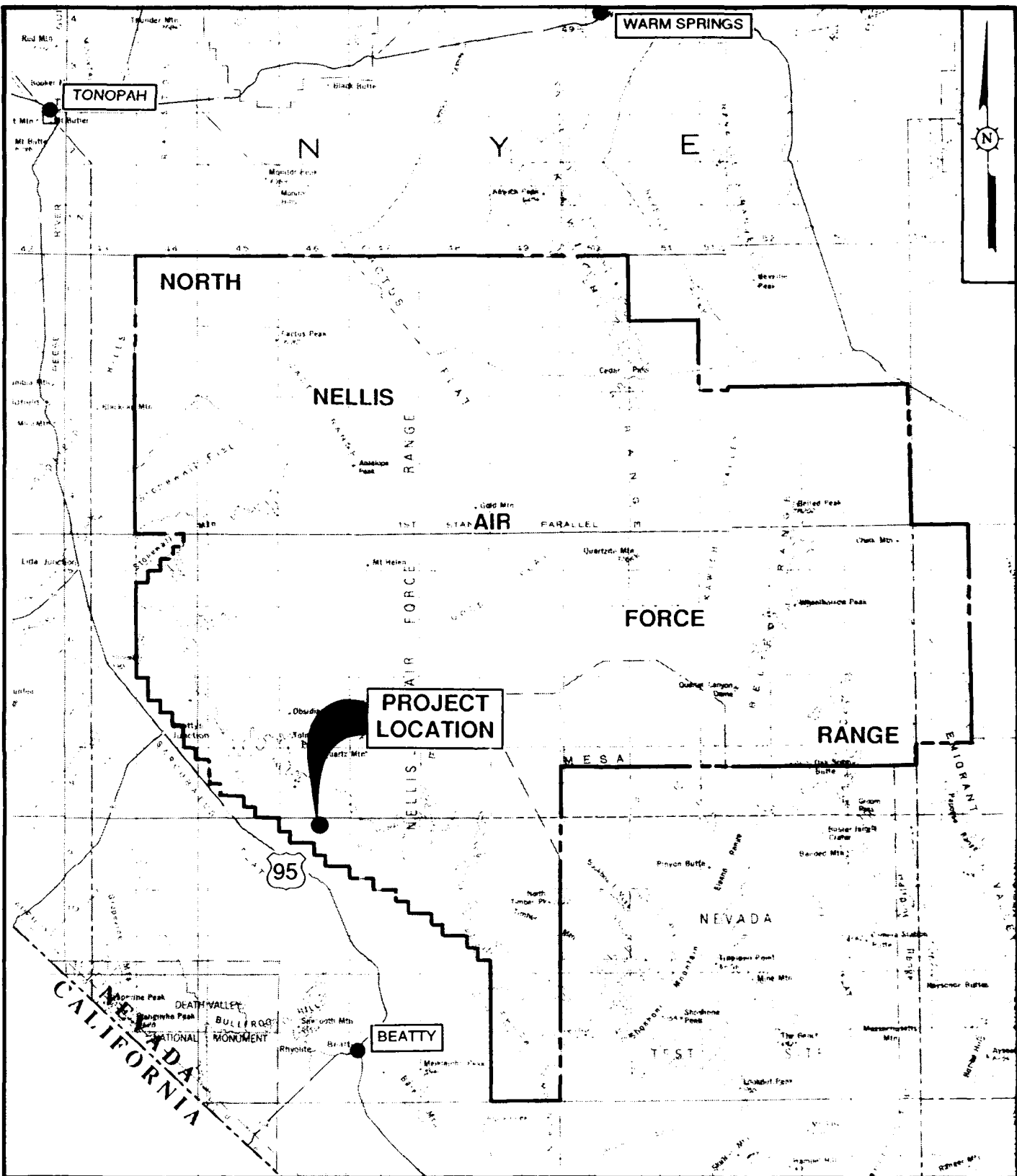


FIGURE 1.2

PROJECT VICINITY

TOLICHA PEAK GRAVEL PIT PROJECT
 NELLIS AIR FORCE BASE PROGRAM

ENVIRONMENTAL SOLUTIONS, INC.

REFERENCE: U.S.G.S. 1:500,000 MAP OF THE STATE OF NEVADA. COMPILED IN 1962 AND REVISED IN 1984.

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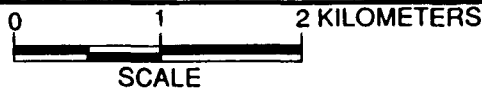
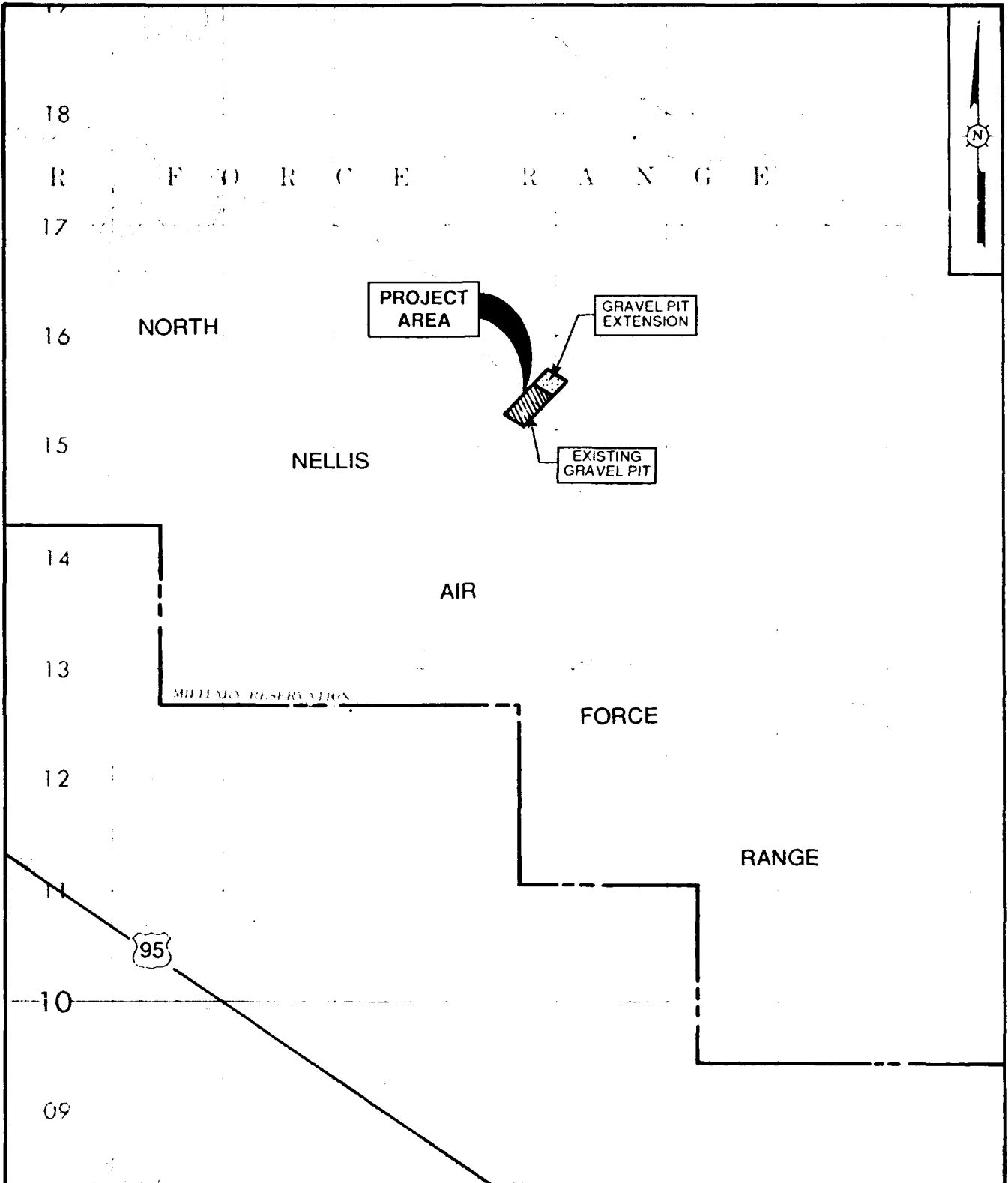


FIGURE 1.3

PROJECT LOCATION

TOLICHA PEAK GRAVEL PIT PROJECT
NELLIS AIR FORCE BASE PROGRAM

ENVIRONMENTAL SOLUTIONS, INC.

REFERENCE: DMATC MAP OF SPRINGDALE, NYE COUNTY, NEVADA.
COMPILED IN 1976.

2.0 ENVIRONMENTAL SETTING

The Tolicha Peak Gravel Pit project area lies within the Basin-and-Range physiographic province along the transition between the Mojave and Great Basin deserts. It is situated on a south-southwest sloping alluvial fan approximately 9 km south of Tolicha Peak. The southern two-thirds of the project area has been disturbed by the existing gravel pit and associated operations, while the northern one-third remains unaltered.

2.1 GEOLOGY AND GEOMORPHOLOGY

The project area is situated above the floor of Sarcobatus Flat on the coalescing southern alluvial fan of Tolicha Peak and Quartz Mountain, which are part of the dissected western portion of the Pahute Mesa landform (Cornwall 1972). Other geomorphic features in this western extension include Obsidian Butte, which lies northwest of Tolicha Peak, and Black Mountain and Thirsty Canyon, which are situated northeast and southeast of Quartz Mountain. Elevations in the project area range from 1,292-1,310 m (4,240-4,300 feet) above mean sea level, while Tolicha Peak reaches 2,150 m (7,054 feet) in height and Quartz Mountain rises to 2,125 m (6,970 feet).

The lithology of the project area is dominated by intrusive and extrusive volcanics. Black Mountain erupted during the Pliocene, approximately 7 million years ago, and produced the youngest volcanic rocks of the Nellis North Range--the most recent formation being Thirsty Canyon Tuff (Ekren et al. 1971:3). Rock types observed during the fieldwork include rhyolite, which dominates, andesite, tuff, and small amounts of vesicular basalt and diorite or gabbro. Gravel- and sand-sized clasts predominate, with cobbles and larger-sized clasts relatively rare.

2.2 FLORA

The flora of the project area and its vicinity is typical of areas of transition between the Mojave and Great Basin deserts. Observed within the project area during the fieldwork were blackbrush (*Coleogyne ramosissima*) and spiny hopsage (*Grayia spinosa*), both of which are relatively abundant, *Atriplex spinifera*, Mormon tea (*Ephedra nevadensis*), cheesebush (*Hymenoclea salsola*), *Galium stellatum eremicum*, winterfat (*Ceratoides lanata*), buckwheat (*Eriogonum inflatum*), and sparsely distributed grasses including Indian rice grass (*Oryzopsis hymenoides*) and bromes (*Bromus* spp.). A few specimens of the invasive exotic, Russian thistle (*Salsola Kali tenuifolia*), are found in the disturbed area of the existing gravel pit.

The boundaries of the broad shallow wash that contains the gravel and sand being mined are visually distinct due to an abrupt vegetation change that coincides with wash borders. This change is noted by differences in vegetation color and dominant species. Creosote bush (*Larrea tridentata*), which tends to a lime green cast, is the visually dominant species of the project vicinity, but it does not grow within the wash. The wash is characterized by a denser distribution of plants with an overall grayish-green hue. The abrupt change in vegetation species and distribution is probably due to differences in clast size and soil drainage characteristics between the two areas.

2.3 FAUNA

Fauna observed during the survey were limited to a few insects and lizards. Rodent holes and badger burrows were noted, but no animals were seen. The fieldwork was conducted during the morning and early afternoon of a single winter day. The faunal inventory, therefore, cannot be considered representative of the local population.

2.4 HYDROLOGY

No sources of permanent water are available in the project area or its vicinity. The nearest source of potable water is Monte Cristo Spring, situated approximately 13 km northwest of the project area on the northwestern slope of Tolicha Peak, opposite Obsidian Butte. Found within 17-19 km of the project area are an unnamed spring in the lower Bullfrog Hills near the floor of Sarcobatus Flat and the spring complex in Oasis Valley, which was formed through entrenchment of the Amargosa River. Thirsty Canyon, the same approximate distance to the east, supports seeps that run seasonally and support zones of riparian vegetation.

Intermittent streams dissect the project area and its vicinity. These direct surface runoff in a south-southwesterly direction to two small playas on the northeastern margin of Sarcobatus Flat. Runoff pools on the surface of these playas and is evaporated. Tolicha Wash, situated approximately 11 km west-northwest of the project area, is a major ephemeral drainage emptying onto Sarcobatus Flat and draining the area from Obsidian Butte southwestward. Sarcobatus Flat is considered to be a recent playa (about 12,000 years old) and has no visible pluvial shoreline development (Mifflin and Wheat 1979:55).

3.0 RESEARCH DESIGN

Archaeological research for the Tolicha Peak Gravel Pit project was undertaken to address both management and research objectives. The specific need to conduct archaeological research in the project area originated with the USAF proposal to expand the existing gravel pit. Consistent with federal regulations for the protection of historic properties (36 CFR Part 800), a site identification effort was undertaken by Environmental Solutions, Inc. to identify those significant properties that may be affected by the proposed gravel pit expansion. The Secretary of the Interior's Standards and Guidelines (National Park Service 1983) were adhered to for the research, which included both archival and field efforts. The following sections of this chapter review the management and research objectives and the methods employed to meet these objectives.

3.1 MANAGEMENT OBJECTIVES

Archival and field research of the project area were designed to achieve the following management goals:

- Identification of all historic properties within the existing gravel pit and the proposed expansion area. The identification and evaluation of historic properties is the first step in the Section 106 process, as required by the National Historic Preservation Act of 1966, as amended, and implemented by the 36 CFR Part 800 procedures. The majority of the expansion area exhibited well-spaced vegetation of medium height (0.6-1.0 m), yielding excellent survey conditions. The existing gravel pit and processing area was essentially devoid of vegetation.
- Ascertainment of the presence of significant or potentially significant properties in the project area. The Criteria for Evaluation (36 CFR Part 60.4) for eligibility to the National Register of Historic Places (NRHP) is the standard used for determination of resource significance. The project can have an effect on only those properties listed or determined eligible for listing in the NRHP, and it is a regulatory requirement to evaluate potentially affected properties during the first step of the Section 106 process. This objective, therefore, would provide a list of eligible and potentially eligible properties that would need additional research to document the site and assign it to an appropriate historic context.
- Assessment of the potential for effects to occur to identified properties as a result of the gravel pit project. This information would then be available for use in project planning so that either redesign or other mitigation measures could be developed to avoid or lessen impacts to significant properties, or other action could be undertaken to determine if sites would be affected.
- Synthesis of the database relative to cultural resource management requirements and development of recommendations for future efforts needed to complete the Section 106 process.

3.2 RESEARCH OBJECTIVES

The research objectives for the survey and inventory effort are as follows:

- Synthesis of existing information and field data to develop a uniform archaeological database for the project area.
- Characterization of the internal organization of any identified site to the degree possible using archival and field survey data. This objective fulfills data requirements that are applicable both to the documentation of sites for the evaluation of their eligibility for NRHP listing and to the placement of sites within specific historic contexts that bring to the forefront the potential of a property or district of properties to make a vital contribution to the resolution of significant research questions. Basic questions addressed for this research include the following:
 - What is the horizontal and vertical distribution of the site (site area, dimensions, and depth)?
 - What data classes (information sets) are represented at the site? What is the density of data within these information sets? How are these information sets distributed within the site?
 - Does the site contain horizontal or vertical stratigraphy indicative of discrete site components?
 - What evidence is present for the chronological ordering of the sites or site components?
 - What impacts exist to each site's contextual integrity? What effect, if any, do these physical impacts have on the research applicability of the site?
 - What is the environmental setting of the site?
- Characterization of the type, distribution, and density of historic properties in the project area, with attention to the following questions:
 - Do site clusters exist in the project area? If so, what explanation for such clustering can be proposed?
 - What site types are represented in the project area?
 - Do the different site types demonstrate differential distributions on the landscape? If so, do correlations in landform or in environmental zone exist between site type and distribution?
 - Do site types or the frequency of sites and site types change through time?

3.3 RESEARCH METHODS

The purpose of the research was the identification of historic properties that may be affected by the proposed project. Two methods were employed to accomplish the identification task. These were an archival records check and an intensive pedestrian survey. The methods used for identification are described below, and the research results are described in Chapter 4.0.

3.3.1 ARCHIVAL SEARCH AND DATA REVIEW METHOD

An archival records search was conducted at the Archaeological Information Center located at the University of Nevada, Las Vegas. This information center is the official repository and clearinghouse for all archaeological information in Nye, Lincoln, Clark, and Esmeralda counties. In addition, the Bureau of Land Management, Las Vegas, was contacted for additional archived data, and Federal Register volumes were reviewed for National Register properties listed, determined eligible for listing, or pending nomination/eligibility.

The archival searches yielded information on:

- Previously-surveyed tracts within or near the area of potential effect (APE).
- Intensity of previous survey efforts.
- Previously-recorded properties within or near the APE.
- Characteristics of previously recorded properties.
- Dates of previous surveys, technical reports, and report authors.

The archival records searches resulted in the identification of previously recorded properties near the APE. Property types ranged from isolated lithics to sparse lithic scatters to toolstone exploitation and reduction loci.

The archival records searches also yielded information on the intensity of previous survey coverage in or near the APE. Field survey efforts have been undertaken in the general project area for about 16 years, but much of the early work does not meet the current BLM standards for intensive survey. Work conducted in the late 1970s and early 1980s (Bergin 1979; Crownover 1981) was accomplished with a 50 m transect interval, while current standards call for a maximum 30 m transect interval.

3.3.2 PEDESTRIAN SURVEY METHOD

The intent of an intensive survey effort is to provide 100 percent visual coverage of the surface of the ground. This is normally accomplished by adhering to a grid pattern of survey consisting of parallel linear transects surveyed at a set interval. For the research of the Tolicha Peak Gravel Pit project, survey personnel walked parallel linear transects spaced at approximate 20 m intervals in the undisturbed terrain proposed for expansion. Perimeter transects were flagged with surveyor's tape or biodegradable toilet tissue to assure maintenance of the survey method. In the area previously disturbed by gravel mining and processing, sidewalls were checked for cultural

material, the area surrounding the excavation boundary was surveyed, and the stockpiles were visually checked for cultural materials. The survey personnel consisted of two archaeologists; the principal investigator and the field/laboratory director.

The survey team proceeded across the terrain on foot and searched for indications of past human habitation or use on the landscape or in soil profiles. For aboriginal properties, such evidence includes chipped stone debitage and tools, ground stone tools or tool fragments, burnt rock, bone and/or shellfish fragments, and soil discoloration or other features such as rock alignments, trails, soil mounds, or depressions. For historic Euroamerican properties, evidence of past habitation or use includes fragments or samples of glass, porcelain, metal, cut wood, domestic or other animal bone with saw cuts or other mechanical butchering marks, non-native vegetation, and features such as foundations, trash dumps, fence lines, and others.

3.3.3 PROPERTY DOCUMENTATION AND/OR RECORDATION METHOD

No evidence of cultural habitation or use was located during the field survey; therefore, no documentation or recordation efforts were required.

4.0 RESEARCH RESULTS

4.1 RESULTS OF THE ARCHIVAL RESEARCH

The archival search and literature review yielded information on previously inventoried areas in the project vicinity and the type, distribution, and significance of previously recorded sites in the project vicinity. The project area had not previously been surveyed for cultural materials, and no sites were known within the Tolicha Peak Gravel Pit project boundaries. Previous goal-specific research in the project region has been ongoing at very minimal levels since the mid-1970s.

In 1975, a reconnaissance level survey of the North Nellis Air Force Range was undertaken by the Museum of Natural History, University of Nevada, Las Vegas to evaluate the sensitivity of the region for archaeological, historical, and architectural properties (Ferraro et al. 1975). This effort was undertaken to provide baseline information relative to development of an Environmental Impact Statement (EIS) on the Department of the Navy's proposed Project Seafarer, which would require approximately 3,000 linear miles of ground disturbance. The reconnaissance concentrated on areas predictably sensitive for prehistoric and/or historical remains--springs, playa margins, Pleistocene lake shorelines, and mining towns or camps represented on U.S.G.S. maps. Obsidian Butte (site 26NY400), Monte Cristo Spring (site 26NY382), a second rockshelter campsite (26NY381), and a lithic scatter (26NY383) were recorded north of the Tolicha Peak Gravel Pit project area as a result of the Project Seafarer survey.

During 1978, the North Nellis Air Force Range was sampled as part of an overall cultural resource study of the Nellis Bombing and Gunnery Range undertaken in support of an Environmental Impact Statement addressing the continued withdrawal of public land for USAF use (Bergin 1979). This range-wide survey effort was undertaken by the Museum of Natural History, University of Nevada, Las Vegas, to develop an understanding of the type, distribution, and significance of cultural properties managed by Nellis Air Force Base. The 1 percent survey of the two-million acre North Nellis Air Force Range was subdivided according to a disproportional stratified random sampling scheme based on environmental variables sensitive to human occupation and use of the land and its resources. A total of 244 sample units, each 80 acres in area, was surveyed on the North Range. Within the sampling scheme, four sample units were used to inventory the salt desert scrub environmental stratum within 4.5-8 km (3-5 miles) of the Tolicha Peak Gravel Pit project area. Each of these sample units (numbered 173, 190, 220, and 227) was 0.32 km in area, oriented along a north-south axis, and 1/8X1 mile in dimension.

Within two of the sample units, four cultural properties were recorded. Sample unit 173, northeast of the project area, contained two isolated flakes designated as isolated finds 173-1 and 173-2. Sample unit 190, northwest of the project area, contained two lithic scatters, recorded as sites 26NY1501 and 26NY1502.

The lithic scatters and isolates in the project vicinity are frequently the result of opportunistic toolstone testing, procurement, and initial reduction of obsidian, welded tuff, rhyolite, chert, and other cobbles incorporated within the alluvial fans of the area. Obsidian Butte, located approximately 15 km north-northwest of the project area, is a primary source of obsidian toolstone. Its erosion and the transport of obsidian nodules along Tolicha Wash acts to introduce secondary sources of obsidian into the project vicinity. Additional volcanic toolstone sources are provided by Quartz and Black mountains and Thirsty Canyon.

Further project-specific research was conducted in the North Range in 1980 as part of a base-wide inventory of targets and support facilities (Crownover 1981). Also conducted by the Museum of Natural History, University of Nevada, Las Vegas, for Nellis Air Force Base, this effort concentrated on target vicinities generally north of the arc of mountains forming the western extension of Pahute Mesa, and therefore is not within the project vicinity. This project did report on an extensive petroglyph site, 26NY2252, and additional lithic scatters associated with the previously recorded sites at Monte Cristo Springs and Obsidian Butte.

More recently a number of survey efforts were conducted south of the Tolicha Peak Gravel Pit project area, and all but one of these is located off-range, usually within the corridor of U.S. Highway 95. The one exception is a 725X800 m parcel with associated access road that was surveyed about 2 km south of the project area by Desert Research Institute in 1988 (Durand et al. 1988). No sites were recorded within the 20 m wide by 2 km long access road, but seven cultural properties were recorded within the parcel. These comprise isolated obsidian and tuff flakes, cores, and a biface; all were collected during the survey (Table 4.1).

The majority of the cultural resource surveys conducted off-range were completed by the Nevada State Department of Transportation (NDOT) in support of U.S. Highway 95 upgrade and maintenance projects. Within an 8 km (5 mile) radius of the project area, one NDOT project (Petersen 1988) inventoried 15 sites in five 0.16 km² (40 acre) locations proposed for use as materials pits. These properties, numbered sequentially from site 26NY1657 through site 26NY1671, range from isolated flakes of obsidian or chert to an isolated Great Basin Stemmed

TABLE 4.1
PREVIOUSLY RECORDED SITES IN PROJECT VICINITY
TOLICHA PEAK GRAVEL PIT PROJECT

SITE NO.	SITE TYPE ^a	NATIONAL REGISTER ELIGIBILITY STATUS	RECORDER AND DATE	REFERENCE
26NY5571	P - Isolated Obsidian Core Reduction Flake (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988
26NY5572	P - White Welded Tuff Stage III Biface (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988
26NY5573	P - Red/brown Tuff Facial Thinning Flake (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988
26NY5574	P - Obsidian Core Reduction Flake (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988
26NY5575	P - Obsidian Core Reduction Flake (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988
26NY5576	P - White Welded Tuff Core and Obsidian Core Reduction Flake (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988
26NY5577	P - White Welded Tuff Facial Thinning Flake (collected)	Not Eligible	Durand and Reno 7 Jan 1988	Durand et al. 1988

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^a P represents prehistoric or aboriginal remains.

point and from small lithic scatters to large, internally-patterned pavement quarries that display evidence of the exploitation of obsidian and chert nodules as well as biface production and subsistence tasks (metates).

Further to the northwest another pavement toolstone source was recorded where the major ephemeral stream, Tolicha Wash, empties onto Sarcobatus Flat. This site, 26NY3974, was recorded during an earlier NDOT survey for materials borrow pits (Moore 1984).

Historical properties have also been inventoried in the general project vicinity south of the Nellis Range boundary. In this general area, historical sites and isolates are usually related to the mining and railroad industries of the area. Approximately 6.5 km south of the gravel pit area, the historic Bullfrog to Goldfield Railroad berm has been recorded as site 26NY1582. The year of railroad construction is 1907 (Myrick 1963 in Petersen 1988). Further to the southeast, site 26NY4815, which contains both historic and prehistoric components, was recorded adjacent to the railroad during a BLM survey of an access road onto the North Nellis Air Force Range (Waski 1987).

In addition to the field research efforts reported above, a number of small cultural resource surveys were conducted in the project vicinity. In 1976 the BLM performed the Sarcobatus Flat Fenceline Survey with negative results (Hatoff 1976). Additional survey efforts by NDOT were completed along U.S. Highway 95 in the vicinity of Scotty's Junction and Tolicha Wash (Self 1981) and in the Springdale area (Barnette and Steinberg 1982).

4.2 RESULTS OF THE FIELDWORK

No historic properties were identified during the intensive pedestrian survey of the Tolicha Peak Gravel Pit project area. The survey method and intensity employed were such that any cultural property evidenced by surface artifacts, features, or soil discoloration would have been identified in the project's APE.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The archival records search and intensive pedestrian survey for the Tolicha Peak Gravel Pit project area produced negative results for historic properties. The southern two-thirds of the project area had been previously impacted by gravel mining and processing operations. Survey conditions were excellent, and the survey method and intensity were sufficient to identify cultural properties with surface evidence if they had been present. The likelihood for the presence of buried cultural remains is considered negligible due to the depositional environmental (alluvial fan/wash) of the project area.

5.1 RESEARCH CONCLUSIONS

Minimal survey efforts have been conducted in the vicinity of the Tolicha Peak Gravel Pit project on the North Range of the Nellis Air Force military reservation. Those surveys that have been completed indicate that this alluvial fan region has primarily been used by aboriginal populations for the opportunistic exploitation of nodules suitable for tool production (Bergin 1979; Durand et al. 1988).

The toolstone materials harvested from desert pavement and unconsolidated fan surfaces and exposures include obsidian, welded tuff, chert, and rhyolite. There is some indication that obsidian may be more abundant in the Tolicha Wash vicinity whereas tuff may be more frequent toward the Thirsty Canyon vicinity. Tolicha Wash extends northward to Obsidian Butte, a primary source of obsidian (site 26NY400).

Aboriginal settlements are concentrated in this northern area due to the presence of a dependable water source at Monte Cristo Spring (site 26NY382), subsistence resources in the local pinyon-juniper environment, and other factors. Additionally, the presence of extensive petroglyphs (site 26NY2252) indicates that this area may have served important religious and/or social functions such as for public ceremonies important to a community of people or for private ceremonies related to important initiations or renewal ceremonies for individuals or groups of individuals with a shared bond.

South of the North Nellis Air Force Range, surveys conducted along the Highway 95 corridor identified a number of isolated flakes and small lithic scatters, similar to those inventoried on the Nellis Range in the general project vicinity (Self 1981; Petersen 1988). However, also recorded were a large pavement obsidian quarry (site 26NY3974) where Tolicha Wash exits onto

Sarcobatus Flat and several other pavement quarries and habitation locales located east and west of the two small playas on the northeastern margin of Sarcobatus Flat, about 5 km southwest of the Tolicha Peak Gravel Pit project area. Campsites in this locale may have been occupied when seed foods were locally available seasonally, at which time raw materials for tool production would have been exploited and reduced to blanks for transportation elsewhere. While aboriginal use of the project vicinity seems to be concentrated where the toe of the alluvial fan meets the gentler gradient of Sarcobatus Flat, this impression may actually be the result of the greater level of survey in this locale due to improvement and maintenance projects associated with U.S. Highway 95. Further field research of the Nellis terrain may prove to uncover site complexes as yet unknown. The Tolicha Wash vicinity is considered to have the greatest potential for historic properties in the general vicinity of the Tolicha Peak Gravel Pit project area.

5.2 MANAGEMENT CONCLUSIONS

The Tolicha Peak Gravel Pit project area requires no special management considerations related to cultural resources since none were identified in the APE.

5.3 RECOMMENDATIONS

No historic properties have been identified in the project area and, therefore, no effects to significant resources can occur as a result of the proposed expansion of the Tolicha Peak Gravel Pit. The identification and evaluation of historic properties, as required by 36 CFR Part 800.4, has been completed with negative results. The USAF can make a Determination of No Effect to complete the Section 106 Compliance process for the Tolicha Peak Gravel Pit project.

Consistent with 36 CFR Part 800.11, which addresses the management of historic properties discovered during project construction or implementation, if previously unidentified historic properties are discovered during expansion of the Tolicha Peak Gravel Pit, damage to the resources should be avoided or minimized, and the Environmental Management Division, Nellis Air Force Base (TFWC/EM), should be notified immediately. No further project-related activities in the discovery area should be undertaken until the procedures outlined at 36 CFR Part 800.11 are completed.

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APPENDIX A
PROJECT LOCATION MAP

89-277A/PTTR REV. 12/4/91

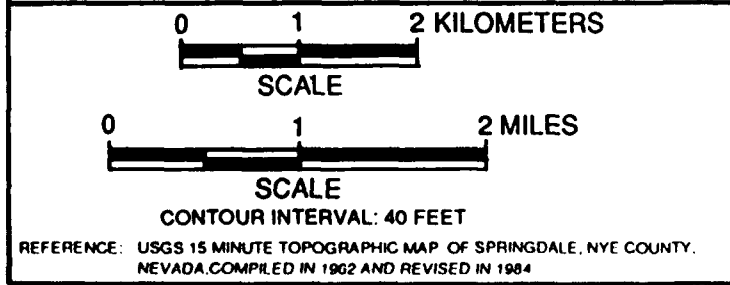
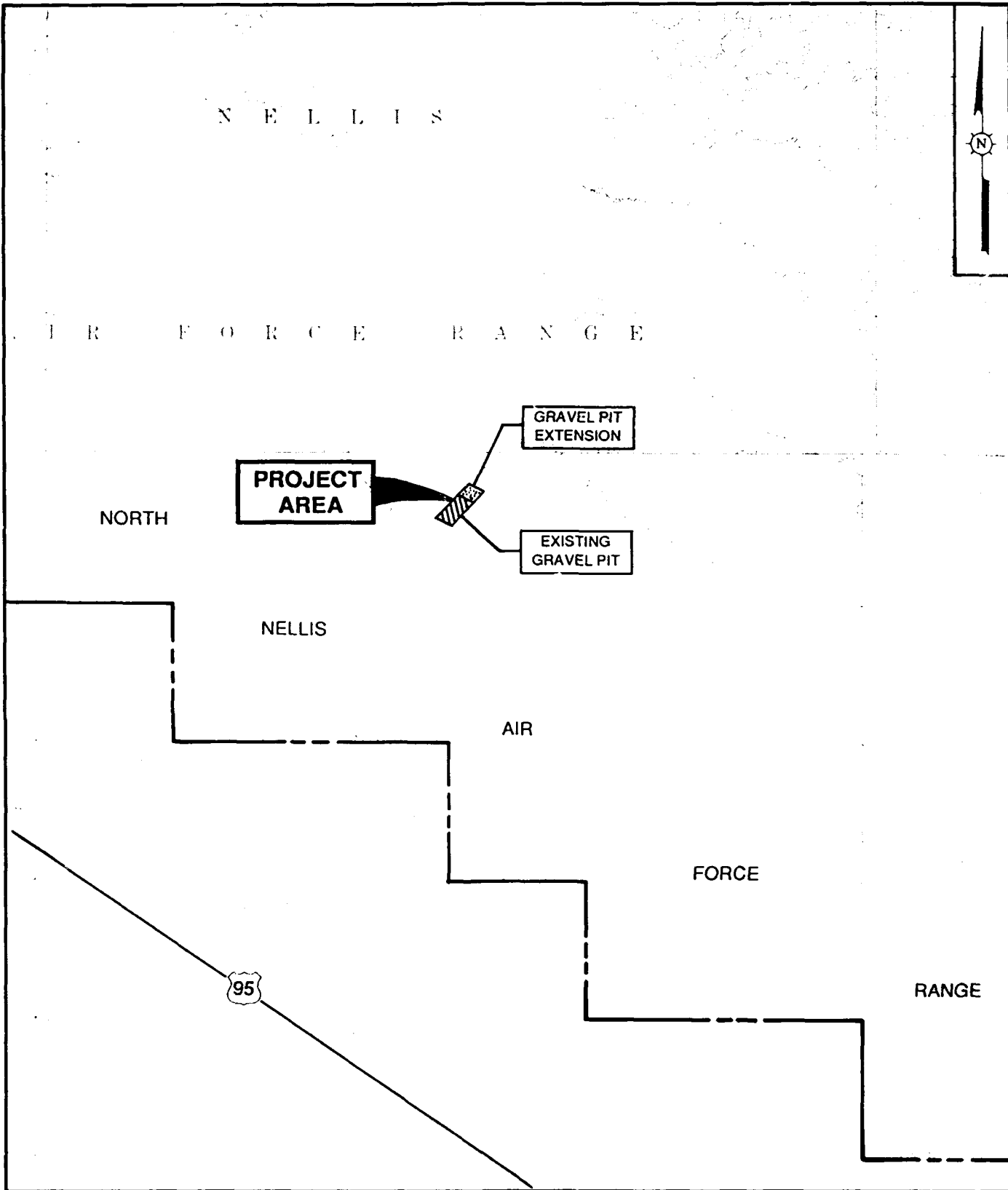


FIGURE A.1
PROJECT LOCATION
U.S.G.S. BASE

TOLICHA PEAK GRAVEL PIT PROJECT
NELLIS AIR FORCE BASE PROGRAM

ENVIRONMENTAL SOLUTIONS, INC.