

**APPENDIX D**  
**Cultural Resources Study FOE**

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**NORTH SHORE DRIVE PROJECT**  
**CITY OF BIG BEAR LAKE,**  
**SAN BERNARDINO COUNTY, CALIFORNIA**  
ARCHAEOLOGICAL AND BUILT ENVIRONMENT  
RESOURCES FINDING OF EFFECT

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*Prepared for:*

PAM CHAVEZ, ENGINEERING TECHNICIAN  
SOUTHWEST GAS  
P.O. BOX 1498  
VICTORVILLE, CALIFORNIA 92393

*Prepared by:*

NICHOLE JORDAN, MA, RPA  
GARCIA AND ASSOCIATES  
435 LINCOLN WAY  
AUBURN, CALIFORNIA 95603  
AND  
MARGO NAYYAR, MA  
MICHAEL BAKER INTERNATIONAL  
2729 PROSPECT PARK DR. SUITE 220  
RANCHO CORDOVA, CA 95670

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A very special thank you to all that made this project possible, including Pam Chavez of Southwest Gas for her patience and persistence, Jay Marshall of the United States Forest Service for picking up the project from a former coworker, Margo Nayyar of Michael Baker for working collaboratively on this document, Kristen Bogue of Michael Baker for keeping the environmental process moving, Gregorio Pacheco for directing the fieldwork under unique field circumstances, the Garcia and Associates field crew for remaining chipper even while working in the snow and rain, John Wilson of Southwest Gas for clearing the snow so we could excavate, and Traffic Control Management Inc., who kept us safe in the field. Thank you.

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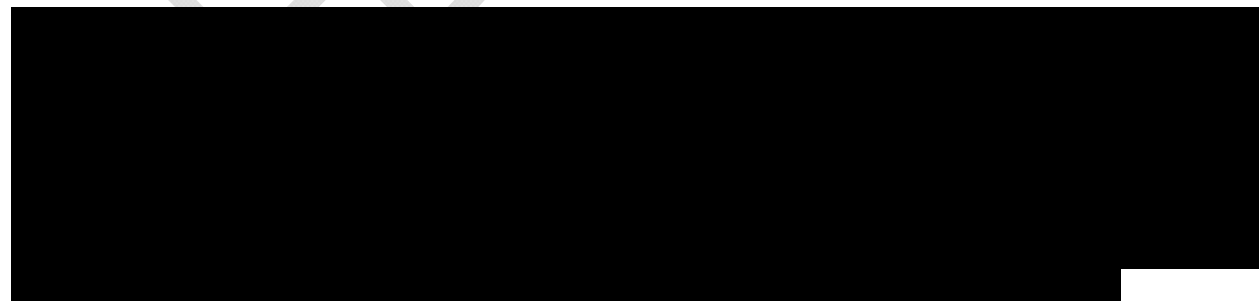
1.0 MANAGEMENT SUMMARY

Southwest Gas proposes the North Shore Drive Project (project) in the City of Big Bear Lake, County of San Bernardino, California. At the request of Southwest Gas, Michael Baker International prepared this cultural resources identification report compliant with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act of 1966, as amended; its implementing regulations, Title 36 of the Code of Federal Regulations (CFR), Section 800; and *Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region (Regional PA 2018, Amendment #1)*. The project is located along North Shore Drive, North Shore Lane, and Stanfield Cutoff, within and just north of the City of Big Bear Lake, San Bernardino County, California.

In the cultural resources identification study prepared for the project, Davis and Nayyar (2018) identified cultural resources within the area of potential effects (APE) by utilizing records searches at the San Bernardino National Forest and South Central Coastal Information Center, literature review, Native American Heritage Commission (NAHC) Sacred Lands File search, Native American consultation completed by the San Bernardino National Forest, historical society consultation, and field survey conducted from June 27-29, 2018.



A finding of no adverse effect is appropriate for the undertaking and an internal review and concurrence of Section 106 documentation prepared in support of the project by the San Bernardino National Forest Service is permitted.



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## 2.0 INTRODUCTION

The project location, background, characteristics, construction methodology, and regulatory context are presented in Davis and Nayyar (2018) and are not reproduced here. Further, expanded APE and ADI descriptions that include archaeological resource sensitivity are presented in Jordan (2018) and are not reproduced here.

### 2.1 AREA OF POTENTIAL EFFECT

Michael Baker International completed a Section 106-compliant cultural resources identification study of the APE for the project (Davis and Nayyar 2018). The ADI includes the maximum extent of ground disturbance; the APE encompasses the ADI and the known extent of resources that may be affected by the project (except in the case of P-36-007049, Rim of the World, which is a long, linear resource) (see Appendix A, Figure 3).

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**3.0 ARCHAEOLOGICAL RESOURCE CONTEXT**

Michael Baker International reviewed the APE’s archaeological sensitivity using the results of the background research, previous archaeological excavations, soils research, and field survey, detailed in Davis and Nayyar (2018). The sensitivity assessment and recommendation for a finding of effect is presented in Jordan (2019).

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4.0 SCOPE OF WORK

4.1 FIELD METHODS AND RESULTS

As required by California state law, approximately 72 hours prior to the initiation of fieldwork, Southwest Gas arranged for an Underground Service Alert to identify the presence of underground lines in the ADI. Additionally, Southwest Gas obtained a California Department of Transportation (Caltrans) encroachment permit for proposed work within the Caltrans right-of-way (ROW).

GANDA, led by field director Gregorio Pacheco, and assisted by archaeological field technicians Daryl Dang, Kathleen Ambrosino, and David Sosa, were observed by San Manuel Band of Mission Indians Native American monitor David Perezchica, from December 2 through December 12, 2019. The GANDA field crew was assisted by the Southwest Gas team, which provided traffic control and cleared snow to make way for archaeological excavation. Jay Marshall, of the San Bernardino National Forest joined the GANDA field crew.

GANDA hand-excavated six Shovel Test Units (STU) and nine Shovel Test Pits (STP). The STUs were 1 x 0.5 meters and varied in depth from 0.70 centimeters to 1.33 meters and STPs were 0.5 x 0.5 meters and extended to a depth of 100 centimeters to 110 centimeters (Appendix A, Figure 3). Soil profiles were documented along the long-exposed sidewalls of the STUs. STU/STP excavation areas were chosen based on their sensitivity and ability to excavate (i.e., proximity to known archaeological resources, paved surfaces, safety concerns, etc.). All excavated sediments were screened through a one-quarter-inch dry screen. The depth of excavation in each STU was consistent with the depth of the project in that location except for STPs 4 and 9, where obstructions were encountered that prohibited excavation to the depth of the project.

All STU/STPs were backfilled and the soil was compacted to minimize settling.

TABLE 1: EXCAVATION SUMMARY

UNIT	Depth (meters/feet)	Length/ Width (meters)	Proximity to Known Resources	Cultural Constituents (centimeters)
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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UNIT	Depth (meters/feet)	Length/ Width (meters)	Proximity to Known Resources	Cultural Constituents (centimeters)
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## 5.0 FINDING OF EFFECT

The finding of effect for both built environment and archaeological resources is presented in this section.

### 5.1 BUILT ENVIRONMENT FINDING OF EFFECT

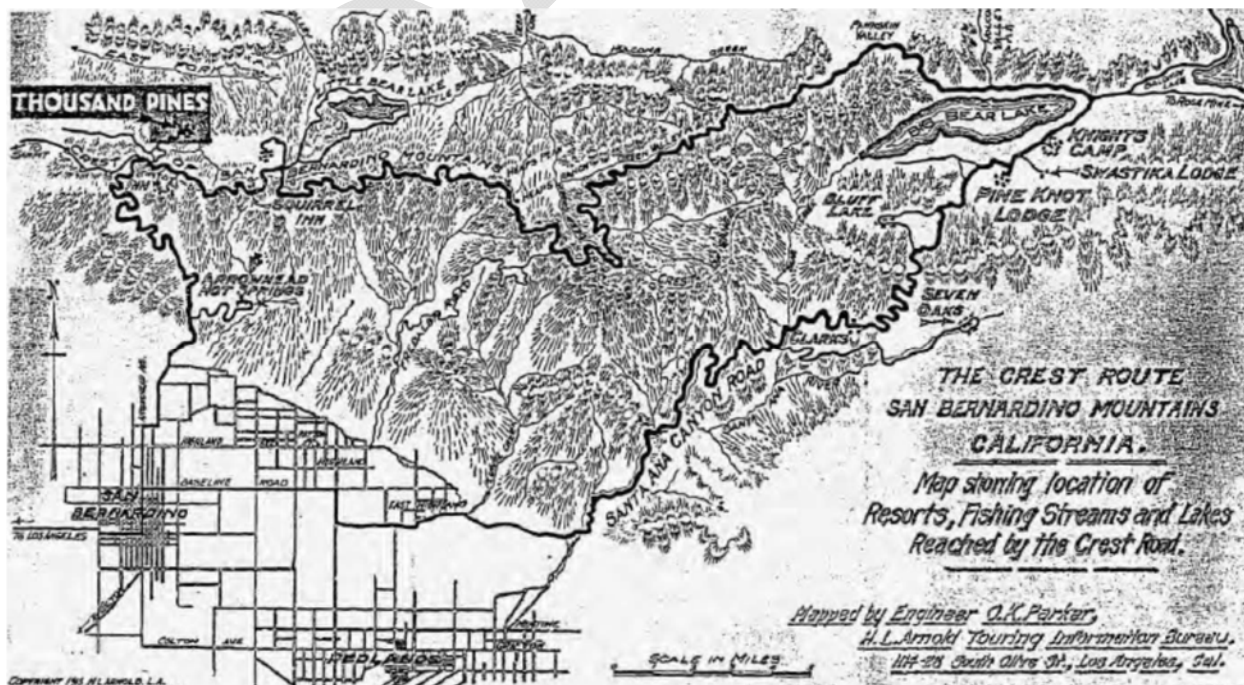
An effect analysis for the Rim of the World (P-36-007049) is presented below.

#### Rim of the World Highway

The following historic context has been adapted from Caltrans' *Historic Resources Evaluation Report for the Roadside Safety Improvement Project on State Route 18 Between Crestline and Rimforest, San Bernardino County, California* (Hammond 2001).

At the turn of the twentieth century, tourists paid \$2.00 to travel the Arrowhead Reservoir Toll Road and into the San Bernardino Mountains for recreational purposes. In 1904, mountain pioneer Dr. John N. Baylis purchased 160 acres of timber near the Squirrel Inn (near the junction of State Route [SR-] 18 and SR-189) and built Pinecrest, the largest resort in the San Bernardino Mountains at that time. Transportation up the steep and narrow dirt grades proved problematic for tourism and, beginning in 1905, Baylis championed the transference of the Arrowhead Reservoir Toll Road to San Bernardino County to encourage the route's improvement and upkeep as a public road. In 1910, Baylis helped secure the Fredalba to Fawnskin wagon road and the Brookings Lumber Company road for the County.

The acquisition of the three major mountain roads aided Baylis' vision for a mountain crest highway. On July 17 and 18, 1918, the San Bernardino Mountain Crest Highway was dedicated as the Rim of the World Highway. The below 1915 map shows the route, which began and ended in San Bernardino. The widely publicized 101-mile unpaved highway was the culmination of years of road acquisition and planning to bring an automobile road to the San Bernardino Mountains.



1915 map depicting the original 101-mile route of the Rim of the World Highway.



In 1928, a two-phase state highway improvement project was completed for sections of the Rim of the World Highway. Improvements included paving the unpaved, two-lane road and eliminating dangerous switchbacks to encourage the roadway's use as a scenic drive. The project ultimately upgraded the road to a modern "high-gear" highway to accommodate the increasing resorts, campgrounds, cabins, and residential traffic in the San Bernardino National Forest. By 1929, the Rim of the World Highway was one of three highways classified as a "scenic boulevard."

E. Q. Sullivan, Director of District 8 (1914–1939) of the California Department of Highways, is credited with the conception of the highway improvements. In addition to the highway's utilitarian purpose of providing easier high-gear access to the San Bernardino Mountain areas, the improvements and realignment further emphasized the scenic vistas that made the original unpaved Rim of the World Highway such a popular tourist attraction in California.

The Great Depression of the early 1930s and the resulting work relief projects were responsible for further improvements along the Rim of the World Highway. Relief programs employed men to build retaining walls, guard rails, and parapets, widen curves, and clear brush from the ROW. These safety improvements also doubled as beautification measures.

Much of the philosophy behind highway construction and beautification during this period can be traced to the increased number of tourists and automobiles on the roads seeking leisure-time activities, which were centered around visiting a rich variety of scenic areas in California and the western United States. This early twentieth century "back to nature" movement initiated a response by the federal government to increase access to the scenic areas of the national parks and national forest areas for tourism and recreation.

The roadside safety elements were constructed to harmonize with the environment and contribute to visitors' rustic views along the road. This rustic treatment, specified in the Department of the Interior's guide for landscaping in the national parks, required the use of local materials for construction of roadside elements. The United States Forest Service also adopted this treatment of roadside elements in the national forests.

### **Previous Evaluation History**

On October 5, 2001, a 3.7-mile segment of the Rim of the World Highway Historic District (SR 18, Post Mile 17.93–21.72) was evaluated and determined eligible for the National Register and listed in the California Register of Historical Resources (California Register). It was determined eligible, at the local level of significance, under Criterion A for its association with important events in the history of recreation, tourism, and transportation in the San Bernardino Mountains and Southern California. Under Criterion C, the district is significant as an outstanding Depression-era example of designing a road and its associated features to be compatible with the scenic and rustic character of a mountainous landscape. It has a period of significance of 1928–1936.

Contributing features of the Rim of the World Highway Historic District consist of the road width, curvilinear alignment, rock pier and chain guard rails, low rock walls, adjacent slopes and scenic overlooks amongst granitic rock outcroppings, high-elevation yellow pine forests, and other vegetation.

The entire 101-mile length of Rim of the World Highway has not been evaluated, but the South Central Coastal Information Center records search identified other segments that have been recorded as part of the historic district. The segment determined eligible is located approximately 20 miles west of the APE.

### **Description and Assumption of Eligibility**

This approximately 1.85-mile-long segment of the Rim of the World Highway was developed circa 1915 and, in consultation with the San Bernardino National Forest, is assumed eligible for listing in the National Register pursuant to 7.7(g) of the Programmatic Agreement as part of the Rim of the World Highway Historic District. The road was likely developed prior to the development of the Rim of the World Highway and incorporated into the original 101-mile highway, as were other roadways, and as depicted in the 1915 map. Its period of significance is consistent with that of the historic district, 1928–1936.

### **Criteria of Adverse Effect**

Michael Baker International applied the Criteria of Adverse Effect pursuant to 36 CFR 800.5(a)(1–2) to evaluate the project's effects to the Rim of the World Highway Historic District, a historic property eligible for listing in the National Register and listed in the California Register. This code section defines adverse effects as any direct or indirect effect that may alter characteristics of a historic property that qualify the property for listing in the National Register. Adverse effects diminish the integrity of a historic property's location, design, setting, materials, workmanship, feeling, or association, and may include, but are not limited to:

- i. Physical destruction of or damage to all or part of the property;
- ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
- iii. Removal of the property from its historic location;
- iv. Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- v. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- vi. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- vii. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

### **No Build Alternative**

Under the No Build Alternative, the existing gas pipeline would not be abandoned, capped off, and replaced with new gas pipelines. The No Build Alternative would not achieve the project goal of upgrading infrastructure to increase pressure and capacity of the gas pipeline to support existing and future increased demands for natural gas.

This project alternative would have no effect on the Rim of the World Highway Historic District because the historic property would remain in place, as is, with no physical destruction; alteration;

removal from place; change of use; introduction of visual, atmospheric, or audible elements; neglect; or property transfer, lease, or sale, as defined in the Criteria of Adverse Effect at 36 CFR 800.5(a)(2)(i-vii).

**Build Alternative**

Under the Build Alternative, the existing gas pipeline would be abandoned and capped, and new gas pipelines would be installed within SR-38. Installation of the gas pipeline would include pavement cutting, trenching, horizontal directional drilling for pipeline placement, adding bell holes within and adjacent to the roadway for construction access, and replacing pavement where removed.

The project does not propose any changes to the character-defining features for which the Rim of the World Highway Historic District was determined eligible for listing in the National Register and listed in the California Register. The project does not propose augmenting the road width or altering the road alignment. The project will not affect any rock piers, chain guard rails, rock walls, slopes or scenic overlooks, or trees or vegetation adjacent to the roadway.

Proposed alterations to this historic property include removal and replacement of the existing pavement along portions of the pipeline and addition of bell holes within and adjacent to the roadway. The road surface material has not been identified as a character-defining feature of the historic property and therefore its removal and replacement will not affect the integrity or the historic property’s ability to convey its significance. Furthermore, the addition of bell holes within and adjacent to the roadway is a minor addition common for roadways, and visually, due to their low profile, will not detract from the setting or other character-defining features of the historic property that would affect the integrity or the historic property’s ability to convey its significance.

Therefore, this project alternative would have no adverse effect to the Rim of the World Highway Historic District because minor visual elements would be introduced but the character-defining features of the historic property would remain undamaged and unaltered; the roadway would remain in its original location and alignment; it would remain in use as a roadway; the setting would remain unchanged; no atmospheric or audible elements would be introduced; and the property would not be transferred, leased, or sold, as defined in the Criteria of Adverse Effect at 36 CFR 800.5(a)(2)(i-vii).

**Finding of Effect Summary for Built Environment Resources**

The project will have a finding of no adverse effect to the Rim of the World Highway Historic District, a built environment resource within the APE.

**5.2 ARCHAEOLOGY FINDING OF EFFECT**

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**6.0 SUMMARY AND CONCLUSIONS**

A finding of no adverse effect is appropriate for the undertaking due to the use of horizontal directional drilling within resource boundaries and the lack of significant archaeological materials observed during subsurface testing. An *Environmentally Sensitive Area Action Plan* will not be necessary; however, an archaeological monitor is recommended for the lateral line trenching at station 50+50 and to ensure directional drilling launch and receiving pit locations are placed outside of resource boundaries.

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### 7.0 PROFESSIONAL QUALIFICATIONS

This report was prepared by Garcia and Associates senior cultural resources manager Nichole Jordan and Michael Baker International project manager, Margo Nayyar. Ms. Jordan has a Bachelor of Arts (BA) in anthropology from California State University, Sacramento, and a Master of Arts (MA) in applied anthropology from California State University, East Bay. She is a registered professional archaeologist (RPA #989208) and a member of the Society for California Archaeology, Society for American Archaeology, Association of Environmental Professionals, and the California Council for the Promotion of History. She meets the Secretary of the Interior's Standards for prehistoric and historical archaeology. Ms. Jordan has 18 years of experience in cultural resources management, including project management; personnel management; archival research; laboratory analysis; ethnographic and historical research; field survey; prehistoric and historical excavation; laboratory analysis; collections management; and geographic information system (GIS) applications in environmental planning, spatial analysis in archaeological site modeling, and surface analysis in cultural resource management. She has experience in preparation of archaeological research, built environment, and archaeological evaluations for inclusion in the National Register and California Register, and survey, testing, excavation, and monitoring reports pursuant to the requirements of CEQA, Section 106 of the National Historic Preservation Act, and the National Environmental Policy Act.

Ms. Nayyar is an architectural historian with ten years of cultural management experience in California. Her experience includes built environment surveys, evaluation of historic-era resources using guidelines outlined in the National Register of Historic Places and California Register of Historical Resources, and preparation of cultural resources technical studies pursuant to CEQA and Section 106 of the National Historic Preservation Act including identification studies, finding of effect documents, memorandum of agreements, programmatic agreements, and Historic American Buildings Survey, Historic American Engineering Record, and Historic American Landscape Survey mitigation documentation. She prepares cultural resources environmental document sections for CEQA environmental documents including infill checklists, initial studies, and environmental impact reports, as well as National Environmental Policy Act environmental documents including environmental impact statements and environmental assessments. She also specializes in municipal preservation planning, historic preservation ordinance updates, and provision of Certified Local Government training to interested local governments. She develops Survey 123 and ESRI Collector applications for large-scale historic resources surveys and authors National Register nomination packets. Ms. Nayyar meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.



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### 8.0 REFERENCES CITED

- Davis, Nichole Jordan and Margo Nayyar. 2018. *Cultural Resources Identification Report for the North Shore Drive Project, City of Big Bear Lake, San Bernardino County, California*. Prepared by Michael Baker International.
- Hammond, Christie. 2001. *Historic Resources Evaluation Report for the Roadside Safety Improvement Project on State Route 18 Between Crestline and Rimforest, San Bernardino County, California*. On file at the California Department of Transportation, District 8.
- Jordan, Nichole. 2019. *Archaeological Resources Testing Plan for the North Shore Drive Project, City of Big Bear Lake, San Bernardino County, California*. Prepared by Garcia and Associates.
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## **APPENDIX A**

### **FIGURES**

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**APPENDIX B**  
**EXCAVATION AND ARTIFACT PHOTOS AND SOIL**  
**PROFILES**

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**APPENDIX C  
FIELD FORMS**

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**APPENDIX D**  
**SITE RECORDS**