

BONNIE CLARE ROAD  
(Scotty's Castle Road)  
(Grapevine Canyon Road)  
(North Highway  
(Route 5)  
Death Valley Junction Vicinity  
Inyo County  
California

HALS CA-89

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Landscape Survey  
National Park Service  
Pacific West Region  
909 1st Avenue  
Seattle, Washington 98104

HISTORIC AMERICAN LANDSCAPES SURVEY

BONNIE CLARE ROAD  
(Scotty's Castle Road)  
(Grapevine Canyon Road)  
(North Highway)  
(Route 5)

HALS NO. CA-89

**Location:** Bonnie Clare Road is in Inyo County, California, in the northeast corner of Death Valley National Park. The road passes through Grapevine Canyon beginning at Grapevine Junction east/northeast for approximately 7.5 miles to the park boundary, which is also the Nevada and California state boundaries. From the junction of the California and Nevada state boundaries, the road continues across U.S. Bureau of Land Management parcels as Route 267 east to Nevada Highway 95 where it terminates.

**Dates of Establishment:** 1929–30, 1947–51

**Present Owner:** National Park Service

**Present Occupant:** National Park Service

**Present Use:** Vehicular road

**Significance:** Bonnie Clare Road traverses Grapevine Canyon in Death Valley National Park. The road corridor has a long history of use and development as a result of its association with American Indian trail use and occupation as well as in post-settlement themes including exploration, mining, and construction of Scotty's Castle. While these themes are an important part of the historical development of the road, historic use alone does not qualify Bonnie Clare Road for listing in the National Register of Historic Places. The historic use of the road and association with exploration, mining activities, and construction are better represented by other roads and properties within Death Valley.

Bonnie Clare Road demonstrates both historical significance and integrity for its association with early National Park Service (NPS) Mission 66 road planning and development in Death Valley National Park. Although funding for work under the Mission 66 program became available in 1956, the conditions, concerns, and design trends that precipitated and shaped the program, actually began in 1945 with the end of World War II and the end of travel restrictions and rationing. The period of significance for the Bonnie Clare Road corridor reflects these trends on a local level of

significance beginning in 1947 when approximately 3.0 miles of Bonnie Clare Road was resurfaced to improve capacity, safety, and visitor access to Scotty's Castle. The period of significance ends in 1951 when the rehabilitation of 4.9 miles of Bonnie Clare Road between Scotty's Castle and the park boundary was completed by the National Park Service. During this period, the road was formalized as a circulation corridor, which marks a distinct period of development that occurred in response to post-war need and a localized effort to increase park visitation, enhance visitor safety, and undertake road improvements that minimized damage to the natural topography, washes, and contours within the often narrow walls of Grapevine Canyon.

Historian: Jayne Aaron and Steven Chris Baker, Aarcher, Inc., 2012

## **PART I. HISTORICAL INFORMATION**

### **A. Physical History**

1. Date(s) of establishment: 1929–30, 1947–51
2. Landscape architect, designer, shaper, creator: Albert Johnson, National Park Service
3. Builder, contractor, laborers, suppliers:

For Albert Johnson:

M. Roy Thompson (1929–30)

For the National Park Service:

Civilian Conservation Corps (1934)

Nevada Highway Department, and National Park Service (1947–51)

4. Original and subsequent owners, occupants:

Public road (Ca. 1906–33), used by Jack Salsberry (who was associated with Ubehebe Copper Mines and Smelter Company of Chicago) in 1906; Kimball Brothers' Bullfrog Stage and Transfer Company used the road on its weekly route from Bonnie Clare to Ubehebe City; heavily used travel corridor that linked the mining areas to the west with the railroad to the east of Grapevine Canyon until 1913; Albert Johnson's construction of Death Valley Ranch in Grapevine Canyon, which began in 1922 and lasted until 1931; used by tourists to Death Valley Ranch, a.k.a. Scotty's Castle

Death Valley National Park – 1933 to present, used by tourists

National Park Service (1933 to present)

5. Periods of development:

a. Original plans and construction:

- 1929–30: Albert Johnson rerouted the narrow dirt road from the center of the canyon through his estate to the south and east sides of the canyon in approximately its current location. He also constructed a fence along the north and west side of the road, on or near the shoulder edge delineating his property boundary.
- 1934: Civilian Conservation Corps (CCC) laborers reconstructed 5.0 miles of the road by hand—it was graded, boulders were blasted from the roadbed, and sharp curves were day-lighted.
- 1934–47: Continuous maintenance of the road was performed due to washouts and heavy tourist traffic accessing Scotty’s Castle.

b. Changes and additions:

- 1947–51: Major improvements and formalization of the road as a major circulation feature of the park occurred.
- 1947: Road was surfaced with a bituminous treatment between Grapevine Junction and Scotty’s Castle.
- 1951: Reconstruction and paving the road from Scotty’s Castle east to the monument boundary occurred.

B. Physical History

Archeological evidence in Grapevine Canyon spans over 5,000 years with sites from the terminal Prehistoric, Protohistoric, and Ethnohistoric archeological periods being most predominately represented (Bergstresser n.d; Pearson 2003). Sites include rock shelters, rock circles, rock walls, cairns or collapsed cairns, food procurement and processing sites, lithic procurement and processing sites, dumps, campsites, habitation sites, and a quarry (Bergstresser n.d.; NPS 2010). The number of rock shelters within the approximately 7.5-mile-long canyon suggests that it was a well-known and often traveled corridor. Evidence from the rock shelters indicates they were both habitation sites and repeated-use campsites (likely used during resource procurement activities and as way stations while traveling from the valley in the west to the desert in the east).<sup>1</sup>

The people formerly occupying Grapevine Canyon are in the region and are defined within the Northern Death Valley District. This district contained three winter villages, of which Mahunu was the largest in terms of size and population. The village was composed of four camps with a total of 27 people. The camps were near Grapevine Springs in the Lower Vine area and included at least two separate archeological sites within the canyon. One, CA-INY-5702 (also known as

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<sup>1</sup> Lynn Johnson, *Ethnographic Report: Rehabilitate Bonnie Claire / Ubehebe Roads*, Johnson Consulting, Independent Research Center for engineering-environmental Management, Inc., 2006.

Indian Camp), was later occupied by American Indian laborers working at Death Valley Ranch. The Timbisha Shoshones (also referred to as the Panamint Shoshones) are descendants of the people who occupied the Mahunu winter camps. Grapevine Canyon was pivotal to their cyclical pursuit of subsistence and as a trade route from California to Utah.<sup>2</sup>

The first documented use of Grapevine Canyon and Grapevine Springs by European Americans did not occur until the mid-1860s when prospectors D. E. Buel and Joseph Todd traveled from water source to water source along the western flank of the Grapevine Mountains. One of the springs depicted on Todd's map was Bonner Springs, which is now known as Grapevine Springs.<sup>3</sup>

Other prospectors followed Buel and Todd—the 1866 Blasdel Expedition was led by Nevada Governor Henry G. Blasdel to find the fastest route from Silver Peak to the Pahrangat Mining District. Possessing information and a map from members of the earlier Todd party, Blasdel initiated a prospecting detour into Death Valley and upon reaching Bonner Springs he renamed it Mound Springs. Blasdel's party camped at the springs and recorded encounters with the local Timbisha Shoshones. In 1869, prospectors led by George Miller and W. H. Rhodes traveled through the area. Accounts documenting early use of the trail through Grapevine Canyon include the 1872 excursion by Von Schmidt,<sup>4</sup> the Wheeler Survey Party in 1875,<sup>5</sup> the 1891 U.S. Biological Survey – Death Valley Expedition, and the 1905 U.S. Geological Survey – Geological Mapping Expedition. There were likely many unrecorded excursions into the area that used the natural corridor and trail system of Grapevine Canyon. Lieutenant Birnie of the Wheeler Survey noted that there were only two passes through the Grapevine Mountains, e.g., Boundary Canyon and Grapevine Canyon.<sup>6</sup> During the early expeditions and excursions, American Indians were often hired as guides or were consulted for directions. These encounters resulted in the use and recordation of the trails and travel corridors used by the native population.<sup>7</sup>

Miners, settlers, and explorers continued to travel these American Indian routes in Death Valley. Between the 1880s and the 1920s, the American Indian-established trail through Grapevine Canyon became a primitive road as later European Americans traveled through the area in livestock-drawn wagons. One of the earliest European American settlers, Jacob Steininger, started farming in Grapevine Canyon around 1880. Steininger grew grapes and other fruits and vegetables, some of which were likely sold to miners and travelers using the primitive road that bisected his farm and connected the Ubehebe mining area with Sarcobatus Flats (a large, dry lake and alluvial fan adjacent to the upper end of Grapevine Canyon).<sup>8</sup>

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<sup>2</sup> Johnson, *Ethnographic Report*.

<sup>3</sup> Dewey Livingston, 2009. Historic Resource Study: Death Valley Scotty Historic District. Death Valley National Park. 52. and Bergstresser, Laura. "Death Valley National Park: Cultural Resource Management Program, DEVA 2004C, DEVA 2005A, DEVA 2009I: Cultural Resources Assessment for The Bonnie Clare and Ubehebe Crater Road Repair Projects, Inyo County." On file at Death Valley National Park Cultural Resource Office. Unpublished.

<sup>4</sup> Benjamin Levy, Death Valley National Monument: Historical Background Study. National Park Service. 1969, 88.

<sup>5</sup> Levy, Death Valley National Monument, 83.

<sup>6</sup> Levy, Death Valley National Monument, 88.

<sup>7</sup> Johnson, *Ethnographic Report*.

<sup>8</sup> Livingston, Historic Resource Study. 27.

The springs and seeps flowing in Grapevine Canyon appealed to other European American settlers. Early twentieth-century settlements in nearby areas played a major role in the development and use of the road through Grapevine Canyon. The town of Bonnie Clare, Nevada, was occupied and built in a late nineteenth-century gold mining area. There was a road connecting Las Vegas, Nevada, with the gold mines to the north in Tonopah, Nevada, with a spur extending to the west through Sarcobatus Flats to the top of Grapevine Canyon. Thorp's Well and Bonnie Clare, 4.0 miles north of Thorp's Well, were on the edge of the flats. In 1904, the Bonnie Clare mill was constructed near the Thorp stage station, and the post office was built in 1905. First named the Montana Station, the post office name was later changed to Bonnie Clare in 1909, which was the last accepted spelling of the name.<sup>9</sup> The owners of Bullfrog Goldfield Railroad platted the town of Bonnie Clare in 1906. In 1907, construction began on a line connecting Las Vegas and Tonopah with a depot in Bonnie Clare built the same year. Bonnie Clare's economic prosperity paralleled local mining booms and busts in the Ubehebe Mining District.<sup>10</sup>

In 1905, as demand for electrical technology increased, the price of copper also increased and the Ubehebe mining region to the west of Grapevine Canyon experienced a renewed boom. By 1906, except for a 6.0-mile length, the road between Bonnie Clare and the copper mines that passed through the Jacob Steininger farm was reported in good condition.<sup>11</sup> A 1906 map in *National Geographic* magazine showed Bonnie Clare Road, which indicates it was significant enough to be placed in a magazine with national distribution. However, this map is not detailed enough to locate the road template exactly within the canyon. A 1913 topographic map of the area represented the road being slightly north of the center of the canyon; both early maps show the road generally following the natural topography of the canyon floor.

Construction of a railroad in western Nevada necessitated that Ubehebe area mines ship ore and obtain supplies east through Grapevine Canyon. Prior to the western Nevada railroad construction, mines in the Ubehebe area shipped ore and obtained supplies west to the Owens Valley rail connections.<sup>12</sup> As copper mine production rapidly increased, there were intentions among investors of constructing a railroad through Grapevine Canyon. The Kimball Brothers' Bullfrog Stage and Transfer Company began a weekly stagecoach route between Ubehebe City and Bonnie Clare, with a stop at Grapevine Springs. The description of road conditions used by the stagecoaches varied widely from decent to bad. Eventually, plans for building a railroad through Grapevine Canyon were abandoned, but the wagon/coach road continued to carry substantial traffic.<sup>13</sup>

In 1907, there was a well-traveled wagon road connecting the Ubehebe Mining District to the west with the railroad in Bonnie Clare to the east.<sup>14</sup> Although early maps depict a road through

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<sup>9</sup> John Southworth, "How Do You Spell Bonnie Clare? And Why Do You Spell it That Way?" Proceedings Fourth Death Valley Conference on History and Prehistory. Death Valley Natural History Association, 1996.

<sup>10</sup> Beth Sennett, "Wage Labor: Survival for the Death Valley Timbisha" In *Native Americans and Wage Labor: Ethnohistorical Perspectives*, edited by Alice Littlefield and Martha C. Knack (University of Oklahoma Press, 1996).

<sup>11</sup> Livingston, *Historic Resource Study*.

<sup>12</sup> Livingston, *Historic Resource Study*, 44.

<sup>13</sup> Livingston, *Historic Resource Study*, 44.

<sup>14</sup> Carey Feierabend, "Bonnie Claire Road – Historic Road Characterization Study: Death Valley National Park, California and

Grapevine Canyon, it is not possible to determine the road's exact alignment. In the first decade of the twentieth century, the road through Grapevine Canyon took a north-of-center route through the Jacob Steininger farm. As with most early trails and wagon roads however, the exact alignment was dictated by natural hydrology and topography (ephemeral drainage bottom/areas of permanent flowing water, canyon walls, slopes, seeps, and springs, etc.) and likely shifted through time due to rock slides, sediment deposition, washouts, and other naturally occurring changes in the landscape.

During the Bonnie Clare Road early historic period, it was a heavily used travel corridor that linked the mining areas to the west with the railroad to the east of Grapevine Canyon. Following a 1913 boom, mining in the Ubehebe area slowed and the next flurry of economic activity in Grapevine Canyon resulted from Albert Johnson's construction of Death Valley Ranch, which began in 1922 and lasted until 1931; the most intense construction activity occurred from 1926 to 1931.

Albert Johnson had camped on the site with Walter Scott for nearly ten years and acquired the Jacob Steininger farmland in 1917. Scott was a minor celebrity born in Kentucky in 1872, left home at age 11, and joined his brothers to work on a ranch in northeastern Nevada. Scott was a skilled horseman and in 1884 joined a horse drive to California. He later accepted employment assisting in the survey of the Nevada-California border. During this survey, Scott enjoyed his experience in Death Valley and subsequently accepted employment with the Harmony Borax Works (associated with the twenty-mule team borax hauling operations) for a few years prior to accepting employment with the railroad. In 1890, at the age of 18, Scott joined Buffalo Bill Cody's Wild West Show as a stunt rider.<sup>15</sup>

Walter Scott traveled across the United States and to several foreign countries with the Wild West Show. He married in 1900 in New York and he and his new bride, Ella Josephine Milium ("Jack"), moved to Colorado to attempt gold mining. This mining venture failed and Scott attempted to return to the Wild West Show; however, Buffalo Bill Cody ended Scott's career with the show in 1901 following an argument. Scott then borrowed two gold nuggets and used his natural showmanship to convince investor Julian Gerard the gold nuggets were extracted from his mine in Death Valley. Gerard agreed to provide Scott with a grubstake (an advance to pay for mining operations) in this gold mine, after which Scott returned to California and sent Gerard news of the mine's success, but never any gold. In 1904, Scott supposedly was delivering \$12,000 in gold dust to Gerard in Philadelphia when he was robbed along the way.<sup>16</sup>

A series of publicity stunts carried out by Scott ensued, including setting the fastest time by train from Los Angeles to Chicago earning him the name "Death Valley Croesus" from the press. Later, he allegedly signed a Las Vegas hotel register "Scott, Death Valley" and was redubbed "Death Valley Scotty," which became his life-long nickname. Other exploits that brought Scott fame included a car wreck, a month-long disappearance in Death Valley, and a mysterious

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Nevada." 2006.

<sup>15</sup> Stanley Paher, *Death Valley's Scotty's Castle: The Story Behind the Scenery* (KC Publications, Inc., 2010):

<sup>16</sup> Paher, *Death Valley's Scotty's Castle: The Story Behind the Scenery*.

gunshot wound to the upper thigh while riding alone in Death Valley. Scott's fame and natural exuberance attracted other investors seeking a grubstake in his mines, including Albert Johnson, a wealthy insurance executive from Chicago.<sup>17</sup>

Born in 1872 to a wealthy Ohio industrialist, Albert Johnson obtained an engineering degree in mining and married Bessie Penniman in 1896. In 1899, Johnson and his father were in a train accident in Colorado that killed his father and left Johnson seriously injured with a broken back. Unable to continue in the mining industry, Johnson and another investor purchased the National Life Insurance Company in Chicago in 1902.<sup>18</sup>

In 1906, after having provided grubstake funds to Walter Scott for two years and beginning to worry about his investment and Julian Gerard's role as a competing investor, Albert Johnson joined an expedition with Scott to see the mine; it became another publicity stunt as Scott hired people to go ahead of the group and "attack" them. In the confusion of the false attack, Scott's brother was shot. Following the expedition and shooting incident, the media turned on Scott as a fake and Scott's brother brought legal charges against him. These charges were eventually dismissed and Scott was able to maintain his gold mine myth.<sup>19</sup>

In 1909, Johnson returned to Death Valley, spending a month in the area with Scott. Johnson realized there was no gold mine, but enjoyed Scott's company and the benefits of the desert environment on his frail health (when Scott was sued in 1912 he was compelled to admit in court that he never owned a gold mine). Following this confession, Scott lived in a cabin in Lower Grapevine Canyon. He spent his time entertaining Johnson who visited on a regular basis and provided him with a monthly stipend of \$30.<sup>20</sup>

Albert Johnson purchased the former Steininger farm property in 1917. Shortly thereafter, he and Walter Scott (and sometimes Johnson's wife Bessie Johnson) began camping on the property in wood-sided tents. In order to accommodate Bessie, Albert ordered the construction of permanent quarters in 1922. The first three structures were rather plain, box-like buildings including a house, cookhouse, and garage. The house was two stories (32' x 96') with a stucco exterior. However, the interior featured the most innovative technology of the day including a personal ice-maker/freezer, indoor plumbing, and a gas stove. As construction of the structures proceeded, rumors of Scott and his gold mine once again surfaced and Johnson preferred to be thought of as Scott's banker, taking a back seat to allow Scott to thrive in the media attention.<sup>21</sup> This relationship ultimately resulted in the media and the public referring to the Death Valley Ranch mansion as Scotty's Castle.

In 1925, Johnson began a more impressive building program that lasted until 1931 when his insurance business failed as a result of the stock market crash and the Great Depression. Construction included a major renovation of the first three buildings and adding support

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<sup>17</sup> Paher, Death Valley's Scotty's Castle: The Story Behind the Scenery.

<sup>18</sup> Paher, Death Valley's Scotty's Castle: The Story Behind the Scenery.

<sup>19</sup> Paher, Death Valley's Scotty's Castle: The Story Behind the Scenery.

<sup>20</sup> Paher, Death Valley's Scotty's Castle: The Story Behind the Scenery.

<sup>21</sup> Paher, Death Valley's Scotty's Castle: The Story Behind the Scenery.

buildings, structures, landscaping, and infrastructure at the officially named Death Valley Ranch. Charles Alexander MacNeilledge was hired to design the Spanish Provincial style complex and Matt Roy Thompson was hired to oversee construction of the lavish ranch house.<sup>22</sup>

Johnson was a religiously devout, quiet, and private person, the exact opposite of the loud and rowdy Scott. Local stories featuring Scott include accounts stating he would drive to Hollywood on three-week drinking binges<sup>23</sup> and was seen sitting in the middle of the road to Scotty's Castle too drunk to stand—his Franklin vehicle off in the ditch.<sup>24</sup> Other local accounts claimed he was a “flim-flam artist” and “bull-shooter,” but that he was also someone who brought Death Valley some notoriety.<sup>25</sup>

Regardless of his antics, Johnson enjoyed Scott's stories and companionship. A letter written by Johnson's construction supervisor may shed some light on the sincerity of Scott's true nature toward Johnson. In 1930, as Johnson was facing a financial downturn and began to lay-off local American Indian laborers from ranch construction, Scott instructed the construction supervisor to say that it was he who was running out of money and not Johnson.<sup>26</sup> Johnson was also generous to Scott and in 1930 he constructed a separate ranch at Lower Grapevine Springs for him, complete with house, indoor plumbing, garage, grain shed, corral, and blacksmith shop. Scott lived at Lower Vine Ranch until 1952 when he moved to Death Valley Ranch (Scotty's Castle) where he lived until his death in 1954.<sup>27</sup>

The unskilled construction labor force at both ranches was generally composed of local native people, largely the Timbisha Shoshones with some Southern Paiutes, who stayed at Indian Camp to the east of Death Valley Ranch. These workers were generally employed year-round, with the exception of August when construction paused during the hottest time of the year (Sennett 1996). Skilled laborers were generally European American and were less consistently present in their employment at the ranch, possibly because skilled labor was not required on a consistent basis<sup>28</sup> or because the isolation of the area created a high turnover rate.<sup>29</sup>

Much of the material used to construct Death Valley Ranch, minus the aggregate for the concrete, had to be shipped via railroad. Until early 1928, supplies were sent by rail to Bonnie Clare, approximately 25 miles east of the ranch, and then delivered by wagon or truck to the construction site via the dirt road through Grapevine Canyon. Rail service to Bonnie Clare was terminated in 1928. In anticipation of the closure, Johnson ordered large amounts of construction materials to be stocked on the loading docks at the rail station until they could be delivered to the ranch.<sup>30</sup> Following the Bonnie Clare rail line closure, construction materials were shipped to Beatty, Nevada, then transported to the ranch by truck via the road through Grapevine Canyon.

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<sup>22</sup> Dorothy Shally and William Bolton, *Death Valley's Fabulous Showplace: Scotty's Castle* (Flying Spur Press, 2000).

<sup>23</sup> Robert McCracken, An Interview with Duke Lowe: An Oral History. Nye County History Project, 1988, 23-25.

<sup>24</sup> Robert McCracken, An Interview with Ralph F. and Chloe C. Leslie: An Oral History. Nye County History Project, 1987a, 19.

<sup>25</sup> Robert McCracken, An Interview with Jack and Maud-Kathrin Crowell: An Oral History. Nye County History Project, 1987b, 50.

<sup>26</sup> NPS DEVA File No. MSS7.

<sup>27</sup> Paher, *Death Valley's Scotty's Castle: The Story Behind the Scenery*.

<sup>28</sup> Sennett, “Wage Labor: Survival for the Death Valley Timbisha.”

<sup>29</sup> Paher, *Death Valley's Scotty's Castle: The Story Behind the Scenery*.

<sup>30</sup> Shalley and Bolton, *Death Valley's Fabulous Showplace: Scotty's Castle*.

Johnson purchased 70 miles of railroad ties from the recently closed rail line, stacked them at the ranch, and burned them for fuel.<sup>31</sup>

The construction of Johnson's vacation retreat coincided with the automobile obsession that swept the nation in the 1920s. Auto tourism was the incentive for several developments to support tourists in the vicinity of Grapevine Canyon. The U.S. Borax Company established the Furnace Creek Inn in 1927, and constructed roads in the valley to provide access for tourists. Herman Eichbaum built a toll road from Darwin into Death Valley, providing access to the area from Los Angeles. He then built Stovepipe Wells Hotel and extended the toll road from Stovepipe Wells to Furnace Creek and Beatty, Nevada. Eichbaum realized that places like Ubehebe Crater and Scotty's Castle were also desirable tourist destinations and built a toll road from Stovepipe Wells to Grapevine Canyon in 1929. In 1930, the State of Nevada built State Road 5 (today known as Highway 95) connecting Beatty with Tonopah, Nevada. Matt Roy Thompson (Johnson's construction supervisor) used a caterpillar to grade Bonnie Clare Road all the way to newly constructed State Road 5, creating a travel and trade corridor connecting California and Nevada. These new and improved roads and new accommodations, combined with the outlandish reputation of "Death Valley Scotty" and his claims to riches, stories about desert thieves, and claims that he owned the luxurious complex attracted tourists to Death Valley Ranch.<sup>32</sup> By 1930, the ranch had become a tourist destination. Free informal tours were given by the Johnsons when they were in residence until 1931.

In 1929, as the federal government began to explore the conservation of a national monument in the area, Albert Johnson rerouted Bonnie Clare Road, moving it from its location north of the center of the canyon to the south and east sides of the canyon as it passed his property. It is likely this decision was prompted by several factors including that the ranch was already becoming a tourist attraction and would allow him to control access to his property. The original road traversed the middle of his property, immediately in front of his house. Johnson likely anticipated traffic would increase with the establishment of a national monument and wanted to divert this increased traffic flow from the immediate vicinity of his home. The new dirt road was constructed in part using a power shovel. The northern and western edges of the road were marked by concrete posts and fencing, which Johnson had installed to mark his property boundary.

The intent behind Johnson's realignment of Bonnie Clare Road was to encompass as much land as he could within his fence, including the springs on the south and east sides of the canyon, and to move the public road away from the center of his estate. Johnson's letters to construction supervisor, Matt Roy Thompson, demonstrate that Johnson was very conscious of the importance of claims to water and water use rights. He laid claim to the water resources at Death Valley Ranch by incorporating the springs inside his fence and capturing spring flows to produce electric power for his home.<sup>33</sup>

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<sup>31</sup> NPS DEVA File No. MSS7.

<sup>32</sup> Livingston, *Historic Resource Study*, 143.

<sup>33</sup> NPS DEVA File No. MSS7.

The new road alignment and placement of the fence provided a physical demarcation of Johnson's property line. At the same time, new entrance gates were constructed.<sup>34</sup>

Construction of the new road at the new entrance gates required digging into the slope opposite the new gate. The material cut from the canyon wall was used to raise the roadbed for the new Bonnie Clare Road alignment and the roadbed for access to the ranch. In 1930, the construction crews focused on the portion of the road west of the gate, using the power shovel for the heavy grading work and to remove hillsides.<sup>35</sup> Historic photographs depict a graded dirt road with the raised roadbed in the area near the entrance gate and a raised roadbed in the area south of the gate; road construction activities under Johnson's direction appear to have involved the greatest degree of cut-and-fill to have occurred along the road up to that time. The road alignment was dictated by natural features within the canyon, including the springheads, natural waterways and desert wash bottom, and the walls and slopes of the canyon walls. The Johnson era of construction of Bonnie Clare Road was finished in 1930, just before Death Valley Ranch was closed to visitors in 1931.

The impending and eventual establishment of the national monument spurred Johnson to use his political connections to retain ownership of his ranch. In 1935, a congressional bill was passed that allowed Johnson and Scott to purchase the 1,500 acres on which Death Valley Ranch and Grapevine Springs / Lower Vine Ranch were built for \$1.25 per acre. Johnson finalized the transaction in 1937 after a survey of the property boundary was completed.<sup>36</sup> The ranch reopened to tourists in 1936 when the land dispute between Johnson and the national monument was negotiated. When Death Valley Ranch / Scotty's Castle reopened, guided tours cost \$1 and during the 1936–37 tourist season as many as 130 tourists a day paid to visit the facility.<sup>37</sup>

The establishment of Death Valley National Monument in 1933 by President Herbert Hoover marked the beginning of federal management of Bonnie Clare Road. Colonel John White, the superintendent of Sequoia and General Grant national parks, was assigned oversight of the new monument.

Shortly after the monument was established, President Franklin D. Roosevelt was elected to office and created the Civilian Conservation Corps in March 1933. The Depression-era program provided thousands of unemployed men with work on federally funded projects. Initially, two CCC camps were established in Death Valley at Cow Creek. The laborers were assigned

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<sup>34</sup> NPS DEVA File Nos. MSS5 and MSS7; Feierabend 2006; Livingston 2009:257.

<sup>35</sup> Livingston, *Historic Resource Study*, 257; NPS DEVA File No. MM7

<sup>36</sup> Paher, *Death Valley's Scotty's Castle: The Story Behind the Scenery*.

<sup>37</sup> Albert Johnson sold his home in Chicago and relocated to Hollywood by the 1940s. Initially, he and Bessie spent much of their time at their vacation home in Death Valley. As tourism at the ranch increased, the Johnsons stayed at the home less often and began renting rooms at what was by then referred to as Scotty's Castle. On a trip back to Los Angeles from the ranch in 1943, Bessie Johnson was killed in a fatal automobile accident. Always a religiously devout man, Johnson founded the Gospel Foundation of California in 1946 for the purpose of operating the ranch. Johnson died in 1948 and the Gospel Foundation continued to maintain the ranch and offer tours of the home. The Gospel Foundation continued to allow overnight accommodations until the 1960s when it began negotiations with the monument to sell the ranch. The 1965 Land and Water Conservation Act provided funds for purchase of the facility in 1970 at a cost of \$850,000—the price Johnson had offered the National Park Service in 1944. The Gospel Foundation donated the furnishings to the monument, allowing the facility to look today as it did when the Johnsons were in residence (Paher 2010).

construction tasks by T. R. Goodwin, the engineer in charge at the monument.<sup>38</sup> The infrastructure improvement and construction activities, including road projects that occurred in the monument until 1942, were completed by CCC crews.<sup>39</sup>

Monthly reports prepared by Death Valley National Monument superintendents beginning in 1933 documented heavy tourist visitation to Scotty's Castle and the ongoing challenges to maintain the road in good condition to safely accommodate tourists visiting the castle and those traveling to Ubehebe Crater and Stovepipe Wells. Two early CCC projects included realignment and reconstruction of the road from the Eichbaum Toll Road (now California State Route 190) to Grapevine Canyon, and improvement of the road from Scotty's Castle toward Bonnie Clare, terminating at the monument boundary. The road project in Grapevine Canyon began in December 1933 and was completed in February 1934.

Letters exchanged among John White, T. R. Goodwin, and F. A. Kittredge (chief engineer under Colonel White) provided the underlying philosophy regarding development of roads within the monument. The road in Grapevine Canyon was the first to be addressed after a late summer cloudburst in September 1933 washed out a portion accessing Scotty's Castle. Goodwin was in favor of road alignments that were minimally intrusive on the visual landscape and that followed the natural contours of the land rather than straight lines. In a letter to John White on February 21, 1934, Goodwin explained, "He (Mr. Kittredge) also is quite in accord with our ideas in holding construction close to present natural ground, with rolling grades and fitting the country, rather than slashing through long tangents and heavy cuts and fills, which the Bureau (Bureau of Public Roads) would demand of a major project".<sup>40</sup>

A 5-mile portion of the road through Grapevine Canyon was opened through manual labor, which Goodwin documented in his monthly memorandum to White in February 1934: "the road has been graded, boulders blasted from the roadbed, curves daylighted, mills made, and road work completed".<sup>41</sup> Early communications among White, Kittredge, and Goodwin discussed the acquisition and use of caterpillars and graders for road construction and maintenance. No other types of equipment, including dump trucks, gravel sorters and screens, rollers, or stone crushers, were mentioned in these letters and reports.<sup>42</sup>

Plans for the 1933–34 CCC repair of Bonnie Clare Road were not found in monument archives. However, considering the Bonnie Clare Road project was one of the first implemented by the CCC crew and it was a road repair rather than a road construction project, it is not unreasonable to assume there were no drawings prepared. The work along Bonnie Clare Road in 1933 and 1934 was completed in two or three months—it is unlikely that significant changes were made to the road alignment or to canyon walls, rock faces, and slopes along the road.

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<sup>38</sup> Livingston, Historic Resource Study, 322.

<sup>39</sup> NPS DEVA File No. 30227.

<sup>40</sup> NPS DEVA File No. 30565.

<sup>41</sup> NPS DEVA File No. 30438.

<sup>42</sup> NPS DEVA Files at Cow Creek.

After Bonnie Clare Road repairs were completed, heavy spring rains in March 1934 again washed out portions (cloudbursts and road washouts were and are a continuous maintenance challenge for monument staff). Additionally, road repairs resulting from weather events and heavy tourist traffic leading to Scotty's Castle resulted in the need for continuous maintenance. Maintenance activities were usually listed in the superintendent's reports as "grading." Between 1933 and 1950 there were four separate washout events recorded in the superintendent's monthly reports. The washouts were recorded in the December 2, 1933, March 4, 1934, August 4, 1936, and August 8, 1946 reports. However, there were thirteen separate instances of major repairs completed on the road through Grapevine Canyon.<sup>43</sup> The road leading to Scotty's Castle was repaired to address continued washouts and maintenance issues because, as Goodwin noted in 1936, "It is heavily travelled, as Scotty's is the goal of nearly all visitors to Death Valley."<sup>44</sup> The road repairs were completed with relative speed indicating there was no major road realignment work at that time.

Letters regarding establishment of the Johnson property boundary in Grapevine Canyon revealed that as early as 1937 there were concerns about the tight, narrow curves within the road alignment. As the property boundary for Death Valley Ranch was being negotiated and surveyed, National Park Service Regional Director Kittredge agreed to use Bonnie Clare Road as the southern boundary as long as the boundary was, "so described that curves of reasonable radius may be secured."<sup>45</sup> At the same time, Superintendent Goodwin argued that the continuous road maintenance and damage to Bonnie Clare Road caused by heavy traffic and storms may be relieved if the road were oiled as a preventative; no funds were allocated to oil Bonnie Clare Road in 1937.<sup>46</sup>

Immediately prior to and during World War II, little work was completed on the roads in the monument because the majority of federal government resources were directed toward the war effort. The Civilian Conservation Corps was eliminated in May 1942; plans to improve Bonnie Clare Road within the boundaries of the monument were placed on hold. With no funds to maintain the road during the war, Superintendent Goodwin recommended that Johnson remove storm debris from the road when needed.

After the war ended, the superintendent's April 1946 report noted that the Nevada Highway Department repaired Bonnie Clare Road from Highway 95 to Scotty's Castle, but the 3 miles of roadway from Scotty's Castle, west to Grapevine Junction, were in poor condition because "it requires 100 miles of dead heading of a grader to spend a day's work necessary to regrade this short stretch. It was bladed once during the month, but the heavy traffic would require daily working to keep smooth, and we have neither men, equipment, nor funds to tie up."<sup>47</sup> The following month's report noted the road had been "regraded as thoroughly as possible without major reconstruction"<sup>48</sup> indicating the road was in very poor condition.

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<sup>43</sup> NPS DEVA Files at Cow Creek.

<sup>44</sup> NPS DEVA File No. 30565.

<sup>45</sup> NPS DEVA File No. 30599.

<sup>46</sup> Livingston, Historic Resource Study, 324.

<sup>47</sup> NPS DEVA File No. 30225.

<sup>48</sup> NPS DEVA File No. 30225.

The superintendent's reports from September to November 1947 described the first post-war work on Bonnie Clare Road along a 3-mile section that was resurfaced and indicated that the improvements, "will prove a real boon to visitors to Scotty's Castle as well as a heavy saving in maintenance costs in the future."<sup>49</sup> The 1946, 1947, and 1951 road improvements constituted the first work conducted on the road in order to improve visitor safety and access to Death Valley at a time when post-war automobile tourism was on the rise.

On December 9, 1948, the superintendent's report recorded the next repair to the road, "Work was completed on the road from Grapevine Junction to Scotty's Castle by a covered seal coat with screened material. This road had been badly broken up under last winter's traffic and was a succession of dangerous holes. Repairs to the old surface were made before sealing. Patching was also carried on all over the road system."<sup>50</sup> Illustrated on a 1951 map of the road system at Death Valley National Monument, the portion of Bonnie Clare Road west of Scotty's Castle to Grapevine Junction was labeled as "paved" with a low type bituminous treatment.

Plans for the 1951 reconstruction of an approximately 4.9-mile section of Bonnie Clare Road from Death Valley Ranch to the monument boundary identified work to be completed by NPS crews based on a set of design plans produced by Department of the Interior engineers. The plans specified the road to be covered with 2" of bituminous mat or road mix with the gravel and road base materials being locally crushed. At the same time, the State of Nevada reconstructed State Route 267 from the Nevada state line east to Highway 95.<sup>51</sup>

The plans also specified some realignment of the road to reduce the number of sharp curves and to widen the road to 20 feet, making the road safer, while increasing its capacity to handle the increasing number of automobiles. The alignment of the road was debated among monument personnel: (1) Kittredge was in favor of eliminating all the sharp curves citing that people traveling faster on the new surface would need 300' radius turns—he claimed a better alignment was preferred, even if more grading was required to accomplish the goal, and he indicated a 1.5:1.0 embankment slope,<sup>52</sup> and (2) Sanford Hill, assistant regional director for region four stated, "The road alignment, of necessity, follows the wash down Grapevine Canyon and is strictly limited as to grade and alignment by the precipitous rock of the canyon walls, as well as rocky points and the fence around the property of Scotty's Castle. To build curves of longer radii would require...the road being built in the steep canyon walls which would require bench sections in solid rock. This would seriously scar the canyon walls and detract from the natural beauty of the landscape along this entrance route."<sup>53</sup> Hill's assessment clearly reflected the philosophy of NPS personnel in the 1930s, which was carried through to the 1940s and to Mission 66 design and planning from 1956 to 1966.

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<sup>49</sup> NPS DEVA File No. 30225.

<sup>50</sup> NPS DEVA File No. 30225.

<sup>51</sup> Feierabend, Bonnie Claire Road—Historic Road Characterization Study.

<sup>52</sup> NPS DEVA File No. 30600.

<sup>53</sup> NPS DEVA File No. 30600.

Final drawings of the 1951 road reconstruction project were not prepared or were lost; however, the proposed road drawings showed a 20'-wide road of 2" oil mat with a 3' oil mat shoulder and a 2'-wide gutter on each side of the road. The proposed plans also show a 1.5:1.0 embankment slope, which does not exist along much of the road. The purchase requests for the work included powder, exploders, and drill bits.<sup>54</sup> The drawings, which show both the existing dirt road and the new proposed road indicate that several sections of road were proposed for realignment that required removal of canyon walls. Some abandoned sections of dirt road later became informal turnouts where visitors parked cars to take pictures and explore the canyon adjacent to the road.<sup>55</sup>

Photographs taken in the 1920s and 1930s along some portions of the road clearly show that the canyon walls were blasted and removed to accommodate the road as it is aligned today. Based on available information, there is evidence of reshaping rock faces and canyon walls from the 1930s work performed by Johnson and the 1951 construction activity of the monument staff. However, the alterations of canyon walls to accommodate larger turning radii for the new road alignment were relatively minor. The largest shifts of road alignment were 120' in a few places. The 1947, 1948, and 1951 improvements to Bonnie Clare Road were a formalization of the continuously evolving road repair, maintenance, and improvement that was dictated by natural features and that closely followed the topography of the canyon. The result of the rehabilitation was realignment of the winding canyon floor road. The design of the road reflected the Mission 66 design philosophy that roads should be minimized as much as possible in the visual landscape.

The road was opened for traffic in June 1951, and the superintendent's report for July 1951 documented a rise in attendance of 33.3 percent over the same month in 1950. Goodwin attributed the increased visitation to the improved road to Scotty's Castle from the east. The completion of the road improved park circulation and allowed people to enter from the northeast and comfortably drive south and west through the monument. The road improvements corresponded to a time when Americans were buying more cars and traveling more frequently to visit national parks and monuments.<sup>56</sup> The 1947, 1948, and 1951 improvements to Bonnie Clare Road pre-date, yet embody the design philosophy of the Mission 66 improvement program, which operated from 1956 to 1966 and focused on modernization of the national parks and monuments to safely accommodate the influx of automobile tourists in a manner that controlled vehicle access and impacts on park and monument resources while maximizing visitor enjoyment.

There were several occasions during the mid-to-late 1950s when portions of "Scotty's Castle Road" sustained storm damage and removal of gravel (sediments and slopewash) and/or patching was required: (1) the October 7, 1954, administrative report stated work was performed to "clear up damage" from a July 25 storm;<sup>57</sup> (2) the June 9, 1958, report stated that "a motor grader was employed three days repairing storm damage;"<sup>58</sup> (3) the March 10, 1959, report stated that

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<sup>54</sup> NPS DEVA File No. 30600.

<sup>55</sup> Feierabend, Bonnie Claire Road—Historic Road Characterization Study.

<sup>56</sup> Livingston, Historic Resource Study, 352.

<sup>57</sup> NPS DEVA File No. 30214.

<sup>58</sup> NPS DEVA File No. 30212.

“storm washed gravel was removed from...Grapevine Canyon”; and (4) the next month’s report stated, “patching crew worked on the worst sections of the Castle road (in Grapevine Canyon).”<sup>59</sup>

During 1957, the subject of tight curves within the Bonnie Clare Road alignment was addressed in a project request to widen the road and realign two sharp turns where sight distance was below acceptable safety standards. Plans were designed and delineated in 1961 that depicted the subject areas and the amount of land required to eliminate the curves. The project was not approved because the required right-of-way included a portion of Scotty’s Castle that was privately owned by the Gospel Foundation.<sup>60</sup>

Storm washouts and patchwork, including grading along Bonnie Clare Road in Grapevine Canyon, were documented on a regular basis beginning in 1959. The springhead discovered by Thompson’s crew in 1929 (within the road alignment at Cottonwood Corner) was dug out and drained in October 1966. The road surface was re-laid when the hydrologic alteration was completed. Also in October 1966, Route 5 was striped with reflective paint (NPS DEVA File No. 30318). During January 1967, the superintendent’s report documented, “Shoulders were leveled on five miles of the Grapevine road and inverted penetration was applied to widen this asphalt surfacing to the full twenty feet.”<sup>61</sup> The same report documented the completion of center-line striping along Bonnie Clare Road including the portion in Grapevine Canyon. Two storms in September 1967 caused closure of Bonnie Clare Road for approximately one month.

Storm damage to the road in the summer of 1968 was extensive, “Grapevine Canyon was hit with extremely heavy flooding causing complete destruction of four to five miles of road.”<sup>62</sup> Ideal Asphalt and Paving Company was contracted to repair the storm damage; the work began on December 2, 1968. The scope of the work was not defined in the maintenance supervisor’s report to the monument superintendent.<sup>63</sup> The contract, scope of work, and/or project drawings from the 1968 work were not in the NPS files and the storage of records of superintendent reports terminated after January 7, 1969. Feierabend documented in a 2006 historic road characterization that there was a 1968 proposal to realign two sharp turns, drain two springs, fix unstable road base in certain locations, and widen and repave narrow sections of the road. It remains unclear what if any work outside of pavement resurfacing was completed in 1969; however, current conditions indicate that there were no major realignments at that time.

The 1965 Land and Water Conservation Act provided funds for the purchase of Scotty’s Castle in 1970 from the Gospel Foundation at a cost of \$850,000. The Gospel Foundation donated the furnishings to the monument, allowing the facility to look today as it did when the Johnsons were in residence.<sup>64</sup>

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<sup>59</sup> NPS DEVA File No. 30212.

<sup>60</sup> Feierabend, Bonnie Claire Road—Historic Road Characterization Study.

<sup>61</sup> NPS DEVA File No. 30138.

<sup>62</sup> NPS DEVA File No. 30137.

<sup>63</sup> NPS DEVA File No. 30134.

<sup>64</sup> Paher, Death Valley’s Scotty’s Castle: The Story Behind the Scenery.

Plans to improve Bonnie Clare Road continued after the 1970 NPS acquisition of Scotty's Castle and a survey was conducted of the 3 miles between Scotty's Castle and Grapevine Junction. The result was a proposal to straighten the curve at Cottonwood Corner; however, Donald Carney, a Grapevine district ranger, objected to the proposal citing it was the only place in Death Valley where cars drive under a tree. He also cited the "local charm" of the road, which would be changed if the road was straightened, and he recommended that the road be repaved and widened slightly after the fence was removed from the curve. It is unclear if Carney's proposal was implemented, but the fence at Cottonwood Corner has been removed. Due to available technology and the narrowness of the canyon, historic aerial photographs acquired in 1952, 1965, 1979, and 1982 are inconclusive in determining if any realignment was implemented since 1951 along the road south of Scotty's Castle.

A major flood occurred in September 1976, which resulted in considerable damage to over 2.5 miles of road and several facilities at Death Valley Ranch. One and a half miles of pavement was removed or damaged by the flood and erosion was documented along the entire length of the road. Another flood in 1983 caused major erosion to the road shoulders.

The monument became a national park in the mid-1990s and a road system evaluation was conducted parkwide. The evaluation recommended that road improvements between Cottonwood Corner and the Nevada state line be implemented, including straightening the curves and widening the pavement.<sup>65</sup> These suggestions have not yet been implemented; however, plans for widening the road have been under consideration since 2000.

## **PART II. PHYSICAL INFORMATION**

### **A. Landscape Character and Description Summary**

Principle landscape characteristics of Bonnie Clare Road include natural systems and features, spatial organization, land use, topography, views and vistas, and archeological sites. Collectively, these landscape characteristics and the associated features serve as an excellent example of development within the context of early Mission 66 design and construction between 1947 and 1951 in Death Valley National Park.

The historic property boundary for Bonnie Clare Road starts at the Death Valley National Park boundary (California-Nevada state line) and extends to the junction with Ubehebe Crater Road near Grapevine Ranger Station, for a total of 7.5 miles. The boundary width is 50' from the centerline of the road, for a total of a 100'-wide corridor, which includes the paved road, unpaved shoulders, unpaved ditches, unpaved turnouts, and canyon wall cuts that were designed and constructed during the period of significance (1947–51). Exceptions to the 100'-wide corridor include where the road parallels the boundary fence to Scotty's Castle; at this site the historic property boundary parallels the fence and the edge of pavement between the two entrances to Scotty's Castle (where there is no fence).

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<sup>65</sup> Livingston, Historic Resource Study, 423.

The boundary includes the length of Bonnie Clare Road within Grapevine Canyon where the design of Bonnie Clare Road was influenced by the natural springs and wash bottom in the canyon and the topography throughout the canyon. The boundary width includes all features that were incorporated into the road design during the period of significance (1947–51). The pre-1947 road alignment remnants are not included in the historic property boundary because they do not convey the significance of the 1947–51 road work.

While the road has been repaired several times as a result of the dynamic nature of the landscape, it retains all seven aspects of integrity, including location, design, setting, materials, workmanship, feeling, and association. Presently, Bonnie Clare Road retains its historic character from the 1947–51 paving and reconstruction within the monument, reflecting early Mission 66 road development efforts in Death Valley National Park.

## B. Character-defining Features

### 1. Natural features

#### a. Topography

- Death Valley is a topographically diverse region defined by millions of years of landscape change, e.g., valleys and mountain ranges were created as land blocks slid past one another along faults, pulling tectonic plates apart and the subsequent and continuing erosion of these features. Primarily oriented north-to-south, Death Valley is bordered by the Amargosa Range to the east and the Panamint Range to the west. Today, the massive valley floor continues to subside, contributing to slow erosion caused by rocks, gravel, and silt sediments being carried to the valley floor by water as slopewash and flows from the surrounding hills and mountains.
- The mountains bordering the northernmost basin of Death Valley are named the Last Chance Range and Grapevine Mountains, portions of the larger Amargosa Range. The Grapevine Mountains are composed mostly of tertiary volcanic and sedimentary rock and lie directly east of the Northern Death Valley Fault Zone, with north-to-south-trending faults of 4' to 5' displacement. Fault movement over time resulted in the folding of the tectonic plates forming the mountains and causing the westward tilt of the basalt deposited below Scotty's Castle.
- The rock formations of Grapevine Canyon resulting from geologic processes represent key natural features of the road and add to the scenic experience of traveling through the narrow canyon. Cathedral Rock is one of the defining geologic formations that the traveler views en route to Scotty's Castle. The mineral value of the rock surrounding Bonnie Clare Road is unknown, but presumed to be low (likely useful for rock and gravel extraction); there is a

lack of historic mineral extraction activity within Grapevine Canyon. Albert Johnson, the original owner of Scotty's Castle, made use of locally available stone and gravel in the construction of some building and structural components (principally foundations, retaining walls, and fence posts) in Death Valley Scotty Historic District. In an area otherwise devoid of building materials, stone is abundant. The rock that was blasted and cut away to create the Bonnie Clare Road alignment became road fill and waste material that was hauled off-site or dumped on the wash bank.

- The width of the canyon floor is variable—from 75' to over 400' west of the Castle and 30' to over 400' east of Scotty's Castle. Generally, the upper portion of the canyon is much narrower due to the higher, steeper mountains/rock formations and the lack of active seeps and springs. The width of the canyon floor is slowly expanding, particularly the lower portion, as the result of deposition of slopewash and alluvium. Following major storms, portions of the road surface are often covered by sediments, gravel, and rock from wash overflow and from slopewash. As a result, the road requires annual maintenance following each storm event to move the debris from the road surface. The road is in a dynamic landscape that requires human manipulation of debris deposited during heavy rains in order to maintain the travel corridor.
- The geologic diversity of the canyon is exposed along Bonnie Clare Road, including mountain slopes (on both sides), individual boulders, sedimentary deposits, and cuts made to accommodate the road that exposed layers of rock. The relationship of the road with the naturally exposed rock and vertical cuts allows visitors to experience the geology and colorful, rugged landscape as they travel through the canyon. In cases where there is a vertical element close to the edge of the road, the road feels narrower and provides a more intimate experience with the canyon geology. Additionally, expansive views of Death Valley and the Nevada desert are framed by the canyon at its eastern and western extremities.
- Local topography has also been manipulated by human activity to some degree. Important aspects of road topography include grade, vertical rock cuts, vertical profile of the road that contours to the existing topography where possible, unpaved ditches, and the fill used on the eastern approach to Scotty's Castle.

The road is constructed within Grapevine wash when possible, which minimizes the amount of cut-and-fill necessary to construct the road along the slope of the canyon hillside which occurs adjacent to active springs and seeps. The road location on the canyon floor makes it susceptible to sediment deposition and surface damage during flash floods that carry sand, gravel, and rocks down-wash to Death Valley. Grapevine wash is narrow at the east end and noticeably widens

below the springs emerging near Scotty's Castle, where a smaller wash to the north flows into Grapevine Canyon. The west end of the wash is a wide alluvial fan and valley characterized by a deep layer of loose rock and soil deposited by flows from the higher eastern elevation of the wash. Because the canyon narrows above the springs and seeps east from Scotty's Castle, rock cuts were used to open the canyon floor wide enough to accommodate the 30' roadbed and surface features. As with many historic roads within Death Valley National Park, Bonnie Clare Road used, as much as possible, the natural topography, except along the entrance to Scotty's Castle where the road is elevated on a bench cut into the hillside. The cut-and-fill is south of and parallel to the Scotty's Castle historic property line. Within Grapevine Canyon, selective cut-and-fill sites were incorporated into the road design to accommodate safe vehicle passage.

The elevation of Bonnie Clare Road ranges from 2,300' at the edge of Death Valley to 3,900' at the edge of Sarcobatus Flats. The elevation is approximately 3,000' at the entrance to Scotty's Castle. This elevation increase is traversed with minimal modification to the existing topography because the road follows the natural low points through the canyon by using the wash as the alignment for the road for the majority of its length. Therefore, switchbacks and extensive grading were not required to traverse the Grapevine Mountain Range. The 1951 plans for rehabilitation of the eastern half of Bonnie Clare Road designed a grade of 0 percent to 6 percent, with most grading around 3 percent to 4 percent. These grades fit within the maximum 7 percent grade recommended in Mission 66 road design. The historical grade of the western half of the road is unknown, but photographs and superintendent's reports of road work prior to 1969 indicate that minimal grading was required to maintain the current grade.

Typical Bonnie Clare Road cross sections include a road bench that is sometimes near original grade and at a few points includes a road bench that is constructed on a fill prism or a bench at a cut slope. Most of the roadbed has been eroded so that the road no longer has a crown. Similarly, most road segments no longer have cross sections that promote drainage, either through cross sheeting or flow directed into unpaved ditches paralleling the shoulders. In a few places to the east of Scotty's Castle, there are unlined ditches adjacent to the shoulders of the road, although most of the ditches are not well defined due to heavy erosion and/or deposition. The road segment paralleling Scotty's Castle boundary fence is constructed on a bench from cut-and-fill of the canyon slope, which is a typical cross section that is not heavily used to the east and west of the property fence. In some locations, particularly to the west of Cottonwood Corner, the road is paralleled by gravel and dirt berms adjacent to the unpaved road shoulders as a result of storm material being cleared from the road and piled along the shoulders. Similarly, a portion of the road to the west of Cottonwood Corner is constructed on a fill prism that is not a design used elsewhere in the canyon.

As a result of using the wash, the majority of the road is at original grade and curved around the toe of slope for much of the southern hills. Wider curves were constructed in 1934 and in 1950–51 to increase sight distance and travel speed, resulting in selected hills being cut at the toe of slope to provide greater straight-aways. In general, there are two types of cuts along the length of Bonnie Clare Road—cuts made through mostly soil slopes (alluvium) and cuts made through rocky slopes (colluvium and bedrock exposures). Minimal cuts were made through soil slopes that have slumped into the road, eroded heavily during major storms (as evidenced by historic aerial photographs), and/or have been modified during road cleanup and repair after storm damage. These minimal cuts, designed and implemented during the period of significance, were in keeping with Mission 66 road design principles that placed an emphasis on reducing the height of cuts to minimize the visual intrusion on the surrounding landscape.

From the park boundary to Scotty's Castle heading west, the cuts are mostly through soil slopes, although there are a few rock-face cuts. The rocky cut slopes (with most cut at steep angles) are more stable. Rock cuts are of varying heights of nearly vertical rough-cut workmanship and occur east from Scotty's Castle. All cuts in the Grapevine Canyon section are minimal and made to short sections of the toeslope for the few slopes that extended near the center of the canyon bottom. Road cuts are especially prevalent at the points of slopes as the canyon narrows significantly on the approach to Scotty's Castle from the east. Some cuts may date to the 1930s CCC work, while most appear to correspond to work performed to make curve realignments to the road as depicted in the 1951 plans.

At Scotty's Castle, the road bench is cut into the southern hillside between the historic and contemporary entrances. From Scotty's Castle to Cottonwood Corner, cuts alternate between soil and rock. Cuts were made where area was needed for larger curves or straightaway sections of road to allow increased sight distance and safety, while siting the road on the south side of Scotty's Castle historic property fenceline and above the wash elevation. Cuts are typically minimal to decrease the surface of exposed cut that would be visible from the road bench. The rock cuts at the descent west from Scotty's Castle are steep, vertical, and are cut close to the edge of pavement; they have retained their definition following many heavy rainstorms. In contrast, many soil cuts in the road segment west from Scotty's Castle toward Cottonwood Corner are slumping. It appears that many of these cuts have eroded during heavy rains and the resultant sediments and slopewash have been deposited in minor drainages and larger washes that flow perpendicular to Bonnie Clare Road. This erosion pattern has resulted in sand and gravel deposition on the road bench—so much so in some places that the fence posts defining Scotty's Castle historic property boundary have been buried or dislodged from their original positions.

The existing road between Cottonwood Corner and Ubehebe Junction does not include major cuts since the roadbed alternates between being at grade or on a fill prism, both of which are aligned toward the center of the wash away from the toe of slope that defines the canyon's south edge. At the junction with Ubehebe Crater Road, the original alignment of Bonnie Clare Road is evident south of the existing road because the rock cuts that were made to the southern hills are clearly visible.

Since Bonnie Clare Road was constructed using the least amount of earthwork possible, there are few fill sections that were constructed during the period of significance. Ditches used to drain the road fill during the period of significance were unpaved in order to allow these features to blend into the surrounding landscape, a key design principle of Mission 66 road design. From the park boundary to Scotty's Castle, the main observable area of fill that differs from the period of significance is in the straightaway sections within the canyon and was prepared to develop a roadbed with a crown and drainage ditch. From review of the 1951 typical cross section it was assumed that fill was used throughout this section for the road crown and drainage system. Since the period of significance, flood debris has raised the level of the road bench at the eastern end of Scotty's Castle, as evidenced by the low height of the fence posts, which are partially to mostly buried along the fill slope at the edge of the wash. The majority of fill at the Scotty's Castle road segment was placed during construction before the period of significance and integrated into the 1947–51 design.

When Albert Johnson realigned Bonnie Clare Road outside his property boundary between 1929 and 1930, a large amount of fill was placed along the southern canyon walls (to position the road outside the more level land that he claimed as his private property). The main section of fill supporting the realigned road bench is just west of the original entrance gate. This fill was stabilized using railroad tie cribbing (Scotty's Castle Cultural Landscape Inventory, 104). The 1947–51 road work was designed to use the existing alignment in this road segment; therefore, additional fill was not needed during the rehabilitation effort.

To the west of Scotty's Castle, Bonnie Clare Road is constructed on fill. Since the period of significance, sand, gravel, and rock from the surrounding hillsides have washed and slid into the roadbed during storm events, resulting in grade elevation. Raising the road profile in this area has not changed the undulating historic character of the road profile. The most dramatic addition of fill has occurred to the west of Scotty's Castle to Cottonwood Corner; historic photographs indicate the portion of the road between Cottonwood Corner and Scotty's Castle was historically nearly at grade with the wash. The current fill and road bench within this section of road appears to have been created over time due to deposition from flooding and slopewash, then leveled in place by road crews. This natural erosion occurrence and maintenance activity has resulted in a more level and elevated

road profile with fewer changes to the height of the vertical profile of the road when compared to the road profile depicted in historic photographs. Prior to the period of significance, photographs indicate the road traversed the rolling topography of the canyon along the toe of slope. The largest quantities of fill in this section are at formerly low spots in the road crossed by flows from drainages off the southern hills that deposit rocks and alluvium during major storm events. These rock and alluvial deposits have buried the adjacent fence posts at some sites between Scotty's Castle to Cottonwood Corner.

From Cottonwood Corner to Ubehebe Junction, Bonnie Clare Road has been built up on fill, most noticeably where the road alignment veers from the toe of slope into the wash prior to merging to the southern edge of the canyon. Analysis of aerial photographs suggests that this road alignment in the middle of the wash has been maintained since the end of the period of significance. However, the road segment comprising the bend toward Ubehebe Crater Road Junction was constructed on a large fill prism that most likely was not placed during the period of significance (because the road used the existing topography as much as possible). The flood deposits at this end of the wash have created an extensive alluvial fan that has added a large quantity of fill at the west end of the canyon. A short section of the road was constructed on a fill prism; however, the overall character of the road fill in this section is compatible with the historic character of the 1947–51 work that included fill to create a crowned roadbed and a drainage ditch system.

b. Vegetation

In Death Valley, native plant communities become established due to elevation, slope exposure, substrate, disturbance, and the amount of available moisture. Within Grapevine Canyon, the Creosote Bush Mixed Shrub type has become established as several plant communities on the slopes, alluvial fans, and wash terraces. Grapevine wash supports plant communities within the Low- and Mid-Elevation Desert Wash Systems, which have become established due to intermittent flooding and deep alluvial deposits. Wetland and riparian communities have become established on wash sites with flowing water and high groundwater tables. Upland species characterizing these plant communities are heat and drought tolerant while wetland species require saturation or inundation for survival. Wetland and riparian communities are rare in this desert environment and may provide habitat for threatened, endangered, and sensitive wildlife species. The extant plant species are not valued from an economic or development standpoint; however, they provide important viewscape and landscape values.

Upland plant communities and associated species within Grapevine Canyon include the Creosote Bush Mixed Shrub type, which is characterized by: creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), brittlebush (*Encelia*

*farinosa*), desert holly (*Atriplex hymenelytra*), shadscale (*Atriplex confertifolia*), Parish goldeneye (*Viguiera parishii*), desert tea (*Ephedra californica*), burrobrush (*Hymenoclea salsola*), chamisa or rubber rabbitbrush (*Ericameria nauseosa*), California buckwheat (*Eriogonum fasciculatum*), and California broomsage (*Lepidospartum squamatum*). Disturbed roadsides support dense stands of cattle saltbush (*Atriplex polycarpa*).

The Mid-Elevation and Low-Elevation Desert Wash types characterize the intermittently flooded Grapevine wash and include: catclaw mesquite (*Acacia greggii*), honey mesquite (*Prosopis glandulosa*), desert willow (*Chilopsis linearis*), burrobrush, Mojave rabbitbrush (*Ericameria paniculata*), Parish goldeneye, desert tea, bladder sage (*Salazaria mexicana*), and chamisa or rubber rabbitbrush. These desert wash vegetation types intermix with riparian and wetland communities with species establishing according to soil moisture, saturation, or inundation.

Wetland and riparian plant communities established along Bonnie Clare Road support southern cattail (*Typha domingensis*), chairmaker's bulrush (*Scirpus americanus*), rushes (*Juncus* spp.), willows (*Salix* sp.), Fremont cottonwood (*Populus fremontii*), Goodding willow (*Salix gooddingii*), common reed (*Phragmites australis*), California fan palm (*Washingtonia filifera*), native grape (*Vitis californica*), mulefat (*Baccharis salicifolia*), and long-leaved brickell-bush (*Brickellia longifolia*). The Fremont cottonwood, California fan palm, and white mulberry (*Morus alba*) trees are not native plants and were in most cases planted or were volunteer seedlings and saplings from those planted by Johnson at Cottonwood Corner and Scotty's Castle. Presently, these species occur within the irrigated landscape, riparian habitats, and wetland sites and may grow immediately adjacent to the road or over the road in the case of the native grape.

Based on analysis of historic aerial photographs, the vegetation of Grapevine Canyon and the Bonnie Clare Road corridor is very similar to the distribution and canopy cover present in 1951 at the end of the road's period of significance. There was no discernible change in vegetation distribution and canopy cover at Cottonwood Corner based on interpretation of a 1952 aerial photograph.

In summary, the natural systems and features associated with the development of Bonnie Clare Road continue to characterize the setting, feeling, and association of travel through a geologically diverse, narrow canyon in a mid-elevation desert environment just as occurred during the period of significance from 1947–51.

c. Water

A narrow seasonal to perennial stream fed by several seeps and springs flows through the canyon segment from the highest elevation spring, through Scotty's

Castle, to just down-drainage of Cottonwood Corner where it likely seeps into the groundwater table. The active streambed is characterized by verdant riparian and wetland vegetation—water can be heard running within the channel from various points along the road.

There are five springs within the vicinity of Bonnie Clare Road, which are between Cottonwood Corner and the water supply system at the east end of the Scotty's Castle property. These springs and some seeps support wetland and riparian communities along the entire length of the drainage. Eight wetlands were identified and described in more detail in the 2005 wetlands delineations report for Bonnie Clare Road (this document only described wetlands that could be affected by proposed road widening). An additional seep/spring survey was conducted in 2010 to determine the benthic macroinvertebrate species present and local water quality.

Wetlands and riparian vegetation stands are directly associated with springs and spring flow. The lowest elevation spring and described wetland at Cottonwood Corner (wetland 8 in the 2005 report) are easily viewed from the road as the woodland and shrubland vegetation is more lush and taller than adjacent plant communities. The second spring emerges just east of Scotty's Castle and is not part of a delineated wetland, but supports dense wetland and riparian vegetation planted as part of the eastern border of the developed building core. The stream flows at the toe of the roadway fill slope and the edge of this site supports Fremont cottonwood, California fan palm, white mulberry, and Bermuda grass (*Cynodon dactylon*) among other introduced species. Another spring and described wetland (wetland 3 from the 2005 report) are 0.5 mile east of Scotty's Castle parking lot entrance; they are significant for being adjacent to the pavement (southern cattail grows within a foot of the pavement edge, willow shrubs arch over the driving lane, and native grapevines grow onto the pavement). The soil immediately adjacent to the paved edge is saturated.

The two upper springs are near the water tank complex east of Scotty's Castle. One spring emerges within the complex and the other emerges approximately 0.1 mile east where an associated wetland (wetland 1) was described in the 2005 report. This spring complex provides much of the water for the perennial stream (spring flow can be subject to seasonal changes during August and September when many local springs are dry or have greatly diminished flow). The remaining smaller wetlands described in 2005 are between Scotty's Castle and Cottonwood Corner and are all associated directly with the perennial stream channel.

Precipitation within Death Valley mountain ranges is greater in the winter and summer seasons and runoff from exposed bedrock and sparsely vegetated slopes results in significant flows through the canyon. Heavy rains cause erosion of the slopes and hillsides, contributing to the size of alluvial fans and amount of

sediment carried through the canyon into Death Valley.

Grapevine Canyon hydrology includes low flows from seeps and springs and large surface water flows following thunderstorms or prolonged monsoonal events. Thunderstorms result in slopewash, sediment deposition, and rockfall on the roadway and have also caused several washouts and landslides across the road in many years, which were repaired by maintenance crews. Bonnie Clare Road is in a dynamic landscape that is continuously modified to varying degrees by the local climatic conditions and hydrology.

## 2. Spatial Organization

Important aspects of the Bonnie Clare Road spatial organization include the road alignment, grade, and width and its response to the changing conditions of canyon slopes and bedrock exposures, the canyon floor width, and the vegetation patterns of Grapevine Canyon. Bonnie Clare Road passes developed and landscaped areas and historic features such as Scotty's Castle, the associated historic property boundary fenceline, and Cottonwood Corner, which create a distinct setting for the road. The spatial organization of the road was heavily influenced by the topography of Grapevine Canyon. The majority of the manipulation of topography within the historic district is associated with the construction of Scotty's Castle and Bonnie Clare Road.

### a. Land Patterns

The road is constructed at the bottom of Grapevine Canyon within Grapevine wash for the majority of the alignment to minimize the amount of cut-and-fill that would be necessary to position it along the canyon slope as described in Part II.B.1. Throughout the length of the road, selective small cuts and areas of fill were incorporated into the design template to accommodate safe vehicle passage through the canyon.

The alignment of Bonnie Clare Road is intricately tied to the natural topography of Grapevine Canyon forming tight curves characteristic of the rock outcrops of the upper canyon, hugging the toe of the southern and eastern slopes in the middle of the canyon to avoid active seeps and springs, and located near the middle of the canyon at its lower reach below Cottonwood Corner. The road includes several tight curves as it passes through the narrow segment of the canyon in the upper section, but has straight segments with sag curves where the canyon widens and alluvial fans and drainages support/cross the pavement. One of the tightest curves is the S-curve of Cottonwood Corner where the road crosses a wash, diverts around a springhead, avoids a common reed wetland, and avoids a grove of Fremont cottonwood and California fan palm trees.

b. Circulation

Bonnie Clare Road, alternatively known as Scotty's Castle Road, Grapevine Canyon Road, North Highway, and Route 5, is in the northeast corner of Death Valley National Park, provides a primary access route in the northeast section of the park, and provides an entrance from western Nevada into the park. The 7.5-mile portion of Bonnie Clare Road in Death Valley that extends from the Nevada-California boundary west to the Ubehebe Crater Road intersection represents the only access to Scotty's Castle, a popular park destination that is a national register-listed historic district.

The entire road includes approximately 37 miles of asphalt pavement with one terminus at California State Route 190 near Stovepipe Wells and the other terminus at Nevada State Route 267 on the California-Nevada state boundary, which is also the park boundary. Route 267 continues east into Nevada for approximately 20 miles to U.S. Highway 95 forming Scotty's Junction at that intersection.

c. Views and Vistas

Views and vistas include important, character-defining views (expansive and/or panoramic prospects, which may be naturally occurring or deliberately contrived) and vistas (deliberate, controlled prospects of a specific linear view). Beyond the natural beauty of the canyon walls, erosion patterns, desert plant communities, and natural rock formations, the Bonnie Clare Road design incorporates key views and vistas along its route. Some of these key views and vistas were planned and designed. In addition to topography, the road alignment was also determined by views of Scotty's Castle. Historic letters and documents related to Albert Johnson's work on the road in the late 1920s and early 1930s indicate the importance of views of Scotty's Castle from the road upon arrival from the south. Other views and vistas were the fortunate result of routing a road through a canyon with impressive natural landscape features.

d. Chimes Tower and Entrance Gate

As Albert Johnson realigned Bonnie Clare Road between 1929 and 1930, one of his goals was to create a striking approach to his property, which was known as Death Valley Ranch or Scotty's Castle. Correspondence from 1929 reflects Johnson's desire for the alignment of the Bonnie Clare Road and entrance to the complex to be an impressive approach to the buildings (Feierabend 2006). As a result, the road was aligned so that the Chimes Tower was the first building visitors would glimpse as they traveled north-northeast along the undulating road.

This view, combined with the fenceline along the western edge of the road, increased anticipation of reaching Scotty's Castle. Johnson placed the main entrance at a point along a sharp curve of the road that is highly visible to visitors traveling from either direction, which also creates a strong sense of arrival. Today, the road remains situated in its historic alignment providing visitors similar views, even with the encroachment of now-mature riparian vegetation near the entrance.

e. Tin Mountain

Traveling south from Scotty's Castle toward Death Valley, a notable panoramic view is revealed from the mouth of Grapevine Canyon toward Tin Mountain. The mountain peaks and ridges rise abruptly from the floor of Death Valley creating a dramatic landscape. According to historic documents, both Albert Johnson and Death Valley Scotty acknowledged the importance of this view.<sup>66</sup> Tin Mountain was also held in high regard by prehistoric inhabitants.<sup>67</sup> This view continues to impress current park visitors aided by large turnouts along both sides of Bonnie Clare Road from which to stop and photograph the landscape.

f. Cottonwood Corner and Cathedral Rock

Cottonwood Corner and Cathedral Rock are notable landmarks along the road and are in proximity to one another. Cottonwood Corner supports green, lush riparian woodland, shrubland, and herbaceous vegetation established on a perennial spring and contrasts sharply with the surrounding desert landscape. It is a unique setting where park visitors drive under large Fremont cottonwood trees as they slow to round a tight corner. Cathedral Rock is a natural landform near Cottonwood Corner. The rock formation, with its distinct texture and color from the surrounding slope, serves as an appealing feature while traversing Bonnie Clare Road and the property fenceline toward Chimes Tower.

g. Water

Along with climate, hydrology represents a limiting factor in terms of living and working in Death Valley. Although Bonnie Clare Road is in a canyon of the Grapevine Mountains, surface water flows occur in the wash only sporadically during large thunderstorms or extended monsoon rainstorms. Five cold springs, additional seeps, and extensive wetlands described at eight sites have been identified within Grapevine Canyon in proximity to Bonnie Clare Road (see Part II.B.1.c). With so little precipitation occurring in Death Valley, water sources, including springs and seeps, were a major factor in settlement locations within the area. In Grapevine Canyon, settlement was concentrated at the springs. Some of

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<sup>66</sup> Feierabend, Bonnie Claire Road—Historic Road Characterization Study.

<sup>67</sup> Feierabend, Bonnie Claire Road—Historic Road Characterization Study.

these springs were manipulated by Albert Johnson by damming and pooling for use at Scotty's Castle as a domestic water supply, for recreation, landscape elements, and for power supply. Important to understanding the alignment of the road is the fact that Johnson rerouted the road to the south of these springs to ensure the springs were included within his property boundary. A perennial stream flows down a narrow channel from the highest elevation spring, through Scotty's Castle property, to just below Cottonwood Corner where it likely disperses into the groundwater table of Death Valley. In very dry years or series of years this spring may have seasonal intermittent flows.

h. Buildings and Structures

Bonnie Clare Road consists of asphalt pavement overlaying the native gravel base. The curvy road is between 18'- and 20'-wide over the approximately 7.5 miles from the park boundary (California-Nevada border) in the east to Grapevine Junction (Death Valley). The road shoulders are soft and many have berms of loose material scraped from the travel lanes following thunderstorms (sediment and rock deposition, rockfall, and landslides). There are few drainage structures along the road.

i. Small-scale Elements (historic fenceline)

Constructed in the late 1920s, a concrete post and barbed-wire fence parallels Bonnie Clare Road for approximately 2.6 miles. Serving a multitude of purposes, the fenceline defines the historic Scotty's Castle property line and the road shoulder / right-of-way edge, while also serving as a visual and rhythmic delineator in the landscape.

Between 1926 and 1931, Albert Johnson coordinated construction of a fence containing more than 3,100 reinforced concrete fence posts to enclose his 1,500-acre Death Valley Ranch. Today, the fenceline is listed in the National Register of Historic Places as a contributing feature of Death Valley Scotty Historic District (1978) and is also included within the boundaries of Scotty's Castle Cultural Landscape Inventory (2005). Because the fence is listed as part of Death Valley Scotty Historic District it cannot be listed as a contributing structure in the Bonnie Clare Road corridor; however, the fence does contribute to spatial organization and the setting of the road.

A portion of the fence system established by Albert Johnson parallels Bonnie Clare Road for approximately 2.6 miles, dictating the northern and/or western extent of the road corridor. Because of the restrictive and often narrow canyon topography of this road section and the permanent nature of the concrete fence posts, the alignment of the fence has remained largely unchanged (although small segments may have been modified during road work). In particular, during the

1950–51 Bonnie Clare Road reconstruction, a few sections of the upper fenceline may have been moved to support curve widening and road straightening efforts (Feierabend 2006). However, this action was not confirmed in the field. The lower fence may have also undergone a few changes in the early 1970s (after the National Park Service acquired Scotty’s Castle) when plans were formulated to straighten the curve at Cottonwood Corner. At the time, Donald Carney, then a Grapevine district ranger, strongly objected to the proposal. As an alternative, Carney recommended that the road be repaved and slightly widened after the fence was removed from the curve.<sup>68</sup> Ultimately, it is unclear if Carney’s proposal was implemented; however, today there is no fence extant at Cottonwood Corner. Between 2008 and 2010, the fenceline was documented by NPS staff as two separate components, although the fence is considered one system or structure. The first component includes the *upper fence*, which extends from Scotty’s Castle east to Station 183+97, while the second component, the *lower fence*, traverses south-southwest from Scotty’s Castle to just beyond Cottonwood Corner where it terminates.

*Upper Fence (south of Scotty’s Castle)*

Along the upper segment of Bonnie Clare Road, the route winds through Grapevine Canyon toward Scotty’s Castle. The historic fenceline parallels the road on its northern border, generally remaining within 5’ to 10’ of the paved road edge. In areas where the canyon begins to narrow and natural rock features are in proximity, the fence is as close as 4’ or 5’ from the edge of the pavement. In contrast, fence post positions just east of Scotty’s Castle, measure 30’ or more from the paved road edge, which is an unusual characteristic of the historic fenceline.

*Lower Fence (Scotty’s Castle to Cottonwood Corner)*

Along the lower segment of Bonnie Clare Road, the route is composed of more gentle curves and crosses undulating toeslopes and drainages between Scotty’s Castle, west toward Cottonwood Corner. The historic fenceline parallels the road on its northern and western extent, generally remaining within 5’ of the paved road edge, although in some places the fence is as close as 3’.

j. Archeological Sites

As a result of several archeological field investigations, eleven rock shelter sites were documented within the 7.5-mile Grapevine Canyon corridor—many of these sites have multiple rock shelters. Other known sites include rock circles, rock walls, and cairns. Evidence from several rock shelters suggest they served as habitation sites and repeated-use campsites. These rock shelters were likely used

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<sup>68</sup> Feierabend, Bonnie Claire Road—Historic Road Characterization Study.

during resource procurement activities and as way stations while traveling from Death Valley in the west to Sarcobatus Flats and the desert in the east. Many rock shelters also contain diagnostic artifacts, faunal remains, and botanic materials dating from 5450 BP to the historic era. Additional archeological sites recorded in Grapevine Canyon include seven lithic scatters, a bedrock milling site, a hunting blind, two petroglyph sites, a quarry, three residential or domestic campsites, and a historic dump site. In addition, there is a multicomponent, multiuse site containing a prehistoric bedrock milling feature with other ground and chipped lithics, an abandoned road segment, a historic trash scatter, a collapsed cairn, and a quarry.<sup>69</sup> Indian Camp, which is one of the three documented residential or domestic campsites, is within the Bonnie Clare Road corridor near Scotty's Castle.

Ultimately, the narrow canyon corridor, combined with the number, diversity of type, and range of occupation dates of documented archeological sites permit archeologists to conclude that Grapevine Canyon, and in some places the current alignment of the road within the canyon, was an often-used corridor for prehistoric use and travel. However, it should be noted that Lynne Johnson (2006) has suggested that little work has been undertaken to record and document the trail network in Grapevine Canyon. The most recent archeological studies in the area recorded some trail segments associated with archeological sites;<sup>70</sup> however, this lack of field investigation does not negate the importance of Grapevine Canyon as a travel corridor.

### **PART III. SOURCES OF INFORMATION**

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<sup>69</sup> Bergstresser, Death Valley National Park: Cultural Resource Management Program.

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#### **PART IV. PROJECT INFORMATION**

The project was sponsored by the National Park Service, U.S. Department of the Interior. The documentation of Bonnie Clare Road was undertaken by architectural historian, Jayne Aaron of Aarcher, Inc. The project historian was S. Chris Baker of Aarcher, Inc. The project leaders were Richard Boston of the National Park Service, Denver Service Center, and Elaine Jackson-Rotondo of the National Park Service, Pacific West Region. The large-format photography was produced by Timothy McGrath. The project was completed during the fall and winter of 2012–13.