

# SEQU

## WIP Report

### NPS Retaining Wall Inventory Program Sequoia National Park



**Federal Lands Highway  
Road Inventory Program**

**Prepared By:**

**Federal Highway Administration  
Eastern Federal Lands Highway Division  
Road Inventory Program (RIP)**

**Data Collection Date: August 2007  
Report Date: December 2015**

# Sequoia National Park in California



**Sequoia National Park**





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# Introduction



## Sequoia National Park



**Federal Lands Highway  
Road Inventory Program**



## **Introduction**

The Federal Lands Highway Division (FLH) of the Federal Highway Administration (FHWA), in partnership with the National Park Service (NPS), has conducted a retaining wall inventory and condition assessment as part of the NPS Retaining Wall Inventory Program (WIP). This inventory provides information to the NPS Facility Management Software System (FMSS) regarding such things as type, size and location of retaining structures, as well as the condition of these facilities and consequences of failure. In addition, when wall and/or adjacent element deficiencies are identified, repair recommendations and estimated costs are also provided, suitable for use as FMSS work orders.

The main intent of this effort is to determine the backlog of needs associated with retaining wall assets – equipment features ascribed to the “parent” roadway asset. Inventory and condition assessments (pavement only) for the roads themselves are conducted under the NPS Road Inventory Program (RIP). Prior to development of the WIP, the vast majority of retaining walls were not accounted for in FMSS. Based on WIP inventory work to date, NPS wall assets are valued at well over \$400M. A second and equally important intent of this effort is to inform and improve project selection, prioritization, and development activities and processes at NPS regions/parks, FLH Division offices and the NPS Denver Service Center.

In support of WIP, a comprehensive procedures manual (available at the following link: <http://www.cflhd.gov/programs/techDevelopment/geotech/WIP/>) was developed to document the data collection and management process, wall attribute and element definitions, and team member responsibilities for conducting retaining wall inventories and condition assessments. This manual was used for nearly 3,500 wall assessments initially conducted between 2007 and 2008 within 34 national parks. WIP is supported by several key components described in the procedures manual, including a comprehensive training program for field inspectors, an Oracle-based database for long-term data management, unique data collection forms, a supporting field guide, and a wall repair/replace cost estimate guide.

Ultimately, condition assessments for retaining wall structures are expressed as deferred maintenance costs, which are then divided by current year replacement costs to arrive at a “Facility Condition Index” (FCI). Coupling this condition prioritization index with an “Asset Priority Index” (API), which measures the feature’s importance to the mission of the park, capital asset investments are made more efficiently. This approach appropriately focuses maintenance and construction priorities on value, rather than solely on cost. Wall inventory condition and cost data are transferred from the WIP database to FMSS, the primary asset documentation, management and planning platform maintained at each park. In addition, wall data are also provided to the Road Inventory Program to update equipment assets associated with the parent roadway asset.

Initial inventories were conducted based on RIP Cycle 3 data, but future planning has ensured updates to WIP will occur simultaneously with RIP. For long-term data management purposes, the WIP database will be linked to the larger, parent RIP database and be updated under the responsibility of the RIP Database Administrator.

This report is organized in a tiered approach from the broad park overview perspective (Tier 1) to a route overview perspective (Tier 2), then down to the details of each wall (Tier 3). Tier 1 presents park wall location maps and an overall park-specific summary narrative of the results of the wall inventory program. Tier 2 presents route overview maps with associated wall summary information. Tier 3 presents individual wall information in a three-page detailed format, including a photograph of each wall. Appendix A provides a condensed summary of wall inventory definitions and assessment categories to assist in reading this report.

# Park Retaining Wall Location Maps



Sequoia National Park



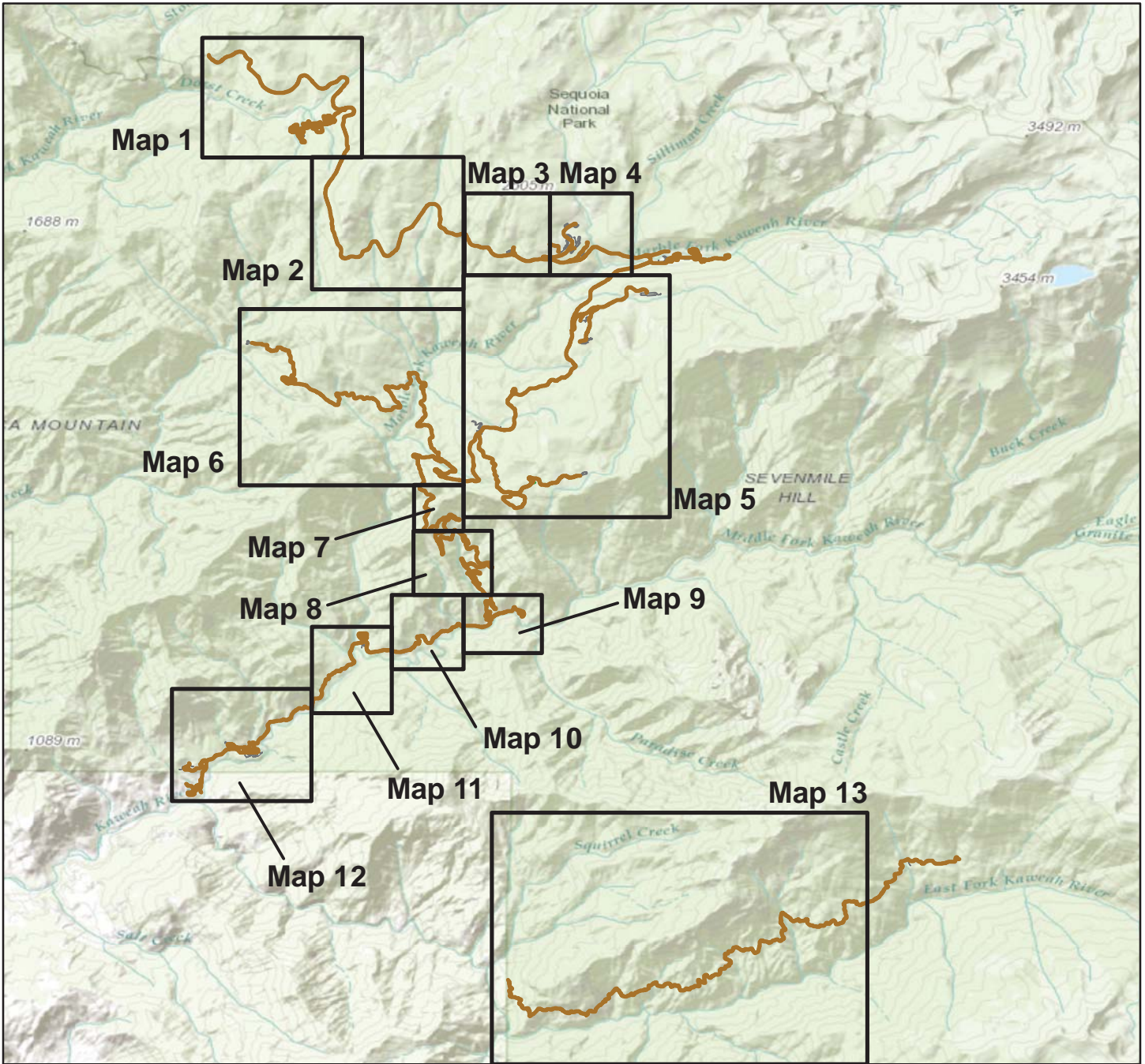
Federal Lands Highway  
Road Inventory Program



# Sequoia National Park

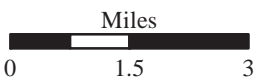
## WALL LOCATION MAP

### Key Map



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

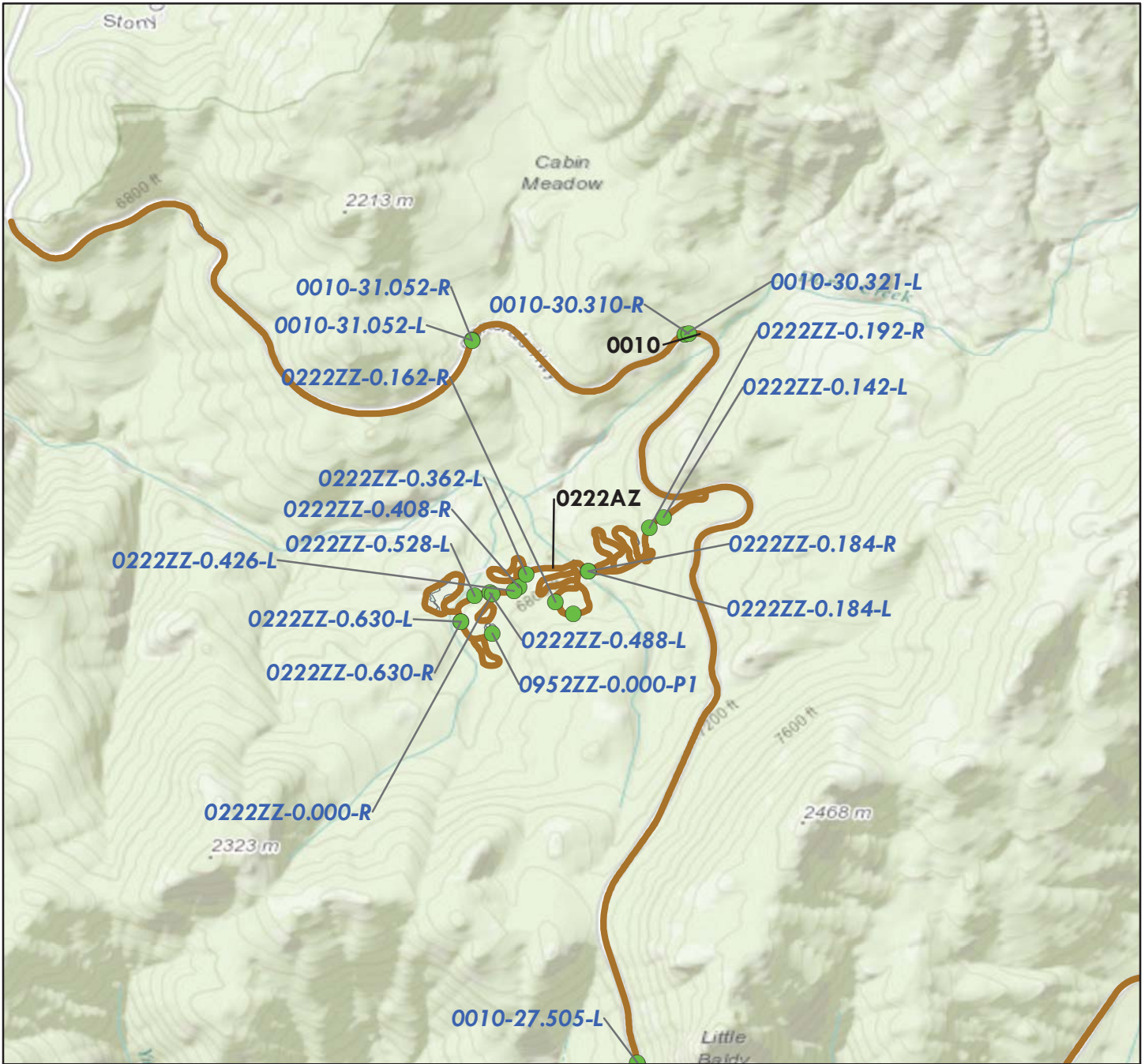
— RIP Collected Routes



# Sequoia National Park

## WALL LOCATION MAP

### Map 1



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes

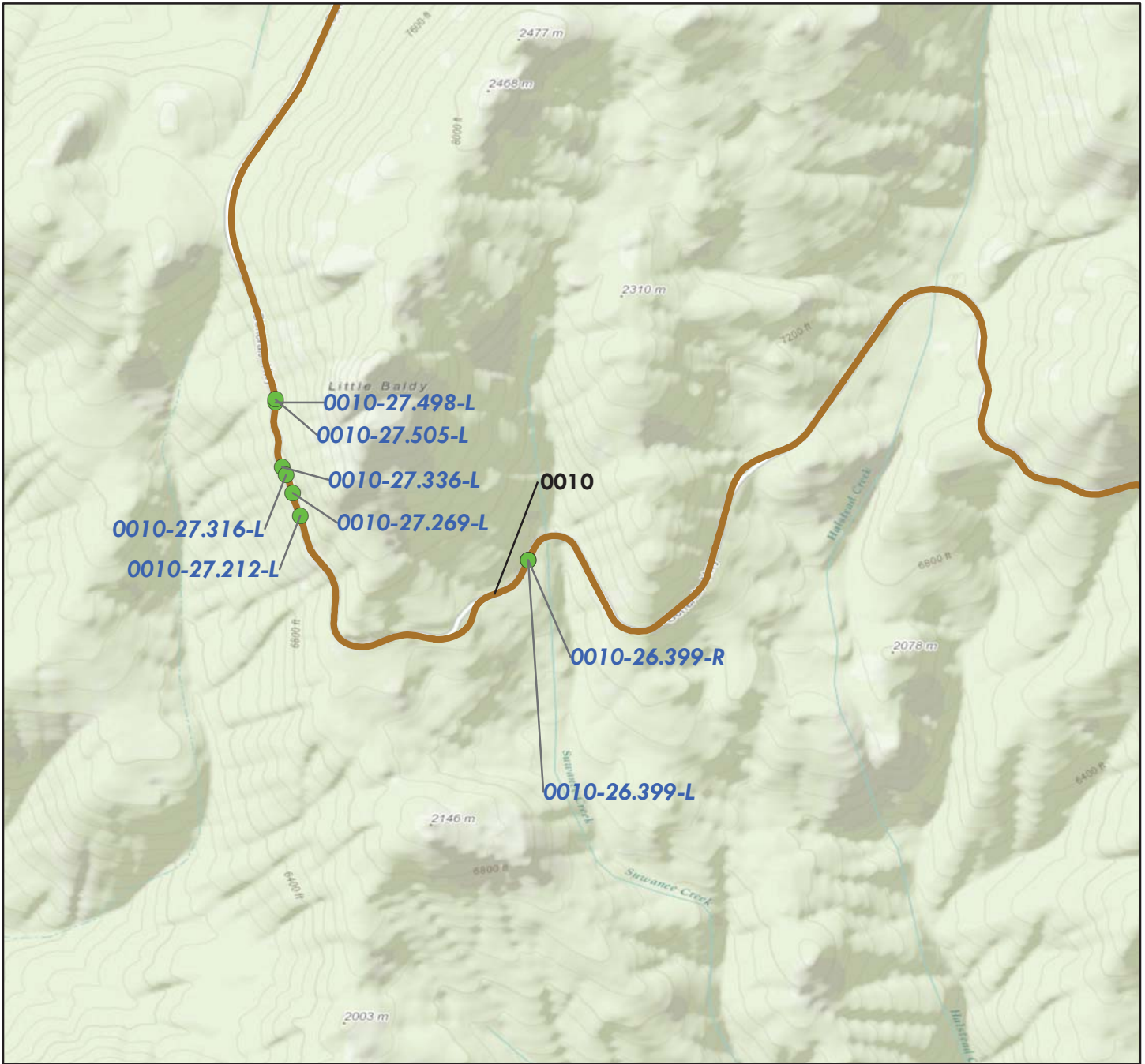




# Sequoia National Park

## WALL LOCATION MAP

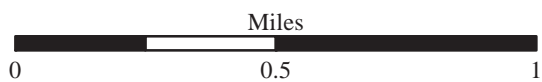
### Map 2



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

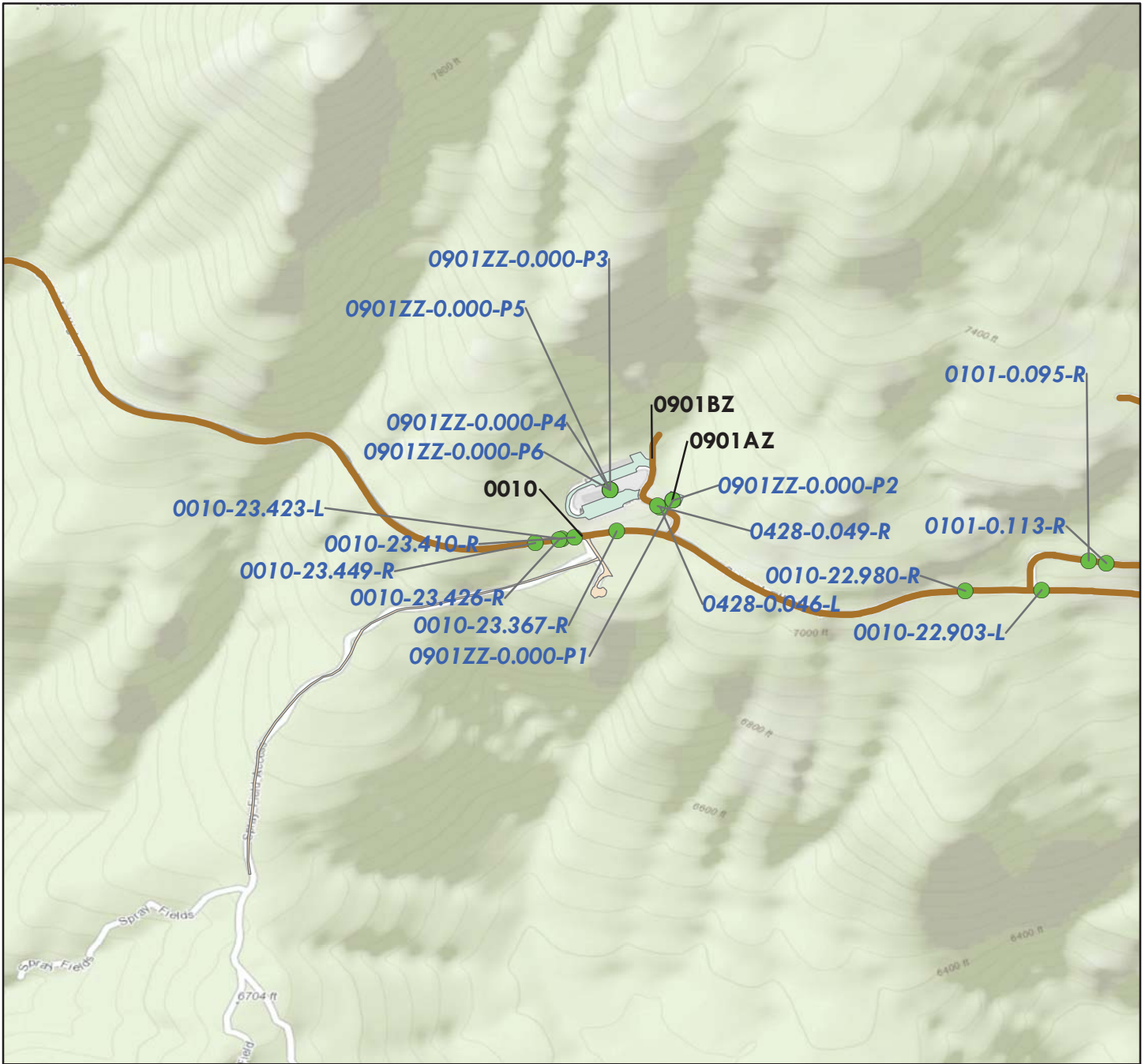
— RIP Collected Routes



# Sequoia National Park

## WALL LOCATION MAP

### Map 3



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes

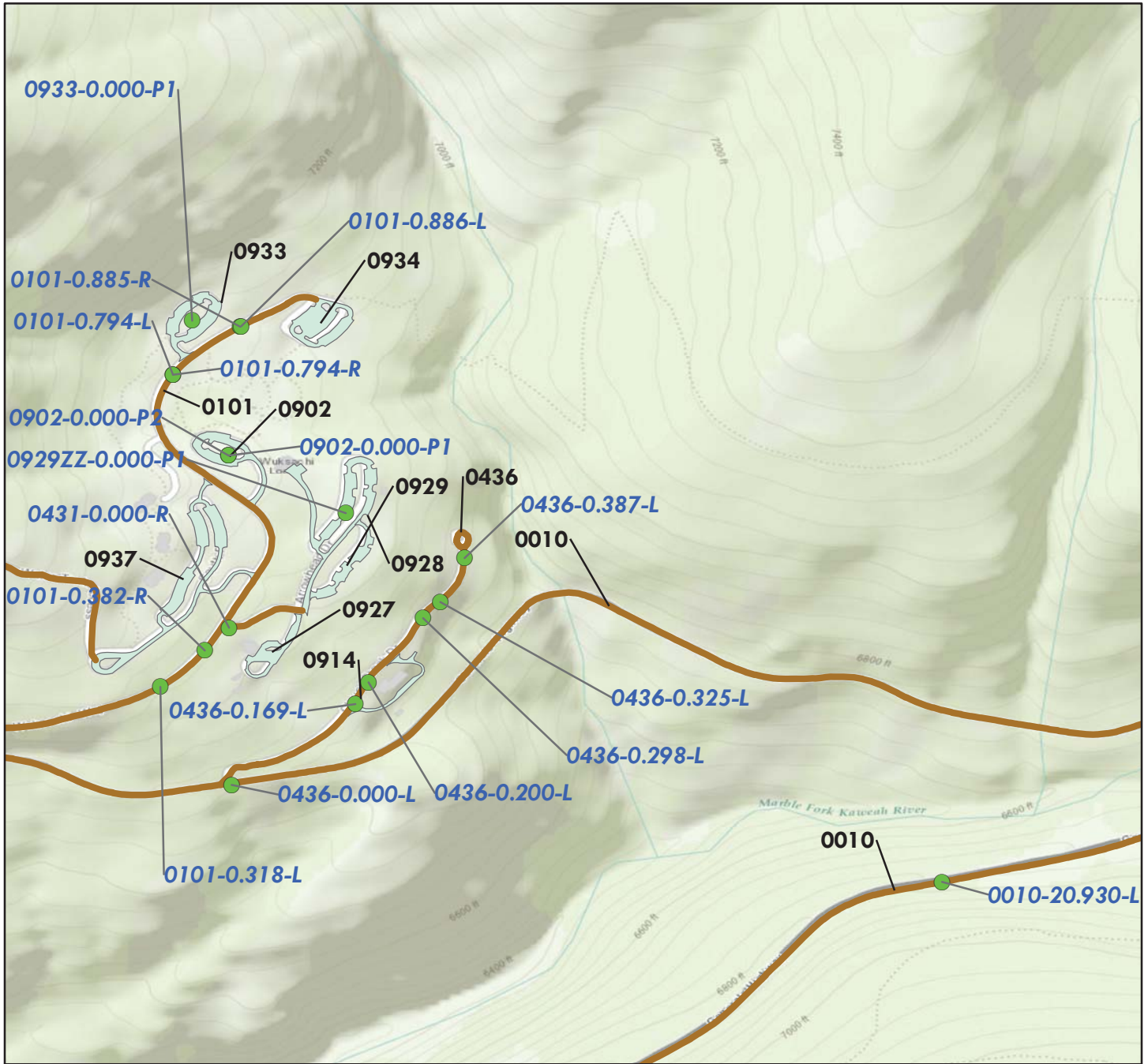




# Sequoia National Park

## WALL LOCATION MAP

### Map 4



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes



# Sequoia National Park

## WALL LOCATION MAP

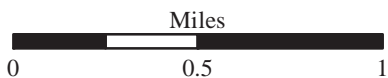
### Map 5



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes





# Sequoia National Park

## WALL LOCATION MAP

### Map 6



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes

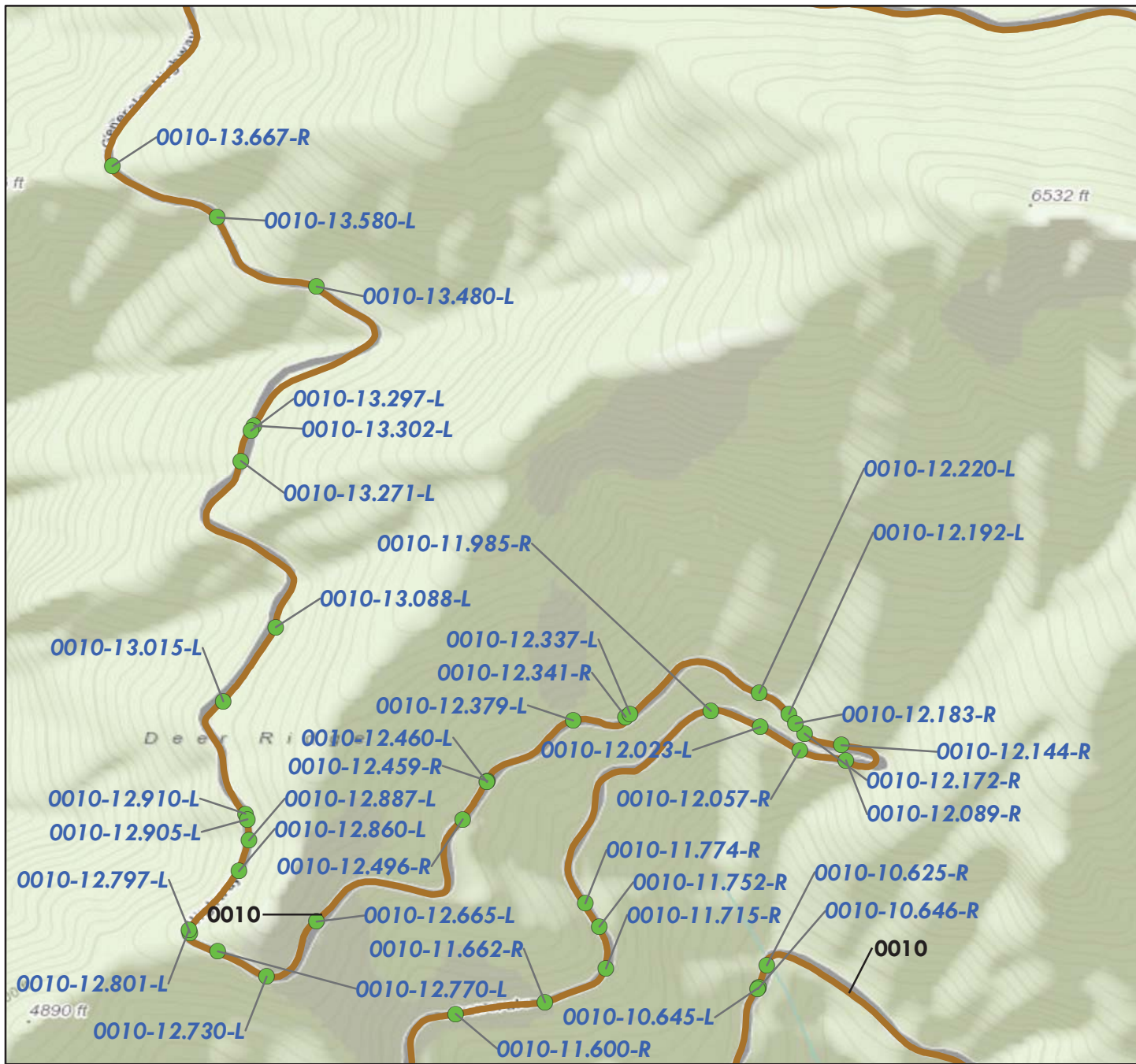




# Sequoia National Park

## WALL LOCATION MAP

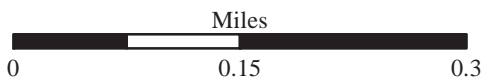
### Map 7



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

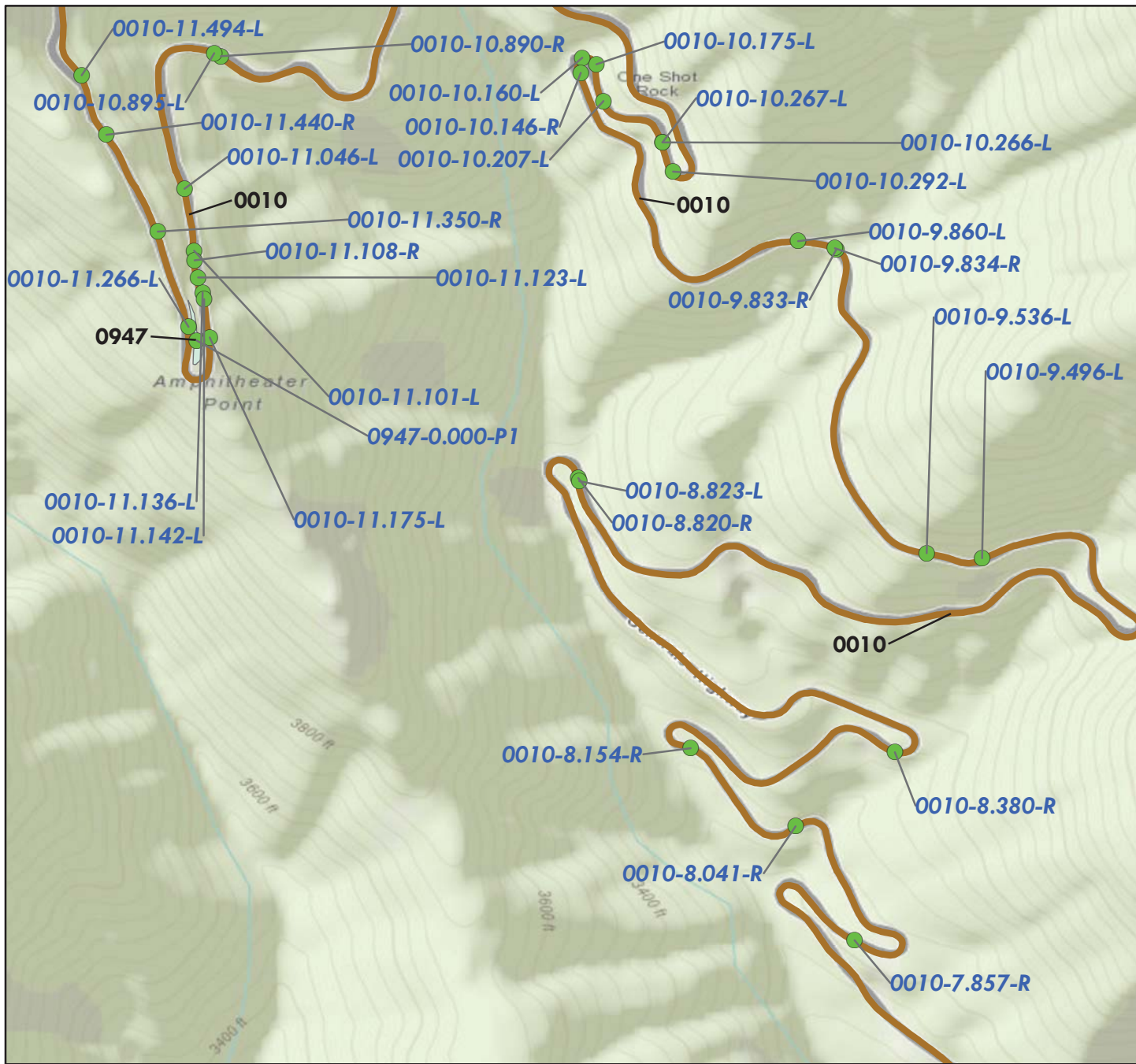
— RIP Collected Routes



# Sequoia National Park

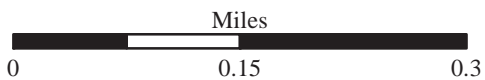
## WALL LOCATION MAP

### Map 8



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

- Wall Locations
- RIP Collected Routes



# Sequoia National Park

## WALL LOCATION MAP

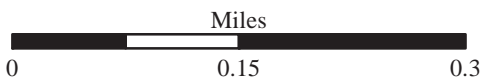
### Map 9



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes





# Sequoia National Park

## WALL LOCATION MAP

### Map 10



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

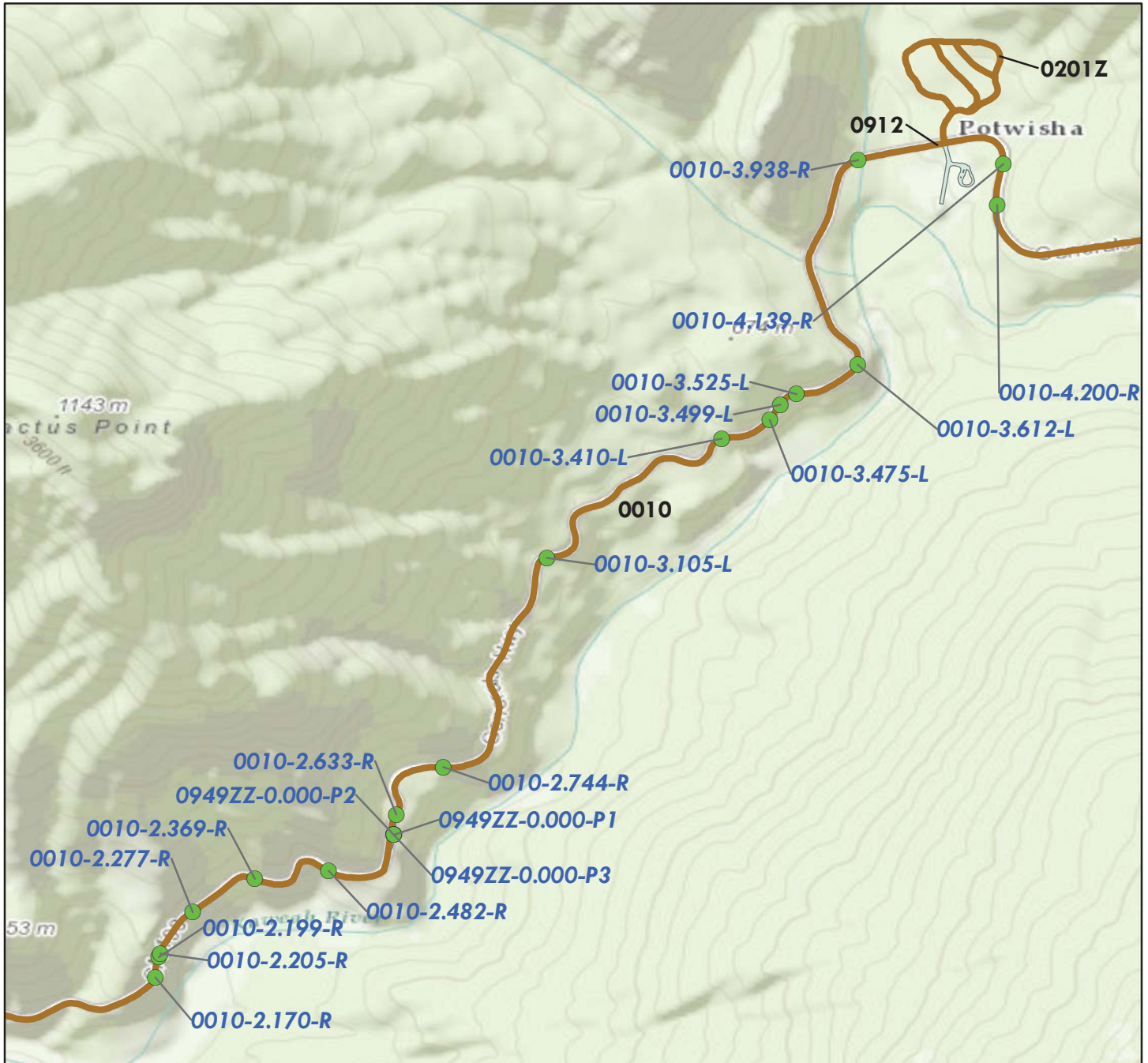
- Wall Locations
- RIP Collected Routes



# Sequoia National Park

## WALL LOCATION MAP

### Map 11



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

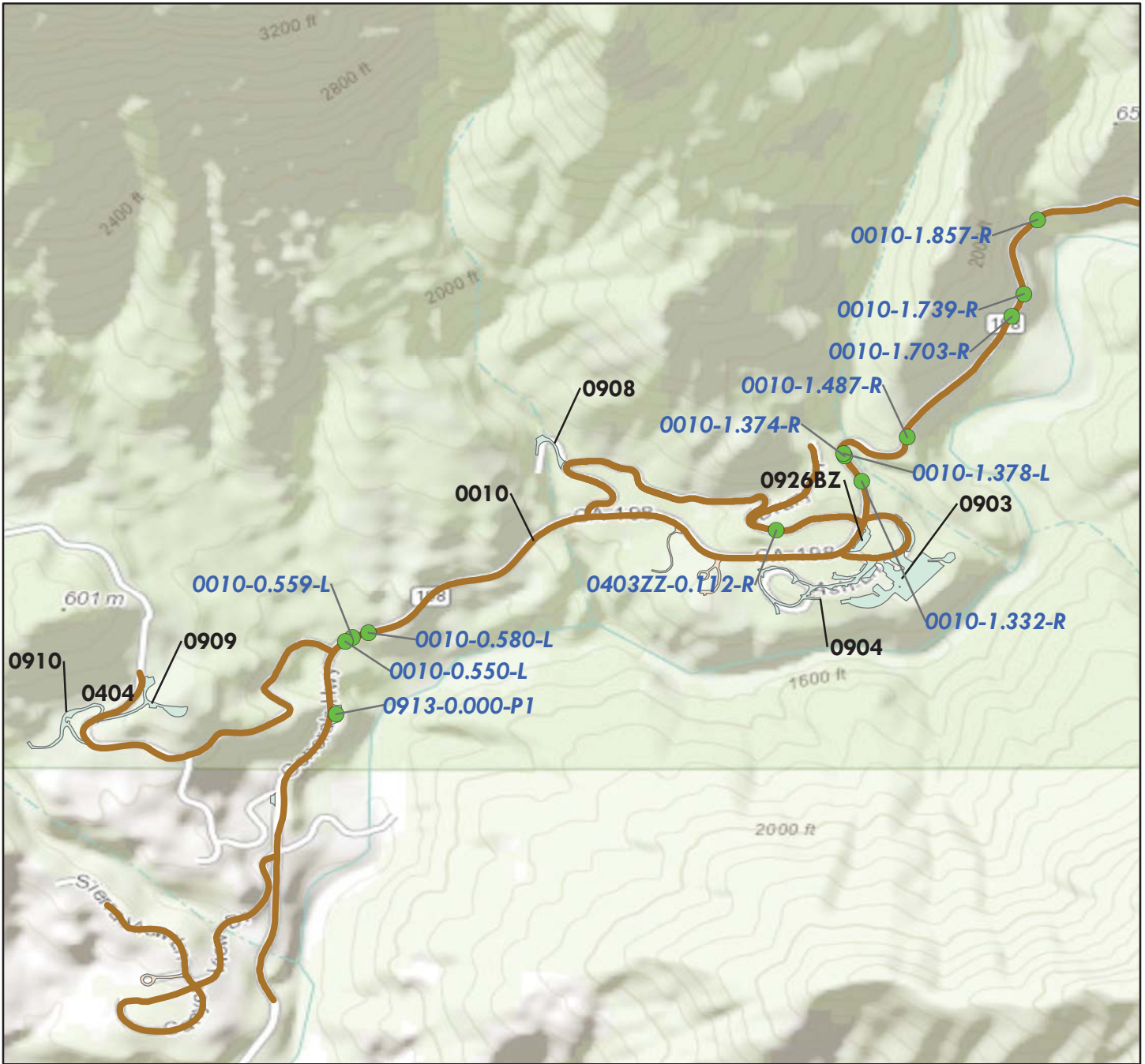
— RIP Collected Routes



# Sequoia National Park

## WALL LOCATION MAP

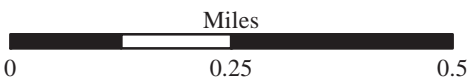
### Map 12



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes

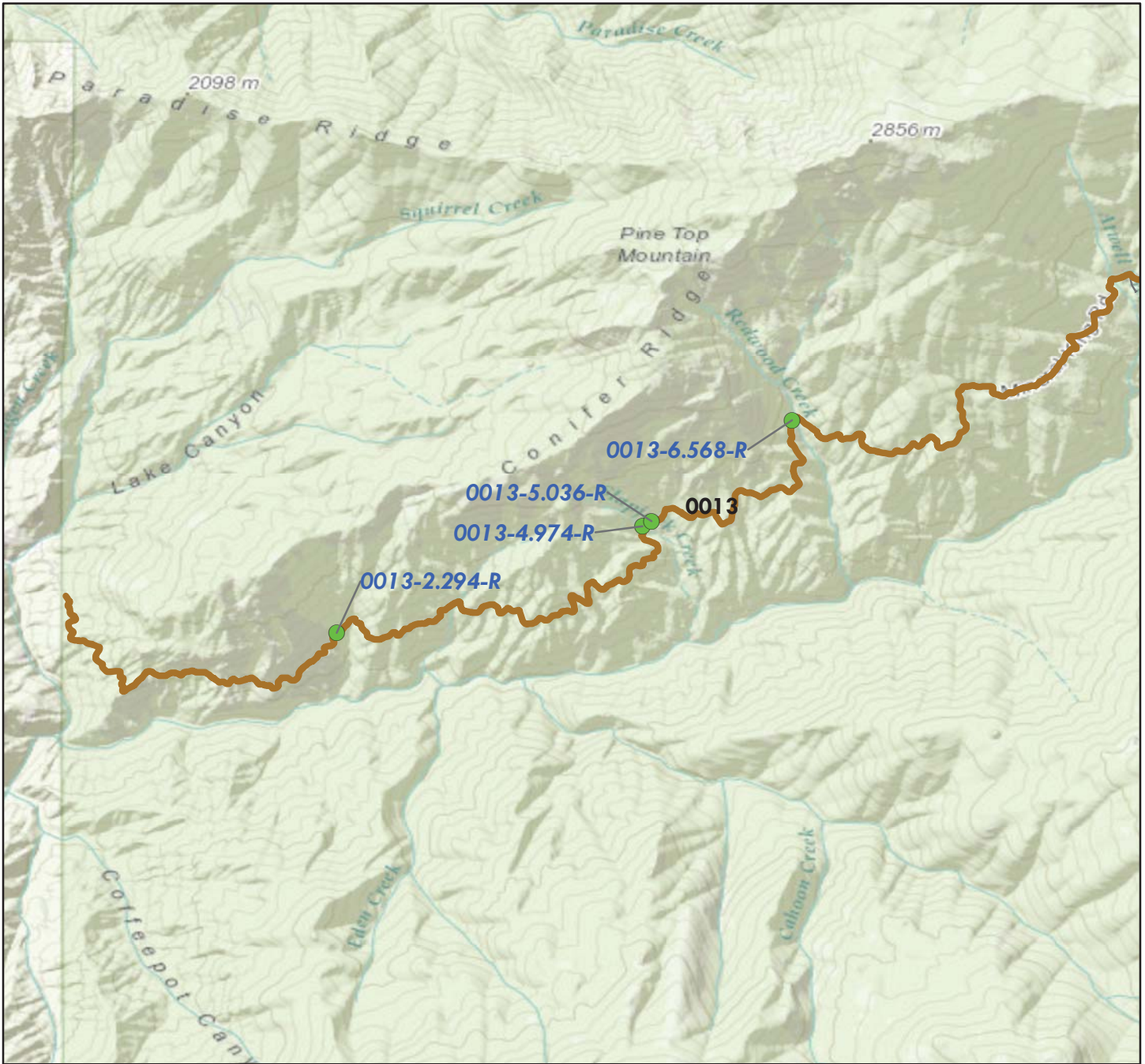




# Sequoia National Park

## WALL LOCATION MAP

### Map 13



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

● Wall Locations

— RIP Collected Routes



# Tier 1 Park Retaining Wall Overview



Sequoia National Park



**Federal Lands Highway  
Road Inventory Program**

## Parkwide Summary: Sequoia National Park

Initial retaining wall inspections were conducted at Sequoia National Park in 2007, and encompassed all known retaining wall structures associated with Park roadways - including structure's retaining cuts and fills, as well as qualifying headwalls at culverts. For the purposes of the assessment, walls must be a minimum of 4 feet in maximum height of retained earth and greater than 6 feet in maximum height for culvert headwalls. This does not include the height of parapet or guardwall above a retaining wall. In general, guardwall or parapets are not included in this assessment, but were inspected for Sequoia National Park in 2009 under a separate effort as part of the Guardwall/Rail Inventory Program (GIP). A report for GIP is available under separate cover.

All paved roadways and parking areas listed in the RIP Route Identification Report were inspected for walls. Occasionally, unpaved routes not in RIP were inventoried due to their future programmatic addition at the park, which was a decision made on site specific to each park.

The following tables provide an overview of the findings of this inspection and assessment effort. In all, 231 walls were inventoried on the routes listed below.

**Table 1: Number of Walls by Route**

<b>Route Number</b>	<b>Route Name</b>	<b>No. of Walls</b>
0010	GENERALS HIGHWAY HISTORIC	151
0013	MINERAL KING ROAD	8
0100	CRYSTAL CAVE ROAD	6
0101	WUKSACHI ROAD	8
0102ZZ	CRESCENT MEADOW ROADS	1
0203	BUCKEYE FLAT ROAD	14
0222ZZ	DORST CAMPGROUND ROADS	14
0403ZZ	ASH MOUNTAIN RESIDENCE ROADS	1
0428	RED FIR ACCESS ROAD	2
0431	WUKSACHI FIRE STATION ROAD	1
0436	CLOVER CREEK PLANT ACCESS ROAD	6
0500	MORO ROCK LOOP ROAD	1
0901ZZ	RED FIR MAINTENANCE FACILITY PARKING AREAS	6
0902	WUKSACHI VILLAGE CENTER ACCESS AND PARKING	2
0913	INDIAN HEAD PARKING	1
0923	WOLVERTON WATER PLANT PARKING	1
0929ZZ	WUKSACHI CONCESSION HOUSING PARKING AREAS	1
0933	WUKSACHI VILLAGE PARKING, WEST TERRACE	1



**Table 1: Number of Walls by Route**

<b>Route Number</b>	<b>Route Name</b>	<b>No. of Walls</b>
0947	AMPHITHEATRE POINT PARKING	1
0949ZZ	TUNNEL ROCK PARKING AREAS	3
0951ZZ	UPPER GENERAL SHERMAN TREE PARKING AREAS	1
0952ZZ	DORST CAMPGROUND PARKING AREAS	1

The following table shows the number of walls broken out by seven possible categories of basic wall function.

**Table 2: Number of Walls by Wall Function**

<b>Wall Function</b>	<b>No. of Walls</b>
CW - Cut Wall	54
FW - Fill Wall	121
HW - Head Wall	48
SP - Slope Protection	6
SW - Switchback Wall	2

The following table shows the primary wall types that were inventoried and assessed. There are 24 possible primary wall types, which are summarized in Appendix A.

**Table 3: Number of Walls by Primary Wall Type**

<b>Primary Wall Type</b>	<b>No. of Walls</b>
BM, Bin - Metal	15
CC, Crib - Concrete	1
CL, Cantilever - Concrete	43
CT, Crib - Timber	3
GD, Gravity - Dry Stone	88
GG, Gravity - Gabion	3
GM, Gravity - Mortared Stone	63
MW, MSE - Welded Wire Face	11
SN, Soil Nail	4

The following table shows the number of walls by one of six categories of recommended action along with associated 2007 costs and the number of walls that are in each recommended action category. The majority of walls have a recommendation of *No Action* or *Monitor*; work orders were created for all other recommended actions.

**Table 4: Number of Walls by Recommended Action and Associated 2007 Cost**

<b>Recommended Action</b>	<b>2007 Repair Costs*</b>	<b>No. of Walls</b>
No Action	\$0	187
Monitor	\$0	0
Maintenance	\$30,290	26
Repair Elements	\$179,925	12
Replace Elements	\$165,000	2
Replace Wall	\$492,090	4
<b>Totals</b>	<b>\$867,305</b>	<b>231</b>

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

The following table categorizes the number of walls that fall into one of ten cost ranges, based on the prepared work orders. The locations, work descriptions, and cost of the recommended repairs for these walls are listed by individual wall in Tier 3 of this report.

**Table 5: Number of Walls Grouped by Associated 2007 Cost**

<b>Cost Range*</b>	<b>No. of Walls</b>
\$0	187
\$1 - \$25,000	38
\$25,001 - \$50,000	0
\$50,001 - \$100,000	1
\$100,001 - \$250,000	5
\$250,001 - \$500,000	0
\$500,001 - \$1,000,000	0
\$1,000,001 - \$2,000,000	0
\$2,000,001 - \$3,000,000	0
\$3,000,001 - \$4,000,000	0
<b>Total Number of Walls</b>	<b>231</b>

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

Routine inspection and performing the noted maintenance will greatly aid in the continued performance of all walls at Sequoia National Park. Work orders for walls needing maintenance generally included items such as replacing missing stones, replacing mortar, filling voids at the top or bottom of fill walls, and clearing vegetation.

Work orders for walls needing localized element repairs generally included items such as adding riprap protection to the wall foundation, replacing missing sections of dry stone walls, replacing culverts, grouting voids in walls, and patching/restoring roadway pavement. While decaying mortar generally does not threaten wall stability in the near term, grout repair will extend the life of these walls.

Work orders for walls needing major repairs (replace elements or replace wall) generally include items such as foundation repair or replacement, fill voids, repair roadway shoulder, replace or extend retaining wall in either height or length, rebuild failed segments of walls, repair elements across 50% or more of the wall, remove and recompact backfill material, add scour protection (typically with riprap, concrete, or rock fill), and remove/reset culvert headwalls. Due to the large unit items associated with major repairs, recommendations vary by specific wall and are presented in Tier 3 of this report.

WIP identified 55 critically deficient walls nationally based on wall ratings less than 49 (poor/critical overall condition). The following table presents the walls in Sequoia National Park that are on this list and have been elevated to the Park Regional Coordinators in a Regional Park Summary Memorandum. Generally, these are walls with major repair element recommendations that may be a priority for repair work in your park.

**Table 6: Number of Walls by Route**

<b>Wall Identification</b>	<b>Failure Consequence<sup>(1)</sup></b>	<b>Wall Rating<sup>(2)</sup></b>	<b>Recommended Action<sup>(3)</sup></b>	<b>2007 Repair Costs<sup>(4)</sup></b>
SEQU-0010-11.350-R	HIGH	48	REPLACE ELEMENTS	\$151,000
SEQU-0010-11.440-R	HIGH	43	REPLACE WALL	\$61,640
SEQU-0010-11.494-L	HIGH	48	REPLACE WALL	\$144,000
SEQU-0010-11.600-R	HIGH	38	REPLACE WALL	\$133,400

Notes: 1) Low consequence of failure and/or no recommended action may indicate repairs are not needed.

2) Wall ratings listed range from 0-49 (Poor/Critical).

3) Information was prepared for project planning purposes only. Actual repair work order scopes and actual costs will need to be evaluated based on current pay item unit prices for specific locations.

4) 2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Tier 2 Route Retaining Wall Overview



Sequoia National Park



Federal Lands Highway  
Road Inventory Program

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-0.580-L 8/13/2007	35	6	Gravity - Mortared Stone	Head Wall	75	\$0.00
SEQU-0010-1.332-R 8/13/2007	1,900	191	Cantilever - Concrete	Fill Wall	82	\$0.00
SEQU-0010-1.374-R 8/13/2007	3,360	336	Cantilever - Concrete	Fill Wall	82	\$0.00
SEQU-0010-1.378-L 8/17/2007	120	22	Gravity - Dry Stone	Head Wall	74	\$0.00
SEQU-0010-1.487-R 8/13/2007	8,500	960	Cantilever - Concrete	Fill Wall	83	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

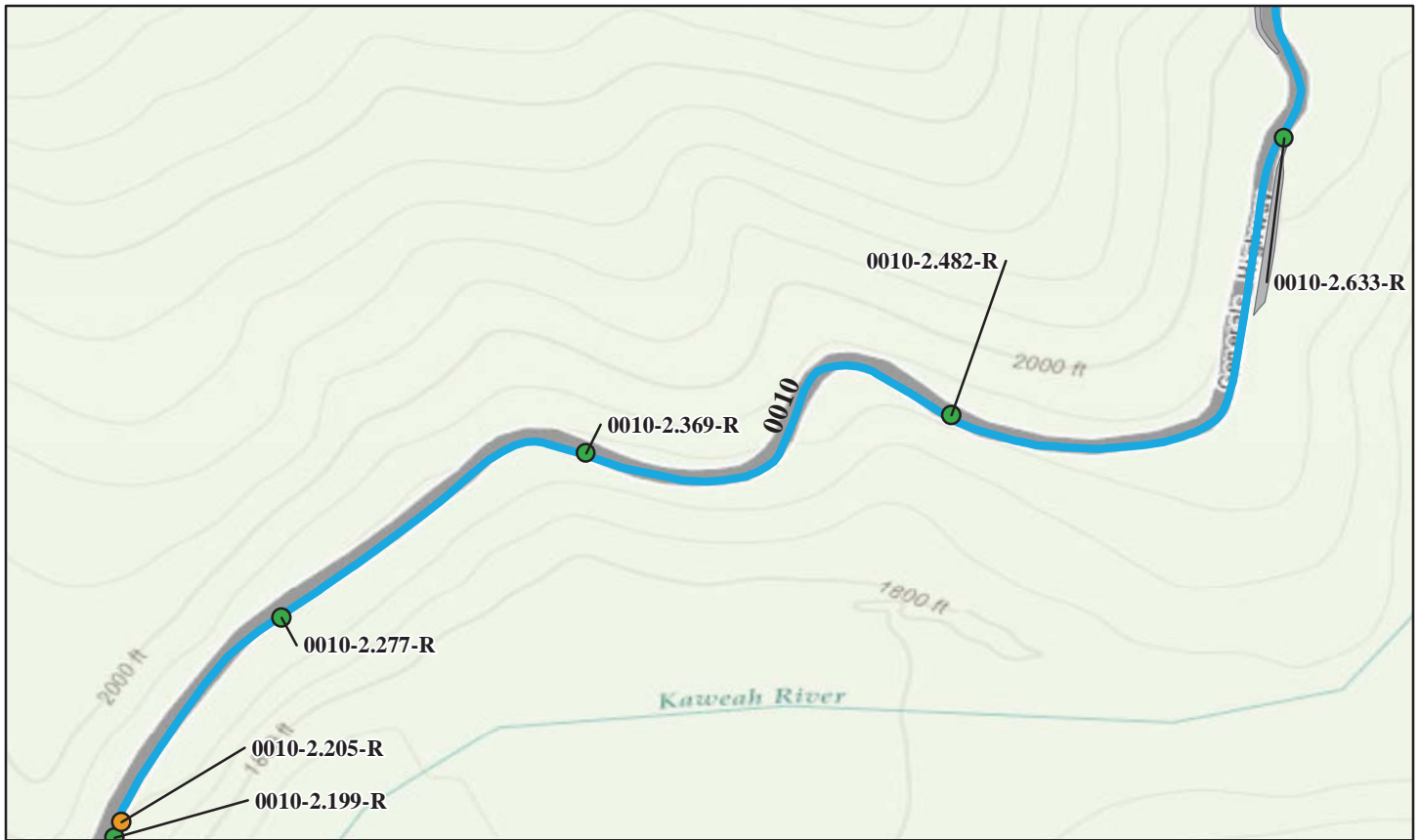
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-1.703-R 8/13/2007	1,400	186	Cantilever - Concrete	Fill Wall	80	\$0.00
SEQU-0010-1.739-R 8/13/2007	1,200	167	Cantilever - Concrete	Fill Wall	81	\$0.00
SEQU-0010-1.857-R 8/14/2007	6,000	713	Cantilever - Concrete	Fill Wall	82	\$200.00
SEQU-0010-2.170-R 8/14/2007	1,800	150	Bin - Metal	Fill Wall	73	\$0.00
SEQU-0010-2.199-R 8/14/2007	190	24	Cantilever - Concrete	Fill Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-2.205-R 8/14/2007	3,200	262	Bin - Metal	Fill Wall	69	\$0.00
SEQU-0010-2.277-R 8/14/2007	1,200	167	Cantilever - Concrete	Fill Wall	87	\$0.00
SEQU-0010-2.369-R 8/14/2007	1,700	192	Cantilever - Concrete	Fill Wall	84	\$0.00
SEQU-0010-2.482-R 8/14/2007	1,500	189	Cantilever - Concrete	Fill Wall	84	\$0.00
SEQU-0010-2.633-R 8/14/2007	2,700	243	Cantilever - Concrete	Fill Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

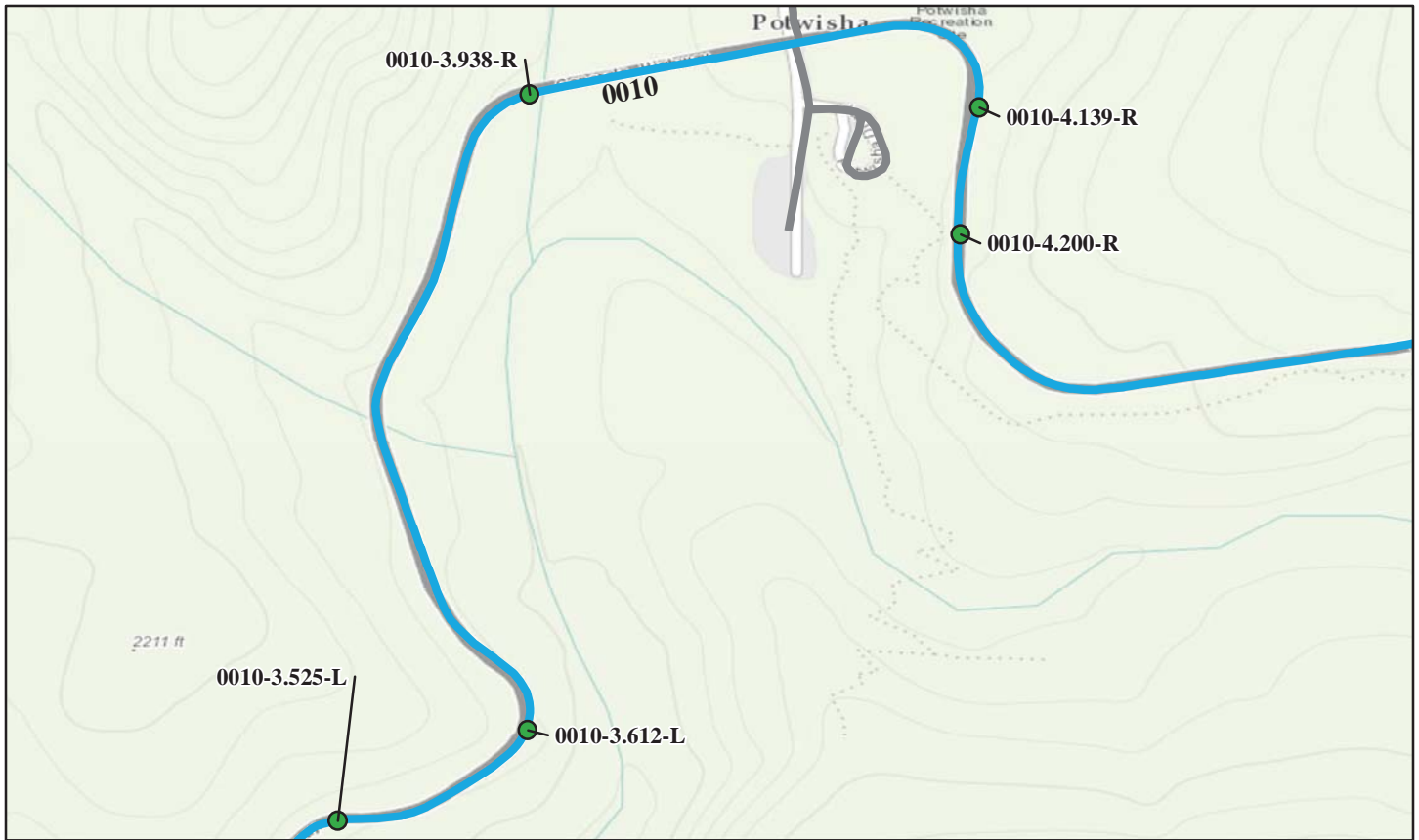
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-2.744-R 8/14/2007	160	25	Gravity - Mortared Stone	Head Wall		
SEQU-0010-3.105-L 8/14/2007	600	285	Gravity - Dry Stone	Cut Wall	77	\$0.00
SEQU-0010-3.410-L 8/14/2007	780	262	Gravity - Dry Stone	Cut Wall	73	\$0.00
SEQU-0010-3.475-L 8/14/2007	380	95	Gravity - Dry Stone	Cut Wall	79	\$0.00
SEQU-0010-3.499-L 8/14/2007	230	58	Gravity - Dry Stone	Cut Wall	79	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-3.525-L 8/14/2007	1,230	244	Gravity - Dry Stone	Cut Wall	80	\$0.00
SEQU-0010-3.612-L 8/14/2007	1,150	230	Gravity - Dry Stone	Cut Wall	80	\$0.00
SEQU-0010-3.938-R 8/14/2007	140	20	Gravity - Mortared Stone	Head Wall	70	\$5,210.00
SEQU-0010-4.139-R 8/14/2007	2,300	323	Cantilever - Concrete	Fill Wall	87	\$0.00
SEQU-0010-4.200-R 8/14/2007	2,700	530	MSE - Welded Wire Face	Fill Wall	76	\$4,925.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

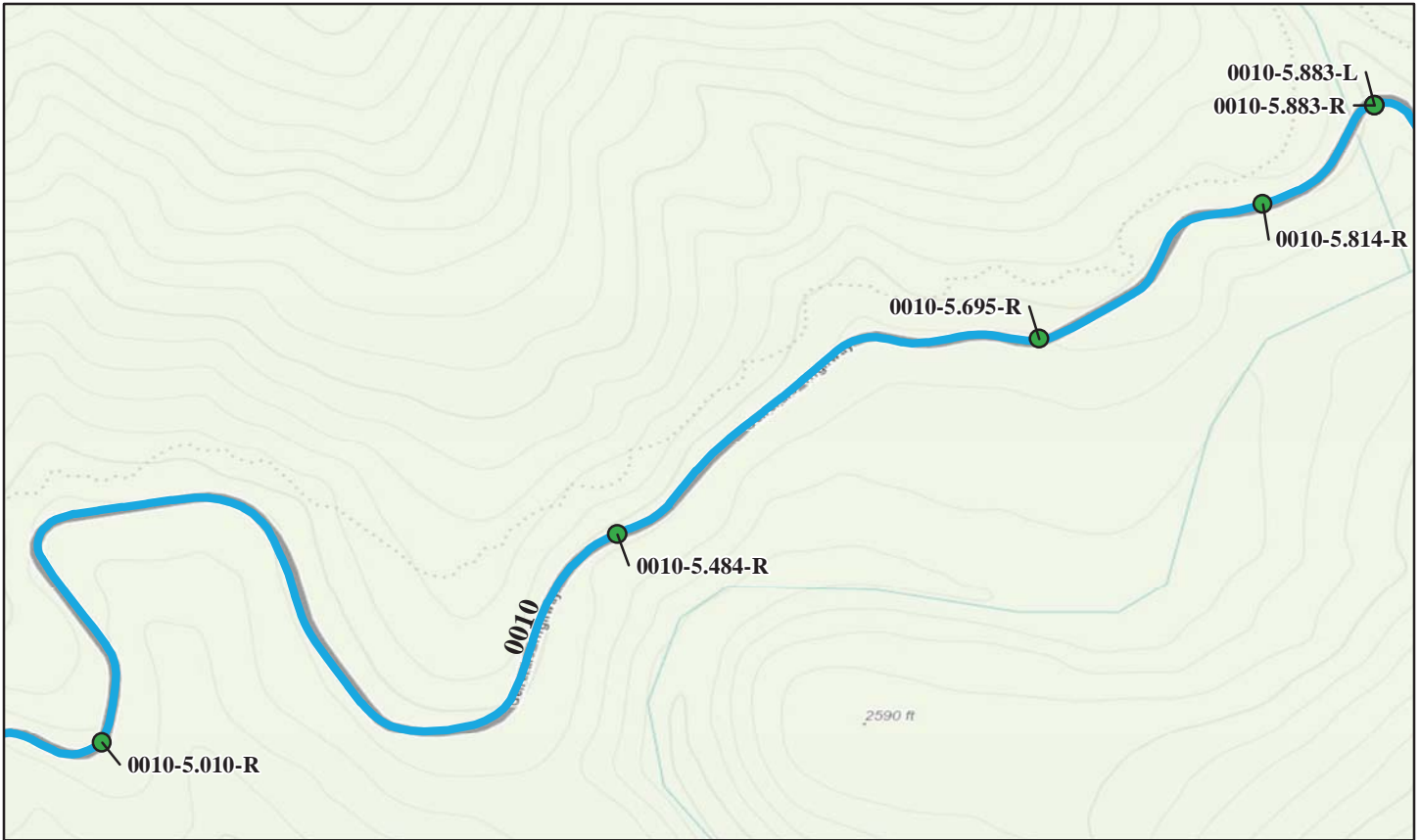
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-4.532-R 8/14/2007	950	161	MSE - Welded Wire Face	Fill Wall	79	\$0.00
SEQU-0010-4.581-R 8/14/2007	450	113	MSE - Welded Wire Face	Fill Wall	80	\$0.00
SEQU-0010-4.618-R 8/14/2007	1,800	471	MSE - Welded Wire Face	Fill Wall	77	\$0.00
SEQU-0010-4.770-R 8/14/2007	1,600	323	MSE - Welded Wire Face	Fill Wall	77	\$0.00
SEQU-0010-4.900-R 8/15/2007	960	162	MSE - Welded Wire Face	Fill Wall	73	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

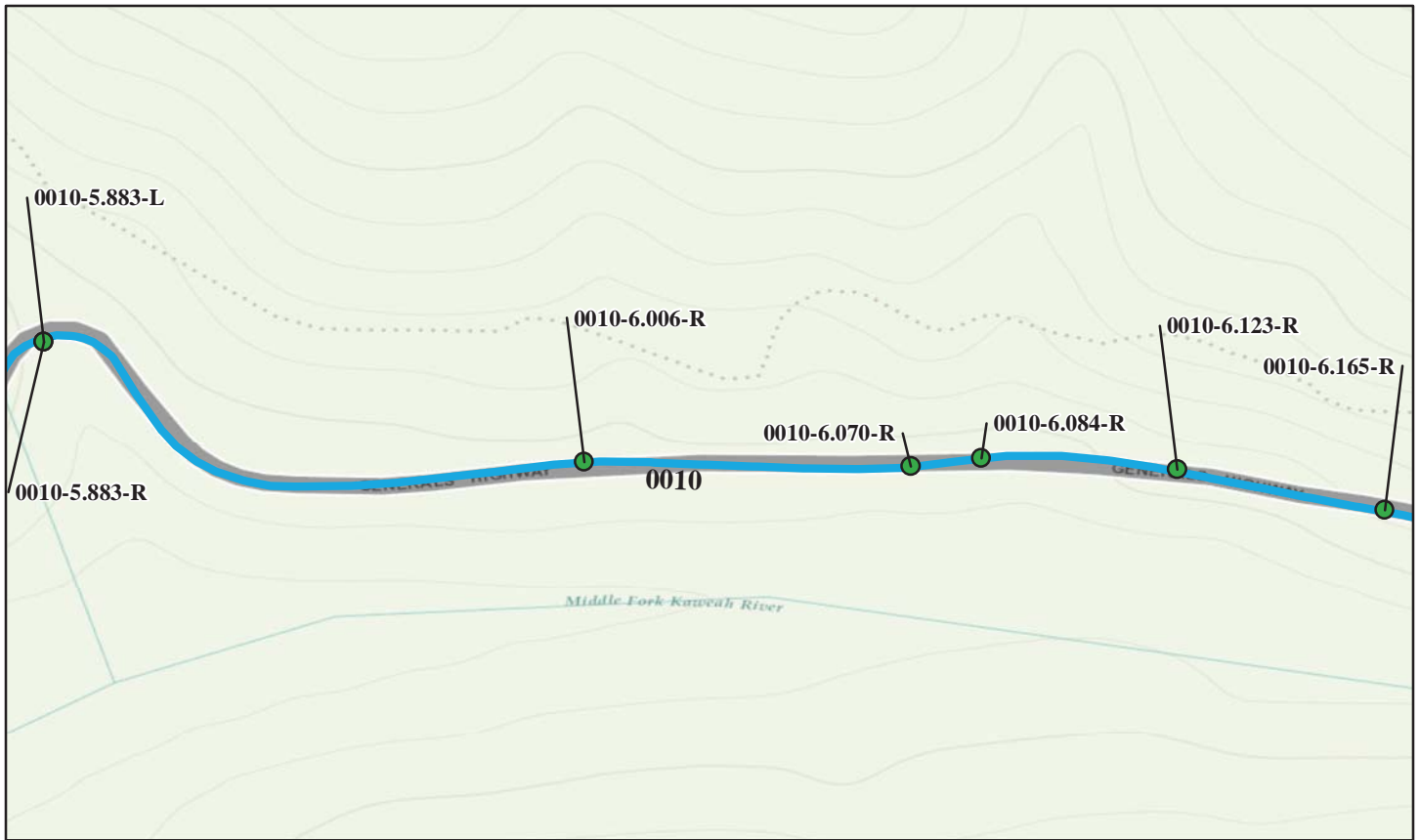
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-5.010-R 8/15/2007	2,700	455	MSE - Welded Wire Face	Fill Wall	70	\$0.00
SEQU-0010-5.484-R 8/15/2007	440	72	Gravity - Dry Stone	Fill Wall	73	\$0.00
SEQU-0010-5.695-R 8/15/2007	570	108	MSE - Welded Wire Face	Fill Wall	79	\$0.00
SEQU-0010-5.814-R 8/15/2007	1,000	135	Cantilever - Concrete	Fill Wall	86	\$0.00
SEQU-0010-5.883-L 8/15/2007	90	31	Cantilever - Concrete	Head Wall	82	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

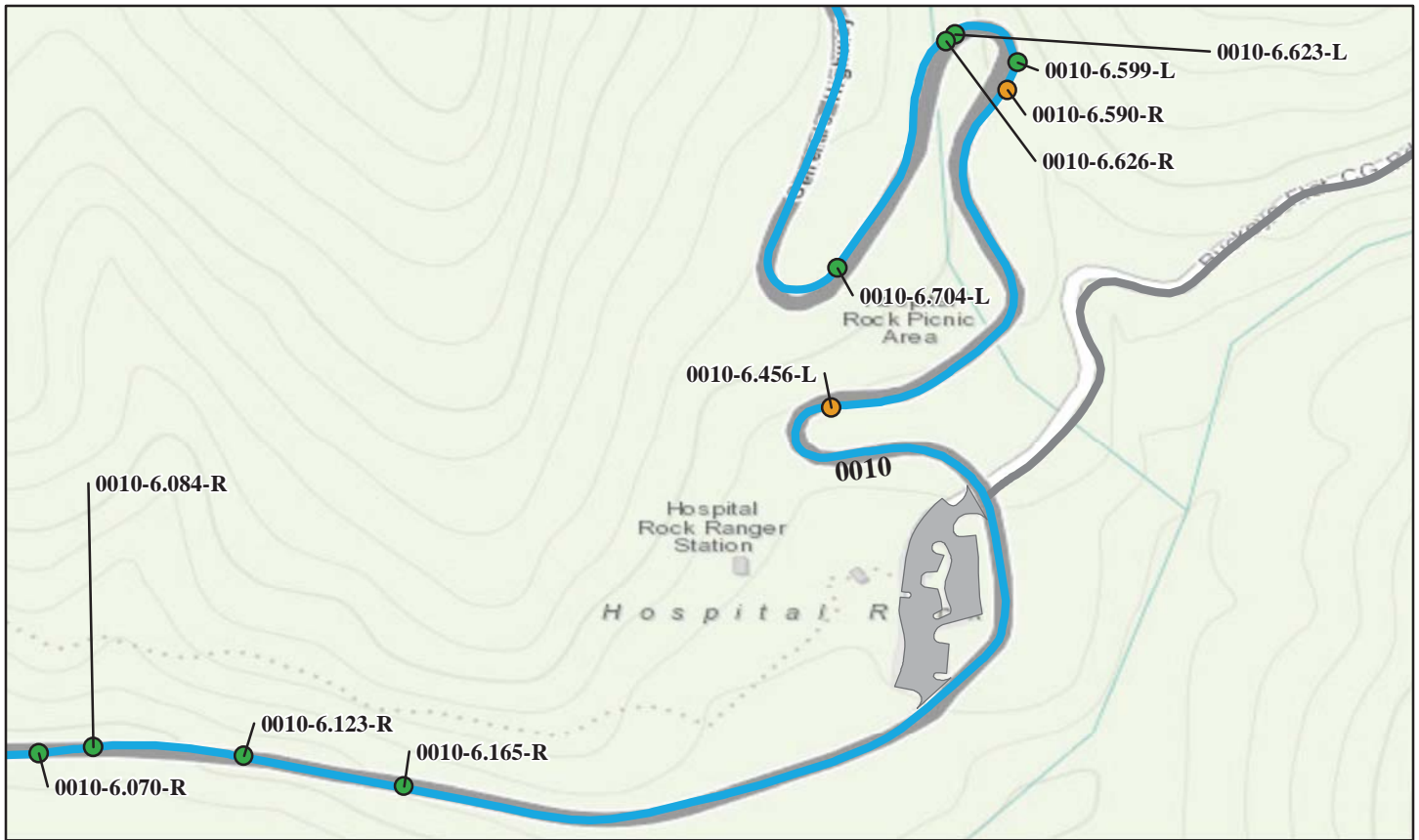
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-5.883-R 8/15/2007	100	31	Cantilever - Concrete	Head Wall	82	\$0.00
SEQU-0010-6.006-R 8/15/2007	2,600	322	Cantilever - Concrete	Fill Wall	83	\$0.00
SEQU-0010-6.070-R 8/15/2007	450	78	Cantilever - Concrete	Fill Wall	82	\$105.00
SEQU-0010-6.084-R 8/15/2007	1,700	139	Bin - Metal	Fill Wall	70	\$255.00
SEQU-0010-6.123-R 8/15/2007	2,400	219	Bin - Metal	Fill Wall	83	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-6.165-R 8/15/2007	650	166	Cantilever - Concrete	Fill Wall	74	\$0.00
SEQU-0010-6.456-L 8/15/2007	720	130	Soil Nail	Cut Wall	66	\$10,000.00
SEQU-0010-6.590-R 8/15/2007	250	33	Gravity - Mortared Stone	Head Wall	69	\$2,750.00
SEQU-0010-6.599-L 8/15/2007	200	25	Gravity - Mortared Stone	Head Wall	82	\$0.00
SEQU-0010-6.623-L 8/15/2007	230	31	Gravity - Mortared Stone	Head Wall	80	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

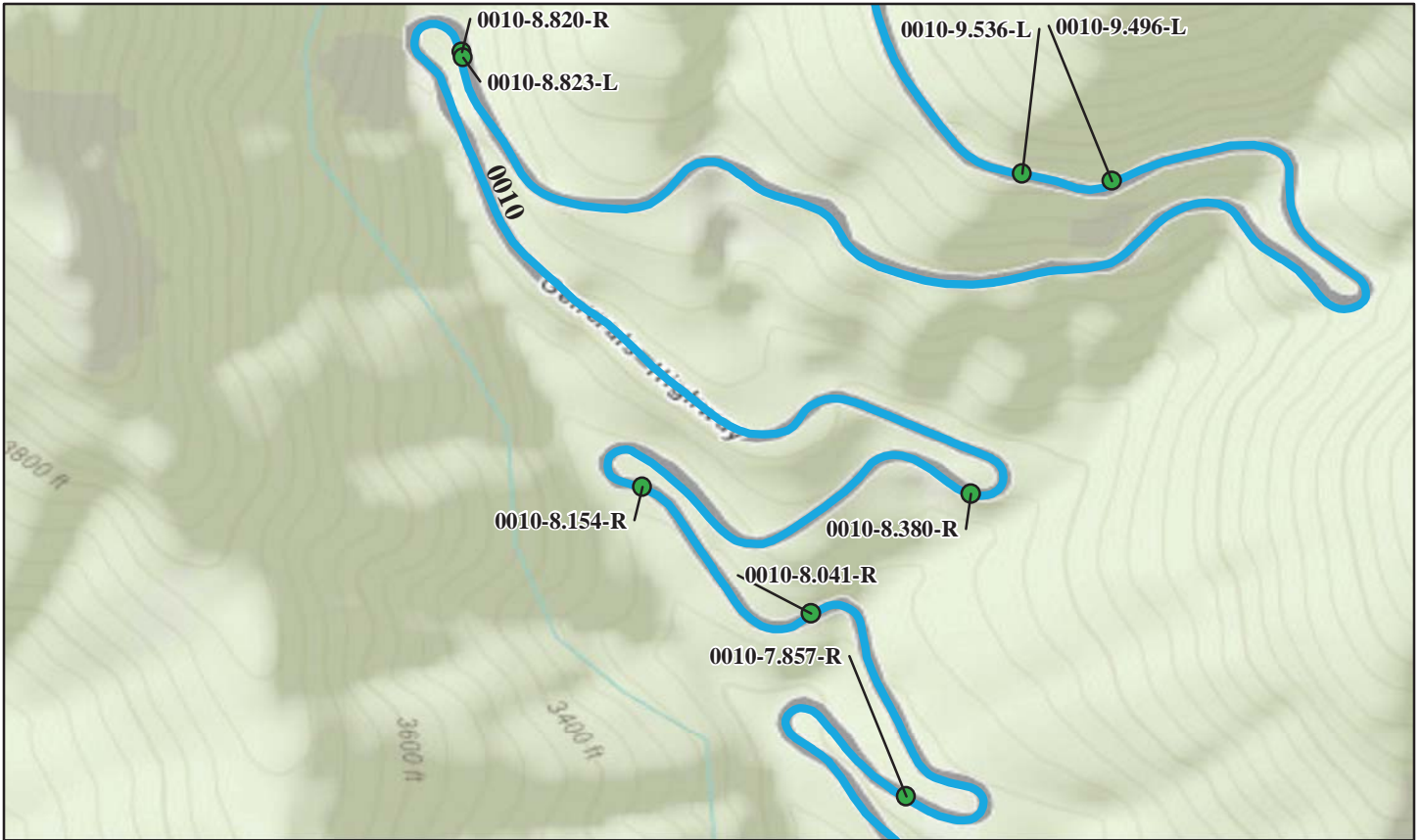
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-6.626-R 8/15/2007	155	24	Gravity - Mortared Stone	Head Wall	80	\$0.00
SEQU-0010-6.704-L 8/15/2007	1,700	213	Cantilever - Concrete	Fill Wall	86	\$0.00
SEQU-0010-6.995-L 8/15/2007	100	25	Gravity - Mortared Stone	Head Wall	80	\$0.00
SEQU-0010-6.996-R 8/15/2007	40	13	Gravity - Mortared Stone	Head Wall	56	\$11,760.00
SEQU-0010-7.315-L 8/15/2007	280	121	MSE - Welded Wire Face	Fill Wall	71	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

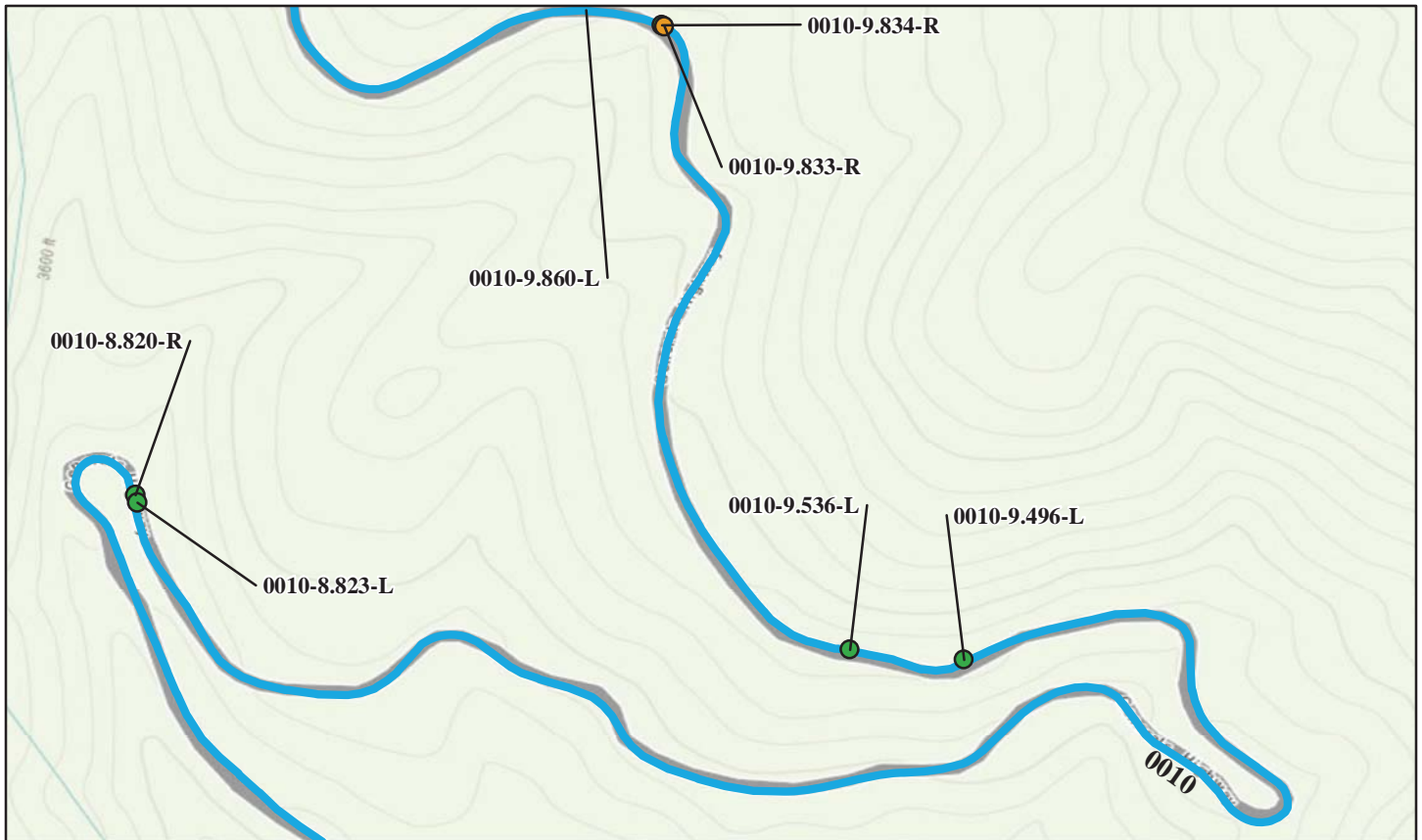
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-7.857-R 8/15/2007	2,300	287	Cantilever - Concrete	Fill Wall	89	\$0.00
SEQU-0010-8.041-R 8/15/2007	60	12	Gravity - Mortared Stone	Head Wall	80	\$0.00
SEQU-0010-8.154-R 8/15/2007	480	52	Cantilever - Concrete	Cut Wall	88	\$0.00
SEQU-0010-8.380-R 8/15/2007	1,900	218	MSE - Welded Wire Face	Fill Wall	79	\$0.00
SEQU-0010-8.820-R 8/16/2007	125	31	Gravity - Mortared Stone	Head Wall	82	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

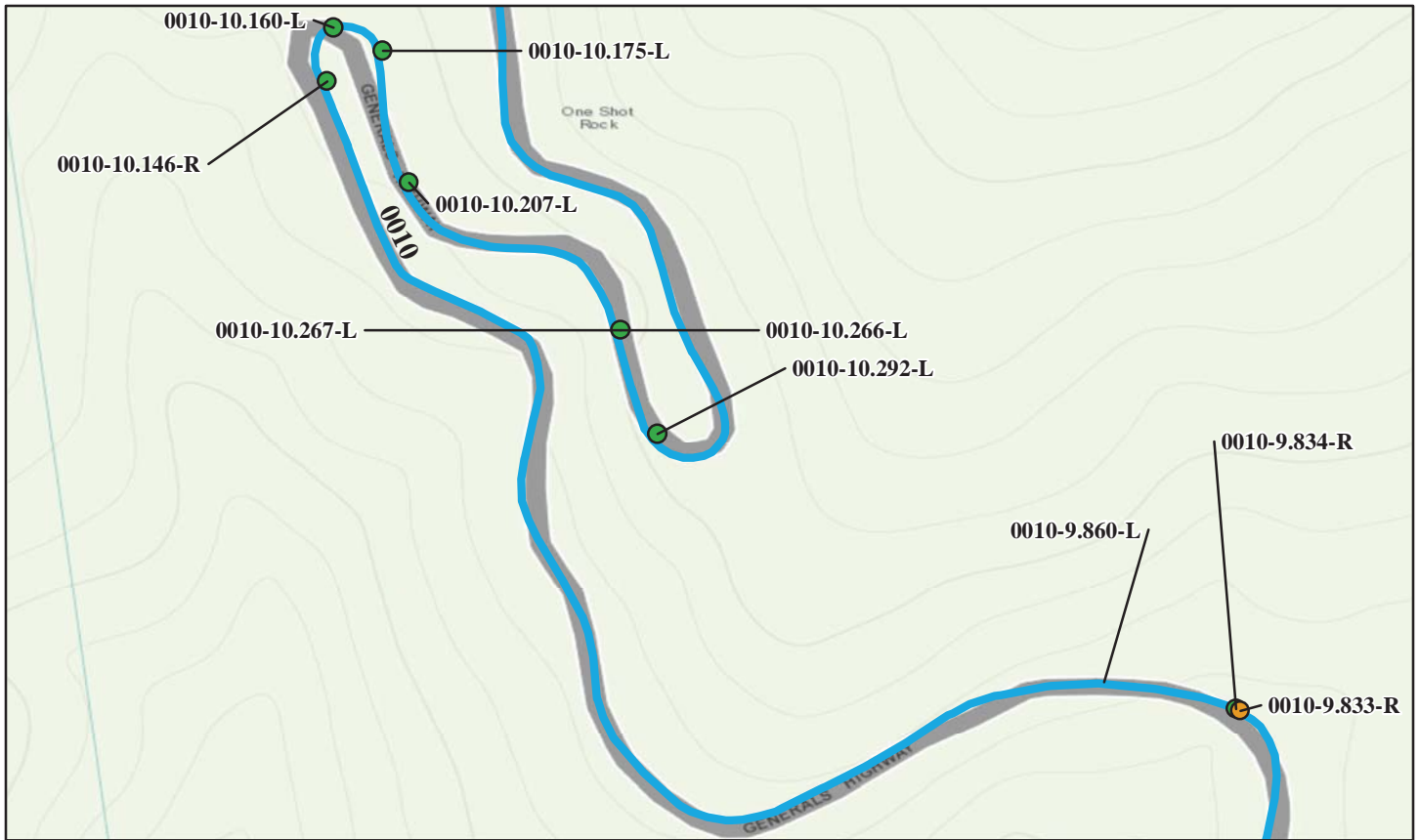
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-8.823-L 8/16/2007	90	19	Gravity - Mortared Stone	Head Wall	79	\$0.00
SEQU-0010-9.496-L 8/15/2007	700	110	Cantilever - Concrete	Fill Wall	83	\$0.00
SEQU-0010-9.536-L 8/16/2007	800	194	MSE - Welded Wire Face	Fill Wall	76	\$0.00
SEQU-0010-9.833-R 8/16/2007	130	36	Gravity - Mortared Stone	Cut Wall	66	\$1,100.00
SEQU-0010-9.834-R 8/16/2007	400	63	Gravity - Dry Stone	Head Wall	88	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

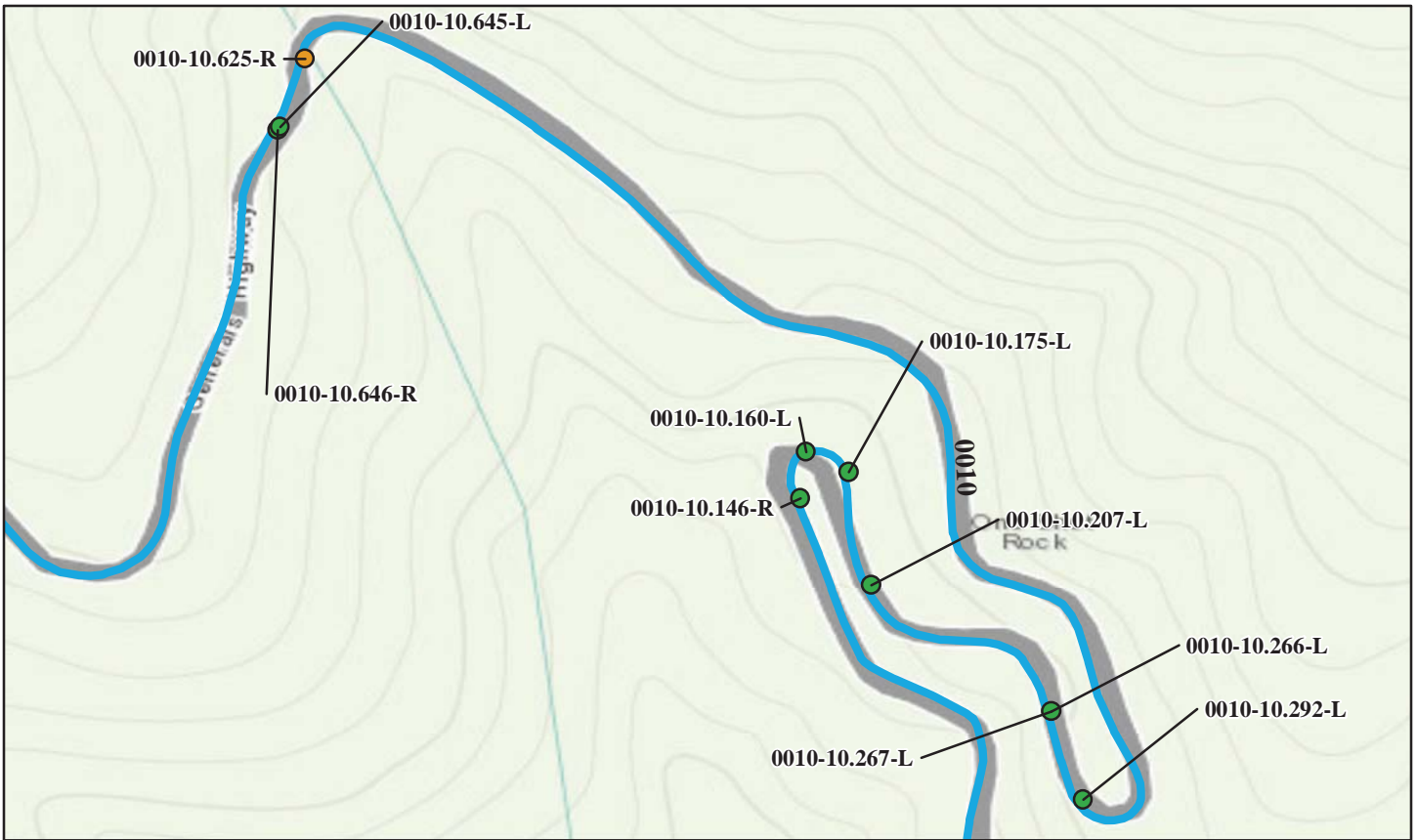
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-9.860-L 8/16/2007	60	12	Gravity - Dry Stone	Head Wall	59	\$3,250.00
SEQU-0010-10.146-R 8/16/2007	2,500	167	Soil Nail	Cut Wall	95	\$0.00
SEQU-0010-10.160-L 8/14/2007	510	53	Gravity - Mortared Stone	Fill Wall	90	\$0.00
SEQU-0010-10.168-L 8/14/2007	4,160	160	Gravity - Mortared Stone	Fill Wall	90	\$0.00
SEQU-0010-10.175-L 8/14/2007	320	69	Gravity - Mortared Stone	Fill Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-10.207-L 8/16/2007	500	124	Soil Nail	Cut Wall	95	\$0.00
SEQU-0010-10.266-L 8/16/2007	600	88	Gravity - Dry Stone	Cut Wall	80	\$0.00
SEQU-0010-10.267-L 8/16/2007	4,160	160	Gravity - Mortared Stone	Fill Wall		
SEQU-0010-10.292-L 8/16/2007	350	86	Soil Nail	Switchback Wall	94	\$0.00
SEQU-0010-10.625-R 8/16/2007	1,300	130	Gravity - Dry Stone	Cut Wall	68	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-10.645-L 8/16/2007	85	20	Gravity - Mortared Stone	Head Wall	83	\$0.00
SEQU-0010-10.646-R 8/16/2007	85	23	Gravity - Mortared Stone	Head Wall	82	\$0.00
SEQU-0010-10.890-R 8/16/2007	600	116	Gravity - Dry Stone	Cut Wall	96	\$0.00
SEQU-0010-10.895-L 8/16/2007	700	102	Cantilever - Concrete	Fill Wall	93	\$0.00
SEQU-0010-11.046-L 8/16/2007	1,900	240	Bin - Metal	Fill Wall	83	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

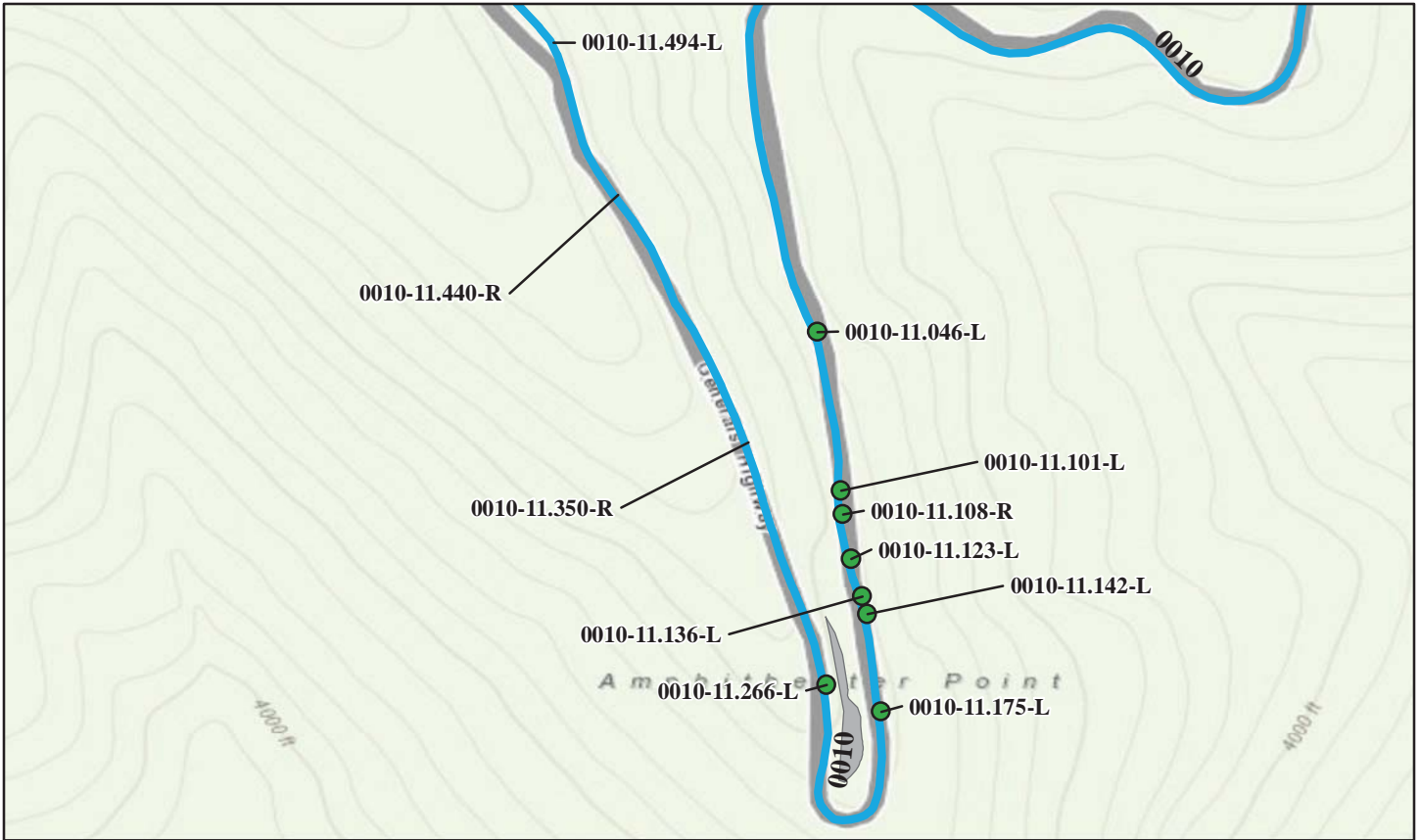
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-11.101-L 8/16/2007	485	121	Cantilever - Concrete	Fill Wall	80	\$0.00
SEQU-0010-11.108-R 8/16/2007	1,000	127	Gravity - Dry Stone	Cut Wall	80	\$0.00
SEQU-0010-11.123-L 8/16/2007	100	14	Cantilever - Concrete	Fill Wall	96	\$0.00
SEQU-0010-11.136-L 8/16/2007	195	32	Cantilever - Concrete	Fill Wall	96	\$0.00
SEQU-0010-11.142-L 8/16/2007	2,700	172	Bin - Metal	Fill Wall	86	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-11.175-L 8/16/2007	4,600	422	Cantilever - Concrete	Fill Wall	96	\$0.00
SEQU-0010-11.266-L 8/16/2007	560	71	Cantilever - Concrete	Fill Wall	96	\$0.00
SEQU-0010-11.350-R 8/17/2007	1,000	134	Gravity - Dry Stone	Fill Wall	48	\$151,000.00
SEQU-0010-11.440-R 8/17/2007	250	45	Gravity - Dry Stone	Fill Wall	43	\$61,640.00
SEQU-0010-11.494-L 8/17/2007	300	76	Gravity - Dry Stone	Fill Wall	48	\$144,000.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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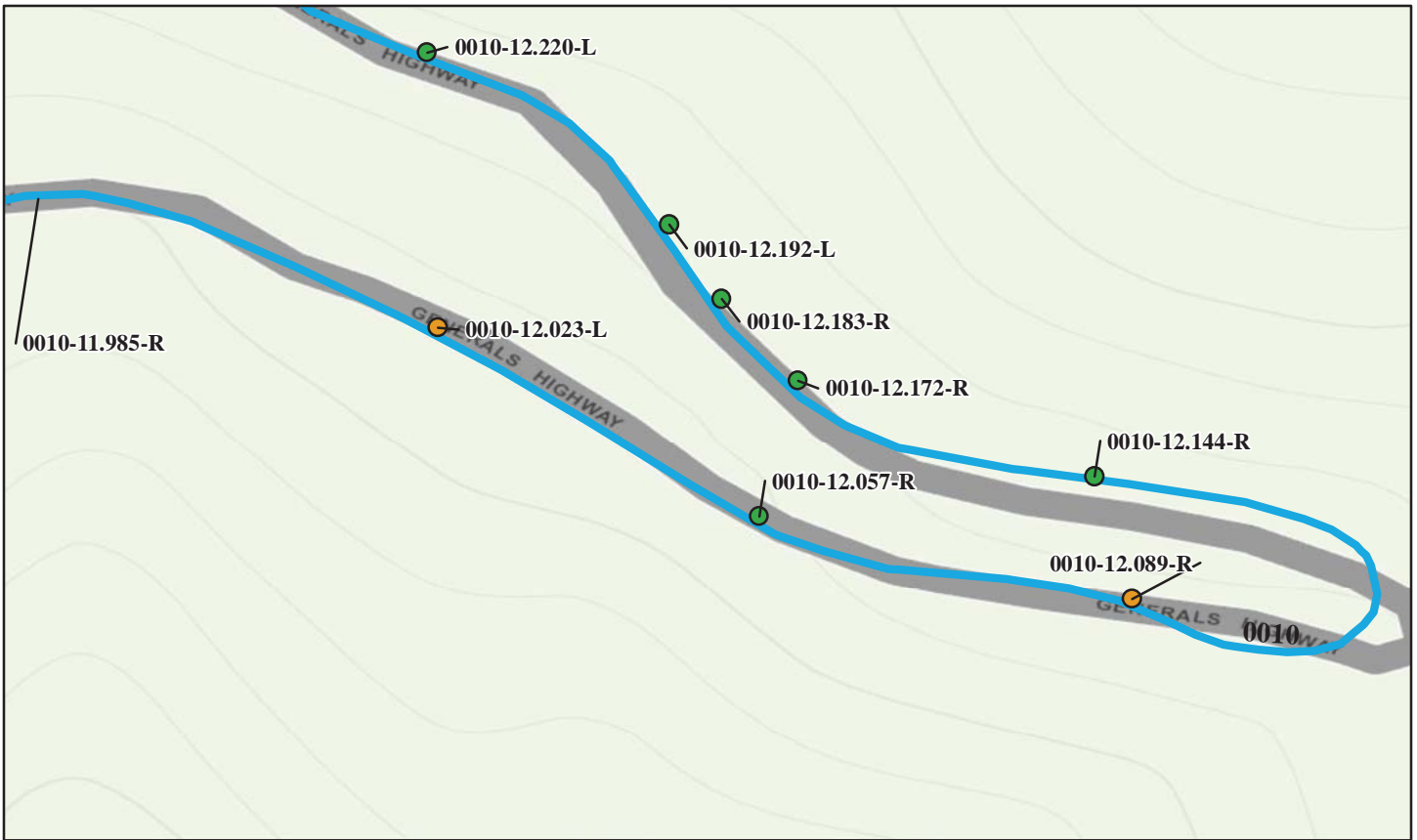
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-11.600-R 8/17/2007	130	43	Gravity - Dry Stone	Fill Wall	38	\$133,400.00
SEQU-0010-11.662-R 8/17/2007	450	178	Gravity - Mortared Stone	Fill Wall	62	\$3,200.00
SEQU-0010-11.715-R 8/17/2007	230	59	Gravity - Mortared Stone	Fill Wall	59	\$112,800.00
SEQU-0010-11.752-R 8/17/2007	780	87	Gravity - Mortared Stone	Fill Wall	77	\$6,500.00
SEQU-0010-11.774-R 8/17/2007	660	66	Gravity - Mortared Stone	Fill Wall	65	\$6,500.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

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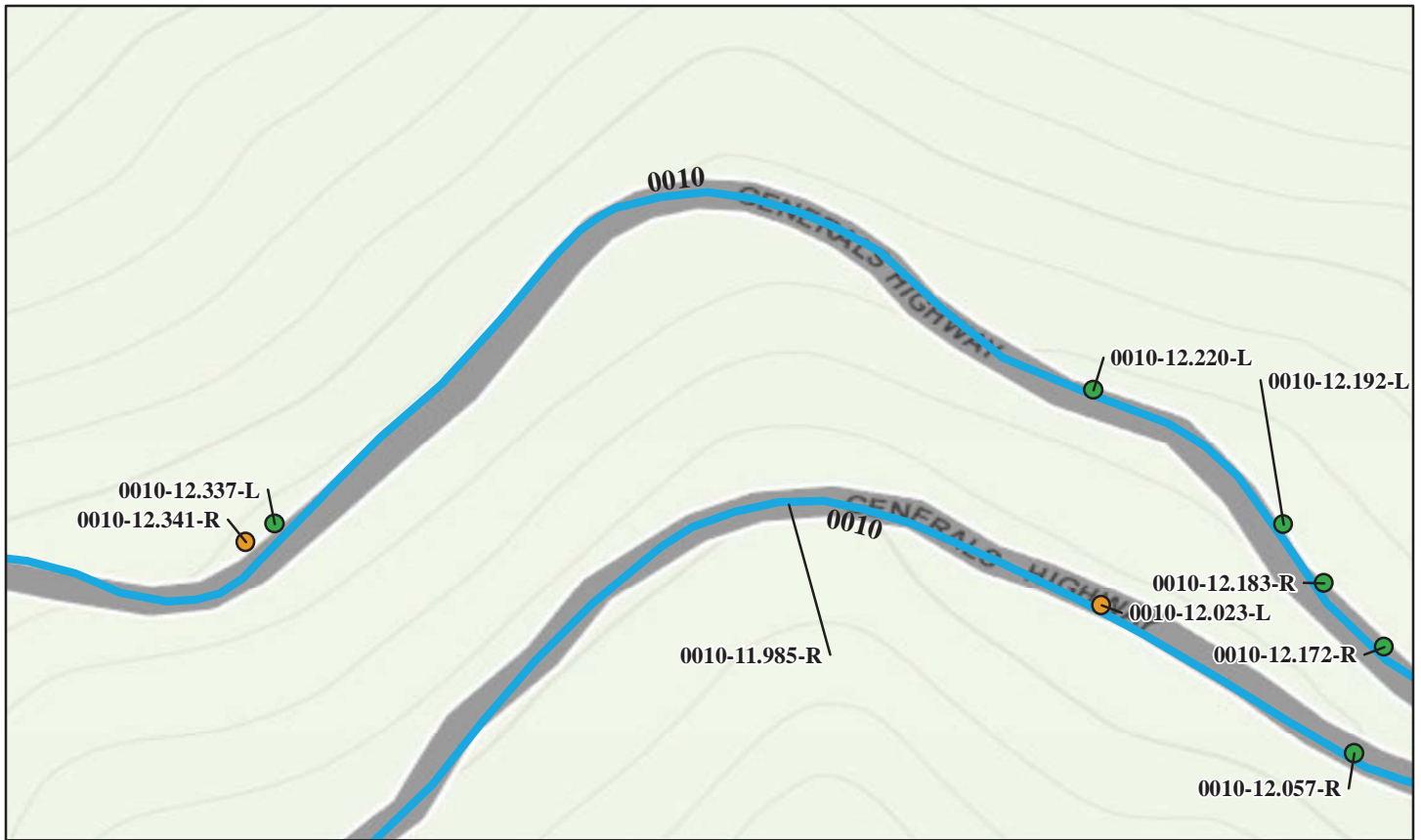
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-11.985-R 8/16/2007	900	65	Gravity - Dry Stone	Fill Wall	59	\$0.00
SEQU-0010-12.023-L 8/16/2007	80	14	Cantilever - Concrete	Head Wall	65	\$0.00
SEQU-0010-12.057-R 8/17/2007	150	13	Gravity - Dry Stone	Fill Wall	73	\$0.00
SEQU-0010-12.089-R 8/16/2007	300	83	Gravity - Dry Stone	Fill Wall	67	\$0.00
SEQU-0010-12.144-R 8/16/2007	1,100	73	Gravity - Dry Stone	Slope Protection	72	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

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No Data

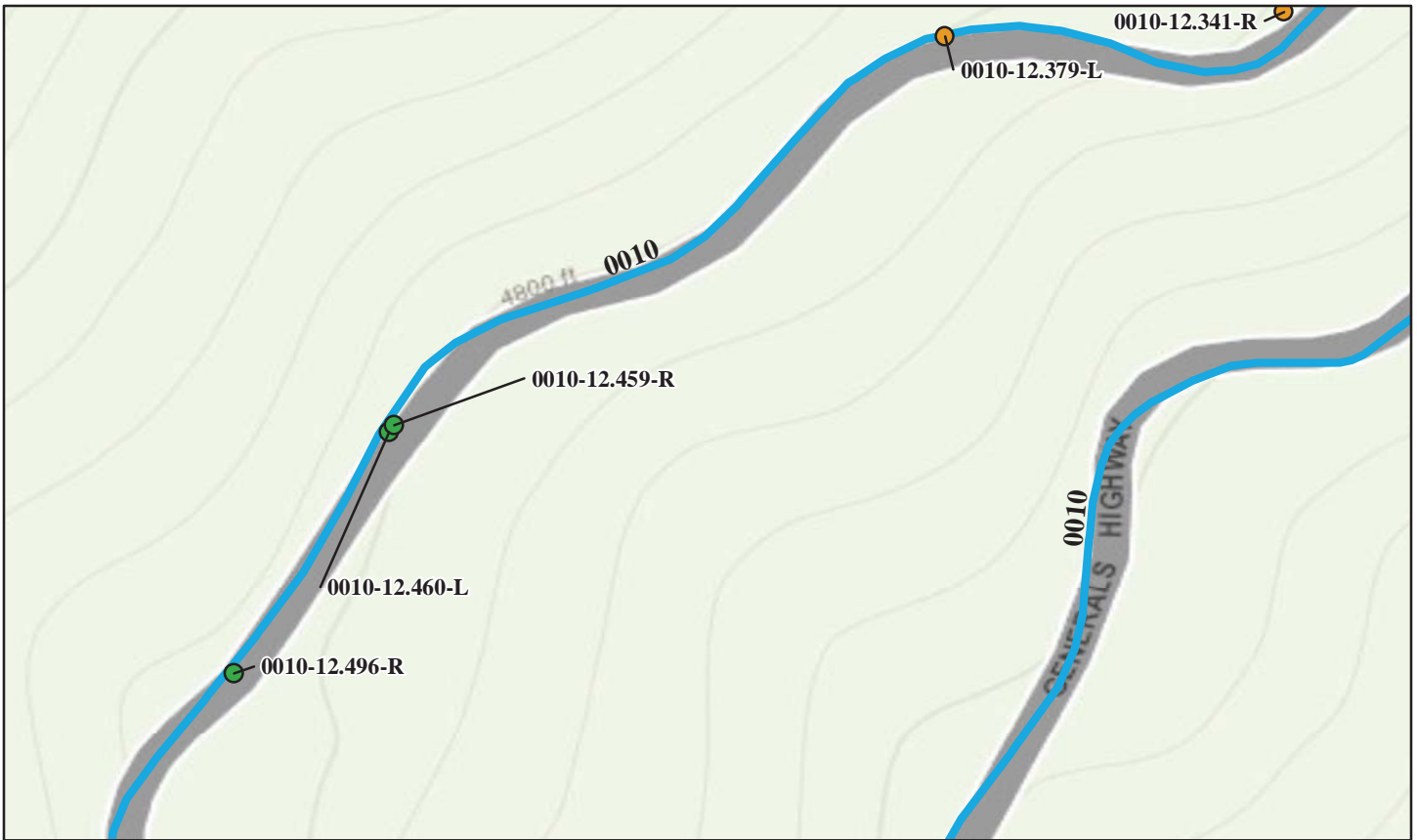
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SEQU-0010-12.172-R 8/17/2007	100	24	Gravity - Mortared Stone	Head Wall	80	\$0.00
SEQU-0010-12.183-R 8/17/2007	70	11	Gravity - Dry Stone	Cut Wall	83	\$0.00
SEQU-0010-12.192-L 8/17/2007	1,050	67	Gravity - Dry Stone	Switchback Wall	79	\$21,150.00
SEQU-0010-12.220-L 8/17/2007	65	26	Gravity - Mortared Stone	Fill Wall	80	\$0.00
SEQU-0010-12.337-L 8/17/2007	1,700	146	Bin - Metal	Fill Wall	79	\$110.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

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Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-12.341-R 8/17/2007	1,000	180	Gravity - Dry Stone	Cut Wall	67	\$0.00
SEQU-0010-12.379-L 8/17/2007	150	30	Bin - Metal	Fill Wall	67	\$0.00
SEQU-0010-12.459-R 8/17/2007	350	50	Gravity - Dry Stone	Cut Wall	76	\$0.00
SEQU-0010-12.460-L 8/17/2007	300	37	Gravity - Dry Stone	Fill Wall	73	\$0.00
SEQU-0010-12.496-R 8/17/2007	106	35	Gravity - Dry Stone	Cut Wall	70	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-12.665-L 8/17/2007	975	162	Bin - Metal	Fill Wall	58	\$0.00
SEQU-0010-12.730-L 8/17/2007	150	50	Gravity - Mortared Stone	Fill Wall	67	\$0.00
SEQU-0010-12.770-L 8/17/2007	300	48	Gravity - Mortared Stone	Fill Wall	78	\$0.00
SEQU-0010-12.797-L 8/17/2007	1,200	187	Gravity - Mortared Stone	Fill Wall	74	\$0.00
SEQU-0010-12.801-L 8/13/2007	650	60	Bin - Metal	Fill Wall	80	\$55.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

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Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

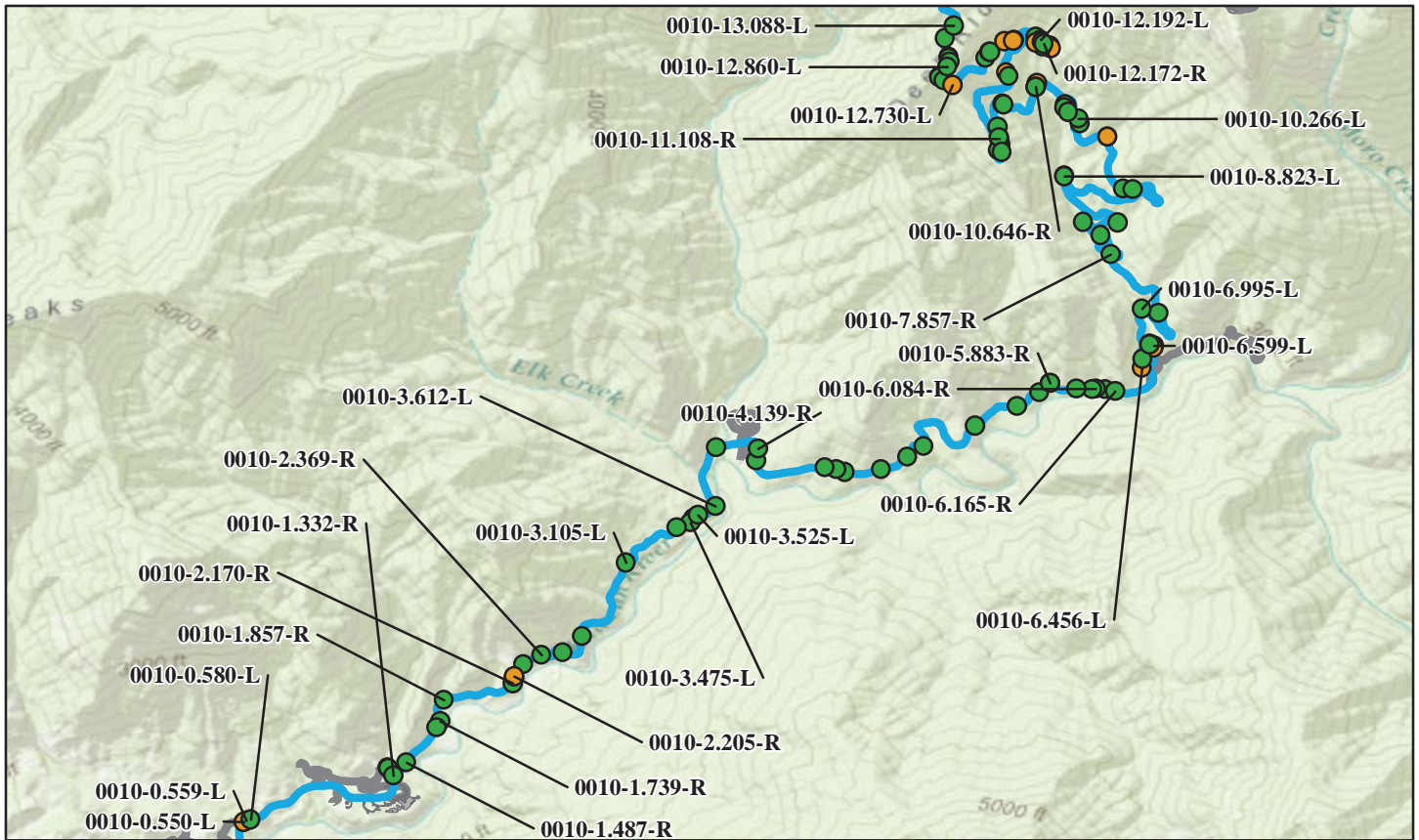
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-12.860-L 8/13/2007	500	55	Bin - Metal	Fill Wall	79	\$55.00
SEQU-0010-12.887-L 8/13/2007	1,120	70	Gravity - Mortared Stone	Fill Wall	89	\$0.00
SEQU-0010-12.905-L 8/13/2007	325	50	Gravity - Mortared Stone	Fill Wall	89	\$0.00
SEQU-0010-12.910-L 8/13/2007	904	113	Gravity - Mortared Stone	Fill Wall	89	\$55.00
SEQU-0010-13.015-L 8/13/2007	432	72	Gravity - Dry Stone	Fill Wall	71	\$110.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

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Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-13.088-L 8/13/2007	1,625	191	Bin - Metal	Fill Wall	79	\$0.00
SEQU-0010-13.271-L 8/14/2007	810	80	Bin - Metal	Fill Wall	81	\$165.00
SEQU-0010-13.297-L 8/14/2007	120	19	Gravity - Dry Stone	Fill Wall	65	\$0.00
SEQU-0010-0.550-L 8/13/2007	250	33	Gravity - Dry Stone	Cut Wall	69	\$0.00
SEQU-0010-0.559-L 8/13/2007	185	26	Gravity - Dry Stone	Cut Wall	63	\$14,000.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-13.302-L 8/14/2007	380	76	Gravity - Mortared Stone	Fill Wall	85	\$0.00
SEQU-0010-13.480-L 8/14/2007	180	30	Gravity - Dry Stone	Fill Wall	71	\$0.00
SEQU-0010-13.580-L 8/14/2007	185	50	Bin - Metal	Fill Wall	80	\$0.00
SEQU-0010-13.667-R 8/14/2007	240	30	Gravity - Dry Stone	Cut Wall	90	\$0.00
SEQU-0010-15.945-R 8/14/2007	110	13	Gravity - Mortared Stone	Head Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

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Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

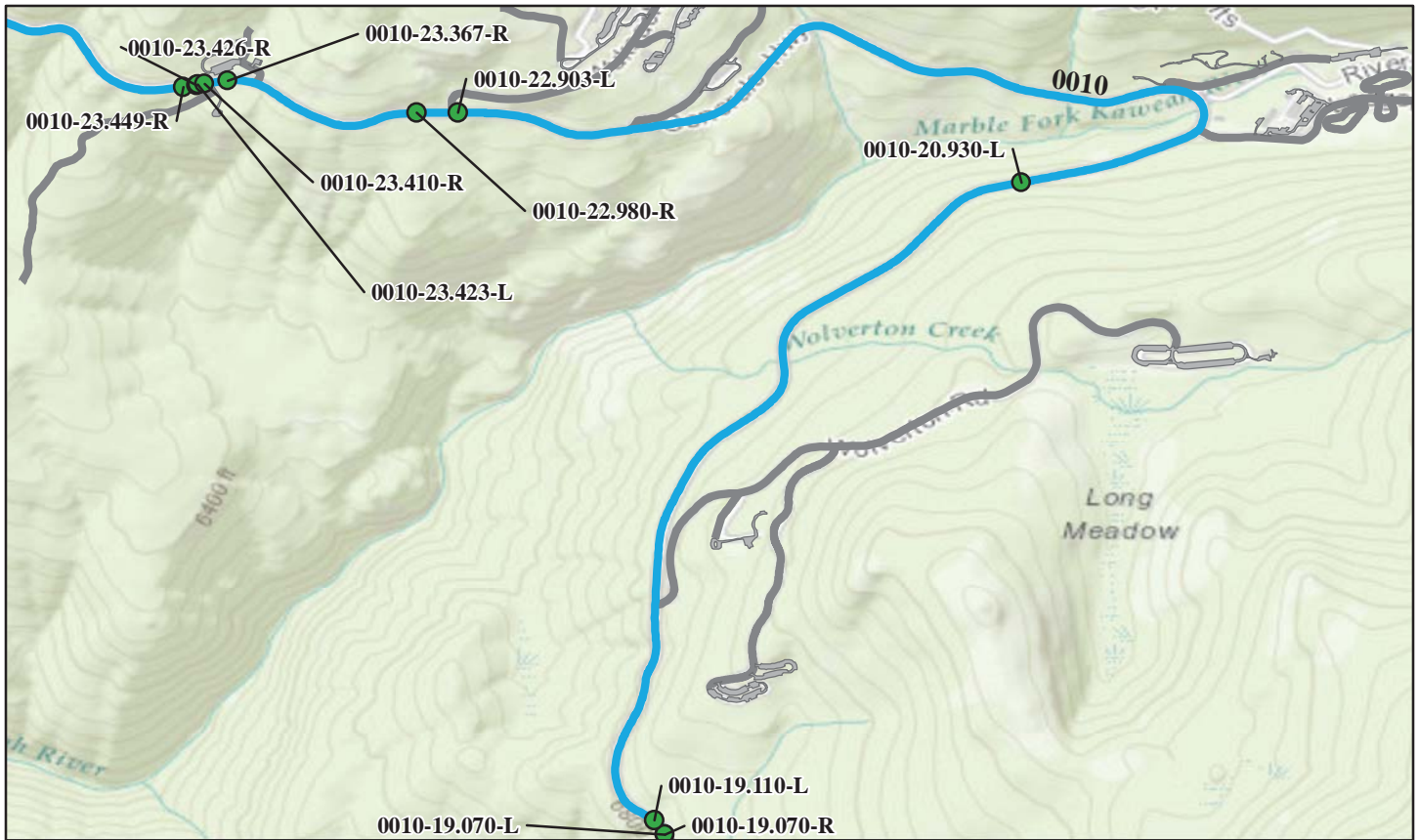
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-18.813-R 8/14/2007	126	18	Gravity - Dry Stone	Slope Protection	83	\$0.00
SEQU-0010-18.913-R 8/14/2007	150	30	Gravity - Dry Stone	Slope Protection	83	\$0.00
SEQU-0010-18.974-R 8/14/2007	360	60	Gravity - Dry Stone	Slope Protection	77	\$0.00
SEQU-0010-19.070-L 8/14/2007	250	60	Gravity - Dry Stone	Head Wall	74	\$0.00
SEQU-0010-19.070-R 8/14/2007	260	36	Gravity - Mortared Stone	Head Wall	97	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



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## ROUTE 0010: GENERALS HIGHWAY HISTORIC



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-19.110-L 8/14/2007	2,300	310	Gravity - Mortared Stone	Fill Wall	89	\$0.00
SEQU-0010-20.930-L 8/17/2007	1,445	170	Gravity - Dry Stone	Fill Wall	80	\$0.00
SEQU-0010-22.903-L 8/16/2007	2,060	440	Bin - Metal	Fill Wall	90	\$0.00
SEQU-0010-22.980-R 8/16/2007	2,200	396	Gravity - Dry Stone	Cut Wall	86	\$0.00
SEQU-0010-23.367-R 8/16/2007	2,450	298	Gravity - Dry Stone	Cut Wall	89	\$0.00

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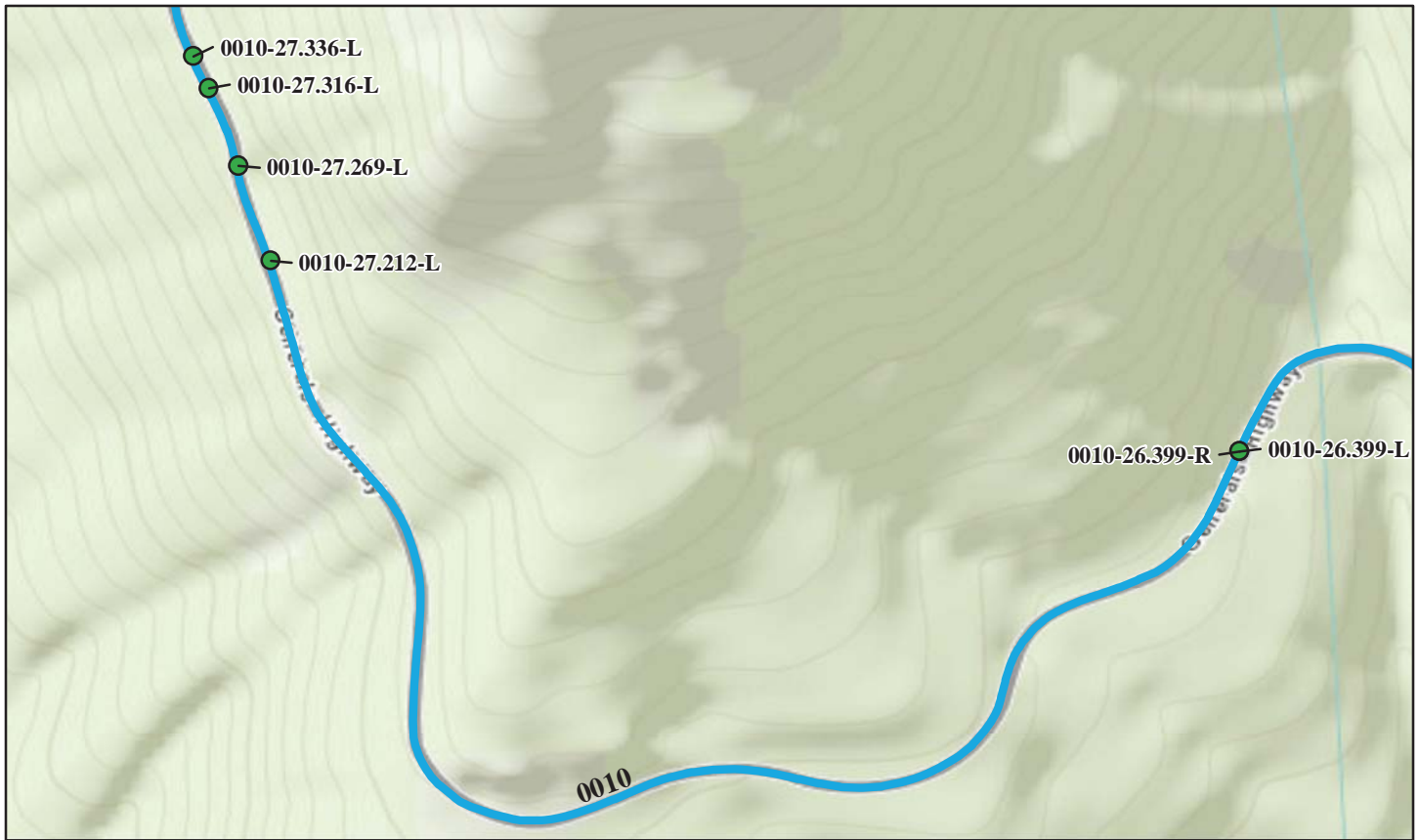
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-23.410-R 8/16/2007	1,700	312	Gravity - Dry Stone	Cut Wall	89	\$0.00
SEQU-0010-23.423-L 8/16/2007	159	38	Gravity - Mortared Stone	Head Wall	87	\$0.00
SEQU-0010-23.426-R 8/16/2007	133	30	Gravity - Mortared Stone	Head Wall	87	\$0.00
SEQU-0010-23.449-R 8/18/2007	1,360	311	Gravity - Dry Stone	Cut Wall	90	\$0.00
SEQU-0010-26.399-L 8/23/2007	110	27	Gravity - Mortared Stone	Head Wall	78	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

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Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-26.399-R 8/23/2007	125	24	Gravity - Mortared Stone	Head Wall	77	\$0.00
SEQU-0010-27.212-L 8/17/2007	2,650	282	Gravity - Dry Stone	Fill Wall	80	\$110.00
SEQU-0010-27.269-L 8/17/2007	1,050	69	Gravity - Dry Stone	Fill Wall	80	\$100.00
SEQU-0010-27.316-L 8/17/2007	670	92	Gravity - Dry Stone	Fill Wall	80	\$100.00
SEQU-0010-27.336-L 8/17/2007	1,680	105	Gravity - Dry Stone	Fill Wall	80	\$100.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

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Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

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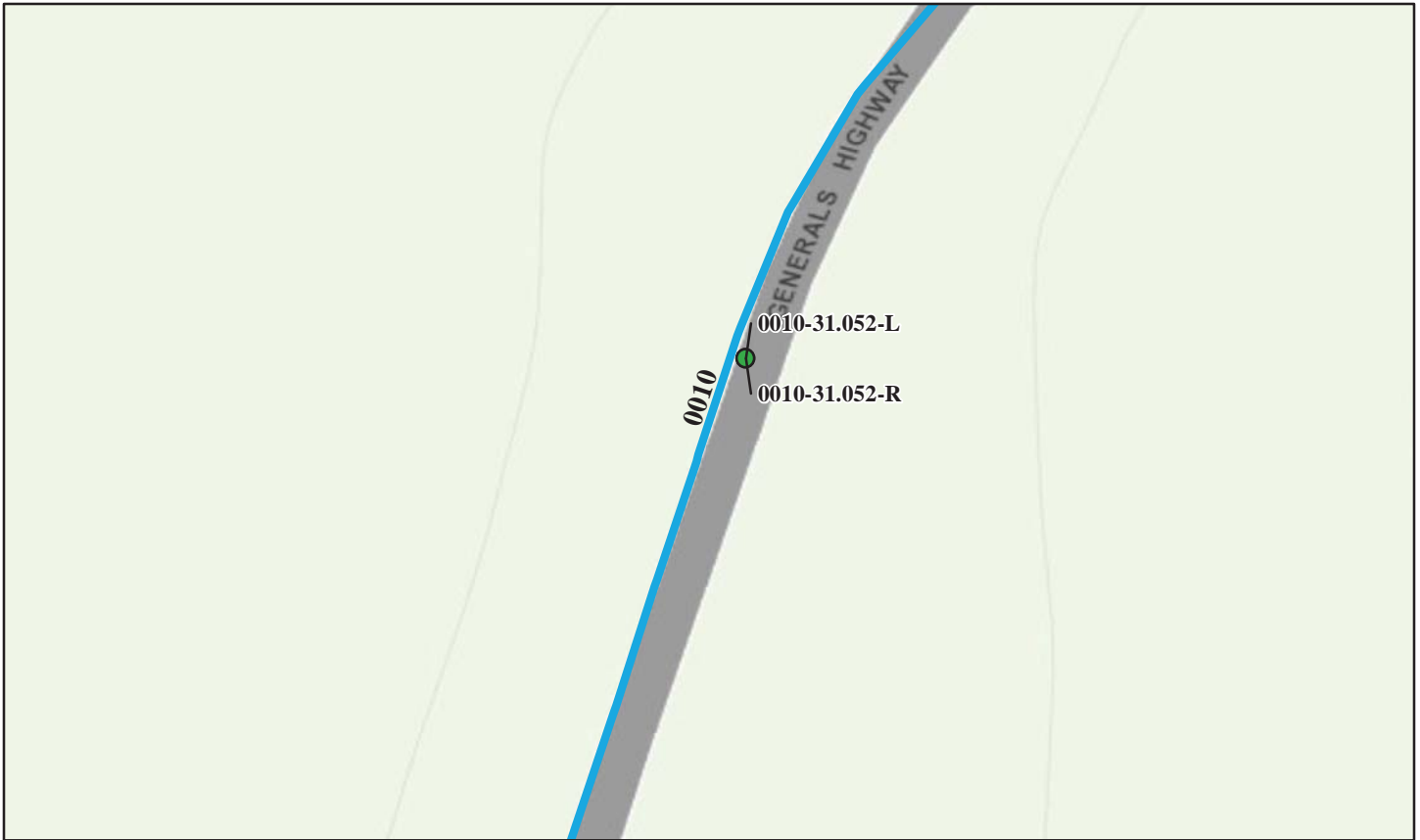
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-27.498-L 8/17/2007	4,065	273	Gravity - Dry Stone	Fill Wall	76	\$200.00
SEQU-0010-27.505-L 8/17/2007	680	78	Gravity - Dry Stone	Fill Wall	67	\$5,000.00
SEQU-0010-30.310-R 8/15/2007	715	78	Cantilever - Concrete	Head Wall	83	\$0.00
SEQU-0010-30.321-L 8/15/2007	750	83	Cantilever - Concrete	Head Wall	83	\$0.00
SEQU-0010-31.052-L 8/15/2007	436	53	Cantilever - Concrete	Head Wall	83	\$220.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0010: GENERALS HIGHWAY HISTORIC



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### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0010-31.052-R  8/15/2007	470	57	Cantilever - Concrete	Head Wall	83	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0013: MINERAL KING ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0013-2.294-R 8/17/2007	320	52	Gravity - Dry Stone	Fill Wall	57	\$0.00
SEQU-0013-4.974-R 8/15/2007	2000	175	Gravity - Dry Stone	Slope Protection	83	\$0.00
SEQU-0013-5.036-R 8/15/2007	1750	140	Gravity - Dry Stone	Slope Protection	83	\$0.00
SEQU-0013-6.568-R 8/15/2007	1080	90	Gravity - Dry Stone	Fill Wall	80	\$0.00
SEQU-0013-11.000-R 8/15/2007	600	49	Gravity - Dry Stone	Fill Wall	78	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0013: MINERAL KING ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0013-12.200-R 8/15/2007	2,100	195	Gravity - Dry Stone	Fill Wall	76	\$0.00
SEQU-0013-12.800-R 8/15/2007	760	95	Gravity - Dry Stone	Fill Wall	76	\$0.00
SEQU-0013-12.838-R 8/15/2007	800	133	Gravity - Dry Stone	Fill Wall	76	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0100: CRYSTAL CAVE ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0100-0.198-L 8/16/2007	130	30	Gravity - Gabion	Fill Wall	77	\$0.00
SEQU-0100-0.214-L 8/16/2007	460	115	Gravity - Dry Stone	Fill Wall	77	\$0.00
SEQU-0100-0.826-L 8/16/2007	2,230	261	Gravity - Dry Stone	Fill Wall	79	\$100.00
SEQU-0100-1.576-L 8/16/2007	1,225	85	Gravity - Dry Stone	Fill Wall	79	\$100.00
SEQU-0100-1.586-R 8/16/2007	120	25	Gravity - Dry Stone	Head Wall	77	\$200.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0100: CRYSTAL CAVE ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0100-6.384-L 8/16/2007	725	122	Crib - Timber	Fill Wall	58	\$153,050.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0101: WUKSACHI ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

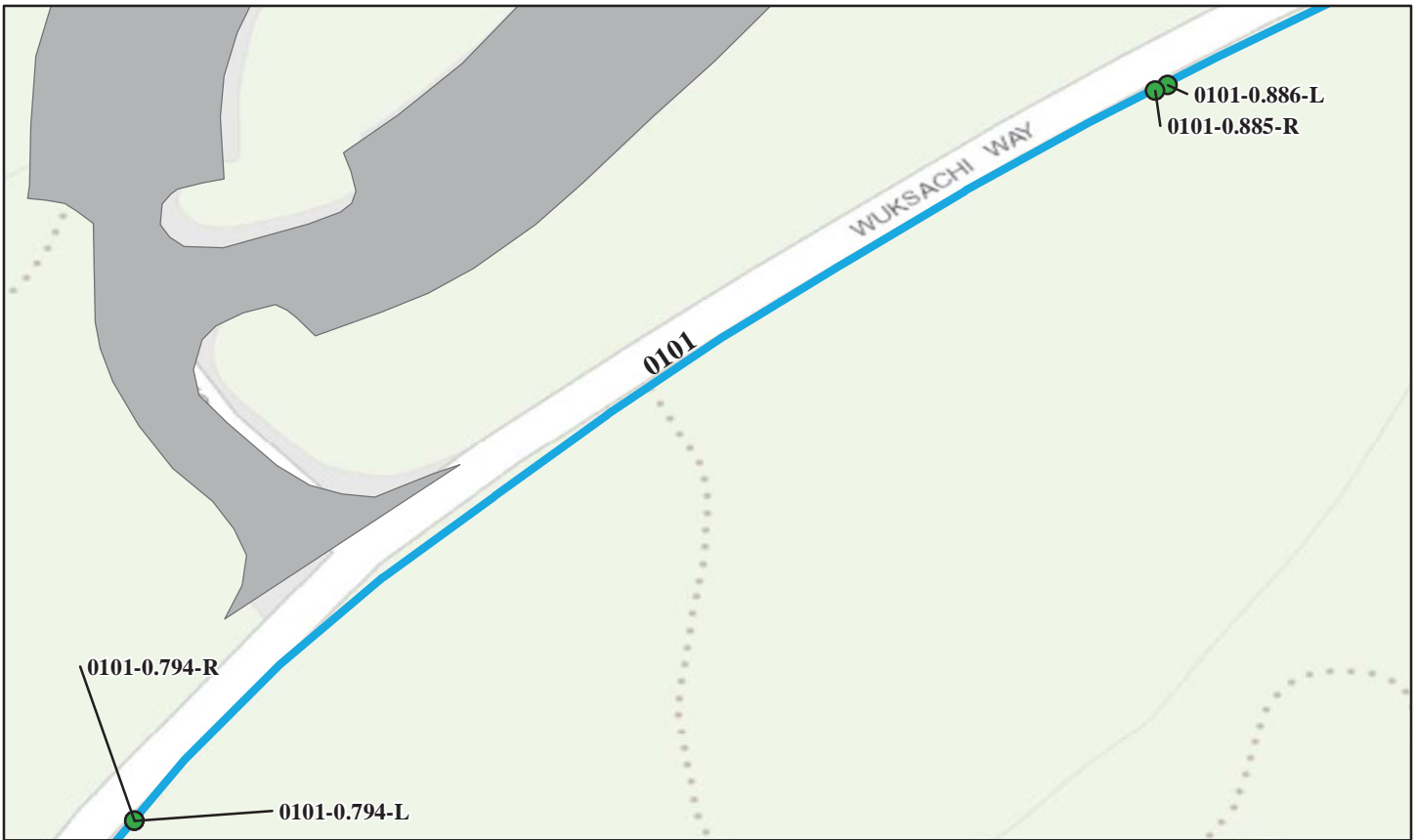
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0101-0.095-R 8/16/2007	500	98	Gravity - Dry Stone	Fill Wall	83	\$0.00
SEQU-0101-0.113-R 8/14/2007	1,530	170	Gravity - Mortared Stone	Fill Wall	90	\$0.00
SEQU-0101-0.318-L 8/16/2007	1,540	290	Gravity - Dry Stone	Cut Wall	90	\$0.00
SEQU-0101-0.382-R 8/16/2007	2,170	334	Crib - Concrete	Fill Wall	90	\$0.00
SEQU-0101-0.794-L 8/14/2007	375	50	Gravity - Mortared Stone	Head Wall	92	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0101: WUKSACHI ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Good to Excellent (70 - 100)

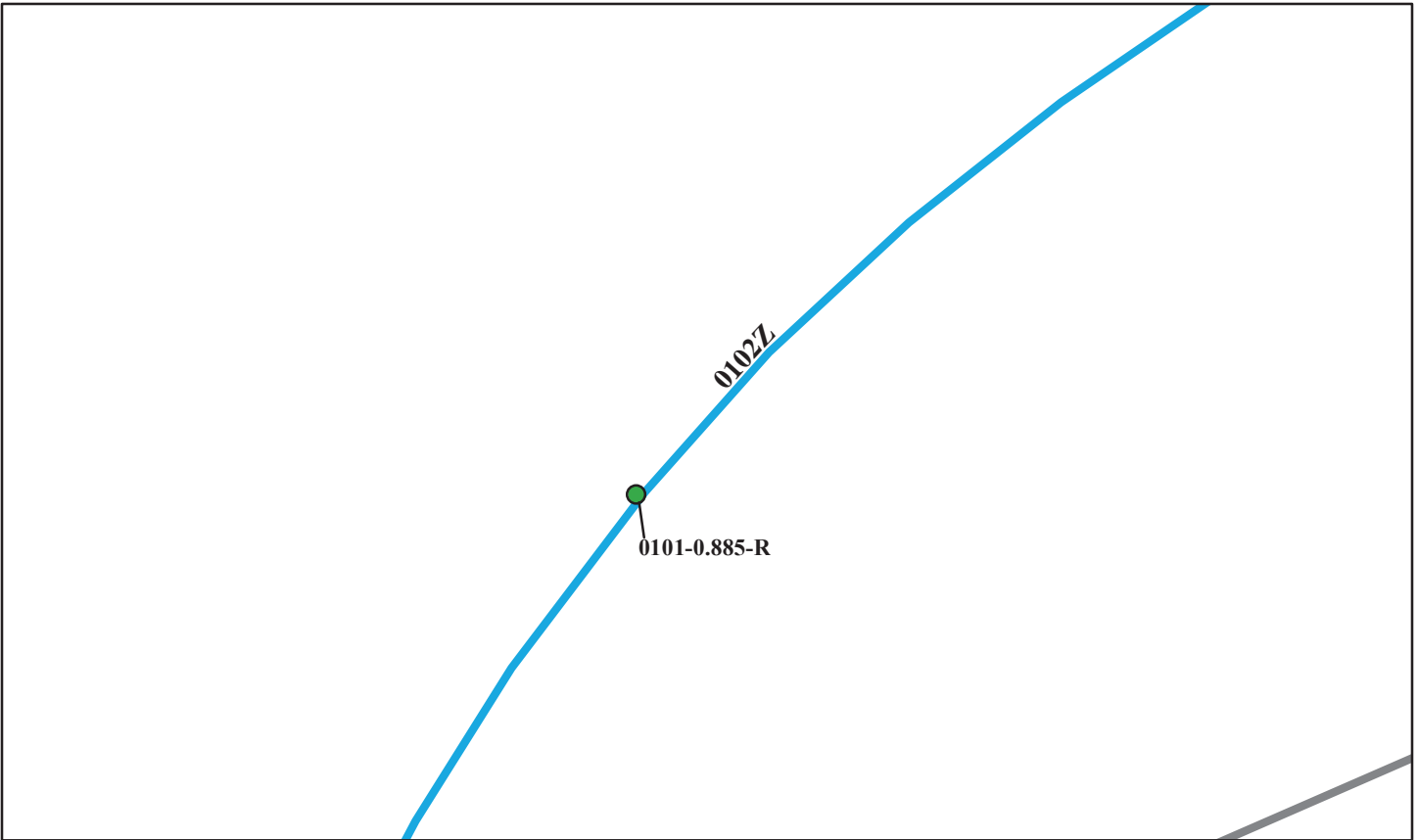
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0101-0.794-R 8/14/2007	225	51	Gravity - Mortared Stone	Head Wall	92	\$0.00
SEQU-0101-0.885-R 8/14/2007	450	62	Gravity - Mortared Stone	Head Wall	92	\$0.00
SEQU-0101-0.886-L 8/14/2007	300	48	Gravity - Mortared Stone	Head Wall	92	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0102ZZ: CRESCENT MEADOW ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

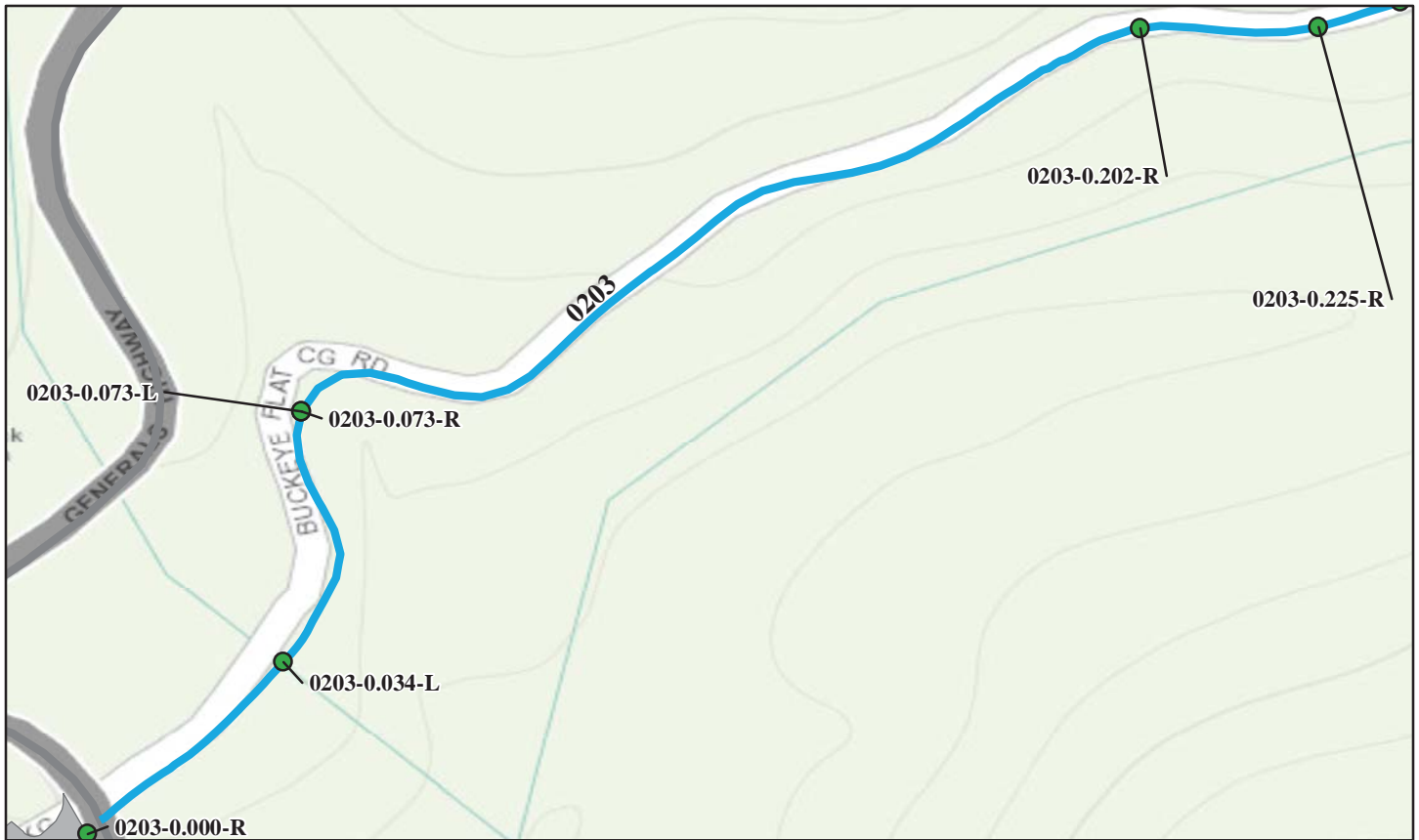
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0102ZZ-1.517-R 8/16/2007	90	18	Gravity - Mortared Stone	Head Wall	78	\$300.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0203: BUCKEYE FLAT ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0203-0.000-R 8/17/2007	1,215	230	Gravity - Dry Stone	Fill Wall	76	\$7,000.00
SEQU-0203-0.034-L 8/17/2007	680	76	Gravity - Dry Stone	Cut Wall	79	\$0.00
SEQU-0203-0.073-L 8/17/2007	140	28	Gravity - Mortared Stone	Head Wall	80	\$1,000.00
SEQU-0203-0.073-R 8/17/2007	180	43	Gravity - Mortared Stone	Head Wall	80	\$0.00
SEQU-0203-0.202-R 8/17/2007	325	108	Gravity - Dry Stone	Fill Wall	70	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0203: BUCKEYE FLAT ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

<b>Critical / Poor (0 - 49)</b>	<b>Fair (50 - 69)</b>	<b>Good to Excellent (70 - 100)</b>	<b>No Data</b>
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0203-0.225-R 8/17/2007	145	31	Gravity - Gabion	Fill Wall	76	\$0.00
SEQU-0203-0.235-R 8/17/2007	160	27	Gravity - Gabion	Fill Wall	76	\$0.00
SEQU-0203-0.266-R 8/17/2007	830	134	Gravity - Mortared Stone	Fill Wall	80	\$0.00
SEQU-0203-0.291-R 8/17/2007	245	35	Gravity - Mortared Stone	Fill Wall	80	\$0.00
SEQU-0203-0.316-R 8/17/2007	145	29	Gravity - Mortared Stone	Fill Wall	80	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0203: BUCKEYE FLAT ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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**Fair (50 - 69)**

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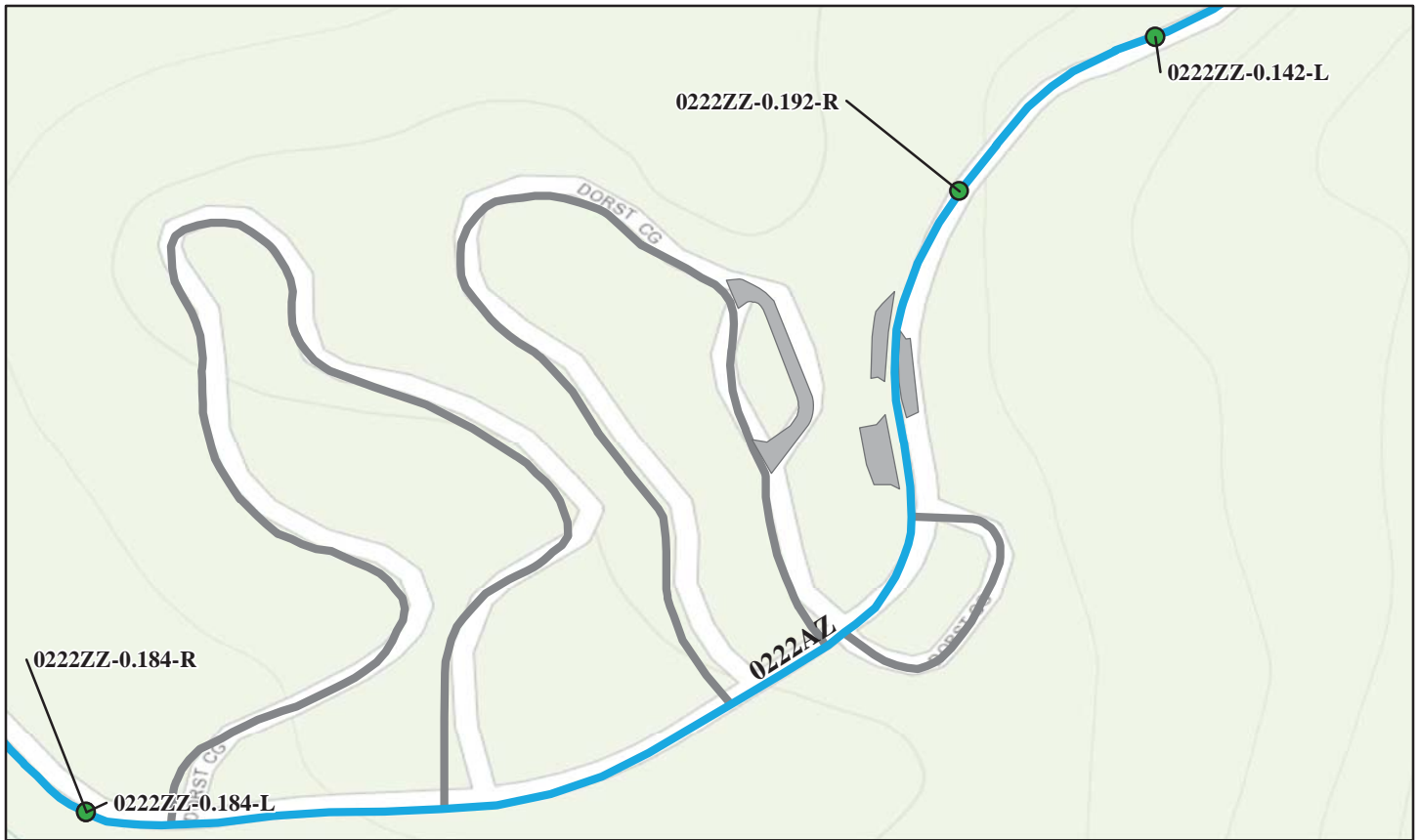
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0203-0.322-R 8/17/2007	70	23	Gravity - Mortared Stone	Fill Wall	80	\$0.00
SEQU-0203-0.335-R 8/17/2007	935	78	Gravity - Mortared Stone	Fill Wall	80	\$0.00
SEQU-0203-0.348-R 8/17/2007	140	61	Gravity - Mortared Stone	Fill Wall	80	\$0.00
SEQU-0203-0.437-R 8/17/2007	120	24	Gravity - Dry Stone	Head Wall	67	\$500.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0222ZZ: DORST CAMPGROUND ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

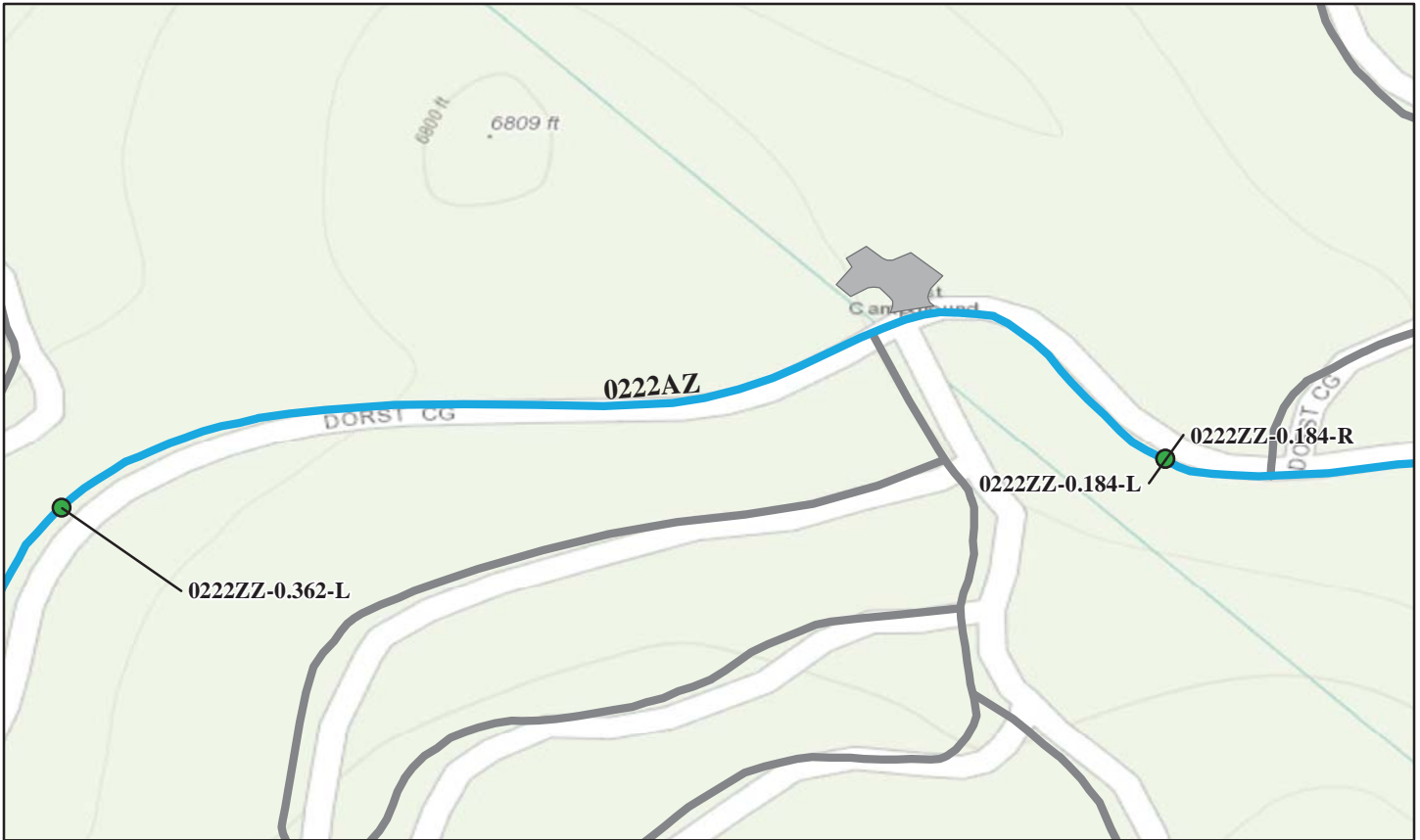
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0222ZZ-0.142-L 8/17/2007	1,350	247	Gravity - Dry Stone	Cut Wall	86	\$0.00
SEQU-0222ZZ-0.184-L 8/17/2007	180	29	Gravity - Mortared Stone	Head Wall	87	\$1,280.00
SEQU-0222ZZ-0.184-R 8/17/2007	60	28	Gravity - Mortared Stone	Head Wall	87	\$0.00
SEQU-0222ZZ-0.192-R 8/17/2007	340	85	Gravity - Dry Stone	Fill Wall	80	\$0.00
SEQU-0222ZZ-0.362-L 8/17/2007	1,300	265	Gravity - Dry Stone	Cut Wall	86	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0222ZZ: DORST CAMPGROUND ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

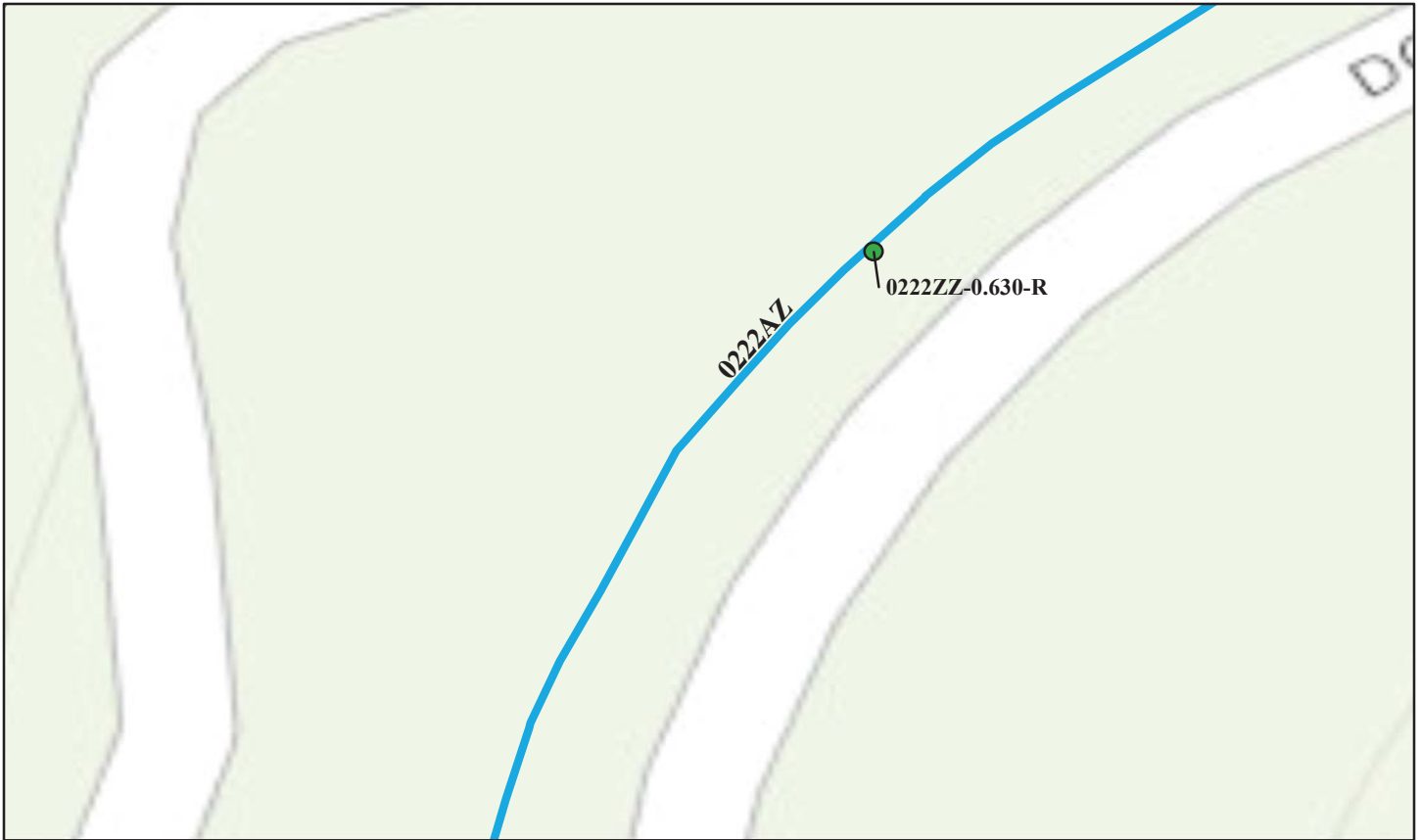
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0222ZZ-0.408-R 8/17/2007	45	11	Gravity - Mortared Stone	Head Wall	82	\$0.00
SEQU-0222ZZ-0.426-L 8/17/2007	450	113	Gravity - Dry Stone	Cut Wall	86	\$0.00
SEQU-0222ZZ-0.488-L 8/17/2007	460	97	Gravity - Dry Stone	Cut Wall	86	\$0.00
SEQU-0222ZZ-0.528-L 8/17/2007	630	192	Gravity - Dry Stone	Cut Wall	86	\$0.00
SEQU-0222ZZ-0.630-L 8/17/2007	92	29	Gravity - Mortared Stone	Head Wall	87	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0222ZZ: DORST CAMPGROUND ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

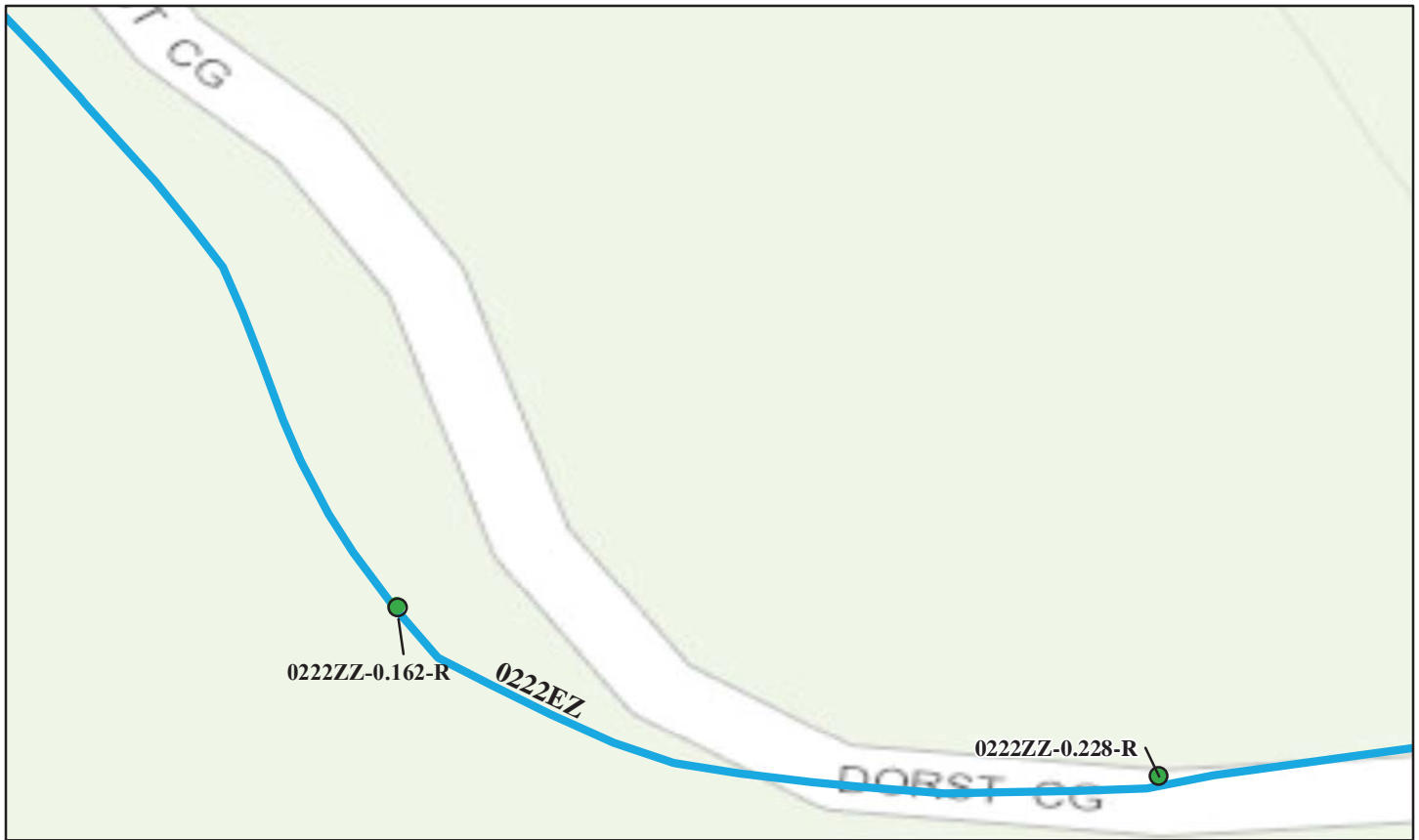
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0222ZZ-0.630-R 8/17/2007	120	30	Gravity - Mortared Stone	Head Wall	87	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0222ZZ: DORST CAMPGROUND ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

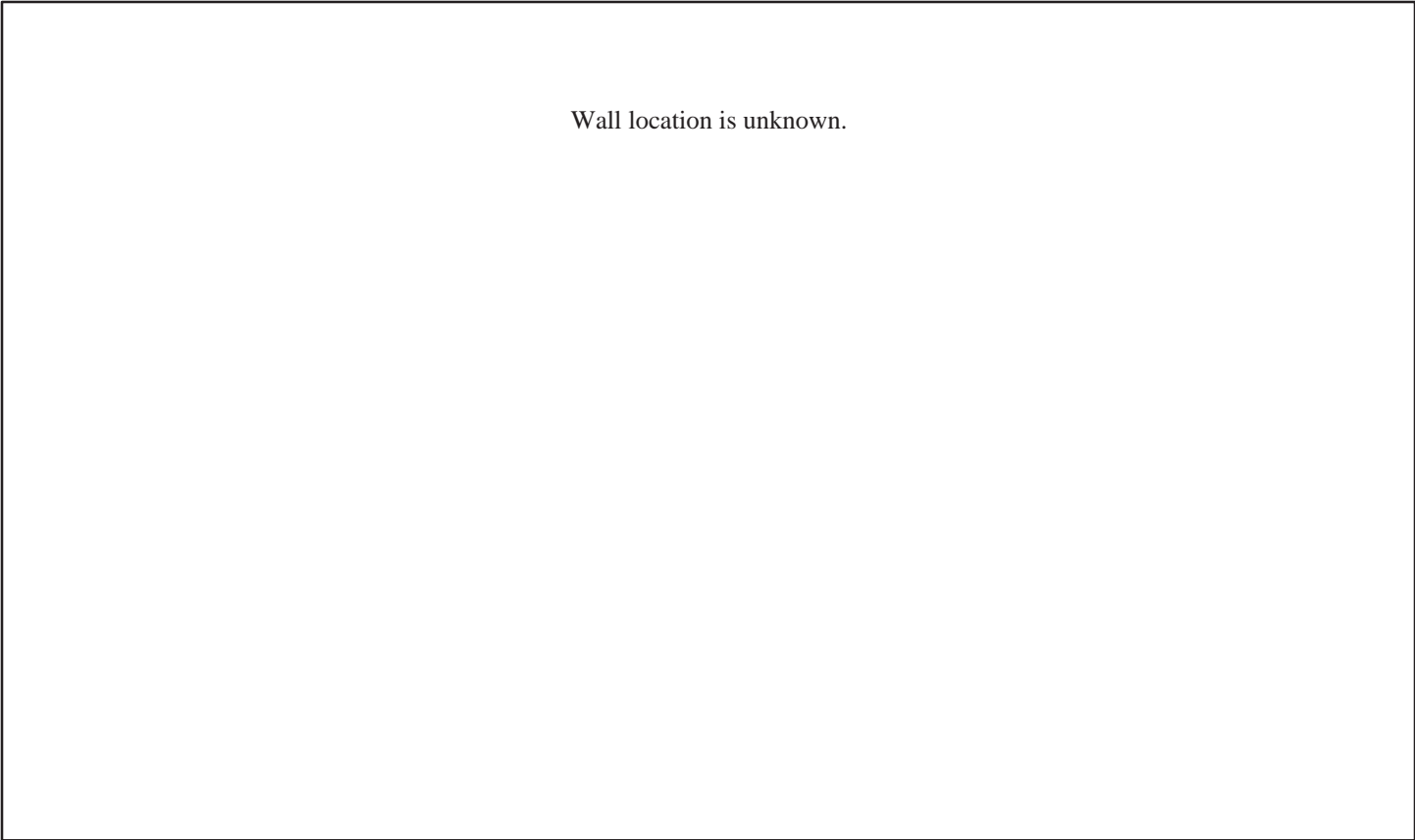
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0222ZZ-0.162-R 8/17/2007	1,030	220	Gravity - Dry Stone	Cut Wall	90	\$0.00
SEQU-0222ZZ-0.228-R 8/17/2007	310	64	Gravity - Dry Stone	Fill Wall	87	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0222ZZ: DORST CAMPGROUND ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

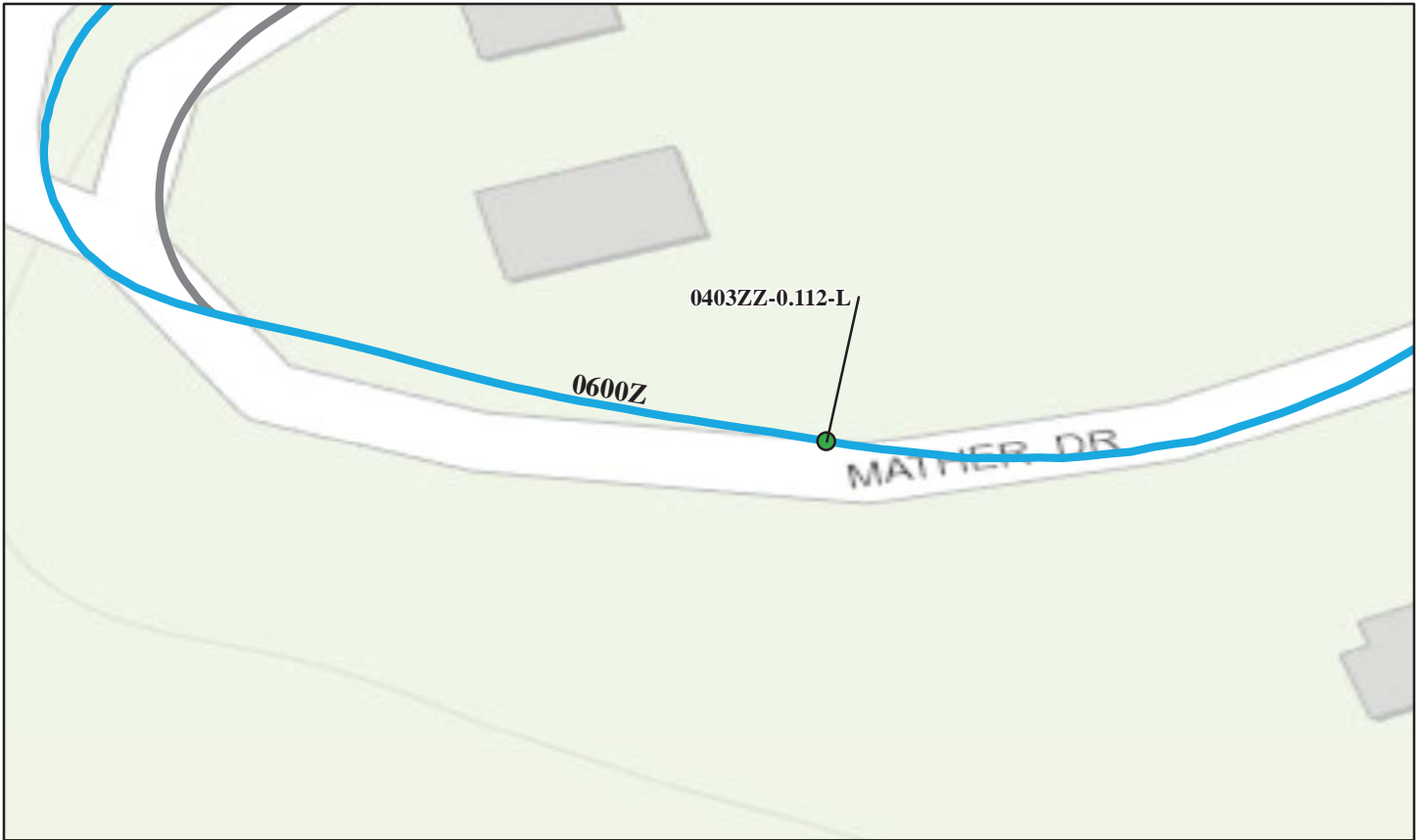
<b>Critical / Poor (0 - 49)</b>	<b>Fair (50 - 69)</b>	<b>Good to Excellent (70 - 100)</b>	<b>No Data</b>
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0222ZZ-0.000-R  8/17/2007	760	158	Gravity - Dry Stone	Fill Wall	80	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0403ZZ: ASH MOUNTAIN RESIDENCE ROADS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

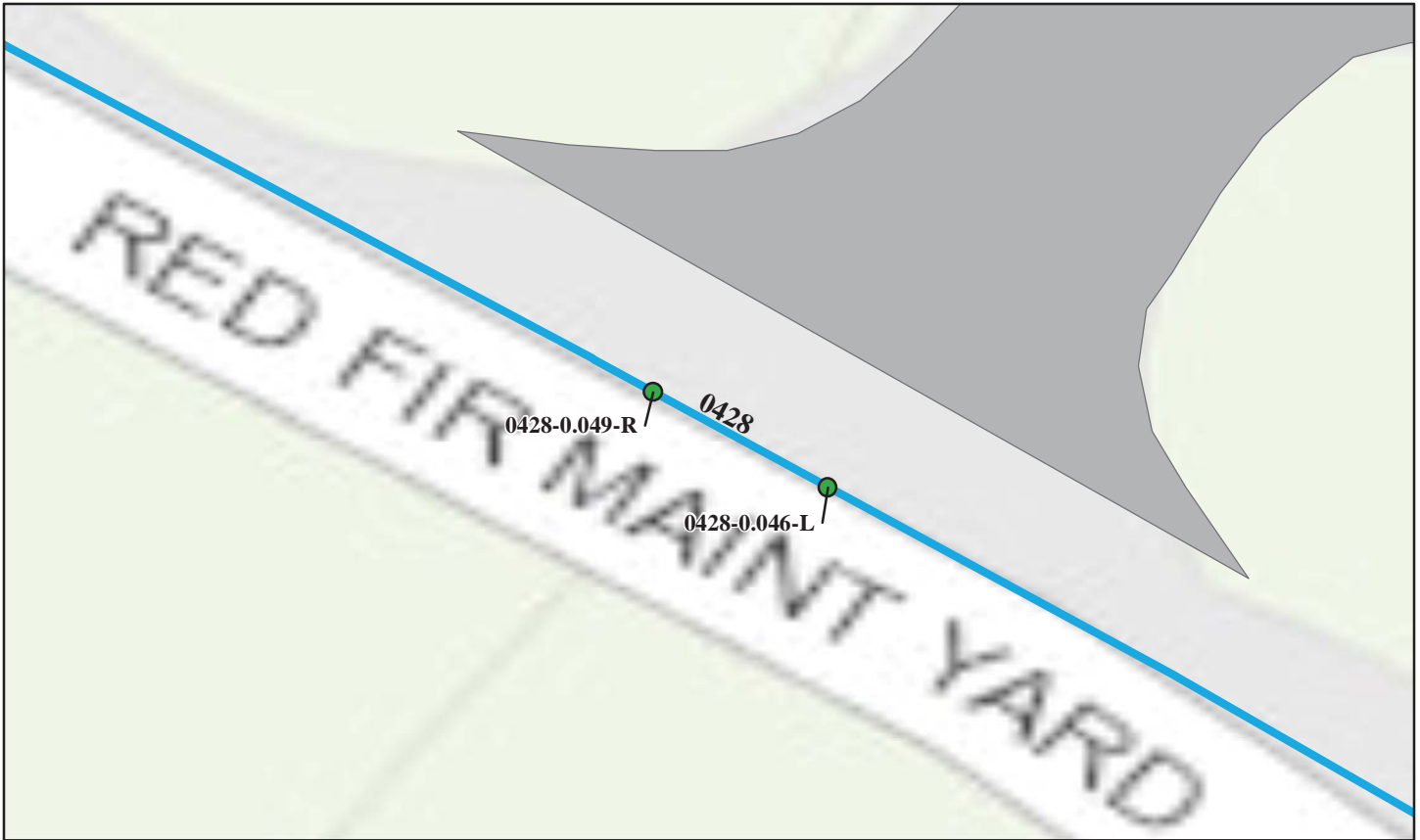
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0403ZZ-0.112-L 8/15/2007	152	38	Gravity - Dry Stone	Cut Wall	83	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0428: RED FIR ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

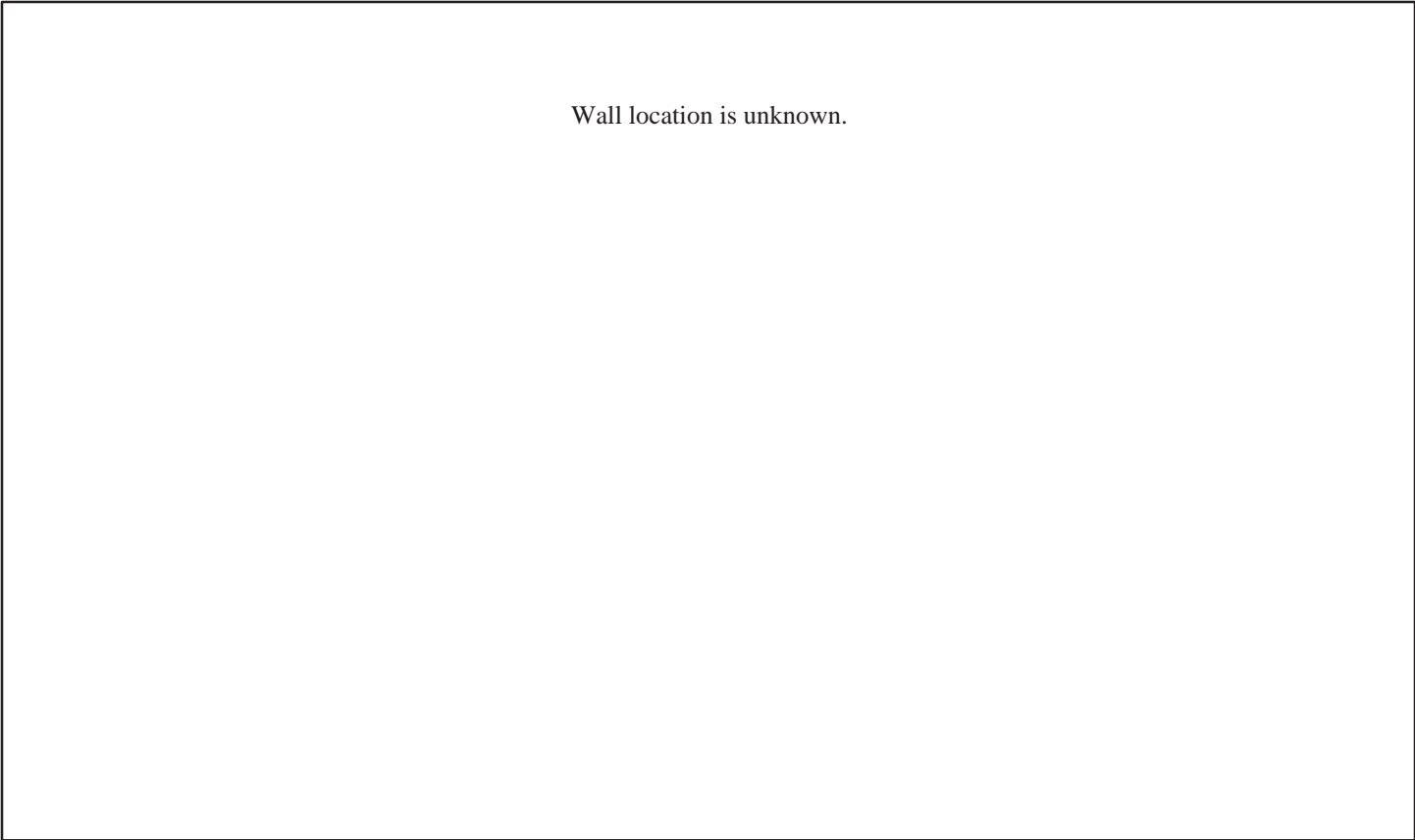
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0428-0.046-L 8/17/2007	205	39	Gravity - Mortared Stone	Head Wall	90	\$0.00
SEQU-0428-0.049-R 8/17/2007	155	36	Gravity - Mortared Stone	Head Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0431: WUKSACHI FIRE STATION ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

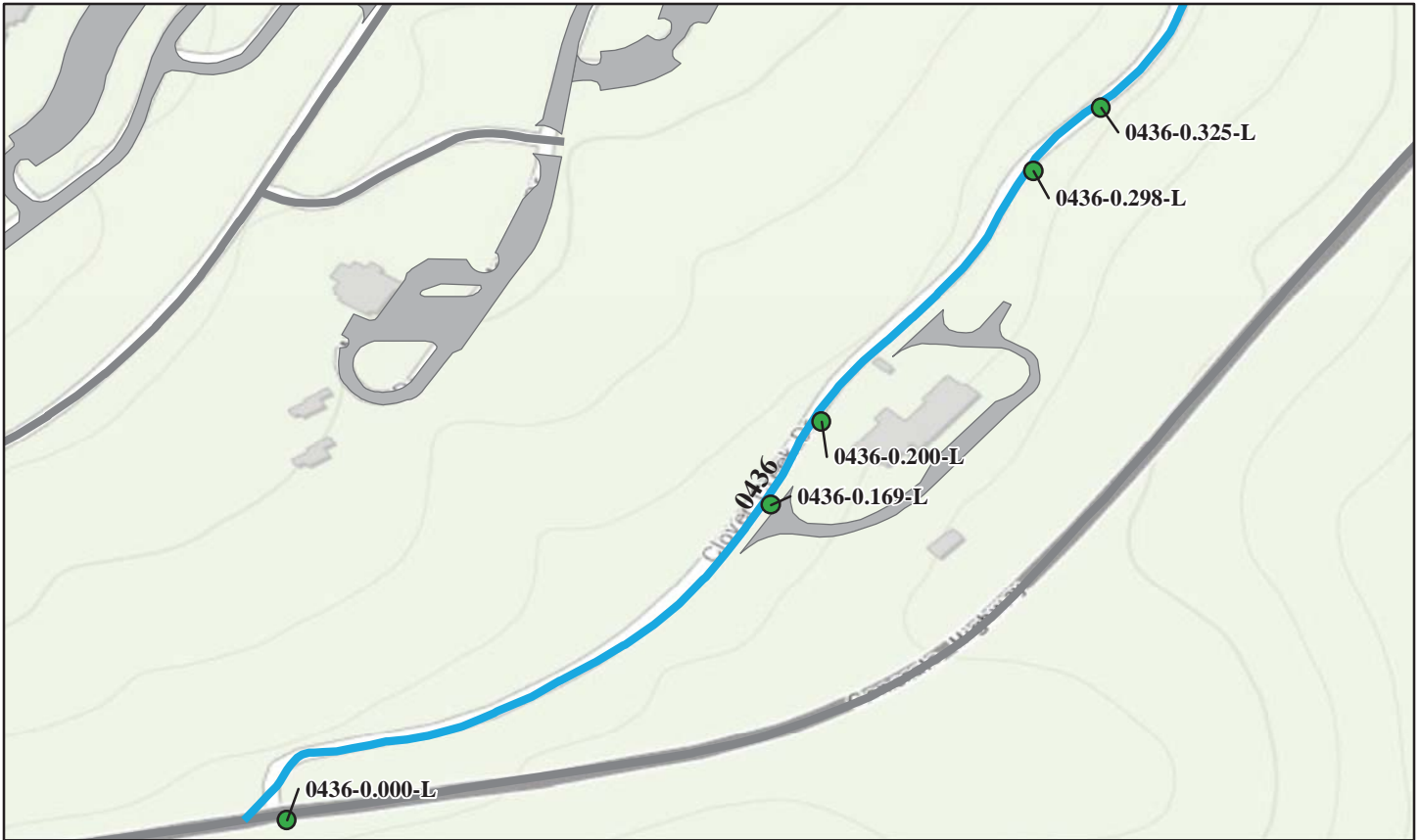
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0431-0.000-R  8/16/2007	900	175	Gravity - Dry Stone	Cut Wall	89	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

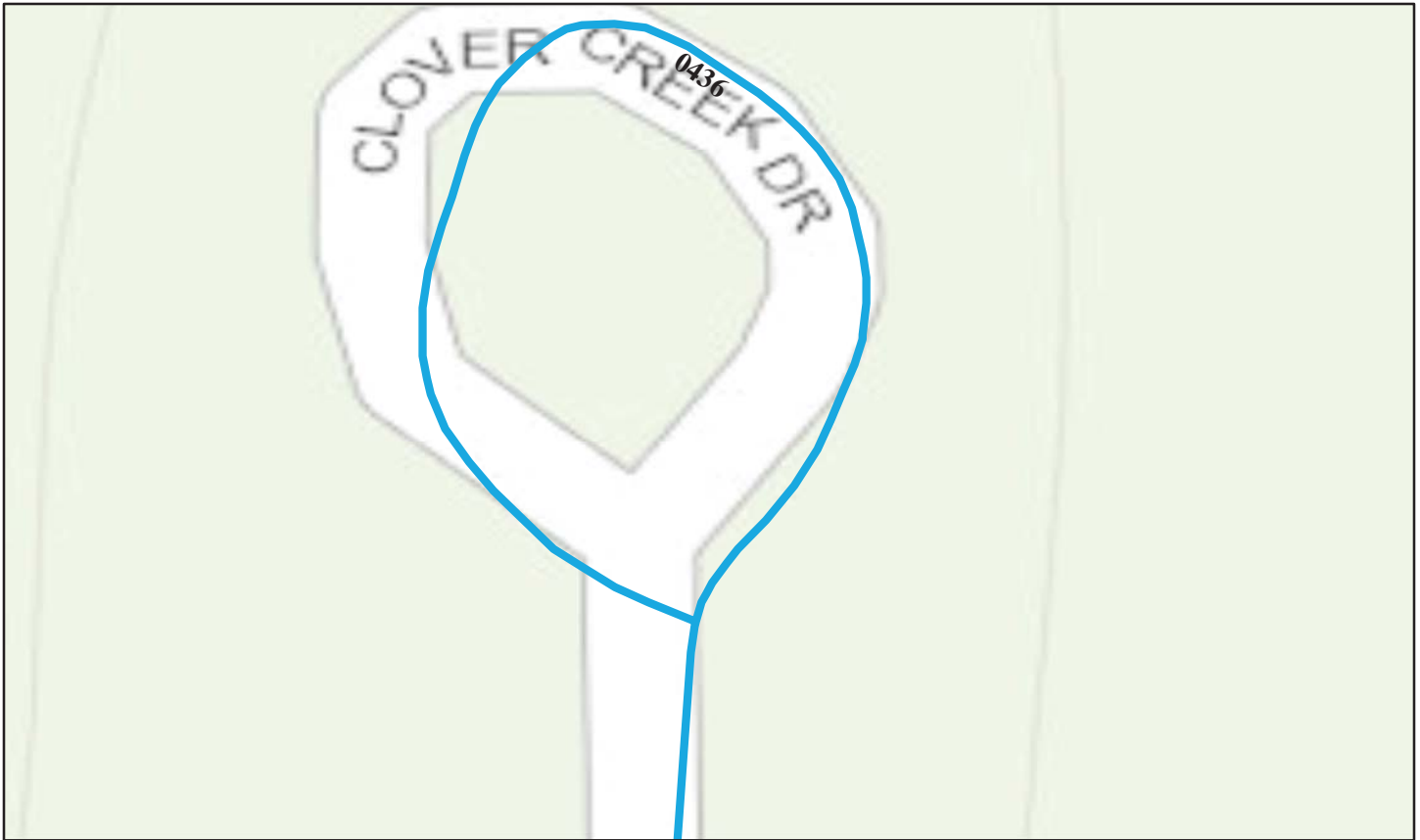
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0436-0.000-L 8/16/2007	3,745	338	Gravity - Dry Stone	Cut Wall	86	\$0.00
SEQU-0436-0.169-L 8/16/2007	410	88	Cantilever - Concrete	Cut Wall	80	\$0.00
SEQU-0436-0.200-L 8/16/2007	1,260	242	Cantilever - Concrete	Cut Wall	80	\$0.00
SEQU-0436-0.298-L 8/17/2007	410	132	Cantilever - Concrete	Cut Wall	80	\$0.00
SEQU-0436-0.325-L 8/17/2007	985	189	Cantilever - Concrete	Cut Wall	80	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

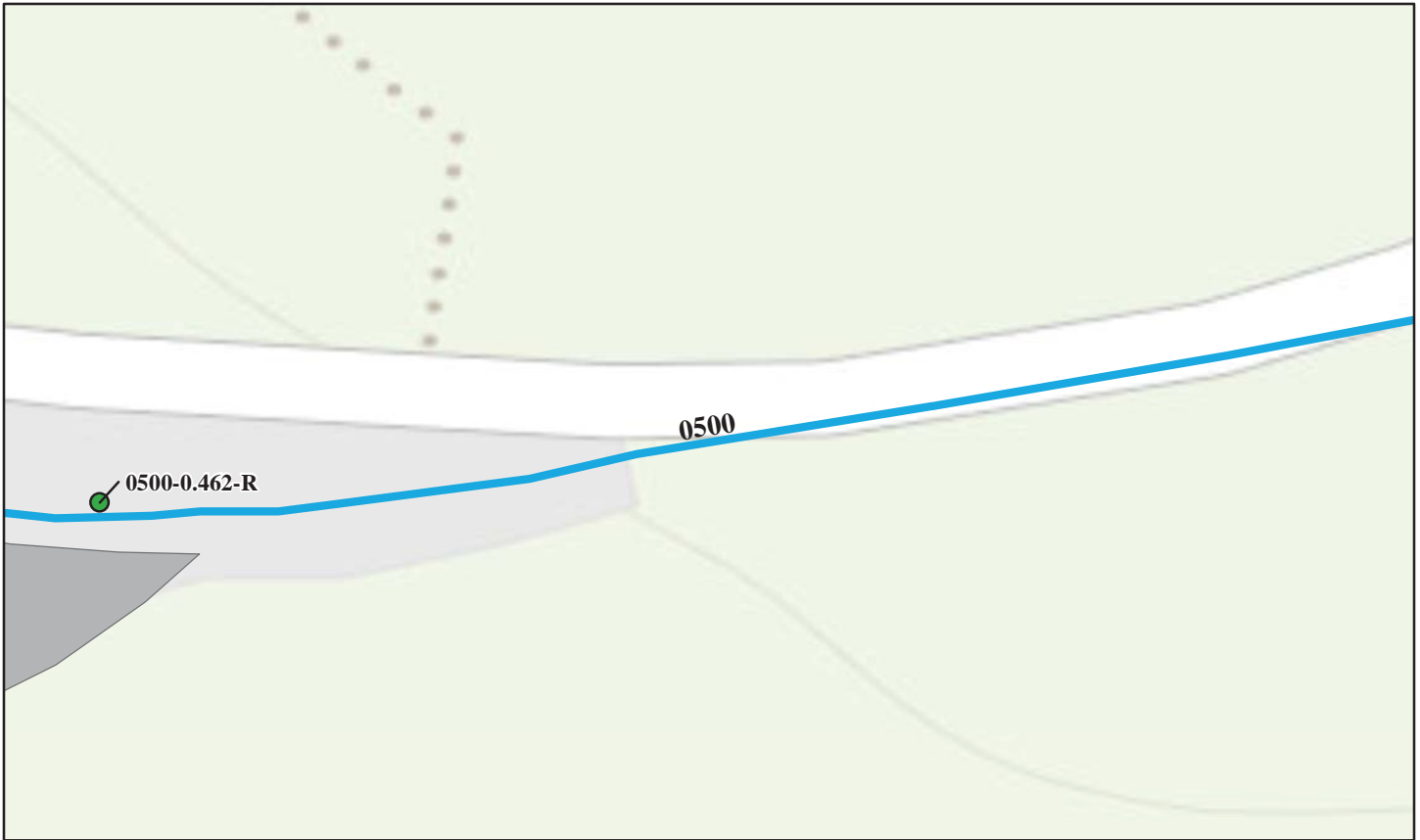
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0436-0.387-L 8/17/2007	1,090	161	Cantilever - Concrete	Cut Wall	80	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0500: MORO ROCK LOOP ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

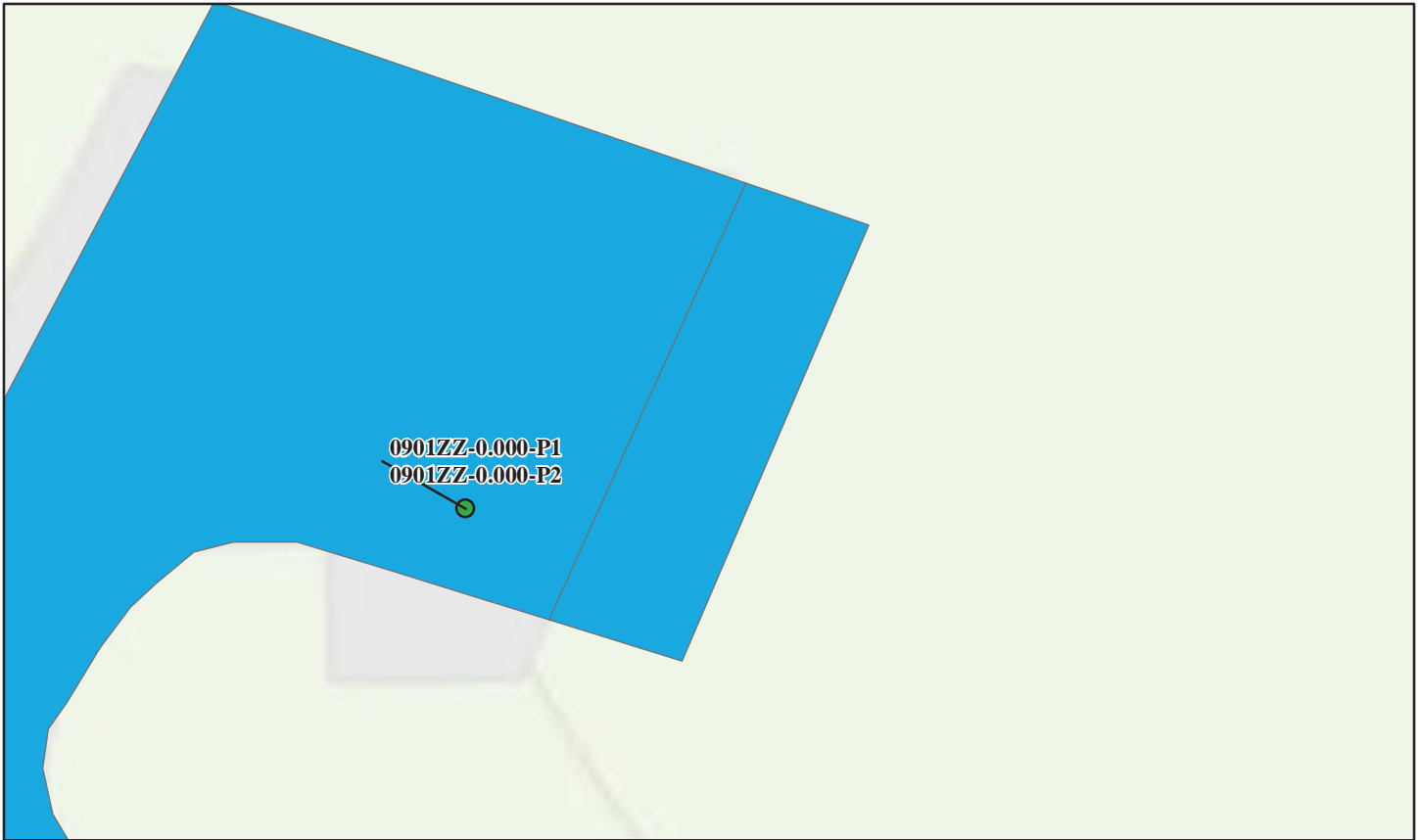
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0500-0.462-R 8/16/2007	4,110	249	Gravity - Dry Stone	Fill Wall	80	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

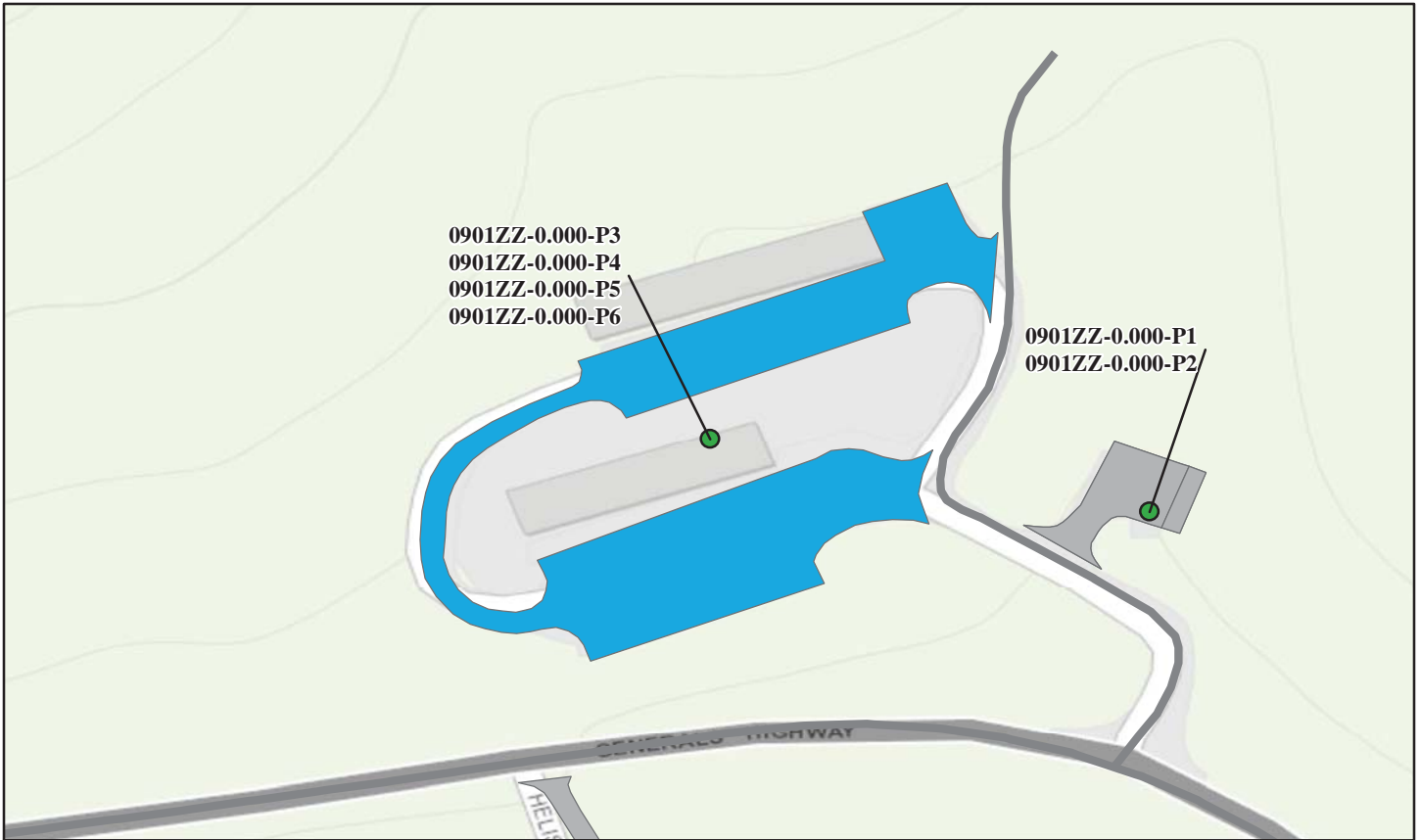
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0901ZZ-0.000-P1 8/17/2007	420	65	Gravity - Dry Stone	Cut Wall	81	\$0.00
SEQU-0901ZZ-0.000-P2 8/17/2007	876	78	Cantilever - Concrete	Cut Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0901ZZ-0.000-P3 8/17/2007	1374	289	Gravity - Dry Stone	Fill Wall	89	\$0.00
SEQU-0901ZZ-0.000-P4 8/17/2007	800	200	Crib - Timber	Cut Wall	84	\$0.00
SEQU-0901ZZ-0.000-P5 8/17/2007	413	140	Gravity - Dry Stone	Fill Wall	90	\$0.00
SEQU-0901ZZ-0.000-P6 8/17/2007	920	100	Cantilever - Concrete	Cut Wall	87	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0902: WUKSACHI VILLAGE CENTER ACCESS AND PARKING



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

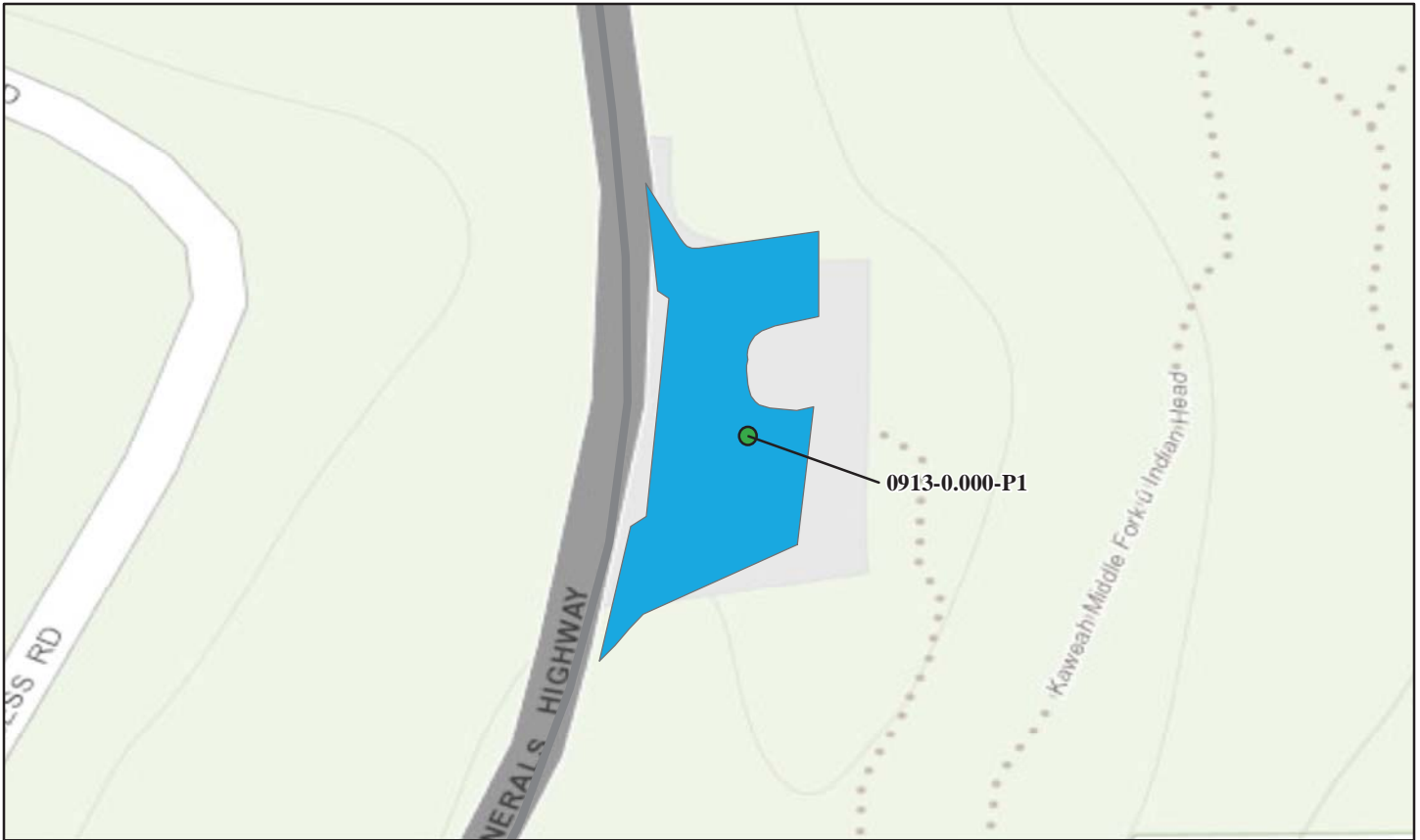
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0902-0.000-P1 8/16/2007	350	85	Gravity - Mortared Stone	Fill Wall	90	\$0.00
SEQU-0902-0.000-P2 8/16/2007	350	75	Gravity - Dry Stone	Cut Wall	87	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0913: INDIAN HEAD PARKING



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

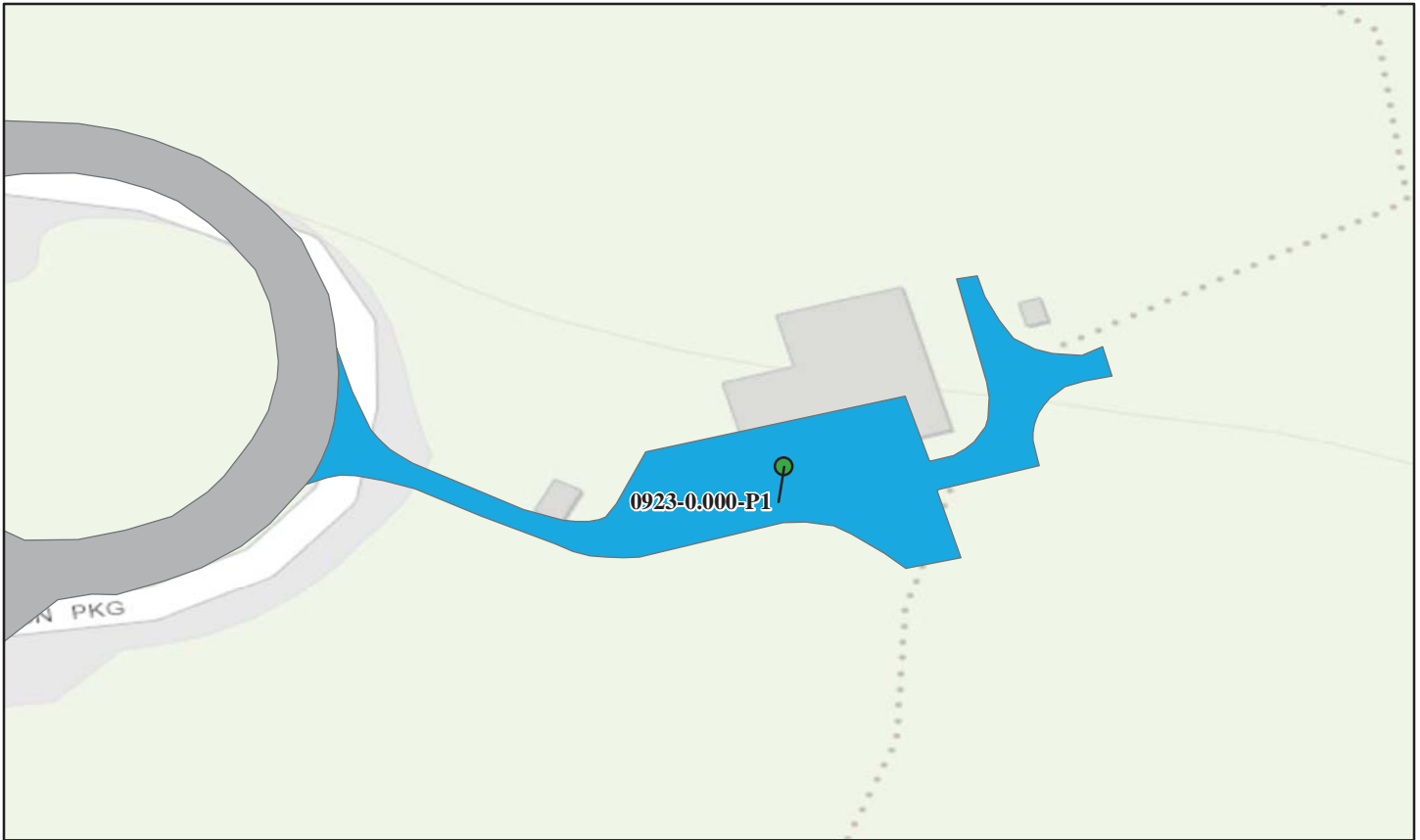
<b>Critical / Poor (0 - 49)</b>	<b>Fair (50 - 69)</b>	<b>Good to Excellent (70 - 100)</b>	<b>No Data</b>
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Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0913-0.000-P1  8/13/2007	300	50	Cantilever - Concrete	Fill Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0923: WOLVERTON WATER PLANT PARKING



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

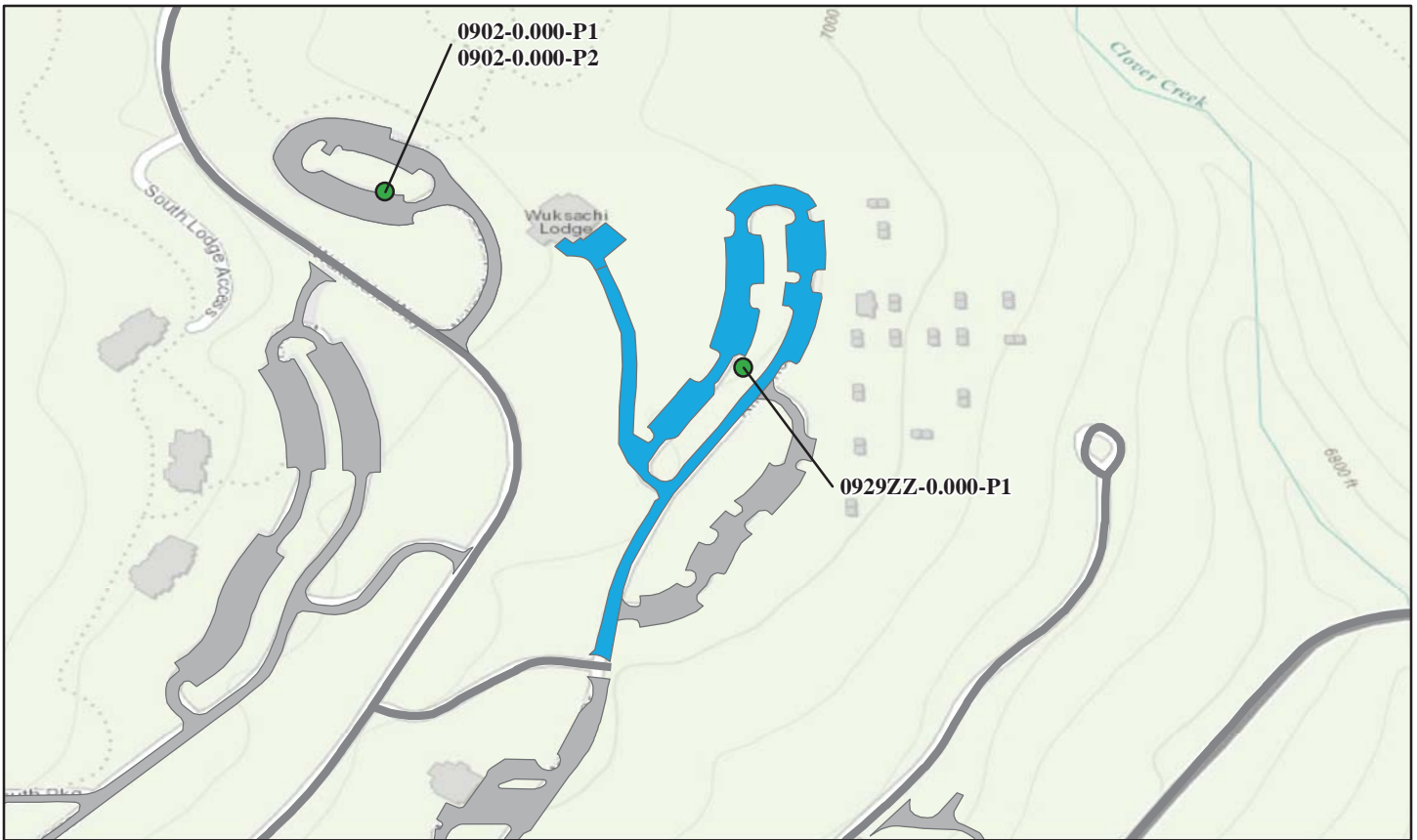
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0923-0.000-P1 8/16/2007	450	73	Cantilever - Concrete	Fill Wall	80	\$300.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0929ZZ: WUKSACHI CONCESSION HOUSING PARKING AREAS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0929ZZ-0.000-P1 8/16/2007	500	127	Gravity - Dry Stone	Cut Wall	86	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0933: WUKSACHI VILLAGE PARKING, WEST TERRACE



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

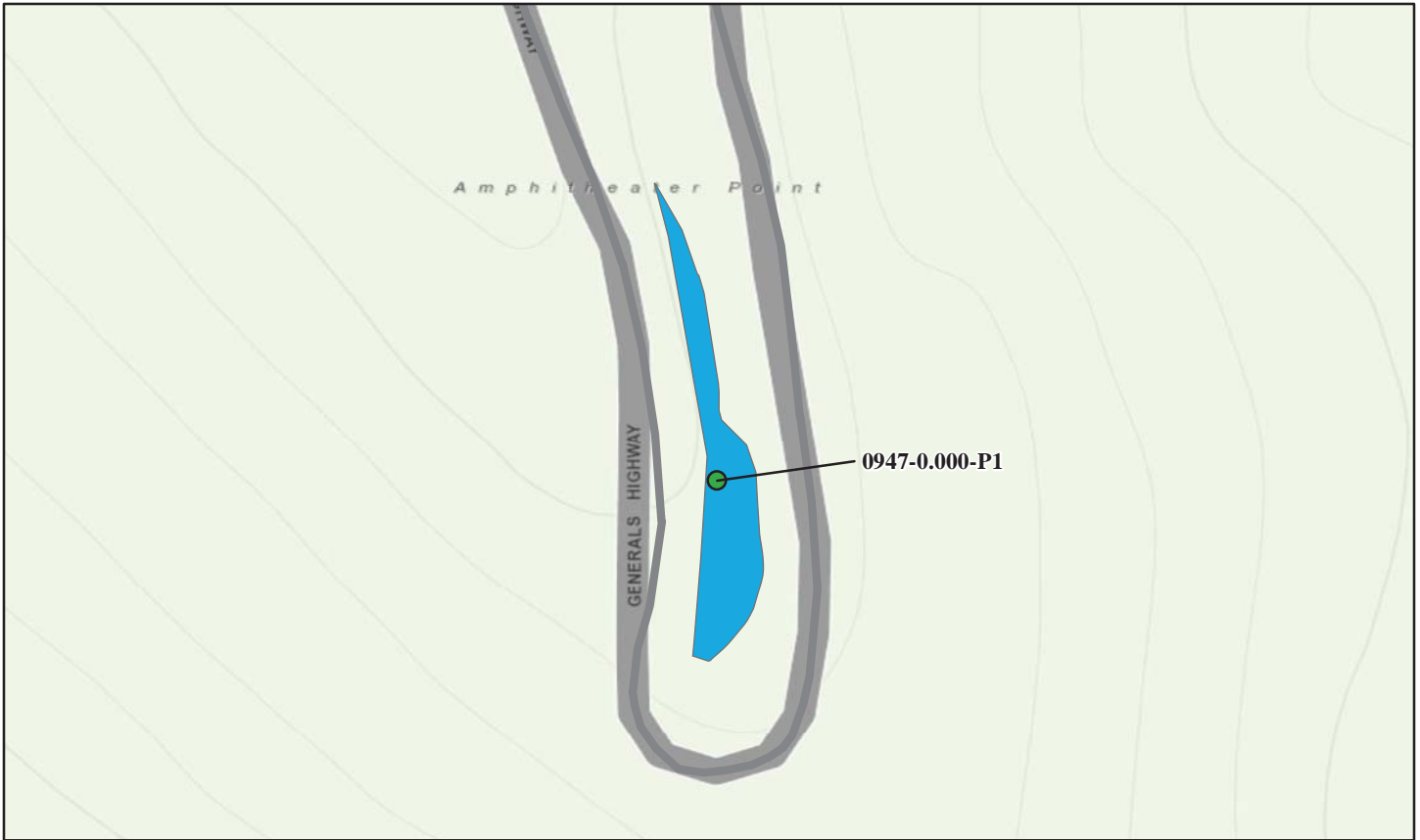
No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0933-0.000-P1 8/14/2007	1180	175	Crib - Timber	Cut Wall	90	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0947: AMPHITHEATRE POINT PARKING



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

**No Data**

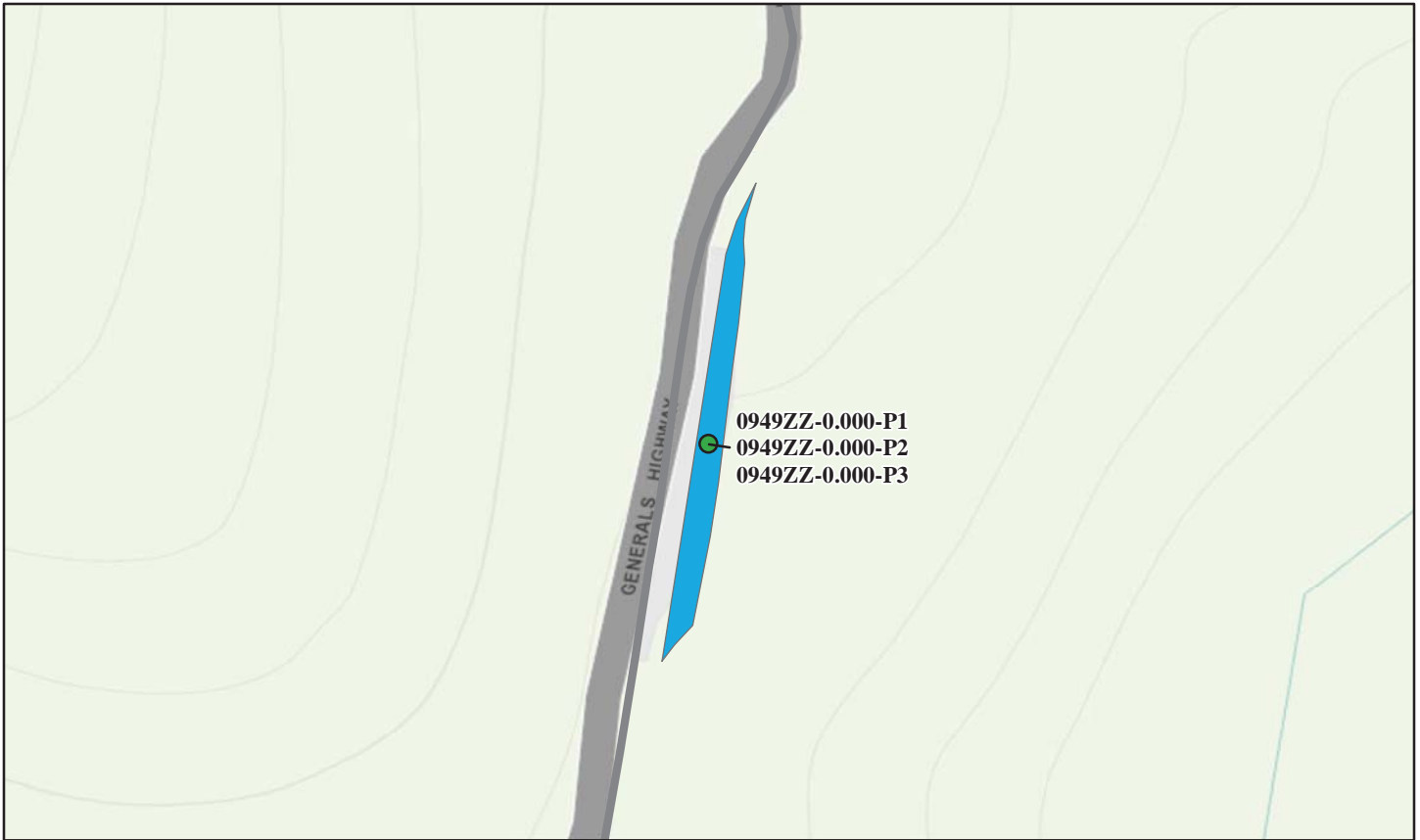
Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0947-0.000-P1 8/16/2007	370	75	Cantilever - Concrete	Fill Wall	96	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

## ROUTE 0949ZZ: TUNNEL ROCK PARKING AREAS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

**Critical / Poor (0 - 49)**

**Fair (50 - 69)**

**Good to Excellent (70 - 100)**

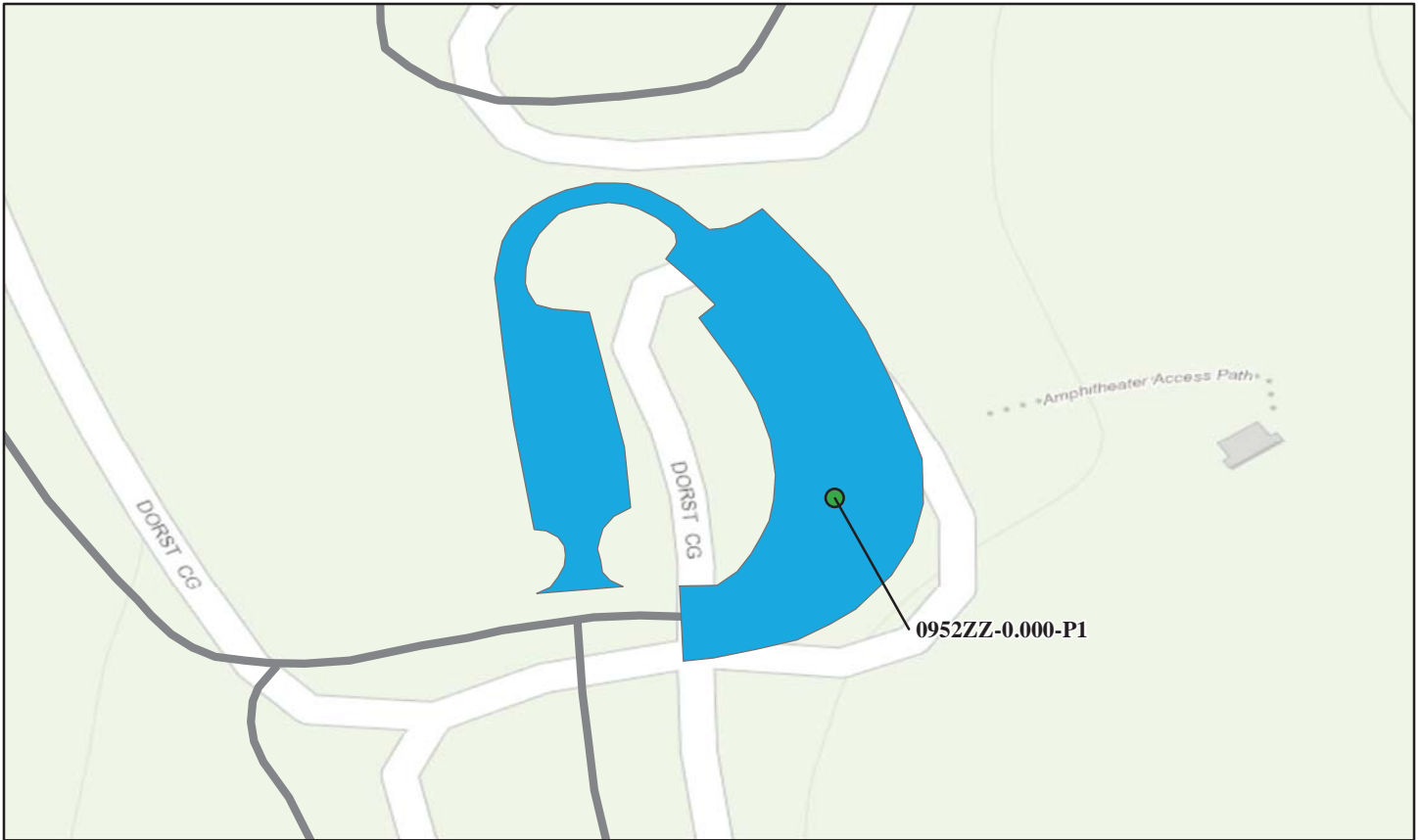
**No Data**

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0949ZZ-0.000-P1 8/14/2007	150	30	Gravity - Mortared Stone	Cut Wall	87	\$0.00
SEQU-0949ZZ-0.000-P2 8/14/2007	250	32	Gravity - Mortared Stone	Cut Wall	85	\$0.00
SEQU-0949ZZ-0.000-P3 8/14/2007	275	54	Gravity - Dry Stone	Cut Wall	73	\$3,350.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

## ROUTE 0952ZZ: DORST CAMPGROUND PARKING AREAS



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

### Retaining Wall Condition Legend – Wall Condition Rating

Critical / Poor (0 - 49)

Fair (50 - 69)

Good to Excellent (70 - 100)

No Data

Wall ID Inspection Date:	Wall Area (Sq. Ft.)	Wall Length (Ft.)	Wall Type	Wall Function	Overall Rating	Repair Cost
SEQU-0952ZZ-0.000-P1 8/17/2007	752	188	Gravity - Dry Stone	Cut Wall	86	\$0.00

\*2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Tier 3 Retaining Wall Details



Sequoia National Park



Federal Lands Highway  
Road Inventory Program

<b>Wall ID:</b>	SEQU-0010-0.550-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	69	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry Stack Cut Wall with no Mortar. To protect a cut slope		

### Wall Measurements

<b>Wall Length (ft.):</b>	33	<b>Face Area (sq.):</b>	250
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No rotation or signs of global failure. No bulging.	6
WALL FOUNDATION MATERIAL 8.00	Compacted soil with stone paved ditch in front of wall. Foundation is sufficient to support wall.	8
PLACED STONE 8.00	Stones are in fair condition with minor cracking and erosion. No missing stones.	7
ROAD/SIDEWALK/SHOULDER 0.50	Good condition. No cracks or failure around wall location.	8
VEGETATION 0.50	No vegetation on wall face that may affect wall stability	8
LATERAL SLOPE 1.00	Loose soil with signs of erosion	6
UPSLOPE 1.00	Soil slope with grass @ 1.5H:1V. Loose soil with signs of erosion	6
WALL DRAINS 1.00	No drains were apparent	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_0.550\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-0.559-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	63	<b>Maintenance Action:</b>	Replace Elements

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry Stack Cut Wall with no mortar used to protect a cut.		

### Wall Measurements

<b>Wall Length (ft.):</b>	26	<b>Face Area (sq.):</b>	185
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Bulging in 3 areas that may fail	6
WALL FOUNDATION MATERIAL 8.00	Compacted soil with stone paved ditches in front of wall. Sufficient to support wall	7
PLACED STONE 8.00	Stone are eroded with minor cracking. Generally, the wall is stable with bulging in 2-3 areas.	6
ROAD/SIDEWALK/SHOULDER 0.50	Good condition. No crack or distress attribute to wall movement.	8
VEGETATION 0.50	None affecting wall stability.	8
LATERAL SLOPE 1.00	Highly eroded on both sides. Possibly caused by ending all too short.	5
UPSLOPE 1.00	Loose soil, eroded with signs of movement.	5
WALL DRAINS 1.00	No drains are apparent. Signs of water flowing on wall surface.	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Rebuild bulging segment. Extending wall segment & matching stone schist - 200 ft <sup>2</sup> @ \$50/ft <sup>2</sup> = \$10,000. Traffic control (8 hrs) @ \$50/hr = \$4,000
<b>Repair Cost:</b>	\$14,000

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_0.559\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-0.580-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	75	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone headwall with masonry drop inlet from an upper pipe (both pipes are 2 in CMP)		

### Wall Measurements

<b>Wall Length (ft.):</b>	6	<b>Face Area (sq.):</b>	35
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is performing adequately. No signs of settlement or global failure	8
WALL FOUNDATION MATERIAL 8.00	Very stable, rock, sufficient to support culvert all	8
MORTAR 8.00	Minor Cracks	7
STONE MASONRY 8.00	Weathered granite and schist mixture	7
ROAD/SIDEWALK/SHOULDER 0.50	Good condition. No cracking	8
VEGETATION 0.50	Not effecting wall stability	8
WALL DRAINS 0.50	None apparent in all	8
LATERAL SLOPE 1.00	Some erosion in the soil grassy vegetation paved down drain with mortared stone on each side.	6
UPSLOPE 1.00	Loose soil 2H:1V signs of erosion	7

### Repair Recommendations

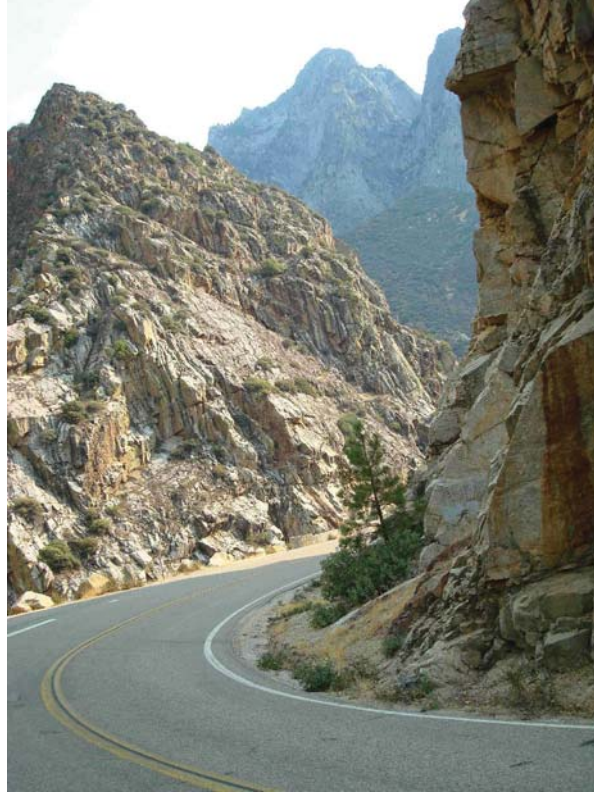
<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0010: GENERALS HIGHWAY HISTORIC

## Retaining Wall Condition Photos



SEQU\_0010\_0.580\_L\_1.jpg

<b>Wall ID:</b>	SEQU-0010-1.332-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	1995
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with form liner facing that replicate granite (like new wall).		

### Wall Measurements

<b>Wall Length (ft.):</b>	191	<b>Face Area (sq.):</b>	1900
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Good condition. Loose soil at some areas 5 ft bench followed by 1.5H:1V slope. Sufficient to support wall. No signs of failure.	7
CONCRETE 8.00	Concrete with formliner. No signs of cracking, distress or fatigue. Excellent condition.	9
ARCHITECTURAL FACING 0.50	Formliner excellent condition. No cracking/spalling.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or signs of distress that is attributed to wall movement	8
TRAFFIC BARRIER/FENCE 0.50	Granite stone traffic and top faces. Outside face is formliner. Excellent condition.	8
VEGETATION 0.50	No vegetation affecting wall stability. Large trees on downslope	8
WALL DRAINS 0.50	Weepholes are installed in the bottom of wall	8
DOWNSLOPE 1.00	Steep varies between 1:5H:1V to 1H:1V soil with occasional boulders, large trees and bushes	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.332\_R\_1.jpg**



**SEQU\_0010\_1.332\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-1.374-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with form liner facing that replicate granite (like new wall).		

**Wall Measurements**

<b>Wall Length (ft.):</b>	336	<b>Face Area (sq.):</b>	3360
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. No cracking or global failure. (Like New)	9
WALL FOUNDATION MATERIAL 8.00	Good condition. Soil loose at some areas and steep (1:1) about 5 ft bench away from foundation.	7
CONCRETE 8.00	Concrete with formliner. No signs of cracking, distress or fatigue. Excellent condition.	9
ARCHITECTURAL FACING 0.50	Formliner is excellent condition	8
CULVERT 0.50	Culvert 24" CMP at beginning on wall. Good working condition	8
DOWNSLOPE 0.50	Steep varies between 1.5H:1V to 1H:1V soil with boulders and large trees	8
LATERAL SLOPE 0.50	Stable, good condition. Soil with boulders at 2H:1V connected to guardwall	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or settlement in roadway adjacent to wall.	8
TRAFFIC BARRIER/FENCE 0.50	Granite stone traffic and top faces. Outside face is formliner. Excellent condition. No missing elements.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.374\_R\_1.jpg**



**SEQU\_0010\_1.374\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-1.378-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	74	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite Dry Stacked Headwall with 4 ft CMP		

### Wall Measurements

<b>Wall Length (ft.):</b>	22	<b>Face Area (sq.):</b>	120
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	8

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No global stability issues. Rocks are large but not lightly stacked.	7
WALL FOUNDATION MATERIAL 8.00	Boulders with compacted fill. Sufficient to support wall	8
PLACED STONE 8.00	Granite, Competent and strong. No weathering and cracking	8
VEGETATION 1.00	A large trees is growling over wall. Several bushes growing out of wall	5
UPSLOPE 1.00	Compact fill with vegetation and boulders with minor erosion. Large trees	6
DOWNSLOPE 1.00	Fill with boulders with minor erosion.	7
LATERAL SLOPE 1.00	Minor erosion and compacted fill with 1.5H <sup>1</sup> V slope.	7
WALL DRAINS 1.00	No drains were visible	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.378\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-1.487-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with form liner facing that replicate granite (like new wall).		

### Wall Measurements

<b>Wall Length (ft.):</b>	960	<b>Face Area (sq.):</b>	8500
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	16	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent working condition. No signs of global stability problems or settlement	9
WALL FOUNDATION MATERIAL 8.00	A bench of about 5 ft of soil with grass followed by 1H:1V slope of soil and boulder. Occasionally lose of foundation materials due to erosion. Specially by culverts.	7
CONCRETE 8.00	Concrete with formliner. No signs of cracking, distress or fatigue. Excellent condition.	9
ARCHITECTURAL FACING 0.50	Formliner. Excellent condition. No cracking is visible (Parapet)	8
LATERAL SLOPE 0.50	Steep soil slopes with boulders stable 1H:1V with some erosion.	8
TRAFFIC BARRIER/FENCE 0.50	Granite stone traffic and top faces. Outside face is formliner. Excellent condition.	8
WALL DRAINS 0.50	Some weep holes were observed near wall foundation. Functioning as designed	8
CULVERT 0.50	Several culverts (three) exist in the wall = 24" CMP - Good working condition	9
ROAD/SIDEWALK/SHOULDER 0.50	Excellent condition. No cracking or settlement are observed	9

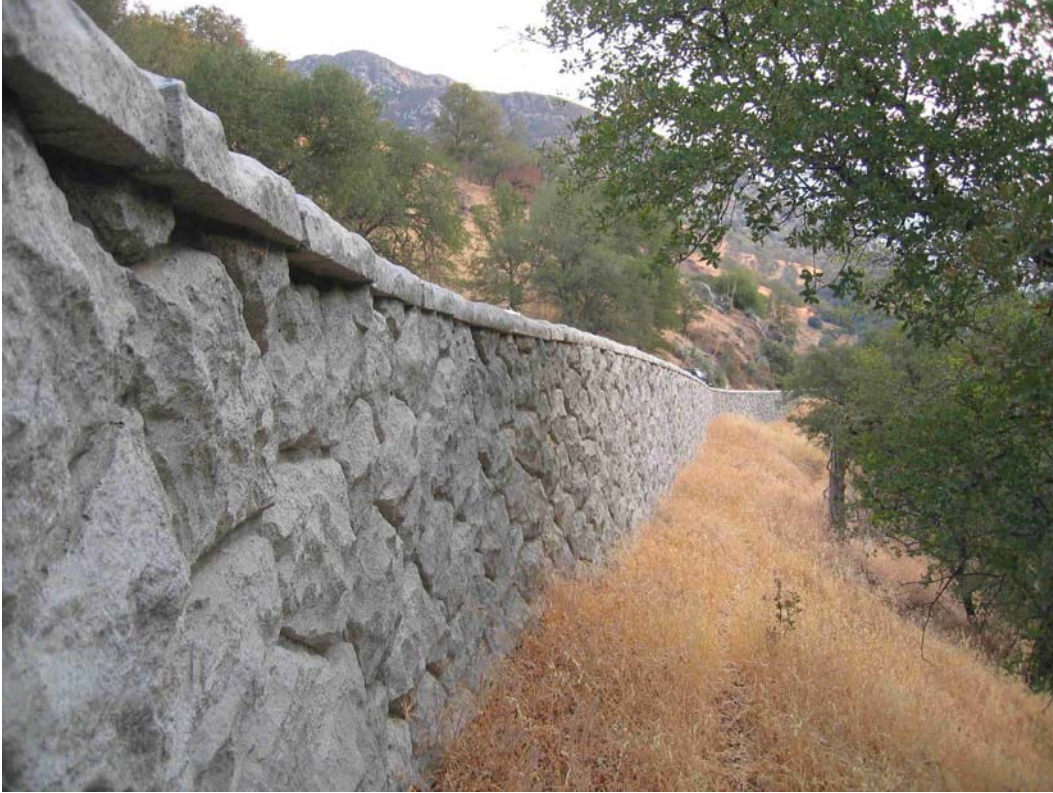
### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.487\_R\_1.jpg**



**SEQU\_0010\_1.487\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-1.703-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with form liner facing that replicate granite (like new wall).		

### Wall Measurements

<b>Wall Length (ft.):</b>	186	<b>Face Area (sq.):</b>	1400
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition. Performing well according to design. No global stability problems	8
WALL FOUNDATION MATERIAL 8.00	The foundation is on 2 ft bench with very steep slope in front of it 1H:1V. The 1H:1V shows some erosion	7
CONCRETE 8.00	Concrete with formliner. No signs of cracking, distress or fatigue. Excellent condition.	9
ARCHITECTURAL FACING 0.50	Formliner excellent condition (minor cracking) at the end of wall	8
LATERAL SLOPE 0.50	Connected to zee-wall on end side. The begin side is steep and loose soil at culvert	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or sign of distress	8
TRAFFIC BARRIER/FENCE 0.50	Formliner concrete parapet on all sides small areas with missing pieces caused by traffic no impacting wall	8
VEGETATION 0.50	No vegetation affecting wall performance	8
WALL DRAINS 0.50	No wall drains were visible	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.703\_R\_1.jpg**



**SEQU\_0010\_1.703\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-1.739-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	81	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete zee-wall with form liner facing that replicate granite (like new wall).		

**Wall Measurements**

<b>Wall Length (ft.):</b>	167	<b>Face Area (sq.):</b>	1200
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition performing as designed	9
WALL FOUNDATION MATERIAL 8.00	The wall foundation is exposed in some areas. Very steep almost vertical in some areas. Rock with soil.	7
CONCRETE 8.00	Concrete with formliner. Minor cracking not affecting wall performance. Good condition.	8
ARCHITECTURAL FACING 0.50	Formliner excellent condition	8
TRAFFIC BARRIER/FENCE 0.50	Formliner concrete parapet on all sides. Good condition. Small area was damaged	8
WALL DRAINS 0.50	Weep holes installed at above toe fill.	8
DOWNSLOPE 0.50	Very steep near vertical. Bedrock	9
LATERAL SLOPE 0.50	Flat soil slope on the end of all. Begin of wall connected to concrete guardwall	9
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress	9

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

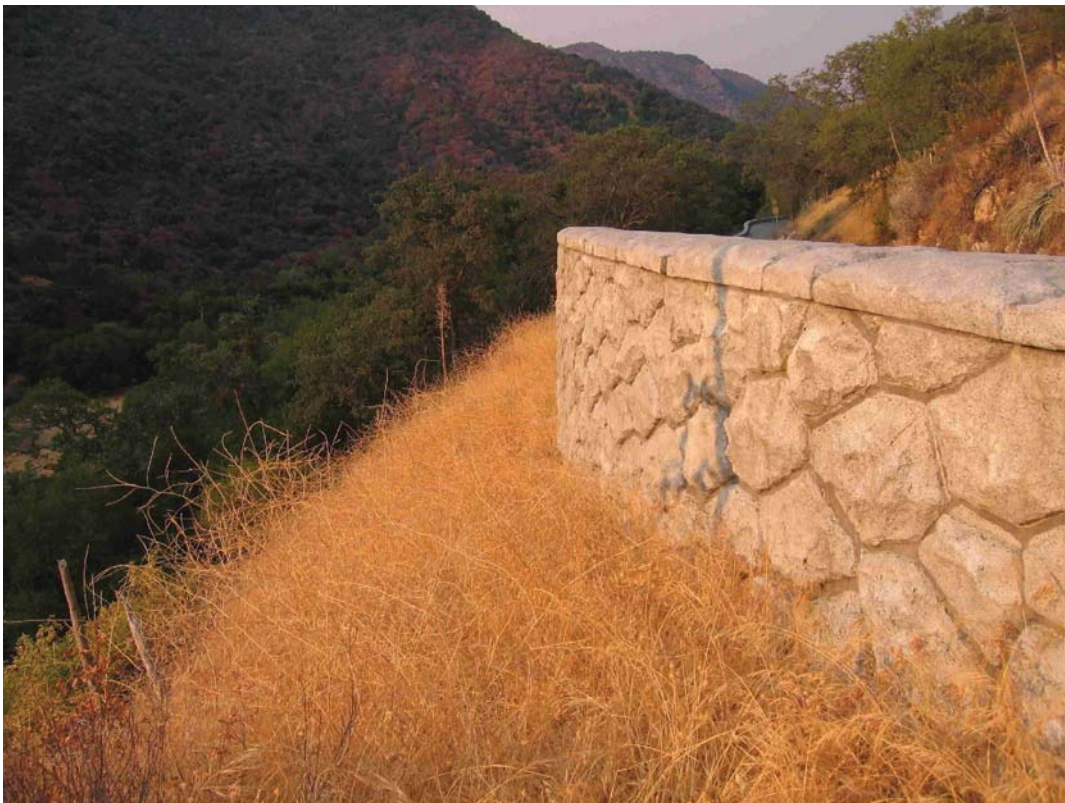
2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.739\_R\_1.jpg**



**SEQU\_0010\_1.739\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-1.857-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	Maintenance

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with form liner facing that replicate granite (like new wall) with half brace at 1.960 to 1.970 (83 ft long)		

**Wall Measurements**

<b>Wall Length (ft.):</b>	713	<b>Face Area (sq.):</b>	6000
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing as designed no signs of movement, settlement, or global failure	9
WALL FOUNDATION MATERIAL 8.00	Soil with boulders with some trees and bushes. 5 ft wide bench. Excellent condition. No signs of erosion	7
CONCRETE 8.00	Concrete with formliner. Minor cracking. No sign of distress or fatigue. Excellent condition.	9
CULVERT 0.50	Two 24" CMP in good condition in wall.	8
DOWNSLOPE 0.50	Soil with boulders and bedrock. 1.5H:1V steep but not stable.	8
LATERAL SLOPE 0.50	Steep 1.5H:1V stable soil with boulders	8
TRAFFIC BARRIER/FENCE 0.50	Formliner concrete parapet on all sides. Good condition	8
VEGETATION 0.50	No vegetation affecting wall performance	8
WALL DRAINS 0.50	Weep holes were installed according to details.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Seal Cracks ( 30 ft long) \$200
<b>Repair Cost:</b>	\$200

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

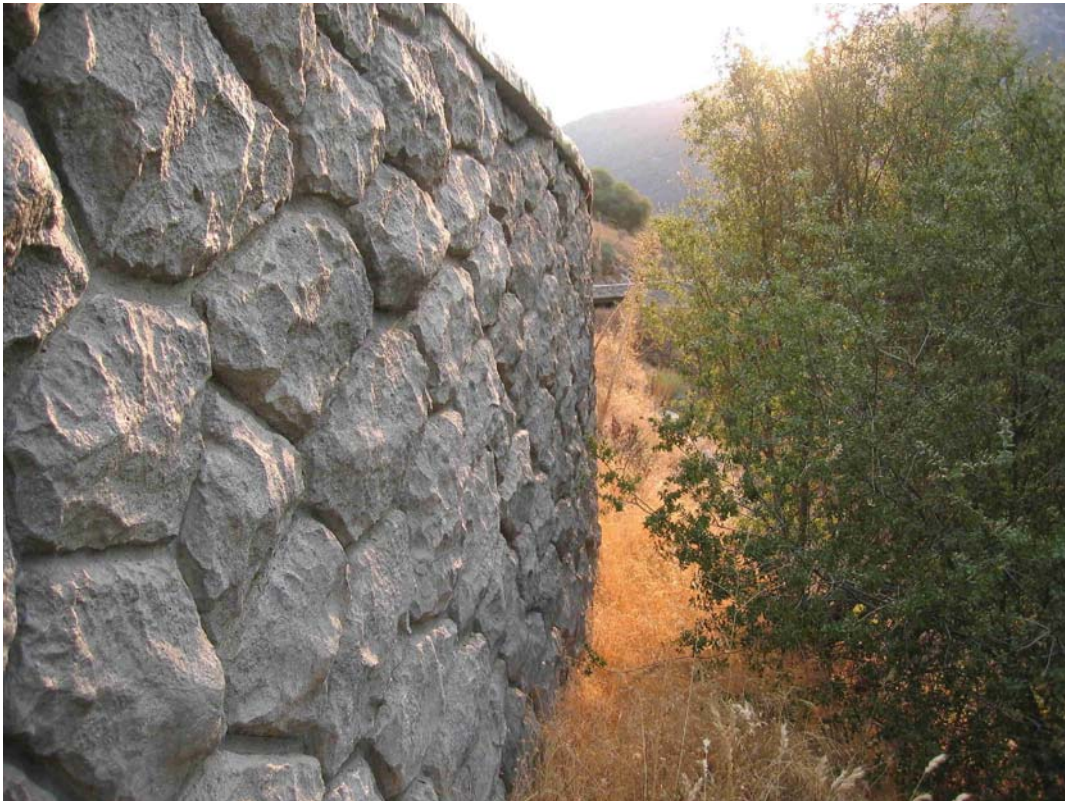


**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_1.857\_R\_1.jpg**



**SEQU\_0010\_1.857\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-2.170-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal Steel Bin Wall (10X X) with a formliner guardwall wall replicate granite.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	150	<b>Face Area (sq.):</b>	1800
<b>Average Wall Height (ft.):</b>	12	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	-1

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition. Stable and no signs of rotation or distress	8
WALL FOUNDATION MATERIAL 8.00	Bedrock with soil. Almost vertical. Competent and stable.	7
BIN OR CRIB 8.00	No elements are missing. All elements leaning against soil. No evidence of excessive corrosion or distress. Wall element appear as constructed	7
DOWNSLOPE 0.50	Soil with boulders over bedrock. Very steep .75H:1V	8
LATERAL SLOPE 0.50	Very steep over bedrock. 1H:1V with larges trees and bushes	8
ROAD/SIDEWALK/SHOULDER 0.50	No signs of cracking or distress	8
TRAFFIC BARRIER/FENCE 0.50	Formliner (all sides) concrete guardwall. Good condition	9
VEGETATION 1.00	Bushes are growing in wall elements. No apparent effect on stability	6
WALL DRAINS 1.00	No drains apparent in wall	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.170\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-2.199-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Very short cast in place retaining wall with formliner face replicate granite. The wall is between two bin wall segments.		

### Wall Measurements

<b>Wall Length (ft.):</b>	24	<b>Face Area (sq.):</b>	190
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing as intended	9
WALL FOUNDATION MATERIAL 8.00	Bedrock, compacted will soil. Sufficient to support wall	9
CONCRETE 8.00	Concrete with formliner. No signs of cracking, distress or fatigue. Excellent condition.	9
DOWNSLOPE 0.50	Soil with boulders - no signs of erosion	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress attributed to wall settlement or movement.	8
ARCHITECTURAL FACING 0.50	Formliner- Excellent condition	9
CULVERT 0.50	24" CMP culvert outlet through the wall. Functioning good.	9
LATERAL SLOPE 0.50	Rock outcrop are one side and adjacent to bin wall on the upper side	9
TRAFFIC BARRIER/FENCE 0.50	Formliner on all sides of parapet replicate granite. Excellent condition	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.199\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-2.205-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	69	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal Steel Bin Wall (10X X)		

**Wall Measurements**

<b>Wall Length (ft.):</b>	262	<b>Face Area (sq.):</b>	3200
<b>Average Wall Height (ft.):</b>	12	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	19	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition. Stable and no signs of rotation or distress (other than top elements)	7
WALL FOUNDATION MATERIAL 8.00	Soil with rock at 2H:1V slope. No signs of erosion or failure sufficient to support wall	8
BIN OR CRIB 8.00	Several damaged element on top of wall. However, they are still intact and has no stability affect on wall. Element damaged by large rocks falling from slope above.	6
DOWNSLOPE 0.50	Soil with boulders. 2H:1V slope with no signs of erosion	8
CULVERT 1.00	Two (24" and 12") CMP culvert installed in wall. Good working condition	6
VEGETATION 1.00	Vegetation/bushes are growing in the wall. It appears that they were intentionally installed and irrigated.	6
LATERAL SLOPE 1.00	Rock/soil with large trees. Steep 1H:1V but stable and adjacent to concrete wall	7
ROAD/SIDEWALK/SHOULDER 1.00	Minor cracks is road but not caused by the wall.	7
WALL DRAINS 1.00	No drains are apparent. However, several irrigation pipes were installed on wall face.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.205\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-2.277-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place zee-wall with formliner replicating granite. This wall has 2 Cast in place concrete cantilever short segments at each end. (Beginning 31 long and 8 end wall long).		

### Wall Measurements

<b>Wall Length (ft.):</b>	167	<b>Face Area (sq.):</b>	1200
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent Condition. Performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Soil with large boulders, competent and compacted. No signs of failure.	9
CONCRETE 8.00	Minor cracking in the concrete. Good stable condition.	8
DOWNSLOPE 0.50	Soil with boulders. No signs of erosion.	8
TRAFFIC BARRIER/FENCE 0.50	Parapet - concrete barrier with formliner replicated granite. Minor cracks in one area.	8
ARCHITECTURAL FACING 0.50	Formliner with staining. Excellent condition.	9
LATERAL SLOPE 0.50	Soil over large boulders. Very stable steep slope 1H:1V	9
ROAD/SIDEWALK/SHOULDER 0.50	No distress or cracking.	9
VEGETATION 0.50	None affecting wall stability.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.277\_R\_1.jpg**



**SEQU\_0010\_2.277\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-2.369-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	84	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete zee-wall with form liner facing that replicate granite (like new wall).		

### Wall Measurements

<b>Wall Length (ft.):</b>	192	<b>Face Area (sq.):</b>	1700
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

Element (Weighting Factor)	Narrative	Condition Rating (0 - 10)
PERFORMANCE 8.00	Excellent condition	9
WALL FOUNDATION MATERIAL 8.00	Loose soil showing some erosion	7
CONCRETE 8.00	Concrete with formliner. No signs of cracking, distress or fatigue. Excellent condition.	9
DOWNSLOPE 0.50	Very steep and slight erosion. Boulders with soil. Well vegetated with 1H:1V slope	8
ROAD/SIDEWALK/SHOULDER 0.50	A small transverse crack near the expansion joint.	8
ARCHITECTURAL FACING 0.50	Formliner all sides with minor staining. Excellent condition	9
LATERAL SLOPE 0.50	Soil over boulders. Compacted with 1H:1V or steeper slopes	9
VEGETATION 0.50	No vegetation on wall or effecting wall stability	9
WALL DRAINS 0.50	Weep holes exist at base of wall. Clear and functioning as designed	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.369\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-2.482-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	84	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with form liner facing that replicate granite (like new wall).		

### Wall Measurements

<b>Wall Length (ft.):</b>	189	<b>Face Area (sq.):</b>	1500
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing as intended	8
WALL FOUNDATION MATERIAL 8.00	Soil with boulder and 5 ft bench and 3H:1V slope in front of wall. No signs of failure or erosion.	9
CONCRETE 8.00	Concrete with formliner. Several hairline cracks. Good condition.	8
LATERAL SLOPE 0.50	Soil with boulders. Good condition. No sign of distress or erosion.	8
UPSLOPE 0.50	Flat 3H:1V slope. No signs of erosion soil with boulders. Well vegetated with few large trees	8
ARCHITECTURAL FACING 0.50	Formliner on all sides with minor staining and hair line cracking.	9
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress were observed	9
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet with formliner on all sides. Excellent condition	9
VEGETATION 0.50	No vegetation is wall face. Not effecting wall stability	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.482\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-2.633-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with formliner replicating granite with a parapet faced with real stone.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	243	<b>Face Area (sq.):</b>	2700
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. No signs of settlement or distress.	9
WALL FOUNDATION MATERIAL 8.00	Soil with large with 8 ft bench and flat slope in front. No signs of erosion or failure	9
CONCRETE 8.00	Excellent condition. No evidence of cracking or distress	9
TRAFFIC BARRIER/FENCE 0.50	A parapet with real granite stone on top and traffic side. Some cracks in the granite facing.	8
ARCHITECTURAL FACING 0.50	Formliner with staining. Excellent condition	9
CULVERT 0.50	One 24" CMP culvert. Good condition.	9
DOWNSLOPE 0.50	Flat soil with boulders 6H:1V. No signs of erosion. Well vegetated with some trees.	9
LATERAL SLOPE 0.50	Soil with boulders. Stable about 2H:1V	9
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress	9

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_2.633\_R\_1.jpg**



**SEQU\_0010\_2.633\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-3.105-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	A dry stack wall with schist rock with an upper tier at the beginning of the wall		

**Wall Measurements**

<b>Wall Length (ft.):</b>	285	<b>Face Area (sq.):</b>	600
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No settlement or bulging	8
WALL FOUNDATION MATERIAL 8.00	Paved. No cracking or signs of distress	8
PLACED STONE 8.00	Schist wall slight weathering and few missing elements. Few large gaps	7
DOWNSLOPE 0.50	Soil vegetated with bushes, 3H:1V stable. No signs of erosion	8
OTHER SECONDARY ELEMENT 0.50	Good condition. No signs of bulging or failure - stable	8
WALL DRAINS 0.50	No wall drains are visible	8
LATERAL SLOPE 0.50	Soil with large rocks. No erosion or movement	9

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_3.105\_L\_1.jpg**



**SEQU\_0010\_3.105\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-3.410-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	A dry stack wall with schist rock		

### Wall Measurements

<b>Wall Length (ft.):</b>	262	<b>Face Area (sq.):</b>	780
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	68
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No signs of global stability or settlement	8
WALL FOUNDATION MATERIAL 8.00	Paved. No cracks or settlement sufficient to support wall	8
PLACED STONE 8.00	Schist stones with slight weathering, few missing stones. Few voids in wall and some bulgin at the beginning of the wall	6
LATERAL SLOPE 0.50	Formed of large boulders in soil matrix. Stable, no erosion evident	8
WALL DRAINS 0.50	One wall drain in the center of wall	8
UPSLOPE 1.00	Sloughing and eroding of the soils are evident. Slope is at 1H:1V	7
VEGETATION 1.00	Large trees on upper slope. No vegetation on wall element	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_3.410\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-3.475-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stack wall to retain a cut		

**Wall Measurements**

<b>Wall Length (ft.):</b>	95	<b>Face Area (sq.):</b>	380
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No signs of global stability or settlement issues	8
WALL FOUNDATION MATERIAL 8.00	Paved. No cracks or settlement is visible and sufficient to support wall	8
PLACED STONE 8.00	Schist stone with slight weathering. No cracking. Few missing elements	8
VEGETATION 0.50	No vegetation affect wall stability	8
WALL DRAINS 0.50	Few wall drains are existing of bottom of wall. Clean and performing well	8
LATERAL SLOPE 1.00	Steep slope with signs of erosion. Soil with vegetation with 1H:1V	7
UPSLOPE 1.00	Sloughing and erosion is evident soil slope. Loose with trees and bushes. 1H:1V slope.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_3.475\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-3.499-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stack rock wall to retain a cut.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	58	<b>Face Area (sq.):</b>	230
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No signs of global stability or settlement	8
WALL FOUNDATION MATERIAL 8.00	Paved. No cracking or settlement. Sufficient to support wall.	8
CONCRETE 8.00	Excellent condition. No cracking or distress	8
PLACED STONE 8.00	Schist stone with slightly weathering. No cracking or missing elements. Few voids	8
CULVERT 0.50	2- 48" CMP excellent condition	8
DOWNSLOPE 0.50	Boulders and stable	8
VEGETATION 0.50	No vegetation on wall face that effect wall stability	8
UPSLOPE 1.00	Erosion of soil. Very steep slope (1H:1V) with some trees.	6
LATERAL SLOPE 1.00	Sloughing and erosion of the soil. Steep slope at 1H:1V	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_3.499\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-3.525-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack schist wall to retain a cut.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	244	<b>Face Area (sq.):</b>	1230
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed	8
WALL FOUNDATION MATERIAL 8.00	Paved. No cracking or settlement sufficient to support wall	8
PLACED STONE 8.00	Schist stone with slight weathering. No cracking, very few missing elements, very small area showed slight bulging	8
LATERAL SLOPE 0.50	Flat slopes. No sign of erosion and stable	8
VEGETATION 0.50	No vegetation effecting wall performance	8
WALL DRAINS 0.50	Wall drains exist in bottom of wall.	8
UPSLOPE 1.00	Sloughing and erosion are evident in the loose soils with few trees and bushes exist	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_3.525\_L\_1.jpg**



**SEQU\_0010\_3.525\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-3.612-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1997
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack schist wall to retain a cut.		

### Wall Measurements

<b>Wall Length (ft.):</b>	230	<b>Face Area (sq.):</b>	1150
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No signs of global, stability, or settlement.	8
WALL FOUNDATION MATERIAL 8.00	Paved. No cracking or distress or settlement are visible, sufficient to support wall.	8
PLACED STONE 8.00	Schist stone with slight weathering. No cracking or missing elements	8
LATERAL SLOPE 0.50	2H:1V soil slope relatively stable.	8
VEGETATION 0.50	No vegetation effecting wall performance	8
WALL DRAINS 0.50	Wall drains were visible in wall. Performing well and clean.	8
UPSLOPE 1.00	2H:1V slope with some trees and bushes. Soil material loose at lines slight evidence of erosion.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_3.612\_L\_1.jpg**



**SEQU\_0010\_3.612\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-3.938-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	70	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	Gravity - Dry Stone
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone masonry headwall with 4 ft box overlain by drystack stone wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	20	<b>Face Area (sq.):</b>	140
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is distressed due to vegetation impacts and poor drystack construction.	6
WALL FOUNDATION MATERIAL 8.00	No signs of foundation settlement or scoured material.	9
PLACED STONE 8.00	Large weathered and cracked granite stones, poorly chinked, with some blocks rotating out of placed position.	5
MORTAR 8.00	Intact, strong, durable, with very minor cracking.	7
STONE MASONRY 8.00	Strong, durable, hard granite with minor weathering.	8
ROAD/SIDEWALK/SHOULDER 0.50	Minor settlement in shoulder. No roadway distress.	8
WALL DRAINS 0.50	No visible wall drains in the mortared headwall. Minor seepage evident.	8
DOWNSLOPE 0.50	Grouted rock channel shows no signs of distress.	9
VEGETATION 1.00	Brush and small trees growing within the dry stack and possibly impacting wall stability.	5

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	Remove brush and small trees: Labor (4 hours) @ \$55/hr = \$210 Reset and chink dry laid stone section reusing existing stone: rebuild 100 sqft @ \$50/sqft = \$5,000
<b>Repair Cost:</b>	\$5,210

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-3.938-R.**



<b>Wall ID:</b>	SEQU-0010-4.139-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with schist stone veneer.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	323	<b>Face Area (sq.):</b>	2300
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing according to design. No signs of instability	9
WALL FOUNDATION MATERIAL 8.00	Loose soil with vegetation about 5 feet bench sufficient to support the wall	8
CONCRETE 8.00	Excellent condition. No cracking, fatigue or any type of failure.	9
ARCHITECTURAL FACING 0.50	Schist stone. Excellent condition	9
DOWNSLOPE 0.50	2H:1V soil with rocks. Stable, no signs of erosion	9
LATERAL SLOPE 0.50	One side was adjacent to MSE wall. The other side is soil with rock. Stable, no erosion	9
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress caused by wall movement	9
TRAFFIC BARRIER/FENCE 0.50	Parapet with schist veneer on all sides. Excellent condition	9
VEGETATION 0.50	No vegetation on wall face or foundation that may effect wall stability	9

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

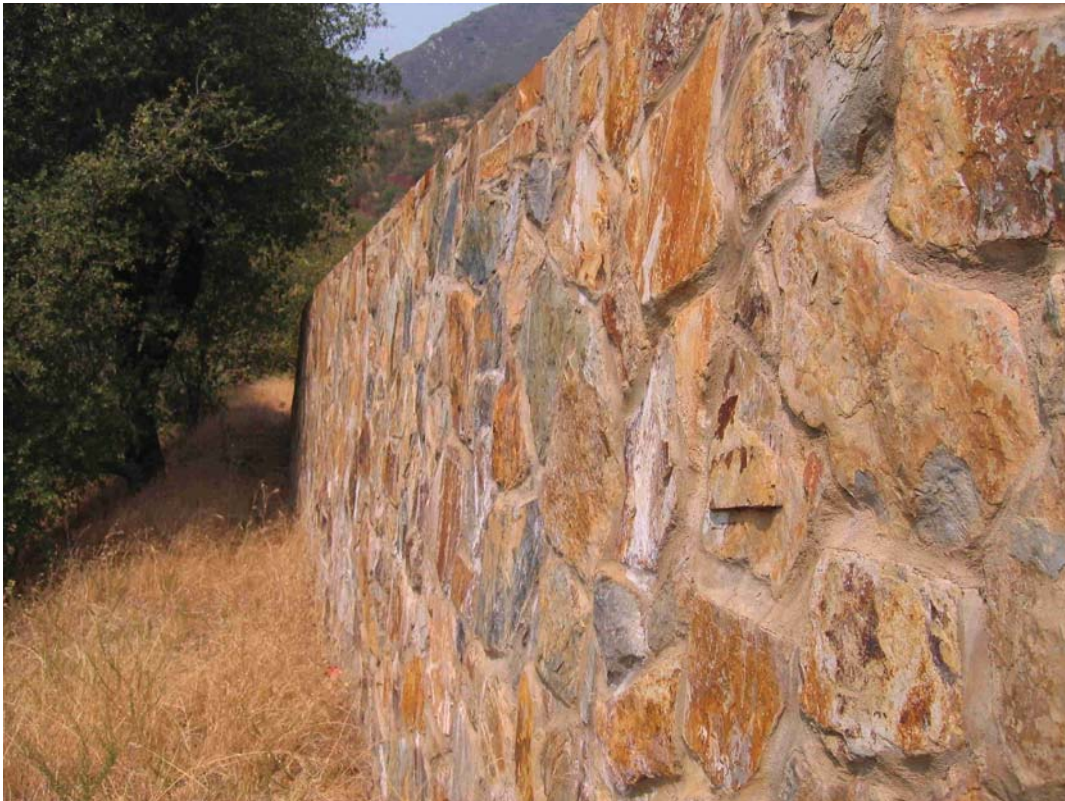
2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.139\_R\_1.jpg**



**SEQU\_0010\_4.139\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-4.200-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	530	<b>Face Area (sq.):</b>	2700
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No signs of major settlement or global instability	8
WALL FOUNDATION MATERIAL 8.00	Loose soils, minor erosion especially next to the culvert and slight undermining near the culvert.	7
WIRE/GEOSYNTHETIC FACING 8.00	The wire baskets are in excellent condition. No bulging or settlement are apparent. The face is vertical and baskets are intact	8
LATERAL SLOPE 0.50	One side is connected to cast in place. Other side is in good condition.	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist veneer on all sides. No cracks or distress. Excellent condition.	8
VEGETATION 0.50	Bushes are growing in wall face but not effecting all stability	8
DOWNSLOPE 1.00	Soil with vegetation. Slope is stable and 2H:1V.	7
ROAD/SIDEWALK/SHOULDER 1.00	Short crack near centerline due to slight wall settlement	7
WALL DRAINS 1.00	No wall drains were apparent	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Unclassified fill material (5 yds) @ \$35/yd = \$175. Riprap, Class 4 (5 yds) @ \$130/yd = \$650. Labor (20 hrs) @ \$55/hr = \$1100. Backhoe (20 hrs) @ \$150/hr = \$3000.
<b>Repair Cost:</b>	\$4,925

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.200\_R\_1.jpg**



**SEQU\_0010\_4.200\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-4.532-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	161	<b>Face Area (sq.):</b>	950
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing very well. No signs of settlement or rotation.	8
WALL FOUNDATION MATERIAL 8.00	Soil with boulders and loose materials. No undermining or foundation problems sufficient to support wall steep 1V:1H.	8
WIRE/GEOSYNTHETIC FACING 8.00	Wires are in good condition. Slight signs of bulging and settlement. Not severe	8
CULVERT 0.50	One 24" CMP in the wall. Excellent condition.	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist facing on all sides. Stable and no cracking. Slightly weathering of schist.	8
VEGETATION 0.50	The wall face is purposely vegetated. No vegetation effect wall stability	8
WALL DRAINS 0.50	Wall drains were visible. Performing well and clean.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress	9
ARCHITECTURAL FACING 1.00	Schist stone was installed behind wire baskets as a facing. Not evaluated.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.532\_R\_1.jpg**



**SEQU\_0010\_4.532\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-4.581-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	113	<b>Face Area (sq.):</b>	450
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No signs of bulging or global failure or settlement	8
WALL FOUNDATION MATERIAL 8.00	Soil with boulders, well vegetated bushes/trees sufficient to support wall	8
WIRE/GEOSYNTHETIC FACING 8.00	Wires are in excellent condition. No signs of rusting or bulging or settlement	8
LATERAL SLOPE 0.50	Stable. No signs of erosion or failure. 1.5H:1V with trees and bushes.	8
VEGETATION 0.50	None effecting wall stability	8
CULVERT 0.50	One 24" CMP below the wall foundation. Excellent condition.	9
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress	9
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist veneer on all sides. No cracks or damage. Excellent condition	9
DOWNSLOPE 1.00	Steep stable 1.5H:1V slope. Soil with boulders with minor erosion.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.581\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-4.618-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	471	<b>Face Area (sq.):</b>	1800
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No signs of settlement issues of global failures.	8
WALL FOUNDATION MATERIAL 8.00	Stable (1.5H:1V) slope with loose soil with boulders. No undermining or exposed bottom baskets.	8
WIRE/GEOSYNTHETIC FACING 8.00	Wire is in excellent condition. Minor signs of settlement and a damaged basket due to a rock fall at 160 ft from begin wall	7
LATERAL SLOPE 0.50	Good stable condition. Soil with boulders.	8
VEGETATION 0.50	Bushes are growing intentionally in the all. No effect on stability	8
WALL DRAINS 0.50	Drains were apparent, clean and functioning.	8
CULVERT 0.50	One 24" CMP in midwall. Excellent condition. Riprap with gabion baskets are also installed near culvert.	9
ROAD/SIDEWALK/SHOULDER 0.50	No crack or distress	9
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist facing all sides. No cracks or distress. Excellent condition	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.618\_R\_1.jpg**



**SEQU\_0010\_4.618\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-4.770-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	323	<b>Face Area (sq.):</b>	1600
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	-2

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No global failure issues or settlement issues.	8
WALL FOUNDATION MATERIAL 8.00	Loose soil material all bottom baskets are fully embedded. No undermining sufficient to support wall.	8
WIRE/GEOSYNTHETIC FACING 8.00	Wires are in good condition. Minor bulging in some baskets. Not severe or effecting wall. Minor settlement in some baskets.	7
LATERAL SLOPE 0.50	One side adjacent to guardwall and other side is bedrock.	8
WALL DRAINS 0.50	Wall drains are working and clean	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress	9
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist veneer all faces. Excellent condition.	9
DOWNSLOPE 1.00	Very steep 0.75H:1V boulders with soil some erosion, bushes and trees.	7
VEGETATION 1.00	Vegetation intentionally growing in wall face. Not effecting stability.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.770\_R\_1.jpg**



**SEQU\_0010\_4.770\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-4.900-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	162	<b>Face Area (sq.):</b>	960
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing as designed. No signs of major settlement or global failure.	8
WALL FOUNDATION MATERIAL 8.00	Loose soil, some erosion. Very steep 1H:1V of all base. All bottom baskets are buried sufficient to support wall.	7
WIRE/GEOSYNTHETIC FACING 8.00	Wire is in good condition. No corrosion, some settlement in the basket and minor bulging were observed. The baskets are generally intact.	7
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress that may be caused by wall movement	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist stone veneer on all faces. No cracks or distress. Excellent condition.	8
DOWNSLOPE 1.00	0.75:1 steep slope. Boulders with soil, well vegetated with grass and trees. Some erosion exist.	7
LATERAL SLOPE 1.00	1H:1V boulders with soil and large trees. No signs of erosion or sloughing.	7
VEGETATION 1.00	Vegetation is growing intentionally on wall face. No effecting wall stability	7
WALL DRAINS 1.00	No wall drains were observed	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_4.900\_R\_1.jpg**



**SEQU\_0010\_4.900\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-5.010-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	70	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18 high with 4 squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	455	<b>Face Area (sq.):</b>	2700
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Some signs of settlement but not affecting overall stability or performance.	7
WALL FOUNDATION MATERIAL 8.00	Soil with boulders with no bench (1H:1V). All bottom baskets are intact and embedded. Foundation is sufficient to support wall.	7
WIRE/GEOSYNTHETIC FACING 8.00	Wire is in good condition. Signs of settlement mainly in the top two baskets and specifically in the upper half of wall.	7
WALL DRAINS 0.50	Wall drains are clean and functioning.	8
ROAD/SIDEWALK/SHOULDER 1.00	The upper half of wall, the road is cracked due to wall settlement.	6
DOWNSLOPE 1.00	Very steep 0.75H:1V slope. Boulders with loose soil, well vegetated, minor erosion.	7
LATERAL SLOPE 1.00	Heavily vegetated with large bushes. 1H:1V slope but stable condition. Soil with boulders.	7
TRAFFIC BARRIER/FENCE 1.00	Guardwall with schist stone veneer on all sides. No cracks or distress.	7
VEGETATION 1.00	Vegetation is intentionally growing on wall face. Not effecting stability.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_5.010\_R\_1.jpg**



**SEQU\_0010\_5.010\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-5.484-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	A granite dry stack rockery wall with schist guardwall wall (anchor slab)		

**Wall Measurements**

<b>Wall Length (ft.):</b>	72	<b>Face Area (sq.):</b>	440
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	-2

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of rotating, settlement or global instability.	8
WALL FOUNDATION MATERIAL 8.00	Soil with boulders, loose, with minor erosion. No undermining or failure of foundation sufficient to support wall.	7
PLACED STONE 8.00	Rough cut large granite boulders. Some missing elements on the top row. Stones are strong and competent. No signs of weathering or cracking.	7
LATERAL SLOPE 0.50	Boulders/bedrock 1H:1V stable slope.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist on all sides. No cracking or distress.	8
DOWNSLOPE 1.00	Soil with boulders 1H:1V slope. Loose materials, trees and bushes.	7
WALL DRAINS 1.00	No wall drains were visible.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_5.484\_R\_1.jpg**



**SEQU\_0010\_5.484\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-5.695-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

<b>Wall Description</b>			
<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are 18" high with 4" squares galvanized wire a hardware cloth facing was apparent (4 opening/in) fill with gravel.		

<b>Wall Measurements</b>			
<b>Wall Length (ft.):</b>	108	<b>Face Area (sq.):</b>	570
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-1

<b>Assessed Elements</b>		
<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Minor settlement. No rotation or global stability issue.	8
WALL FOUNDATION MATERIAL 8.00	Loose soil. All bottom baskets were buried. No undermining or lose of foundation. Sufficient to support wall.	8
WIRE/GEOSYNTHETIC FACING 8.00	Welded wire is in good condition. No corrosion. All baskets are intact and very minor signs of settlement. Excellent condition.	8
LATERAL SLOPE 0.50	Signs of minor erosion. Adjacent to guardwall on both sides.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress.	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist stone veneer on all sides. Excellent condition.	9
DOWNSLOPE 1.00	Soft loose soil with signs of erosion. Well vegetated with grass and large trees.	7
VEGETATION 1.00	Vegetation exist on wall face but not affecting stability.	7
WALL DRAINS 1.00	No wall drains were visible.	7

<b>Repair Recommendations</b>	
<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_5.695\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-5.814-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with schist stone veneer with parapet (schist stone veneer all faces).		

**Wall Measurements**

<b>Wall Length (ft.):</b>	135	<b>Face Area (sq.):</b>	1000
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing as intended	9
WALL FOUNDATION MATERIAL 8.00	Compacted soil. No undermining or failure are visible and sufficient to support wall	8
CONCRETE 8.00	Concrete is faced with real schist stone and mortar	9
WALL DRAINS 0.50	Weep holes drains are visible and functioning	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress due to wall	9
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet with real schist stone on all sides. Excellent condition	9
VEGETATION 0.50	No vegetation on wall face affecting stability	9
DOWNSLOPE 1.00	Very steep (2H:1V) with loose soil and boulders. Signs of erosion. Vegetated with trees, bush and grass	7
LATERAL SLOPE 1.00	Compacted soil. Steep and stable vegetated with large bushes and grass	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_5.814\_R\_1.jpg**



**SEQU\_0010\_5.814\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-5.883-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Concrete headwall with wingwalls and 2 48 in CMP each		

### Wall Measurements

<b>Wall Length (ft.):</b>	31	<b>Face Area (sq.):</b>	90
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-5

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Performing as intended	9
WALL FOUNDATION MATERIAL 8.00	Large boulders. No scour or lose of materials	8
CONCRETE 8.00	Excellent condition. No cracking or distress	8
CULVERT 0.50	2- 48" CMP excellent condition	8
DOWNSLOPE 0.50	Boulders and stable	8
WALL DRAINS 0.50	No drains in wall	8
LATERAL SLOPE 1.00	Soil with vegetation eroded	6
UPSLOPE 1.00	Loose soil with grass and some erosion	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_5.883\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-5.883-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Concrete Headwall with wingwalls.		

### Wall Measurements

<b>Wall Length (ft.):</b>	31	<b>Face Area (sq.):</b>	100
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-10

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance	9
WALL FOUNDATION MATERIAL 8.00	Large boulders intact in competent. No scour or lose of mortared	8
CONCRETE 8.00	Concrete is in excellent condition. No cracking or distress	8
CULVERT 0.50	Two 48" CMP. Excellent working condition	8
LATERAL SLOPE 0.50	Loose soil intact. No signs of erosion or failure	8
WALL DRAINS 0.50	No wall drains were evident.	8
UPSLOPE 1.00	Loose soil with grass and bushes. Some erosion was evident	7
VEGETATION 1.00	Large trees is growing in the wall foundation. Not effecting stability	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_5.883\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.006-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete cantilevered wall with schist veneer in front face with schist parapet (schist stone veneer on all faces)		

### Wall Measurements

<b>Wall Length (ft.):</b>	322	<b>Face Area (sq.):</b>	2600
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No settlement or global stability issues.	8
WALL FOUNDATION MATERIAL 8.00	Compacted soil. Good condition and no signs of loose materials. Sufficient to support wall.	8
CONCRETE 8.00	Concrete faced with real schist stone and mortar. No major cracking or distress apparent.	9
ARCHITECTURAL FACING 0.50	Schist veneer is in good condition. Schist is slightly weathered and minor shrinkage in evident in the mortar.	8
LATERAL SLOPE 0.50	Compacted soil steep 1.5H:1V slope. Stable and well vegetated.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress	8
WALL DRAINS 0.50	Weep holes are evident, clean and functioning.	8
DOWNSLOPE 0.50	Bedrock with soil and boulders. Stable 3H:1V slope and well vegetated with trees and boulders.	9
VEGETATION 0.50	No vegetation on wall or effecting wall stability	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.006\_R\_1.jpg**



**SEQU\_0010\_6.006\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-6.070-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	Repair Elements

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete cantilevered wall with schist stone veneer on front face with schist parapet (stone veneer on all faces)		

**Wall Measurements**

<b>Wall Length (ft.):</b>	78	<b>Face Area (sq.):</b>	450
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No settlement or global instability issue.	8
WALL FOUNDATION MATERIAL 8.00	Compacted soil. Good condition with 5 ft bench. No signs of losing materials sufficient to support wall.	8
CONCRETE 8.00	Concrete faced with real schist stone and mortar. No major cracking or distress. Stone showing some signs of weathering.	9
ARCHITECTURAL FACING 0.50	Schist veneer slight weathering and minor shrinkage cracks in the mortar.	8
DOWNSLOPE 0.50	Bedrock standing vertical. No erosion.	8
LATERAL SLOPE 0.50	Bedrock and no erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress.	8
VEGETATION 0.50	No vegetation growing on wall or effect wall stability.	8
WALL DRAINS 0.50	Weep holes are evident, functioning as designed.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Labor (1 hr) @ \$55/hr = \$55 Mortar and rock \$50 = \$50
<b>Repair Cost:</b>	\$105

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.070\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.084-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	70	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall (10X X) with schist guardwall. A 24 in pipe is passing through the wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	139	<b>Face Area (sq.):</b>	1700
<b>Average Wall Height (ft.):</b>	12	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	16	<b>Vertical Offset (ft.):</b>	1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of global stability issues, or settlement.	7
WALL FOUNDATION MATERIAL 8.00	Loose soil with boulders. Sufficient to support wall.	7
BIN OR CRIB 8.00	Bins are in good condition with the exception of couple sections that are damages. Corrosion is not too excessive. All members are stable.	7
CULVERT 0.50	A long section of 24" CMP culvert is through all. Excellent condition and functioning as intended.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress.	8
TRAFFIC BARRIER/FENCE 1.00	Concrete guardwall with schist stone veneer on all sides. The barrier has a scupper through it. The water is running through it and is eroding barrier foundation and top bin wall fill material.	6
DOWNSLOPE 1.00	Loose soil with boulders. Very steep 1H:1V with trees and bushes. Minor erosion on slopes.	7
LATERAL SLOPE 1.00	One side is almost vertical bedrock and the other side is steep 1H:1V stable slope with boulders and soil.	7
VEGETATION 1.00	Vegetation is growing on wall but not affecting wall stability.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Fill material = 1 yd at \$35 = \$35 Labor (4 hrs) @ \$55 = \$220
<b>Repair Cost:</b>	\$255

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.084\_R\_1.jpg**



**SEQU\_0010\_6.084\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-6.123-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal Bin wall (10 XX) with schist guardwall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	219	<b>Face Area (sq.):</b>	2400
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance, well intact and no signs of movement, damage or rotation.	9
WALL FOUNDATION MATERIAL 8.00	Soil on rock, stable , no signs of failure sufficient to support wall.	8
BIN OR CRIB 8.00	All bin are intact and in excellent condition. No damage or excessive corrosion was noticed	8
DOWNSLOPE 0.50	Soil on bedrock 1H:1V slope stable minor erosion grass, trees, and bushes.	8
ROAD/SIDEWALK/SHOULDER 0.50	No visible cracks or distress caused by wall.	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist on all sides, good condition, minor shrinkage in mortar	8
VEGETATION 0.50	Some vegetation is growing on wall but not affecting wall stability	8
WALL DRAINS 0.50	No drains are visible in wall.	8
LATERAL SLOPE 0.50	One side connected to concrete wall and other side is bedrock. Stable and no erosion.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.123\_R\_1.jpg**



**SEQU\_0010\_6.123\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-6.165-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	74	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Concrete Cast in Place Wall with schist veneer on front face with schist parapet ( stone veneer all faces).		

**Wall Measurements**

<b>Wall Length (ft.):</b>	166	<b>Face Area (sq.):</b>	650
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No major settlement, global stability issues were observed	8
WALL FOUNDATION MATERIAL 8.00	Soil on large boulders. Inlaid and compacted some were exposed	6
CONCRETE 8.00	Concrete is in excellent condition. No cracking or distress was visible	8
DOWNSLOPE 0.50	Soil on rock 1H:1V slope stable. Well vegetated with grass, bushes and trees	8
LATERAL SLOPE 0.50	One side connected to bin wall and other side is soil and boulders, trees. No signs of erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress caused by wall	8
TRAFFIC BARRIER/FENCE 0.50	Parapet with schist stone on all sides. Minor weathering and mortar shrinkage	8
VEGETATION 0.50	No vegetation growing on wall face. Not affect on stability	8
WALL DRAINS 0.50	Weep holes were functioning as designed	8

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.165\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.456-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	66	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Soil Nail
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone
<b>General Description:</b>	Soil Nail wall with schist rock facing ( 1 ft thick) Batter 70 deg but at mid section 80 deg batter.		

### Wall Measurements

<b>Wall Length (ft.):</b>	130	<b>Face Area (sq.):</b>	720
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Requires investigation.	6
WALL FOUNDATION MATERIAL 8.00	Paved excellent condition.	8
SHOTCRETE 8.00	The wall is faced with schist stone veneer. The shotcrete is not visible. Signs of wall bulging in mid section.	6
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress due to the wall movement.	8
ARCHITECTURAL FACING 1.00	Cut schist stone with mortar. Stone is weathered and no missing elements. Mortar cannot be evaluate mortar because the joints are soil packed.	6
LATERAL SLOPE 1.00	The begin wall is near wall outcrop. Minor erosion on both ends. The end wall has riprap. Wall may have ended to soon.	6
WALL DRAINS 1.00	Wall drains are only visible and functioning in the lower section (begin) and not upper section.	6
UPSLOPE 1.00	Soil slope 2H:1V vegetated wit grass and trees. Drainage may be ..... Behind the wall.	7
VEGETATION 1.00	No vegetation on all	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Install piezo. To determine ground water fluctuation. Wall is bulging at 20 ft from wall end. Estimated repairs = \$10,000.
<b>Repair Cost:</b>	\$10,000

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.456\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-6.590-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	69	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared granite cut stone headwall with a 7 ft diameter culvert and two 10 ft wingwalls.		

### Wall Measurements

<b>Wall Length (ft.):</b>	33	<b>Face Area (sq.):</b>	250
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance but require foundation stabilization	6
WALL FOUNDATION MATERIAL 8.00	Undermined, boulders,	5
MORTAR 8.00	Good condition with minor cracking.	8
STONE MASONRY 8.00	Strong, granite. No weathering or fatigue.	8
CULVERT 0.50	7 ft arch culvert with concrete paved bottom with concrete footing. Good condition.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress	8
VEGETATION 0.50	Minor vegetation on wall face but not affecting wall stability.	8
LATERAL SLOPE 0.50	Bedrock, very strong.	9
UPSLOPE 0.50	Bedrock, boulders, and no failure.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Grouted riprap = 5 yds at \$330 = \$1650 Labor (20 hrs) @ \$55/hr = \$1100
<b>Repair Cost:</b>	\$2,750

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.590\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.599-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) headwall with two wingwalls and a 7 ft culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	25	<b>Face Area (sq.):</b>	200
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No global stability or settlement issues.	8
WALL FOUNDATION MATERIAL 8.00	Boulders, stable and strong. No erosion.	9
MORTAR 8.00	Good condition with minor cracking.	8
STONE MASONRY 8.00	Strong granite. No weathering or fatigue.	8
CULVERT 0.50	7 ft arch culvert with concrete footings foundation and concrete bottom. Good condition.	8
VEGETATION 0.50	No vegetation on wall face.	8
DOWNSLOPE 0.50	Large boulders, and stable.	9
LATERAL SLOPE 0.50	Large boulders, stable. No erosion.	9
UPSLOPE 1.00	Soil loose, flat, some erosion was visible.	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.599\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.623-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) headwall with one wingwall with a 7 ft arch culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	31	<b>Face Area (sq.):</b>	230
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No global stability issues or settlement issues.	8
WALL FOUNDATION MATERIAL 8.00	Boulders, strong. No erosion.	8
MORTAR 8.00	Good condition. No cracking or shrinkage observed.	8
STONE MASONRY 8.00	Strong competent granite blocks. No missing elements. No weathering.	8
CULVERT 0.50	7 ft arch culvert with concrete footings.	8
DOWNSLOPE 0.50	Large boulders stable.	8
LATERAL SLOPE 0.50	Large boulders stable.	8
VEGETATION 0.50	No vegetation on wall face	8
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.623\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-6.626-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared and granite stone headwall with two wingwalls with a 7 ft arch culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	24	<b>Face Area (sq.):</b>	155
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Large boulders, stable, no scouring.	8
MORTAR 8.00	Good condition with minor cracking.	8
STONE MASONRY 8.00	Strong granite blocks. No cracks or missing elements.	8
CULVERT 0.50	7 ft arch culvert.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress	8
VEGETATION 0.50	No vegetation on wall face.	8
DOWNSLOPE 0.50	Boulders and stable.	9
LATERAL SLOPE 0.50	Boulders and very large stable. No erosion.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.626\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.704-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with parapet and schist veneer on all faces.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	213	<b>Face Area (sq.):</b>	1700
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No signs or settlement and global instability.	8
WALL FOUNDATION MATERIAL 8.00	5 ft bench. Compacted soil and no signs of erosion or exposed footing. Excellent condition.	9
CONCRETE 8.00	Concrete covered with schist stone, no cracking is visible.	9
ARCHITECTURAL FACING 0.50	Schist stone with mortar, minor shrinkage cracks and slight weathering.	8
DOWNSLOPE 0.50	Soil with boulders relatively flat 4H:1V. No signs of erosion. Stable with bushes and trees.	8
LATERAL SLOPE 0.50	Soil with rock and stable minor erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress caused by wall.	8
TRAFFIC BARRIER/FENCE 0.50	Parapet with schist on all sides. Excellent condition.	8
VEGETATION 0.50	No vegetation on wall face or affecting wall stability.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.704\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-6.995-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Masonry and granite stone headwall with wingwalls a 7 ft arched culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	25	<b>Face Area (sq.):</b>	100
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No settlements or global stability issues.	8
WALL FOUNDATION MATERIAL 8.00	Boulders with concrete. Stable but sufficient to support wall.	8
MORTAR 8.00	Mortar is in good condition. No signs of cracking or shrinkage.	8
STONE MASONRY 8.00	Competent and strong granite. No signs of weathering or cracking.	8
CULVERT 0.50	7 arched culvert over footings.	8
VEGETATION 0.50	No vegetation on wall face	8
DOWNSLOPE 0.50	Concrete and boulders.	9
LATERAL SLOPE 0.50	Bedrock and large boulders. No signs of erosion. Excellent condition.	9
UPSLOPE 0.50	Paved pullout	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.995\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-6.996-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	56	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone granite headwall for a 7 ft arch culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	13	<b>Face Area (sq.):</b>	40
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance but foundation needs to fixed and reset stones.	6
WALL FOUNDATION MATERIAL 8.00	Foundation is undermined. If undermining continues to undercut, it will affect wall stability.	5
MORTAR 8.00	Missing mortar between stones.	5
STONE MASONRY 8.00	Good condition. No weathering or cracking. Missing elements.	6
DOWNSLOPE 1.00	Bedrock with large boulders and large trees and scouring.	6
LATERAL SLOPE 1.00	Bedrock with large boulders and large trees. Scouring underneath but no stability issues yet.	6
VEGETATION 1.00	No vegetation is on wall face or affecting wall performance.	7
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Replace missing stonework and repair foundation. Place grouted riprap at foundation, 8 cubic yards @ \$330/cu.yd. = \$2,640. Replace masonry stone, 10 sq.ft. @ \$620/sq.ft = \$6,200. Misc. equipment time, 8 hours @ \$200/hr = \$1,600. Misc. Labor, 24 hours @ \$55
<b>Repair Cost:</b>	\$11,760

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_6.996\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-7.315-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	71	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wired face MSE wall with a historic guardwall (schist). Historic guardwall reconstructed on the MSE wall. MSE wall entirely buried.		

### Wall Measurements

<b>Wall Length (ft.):</b>	121	<b>Face Area (sq.):</b>	280
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance based on roadway and guardwall performance.	7
WALL FOUNDATION MATERIAL 8.00	Wall is buried and not able to see. Soil and boulder covered wall face and toe.	7
WIRE/GEOSYNTHETIC FACING 8.00	Welded wire is buried and not able see. Soil and boulders covered wall face.	7
DOWNSLOPE 0.50	2H:1V slope with moderate vegetation with grass and bushes.	8
LATERAL SLOPE 0.50	Soil and boulders with minor erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or cracking.	8
TRAFFIC BARRIER/FENCE 0.50	Schist guardwall (historic). Good condition.	8
WALL DRAINS 0.50	No drainage apparent.	8
VEGETATION 1.00	Wall buried. No large vegetation on buried wall.	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_7.315\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-7.857-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with schist masonry stone facing on all sides with schist stone facing parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	287	<b>Face Area (sq.):</b>	2300
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No signs of settlement or global instability.	9
WALL FOUNDATION MATERIAL 8.00	5 ft compacted soil bench. No signs of erosion or loose of material.	9
CONCRETE 8.00	Concrete covered with schist stone. No cracking is visible	9
ARCHITECTURAL FACING 0.50	Schist stone with mortar. Minor mortar shrinkage and slight weathering in stone. Good condition.	8
DOWNSLOPE 0.50	Soil with boulders. Slope 1.5H:1V with minor erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress caused by wall.	8
TRAFFIC BARRIER/FENCE 0.50	Parapet with schist stone veneer on all sides. Excellent condition.	8
VEGETATION 0.50	No vegetation on wall face.	8
LATERAL SLOPE 0.50	Bedrock on both sides. Very stable.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_7.857\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-8.041-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) headwall for a 2 in CMP culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	12	<b>Face Area (sq.):</b>	60
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock, competent and strong (granite) sufficient to support wall.	8
MORTAR 8.00	Good condition. Minor shrinkage and no cracking.	8
STONE MASONRY 8.00	Stones are slightly weathered but intact and no missing elements.	8
CULVERT 0.50	One 24" CMP. Good condition with some rust on the bottom of culvert.	8
LATERAL SLOPE 0.50	Soil over bedrock with minor erosion.	8
VEGETATION 0.50	No vegetation on wall face	8
UPSLOPE 0.50	Bedrock competent strong granite	9
WALL DRAINS 1.00	No wall drain is visible	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_8.041\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-8.154-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2004
<b>*Wall Rating:</b>	88	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete cantilevered wall with schist stone veneer on all faces.		

### Wall Measurements

<b>Wall Length (ft.):</b>	52	<b>Face Area (sq.):</b>	480
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No signs of settlement or global instability.	9
WALL FOUNDATION MATERIAL 8.00	Curb backfill. Loose soil and moderate vegetation. Flat bench - 5 ft. No signs of distress.	9
CONCRETE 8.00	Concrete covered with schist stone. No cracking is visible.	9
ARCHITECTURAL FACING 0.50	Schist stone veneer. White stains in mortars. Facing constructed in 2007.	8
ROAD/SIDEWALK/SHOULDER 0.50	No signs of cracking.	9
VEGETATION 0.50	No vegetation on wall face.	9
WALL DRAINS 0.50	Weep holes are visible, clean and functioning.	9
LATERAL SLOPE 1.00	Loose soil with minor erosion.	7
UPSLOPE 1.00	Signs of minor erosion. Loose soil 1.5H:1V to 1H:1V slope well vegetation.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_8.154\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-8.380-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are X high with X squares galvanized wire a hardware cloth facing was apparent (X opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	218	<b>Face Area (sq.):</b>	1900
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of settlement, rotation, or global instability.	8
WALL FOUNDATION MATERIAL 8.00	Loose soil at steep angle 1H:1V thru 1.5H:1V. All bottom baskets are buried and no foundation problems exist. Sufficient to support wall.	8
WIRE/GEOSYNTHETIC FACING 8.00	Wire are in good condition. Baskets are straining and not bowed. Minor settlement in baskets, generally in very good condition and good batter.	8
LATERAL SLOPE 0.50	Bedrock, strong competent stable.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress	8
VEGETATION 0.50	Vegetation in intentionally growing in wall. No effect on stability.	9
DOWNSLOPE 1.00	Loose soil steep 1H:1V with boulders.	7
TRAFFIC BARRIER/FENCE 1.00	Guardwall with schist on all sides. Minor weathering in schist materials and shrinkage in mortar.	7
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_8.380\_R\_1.jpg**



**SEQU\_0010\_8.380\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-8.820-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared granite cut stone wall with two wingwalls for a 5 ft arch culvert on footings.		

### Wall Measurements

<b>Wall Length (ft.):</b>	31	<b>Face Area (sq.):</b>	125
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-4

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Granite, strong competent, bedrock.	9
MORTAR 8.00	Good condition. Minor cracking.	8
STONE MASONRY 8.00	Strong, competent, granite cut stone. No signs of weathering or cracking. No missing elements.	8
LATERAL SLOPE 0.50	Compacted soil. No signs or erosion, vegetated with grass. Stable flat slope begin of wall. 1.5H:1V slope on the end of wall.	8
UPSLOPE 0.50	Loose soil with grass flat 6H:1V.	8
DOWNSLOPE 0.50	Granite bedrock, strong, intact.	9
CULVERT 1.00	5 ft arch culvert on footings. Good condition.	7
VEGETATION 1.00	No vegetation in wall face that affected stability.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_8.820\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-8.823-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut granite stone headwall with two wingwalls for a 5 ft arch CMP culvert on footings.		

### Wall Measurements

<b>Wall Length (ft.):</b>	19	<b>Face Area (sq.):</b>	90
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock, granite, strong, competent.	8
MORTAR 8.00	No cracks or shrinkage. Good condition.	8
STONE MASONRY 8.00	Strong, competent, granite. No weathering or cracking. No missing elements.	8
DOWNSLOPE 0.50	Granite, competent, bedrock.	8
LATERAL SLOPE 0.50	Bedrock, very strong granite.	8
CULVERT 1.00	5 ft arch culvert on footing. Good condition.	7
UPSLOPE 1.00	Loose soil. 2H:1V slope with grass.	7
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_8.823\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-9.496-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with masonry mortared schist veneer facing with a parapet with a schist veneer on all faces.		

### Wall Measurements

<b>Wall Length (ft.):</b>	110	<b>Face Area (sq.):</b>	700
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Compacted soil. No undermining of wall foundation. Steep slope 1H:1V. Some erosion.	7
CONCRETE 8.00	Concrete is faced with real schist stone and mortar.	9
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet with real schist stone on all sides. Excellent condition. Minor weathering and minor mortar cracking.	8
WALL DRAINS 0.50	Weep holes are visible and functioning.	8
ARCHITECTURAL FACING 0.50	Schist stone veneer and mortar. No signs ore shrinkage or cracking of the mortar. No cracking of the stone veneer and minor weathering of schist.	9
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress.	9
VEGETATION 0.50	No vegetation on wall face affecting wall stability.	9
DOWNSLOPE 1.00	Very steep 1H:1V with loose soil, grass and large trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_9.496\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-9.536-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2001
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	MSE - Welded Wire Face
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Welded wire MSE retaining wall with schist veneer guardwall. The baskets are X high with X squares galvanized wire a hardware cloth facing was apparent (X opening/in) fill with gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	194	<b>Face Area (sq.):</b>	800
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of settlement or rotation.	8
WALL FOUNDATION MATERIAL 8.00	Steep 2H:1V slope. All bottom baskets are buried. Compacted soil and sufficient to support wall.	7
WIRE/GEOSYNTHETIC FACING 8.00	Welded wires/baskets are in good condition. No signs of settlement or rotation.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or distress caused by wall	8
TRAFFIC BARRIER/FENCE 0.50	Schist stone veneer guardwall. No cracking and some weathering to schist stone. Good condition.	8
VEGETATION 0.50	Vegetation is intentionally growing on wall face.	8
DOWNSLOPE 1.00	Very steep 1H:1V with grass. Some eroded areas that may affect foundation stability in the near future.	7
LATERAL SLOPE 1.00	Compacted soils with grass and trees.	7
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_9.536\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-9.833-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	66	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone rockery (granite) wall. Parking area under construction.		

### Wall Measurements

<b>Wall Length (ft.):</b>	36	<b>Face Area (sq.):</b>	130
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	83
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of settlement or rotation.	7
WALL FOUNDATION MATERIAL 8.00	Compacted soil, sound foundation. Sufficient to support wall.	8
STONE MASONRY 8.00	Strong granite, slightly weathered with some cracking. Missing elements. Some sections has failed and needs rebuilding.	5
MORTAR 8.00	Some cracking and shrinkage were visible. Missing stones in some areas.	6
LATERAL SLOPE 0.50	Bedrock granite on both sides with a flat path on each side. Stable slope.	9
UPSLOPE 0.50	Bedrock granite with some soil and very stable.	9
VEGETATION 1.00	A large tree is growing upslope on top of wall. No effect on stability.	7
WALL DRAINS 1.00	No wall drains are visible. On water pipe is visible with a sign "untreated water supply"	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	Most of the stone for rebuilding/resetting is available on site. Labor (20 hrs) @ \$55/hr = \$1,100.00
<b>Repair Cost:</b>	\$1,100

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-9.833-R.**



<b>Wall ID:</b>	SEQU-0010-9.834-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	88	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite dry stacked headwall with small granite wall wrap around. 36 in concrete lined culvert. Parking lot under construction.		

### Wall Measurements

<b>Wall Length (ft.):</b>	63	<b>Face Area (sq.):</b>	400
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Newly constructed. Performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Soil and small riprap. Newly placed. No signs of distress.	9
PLACED STONE 8.00	Granite stone. Good condition. Little weathering and no cracks.	9
LATERAL SLOPE 0.50	Minor erosion due construction disturbance. Minor erosion at begin and end of wall.	8
CULVERT 0.50	One 36" new concrete lined culvert.	9
DOWNSLOPE 0.50	Large rock outcrop and small boulders with minor vegetation. Not impacting wall.	9
VEGETATION 0.50	No vegetation on wall face. Not impacting wall.	9
ROAD/SIDEWALK/SHOULDER 1.00	Not paved yet. Dirt pullout.	7
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-9.834-R.**

<b>Wall ID:</b>	SEQU-0010-9.860-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	59	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack headwall underneath a gap in bedrock for a reline 36 in culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	12	<b>Face Area (sq.):</b>	60
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-8

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Needs to be stabilized.	4
WALL FOUNDATION MATERIAL 8.00	Granite bedrock, very strong competent.	9
PLACED STONE 8.00	Schist and granite stone, missing elements on one side. Needs to be rebuilt or it will fail and also needs mortar.	4
DOWNSLOPE 0.50	Bedrock, granite, strong and competent	8
LATERAL SLOPE 0.50	Bedrock and granite.	8
VEGETATION 0.50	No vegetation on wall face.	8
CULVERT 0.50	Relined 3 ft CMP with 2.5 ft PVC. Excellent condition.	9
WALL DRAINS 1.00	No walls drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Add mortar between existing stones and rebuild upper end of wall. All masonry stones are available. Mortared Gravity Stone 10 sq.ft @ \$160/s.f. = \$1,600. Misc. Labor, 30 hrs @ \$55/hr = \$1,650.
<b>Repair Cost:</b>	\$3,250

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_9.860\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-10.146-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	95	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Soil Nail
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Soil nail wall with mortared schist facing with 16 ft long (3 ft) rockery section (historic) at end of wall.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	167	<b>Face Area (sq.):</b>	2500
<b>Average Wall Height (ft.):</b>	14	<b>Face Angle (deg.):</b>	71
<b>Maximum Wall Height (ft.):</b>	20	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance condition. Newly built wall, no bulging, rotation or settlement.	10
WALL FOUNDATION MATERIAL 8.00	Compacted base material and sufficient to support wall. Stable slope.	9
SHOTCRETE 8.00	Not visible. Wall faced with schist stone veneer. Newly installed wall.	10
ARCHITECTURAL FACING 0.50	Schist stone with mortar. Excellent condition and newly installed.	9
ROAD/SIDEWALK/SHOULDER 0.50	Not paved due to construction.	9
UPSLOPE 0.50	Soil compacted with bushes and trees.	9
VEGETATION 0.50	No vegetation on wall face and not affecting wall stability.	9
WALL DRAINS 0.50	Weep holes were visible, clean, and functioning. 6 ft increments.	10
LATERAL SLOPE 1.00	Soil with signs of moderate erosion on beginning wall. Stable slope on end of wall.	7

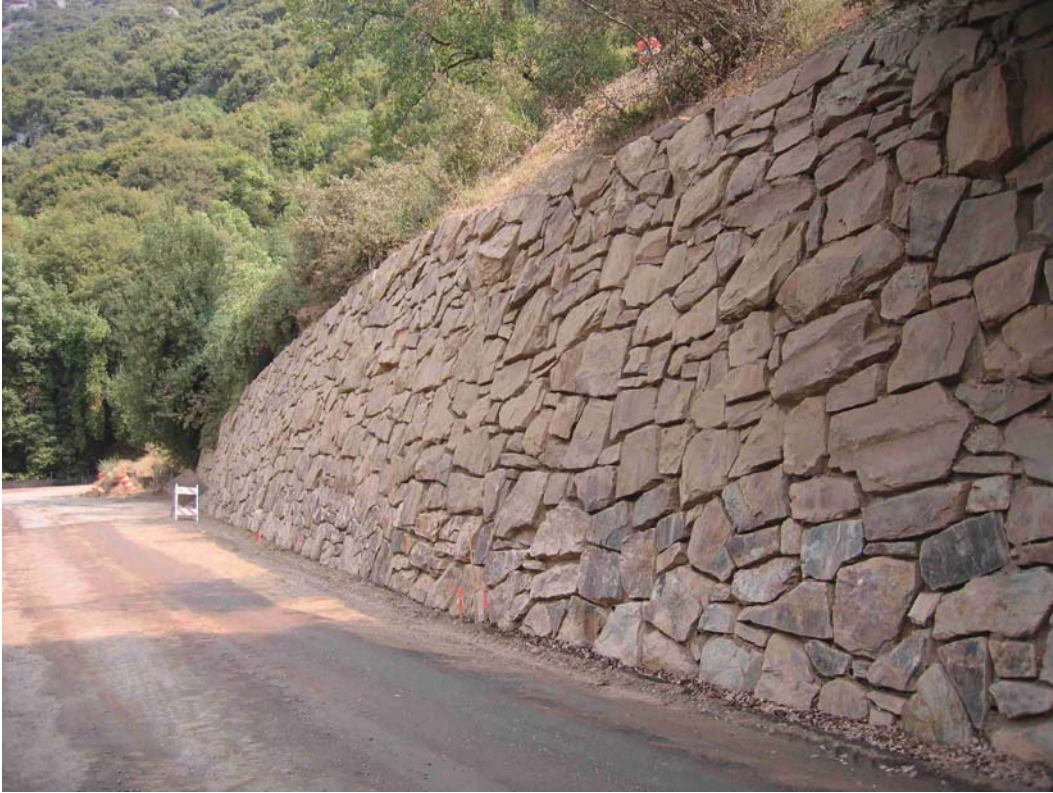
**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.146\_R\_1.jpg**



**SEQU\_0010\_10.146\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-10.160-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone masonry wall with integral mortared stone masonry guardwall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	53	<b>Face Area (sq.):</b>	510
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall performing very well. No significant signs of wall distress.	9
WALL FOUNDATION MATERIAL 8.00	Bedrock foundation showing no signs of instability, missing rock, or erosion.	9
MORTAR 8.00	Sound, durable, and intact with no significant cracking or weathering.	9
STONE MASONRY 8.00	Hard, unweathered, fresh granite.	9
LATERAL SLOPE 0.50	Minor erosion, but mostly stable rock outcrop.	8
WALL DRAINS 0.50	No visible wall drains, but no seepage or water staining evident.	8
ROAD/SIDEWALK/SHOULDER 0.50	Very minor evidence of wall fill settlement. No roadway cracking or patching.	9
TRAFFIC BARRIER/FENCE 0.50	Guard wall shows no significant signs of wall-related distress.	9
DOWNSLOPE 0.50	Hard rock outcrop with no signs of wall-related or slope distress.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-10.160-L.**



<b>Wall ID:</b>	SEQU-0010-10.168-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Apparent mortared stone masonry wall (MSE wall with stone facing?) just past Sequoia Grove Overlook.		

### Wall Measurements

<b>Wall Length (ft.):</b>	160	<b>Face Area (sq.):</b>	4160
<b>Average Wall Height (ft.):</b>	26	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	30	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is performing almost like new. No significant signs of wall distress.	9
WALL FOUNDATION MATERIAL 8.00	Largely bedrock foundation showing no signs of erosion or settlement.	9
MORTAR 8.00	Sound, durable, intact and unweathered.	9
STONE MASONRY 8.00	Fresh, hard, durable, intact granite, with no missing blocks.	9
LATERAL SLOPE 0.50	Minor slope erosion associated with new wall construction.	8
WALL DRAINS 0.50	Wall is draining well, with no signs of seepage from the wall face or along the toe.	8
DOWNSLOPE 0.50	Hard rock outcrops, with minor surface soil erosion.	9
ROAD/SIDEWALK/SHOULDER 0.50	Very minor evidence of wall fill settlement. No cracking or roadway patching.	9
TRAFFIC BARRIER/FENCE 0.50	Guard wall shows no signs of wall-related distress, with no cracking in the mortar evident.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.168\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-10.175-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone masonry wall with integral stone masonry guardwall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	69	<b>Face Area (sq.):</b>	320
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	13	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall shows no significant signs of distress. Very stable wall structure performing very well.	9
WALL FOUNDATION MATERIAL 8.00	Apparent bedrock foundation showing no signs of settlement or related distress.	9
MORTAR 8.00	Sound, durable and intact with no significant cracking or weathering.	9
STONE MASONRY 8.00	Hard, durable, unweathered granite with no signs of cracking or missing blocks.	9
LATERAL SLOPE 0.50	Minor erosion at wall ends, though largely hard rock outcrop.	8
WALL DRAINS 0.50	No wall drains visible. No signs of seepage, water staining along the wall face, or other seepage/drain distresses.	8
ROAD/SIDEWALK/SHOULDER 0.50	Very minor evidence of wall fill settlement. No roadway cracking or patching.	9
TRAFFIC BARRIER/FENCE 0.50	Mortared stone masonry guard wall is intact, showing no wall-related distress or cracking in wall mortar.	9
DOWNSLOPE 0.50	Hard rock outcrop, comprised of massive, stable granite.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-10.175-L.**



<b>Wall ID:</b>	SEQU-0010-10.207-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	95	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Soil Nail
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Soil nail wall with mortared schist stone facing.		

### Wall Measurements

<b>Wall Length (ft.):</b>	124	<b>Face Area (sq.):</b>	500
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	74
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance and condition. Newly constructed. No bulging, rotation, or settlement.	10
WALL FOUNDATION MATERIAL 8.00	Compacted base material (under construction). Stable and sufficient to support wall.	9
SHOTCRETE 8.00	Shotcrete not visible. Wall faced with stone - Newly constructed wall	10
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction	9
VEGETATION 0.50	No vegetation on wall effecting wall stability.	9
ARCHITECTURAL FACING 0.50	Schist stone veneer with mortar. No cracking or weathering. Excellent condition.	10
WALL DRAINS 0.50	Weep holes are visible, clean and functioning. About 6 ft increments.	10
LATERAL SLOPE 1.00	Loose soil, moderately eroded.	7
UPSLOPE 1.00	Loose soil with large trees, moderately eroded. Very steep 1H:1V slope.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.207\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-10.266-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Historic schist dry stack wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	88	<b>Face Area (sq.):</b>	600
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	50
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance and no signs of rotation, bulging, or settlement.	8
WALL FOUNDATION MATERIAL 8.00	Compacted road base material (under construction). Sufficient to support wall.	9
PLACED STONE 8.00	Schist stones, moderately weathered and cracked. Missing element and loose stones	7
LATERAL SLOPE 0.50	Compacted, well vegetated, stable soil slopes	8
UPSLOPE 0.50	Compacted well vegetated slope with grass, bushes/trees, moderate erosion.	8
VEGETATION 0.50	No vegetation on wall face or affecting wall stability	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.266\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-10.292-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	94	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Switchback Wall	<b>Primary Wall Type:</b>	Soil Nail
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Soil nail wall with mortared schist stone to retain a cut.		

### Wall Measurements

<b>Wall Length (ft.):</b>	86	<b>Face Area (sq.):</b>	350
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	72
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Newly constructed. No rotation or settlement.	10
WALL FOUNDATION MATERIAL 8.00	Compacted road base (under construction) sufficient to support wall.	9
SHOTCRETE 8.00	Shotcrete not visible- wall faced with schist stone. Newly constructed wall. Very slight bulging in midway.	9
LATERAL SLOPE 0.50	Soil with grass and bushes. Minor erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
ARCHITECTURAL FACING 0.50	Schist stone with mortar. No cracking, shrinkage or weathering. Excellent condition.	10
UPSLOPE 0.50	Slope relatively flat 4H:1V. Heavily vegetated with grass, large bushes. Stable.	10
VEGETATION 0.50	No vegetation on wall face. Not may have affect ton wall stability.	10
WALL DRAINS 0.50	Weep holes are visible, clean and functioning about 6 ft center.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.292\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-10.625-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	68	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack rockery wall. Wall composed of mostly schist and few large granite boulders.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	130	<b>Face Area (sq.):</b>	1300
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Fair performance. Some movement of blocks is apparent but because of size of boulders, the wall is stable.	6
WALL FOUNDATION MATERIAL 8.00	Compacted road base materials (road under construction). Sufficient to support wall.	9
PLACED STONE 8.00	Large boulders of schist and granite. Highly eroded, cracks in blocks and blocks missing.	5
UPSLOPE 0.50	Eroded bedrock and large boulders. Vegetated with bushes and trees and stable slope.	8
LATERAL SLOPE 0.50	Strong competent schist stone with trees and no erosion.	9
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
WALL DRAINS 1.00	No wall drains were visible.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.625\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-10.645-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry granite headwall for 5 ft arched culvert on footings.		

### Wall Measurements

<b>Wall Length (ft.):</b>	20	<b>Face Area (sq.):</b>	85
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-4

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Fill on bedrock, stable and sufficient to support wall.	9
MORTAR 8.00	Mortar is in good condition. No missing segments, shrinkage, or cracking.	9
DOWNSLOPE 0.50	Fill on bedrock and stable.	8
VEGETATION 1.00	Large bushes are growing in wall.	6
CULVERT 1.00	5 ft CMP arch culvert on footing with concrete bottom. Good condition.	7
LATERAL SLOPE 1.00	Fill with large trees. Very steep 1H:1V with some erosion.	7
UPSLOPE 1.00	Loose fill, road under construction.	7
WALL DRAINS 1.00	No drains were observed.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.645\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-10.646-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) for a 5 ft arch culvert on footing.		

### Wall Measurements

<b>Wall Length (ft.):</b>	23	<b>Face Area (sq.):</b>	85
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance.	9
WALL FOUNDATION MATERIAL 8.00	Bedrock, granite, strong competent. Sufficient to support wall.	9
STONE MASONRY 8.00	Granite, strong competent. No signs of weathering, cracking or missing elements.	7
MORTAR 8.00	Minor shrinkage. Good condition.	8
LATERAL SLOPE 0.50	Granite bedrock with large trees.	8
UPSLOPE 0.50	Bedrock, competent strong granite.	8
VEGETATION 0.50	No vegetation on wall face. Not affecting wall stability.	9
WALL DRAINS 1.00	No wall drains are apparent.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-10.646-R.**



<b>Wall ID:</b>	SEQU-0010-10.890-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	96	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stack rockery wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	116	<b>Face Area (sq.):</b>	600
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	73
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. No signs of rotation, bulging, or settlement.	10
WALL FOUNDATION MATERIAL 8.00	Road under construction. Compacted road base fill and sufficient to support wall.	9
PLACED STONE 8.00	Strong competent schist stone. No signs of weathering or cracking. (Newly constructed)	10
LATERAL SLOPE 0.50	Decomposed bedrock at begin wall and bedrock at end wall with moderate erosion.	8
UPSLOPE 0.50	Very steep loose rock with eroded bedrock. No vegetation.	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
VEGETATION 0.50	No vegetation on wall face or any that affect wall performance.	9
WALL DRAINS 0.50	Drain pipes was visible, clean and functioning.	10

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.890\_R\_1.jpg**



**SEQU\_0010\_10.890\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-10.895-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	93	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with formliner replicating schist and a parapet with schist on top and traffic sides.		

### Wall Measurements

<b>Wall Length (ft.):</b>	102	<b>Face Area (sq.):</b>	700
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. New construction.	10
WALL FOUNDATION MATERIAL 8.00	Compacted fill and 5 ft bench. No vegetation. New construction. Sufficient to support wall.	8
CONCRETE 8.00	Newly constructed. No cracking or distress	10
DOWNSLOPE 0.50	Steep, loose fill with trees and bushes. 1H:1V slope.	8
LATERAL SLOPE 0.50	Steep, loose fill with grass trees. Guardwall on both sides.	8
VEGETATION 0.50	No vegetation on wall.	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction. No pavement.	9
ARCHITECTURAL FACING 0.50	Formliner replicating schist. Excellent condition. Newly constructed.	10
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet. Formliner on other face, schist on traffic face and top side. Excellent condition.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_10.895\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-11.046-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal Bin wall (10X X) with schist stone veneer faced guardwall and anchor slab guardwall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	240	<b>Face Area (sq.):</b>	1900
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of rotation, settlement or global stability issues.	8
WALL FOUNDATION MATERIAL 8.00	Loose fill with grass. Sufficient to support wall	8
BIN OR CRIB 8.00	All bins are intact. No damage or excessive corrosion. All bins have a good batter 75 degrees . Good condition.	9
LATERAL SLOPE 0.50	Very steep 1H:1V with large trees connected to guardwalls on both sides.	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist stone on traffic and top face. Formliner on back face. Newly constructed - Excellent condition.	10
DOWNSLOPE 1.00	Very steep 1H:1V with large trees.	7
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.046\_L\_1.jpg**



**SEQU\_0010\_11.046\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.101-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1960
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Old cantilevered cast in place concrete all with a guardwall with schist on top and traffic sides and formliner on other face.		

### Wall Measurements

<b>Wall Length (ft.):</b>	121	<b>Face Area (sq.):</b>	485
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	18	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Compacted fill with boulders. Stable with 5 ft bench. Wall foundation is embedded.	8
CONCRETE 8.00	Good condition. No cracks or distress.	8
DOWNSLOPE 0.50	Fill with boulders, large tree, and bushes. Stable slope.	8
LATERAL SLOPE 0.50	Connected with cast in place concrete retaining wall and metal bin wall.	8
VEGETATION 0.50	No vegetation on wall face.	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
TRAFFIC BARRIER/FENCE 0.50	Modified anchor guardwall with schist on top and traffic sides with formliner on other face. Excellent condition.	10
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.101\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-11.108-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stacked rock wall to retain cut		

### Wall Measurements

<b>Wall Length (ft.):</b>	127	<b>Face Area (sq.):</b>	1000
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	5

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Stable. No bulging or global instability	8
WALL FOUNDATION MATERIAL 8.00	Compacted road base (road under construction) - Sufficient to support wall.	8
PLACED STONE 8.00	Strong competent schist (large blocks). No sign of cracking, slight weathering. Missing few small elements.	8
LATERAL SLOPE 0.50	Schist bedrock show erosion 1H:1V	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction	9
UPSLOPE 0.50	Eroded schist bedrock with soil and boulders 1.5H:1V stable slope	9
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.108\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-11.123-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	96	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with formliner replicating schist and a parapet with schist on top and traffic sides.		

### Wall Measurements

<b>Wall Length (ft.):</b>	14	<b>Face Area (sq.):</b>	100
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Newly constructed.	10
WALL FOUNDATION MATERIAL 8.00	Compacted fill. Excellent condition. Newly constructed. Sufficient to support wall.	9
CONCRETE 8.00	Newly constructed wall. Concrete is sound and no cracks.	10
DOWNSLOPE 0.50	Steep fill with boulders, large trees, 1H:1V slope. Stable and minor erosion.	8
VEGETATION 0.50	No vegetation on wall.	8
LATERAL SLOPE 0.50	Wall adjacent to old Cast in place concrete all and guardwalls on both sides.	9
ROAD/SIDEWALK/SHOULDER 0.50	Under construction. No pavement.	9
ARCHITECTURAL FACING 0.50	Formliner. Excellent condition. New construction.	10
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet with formliner on back side and schist veneer on top and traffic sides.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.123\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-11.136-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	96	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with formliner replicating schist and a parapet with formliner on other face and schist veneer on top and traffic sides.		

### Wall Measurements

<b>Wall Length (ft.):</b>	32	<b>Face Area (sq.):</b>	195
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Newly constructed.	10
WALL FOUNDATION MATERIAL 8.00	Compacted fill. Excellent condition (Newly constructed) sufficient to support wall.	9
CONCRETE 8.00	Newly constructed wall. Concrete is sound and no cracks.	10
DOWNSLOPE 0.50	Steep fill with boulders, large trees 1H:1V slopes. Stable minor erosion.	8
VEGETATION 0.50	No vegetation on wall.	8
LATERAL SLOPE 0.50	Wall connected to guardwall and adjacent to existing bin wall.	9
ROAD/SIDEWALK/SHOULDER 0.50	Roadway under construction.	9
ARCHITECTURAL FACING 0.50	Formliner. Excellent condition. Newly constructed.	10
CULVERT 0.50	One 24" CMP culvert. New condition.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.136\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-11.142-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Bin wall with guardwall that is faced with schist stone veneer on top and traffic and formliner on back side.		

### Wall Measurements

<b>Wall Length (ft.):</b>	172	<b>Face Area (sq.):</b>	2700
<b>Average Wall Height (ft.):</b>	15	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	30	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No rotation, settlement or global stability issues.	9
WALL FOUNDATION MATERIAL 8.00	Loose fill with large bushes. Sufficient to support wall.	8
BIN OR CRIB 8.00	All bins are intact. No damage or excessive corrosion. All bins maintain the original batter. Good condition.	9
DOWNSLOPE 0.50	Compacted schist rock and stable soil with large trees.	8
LATERAL SLOPE 0.50	Adjacent to cast in place concrete walls on both sides.	8
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
TRAFFIC BARRIER/FENCE 0.50	Guardwall with schist stone on traffic & top faces and formliner on back side. Newly constructed.	10
WALL DRAINS 1.00	No drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.142\_L\_1.jpg**



**SEQU\_0010\_11.142\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-11.175-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	96	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with formliner replicating schist and a parapet with formliner on other face and schist veneer on top and traffic sides. This wall has not been constructed but is formed.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	422	<b>Face Area (sq.):</b>	4600
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall under construction.	10
WALL FOUNDATION MATERIAL 8.00	Compacted fill and good condition.	9
CONCRETE 8.00	Wall under construction. The wall is being formed but not constructed.	10
DOWNSLOPE 0.50	Fill compacted with large tree.	8
LATERAL SLOPE 0.50	Adjacent to bin wall and guardwall.	9
ROAD/SIDEWALK/SHOULDER 0.50	Road under construction.	9
WALL DRAINS 0.50	Weep holes are installed.	10

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.175\_L\_1.jpg**



**SEQU\_0010\_11.175\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.266-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	96	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Simulated Stone
<b>General Description:</b>	Cast in place concrete wall with formliner replicating schist and a parapet with formliner on other face and schist veneer on top and traffic sides.		

### Wall Measurements

<b>Wall Length (ft.):</b>	71	<b>Face Area (sq.):</b>	560
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Newly constructed	10
WALL FOUNDATION MATERIAL 8.00	Compacted fill. Excellent condition and sufficient to support wall. Newly constructed.	9
CONCRETE 8.00	Newly constructed wall. Concrete is sound or cracks.	10
DOWNSLOPE 0.50	Steep fill with boulders, large trees. 1H:1V slope - stable with minor erosion.	8
VEGETATION 0.50	No vegetation on wall face.	8
LATERAL SLOPE 0.50	Wall connected to guardwall and rock outcrop	9
ROAD/SIDEWALK/SHOULDER 0.50	Roadway under construction.	9
ARCHITECTURAL FACING 0.50	Formliner. Excellent condition and newly constructed.	10
CULVERT 0.50	One 24" CMP culvert. New culvert.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.266\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-11.350-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	48	<b>Maintenance Action:</b>	Replace Elements

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone masonry wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	134	<b>Face Area (sq.):</b>	1000
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Mid-section of wall is intact. End sections of wall are bulging and missing elements.	4
WALL FOUNDATION MATERIAL 8.00	Compacted fill with schist rock, wall bottom is embedded. No undermining.	6
PLACED STONE 8.00	Schist, moderately weathered, highly fractured. Two ends of walls are failed, missing elements, large gaps	4
TRAFFIC BARRIER/FENCE 1.00	Schist stone barrier. Missing many elements and several are loose. Some areas are undermined.	4
DOWNSLOPE 1.00	Very steep 0.75H:1V fill with some trees and bushes. Some erosion.	5
LATERAL SLOPE 1.00	Loose fill and very steep. Signs of erosion.	5
ROAD/SIDEWALK/SHOULDER 1.00	Cracks in roadway caused by settlement	5
VEGETATION 1.00	No vegetation on wall and not affecting wall stability except for a Yucca plant (needs removing)	6
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Schist stone = 200 ft at \$50 = \$10,000 Rebuild guardwall = 200 ft at \$705 = \$141,000
<b>Repair Cost:</b>	\$151,000

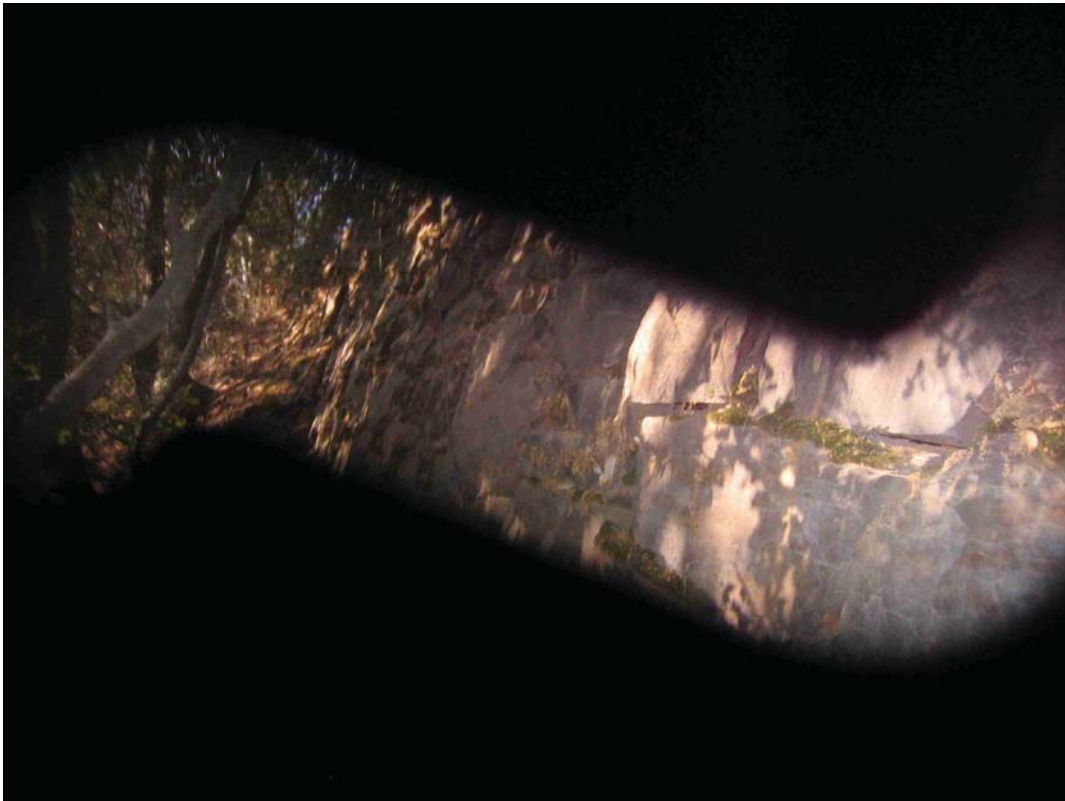
2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.350\_R\_1.jpg**



**SEQU\_0010\_11.350\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.440-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	43	<b>Maintenance Action:</b>	Replace Wall

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack schist rockery wall		

**Wall Measurements**

<b>Wall Length (ft.):</b>	45	<b>Face Area (sq.):</b>	250
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-1

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Wall is failed in segment and bulging.	4
WALL FOUNDATION MATERIAL 8.00	Loose fill, very steep 0.75H:1V slope. The bottom of wall is embedded.	6
PLACED STONE 8.00	Stones are schist moderately weathered and fractured. Missing elements, elements moved, and wall rotated.	4
ROAD/SIDEWALK/SHOULDER 1.00	Cracks and distress caused by wall movement.	4
DOWNSLOPE 1.00	Very steep, 0.75H:1V with loose fill.	5
LATERAL SLOPE 1.00	Very steep, 0.75H:1V with minor erosion	5
WALL DRAINS 1.00	No wall drains are visible.	7
TRAFFIC BARRIER/FENCE 5.00	Schist guardwall. Missing elements or fractured. Bad condition.	3
VEGETATION 5.00	A large tree is growing in all and affecting the wall stability and integrity (Need to be removed)	3

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Rebuild wall \$100 ft <sup>2</sup> at \$50/ft <sup>2</sup> = \$5000 Remove tree - Labor (8 hrs) @ \$55/hr = \$240 Rebuild guardwall 80 ft at \$705 = \$56400
<b>Repair Cost:</b>	\$61,640

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.440\_R\_1.jpg**



**SEQU\_0010\_11.440\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-11.494-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	48	<b>Maintenance Action:</b>	Replace Wall

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stack rockery wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	76	<b>Face Area (sq.):</b>	300
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Signs of rotation, settlement, and failed segments.	4
WALL FOUNDATION MATERIAL 8.00	Fill with rock 3 ft bench and sufficient to support wall.	8
PLACED STONE 8.00	Moderately weathered schist with some cracks, missing elements, failed segment.	4
LATERAL SLOPE 1.00	Fill with rock slope. Steep 1H:1V slope with minor erosion.	5
DOWNSLOPE 1.00	Fill with rock, grass and large trees. Steep 1H:1V with moderate erosion.	6
VEGETATION 1.00	Minor vegetation is on wall face and not affecting wall stability.	7
WALL DRAINS 1.00	No wall drains are visible.	7
ROAD/SIDEWALK/SHOULDER 5.00	Half moon failure with 2 inch depression caused by wall rotation and movement.	3
TRAFFIC BARRIER/FENCE 5.00	Schist, highly weathered and cracked. Severely settled with only 2 inch above grade.	3

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Rebuild schist wall = 60 ft2 at \$50 = \$3000 Rebuild guardwall = 200 ft at \$705 = \$141000
<b>Repair Cost:</b>	\$144,000

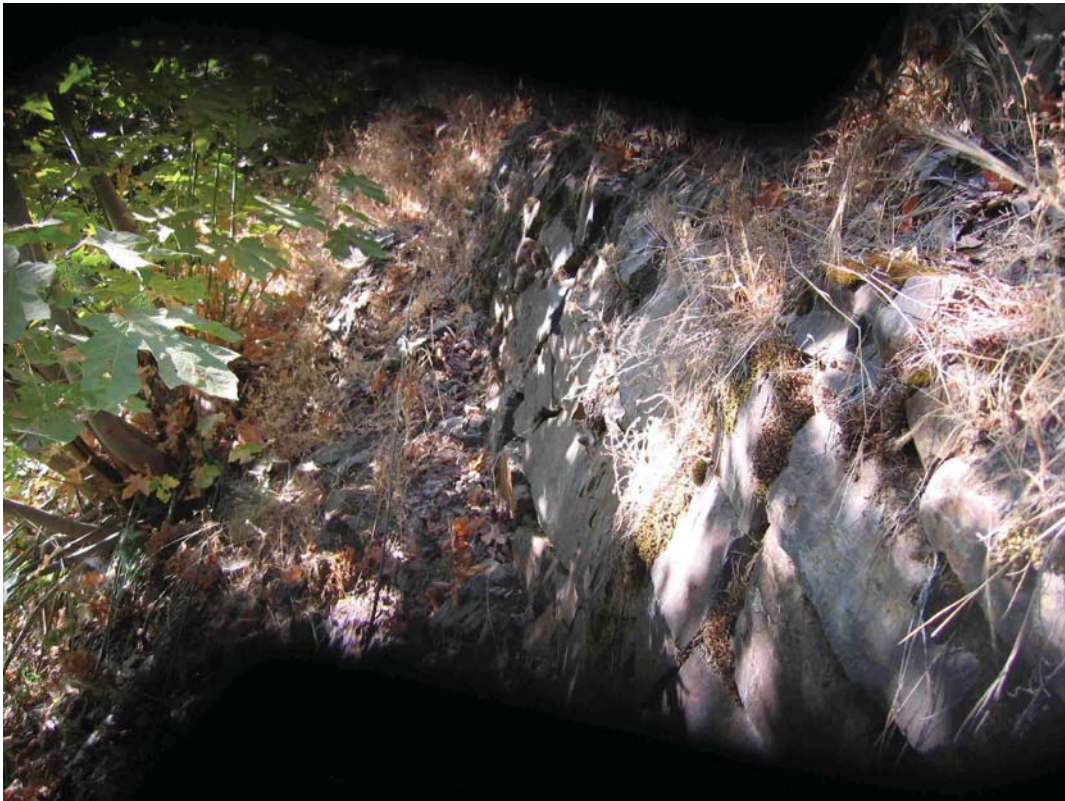
2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.494\_L\_1.jpg**



**SEQU\_0010\_11.494\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.600-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	38	<b>Maintenance Action:</b>	Replace Wall

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stacked wall with schist guardwall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	43	<b>Face Area (sq.):</b>	130
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Failed foundation and rotated wall, settlement and global failure evident.	4
WALL FOUNDATION MATERIAL 8.00	Undermined by the culvert. Not sufficient to support wall. Immediate attention needed.	3
PLACED STONE 8.00	Schist moderately weathered, cracked, bulging, missing elements.	4
CULVERT 1.00	12 in CMP culvert washing foundation from under wall.	4
ROAD/SIDEWALK/SHOULDER 1.00	Cracking and depression due to wall settlement.	4
VEGETATION 1.00	Large tree stump and affecting wall stability.	4
DOWNSLOPE 1.00	Very steep. Loose 0.75H:1V with trees and bushes with moderate eroded.	6
LATERAL SLOPE 1.00	Very steep, compacted fill with grass and bushes. Severe erosion.	6
WALL DRAINS 1.00	No drains were visible in wall.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Rebuild wall 130 ft at \$50 = \$6,500 Rebuild guardwall 180 ft at \$705 = \$126,900
<b>Repair Cost:</b>	\$133,400

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.600\_R\_1.jpg**



**SEQU\_0010\_11.600\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-11.662-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	62	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared schist stone wall with schist parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	178	<b>Face Area (sq.):</b>	450
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance, moderate settlement and rotation are evident.	6
WALL FOUNDATION MATERIAL 8.00	Compacted fill with boulders and 5 ft bench.	7
MORTAR 8.00	Mortar is showing signs of cracking and shrinkage. Some missing sections.	6
STONE MASONRY 8.00	Slightly weathered schist and missing elements.	6
ROAD/SIDEWALK/SHOULDER 1.00	Cracks caused by wall settlement and rotation.	4
TRAFFIC BARRIER/FENCE 1.00	Guardwall with mortared schist stone. Poor condition, weathered, cracked, moved and missing elements.	4
DOWNSLOPE 1.00	Very steep 1H:1V slope with bedrock, weathered rock, trees and bushes.	7
LATERAL SLOPE 1.00	Minor erosion and steep slope.	7
VEGETATION 1.00	Minor vegetation on wall but not affecting wall stability	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Reset elements (mortared stone) = 20 ft2 at \$160 = \$3200
<b>Repair Cost:</b>	\$3,200

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.662\_R\_1.jpg**



**SEQU\_0010\_11.662\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.715-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	59	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared granite stone wall with a 20 ft long segment of schist dry stack under culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	59	<b>Face Area (sq.):</b>	230
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Intact but slight rotation and settlement	6
WALL FOUNDATION MATERIAL 8.00	Compacted fill and bedrock. Steep-washed out near the culvert	6
MORTAR 8.00	Slightly weathered, shrinkage, missing sections.	6
PLACED STONE 8.00	Granite/schist show some weathering	6
ROAD/SIDEWALK/SHOULDER 1.00	Cracked and distressed, settlement due to wall movement	4
TRAFFIC BARRIER/FENCE 1.00	Guardwall with schist mortared cut stone - Bad condition.	4
DOWNSLOPE 1.00	Weathered bedrock 0.5H:1V with bushes. Erosion beneath pipe.	5
LATERAL SLOPE 1.00	Weathered bedrock. Very steep and eroded	5
CULVERT 1.00	One 18" culvert. Performing as intended.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Replace guardwall 160 ft long @ \$705 = \$112,800
<b>Repair Cost:</b>	\$112,800

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.715\_R\_1.jpg**



**SEQU\_0010\_11.715\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-11.752-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) with a granite parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	87	<b>Face Area (sq.):</b>	780
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	16	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of rotation, global instability or settlement	8
WALL FOUNDATION MATERIAL 8.00	Granite bedrock and 5 ft bench.	8
MORTAR 8.00	Some cracking and missing sections.	7
STONE MASONRY 8.00	Strong, competent granite. No weathering or cracking	8
DOWNSLOPE 0.50	Bedrock, strong competent granite with large trees stable.	8
LATERAL SLOPE 0.50	Minor erosion and steep slope. One end at rock outcrop	8
ROAD/SIDEWALK/SHOULDER 0.50	Some cracking but not related to wall movement.	8
TRAFFIC BARRIER/FENCE 0.50	Intact granite, strong and competent.	8
WALL DRAINS 1.00	No drains visible	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Repair a cracked section ( 50 ft2) at \$130/ft2 = \$6500 at beginning of wall
<b>Repair Cost:</b>	\$6,500

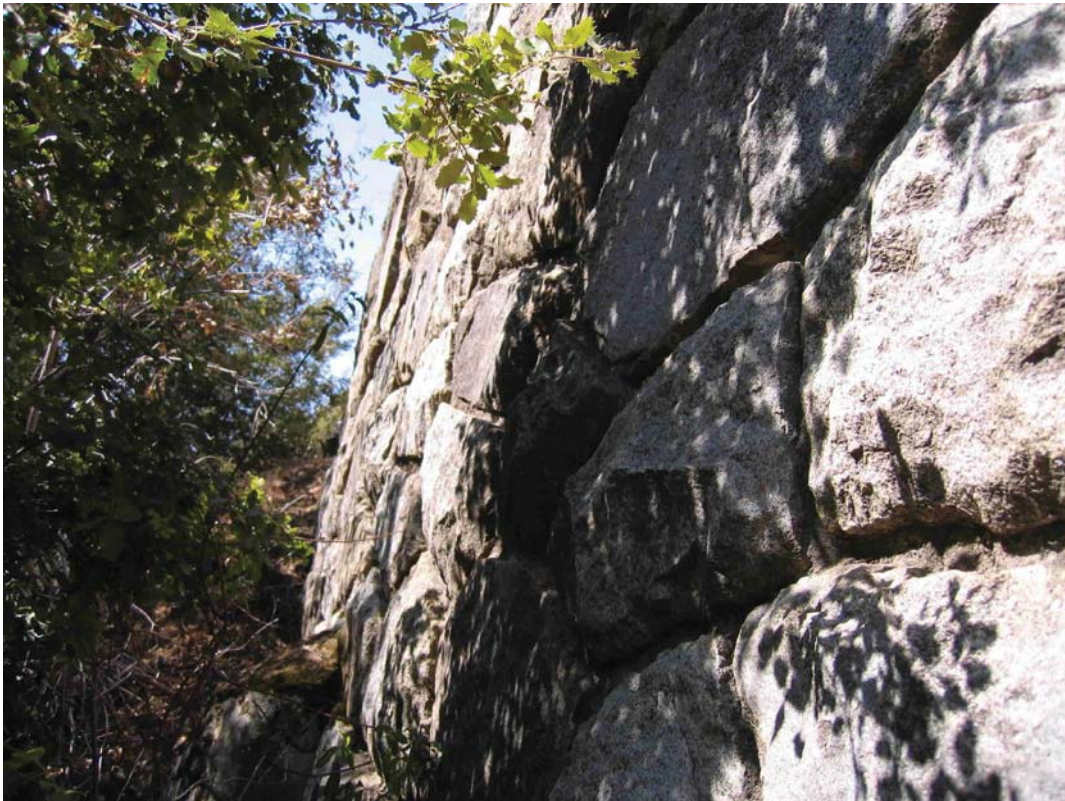
2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.752\_R\_1.jpg**



**SEQU\_0010\_11.752\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.774-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	65	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) with a granite parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	66	<b>Face Area (sq.):</b>	660
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Wall appears to be hit by traffic and shifted at midpoint.	6
WALL FOUNDATION MATERIAL 8.00	Bedrock, granite, strong and competent	8
MORTAR 8.00	Mortar is generally in good condition. Missing segments and some cracking. A large crack in mid wall. (Requires repair)	6
STONE MASONRY 8.00	Strong competent, granite stone. No weathering, some missing elements, a large cracked segment.	6
DOWNSLOPE 0.50	Strong, competent bedrock	8
LATERAL SLOPE 0.50	Minor erosion and steep slope next to rock outcrop.	8
ROAD/SIDEWALK/SHOULDER 1.00	Some cracking due to settlement.	6
TRAFFIC BARRIER/FENCE 1.00	Generally competent and intact. One shifted movement in midpoint.	6
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Repair a cracked section at mid point of wall (50 ft2) at \$130/ft2 = \$6500
<b>Repair Cost:</b>	\$6,500

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.774\_R\_1.jpg**



**SEQU\_0010\_11.774\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-11.985-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	59	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack rockery wall (Granite/Schist)		

### Wall Measurements

<b>Wall Length (ft.):</b>	65	<b>Face Area (sq.):</b>	900
<b>Average Wall Height (ft.):</b>	13	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs or settlement, rotation or global instability	6
WALL FOUNDATION MATERIAL 8.00	Competent strong fill on bedrock. Very steep .75H:1V some erosion	6
PLACED STONE 8.00	Schist with some weathering.	6
DOWNSLOPE 1.00	Very steep .75H:1V moderate erosion	5
LATERAL SLOPE 1.00	Bedrock will loose fill and eroded	5
ROAD/SIDEWALK/SHOULDER 1.00	Crack due to settlement	5
VEGETATION 1.00	Minor vegetation on wall but not affecting stability	5
WALL DRAINS 1.00	No wall drains were visible	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_11.985\_R\_1.jpg**



**SEQU\_0010\_11.985\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-12.023-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	65	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Concrete Headwall for a 4 ft CMP culvert.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	14	<b>Face Area (sq.):</b>	80
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of settlement or movement.	7
WALL FOUNDATION MATERIAL 8.00	Fill with boulders	7
CONCRETE 8.00	Concrete is severely weathered. Aggregate and rebar exposed	5
LATERAL SLOPE 0.50	Bedrock schist with some weathering	8
UPSLOPE 0.50	Bedrock, schist. Good condition.	8
VEGETATION 0.50	No vegetation affecting culvert	8
CULVERT 1.00	4' CMP in moderate condition with some rust but generally good	7
WALL DRAINS 1.00	No drains are visible.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.023\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.057-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stack wall		

### Wall Measurements

<b>Wall Length (ft.):</b>	13	<b>Face Area (sq.):</b>	150
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	-5

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No settlement or rotation.	7
WALL FOUNDATION MATERIAL 8.00	Granite bedrock, strong competent	8
PLACED STONE 8.00	Schist stone, competent strong, slightly weathered.	7
DOWNSLOPE 0.50	Loose materials on bedrock. 1H:1V slope with some erosion.	8
LATERAL SLOPE 0.50	Granite bedrock, strong, competent.	8
VEGETATION 0.50	No vegetation on wall face.	8
CULVERT 1.00	One CMP next to wall in good condition. Not a headwall.	7
WALL DRAINS 1.00	No wall drains were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.057\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.089-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	67	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite dry stack rockery wall to retain cut.		

### Wall Measurements

<b>Wall Length (ft.):</b>	83	<b>Face Area (sq.):</b>	300
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Minor rotation and settlement are observed.	7
WALL FOUNDATION MATERIAL 8.00	Loose fill material will boulder sufficient to support wall.	7
PLACED STONE 8.00	Granite stone, strong competent rock. No weathering or cracking, missing element.	6
LATERAL SLOPE 0.50	Large boulders and bedrock. Minor weathering.	8
DOWNSLOPE 1.00	Loose fill on bedrock steep 1H:1V	7
VEGETATION 1.00	Some vegetation is in the wall. Not affecting all performance.	7
WALL DRAINS 1.00	No wall drains were evident.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.089\_R\_1.jpg**



**SEQU\_0010\_12.089\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-12.144-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	72	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Slope Protection	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite dry stack rock slope protection to retain a fill.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	73	<b>Face Area (sq.):</b>	1100
<b>Average Wall Height (ft.):</b>	15	<b>Face Angle (deg.):</b>	45
<b>Maximum Wall Height (ft.):</b>	30	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No movement is observed. Strong, competent are light against slopes.	7
WALL FOUNDATION MATERIAL 8.00	Fill is boulders over bedrock.	8
PLACED STONE 8.00	Granite stone slope protection. Strong competent stones, lightly packed against slope. Slightly bulging and missing very few elements.	7
TRAFFIC BARRIER/FENCE 1.00	Guard rail is damaged.	5
CULVERT 1.00	One 24" CMP. Fair condition. Culvert is clean and functional.	7
DOWNSLOPE 1.00	Boulders, drainage relatively flat.	7
LATERAL SLOPE 1.00	Some erosion on one side. Fill material other granite bedrock.	7
ROAD/SIDEWALK/SHOULDER 1.00	Minor transverse cracking. Good condition.	7
WALL DRAINS 1.00	No drains are visible.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.144\_R\_1.jpg**



**SEQU\_0010\_12.144\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-12.172-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone headwall for 4 ft CMP culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	24	<b>Face Area (sq.):</b>	100
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No signs of global instability or settlement.	8
WALL FOUNDATION MATERIAL 8.00	Granite bedrock. Strong and competent.	9
MORTAR 8.00	Mortar showed moderate shrinkage.	7
STONE MASONRY 8.00	Granite, strong, competent. No weathering or cracking.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracking or distress	8
TRAFFIC BARRIER/FENCE 0.50	Mortared masonry granite barrier. Good condition.	8
LATERAL SLOPE 0.50	Bedrock granite. Strong and competent. No erosion.	9
UPSLOPE 0.50	Bedrock Cliff (Granite)	9
WALL DRAINS 1.00	No drains are visible. One pipe in the wall, not sure if used for drainage.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.172\_R\_1.jpg**



**SEQU\_0010\_12.172\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-12.183-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	A dry stack wall to hide a water tank (Granite)		

### Wall Measurements

<b>Wall Length (ft.):</b>	11	<b>Face Area (sq.):</b>	70
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Not retaining soil. No movement or global instability exist.	8
WALL FOUNDATION MATERIAL 8.00	Granite bedrock, strong	9
PLACED STONE 8.00	Strong competent granite stone. No weathering or cracking.	8
DOWNSLOPE 0.50	Paved.	8
LATERAL SLOPE 0.50	Bedrock, granite, massive.	8
UPSLOPE 0.50	Bedrock granite massive.	8
VEGETATION 0.50	No vegetation exist on wall face.	8
WALL DRAINS 1.00	No drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.183\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-12.192-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Switchback Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked wall (Granite) with granite parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	67	<b>Face Area (sq.):</b>	1050
<b>Average Wall Height (ft.):</b>	15	<b>Face Angle (deg.):</b>	68
<b>Maximum Wall Height (ft.):</b>	18	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No major rotation, settlement or global failure.	8
WALL FOUNDATION MATERIAL 8.00	Compacted road base with rocks, strong. Sufficient to support wall.	9
PLACED STONE 8.00	Granite, competent, strong, strong. No weathering or cracking. No missing elements. Slight bulging is observed.	7
DOWNSLOPE 0.50	Paved.	8
UPSLOPE 0.50	Paved.	8
LATERAL SLOPE 0.50	Granite bedrock, strong, competent.	9
TRAFFIC BARRIER/FENCE 1.00	Granite guardwall with mortared granite stones. Damage and missing stones.	6
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Repair parapet 30 lft at \$705 = \$21,150
<b>Repair Cost:</b>	\$21,150

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.192\_L\_1.jpg**



**SEQU\_0010\_12.192\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-12.220-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry granite wall with a mortared masonry parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	26	<b>Face Area (sq.):</b>	65
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	78
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	8
WALL FOUNDATION MATERIAL 8.00	Granite, strong, competent bedrock.	9
MORTAR 8.00	Mortar is in good condition. Not visible due to mold (moss)	7
STONE MASONRY 8.00	Competent, strong granite. No weathering or cracking.	8
ROAD/SIDEWALK/SHOULDER 0.50	No crack or distress caused by wall.	8
TRAFFIC BARRIER/FENCE 0.50	Good condition. Mortared and granite stain.	8
VEGETATION 0.50	No vegetation growing in wall face.	8
DOWNSLOPE 0.50	Granite bedrock, no erosion.	9
LATERAL SLOPE 0.50	Granite bedrock, no erosion.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.220\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.337-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall (10 X X) with metal beam and wooden post guardrail.		

### Wall Measurements

<b>Wall Length (ft.):</b>	146	<b>Face Area (sq.):</b>	1700
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	82
<b>Maximum Wall Height (ft.):</b>	16	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance.	8
WALL FOUNDATION MATERIAL 8.00	Compacted fill with rock all bottom of bins are embedded, sufficient to support wall. Three bins section are founded on a concrete foundation block.	8
BIN OR CRIB 8.00	All bins are intact. Batter of wall is good (78 deg). No signs of significant rotation. No excessive corrosion. Only couple of bent wall are caused by a growing tree	8
TRAFFIC BARRIER/FENCE 0.50	Guardrail is in good condition. All posts are intact.	8
DOWNSLOPE 1.00	Fill materials and some erosion and large trees.	7
LATERAL SLOPE 1.00	Fill with large trees. Minor erosion.	7
ROAD/SIDEWALK/SHOULDER 1.00	Some cracks due to settlement.	7
WALL DRAINS 1.00	No wall drain were visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove tree, Labor (2 hrs) @ \$55/hr = \$110.00
<b>Repair Cost:</b>	\$110

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.337\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-12.341-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	67	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite dry stack rockery wall to retain a cut.		

### Wall Measurements

<b>Wall Length (ft.):</b>	180	<b>Face Area (sq.):</b>	1000
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	62
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. The wall appears to functioning good even though rocks are not stacked in an engineered fashion.	7
WALL FOUNDATION MATERIAL 8.00	Compacted fill. Strong and competent.	8
PLACED STONE 8.00	Granite, strong, competent rock. Not very well stacked, some loose rocks.	5
LATERAL SLOPE 1.00	Moderate erosion. Fill with bushes and trees.	7
UPSLOPE 1.00	1H:1V fill with some erosion with large trees.	7
VEGETATION 1.00	Some vegetation (bushes) growing on wall. Not affecting wall stability.	7
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.341\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.379-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	67	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Bin wall (10X X) with guardrail (wooden post and metal beam)		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	150
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Some rotation of wall is evident.	6
WALL FOUNDATION MATERIAL 8.00	Compacted fill with 5 ft bench. Sufficient to support wall.	8
BIN OR CRIB 8.00	All bins are intact. Batter of wall (85 deg) show signs of rotation and cracks on roadway indicate settlement.	6
TRAFFIC BARRIER/FENCE 0.50	Guardrail in good condition. All posts intact.	8
ROAD/SIDEWALK/SHOULDER 1.00	Cracks due to wall rotation or settlement.	6
DOWNSLOPE 1.00	Fill materials, some erosion, large trees.	7
LATERAL SLOPE 1.00	Fill with large trees. Minor erosion.	7
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.379\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.459-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite dry stack cut wall to retain cut		

### Wall Measurements

<b>Wall Length (ft.):</b>	50	<b>Face Area (sq.):</b>	350
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No rotation or settlement.	8
WALL FOUNDATION MATERIAL 8.00	Compacted fill sufficient to support wall	8
PLACED STONE 8.00	Granite, competent strong rock. No weathering or cracking but many gap	7
VEGETATION 0.50	Some vegetation growing on wall but not affecting wall performance	8
LATERAL SLOPE 0.50	Bedrock granite on one side and schist bedrock on the other side. No erosion.	9
UPSLOPE 1.00	Decomposed rock and soil. Lots of bushes and trees.	7
WALL DRAINS 1.00	No wall drains are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.459\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-12.460-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Schist dry stack fill wall		

### Wall Measurements

<b>Wall Length (ft.):</b>	37	<b>Face Area (sq.):</b>	300
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	16	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No signs of rotation or settlement. Rock right against soil	8
WALL FOUNDATION MATERIAL 8.00	Compacted fill sufficient for wall support.	7
PLACED STONE 8.00	Schist, strong competent, slightly weathering. No missing elements.	7
LATERAL SLOPE 0.50	Bedrock with fill and trees.	8
DOWNSLOPE 1.00	Fill steep slope with 1.5H:1V with large trees.	7
WALL DRAINS 1.00	No wall drain are visible.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.460\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.496-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	70	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite dry stack rockery wall to retain cut		

### Wall Measurements

<b>Wall Length (ft.):</b>	35	<b>Face Area (sq.):</b>	106
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. Rocks are not stacked well many gaps. No settlement or rotation.	7
WALL FOUNDATION MATERIAL 8.00	Compacted fill sufficient to support wall	8
PLACED STONE 8.00	Granite competent strong not well stacked. No weathering or cracking.	6
LATERAL SLOPE 1.00	Loose decomposed fill with some erosion.	7
UPSLOPE 1.00	Loose decomposed rock with large boulders. Some erosion.	7
VEGETATION 1.00	Some vegetation on wall not affecting stability.	7
WALL DRAINS 1.00	No drains are visible	7

### Repair Recommendations

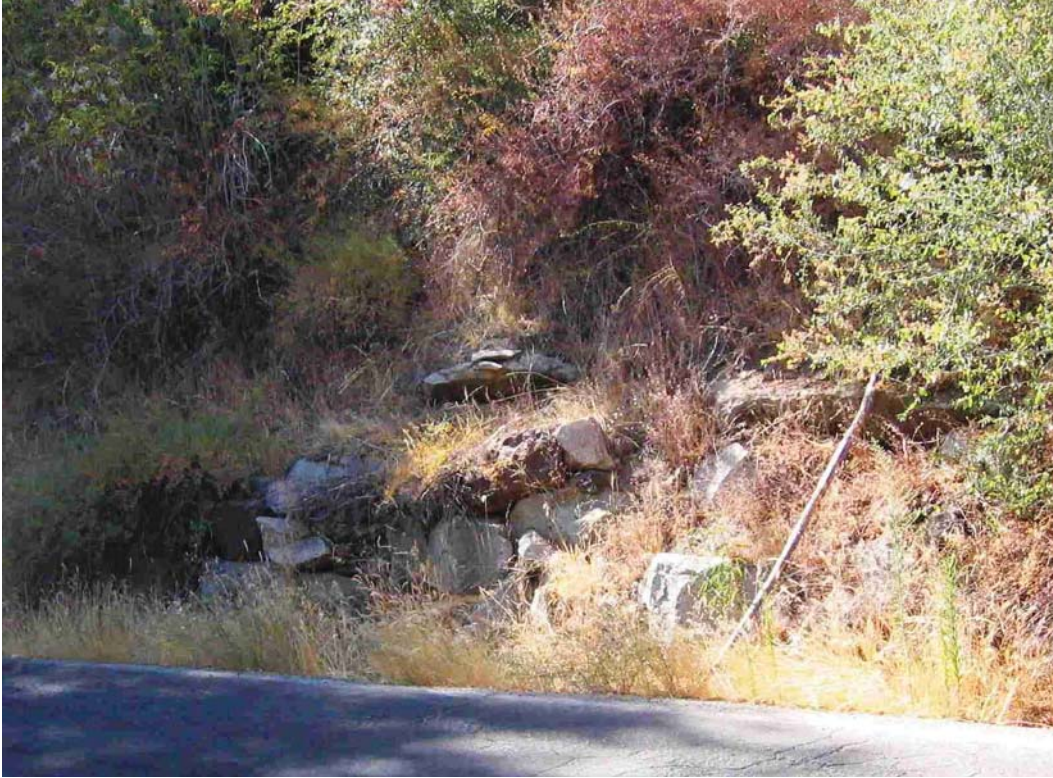
<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.496\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.665-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1970
<b>*Wall Rating:</b>	58	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall (10 XX) with wooden post and metal beam guardrail.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	162	<b>Face Area (sq.):</b>	975
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	87
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Poor performance. Obvious rotate, global instability, settlement.	5
WALL FOUNDATION MATERIAL 8.00	Loose fill with rock.	6
BIN OR CRIB 8.00	All bins are intact however rotated several degrees wall almost vertical (87 deg)	6
ROAD/SIDEWALK/SHOULDER 1.00	Half moon cracks and 1 inch settlement. Obvious movement of wall.	5
DOWNSLOPE 1.00	Loose fill - Slide area needs investigation. Visible toe slide.	6
LATERAL SLOPE 1.00	Loose fill with erosion, bushes and trees.	6
TRAFFIC BARRIER/FENCE 1.00	Metal guardrail with wood post. Poor condition.	6
VEGETATION 1.00	No vegetation growing on wall face.	7
WALL DRAINS 1.00	No drains are visible.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.665\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-12.730-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	67	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry rock (schist & granite) wall with schist parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	50	<b>Face Area (sq.):</b>	150
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance.	7
WALL FOUNDATION MATERIAL 8.00	Compacted fill. Very steep 1H:1V sufficient to support the wall.	7
MORTAR 8.00	Cracking, shrinkage, missing sections.	6
PLACED STONE 8.00	Strong competent granite and minor cracking and weathering in schist. (60% granite and 40% schist)	7
VEGETATION 0.50	No vegetation on wall face.	8
TRAFFIC BARRIER/FENCE 1.00	Schist parapet, missing stones and cracked grout - rebuild.	5
DOWNSLOPE 1.00	Fill very steep 1H:1V with trees and bushes. Some minor erosion.	6
ROAD/SIDEWALK/SHOULDER 1.00	Roadway is patched with cracks evidence of rotation or wall movement.	6
LATERAL SLOPE 1.00	Adjacent to guardwalls, minor erosion and compacted fill.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.730\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.770-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	78	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry rock (granite) wall with schist parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	48	<b>Face Area (sq.):</b>	300
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No rotation or global failure.	8
WALL FOUNDATION MATERIAL 8.00	Compacted fill with 3 feet bench.	8
MORTAR 8.00	Mortar is in good condition. Minor shrinkage.	8
PLACED STONE 8.00	Competent, strong, granite stone with slightly weathering.	8
VEGETATION 0.50	No vegetation on wall face.	8
TRAFFIC BARRIER/FENCE 1.00	Schist parapet in poor condition. Missing elements.	6
DOWNSLOPE 1.00	Fill with grass and minor erosion 1H:1V.	7
LATERAL SLOPE 1.00	Fill with large trees. Adjacent to guardwall on both ends. Flat slope 2H:1V	7
ROAD/SIDEWALK/SHOULDER 1.00	Cracks in road but not related to settlement.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.770\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.797-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	74	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry granite wall with schist parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	187	<b>Face Area (sq.):</b>	1200
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. No global instability, bulging or rotation.	7
WALL FOUNDATION MATERIAL 8.00	Fill compacted and sufficient to support wall.	8
MORTAR 8.00	The mortar showed signs of shrinkage and missing section at beginning of wall.	7
PLACED STONE 8.00	Competent, strong, granite slight weathering. Some blocks are schist.	8
TRAFFIC BARRIER/FENCE 1.00	Schist parapet with some granite. Poor condition needs rebuilding.	5
DOWNSLOPE 1.00	Compacted fill stable with large trees. Steep slope 1H:1V.	7
LATERAL SLOPE 1.00	Connected to guardwalls. Slopes are compacted fill and trees with slight erosion.	7
ROAD/SIDEWALK/SHOULDER 1.00	No cracks attributed to wall movement.	7
WALL DRAINS 1.00	No wall drains are in wall.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

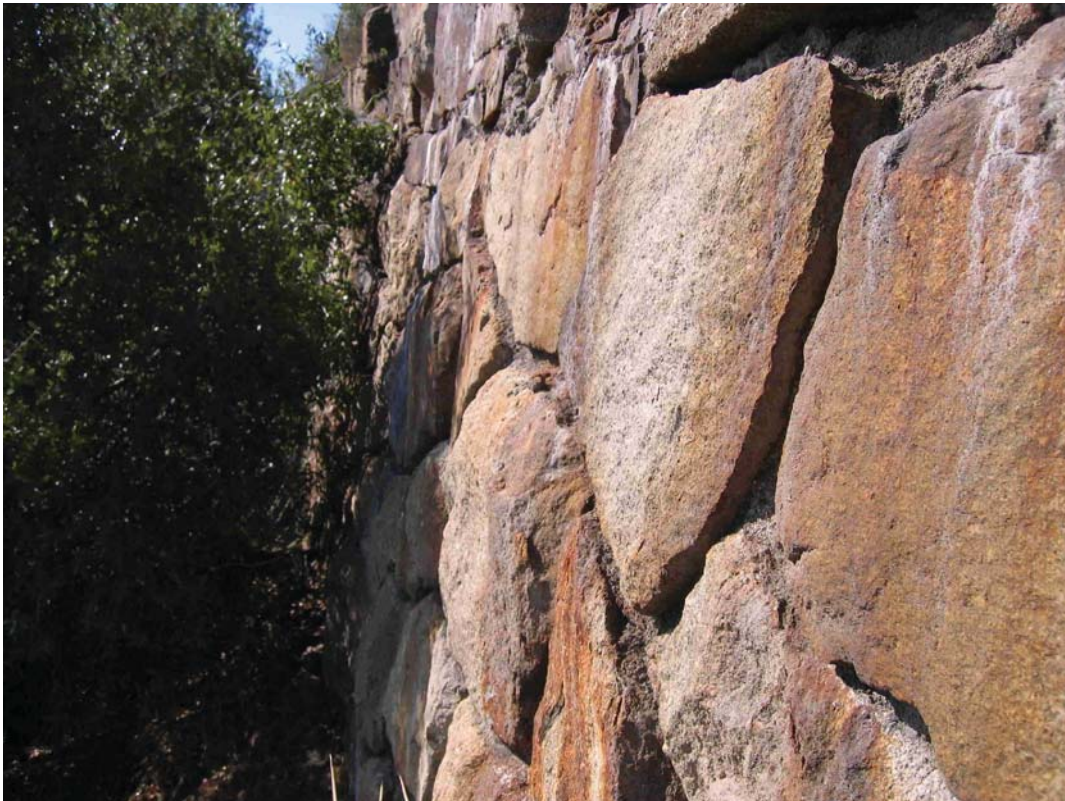


**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.797\_L\_1.jpg**



**SEQU\_0010\_12.797\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-12.801-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall in good condition, supporting Deer Ridge Overlook pullout area.		

### Wall Measurements

<b>Wall Length (ft.):</b>	60	<b>Face Area (sq.):</b>	650
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good, no significant signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	Rock fill, stable, no signs of settlement.	8
BIN OR CRIB 8.00	All bins are intact. Minor corrosion, no cracking or breaking. No significant settlement or distortion.	8
ROAD/SIDEWALK/SHOULDER 0.50	No signs of wall related settlement.	8
TRAFFIC BARRIER/FENCE 0.50	Stone masonry guardwall with some missing elements. No wall related damage.	8
DOWNSLOPE 0.50	Well vegetated rock fill. No signs of slope distress	9
LATERAL SLOPE 0.50	Stable soil, not signs of erosion.	9
WALL DRAINS 0.50	None visible, but wall appears to be draining well.	9
VEGETATION 1.00	Brush growing out of wall face.	7

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	Remove brush growing out of wall face: Labor (1 hr) @ \$55.00/hr = \$55.00
<b>Repair Cost:</b>	\$55

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0010-12.801-L.**

<b>Wall ID:</b>	SEQU-0010-12.860-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	Maintenance

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall in good condition.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	55	<b>Face Area (sq.):</b>	500
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	13	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition, no significant signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	No signs of erosion or distortion.	8
BIN OR CRIB 8.00	All bins are intact. Minor corrosion, no cracking or breaking. No significant settlement or distortion.	8
TRAFFIC BARRIER/FENCE 0.50	Metal guard rail, no wall related distress.	8
DOWNSLOPE 0.50	Well vegetated rock fill. No signs of slope distress.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9
LATERAL SLOPE 1.00	Minor erosion at upstation of wall.	7
ROAD/SIDEWALK/SHOULDER 1.00	Some signs of minor distress and settlement in the roadway.	7
VEGETATION 1.00	Bushes in wall face and on top of wall	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove vegetation from wall face: Labor (1 hr) @ \$55.00/hr = \$55.00
<b>Repair Cost:</b>	\$55

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.860\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.887-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	70	<b>Face Area (sq.):</b>	1120
<b>Average Wall Height (ft.):</b>	16	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	18	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, like new wall.	9
WALL FOUNDATION MATERIAL 8.00	Bedrock and rock fill, very stable.	9
MORTAR 8.00	Good condition, no cracking or shrinking.	8
STONE MASONRY 8.00	Excellent condition, hard, fresh granite, no weathering or distress.	10
LATERAL SLOPE 0.50	Well vegetated, stable soil, no erosion.	8
WALL DRAINS 0.50	None visible but wall appears to be draining well.	8
TRAFFIC BARRIER/FENCE 0.50	Placed boulders near road edge, no wall related distress.	9
ROAD/SIDEWALK/SHOULDER 1.00	Significant settlement and patching is evident.	6

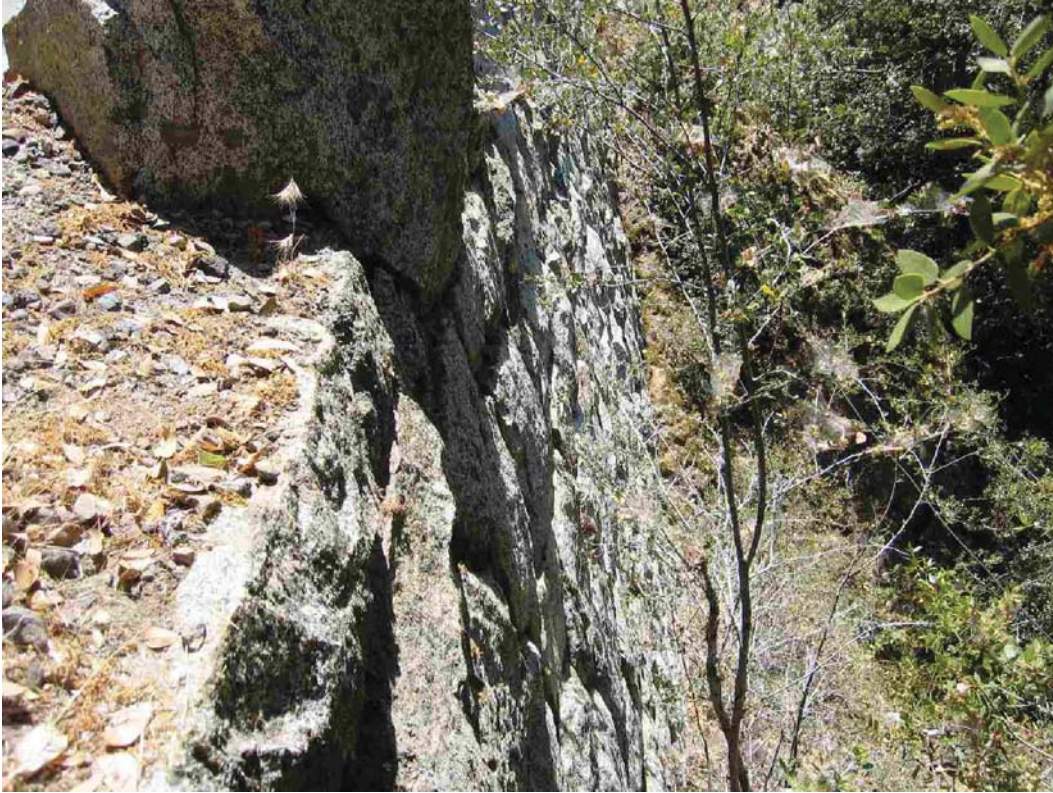
### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.887\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-12.905-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	50	<b>Face Area (sq.):</b>	325
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition, no significant signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Rock fill and bedrock. No signs of distress.	9
MORTAR 8.00	Good condition, no cracking or shrinking.	8
STONE MASONRY 8.00	Excellent condition, hard, fresh granite, no weathering or distress.	10
LATERAL SLOPE 0.50	Heavily vegetated, no signs of erosion.	8
TRAFFIC BARRIER/FENCE 0.50	Placed boulders on shoulder area.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9
ROAD/SIDEWALK/SHOULDER 1.00	Minor settlement in roadway.	7
VEGETATION 1.00	Brushes growing out of wall.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.905\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-12.910-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	113	<b>Face Area (sq.):</b>	904
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	18	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent overall condition, no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Rock fill and bedrock. No signs of distress.	9
MORTAR 8.00	Good condition, no cracking or shrinking.	8
STONE MASONRY 8.00	Excellent condition, hard, fresh granite, no weathering or distress.	10
LATERAL SLOPE 0.50	Heavily vegetated, no signs of erosion.	8
TRAFFIC BARRIER/FENCE 0.50	Placed boulders on shoulder area.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9
ROAD/SIDEWALK/SHOULDER 1.00	Minor settlement in roadway.	7
VEGETATION 1.00	Brush growing out of top of wall.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove brush from top of wall: Labor (1 hr) @ \$55.00/hr = \$55.00
<b>Repair Cost:</b>	\$55

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_12.910\_L\_1.jpg**



**SEQU\_0010\_12.910\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-13.015-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	71	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Old, dry laid stone rubble wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	72	<b>Face Area (sq.):</b>	432
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is showing signs of distress and some stones are missing.	7
WALL FOUNDATION MATERIAL 8.00	Bedrock, some minor erosion.	8
PLACED STONE 8.00	Durable rock, but several missing stones and some were poorly placed.	7
LATERAL SLOPE 0.50	Anchored by big tree on one side. No signs of major distress.	8
TRAFFIC BARRIER/FENCE 0.50	Steel guardrail in good condition.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9
DOWNSLOPE 1.00	Very steep with moderate signs of erosion.	5
ROAD/SIDEWALK/SHOULDER 1.00	Significant cracking, patching, and settlement in the roadway.	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove brush from wall face: Labor (2 hrs) @ \$55/hr = \$110.00
<b>Repair Cost:</b>	\$110

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.015\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-13.088-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall, functioning well.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	191	<b>Face Area (sq.):</b>	1625
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	13	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good, no significant signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	Rock fill, stable, no signs of settlement.	8
BIN OR CRIB 8.00	All bins are intact. Minor corrosion, no breaking or cracking, no significant distortion or settlement.	8
DOWNSLOPE 0.50	Moderately vegetated, stable soil.	8
LATERAL SLOPE 0.50	Moderately vegetated, stable soil.	8
TRAFFIC BARRIER/FENCE 0.50	Guardwall, no wall related stress.	8
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9
CURB/BERM/DITCH 1.00	Wall settlement cracking is evident in the asphalt curb.	7
ROAD/SIDEWALK/SHOULDER 1.00	Significant settlement in roadway, some patching of road surface.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.088\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-13.271-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	81	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Metal bin wall, several dents in the beams, 8 ft from wall start. Non-linear wall with an angled joint at @ 50 ft from wall start.		

### Wall Measurements

<b>Wall Length (ft.):</b>	80	<b>Face Area (sq.):</b>	810
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good wall, no significant signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	Stable soil, no distress or erosion.	8
BIN OR CRIB 8.00	All bins are intact but there are several dents in the wall beams.	8
ROAD/SIDEWALK/SHOULDER 0.50	Some settlement in the roadway, some patching of road surface.	8
DOWNSLOPE 0.50	Stable soils, no erosion evident.	9
LATERAL SLOPE 0.50	Heavily vegetated, stable soil.	9
TRAFFIC BARRIER/FENCE 0.50	Steel guardrail, no wall related stress.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove large bushes and other vegetation from top of wall and wall face areas. Labor (3 hrs) @ \$55.00/hr = \$165.00
<b>Repair Cost:</b>	\$165

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.271\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-13.297-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	65	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Old, dry laid stone wall, heavily vegetated, moss covered. Suggest foundation be monitored.		

### Wall Measurements

<b>Wall Length (ft.):</b>	19	<b>Face Area (sq.):</b>	120
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good wall overall for its age, but minor foundation issues; recommend monitoring foundation.	7
WALL FOUNDATION MATERIAL 8.00	Eroding soil at foundation.	5
PLACED STONE 8.00	No significant distress and no movement evident, but some stones are missing.	7
ROAD/SIDEWALK/SHOULDER 0.50	Some settlement in the roadway, some patching of road surface.	8
TRAFFIC BARRIER/FENCE 0.50	Steel guardrail, no wall related distress.	8
WALL DRAINS 0.50	None visible but wall appears to be draining well.	8
LATERAL SLOPE 0.50	Stable soils, no signs of erosion or movement.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.297\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-13.302-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	85	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared, stone wall in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	76	<b>Face Area (sq.):</b>	380
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performing wall, no significant distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil, no signs of movement or distress.	8
MANUFACTURED BLOCK/BRICK 8.00	Good condition, minor weathering, no signs of distress	8
MORTAR 8.00	Mortar in good condition, no signs of shrinking or cracking.	9
ROAD/SIDEWALK/SHOULDER 0.50	Some settlement in the roadway.	8
LATERAL SLOPE 0.50	Stable slope, no signs of distress, no erosion evident.	9
TRAFFIC BARRIER/FENCE 0.50	Large stones placed intermittently in roadway shoulder area. No signs of distress.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.302\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-13.480-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	71	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Old, dry laid rockery wall with some voids, soil covering much of the wall. Consider monitoring wall annually.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	180
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good overall, but the voids in the wall face should be monitored.	7
WALL FOUNDATION MATERIAL 8.00	Stable soil, no signs of distress.	8
PLACED STONE 8.00	Stones in good condition, but covered with soil and vegetation. Some voids in wall face.	6
ROAD/SIDEWALK/SHOULDER 0.50	Minor roadway settlement, some patching of road surface.	8
WALL DRAINS 0.50	None visible but wall appears to be draining well.	8
LATERAL SLOPE 0.50	Moderately vegetated, stable soil. No signs of wall-related stress.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.480\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-13.580-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Steel bin wall in good condition		

### Wall Measurements

<b>Wall Length (ft.):</b>	50	<b>Face Area (sq.):</b>	185
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, slight settlement of road to centerline.	8
WALL FOUNDATION MATERIAL 8.00	Stable soil, no distress.	8
BIN OR CRIB 8.00	All bins are intact and in good condition.	8
LATERAL SLOPE 0.50	Good, stable soil; at wall begin stones placed to maintain lateral slope stability (4' H x 6' W).	8
UPSLOPE 0.50	Paved partially at wall begin and end.	8
WALL DRAINS 0.50	None visible but wall appears to be draining well.	8
DOWNSLOPE 0.50	Heavily vegetated, stable soil.	9

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

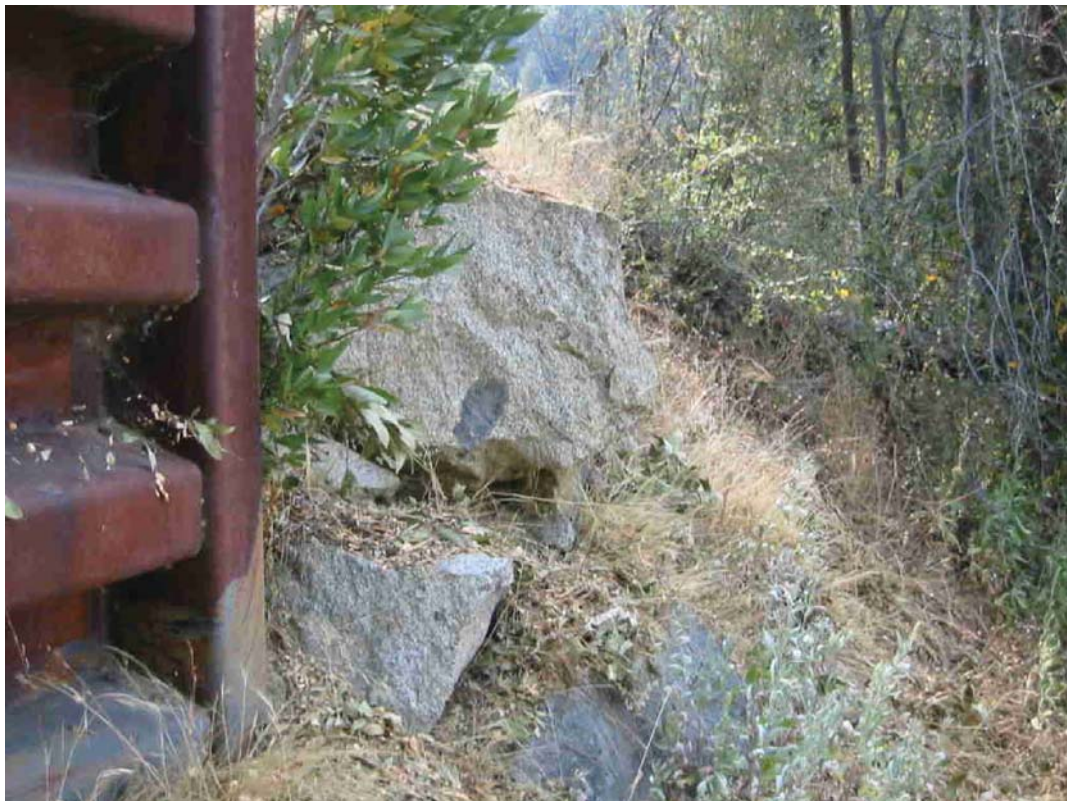


**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.580\_L\_1.jpg**



**SEQU\_0010\_13.580\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-13.667-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rockery cut wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	240
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	55
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well as designed.	9
WALL FOUNDATION MATERIAL 8.00	Stable bedrock and roadway.	9
PLACED STONE 8.00	Excellent condition.	9
LATERAL SLOPE 0.50	Stable, no signs of erosion.	9
ROAD/SIDEWALK/SHOULDER 0.50	No wall induced stress.	9
UPSLOPE 0.50	Stable soils, no signs of erosion.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_13.667\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-15.945-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone culvert head wall with wing walls at a pullout in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	13	<b>Face Area (sq.):</b>	110
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	88
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Very good, stable soil and rock.	9
MORTAR 8.00	Good condition, no signs of shrinking or cracking, a few small voids.	9
PLACED STONE 8.00	Good condition, no signs of weathering or corrosion.	9
CULVERT 0.50	Very rusty culvert, but not critical.	8
ARCHITECTURAL FACING 0.50	Not visible, but wall appears to be draining well.	9
LATERAL SLOPE 0.50	No signs of distress, no erosion, stable soil.	9
WALL DRAINS 0.50	None visible but wall appears to be draining well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_15.945\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-18.813-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1933
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Slope Protection	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack rockery wall protecting slope under sequoia tree on Generals Highway.		

### Wall Measurements

<b>Wall Length (ft.):</b>	18	<b>Face Area (sq.):</b>	126
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition, no signs of bulging, no voids, no signs of unsettling.	8
WALL FOUNDATION MATERIAL 8.00	Stable soil foundation.	9
PLACED STONE 8.00	Hand placed stones, minor settling, no major distress.	8
LATERAL SLOPE 0.50	Stable soil and decomposed rock, no signs of erosion.	8
WALL DRAINS 0.50	None visible, but wall appears to be draining well.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_18.813\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-18.913-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1933
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Slope Protection	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack rockery wall supporting the slope under sequoia tree on Generals Highway.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	150
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance, no signs of bulging, no significant settling.	8
WALL FOUNDATION MATERIAL 8.00	Stable soil, no signs of distress.	9
PLACED STONE 8.00	Hand placed stones, minor settling.	8
LATERAL SLOPE 0.50	Stable soil and decomposed rock.	8
ROAD/SIDEWALK/SHOULDER 0.50	Minor settling in the roadway, but this is common to most of the road in the Giant Grove section of the park.	8
WALL DRAINS 0.50	None visible, but no signs of drain related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_18.913\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-18.974-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1933
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Slope Protection	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rockery wall on roadside near sequoia tree, located near sign for General Sherman Tree Parking Area.		

### Wall Measurements

<b>Wall Length (ft.):</b>	60	<b>Face Area (sq.):</b>	360
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition with only minor stone displacement.	7
WALL FOUNDATION MATERIAL 8.00	Stable soil	9
PLACED STONE 8.00	Hand placed stones, a few stones displaced pointing outward near the top layer.	7
LATERAL SLOPE 0.50	Stable soil and decomposed rock.	8
WALL DRAINS 0.50	None visible, but wall appears to be draining well.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_18.974\_R\_1.jpg**



**SEQU\_0010\_18.974\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-19.070-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	74	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Poorly constructed dry laid rockery head wall. Two large felled tree trunks lie in the drainage area.		

### Wall Measurements

<b>Wall Length (ft.):</b>	60	<b>Face Area (sq.):</b>	250
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	-3

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good to fair overall, but stone placements are of concern.	7
WALL FOUNDATION MATERIAL 8.00	No signs of major instability; stable streambed.	8
PLACED STONE 8.00	Poorly placed large stones.	7
CULVERT 0.50	Metal pipe culvert is performing well.	8
LATERAL SLOPE 0.50	Bedrock and large boulders; slope appears stable.	8
ROAD/SIDEWALK/SHOULDER 0.50	No wall-related stress.	8
WALL DRAINS 0.50	Wall appears to be draining well.	8
VEGETATION 1.00	Lots of vegetated debris, tree stumps, in and on top of stones.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_19.070\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-19.070-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	97	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Gravity mortared stone head wall with 6 ft diameter pipe, very good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	36	<b>Face Area (sq.):</b>	260
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-4

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, like new head wall.	10
WALL FOUNDATION MATERIAL 8.00	Stable bedrock.	9
MORTAR 8.00	Like new.	10
STONE MASONRY 8.00	Excellent, like new masonry stone wall.	10
WALL DRAINS 0.50	Wall appears to be draining well.	10
LATERAL SLOPE 1.00	Erodable fill material.	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_19.070\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-19.110-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	2003
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone wall with guard wall parapet, recently built, excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	310	<b>Face Area (sq.):</b>	2300
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Recently built wall performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil.	9
MORTAR 8.00	Excellent condition.	9
STONE MASONRY 8.00	Excellent condition.	9
CURB/BERM/DITCH 0.50	Solid granite curb in excellent condition.	9
ROAD/SIDEWALK/SHOULDER 0.50	No wall related stress.	9
TRAFFIC BARRIER/FENCE 0.50	Excellent condition, mortared stone guardwall.	9
WALL DRAINS 0.50	Multiple drain pipes, performing well.	9
LATERAL SLOPE 1.00	Near the wall end there is some loose soil, easily erodable.	7

### Repair Recommendations

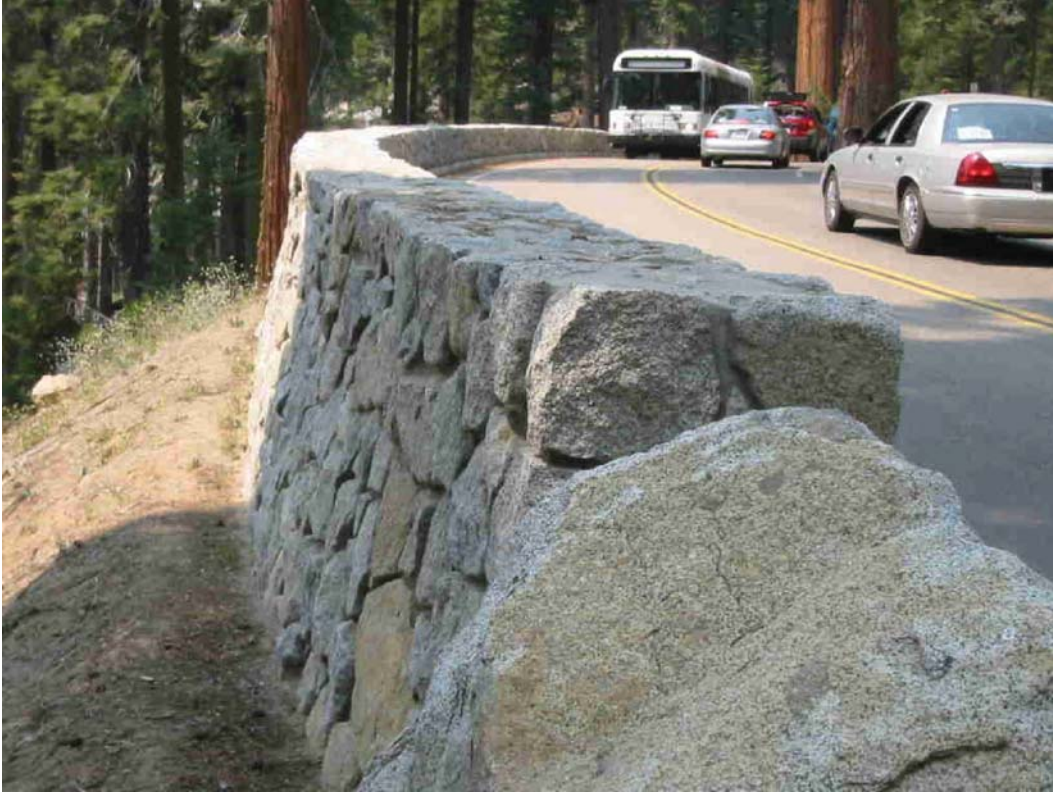
<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_19.110\_L\_1.jpg**



**SEQU\_0010\_19.110\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-20.930-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked granite stone fill wall at turn out.		

### Wall Measurements

<b>Wall Length (ft.):</b>	170	<b>Face Area (sq.):</b>	1445
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and competent soil.	8
PLACED STONE 8.00	Dry stacked granite stone in good condition.	8
DOWNSLOPE 0.50	30 feet offset from a rock ledge.	8
LATERAL SLOPE 0.50	No issues.	8
VEGETATION 0.50	No vegetation issues.	8
WALL DRAINS 0.50	No drainage issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_20.930\_L\_1.jpg**



**SEQU\_0010\_20.930\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-22.903-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Bin - Metal
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Steel galvanized bin wall, excellent condition. Near Wuksachi Village Road entrance.		

### Wall Measurements

<b>Wall Length (ft.):</b>	440	<b>Face Area (sq.):</b>	2060
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, bin face in excellent condition, stable foundation, no signs of significant distress.	9
WALL FOUNDATION MATERIAL 8.00	Possibly bedrock, or stable rock fragments and granular soil. No evidence of foundation settlement.	9
BIN OR CRIB 8.00	Excellent overall, but slight construction damage to visible bottom horizontal beam.	9
CURB/BERM/DITCH 0.50	Shallow paved ditch, broken to left in one place.	8
WALL DRAINS 0.50	None visible, free draining structure, no signs of distress.	8
DOWNSLOPE 0.50	Rocky soil downslope, mostly vegetated, stable.	9
LATERAL SLOPE 0.50	Stable soil and rock/colluvium.	9
ROAD/SIDEWALK/SHOULDER 0.50	Granular soil and rock fragments, stable.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_22.903\_L\_1.jpg**



**SEQU\_0010\_22.903\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-22.980-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall, north corner of intersection of Generals Highway and Wuksachi Lodge Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	396	<b>Face Area (sq.):</b>	2200
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Solid, stable soil.	9
PLACED STONE 8.00	Excellent granite stones, stable, no weathering,	8
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	8
UPSLOPE 0.50	Stable, compacted soil vegetated with bushes and trees.	8
WALL DRAINS 0.50	Open faced wall, self draining, no drainage related distress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_22.980\_R\_1.jpg**



**SEQU\_0010\_22.980\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-23.367-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall, double terraced, in very good condition. West side of intersection at Generals Highway and Red Fir Maintenance Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	298	<b>Face Area (sq.):</b>	2450
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent rockery wall about 8 years old, very stable with no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil, so signs of distress.	9
PLACED STONE 8.00	Excellent granite stones, stable, no weathering,	9
LATERAL SLOPE 0.50	Vegetated, stable soil, no erosion evident.	8
UPSLOPE 0.50	Heavily vegetated, stable soil.	8
WALL DRAINS 0.50	No drainage related distress evident.	8

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_23.367\_R\_1.jpg**



**SEQU\_0010\_23.367\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-23.410-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall, double terraced, in very good condition. West side of intersection at Generals Highway and Red Fir Maintenance Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	312	<b>Face Area (sq.):</b>	1700
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent rockery wall about 8 years old, very stable with no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil near roadway, no signs of distress.	9
PLACED STONE 8.00	Excellent granite stones, stable, no weathering,	9
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	8
UPSLOPE 0.50	Stable vegetated soil, no erosion evident.	8
WALL DRAINS 0.50	No drainage related distress evident.	8

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_23.410\_R\_1.jpg**



**SEQU\_0010\_23.410\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-23.423-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared, masonry stone headwall, with wingwalls, in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	38	<b>Face Area (sq.):</b>	159
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-7

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Boulders with fill, compacted, sufficient to support wall.	8
MORTAR 8.00	Excellent condition, no shrinkage or cracking.	9
STONE MASONRY 8.00	Excellent condition, no weathering, or cracking.	9
CULVERT 0.50	Excellent 4'high x 5' wide pipe, plastic lined.	8
DOWNSLOPE 0.50	Boulders and vegetation, no wall related stress.	8
LATERAL SLOPE 0.50	Stable soil, boulders, minor erosion.	8
UPSLOPE 0.50	Moderately vegetated, stable soil	8
WALL DRAINS 0.50	No drainage related distress evident.	8

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_23.423\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-23.426-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared, masonry stone headwall in good condition. Pipe is 6 ft V by 4.5 ft H.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	133
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Excellent stable soil, no signs of distress.	8
MORTAR 8.00	Excellent, no shrinkage or cracking.	9
STONE MASONRY 8.00	Excellent condition, no weathering, or cracking.	9
DOWNSLOPE 0.50	Stable vegetated soil, no erosion evident.	8
LATERAL SLOPE 0.50	Well vegetated stable soil.	8
UPSLOPE 0.50	Stable vegetated soil, no erosion evident.	8
WALL DRAINS 0.50	No drainage related distress evident.	8

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_23.426\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-23.449-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 18, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rockery cut wall in excellent condition. Located near Red Fir Maintenance Area.		

### Wall Measurements

<b>Wall Length (ft.):</b>	311	<b>Face Area (sq.):</b>	1360
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Granular stable soil.	9
PLACED STONE 8.00	Very good condition, no structural distortion on face of wall.	9
WALL DRAINS 0.50	Drains via granular soil backfill and voids between placed stones.	9
LATERAL SLOPE 0.50	Stable granular soil, vegetated, very low relief.	10
UPSLOPE 0.50	Low angle slope, stable, vegetated with bushes and large trees.	10

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_23.449\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-26.399-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 23, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	78	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite mortared rock headwall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	27	<b>Face Area (sq.):</b>	110
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-50

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance.	8
WALL FOUNDATION MATERIAL 8.00	Fill over granite boulders and sufficient to support wall.	8
MORTAR 8.00	Mortar is in excellent condition. No cracking or shrinkage.	8
STONE MASONRY 8.00	Granite, competent, strong cut stone. Excellent condition.	8
CULVERT 0.50	Culvert is 7 ft high. Constructed out of mortared granite.	9
LATERAL SLOPE 1.00	Moderate to severe erosion on one side. Riprap on the other side.	6
DOWNSLOPE 1.00	Boulders, large trees, fill, competent. Signs of erosion.	7
ROAD/SIDEWALK/SHOULDER 1.00	Cracking and depression in roadway not caused by wall.	7
UPSLOPE 1.00	Riprap over fill material. 1H:1V slope.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_26.399\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-26.399-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 23, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Granite mortared rock headwall with 7 ft arch opening. A secondary wall above wall (Gravity dry stack 11 ft by 32 ft)		

### Wall Measurements

<b>Wall Length (ft.):</b>	24	<b>Face Area (sq.):</b>	125
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-35

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance.	8
WALL FOUNDATION MATERIAL 8.00	Fill over granite boulders sufficient to support wall.	8
MORTAR 8.00	Mortar is in excellent condition. No cracking or shrinkage.	8
STONE MASONRY 8.00	Granite, competent, strong, cut stone. Excellent condition.	8
OTHER SECONDARY ELEMENT 0.50	Dry stack. Element not weathered or cracked. Missing some chinking.	8
TRAFFIC BARRIER/FENCE 1.00	Poor condition. Wooden post and metal beam (Beam -Half Moon shape)	4
CULVERT 0.50	Culvert is 7 ft high. Constructed out of mortared granite.	9
LATERAL SLOPE 1.00	Moderate to severe erosion.	6
UPSLOPE 1.00	Loose fill with some boulders and trees.	6

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_26.399\_R\_1.jpg**



**SEQU\_0010\_26.399\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-27.212-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Long, dry stacked rock wall at roadway edge behind AC shoulder.		

### Wall Measurements

<b>Wall Length (ft.):</b>	282	<b>Face Area (sq.):</b>	2650
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	55
<b>Maximum Wall Height (ft.):</b>	23	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Boulders, bedrock and soil with no erosion problems.	8
PLACED STONE 8.00	Stones are in good condition for an old wall.	8
DOWNSLOPE 0.50	Steep bouldery slope with vegetation.	8
LATERAL SLOPE 0.50	No issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or cracks within AC road.	8
VEGETATION 0.50	Some bushes on wall face and above top of wall.	8
WALL DRAINS 0.50	No drainage issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove trees and bushes from wall face and road shoulder. Labor (2 hrs) @ \$55.00/hr = \$110.00
<b>Repair Cost:</b>	\$110

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_27.212\_L\_1.jpg**



**SEQU\_0010\_27.212\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0010-27.269-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Long dry stack fill wall immediately at roadway edge behind AC shoulder.		

### Wall Measurements

<b>Wall Length (ft.):</b>	69	<b>Face Area (sq.):</b>	1050
<b>Average Wall Height (ft.):</b>	15	<b>Face Angle (deg.):</b>	58
<b>Maximum Wall Height (ft.):</b>	20	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Soil, boulders and bedrock outcrop.	8
PLACED STONE 8.00	Dry stacked granite stones in good condition.	8
DOWNSLOPE 0.50	Steep bouldery slope with vegetation.	8
LATERAL SLOPE 0.50	No issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or cracks in roadway.	8
VEGETATION 0.50	Small amount on wall face.	8
WALL DRAINS 0.50	No drainage issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove small trees and bushes from wall face and roadway shoulder. Labor and mobilization = \$100.00
<b>Repair Cost:</b>	\$100

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_27.269\_L\_1.jpg**



**SEQU\_0010\_27.269\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-27.316-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked stone fill wall at edge of roadway in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	92	<b>Face Area (sq.):</b>	670
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	55
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Steep bedrock, boulders and soil with vegetation.	8
PLACED STONE 8.00	Dry stacked granite stone in good condition.	8
DOWNSLOPE 0.50	Very steep bedrock and boulders.	8
LATERAL SLOPE 0.50	No issues.	8
VEGETATION 0.50	Small trees and bushes on wall face.	8
WALL DRAINS 0.50	No issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove vegetation and trees from wall face and top of wall. Labor and mobilization = \$100.00
<b>Repair Cost:</b>	\$100

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_27.316\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-27.336-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack stone wall at edge of roadway in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	105	<b>Face Area (sq.):</b>	1680
<b>Average Wall Height (ft.):</b>	16	<b>Face Angle (deg.):</b>	55
<b>Maximum Wall Height (ft.):</b>	32	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Mostly bedrock with competent solid foundation zones.	8
PLACED STONE 8.00	Granite stones are in good condition.	8
DOWNSLOPE 0.50	Very steep bedrock and boulders slope with vegetation.	8
LATERAL SLOPE 0.50	NO issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	Good condition no AC pavement settlement or cracks.	8
VEGETATION 0.50	Some small trees and brush on wall face and at top of wall.	8
WALL DRAINS 0.50	No drainage issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove small trees and bushes from wall face. Labor and mobilization = \$100.00
<b>Repair Cost:</b>	\$100

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_27.336\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-27.498-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked stone wall located immediately on fill side behind roadway shoulder.		

### Wall Measurements

<b>Wall Length (ft.):</b>	273	<b>Face Area (sq.):</b>	4065
<b>Average Wall Height (ft.):</b>	14	<b>Face Angle (deg.):</b>	55
<b>Maximum Wall Height (ft.):</b>	20	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall in good condition except fore one spot that could be slightly bulging.	8
WALL FOUNDATION MATERIAL 8.00	Competent soil, boulders and bedrock outcrop.	8
PLACED STONE 8.00	Durable granite stone with drainage problem at one spot causing settlement and cracks.	7
LATERAL SLOPE 0.50	No issues	8
DOWNSLOPE 1.00	Steep wooded and vegetated slope	7
VEGETATION 1.00	Some small trees and bushes on wall face.	7
WALL DRAINS 1.00	Wall drainage good. Surface drainage at one spot causing slight wall movement and settlement.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove small trees and bushes from within wall face and top of wall. Clear ditch on opposite side of settled roadway in order to limit surface runoff on wall face. Labor and mobilization = \$200.00
<b>Repair Cost:</b>	\$200

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_27.498\_L\_1.jpg**



**SEQU\_0010\_27.498\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0010-27.505-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	67	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked stone wall at roadway pavement edge on the fill side.		

### Wall Measurements

<b>Wall Length (ft.):</b>	78	<b>Face Area (sq.):</b>	680
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	52
<b>Maximum Wall Height (ft.):</b>	17	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall performing good with erosion problem.	7
WALL FOUNDATION MATERIAL 8.00	Boulders and soil with severe erosion.	6
PLACED STONE 8.00	Dry stacked stones in fair to good condition. Stones durable.	7
VEGETATION 0.50	Some vegetation growth on wall face.	8
LATERAL SLOPE 1.00	Steep to very steep boulders and rock with some erodable material.	6
WALL DRAINS 1.00	Drainable wall with erosion problem.	6
ROAD/SIDEWALK/SHOULDER 1.00	Small longitudinal cracks parallel to curb.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Grout bottom eroded 1 to 2 feet of the wall. Grouting could be combined with minor excavation, placement of additional stones. Also remove brush at edges of wall. Material and labor estimated at \$5,000.00.
<b>Repair Cost:</b>	\$5,000

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_27.505\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-30.310-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Concrete cast in-place head wall, inlet. Three old USGS water level gauges on left side of wing.		

### Wall Measurements

<b>Wall Length (ft.):</b>	78	<b>Face Area (sq.):</b>	715
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	-27

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, performing as intended.	8
WALL FOUNDATION MATERIAL 8.00	Stable stream bed, no signs of distress	9
CONCRETE 8.00	Cast-in-place concrete in good condition, no leaching, very minor spalling on cap ends.	8
CULVERT 0.50	CIP concrete with arch, good condition.	8
LATERAL SLOPE 0.50	Stable, vegetated soil, no erosion evident.	8
UPSLOPE 0.50	Trees, loose stable sandy soil embankment.	8
WALL DRAINS 0.50	None visible, but no signs of drain related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_30.310\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-30.321-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Cast in-place concrete headwall, outlet in good condition. 14 foot high concrete CIP arch culvert.		

### Wall Measurements

<b>Wall Length (ft.):</b>	83	<b>Face Area (sq.):</b>	750
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	-30

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, performing as intended	8
WALL FOUNDATION MATERIAL 8.00	Stable stream bed, no signs of distress	9
CONCRETE 8.00	CIP concrete with arch, good condition.	8
CULVERT 0.50	CIP concrete arch culvert in good condition.	8
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	8
UPSLOPE 0.50	Trees, loose, stable sandy soil embankment.	8
WALL DRAINS 0.50	None visible, but no signs of drain related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_30.321\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0010-31.052-L		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Concrete cantilever cast in-place culvert headwall in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	53	<b>Face Area (sq.):</b>	436
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	-32

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good overall performing wall, no signs of distress, but trees in culvert inlet need to be removed.	8
WALL FOUNDATION MATERIAL 8.00	Stable massive bedrock foundation.	9
CONCRETE 8.00	Cast-in-place concrete in good condition, some spalling on outlet collar and one short piece of rebar is exposed. Wings in good condition.	8
LATERAL SLOPE 0.50	Stable soil, trees and bushes.	8
UPSLOPE 0.50	Stable soil, vegetated by trees and bushes.	8
WALL DRAINS 0.50	None visible, but no signs of drain related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove large felled tree trunks and other debris from culvert opening: Labor (4 hours) @ \$55.00/hr = \$220.00
<b>Repair Cost:</b>	\$220

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_31.052\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0010-31.052-R		
<b>Route Name:</b>	GENERALS HIGHWAY HISTORIC		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Cantilever, cast in-place concrete culvert head wall in good condition.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	57	<b>Face Area (sq.):</b>	470
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	-32

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good overall performing wall, no signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	Stable massive bedrock foundation.	9
CONCRETE 8.00	Cast-in-place concrete in good condition, some spalling on outlet collar and one short piece of rebar is exposed. Wings in good condition.	8
LATERAL SLOPE 0.50	Stable soil, trees and bushes.	8
UPSLOPE 0.50	Stable soil, vegetated by trees and bushes.	8
WALL DRAINS 0.50	None visible, but no signs of drain related stress.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0010: GENERALS HIGHWAY HISTORIC**

**Retaining Wall Condition Photos**



**SEQU\_0010\_31.052\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0013-2.294-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	57	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	Gravity - Dry Stone
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid concrete rubble wall with internal dry laid rock section at 1 ft diameter culvert pipe.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	52	<b>Face Area (sq.):</b>	320
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Dry laid rock section is deforming outward at culvert.	5
WALL FOUNDATION MATERIAL 8.00	Free draining. Water problems associated with outbound drain.	5
PLACED STONE 8.00	Concrete rubble and weathered granite boulders. Concrete section is durable. Rock section is poorly laid.	4
STONE MASONRY 8.00	Cut thin concrete slabs stacked. Functioning well.	7
CULVERT 1.00	Appears to be functioning, though roadway drain is directing water to top of wall.	6
DOWNSLOPE 1.00	Steep, heavily vegetated rock fill slope. No significant erosion distress.	7
LATERAL SLOPE 1.00	No erosion, no instability, no significant distress.	7
VEGETATION 1.00	Substantial tree holding wallup near culvert.	7
ROAD/SIDEWALK/SHOULDER 5.00	Substantial settlement, cracking, patching and void at top of wall behind culvert.	3

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0013-2.294-R.**

<b>Wall ID:</b>	SEQU-0013-4.974-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Slope Protection	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Large dry laid slope protection wall. Near vertical boulder placement in some locations.		

### Wall Measurements

<b>Wall Length (ft.):</b>	175	<b>Face Area (sq.):</b>	2000
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	20	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good. No signs of global distress.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and rock fill. Very stable.	9
PLACED STONE 8.00	Sound durable granite buolders.	8
LATERAL SLOPE 0.50	No significant erosion distress. No slumping.	8
ROAD/SIDEWALK/SHOULDER 0.50	Recent full-width patch. Signs of significant fill settlement.	8
WALL DRAINS 0.50	Free draining. No wall water issues.	8
CURB/BERM/DITCH 0.50	Asphalt berm recently added to direct roadway runoff. No signs of wall-related distress.	9
DOWNSLOPE 1.00	Very steep rock fill with sparse vegetation, though several large trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0013-4.974-R.**



<b>Wall ID:</b>	SEQU-0013-5.036-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Slope Protection	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Large dry laid rock slope protection wall with very steep fill. Similar to a rockery.		

### Wall Measurements

<b>Wall Length (ft.):</b>	140	<b>Face Area (sq.):</b>	1750
<b>Average Wall Height (ft.):</b>	12	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	35	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, no signs of global distress.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and rock fill. Very stable.	9
PLACED STONE 8.00	Sound durable granite buolders.	8
LATERAL SLOPE 0.50	No significant erosion distress. No slumping.	8
ROAD/SIDEWALK/SHOULDER 0.50	Recent full-width patch. Signs of significant fill settlement.	8
WALL DRAINS 0.50	Free draining. No wall water issues.	8
CURB/BERM/DITCH 0.50	Asphalt berm recently added to direct roadway runoff. No signs of wall-related distress.	9
DOWNSLOPE 1.00	Very steep rock fill with sparse vegetation, though several large trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0013-5.036-R.**

<b>Wall ID:</b>	SEQU-0013-6.568-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Placed granite boulder rockery wall.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	90	<b>Face Area (sq.):</b>	1080
<b>Average Wall Height (ft.):</b>	12	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, no signs of global distress.	7
WALL FOUNDATION MATERIAL 8.00	Bedrock and rock fill. Very stable.	9
PLACED STONE 8.00	Hard, durable granite boulders.	8
CULVERT 0.50	Pipe is located through the fill. Functioning as intended.	8
DOWNSLOPE 0.50	Stable boulder field.	8
LATERAL SLOPE 0.50	No significant erosion distress.	8
VEGETATION 0.50	Minor vegetation at top of wall. No impacts.	8
WALL DRAINS 0.50	Free draining. No wall water issues.	8
ROAD/SIDEWALK/SHOULDER 1.00	Substantial fill settlement. Road damage due to tree fall? Patched roadway.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0013-6.568-R.**

<b>Wall ID:</b>	SEQU-0013-11.000-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	78	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Rockery fill wall at a culvert outlet.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	49	<b>Face Area (sq.):</b>	600
<b>Average Wall Height (ft.):</b>	12	<b>Face Angle (deg.):</b>	50
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good, no signs of global distress. Functioning as intended.	8
WALL FOUNDATION MATERIAL 8.00	Rock fill, table, no significant signs of distress.	7
PLACED STONE 8.00	Large, subangular durable, hard granite boulders.	9
CULVERT 0.50	24" CMP culvert, functioning as intended.	8
WALL DRAINS 0.50	Free draining. No wall water issues.	8
LATERAL SLOPE 1.00	Significant soil erosion. Poorly vegetated.	6
ROAD/SIDEWALK/SHOULDER 1.00	Patched due to culvert fill settlement. Cracked, minor settlement distress continues.	6
DOWNSLOPE 1.00	Stable, shallow drainage slope.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0013\_11.000\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0013-12.200-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Rough stacked rockery wall, very steep, large blocks, with placed fill.		

### Wall Measurements

<b>Wall Length (ft.):</b>	195	<b>Face Area (sq.):</b>	2100
<b>Average Wall Height (ft.):</b>	10	<b>Face Angle (deg.):</b>	50
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well. No significant distress.	7
WALL FOUNDATION MATERIAL 8.00	Steep loose fill, stable.	7
PLACED STONE 8.00	Large, durable, sound granite boulders.	9
ROAD/SIDEWALK/SHOULDER 0.50	Gravel road shows no wall-related distress.	8
CULVERT 1.00	Functioning as intended.	7
DOWNSLOPE 1.00	Steep, loose fill slope. Stable, vegetated with minor erosion.	7
LATERAL SLOPE 1.00	Very steep fill slopes, with minor erosion and minor vegetation.	7
VEGETATION 1.00	Some bush growing from wall face area and at top, but stabilizing soil fill in rock. Leave in place.	7
WALL DRAINS 1.00	Free draining. Some migration through wall.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0013\_12.200\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0013-12.800-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rock fill wall on outbound, interior edge of curve.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	95	<b>Face Area (sq.):</b>	760
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well. No significant distress.	7
WALL FOUNDATION MATERIAL 8.00	Steep loose fill, stable.	7
PLACED STONE 8.00	Large, durable, sound granite boulders.	9
ROAD/SIDEWALK/SHOULDER 0.50	Gravel road shows no wall-related distress.	8
CULVERT 1.00	Functioning as intended.	7
DOWNSLOPE 1.00	Steep, loose fill slope. Stable, vegetated with minor erosion.	7
LATERAL SLOPE 1.00	Very steep fill slopes, with minor erosion and minor vegetation.	7
VEGETATION 1.00	Some bush growing from wall face area and at top, but stabilizing soil fill in rock. Leave in place.	7
WALL DRAINS 1.00	Free draining. Some migration through wall.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0013\_12.800\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0013-12.838-R		
<b>Route Name:</b>	MINERAL KING ROAD		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Rough laid rockery fill wall, with a steep slope and placed rock fill with several concrete blocks placed at the top of the wall for road stability/widening.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	133	<b>Face Area (sq.):</b>	800
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well. No significant distress.	7
WALL FOUNDATION MATERIAL 8.00	Steep loose fill, stable.	7
PLACED STONE 8.00	Large, durable, sound granite boulders.	9
ROAD/SIDEWALK/SHOULDER 0.50	Gravel road shows no wall-related distress.	8
CULVERT 1.00	Functioning as intended.	7
DOWNSLOPE 1.00	Steep, loose fill slope. Stable, vegetated with minor erosion.	7
LATERAL SLOPE 1.00	Very steep fill slopes, with minor erosion and minor vegetation.	7
VEGETATION 1.00	Some bush growing from wall face area and at top, but stabilizing soil fill in rock. Leave in place.	7
WALL DRAINS 1.00	Free draining. Some migration through wall.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0013: MINERAL KING ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0013\_12.838\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0100-0.198-L		
<b>Route Name:</b>	CRYSTAL CAVE ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Gabion
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Gabion basket wall for repair of a landslide. Two rows of baskets filled with 9 in river run gravel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	130
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well as intended and constructed.	8
WALL FOUNDATION MATERIAL 8.00	No settlement, minor erosion at the bottom.	7
WIRE/GEOSYNTHETIC FACING 8.00	Gabion baskets in good condition with minor deformation from construction.	8
LATERAL SLOPE 0.50	No distress, minor erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	Minor erosion, no settlement.	8
WALL DRAINS 0.50	Wall is permeable and drains through the gabion pole.	9
DOWNSLOPE 1.00	Steep slope, could be disturbed as result of early rock slide.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0100: CRYSTAL CAVE ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0100\_0.198\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0100-0.214-L		
<b>Route Name:</b>	CRYSTAL CAVE ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked rock wall at a steep angle on fill side of the road.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	115	<b>Face Area (sq.):</b>	460
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well as constructed.	8
WALL FOUNDATION MATERIAL 8.00	No settlement or erosion.	8
PLACED STONE 8.00	Good condition, durable granite stones.	7
LATERAL SLOPE 0.50	No distress or erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	Good condition, no settlement or erosion.	8
VEGETATION 0.50	Minor vegetation at some locations.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	1:1 Slope	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0100: CRYSTAL CAVE ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0100\_0.214\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0100-0.826-L		
<b>Route Name:</b>	CRYSTAL CAVE ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack rock wall at a steep angle on fill side of the road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	261	<b>Face Area (sq.):</b>	2230
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	50
<b>Maximum Wall Height (ft.):</b>	25	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well with no distress signs.	8
WALL FOUNDATION MATERIAL 8.00	No settlement or erosion.	8
PLACED STONE 8.00	Dry stacked granite stones in good condition with no loss or settlement.	8
LATERAL SLOPE 0.50	No distress or erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	Good condition with no settlement or erosion. Minor pavement cracks and settlement.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Steep slope at approx. 1:1	7
VEGETATION 1.00	Some vegetation on wall face; would require removal.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove small trees and brush from wall face. Labor and mobilization = \$100.00
<b>Repair Cost:</b>	\$100

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0100: CRYSTAL CAVE ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0100\_0.826\_L\_1.jpg**



**SEQU\_0100\_0.826\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0100-1.576-L		
<b>Route Name:</b>	CRYSTAL CAVE ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone fill wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	85	<b>Face Area (sq.):</b>	1225
<b>Average Wall Height (ft.):</b>	14	<b>Face Angle (deg.):</b>	50
<b>Maximum Wall Height (ft.):</b>	30	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well as constructed.	8
WALL FOUNDATION MATERIAL 8.00	Rocks and boulders forming good foundation.	8
PLACED STONE 8.00	Granite stones in good condition.	8
ROAD/SIDEWALK/SHOULDER 0.50	No cracks or settlement.	8
WALL DRAINS 0.50	No drainage issues. Culvert at mid-wall height.	8
LATERAL SLOPE 1.00	Mild bouldered slope.	7
VEGETATION 1.00	Some vegetation growth on wall face.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove vegetation including small trees from wall face: Labor and mobilization = \$100.00
<b>Repair Cost:</b>	\$100

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0100: CRYSTAL CAVE ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0100\_1.576\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0100-1.586-R		
<b>Route Name:</b>	CRYSTAL CAVE ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	77	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked rock head wall with 48 in CMP culvert inlet. Large rocks 3 to 4 ft diameter.		

### Wall Measurements

<b>Wall Length (ft.):</b>	25	<b>Face Area (sq.):</b>	120
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Performing well as constructed.	8
WALL FOUNDATION MATERIAL 8.00	Competent rock at foundation.	8
PLACED STONE 8.00	Generally good condition with durable granite rock and a few displaced rock pieces.	7
LATERAL SLOPE 0.50	No settlement or erosion.	8
ROAD/SIDEWALK/SHOULDER 0.50	Good condition, no settlement.	8
UPSLOPE 0.50	Competent rock at slope.	8
WALL DRAINS 0.50	No drainage issues.	8
VEGETATION 0.50	No vegetation	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Reset two dislodged large rocks at top of wall: Labor and mobilization of equipment = \$200.00
<b>Repair Cost:</b>	\$200

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0100: CRYSTAL CAVE ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0100\_1.586\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0100-6.384-L		
<b>Route Name:</b>	CRYSTAL CAVE ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	58	<b>Maintenance Action:</b>	Replace Wall

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Crib - Timber
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Timber crib wall beginning to fail causing roadway settlement and cracks. A void exists behind top of wall from loss of soil through erosion and piping.		

### Wall Measurements

<b>Wall Length (ft.):</b>	122	<b>Face Area (sq.):</b>	725
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Beginning to fail causing roadway settlement and AC cracks.	5
WALL FOUNDATION MATERIAL 8.00	Steep slope covered with vegetation.	7
LAGGING 8.00	Timber is in fair to good condition; bulging at one location.	6
BIN OR CRIB 8.00	Timber lagging and deadman in good condition with a void at top behind wall.	7
DOWNSLOPE 1.00	Steep slope covered with vegetation.	6
LATERAL SLOPE 1.00	Vegetation growth on shoulder.	6
WALL DRAINS 1.00	Drainage via wall piping but eroding embankment is causing settlement.	6
ROAD/SIDEWALK/SHOULDER 5.00	Significant settlement to roadway center line (2-3"). Loss of fines through wall face.	3

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Replace timber crib wall with a MSE wall. Replace 1,030 sq.ft. of wall with MSE welded wire faced wall @ \$75/sq.ft. = \$77,250.00. Flexible pavement replacement of 4,000 sq.ft. @ \$12/sq.ft. = \$48,000.00. Traffic control, lumpsum = \$8,000.00. Erosion control
<b>Repair Cost:</b>	\$153,050

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0100: CRYSTAL CAVE ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0100\_6.384\_L\_1.jpg**



**SEQU\_0100\_6.384\_L\_2.jpg**



<b>Wall ID:</b>	SEQU-0101-0.095-R		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rocks, several dislodged, voids in some areas but not affecting stability.		

### Wall Measurements

<b>Wall Length (ft.):</b>	98	<b>Face Area (sq.):</b>	500
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	63
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good, no signs of significant distress.	8
WALL FOUNDATION MATERIAL 8.00	Stable soil and decomposed rock.	9
PLACED STONE 8.00	Some voids, minor vegetation, minor weathering but stable.	8
LATERAL SLOPE 0.50	Heavily vegetated on one side and a mortared stone wall on the other side.	8
WALL DRAINS 0.50	18' pipe between this wall and a wall immediately next to it.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.095\_R\_1.jpg

<b>Wall ID:</b>	SEQU-0101-0.113-R		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1995
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone fill wall in excellent condition with a mortared stone guardwall parapet.		

### Wall Measurements

<b>Wall Length (ft.):</b>	170	<b>Face Area (sq.):</b>	1530
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	63
<b>Maximum Wall Height (ft.):</b>	14	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition, wall is performing as designed, no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Solid, stable soil, no signs of distress.	9
MORTAR 8.00	Excellent condition, no signs of shrinking or cracking.	9
STONE MASONRY 8.00	Excellent condition, unweathered stones, no signs of distress.	9
LATERAL SLOPE 0.50	Stable soil, well vegetated.	8
TRAFFIC BARRIER/FENCE 0.50	Mortared stone guardwall, extension of retaining wall, in excellent condition.	9
WALL DRAINS 0.50	Small drain pipes, working well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.113\_R\_1.jpg

<b>Wall ID:</b>	SEQU-0101-0.318-L		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall, concrete drainage ditch, in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	290	<b>Face Area (sq.):</b>	1540
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, wall performing as intended, no distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable solid granular soils.	9
PLACED STONE 8.00	Excellent granite stones, no weathering, no corrosion, or cracking.	9
LATERAL SLOPE 0.50	Well vegetated, stable soil.	8
WALL DRAINS 0.50	No drainage related distress evident.	8
CURB/BERM/DITCH 0.50	Concrete drainage ditch in excellent condition.	9
UPSLOPE 0.50	Stable vegetated soil, no erosion evident.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.318\_L\_1.jpg



<b>Wall ID:</b>	SEQU-0101-0.382-R		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Crib - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Crib concrete wall, excellent condition, granular backfill.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	334	<b>Face Area (sq.):</b>	2170
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	-1

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, crib wall only about eight years old.	9
WALL FOUNDATION MATERIAL 8.00	Stable granular soil, moderate slope	9
BIN OR CRIB 8.00	Like new condition.	9
LATERAL SLOPE 0.50	Stable soil.	8
UPSLOPE 0.50	Geo-textile material, exposed in localized areas.	8
WALL DRAINS 0.50	None visible, free draining structure, no signs of distress.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.382\_R\_1.jpg



SEQU\_0101\_0.382\_R\_2.jpg

<b>Wall ID:</b>	SEQU-0101-0.794-L		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	92	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone head wall with wing wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	50	<b>Face Area (sq.):</b>	375
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition, nearly new wall.	10
WALL FOUNDATION MATERIAL 8.00	Stable solid stream bed, no signs of distress.	9
MORTAR 8.00	Excellent condition, like new.	9
STONE MASONRY 8.00	Excellent condition.	9
CULVERT 0.50	Nearly new culvert, draining well, cast concrete bottom and sides, CMP arch.	9
LATERAL SLOPE 0.50	Stable riprap.	9
TRAFFIC BARRIER/FENCE 0.50	Mortared, masonry stone guardwall with timber rails, like new.	9
WALL DRAINS 0.50	Excellent drainage system.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.794\_L\_1.jpg

<b>Wall ID:</b>	SEQU-0101-0.794-R		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	2000
<b>*Wall Rating:</b>	92	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone head wall in like new condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	51	<b>Face Area (sq.):</b>	225
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	11	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, nearly new wall performing as designed.	10
WALL FOUNDATION MATERIAL 8.00	Stable solid stream bed, no signs of distress.	9
MORTAR 8.00	Excellent condition, like new.	9
STONE MASONRY 8.00	Excellent condition.	9
CULVERT 0.50	Nearly new culvert, draining well, cast concrete bottom and side, with CMP arch.	9
LATERAL SLOPE 0.50	Stable riprap.	9
TRAFFIC BARRIER/FENCE 0.50	Mortared, masonry stone with timber rails, like new.	9
WALL DRAINS 0.50	Wall appears to be draining well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.794\_R\_1.jpg



SEQU\_0101\_0.794\_R\_2.jpg



<b>Wall ID:</b>	SEQU-0101-0.885-R		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	2000
<b>*Wall Rating:</b>	92	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone head wall, recently built.		

### Wall Measurements

<b>Wall Length (ft.):</b>	62	<b>Face Area (sq.):</b>	450
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	13	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition, nearly new wall.	10
WALL FOUNDATION MATERIAL 8.00	Stable solid stream bed, no signs of distress.	9
MORTAR 8.00	Excellent condition, like new.	9
STONE MASONRY 8.00	Excellent, like new masonry stone wall.	9
CULVERT 0.50	Nearly new culvert, draining well, cast concrete bottom and sides, CMP arch.	9
LATERAL SLOPE 0.50	Stable riprap.	9
TRAFFIC BARRIER/FENCE 0.50	Mortared, masonry stone guardwall with timber rails, like new.	9
WALL DRAINS 0.50	Wall appears to be draining well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.885\_R\_1.jpg

<b>Wall ID:</b>	SEQU-0101-0.886-L		
<b>Route Name:</b>	WUKSACHI ROAD		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	2000
<b>*Wall Rating:</b>	92	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone head wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	48	<b>Face Area (sq.):</b>	300
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, nearly new wall, performing as designed.	10
WALL FOUNDATION MATERIAL 8.00	Stable stream bed.	9
MORTAR 8.00	Excellent condition, like new.	9
STONE MASONRY 8.00	Excellent, like new masonry stone wall.	9
CULVERT 0.50	Nearly new culvert head wall, cost concrete bottom and sides with CMP arch.	9
LATERAL SLOPE 0.50	Stable riprap.	9
TRAFFIC BARRIER/FENCE 0.50	Masonry stone guardwall with timber rails in excellent condition.	9
WALL DRAINS 0.50	Excellent drainage system.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

ROUTE 0101: WUKSACHI ROAD

## Retaining Wall Condition Photos



SEQU\_0101\_0.886\_L\_1.jpg

<b>Wall ID:</b>	SEQU-0102ZZ-1.517-R		
<b>Route Name:</b>	CRESCENT MEADOW ROADS		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	78	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Culvert headwall 200 ft before tunnel.		

### Wall Measurements

<b>Wall Length (ft.):</b>	18	<b>Face Area (sq.):</b>	90
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good, with no concerns.	8
WALL FOUNDATION MATERIAL 8.00	Streambed, stable.	8
MORTAR 8.00	Some mortar is missing near top of wall.	7
STONE MASONRY 8.00	Good durable stones, but 2 are missing from wall.	8
CULVERT 0.50	Good condition, continuous flow.	8
DOWNSLOPE 0.50	Mild slope, no erosion.	8
LATERAL SLOPE 0.50	No issues, no settlement or erosion.	8
WALL DRAINS 0.50	No drainage issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	Replace stones where two are missing at top of wall and remove vegetation. Labor, two stones, plus mobilization = \$300.00
<b>Repair Cost:</b>	\$300

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0102ZZ: CRESCENT MEADOW ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0102ZZ\_1.517\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0203-0.000-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	Maintenance
<b>Wall Description</b>			
<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked granite stone fill wall located at edge of pavement with a 1 foot stone guardwall parapet.		
<b>Wall Measurements</b>			
<b>Wall Length (ft.):</b>	230	<b>Face Area (sq.):</b>	1215
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0
<b>Assessed Elements</b>			
<b>Element (Weighting Factor)</b>	<b>Narrative</b>		<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition with some drainage problem.		7
WALL FOUNDATION MATERIAL 8.00	Bedrock and competent soil.		8
PLACED STONE 8.00	Dry stacked granite stone with some movement at one location.		8
LATERAL SLOPE 0.50	Mild to slightly sloping.		8
VEGETATION 0.50	Vegetation growth below wall.		8
DOWNSLOPE 1.00	Very steep bedrock, boulders and soil with vegetation.		7
WALL DRAINS 1.00	Drainage problem at one location through guardwall.		7
<b>Repair Recommendations</b>			
<b>Failure Consequence:</b>	HIGH		
<b>Recommendation Narrative:</b>	Observed settlement and a forced drainage location through the stone guardwall that resulted in movement of some stone blocks located below. Recommend directing the flow to end of wall by raising (patching) settled area and adding mortar to guardwall.		
<b>Repair Cost:</b>	\$7,000		
2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.			

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0203\_0.000\_R\_1.jpg**



**SEQU\_0203\_0.000\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0203-0.034-L		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	79	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked rockery cut wall at edge of pavement.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	76	<b>Face Area (sq.):</b>	680
<b>Average Wall Height (ft.):</b>	8	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Rock and competent soil.	8
PLACED STONE 8.00	Dry stacked granite stone in good condition.	8
LATERAL SLOPE 0.50	Good condition.	8
WALL DRAINS 0.50	No drainage issues.	8
UPSLOPE 1.00	Steep with large trees above wall.	7
VEGETATION 1.00	Large trees near top of wall.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0203\_0.034\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0203-0.073-L		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	Cantilever - Concrete
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone headwall with concrete footers and slab above stone wall section.		

### Wall Measurements

<b>Wall Length (ft.):</b>	28	<b>Face Area (sq.):</b>	140
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Boulders and competent soil.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses, large granite stones.	8
CULVERT 0.50	9' x 7' culvert (bottomless) in good condition.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
UPSLOPE 1.00	Large boulders on steep slope with some trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Add mortar to mortared riprap at inlet to avoid further deterioration and loss of riprap. Labor and materials plus mobilization = \$1,000.00
<b>Repair Cost:</b>	\$1,000

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0203\_0.073\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0203-0.073-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	Cantilever - Concrete
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone headwall with concrete footers and slab above stone wall section.		

### Wall Measurements

<b>Wall Length (ft.):</b>	43	<b>Face Area (sq.):</b>	180
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Boulders and competent soil.	8
MORTAR 8.00	Good condition with no loss.	8
STONE MASONRY 8.00	Good condition, large granite stones.	8
CULVERT 0.50	9' x 7' bottomless culvert in good condition.	8
LATERAL SLOPE 0.50	Slight slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Bouldery slope with trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0203\_0.073\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0203-0.202-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	70	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked rectangular stone blocks at edge of pavement. (1 x 0.5 x 0.5 ft)		

**Wall Measurements**

<b>Wall Length (ft.):</b>	108	<b>Face Area (sq.):</b>	325
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	-2

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Fair condition, any maintenance disturbance will cause the wall to collapse.	8
WALL FOUNDATION MATERIAL 8.00	Very steep erodable soils with some boulders.	6
PLACED STONE 8.00	Dry stacked stones with few losses.	7
ROAD/SIDEWALK/SHOULDER 0.50	Road in good condition with no shoulder.	8
DOWNSLOPE 1.00	Very steep slope with soil and boulders.	6
LATERAL SLOPE 1.00	Slight to mild slope.	7
VEGETATION 1.00	Trees holding portions of wall together.	7
WALL DRAINS 1.00	Minor drainage problem causing some erosion on sides.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Note: Do not remove trees and bushes from wall front and face. Vegetation is keeping the wall from deteriorating and collapsing.
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0203\_0.202\_R\_1.jpg**



**SEQU\_0203\_0.202\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0203-0.225-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Gabion
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Gravity gabion wall at edge of pavement within a slide repair section of the embankment.		

### Wall Measurements

<b>Wall Length (ft.):</b>	31	<b>Face Area (sq.):</b>	145
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Very steep soil and boulder foundation.	7
WIRE/GEOSYNTHETIC FACING 8.00	Gabion baskets in good condition.	8
VEGETATION 0.50	Bushes below wall and grass on wall.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep soil (silt) and boulders with vegetation.	7
LATERAL SLOPE 1.00	Mild slope	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.225-R.**



<b>Wall ID:</b>	SEQU-0203-0.235-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	76	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Gabion
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Gravity gabion wall at edge of roadway pavement.		

### Wall Measurements

<b>Wall Length (ft.):</b>	27	<b>Face Area (sq.):</b>	160
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Very steep soil and boulder foundation.	7
WIRE/GEOSYNTHETIC FACING 8.00	Gabion baskets in good condition.	8
VEGETATION 0.50	Bushes below wall and grass on wall.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep soil (silt) and boulders with vegetation.	7
LATERAL SLOPE 1.00	Mild slope	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.235-R.**

<b>Wall ID:</b>	SEQU-0203-0.266-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared (flat) stone fill wall at edge of roadway pavement.		

### Wall Measurements

<b>Wall Length (ft.):</b>	134	<b>Face Area (sq.):</b>	830
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and boulders.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep vegetated slope with some trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.266-R.**

<b>Wall ID:</b>	SEQU-0203-0.291-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared (flat) stone fill wall at edge of roadway pavement.		

### Wall Measurements

<b>Wall Length (ft.):</b>	35	<b>Face Area (sq.):</b>	245
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	12	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and boulders.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep vegetated slope with some trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.291-R.**



<b>Wall ID:</b>	SEQU-0203-0.316-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared (flat) stone fill wall at edge of roadway pavement.		

### Wall Measurements

<b>Wall Length (ft.):</b>	29	<b>Face Area (sq.):</b>	145
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and boulders.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep vegetated slope with some trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.316-R.**

<b>Wall ID:</b>	SEQU-0203-0.322-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared (flat) stone fill wall at edge of roadway pavement.		

### Wall Measurements

<b>Wall Length (ft.):</b>	23	<b>Face Area (sq.):</b>	70
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and boulders.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep vegetated slope with some trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.322-R.**

<b>Wall ID:</b>	SEQU-0203-0.335-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared (flat) stone fill wall at edge of roadway pavement.		

### Wall Measurements

<b>Wall Length (ft.):</b>	78	<b>Face Area (sq.):</b>	935
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	15	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and boulders.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep vegetated slope with some trees.	7

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.335-R.**



<b>Wall ID:</b>	SEQU-0203-0.348-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared (flat) stone fill wall at edge of roadway pavement.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	61	<b>Face Area (sq.):</b>	140
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Wall is in good condition.	8
WALL FOUNDATION MATERIAL 8.00	Bedrock and boulders.	8
MORTAR 8.00	Good condition, no losses.	8
STONE MASONRY 8.00	Good condition, no losses.	8
LATERAL SLOPE 0.50	Mild slope.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Very steep vegetated slope with some trees.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.348-R.**

<b>Wall ID:</b>	SEQU-0203-0.437-R		
<b>Route Name:</b>	BUCKEYE FLAT ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	67	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Gravity dry stacked stone headwall functioning properly but needs some maintenance.		

### Wall Measurements

<b>Wall Length (ft.):</b>	24	<b>Face Area (sq.):</b>	120
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Fair condition, needs maintenance.	7
WALL FOUNDATION MATERIAL 8.00	Boulders with soil.	7
PLACED STONE 8.00	Dry stacked stones in fair condition.	6
LATERAL SLOPE 0.50	No issues.	8
WALL DRAINS 0.50	No drainage issues.	8

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	Remove and reset top row, or top 2 rows, of stone. Recommend mortaring the top. Extend cap stone to eliminate and prevent future erosion. Labor, materials and mobilization = \$500.00
<b>Repair Cost:</b>	\$500

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0203: BUCKEYE FLAT ROAD**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0203-0.437-R.**



<b>Wall ID:</b>	SEQU-0222ZZ-0.142-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall in excellent condition on Dorst Campground Access Road, near the entrance.		

### Wall Measurements

<b>Wall Length (ft.):</b>	247	<b>Face Area (sq.):</b>	1350
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, no signs of distress, performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Solid stable soil just off the paved roadway.	8
PLACED STONE 8.00	Excellent granite stones, no weathering, no corrosion, or cracking, none missing.	9
UPSLOPE 0.50	Stable, compacted soil vegetated with bushes and trees.	8
WALL DRAINS 0.50	Wall is self draining with no evidence of drainage related stress.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil.	9

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.142-L.**

<b>Wall ID:</b>	SEQU-0222ZZ-0.184-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	Other - Cinder blocks
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone head wall with a few cinder blocks, 7 ft x 4 ft CMP, with 3.5 ft tall guardwall parapet. Inside Dorst Campground area about .3 miles from entrance.		

### Wall Measurements

<b>Wall Length (ft.):</b>	29	<b>Face Area (sq.):</b>	180
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	88
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Overall excellent performance, no signs of major distress.	8
WALL FOUNDATION MATERIAL 8.00	Cinder blocks on granular, stable soil, no signs of distress.	9
MORTAR 8.00	Excellent condition. No cracking or shrinkage observed.	9
STONE MASONRY 8.00	Excellent condition intact stones; no evidence of weathering.	9
CULVERT 0.50	7'x4' asphalt lined CMP; liner is badly eroded but not affecting culvert performance at this time.	8
TRAFFIC BARRIER/FENCE 0.50	3.5' high guardwall parapet in excellent condition.	9
WALL DRAINS 0.50	4" drainage pipe inside wall in good condition.	9
LATERAL SLOPE 1.00	Riprap on one side, exposed, eroded soil on the other side.	6

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	Add riprap to left side of culvert head wall where soil has been severely eroded: 2 cubic yards of riprap @ \$120.00 per c.y. = \$240.00. Backhoe equipment @ \$150.00 per hour for 4 hours = \$600.00. Labor (8 hrs) @ \$55.00/hr = \$440.00
<b>Repair Cost:</b>	\$1,280

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.184\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0222ZZ-0.184-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone head wall, asphalt-lined 7 ft x 4 ft pipe, with guardwall parapet. Inside the Dorst Campground area, close to the entrance.		

### Wall Measurements

<b>Wall Length (ft.):</b>	28	<b>Face Area (sq.):</b>	60
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	88
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No settlement or global stability issues.	8
WALL FOUNDATION MATERIAL 8.00	Stable granular soil, no distress evident.	9
MORTAR 8.00	Excellent condition. No cracking or shrinkage observed.	9
STONE MASONRY 8.00	Excellent condition, unweathered granite stones.	9
CULVERT 0.50	Asphalt lined, liner is badly eroded, but no major impact to culvert performance.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil, no erosion evident.	9
WALL DRAINS 0.50	None visible, but no drainage related distress.	9

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.184\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0222ZZ-0.192-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall in good condition with a small culvert near the wall end.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	85	<b>Face Area (sq.):</b>	340
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	-6

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, no signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	Good stable soil, no signs of unsettling.	8
PLACED STONE 8.00	Excellent granite stones, no weathering, no corrosion, or cracking, none missing.	8
CULVERT 0.50	An 18" CMP culvert is in the wall near the end and in very good condition.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil.	8
UPSLOPE 0.50	Heavily vegetated, stable soil.	8
WALL DRAINS 0.50	Wall is self draining with no evidence of drainage related stress.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.192-R.**



<b>Wall ID:</b>	SEQU-0222ZZ-0.362-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall in excellent condition, on the Dorst Campground Road, about .3 miles from the entrance.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	265	<b>Face Area (sq.):</b>	1300
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. No settlement or global stability issues.	9
WALL FOUNDATION MATERIAL 8.00	Compacted soil abuts the paved roadway.	8
PLACED STONE 8.00	Stones are in good condition, no weathering or cracking, none missing.	9
LATERAL SLOPE 0.50	Stable, vegetated and rocky soil, no erosion evident.	8
UPSLOPE 0.50	Stable vegetated soil with dense bushes, trees, no erosion evident. 2H:1V slope.	8
WALL DRAINS 0.50	None visible, but no drainage related distress.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.362\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0222ZZ-0.408-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	82	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone culvert head wall in good condition, located about .4 miles from start of Dorst Campground Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	11	<b>Face Area (sq.):</b>	45
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-4

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performing head wall, no signs of major distress.	9
WALL FOUNDATION MATERIAL 8.00	Granular, stable soil.	8
MORTAR 8.00	Very good condition. Minor weathering; no cracking or shrinkage observed.	8
STONE MASONRY 8.00	Good condition intact stones with only minor weathering, but no cracking, none missing.	8
LATERAL SLOPE 0.50	Stable soil, no signs of distress.	8
UPSLOPE 0.50	Vegetated, stable soil, gentle slope.	8
WALL DRAINS 0.50	None visible, but no evidence of drainage related stress.	8
CULVERT 0.50	18" CMP performing well.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.408\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0222ZZ-0.426-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall in excellent condition. Located on Dorst Campground Road, about .36 miles from the start of this road.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	113	<b>Face Area (sq.):</b>	450
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Compacted stable soil, abutting paved roadway.	8
PLACED STONE 8.00	Excellent condition intact stones; no evidence of weathering, none missing.	9
CURB/BERM/DITCH 0.50	Small curb on roadway edge in good condition.	8
LATERAL SLOPE 0.50	Stable soil, no erosion evident.	8
UPSLOPE 0.50	Loose soil, no vegetation, with a few large trees. 2H:1V slope ratio.	8
WALL DRAINS 0.50	Wall is self-draining, no evidence of drainage related stress.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.426\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0222ZZ-0.488-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall in excellent condition. Located on Dorst Campground Road, about .5 miles from the road start.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	97	<b>Face Area (sq.):</b>	460
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Stable granular soil, no distress evident, sufficient to support wall.	8
PLACED STONE 8.00	Excellent condition intact stones; no evidence of weathering, none missing.	9
LATERAL SLOPE 0.50	Stable soil, no erosion evident.	8
UPSLOPE 0.50	Mild slope densely vegetated with large trees.	8
WALL DRAINS 0.50	None visible, but no evidence of drainage related stress.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.488\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0222ZZ-0.528-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rockery wall, well built, undulating height of 1 ft to 6 ft. Located about .55 miles from the start of Dorst Campground Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	192	<b>Face Area (sq.):</b>	630
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	5

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Stable compacted soil, no distress evident, sufficient to support wall.	8
PLACED STONE 8.00	Excellent condition intact stones; no evidence of weathering, none missing.	9
CURB/BERM/DITCH 0.50	Small curb on roadway at wall bottom in excellent condition.	8
LATERAL SLOPE 0.50	Stable soil, no erosion evident.	8
UPSLOPE 0.50	Low angle slope, heavily vegetated with dense bushes and larges trees on one segment, loose soils and light vegetation on remainder of wall area.	8
WALL DRAINS 0.50	None visible, but no evidence of drainage related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.528-L.**

<b>Wall ID:</b>	SEQU-0222ZZ-0.630-L		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone culvert headwall, with wingwalls, in excellent condition. Located on left side of a roadway that turns right about .6 miles from start of Dorst Campground Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	29	<b>Face Area (sq.):</b>	92
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Cinder blocks on stable stream bed sufficient to support wall.	8
MORTAR 8.00	Excellent condition. No cracking or shrinkage observed.	9
STONE MASONRY 8.00	Excellent condition intact stones; no evidence of weathering, none missing.	9
CULVERT 0.50	4' x 6' CMP in good condition performing as designed.	8
UPSLOPE 0.50	Stable, low angle slope, moderately vegetated, no distress.	8
WALL DRAINS 0.50	None visible, but no evidence of drainage related stress.	8
LATERAL SLOPE 0.50	Heavily vegetated stable soil.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.630-L.**



<b>Wall ID:</b>	SEQU-0222ZZ-0.630-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone culvert headwall, with wingwalls, in excellent condition. Located on a roadway that turns right about .6 miles from start of Dorst Campground Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	120
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-7

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Cinder blocks on stable streambed sufficient to support wall.	8
MORTAR 8.00	Excellent condition. No cracking or shrinkage observed.	9
STONE MASONRY 8.00	Excellent condition intact stones; no evidence of weathering, none missing.	9
CULVERT 0.50	4' x 6' CMP in good condition performing as designed.	8
UPSLOPE 0.50	Low angle slope, stable grassy soil, no distress.	8
LATERAL SLOPE 0.50	Heavily vegetated with bushes on one side and stable grassy soil on the other.	9
WALL DRAINS 0.50	Good condition - 2 4" drain pipes performing as designed.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.630-R.**

<b>Wall ID:</b>	SEQU-0222ZZ-0.162-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rockery wall in excellent condition. Very long wall, wraps around parking area and located in the parking area for camp sites 106-114.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	220	<b>Face Area (sq.):</b>	1030
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil and decomposed rock, wall abuts paved parking lot, sufficient to support wall.	9
PLACED STONE 8.00	Large stones in good condition, no signs of weathering, no cracking, none missing.	9
UPSLOPE 0.50	Trees, boulders, mostly loose soil but stable.	8
LATERAL SLOPE 0.50	Loose soil but stable, no signs of distress.	9
WALL DRAINS 0.50	Wall is self-draining, no signs of drainage related stress.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**



**SEQU\_0222ZZ\_0.162\_R\_1.jpg**



**SEQU\_0222ZZ\_0.162\_R\_2.jpg**



<b>Wall ID:</b>	SEQU-0222ZZ-0.228-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rockery wall in excellent condition. L shaped wall supporting a parking space/campsite. Located in the first left-side campground area on Dorst Campground Road.		

### Wall Measurements

<b>Wall Length (ft.):</b>	64	<b>Face Area (sq.):</b>	310
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil, sufficient to support wall.	8
PLACED STONE 8.00	Large stones in good condition, no signs of weathering, no cracking, none missing.	9
LATERAL SLOPE 0.50	Stable soil, no signs of distress.	8
DOWNSLOPE 0.50	Low angle slope, stable soil, no distress.	9
WALL DRAINS 0.50	Wall is self-draining, no signs of drainage related stress.	9

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.228-R.**

<b>Wall ID:</b>	SEQU-0222ZZ-0.000-R		
<b>Route Name:</b>	DORST CAMPGROUND ROADS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall with 18 in CMP culvert near wall end, in excellent condition. Located in campground area for camp sites 164 to 192.		

### Wall Measurements

<b>Wall Length (ft.):</b>	158	<b>Face Area (sq.):</b>	760
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-6

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performing wall, no signs of significant distress.	8
WALL FOUNDATION MATERIAL 8.00	Stable granular soil, no distress evident, sufficient to support wall.	8
PLACED STONE 8.00	Excellent condition intact stones; no evidence of weathering; none missing.	8
CULVERT 0.50	18" CMP is performing well and is not impacting wall performance.	8
LATERAL SLOPE 0.50	Moderately vegetate, stable soil, no distress.	8
UPSLOPE 0.50	Densely vegetated, gentle slope, no distress evident.	8
WALL DRAINS 0.50	Wall is self-draining, no evidence of drainage related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0222ZZ: DORST CAMPGROUND ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0222ZZ-0.000-R.**



<b>Wall ID:</b>	SEQU-0403ZZ-0.112-L		
<b>Route Name:</b>	ASH MOUNTAIN RESIDENCE ROADS		
<b>Inspection Date:</b>	August 15, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	83	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone masonry wall near the east end of Mather Drive.		

### Wall Measurements

<b>Wall Length (ft.):</b>	38	<b>Face Area (sq.):</b>	152
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, stable, no global distress.	8
WALL FOUNDATION MATERIAL 8.00	No distress, no signs of settlement in the wall.	9
STONE MASONRY 8.00	Hard durable, stable angular stones, well-place.	8
CULVERT 0.50	12" CMP culvert at wall end. No culvert distress, functioning as intended.	8
LATERAL SLOPE 0.50	No distress, stable soil fill.	8
WALL DRAINS 0.50	No drains, no water issues.	8
ROAD/SIDEWALK/SHOULDER 1.00	No wall-related distress.	7

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0403ZZ: ASH MOUNTAIN RESIDENCE ROADS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0403ZZ-0.112-L.**

<b>Wall ID:</b>	SEQU-0428-0.046-L		
<b>Route Name:</b>	RED FIR ACCESS ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone culvert head wall in excellent condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	39	<b>Face Area (sq.):</b>	205
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, wall performing as intended, no distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil and creekbed.	9
MORTAR 8.00	Excellent condition, no flaking, no distress.	9
STONE MASONRY 8.00	Excellent condition, no weathering, or cracking.	9
WALL DRAINS 0.50	No drainage related distress evident.	8
CULVERT 0.50	Performing well, corrugated metal pipe, asphalt lined.	9
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	9
UPSLOPE 0.50	Well vegetated, stable soil.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0428: RED FIR ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0428\_0.046\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0428-0.049-R		
<b>Route Name:</b>	RED FIR ACCESS ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Head Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared stone culvert head wall in very good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	36	<b>Face Area (sq.):</b>	155
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	88
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	-1

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, wall performing as intended, no distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil and creekbed.	9
MORTAR 8.00	Excellent, no flaking or cracking, no distress	9
STONE MASONRY 8.00	Excellent, no weathering, no corrosion, or cracking.	9
WALL DRAINS 0.50	No drainage related distress evident.	8
CULVERT 0.50	Performing well, corrugated metal pipe, asphalt lined.	9
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	9
UPSLOPE 0.50	Well vegetated, stable soil.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0428: RED FIR ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0428\_0.049\_R\_1.jpg**

<b>Wall ID:</b>	SEQU-0431-0.000-R		
<b>Route Name:</b>	WUKSACHI FIRE STATION ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rock wall on a road located in an area adjacent to a parking area. No milepoint available.		

### Wall Measurements

<b>Wall Length (ft.):</b>	175	<b>Face Area (sq.):</b>	900
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	80
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, wall performing as intended, no distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable solid granular soils.	9
PLACED STONE 8.00	Excellent granite stones, no weathering, no corrosion, or cracking.	9
CURB/BERM/DITCH 0.50	Rock-lined drainage ditch, good condition.	8
VEGETATION 0.50	Minor vegetated growth in some areas, not affecting stability at this time.	8
WALL DRAINS 0.50	Natural drainage, no evidence of drainage related stress.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil.	9
UPSLOPE 0.50	Stable vegetated soil, no erosion evident.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0431: WUKSACHI FIRE STATION ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0431\_0.000\_R\_1.jpg**



<b>Wall ID:</b>	SEQU-0436-0.000-L		
<b>Route Name:</b>	CLOVER CREEK PLANT ACCESS ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Three tiered rockery wall at beginning of road to sewage treatment plant.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	338	<b>Face Area (sq.):</b>	3745
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	20	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	9
WALL FOUNDATION MATERIAL 8.00	No settlement or erosion.	8
PLACED STONE 8.00	Stacked stones in good condition.	9
LATERAL SLOPE 0.50	No problems, designed vegetation.	8
UPSLOPE 0.50	Wooded 2:1 slope.	8
VEGETATION 0.50	Vegetated based on design or aesthetics.	8
WALL DRAINS 0.50	No drainage problems.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0436\_0.000\_L\_1.jpg**



**SEQU\_0436\_0.000\_L\_2.jpg**

<b>Wall ID:</b>	SEQU-0436-0.169-L		
<b>Route Name:</b>	CLOVER CREEK PLANT ACCESS ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Formlined Concrete
<b>General Description:</b>	Cantilever concrete wall with architectural facing in good condition.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	88	<b>Face Area (sq.):</b>	410
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition, no issues.	8
WALL FOUNDATION MATERIAL 8.00	Good condition, no settlement.	8
CONCRETE 8.00	Good condition, no cracks.	8
ARCHITECTURAL FACING 0.50	Good condition.	8
LATERAL SLOPE 0.50	Moderate slope, no issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or erosion.	8
UPSLOPE 0.50	Moderate slope, well vegetated.	8
VEGETATION 0.50	Bushes behind top of wall.	8
WALL DRAINS 0.50	Weep holes, functioning.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



**Sequoia National Park**  
**ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0436\_0.169\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0436-0.200-L		
<b>Route Name:</b>	CLOVER CREEK PLANT ACCESS ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Formlined Concrete
<b>General Description:</b>	Cantilever concrete cut wall in good condition.		

### Wall Measurements

<b>Wall Length (ft.):</b>	242	<b>Face Area (sq.):</b>	1260
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition, no problems.	8
WALL FOUNDATION MATERIAL 8.00	Good condition, no settlement.	8
CONCRETE 8.00	Good condition, no cracks.	8
LATERAL SLOPE 0.50	No problems with slope.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or erosion.	8
ARCHITECTURAL FACING 0.50	Good condition.	9
WALL DRAINS 0.50	Weep holes, no problems.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0436\_0.200\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0436-0.298-L		
<b>Route Name:</b>	CLOVER CREEK PLANT ACCESS ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Formlined Concrete
<b>General Description:</b>	Cantilever concrete cut wall with architectural facing at trailer pad area.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	132	<b>Face Area (sq.):</b>	410
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	4	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Good condition. No settlement.	8
CONCRETE 8.00	Good condition. No cracks.	8
ARCHITECTURAL FACING 0.50	Good condition.	8
LATERAL SLOPE 0.50	No issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or erosion.	8
UPSLOPE 0.50	Mild slope with minor vegetation.	8
VEGETATION 0.50	Small bushes.	8
WALL DRAINS 0.50	Weep holes, functioning.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0436\_0.298\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0436-0.325-L		
<b>Route Name:</b>	CLOVER CREEK PLANT ACCESS ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Formlined Concrete
<b>General Description:</b>	Cantilever concrete cut wall with architectural facing at trailer pad area.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	189	<b>Face Area (sq.):</b>	985
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Good condition. No settlement.	8
CONCRETE 8.00	Good condition. No cracks.	8
ARCHITECTURAL FACING 0.50	Good condition.	8
LATERAL SLOPE 0.50	No issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or erosion.	8
UPSLOPE 0.50	Mild slope with minor vegetation.	8
VEGETATION 0.50	Small bushes.	8
WALL DRAINS 0.50	Weep holes, functioning.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0436\_0.325\_L\_1.jpg**

<b>Wall ID:</b>	SEQU-0436-0.387-L		
<b>Route Name:</b>	CLOVER CREEK PLANT ACCESS ROAD		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Formlined Concrete
<b>General Description:</b>	Cantilever concrete cut wall with architectural facing at trailer pad area.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	161	<b>Face Area (sq.):</b>	1090
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Good condition. No settlement.	8
CONCRETE 8.00	Good condition.	8
ARCHITECTURAL FACING 0.50	Good condition.	8
LATERAL SLOPE 0.50	No issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or erosion.	8
UPSLOPE 0.50	Mild slope, minor vegetation.	8
VEGETATION 0.50	Small bushes.	8
WALL DRAINS 0.50	Weep holes, functioning.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0436: CLOVER CREEK PLANT ACCESS ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0436\_0.387\_L\_1.jpg**



<b>Wall ID:</b>	SEQU-0500-0.462-R		
<b>Route Name:</b>	MORO ROCK LOOP ROAD		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stacked rock wall on fill side of embankment.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	249	<b>Face Area (sq.):</b>	4110
<b>Average Wall Height (ft.):</b>	16	<b>Face Angle (deg.):</b>	55
<b>Maximum Wall Height (ft.):</b>	21	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good with a few loose stones, but no effect on wall.	8
WALL FOUNDATION MATERIAL 8.00	Competent rock and soil.	8
PLACED STONE 8.00	Durable stones in good condition.	8
LATERAL SLOPE 0.50	No slope issues.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement or erosion.	8
VEGETATION 0.50	Minimum vegetation on wall face.	8
WALL DRAINS 0.50	No drainage issues.	8
DOWNSLOPE 1.00	Steep slope with boulders and soil.	7

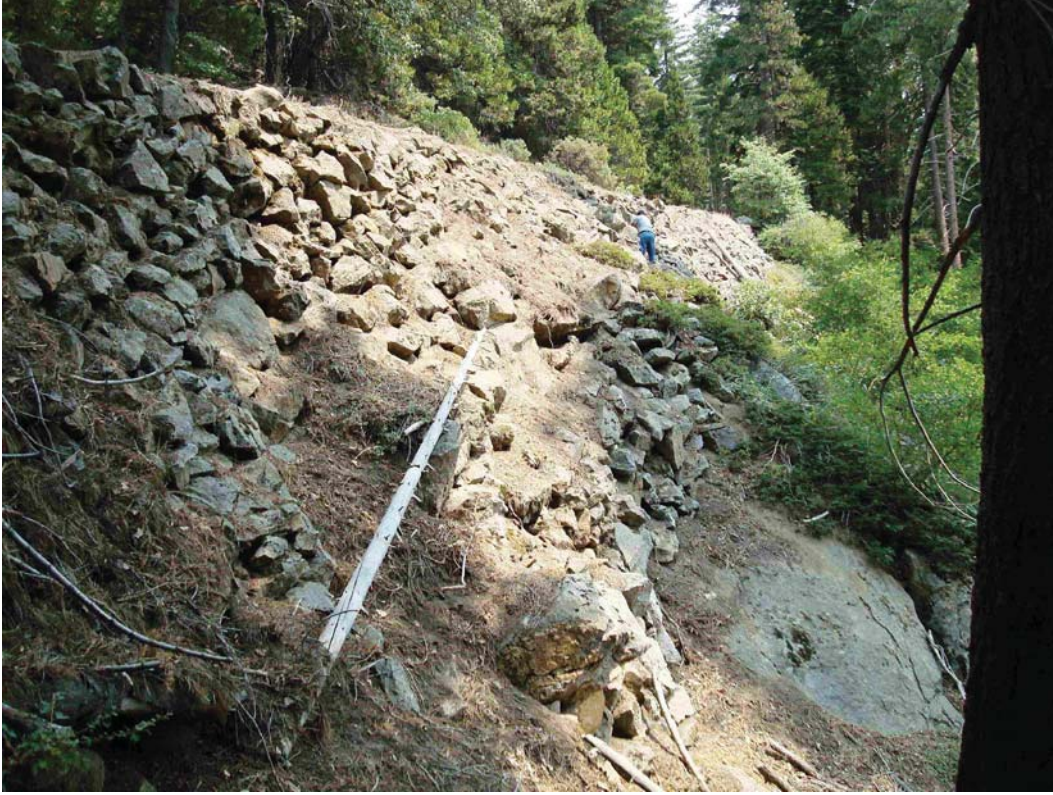
**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0500: MORO ROCK LOOP ROAD**

**Retaining Wall Condition Photos**



**SEQU\_0500\_0.462\_R\_1.jpg**



**SEQU\_0500\_0.462\_R\_2.jpg**

<b>Wall ID:</b>	SEQU-0901ZZ-0.000-P1		
<b>Route Name:</b>	RED FIR MAINTENANCE FACILITY PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	81	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Huge boulder rockery that butts into bedrock outcrop on the left side of a sand storage quonset building.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	65	<b>Face Area (sq.):</b>	420
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	60
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Some voids between large boulders, variable face angles, but good performing wall.	8
WALL FOUNDATION MATERIAL 8.00	Granular soil.	9
PLACED STONE 8.00	Large boulders poorly constructed, but stable.	7
LATERAL SLOPE 0.50	Stable bedrock on the right, stable soil on the left.	9
UPSLOPE 0.50	Stable soil, no signs of erosion.	9
WALL DRAINS 0.50	None visible, wall is self-draining.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0901ZZ\_0.000\_P1\_1.jpg



<b>Wall ID:</b>	SEQU-0901ZZ-0.000-P2		
<b>Route Name:</b>	RED FIR MAINTENANCE FACILITY PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Plain Concrete
<b>General Description:</b>	Cantilever concrete cut wall in excellent condition, integrated as the front wall of a storage facility.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	78	<b>Face Area (sq.):</b>	876
<b>Average Wall Height (ft.):</b>	11	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	25	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, wall performing as intended, no distress.	9
WALL FOUNDATION MATERIAL 8.00	Excellent, stable granular soil.	9
CONCRETE 8.00	Excellent condition, no cracking or chinking.	9
ARCHITECTURAL FACING 0.50	Excellent texture, no weathering.	9
LATERAL SLOPE 0.50	Heavily vegetated stable soil.	9
UPSLOPE 0.50	Heavily vegetated stable soil.	9
WALL DRAINS 0.50	Drains exist at wall bottom; appear to be draining well.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0901ZZ\_0.000\_P2\_1.jpg

<b>Wall ID:</b>	SEQU-0901ZZ-0.000-P3		
<b>Route Name:</b>	RED FIR MAINTENANCE FACILITY PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	89	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall in good condition in parking area of Red Fir Maintenance facility.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	289	<b>Face Area (sq.):</b>	1374
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, no signs of distress, performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil and decomposed rock.	9
PLACED STONE 8.00	Good condition granite stones, minor weathering, no significant distress.	9
CURB/BERM/DITCH 0.50	Small drainage ditch at bottom of wall, performing well.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil, no signs of erosion.	8
UPSLOPE 0.50	Heavily vegetated, one erodable area on steep slope.	8
WALL DRAINS 0.50	None visible, but no distress evident from drainage.	8

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.



# Sequoia National Park

ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0901ZZ\_0.000\_P3\_1.jpg



SEQU\_0901ZZ\_0.000\_P3\_2.jpg



<b>Wall ID:</b>	SEQU-0901ZZ-0.000-P4		
<b>Route Name:</b>	RED FIR MAINTENANCE FACILITY PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	84	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Crib - Timber
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Timber crib wall in good wall in good condition in large parking area of Red Fir Maintenance facility.		

### Wall Measurements

<b>Wall Length (ft.):</b>	200	<b>Face Area (sq.):</b>	800
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good condition, no bulging, no signs of distress.	8
WALL FOUNDATION MATERIAL 8.00	Stable soil, wall is very close to paved parking area.	9
BIN OR CRIB 8.00	Wood crib in good condition with some minor stained areas, but no significant distress.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil.	9
UPSLOPE 0.50	Well vegetated, stable soil.	9
WALL DRAINS 0.50	None visible, but no distress evident due to drainage.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0901ZZ\_0.000\_P4\_1.jpg

<b>Wall ID:</b>	SEQU-0901ZZ-0.000-P5		
<b>Route Name:</b>	RED FIR MAINTENANCE FACILITY PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall, in L-configuration, excellent condition, in upper parking lot of Red Fir Maintenance facility.		

### Wall Measurements

<b>Wall Length (ft.):</b>	140	<b>Face Area (sq.):</b>	413
<b>Average Wall Height (ft.):</b>	2	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	-7

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable soil.	9
PLACED STONE 8.00	Excellent granite stones, no weathering, no corrosion, or cracking, none missing.	9
LATERAL SLOPE 0.50	Well vegetated, stable soil.	9
UPSLOPE 0.50	Well vegetated, stable soil.	9
WALL DRAINS 0.50	None visible, self draining wall with no drainage related stress.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0901ZZ\_0.000\_P5\_1.jpg



<b>Wall ID:</b>	SEQU-0901ZZ-0.000-P6		
<b>Route Name:</b>	RED FIR MAINTENANCE FACILITY PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Painted	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Cantilever concrete wall in excellent condition adjacent to large building in the Red Fir Maintenance area.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	100	<b>Face Area (sq.):</b>	920
<b>Average Wall Height (ft.):</b>	9	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good condition, no signs of distress.	9
WALL FOUNDATION MATERIAL 8.00	Poured concrete foundation.	10
CONCRETE 8.00	Good overall condition, but some seepage and minor spalling and about a dozen thin vertical cracks.	7
LATERAL SLOPE 0.50	A building on one side, stable, vegetated soil on the other.	9
WALL DRAINS 0.50	No internal drains, but surface drains at wall bottom.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0901ZZ: RED FIR MAINTENANCE FACILITY PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0901ZZ\_0.000\_P6\_1.jpg

<b>Wall ID:</b>	SEQU-0902-0.000-P1		
<b>Route Name:</b>	WUKSACHI VILLAGE CENTER ACCESS AND PARKING		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared masonry stone wall, with guard wall parapet, in excellent condition.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	85	<b>Face Area (sq.):</b>	350
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	89
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, like new wall performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Solid bedrock.	9
MORTAR 8.00	Excellent, no shrinkage or cracking.	9
STONE MASONRY 8.00	Excellent condition, no weathering, or cracking.	9
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	8
WALL DRAINS 0.50	No drainage related distress evident.	8
TRAFFIC BARRIER/FENCE 0.50	Excellent mortared stone guardwall.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0902: WUKSACHI VILLAGE CENTER ACCESS AND PARKING

## Retaining Wall Condition Photos



SEQU\_0902\_0.000\_P1\_1.jpg



<b>Wall ID:</b>	SEQU-0902-0.000-P2		
<b>Route Name:</b>	WUKSACHI VILLAGE CENTER ACCESS AND PARKING		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rock wall in the main parking area of the Wuksachi Lodge. Excellent Condition		

### Wall Measurements

<b>Wall Length (ft.):</b>	75	<b>Face Area (sq.):</b>	350
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Very good, but some voids, insect infestation.	8
WALL FOUNDATION MATERIAL 8.00	Stable solid granular soils.	9
PLACED STONE 8.00	Excellent granite stones, no weathering, no corrosion, or cracking.	9
WALL DRAINS 0.50	No drainage related distress evident.	8
LATERAL SLOPE 0.50	Well vegetated, stable soil.	9
UPSLOPE 0.50	Stable vegetated soil, no erosion evident.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0902: WUKSACHI VILLAGE CENTER ACCESS AND PARKING

## Retaining Wall Condition Photos



SEQU\_0902\_0.000\_P2\_1.jpg

<b>Wall ID:</b>	SEQU-0913-0.000-P1		
<b>Route Name:</b>	INDIAN HEAD PARKING		
<b>Inspection Date:</b>	August 13, 2007	<b>Approximate Year Built:</b>	1995
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with granite stone masonry facing that is mortared.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	50	<b>Face Area (sq.):</b>	300
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	8	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Wall performing as intended. No signs of rotation, bearing failure.	9
WALL FOUNDATION MATERIAL 8.00	No signs of erosion and sufficient to support wall	9
CONCRETE 8.00	Concrete is faced with granite stone. Not visible but no apparent signs of fatigue.	9
ARCHITECTURAL FACING 0.50	No signs of shrinkage, cracking or water problems on mortar. Granite 6 inch stone veneer in excellent condition. No missing stones or weathering.	9
DOWNSLOPE 0.50	About 5 ft of flat bench followed by steep slope with a few large trees. No signs of failure.	9
LATERAL SLOPE 0.50	Good condition. 1.5H:1V stable slopes.	9
ROAD/SIDEWALK/SHOULDER 0.50	Sidewalk in good condition. No signs of cracking.	9
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet with granite stone veneer facing in excellent condition.	9
VEGETATION 0.50	No vegetation in wall facing or foundation. Not affecting wall stability.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0913: INDIAN HEAD PARKING**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0913-0.000-P1.**



<b>Wall ID:</b>	SEQU-0923-0.000-P1		
<b>Route Name:</b>	WOLVERTON WATER PLANT PARKING		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	80	<b>Maintenance Action:</b>	Maintenance

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>	Stain	<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Formlined Concrete
<b>General Description:</b>	Cantilever concrete fill wall in the Water Plant parking area.		

### Wall Measurements

<b>Wall Length (ft.):</b>	73	<b>Face Area (sq.):</b>	450
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	-2

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition.	8
WALL FOUNDATION MATERIAL 8.00	Good condition.	8
CONCRETE 8.00	Good condition	8
ARCHITECTURAL FACING 0.50	Good condition.	8
CULVERT 0.50	No scour or erosion.	8
LATERAL SLOPE 0.50	Stable soil, no concerns.	8
ROAD/SIDEWALK/SHOULDER 0.50	No settlement.	8
WALL DRAINS 0.50	Drain in wall is working, no issues.	8
VEGETATION 1.00	Trees planted behind top of wall.	7

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	Remove and relocate trees from behind top of wall. Labor and mobilization = \$300.00
<b>Repair Cost:</b>	\$300

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0923: WOLVERTON WATER PLANT PARKING**

**Retaining Wall Condition Photos**



**SEQU\_0923\_0.000\_P1\_1.jpg**

<b>Wall ID:</b>	SEQU-0929ZZ-0.000-P1		
<b>Route Name:</b>	WUKSACHI CONCESSION HOUSING PARKING AREAS		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid rock wall in excellent condition located in a parking area where trailer hook-ups have been provided for employees.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	127	<b>Face Area (sq.):</b>	500
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent, wall performing as intended, no distress.	9
WALL FOUNDATION MATERIAL 8.00	Stable solid granular soils.	9
LATERAL SLOPE 0.50	Stable vegetated soil, no erosion evident.	8
UPSLOPE 0.50	Well vegetated, stable soil.	9
WALL DRAINS 0.50	None visible, draining freely, no drainage related stress.	9
VEGETATION 1.00	Brushes in several areas, but no major impact to the wall at this time.	7

**Repair Recommendations**

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# **Sequoia National Park**

**ROUTE 0929ZZ: WUKSACHI CONCESSION HOUSING PARKING AREAS**

## **Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0929ZZ-0.000-P1.**



<b>Wall ID:</b>	SEQU-0933-0.000-P1		
<b>Route Name:</b>	WUKSACHI VILLAGE PARKING, WEST TERRACE		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	1999
<b>*Wall Rating:</b>	90	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Crib - Timber
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Timber crib wall in good condition in a park maintenance area, near parking lot of a residential complex. No milepoint available.		

### Wall Measurements

<b>Wall Length (ft.):</b>	175	<b>Face Area (sq.):</b>	1180
<b>Average Wall Height (ft.):</b>	6	<b>Face Angle (deg.):</b>	85
<b>Maximum Wall Height (ft.):</b>	9	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
WALL FOUNDATION MATERIAL 8.00	Stable solid granular soils.	9
BIN OR CRIB 8.00	Timber is intact and in excellent condition.	9
UPSLOPE 0.50	Stable soil well vegetated with bushes and trees.	8
LATERAL SLOPE 0.50	No signs of instability or erosion.	9
WALL DRAINS 0.50	None visible, self draining, no drainage related stress.	9

### Repair Recommendations

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# **Sequoia National Park**

**ROUTE 0933: WUKSACHI VILLAGE PARKING, WEST TERRACE**

## **Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0933-0.000-P1.**

<b>Wall ID:</b>	SEQU-0947-0.000-P1		
<b>Route Name:</b>	AMPHITHEATRE POINT PARKING		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2007
<b>*Wall Rating:</b>	96	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Fill Wall	<b>Primary Wall Type:</b>	Cantilever - Concrete
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	Stone Veneer
<b>General Description:</b>	Cast in place concrete wall with schist stone veneer facing and a parapet with schist stone veneer facing.		

### Wall Measurements

<b>Wall Length (ft.):</b>	75	<b>Face Area (sq.):</b>	370
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	90
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. Newly construction.	10
WALL FOUNDATION MATERIAL 8.00	Compacted fill. Excellent condition (Newly constructed) sufficient to support wall	9
CONCRETE 8.00	Newly constructed wall. Concrete is sound and no cracks.	10
UPSLOPE 0.50	3H:1V stable slope. Soil, boulders and fill	8
VEGETATION 0.50	No vegetation on wall face.	8
LATERAL SLOPE 0.50	Wall connected to guardwall and ends at paved parking area.	9
ROAD/SIDEWALK/SHOULDER 0.50	Roadway under construction.	9
TRAFFIC BARRIER/FENCE 0.50	Concrete parapet with stone schist on all sides. Excellent condition.	9
ARCHITECTURAL FACING 0.50	Mortared stone veneer. Excellent condition (Newly constructed) No cracks or weathering.	10

### Repair Recommendations

<b>Failure Consequence:</b>	HIGH
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0947: AMPHITHEATRE POINT PARKING**

**Retaining Wall Condition Photos**



**SEQU\_0947\_0.000\_P1\_1.jpg**



**SEQU\_0947\_0.000\_P1\_2.jpg**



<b>Wall ID:</b>	SEQU-0949ZZ-0.000-P1		
<b>Route Name:</b>	TUNNEL ROCK PARKING AREAS		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (granite) wall at the tunnel rock wall.		

### Wall Measurements

<b>Wall Length (ft.):</b>	30	<b>Face Area (sq.):</b>	150
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	13	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent performance. The wall is designed to support tunnel rock.	9
WALL FOUNDATION MATERIAL 8.00	Paved, excellent condition. No signs of distress.	9
MORTAR 8.00	No cracking or shrinkage are visible.	8
STONE MASONRY 8.00	Granite, strong stone intact. No signs of weathering and stable. Excellent condition.	9
WALL DRAINS 0.50	No wall drains are visible.	8
UPSLOPE 0.50	Bedrock, very strong. Wall is forming the tunnel rock wall on left.	9
VEGETATION 0.50	No vegetation on wall.	9
LATERAL SLOPE 1.00	Soil with minor erosion.	7

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0949ZZ: TUNNEL ROCK PARKING AREAS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0949ZZ-0.000-P1.**

<b>Wall ID:</b>	SEQU-0949ZZ-0.000-P2		
<b>Route Name:</b>	TUNNEL ROCK PARKING AREAS		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	85	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Mortared Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Mortared cut stone (Granite) wall at Tunnel Rock.		

### Wall Measurements

<b>Wall Length (ft.):</b>	32	<b>Face Area (sq.):</b>	250
<b>Average Wall Height (ft.):</b>	7	<b>Face Angle (deg.):</b>	75
<b>Maximum Wall Height (ft.):</b>	10	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent condition. Wall is designed to support tunnel rock. Performing as intended.	9
WALL FOUNDATION MATERIAL 8.00	Paved, excellent condition. No evidence of movement, sufficient to support wall.	9
MORTAR 8.00	Minor shrinkage in small areas.	7
STONE MASONRY 8.00	Strong granite stone. Intact and no evidence of weathering. Excellent condition.	9
LATERAL SLOPE 0.50	Bedrock, competent, strong. No vegetation.	8
UPSLOPE 0.50	Bedrock, competent, strong granite. Wall is forming right side of tunnel rock	8
WALL DRAINS 0.50	No wall drains are visible.	8
VEGETATION 0.50	No vegetation on wall face.	9

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0949ZZ: TUNNEL ROCK PARKING AREAS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0949ZZ-0.000-P2.**



<b>Wall ID:</b>	SEQU-0949ZZ-0.000-P3		
<b>Route Name:</b>	TUNNEL ROCK PARKING AREAS		
<b>Inspection Date:</b>	August 14, 2007	<b>Approximate Year Built:</b>	Unknown
<b>*Wall Rating:</b>	73	<b>Maintenance Action:</b>	Repair Elements

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry stack (schist) cut wall near the tunnel rock.		

### Wall Measurements

<b>Wall Length (ft.):</b>	54	<b>Face Area (sq.):</b>	275
<b>Average Wall Height (ft.):</b>	5	<b>Face Angle (deg.):</b>	70
<b>Maximum Wall Height (ft.):</b>	6	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good performance. The wall is light against soil. No signs of failure or settlement.	7
WALL FOUNDATION MATERIAL 8.00	Soil compacted. No signs of failure and sufficient to support wall.	8
PLACED STONE 8.00	Schist showing signs of slight weathering. Few gap existing with voids.	7
LATERAL SLOPE 0.50	Bedrock on both sides.	8
WALL DRAINS 0.50	No wall drains are visible. Signs of water staining on wall face and water runoff on top wall.	8
UPSLOPE 1.00	Eroded soil slope with no vegetation.	6

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	Schist rock = 10 yds <sup>3</sup> at \$100/yd = \$1000 Labor (40 hrs) @ \$55/hr = \$2200 Fill material = 5 yds <sup>3</sup> at \$30/yd = \$150
<b>Repair Cost:</b>	\$3,350

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0949ZZ: TUNNEL ROCK PARKING AREAS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0949ZZ-0.000-P3.**

<b>Wall ID:</b>	SEQU-0951ZZ-0.000-P1		
<b>Route Name:</b>	UPPER GENERAL SHERMAN TREE PARKING AREAS		
<b>Inspection Date:</b>	August 16, 2007	<b>Approximate Year Built:</b>	2005
<b>*Wall Rating:</b>	87	<b>Maintenance Action:</b>	No Action

**Wall Description**

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Rockery wall on left side of Upper General Sherman Tree Parking area. Newly constructed.		

**Wall Measurements**

<b>Wall Length (ft.):</b>	164	<b>Face Area (sq.):</b>	615
<b>Average Wall Height (ft.):</b>	3	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	7	<b>Vertical Offset (ft.):</b>	0

**Assessed Elements**

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Good condition, recently built wall.	9
WALL FOUNDATION MATERIAL 8.00	No settlement or erosion.	8
PLACED STONE 8.00	Stones are in good condition.	9
LATERAL SLOPE 0.50	No issues.	8
UPSLOPE 0.50	1:1 slope to upper parking area.	8
VEGETATION 0.50	No vegetation.	9
WALL DRAINS 0.50	No drainage issues.	9

**Repair Recommendations**

<b>Failure Consequence:</b>	MODERATE
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

# Sequoia National Park

ROUTE 0951ZZ: UPPER GENERAL SHERMAN TREE PARKING AREAS

## Retaining Wall Condition Photos



SEQU\_0951ZZ\_0.000\_P1\_1.jpg



<b>Wall ID:</b>	SEQU-0952ZZ-0.000-P1		
<b>Route Name:</b>	DORST CAMPGROUND PARKING AREAS		
<b>Inspection Date:</b>	August 17, 2007	<b>Approximate Year Built:</b>	1990
<b>*Wall Rating:</b>	86	<b>Maintenance Action:</b>	No Action

### Wall Description

<b>Wall Function:</b>	Cut Wall	<b>Primary Wall Type:</b>	Gravity - Dry Stone
<b>Surface Treatment:</b>		<b>Secondary Wall Type:</b>	
<b>Secondary Surface Treatment:</b>		<b>Architectural Facing:</b>	
<b>General Description:</b>	Dry laid stone wall, with 2 wing sections in excellent condition. Located in the Amphitheater Parking Area.		

### Wall Measurements

<b>Wall Length (ft.):</b>	188	<b>Face Area (sq.):</b>	752
<b>Average Wall Height (ft.):</b>	4	<b>Face Angle (deg.):</b>	65
<b>Maximum Wall Height (ft.):</b>	5	<b>Vertical Offset (ft.):</b>	0

### Assessed Elements

<b>Element (Weighting Factor)</b>	<b>Narrative</b>	<b>Condition Rating (0 - 10)</b>
PERFORMANCE 8.00	Excellent wall, performing as designed.	9
WALL FOUNDATION MATERIAL 8.00	Compacted soil abutting paved parking lot. No distress.	8
PLACED STONE 8.00	Excellent condition intact stones; no evidence of weathering, none missing.	9
CURB/BERM/DITCH 0.50	Small stone curb on paved parking lot at wall bottom in excellent condition.	8
LATERAL SLOPE 0.50	Stable soil, no signs of distress.	8
UPSLOPE 0.50	Stable, low angle slope heavily vegetated with bushes and trees.	8
WALL DRAINS 0.50	None visible, but no evidence of drainage related stress.	8

### Repair Recommendations

<b>Failure Consequence:</b>	LOW
<b>Recommendation Narrative:</b>	None
<b>Repair Cost:</b>	\$0

2007 cost estimate (ASTM Class D), preliminary for comparison to other repair costs only.

**Sequoia National Park**  
**ROUTE 0952ZZ: DORST CAMPGROUND PARKING AREAS**

**Retaining Wall Condition Photos**

**Condition photos are not available for SEQU-0952ZZ-0.000-P2.**

# Appendix A

## Summary of WIP Definitions



Sequoia National Park



Federal Lands Highway  
Road Inventory Program

# **Appendix A**

## **Summary of WIP Definitions and Assessment Categories**



## **Wall Naming Convention**

Unique “Wall Identification” names were assigned to the retaining walls that were inventoried. The Wall Identification includes the Park Name, the RIP Route Number (e.g., **0013**), the beginning milepoint of a wall (e.g., **0.622**) and the side of the road the wall is located on (e.g., **L.**) relative to the primary direction of travel (direction of increasing mileposts). Thus, a typical wall identified would have the following format: **YOSE-0013-0.622-L.**

For roadways not in RIP, park-supplied route numbers were used or the convention RRR#. Similarly, for parking areas not in RIP, the park-supplied parking area number or the convention PPP# was used. Also for parking areas, walls are numbered in ascending order as they are encountered when traveling counterclockwise around the parking area (most common direction of traffic flow). Parking area walls are designated P1, P2, P3, etc. as new walls are encountered.

**- NPS Retaining Wall Inventory Program Field Guide (WIFG)-**

**Retaining Wall Acceptance Criteria**

- \*All classes of paved roadways and parking areas included in the RIP Route Investigation Report and/or identified by park staff.
- \*Walls must reside within the constructed roadway/parking area prism.
- \*Maximum wall height, including only that portion actively retaining soil and/or rock, must be  $\geq 4$  ft. (>6ft for culvert headwalls).
- \*Consider known/verifiable wall embedment in determining maximum retaining wall height. Include fully buried retaining structures.
- \*Walls have an internal wall face angle  $\geq 45^\circ$  ( $\geq 1H:1V$  face slope ratio).
- \*Include all walls where the intent is to support/protect the travelway, and where failure would require replacement with a retaining wall.

**Definitions**

<b>Design Criteria</b>	Measure of how well current design criteria are satisfied: <b>None</b> - Does not meet any known standards. <b>Non-AASHTO</b> - Does not meet AASHTO, but is consistent with other structures of its type/period with good performance. <b>AASHTO</b> - Apparently meets current AASHTO Geometric, Design, Materials, and Construction Standards.
<b>Consequence of Failure</b>	<b>Low</b> - No loss of roadway, no to low public risk, no impact to traffic during wall repair/replacement <b>Moderate</b> - Hourly to short-term closure of roadway, low-to-moderate public risk, multiple alternate routes available <b>High</b> - Seasonal to long-term loss of roadway, substantial loss-of-life risk, no alternate routes available
<b>Action</b>	Select from: <b>No Action, Monitor, Maintenance, Repair Elements, Replace Elements, and Replace Wall</b>
<b>Weighting Factor</b>	Weighting Factor to be applied to the Condition Rating (CR). When indicated on the Condition Assessment Input Form: WF=0.5 for CR=8-10; WF=1.0 for CR=4-7; and WF=5 for CR=1-3.
<b>Data Reliability</b>	Estimate of how well observed conditions represent wall performance, and if additional investigations may be warranted. <b>1-Poor</b> Conditions cannot be sufficiently observed to rate element(s), warranting additional investigations to better define element performance and/or to determine the cause(s) or poor performance. <b>2-Good</b> Observed conditions are sufficient to rate the conditions of wall element(s); however, additional investigations would be useful to better understand element performance. <b>3-Very Good</b> Observed conditions clearly describe wall performance. Additional investigations are not needed.

**Wall Function Codes**

[FW] Fill Wall	[BW] Bridge Wall	[SW] Switchback Wall
[CW] Cut Wall	[HW] Head Wall	[SP] Slope Protection [FL] Flood Wall

**Wall Type Codes**

[AH] Anchor, Tieback H-Pile	[CC] Crib, Concrete	[MG] MSE, Geosynthetic Wrapped Face
[AM] Anchor, Micropile	[CM] Crib, Metal	[MP] MSE, Precast Panel
[AS] Anchor, Tieback Sheet Pile	[CT] Crib, Timber	[MS] MSE, Segmental Block
[BC] Bin, Concrete	[GB] Gravity, Concrete Block/ Brick	[MW] MSE, Welded Wire Face
[BM] Bin, Metal	[GC] Gravity, Mass Concrete	[SN] Soil Nail
[CL] Cantilever, Concrete	[GD] Gravity, Dry Stone	[TP] Tangent/ Secant Pile
[CP] Cantilever, Soldier Pile	[GG] Gravity, Gabion	[OT] Other, User Defined
[CS] Cantilever, Sheet Pile	[GM] Gravity, Mortared Stone	[NO] None

**Architectural Facing Type Codes**

[BV] Brick Veneer	[PF] Planted Face	[SS] Simulated Stone
[CO] Cementitious Overlay	[SC] Sculpted Shotcrete	[SV] Stone Veneer
[FF] Fractured Fin Concrete	[SH] Shotcrete (nozzle finish)	[TI] Timber
[FL] Formlined Concrete	[SM] Steel/Metal	[OT] Other, User Defined
[PC] Plain Concrete (float finish or light texture)	[SO] Stone	[NO] None

**Surface Treatment Codes**

[BG] Bush Gun (tool-textured concrete)	[PS] Preservative	[WS] Weathering Steel
[CA] Color Additive	[SE] Silane Sealer	[OT] Other, User Defined
[GL] Galvanized	[ST] Stain	[NO] None
[PA] Painted	[TR] Tar Coated	

### Condition Ratings

Condition Ratings apply to all Primary and Secondary Wall Elements, and are intended to assist in consistently defining element **severity**, **extent**, and **repair/replace urgency** of wall element distresses.

<b>9-10 (Excellent)</b>	-Any defects are minor and are within normal range for <i>newly constructed or fabricated</i> elements. -Defects may include those typically caused from fabrication or construction.
<b>7-8 (Good)</b>	-Low-to-moderate extent of low severity distress. -Distress present does not significantly compromise the element function, nor is there significantly severe distress to major structural components of an element.
<b>5-6 (Fair)</b>	-High extent of low severity distress and/or low-to-medium extent of medium to high severity distress. -Distress present does not compromise element function, but lack of treatment may lead to impaired function/elevated risk of element failure in the near term.
<b>3-4 (Poor)</b>	-Medium-to-high extent of medium-to-high severity distress. -Distress present threatens element function, and strength is obviously compromised and/or structural analysis is warranted. -The element condition does not pose an immediate threat to wall stability and road closure is not necessary.
<b>1-2 (Critical)</b>	-Medium-to-high extent of high severity distress. -Element is no longer serving intended function. Element performance threatening overall stability of the wall at the time of inspection.

### Wall Performance Condition Ratings

<b>Performance</b>	Evaluation of overall wall performance as indicated by observations not necessarily captured by observed distresses for specific elements, including global wall distresses (rotation, settlement, translation, displacement, etc.) and/or evidence of prior repairs that may further indicate component problems.	<p><b>Good to Excellent</b> - No observation of distresses not already captured by individual element condition assessment. No combination of element distresses indicating unseen problems or creating significant performance problems. No history of remediation or repair to wall or adjacent elements.</p> <p><b>Fair</b> - Some observed global distress is not associated with specific elements. Some observation of element distress combinations that indicate wall component problems. Minor work on primary elements or major work on secondary elements has occurred improving overall wall function.</p> <p><b>Poor to Critical</b> - Global wall rotation, settlement, and/or overturning is readily apparent. Combined element distresses clearly indicate serious stability problems with components or global wall stability. Major repairs have occurred to wall structural elements, though functionality has not improved significantly.</p>
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