

THE ROAD INVENTORY
for
Great Sand Dunes National Monument
(Colorado)



national park service



Prepared By:
Federal Highway Administration
Eastern Federal Lands Highway Division
June 1998



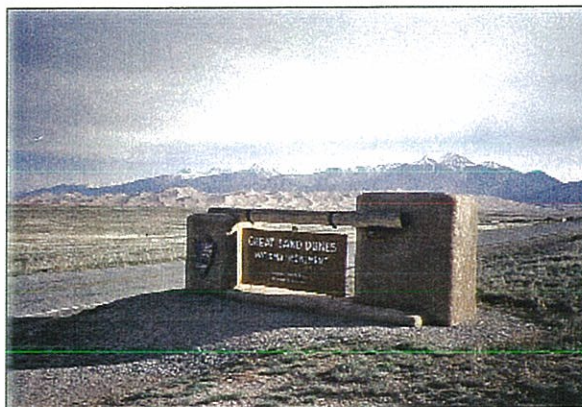
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THE ROAD INVENTORY
for
Great Sand Dunes National Monument
(Colorado)



national park service

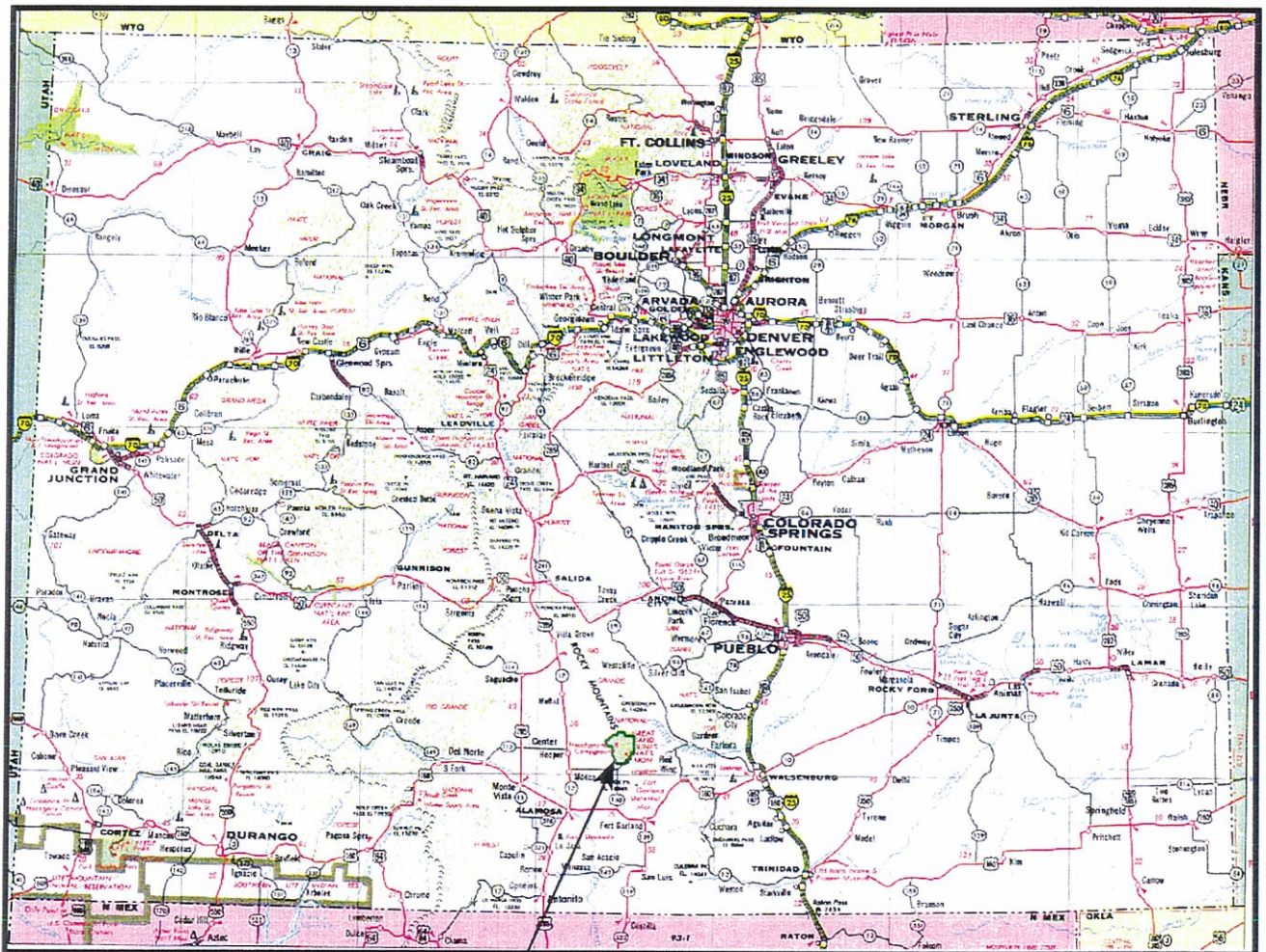


Prepared By:
Federal Highway Administration
Eastern Federal Lands Highway Division
April 1999



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Great Sand Dunes National Monument in Colorado



Great Sand Dunes
National Monument



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INTRODUCTION

Background: In July 1976, amended December 1980, the National Park Service (NPS) and the Federal Highway Administration (FHWA) entered into a Memorandum of Agreement (MOA), establishing the Road Inventory Program (RIP). The purpose of RIP, per the 1980 MOA, was to develop long range and short range costs and programs to bring NPS roads up to, or to maintain, designated standards; as well as provide a database so the NPS can revise their Maintenance Management System, if necessary. A supplementary Project Agreement, Number DTFH71-98-X-00005, was prepared and signed by the FHWA and the NPS to coordinate the project roles and responsibilities, funding requirements, and define the deliverables for the completion of Cycle 2 (January 1998 to January 2000).

Since 1984 the funding has been derived from the NPS FLHP (Title 23) planning funds, and coordinated by the National Park Service Park Facility Management Division. The need for a total road information database was mandated by the requirements for a continuing, comprehensive, and coordinated (3-C) planning process, and Maintenance Management System.

Federal Lands Highway (FLH) was assigned the task to inventory maintenance items (pavement type and quantities, location of culverts, ditches, guardrail, etc.), identify pavement distresses and evaluate the condition of existing park roads, summarize the data and findings in a report, and provide a videolog of the NPS roads system.

Objective: The objective of the RIP report is to provide NPS personnel at all levels, with the basic information needed for effective road and road system planning, management, operations, and maintenance.

These reports are prepared in standard format and content with comprehensive data analysis for each park, which will replace the old Brown Books. The data presented in each report will vary greatly from park to park, but the presentation of the report will be uniform in format and will become a seamless document throughout the NPS roads system, displaying site specific data for each park.

Scope: RIP is a national program coordinated by the Eastern Federal Lands Highway Division (EFLHD) of the FHWA. The FHWA goal for the paved park roads is to provide timely, cost effective, and accurate roadway inventories and pavement surveys of all the National Park Roads. Dissemination of this data to the NPS will provide them with a data base upon which they can develop a funding and maintenance management program to maintain roadway standards of the National Park System to prevent further deterioration over the next five years.

In an effort to track the condition of the park roads, a cyclic data collection and reporting process was implemented for all parks and regions. Monitoring the condition and system performance of the paved roads over time using a percent good, fair, and poor condition rating provided a realistic means of assessing the funding needs for road improvements. The pavement condition rating system is described in Section VI of this report. This pavement condition performance assessment will determine the level of paved park road deterioration throughout the park road system.

The report will include a Park Summary, a Park Summary Map, a Park Route Inventory, a Maintenance Features Summary, a Paved Route Condition Rating, and a Features Inventory. Also included is a listing of all unpaved routes in each park and various Appendices.

The FHWA RIP team will inspect, rate, inventory the roads, and prepare the final RIP reports for distribution to the NPS. All the field work is coordinated with the site specific park and the regional offices to ensure customer satisfaction. The FHWA Washington Office coordinates policy and prepares national reports and needs assessment studies for Congress.

The FHWA is responsible for all the data presented in this report. Anyone having questions or comments regarding the contents of this report are encouraged to contact the FHWA RIP Coordinator or the NPS RIP Coordinator in your Region.

RIP Coordinator
Technical Services, HTS-15
FHWA/EFLHD
21400 Ridgetop Circle
Sterling, VA 20166
(703) 285-0076

Great Sand Dunes National Monument Summaries

PARK TOTAL SUMMARY ITEMS	TOTAL	DATE
PAVED ROUTE MILES	7.02	980512
UNPAVED ROUTE ESTIMATED MILES	6.67	980512
PAVED AND UNPAVED ROUTE MILES	13.69	980512
PARKING LOT LANE MILES	2.54	980512
PAVED LANE MILES	15.02	980512
PARK ACRES	48,000	980512

Note: Paved Lanes Miles includes parking lot areas which have been converted to lane miles using an 11-foot lane width.

RED LETTER denotes estimated mileage.

Estimated Unpaved Mileage Summary by Functional Class

F. C.	MILEAGE	PERCENTAGE
I	-	-
II	-	-
III	-	-
IV	4.99	74.81%
V	0.88	13.20%
VI	0.80	11.99%
VII	-	-
VIII	-	-

Paved Route Miles and Percentages by Functional Class and SCR

F. C.	Excellent (95 - 100)		Good (85 - 94)		Fair (61 - 84)		Poor (<= 60)		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	
I	-	-	-	-	0.72	10.25	3.58	51.00	4.30
II	-	-	-	-	0.50	7.14	-	-	0.50
III	-	-	-	-	0.29	4.13	1.46	20.80	1.75
IV	-	-	-	-	-	-	-	-	-
V	0.09	1.28	-	-	-	-	0.38	5.41	0.47
VI	-	-	-	-	-	-	-	-	-
VII	-	-	-	-	-	-	-	-	-
VIII	-	-	-	-	-	-	-	-	-
Totals	0.09	1.28	0.00	0.00	1.51	21.52	5.42	77.21	7.02

GREAT SAND DUNES NM - GRSA/1470
PAVEMENT SECTIONS AND SAMPLE UNIT LOCATION

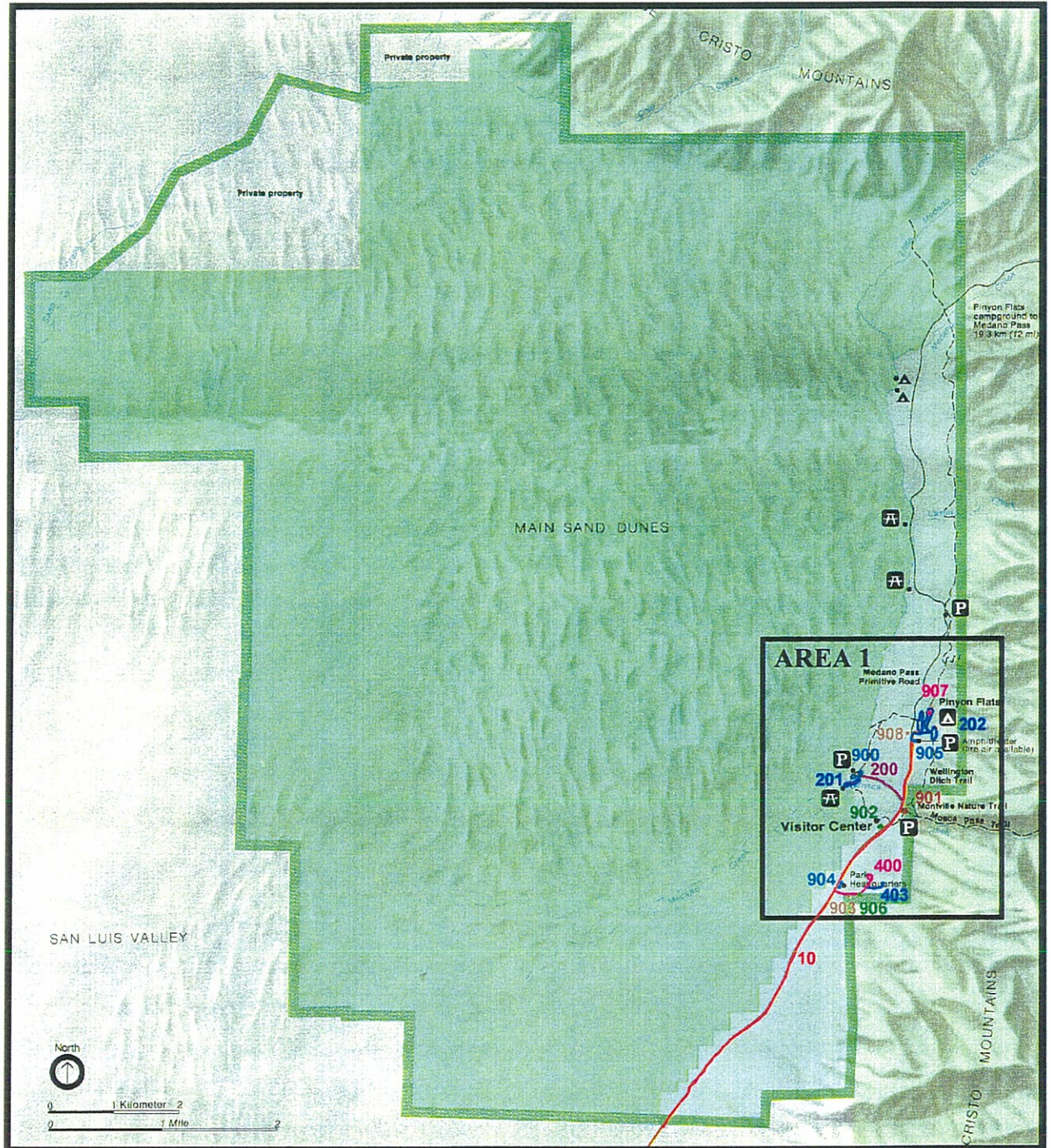
ROUTE NUMBER	PAVEMENT SECTION				SAMPLE UNIT			PERCENT SAMPLED
	NUMBER	START	END	LENGTH	NUMBER	START	LENGTH	
010	1	0.000	0.808	0.808	14	0.494	200'	4.7
010	2	0.808	1.776	0.968	02	0.838	200'	3.9
010	3	1.776	2.674	0.898	21	2.522	200'	4.2
010	4	2.674	2.780	0.106	01	2.674	200'	35.8
010	5	2.780	3.579	0.799	14	3.274	200'	4.8
010	6	3.579	4.295	0.716	16	4.140	200'	5.3
200	1	0.000	0.501	0.501	11	0.380	200'	7.6
201	1	0.000	0.335	0.335	07	0.215	200'	11.3
202	1	0.000	0.188	0.188	04	0.114	200'	20.2
202	2	0.188	0.623	0.435	02	0.226	200'	8.7
202	3	0.623	1.118	0.495	05	0.775	200'	7.7
202	4	1.118	1.405	0.287	04	1.232	200'	13.2
400	1	0.000	0.379	0.379	03	0.076	200'	10.0
403	1	0.000	0.089	0.089	02	0.038	200'	42.7

TOTAL PERCENT OF PARK MILEAGE SAMPLED 7.6

GREAT SAND DUNES NATIONAL MONUMENT

ROUTE LOCATION

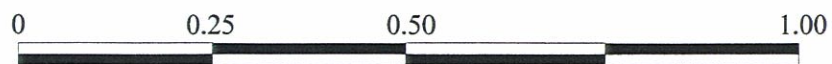
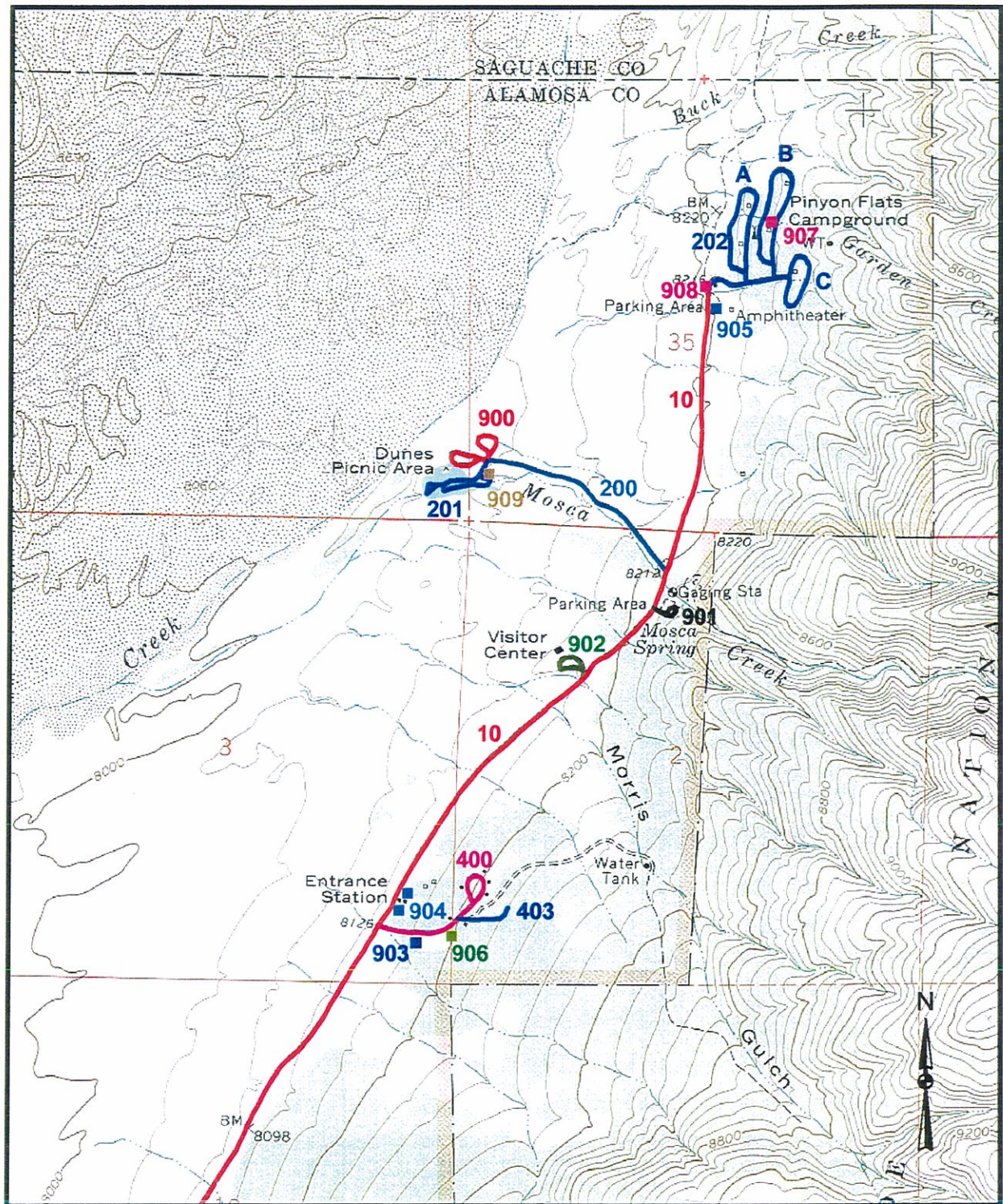
KEY MAP



Great Sand Dunes National Monument

ROUTE LOCATION

AREA MAP 1



Scale in Miles

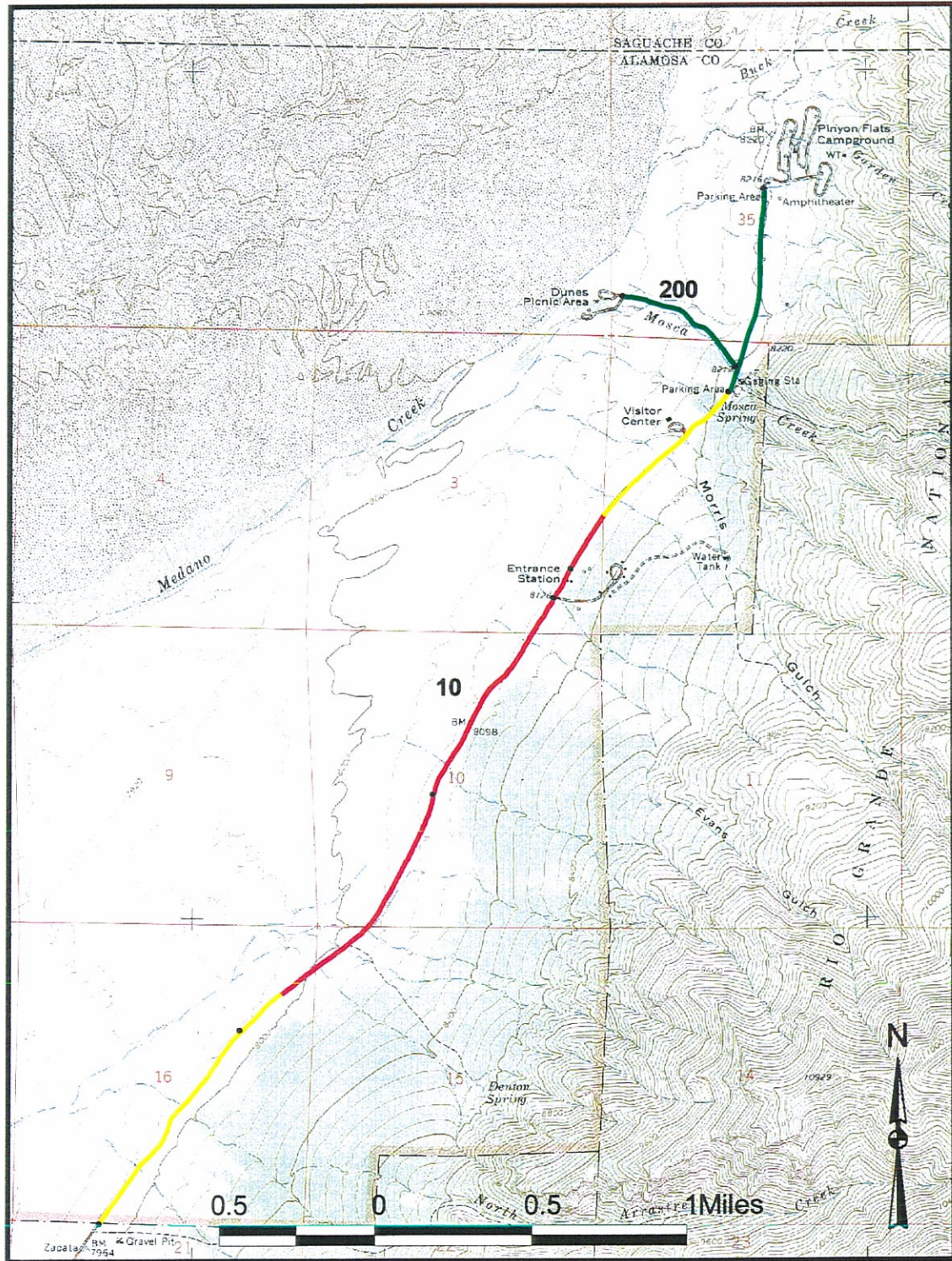
Great Sand Dunes National Monument

ROUTE CONDITION

KEY MAP

SCR/DCR - by Section

FUNCTIONAL CLASSIFICATION I, II, VII, VIII ROADS



SCR Excellent ■ Good ■ Fair ■ Poor ■ DCR Poor =

* Roughness data is not available for this park, therefore only the SCR is calculated.

GREAT SAND DUNES NATIONAL MONUMENT
NUMERIC ROUTE LIST

RED LETTER Denotes Estimated Mileages.

F_CLASS (Functional Class, P = Public, N = Non-Public)

Shading Color Key:

White = Paved Routes

Blue = Paved Parking Area

Yellow = Unpaved Routes

Green = Unpaved Parking Area

Route Number	Route Name	Route Miles	Route Description	Paved Miles	Unpaved Miles	Lanes	F_Class
010	ENTRANCE ROAD	4.30	FROM SOUTH PARK BOUNDARY, NORTH TO INT. RTES 202 & 205	4.30	-	2	I
200	DUNES PARKING ACCESS ROAD	0.50	FROM RTE 010, WEST TO RTES 201, & 900	0.50	-	2	II
201	DUNES PICNIC AREA ROAD	0.34	FROM INT. OF RTES 200 & 900, SOUTH THROUGH PICNIC AREA LOOPS	0.34	-	1	III
202	PINYON FLATS CAMPGROUND ROAD	1.41	FROM END OF RTE 010, EAST THROUGH CAMPGROUND LOOPS	1.41	-	2	III
203	MEDANO ROAD	4.99	FROM END OF RTE 010, NORTH TO EAST PARK BOUNDARY	-	4.99	1	IV
204	LITTLE MEDANO CREEK ROAD	0.80	FROM RTE 203 @ MP 4.45, WEST TO LITTLE MEDANO CREEK	-	0.80	1	VI
400	RESIDENCE AND UTILITY AREA ROAD	0.38	FROM RTE 010, EAST TO END OF LOOP IN RESIDENCE AREA	0.38	-	2	V
401	TRAILER RESIDENCE ROAD	0.13	FROM RTE 400, NORTH TO END	-	0.13	1	V
402	BONEYARD ROAD	0.35	FROM RTE 400, SOUTH TO END	-	0.35	1	V
403	NEW RESIDENCE ROAD	0.09	FROM RTE 400, EAST TO END	0.09	-	2	V
404	BARN ROAD	0.30	FROM RTE 400, EAST TO WATER TANK	-	0.30	1	V
405	PINYON FLATS CAMPGROUND WATER TANK ROAD	0.10	FROM RTE 202 (LOOP C) . EAST TO WATER TANK	-	0.10	1	V
900	DUNES PARKING AREA	71,877 SF	FROM END OF RTE 200, WEST TO PARKING	1.23	-	-	P
901	MONTVILLE TRAILHEAD PARKING	11,555 SF	FROM RTE 010, EAST TO TRAILHEAD PARKING	0.20	-	-	P
902	VISITOR CENTER PARKING	24,474 SF	FROM RTE 010, WEST TO VISITOR CENTER PARKING	0.42	-	-	P
903	MAINTENANCE AREA	14,152 SF	FROM RTE 400, SOUTH TO MAINTENANCE AREA AND PARKING	0.24	-	-	N
904	HEADQUARTERS PARKING	5,761 SF	FROM RTE 010, EAST TO HEADQUARTERS PARKING	0.10	-	-	P
905	AMPHITHEATER AND DUMP STATION PARKING AREA	13,890 SF	FROM RTE 010, EAST TO PARKING AND DUMP STATION AREA	0.24	-	-	P
906	RESIDENCE PARKING	2,166 SF	PARKING FOR RESIDENCE ON RTE 400, @ MP 0.135	0.04	-	-	N
907	BACKCOUNTRY OVERNIGHT PARKING	986 SF	GROUP PARKING ALONG LEFT SIDE OF LOOP B IN THE PINYON FLATS CG	0.02	-	-	P
908	OVERNIGHT PARKING	2,370 SF	PARKING ALONG LEFT SIDE OF RTE 202 AT INT. WITH RTES 010 & 205	0.04	-	-	P
909	NORTH RAMADA PICNIC AREA	-	UNPAVED PICNIC AREA ON RTE 201 @ MP 0.03	-	-	-	P

GREAT SAND DUNES NATIONAL MONUMENT
ALPHABETIC ROUTE LIST

RED LETTER Denotes Estimated Mileages.

F_CLASS (Functional Class, P = Public, N = Non-Public)

Shading Color Key:

White = Paved Routes

Blue = Paved Parking Area

Yellow = Unpaved Routes

Green = Unpaved Parking Area

Route Number	Route Name	Route Miles	Route Description	Paved Miles	Unpaved Miles	Lanes	F_Class
905	AMPHITHEATER AND DUMP STATION PARKING AREA	13,890 SF	FROM RTE 010, EAST TO PARKING AND DUMP STATION AREA	0.24	-	-	P
907	BACKCOUNTRY OVERNIGHT PARKING	986 SF	GROUP PARKING ALONG LEFT SIDE OF LOOP B IN THE PINYON FLATS CG	0.02	-	-	P
404	BARN ROAD	0.30	FROM RTE 400, EAST TO WATER TANK	-	0.30	1	V
402	BONEYARD ROAD	0.35	FROM RTE 400, SOUTH TO END	-	0.35	1	V
200	DUNES PARKING ACCESS ROAD	0.50	FROM RTE 010, WEST TO RTES 201, & 900	0.50	-	2	II
900	DUNES PARKING AREA	71,677 SF	FROM END OF RTE 200, WEST TO PARKING	1.23	-	-	P
201	DUNES PICNIC AREA ROAD	0.34	FROM INT. OF RTES 200 & 900, SOUTH THROUGH PICNIC AREA LOOPS	0.34	-	1	III
010	ENTRANCE ROAD	4.30	FROM SOUTH PARK BOUNDARY, NORTH TO INT. RTES 202 & 205	4.30	-	2	I
904	HEADQUARTERS PARKING	5,761 SF	FROM RTE 010, EAST TO HEADQUARTERS PARKING	0.10	-	-	P
204	LITTLE MEDANO CREEK ROAD	0.80	FROM RTE 203 @ MP 4.45, WEST TO LITTLE MEDANO CREEK	-	0.80	1	VI
903	MAINTENANCE AREA	14,152 SF	FROM RTE 400, SOUTH TO MAINTENANCE AREA AND PARKING	0.24	-	-	N
203	MEDANO ROAD	4.99	FROM END OF RTE 010, NORTH TO EAST PARK BOUNDARY	-	4.99	1	IV
901	MONTVILLE TRAILHEAD PARKING	11,555 SF	FROM RTE 010, EAST TO TRAILHEAD PARKING	0.20	-	-	P
403	NEW RESIDENCE ROAD	0.09	FROM RTE 400, EAST TO END	0.09	-	2	V
909	NORTH RAMADA PICNIC AREA	-	UNPAVED PICNIC AREA ON RTE 201 @ MP 0.03	-	-	-	P
908	OVERNIGHT PARKING	2,370 SF	PARKING ALONG LEFT SIDE OF RTE 202 AT INT. WITH RTES 010 & 205	0.04	-	-	P
202	PINYON FLATS CAMPGROUND ROAD	1.41	FROM END OF RTE 010, EAST THROUGH CAMPGROUND LOOPS	1.41	-	2	III
405	PINYON FLATS CAMPGROUND WATER TANK ROAD	0.10	FROM RTE 202 (LOOP C), EAST TO WATER TANK	-	0.10	1	V
400	RESIDENCE AND UTILITY AREA ROAD	0.38	FROM RTE 010, EAST TO END OF LOOP IN RESIDENCE AREA	0.38	-	2	V
906	RESIDENCE PARKING	2,166 SF	PARKING FOR RESIDENCE ON RTE 400, @ MP 0.135	0.04	-	-	N
401	TRAILER RESIDENCE ROAD	0.13	FROM RTE 400, NORTH TO END	-	0.13	1	V
902	VISITOR CENTER PARKING	24,474 SF	FROM RTE 010, WEST TO VISITOR CENTER PARKING	0.42	-	-	P

PARKWIDE MAINTENANCE FEATURES SUMMARY
IMR : GRSA : 1470

ICAP CODE	FEATURE	PARK TOTAL	UNIT
1152	PULLOUT (PAVED)	11	EACH
1153	INTERSECTION	21	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	380	LINEAR FEET
1331	CULVERT	74	EACH
1333	DROP INLET	-	EACH
1340	CURB	1,331	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	375	LINEAR FEET
1542	GUARDWALL	158	LINEAR FEET
1545	CATTLE GUARD	1	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	8	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	GATE	1	EACH
	PAVED PARKING AREA	9	EACH
	PARK BOUNDARY	1	EACH

ROUTE MAINTENANCE FEATURES SUMMARY

IMR : GRSA : 1470

ROUTE 010

ENTRANCE ROAD

ICAP CODE	FEATURE	ROUTE TOTAL	UNIT
1152	PULLOUT (PAVED)	7	EACH
1153	INTERSECTION	6	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	-	LINEAR FEET
1331	CULVERT	53	EACH
1333	DROP INLET	-	EACH
1340	CURB	597	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	-	LINEAR FEET
1542	GUARDWALL	-	LINEAR FEET
1545	CATTLE GUARD	1	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	-	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	PAVED PARKING AREA	4	EACH
	GATE	-	EACH
	PARK BOUNDARY	1	EACH

ROUTE MAINTENANCE FEATURES SUMMARY

IMR : GRSA : 1470

ROUTE 200

DUNES PARKING AREA ACCESS ROAD

ICAP CODE	FEATURE	ROUTE TOTAL	UNIT
1152	PULLOUT (PAVED)	-	EACH
1153	INTERSECTION	-	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	380	LINEAR FEET
1331	CULVERT	2	EACH
1333	DROP INLET	-	EACH
1340	CURB	-	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	-	LINEAR FEET
1542	GUARDWALL	-	LINEAR FEET
1545	CATTLE GUARD	-	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	-	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	PAVED PARKING AREA	1	EACH
	GATE	-	EACH
	PARK BOUNDARY	-	EACH

ROUTE MAINTENANCE FEATURES SUMMARY

IMR : GRSA : 1470

ROUTE 201

DUNES PICNIC AREA ROAD

ICAP CODE	FEATURE	ROUTE TOTAL	UNIT
1152	PULLOUT (PAVED)	-	EACH
1153	INTERSECTION	6	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	-	LINEAR FEET
1331	CULVERT	-	EACH
1333	DROP INLET	-	EACH
1340	CURB	-	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	375	LINEAR FEET
1542	GUARDWALL	-	LINEAR FEET
1545	CATTLE GUARD	-	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	-	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	PAVED PARKING AREA	-	EACH
	GATE	-	EACH
	PARK BOUNDARY	-	EACH

ROUTE MAINTENANCE FEATURES SUMMARY

IMR : GRSA : 1470

ROUTE 202

PINYON FLATS CAMPGROUND ROAD

ICAP CODE	FEATURE	ROUTE TOTAL	UNIT
1152	PULLOUT (PAVED)	4	EACH
1153	INTERSECTION	4	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	-	LINEAR FEET
1331	CULVERT	17	EACH
1333	DROP INLET	-	EACH
1340	CURB	734	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	-	LINEAR FEET
1542	GUARDWALL	158	LINEAR FEET
1545	CATTLE GUARD	-	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	8	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	PAVED PARKING AREA	2	EACH
	GATE	1	EACH
	PARK BOUNDARY	-	EACH

ROUTE MAINTENANCE FEATURES SUMMARY

IMR : GRSA : 1470

ROUTE 400

RESIDENCE AND UTILITY AREA ROAD

ICAP CODE	FEATURE	ROUTE TOTAL	UNIT
1152	PULLOUT (PAVED)	-	EACH
1153	INTERSECTION	4	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	-	LINEAR FEET
1331	CULVERT	2	EACH
1333	DROP INLET	-	EACH
1340	CURB	-	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	-	LINEAR FEET
1542	GUARDWALL	-	LINEAR FEET
1545	CATTLE GUARD	-	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	-	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	PAVED PARKING AREA	2	EACH
	GATE	-	EACH
	PARK BOUNDARY	-	EACH

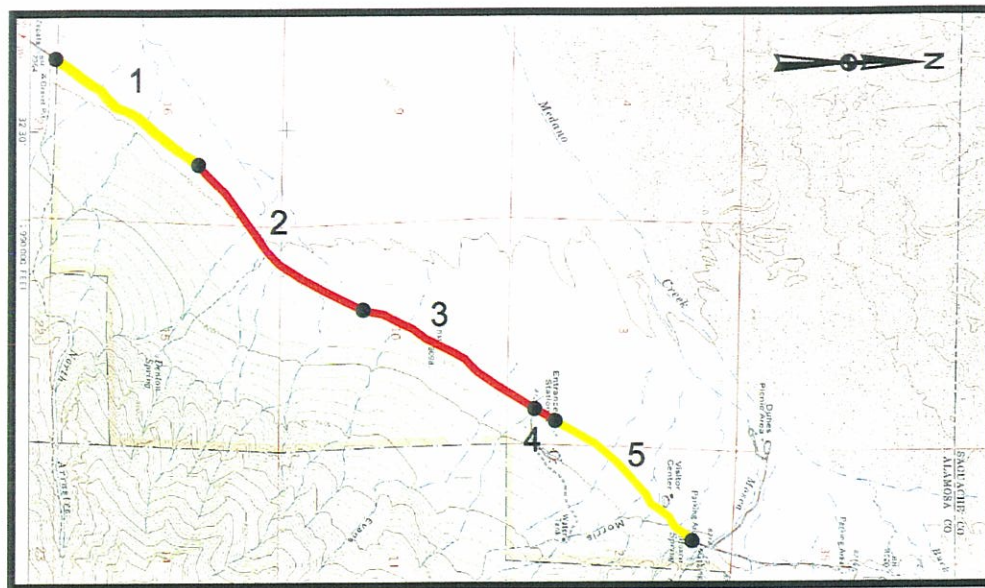
ROUTE MAINTENANCE FEATURES SUMMARY

IMR : GRSA : 1470

ROUTE 403

NEW RESIDENCE ROAD

ICAP CODE	FEATURE	ROUTE TOTAL	UNIT
1152	PULLOUT (PAVED)	-	EACH
1153	INTERSECTION	1	EACH
1190	TURNOUT (PASSING LANE)	-	LINEAR FEET
1320	PAVED DITCH	-	LINEAR FEET
1331	CULVERT	-	EACH
1333	DROP INLET	-	EACH
1340	CURB	-	LINEAR FEET
1530	TRAFFIC LIGHT	-	EACH
1540	GUARDRAIL	-	LINEAR FEET
1542	GUARDWALL	-	LINEAR FEET
1545	CATTLE GUARD	-	EACH
1720	BRIDGE	-	EACH
1740	TUNNEL	-	EACH
3361	RETAINING WALL	-	EACH
5833	LIGHT POLE	-	EACH
8390	OVERHEAD SIGN	-	EACH
8400	RAILROAD CROSSING	-	EACH
	PAVED PARKING AREA	-	EACH
	GATE	-	EACH
	PARK BOUNDARY	-	EACH



SCR Excellent Good Fair Poor DCR Poor

* Roughness data is not available for this park, therefore only the SCR is calculated.

Intermountain Region
Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 010 ENTRANCE ROAD

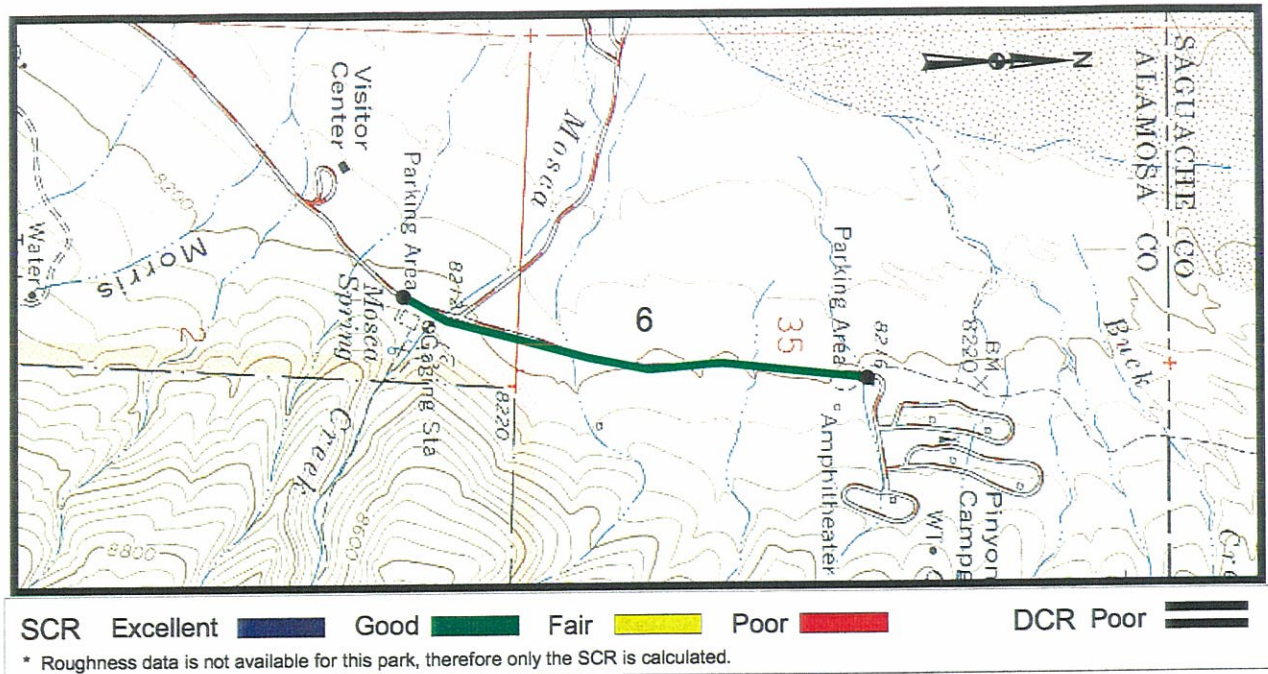
TOTAL LENGTH: 4.30 Miles

Section Number	1	2	3	4	5
Section Length (mi)	0.81	0.97	0.90	0.11	0.80
AADT	293	293	293	293	293
SADT	NA	NA	NA	NA	NA
ADT Date	12/97	12/97	12/97	12/97	12/97
Cross Section Information					
Number of Lanes	2	2	2	2	2
Paved Width (ft)	25	25	24	35	24
Lane Width (ft)	11	10	11	10	11
Shoulder Width (ft)	5	5	6	11	6
Roadway Condition Information					
SCR (Surface Condition Rating)	67	60	59	59	68
Alligator Cracking	100	100	100	100	100
Rutting Index	100	100	100	100	100
Patching Index	100	100	100	100	100
Transverse Cracking	82	78	69	73	76
Longitudinal Cracking	85	82	90	85	91
Shoulder Condition Rating	Excellent	Excellent	Excellent	Good	Good
Drainage Condition Rating	Excellent	Excellent	Excellent	Good	Good

COMMENTS:

Photo #01 - Section 1, Sample Unit 14 (MP 0.50)
 Photo #02 - Section 2, (MP 0.81)
 Photo #03 - Typical culvert inlet with headwall (MP 0.85)
 Photo #04 - Typical culvert outlet (MP 0.85)
 Photo #05 - Section 2, Sample Unit 2 (MP 0.84)
 Photo #06 - Section 3 (MP 1.78)
 Photo #07 - Section 3, Sample Unit 21 (MP 2.52)
 Photo #08 - Section 4, Sample Unit 1 (MP 2.67)
 Photo #09 - Section 5 (MP 2.78)
 Photo #10 - Section 5, Sample Unit 14 (MP 3.27)
 Photo #11 - Culvert inlet (MP 3.40)
 Photo #12 - Culvert outlet (MP 3.40)

ROUTE: 010 ENTRANCE ROAD



Intermountain Region
Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 010 ENTRANCE ROAD

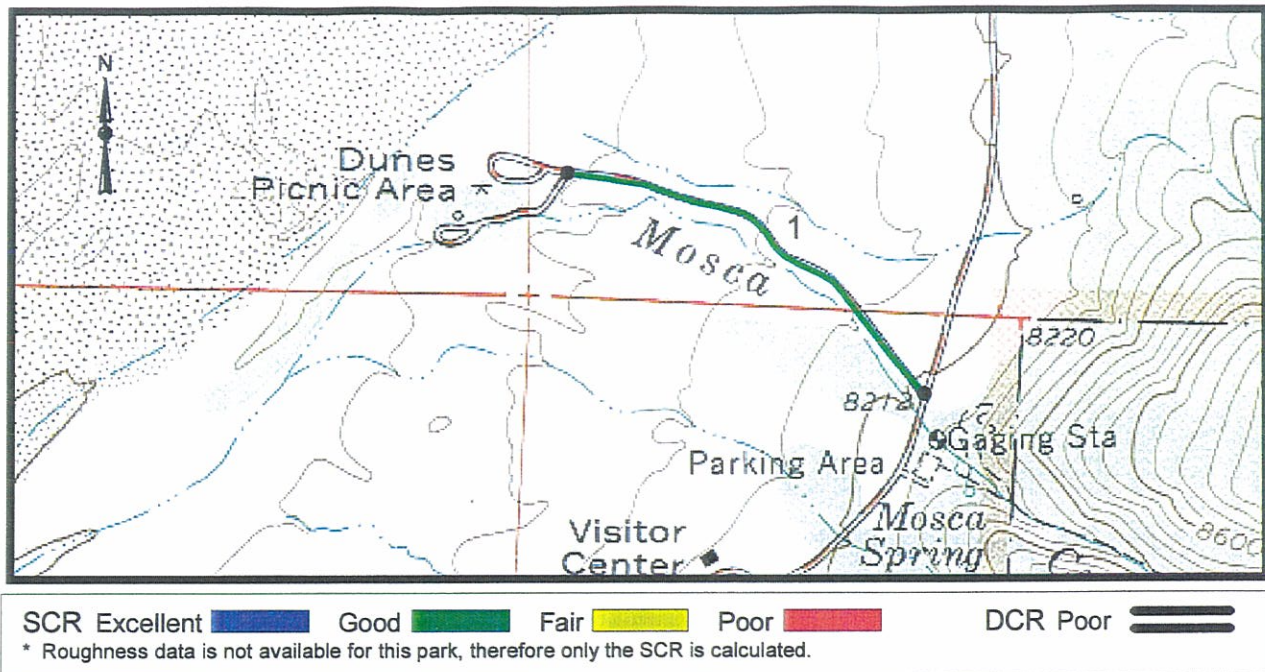
TOTAL LENGTH: 4.30 Miles

Section Number	6				
Section Length (mi)	0.72				
AADT	293				
SADT	NA				
ADT Date	12/97				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	23				
Lane Width (ft)	11				
Shoulder Width (ft)	5				
Roadway Condition Information					
SCR (Surface Condition Rating)	89				
Alligator Cracking	100				
Rutting Index	100				
Patching Index	100				
Transverse Cracking	92				
Longitudinal Cracking	97				
Shoulder Condition Rating	Good				
Drainage Condition Rating	Good				

COMMENTS:

Photo #13 - Section 6 (MP 3.58)
Photo #14 - Section 6, Sample Unit 16 (MP 4.14)

ROUTE: 010 ENTRANCE ROAD



Intermountain Region

Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 200 DUNES PARKING ACCESS ROAD

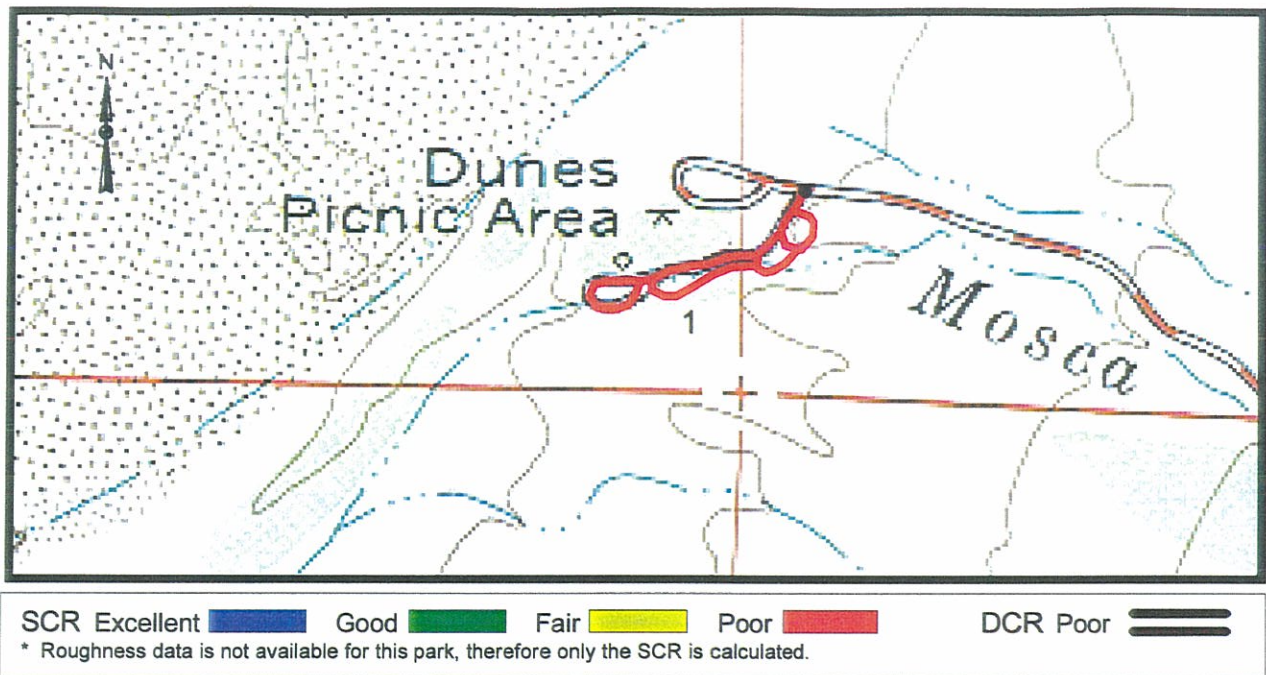
TOTAL LENGTH: 0.50 Miles

Section Number	1				
Section Length (mi)	0.50				
AADT	NA				
SADT	NA				
ADT Date	NA				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	23				
Lane Width (ft)	10				
Shoulder Width (ft)	2				
Roadway Condition Information					
SCR (Surface Condition Rating)	92				
Alligator Cracking	100				
Rutting Index	100				
Patching Index	100				
Transverse Cracking	92				
Longitudinal Cracking	100				
Shoulder Condition Rating	Excellent				
Drainage Condition Rating	Excellent				

COMMENTS:

Photo #25 - Route 200, Section 1, Sample Unit 11 (MP 0.38)

ROUTE: 200 DUNES PARKING ACCESS ROAD



Intermountain Region
Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 201 DUNES PICNIC AREA ROAD

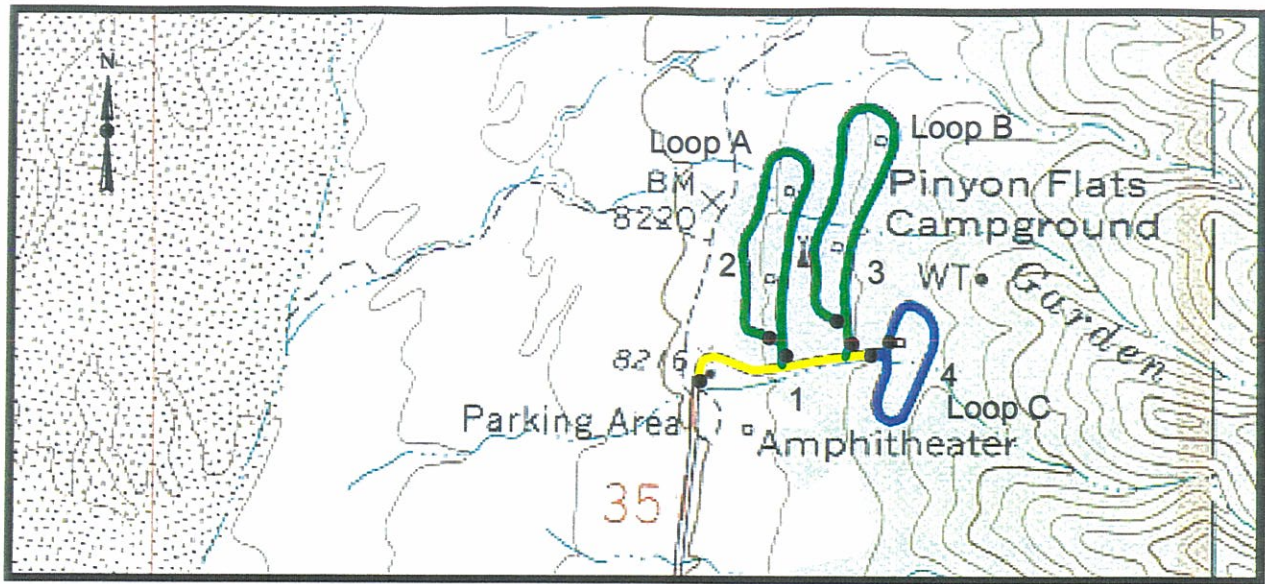
TOTAL LENGTH: 0.34 Miles

Section Number	1				
Section Length (mi)	0.34				
AADT	NA				
SADT	NA				
ADT Date	NA				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	11				
Lane Width (ft)	11				
Shoulder Width (ft)	0				
Roadway Condition Information					
SCR (Surface Condition Rating)	51				
Alligator Cracking	100				
Rutting Index	100				
Patching Index	100				
Transverse Cracking	53				
Longitudinal Cracking	97				
Shoulder Condition Rating	NA				
Drainage Condition Rating	Fair				

COMMENTS:

Photo #15 - Begin Route 201
Photo #16 - North Ramada picnic site (gravel area)
Photo #17 - Picnic access
Photo #18 - Wood guardrail
Photo #19 - Standing water at picnic loop
Photo #20 - South Ramada picnic site under construction
Photo #21 - One-way loop
Photo #22 - Access to picnic restrooms
Photo #23 - Developed low water crossing
Photo #24 - Developed low water crossing

ROUTE: 201 DUNES PICNIC AREA ROAD



SCR Excellent

Good

Fair

Poor

DCR Poor

* Roughness data is not available for this park, therefore only the SCR is calculated.

Intermountain Region

Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 202 PINYON FLATS CAMPGROUND ROAD

TOTAL LENGTH: 1.41 Miles

Section Number	1	2	3	4	
Section Length (mi)	0.19	0.43	0.50	0.29	
AADT	NA	NA	NA	NA	
SADT	NA	NA	NA	NA	
ADT Date	NA	NA	NA	NA	
Cross Section Information					
Number of Lanes	2	1	1	1	
Paved Width (ft)	24	15	15	18	
Lane Width (ft)	12	15	15	16	
Shoulder Width (ft)	0	0	0	0	
Roadway Condition Information					
SCR (Surface Condition Rating)	81	86	85	96	
Alligator Cracking	100	100	100	100	
Rutting Index	100	100	100	100	
Patching Index	100	100	100	100	
Transverse Cracking	85	89	87	96	
Longitudinal Cracking	97	98	99	100	
Shoulder Condition Rating	NA	NA	NA	NA	
Drainage Condition Rating	Good	Good	Good	Excellent	

COMMENTS:

Photo #26 - End Route 010, Begin Route 202, Section 1

Photo #27 - Section 1, Sample Unit 4 (MP 0.11)

Photo #28 - Campground Loop A, Section 2, Sample Unit 2 (MP 0.04 - from beginning of Loop A)

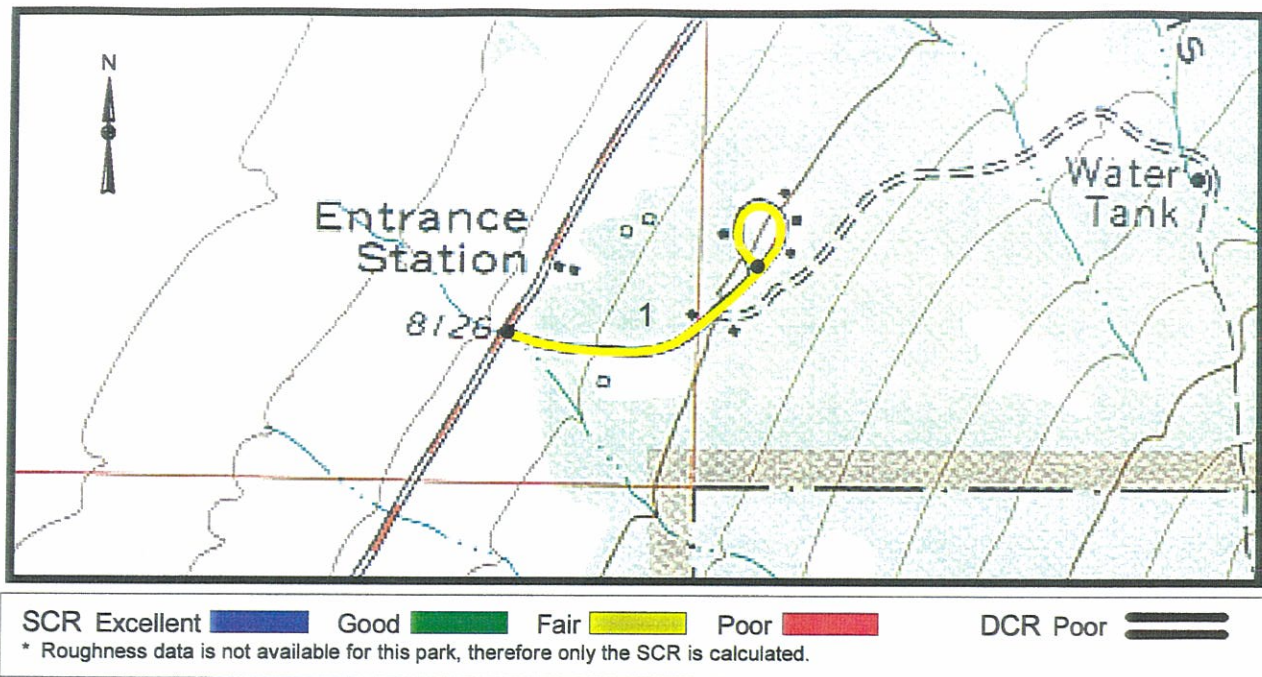
Photo #29 - Campground Loop B, Section 3, Sample Unit 5 (MP 0.15 - from beginning of Loop B)

Photo #30 - Campground Loop C, Section 4, Sample Unit 4 (MP 0.11 - from beginning of Loop C)

Photo #31 - Campground registration station

Photo #32 - Water Tank Road (unpaved) off Section 4

ROUTE: 202 PINYON FLATS CAMPGROUND ROAD



Intermountain Region
Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 400 RESIDENCE AND UTILITY AREA ROAD

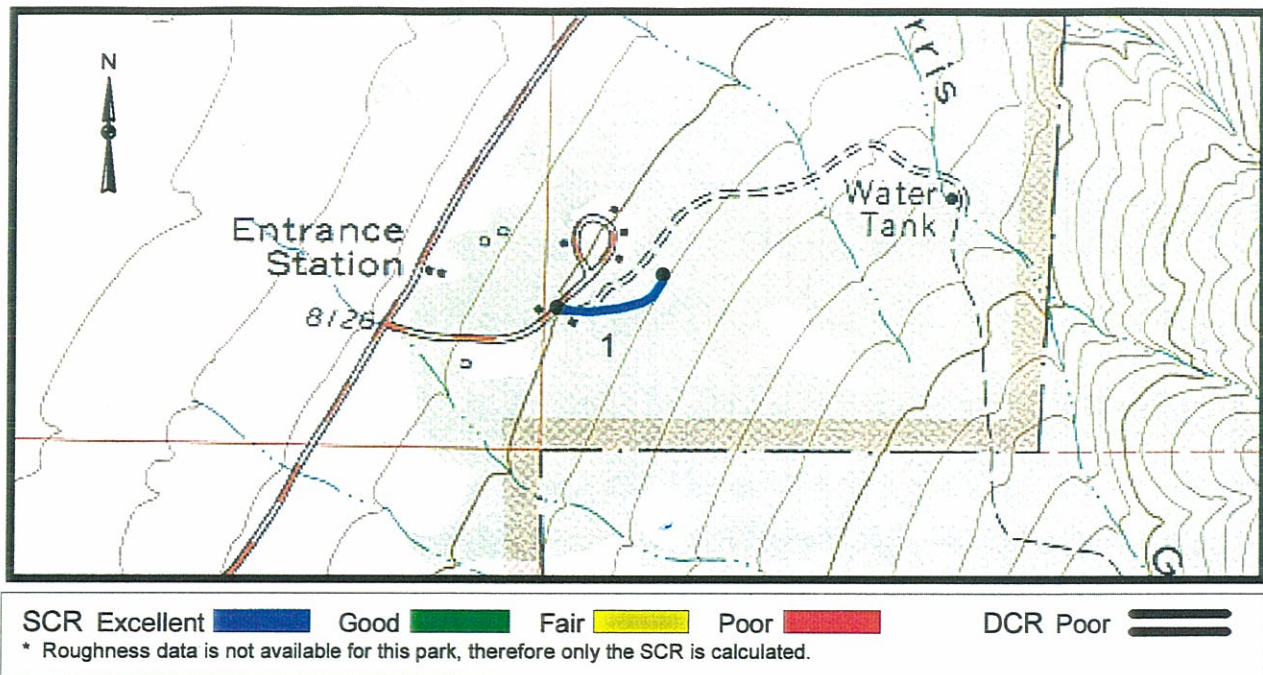
TOTAL LENGTH: 0.38 Miles

Section Number	1				
Section Length (mi)	0.38				
AADT	NA				
SADT	NA				
ADT Date	NA				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	18				
Lane Width (ft)	9				
Shoulder Width (ft)	4				
Roadway Condition Information					
SCR (Surface Condition Rating)	69				
Alligator Cracking	100				
Rutting Index	100				
Patching Index	98				
Transverse Cracking	77				
Longitudinal Cracking	94				
Shoulder Condition Rating	Fair				
Drainage Condition Rating	Fair				

COMMENTS:

Photo #35 - Route 400, Section 1, Sample Unit 3 (MP 0.08)

ROUTE: 400 RESIDENCE AND UTILITY AREA ROAD



Intermountain Region
 Rocky Mountain Cluster : GRSA : 1470 : Great Sand Dunes National Monument

ROUTE: 403 NEW RESIDENCE ROAD

TOTAL LENGTH: 0.09 Miles

Section Number	1				
Section Length (mi)	0.09				
AADT	NA				
SADT	NA				
ADT Date	NA				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	18				
Lane Width (ft)	9				
Shoulder Width (ft)	2				
Roadway Condition Information					
SCR (Surface Condition Rating)	100				
Alligator Cracking	100				
Rutting Index	100				
Patching Index	100				
Transverse Cracking	100				
Longitudinal Cracking	100				
Shoulder Condition Rating	Fair				
Drainage Condition Rating	Fair				

COMMENTS:

Photo #36 - Route 403, Section 1, Sample Unit 2 (MP 0.04)

ROUTE: 403 NEW RESIDENCE ROAD

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512

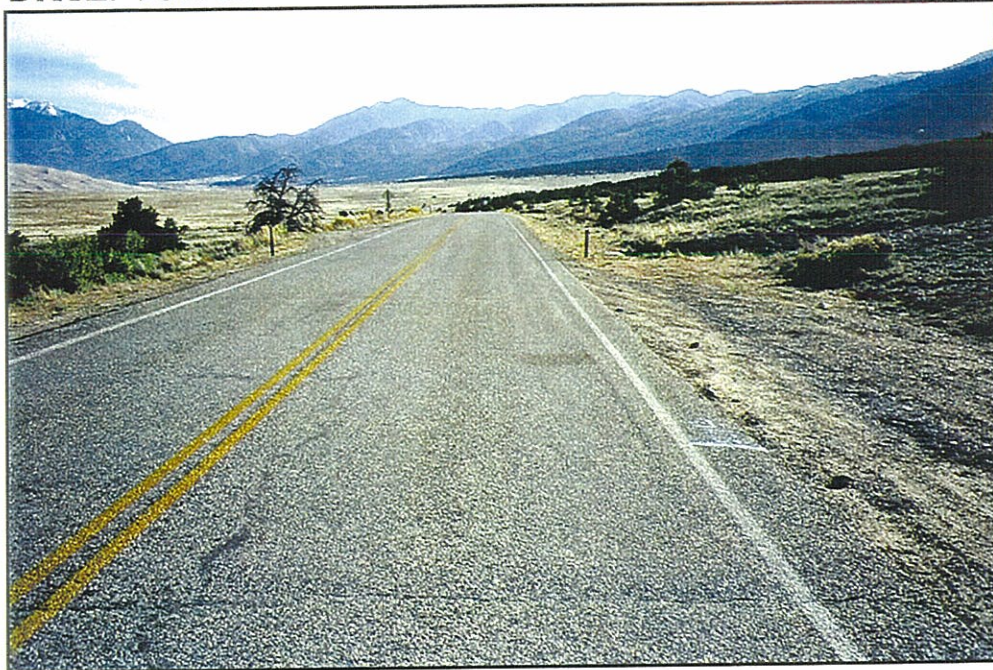


Photo # 01 - Section 1, Sample Unit 14 (MP 0.50)

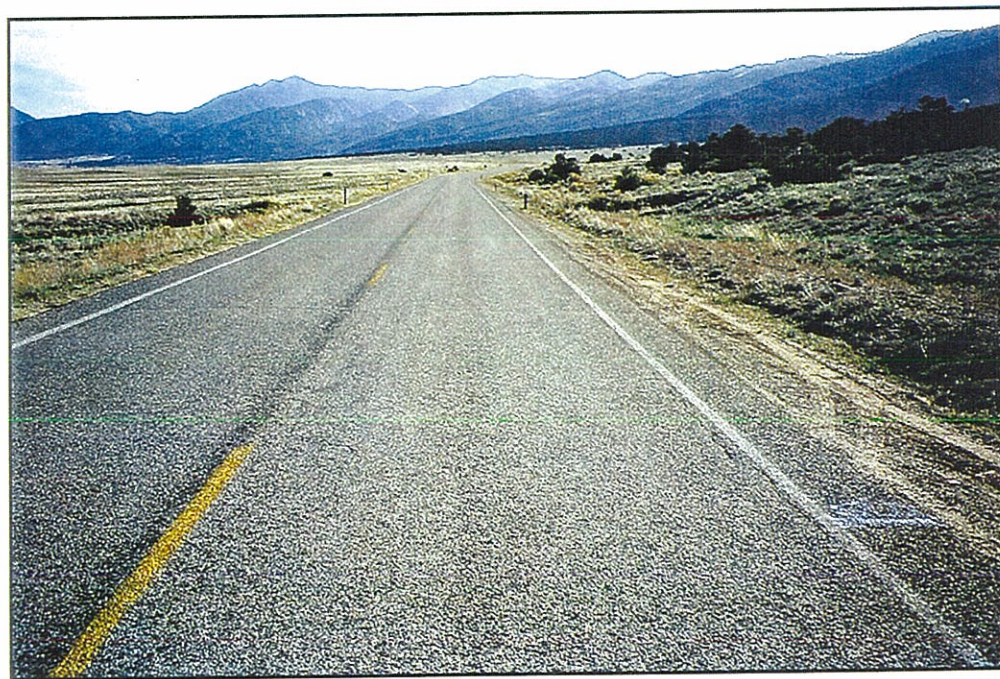


Photo # 02 - Section 2, (MP 0.81)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512



Photo # 03 - Typical culvert inlet with headwall (MP 0.85)



Photo # 04 - Typical Culvert Outlet (MP 0.85)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512



Photo # 05 - Section 2, Sample Unit 2 (MP 0.84)

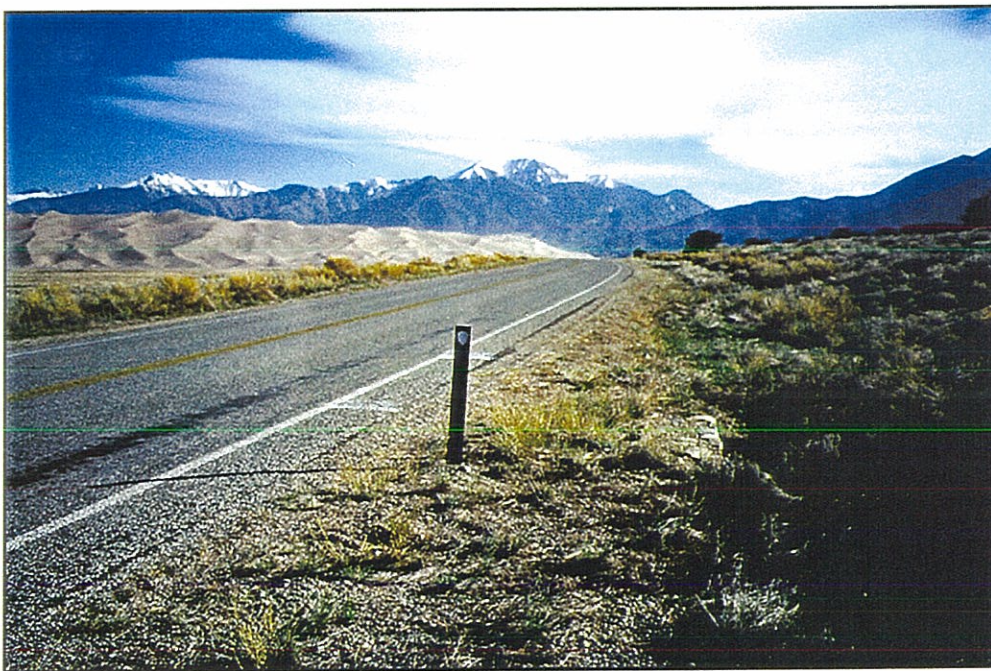


Photo # 06 - Section 3 (MP 1.78)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512

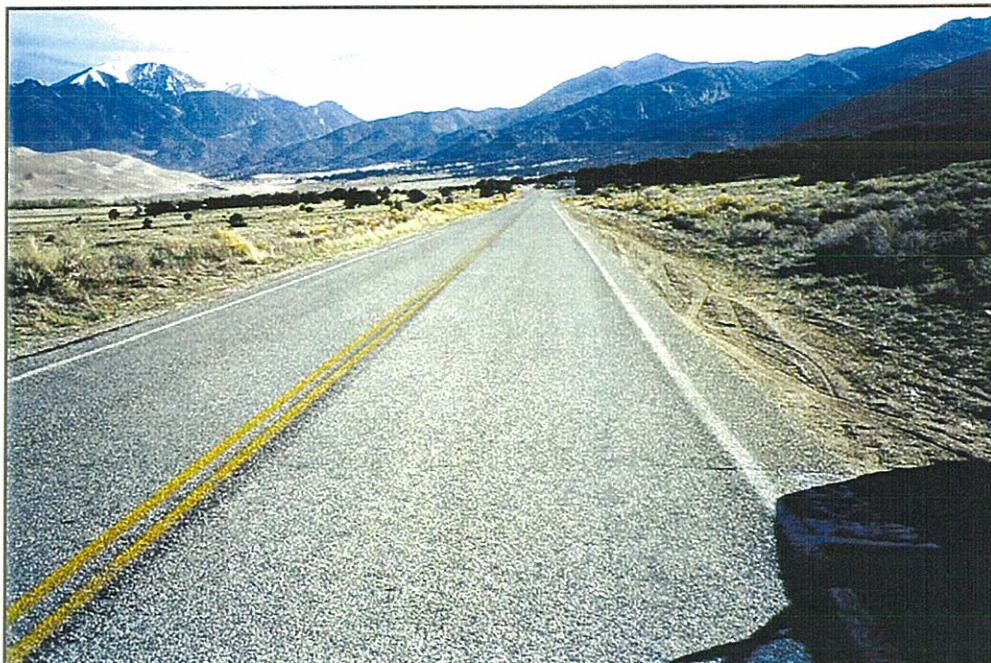


Photo # 07 - Section 3, Sample Unit 21 (MP 2.52)

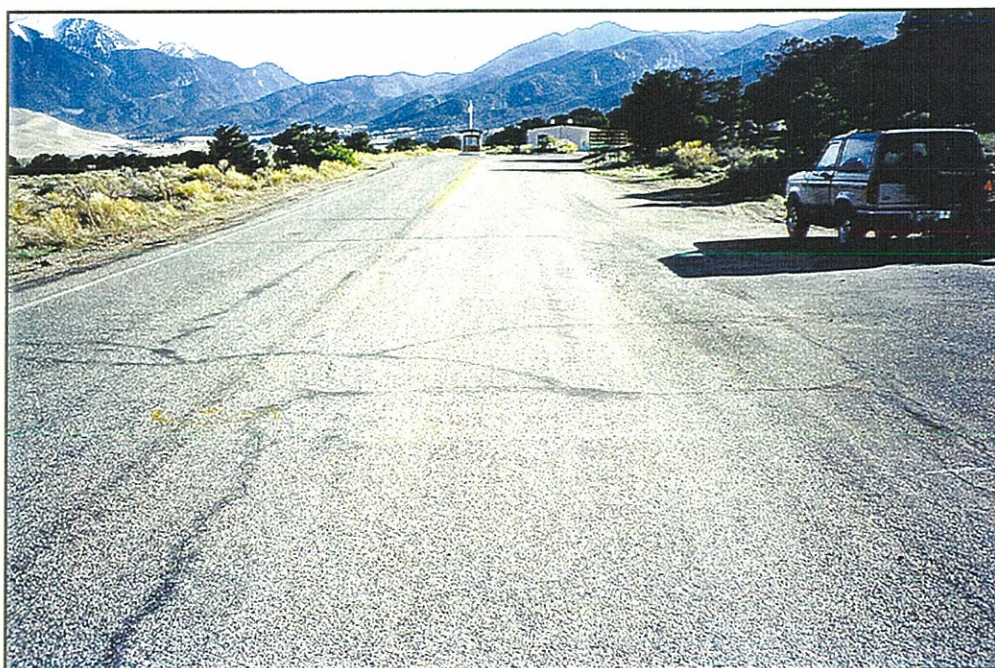


Photo # 08 - Section 4, Sample Unit 1 (MP 2.67)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512

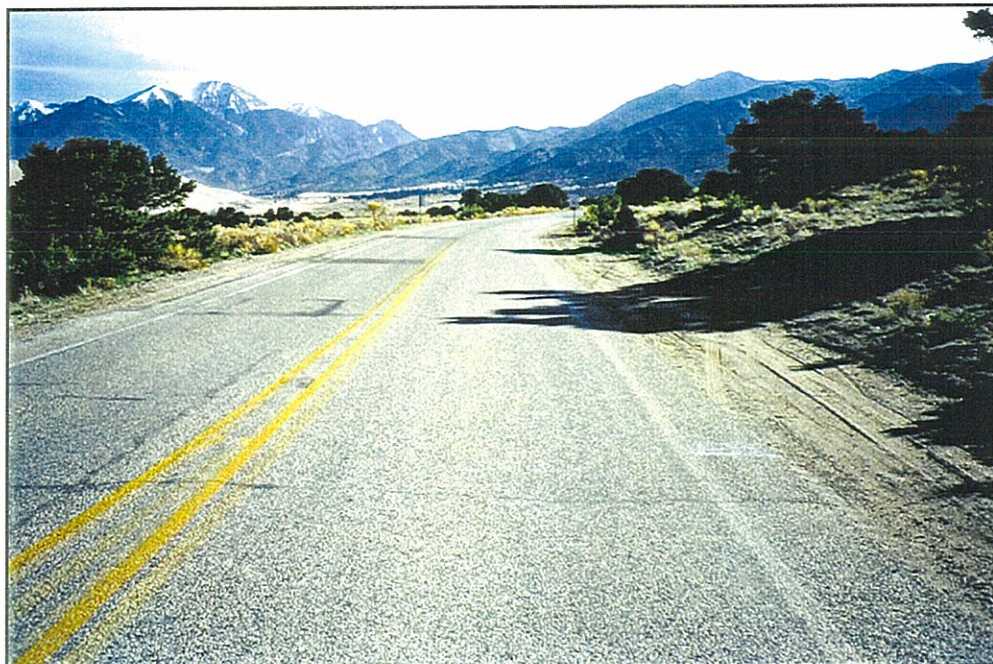


Photo # 09 - Section 5 (MP 2.78)

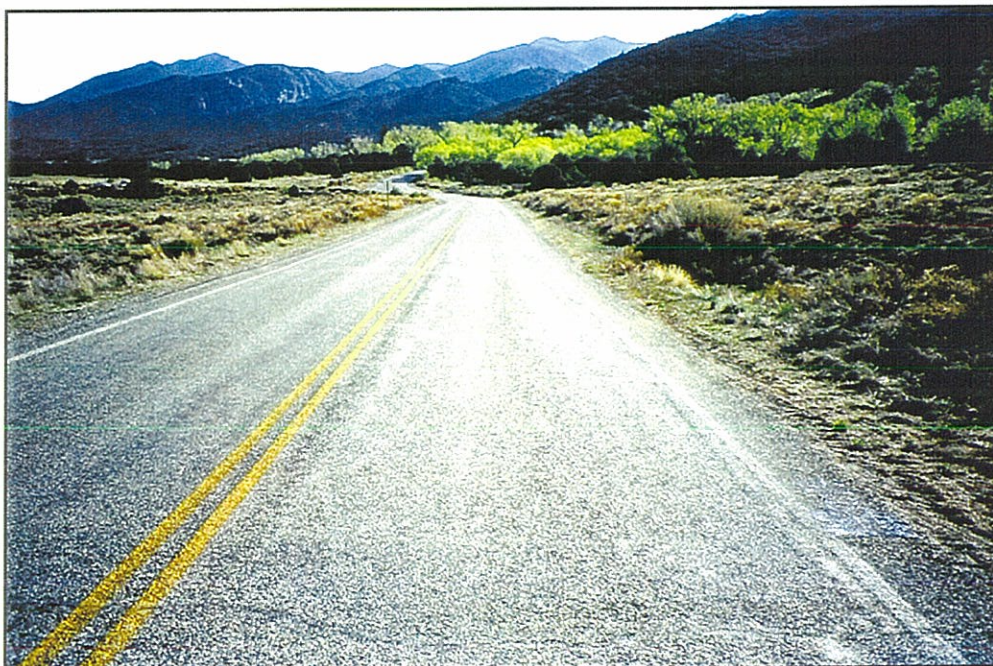


Photo # 10 - Section 5, Sample Unit 14 (MP 3.27)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512



Photo # 11 - Culvert inlet (MP 3.40)



Photo # 12 - Culvert Outlet (MP 3.40)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 010 - "ENTRANCE ROAD"

DATE: 980512

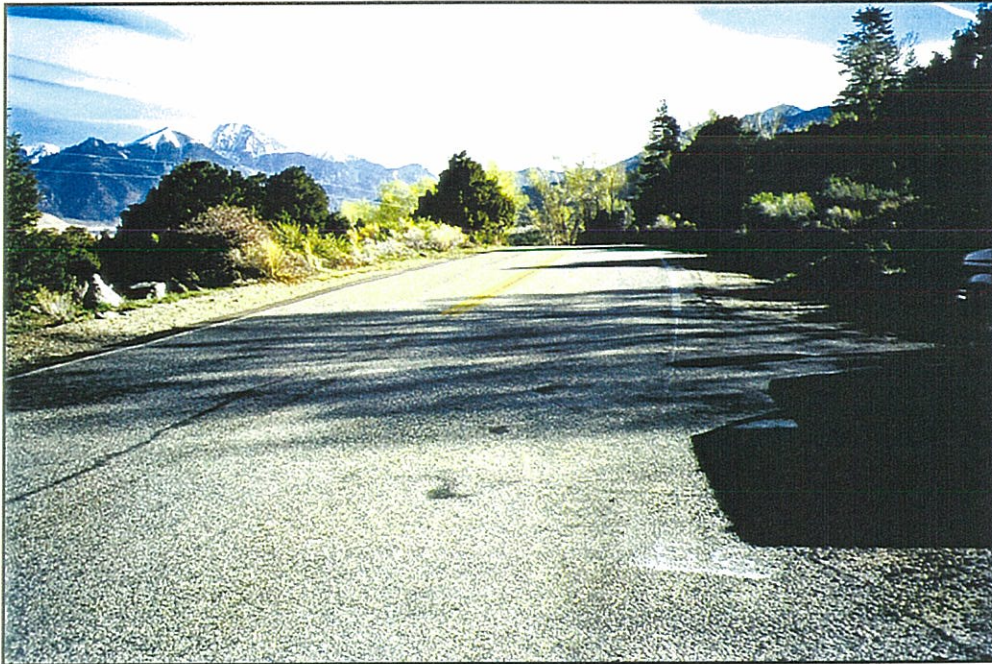


Photo # 13 - Section 6 (MP 3.58)



Photo # 14 - Section 6, Sample Unit 16 (MP 4.14)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 201 - "DUNES PICNIC AREA ROAD"

DATE: 980512



Photo # 15 - Begin Route 201



Photo # 16 - North Ramada picnic site (gravel area)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 201 - "DUNES PICNIC AREA ROAD"

DATE: 980512

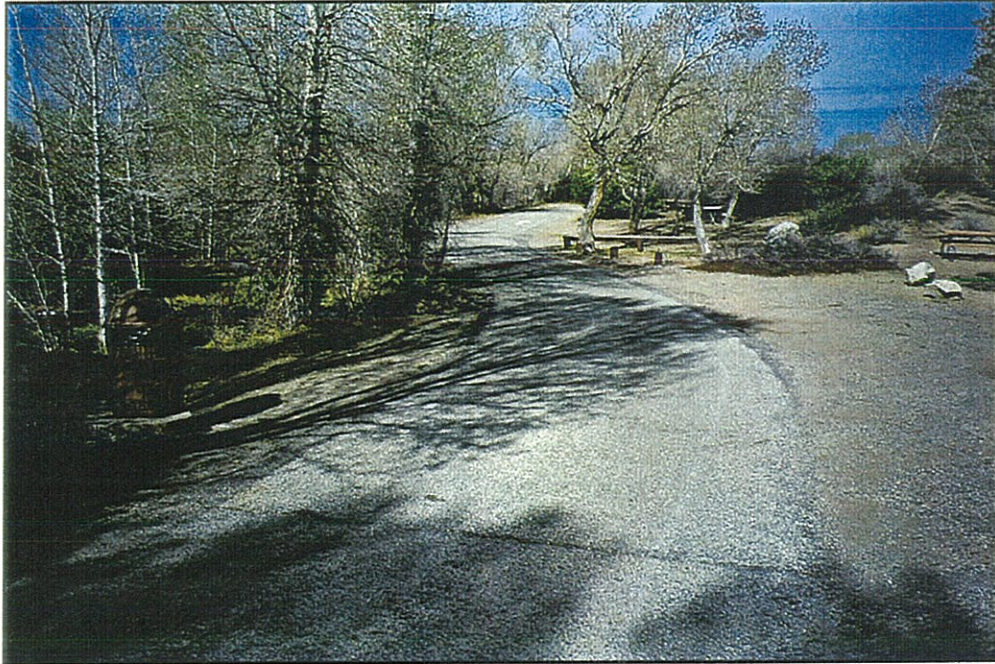


Photo # 17 - Picnic access



Photo # 18 - Wood guardrail

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 201 - "DUNES PICNIC AREA ROAD"

DATE: 980512



Photo # 19 - Standing water at picnic loop

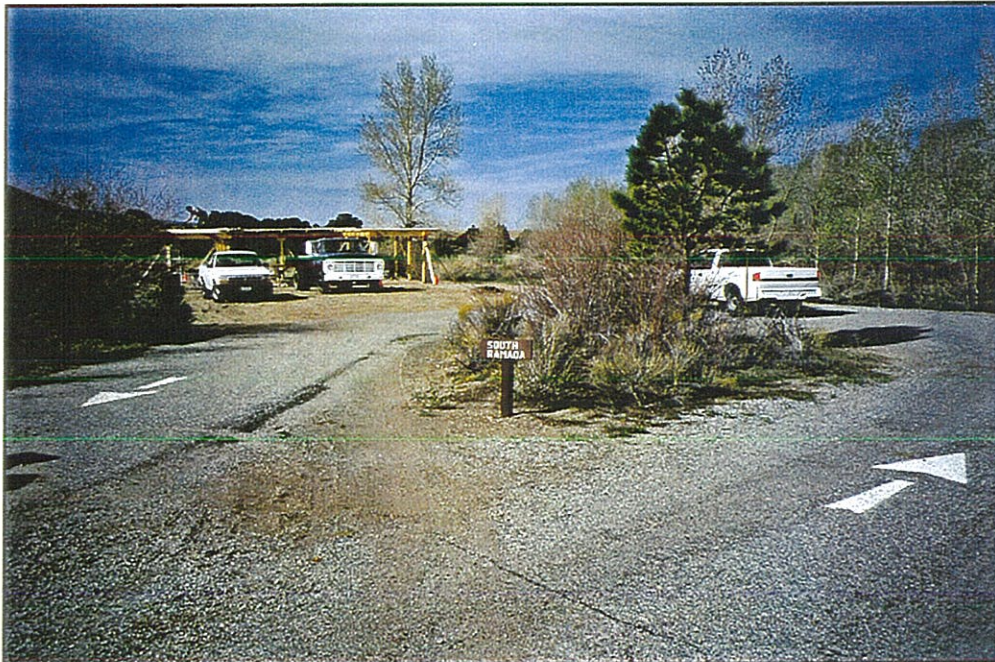


Photo # 20 - South Ramada picnic site under construction

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 201 - "DUNES PICNIC AREA ROAD"

DATE: 980512



Photo # 21 - One-way loop

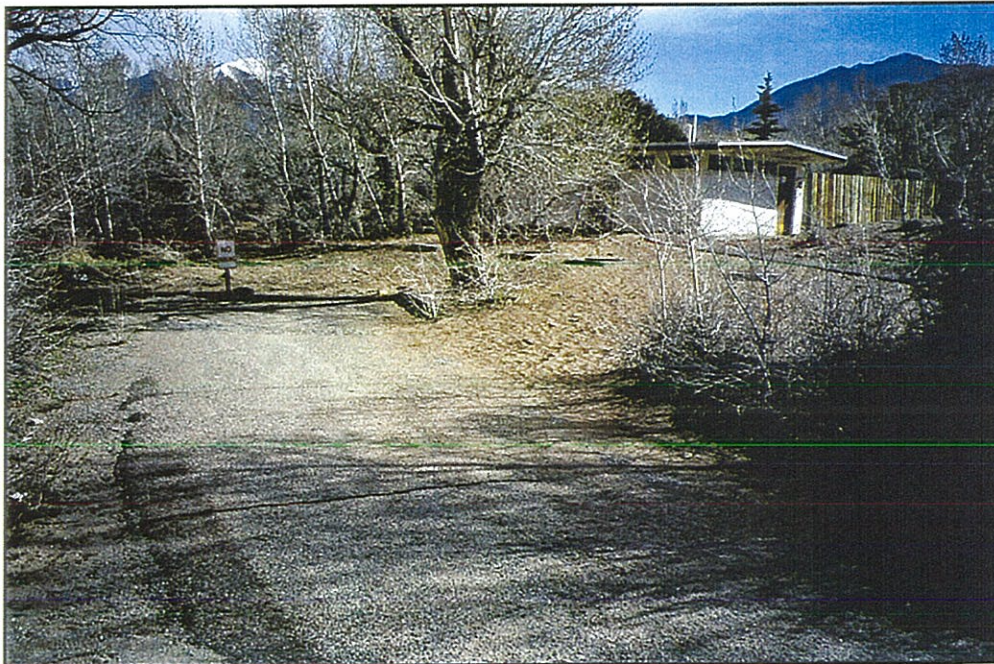


Photo # 22 - Access to picnic restrooms

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 201 - "DUNES PICNIC AREA ROAD"

DATE: 980512

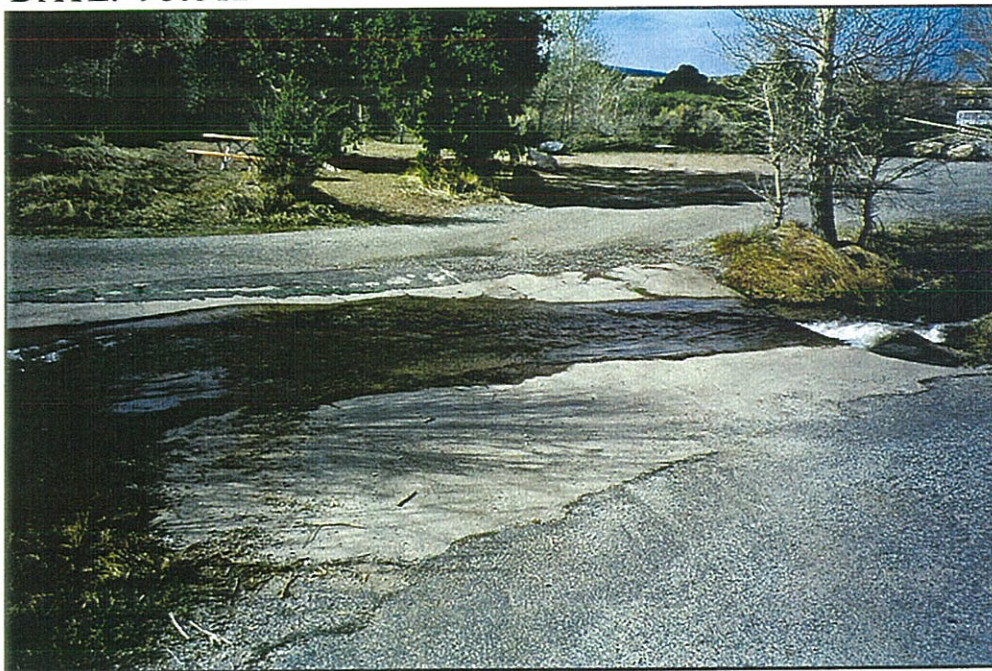


Photo # 23 - Developed low water crossing

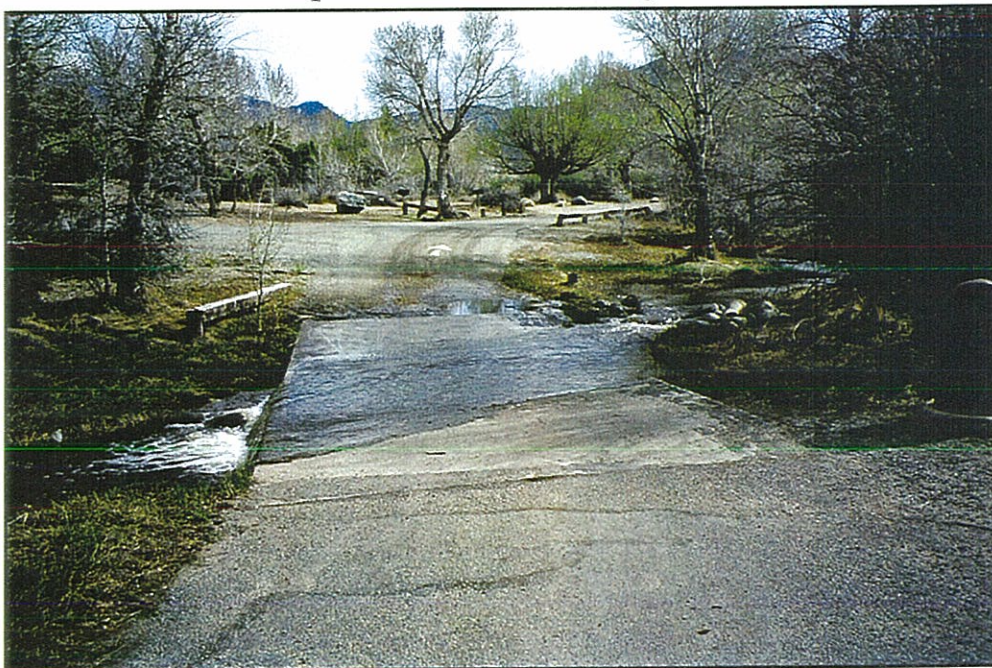


Photo # 24 - Developed low water crossing

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 200 - "DUNES PARKING ACCESS ROAD" and
202 - "PINYON FLATS CAMPGROUND ROAD"

DATE: 980512

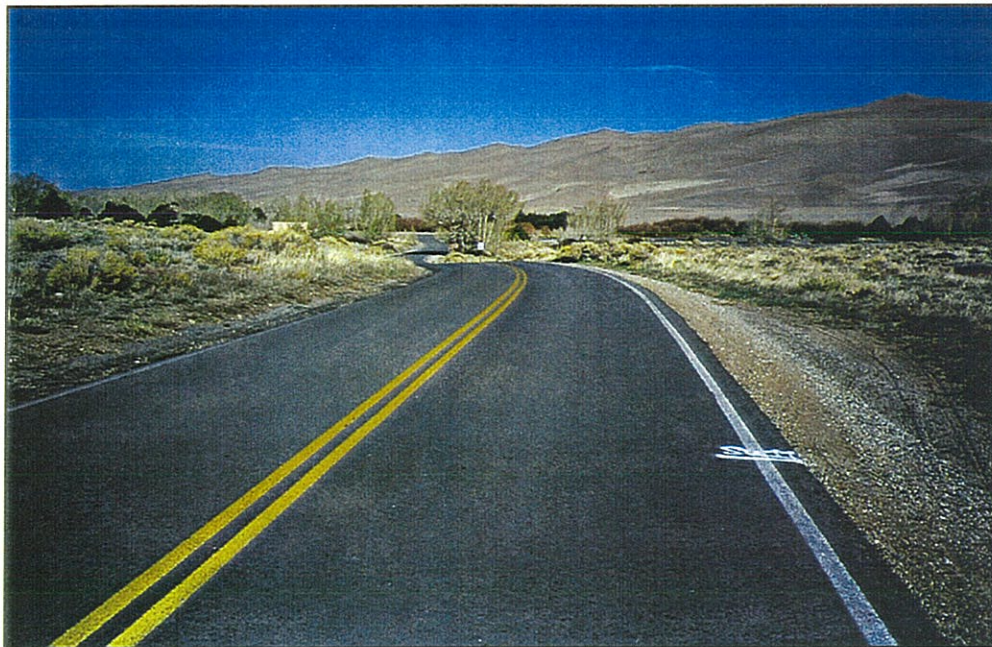


Photo # 25 - Route 200, Section 1, Sample Unit 11 (MP 0.38)

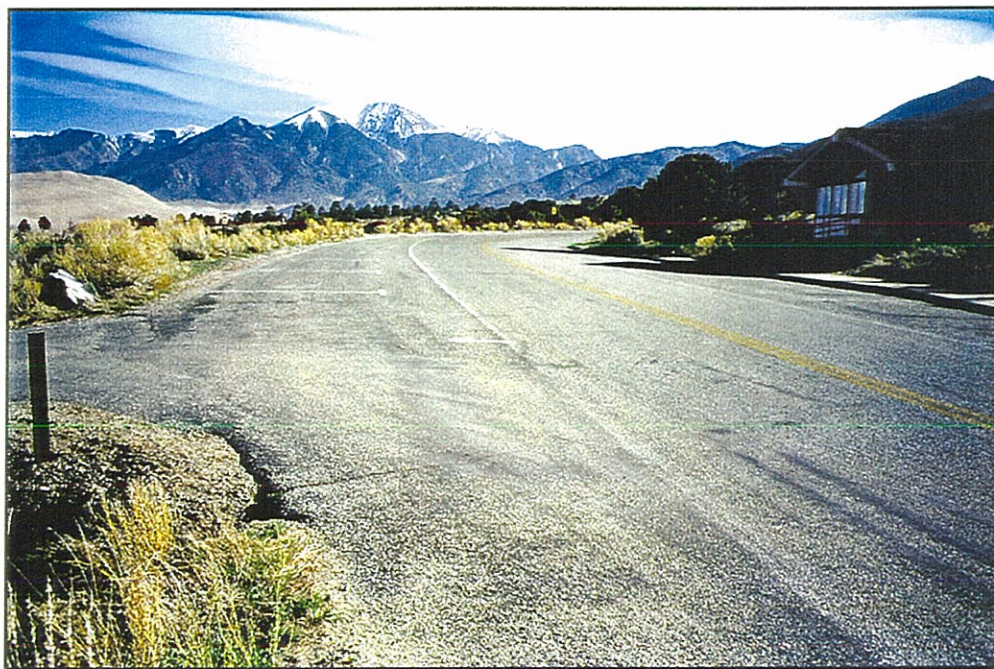


Photo # 26 - End Route 010, Begin Route 202, Section 1

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 202 - "PINYON FLATS CAMPGROUND ROAD"

DATE: 980512



Photo # 27 - Section 1, Sample Unit 4 (MP 0.11)

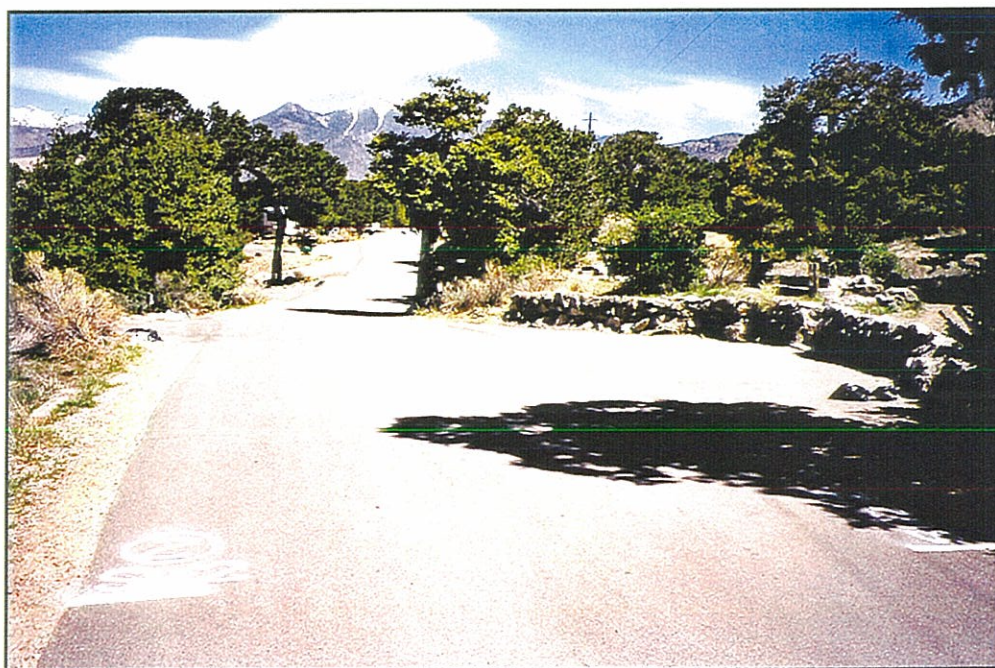


Photo # 28 - Campground Loop A, Section 2, Sample Unit 2 (MP 0.04)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 202 - "PINYON FLATS CAMPGROUND ROAD"

DATE: 980512



Photo # 29 - Campground Loop B, Section 3, Sample Unit 5 (MP 0.15)



Photo # 30 - Campground Loop C, Section 4, Sample Unit 4 (MP 0.11)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 202 - "PINYON FLATS CAMPGROUND ROAD"

DATE: 980512



Photo # 31 - Campground registration station



Photo # 32 - Water Tank Road (unpaved) off Route 202, Section 4

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 203 - "MEDANO ROAD" (unpaved) and
"BONEYARD" (unpaved)

DATE: 980512



Photo # 33 - Begin Route 203 (Unpaved road)



Photo # 34 - Boneyard behind maintenance area (unpaved)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 400 - "Residence and Utility Area Road" and
403 - "New Residence Road"

DATE: 980512



Photo # 35 - Route 400, Section 1, Sample Unit 3 (MP 0.08)



Photo # 36 - Route 403, Section 1, Sample Unit 2 (MP 0.04)

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: 900 - "Dunes Parking Area"

DATE: 980512



Photo # 37 - Dunes boardwalk access



Photo # 38 - Dunes restrooms access

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: VISITOR CENTER

DATE: 980512



Photo # 39 - VC sign



Photo # 40 - VC handicap access

PHOTOGRAPHIC SHEET

PARK: GRSA/1470

ROUTE: HEADQUARTERS and ENTRANCE KIOSK

DATE: 980512



Photo # 41 - Headquarters building

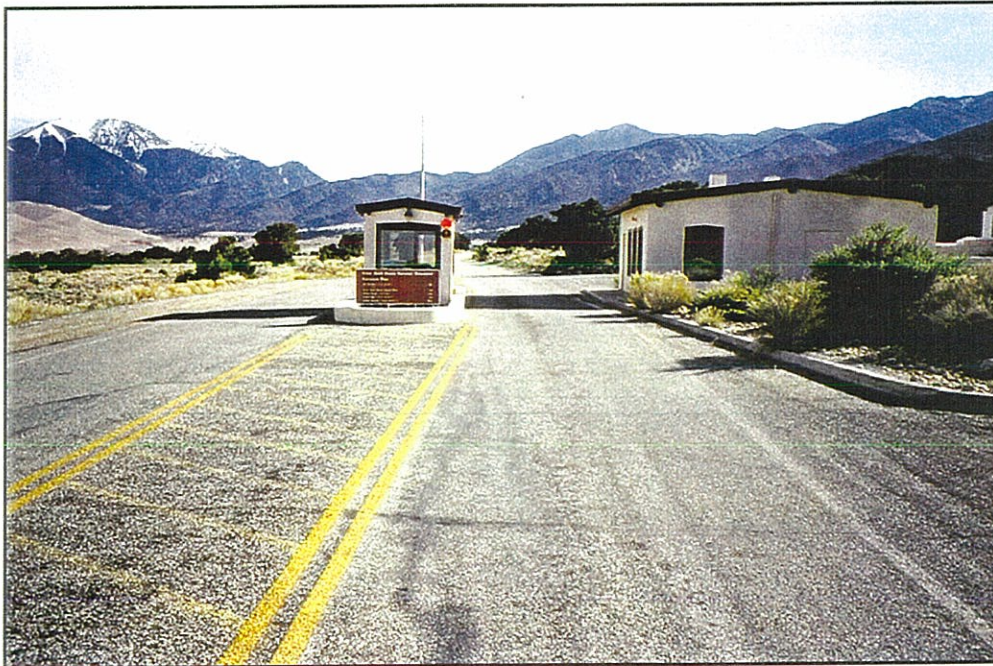


Photo # 42 - Entrance Kiosk

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 010

ENTRANCE ROAD

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
0.000			BOUNDARY	SOUTH PARK BOUNDARY
0.000			CATTLE GUARD	
0.010			PULLOUT	
0.055		PULLOUT		
0.077			CULVERT	
0.172			CULVERT	
0.227			CULVERT	
0.238		PULLOUT		
0.243			CULVERT	
0.366			CULVERT	
0.397			CULVERT	
0.427			CULVERT	
0.453			CULVERT	
0.482			CULVERT	
0.510			CULVERT	
0.567			CULVERT	
0.688			CULVERT	
0.751			CULVERT	
0.787			CULVERT	
0.808			CULVERT	
0.866			CULVERT	
0.888			CULVERT	
0.946			CULVERT	
1.039			CULVERT	
1.154			CULVERT	
1.253			CULVERT	
1.352			CULVERT	
1.427			CULVERT	
1.585			CULVERT	
1.675			CULVERT	
1.709			CULVERT	
1.776			CULVERT	
1.977			CULVERT	
2.040			CULVERT	
2.051		PULLOUT		
2.155			CULVERT	
2.209			CULVERT	
2.249			CULVERT	
2.340			CULVERT	
2.412			CULVERT	
2.450			CULVERT	
2.484			CULVERT	
2.604			CULVERT	

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 010

ENTRANCE ROAD

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
2.651			CULVERT	
2.674			INTERSECTION	RTE 400, RESIDENCE AND UTILITY AREA ROAD
2.705			CULVERT	
2.717			PARKING AREA	RTE 904, HEADQUARTERS PARKING
2.721	2.740		CURB	
2.758			CULVERT	
2.976			CULVERT	
3.018		PULLOUT		
3.186			CULVERT	
3.235		PULLOUT		
3.285			CULVERT	
3.369			CULVERT	
3.401		INTERSECTION		RTE 902, VISITOR CENTER PARKING
3.401		PARKING AREA		RTE 902, VISITOR CENTER PARKING
3.504			CULVERT	
3.579			INTERSECTION	RTE 901, MONTVILLE TRAILHEAD PARKING
3.579			PARKING AREA	RTE 901, MONTVILLE TRAILHEAD PARKING
3.615			CULVERT	
3.662			CULVERT	
3.748		INTERSECTION		RTE 200, DUNES PARKING ACCESS ROAD
3.795			CULVERT	
3.823		PULLOUT		
3.852			CULVERT	
4.066			CULVERT	
4.137			CULVERT	
4.242			CULVERT	
4.245	4.292		CURB	
4.264	4.264		PARKING AREA	RTE 905, AMPHITHEATER & DUMP STA. PRKG AREA
4.225	4.272	CURB		
4.292		CULVERT		
4.295		INTERSECTION		RTE 203, MEDANO ROAD (UNPAVED)
4.295			INTERSECTION	RTE 202, PINYON FLATS CAMPGROUND ROAD

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 200

DUNES PARKING ACCESS ROAD

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
---------------------------	--	--------------------------------	---------------------------------	---------

0.002

CULVERT

0.072

CULVERT

0.376

0.448

PAVED DITCH

0.500

PARKING AREA

RTE 900

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 202

PINYON FLATS CAMPGROUND ROAD (MAIN & LOOPS A, B, C)

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
------------------------	--	--------------------------------	---------------------------------	---------

MAIN ROAD

0.000		INTERSECTION		RTE 203, MEDANO ROAD (UNPAVED)
0.000	0.063		CURB	
0.010			PULLOUT	
0.010		PARKING AREA		RTE 908, OVERNIGHT PARKING
0.084			PULLOUT	
0.105			PULLOUT	
0.109		INTERSECTION		CAMPGROUND LOOP A
0.172		INTERSECTION		CAMPGROUND LOOP B
0.188				BEGIN CAMPGROUND LOOP C AT GATE

LOOP A**

0.000				INTERSECTION WITH MAIN ROAD
0.010	0.017	CURB		
0.057			CULVERT	
0.071			CULVERT	
0.139			CULVERT	
0.182			CULVERT	
0.253			CULVERT	
0.239	0.259		CURB	
0.285			CULVERT	
0.331	0.34		CURB	
0.369			CULVERT	

LOOP B**

0.000				INTERSECTION WITH MAIN ROAD
0.016			GATE	
0.019			CULVERT	
0.017	0.027		CURB	
0.020			WALL	
0.051			WALL	
0.060			CULVERT	
0.102		PULLOUT		
0.094			WALL	
0.123			CULVERT	
0.131			WALL	
0.143			CULVERT	
0.183			WALL	
0.217		PARKING AREA		RTE 907, BACKCOUNTRY OVERNIGHT PARKING
0.290			WALL	
0.311			CULVERT	
0.354			CULVERT	
0.348			WALL	

** Loop mileages begin at the start of each loop

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 202

PINYON FLATS CAMPGROUND ROAD (MAIN & LOOPS A, B, C)

MILE POST		FEATURE	FEATURE	REMARKS
BEGIN	END	DESCRIPTION LEFT	DESCRIPTION RIGHT	
0.393			CULVERT	
0.395	0.401		CURB	
0.447			CULVERT	
0.449	0.455		CURB	
LOOP C**				
0.000				END OF MAIN ROAD PORTION, AT GATE
0.000			GATE	
0.022			CULVERT	
0.026	0.040		CURB	
0.103	0.133		WALL - GUARD	
0.146			CULVERT	
0.152	0.156		CURB	
0.174			WALL	
0.183			INTERSECTION	RTE 405, PINYON FLATS CG WATER TANK RD

** Loop mileages begin at the start of each loop

IMR : GRSA : 1470

4/19/99

8 - ROUTE 202 - 5

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 201

DUNES PICNIC AREA ROAD

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
------------------------	--	--------------------------------	---------------------------------	---------

MAIN ENTRANCE PORTION AND FIRST PICNIC LOOP

0.030		INTERSECTION		RTE 909, NORTH RAMADA PICNIC AREA
0.046			INTERSECTION	PICNIC AREA LOOP 2
0.050	0.055		GUARDRAIL	
0.062			INTERSECTION	PICNIC AREA LOOP 2
0.062	0.065		GUARDRAIL	
0.065	0.079		GUARDRAIL	
0.080	0.089		GUARDRAIL	

SECOND PICNIC LOOP

0.115	0.120	GUARDRAIL		
0.133			INTERSECTION	PICNIC AREA LOOP 3
0.150	0.154	GUARDRAIL		

THIRD PICNIC LOOP

0.205	0.210	GUARDRAIL		
0.249			INTERSECTION	PICNIC AREA LOOP 4
0.254			INTERSECTION	PICNIC SPUR 5, UNDER CONSTRUCTION

FOURTH PICNIC LOOP

0.300	0.313		GUARDRAIL	
0.315	0.317		GUARDRAIL	
0.320	0.329		GUARDRAIL	

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 400

RESIDENCE AND UTILITY AREA ROAD

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
0.091			PARKING AREA	RTE 903, MAINTENANCE AREA
0.091		INTERSECTION		RTE 401, TRAILER RESIDENCE ROAD (UNPAVED)
0.101			INTERSECTION	RTE 402, BONEYARD ROAD (UNPAVED)
0.135			PARKING AREA	RTE 906, RESIDENCE PARKING
0.166			CULVERT	
0.217			INTERSECTION	RTE 403, NEW RESIDENCE ROAD
0.232		INTERSECTION		LOOP AT END OF RTE 400
0.235			CULVERT	

ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 403

NEW RESIDENCE ROAD

MILE POST BEGIN END		FEATURE DESCRIPTION LEFT	FEATURE DESCRIPTION RIGHT	REMARKS
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0.052

INTERSECTION

RTE 404, BARN ROAD (UNPAVED)

IX. UNPAVED ROUTES

Unpaved routes are not addressed in this report at this time. Section "IV. ROUTE INVENTORY" includes a current register of all unpaved routes (name, number, estimated mileage to the nearest 0.01, functional class, number of lanes, and termini description). Any further information will be added post 1997-99 data collection. Data was collected for unpaved routes in numerous parks during the '94-'96 data collection cycle. This data (digital images, GPS traces, features inventory, and condition assessments) may be processed in the future.

GLOSSARY OF TERMS
AND
ABBREVIATIONS

<u>TERM OR ABBREVIATION</u>	<u>DESCRIPTION OR DEFINITION</u>
1470	Great Sand Dunes National Monument numeric code.
AADT	Annually Average Daily Traffic. Average daily traffic for the time period comprising 80% of annual visitation.
CRS	Condition Rating Sheet. Index rating for pavement distresses, roadway condition and cross section information.
DCR	Drainage Condition Rating
Drainage Condition Rating	A descriptive term (Excellent, Good, Fair, Poor) assigned subjectively on a visual basis.
Excellent	Excellent rating.
Fair	Fair rating.
FUNC. CLASS	Functional Class. See Table 1 in appendix.
Good	Good rating.
GRSA	Great Sand Dunes National Monument alphabetic code.
IMR	Intermountain Region
Lane	The portion of roadway from centerline to fogline, or to edge of pavement if no fog line exists.
LRUT	Left Rut
NA	Not applicable.
NO. OF LANES	Number of lanes
PAVED MILES	Paved portion of route, length in miles.
Pavement Width	The entire portion of roadway from edge of pavement to edge of pavement.

GLOSSARY OF TERMS
AND
ABBREVIATIONS

<u>TERM OR ABBREVIATION</u>	<u>DESCRIPTION OR DEFINITION</u>
PCR	Pavement Condition Rating. Numerical rating from 0 (failed) to 100 (excellent), based on the surface condition and the roughness of the road.
Poor	Poor rating.
RMC	Rocky Mountain Cluster
RRUT	Right Rut
RTE DESCRIPTION	Description of the route terminus.
RTE MILEAGE	Total route length in miles.
RTE NAME	Route name.
RTE NO.	FHWA route number
SADT	Seasonal Average Daily Traffic. Average daily traffic for the total "season".
SCR	Surface Condition Rating. Numerical rating from 0 (failed) to 100 (excellent). Based on the extent of alligator cracking, patching, longitudinal cracking, rutting and transverse cracking.
SF	Square Feet
Shoulder Condition Rating	Shoulder Condition Rating. A descriptive term (Excellent, Good, Fair, Poor) assigned subjectively on a visual basis.
Shoulder Width	Portion of road from fogline to hinge point, or from edge of pavement (if no fogline) to hinge point.
UNPAVED MILES	Unpaved portion of route, length in miles.

GENERAL PARK ROAD FUNCTIONAL CLASSIFICATION - TABLE 1

Class I	Principal Park Road/Rural Parkway (Public Roads) - Roads which constitute the main access route, circulatory tour, or thoroughfare for park visitors. Route Numbers 1-99. Note: Rural parkways (e.g. Natchez Trace) are numbered 1-9. All other FC 1 routes have two digit numbers.
Class II	Connector Park Road (Public Roads) - Roads which provide access within a park to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, etc. Route Numbers 100-199.
Class III	Special Purpose Park Road (Public Roads) - Roads which provide circulation within public areas, such as campgrounds, picnic areas, visitor center complexes, concessionaire facilities, etc. These roads generally serve low-speed traffic and are often designed for one-way circulation. Route Numbers 200-299.
Class IV	Primitive Park Roads (Public Roads) - Roads which provide circulation through remote areas and/or access to primitive campgrounds and undeveloped areas. These roads frequently have no minimum design standards and their use may be limited to specially equipped vehicles. Route Numbers 200-299. Note: Functional Classes III and IV have the same route numbers because, historically, they were numbered similarly.
Class V	Administrative Access Road (Administrative Roads) - All public roads intended for access to administrative developments or structures such as park offices, employee quarters, or utility areas. Route Numbers 400-499.
Class VI	Restricted Road (Administrative Roads) - All roads normally closed to the public, including patrol roads, truck trails, and other similar roads. Route Numbers 400-499. Note: Functional Classes V and VI have the same route numbers because historically they were numbered similarly and often there is little distinction between these routes. For example, because utility areas and employee housing are often closed to the public, this restriction would result in classification of FC VI rather than FC V.
Class VII	Urban Parkway (Urban Parkways and City Streets) - These facilities serve high volumes of park and non-park related traffic and are restricted, limited-access facilities in an urban area. This category of roads primarily encompasses the major parkways which serve as gateways to our nation's capital. Other major park roads or portions thereof, however, may be included in this category. Route Numbers 1-9.
Class VIII	City Streets (Urban Parkways and City Streets) - City streets are usually extensions of the adjoining street system that are owned and maintained by the National Park Service. The construction and/or reconstruction should conform with accepted local engineering practice and local conditions. Route Numbers 600-699.

A park road system contains those roads within or giving access to a park or other unit of the NPS which are administered by the NPS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a park road is not based on traffic volumes or design speed, but on the intended use or function of that road or route.

The historic route numbering system also included a 300 number series for interpretive roads, and a 500 series for one-way roads. There are approximately 250 roads nationwide which are designated by the 300 and 500 series. The numbers for these roads will be maintained for reporting consistency. However, since these interpretive and one-way routes are not as clearly tied to a specific functional class, the 300 and 500 series will be discontinued for future use.

DESCRIPTION OF RATING SYSTEM

Data is collected on the following distresses and conditions:

Alligator Cracking - a series of interconnecting cracks resembling alligator skin or chicken wire which usually occur in the wheel path.

Longitudinal Cracking - cracks which are parallel to the pavement centerline or asphalt lay down direction.

Transverse Cracking - cracks perpendicular to the pavement centerline.

Pothole (patch) - a bowl-shaped hole in the pavement surface.

Rutting - surface depressions in the wheel paths.

A Rating Index value is calculated for each distress in each section.

Rating Index Formulas

Alligator Cracking Index = $100 - [40 * (\% \text{low}/70 + \% \text{medium}/30 + \% \text{high}/10)]$

Longitudinal Cracking Index = $100 - [40 * (\% \text{low}/350 + \% \text{medium}/200 + \% \text{high}/75)]$

Transverse Cracking Index = $100 - [40 * (\text{low}/7.6 + \text{medium}/3.8 + \text{high}/0.95)]$

Patching Index = $100 - [40 * (\% \text{patching} / 80)]$

Rutting Index = $[13.33 * (\text{deepest rut})^2] - [86.67 * \text{deepest rut}] + 100$

Surface Condition Rating (SCR) = $100 - [40 * (\text{LOW ALLIGATOR CRACKING}/70 + \text{MEDIUM ALLIGATOR CRACKING}/30 + \text{HIGH ALLIGATOR CRACKING}/10 + \text{PATCHING}/80 + \text{LOW TRANSVERSE CRACKING}/28.69 + \text{MEDIUM TRANSVERSE CRACKING}/14.25 + \text{HIGH TRANSVERSE CRACKING}/3.6 + \text{LOW LONGITUDINAL CRACKING}/350 + \text{MEDIUM LONGITUDINAL CRACKING}/200 + \text{HIGH LONGITUDINAL CRACKING}/75 + \text{AVERAGE RUT VALUE})]$

Drainage Condition Rating Definitions

Excellent: No drainability problem. If funding were available for pavement maintenance, no funds would be required for drainage concerns.

Good: Minimal overall drainability problems. If funding were available for pavement maintenance, 25% or less is estimated to correct drainage deficiencies.

Fair: Moderate problems with drainability that needs correcting before it deteriorates to a poor rating. If funding were available for pavement maintenance in this section, 25% to 50% is estimated to correct deficiencies.

Poor: Severe problems exist that jeopardizes the integrity of the road in this section. If funding were available for pavement maintenance, 50% to 100% is estimated to correct drainage deficiencies.

Drainage Rating Criteria

The following are examples of basic criteria to help the rater to identify the different drainability ratings. While in the field, many other flaws will be discovered, but this criteria should give a feel for where the flaws would apply in the ratings.

A. Excellent Drainability

All water clears the road prism adequately without any chance of base saturation.

- Pavement drains without interruption.
- Curbs are flawless with the exception of minor cracking.
- Down drains are secure and placed properly.
- Drop inlets are at the correct grade and location with no deficiencies.
- Culverts are adequate in numbers, size, and condition.
- Ditches are constructed of asphalt and are sufficient to carry required volumes of water.

B. Good Drainability

Most water clears the road prism adequately with little concern of base saturation.

- Pavement has minor deficiencies that interrupt water flow.
- Shoulders are mostly adequate as they relate to surrounding terrain. Shoulder design generally coincides with the drainage design.
- Curbs have deficiencies, but still function without erosion.
- Down drains are placed properly, but show signs of some deterioration.
- Culverts are adequate in numbers and size, however, minor deficiencies are evident.
- Ditches are not paved, but solid and have enough area to maintain and carry required volume of water.

C. Fair Drainability

Some areas have questionable ability for the water to clear the road prism with an uncomfortable concern for base saturation.

- Pavement shows moderate flaws, such as rutting, and other irregularities that would hold minor amounts of water, interrupting the flow of water.
- Shoulder grades restrict the flow of water, however, water exits after some ponding.
- Down drains show evidence that limited water is causing erosion as a result of deterioration, or other similar flaws (e.g. missing asphalt that guides water to down drain).
- Drop inlet encasements are cracked, iron is bent, or are misaligned to cause limited water to escape.
- Culvert headwalls show moderate damage or are inadequate, the exit shows some damage to fill areas, or entry asphalt is moderately damaged.
- Ditches have some permeable material, unmovable obstructions to interrupt flow obviously hard to maintain due to inconsistencies, or have a less than desirable area to carry required volumes of water.

D. Poor Drainability

This section has areas of inadequate drainage ability that is causing base saturation that could cause a road failure.

- Pavement grade is irregular and holds dangerous amounts of water (hydroplaning is a concern), or shows massive alligator cracking.
- Shoulder design induces ponding that encroaches on the pavement (drivers try to avoid ponds).
- Portions of curbs are missing, allowing water to escape causing erosion.
- Drop inlets, due to various reasons, are only able to drain 50% or less efficiently.
- Down drains show signs of water exiting in areas by the down drain causing erosion.
- Culverts are functionally deficient including size, installation, location, or grade giving water opportunity to saturate the road base.
- Ditches allow water opportunity to saturate the road base through various reasons such as low places in ditch where design has not allowed for water to drain, little or no room in the road prism for a needed ditch, or water is disappearing within the ditch.

Shoulder Condition Rating Definitions

- Excellent:** Shoulder is new or under construction. It meets or exceeds standards. The curb is new.
- Good:** The shoulder is below standard width for posted speed and grading is required. The curb is functional.
- Fair:** There are variations in the shoulder, irregular width with material replacement required. The curb is in need of repairs or adjustments.
- Poor:** There isn't any shoulder, erosion has removed it. The curb needs replacement.

Shoulder Rating Criteria

The following are examples of basic criteria to help the rater to identify the different shoulder ratings. While in the field, many other flaws will be discovered, but this criteria should give a feel for where the flaws would apply in the ratings. The overall shoulder condition rating for a section is determined by the lowest individual rating for any one of the above categories (width, rutting, cracking, erosion, drop-off, and curbs).

A. Excellent Shoulders

- If shoulder is unpaved there will not be any drop-offs or erosion.
- If shoulder is paved there isn't any rutting, cracking, or erosion.
- Curbs are flawless with the exception of minor cracking and no erosion behind curb.

B. Good Shoulders

- If shoulder is unpaved drop-offs are less than 1", but grading is required.
- If shoulder is paved rut depth is less than 1/2", sealed cracks are present, and grading is required.
- If curbs are present they are functional.

C. Fair Shoulders

- If shoulder is unpaved drop-offs are from 1" to 4" and replacement of material required.
- If shoulder's paved rut depth is less than from 1/2" to 1". Open cracks are present but less than 1/4" deep, replacement of material is needed from erosion.
- If curbs are present they need repairs, and there is erosion behind the curb.

D. Poor Shoulder

- If shoulder is unpaved drop-offs are greater than 4" and erosion has removed the shoulder.
- If shoulder is paved rut depth is greater than 1". Open cracks are greater than 1/4" deep, and erosion has removed the shoulder.
- If curbs are present they need replacement.
- If curbs are present they need repairs, and there is erosion behind the curb.

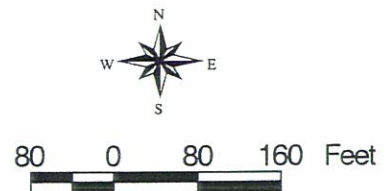
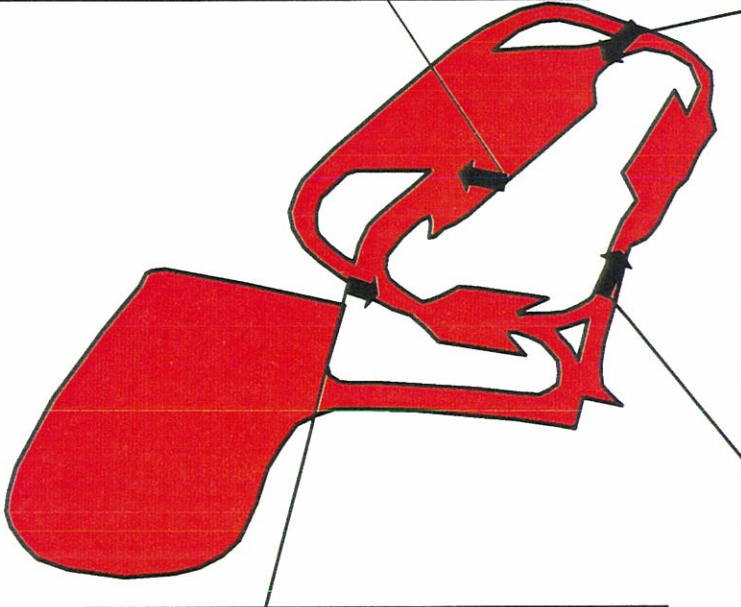
GREAT SAND DUNES NATIONAL MONUMENT

Route 900

DUNES PARKING AREA

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
900	980512			71,677	1.23	Excellent

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



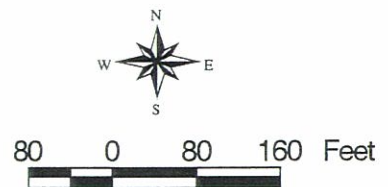
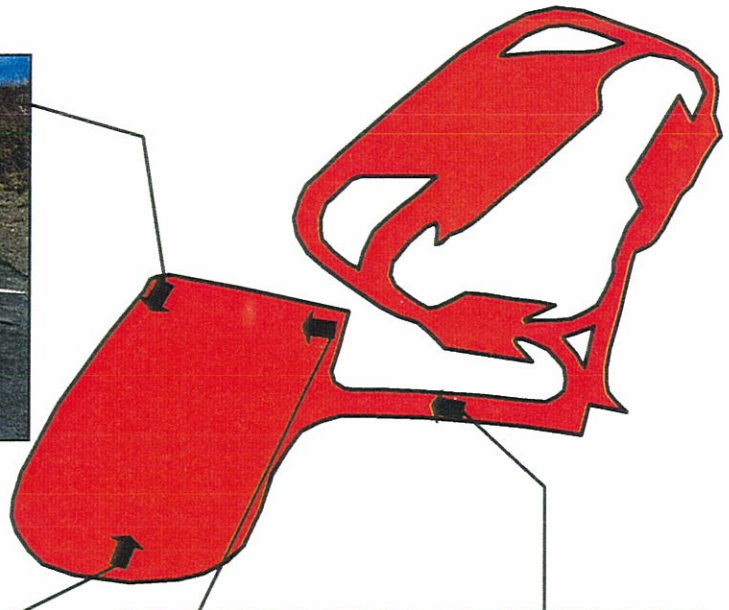
GREAT SAND DUNES NATIONAL MONUMENT

Route 900

DUNES PARKING AREA

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
900	980512			71,677	1.23	Excellent

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



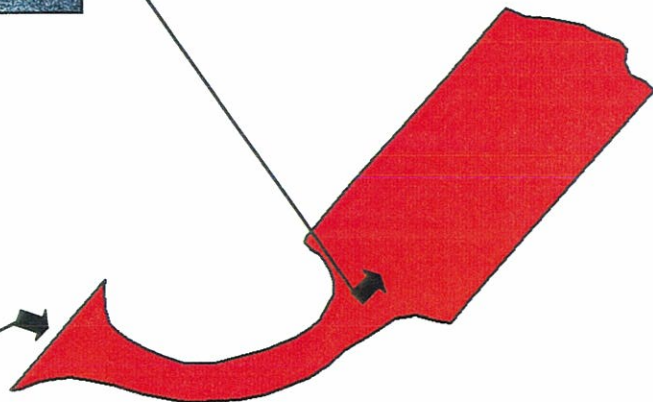
GREAT SAND DUNES NATIONAL MONUMENT

Route 901

MONTVILLE TRAILHEAD PARKING

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
901	980512			11,555	0.20	Good

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



60 0 60 120 Feet



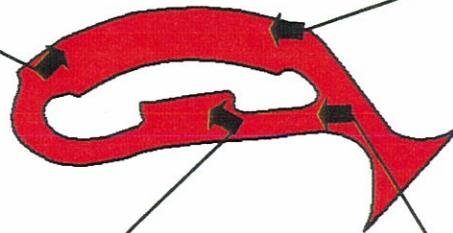
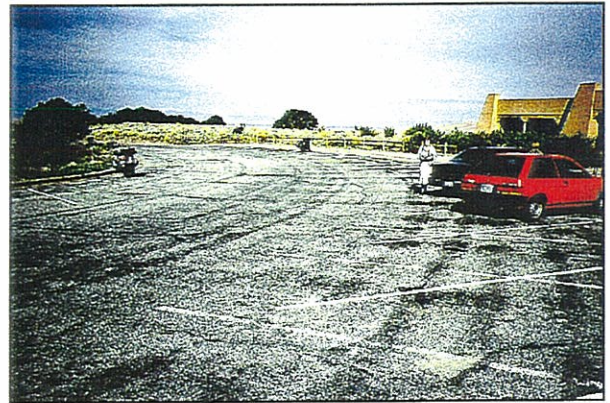
GREAT SAND DUNES NATIONAL MONUMENT

Route 902

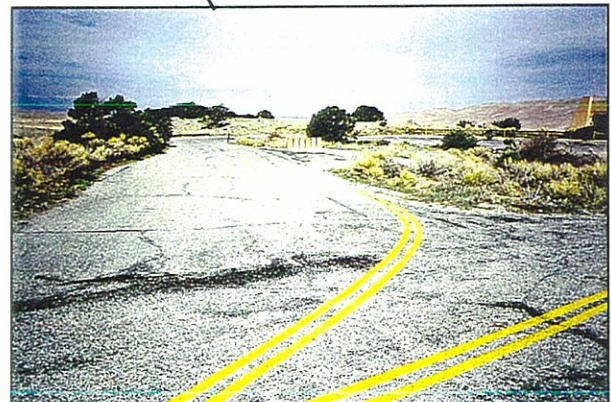
VISITOR CENTER PARKING

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
902	980512			24,474	0.42	Fair

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



90 0 90 180 Feet

A scale bar with markings for 90, 0, 90, and 180 feet. The bar is divided into segments corresponding to these measurements.


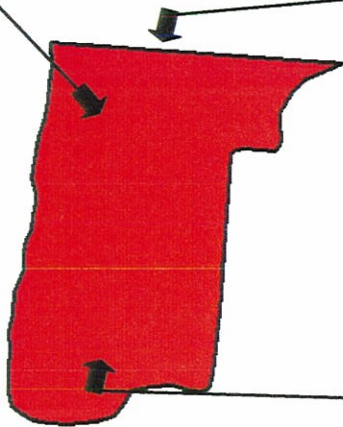
GREAT SAND DUNES NATIONAL MONUMENT

Route 903

MAINTENANCE AREA

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
903	980512			14,152	0.24	Fair

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



70 0 70 140 Feet



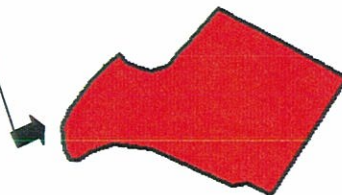
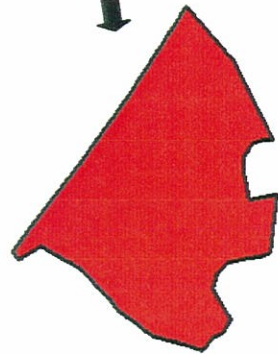
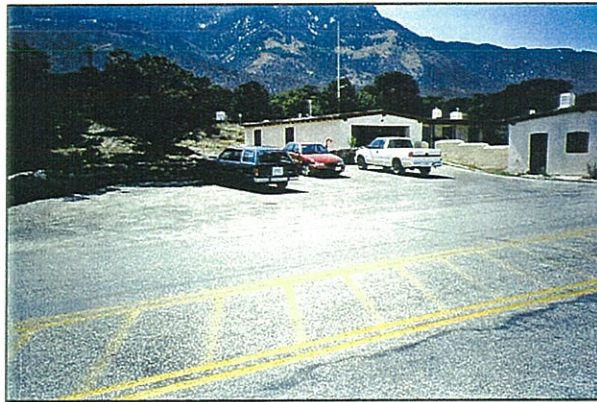
GREAT SAND DUNES NATIONAL MONUMENT

Route 904

HEADQUARTERS PARKING

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
904	980512			5,761	0.10	Fair

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



30 0 30 60 Feet



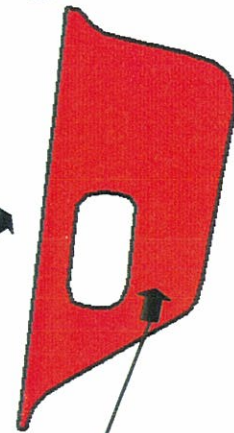
GREAT SAND DUNES NATIONAL MONUMENT

Route 905

AMPHITHEATER and DUMP STATION PARKING AREA

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
905	980512			13,890	0.24	Fair

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



80 0 80 160 Feet



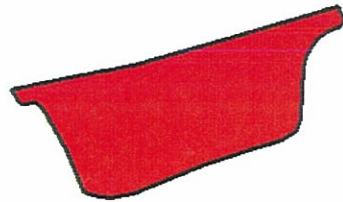
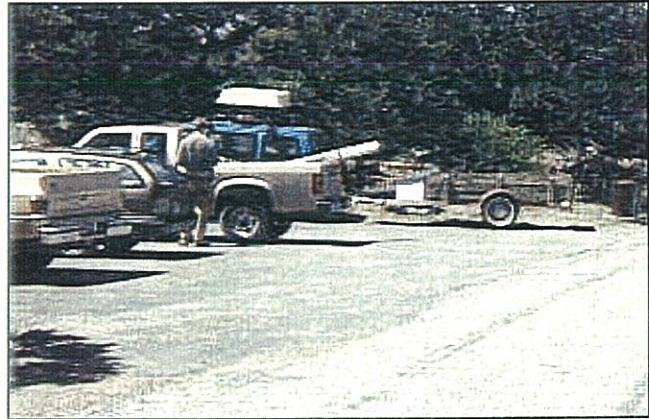
GREAT SAND DUNES NATIONAL MONUMENT

Route 906

RESIDENCE PARKING

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
906	980512			2,166	0.04	Fair

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



40 0 40 80 Feet



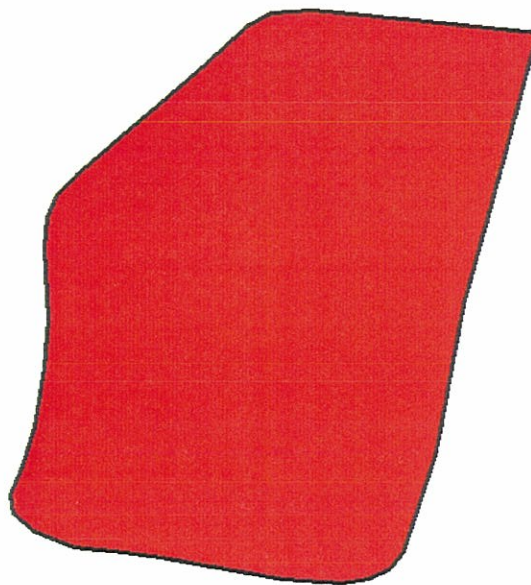
GREAT SAND DUNES NATIONAL MONUMENT

Route 907

BACKCOUNTRY OVERNIGHT PARKING

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
907	980512			986	0.02	Good

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



9 0 9 18 Feet



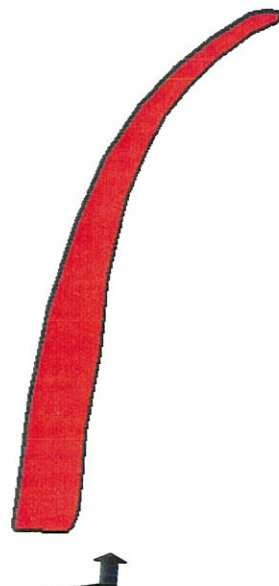
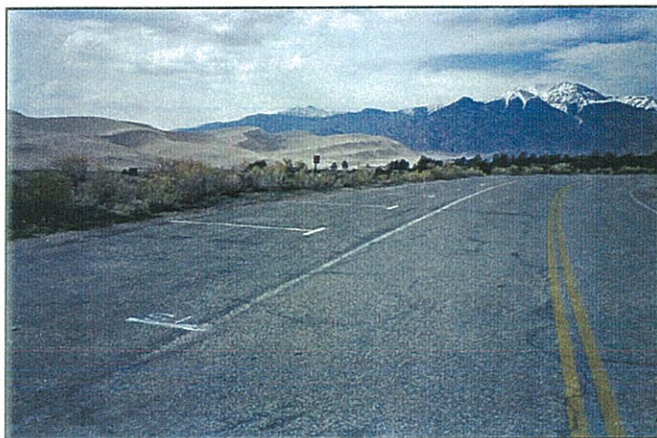
GREAT SAND DUNES NATIONAL MONUMENT

Route 908

OVERNIGHT PARKING

Route	Date	Length (mi)	Width (ft)	Area (sq ft)	Lane Miles	Condition
908	980512			2,370	0.04	Fair

- Length and width will be used when applicable
- Lane miles are based on 11' lane widths



60 0 60 120 Feet

