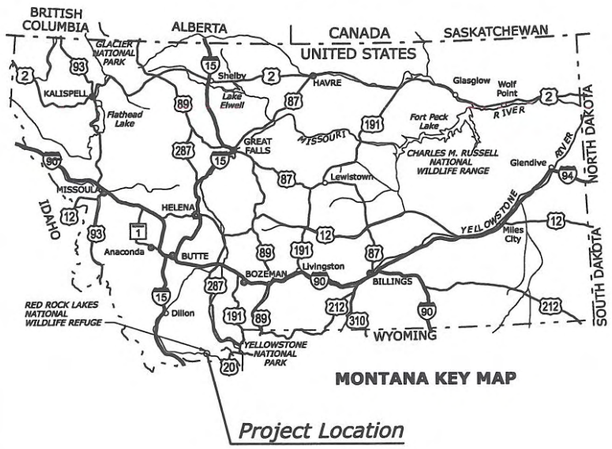
STATE	PROJECT	SHEET NUMBER
MT	RRP RERO 105(1)	A.1

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



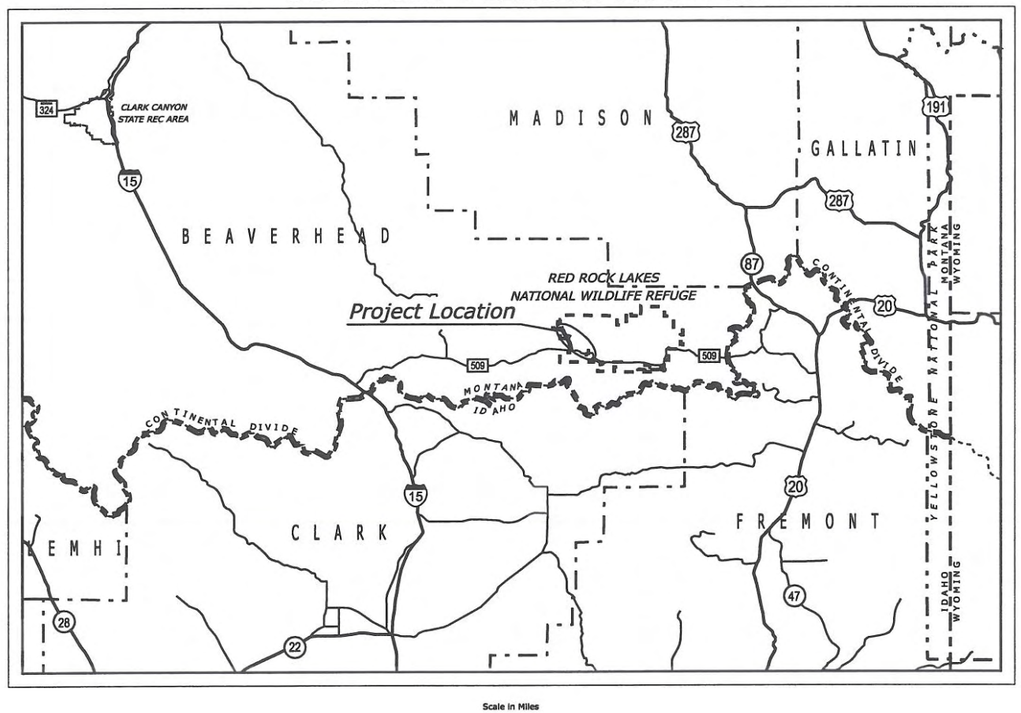
PLANS FOR PROPOSED PROJECT

MT RRP RERO 105(1)

LOWER LAKE ROADS AND PARKING

RED ROCK LAKES NATIONAL WILDLIFE REFUGE
BEAVERHEAD COUNTY
MONTANA

SCHEDULE A LENGTH 3.993 MILES
SCHEDULE B LENGTH 3.684 MILES



Scale in Miles
0 2 4 6 8

TYPE OF CONSTRUCTION:

Aggregate surfacing and drainage.

DESIGN DESIGNATION:

ADT (YEAR)	*15*
ADT (YR+20)	*25*
V	*25 MPH*

SPECIFICATION:

Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 US Customary Units

FEDERAL LANDS HIGHWAY
COMMITMENT TO EXCELLENCE

PLANS PREPARED BY
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION
VANCOUVER, WASHINGTON

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- I.1 TABULATION OF QUANTITIES
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- I.3 PAVEMENT MARKING DETAILS

RECOMMENDED:

Karl H. Gleason DATE 8/7/07
Refuge Roads Project Manager,
Western Federal Lands Highway Division

APPROVED:

Robert B. Lutz DATE 8/14/07
Director, Project Delivery,
Western Federal Lands Highway Division

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Δ	total central angle
Δc	curve central angle
Ø	diameter
θs	spiral central angle
abut.	abutment
ADT	average daily traffic
AH	ahead
appr.	approach
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
cc or c. to c.	center to center
℄	centerline
clr.	clear
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	point of curve to spiral
ctrs.	centers
CUFT	cubic foot (feet)
culv.	culvert
CUYD	cubic yard(s)
D	diameter
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
E	east
e	superelevation rate
El. 94.16 ft	elevation with number
elev.	elevation
emb.	embankment
EP	edge of pavement
EQ or eq.	equation
ER	edge of road
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ft2	square foot
ft3	cubic foot (feet)
ftg.	footing
ga.	gage (gauge)
galv.	galvanized
hdwl.	headwall
hex.	hexagon
HW	high water
ID	inside diameter
jt.	joint
L	length of curve
lam.	lamination
lat.	latitude
LNFT	linear foot (feet)
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water

M.L.	main line
M.P.	mile post
matl.	material
max.	maximum
MGAL	thousand gallon
min.	minimum
mon.	monument
N	north
NC	normal crown
o. c.	on center
o. to o.	out to out
OD	outside diameter
OG	original ground
PC	point of curve
PCC	point of compound curve
PCS	point of curve to spiral
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
PS	point of tangent to spiral
PSC	point of spiral to curve
PST	point of spiral to tangent
PT	point of tangent
pvmt.	pavement
R	radius
R.	range
R/W	right-of-way
rdwy.	roadway
reinf.	reinforcement
reqd.	required
rt. or RT	right
rte.	route
S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
SLRY	slurry unit
spa.	spacing, spaces or spaced
SQFT	square foot
SQYD	square yard
SRS	point of spiral to reverse spiral
SS	point of spiral to spiral (no curve)
ST	point of spiral to tangent
STA, Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
sym.	symmetrical
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
vph	vehicles per hour
VPI	vertical point of intersection
W	west
yd2	square yard
yd3	cubic yard(s)

NOTE:

1. Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.

National Boundary

State Boundary

County Boundary

City Boundary

Township or Range Line

Section Line

Section Corner (Found, Projected) — 36 31 / 1 6 — 36 31 / 1 6

¼ Section Line

¼ Section Corner (Found, Projected) — 15 / 22 — 15 / 22

1/16 Section Line

1/16 Section Corner (Found, Projected) — 1/16 SEC. — 1/16 SEC.

Property Line w/Found Property Corner — P/L — P/L — P/L

Parcel Number — 400

National Park Boundary — NP

National Forest Boundary

National Wildlife Refuge Boundary — NWR NWR NWR NWR

BLM Lands Boundary

Indian Reservation Boundary

Existing Roadway (Road, Paved, Gravel)

Railroad

Trail

Wattle

Silt Fence

Intermittent Drainage or Small Creek

Large Creek or River

Lake, Pond or Reservoir; Marshland

Spring or Seep

Treeline; Individual Trees

Material Source; Bore Hole; Test Pit — BH — TP

Spot Elevation; Coordinate Grid Tick — EL. 1234.56 — N m

Above Ground Tank; Underground Tank

Boulder; Well; Satellite Dish; Grave — W

Cooking Grate; Garbage Can; Picnic Table

Flagpole; Fire Hydrant

Gas & Water Meter; Gas & Water Valve — G W — G W

Control Point (Terestrial and GPS); Jump Hub — CP — GPS — JH

STATE	PROJECT	SHEET NUMBER
MT	RRP RERO 105(1)	A.2

North Arrow — N

	EXISTING	PROPOSED
Slope Stake Limits — Top of Cut		
Toe of Fill		
Transition		
Fence		
Gate with Fence		
Cattleguard		
Guardrail		
Concrete Barrier		
Retaining Wall		wall face
Signs (Single, double post; portable)		
Delineators		
Pipe Culvert (arrow shows flow)		
Pipe Culvert with End Section		
Pipe Culvert with Headwall		
Pipe Culvert with Drop Inlet	DI	DI
Box Culvert		
Underdrain	UD	UD
Overhead/Above Ground Utilities	P	P
Underground Utilities	W	W

FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil, P = power, SA= sanitary sewer, SD = storm drain, SS = storm sewer, STEAM = steam, T = telephone, TV = CATV, W = water

Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)

Miscellaneous Utility Features — T — T

EM = electric meter, T = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain

Building

Right-of-Way Line with Monument — R/W — R/W

Permanent Easement — P/E — P/E

Construction Easement — - no symbol - — C/E

Riprap

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PLAN SYMBOLS AND ABBREVIATIONS

DETAIL APPROVED FOR USE 11/2001

REVISED: 9/2005
DRAFT: 1/2007

DETAIL W101-1

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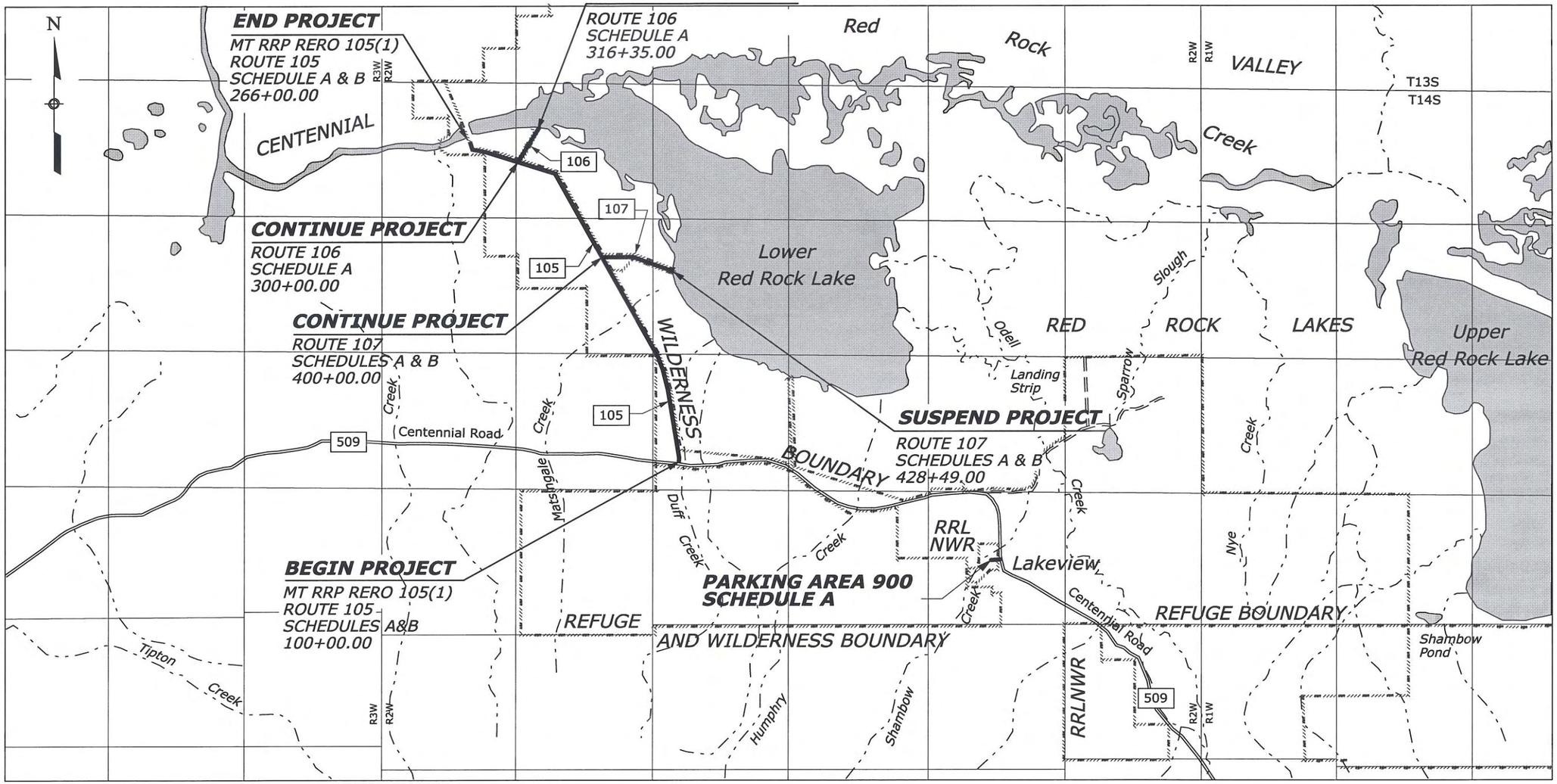
STATE	PROJECT	SHEET NUMBER
MT	RRP RERO 105(1)	A.3



VICINITY MAP

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