

# DREAMY DRAW DAM

GILA RIVER BASIN, ARIZONA

DREAMY DRAW

## DAM, OUTLET WORKS AND SPILLWAY

PERIODIC INSPECTION

REPORT NO. 4

DECEMBER 1976

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**PIR-4**

U.S. ARMY ENGINEERS DISTRICT, LOS ANGELES

CORPS OF ENGINEERS

**A203.907**

TEAM INSPECTION OF DREAMY DRAW DAM  
Periodic Inspection Report No. 4  
dated December 1976

CONTENTS

	Page
Inspection team. . . . .	1
Project conditions . . . . .	1
Maximum water surface elevation. . . . .	1
Inspection results . . . . .	1
Conclusions. . . . .	3
Required action. . . . .	3
Future inspection. . . . .	3
Instrument observation program chart	
Settlement study plates 1-2	
Photos 1 through 6	

Appendix I

SPD Trip Report

Appendix II

Agenda for Inspection

RECEIVED  
Flood Control  
Maricopa

JUN 6 1977

TEAM INSPECTION OF  
DREAMY DRAW DAM

1. INSPECTION TEAM. On 8 December 1976 a periodic team inspection of Dreamy Draw Dam was made as required by ER 1110-2-100. The team consisted of the following personnel:

Maricopa County Flood  
Control District

Los Angeles District

B. Pendergast

T. Hembree

South Pacific Division

V. Minor

L. Knuppel

R. Catanach

W. McCoy

2. PROJECT CONDITIONS.

a. The weather was clear and sunny with a temperature of about 60°F.

b. The reservoir was dry with only a few small trees and a sparse growth of brush in the basin area.

3. MAXIMUM WATER SURFACE ELEVATION.

None recorded.

4. INSPECTION RESULTS.

a. Embankment

(1) Crest - Free of erosion. Shoulders of road sparsely covered with growth of weeds. A.C. paving in good condition with no evidence of settlement or cracking. Settlement monuments and guard posts in good condition.

(2) Abutment contacts - no cracks, slides, or erosion or other signs of instability.

(3) Upstream and downstream slopes - upstream slope had no erosion or evidence of burrowing animals. Stone facing was sound and durable. Downstream slope where top soil was placed for landscaping was eroded into gullies a foot deep and 4" to 6" wide. There is a sparse growth of grass and weeds, but not enough to prevent erosion.

(4) Upstream and downstream toes - no evidence of erosion, seepage, undermining, or settlement at the toes.

b. Saddle dike.

(1) Crest - free of erosion. Shoulders of road sparsely covered with growth of weeds. A.C. paving in good condition with no evidence of settlement or cracking. Some cracking of downstream shoulder is occurring between topsoil that was placed and original downstream slope of saddle dike.

(2) Abutment contacts - no signs of instability or erosion of exposed abutment surfaces.

(3) Upstream and downstream slopes - riprap on upstream slope was sound and in place. No vegetation was observed on upstream slope. Topsoil on downstream slope was eroded similar to main embankment. There was a sparse growth of weeds and grass on the downstream slope.

(4) Upstream and downstream toes - no evidence of erosion or settlement at the toes.

c. Spillway.

(1) Approach channel - clean and unobstructed. The ravelling of the left excavated slope noted at the last inspection had been repaired and the slopes on both sides were in good condition.

(2) Concrete sill - no change in the minor shrinkage cracks noted at last inspection. Slight ravelling of the excavated slopes near the sill caused from motorbike riders climbing the slopes.

(3) Outlet channel - clean and unobstructed. The three gullies that had eroded the left excavated slope of the channel have been satisfactorily repaired using 6" to 12" cobbles and concrete grout. (See photo No. 6)

d. Outlet works.

(1) Approach channel - free of debris and unobstructed.

(2) Intake structure - concrete was in good condition with no signs of reactive aggregate or structural distress. There is still no accumulation of debris in the vicinity of the structure.

(3) Conduit - concrete had no signs of reactive aggregate or structural distress.

(4) Stilling basin - concrete was in good condition with no signs of reactive aggregate or structural distress. There has been some erosion of the material behind both side walls of the basin. Stone should be placed to stop erosion. Erosion is from water flowing along downstream toe of dam to outlet channel.

(5) Outlet channel - was free of debris and unobstructed.

e. Embankment instrumentation.

(1) Monuments - The embankment crest is instrumented with five settlement monuments, located between stations 21+50 and 24+10. A survey was conducted in September 1976. The location of the settlement monuments and the survey data is shown on plate 1. A settlement profile is shown on plate 2.

(2) Analysis of data - The survey of settlement monuments indicates insignificant horizontal and vertical movements to date.

5. CONCLUSIONS.

a. The erosion on the downstream slopes of the embankments is not structurally significant since a stable layer of slope protection was placed on the slope during construction. However, a large part of the erosion appears to be caused by water running off the crest of the embankment and this could be easily prevented by constructing an earth or asphaltic berm along the downstream edge of the crest.

b. The erosion behind the stilling basin sidewalls should be repaired with stone.

6. REQUIRED ACTION.

a. Place earth or asphaltic berm along downstream edge of embankment crest to control erosion of landscape fill.

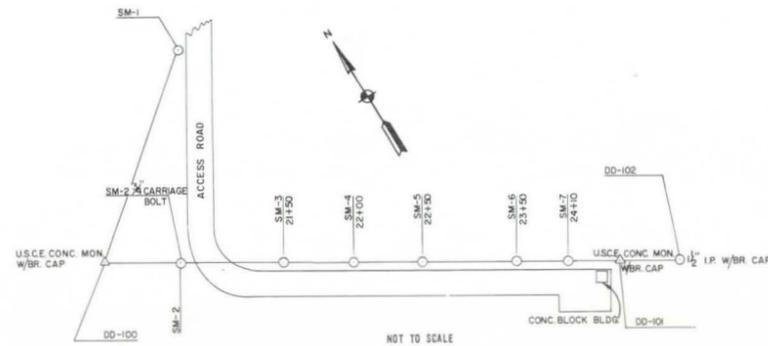
b. Repair erosion back of stilling basin sidewalls by placing stone.

7. FUTURE INSPECTION.

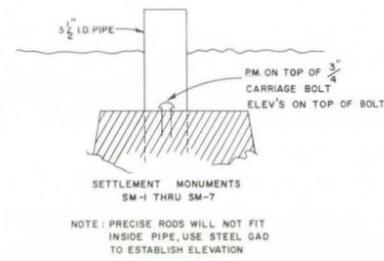
The next team inspection for Dreary Draw Dam is scheduled for October 1978.



POINT	JAN. 1974			APRIL 1974			NOV. 1974			NOV. 1975			SEPT. 1976		
	DISTANCE	OFFSET	ELEVATION	DISTANCE	OFFSET	ELEVATION	DISTANCE	OFFSET	ELEVATION	DISTANCE	OFFSET	ELEVATION	DISTANCE	OFFSET	ELEVATION
SM-1*			1418.133			1418.133*			1418.135			1418.123			1418.127
	245.85														
DD-100															
	52.58			52.57			52.57			52.58			52.48		
SM-2		0.00	1417.938		0.01L	1417.938		0.00	1417.943		0.02R	1417.942		0.02R	1417.946
	192.58			192.58			192.55			192.55			192.58		
SM-3		0.025R	1416.661		0.03R	1416.660		0.04R	1416.663		0.035R	1416.650		0.03R	1416.655
	49.88			49.87			49.84			49.87			49.85		
SM-4		0.040R	1416.667		0.04R	1416.664		0.04R	1416.665		0.035R	1416.654		0.04R	1416.656
	50.07			50.11			50.04			50.09			50.08		
SM-5		0.020R	1416.703		0.03R	1416.701		0.04R	1416.702		0.04R	1416.692		0.03R	1416.690
	100.02			100.00			100.04			100.03			100.01		
SM-6		0.020R	1416.761		0.03R	1416.791		0.04R	1416.795		0.04R	1416.788		0.03R	1416.783
	58.97			58.98			58.93			58.98			58.97		
SM-7		0.00	1416.770		0.01R	1416.772		0.00	1416.768		0.005R	1416.769		0.01L	1416.767
	47.41			47.28			47.33			47.30			47.31		
DD-101		0.00	1418.785		0.00	1418.894		0.00	1418.896		0.00	1418.893		0.00	1418.896
	37.35			37.47			37.42			37.46			37.58		
DD-102															
DD-103*						1409.377*			1409.377*			1409.377*			1409.377*
#3855						1418.874			1418.874*			1418.874*			1418.874*



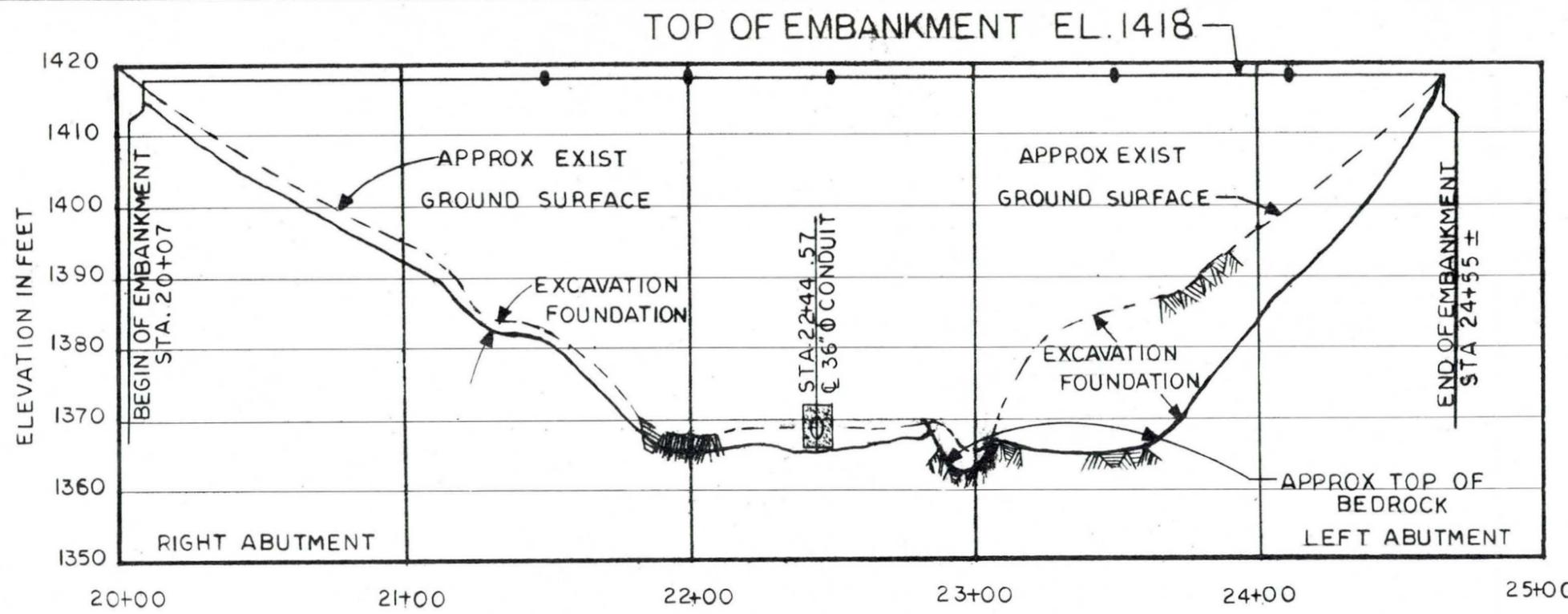
REFERENCE: HORIZONTAL & VERTICAL CONTROL IN FIELD BOOK AR-F7-2-112  
L & R MEANS LEFT AND RIGHT FACING INCREASING STATIONING.



\* BASIS OF ELEVATIONS  
① RESET IN APRIL 1974

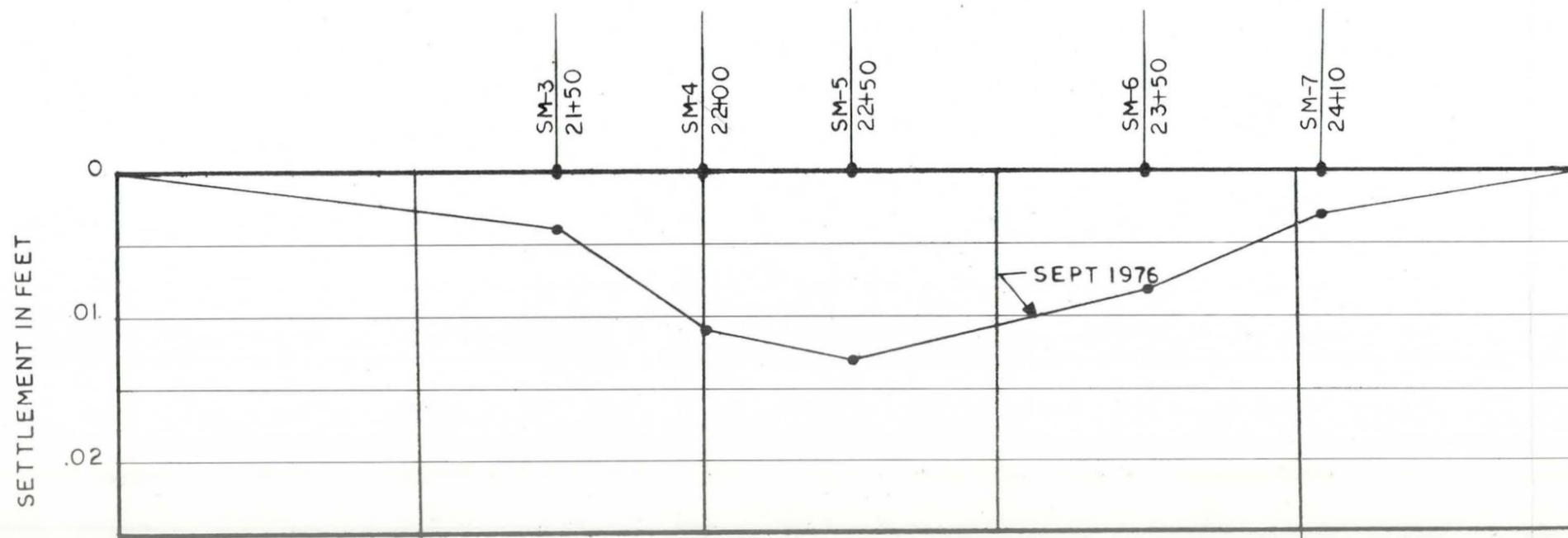
DATUM IS MEAN SEA LEVEL

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
U. S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	<b>DREAMY DRAW DAM SETTLEMENT STUDIES</b>		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	APPROVED:	SHEET 1 OF 1 SHEETS	
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09- DISTRICT FILE NO. 362/166 JULY 1974		



CENTER LINE EMBANKMENT PROFILE

- NOTES:
1. CONSTRUCTION OF PROJECT COMPLETED IN SEPTEMBER 1973.
  2. BASIS OF SETTLEMENTS JANUARY 1974 SURVEY DATA.



SETTLEMENT PROFILE

HORIZONTAL SCALE 1" = 50'

GILA RIVER BASIN  
 NEW RIVER & PHOENIX CITY STREAMS  
**DREAMY DRAW DAM**  
 EMBANKMENT SETTLEMENT  
 U. S. ARMY ENGINEER DISTRICT  
 LOS ANGELES, CORPS OF ENGINEERS  
 TO ACCOMPANY REPORT DATED:



Photo 1 – Crest of Saddle dike. Looking north.



Photo 2 – Crest of dam. Looking west.



Photo 3 – Downstream slope of dam showing erosion of top soil placed over stone facing.



Photo 4 – Downstream slope of dam showing erosion of top soil placed for landscaping.



Photo 5 — Recorder House showing 6 inch thick concrete shell placed over existing concrete block.

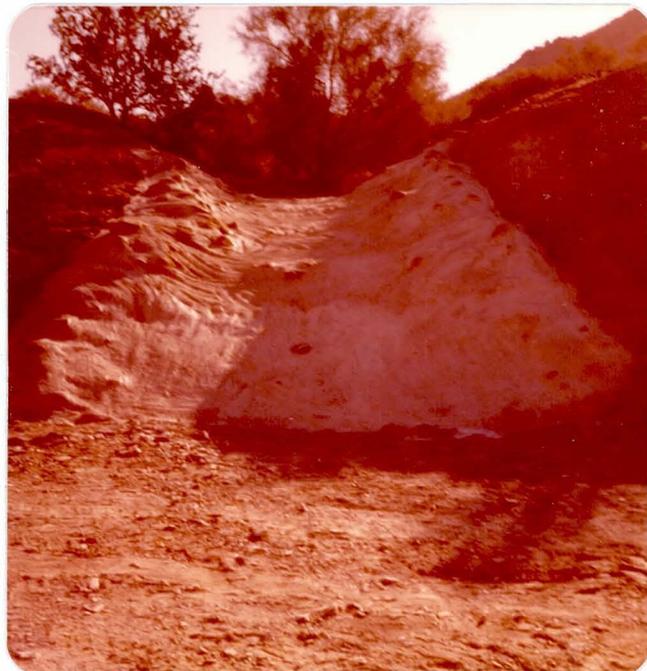


Photo 6 — Typical Grouted Stone repair of one of three gullies that were eroding the spillway outlet channel bank.

APPENDIX I



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS  
630 Sansome Street, Room 1216  
San Francisco, California 94111

SPDED-G

MEMORANDUM FOR THE RECORD

SUBJECT: Periodic Inspection - Dreamy Draw Dam

1. On 8 Dec 1976, the following personnel performed the periodic inspection of Dreamy Draw Dam:

R. Catanach           SPD  
W. McCoy               SPD

L. Knuppel             SPL  
T. Hembree             SPL  
V. Minor                SPL

B. Pendergast       Maricopa County Flood Control  
  District

2. This was the fourth annual inspection since the completion of the project in 1973. It is recommended that the next inspection be held in two years based on condition of the project.

3. The project is in excellent condition and there are no questions regarding the structure stability, safety or operational adequacy of the project. Two items were noted during the inspection and deserve comment and appropriate action prior to the next inspection.

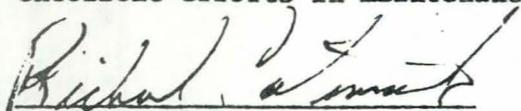
a. Landscaping of the downstream face is deteriorating due to erosion. Loss of the earth is not a safety hazard in itself but could clog the downstream channel. Therefore an earth or asphaltic berm should be added on the downstream edge of the crest to channel the water to the abutments.

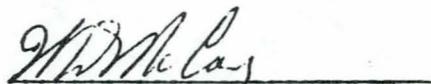
b. Erosion around the downstream stilling basin continues and rock should be added to protect the structure.

4. The spillway has been protected from flows in intersecting natural drains and no additional work is required.

5. Instrumentation does not indicate any problems but should continue to be monitored particularly in the event of high storage.

6. Maricopa County and Mr. Pendergast should be commended for their excellent efforts in maintenance of this structure.

  
R. Catanach

  
W. McCoy

APPENDIX II

AGENDA FOR INSPECTION OF  
TAT MOMOLIKOT (SANTA ROSA)  
DREAMY DRAW AND ALAMO LAKE DAMS

Monday, 6 December 1976 - Members will arrive at Phoenix, Arizona by plane. Arrangements for cars will be made by LAD. Single room reservations will be made for all members for 6 December 1976. The name and address of the motel is:

Ramada Inn East  
38th & Van Buren  
Phoenix, Arizona  
Telephone Number: (602) 275-7878

Tuesday, 7 December 1976

0800	Depart from motel for Tat Momolikot Dam
0930	Inspection of dam
1130	Lunch - Members will bring own lunch
1230	Inspection of dam
1430	Assemble for discussion of inspection
1500	Depart for Phoenix, Arizona

Single room reservations will be made for all members for 7 December 1976 at the Ramada Inn East.

Wednesday, 8 December 1976

0800	Depart from motel for Dreamy Draw Dam
0830	Inspection of dam
1130	Assemble for discussion of inspection
1200	Lunch
1300	Depart for Wickenburg, Arizona

Single room reservations will be made for all members for 8 December 1976.  
The name and address of the motel is:

Rancho Grande Motel  
293 East Center Street  
Wickenburg, Arizona 85358  
Telephone Number: (602) 684-5445

Thursday, 9 December 1976

0800	Depart from motel for Alamo Lake Dam
1000	Inspection of dam
1200	Lunch - Members will bring own lunch
1300	Inspection of dam
1530	Assemble for discussion of inspection
1600	Depart for Phoenix, Arizona

Single room reservations will be made for all members for 9 December 1976  
at the Ramada Inn East in Phoenix.

Friday, 10 December 1976 - Members will return to duty station.