DEADMAN WASH
FLOODPLAIN DELINEATION STUDY
FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

VOLUME 2 of 2

PREPARED FOR

FLOOD CONTROL DISTRICT
of
Maricopa County
2801 West Durango Street • Phoenix, Arizona 85009
Telephone (602) 506-1501

PREPARED BY

HNTB
HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS

MAY 1992
REVISED DECEMBER 1992

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Prepared By

HOWARD NEEDLES TAMMEN & BERGENDOFF
Two Renaissance Square
40 North Central Avenue
Suite 1100
Phoenix, Arizona 85004
(602) 528-4300

May, 1992
Revised December, 1992

20957
BAILANG
SUN
Date Signed 12/2/92
ARIZONA

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Registered Professional Engineer (Civil) CERTIFICATE NO. 20057 BAILANG SUN Date Signed 12/2/92 ARIZONA, U.S.A.

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2. DRAINAGE SUB-BASIN SOILS MAP
3. DRAINAGE SUB-BASIN LAND USE MAP
4. DRAINAGE SUB-BASIN FLOW PATHS AND FLOOD ROUTING MAP
5. HEC-1 MODEL SCHEMATIC
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C. SGRAPH.WK1 Outputs of Sub-Basin Loss Parameters
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DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX A: Survey Field Notes

DEADMAN WASH

ERM #	ELEV.	COORDINATES		DESCRIPTION
	(ft.)	North (Y) Feet	East (X) Feet	
1	1498.531	1009704.637	608932.260	B.C. in granite stamped "SNOD 1991". 300'± S.E. of Snodgrass Tank. In the S.W. 1/4 Sec. 13, T5N R1E.
2	1512.499			B.C. in 6" conc. post stamped "1512.50". 1000'± S.W. of Maricopa Tank in the N.E. 1/4 Sec 13, T5N R1E.
3	1541.933	1013344 ±	615908±	B.C. in 6" conc. post stamped "1541.93". 40' ± N.E. of Jeep Trail inter. 1000'± N.E. S. 1/4 Cor. Sec 7, T5N R2E.
4	1586.849	1017805.779	618653.894	A.D.O.T. P&M B.C. on conc. post stamped "GATE" @ M.P. 28, 3 1/2' ± N. of S. R/W Fence of Carefree Hwy. 900'± East of N.W. Cor. Sec. 8, T5N R2E.
5	1611.458			B.C. in 6" Dia. conc. post stamped "1611.46". 300' ± S.W. of E. 1/4 Cor. Sec. 5, T5N R2E.
6	1632.849	1023191.261	623151.572	U.S.G.L.O. B.C. (S.E. Cor Sec. 32, T6N R2E).
7	1669.324			U.S.G.L.O. B.C. (E. 1/4 Cor Sec. 32, T6N R2E).
8	1688.706			U.S.G.L.O. B.C. (S. 1/4 Cor Sec. 28, T6N R2E), along N-S fence.

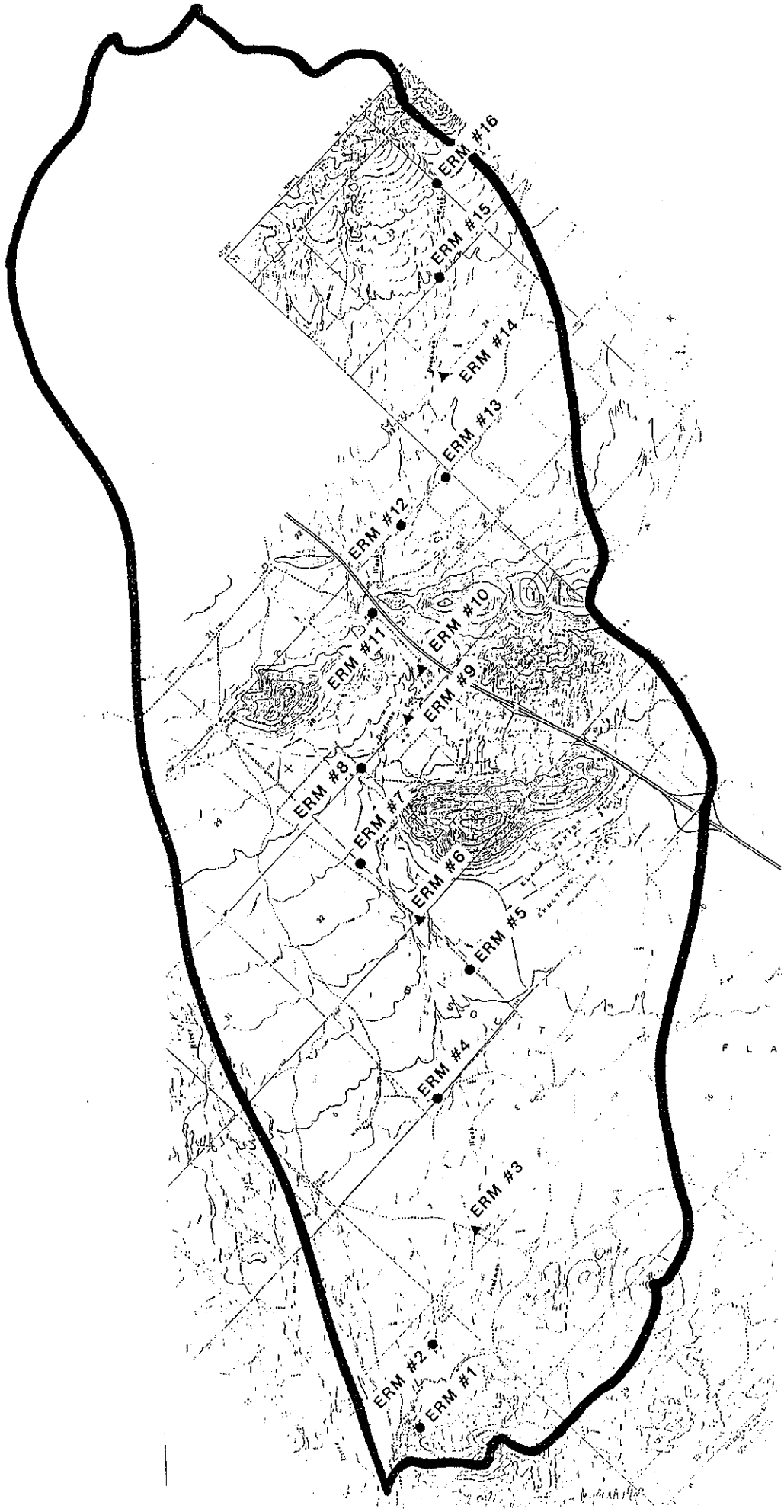
ERM #	ELEV.	COORDINATES		DESCRIPTION
9	1689.700	1028753.635	628447.834	M.C.H.D. B.C. flush in conc. in paved road, (N.W. Cor Sec. 34, T6N R2E).
10	1704.830	1029663.623	630210.216	U.S.G.S. B.C. on 3 1/2" dia. pipe stamped "1705". 150'± W. of dirt rd. (950' ± N. and 1750'± E. of S.W. Cor. Sec. 27, T6N R2E).
11	1722.720	1032470.852	630482.984	U.S. C & G.S. B.C. in rock stamped " U-56 1984" Rec. 1722.720. (2000± E. and 1500' ± S. of N.W. Cor. Sec. 27, T6N R2E).
12	1751.901			U.S. G.L.O. B.C.(WC N.E. Cor. Sec. 27, T6N R2E).
13	1791.558			B.C. in 6" dia. conc. post stamped "1791.56" 1'± N.E. of fence cor. S.W. R/W of 31st Ave. and Desert Hills Drive In N. 1/4 Cor. Sec. 26, T6N R2E.
14	1824.559	1036658.235	639034.828	U.S.G.L.O. B.C. (E. 1/4 Cor. Sec. 23, T6N R2E).
15	1899.660			U.S.G.L.O. B.C. (N.1/4 Cor. Sec. 24, T6N R2E).
16	1996.555			U.S.G.L.O. B.C. (E 1/4 Cor. Sec. 13, T6N R2E).

MJT/bgs DEADMAN.ERM

Ten stream cross sections were obtained by field survey methods. Refer to **Appendix A - Survey Field Notes**, Book 97, pp. 46 through 68. Distribution of the sections is as follows:

Stream

Deadman Wash - 75' South of Split
Deadman Wash - 575' South of Split
Stream No. 12 - Existing Carefree Highway Pipe
Deadman Wash - 146' South of Carefree Highway
Deadman Wash - 175' North of Joy Ranch Road
Deadman Wash - I-17 Bridges
Deadman Wash - Structure #1 through #5, #7 and #8
Stream # 5 -
Stream # 4 - North of Irvine Road on 33rd Avenue
Deadman Wash - 500' West of intersection of 33rd Avenue and Desert Hills Drive


ERM #16
ERM #15
ERM #14
ERM #13
ERM #12
ERM #11
ERM #10
ERM #9
ERM #8
ERM #7
ERM #6
ERM #5
ERM #4
ERM #3
ERM #2
ERM #1

D002
D003
D007
D008
D004
D011
D014
D010
D009
D005
D016
D015
801
#P004
805
806
D025
900
D019
D017
D006
D012
813
808
#9995
810
804
802
500
D024
D021
D020
D026
812
#P650
D023
811
D013
D022
809
803
D018
#P033
D030

FAX TRANSMISSION

11/18/1991

From: McEwen Global Positioning Systems, Inc.
3003 West Northern Avenue, Suite #8
Phoenix, Arizona 85051

Office: (602) 995-8445 Fax: (602) 841-8953

To: HNTB

Att'n.: Mike Tholl

Re: Deadman Wash ADMS GPS Control

Mike: As per our discussion, here's the revised listing. No horizontal or vertical changes were made other than point #D016.
---BDE---

NOTE: ALL GPS ELEVATIONS AND SPC VALUES WERE COMPUTED IN METERS AND CONVERTED TO THE U.S. SURVEY FOOT USING THE ASHTECH GPPS MODULE "83MTR2FT.EXE". THESE Y AND X VALUES ARE ARIZONA CENTRAL ZONE SPC NAD83.

PT#	NORTH(Y) FEET	EAST(X) FEET	POINT(Z) ELEV.(FT)	PANEL(Z) ELEV. (FT)	COMMENTS:
0103	1017786.249	606546.687	1561.28	N/A	NOT PANELLED
*9995	1017805.779	618653.894	1586.98	1586.53	N/G 1'FROM CENT.
D001	1052887.471	631089.420	2026.42	N/A	NOT PANELLED
D002	1025011.864	606881.952	1621.88	N/A	NOT PANELLED
D003	1017872.902	601014.877	1575.78	N/A	NOT PANELLED
*D004	1039032.610	630698.607	1800.57	1800.6	N/G 1'FROM CENT.
*D005	1032470.852	630482.984	1722.72	N/A	SEE LEVEL NOTES
*D006	1029663.623	630210.216	1704.82	1703.7	N/G @ CENT. & P
*D007	1044582.442	628503.110	1879.52	1878.5	CENT. PANEL
*D008	1044572.999	633779.999	1904.92	1902.9	N/G 3'FROM CENT.
*D009	1044559.850	644331.576	2132.45	2130.55	N/G 3'FROM CENT.
*D010	1041933.658	639061.360	1943.29	1941.3	N/G 2'FROM CENT.
D011	1036644.213	628475.216	1786.55	1786.55	FLUSH
*D012	1036658.235	639034.828	1824.51	1823.0	N/G 3'FROM CENT.
*D013	1036646.342	644303.747	1875.57	1873.8	N/G 2'FROM CENT.
D014	1034219.414	629945.584	1753.82	1753.82	FLUSH
D015	1032829.955	632226.774	1739.92	1739.92	FLUSH
D016	1031329.161	630514.175	1715.43	1715.43	FLUSH
D017	1028753.635	628447.834	1689.70	1689.70	FLUSH
*D018	1028727.172	644276.835	1811.84	1809.8	N/G 3'FROM CENT.
*D019	1023191.261	623151.572	1632.84	1631.1	N/G 3'FROM CENT.
D020	1017550.757	620663.270	1585.75	1585.75	FLUSH
D021	1013343.879	615907.941	1541.72	1541.72	FLUSH
D022	1010691.555	616504.210	1534.85	1534.85	FLUSH
D024	1009704.637	608932.260	1498.79	1498.79	FLUSH
D025	1010996.160	606715.184	1491.98	1491.98	FLUSH
D026	1007179.387	607757.272	1511.37	1511.37	FLUSH
D030	1006852.616	635329.330	1584.78	N/A	NOT PANELLED
*P004	1017877.459	612105.885	1564.01	1563.5	N/G 1'FROM CENT.
*P015	1001243.037	612461.403	1501.24	1501.1	N/G 1'FROM CENT.
P033	1028878.162	654833.461	1854.72	N/A	NOT PANELLED
P650	1009940.611	612702.856	1511.74	1511.74	FLUSH

DUE TO THE USE OF EXISTING USGLO MONUMENTS, MANY OF THE PANELS ARE NOT FLAT AT THE CENTER. MGPS RECOMMENDS THAT THE PHOTOGRAMMETRY CONTRACTOR BE NOTIFIED OF THIS, AND PROVIDED WITH OUR POINT DESCRIPTIONS ON STATIONS MARKED WITH AN ASTERISK (*) TO ALLOW THE MAP COMPILER TO PICK THE AREA TO BE READ VERTICALLY.

PT#	SPIRIT ELEV. (FT)	SPIRIT ELEV. (M)	SOURCE	GPS ELEV. (FT)	GPS ELEV. (M)
0103	1561.28	475.879	ADOT		
9995	1586.98	483.713	ADOT		
D001	2026.42	617.653	C&GS		
D002	1621.88	494.348	MGPS		
D003	1575.78	480.299	ADOT		
D004	1800.57	548.815	C&GS		
D005	1722.72	525.086	C&GS		
D006			MGPS	1704.82	519.631
D007			MGPS	1879.52	572.880
D008			MGPS	1904.92	580.622
D009	2132.45	649.971	MGPS		
D010			MGPS	1943.29	592.317
D011			MGPS	1786.55	544.542
D012			MGPS	1824.51	556.112
D013	1875.57	571.676	MGPS		
D014			MGPS	1753.82	534.566
D015			MGPS	1739.92	530.330
D016			MGPS	1715.43	522.864
D017	1689.70	515.022	HNTB		
D018	1811.84	552.248	MGPS		
D019			MGPS	1632.84	497.692
D020			MGPS	1585.75	483.337
D021			MGPS	1541.72	469.916
D022			MGPS	1534.85	467.822
D024	1498.79	456.831	MGPS		
D025			MGPS	1491.98	454.757
D026			MGPS	1511.37	460.665
D030	1584.78	483.041	C&GS		
P004	1564.01	476.711	MGPS		
P015			MGPS	1501.24	457.579
P033	1854.72	565.320	MGPS		
P650			MGPS	1511.74	460.778

NOTE: ALL GPS ELEVATIONS WERE COMPUTED IN METERS AND CONVERTED TO THE U.S. SURVEY FOOT USING THE ASHTECH GPPS MODULE "83MTR2FT.EXE".

DAILY REPORT

HNTB DEADMAN WASH ADMS 14 October, 1991 DAY 287

Operator	Station	Description	Receiver
SESSION A (STATIC)			
Dave	D007	NE COR. S16, T6N,R2E USGLO BC IN ROCK CAIRN 1.50' ABOVE GRND. SEE DESCRIPTION	1
Jerry	D009	NE COR. S13, T6N,R2E USGLO BC IN ROCK CAIRN 1.90' ABOVE GRND. SEE DESCRIPTION	2
Woody	D001	STA. "NEW (USC&GS) STD. USC&GS DISK SEE DESCRIPTION	3
Brian	D008	NE COR. S15, T6N,R2E USGLO BC IN ROCK CAIRN 2.0' ABOVE GRND. SEE DESCRIPTION	4
SESSION B (STATIC)			
Dave	D007	NE COR. S16, T6N,R2E USGLO BC IN ROCK CAIRN 1.50' ABOVE GRND. SEE DESCRIPTION	1
Jerry	D009	NE COR. S13, T6N,R2E USGLO BC IN ROCK CAIRN 1.90' ABOVE GRND. SEE DESCRIPTION	2
Woody	D004	STA. "HOUND" (USC&GS) STD. USC&GS DISK 0.50' ABOVE GRND. I-17 1 MI. S. OF DESERT HILLS RD.	3
Brian	D010	E 1/4 S14, T6N,R2E USGLO BC IN ROCK CAIRN 2.0' ABOVE GRND. SEE DESCRIPTION	4
SESSION C (STATIC)			
Dave	D018	NE COR. S36, T6N,R2E USGLO BC IN ROCK CAIRN 2.0' ABOVE GRND. JOY RANCH RD. 1 MI. W. OF 7TH AVE.	1
Jerry	D009	NE COR. S13, T6N,R2E USGLO BC IN ROCK CAIRN 1.90' ABOVE GRND. SEE DESCRIPTION	2
Woody	P033	NE COR. S32, T6N,R3E MCHD BC IN POTHOLE 0.40' BELOW PVMT. 7TH ST. & JOY RANCH RD.	3
Brian	D013	E 1/4 S24, T6N,R2E USGLO BC IN ROCK CAIRN 1.8' ABOVE GRND. SEE DESCRIPTION	4
SESSION D (STATIC)			
Dave	D011	PANEL PT. NEAR E 1/4 S20, T6N,R2E 1/2" REBAR FLUSH SEE DESCRIPTION	1
Jerry	D012	E 1/4 S23, T6N,R2E USGLO BC IN ROCK CAIRN 1.40' ABOVE GRND. 35TH AVE. & IRVINE RD.	2
Woody	D004	STA. "HOUND" (USC&GS) STD. USC&GS DISK 0.50' ABOVE GRND. I-17 1 MI. S. OF DESERT HILLS RD.	3
Brian	D013	E 1/4 S24, T6N,R2E USGLO BC IN ROCK CAIRN 1.8' ABOVE GRND.	4

SESSION E (STATIC)

Dave	D011	PANEL PT. NEAR E 1/4 S20, T6N,R2E 1/2" REBAR FLUSH SEE DESCRIPTION	1
Jerry	D015	PANEL POINT 1/2" REBAR FLUSH SEE DESCRIPTION	2
Woody	D014	PANEL POINT 1/2" REBAR FLUSH SEE DESCRIPTION	3
Brian	D005	BM "U-56" (USC&GS) STD. USC&GS DISK SEE DESCRIPTION	4

DAILY REPORT

HNTB DEADMAN WASH ADMS 15 October, 1991 DAY 288

Operator	Station	Description	Receiver
SESSION A (STATIC)			
Dave	D018	NE COR. S36, T6N,R2E USGLO BC IN ROCK CAIRN 2.0' ABOVE GRND. JOY RANCH RD. 1 MI. W. OF 7TH AVE.	1
Jerry	D015	PANEL POINT 1/2" REBAR FLUSH SEE DESCRIPTION	2
Woody	D017	NE COR. S33, T6N,R2E MCHD BC FLUSH SEE DESCRIPTON	3
Brian	D012	E 1/4 S23, T6N,R2E USGLO BC IN ROCK CAIRN 1.50' ABOVE GRND. 35TH AVE. & IRVINE RD.	4
SESSION B (STATIC)			
Dave	D016	PANEL POINT 1/2" REBAR FLUSH SEE DESCRIPTION	1
Jerry	D006	USGS BM (UNIDENTIFIED) STD. USGS CAP 1.15' ABOVE GRND. SEE DESCRIPTION	2
Woody	D017	NE COR. S33, T6N,R2E MCHD BC FLUSH SEE DESCRIPTON	3
Brian	D005	BM "U-56" (USC&GS) STD. USC&GS DISK SEE DESCRIPTION	4
SESSION C (STATIC)			
Dave	D020	PANEL PT. NEAR N 1/4 S8, T6N,R2E 1/2" REBAR FLUSH SEE DESCRIPTION	1
Jerry	D019	SE COR. S32, T6N,R2E USGLO BC IN ROCK CAIRN 1.7' ABOVE GRND. SEE DESCRIPTION	2
Woody	D017	NE COR. S33, T6N,R2E MCHD BC FLUSH SEE DESCRIPTON	3
Brian	D030	STA. "MUNSON" (USC&GS) STD. USC&GS DISK I-17 2.1 MI. S. OF CAREFREE HWY.	4
SESSION D (STATIC)			
Dave	D020	PANEL PT. NEAR N 1/4 S8, T6N,R2E 1/2" REBAR FLUSH SEE DESCRIPTION	1
Jerry	D022	PANEL PT. 1/2" REBAR FLUSH SEE DESCRIPTION	2
Woody	9995	STA. "GATE" (ADOT) STD. ADOT P&M AL. CAP 0.45' ABOVE GRND. CAREFREE HWY. 2.7 MI. W. OF I-17	3
Brian	D021	PANEL PT. 1/2" REBAR FLUSH	4

SESSION E (STATIC)

Dave	P650	PANEL PT. 1/2" REBAR FLUSH SEE DESCRIPTION	1
erry	D024	STA. "SNOD" (MGPS) MGBS BC IN STONE FLUSH SEE DESCRIPTION	2
Woody	P004	STA. "TANK" (MGPS) MGPS BC 0.5' ABOVE GRND. CAREFREE HWY. 3.8 MI. W. OF I-17	3
Brian	D021	PANEL PT. 1/2" REBAR FLUSH SEE DESCRIPTION	4

DAILY REPORT

HNTB DEADMAN WASH ADMS 16 October, 1991 DAY 289

Operator	Station	Description	Receiver
SESSION A (STATIC)			
Dave	D026	PANEL PT. NEAR NE COR. S23, T6N,R1E USBOR BC (CAP ROW STA. 108+14.37) SEE DESCRIPTION	1
Jerry	D022	PANEL PT. 1/2" REBAR FLUSH SEE DESCRIPTION	2
Woody	P015	PANEL PT. USBOR BC (CAP ROW STA. 184+00, 150' RT.) SEE DESCRIPTION	3
Brian	P650	PANEL PT. NEAR E 1/4 S13, T5N,R1E 1/2" REBAR FLUSH SEE DESCRIPTION	4
SESSION B (STATIC)			
Dave	D026	PANEL PT. NEAR NE COR. S23, T6N,R1E USBOR BC (CAP ROW STA. 108+14.37) SEE DESCRIPTION	1
Jerry	D024	STA. "SNOD" (MGPS) MGBS BC IN STONE FLUSH SEE DESCRIPTION	2
Woody	D025	PANEL PT. 1/2" REBAR FLUSH SEE DESCRIPTION	3
Brian	D003	STA. "PESO" (ADOT) STD. ADOT P&M AL. CAP LAKE PLEASANT RD. & CAREFREE HWY.	4
SESSION C (STATIC)			
Dave	D007	NE COR. S16, T6N,R2E USGLO BC IN ROCK CAIRN 2.0' ABOVE GRND. SEE DESCRIPTION	1
Jerry	D011	PANEL PT. 20' S. OF E 1/4 S21, T6N,R2E 1/2" REBAR FLUSH SEE DESCRIPTION	2
Woody	D017	NE COR. S33, T6N,R2E MCHD BC FLUSH SEE DESCRIPTION	3
Brian	D002	STA. "WHITE" (USC&GS) STD. USC&GS DISK SEE DESCRIPTION	4

DAILY REPORT

HNTB DEADMAN WASH ADMS 18 October, 1991 DAY 291

Operator	Station	Description	Receiver
ESSION A (STATIC)			
Glen	D018	NE COR. S36, T6N,R2E USGLO BC IN ROCK CAIRN 1.70' ABOVE GRND. JOY RANCH RD. 1 MI. W. OF 7TH AVE.	1
Jerry	P033	NE COR. S32, T6N,R3E MCHD BC IN POTHOLE 0.40' BELOW PVMT. 7TH ST. & JOY RANCH RD.	2
Woody	D030	STA. "MUNSON" (USC&GS) STD. USC&GS DISK I-17 2.1 MI. S. OF CAREFREE HWY.	3

MGPS Inc

Adjusted Position Sta.(name) GATE Sta.# 9995

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

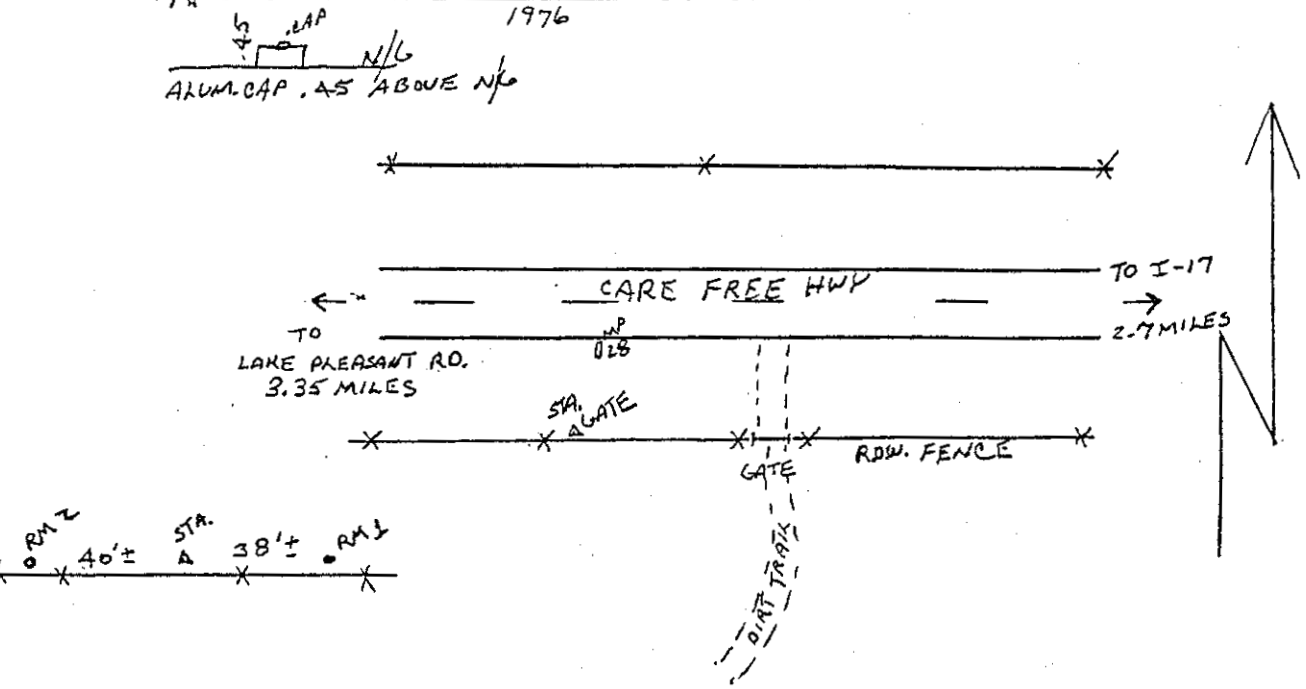
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark ADOT ALUM. CAP 1976 Condition GOOD



Comments: TO REACH THIS STATION FROM CARE FREE HWY & I-17 INTERCHANGE GO WEST ON CARE FREE HWY TO MP 28 ALUM CAP IS LOCATED ON SOUTH SIDE OF CARE FREE HWY 3' NORTH OF SOUTH ROW FENCE & 130'± WEST OF GATE

MGPS Inc

Adjusted Position Sta.(name) USGLS HOUND Sta.# 0004

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

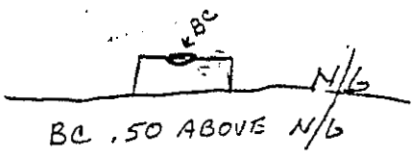
****

Location Sketch and Description

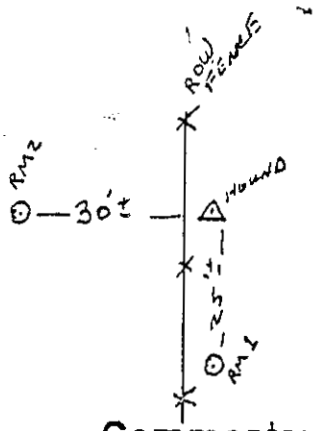
****

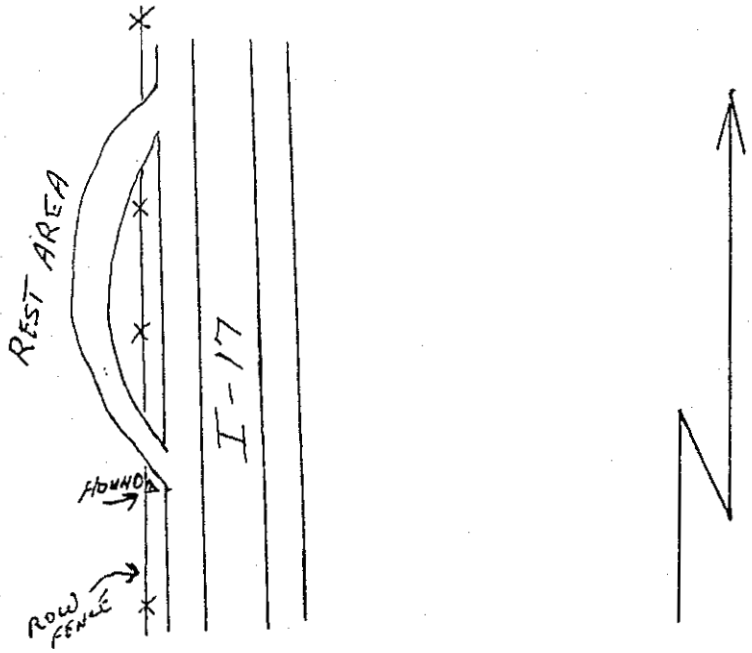
Date 10/14/91 Project DEADMAN WASH

Type of Mark USGLS BC IN CONCRETE 1959 Condition GOOD



BC .50 ABOVE N/G





Comments: TO REACH THIS STATION FROM I-17 & DESERT HILL RD. GO SOUTH ON I-17 1.0 MILE TO SOUTH END OF REST AREA BC IS LOCATED 5'± EAST OF WEST ROW FENCE TWO RM'S RM1 25'± SOUTH RM2 20'± WEST

MGPS Inc

Adjusted Position Sta.(name) U-56 Sta.# D005

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

Location Sketch and Description

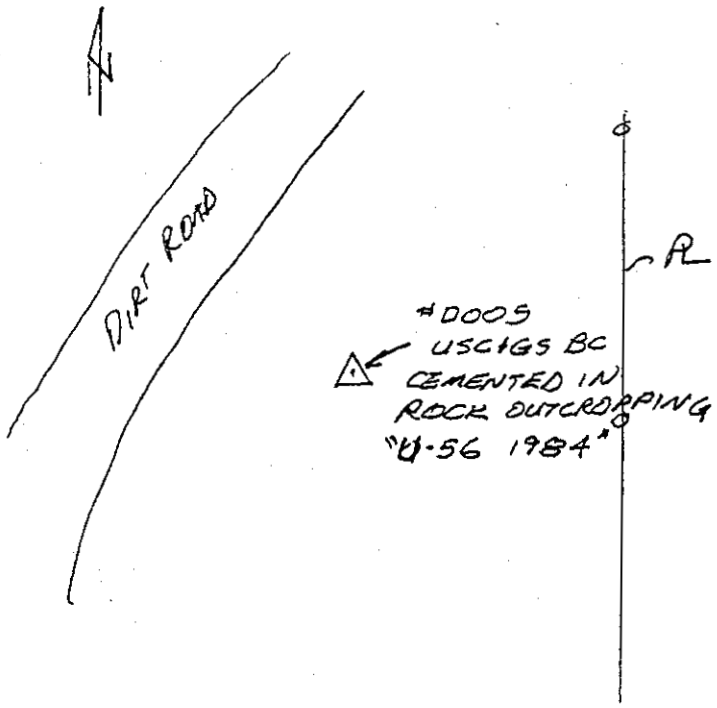
****

Date 10/14/91 Project DEADMAN WASH ADMS

Type of Mark USCIGS CAP Condition GOOD

PANEL PROFILE: FROM WEST LOOKING EAST

SEE LEVEL NOTES FOR PANEL ELEV.



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) PANEL "D006 Sta.# D006

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

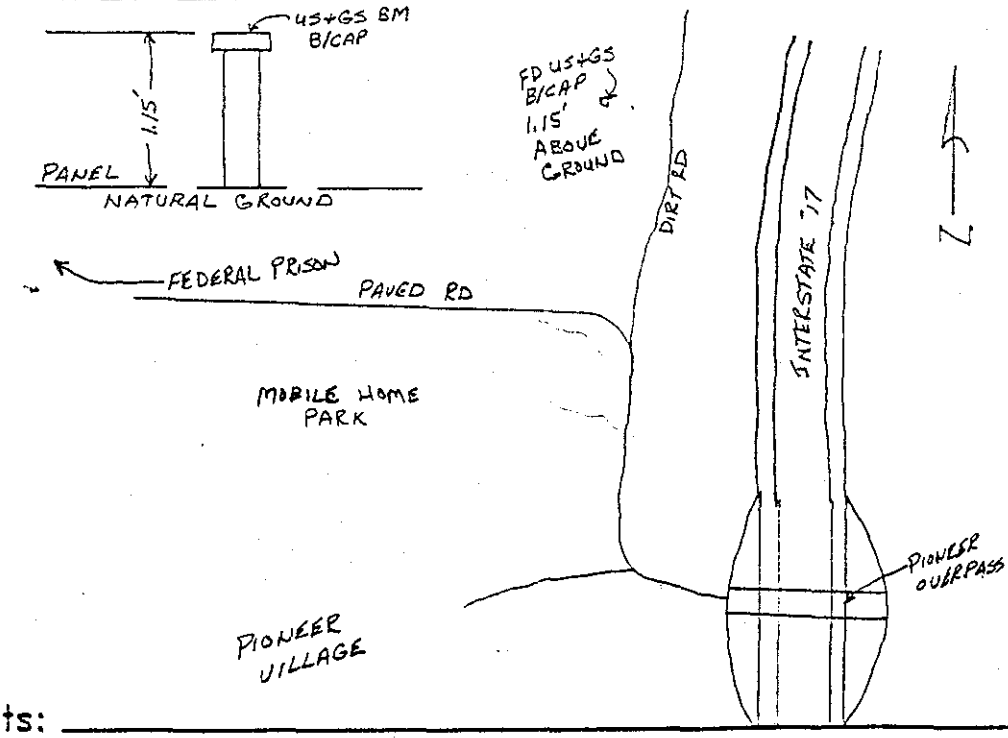
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark US+GS BM B/CAP Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) NE COR S16 T6N R2E Sta.# D007

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

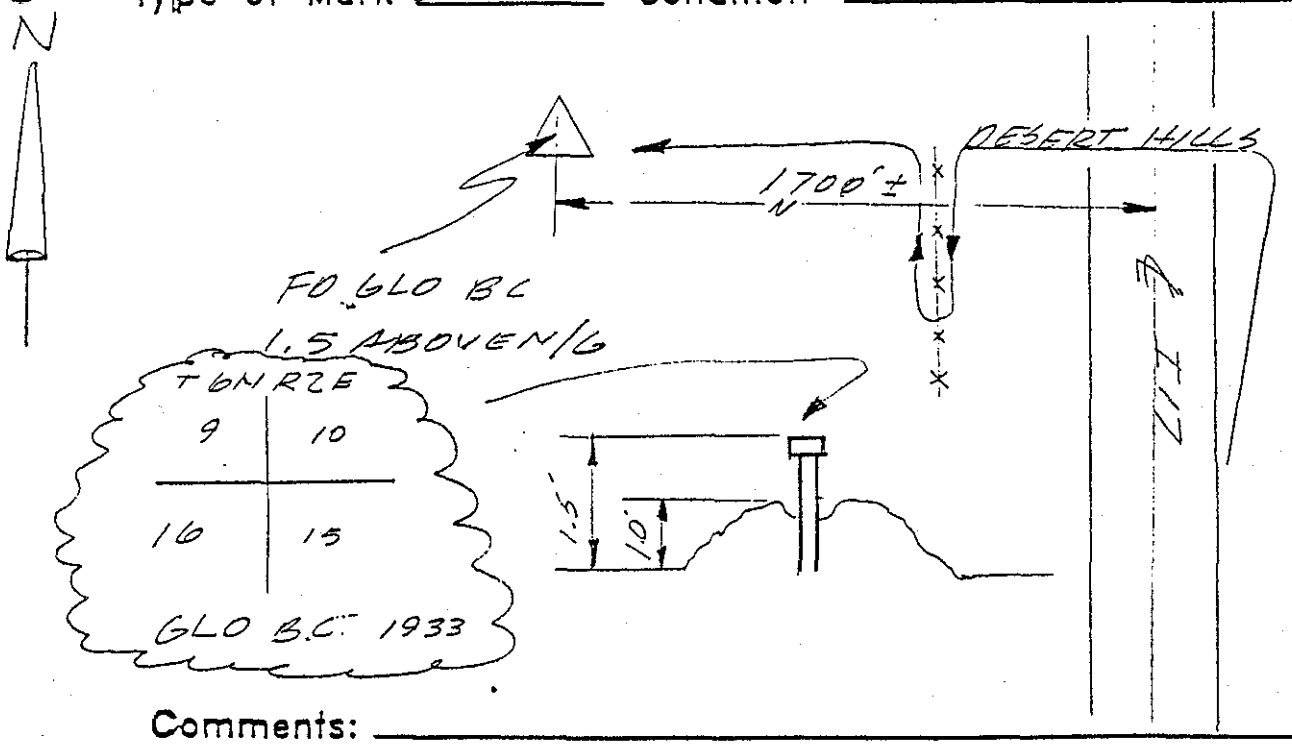
****

Location Sketch and Description

****

Date 14 OCT 91 Project DEADMAN WASH ADMS

Type of Mark GLO B.C. Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) NE15 T6N, R2E Sta.# D008

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

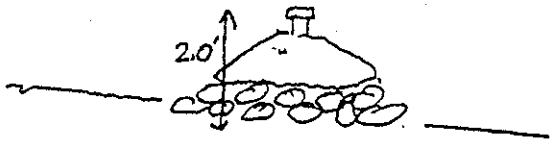
Location Sketch and Description

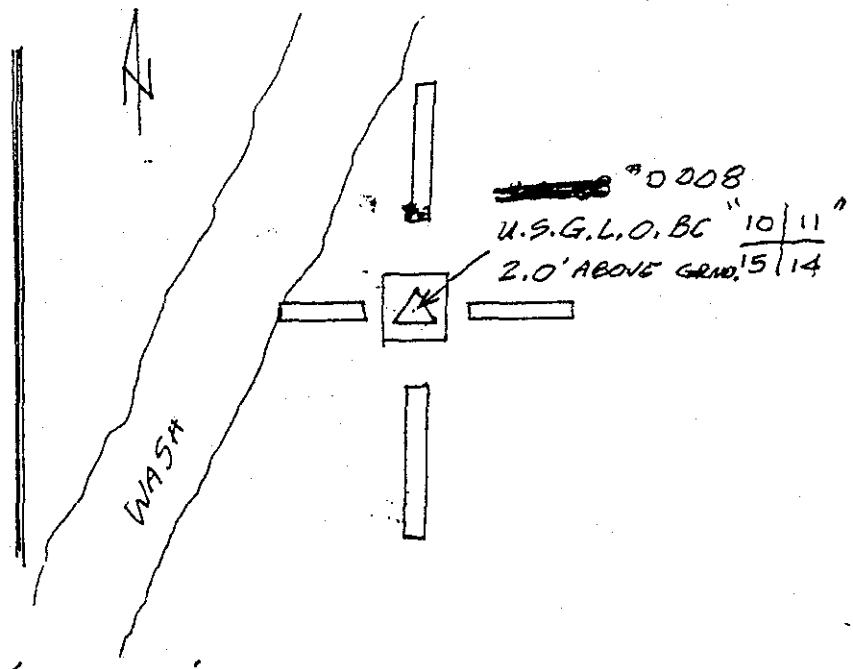
****

Date 10/14/91 Project DEADMAN WASH ADMS

Type of Mark GLO BC Condition GOOD

PANEL PROFILE: FROM EAST LOOKING WEST





Comments: STA. IS IN A 4' DIA. x 2' H ROCK CAIRN ON A GENTLE SLOPE SE OF A PROMINENT WASH, AS PLOTTED ON QUAD MAP

MGPS Inc

Adjusted Position Sta.(name) T6N-R2E N.E. COR. SEC. 13 Sta.# D009

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

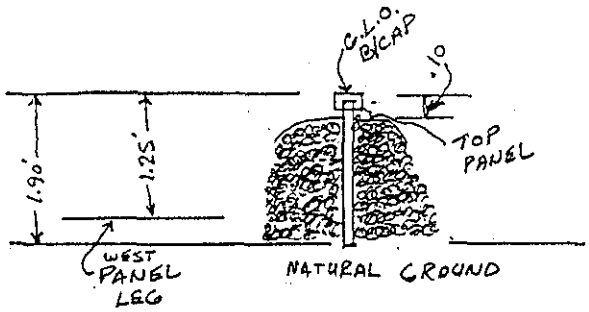
****

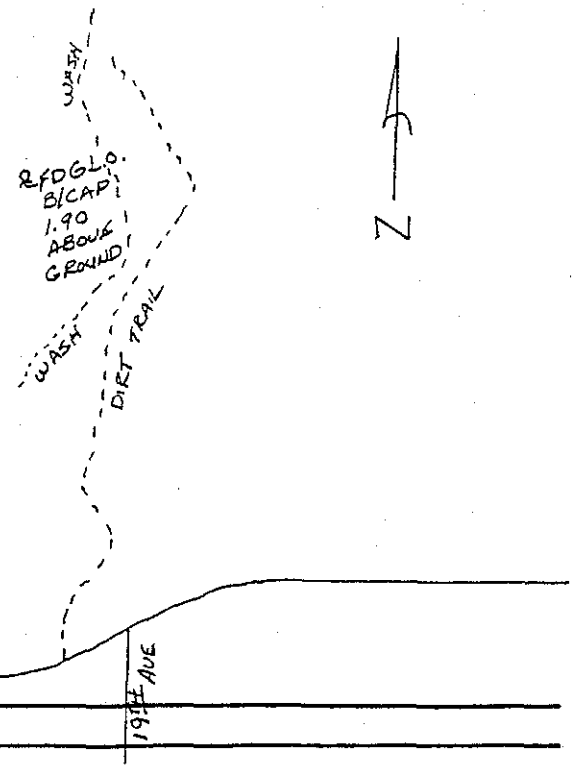
Location Sketch and Description

****

Date 10/14/91 Project DEADMAN WASH

Type of Mark G.L.O. B/CAP Condition GOOD





Comments: _____

MGPS Inc

Adjusted Position Sta.(name) E1/4 14, T6N, R2E Sta.# D010

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

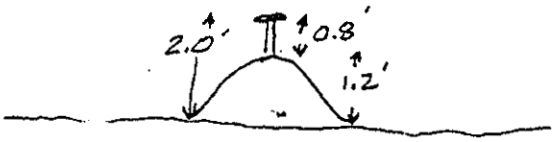
Location Sketch and Description

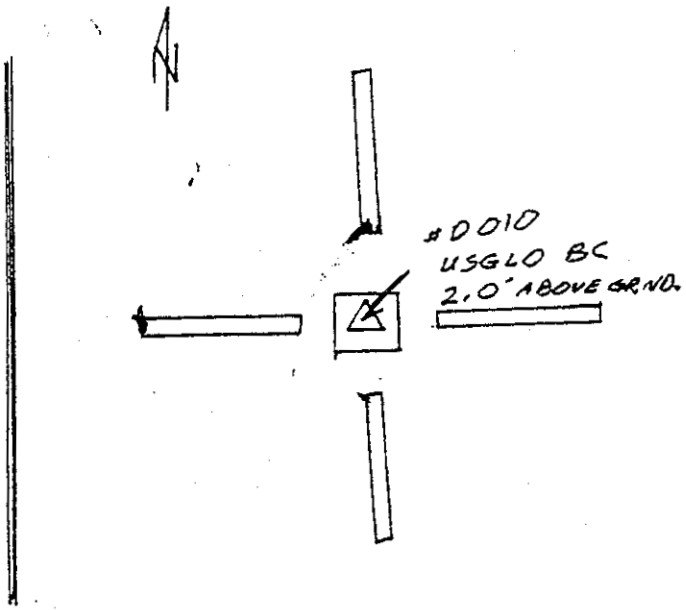
****

Date 10/24/91 Project DEADMAN WASH ADMS

Type of Mark GLO BC Condition GOOD

PANEL PROFILE: FROM S, LOOKING N.





Comments: STA. IS IN A 3' DIA. 1.2' H ROCK CAIRN AS PLOTTED ON QUADMAP. 50'± NW OF TRACK ROAD RUNNING NE/SW

MGPS Inc

Adjusted Position Sta.(name) E1/4 S23 T1N R2E Sta.# D012

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

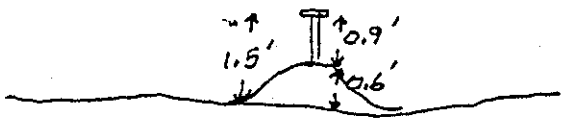
Location Sketch and Description

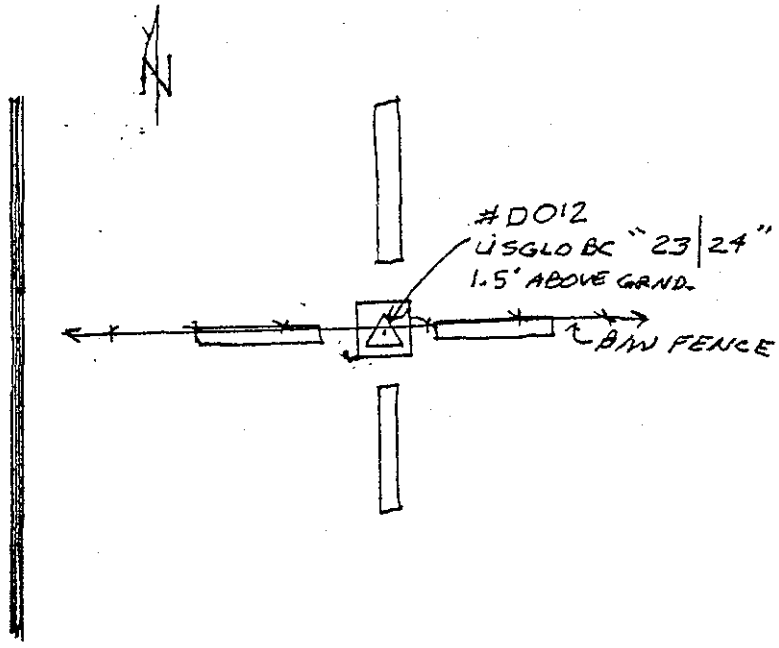
****

Date 10/15/91 Project ~~[illegible]~~ DENMAN WASH ADMS

Type of Mark GLO BC Condition GOOD

PANEL PROFILE: FROM SOUTH LOOKING NORTH





Comments: 0.5 MI ± N. OF DESERT HILLS RD. ALONG TRACK ROAD APPX. 27TH AVE

MGPS Inc

Adjusted Position Sta.(name) E¼ S24, T6N, R26E Sta.# D013

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

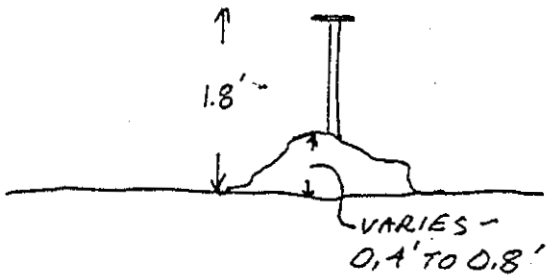
Location Sketch and Description

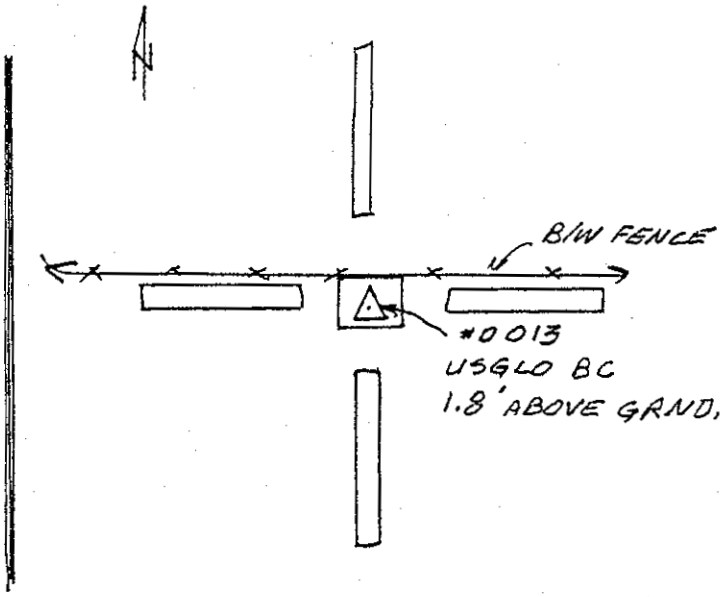
****

Date 10/14/91 Project DEADMAN WASH ADMS

Type of Mark GLO BC Condition GOOD

PANEL PROFILE: FROM SOUTH LOOKING NORTH





Comments: _____

MGPS Inc

Adjusted Position Sta.(name) N/E COR 53C T6N R2E Sta.# 0018

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

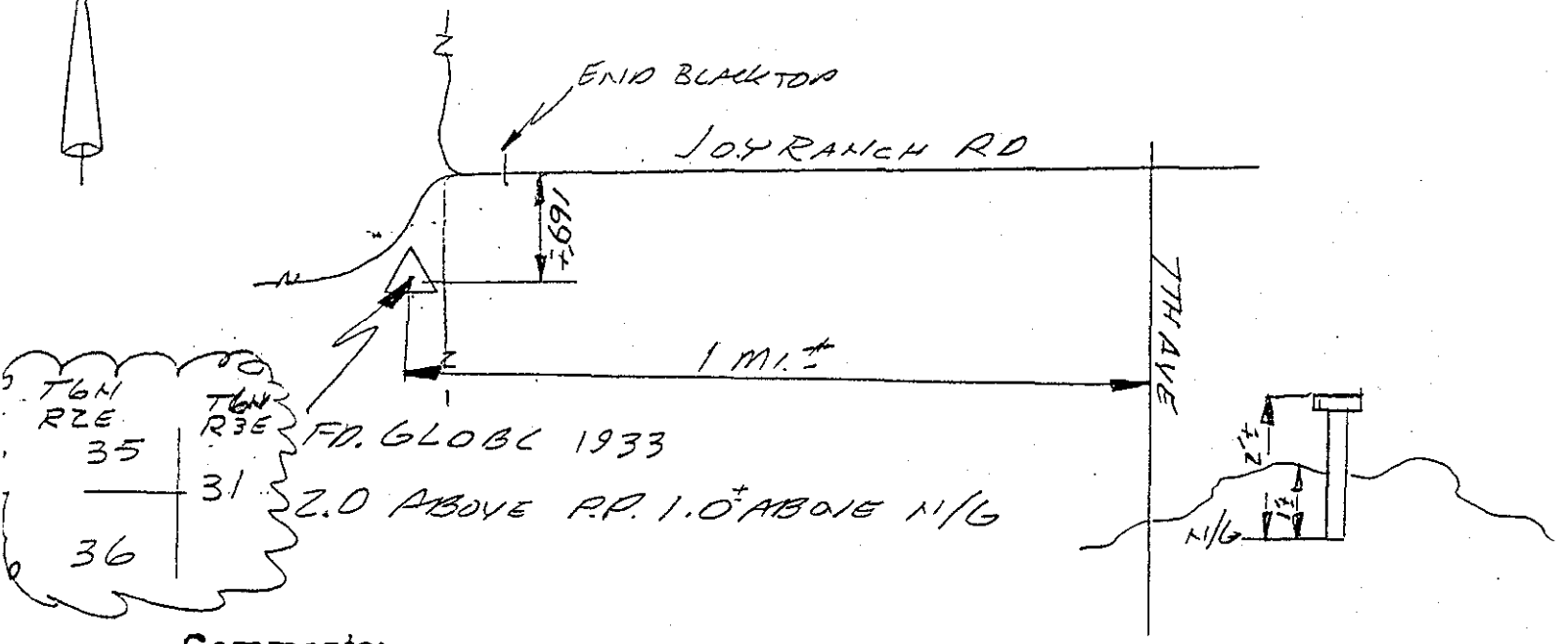
****

Location Sketch and Description

****

Date 14 OCT 91 Project OETTMAN WASH ADMS

Type of Mark GLOBE Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) T6N-R2E S.E. COR. SEC. 32 Sta.# D019

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

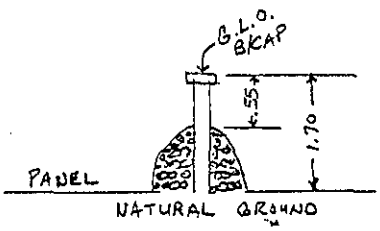
****

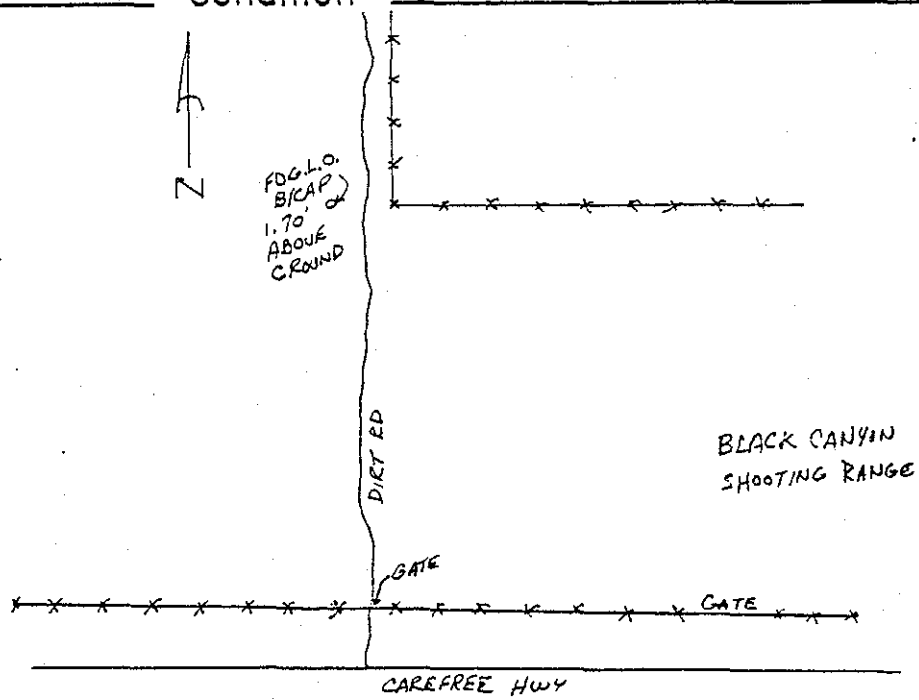
Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark G.L.O. B/CAP Condition GOOD





Comments: _____

MGPS Inc

Adjusted Position Sta.(name) NEW Sta.# 0001

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

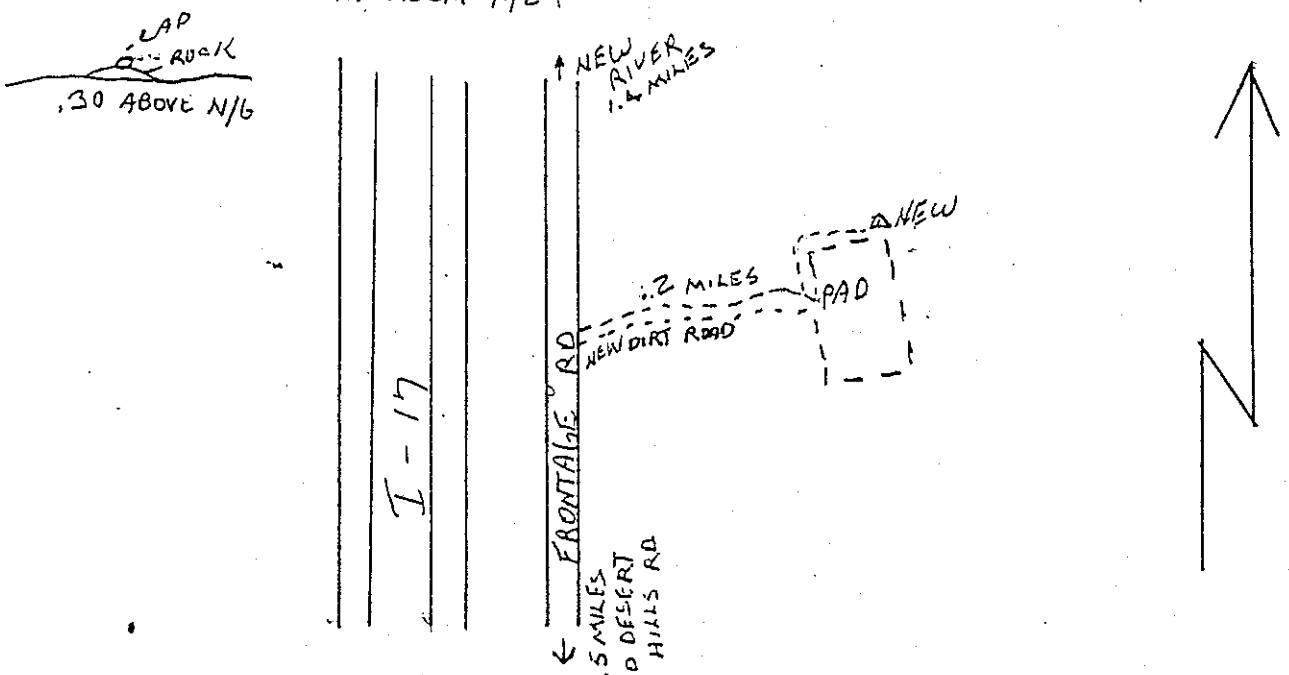
****

Location Sketch and Description

****

Date 10/14/91 Project DEADMAN WASH ADMS

Type of Mark USC&GS BC IN ROCK 1924 Condition GOOD



Comments:

TO REACH THIS STATION GO NORTH ON I-17 TO DESERT HILL RD. EXIT GET OFF STAY ON EAST FRONTAGE RD. GO 1.5 MILE TO NEW DIRT RD. GO EAST FOR .2 MILES TO PAD 100'± NE OF PAD.

MGPS Inc

Adjusted Position Sta.(name) ~~[illegible]~~ WHITE Sta.# D002

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

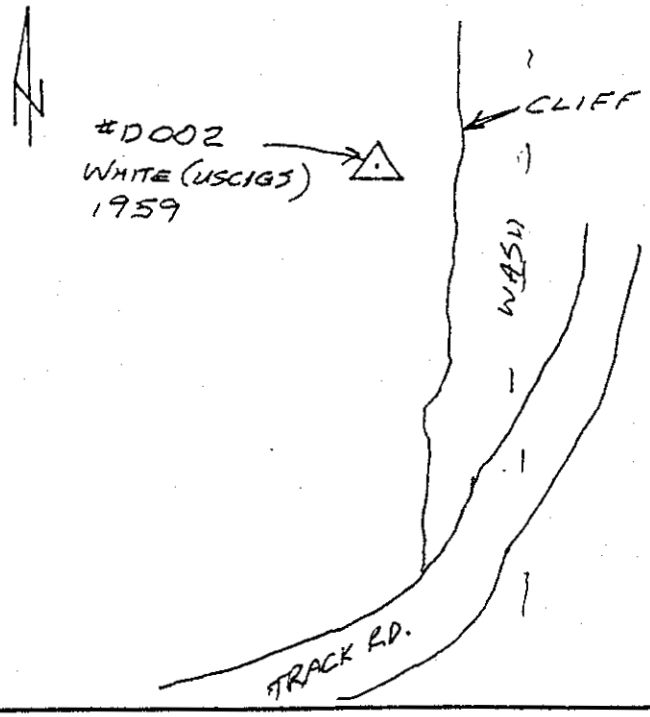
****

Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH ADMS

Type of Mark C&GS CAP Condition GOOD



Comments: STA. IS A STD. C&GS DISK CEMENTED IN WHITE ROCK OUTCROP FLUSH W/GRND.
STA., RM1 & RM2 INTACT.

MGPS Inc

Adjusted Position Sta.(name) PESO (AGS) Sta.# D003

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

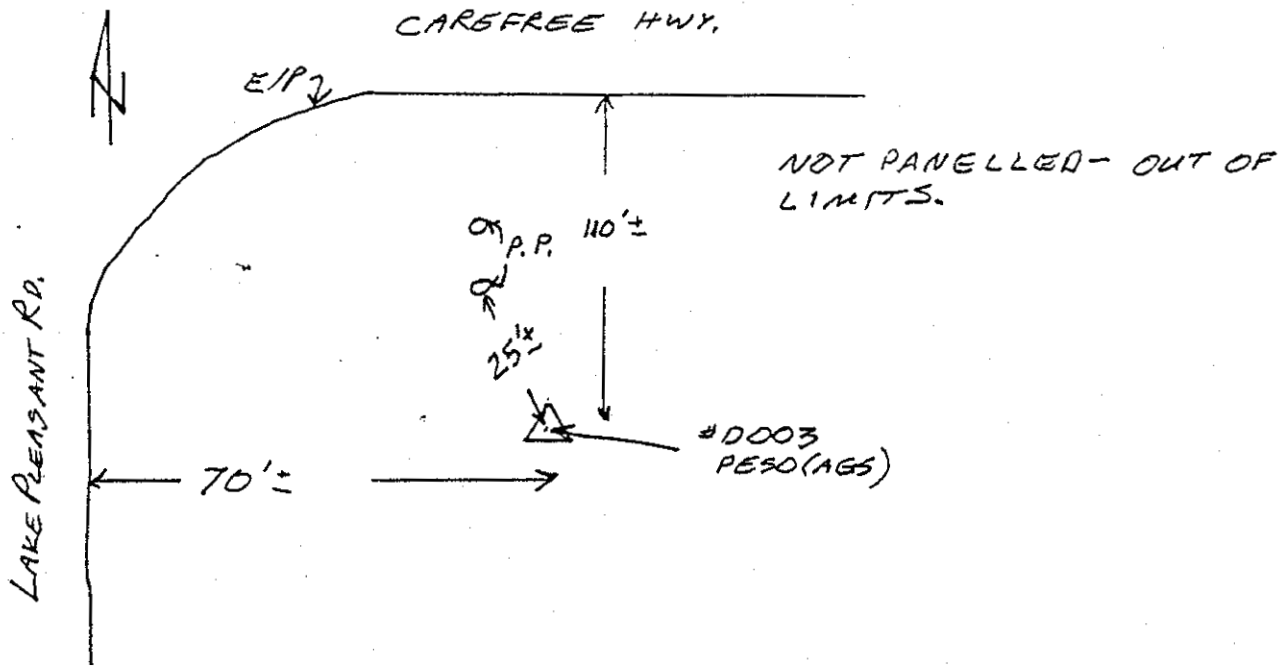
****

Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH ADMS

Type of Mark ADOT PIM ALC Condition GOOD



Comments: APPEARS POSSIBLY DISTURBED, BUT ADOT PIM REPORTS STA. IS OK, STA. IS A STANDARD ADOT PIM ALUMINUM CAP IN CONC.

MGPS Inc

Adjusted Position Sta.(name) MECOR S16 T6N R2E Sta.# D007

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

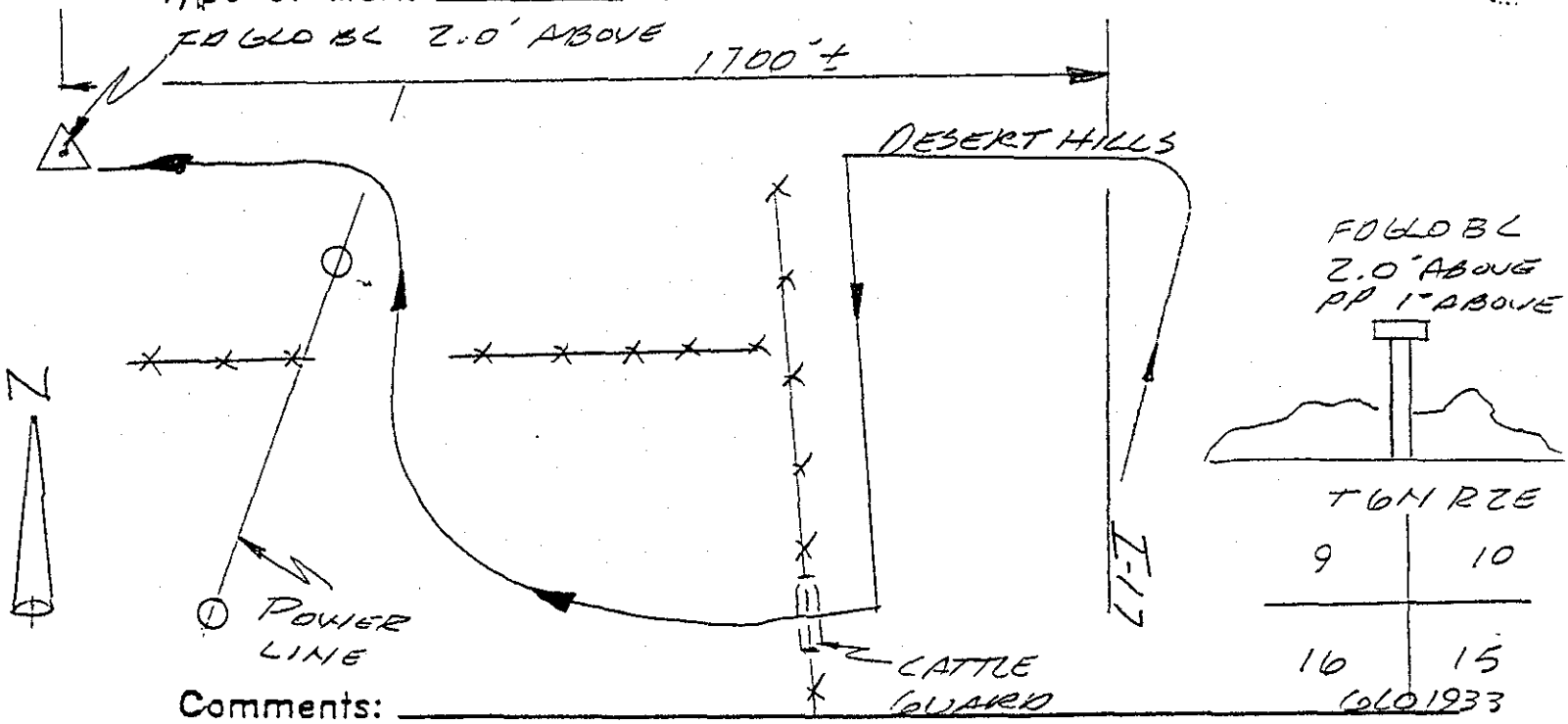
****

Location Sketch and Description

****

Date 16 OCT 91 Project DEADMAN WASH ADMS

Type of Mark GLO BC Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) PANEL "D011 Sta.# D011

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

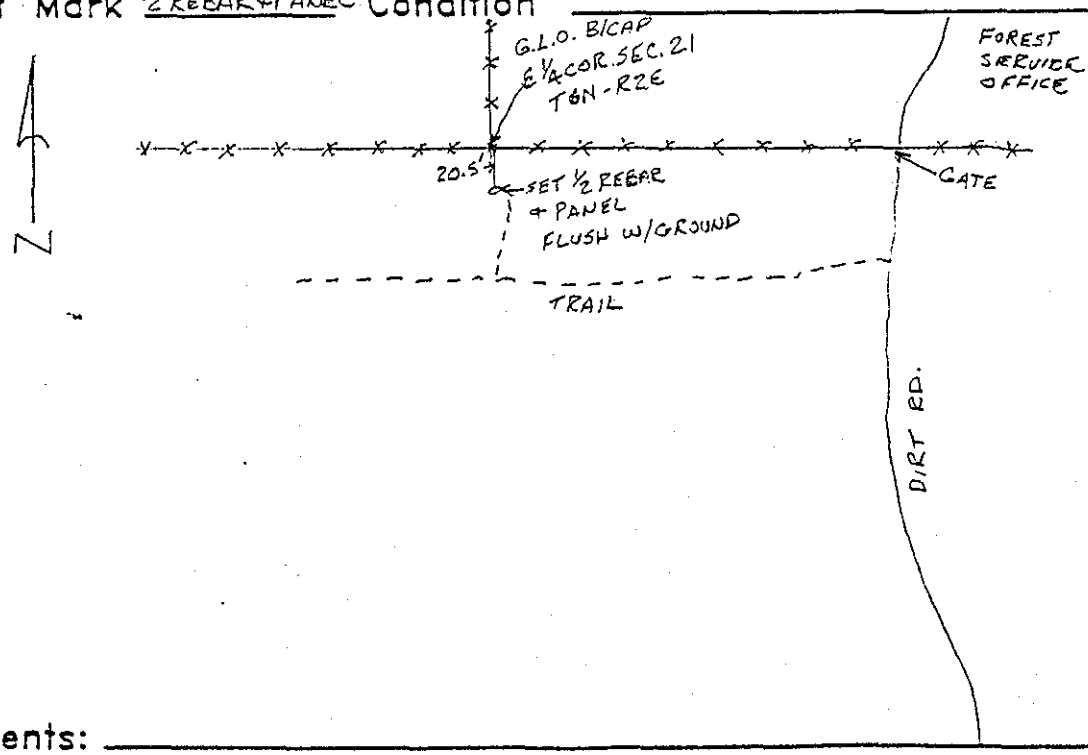
****

Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH

Type of Mark ½ REBAR+PANEL Condition _____



Comments: E¼ COR. SEC. 21 T6N-R2E. COULD NOT BE OCCUPIED BECAUSE STEEL FENCE POST WAS LEANING OVER IT.

MGPS Inc

Adjusted Position Sta.(name) E1/4 COR S20 ECC. T6N R2E Sta.# 0011

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

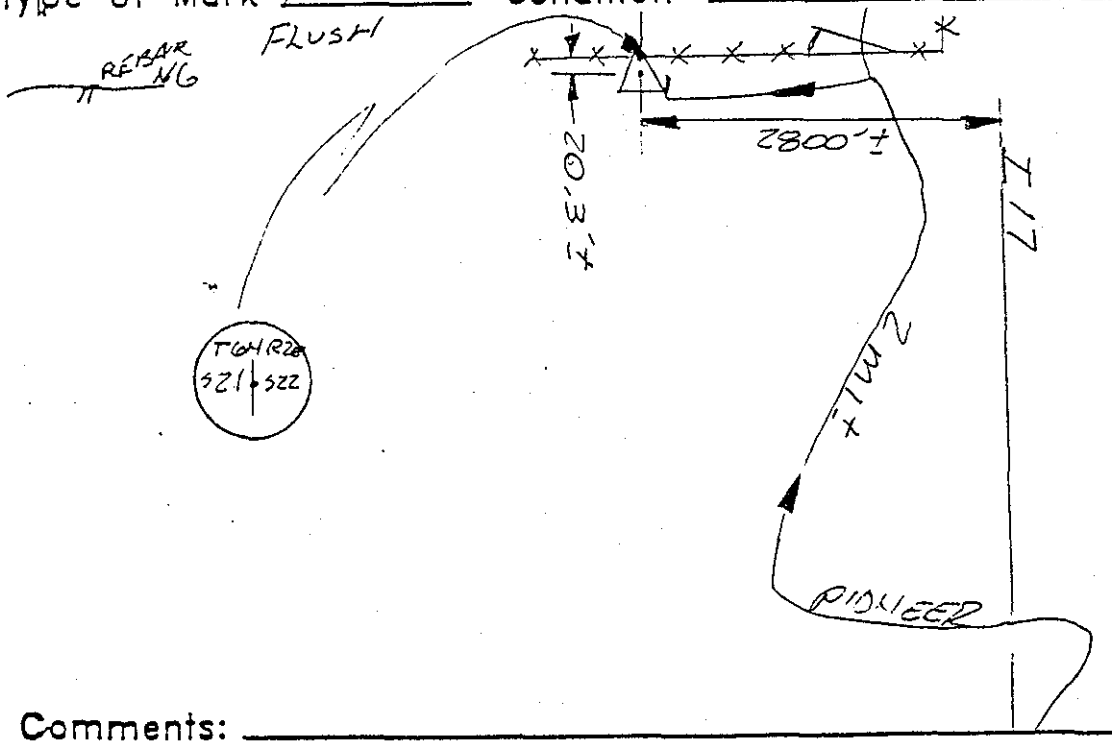
****

Location Sketch and Description

****

Date 14 OCT 91 Project DEADMAN WASH ADMS

Type of Mark 1/2" R.B FLUSH Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) T6N-R2E E¼COR.SEC.23 Sta.# D012

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

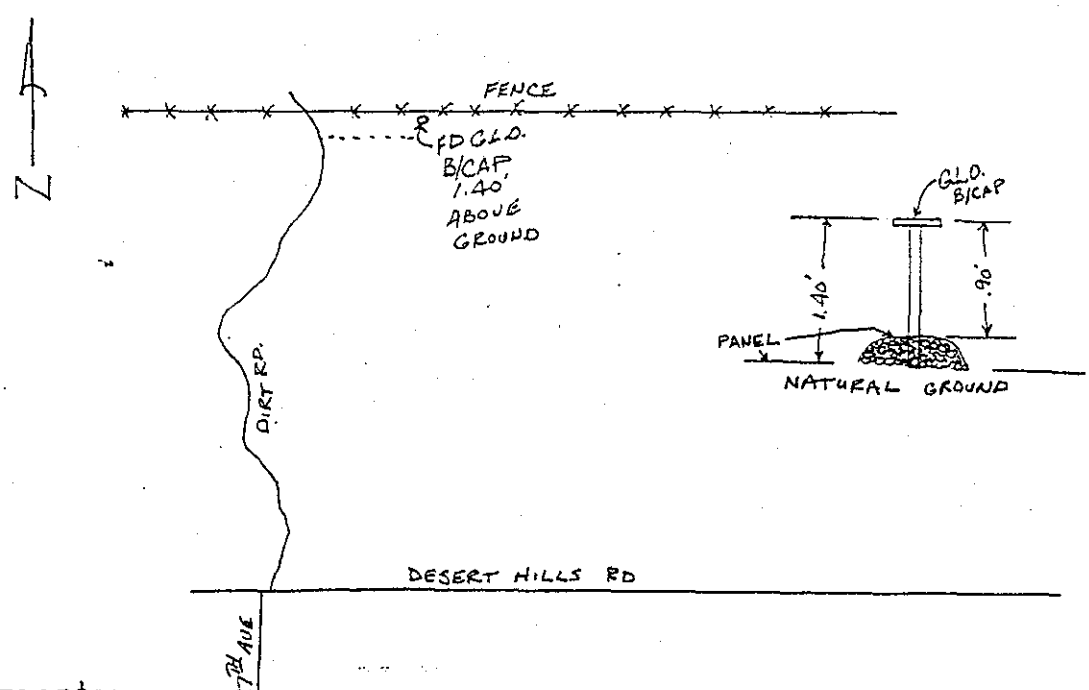
****

Location Sketch and Description

****

Date 10/14/91 Project DEADMAN WASH

Type of Mark G.L.O. B/CAP Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) RP 0014 Sta.# 0014

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

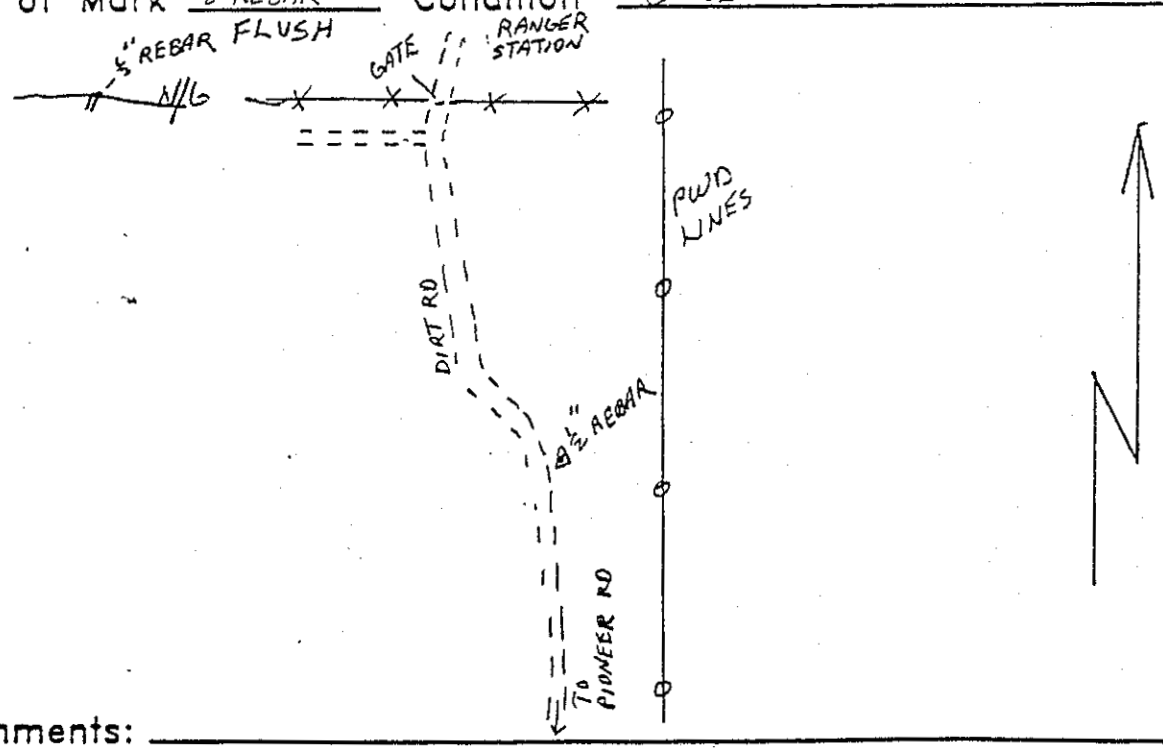
****

Location Sketch and Description

****

Date 10/14/91 Project DEADMAN WASH

Type of Mark ½" REBAR Condition GOOD



Comments:

TO REACH THIS STATION FROM PIONEER RD & I-17 TAKE PIONEER RD RD. .7 MILES TO A NORTH DIRT RD GO N. ON DIRT RD. 1.0 MILES TO STATION ON RIGHT ½" REBAR IS LOCATED 25'± EAST OF DIRT RD & 95'± NW OF RP #15

MGPS Inc

Adjusted Position Sta.(name) PANEL "D015 Sta.# D015

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

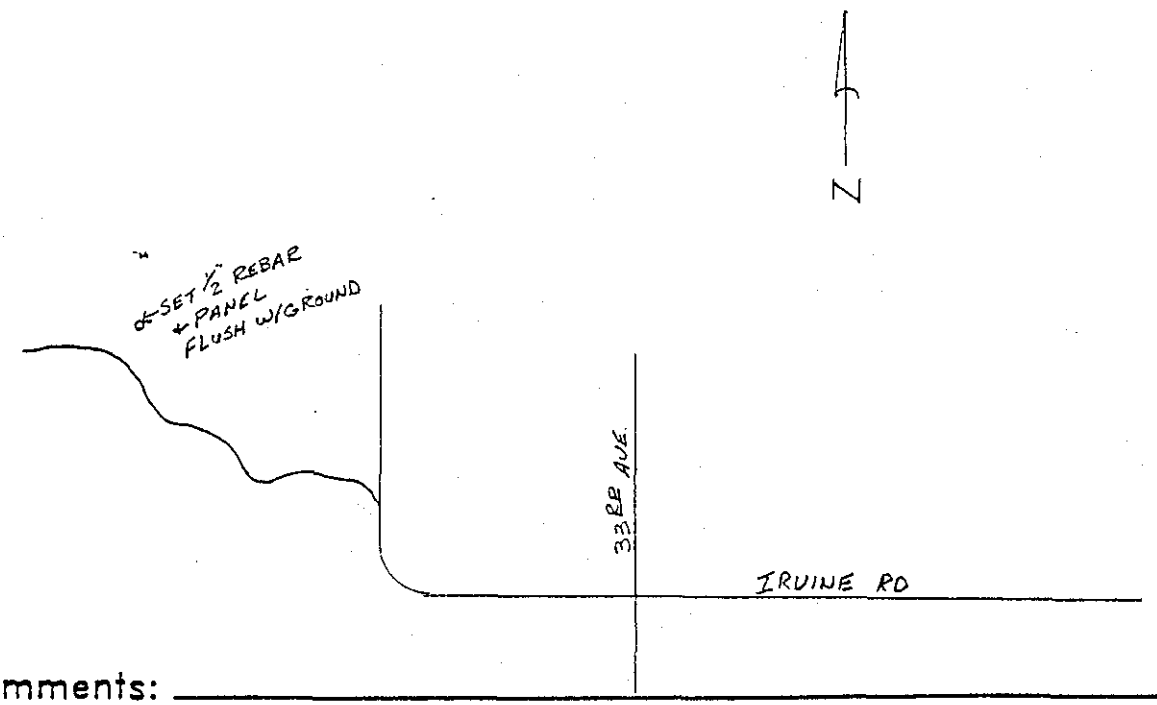
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark 1/2" REBAR + PANEL FLUSH Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) PANEL #D015 Sta.# D015

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

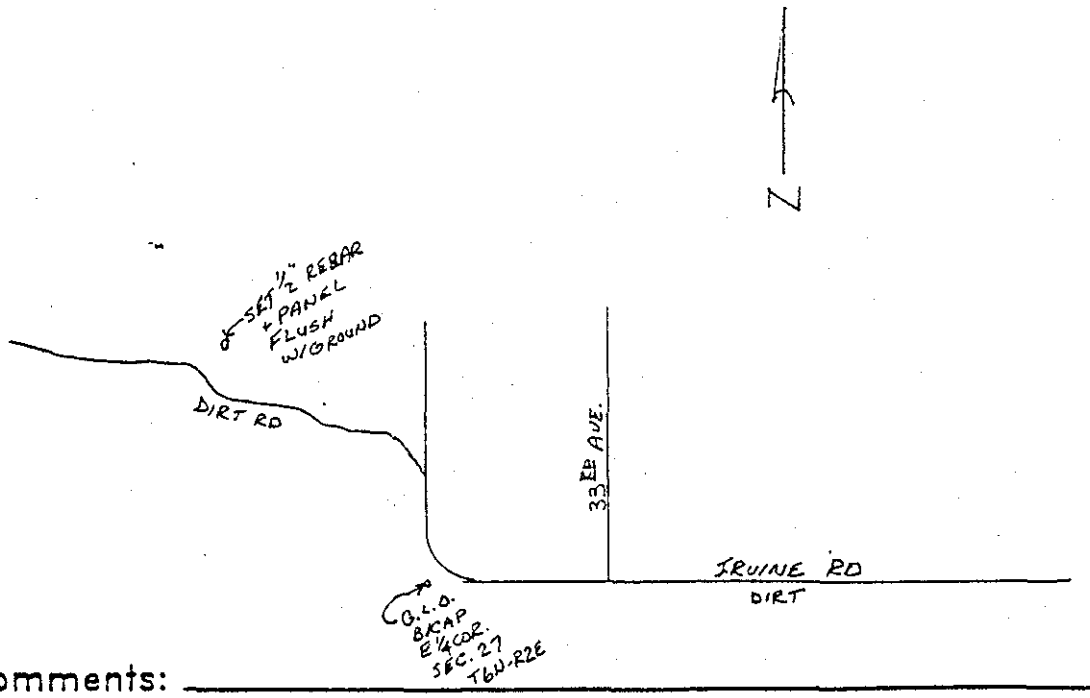
****

Location Sketch and Description

****

Date 10/14/91 Project DEADMAN WASH

Type of Mark 1/2" REBAR + PANEL Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) PP0016 Sta.# D016

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

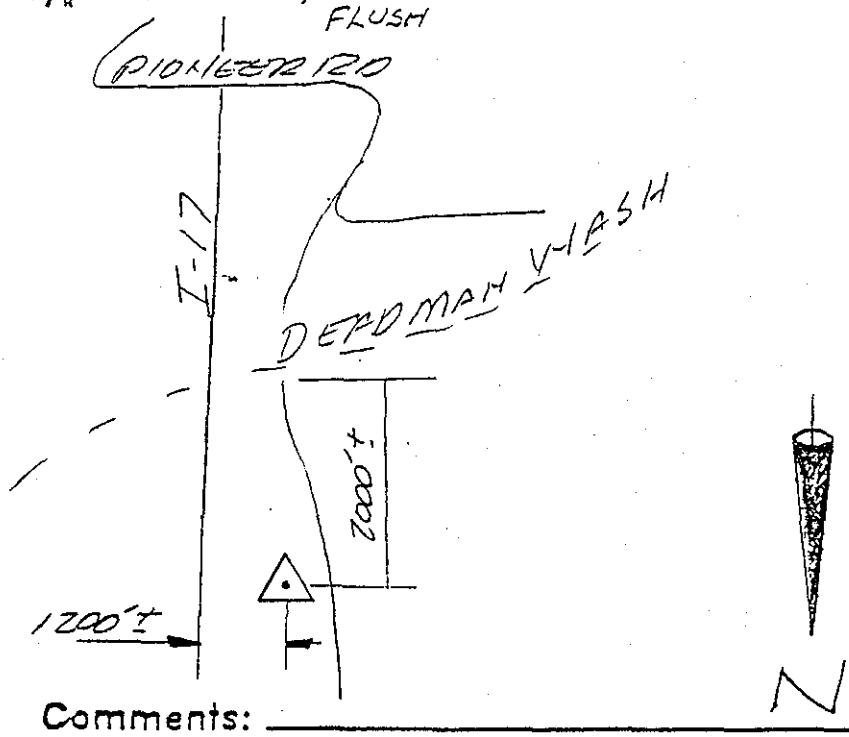
****

Location Sketch and Description

****

Date 15 OCT 91 Project DEADMAN WASH ADMS

Type of Mark 1/2" R.B. FLUSH Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) NE33 T6N-R2E Sta.# D017

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

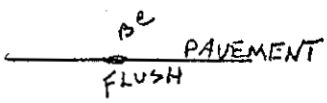
****

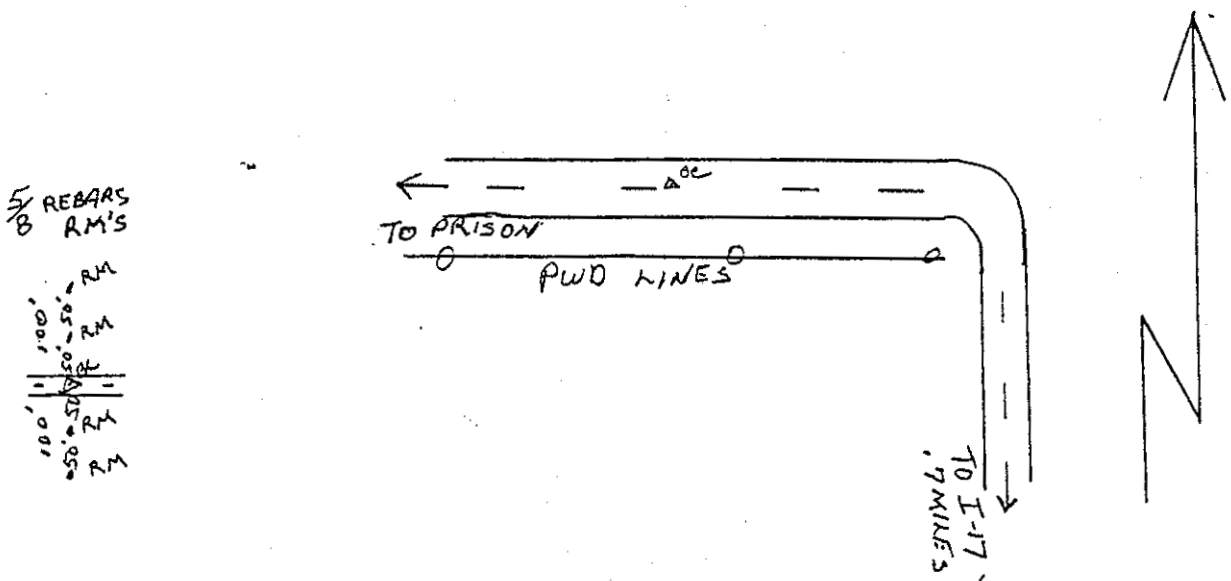
Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH

Type of Mark MCHD BC FLUSH Condition GOOD





Comments: TO REACH THIS STATION FROM I-17 & PIONEER RD TAKE PIONEER RD TOWARDS THE PRISON 1.0 MILES BC IS LOCATED 3'± NORTH OF ℄

MGPS Inc

Adjusted Position Sta.(name) NE33 T6N-R2E Sta.# 0017

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

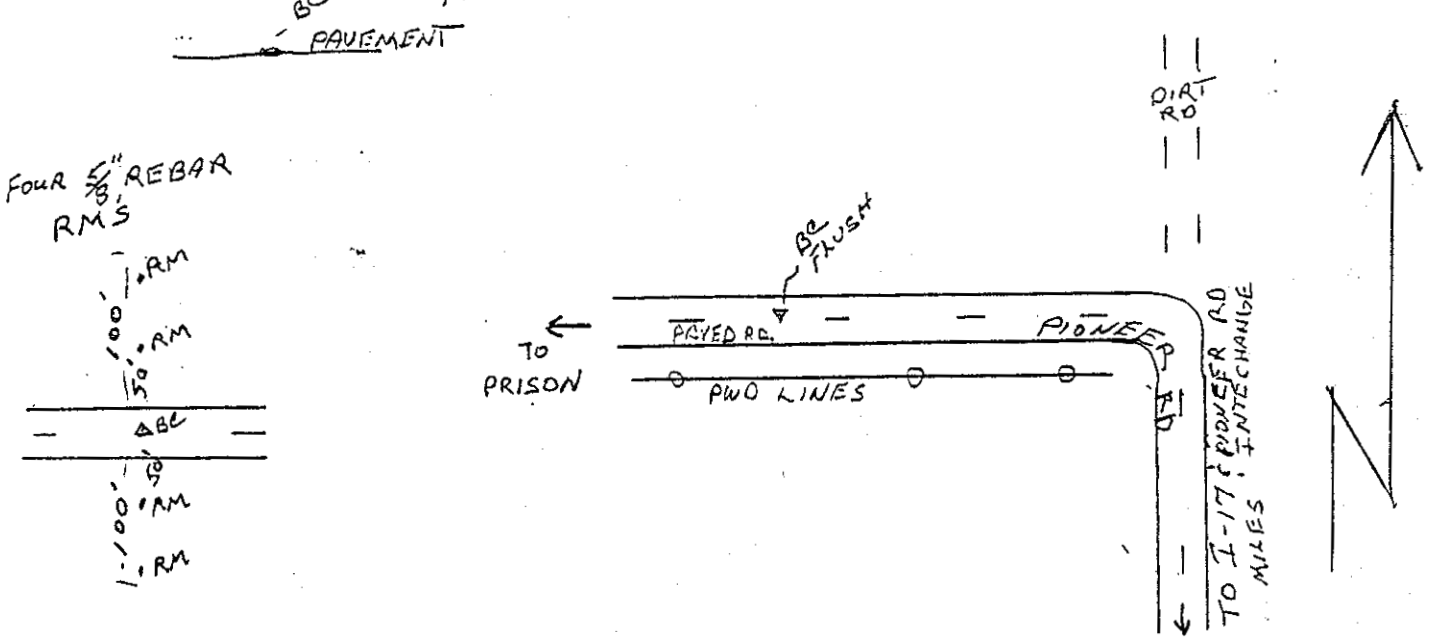
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark MCHD BC FLUSH Condition GOOD



Comments: TO REACH THIS STATION FROM I-17 & PIONEER RD. TAKE PIONEER RD (TOWARDS THE PRISON) 1.1 MILES BC IS LOCATED 2' NORTH OF ⌐ WITH FOUR REV. MON. 5/8 REBARS 50'-100' N & S

MGPS Inc

Adjusted Position Sta.(name) NE 36 6N 2E Sta.# D 618

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

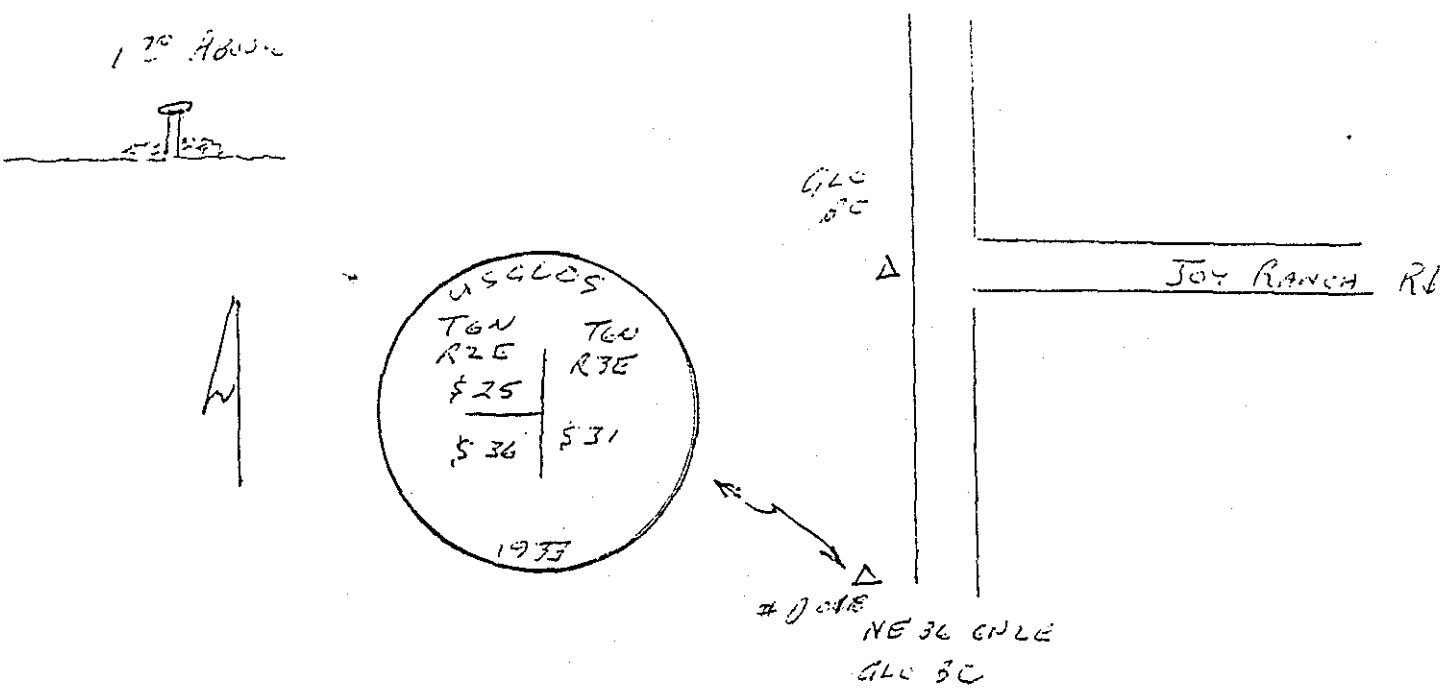
****

Location Sketch and Description

****

Date 10-18-91 Project Oealman

Type of Mark GLO BC Condition Good 1' Above Surface



Comments: Sta located 200' + South of Joy Ranch Rd

MGPS Inc

Adjusted Position Sta.(name) N/A S. 8 ECC. T6N R2E Sta.# 0020

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

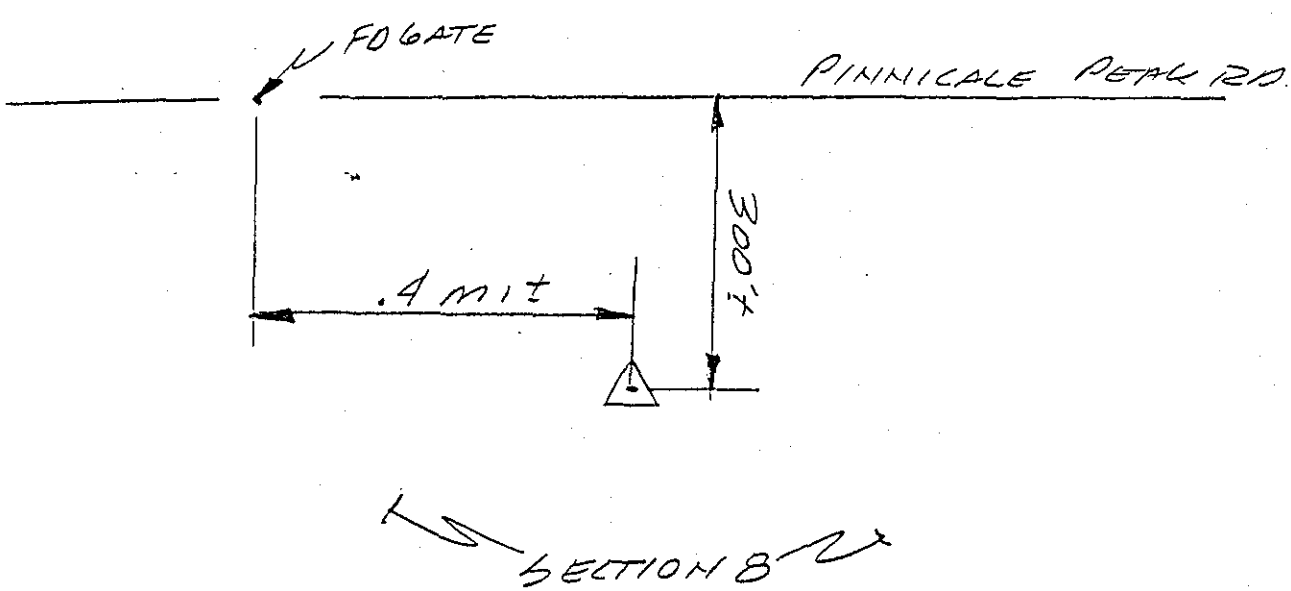
****

Location Sketch and Description

****

Date 15 OCT 91 Project DEADMAN WASH ADMS

Type of Mark 1/2" RB FLUSH Condition GOOD



Comments: PREVIOUS #0663

MGPS Inc

Adjusted Position Sta.(name) PANEL POINT Sta.# D021

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

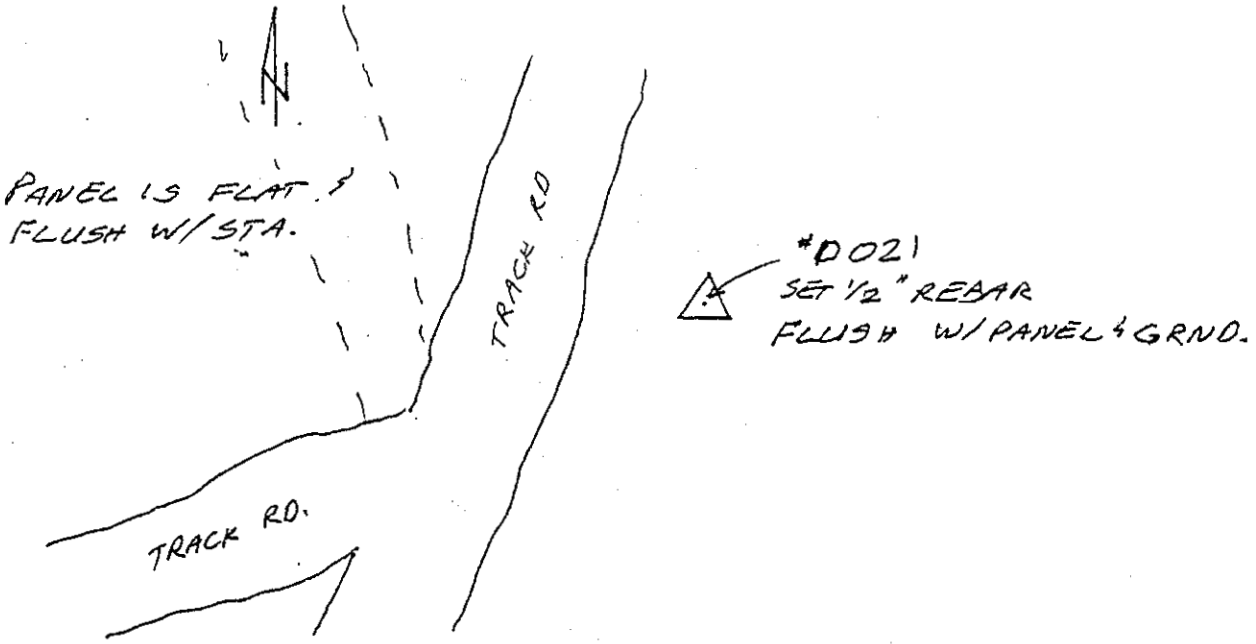
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH ADMS

Type of Mark 1/2" REBAR Condition GOOD



Comments: STA. IS 50'± NE OF A CROSSROADS SHOWN ON THE USGS QUAD MAP, 800'± NNE OF 1/4 COR. "S7" T5N, R2E
S18

MGPS Inc

Adjusted Position Sta.(name) PANEL "D022 Sta.# D022

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

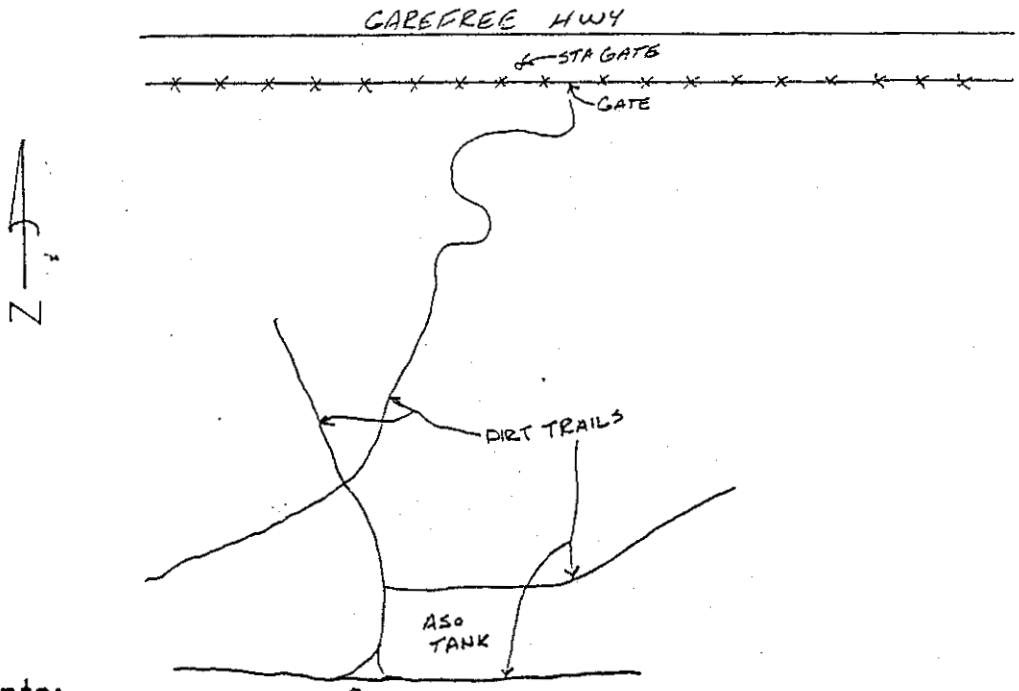
****

Location Sketch and Description

****

Date 10/16/01 Project DEADMAN WASH

Type of Mark ½" REBAR + PANEL Condition GOOD



Comments: SET ½" REBAR + PANEL FLUSH W/GROUND

MGPS Inc

Adjusted Position Sta.(name) PANEL "D022 Sta.# D022

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

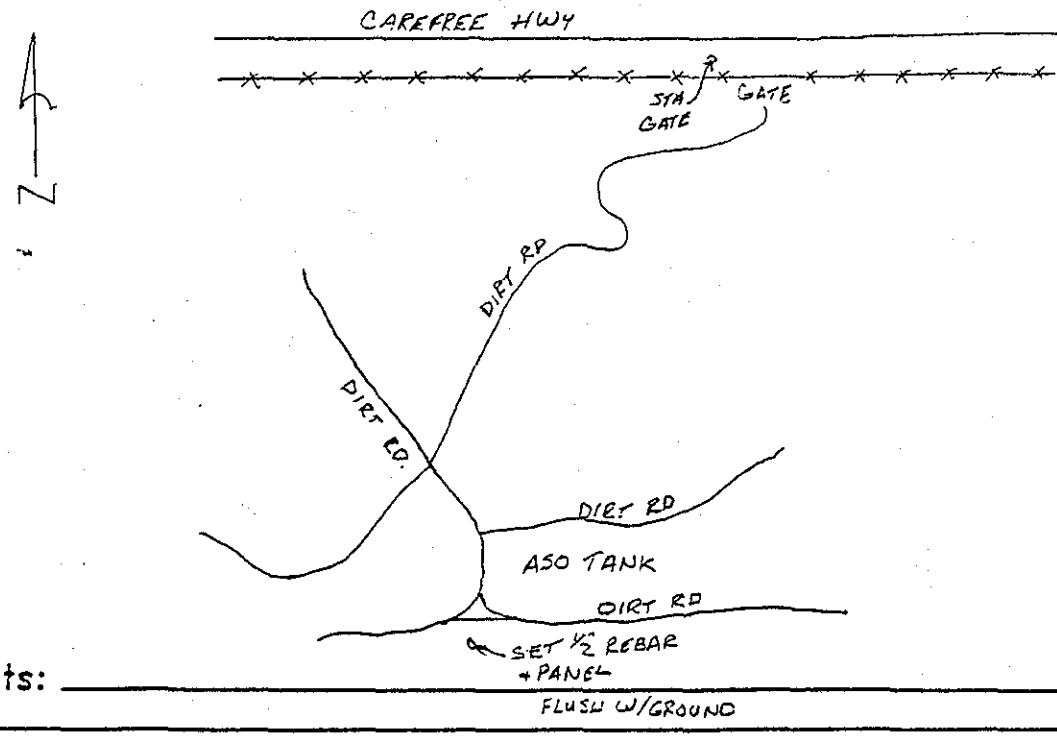
****

Location Sketch and Description

****

Date 10/15/01 Project DEADMAN WASH

Type of Mark ½" REBAR + PANEL FLUSH Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) Ecc. E 1/4 S13, T5N, R1E Sta.# P650

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH ADMS

Type of Mark 1/2" RA Condition GOOD

INSUFFICIENT TERRAIN FEATURES TO DESCRIBE THIS STATION.

STA. IS FLUSH W/PANEL

STA. WAS SET FOR C.O.P. 1/4 SEC. MAPPING IN SPRING OF 1990.

Comments: _____

MGPS Inc

Adjusted Position Sta.(name) STA "SNOD PANEL" D 024 Sta.# D024

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

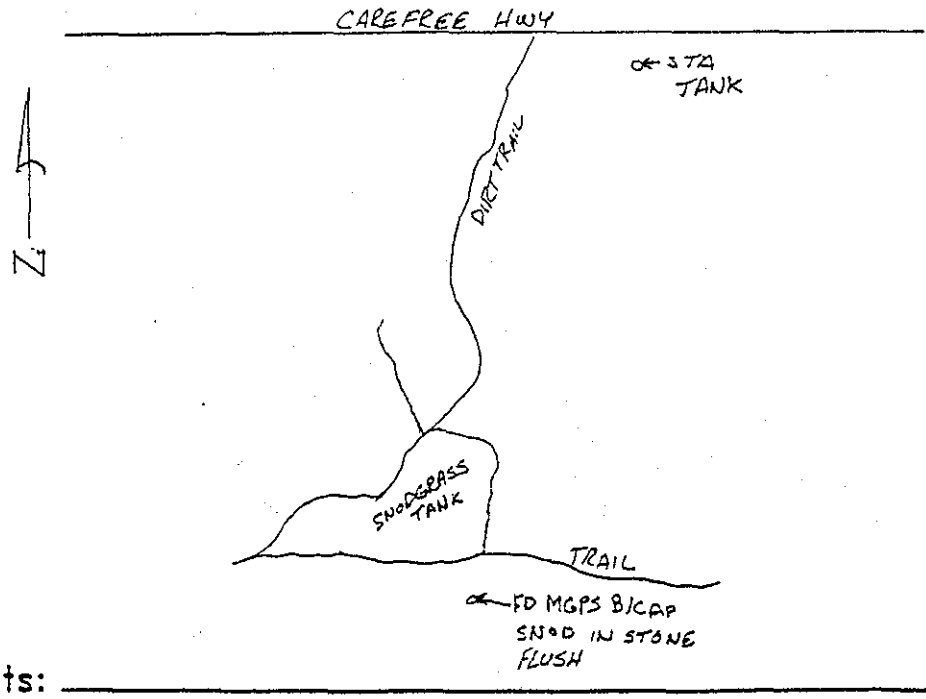
****

Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH

Type of Mark MGPS B/CAP Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) PANEL "D024 Sta.# D024

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

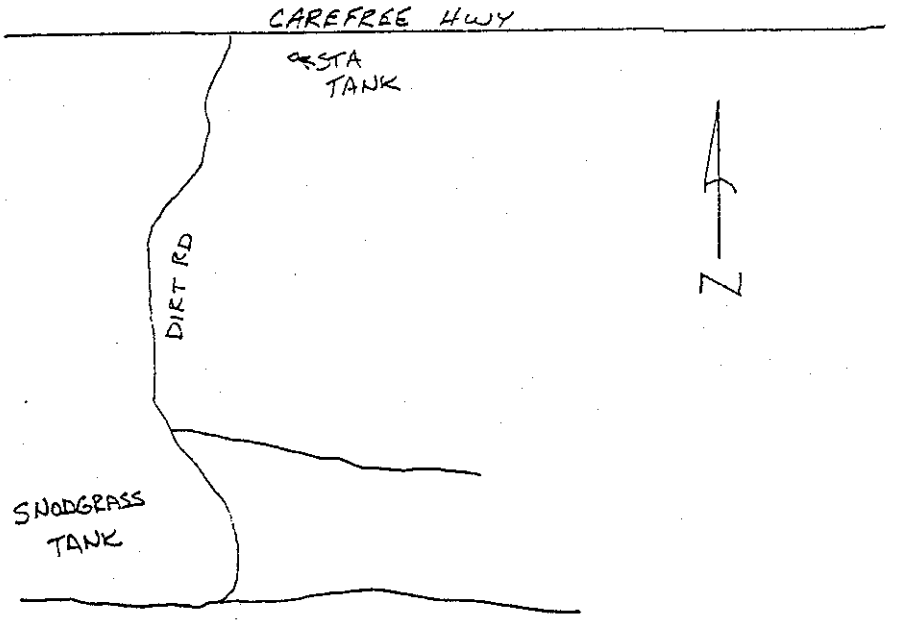
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark 1/2 REBAR + PANEL FLUSH Condition GOOD



Comments: FD MGPS B/CAP IN STONE FLUSH

MGPS Inc

Adjusted Position Sta.(name) PP 0025 Sta.# 0025

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

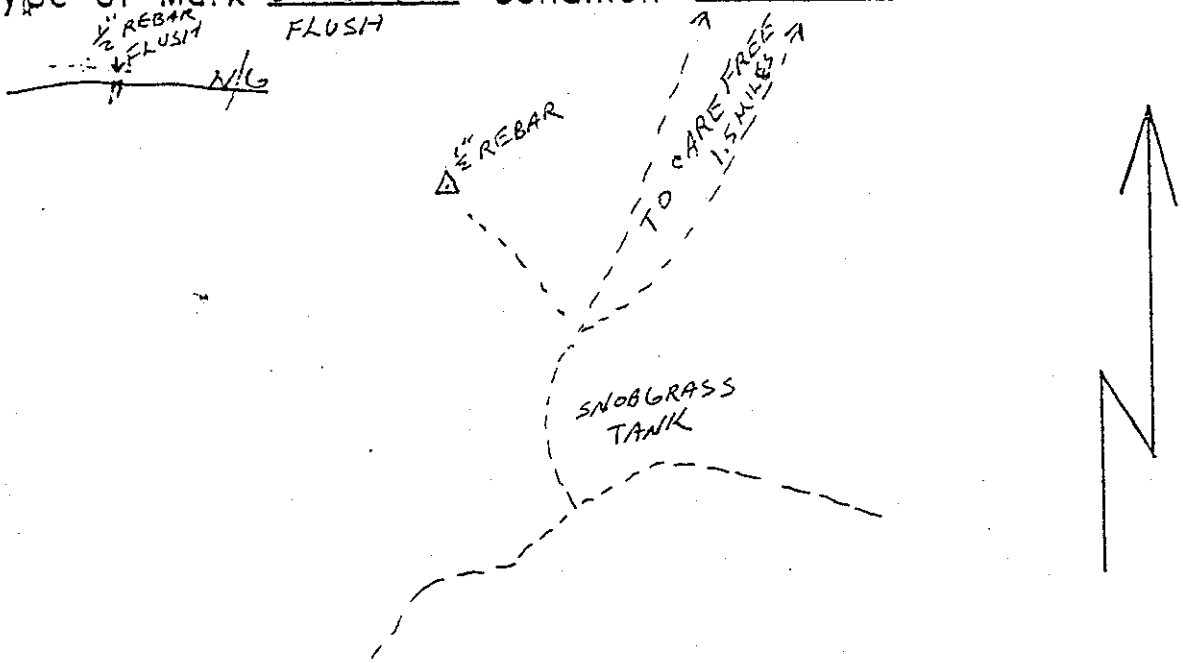
****

Location Sketch and Description

****

Date 10/16/91 Project DEADMAN WASH

Type of Mark ½" REBAR FLUSH Condition GOOD



Comments: ½" REBAR IS LOCATED MILES NW OF Y IN TRAILS NORTH WEST OF SNOWGRASS TANK FOLLOW FLAGING @ Y IN TRAILS NW

MGPS Inc

Adjusted Position Sta.(name) NE COR S 23 ELL T6H R1E Sta.# 0026

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

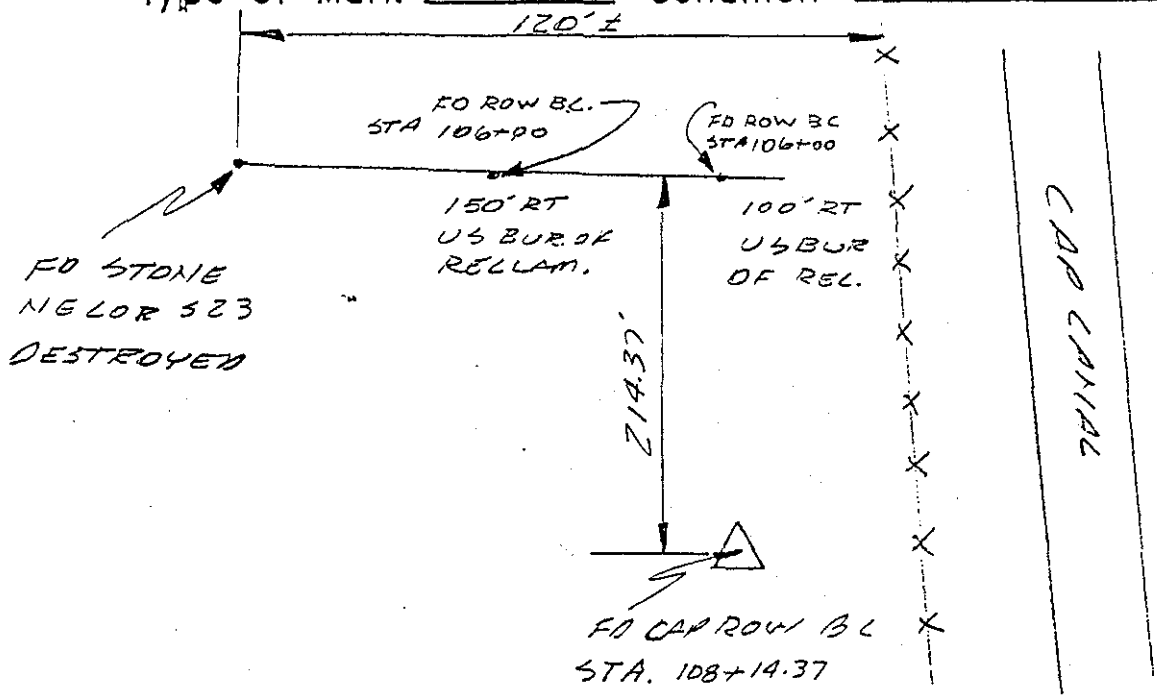
****

Location Sketch and Description

****

Date 16 OCT 91 Project DEADMAN WASH ADMS

Type of Mark FLUSH CAP B.C. Condition GOOD



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) MUNSON Sta.# 0030

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

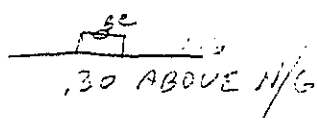
****

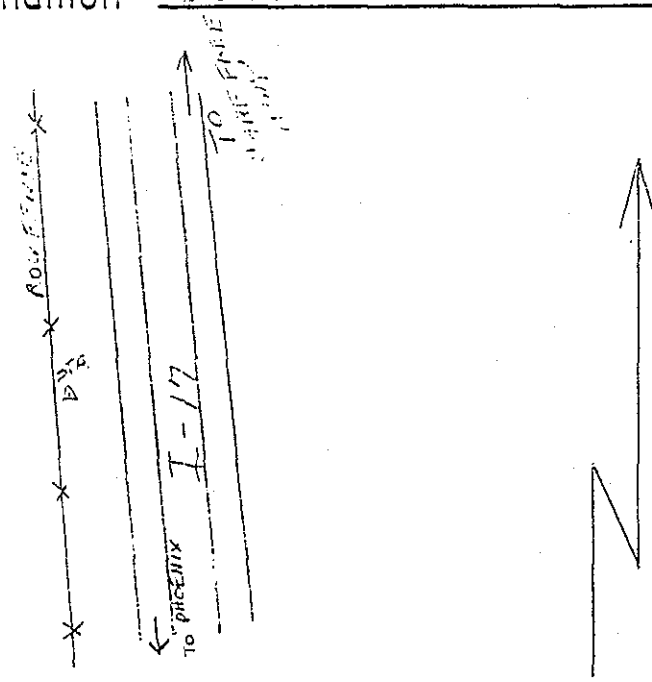
Location Sketch and Description

****

Date 10/18/01 Project DEARMAN WEST

Type of Mark USC&GS BC Condition GOOD





Comments: TO REACH THIS STATION FROM PARK FOTS HWY I-17 GO SOUTH ON I-17 FOR 7.2 MILES. STATION IS LOCATED WEST 4.6 FT FROM 1.5' EAST OF WEST ROW FENCE

MGPS Inc

Adjusted Position Sta.(name) MUNSON Sta.# D0030

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

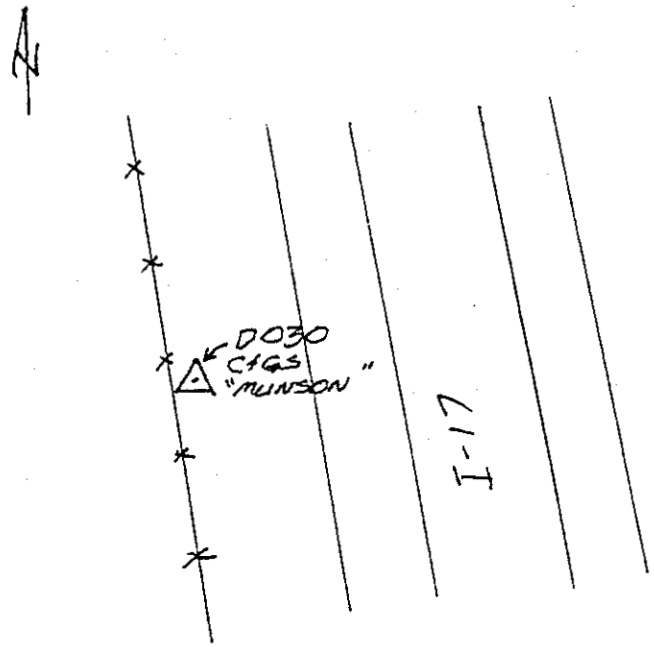
Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH ADMS

Type of Mark CIGS CAP Condition GOOD

NOT PANELED-
OUT OF LIMITS



Comments: FROM I-17 & CAREFREE HWY., GO SOUTH ALONG I-17 2.1 MI ± TO THE STATION. 3' ± E. OF THE W. ROW FENCE.

MGPS Inc

Adjusted Position Sta.(name) TANK Sta.# P004

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

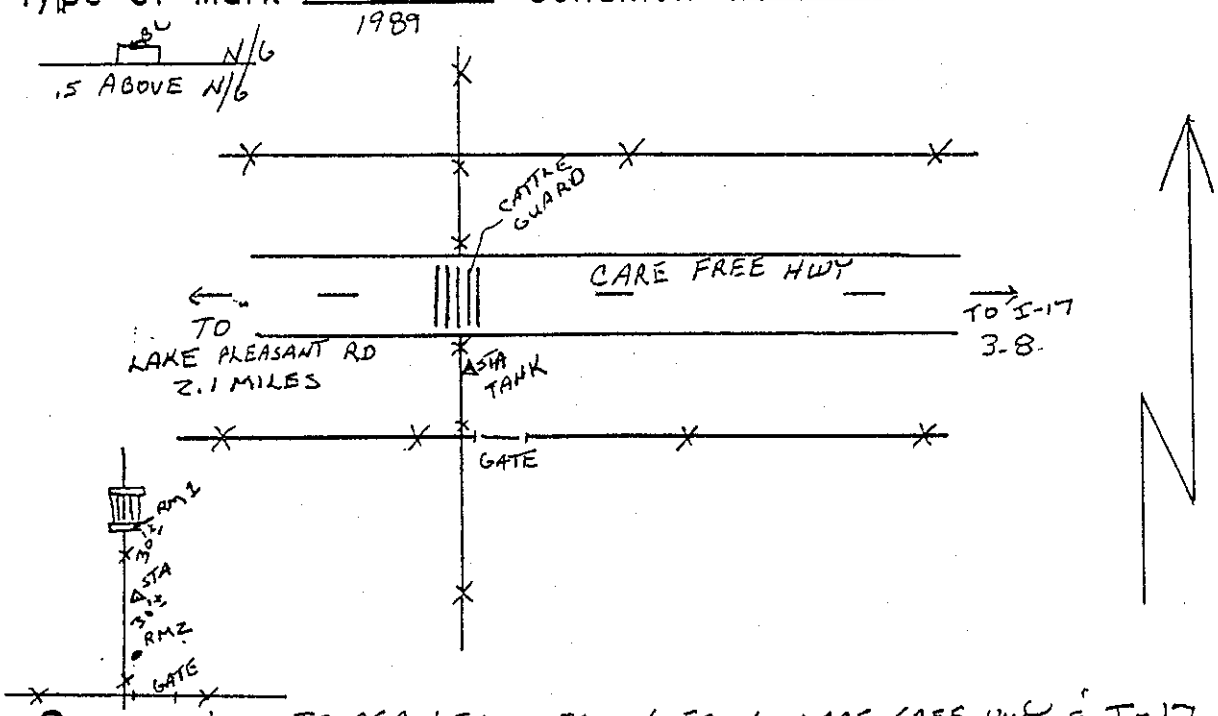
****

Location Sketch and Description

****

Date 10/15/91 Project DEADMAN WASH

Type of Mark MGPS BC 1989 Condition GOOD



Comments: TO REACH THIS STATION FROM CARE FREE HWY & I-17 GO WEST ON CARE FREE. 3.8 MILES TO CATTLE GUARD BC IS LOCATED SOUTH OF CARE FREE HWY 4'± EAST OF N/S FENCE 75'± NORTH OF E/W ROW FENCE & 30'± SOUTH OF CATTLE GUARD

MGPS Inc

Adjusted Position Sta.(name) ROW 184+00 150' RT Sta.# P015

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

****

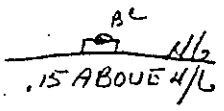
Location Sketch and Description

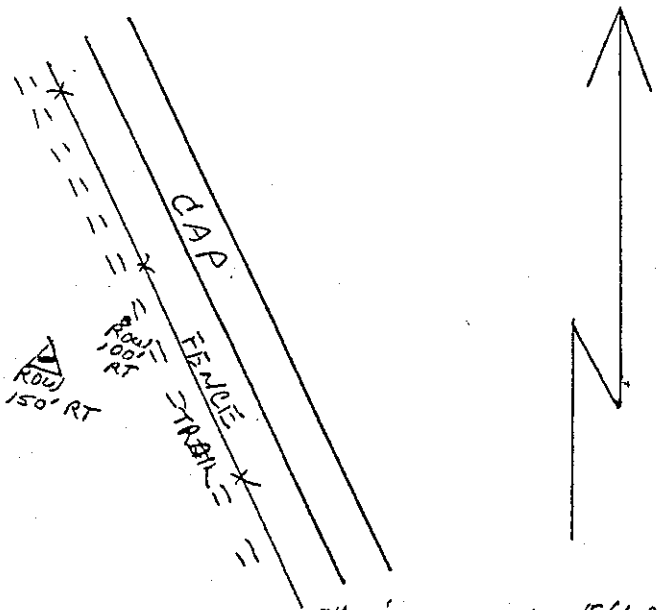
****

Date 10/16/91 Project DEADMAN WASH

Type of Mark DOI BC Condition GOOD

ROW 184+00
150' RT





Comments: TO REACH THIS STATION FROM 67TH & DEER VALLEY RD GO NORTH ON 67TH AVE FOLLOW PAVED RD TO SHOOTING RANGE THEN TAKE TRAIL ON THREW FENCE ON THE WEST SIDE OF PAVED RD TAKE TRAIL NORTH TO CAP ROW FENCE THEN TAKE TRAIL NW ALONG CAP ROW FENCE MILES TO ROW BC

MGPS Inc

Adjusted Position Sta.(name) [illegible] Sta.# [illegible]

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

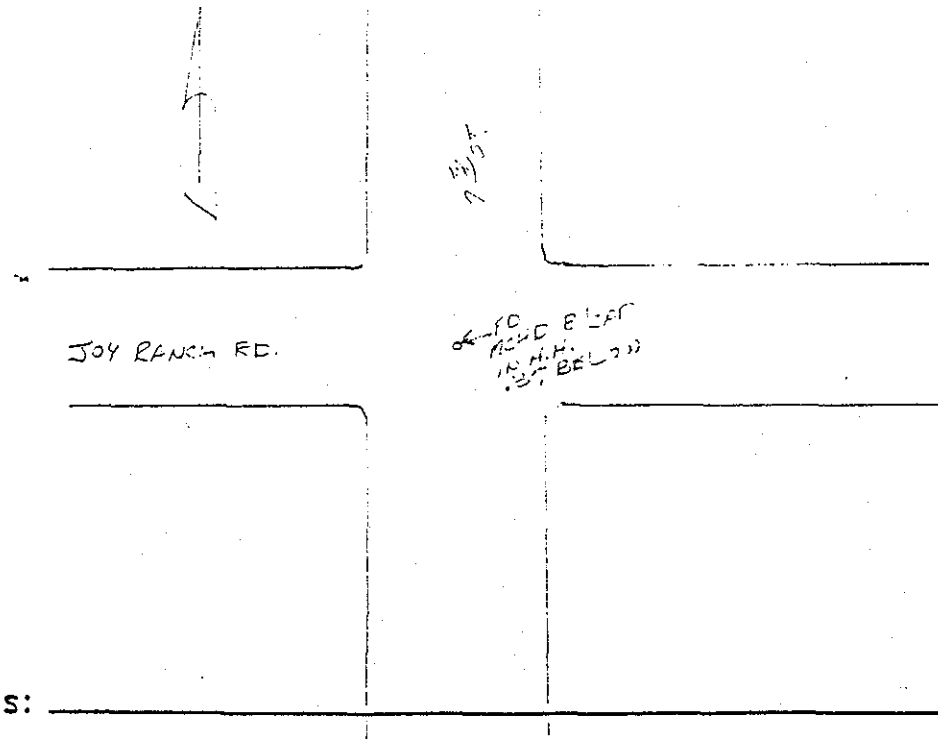
****

Location Sketch and Description

****

Date [illegible] Project [illegible]

Type of Mark [illegible] Condition [illegible]



Comments: _____

MGPS Inc

Adjusted Position Sta.(name) NE 32 T6N-R3E Sta.# P033
AKA TBM-42

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

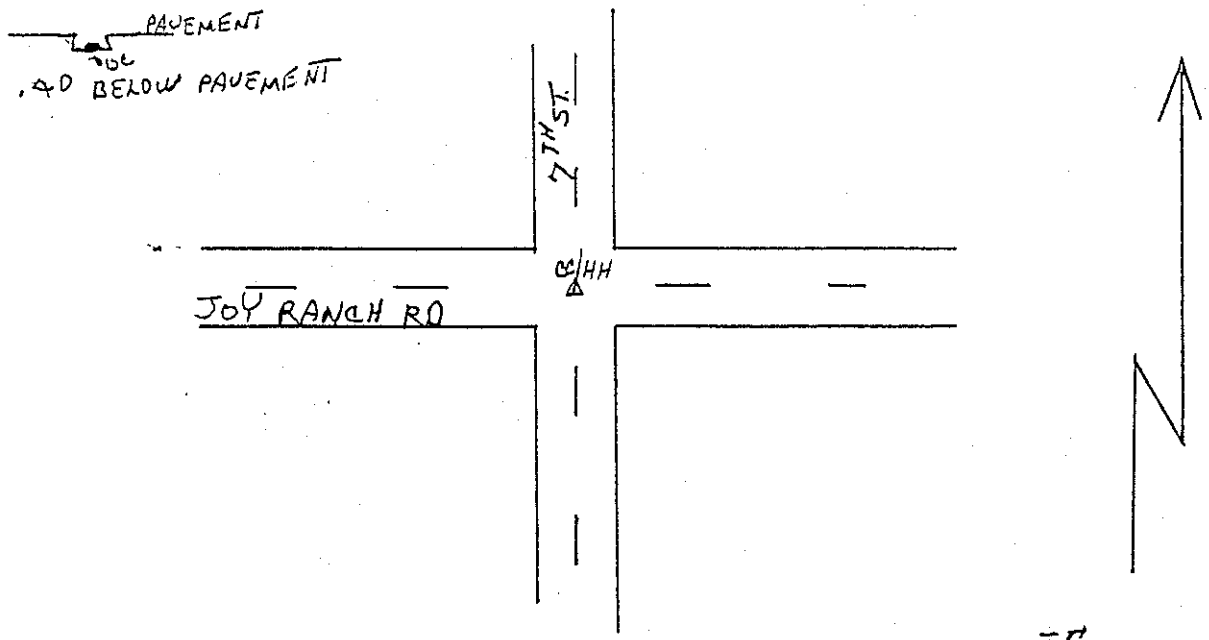
****

Location Sketch and Description

****

Date 10/14/91 Project DEADMAN WASH

Type of Mark MCHD BC/HH Condition GOOD



Comments: BC/HH IS LOCATED @ JOY RANCH RD & 7TH ST.

MGPS Inc

Adjusted Position Sta.(name) RP.0650 Sta.# 0650

Latitude _____ Coord. Sys. _____

Longitude _____ Ellipsoid _____

Ellipsodial Height _____ X _____

Geoid Height _____ Y _____

M.S.L. Elevation _____ Z _____

Vert. Datm Ref. _____

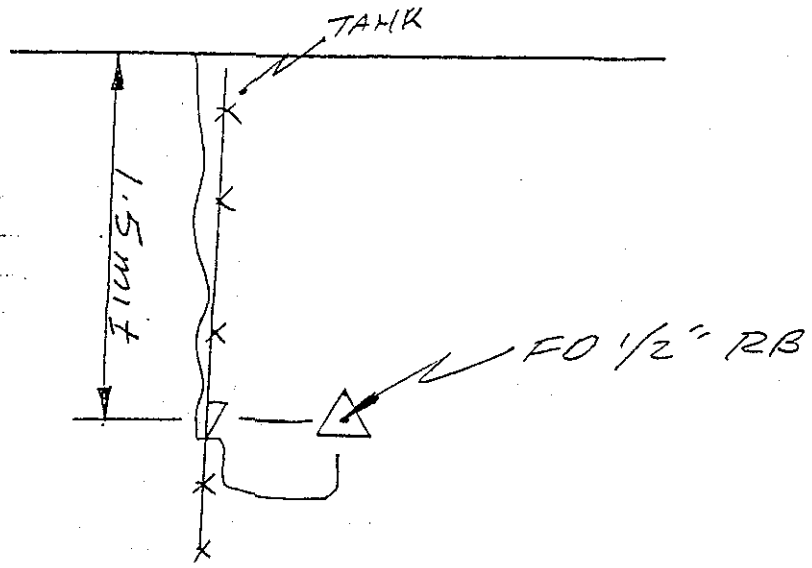
****

Location Sketch and Description

****

Date 15 OCT 91 Project DEADMAN WASH ADMS

Type of Mark 1/2" R.B. FLUSH Condition GOOD



Comments: SAME AS 0023

BENCH CIRCUIT
PESO TO WHITE

M. WOOD
D. COE
J. GALLOWAY
B. ATTEBERRY

PESO = ADOT WHUM CAP 1976
WHITE = USC&GS BC 1959

STA	+	HI	-	ELEV
BS PESO	10.64	1586.42		1575.78
	10.86	1586.64		
TP #1			0.88	1585.54
			1.11	1585.53
TP #1	9.65	1595.19		
	9.35	1594.88		
TP #2			1.20	1593.99
			0.90	1593.98
TP #2	11.45	1605.44		
	11.30	1605.28		
TP #3			4.98	1600.46
			4.82	1600.46
TP #3	2.99	1603.45		
	3.07	1603.53		
TP #4			3.53	1599.92
			3.62	1599.91
TP #4	12.95	1612.87		
	12.90	1612.81		
TP #5			0.39	1612.48
			0.34	1612.47

PESO ADOT ALUM. CAP 1976

STA	+	HI	−	ELEV
TP#5	9.30	1622.78		
	9.99	1622.46		
TP#6			0.36	1621.42
			1.05	1621.41
TP#6	1.42	1622.84		
	1.61	1623.02		
TP#7			0.30	1622.54
			0.48	1622.54
TP#7	12.00	1634.54		
	12.15	1634.69		
TP#8			1.10	1633.44
			1.245	1633.445
TP#8	5.05	1638.49		
	4.79	1638.24		
TP#9			9.11	1629.38
			8.85	1629.39
TP#9	0.35	1629.73		
	0.29	1629.67		
TP#10			10.07	1619.66
			10.01	1619.66

STA	+	HI	—	ELEV
TP#10	12.58	1632.24		
	12.67	1632.33		
TP#11			7.98	1624.26
			8.07	1624.26
TP#11	1.94	1626.20		
	2.14	1626.40		
TP#12			10.78	1615.42
			10.98	1615.42
TP#12	7.10	1622.52		
	7.58	1623.00		
WHITE			0.64	1621.88
			1.13	1621.87

WHITE USC&GS BC IN ROCK 1959
ELEV 1621.88
1621.87
AVG 1621.875

DE 46.10 (13)
DE 46.09

BENCH CIRCUIT
TBM 4Z - NE COR 13

M. WOOD
D. COE
J. GALLOWAY
B. ATTEBERRY

TBM 4Z = MCHD BC/HH
NE 13 = GLO BC 1919

STA	+	HI	-	ELEV
BS TBM 42	3.74			1854.72
	4.00			
TP#1			7.83	
			8.09	
TP#1	3.47			
	3.10			
TP#2			12.43	
			12.07	
TP#2	4.26			
	3.86			
TP#3			7.82	
			7.42	
TP#3	0.28			
	0.63			
TP#4			11.49	
			11.84	
TP#4	3.26			
	2.99			
TP#5			7.70	
			7.43	

TBM 42 = MCHD BC/HH .35 BELOW PAVEMENT
7TH ST & JOY RANCH RD

STA	+	HI	−	ELEV
TP#5	4.07			
	3.915			
TP#6			8.64	
			8.48	
TP#6	6.17			
	5.86			
TP#7			6.73	
			6.41	
TP#7	12.27			
	11.94			
TP#8			3.39	
			3.05	
TP#8	1.14			
	0.94			
TP#9			10.395	
			10.20	
TP#9	2.61			
	2.04			
SS			4.87	1814.35

SS = SW30 GLO BC 1.35 ABOVE N/G

STA	+	HI	−	ELEV
TP#10 NE 36 CC			7.73	1811.835
			7.17	1811.835
TP#10 NE 36 CC	8.44			
	8.80			
TP#11			0.34	
			0.70	
TP#11	11.65			
	11.47			
TP#12			12.19	
			12.02	
TP#12	6.23			
	5.86			
TP#13			0.70	
			0.33	
TP#13	12.82			
	13.045			
TP#14			0.29	
			0.515	

DE 42.885 (10)

TP #10 = NE 36 GLO BC 1.75 ABOVE N/G

STA	+	HI	−	ELEV
TP# 14	9.69			
	9.84			
TP# 15			10.905	
			11.06	
TP# 15	2.53			
	2.67			
TP# 16			2.88	
			3.02	
TP# 16	6.44			
	6.13			
TP# 17			2.24	
			1.93	
TP# 17	12.895			
	13.01			
TP# 18			0.30	
			0.42	
TP# 18	11.31			
	10.98			
TP# 19			7.44	1852.555
			7.12	1856.525

STA	+	HI	−	ELEV
TP#19	4.93			
	5.19			
TP#20			9.20	
			9.46	
TP#20	7.61			
	7.40			
TP#21			2.15	
			1.93	
TP#21	11.31			
	11.39			
TP#22			0.43	
			0.52	
TP#22	10.12			
	9.94			
TP#23			1.81	
			1.62	
TP#23	5.945			
	6.11			
SS			7.42	1875.605

SS = W¼ 19 GLO BC 2.27' ABOVE N/G.

STA	+	HI	−	ELEV
TP# 24 (Ex 24)			7.30	1875.580
			7.46	1875.565
	END OF DAY			
	BEGIN DAY			
TP# 24	11.58			
	11.43			
TP# 25			2.32	
			2.17	
TP# 25	8.33			
	8.08			
TP# 26			1.44	
			1.19	
TP# 26	12.48			
	12.60			
TP# 27			0.24	
			0.44	

TP# 24 = Ex 24 GLO BC 1.50' ABOVE N/G

DE 63.745 24

DE 63.73

STA	+	HI	−	ELEV
TP#27	12.06			
	12.01			
TP#28			1.54	1914.490
			1.48	1914.485
TP#28	12.99			
	13.07			
TP#29			0.82	
			0.905	
TP#29	12.12			
	12.22			
TP#30			0.57	
			0.66	
TP#30	12.89			
	13.04			
TP#31			0.18	
			0.32	
TP#31	11.70			
	11.81			
TP#32			0.18	
			0.29	

TP#28 = TBM 1.0

DE + 38.91 (28)

DE + 38.92

STA	+	HI	−	ELEV
TP#32	11.82			
	11.92			
TP#33			0.79	
			0.90	
TP#33	12.92			
	13.04			
TP#34			0.79	
			0.91	
TP#34	10.95			
	11.00			
TP#35			0.16	
			0.22	
TP#35	11.64			
	11.74			
TP#36			0.42	
			0.52	
TP#36	12.555			
	12.64			
TP#37			0.23	2019.935
			0.32	2019.92

STA	+	HI	−	ELEV
TP# 37	12.41			
	12.48			
TP# 38			0.52	
			0.59	
TP# 38	11.90			
	12.03			
TP# 39			0.81	
			0.94	
TP# 39	12.93			
	13.045			
TP# 40			0.535	
			0.645	
TP# 40	12.64			
	12.73			
TP# 41			0.745	
			0.835	
TP# 41	12.38			
	12.44			
TP# 42			0.625	
			0.685	

STA	+	HI	−	ELEV
TP# 42	11.76			
	11.89			
TP# 43			0.27	
			0.41	
TP# 43	12.48			
	12.69			
TP# 44			0.36	
			0.565	
TP# 44	11.88			
	11.80			
TP# 45			0.61	
			0.53	
TP# 45	12.80			
	12.87			
TP# 46			0.90	
			0.975	
TP# 46	8.86			
	8.91			
NE 13			2.14	2132.460
			2.195	2132.435

NE 13 GAO BC DE + 217.97
DE + 217.95

M.G.P.S.

BENCH CIRCUIT
SHOOGLEASS TANK B.C.
TO CAREFREE B.C. BOTH
SET BY MGR.

☒ M+T SOE
✓ S. GALLOWAY
✓ B. ATTEBERRY

SHOOGLEASS B.C. SET BY
M. WOOD AND G. McEWEN

BENCH CIRCUIT
TBM10 – NECOR 24 CC

STA	+	HI	−	ELEV
TBM 10	10.69			1914.490
	10.52			1914.485
TP# 1			1.12	
			0.95	
TP# 1	6.45			
	6.32			
TP# 2			3.54	
			3.41	
TP# 2	11.295			
	11.455			
SS			3.26	
			(4.65 N/G)	
NE 24			6.925	1931.340
			7.09	1931.330
			(8.66 N/G)	

SS = NW COR SEC. 19 R3E-T6N
300' N

NE COR SEC. 24 R2E-T6N
OE +16.845
OE +16.85

STA	+	HI	−	ELEV.
TBM 20				1564.01
	1.11			
	0.99			
			11.835	
			11.72	
	3.005			
	3.08		8.77	
			8.85	
	0.56			
	0.64		9.97	
			10.04	
	0.435			
	0.375		10.55	
			10.48	
	2.685			
	2.61		9.70	
			9.62	
	2.995			
	2.865		9.43	
			9.30	
	1.315			
	1.26		9.54	
			9.48	

B.C. TAHK TBM# 20
1564.01

STA	+	HI	−	ELEV
	1.345			
	1.23		9.04	
			8.92	
	3.47			
	3.53		11.47	
			11.53	
	5.22			
	5.11		7.02	
			6.91	
	2.82			
	2.785			
			8.02	
	10.80		7.99	
	10.55			
			0.58	
	10.575		0.33	
	10.68			
			12.755	
	8.535		12.87	
	8.43			
			1.42	1498.78
			1.31	1498.795

SHONGRASS TANK BC =
M = 1498.7875
DE 65.23 = 65.225
DE 65.215

(14)

BK. # 97

Deadman Wash

TELEDYNE

#416

FIELD / TRANSIT BOOK

Level Loop "Hound" To GLO
Mon West of Desert Hills Bridge
(Panel Pt # D007) Pg 1 of 3

Sta	+	HI	−	Elev
TBM				1800.571
	9.788	1810.359		
			0.785	1809.574
	8.271	1817.845		
			2.972	1814.873
	7.460	1822.333		
			2.085	1820.248
	9.169	1829.417		
			1.535	1827.882
	8.68	1836.562		
			1.855	1834.707
	9.18	1843.887		
			2.60	1841.287
	7.054	1848.341		
			2.416	1845.925
	9.219	1855.144		
			0.675	1854.469
	8.149	1862.618		
			1.292	1861.326
	8.895	1870.221		
			1.70	1869.021

Oct - 190 BK 97 1

102° clear

M. Cordova
K M Jelinek

Desc.

BC in Conc "Hound"

Rock

Rock

Rock

Oct 14, 1991 Same Crew
80° Clear

Rock

Nail

Rock

Nail

Nail

Rock

Level Loop "Hound" Cont

pg 2 of 3

Sta	+	HI	−	Elev
	9.79	1878.811		
			0.82	1877.991
	9.25	1887.241		
			3.309	1883.932
	2.619	1886.551		
			7.278	1879.273
	0.201	1879.474		
			5.039	1874.435 ~~1868.360~~ 1874.415
	5.042	1879.477		
			0.885	1878.592
	6.735	1885.327		
			2.92	1882.407
	4.202	1886.609		
			7.64	1878.969
	0.525	1879.494		
			10.142	1869.352
	0.781	1870.133		
			9.819	1860.314
	0.560	1860.874		
			8.909	1851.965
	1.758	1853.723		
			9.46	1844.263

Oct 14, 1991 BK 97 2

80° Clear

Same Crew

Desc.

Nail

Rock

Rock

Set TBM Nail 100' (±) East of G10 mon

Nail

Rock

Rock

Nail

Rock

Rock

Rock

Level Loop "Hound" Cont
pg. 3 of 3

Sta	+	HI	−	Elev	
	1.749	1846.012			
			8.572	1837.44	
	1.98	1839.420			
			8.968	1830.452	
	3.229	1833.681			
			9.398	1824.283	
	1.58	1825.863		181	
			5.958	1819.905	
	4.886	1824.791			
			8.473	1816.318	
	2.308	1818.626			
			9.781	1808.845	
	0.865	1809.71			
BM			9.099	1800.611	1800.571
				+0.04	
	Tie TO GLO From TBM				
				1874.735	1874.415
	~~6.824~~ ~~7.34~~	~~1881.775~~	1.695 ~~2.192~~	1879.584	1879.564
	1.041 ~~2.008~~	~~1881.651~~	6.789 ~~7.20~~	~~1874.416~~ ~~1874.436~~	
				+0.001	

OCT 14, 1991 BK 97 3

82° Clear

Same crew

Desc.

Rock

Rock

Rock

Rock

Rock

Rock

"Hound"

TBM Nail 100' (±) East of GLO Mon.

GLO Mon 1.40' (±) ABOVE Grd (PANEL PNT. #D007)

LEVEL LOOP FROM B.M. "HOUND"
TO PANEL PNT. #D011 1/2" Rebar
Pg 1 of 2

Sta.	+	Hi	−	Elev.	
BM				1800.571	
	7.603	1800.174			
T.P.			5.262	1802.912	
	4.220	1807.132			
T.P.			8.439	1798.693	
	3.422	1802.115			
T.P.			9.350	1792.765	
	0.161	1792.926			
T.P.			10.748		
	5.567				
T.P.			2.830		
	6.181				
T.P.			2.519		
	2.980				
T.P.			6.129		
	5.100				
T.P.			4.440		
	4.738	1790.895			
S.S.			2.648	1788.247	
T.P.			4.340	1786.555	1786.570
	4.810				

Oct. 14, 1991 BK97

π M. Cordova
M. Jelinek

Description:
B.C. Flash in conc. W. Side I-17

Top of Rock

" "

" " ℄ dirt rd.

" " W. Side dirt Rd.

" " ℄ dirt Rd.

" " E. Side dirt rd.

Oct. 15, 1991 70° Clear

" "

" "

G.L.O. 5-21 & 5-22 Sect. Line
Fnd Alum. Cap @ fence post (-1.40 To Nat. Gnd.)
Fnd 1/2 in. rebar panel pnt. D011

Continued From Prev. Pg.
Pg. 2 of 2

Sta.	+	Hi.	-	Elev.	
T.P.			5.768		
-	4.641				
T.P.			3.488		
-	5.139				
T.P.			6.122		
-	3.779				
T.P.			8.089		
-	5.480				
T.P.			0.608		
	12.980				
T.P.			2.219		
	7.184				
T.P.			2.809		
	6.430				
T.P.			5.393		
	5.462				
BM			7.364	1800.54 (-0.031)	1800.571

Oct. 15, 1991 BK 97 5

72° Clear ⊼ M. Cordova
M. Jelinek

Description:
Top of Rock

" " N. Side of Gate W. End

" "

" "

" "

" "

" "

" "

Brass Cap Found

Level Loop From Panel Pnt. # D011
To Panel pnt. # D005 "BM U-56"
Pg 1 of 3

STA	+	HI	-	Elev
BM				1786.555
	3.901	1790.456		
TP #1			5.124	1785.332
	5.012	1790.344		
TP #2			8.308	1782.036
	2.046	1784.082		
TP #3			8.769	1775.313
	1.541	1776.854		
TP #4			8.950	1767.904
	1.531	1769.435		
TP #5			8.290	1761.145
	1.515	1762.660		
TP #6			8.875	1753.785
	1.252	1755.037		
TP #7			11.250	1743.787
	0.228	1744.015		
TP #8			13.22	1730.795
	0.191	1730.986		
TP #9			9.770	1721.216
	7.193	1728.409		
TP #10			5.780	1722.629
	8.11	1730.739		

Oct 15, 1991 BK 97 6

87° Clear M Cordova
K M Jelinek

Description

1/2" Rebar panel pnt. #D011. 15' ± S. of 1/4 cor. 28 | 27 / 33 | 34

Rock

Rock

Rock

Rock

Rock

panel Point #D014 End. 1/2" rebar

Rock

Rock

Rock

panel Point BC Grouted in Rock "U 56"
D005

Cont From Prev Page
pg 2 of 3

STA	+	HI	−	Elev
TP# 11			5.061	1725.678
	0.090	1725.768		
TP # 12			10.408	1715.360
	2.101	1717.461		
TP # 13			7.806	1709.655
	3.349	1713.004		
TP # 14			5.230	1707.774
	5.380	1713.154		
TP # 15			6.74	1706.414
	4.458	1710.872		
TP# 16			6.105	1704.767 1705.00
	5.749	1710.516		
TP # 17			2.886	1707.630
	5.295	1712.925		
TP # 18			5.172	1707.753
	7.630	1715.383		
TP # 19			0.981	1714.402
	8.369	1722.771		
TP # 20			5.732	1717.039
	8.145	1725.184		
TP # 21			4.362	1720.822

Oct 15 1991 BK 97 7

92° Clear same crew

Desc.

Rock

Panel point D016

Rock

Rock

Rock

BC 6LO Primary BM

Oct 16, 1991 67° clear same crew

Cont From Prev Page
pg 3 of 3

STA	+	HI	−	ELEV	
	8.132	1728.954			
TP #22			5.451	1723.503	
	8.324	1731.827			
TP #23			0.871	1730.956	
	11.420	1742.376			
TP #24			0.466	1741.910	
	11.910	1753.820			
TP #25			1.059	1752.761	
	9.465	1762.226			
TP #26			2.665	1759.561	
	9.399	1768.960			
TP #27			1.432	1767.528	
	10.029	1777.557			
TP #28			1.412	1776.145	
	9.698	1785.843			
TP #29			1.541	1784.302	
	6.310	1790.612			
TP #30			3.982	1786.630	
	5.289	1791.919			
TBM			5.299	1786.620	1786.555
				(+0.065)	

Oct 16, 1991 BK 97 8

76° Clear Same Crew

Description

1/2" Rebar

LEVEL LOOP FROM BM "HOUND"
to BM "U-56"
Pg. 1 of

Sta	+	Hi.	−	Elev.
BM				1800.571
	6.815 ~~8.702~~			
TP #1			5.759 ~~7.121~~	
	2.749 ~~2.454~~			
TP #2			5.765 ~~7.319~~	
	1.838 ~~2.030~~			
TP #3			11.064 ~~9.420~~	
	1.204 ~~1.887~~			
TP #4			9.783 ~~8.395~~	
	6.335 ~~1.806~~			
TP #5			2.220 ~~8.624~~	
	6.128 ~~1.970~~			
TP #6			3.376 ~~8.341~~	
	4.162			
TP #7			7.679	
	2.147			
TP #8			7.800	
	1.828			
TP #9			8.012	
TP #10				

VOID

October 16, 1991 BK-97 9

90° Clear TM. Cordova
M. Jelinek

Description:
BC in conc. S. End of rest area S. of Desert Hill Rd. W. of I-17

VOID

Continued From Prev. Pg.

Pg. 2 of

Sta.	+	Hi.	−	Elev.
TP #11				
TP #12				
TP #13				
TP #14				
TP #15				

VOID

Oct. 16, 1991 BK 97 10

Clear Crew Same

Description:

VOID

Level Loop From BM "SNOD" Panel Pt. #D024 To Panel Pnt. # D022

Pg 1 of 4

STA	+	HI	−	ELEV
BM				1498.788
	1.952	1500.740		
TP #1			5.182	1495.558
	9.484	1505.042		
TP #2			6.709	1498.333
	3.246	1501.579		
TP #3			6.821	1494.758
	8.132	1502.890		
TP # 4			4.402	1498.488
	6.722	1505.210		
TP #5			2.979	1502.231
	8.851	1511.082		
TP #6			4.370	1506.712
	5.882	1512.594		
TP #7			6.225	1506.369
	6.729	1513.098		
TP # 8			4.40	1508.698
	4.560	1513.258		
TP # 9			1.506	1511.752
	7.089	1518.841		
TP #10			1.091	1517.750
	4.92	1522.670		

Oct 17, 1991 BK 97 12

80° Clear M Cordova

T M Jolinek

BC Grouted in Boulders @ Snod Grass Tank
PANEL PT. D024

Rock

Nail

Nail

Rock

Nail

Nail

Nail

Nail

Nail

Nail @ Gate

Cont From Prev. Page
pg 3 of 4

STA	+	HI	-	Elev
TP #11			5.624	1517.046
	1.629	1513.675		
TP #12			1.713	1516.952
	3.053	1519.735		
TP #13			8.247	1511.733 1511.719
	8.815	1520.553		
TP #14			2.285	1518.268
	5.180	1523.448		
TP #15			6.819	1516.629
	1.620	1518.249		
TP #16			3.409	1514.840
	6.839	1521.679		
TP #17			3.461	1518.218
	8.780	1526.998		
TP #18			3.365	1523.633
	6.948	1530.581		
TP #19			5.619	1524.962
	6.290	1531.252		
TP #20			4.661	1526.591
	6.172	1532.763		
TP #21			3.229	1529.534

92° Clear Same Crew

DESC.

Boulder

Rock

Bar Rebar Bent Cap #D023

Rock

Rock

Nail

Nail

Oct 18, 1991 75° Clear Same Crew

Nail

Rock

Rock

Rock

Cont From Prev. Page.

Pg 3 of 4

STA	+	HI	−	Elev
	9.079	1538.613		
TP # 22			6.723	1531.890
	7.281	1539.171		
TP # 23			4.220	1534.917
	4.125	1539.076		
TP # 24			7.165	1531.911
	6.569	1538.480		
TP # 25			9.291	1529.189
	2.835	1532.024		
TP # 26			5.579	1526.445
	4.535	1530.980		
TP # 27			6.250	1524.73
	6.401	1531.131		
TP # 28			7.119	1524.012
	1.788	1525.80		
TP # 29			9.20	1516.60
	3.828	1520.428		
TP # 30			7.745	1512.683
	8.888	1521.571		
TP # 31			4.665	1516.906
	9.090	1525.996		
TP # 32			6.655	1519.341
	2.838	1522.179		

Oct 18, 1991 BK 97 14

90° Clear Carter Crew

Desc.

Wall

1/2" Rebar Found Point # D022

Rock

Rock

Rock

Rock

Wall

Wall

Rock

Cont From Prev Page

pg. 4 of 4

STA	+	HI	−	Elev		DESC.
TP #33			8.450	1513.729		Rock
	7.589	1521.318				
TP #34			3.587	1517.31		Nail @ Gate
	1.17	1518.901				
TP #35			7.075	1511.826		
	1.705	1513.531				
TP #36			4.860	1508.671		
	4.90	1513.571				
TP #37			5.584	1507.987		Nail
	3.961	1511.948				
TP #38			7.191	1504.757		Rock
	1.885	1506.642				
TP #39			7.032	1499.610		Nail
	5.951	1505.561				
TP #40			10.547	1495.014		Nail
	6.564	1501.578				
TP #41			5.012	1496.566		Rock
	8.235	1504.801				
TP #42			7.131	1497.670		Rock
	3.189	1500.859				
BM			2.008	1498.851	1498.788	"Spad"
				+0.063		

Oct 18, 1991 BK 97 15

54° Clear Tomas Chico

Level Loop "Snod" to D026 &
Pick up point #800
pg 1 of 3

STA	+	HI	-	Elev
BM				1498.788
	5.320	1504.108		
TP #1			6.310	1497.798
	1.106	1498.904		
TP #2			9.754	1489.150
	13.182	1502.332		
TP #3			6.061	1496.271
	12.349	1508.620		
TP #4			2.212	1506.408
	0.239	1506.647		
TP #5			13.071	1493.576
	0.959	1494.535		
TP #6			10.379	1484.156
	3.149	1487.305		
TP #7			6.940	1480.365
	3.822	1484.187		
TP #8			6.198	1477.989
	4.829	1482.818		
TP #9			3.680	1479.138
	4.519	1483.657		
TP #10			7.575	1476.082
	3.622	1479.704		

Oct 23, 1991 BK 97 16
76° Cloudy M Cordova
T M Delinck

Description
"Snod" panel point = D024 fnd. Cap in rock.

Rock
Nail
Nail
Rock
Rock
Rock
Rock
Rock
Rock
panel point #800 1/2" Rebar fnd. ✓

84° Mostly Cloudy Same crew

Cont From Prev Page
pg 2 of 3

STA	+	HI	−	ELEV	Desc.
TP #11			7.388	1472.316	Nail
	5.792	1478.108			
TP #12			2.520	1475.588	Rock
	12.745	1488.333			
TP #13			1.508	1486.825	Rock
	9.150	1495.975			
TP #14			3.170	1492.805	Rock
	9.522	1502.327			
TP #15			0.300	1502.027	Rock
	10.622	1512.649			
TP #16			1.289	1511.360	panel pnt # DO26 BC in conc. (Sta 108+4.32 150' Rt ROW)
	0.800	1512.160			
TP #17			10.699	1501.461	Rock
	0.188	1501.649			
TP #18			10.512	1491.137	Rock
	1.002	1492.139			
TP #19			3.381	1488.758	Rock
	0.210	1488.968			
TP #20			12.974	1475.994	Rock
	1.475	1477.469			
TP #21			4.212	1473.257	~~Rock~~ Nail
	7.240	1480.497			
TP #22	10		7.255	1473.242	Rock ✓

Cont. From Prev. Page

Pg 3 of 3

STA	+	HI	−	Elev	Desc.
	9.065	1482.307			
TP #23			3.212	1479.095	Rock
	3.949	1483.044			
TP# 24			4.744	1478.300	Nail
	7.029	1485.329			
TP# 25			3.039	1482.290	Nail
	11.648	1493.933			
TP# 26			1.138	1492.800	Rock
	12.940	1505.740			
TP# 27	(5)		0.820	1504.920	Nail
	4.91 5.061	1509.830 1509.981			
TP# 28	(2)		13.219 ~~7.219~~	1496.762 ~~1502.762~~	Nail ✓
	1.269	1498.031 ~~1504.031~~			
TP# 29	(3)		2.728	1495.303 ~~1501.303~~	Rock
	3.029	1498.332 ~~1504.332~~			
TP# 30	(2)		9.109	1489.223 ~~1495.223~~	Nail
	11.641	1500.864 ~~1506.864~~			
TP# 31	(1)		3.328	1497.536 ~~1503.536~~	Rock
	6.399	1503.935 ~~1509.935~~			
BM			5.125	1498.810 ~~1504.810~~ 1498.788	"snod"
				+0.022	

Oct 23, 1991 BK 97 18

84° partly cloudy Same crew

Level Loop 801 thru 801A
to 802 pg 1 of 3

STA	+	HI	−	ELEV
TBM				1777.995
	3.790	1781.785		
TP #1			0.575	1781.210
	10.440	1791.650		
TP #2			5.544	1786.106
	2.480	1789.586		
TP #3			9.689	1778.897
	2.105	1781.002		
TP #4			9.372	1771.630
	1.509	1773.139		
TP #5			13.069	1760.070
	0.331	1760.401		
TP #6			10.060	1750.341
	4.90	1755.241		
TP #7			6.820	1748.421
	4.852	1753.273		
TP #8			1.550	1751.723
	7.669	1759.392		
TP #9			1.366	1758.026
	13.228	1771.254		
TP #10			2.715	1768.539
	9.819	1778.358		
TP #11			8.040	1770.318

Oct 24 BK 97

76° mostly sunny M Corradie
A M Velinek

Desc.
pnt # 801 1/4 cor Sec 22, Sec 23 (0.93' Above 23)

Rock

Rock

Rock

Wait

Rock

pond pnt # 801A Sec Cor S 22 ‖ S 23 / S 27 ‖ S 26 (1.50' Above Grd)

Rock

Rock

Rock

Cont From Previous Page

pg 2 of 3

STA	+	HI	-	Elev
	2.048	1772.366		
TP #12			11.571	1760.795
	2.101	1762.896		
TP #13			8.943	1753.953
	12.004	1765.957		
TP # 14			0.852	– 1765.105
	9.230	1774.335		~~1773.846~~
TP #15			0.499	1773.846
	11.090	1784.936		
TP #16			2.199	1782.737
	8.527	1791.264		1788.992
TP #17			2.272	1789.002
	1.172	1790.164		
TP #18			9.822	1780.342
	0.411	1780.753		
TP # 19			11.450	1769.303
	2.160	1771.463		
TP #20			13.208	1758.255
	1.649	1759.904		
TP # 21			4.461	1755.443
	8.452	1763.895		
TP # 22			0.539	1763.356
	12.631	1775.987		
TP # 23			2.510	1773.477

82° partly Cloudy

Desc.

Rock

Rock

Rock

Rock

Rock

panel pnt # 802 ¼ Cor sec 27/sec 26 (1.50' above Grd)

Rock

Rock

Rock

Rock

Rock

ROCK

Cont From Prev Page

pg 3 of 3

STA	+	HI	−	Elev	Desc.
	0.140	1773.617			
TP #24			7.939	1765.678	Rock
	2.203	1767.881			
TP #25			13.080	1754.801	Rock
	4.509	1759.310			
TP #26			8.865	1750.445	Rock
	5.966	1756.411			
TP #27			0.329	1756.082	Rock
	10.110	1766.192			
TP #28			0.621	1765.571	Rock
	9.675	1775.246			
TP #30			1.810	1773.436	Nail
	8.999	1782.435			
TP #31			3.027	1779.408	Rock
	8.460	1787.868			
TP #32			2.135	1785.733	Rock
	4.150	1789.883			
TP #33			10.180	1779.703	
	2.087	1781.790			
TBM			3.815	~~1777.985~~ 1777.975 (.02)	1777.975 panel pnt # 801

OCT 24 1991 3:97 21

82° mostly Cloudy M. Cordova

T M Jelinek

LEVEL LOOP FROM PANEL PNT. # 803 TO PANEL PNT. # 802

Pg. 1 of 4

Sta	+	Hi	−	Elev.
TBM				
	5.653			
T.P. #1			4.922	
	6.549			
T.P. #2			3.720	
	3.731			
T.P. #3			3.361	
	10.214			
T.P. #4			0.423	
	8.086			
T.P. #5			6.825	
	2.851			
T.P. #6			7.060	
	2.729			
T.P. #7			7.241	
	2.998			
T.P. #8			6.675	
	1.429			
T.P. #9			7.501	
	0.940			
T.P. #10			7.132	

Oct. 25, 1991 BK 97 22

55° Clear

M. Cordova

M. Jelinek

Description:

PK. Nail in pav. @ intersection of 27th Ave. & Joy Ranch Rd.; Panel pnt. # 803

Rock

Continued from prev. page
Pg. 2 of 4

Sta.	+	Hi	−	Elev.
	0.389			
T.P. # 11			10.083	
	3.329			
T.P. # 12			6.025	
	6.290			
T.P. # 13			6.290	
	7.253			
T.P. # 14			2.220	
	11.440			
T.P. # 15			0.749	
	6.726			
T.P. # 16			0.451	
	0.445			
T.P. # 17			0.839	
	0.593			
T.P. # 18			10.617	
	1.609			
T.P. # 19			7.147	
	6.101			
T.P. # 20			4.095	
	3.829			
T.P. # 21			3.433	

Oct. 25, 1991 BK97 23
65° Clear Cloudy 32°F

Description:

Rock

"

"

"

"

B.C. 1.50' ± above gnd. 1/4 cor sec. 27/26. Panel
Pnt. # 802

Rock

"

"

"

"

"

Continued from prev. page.
Pg. 3 of 4

Oct. 25, 1991 BK97 24
72° Clear Crew: Same

sta.	+	Hi	−	Elev.	Description:
	10.269				
T.P. # 22			0.278		Rock
	8.050				
T.P. # 23			1.942		"
	8.026				
T.P. # 24			1.689		"
	6.811				
T.P. # 25			3.349		"
	6.845				
T.P. # 26			2.919		"
	6.541				
T.P. # 27			3.080		"
	6.921				
T.P. # 28			5.323		"
	0.772				
T.P. # 29			9.035		"
	0.939				
T.P. # 30			4.995		"
	5.528				
T.P. # 31			5.843		"
	3.331				
T.P. # 32			5.849		"

Continued from prev. page
Pg. 4 of 4

Sta.	+	Hi	-	Elev.
	4.259			
TBM			5.349	

Oct. 25, 1991 BK 97 25

79° Clear Crew: Same

Description:

P.K. nail in pav. @ inter. 27th Ave. & Joy Ranch Rd.
Parcel pnt. #303

RE-DO LEVEL LOOP FROM PANEL PNT. #803 TO PANEL PNT. #802

Pg. 1 of

Sta.	+	Hi	−	Elev.
TBM				1788.077
	5.285	1793.362		
T.P. #1			3.954	1789.408
	5.751	1795.159		
T.P. #2			3.298	1791.861
	5.451	1797.312		
T.P. #3			5.342	1791.970
	5.356	1797.326		
T.P. #4			1.252	1796.074
	9.114	1805.188		
T.P. #5			1.378	1803.810
	5.417	1809.227		
T.P. #6			5.474	1803.753
	2.737	1806.49		
T.P. #7			6.830	1799.660
	2.289	1801.949		
T.P. #8			6.794	1795.155
	2.701	1797.856		
T.P. #9			7.195	1790.661
	0.860	1791.521		
T.P. #10			7.408	1784.113

Oct. 25, 1991 BK97

74° Clear

K. M. Cordova
M. Jelinek

Description:
P.K. nail in pav. @ inter. 27th Ave. & Joy Ranch Rd.
Panel pnt. #803
Rock

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Oct. 26, 1991 Crew: Same
50° Clear

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Continued from prev. page
Pg. 2 of

Sta	+	Hi	−	Elev.
	0.471	1784.584		
T.P.#11			10.890	1773.694
	0.109	1773.803		
T.P.#12			5.362	1768.441
	4.959	1773.40		
T.P.#13			6.950	1766.450
	7.828	1774.278		
T.P.#14			1.214	1773.064
	10.217	1783.281		
T.P.#15			0.661	1782.620
	6.812	1789.432		
*T.P.#16			0.423	1789.009 [illegible]
	0.371	1789.380		
T.P.#17			6.646	1782.734
	0.320	1783.054		
T.P.#18			11.009	1772.045
	1.928	1773.973		
T.P.#19			6.659	1767.314
	6.288	1773.602		
T.P.#20			5.001	1768.601
	6.451	1775.052		
T.P.#21			0.320	1774.732

Oct. 26, 1991 pk 97 27

55° clear crew: same

Description:

Rock

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B.C. 1.50'± above gnd. (1/4 cor. sec. 27/Sec. 26)
Panel pnt. # 802

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Continued from Prev. page

Pg. 3 of

Sta.	+	Hi	-	Elev.	
	11.079	1785.811			
T.P. #22			1.612	1784.199	
	8.795	1792.994			
T.P. #23			1.946	1791.048	
	7.044	1798.092			
T.P. #24			2.841	1795.251	
	7.009	1802.260			
T.P. #25			2.668	1799.592	
	7.069	1806.661			
T.P. #26			3.120	1803.541	
	8.080	1811.621			
T.P. #27			7.109	1804.512	
	0.536	1805.048			
T.P. #28			9.710	1795.338	
	2.012	1797.350			
T.P. #29			4.689	1792.661	
	4.281	1796.942			
T.P. #30			6.574	1790.368	
	3.778	1794.146			
~~TBM~~			6.056	1788.09	1788.077
				+0.013	
T.P. #					

Oct. 26, 1991 BK97 28

62° Clear Crew Same

Description:

Rock

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Level Loop D018 to 803

pg 103

sta.	+	Hi	−	Elev.
				1811.835
	0.605	1812.440		
TP#1			7.807	1804.633
	8.012	1812.645		
TP#2			5.29	1807.355
	5.245	1812.600		
TP#3			6.075	1806.525
	5.844	1812.369		
TP#4			10.111	1802.258
	2.201	1804.459		
TP#5			9.742	1794.717
	0.298	1795.015		
TP#6			9.770	1785.243
	4.669	1789.914		
TP#7			9.364	1780.550
	4.71	1785.260		
TP#8			7.968	1777.292
	2.422	1779.714		
TP#9			0.261	1779.453
	9.985	1789.438		
TP#10			6.644	1782.794
	3.747	1786.541		
TP#11			6.371	1780.170

Oct 26, 1991 BK 97 29

70° Clear M Conover ~~Crew same~~

JM Jelinek

Description:

pnt #D018 BC (1.75' Above ground) 1/4 cor S25 S36 S31

Rock

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Cont From Prev Page
pg. 2 of 3

STA	+	HI	-	Elev
	6.529	1786.699		
TP #12			4.849	1781.850
	5.010	1786.860		
TP #13			4.988	1781.872
	7.675	1789.547		
TP #14			2.718	1786.829
	5.562	1792.391		
TP #15			4.329	1788.062 1785.07
	4.470	1792.532		
TP #16			5.541	1786.991
	3.780	1790.771		
TP #17			9.198	1781.573
	5.368	1786.941		
TP #18			5.129	1781.812
	5.322	1787.134		
TP #19			6.479	1780.655
	5.163	1785.818		
TP#20			4.661	1781.157
	7.079	1788.236		
TP#21			6.362	1781.874
	1.485	1783.359		
TP#22			8.880	1774.479
	9.018	1783.497		

Oct 26, 1991 30
75° Clear

Description:

Rock
"
"

pnt # 803 pk. Nail

Rock
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"
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Cont From Prev. Page

pg 3 of 3

STA	+	HI	-	ELEV
TP #23			3.544	1779.953
	7.135	1787.088		
TP #24			2.608	1784.480
	5.80	1790.280 ~~3.399~~		
TP #25			3.399	1786.881
	11.174	1798.055		
TP #26			1.00	1797.055
	13.121	1810.176		
TP #27			3.512	1806.664
	5.539	1812.203		
TP #28			5.52	1806.683
	6.00	1812.683		
TP #29			5.712	1806.971
	4.669	1811.640		
TP #30			7.032	1804.608
	7.48	1812.088		
TBM			0.282	1811.806
				-0.029

Oct 26, 1991 BL97 31

800 Clear Same Crew

Desc.

Rock

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"

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pnt D018

LEVEL LOOP FROM D017 TO 804

Pg. 1 of 2

Sta.	+	Hi	−	Elev.
BM				1689.70
	4.333	1694.033		
T.P. #1			5.572	1688.461
	4.264	1692.725		
T.P. #2			3.271	1689.454
	7.608	1697.062		
T.P. #3			3.395	1693.667
	5.137	1698.804		
T.P. #4			5.790	1693.014
	4.862	1697.876		
T.P. #5			6.414	1691.462
	4.610	1696.072		
T.P. #6			6.691	1689.381
	6.530	1695.911		
T.P. #7			4.449	1691.462
	6.208	1697.670		
T.P. #8			4.509	1693.161
	4.740 ×	1697.901		
T.P. #9			4.099	1693.802
	4.057	1697.859		
T.P. #10			8.079	1689.780
	3.463	1693.243		

November 6, 1991 BK 97 32

63° Clear T. M. Cordova

M. Jelinek

Description:

Flush BC on ℄ paved Rd. Sec. Cor. 28 27 33 34

Panel pnt. # D017

Rock

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"

"

"

Fnd. 1/2" rebar panel pnt. 2500' ± S. of D017

Rock

"

"

"

Continued from Prev. Page
Pg. 2 of 2

sta	+	Hi	-	Elev.
		1693.243		
T.P.#11			4.955	1688.288
	5.712	1694.000		
TP#12			4.820	1689.18
	5.425	1694.605		
BM			4.91	1689.695 (1689.70)
				(-0.005)

Nov. 06, 1991 BK97 33
66° Clear crew: same

Description:

Rock

"

Do17

Level Loop From BM "GATE" To PANEL
Pnt. # 808
Pg. 1 of 1

Sta.	+	Hi	-	Elev.	
BM				1586.849	(Rec. Elev. = 1586.98)
	2.634	1589.483			
T.P. #1			6.786	1582.697	
	5.285	1587.982			
T.P. #2			8.059	1579.923	
	2.652	1582.575			
T.P. #3			7.994	1574.581	
	3.562	1578.143			
T.P. #4			5.583	1572.560	
	5.549	1578.109			
T.P. #5			3.548	1574.561	
	8.131	1582.692			
T.P. #6			2.564	1580.128	
	7.603	1587.731			
T.P. #7			4.281	1583.45	
	6.479	1589.929			
BM			3.084	1586.845 (1586.849)	
				-0.004	
T.P. #					

Nov. 6, 1991 BK 97 34
Clear
K. M. Cordova
M. Jelinek

Description:
A.D.O.T. Alum. Cap in conc. post. Stamped "Gate" @ M.P. 28 3½'± N. of S. R/W Fence of Carefree Hwy
Rock
"
"
End ½" rebar panel pnt. # 808 1000'± W. of "GATE"
Rock
"
"
"GATE"

Level Loop BM #17 thru #807 to #~~809~~ 811

Pg 1 of 2

Sta	+	HI	−	Elev.
TBM				1587.915
	4.090	1592.005		
TP#1			6.372	1585.633
	3.188	1588.821		
TP#2			7.240	1581.581
	3.580	1585.161		
TP#3			6.518	1578.643
	4.970	1583.613		
TP#4			8.559	1575.054
	4.841	1579.895		
TP#5			8.525	1571.370
	2.665	1574.035		
TP#6			7.284	1566.751
	3.212	1569.963		
TP#7			7.318	1562.645
	3.000	1565.645		
TP#8			5.299	1560.346
	2.992	1563.338		
TP#9			8.130	1555.208
	3.402	1558.610		
TP#10			8.02	~~1550.540~~ 1550.602
	7.95	1558.540		
TP#11			3.442	1555.098

Nov. 7, 1991

76° Clear

M. Cordova

T M Jelinek

Description

TBM #17 5/8" rebar on Fence Line S. of Cane Fire Hwy @ 55 Ave.

panel point #807 1/2" Rebar DOTS

Rock

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"

"

"

"

"

"

Root

Panel point #~~809~~ 811 Small Boulder w/punch painted white

1/4 Cor of 7 | 8

Rock 18 | 17

Cont From Prev. Page

pg. 2 of 2

STA	+	HI	-	Elev	
	7.620	1562.718			
TP#12			2.058	1560.660	
	5.179	1565.839			
TP#13			3.220	1562.619	
	7.150	1569.769			
TP#14			3.189	1566.580	
	7.122	1573.702			
TP#15			2.800	1570.902	
	7.599	1578.501			
TP#16			3.860	1574.641	
	6.584	1581.225			
TP#17			4.789	1576.436	
	6.052	1582.488			
TP#18			3.366	1579.122	
	6.925	1586.047			
TP#19			2.290	1583.757	
	7.122	1590.879			
TBM #17			2.988	1587.891 -0.024	1587.915

Nov. 7, 1991 BK 97 36

79° Clear Same Crew

desc.
Rock
Root
Rock
"
"
"
"
"
5/8" rebar on R.O.W.

Level Loop D019 to 806

STA	+	HI	−	Elev
				1632.949
	3.421	1636.270		
TP#1			4.948	1631.322
	7.001	1638.323		
TP#2			6.021	1632.302
	4.978	1637.280		
TP#3			4.211	1633.069
	4.444	1637.513		
TP#4			8.140	1629.373
	2.746	1632.119		
TP#5			7.482	1624.697
	4.300	1628.997		
TP#6			6.039	1622.958
	3.638	1626.596		
TP#7			7.360	1619.236
	8.401	1627.637		
TP#8			4.100	1623.537
	6.940	1630.477		
TP#9			3.218	1627.259
	7.161	1634.420		
TP#10			2.062	1632.358
	6.405	1638.763		
TP#11			6.571	1632.192

Nov. 11 199[illegible] BK 97 37

[illegible]° partly Cloudy M Cordova

Description M [illegible]

Alum Cap 1.6' Above Grad.

Rock

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Panel Point # 806 1/2" Rebar

Rock

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"

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Cont From prev. Page

STA	+	HI	-	Elev
	6.012	1638.204		
TP #12			9.825	1628.379
	5.850	[illegible]		
TBM			1.09	1633.139
				+.29

Nov 11, 1991 37 97 38

60° partly sunny Same Crew

Desc.

Rock

Level Loop D019 to 806

Pg 1 of 2

STA	+	HI	-	Elev
TBM				1632.849
	3.365	1636.214		
TP #1			4.345	1631.869
	7.025	1638.894		
TP #2			6.043	1632.851
	4.899	1637.204		
TP #3			4.135	1633.069
	4.164	1637.233		
TP #4			8.155	1629.078
	3.088	1632.166		
TP #5			7.761	1624.405
	4.325	1628.730		
TP #6			6.069	1622.661
	3.691	1626.352		
TP #7			7.418	1618.934
	8.198	1627.132		
TP #8			3.400	1623.732
	6.544	1630.776		
TP #9			2.708	1627.068
	7.160	1634.228		
TP #10			2.165	1632.063
	6.245	1638.308		
TP #11			6.411	1631.897

Nov 11, 1991 BK 97 39

Sunny M Cordova

Description T M Jelinek

Alum Cap 1.6' Above Grd.

Rock

1/2" Rebar panel pnt #806

Rock

Cont From Prev Page

pg 2 of 2

STA	+	HI	-	Elev
	5.994	1637.891		
TP#12			9.812	1628.079
	5.970	1634.049		
TBM			1.200	1632.849

Nov. 11, 1991 BK 97 ÷0

72° Mostly Sunny Evans Crew

Desc.

D019

LEVEL LOOP FROM #807 TO #809

Pg. 1 of 1

Sta.	+	Hi	−	Elev.
TBM				1585.633
	5.103	1590.736		
T.P.#1			6.835	1583.901
	4.194	1588.095		
T.P.#2			4.619	1583.476
	2.710	1586.186		
T.P.#3			6.839	1579.347
	3.051	1582.398		
T.P.#4			7.044	1575.354
	3.290	1578.644		
T.P.#5			6.675	1571.969
	6.461	1578.430		
T.P.#6			2.819	1575.611
	6.459	1582.070		
T.P.#7			2.910	1579.160
	6.219	1585.379		
T.P.#8			3.288	1582.091
	5.660	1587.751		
T.P.#9			4.230	1583.521
	6.806	1590.327		
TBM			4.701	1585.626 (1585.633)
				-0.007

Nov. 12, 1991 BK97 41

60° Clear/Windy T. M. Cordova

M. Jelinek

Descriptions:

½" rebar panel pnt. #807. T.P.#1 See pg. 35. 500'± S.E. of BM 17.

Rock

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Fnd. ½" rebar Panel Pnt. #809. 1500'± S. of Panel Pnt. #807

Rock

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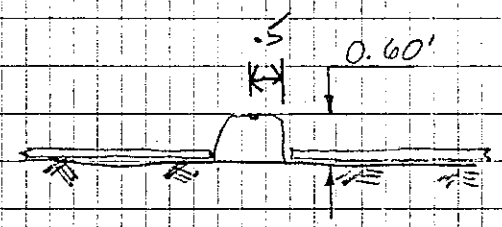
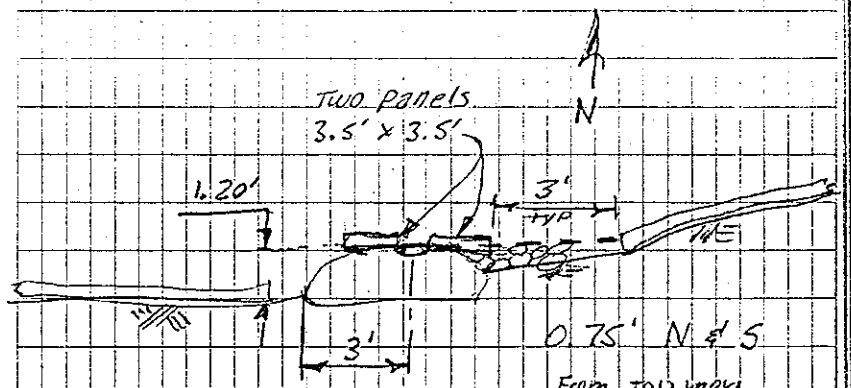
Panel Pnt. #807

Various
Diagram of Panel Pot's
Pg. 1 of 3



Note: Panels set to small Boulder & not over it.

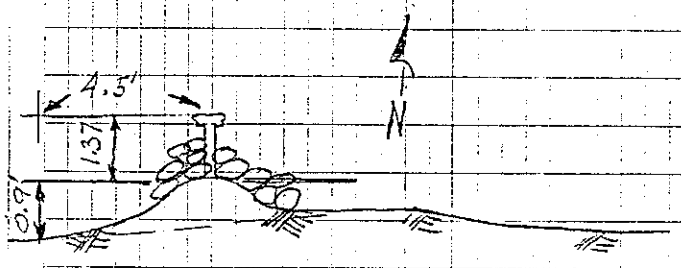
811



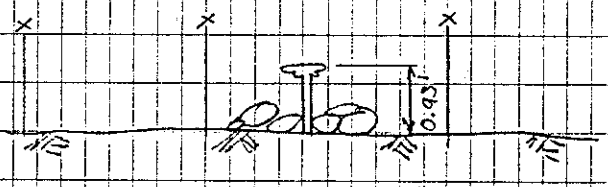
0.75' N & S
From top knob to Ground.

D005

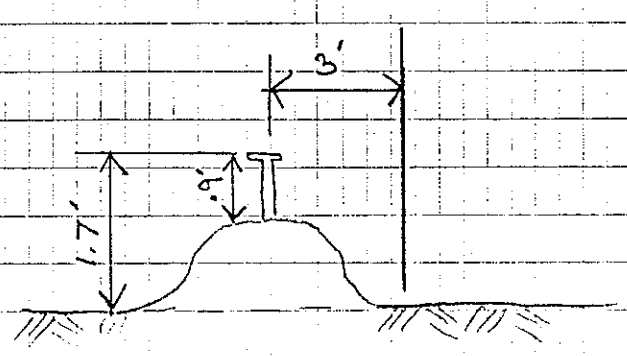
Pg. 2 of 3



802



801



500

X-SECTION OF DEADMAN'S WASH
@ SPLIT in N.E. 1/4 of SECTION 5
Pg. 1 of

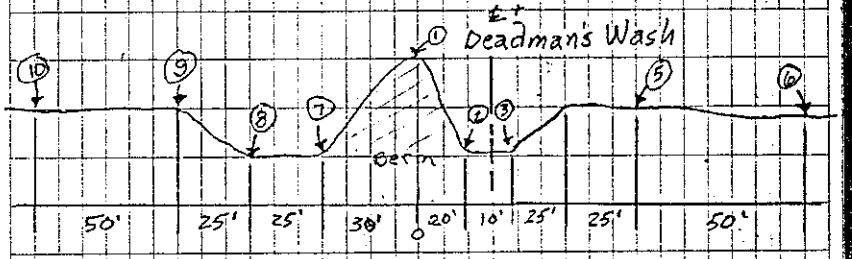
Sta.	+	Hi.	−	Elev.
BM				1611.46
	6.78	1618.24		
T.P.#1			4.03	1614.21
	5.22	1619.43		
#2			4.49	1614.94
	4.75	1619.69		
#3			4.65	1615.04
	8.32	1623.36		
①			4.98	1618.38
②			12.86	1610.50
③			13.20	1610.16
④			9.54	1613.82
⑤			9.33	1614.03
⑥			10.06	1613.30
⑦			11.75	1611.61
⑧			12.75	1610.61
⑨			8.35	1615.01
⑩			8.30	1615.06
T.P.#4			10.20	1613.16

Febuary 18, 1992 BK ~~99~~ 97 46

65° Clear M. Tholl
T. M. Cordova

Description:
Fnd. B.C. in 6" diameter concrete post, stamped elevation = 1611.46 1' N. of 1/2" rebar panel pnt. # "D010"
Rock

Note: X-section looking upstream 75' S. of split in wash



N.T.S.

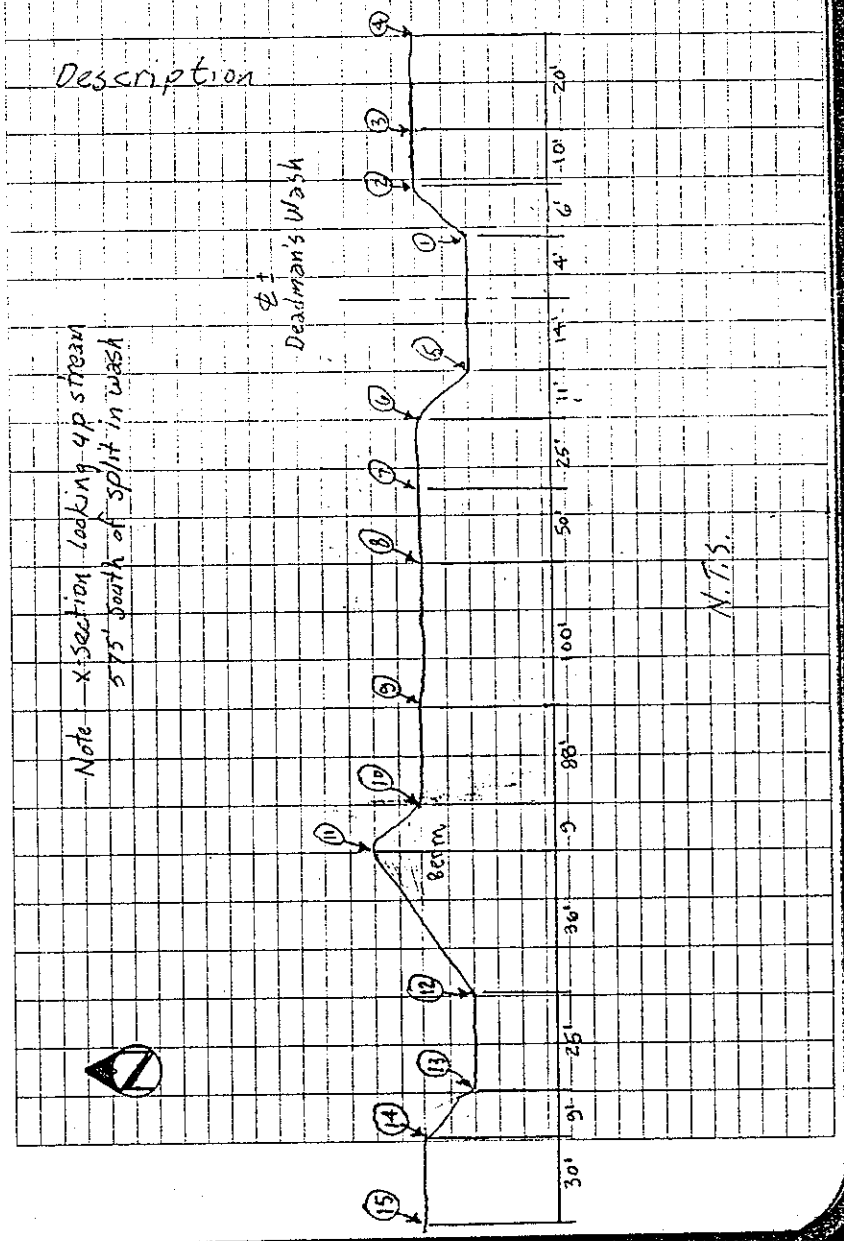
Continued from prev. page

Pg. 2 of

sta.	+	Hi.	−	Elev.
TP.#4				1613.16
	10.65			
1			16.98	
2			13.30	
3			11.92	
4			11.75	
5			16.73	
6			13.16	
7			11.80	50'
8			11.54	100'
9			11.50	200'
10			11.30	
11			7.82	
12			15.10	
13			15.35	
14			12.20	
15			11.80	

72° clear Crew same

Description

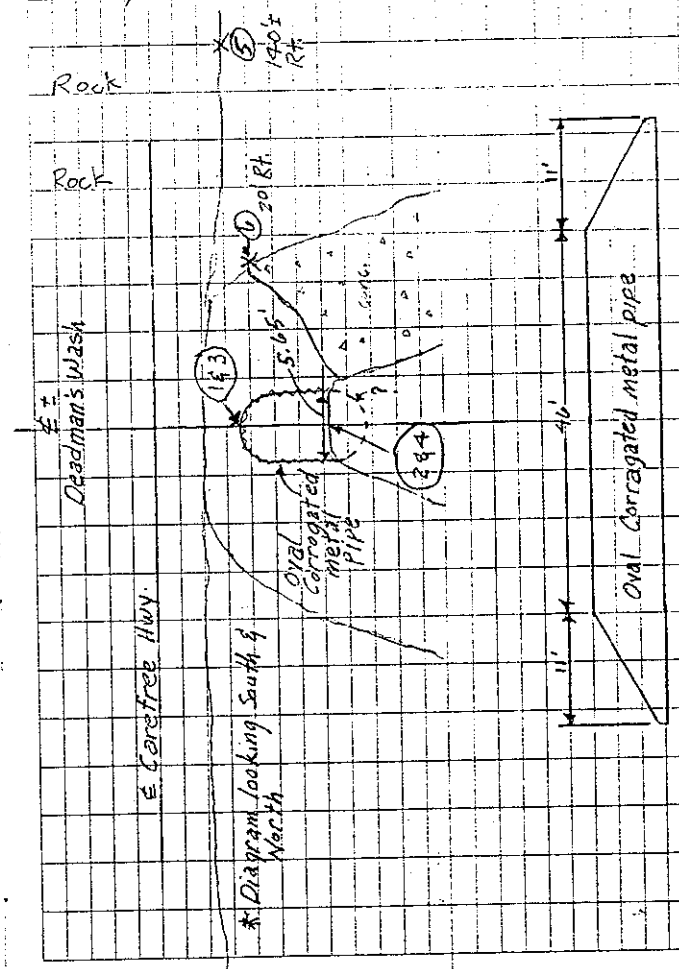


TOPO VERIFICATION OF STRUCTURE
@ DEADMAN'S WASH & CAREFREE HWY.
Pg. 1 of 1

sta.	+	Hi	−	Elev.	
TBM				1585.633	
	7.24	1592.87			
T.P.#1			3.81	1589.06	
	7.18	1596.24			
T.P.#2			2.84	1593.40	
	5.70	1599.10			
① TOP			7.03	1592.07	Top of Pipe N/S
② BOT			12.72	1586.38	Gnd.
③ TOP			7.07	1592.03	Top of Pipe S/S
④ BOT.			13.11	1585.99	Gnd
⑤ N. Side			7.16	1591.94	Gnd. @ 140' Rt. from ℄
⑥ N. Side			5.20	1593.90	Gnd. @ 20' Rt. from ℄

Febuary 20, 1992 BK97
50° Partly cloudy
M. Troll
T. M. Cordova

Description:
Panel pnt. # 807 (D020) 1/2" rebar see pg. 35

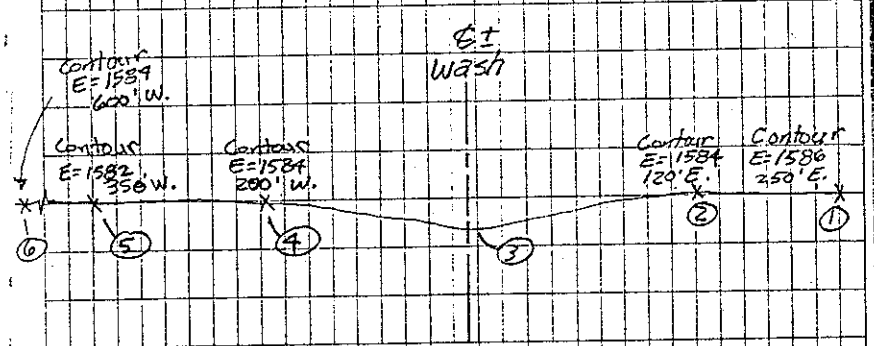


VERIFY TOPO BY X-SECTION OF
WASH WEST ¼ mile± OF DEADMAN's Wash
Pg. 1 of 1
(* X-Sectin Line 146'± S. of ℄ Carefree Hwy)

sta.	+	Hi	−	Elev
BM				1586.849
	2.85	1589.70		
1			3.90	1585.80
2			5.70	1584.00
3			8.94	1580.76
4			5.80	1583.90
5			7.60	1582.10
6			5.90	1583.80

Feb 20, 1992 BK 97
66° clear M. Tholl

Description
A.D.O.T. Alum. cap in conc. post, stamped "GATE"
@ M.P. 28 3½'± N. of R.O.W. Fence S. Side of
Carefree Hwy. See pg. 34



VERIFY TOPO BY X-SECTION & INVERTS OF STRUCTURE ON FEDERAL INST. ROAD.

Pg. 1 of 4

Sta.	+	Hi	−	Elev.	
BM				1689.70	
	3.14	1692.84			
①			9.42	1683.42	invert S. Side
②			5.85	1686.99	Top Headwall S. Side
③			9.58	1683.26	invert N. Side
④			6.20	1686.64	Top Headwall N. Side
T.P.#1			5.80	1687.04	Top of headwall s/s
	2.28	1689.32			
T.P.#2			6.71	1682.61	Rock
	3.87	1686.48			
⑤			6.30	1680.18	Gnd.
⑥			6.40	1680.08	Gnd.
⑦			10.48	1676.00	Gnd
⑧			12.45	1674.08	Gnd.
⑨			10.33	1676.15	Gnd.
⑩			6.30	1680.18	Gnd.
⑪			4.20	1682.28	Gnd.
⑫			2.38	1684.10	Gnd.

Feb. 20, 1992 Bk 97

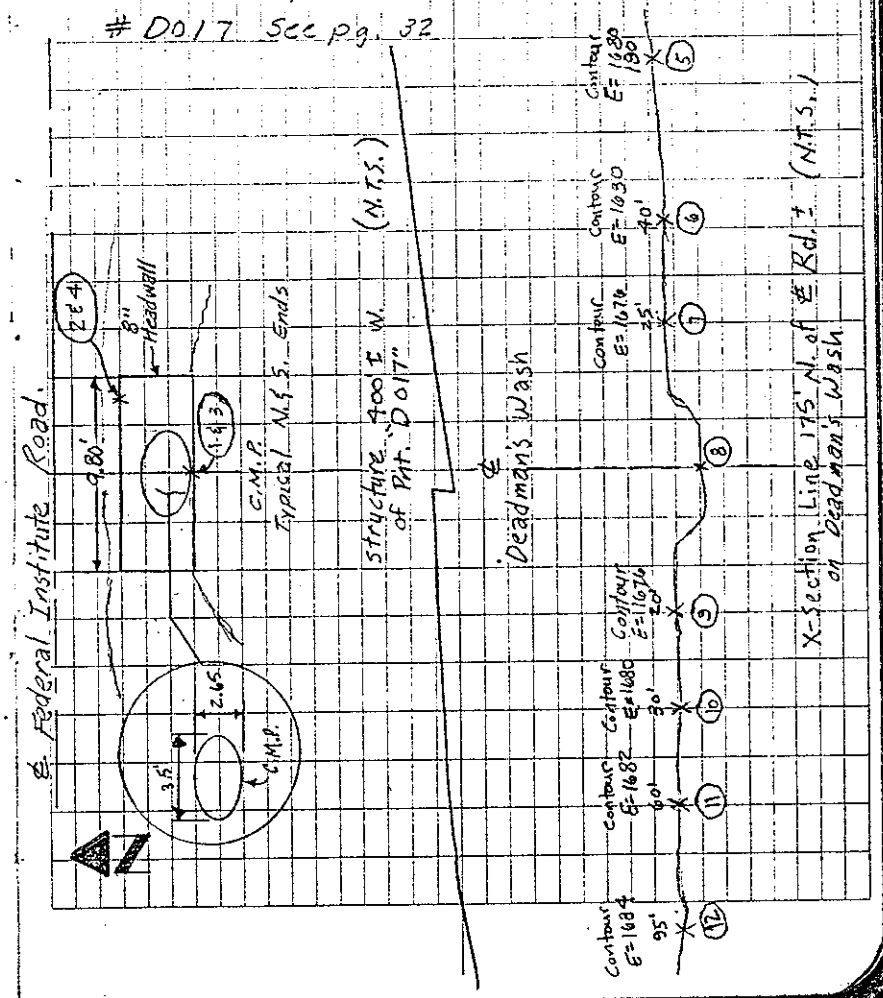
70° clear

M. Tholl

T. M. Cordova

Description:

Flush B.C. on ℄ paved rd. Sec. Cor. 28 | 27 / 33 | 34 . Panel pnt. # D017 See pg. 32

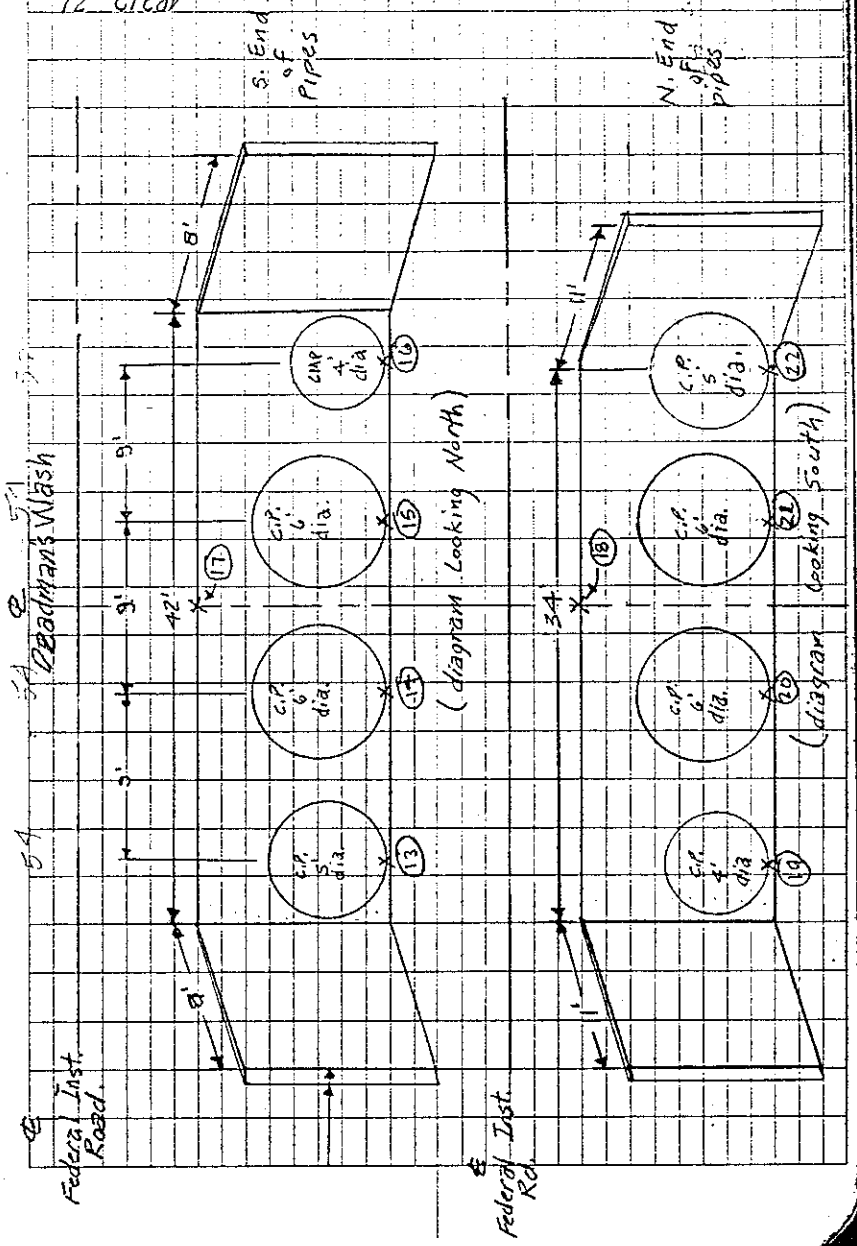


Continued From Prev. Pg.

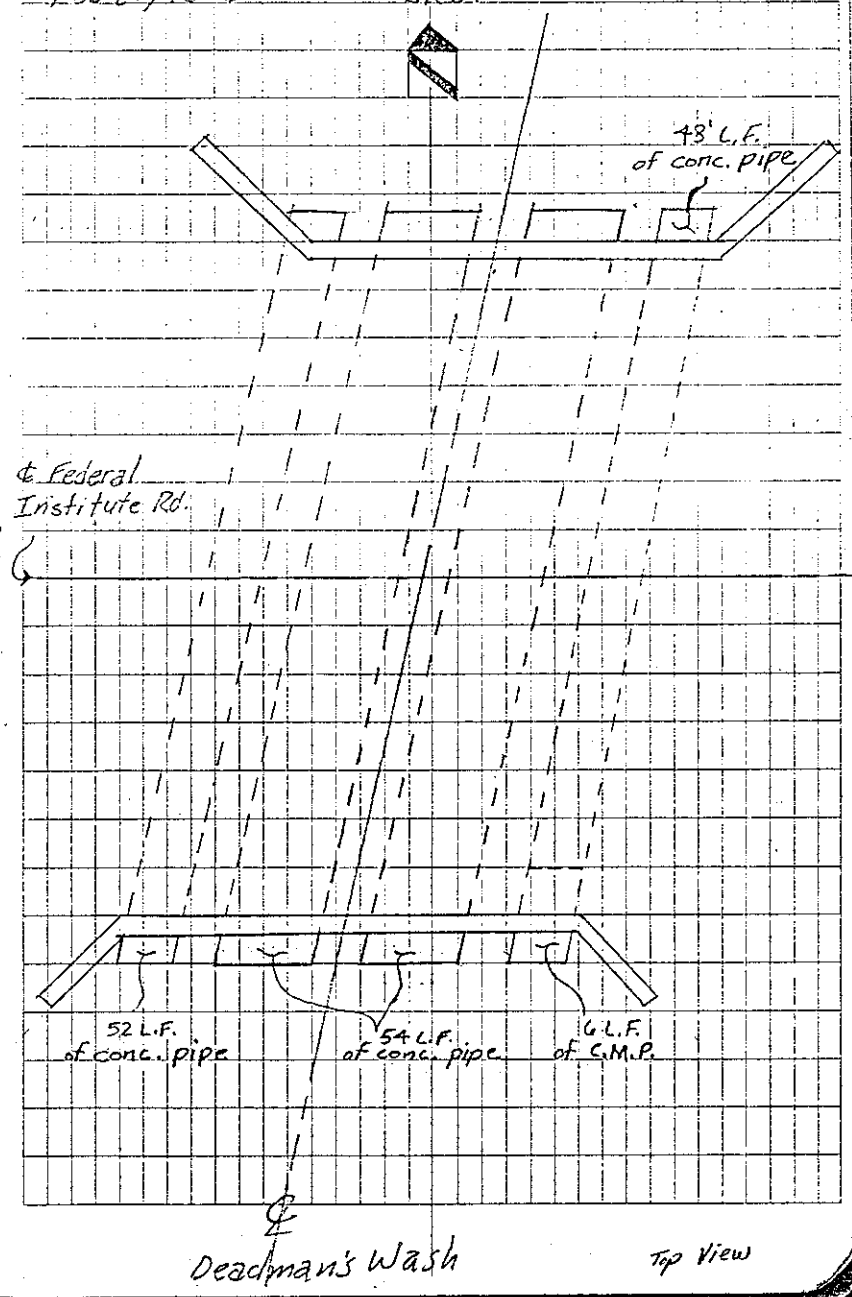
Pg. 2 of 4

Sta.	+	Hi	−	Elev.
		1686.48		
13			14.64	inv.
14			14.37	inv.
15			14.16	inv.
16			13.80	inv. Top Headwall
17			6.82	S. Side
18			5.97	TOP HEADWALL N. Side
19			12.74	inv.
20			13.86	inv.
21			13.69	inv.
22			13.83	inv.

72° Clear



Continued from Prev. Page.
Pg. 4 of 4



Top View

VERIFY TOPO BY X-SECTION, & GROUND & CLEARANCE @ BRIDGE FOR DEADMAN'S WASH & I-17

Pg. 1 of 84

Sta.	+	Hi	−	Elev.	
TBM				1753.79	1/2" rebar see Pg. 6
	0.58	1754.37			
T.P. # 1			10.24	1744.13	Rock
	0.63	1744.76			
T.P. # 2			15.96	1728.80	Rock
	5.32	1734.12			
T.P. # 3			8.03	1726.09	Rock
	4.13	1730.22			
①			11.30	1718.92	
②			10.25	1719.97	
③			8.25	1721.97	
④			6.05	1724.17	
⑤			4.40	1725.82	
⑥			1.80	1728.42	
⑦			10.23	1719.99	
⑧			8.35	1721.87	
⑨			6.10	1724.12	
⑩			4.30	1725.92	

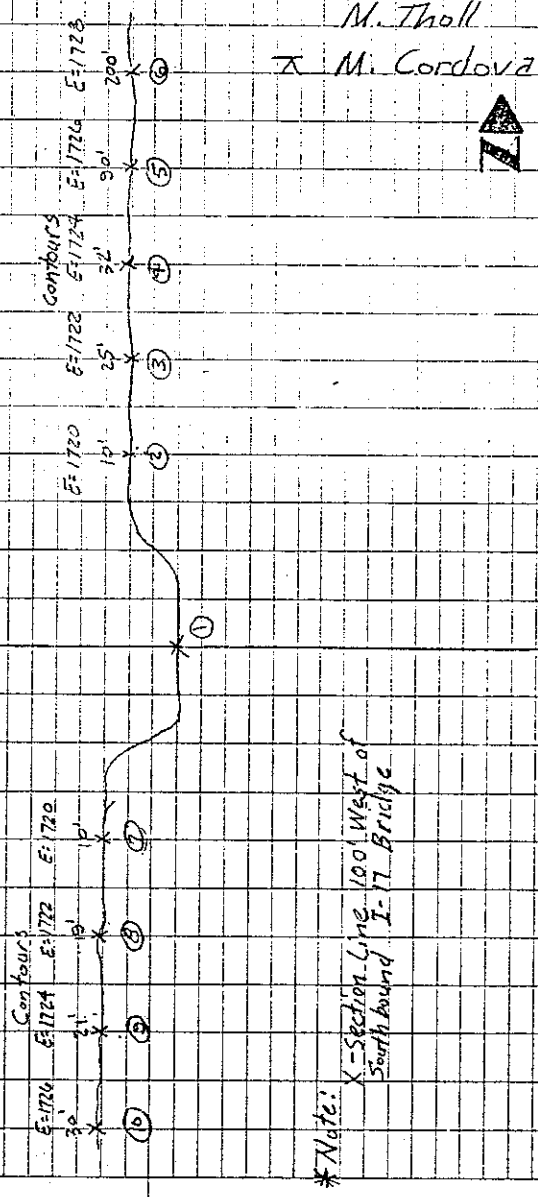
Feb 21, 1992 BK 97

65° Clear

M. Tholl

M. Cordova

Parcel pnt. # D014



*Note: X-Section Line 100' West of Southbound I-17 Bridge

Continued from previous page
Pg. 2 of 34

I-17 & DEADMAN'S Wash
(South Bound Bridge)

Diagram Looking East
(Bridge length = 45')
= N.T.S. =

Feb. 21, 1992 BK 97 54
65° Clear Crew same

I-17 & Deadman's Wash
(North Bound Bridge)

Diagram Looking East
(Bridge length = 44')
= N.T.S. =

Cont. From Prev. Page

Pg. 3 of 3 4

* Note: See diagram prev. pg.

Sta.	+	Hi	−	Elev.
		1730.22		
11			10.75	
12			(+) 2.61	
13			10.70	
14			(+) 2.79	
15			10.75	
16			(+) 2.70	
17			9.45	
18			(+) 2.73	
19			10.40	
20			10.50	
21			10.50	
22			8.25	
23			8.00	
24			(+) 7.64	
25			8.05	
26			(+) 7.85	
27			6.40	
28			7.30	
29			(+) 7.98	
30			6.20	
T.P.# 4			7.08	1723.14
	11.00	1734.14		

Feb. 21, 1992 BK 97 55

74° Clear crew same

Description:

Gnd shot	W. Side of bridge I-17 S. Bound
Bott. of Bridge	
Gnd. shot	
Bottom of bridge	
Gnd. shot	
Bottom of bridge	
Gnd. shot	
Bottom of bridge	
Gnd shot	E. Side of bridge I-17 S. Bound
" "	
" "	
" "	
Gnd. shot	W. Side of bridge I-17 N. Bound
Bottom of bridge	
Gnd. Shot	
Bottom of bridge	
Gnd. shot	E. Side of bridge I-17 N. Bound
Gnd shot	W. Side of bridge I-17 N. Bound
Bottom of bridge	" " " " " " "
Gnd shot	E. Side of bridge I-17 N. Bound
Rock	

Continued From Previous Page

Pg. 4 of 4

*Note: See diagram on page 54

Sta.	+	Hi	−	Elev.
		1734.14		
31.			11.20	
32			11.15	
33			(+)3.69	
34			10.40	

Crew Same

Description	
Gnd. Shot	E. Side of bridge I-17 N. Bound
" "	W. Side " " " " "
Bott. of bridge	" " " " " " "
Gnd. Shot	E. Side " " " " "

Stream No. 8

VERIFY STRUCTURE #7 2000' N. OF DEADMANS WASH on I-17

Pg. 1 of 1

Sta	+	Hi	−	Elev.
1				100.00
	3.87			
2			6.74	
3			14.60	
4			14.85	
5			4.47	
6			5.40	
7			12.69	
8			12.78	

Febuary 24, 1992 Bk 97 57

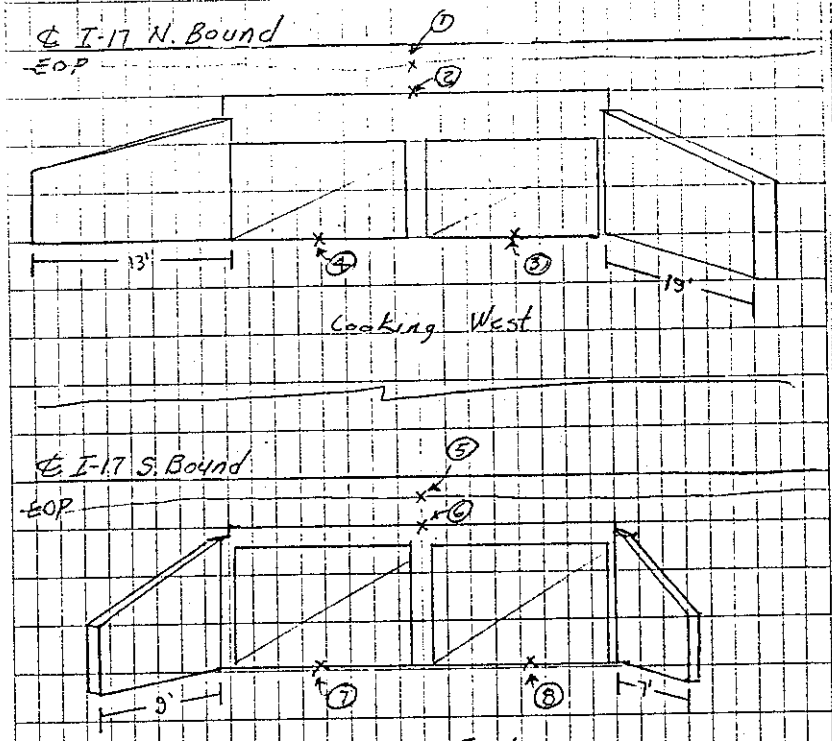
59° Clear

M. Tholl

M. Cordova

Description:

EOP E side of I-17 N. Bound assumed elevation @ ℄ of wash



Sizes: 8' wide x 6' high x 22' Length

Stream No. 8

VERIFY STRUCTURE #8 1/2 MILE N. of DESERT HILL ON I-17

Pg. 1 of 1

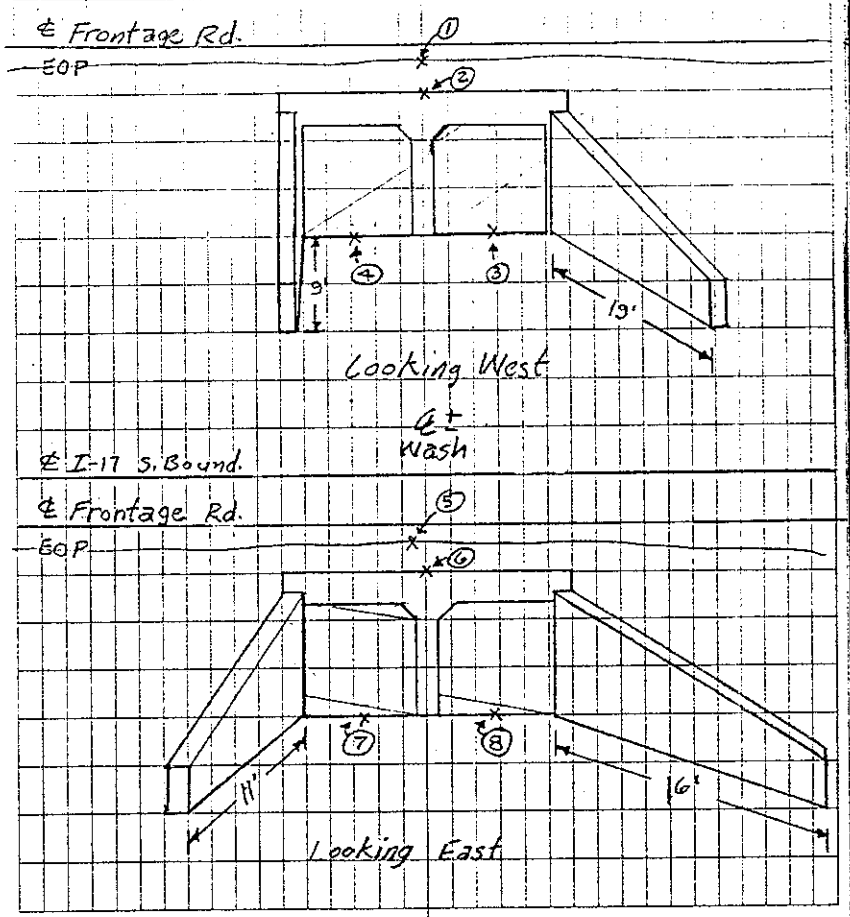
Feb 24, 1992 BK 97 58

65° Clear

M. Tholl

T. M. Cordova

sta.	+	Hi	-	Elev.	
①				100.00	E.O.P. @ E. side of E. Frontage Rd. on ℄ ± Wash. Assumed elev.
	3.78				
②			4.48		Fnd. B.C. in headwall E:1912.23 (sta 512 x 13)
③			11.38		
④			11.37		
⑤			7.77		
⑥			7.94		
⑦			14.70		
⑧			14.61		



Sizes = 6'W x 5'H x 370'L.

Unnamed Wash in DA-10L

VERIFY STRUCTURE #5 1 mile± SOUTH OF DEADMAN Wash on I-17

Pg. 1 of 1

Sta.	+	Hi	—	Elev.
1				100.00
	2.85			
2			7.12	
3			7.01	
4			5.50	
5			14.20	
6			14.20	

Feb. 24, 1992 BK97 59

70° clear M. Thall

M. Cordova

Description

E.O.P. @ E. Side I-17 N. bound @ ℄± of structure
Assumed elev.

N. invert @ E. End

S. invert @ E. End

E.O.P. @ W. Side of I-17 S. bound @ ℄± of structure

N. invert @ W. End

S. invert @ W. End

* Description of structure:
2, 3' diameter C.M.P.'s with double steel end sections.
Length = 221 L.F.

Stream No. 11

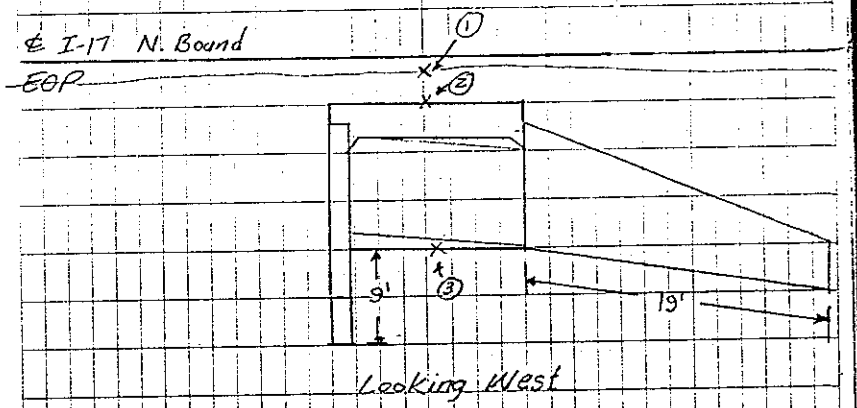
VERIFY STRUCTURE #4 1/4 mile± SOUTH OF PIONEER Rd.

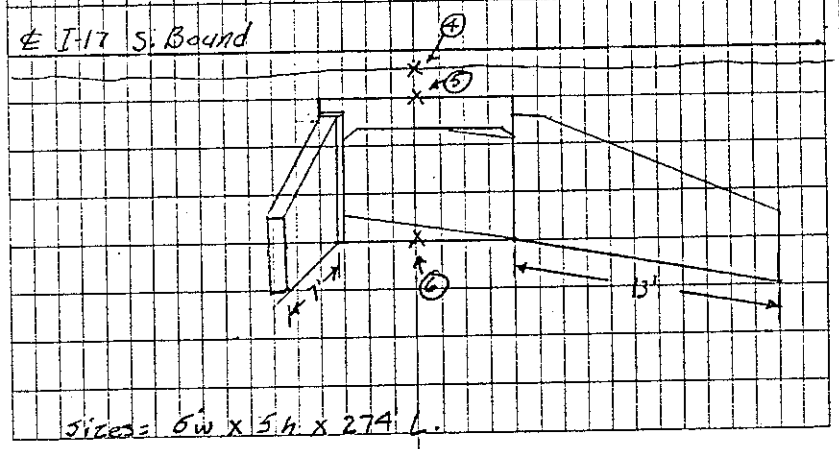
Pg. 1 of 1

sta.	+	Hi	−	Elev.	Desc.
①				100.00	E.O.P. @ E. Side of I-17 N. Bound Assumed elev.
	3.36				
②			7.72		
③			14.60		
④			10.61		
⑤			11.34		
⑥			17.53		

Feb. 24, 1992 BK 97 60

M. Tholl
π M. Cordova





Sizes: 6w x 5h x 274 L.

Stream No. 11

VERIFY STRUCTURE # 3 1 mile ± SOUTH OF PIONEER Rd.

Pg. 1 of (M.P. 225)

Sta.	+	Hi	−	Elev.	Desc.
①				100.00	E.O.P. @
	2.26				
②			5.18		Fnd. Alum Cap Top H/W E=1697.72 STA= 1273+620
③			13.84		
④			4.11		
⑤			4.71		
⑥			12.87		

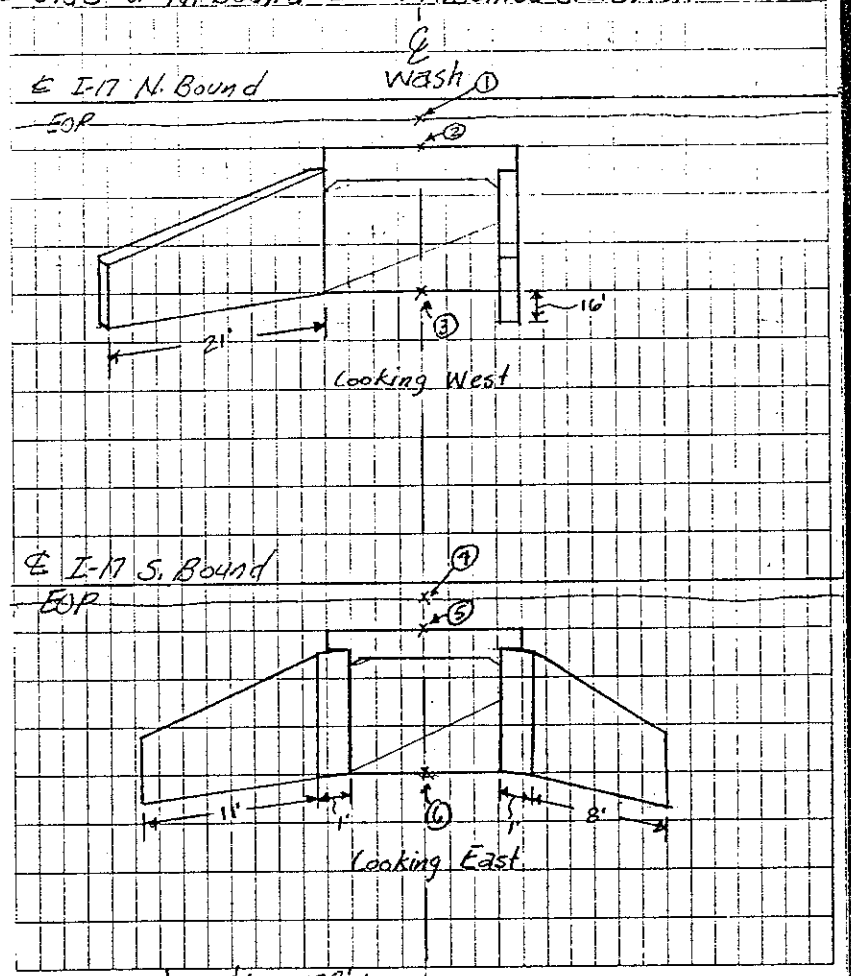
Febuary 26, 1992 BK 97

65° Clear

M. Tholl

T. M. Cordova

E. Side of N. Bound I-17. Assumed elevation



Sizes: 6'w x 1'h x 228'L

Stream No. 11

Verify Structure #2 @ East End of BEN AVERY SHOOTING RANGE ON I-17

Pg. 1 of 1

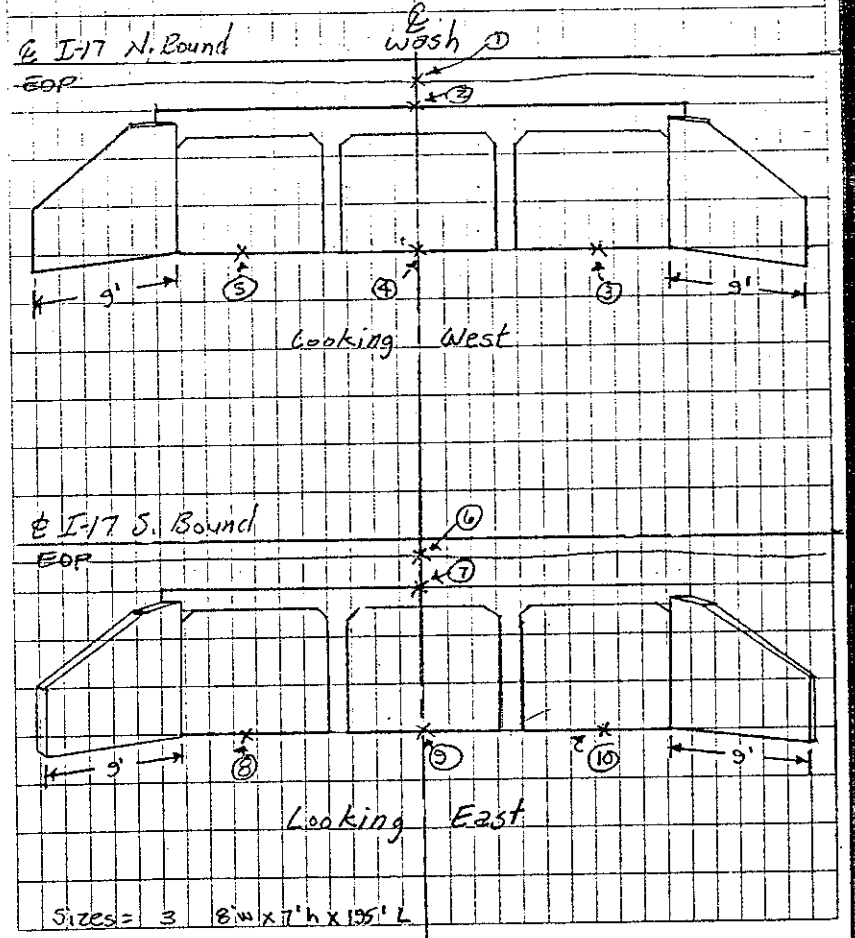
Sta.	+	Hi	−	Elev.	Desc.
①					E.O.P. @ E. Side N. Bound I-17, Assumed elev.
	2.51				
②			3.24		
③			11.57		
④			11.56		
⑤			11.52		
⑥			4.63		
⑦			4.97		
⑧			13.28		
⑨			13.26		
⑩			13.28		

Febuary 26, 1992 BK 97

70° Clear

M. Tholl

T. M. Cordova



Sizes = 3 8'w x 7'h x 195' L

Stream No. 11

VERIFY STRUCTURE #1 @ Inter. OF

OFF Ramp & CAREFREE Hwy of I-17

S. BOUND

Pg. 1 of 1

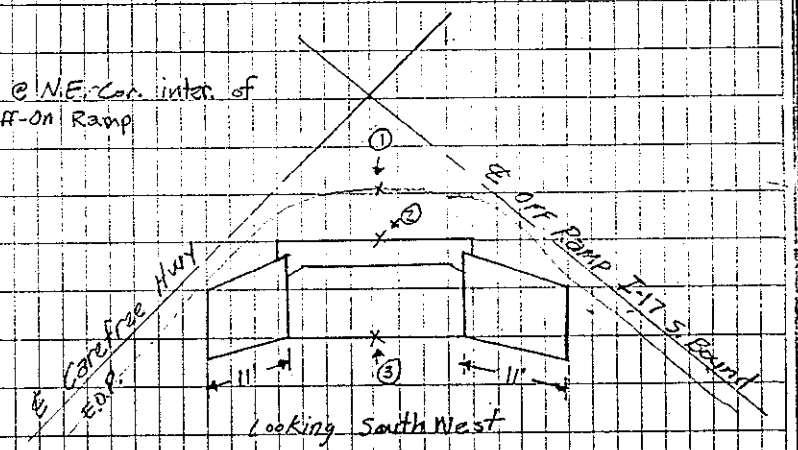
Feb. 26, 1992 BK97 63

71° Clear

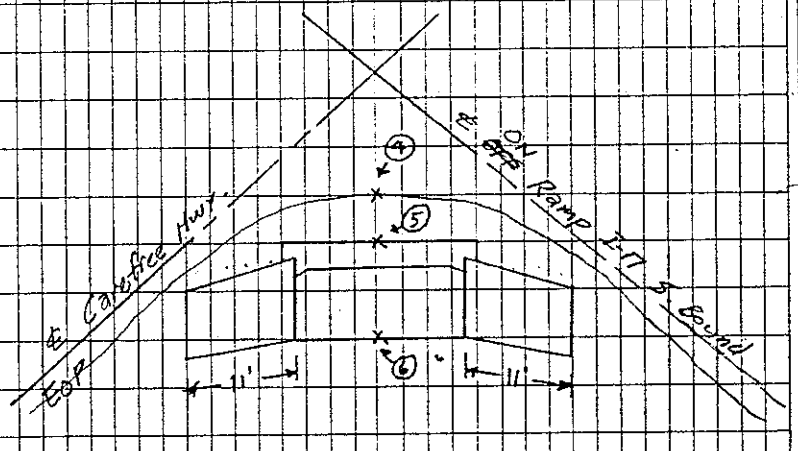
M. Tholl

M. Cordova

Sta	+	Hi	−	Elev.	Desc.
①				100.00	E.O.P. @ P.O.C. @ N.E. Cor. inter. of Carefree Hwy. & off-on Ramp
	3.49				
②			4.10		Fnd ADOT CAP @ Top Hwy E=1669.02 Sta. 11+25
③			8.86		
④			4.51		
⑤			4.59		
⑥			9.39		



Looking South West



Looking North East

Sizes = 1 8'W x 3'H x 80' L

PROFILE LINE @ SNODGRASS TANK @ TOP OF LEVEE

Pg. 1 of 2

Sta.	+	Hi	−	Elev.
BM				1498.788
	6.14			
T.P.#1			6.50	
	7.46			
-0+40 ±			0.00	
-0+13 ±			3.50	
-0+10 ±			7.90	
0+00 ±			8.15	
0+20 ±			4.05	
1+00 ±			4.50	
2+00 ±			4.60	
T.P.#2			4.89	
	3.73			
2+50 ±			3.80	
3+00 ±			4.20	
4+00 ±			4.40	
5+00 ±			3.70	
T.P.#3			3.30	
	2.53			
6+00 ±			3.95	

Febuary 28, 1992 BK 97

50° clear

M. Thall

T. M. Cordova

Description:

B.C. in rock B.M. "SNOD". Panel pnt. #D024 South of Snodgrass tank

Rock

Gnd. @ 40' S. of 0+00 (±) Dirt Rd. @ S.W. Cor Snodgrass Tank)

Gnd @ 13' S. " " (" " " " " " " ")

Gnd. @ 10' S. " " (" " " " " " " ")

Gnd @ ± Dirt rd. @ S.W. Cor of Snodgrass Cor.

Gnd @ TSL @ Top of levee

Gnd @ Top of levee

Gnd @ Top of levee P.C. ±

Rock

Gnd @ Top of levee P.T. ±

Gnd @ Top of levee

Gnd @ Top of levee

Gnd @ Top of levee

Rock

Gnd @ Top of levee (Note: N.E Cor of levee @ 6+70 non Accessable)

PROFILE LINE @ TOP OF LEVEE

0+00 = N.E. Cor Snodgrass Tank

sta's increase North

Pg. 2 of 2

Feb 28, 1992 Bk 97

62° Clear Crew same

sta.	+	Hi	−	Elev.	
BM				1498.788	B.C. BM "SNOD"
	1.34				
T.P. #1			11.10		Rock
	4.65				
0+15 ±			7.60		Gnd @ Toe of slope
0+60 ±			8.60		Gnd @ Toe of slope
T.P. #2			5.72		Rock
	16.58				
1+50 ±			4.40		Gnd @ Top of levee
2+00 ±			4.30		Gnd @ Top of levee
T.P. #3			16.58		Rock
	4.91				
T.P. #4			4.70		Rock
	17.30				
4+00 ±			4.90		Gnd @ Top of levee
5+00 ±			5.00		Gnd @ Top of levee
T.P. #5			17.30		
	5.07				
T.P. #6			2.60		Rock
	14.90				
6+00 ±			4.10		Gnd @ Top of levee
7+00 ±			4.55		Gnd @ Top of levee

VERIFY TOPO. by X-SECTION OF STREAM #5

Pg. 1 of

sta.	+	Hi	−	Elev.
BM				1800.571
	4.96	1805.53		
T.P.# 1			8.22	1797.31
	0.47	1797.78		
T.P.#2			11.06	1786.72
	1.34	1788.06		
T.P.#3			10.07	1777.99
	14.05	1792.04		
①			7.30	1784.74
②			12.15	1779.84
③			20.20	1771.84
④			23.00	1769.04
⑤			20.70	1771.34
⑥			15.30	1776.74

Feb. 23, 1992 BK 97 66

73° Clear M. Tholl

J. M. Cordova

Description

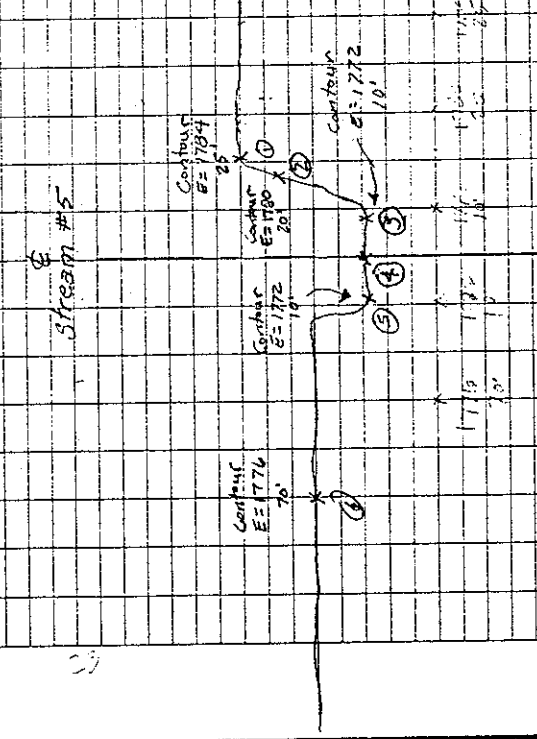
Alum. Cap ADOT "HOUND". Cap in conc. post

522 pg. 1 this bk.

Top ∡ IRON

Rock

Rock



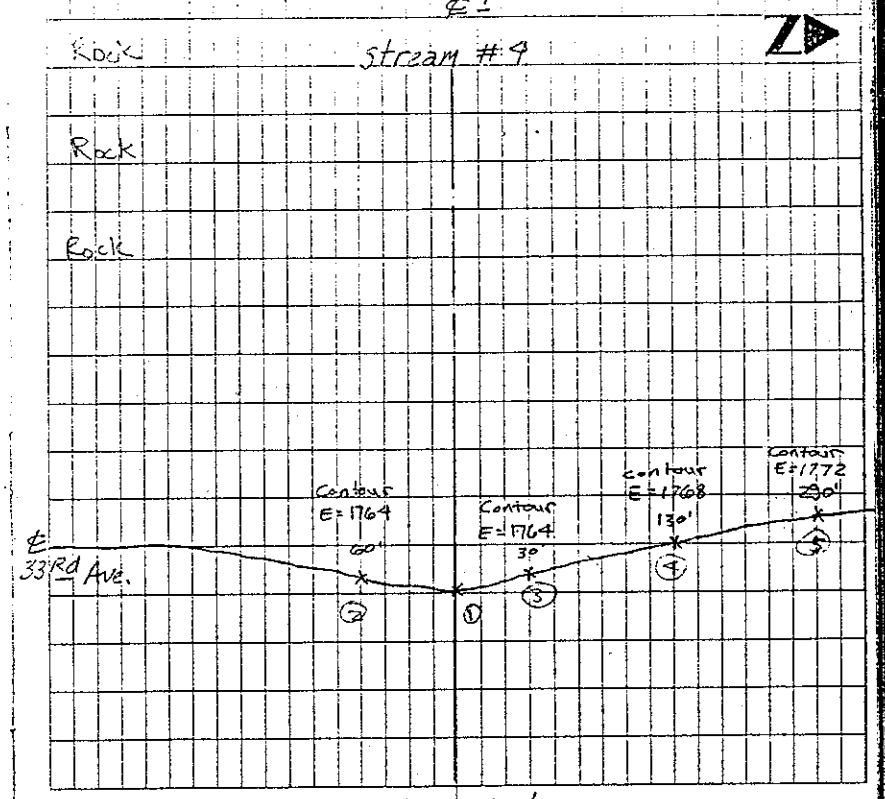
Verify Topo by X-Section Of
Stream #4
(N. of Irvine Rd on 33rd Ave.)
Pg. 1 of 1

Sta.	+	Hi	−	Elev.
BM				1789.003
	1.13	1790.13		
T.P. #1			7.51	1782.62
	1.72	1784.34		
T.P. #2			11.72	1772.62
	2.04	1774.66		
T.P. #3			8.20	1766.46
	6.77	1773.23		
T.P. #4			4.53	1768.90
	4.29	1772.99		
①			9.50	1763.49
②			8.40	1764.59
③			8.90	1764.09
④			4.40	1768.59
⑤			1.10	1771.89

March 4, 1992 BK 87 67

49° Cloudy / Rain T. M. Cordova
M. Tholl

Description:
3.6. 1.50± above N. end. (1/4 cor Sec. 27 | Sec 34)
Panel pat #892 See pg. 37



Looking West

VERIFY TOPO BY X-SECTION OF
DEADMAN'S WASH @ BEND
(500'± W. of inter. of 33rd Ave & Desert Hills Rd)
Pg. 1 of

Sta.	+	Hi	−	Elev.
BM				1751.723
	5.97	1757.69		
T.P. #1			3.83	1753.86
	6.65	1760.51		
T.P. # 2			4.49	1756.02
	9.81	1765.83		
T.P. # 3			1.91	1763.92
	14.66	1778.58		
T.P. #4			5.56	1773.02
	9.46	1782.48		
T.P. #5			3.18	1779.30
	6.67	1785.97		
T.P. #6			3.12	1782.85
	0.28	1783.13		
1			21.50	1761.63
2			19.20	1763.93
3			18.60	1764.53
4			14.90	1768.23
5			11.30	1771.83
6			7.40	1775.73
7			3.40	1779.73

March 4, 1992 Bk 97

51° Cloudy M. Thrall
π M. Cordova

Description:
Panel pnt. #801-A B.C. 150±' above and. (Sec. cor of 522 | 523 / 527 | 526). See page 19.

Rock

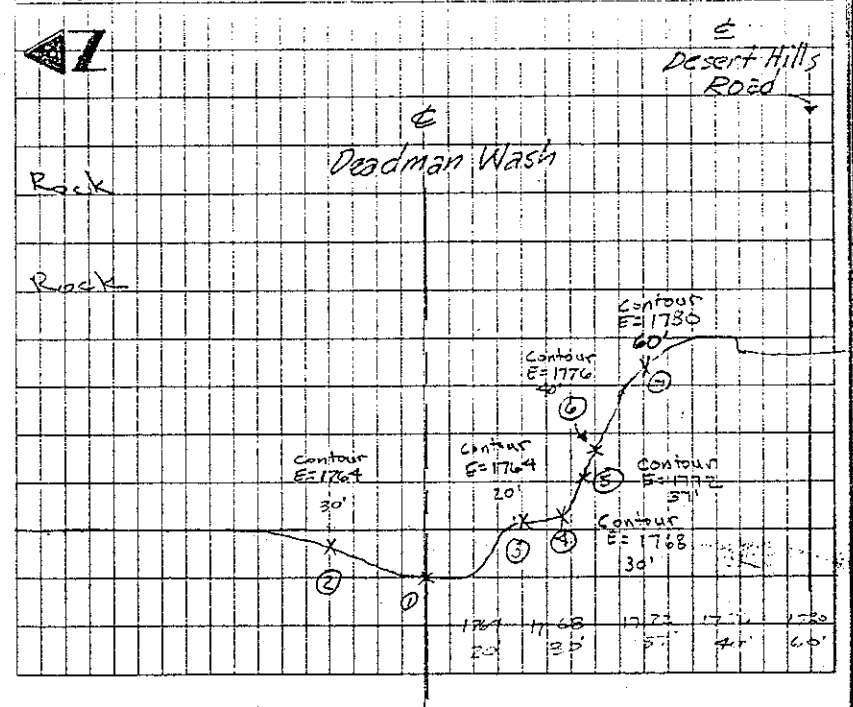
Rock

Rock

47

Rock

Rock



Good Morning Work

Farm's

LIETZ

SINCE 1882

ECONOMY FIELD BOOK

No. 8152-05

1

91019

Levels Run using
a Pentax A2-M2
with a Parallel plate
micrometer to Read
to the 1/1000 of a ft.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
ALBERT
LARRY M.
MALDONADO
Date Issued 1-14-92
ARIZONA, U.S.A.

K. Mortensen
J. South
Oct 28 91

2

Sta	BS +	FS −		Elev	ID	Remarks
PoB				1722.720	ERM 11 D005 3/11/92 M.C.	USC&GS BC in Rock stamped "U 56 1984" Rec 1722.720
	2.128					
TP 1		5.865		1718.~~754~~ .986		Rock
	3.290					
TP 2		3.940		1718.336		Rock
	3.758					
TBM 3		6.651	Add 200'± per Tim	1715.~~444~~ .448	D016	Rebar & Panel 50'± E of Rd
	2.501					
TP 4		9.291		1708.~~455~~ .661		Rock
	4.495					
TP 5		4.066		1709.~~085~~ .086		Rock
	3.613					
TP 6		2.895		1709.805		Rock
	0.841					
TBM 7		5.817		1709.~~024~~ .024	ERM 10 none 3/18/92 M.C.	USGS BC on 3½" pipe stamped "1705" & Panel 150'± W of Dirt Rd (950'± N & 1750'± E of SW Cor Sec 27)
	5.867					
TP 8		0.893		1709.~~951~~ [illegible]		used TP6
	2.889					
TP 9		3.609		1709.~~087~~		used TP5
	3.979					
TP 10		4.400		1708.~~667~~		used TP4
	9.586					
TP 11		2.801		1715.~~453~~		used TBM 3
	6.539					
TP 12		3.657		1718.336		used TP 2

LARRY M. MALDONADO
A.A.U. ANCHORAGE

Sta	BS +	FS -		Elev		Remarks	Oct 28 91
	3.923 ~~2.960~~						
TP 13		3.272 ~~2.209~~		1718.~~449~~		Used TP1	
	5.959						
End 14		2.229		1722.720		POB	
						Error = -0.018' in 0.53 mi (1 way) 3rd order allows 0.036'	

K. Mortensen
J. South
Oct 28 91

Sta	BS+	FS−		Elev	ID	Remarks
POB				1704.830		TBM 7 p2 USGS BC stamped "1705"
	7.703					
TP 1		1.700		1710.833		Rock
	9.871					
TP 2		8.525		1712.179		Rock near Rd corner (Jncto)
	2.288 ~~1.836~~					
TP 3		7.640 ~~7.204~~		1706.823 ~~828~~		NW Cor Hood wall
	2.258 ~~1.420~~					
TP 4		9.787 ~~8.752~~		1699.295 ~~297~~		Rock
	2.593					
TP 5		8.801		1693.090 ~~091~~		Rock
	2.851					
~~ERM~~ 6		6.242		1689.700	ERM 9 D017 3/19/92 M.G.	MCHD BC in Conc in paved Rd sec cor 28 27 / 33 34
	6.397					
TP 7		3.009		1693.~~088~~		used TP 5
	8.663					
TP 8		2.460		1699.~~297~~		used TP 4
	9.666 ~~8.981~~					
TP 9		2.140 ~~1.467~~		1706.~~818~~		used TP 3 HW
	7.655					
TP 10		2.295		1712.178		used TP 2
	8.244					
TP 11		9.589		1710.833		used TP 1
	1.690 ~~1.593~~					
End 12		7.693 ~~7.808~~		1704.830		POB Error = 0.002' in 0.53 mi 1 way

3rd order allows 0.036'

K. Mortensen
J. South
OCT 29 '91

5

Sta	BS +	FS -		Elev.	I.D.	Remarks		
ROB				1689.700		~~FRM~~ 6 p 4 BC Sec Cor 3/16/92 M.C.	22 / 33	27 / 34
	2110							
TP 1		5,969	[illegible]	1685.842		EP		
	3218 ~~3242~~							
TP 2		6729 ~~6,968~~	3.725	1682.133		Rock		
	4342							
TP 3		6200	1.838	1680.276		EP @ wash		
	5574							
TP 4		3,855	[illegible]	1681.996		Rock		
	6632							
TP 5		4,618	[illegible]	1684.011		3/4" Rebar ½" ± up at Sec line		
	7151							
~~ERM 6~~ 3/16/92 M.C.		2458	4.633	1688.706	ERM 8 3/16/92 M.C.	GLO BC stamped "1/4 S. 28 / S. 33" along N-S Fence		
	2516							
TP 7		7211	4.593	1684.012		used TP 5		
	4619							
TP 8		6637	2.018	1681.995		used TP 4		
	3579							
TP 9		5294	1.715	1680.281		used TP 3		
	6143							
TP 10		4294	1.949	1682.132		used TP 2		
	6981							
TP 11		3270	3.711	1685.842		used TP 1		
	5845							
End 12		1.990	3.855	1689.700		ROB Error = 0.015 in ½ mi Loop		

Sta	BS+	FS-	I	Elev	ID	Remarks	
POB				1688.706		~~ERM~~ 6 P.S. GLO BC	oct 30 91 ¼ 528/533
	0.477						
TP1		6.274		1682.910		Rock	
	4.530						
TP2		2.029		1685.~~411~~ .413		Rock	
	2.614						
TP3		6.581		1681.~~445~~ .447		Rock	
	3.035						
TP4		3.405		1681.075		Rock	
	6.212						
TBM 5		4.763		1682.525	S-5 none	½" Rebar & Panel 1500'± WSW of ¼ Cor 528/533	
	4.808						
TP6		5.950		1681.~~324~~ .382		Rock	
	2.844						
TP7		6.311		1677.917		Rock	
	3.459						
TP8		6.264		1675.~~113~~ .109		Rock	
	2.539						
TP9		3.959		1673.~~694~~ .690		Rock	
	4.480						
TP10		4.646		1673.~~528~~ .524		Rock	
	4.686						
TP11		5.355		1672.~~860~~ .855		Rock	
	2.940						
TP12		6.230		1669.~~570~~ .569		Rock	

Sta.	BS+	FS-		Elev		Remarks:	Oct 30 '91
	3416						
~~ERM~~ 13 3/18/92 M.C.		3663		1669.324	ERM 7 3/18/92 M.C.	1933 GLO BC stamped "1/4"	S32 + S33 along N-S Fence
	3865						
TP 14		3623		1669.~~567~~		used TP 12	
	6310						
TP 15		3028		1672.~~849~~		used TP 11	
	5909						
TP 16		5240		1673.~~519~~		used TP 10	
	5051						
TP 17		4884		1673.~~686~~		used TP 9	
	4252						
TP 18		2834		1675.~~105~~		used TP 8	
	6612						
TP 19		3802		1677.~~946~~		used TP 7	
	6474						
TP 20		3011		1681.~~379~~		used TP 6	
	6071						
TP 21		4925		1682.~~526~~		used TP 5	
	5112						
TP 22		6563		1681.~~676~~		used TP 4	
	2961						
TP 23		2588		1681.~~449~~		used TP 3	
	6639						
TP 24		2673		1685.~~416~~		used TP 2	

Sta	BS +	FS −		Elev	
	2673				
TP 25		5178		1682.944	used TP 1
	6828				
End 26		1034		1688.706	POB

Error = 0.016
in 0.7 mi
3rd order allows 0.042

Loop F

K. Mortensen
L. Chavez
Oct 31 '91

Sta	BS +	FS -		Elev	ID	Remarks
POB				1669.324		~~ERM~~ 13 of 7 GLO BC 1/4 Cor 532/533
	3762					3/18/92 M.C.
TP 1		6593		1666.~~442~~ .490		Rock
	3132					
TP 2		7290		1662.~~332~~ .333		Rock
	2918					
TP 3		7.600		1657.~~647~~ .646		Rock
	2.953					
TP 4		7.889		1652.~~712~~ .704		Rock GS
	0.796					
TP 5		8.294		1645.~~213~~ .208		Rock
	0.904					
TP 6		8.221		1637.~~894~~ .893		Rock
	4.283					
TP 7		9.234		1632.~~942~~ .939		Rock N of Wash
	1.663					
TP 8		4.291		1630.~~313~~ .311		Rock S of Wash
	6.557				ERM 6 D019 3/18/92 M.C.	
~~ERM~~ 9 3/18/92 M.C.		4.019		1632.849		US GLO BC Stamped: TAN R2E 532/533 S5 T5N R2E
	4.141					
TP 10		6.680		1630.~~309~~		used TP 8
	4.597					
TP 11		1.970		1632.~~935~~		used TP 7
	9.400					
TP 12		4.443		1637.~~894~~		used TP 6

Sta	BS+	FS−		Elev.	Remarks	oct 31 91
	8,100					
TP 13		2,787		1645.~~202~~	used TP 5	
	8499 ~~9135~~					
TP 14		1,004 ~~1,643~~		1652.~~596~~	used TP 4	
	7,575					
TP 15		2,628		1657.~~542~~	used TP 3	
	7,823					
TP 16		3,150		1662.~~374~~	used TP 2	
	7,175					
TP 17		3,019		1666.~~499~~	used TP 1	
	6,679					
End 18		3,842		1669.324	POB	

Error = 0.023
in ½ mi
3rd order allows 0.035

Loop 5

Oct 31 '91

Sta	BS +	FS −		Elev	ID	Remarks	
POB				1632.849		~~Elim~~ 9 pg 9 620 BC 3/18/92 M.C.	332 | 533 55
	1051						
TP 1		6974		1625.~~426~~ .922		Rock	
	3450						
TP 2		4390		1625.~~985~~ .982		Rock S. Bank Wash	
	6017						
TP 3		5775		1626.~~227~~ .225		Rock	
	2434						
TP 4		6097		1622.563		Rock	
	3297						
TP 5		6516		1619.~~344~~ .347		Rock	
	2497						
TP 6		7205		1614.635		Rock	
	3620						
TP 7		5760		1612.~~495~~ .498		Rock	
	5083						
TBM 8		6498		1611.~~079~~ .083	none	Rebar & Panel 300'± SW of E 1/4 Cor Sec 5	
	3874						
TP 9		6361		1608.~~592~~ .589		Rock	
	3126						
TP 10		6427		1605.~~290~~ .289		Rock	
	3481						
TP 11		6427		1602.344		Rock	
	3374						
TP 12		6109		1599.~~606~~ .609		Rock	

Sta.	BS+	FS-		Elev	ID	Remarks
	4.117					
~~ERM~~ 13		5.757		1597.968	Bm 16	Fd R&R Spike E. Face RR 835 marked "CAP BM"
3/15/92 M.G.	5.631					50'± W of SE Cor Sec 5 (Rec 1598.09)
TP 14		3.988		1599.~~510~~		used TP 12
	6.325					
TP 15		3.590		1602.~~345~~		used TP 11
	6.532					
TP 16		3.589		1605.~~287~~		used TP 10
	6.440					
TP 17		3.141		1608.~~586~~		used TP 9
	6.247					
TP 18		3.745		1611.~~687~~		used TBM 8
	6.128					
TP 19		4.714		1612.~~501~~		used TP 7
	5.556					
TP 20		3.420		1614.~~636~~		used TP 6
	7.133					
TP 21		2.418		1619.~~351~~		used TP 5
	6.034					
TP 22		2.821		1622.563		used TP 4
	6.117					
TP 23		2.458		1626.~~222~~		used TP 3
	5.807					
TP 24		6.049		1625.~~879~~		used TP 2

oct 31 '91

Sta.	BS+	FS-		Elev	ID
	4.122				
TP 25		3.183		1626.~~948~~	
	7.008				
End 25		1.076		1632.849	

used TP 1

POB

Error = 0.013

in 1mi

3rd order allow 0.050

K. Martinson
J. Souto

Sta	BS +	FS −		Elev	ID	Remarks
POB				1597.968		ERM 13 p 12 R+R spike in PP (SE Cor Sec 5) 3/18/92 M.C.
	3.658 ~~4.093~~		3.458 ~~3.993~~			
TP 1		6.090 ~~6.469~~		1595.538 ~~1595.535~~		Rock
	4.453		0.211			
TP 2		4.242		1595.746 ~~1595.745~~		Rock
	3.476		2.6[illegible]			
TP 3		6.126		1593.091 ~~1593.094~~		Rock E of w End Powerline
	5.346		[illegible]			
TP 4		4.504		1593.933 ~~1593.934~~		Rock W of Wash + N of EP
	1.968		[illegible]			
TP 5		5.491		1590.398 ~~1590.410~~		N. EP
	4.495		0.[illegible]			
TP 6		5.101		1589.799 ~~1589.803~~		N EP
	3.989		1.371			
TP 7		5.360		1588.429 ~~1588.431~~		N EP by Tree (near ¼ cor) (see Btm P. 15 for tie)
	2.695		3.1[illegible]			
TP 8		5.893		1585.232		N. EP
	5.036		0.4[illegible]			
TP 9		5.484		1584.782 ~~1584.783~~		N EP
	5.403		1.259			
TP 10		4.144		1586.045 ~~1586.041~~		N EP
	5.193		0.509			
~~ERM~~ 11 3/18/92 M.C.		4.384		1586.849	ERM 4 GATE 3/18/92 M.C.	ADOD Ptm BC on Conc Post stamped "GATE" @ MP 28 3½' ± N of S R/W Fence of Core Free Hwy + 130' ± W of Gate (Rec 1586.98)
	4.300		0.797			
TP 12		5.097		1586.050		Used TP 10

Sta.	BS +	FS −		Elev	TP	Remarks	Nov. 4 '91
	4011		1.269				
TP 13		5,280		1584.~~730~~		used TP 9	
	5614		0.434				
TP 14		5160		1585.~~233~~		used TP 8	
	5874		3.1[illegible]				
TP 15		2679		1588.~~427~~		used TP 7	
	5446		1.349				
TP 16		4077		1589.~~795~~		used TP 6	
	5013		0.661				
TP 17		4412		1590.~~395~~		used TP 5	
	5517		3.587				
TP 18		1980		1593.~~931~~		used TP 4	
	4643		0.342				
TP 19		5485		1593.~~889~~		used TP 3	
	6522		2.661				
TP 20		3861		1595.~~747~~		used TP 2	
	4075		0.195				
TP 21		4280		1595.~~541~~		used TP 1	
	6555		2.428				
End 22		4127		1597.968		POB Error = 0.025 in 0.8 mi 3rd. order allows 0.045	
POB	4351			1588.429		TP 7 p 74 (EP) (There is an orange 1" PVC Gas marker 3'± North)	
TBM A	4974	4866		1587.915	BM 17	3/4" Rebar under Fence S R/W Carefree Hwy (Rec 1588.05) ½ mi. W of POB p14.	
End 2		4460		1588.429		POB	

K. Mortensen
J. South
Nov 4 91

6

Sta	BS+	FS-		Elev	ID	Remarks
POB				1586.849		~~From~~ 11, p 14 ADOT Pt m BC "Gate" @ MP 28 Corefree Hwy
	2.790					
TP 1		6.480		1583.~~[illegible]~~ .458		Rock
	4.790					
TP 2		5.640		1582.~~308~~ .301		Rock
	2.902					
TP 3		7.501		1577.~~709~~ .704		Rock
	2.136					
TP 4		5.969		1573.876		Rock W. of Trail
	4.443					
TBM 5		5.726		1572.~~573~~ .597	none	Rebar & Panel 1000'± SW of N.E. Cor Sec 7
	4.754		0.499			
TP 6		5.162		1572.~~184~~ .188		Rock W. of Trail
	3.754					
TP 7		7.499		1568.~~439~~ .448		Rock N. Edge Bulge in Trail
	4.305		2.054			
TP 8		6.359		1566.~~385~~ .394		Rock S. Edge Bulge in Trail
	3.757		3.076			
TP 9		6.833		1563.~~308~~ .318		Rock
	3.035		4.935			
TP 10		8.020		1558.~~323~~ .333		Rock 10'± W of Jeep Trail painted Red & marked w. 4' Lath
	2.754		2.330			
TP 11		5.084		1555.~~993~~ .997		Rock
	2.360		5.140			
TP 12		7.500		1550.852		Rock

Nov. 4 '91
Nov 5 '91 @ TP21

Sta	BS+	FS-		Elev	ID	Remarks
	5245		[illegible]			
TP 13		6867		1549.~~230~~ .228		Rock
	2,772		[illegible]			
TP 14		6,736		1545.~~256~~ .269		Rock
	3722		[illegible]			
TBM 15		7,439		1541.549	D021	½" Rebar & Panel 40'± NE of Jeep Trail Int 1000'± NE of S. ¼ cor Sec 7
	7.520		[illegible]			
TP 16		3,796		1545.~~272~~		used TP 14
	7141		[illegible]			
TP 17		3,188		1549.~~225~~		used TP 13
	6,796		[illegible]			
TP 18		5168		1550.~~853~~		used TP 12
	7,434		5.150			
TP 19		2284		1556.~~202~~		used TP 11
	5.326 ~~5015~~		2.350 ~~2.353~~			
TP 20		2,986 ~~2662~~		1558.~~342~~		used TP 10
	8012		4.986			
TP 21		3,026		1563.~~328~~		used TP 9
	7,099		3.073			
TP 22		4023		1566.~~457~~		used TP 8
	6233		2.054			
TP 23		4,179		1568.~~457~~		used TP 7
	7,773		3.735			
TP 24		4,038		1572.~~192~~		used TP 6

K. Mortjensen
J. South
Nov 5 '91

Sta	BS+	FS−		Elev	Remarks
	5.406		0.409		
TP 25		4.997		1572.~~601~~	used TP 5
	5.890		1.277		
TP 26		4.613		1573.~~877~~	used TP4
	5.855		3.821		
TP 27		2.034		1577.~~698~~	used TP 3
	7.804		4.595		
TP 28		3.209		1582.~~293~~	used TP2
	5.857		0.864		
TP 29		4.993		1583.~~156~~	used TP1
	6.273		3.693		
End 30		2.580		1586.849	POB

Error 0.009 in 1.1 mi
3rd order allows 0.052

K Mortensen
J. South
Nov 5 '91

Sta.	BS +	FS −		Elev	Remarks
POB				1541.549	TBM 15 p17 Rebar & Panel 40'± NE of Jeep Trail Int
	3.848				
TP1		6.534		1538.~~564~~ .861	Hub
	4.262				
TP2		5.939		1537.~~187~~ .190	Hub
	4.228				
TP3		7.090		1534.~~220~~ .330	Hub
	3.483				
TP4		6.795		1531.~~[illegible]~~ .020	Hub near Panel (See Btm p.20 TBM 8)
	4.483				
TP5		5.139		1530.~~357~~ .362	Hub
	2.942				
TP6		6.043		1527.~~258~~ .260	Rock
	4.005				
TP7		7.820		1523.~~444~~ .443	Rock w/ Tree
	3.708				
TP8		6.506		1520.~~846~~ .650	Hub E of Pond
	4.127				
TP9		7.441		1517.~~373~~ .332	Hub W of Pond
	4.180				
TBM 10		4.320		1517.194	Nail SE Cor of South Fence Post of Gate 500'± SW of
	4.272				Maricopa Tank near NE Cor Sec 13
TP11		4.135		1517.~~331~~	used TP9
	7.414				
TP12		4.091		1520.~~156~~	used TP8

Sta	BS +	FS -		Elev		Remarks	Nov 5th '91
	6,540						
TP 13		3,753		1523.442		used TP 7	
	7,818						
TP 14		3,999		1527.652		used TP 6	
	6,258						
TP 15		3,154		1530.766		used TP 5	
	4881						
TP 16		4,222		1531.521		used TP 4 near Panel (see TBM A Below)	
	6,619						
TP 17		3,311		1534.777		used TP 3	
	7,036						
TP 18		4,178		1537.773		used TP 2	
	5781						
TP 19		4,116		1532.856		used TP 1	
	6,500						
End 20		3,810		1541.549		PoB Error = 0.011 in 0.8 mi 3rd Order allows 0.045	
PoB				1531.020		TP 4 p 19 (Hub)	
	4,904						
TBM A		4317		1531.607	none	Rebar ℄ Panel 150'± N. of Jeep Trail & 1000'± WSW	
	4,474					of N. ¼ Cor Sec 18	
End B		5,011		1531.020		PoB Error = 0.000	

K. Mortensen
J. South
Nov 6 91

21

Sta.	BS+	FS-		Elev	ID	Remarks
P013				1517.194		TBM 10 p 12 Nail in S Gate post
	2,320					
TP 1		5.596		1513.917		Rock
	4,901					
TBM 2		6.706		1512.112	none	Rebar & Panel 1000'± SW of Maricopa Tank in the NE ¼ Sec 13
	5976					
TP 3		5.866		1512.~~221~~ .218		Rock
	3585					
TP 4		6.386		1509.~~420~~ .418		Rock
	2825					
TP 5		7.230		1505.~~014~~ .011		Rock @ Beg S Curves
	1838					
TP 6		7.109		1499.~~743~~ .740		Rock
	4282					
TP 7		7.895		1496.~~129~~ .128		Hub
	3892					
TP 8		5.846		1494.~~174~~ .173		Rock @ N. Side Trees
	3,407					
TP 9		4.264		1493.~~317~~ .319		Hub
	2876					
TP 10		4.231		1491.~~961~~ .963		Hub in Tree Clearing
	3994					
TP 11		2.635		1493.~~320~~ .318		Hub
	5,871					
TP 12		0.659		1498.531	ERM 1 D024 SNOD 3/18/92 M.C.	BC in Granit Rock stamped "SNOD 1991" (Rec 1498.788) 300'± SE of Snodgrass Tank in the W. ½ sec 13

Nov 6 '91

Sta	BS+	FS-		Elev	Remarks
	0.583				
TP 13		5.798		1493.~~[illegible]~~	used TP 11
	2.617				
TP 14		3.967		1491.~~[illegible]~~	used TP 10
	4.273				
TP 15		2.915		1493.~~[illegible]~~	used TP 9
	4.184				
TP 16		3.335		1494.~~[illegible]~~	used TP 8
	5.840				
TP 17		3.883		1496.~~[illegible]~~	used TP 7
	7.812				
TP 18		4.202		1499.~~[illegible]~~	used TP 6
	6.365				
TP 19		1.094		1505.~~[illegible]~~	used TP 5
	7.451				
TP 20		3.042		1509.~~[illegible]~~	used TP 4
	6.530				
TP 21		3.731		1512.~~[illegible]~~	used TP 3
	5.969				
TP 22		6.070		1512.112	used TP 2
	6.976				
TP 23		5.172		1513.~~[illegible]~~	used TP 1
	5.699				
End 24		2.420		1517.194	POB

Error = 0.014 in 0.8 mi

3rd order allows 0.045

K Mortensen
J. South
Nov 15 '91

Sta	BS+	FS-		Elev	ID	Remarks
POB				1722.720	0005	USC&GS BC in Rock stamped "USS 1984"
	4082					Elev 1722.72
TP 1		3440		1723.~~313~~ 364		Rock
	5800					
TP 2		3818		1725.~~746~~ 347		Rock S. of road
	1633					
TP 3		7520		1719.460		Rock NW of Bridge
	6919					
TP 4		3159		1723.~~221~~ .219		Rock E of Bridge
	10191					
TP 5		2339		1731.~~074~~ .073		Rock on Trail
	8661					
TP 6		4151		1735.585		Rock E of Trail
	5325					
TP 7		2455		1738.~~456~~ .464		Rock
	8120					
TP 8		4389		1742.~~166~~ .197		Rock NW side wash
	3666					
TP 9		2736		1743.~~119~~ .127		Rock SE sidewash
	8512					
TP 10		3598		1748.~~031~~ .041		Rock
	4881					
TP 11		0539		1752.~~377~~ .381		Rock
	4825					
ERM 12		5303		1751.901	ERM 12 3/18/92 M.C.	VS G&G BC WC stamped: (with Panel)

T6N R2E
S22 | S23
S27 | S26
WC

Sta.	BS+	FS-		Elev	I.D.	Remarks
	5.311					
TP 13		4.828		1752.~~365~~		used TP 11
	0.577					
TP 14		4.914		1748.~~649~~		used TP 10
	3.555					
TP 15		8.470		1745.~~125~~		used TP 9
	2.740					
TP 16		3.670		1742.~~206~~		used TP 8
	4.347					
TP 17		8.081		1738.~~473~~		used TP 7
	4.433					
TP 18		7.322		1735.585		used TP 6
	4.404					
TP 19		8.918		1731.~~072~~		used TP 5
	2.307					
TP 20		10.163		1723.~~247~~		used TP 4
	3.121					
TP 21		6.878		1719.~~461~~		used TP 3
	7.901					
TP 22		2.014		1725.~~349~~		used TP 2
	3.927					
TP 23		5.911		1723.~~366~~		used TP 1
	3.562					
End 24		4.209		1722.720		POB

Error = 0.025 in 0.77 mi

3rd order allows 0.044

K. Morrison
L. Chavez
Nov 1991

Sta	BS +	FS −		Elev	I.D.	Remarks
POB				1751.901		FRM 12 n 23 GLO BC WC
	5359					
TP 1		3246		1754.014		Rock
	6,116					
TP 2		3,886		1756.~~247~~ 247		Rock
	9002					
TP 3		1122		1764.~~124~~ 126		Rock
	12,227					
TP 4		3130		1773.~~224~~ .224		Rock
	8,838					
TP 5		2971		1779.~~088~~ .087		Rock @ Rd Corner
	5,504					
TP 6		3639		1780.~~953~~ .952		Rock in Rd
	7,459					
TP 7		2640		1785.~~772~~ .770		Rock S
	6,802					
TP 8		2817		1789.~~757~~ .758		Rock N.
	5680					
TBM 9		4137		1791.301		Conc Footing of NE Cor. Chain Link Fence R/W SW Cor of 31 Ave + Desert Hills Dr (80'± S 4 25'± W of ¼ Cor S 23 / S 26)
	4063					
TP 10		5605		1789.~~757~~		used TP 8
	2849					
TP 11		6840		1785.~~768~~		used TP 7
	2,760					
TP 12		7577		1780.~~951~~		used TP 6

Sta	BS +	FS -		Elev	ID	Remarks	Nov 18 '91
	3.635						
TP 13		5.500		1779.~~274~~		used TP 5	
	3.110						
TP 14		8.969		1773.~~227~~		used TP 4	
	3.404						
TP 15		12.502		1764.~~129~~		used TP 3	
	1.176						
TP 16		9.054		1756.~~251~~		used TP 2	
	3.914						
TP 17		6.150		1754.~~015~~		used TP 1	
	3.216						
End 18		5.330		1751.901		POB	
						Error = 0.001	in 0.5 mi
							3rd order Allows 0.035

K Mortensen
L. Chavez
Nov 18 '91

21

Sta.	BS +	FS-		Elev		Remarks
POB				1791.301		TBM 9 p25 Conc. Footing Fence Corner
	4855					
TP 1		8.882		1787.274		Rock
	2051					
TP 2		10.864		1778.~~461~~ .462		Rock
	7360					
TP 3		0.120		1785.~~701~~ .702		Rock
	7781					
TP 4		3.480		1790.~~999~~ .001		Rock in [illegible]
	5.364					
TP 5		4.629		1790.737		Stump
	9.821					
TP 6		4.594		1795.~~963~~ .966		Rock
	10.186					
TP 7		0.899		1805.250		Rock
	7.786					
TP 8		1.607		1811.~~429~~ .428		Rock
	7859					
TP 9		1.651		1817.637		Rock by Rd
	8517					
~~EXM~~ 10 3/18/92 M.C.	•	1.595		1824.559	ERM 14 3/18/92 M.C.	US GLO BC stamped 1/4 S23 + S24 & Panel D012
	1.493					
TP 11		8.416		1817.~~436~~		Used TP 9
	1.586					
TP 12		7.795		1811.~~427~~		Used TP 8

Sta	BS+	FS−		Elev	Remarks
	1.667				
TP 13		7.844		1805.250	used TP 7
	0.156				
TP 14		9.437		1795.~~969~~	used TP 6
	4.692				
TP 15		9.923		1790.~~738~~	used TP 5
	4.191				
TP 16		4.928		1790.~~000~~	used TP 4
	3.044				
TP 17		7.340		1785.~~704~~	used TP 3
	0.665				
TP 18		7.902		1778.~~464~~	used TP 2
	11.189				
TP 19		2.380		1787.~~273~~	used TP 1
	8.980				
End 20		4.952		1791.301	POB

Nov. 1891

Error = 0.002 in 0.71 mi

3rd order allows 0.042

K. Mortensen
L. Chavez
Nov 19 '91

Sta	BS+	FS-		Elev		Remarks
POB				1824.559		~~ERM~~ 10 p 27 GLO BC "1/4 S23 | S24" 3/13/92 H.C.
	5.135 ~~5.656~~		4.191			
TP 1		0.944 ~~1.527~~		1828.751 ~~749~~		Rock
	4.301		3.284			
TP 2		1.017		1832.038 ~~032~~		Rock
	10.213		9.110			
TP 3		1.103		1841.147 ~~142~~		Rock
	8.666		4.089			
TP 4		4.597		1845.216 ~~210~~		Rock S Bank wash
	6.225		2.126			
TP 5		4.099		1847.342 ~~335~~		Rock @ FL wash
	12.220		11.001			
TP 6		1.219		1858.338 ~~335~~		Rock N Bank wash
	8.343		5.514			
TP 7		2.829		1863.850 ~~849~~		Rock w side off shoot FL
	11.747		11.511			
TP 8		0.236		1875.361 ~~359~~		Rock
	12.380		11.153			
TP 9		1.227		1886.511		Rock
	8.609		3.823			
TP 10		4.986		1890.132 ~~133~~		Rock
	10.948		9.528			
~~ERM~~ 11 3/18/92 H.C.		1.420		1899.660	ERM 15 3/18/92 H.C.	vs GLO BC stamped 1/4 S 13 / S 24 (no panel)
	1.453		9.529			
TP 12		10.982		1890.131		used TP 10

Sta	BS +	FS -		Elev	Remarks
	5.076		3.620		
TP 13		8.696		1886.510	used TP 9
	1.135		11.145		
TP 14		12.280		1875.364	used TP 8
	0.355		11.512		
TP 15		11.867		1863.851	used TP 7
	2.540		5.509		
TP 16		8.049		1858.342	used TP 6
	1.289		10.991		
TP 17		12.280		1847.350	used TP 5
	4.056		2.126		
TP 18		6.182		1845.323	used TP 4
	4.480		4.070		
TP 19		8.550		1841.152	used TP 3
	0.760		9.108		
TP 20		9.868		1832.044	used TP 2
	1.818		3.289		
TP 21		5.107		1828.754	used TP 1
	0.946		4.194		
End 22		5.140		1824.559	POB

Error = 0.017 in 0.72 mi

3rd order Allows 0.042

Nov 19 '91

K. Mortensen
J. Smith
Nov 20 '91

Sta	BS +	FS −		Elev		Remarks
POB				1899.660		~~ERM~~ 11 p29 GLO BC 1/4 5.13/5.34" 3/18/92 M.C.
	9.953					
TP 1		0.831		1908.~~781~~ .780		Rock
	12.956					
TP 2		0.985		1920.~~751~~ .750		Rock
	8.166					
TP 3		7.016		1921.~~950~~ .902		Rock @ 1st drop
	12.713					
TP 4		2.286		1932.~~325~~ .332		Rock @ E. Bank
	11.637					
TP 5		2.206		1941.~~755~~ .763		Rock
	12.487					
TP 6		7.730		1946.~~514~~ .516		Rock by Saguaro @ 2nd drop
	5.434					
TP 7		1.488		1950.~~456~~ .464		Rock
	12.937					
TP 8		2.339		1961.~~053~~ .055		Rock SE of small hill/Ridge
	12.980					
TP 9		0.703		1973.~~329~~ .330		Rock W of FL
	12.941					
TP 10		1.333		1984.~~936~~ .937		Rock E of FL
	13.099					
~~ERM~~ 11 3/18/92 M.C.		1.479		1996.555	ERM 16 3/18/92 M.C.	US GLO BC stamped: 1/4 5.13 1933
	11.78					
TP 12		12.793		1984.~~938~~		Used TP 10

Nov 20 '91

Sta	BS+	FS−		Elev	Remarks
	0.857				
TP 13		12.463		1973.331	used TP 9
	0.797				
TP 14		13.070		1961.257	used TP 8
	1.986				
TP 15		12.570		1950.473	used TP 7
	1.403				
TP 16		5.352		1946.522	used TP 6
	5.651				
TP 17		10.400		1941.772	used TP 5
	0.903				
TP 18		10.334		1932.340	used TP 4
	2.073				
TP 19		12.507		1921.904	used TP 3
	6.921				
TP 20		8.075		1920.749	used TP 2
	0.156				
TP 21		12.125		1908.779	used TP 1
	0.889				
End 22		10.007		1899.660	POB

Error = 0.025 in 0.71 mi

3rd order Allows 0.042

Sta	BS+	FS-		Elev	
POB				1791.301	
	4.811				
ERM ~~A~~ 13		4.556		1791.558	
3/18/92 H.C.	4.414				
End		4.672		1791.301	
POB				1611.083	
	4.887				
ERM ~~B~~ 5		4.512		1611.458	
3/18/92 H.C.	4.442				
End		4.817		1611.083	

1-8-92

TBM 9 p 25 Conc Footing Cor Fence R/W

BC in 6" diam Conc Post Stamped "1791.56"
1 ft NE of Fence Cor SW R/W of 31 Ave + Desert Hills
POB Error = 0.003

TBM 8 p 11 (Rebar & Panel)

BC in 6" diam Conc Post stamped "1611.46"
½ ft N of TBM 8 p 11 (½' N & Panel)
POB Error = 0.000

Sta	BS+	FS-		Elev
POB				1541.549
	4599 ~~4702~~			
ERM ~~6~~ 3		4.216 ~~4322~~		1541.933
3/18/92 M.C.	4205			
End		4.590		1541.549
POB				1512.112
	4611			
ERM ~~8~~ 2		4225		1512.499
3/18/92 M.C.	4157			
End		4544		1512.112

1-8-92

TBM 15 p 17 Rebar ℄ panel @ Ingr Trail Int.

BC in 6" conc post stamped "1541.93"
½' N of TBM 15 p 17 (½' N. of ℄ panel D021)
POB Error = .002

TBM 2 p 21 Rebar ℄ Panel

BC in 6" conc Post stamped "1512.50"
½' N. of TBM 2 p 21 (½' N. of ℄ Panel)
POB Error = .001

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX B: Manning's n Determination Report

MANNING'S N VALUE DETERMINATION REPORT

DEADMAN WASH FLOODPLAIN DELINEATION STUDY

FOR

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FCD 90-65

Prepared by:

HOWARD NEEDLES TAMMEN & BERGENDOFF
Two Renaissance Square
40 North Central, Suite 1100
Phoenix, Arizona 85004
(602) 528-4300

February 14, 1992
Revised March 16, 1992

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Manning's N Value Determination Report

for

Deadman Wash Floodplain Delineation Study

Date: January 31, 1992

Location: Deadman Wash Watershed, Maricopa County, Arizona

Subject: Field Investigations of Floodplain Characteristics

Present: FCDMC: Russ Cruff, Tim Murphy, Afshin Ahouraiyan
HNTB: Dick Wells, Gary Sun

INTRODUCTION

A follow-up reconnaissance field trip was made to observe floodplain characteristics and drainage structures in the study reaches. In addition, the routing channel characteristics for hydrologic analysis were also investigated and discussed. This report summarizes the results of Manning's n value determination for use in backwater analyses of Deadman Wash and its two tributaries - Stream Nos. 4 and 7.

The estimation of Manning's roughness coefficient, n, for the selected study sub-reaches is included with a summary spreadsheet showing the components of the roughness coefficient. A set of photographs for channel and floodplain conditions with a brief description is also provided in this report. Exhibits 1 through 3 are included at the end of this report and present the estimated Manning's n values for the study streams. The comparison with the known resistance of similar sites was made to aid and verify the selected n values.

METHODOLOGY

The determination of Manning's n values in this study was estimated by use of the following materials and references:

A. Aerial Photographs - 1: 9,000 and 1:17,600 contact prints of flight used for topographic mapping.

B. Photographs taken during field reconnaissance trips.

C. Video tapes that were filmed during field reconnaissance trips.

D. References as listed below:

1. Flood Control District of Maricopa County, "Estimated Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona," Prepared by the U.S. Geological Survey, April 1991.

2. U.S. Geological Survey, "Roughness Characteristics of Natural Channels," Water-Supply paper 1849, Third Printing, 1987.

3. U.S. Geological Survey, "Roughness Coefficients for Stream Channels in Arizona, " Open-File Report, 1973.

4. Federal Highway Administration, "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains," Report No. FHWA-TS-84-204, April 1984.

5. V.T. Chow, "Open Channel Hydraulics," McGraw-Hill, 1959.

The procedure outlined in Reference 1 was used to determine the roughness coefficients for channels and floodplains in this study. The total n value was determined by assigning a base n value for the channel or floodplain and applying adjustments for various roughness factors. These roughness factors considered consist of degree of irregularity, effects of obstruction, vegetation, and variations in channel cross section, and degree of meandering (References 4 & 5). The adjustments were made to the base value through addition or multiplying by a factor to arrive at a total value. Photographs of channels and floodplains of known resistance were used to aid in determining of roughness coefficients. These photographs were used for comparison with field situations to help verify selected n values. The estimated n values were also checked against values found within the above references (References 1, 2 & 3).

The total value of Manning's n was computed by:

$$n = (n_b + n_1 + n_2 + n_3 + n_4)\, m$$

Where: n_b = a base value of n for a straight uniform channel;

n_1 = a value for the degree of surface irregularities;

n_2 = a value for the effects of obstruction;

n_3 = a value for vegetation;

n_4 = a value for variations in shape and size of the channel cross section;

and m = a multiplier to correct for meandering of the channel.

Selection of Base n Values

Base values of Manning's n were selected from Table 1 in Reference 1. In general, a base value ranging from 0.035 to 0.050 was assigned to Deadman Wash from the headwater to near Aso Tank, and from Snodgrass Tank to the New River. A base value of 0.030 was used for Deadman Wash between Aso and Snodgrass Tanks to represent coarse sand, gravel, and firm soil. Reference 1 contains the estimation of roughness coefficients for the New River area just northwest of this study area.

Adjustment Factors for Channels and Floodplains

Channel irregularities, obstructions, vegetation, varations, and meandering increase the roughness, and the value for n was adjusted accordingly. For study reaches, some weeds and low-growing brush create obstructions to the channel flow. The vegetation is fairly dense along top of banks, and overflow areas have a medium to dense cover of bushes and trees. No meander adjustment was made to the total n value for this project, because the flow will not be confined to the channel and the overbank flow is expected.

Subdivision of Cross Section

Each cross section was divided into left overflow, channel, and right overflow areas. Subdivision of channel cross sections was not needed for this study because the streams contain well-defined channels with fairly uniform roughness across the cross section.

RESULTS

The Manning's n values required for the floodplain delineation study were determined. The values estimated for the study reaches vary from 0.038 to 0.080 for the channels, and from 0.058 to 0.090 for the floodplains. The n values were estimated for 19 representive reaches with 16 photographs in this report. The results of n values for channels and overflow areas are also shown on Exhibits 1 through 3.

BGS/rjc
NREPORT.RJC

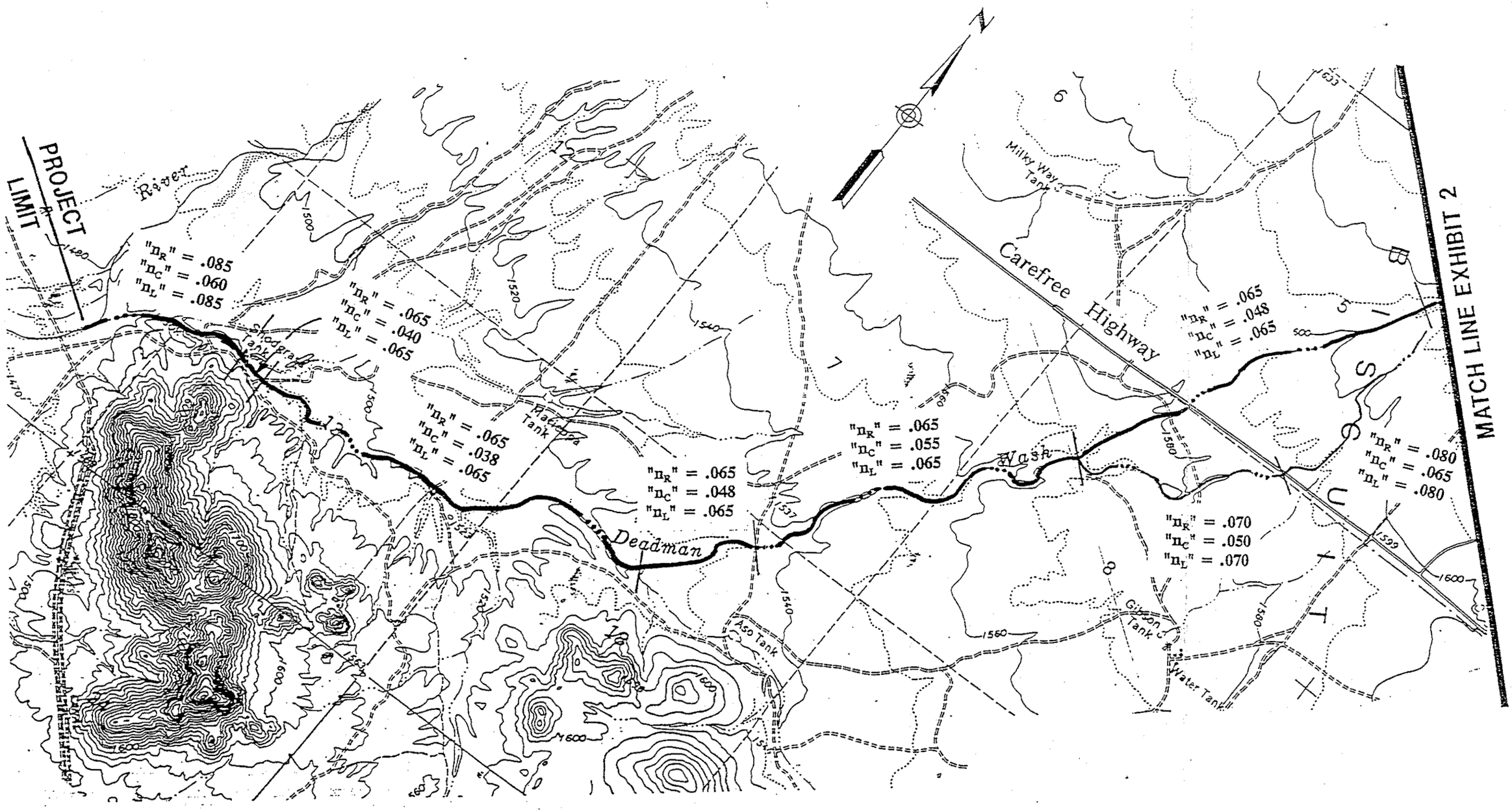

EXHIBIT 1

Manning's n Value
For
Deadman Wash Floodplain Delineation Study

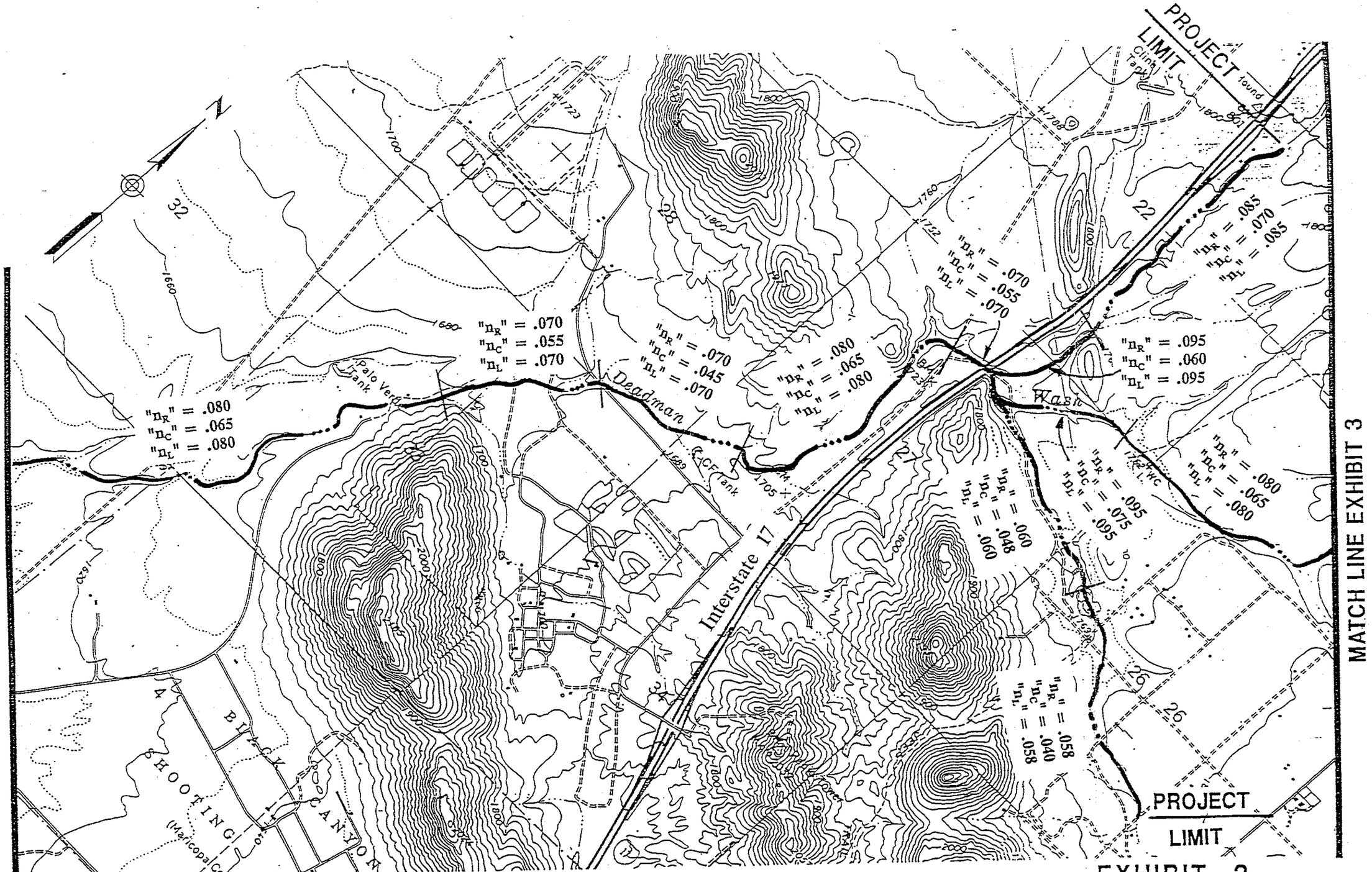

EXHIBIT 2

Manning's n Value
For
Deadman Wash Floodplain Delineation Study

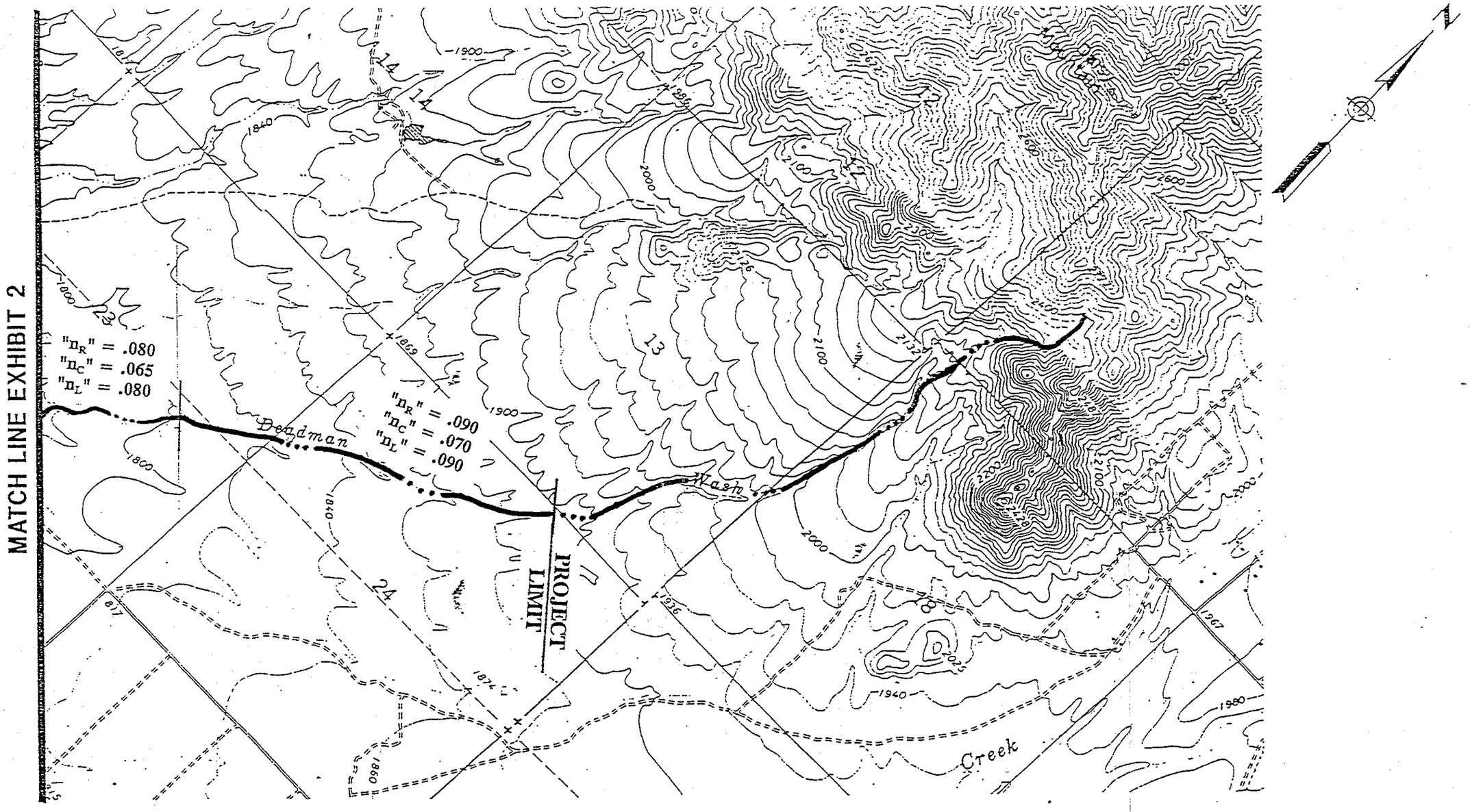

EXHIBIT 3

Manning's n Value
For
Deadman Wash Floodplain Delineation Study

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Adjacent to Snodgrass Tank (R10W – 10X)
Photo No : 1
Section Description : Bed material is cobbles and boulders.
Channel and floodplain have a dense growth of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Cobbles	nb	.030 – .050	0.035	0.035	0.035
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025		0.020	
	Large		.025 – .050	0.035		0.035
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.085	0.060	0.085

NVALUE1.WK3

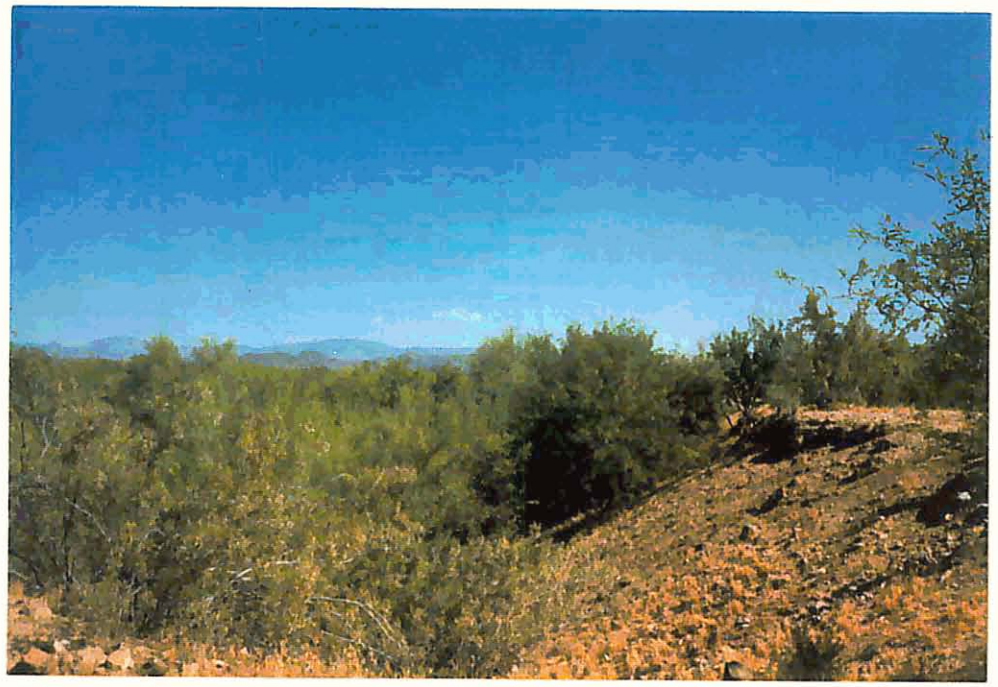

PHOTO NO. 1
Deadman Wash just downstream of Snodgrass Tank. Bed material is cobbles and boulders. Bed and banks have a fairly heavy growth of trees and brush.

PHOTO NO. 2
Deadman Wash at Snodgrass Tank. Bed and banks are lined with grass and small trees.

PHOTO NO. 3
Deadman Wash between Maricopa and Aso Tanks. Bed is mostly coarse sand and gravel with trees and brush along top of banks.

PHOTO NO. 4
Deadman Wash just north of Aso Tank. Bed material is gravel and cobbles. Banks are heavily lined with overhanging trees and brush.

PHOTO NO. 5

Stream No. 12 at Carefree Highway (Looking downstream). Bed is mostly sand and silt. Banks are lined with overhanging trees and brush.

PHOTO NO. 6

Stream No. 12 at split flow location. The man-made dike dividing Deadman Wash from Stream No. 12 is stable. Bed material is coarse gravel and cobbles. Banks have thick growth of brush.

PHOTO NO. 7

Deadman Wash cross culvert (2 - 72" & 2 - 60" RCPs) with some debris at Joy Ranch Road (Looking downstream from upstream end). Bed is mostly coarse gravel at the culvert upstream, and cobbles and boulders at the downstream side. The overhanging tree is almost completely blocking off the 60" RCP on the left.

PHOTO NO. 8

Deadman Wash at the concentration point with DA-10J, approximately 1,000 ft west of I-17. A wide channel (B=80') consists of cobbles and boulders with scattered bushes and overhanging trees.

PHOTO NO. 9

Deadman Wash just downstream of I-17 bridges. Bed material is cobbles and boulders. Both banks are lined with overhanging trees. Backwater pool area resulting from downstream unpaved road crossing.

PHOTO NO. 10

Deadman Wash just upstream of I-17 bridges near the confluence with Stream No. 4 (Looking upstream). Bed is cobbles and large boulders with scattered weeds and bushes. Banks are lined with heavy growth of trees and brush.

PHOTO NO. 11
Stream No. 8 just upstream of I-17 Bridges. Bed consists of cobbles and boulders. banks are lined with brush and small trees.

PHOTO NO. 12
Deadman Wash just upstream of I-17 Bridges. Bed consists of rock and boulders. Bed and banks between I-17 bridges have a dense vegetation. Banks are irregular with bushes and small trees.

PHOTO NO. 13
Stream No. 7 East of I-17 West Rest Area (Looking upstream). Bed consists of boulders and has scattered growth of weeds and bushes. Banks are lined with trees and brush.

PHOTO NO. 14
Stream No. 4 at Irvine Road (Looking upstream). Bed consists of sand and silt with scattered cobbles. banks are irregular with grass, bushes and small trees.

PHOTO NO. 15

Deadman Wash next to Desert Hills Drive where Stream No. 1 joins the wash (Looking downstream). Bed is cobbles and boulders. Banks are lined with overhanging trees and brush.

PHOTO NO. 16

Deadman Wash in Reach 10A - 10B (Looking upstream). Bed consists of angular cobbles and boulders. Banks are irregular with trees and brush growing down to the low waterline.

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : At Snodgrass Tank
Photo No : 2
Section Description : Bed and banks are lined with grass and small trees.
Floodplain has a dense growth of trees and brush.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Firm Soil	nb	.025 – .032	0.030	0.030	0.030
	Coarse Sand		.026 – .035			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.010	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.005		0.005
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.040	0.065

NVALUE2.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Between Maricopa and Aso Tanks
Photo No : 3
Section Description : Bed material is coarse sand and coarse gravel with overhanging trees and brush along the banks. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Sand	nb	.026 – .035	0.030	0.030	0.030
	Coarse Gravel		.028			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004		0.003	
	Minor		.005 – .015	0.005		0.005
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.038	0.065

NVALUE3.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : North of Aso Tank
Photo No : 4
Section Description : Bed material is gravel and cobbles with heavily overhanging trees and brush along the banks. Floodplain has a medium to dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.030	0.040	0.030
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004		0.003	
	Minor		.005 – .015	0.005		0.005
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.048	0.065

NVALUE4.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 12
Location : At Carefree Highway
Photo No : 5
Section Description : Bed material is silt, sand and gravel with overhanging trees and brush along the banks. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Firm Soil	nb	.025 – .032	0.030	0.030	0.030
	Gravel		.028 – .035			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.050	0.070

NVALUES.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 12
Location : At Split Flow Location
Photo No : 6
Section Description : Bed material is gravel and cobbles with low–growing trees and brush. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n	Value	Left Overflow	Channel	Right Overflow
Channel Material						
	Gravel	nb	.028 – .035			
	Cobble		.030 – .050	0.040	0.040	0.040
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.010	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.080	0.065	0.080

NVALUE6.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Cross Culverts at Joy Ranch Road (Downstream Channel)
Photo No : 7
Section Description : Bed material is cobbles and boulders downstream of culverts. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.035	0.050	0.035
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.055	0.070

NVALUE7D.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Cross Culverts at Joy Ranch Road (Upstream Channel)
Photo No : 7
Section Description : Bed material is coarse gravel and cobbles upstream of culverts. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.035	0.040	0.035
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.045	0.070

NVALUE7U.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Approx. 1,000 ft west of I–17
Photo No : 8
Section Description : Bed material is cobbles and boulders with scattered weeds and bushes. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.050	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005		0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.080	0.065	0.080

NVALUE6.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Just downstream of I–17 bridges
Photo No : 9
Section Description : Bed material is cobbles and boulders with overhanging trees.
Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.050	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005	0.005	0.005	0.005
	Moderate		.006 – .010			
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010		0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.010		0.010
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.070	0.055	0.070

NVALUE9.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Just upstream of I–17 bridges
Photo No : 10
Section Description : Bed material is cobbles, boulders, and large rock with weeds and brush. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.015	0.010	0.015
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.025	0.015	0.025
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.095	0.075	0.095

NVALUE10.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 8
Location : Just upstream of I–17 bridges
Photo No : 11
Section Description : Bed material is cobbles and boulders with overhanging brush. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.015	0.005	0.015
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.025		0.025
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.095	0.060	0.095

NVALUE11.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : I–17 bridges
Photo No : 12
Section Description : Bed material is cobbles and boulders with small trees and brush.
A dense cover of trees and brush along the banks.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.015	0.015	0.015
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010			
	Medium		.010 – .025	0.025	0.015	0.025
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.095	0.080	0.095

NVALUE12.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 7
Location : East of I–17 East Rest Area
Photo No : 13
Section Description : Bed material is cobbles and boulders with weeds and overhanging brush. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material	Coarse Gravel	nb	.028			
	Cobble		.030 – .050	0.045	0.045	0.045
	Boulder		.040 – .070			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.010	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.010	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.085	0.070	0.085

NVALUE13.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 4
Location : At Irvine Road
Photo No : 14
Section Description : Bed material is silt, sand and small cobbles with overhanging brush and trees. Floodplain has grass and scattered trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Coarse Sand	nb	.026 – .035	0.035	0.035	0.035
	Cobble		.030 – .050			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004	0.003		0.003
	Minor		.005 – .015			
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010	0.010		0.010
	Medium		.010 – .025			
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.058	0.040	0.058

NVALUE14.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Next to Desert Hills Drive (R10E – 10F)
Photo No : 15
Section Description : Bed material is cobbles and boulders with weeds and overhanging brush and trees. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material						
	Cobble	nb	.030 – .050			
	Boulder		.040 – .070	0.050	0.050	0.050
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010	0.010	0.005	0.010
	Medium		.010 – .025			
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.080	0.065	0.080

NVALUE15.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : Reach 10A – 10B
Photo No : 16
Section Description : Bed material is cobbles and boulders with weeds and overhanging brush and trees. Floodplain has a dense cover of trees and brush.

Channel Conditions		Manning's n Value		Left Overflow	Channel	Right Overflow
Channel Material						
	Cobble	nb	.030 – .050			
	Boulder		.040 – .070	0.050	0.050	0.050
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.010	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.020		0.020
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.090	0.070	0.090

NVALUE16.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Deadman Wash
Location : From 2000' South of Carefree Highway to Split Flow Location
Photo No : N/A
Section Description : Bed material is firm soil, sand and gravel with weeds and brush. Floodplain has sparse brush and small trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Firm Soil	nb	.025 – .032	0.030	0.030	0.030
	Gravel		.028 – .035			
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005			
	Moderate		.006 – .010	0.010	0.008	0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004			
	Minor		.005 – .015	0.010	0.005	0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010		0.005	
	Medium		.010 – .025	0.015		0.015
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.065	0.048	0.065

NVALUE17.WK3

DETERMINATION OF MANNING'S ROUGHNESS COEFFICIENTS BY FCDMC'S METHOD

Project : Deadman Wash Floodplain Delineation Study
Stream : Stream No. 4
Location : Between I–17 and Unnamed Stock Tank
Photo No : N/A
Section Description : Bed material is gravel and cobbles with overhanging brush. Floodplain has grass and scattered trees.

Channel Conditions		Manning's	n Value	Left Overflow	Channel	Right Overflow
Channel Material	Gravel	nb	.028 – .035	0.030		0.030
	Cobble		.030 – .050		0.040	
Degree of Irregularity	Smooth	n1	.000			
	Minor		.001 – .005		0.005	
	Moderate		.006 – .010	0.010		0.010
	Severe		.011 – .020			
Effects of Obstruction	Negligible	n2	.000 – .004		0.003	
	Minor		.005 – .015	0.010		0.010
	Appreciable		.020 – .030			
	Severe		.040 – .060			
Vegetation	Small	n3	.002 – .010	0.010		0.010
	Medium		.010 – .025			
	Large		.025 – .050			
	Very Large		.050 – .100			
Variations in Channel Cross Section	Gradual	n4	.000			
	Alternating		.001 – .005			
	Alternating		.010 – .015			
Degree of Meandering	Minor	m	1.00			
	Appreciable		1.15			
	Severe		1.30			
n = (nb + n1 + n2 + n3 + n4) m				0.060	0.048	0.060

NVALUE18.WK3

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX C: SGRAPH.WK1 Outputs of Sub-Basin Loss Parameters

LOSS PARAMETERS FOR SUBBASIN: DA-1A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	167.400	45.37	0.01	-0.907	0.00	0.00
110	114.700	31.08	0.13	-0.275	0.00	0.00
44	71.500	19.38	0.03	-0.295	0.00	0.00
13	12.000	3.25	0.01	-0.065	0.00	0.00
68	2.400	0.65	0.63	-0.001	0.00	0.00
98	1.000	0.27	0.37	-0.001	0.00	0.00

TOTAL = 369.000 ACRES XKSAT = 0.03 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF

= 10.1

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
369.00	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

369.000 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.035

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-1A	0.577	0.350	0.250	10.10	0.035	0.00	69.5

LOSS PARAMETERS FOR SUBBASIN: DA-2A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
109	217.100	88.98	0.35	-0.406	35.00	31.14
44	26.900	11.02	0.03	-0.168	0.00	0.00

TOTAL = 244.000 ACRES XKSAT = 0.27 %ROCK= 31.14

DTHETA		PSIF	
Dry =	0.35	=	3.61
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
0.00	DESERT	0.00	DRY	25.00	0.00	0.00	0.35	0.000
24.40	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
219.60	MOUNTAIN	90.00	DRY	50.00	0.00	0.00	0.25	0.225

244.000 =TOTAL AREA OK AVERAGE = 49.00 TOTAL = 0.00 AVG. = 0.240
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.386

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 31.14
% EFFECTIVE IMP. = 31.14

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-2A	0.381	0.240	0.350	3.61	0.386	31.14	30.4

LOSS PARAMETERS FOR SUBBASIN: DA-2B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	74.800	82.83	0.35	-0.378	35.00	28.99
44	15.500	17.17	0.03	-0.261	0.00	0.00

TOTAL = 90.300 ACRES XKSAT = 0.23 %ROCK= 28.99

DTHETA		PSIF	
Dry =	0.36	=	4.12
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
0.00	DESERT	0.00	DRY	25.00	0.00	0.00	0.35	0.000
13.55	HILLSLOPES	15.00	DRY	40.00	0.00	0.00	0.15	0.023
76.76	MOUNTAIN	85.00	DRY	50.00	0.00	0.00	0.25	0.213

90.300 =TOTAL AREA OK AVERAGE = 48.50 TOTAL = 0.00 AVG. = 0.235
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.360

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.327

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 28.99

% EFFECTIVE IMP. = 28.99

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-2B	0.141	0.235	0.360	4.12	0.327	28.99	19

LOSS PARAMETERS FOR SUBBASIN: DA-2C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
98	173.500	41.42	0.37	-0.179	0.00	0.00
12	157.700	37.65	0.01	-0.753	0.00	0.00
44	51.100	12.20	0.03	-0.186	0.00	0.00
110	25.100	5.99	0.13	-0.053	0.00	0.00
109	11.500	2.75	0.35	-0.013	35.00	0.96

TOTAL = 418.900 ACRES XKSAT = 0.07 %ROCK= 0.96

DTHETA

Dry = 0.28
Normal = 0.15
Wet = 0

PSIF

= 8.28

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
377.01	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
20.95	HILLSLOPES	5.00	DRY	40.00	0.00	0.00	0.15	0.008
20.95	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013

418.900 =TOTAL AREA OK AVERAGE = 27.00 TOTAL = 0.00 AVG. = 0.335
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.280

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.083

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.96

% EFFECTIVE IMP. = 0.96

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-2C	0.655	0.335	0.280	8.28	0.083	0.96	58.3

LOSS PARAMETERS FOR SUBBASIN: DA-3A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	62.100	83.81	0.35	-0.382	35.00	29.33
44	12.000	16.19	0.03	-0.247	0.00	0.00
TOTAL =	74.100 ACRES		XKSAT =	0.24	%ROCK=	29.33

DTHETA

Dry = 0.36
Normal = 0.25
Wet = 0

PSIF

= 3.81

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
0.00	DESERT	0.00	DRY	25.00	0.00	0.00	0.35	0.000
29.64	HILLSLOPES	40.00	DRY	40.00	0.00	0.00	0.15	0.060
44.46	MOUNTAIN	60.00	DRY	50.00	0.00	0.00	0.25	0.150
74.100	=TOTAL AREA OK		AVERAGE =	46.00	TOTAL =	0.00	AVG. =	0.210
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.360

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.335

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 29.33

% EFFECTIVE IMP. = 29.33

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-3A	0.116	0.210	0.360	3.81	0.335	29.33	15.2

LOSS PARAMETERS FOR SUBBASIN: DA-3B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
44	66.000	44.03	0.03	-0.671	0.00	0.00
12	50.500	33.69	0.01	-0.674	0.00	0.00
109	25.700	17.14	0.35	-0.078	35.00	6.00
110	7.600	5.07	0.13	-0.045	0.00	0.00
98	0.100	0.07	0.37	-0.000	0.00	0.00

TOTAL = 149.900 ACRES XKSAT = 0.03 %ROCK= 6.00

DTHETA

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF

= 10.1

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
104.93	DESERT	70.00	DRY	25.00	0.00	0.00	0.35	0.245
44.97	HILLSLOPES	30.00	DRY	40.00	0.00	0.00	0.15	0.045
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

149.900 =TOTAL AREA OK AVERAGE = 29.50 TOTAL = 0.00 AVG. = 0.290
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.036

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 6.00

% EFFECTIVE IMP. = 6.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-38	0.234	0.290	0.250	10.10	0.036	6.00	26.6

LOSS PARAMETERS FOR SUBBASIN: DA-3C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	43.700	61.12	0.13	-0.542	0.00	0.00
109	15.000	20.98	0.35	-0.096	35.00	7.34
12	12.800	17.90	0.01	-0.358	0.00	0.00

TOTAL = 71.500 ACRES XKSAT = 0.10 %ROCK= 7.34

DTHETA

Dry = 0.35
Normal = 0.15
Wet = 0

PSIF

= 7.5

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
42.90	DESERT	60.00	DRY	25.00	0.00	0.00	0.35	0.210
28.60	HILLSLOPES	40.00	DRY	40.00	0.00	0.00	0.15	0.060
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

71.500 =TOTAL AREA OK AVERAGE = 31.00 TOTAL = 0.00 AVG. = 0.270
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.123

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00

ROCK OUTCROP @ 100 % effective = 7.34

% EFFECTIVE IMP. = 7.34

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-3C	0.112	0.270	0.350	7.50	0.123	7.34	18.8

LOSS PARAMETERS FOR SUBBASIN: DA-3D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	203.000	89.31	0.01	-1.786	0.00	0.00
98	22.500	9.90	0.37	-0.043	0.00	0.00
13	1.600	0.70	0.01	-0.014	0.00	0.00
110	0.200	0.09	0.13	-0.001	0.00	0.00

TOTAL = 227.300 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
227.30	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

227.300 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN *DRY =* *100.00 %*
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-3D	0.355	0.350	0.150	12.40	0.012	0.00	58.6

LOSS PARAMETERS FOR SUBBASIN: DA-4A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA	% Area	XKSAT	log(XKSAT)	% ROCK	% Area

	ACRES			*(% Area)	OUTCROP *	%R.O.
12	191.900	99.12	0.01	-1.982	0.00	0.00
13	1.700	0.88	0.01	-0.018	0.00	0.00

TOTAL = 193.600 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.15	=	12.4
Normal =	0.05		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
193.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

193.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-4A	0.303	0.350	0.150	12.40	0.012	0.00	53.4

LOSS PARAMETERS FOR SUBBASIN: DA-4B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	94.400	56.29	0.33	-0.271	15.00	8.44
12	52.500	31.31	0.01	-0.626	0.00	0.00
13	20.800	12.40	0.01	-0.248	0.00	0.00

TOTAL = 167.700 ACRES XKSAT = 0.07 %ROCK= 8.44

DTHETA		PSIF
Dry =	0.28	= 8.28
Normal =	0.15	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
75.47	DESERT	45.00	DRY	25.00	0.00	0.00	0.35	0.158
33.54	HILLSLOPES	20.00	DRY	40.00	0.00	0.00	0.15	0.030
58.70	MOUNTAIN	35.00	DRY	50.00	0.00	0.00	0.25	0.088

167.700 =TOTAL AREA OK AVERAGE = 36.75 TOTAL = 0.00 AVG. = 0.275
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.280

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.091

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 8.44
% EFFECTIVE IMP. = 8.44

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-4B	0.262	0.275	0.280	8.28	0.091	8.44	20.6

LOSS PARAMETERS FOR SUBBASIN: DA-4C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	350.600	79.07	0.01	-1.581	0.00	0.00
13	67.300	15.18	0.01	-0.304	0.00	0.00
18	14.200	3.20	0.33	-0.015	15.00	0.48
110	11.300	2.55	0.13	-0.023	0.00	0.00

TOTAL = 443.400 ACRES XKSAT = 0.01 %ROCK= 0.48

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
376.89	DESERT	85.00	DRY	25.00	0.00	0.00	0.35	0.298
44.34	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
22.17	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013

443.400 =TOTAL AREA OK AVERAGE = 27.75 TOTAL = 0.00 AVG. = 0.325
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.48

% EFFECTIVE IMP. = 0.48

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-4C	0.693	0.325	0.150	12.40	0.012	0.48	40.5

LOSS PARAMETERS FOR SUBBASIN: DA-4D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	55.000	43.10	0.33	-0.208	15.00	6.47
110	36.300	28.45	0.13	-0.252	0.00	0.00
12	32.300	25.31	0.01	-0.506	0.00	0.00
13	4.000	3.13	0.01	-0.063	0.00	0.00

TOTAL = 127.600 ACRES XKSAT = 0.09 %ROCK= 6.47

DTHETA

Dry = 0.33
Normal = 0.15
Wet = 0

PSIF

= 7.78

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
57.42	DESERT	45.00	DRY	25.00	0.00	0.00	0.35	0.158
31.90	HILLSLOPES	25.00	DRY	40.00	0.00	0.00	0.15	0.038
38.28	MOUNTAIN	30.00	DRY	50.00	0.00	0.00	0.25	0.075

127.600 =TOTAL AREA OK AVERAGE = 36.25 TOTAL = 0.00 AVG. = 0.270
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.330

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.116

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 6.47

% EFFECTIVE IMP. = 6.47

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-4D	0.199	0.270	0.330	7.78	0.116	6.47	23.4

LOSS PARAMETERS FOR SUBBASIN: DA-4E

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	42.200	38.43	0.33	-0.185	15.00	5.77
110	36.000	32.79	0.13	-0.291	0.00	0.00
12	23.000	20.95	0.01	-0.419	0.00	0.00
98	8.600	7.83	0.37	-0.034	0.00	0.00

TOTAL = 109.800 ACRES XKSAT = 0.12 %ROCK= 5.77

DTHETA		PSIF	
Dry =	0.37	=	7.14
Normal =	0.19		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
54.90	DESERT	50.00	DRY	25.00	0.00	0.00	0.35	0.175
38.43	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
16.47	MOUNTAIN	15.00	DRY	50.00	0.00	0.00	0.25	0.038

109.800 =TOTAL AREA OK AVERAGE = 34.00 TOTAL = 0.00 AVG. = 0.265
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.370

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.152

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 5.77

% EFFECTIVE IMP. = 5.77

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-4E	0.172	0.265	0.370	7.14	0.152	5.77	17.9

LOSS PARAMETERS FOR SUBBASIN: DA-5A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	260.700	84.48	0.35	-0.385	35.00	29.57
110	44.700	14.48	0.13	-0.128	0.00	0.00
44	3.200	1.04	0.03	-0.016	0.00	0.00

TOTAL = 308.600 ACRES XKSAT = 0.30 %ROCK= 29.57

DTHETA		PSIF	
Dry =	0.35	=	3.77
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
77.15	DESERT	25.00	DRY	25.00	0.00	0.00	0.35	0.088
108.01	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
123.44	MOUNTAIN	40.00	DRY	50.00	0.00	0.00	0.25	0.100
308.600	=TOTAL AREA OK		AVERAGE =	40.25	TOTAL =	0.00	AVG. =	0.240

% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.400

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 29.57

% EFFECTIVE IMP. = 29.57

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5A	0.482	0.240	0.350	3.77	0.400	29.57	27.9

LOSS PARAMETERS FOR SUBBASIN: DA-5B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	21.800	53.69	0.13	-0.476	0.00	0.00
109	10.400	25.62	0.35	-0.117	35.00	8.97
12	8.400	20.69	0.01	-0.414	0.00	0.00

TOTAL = 40.600 ACRES XKSAT = 0.10 %ROCK= 8.97

DTHETA

Dry = 0.35
Normal = 0.15
Wet = 0

PSIF

= 7.5

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
30.45	DESERT	75.00	DRY	25.00	0.00	0.00	0.35	0.263
10.15	HILLSLOPES	25.00	DRY	40.00	0.00	0.00	0.15	0.038
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

40.600 =TOTAL AREA OK AVERAGE = 28.75 TOTAL = 0.00 AVG. = 0.300
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.121

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 8.97

% EFFECTIVE IMP. = 8.97

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5B	0.063	0.300	0.350	7.50	0.121	8.97	18.8

LOSS PARAMETERS FOR SUBBASIN: DA-5C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
44	12.400	42.32	0.03	-0.644	0.00	0.00
110	9.600	32.76	0.13	-0.290	0.00	0.00
109	7.000	23.89	0.35	-0.109	35.00	8.36
98	0.300	1.02	0.37	-0.004	0.00	0.00

TOTAL = 29.300 ACRES XKSAT = 0.09 %ROCK= 8.36

DTHETA

Dry = 0.33
Normal = 0.15
Wet = 0

PSIF

= 7.78

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
26.37	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
2.93	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

29.300 =TOTAL AREA OK AVERAGE = 26.50 TOTAL = 0.00 AVG. = 0.330
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.330

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.106

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 8.36
% EFFECTIVE IMP. = 8.36

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5C	0.046	0.330	0.330	7.78	0.106	8.36	14.6

LOSS PARAMETERS FOR SUBBASIN: DA-5D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	42.700	69.77	0.13	-0.618	0.00	0.00
109	13.700	22.39	0.35	-0.102	35.00	7.83
44	4.700	7.68	0.03	-0.117	0.00	0.00
98	0.100	0.16	0.37	-0.001	0.00	0.00
TOTAL =	61.200 ACRES		XKSAT =	0.15	%ROCK=	7.83

DTHETA

Dry =	0.4
Normal =	0.25
Wet =	0

PSIF

= 6.6

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
55.08	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
6.12	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000
61.200	=TOTAL AREA OK		AVERAGE =	26.50	TOTAL =	0.00	AVG. =	0.330
					% =	0.00		

PERCENT OF SUBBASIN

DRY =	100.00 %
NORMAL =	0.00 %
WET =	0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.400

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.177

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	7.83
	% EFFECTIVE IMP. =		7.83

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5D	0.096	0.330	0.400	6.60	0.177	7.83	14.1

LOSS PARAMETERS FOR SUBBASIN: DA-5E

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	24.700	63.17	0.13	-0.560	0.00	0.00
98	13.400	34.27	0.37	-0.148	0.00	0.00
44	0.900	2.30	0.03	-0.035	0.00	0.00
12	0.100	0.26	0.01	-0.005	0.00	0.00

TOTAL = 39.100 ACRES XKSAT = 0.18 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.39	=	5.67
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
39.10	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

39.100 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %

NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.390

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.210

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5E	0.061	0.350	0.390	5.67	0.210	0.00	14.2

LOSS PARAMETERS FOR SUBBASIN: DA-5F

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
98	97.900	40.35	0.37	-0.174	0.00	0.00
12	88.700	36.56	0.01	-0.731	0.00	0.00
13	40.400	16.65	0.01	-0.333	0.00	0.00
110	12.400	5.11	0.13	-0.045	0.00	0.00
18	3.200	1.32	0.33	-0.006	15.00	0.20

TOTAL = 242.600 ACRES XKSAT = 0.05 %ROCK= 0.20

DTHETA		PSIF
Dry =	0.25	= 8.4
Normal =	0.15	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
242.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

242.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.058

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.20
% EFFECTIVE IMP. = 0.20

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5F	0.379	0.350	0.250	8.40	0.058	0.20	55

LOSS PARAMETERS FOR SUBBASIN: DA-5G

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	194.300	75.51	0.01	-1.510	0.00	0.00
110	37.600	14.61	0.13	-0.129	0.00	0.00
98	25.400	9.87	0.37	-0.043	0.00	0.00

TOTAL = 257.300 ACRES XKSAT = 0.02 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.2	=	9.4
Normal =	0.1		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
257.30	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

257.300 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-5G	0.402	0.350	0.200	9.40	0.023	0.00	59.1

LOSS PARAMETERS FOR SUBBASIN: DA-6A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	239.700	74.42	0.35	-0.339	35.00	26.05
110	37.800	11.74	0.13	-0.104	0.00	0.00
98	28.300	8.79	0.37	-0.038	0.00	0.00
12	16.300	5.06	0.01	-0.101	0.00	0.00

TOTAL = 322.100 ACRES XKSAT = 0.26 %ROCK= 26.05

DTHETA PSIF

Dry = 0.35 = 3.55
Normal = 0.25
Wet = 0

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
241.58	DESERT	75.00	DRY	25.00	0.00	0.00	0.35	0.263
80.52	HILLSLOPES	25.00	DRY	40.00	0.00	0.00	0.15	0.038
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

322.100 =TOTAL AREA OK AVERAGE = 28.75 TOTAL = 0.00 AVG. = 0.300
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.314

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 26.05

% EFFECTIVE IMP. = 26.05

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-6A	0.503	0.300	0.350	3.55	0.314	26.05	45.8

LOSS PARAMETERS FOR SUBBASIN: DA-6B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	84.600	69.40	0.01	-1.388	0.00	0.00
98	22.000	18.05	0.37	-0.078	0.00	0.00
110	15.300	12.55	0.13	-0.111	0.00	0.00

TOTAL = 121.900 ACRES XKSAT = 0.03 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF

= 10.1

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
121.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

121.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.035

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-6B	0.190	0.350	0.250	10.10	0.035	0.00	35.9

LOSS PARAMETERS FOR SUBBASIN: DA-7A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	1029.200	79.02	0.35	-0.360	35.00	27.66
110	114.000	8.75	0.13	-0.078	0.00	0.00
98	75.800	5.82	0.37	-0.025	0.00	0.00
44	52.000	3.99	0.03	-0.061	0.00	0.00
12	31.500	2.42	0.01	-0.048	0.00	0.00

TOTAL = 1302.500 ACRES XKSAT = 0.27 %ROCK= 27.66

DTHETA

Dry = 0.35
Normal = 0.25
Wet = 0

PSIF

= 3.61

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
651.25	DESERT	50.00	DRY	25.00	0.00	0.00	0.35	0.175
325.63	HILLSLOPES	25.00	DRY	40.00	0.00	0.00	0.15	0.038
325.63	MOUNTAIN	25.00	DRY	50.00	0.00	0.00	0.25	0.063

1302.50 =TOTAL AREA OK AVERAGE = 35.00 TOTAL = 0.00 AVG. = 0.275
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.344

IMPERVIOUS AREA:
URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 27.66

% EFFECTIVE IMP. = 27.66

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7A	2.035	0.275	0.350	3.61	0.344	27.66	65.5

LOSS PARAMETERS FOR SUBBASIN: DA-7B

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Soil Survey Used AGUILA

XKSAT
=========

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	18.100	67.29	0.01	-1.346	0.00	0.00
98	8.800	32.71	0.37	-0.141	0.00	0.00

TOTAL = 26.900 ACRES XKSAT = 0.03 %ROCK= 0.00

DTHETA
========

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF
==========

= 10.1

LAND USE
========

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
26.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

26.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.035

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7B	0.042	0.350	0.250	10.10	0.035	0.00	16.4

LOSS PARAMETERS FOR SUBBASIN: DA-7C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	26.200	87.04	0.13	-0.771	0.00	0.00
12	3.900	12.96	0.01	-0.259	0.00	0.00

TOTAL = 30.100 ACRES XKSAT = 0.09 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.33	=	7.78
Normal =	0.15		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
30.10	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

30.100 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.330

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.105

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7C	0.047	0.350	0.330	7.78	0.105	0.00	19.1

LOSS PARAMETERS FOR SUBBASIN: DA-7D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	18.300	87.14	0.01	-1.743	0.00	0.00
110	1.800	8.57	0.13	-0.076	0.00	0.00
98	0.900	4.29	0.37	-0.019	0.00	0.00

TOTAL = 21.000 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
21.00	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

21.000 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7D	0.033	0.350	0.150	12.40	0.012	0.00	16.4

LOSS PARAMETERS FOR SUBBASIN: DA-7E

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	53.700	91.64	0.13	-0.812	0.00	0.00
109	4.900	8.36	0.35	-0.038	35.00	2.93

TOTAL = 58.600 ACRES XKSAT = 0.14 %ROCK= 2.93

DTHETA

Dry = 0.39
Normal = 0.23
Wet = 0

PSIF

= 6.78

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
58.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

58.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.390

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.163

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 2.93

% EFFECTIVE IMP. = 2.93

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7E	0.092	0.350	0.390	6.78	0.163	2.93	23.3

LOSS PARAMETERS FOR SUBBASIN: DA-7F

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	18.000	53.73	0.13	-0.476	0.00	0.00
12	13.500	40.30	0.01	-0.806	0.00	0.00
98	2.000	5.97	0.37	-0.026	0.00	0.00
TOTAL =	33.500 ACRES		XKSAT =	0.05	%ROCK=	0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
33.50	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000
33.500	=TOTAL AREA OK		AVERAGE =	25.00	TOTAL =	0.00	AVG. =	0.350
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.058

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	0.00
	% EFFECTIVE IMP. =		0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7F	0.052	0.350	0.250	8.40	0.058	0.00	15.8

LOSS PARAMETERS FOR SUBBASIN: DA-7G

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	30.000	63.97	0.01	-1.279	0.00	0.00
98	15.100	32.20	0.37	-0.139	0.00	0.00
110	1.800	3.84	0.13	-0.034	0.00	0.00

TOTAL = 46.900 ACRES XKSAT = 0.04 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.2

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
46.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

46.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.047

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-7G	0.073	0.350	0.250	8.20	0.047	0.00	27.9

LOSS PARAMETERS FOR SUBBASIN: DA-7H

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	55.700	53.87	0.01	-1.077	0.00	0.00
98	47.300	45.74	0.37	-0.198	0.00	0.00
110	0.400	0.39	0.13	-0.003	0.00	0.00

TOTAL = 103.400 ACRES XKSAT = 0.05 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.25	=	8.4
Normal =	0.15		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
103.40	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

103.400 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.058

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA	IA	DTHETA	PSIF	XKSAT	RTIMP	LAG
	sq.mi.	inches			adj.	%	min
DA-7H	0.162	0.350	0.250	8.40	0.058	0.00	41.7

LOSS PARAMETERS FOR SUBBASIN: DA-8A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	185.500	65.41	0.13	-0.580	0.00	0.00
13	58.800	20.73	0.01	-0.415	0.00	0.00
44	39.300	13.86	0.03	-0.211	0.00	0.00

TOTAL = 283.600 ACRES XKSAT = 0.06 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.6

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
283.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

283.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.070

IMPERVIOUS AREA:
URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-8A	0.443	0.350	0.250	8.60	0.070	0.00	45.7

LOSS PARAMETERS FOR SUBBASIN: DA-8B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	95.600	53.29	0.01	-1.066	0.00	0.00
13	82.700	46.10	0.01	-0.922	0.00	0.00
110	1.100	0.61	0.13	-0.005	0.00	0.00

TOTAL = 179.400 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.15	=	12.4
Normal =	0.05		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
179.40	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

179.400 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-8B	0.280	0.350	0.150	12.40	0.012	0.00	35.9

LOSS PARAMETERS FOR SUBBASIN: DA-8C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	402.700	80.32	0.01	-1.606	0.00	0.00
98	42.400	8.46	0.37	-0.037	0.00	0.00
110	41.300	8.24	0.13	-0.073	0.00	0.00
18	9.800	1.95	0.33	-0.009	15.00	0.29
13	5.200	1.04	0.01	-0.021	0.00	0.00

TOTAL = 501.400 ACRES XKSAT = 0.02 %ROCK= 0.29

DTHETA

Dry = 0.2
Normal = 0.1
Wet = 0

PSIF

= 9.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
476.33	DESERT	95.00	DRY	25.00	0.00	0.00	0.35	0.332
25.07	HILLSLOPES	5.00	DRY	40.00	0.00	0.00	0.15	0.008
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

501.400 =TOTAL AREA OK AVERAGE = 25.75 TOTAL = 0.00 AVG. = 0.340
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.29

% EFFECTIVE IMP. = 0.29

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-8C	0.783	0.340	0.200	9.40	0.023	0.29	65.4

LOSS PARAMETERS FOR SUBBASIN: DA-8D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
18	12.600	52.72	0.33	-0.254	15.00	7.91
98	11.300	47.28	0.37	-0.204	0.00	0.00

TOTAL = 23.900 ACRES XKSAT = 0.35 %ROCK= 7.91

DTHETA		PSIF	
Dry =	0.35	=	4.03
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
21.51	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
2.39	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

23.900 =TOTAL AREA OK AVERAGE = 26.50 TOTAL = 0.00 AVG. = 0.330
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.414

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 7.91
% EFFECTIVE IMP. = 7.91

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-8D	0.037	0.330	0.350	4.03	0.414	7.91	11.8

LOSS PARAMETERS FOR SUBBASIN: DA-9A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	475.200	76.14	0.01	-1.523	0.00	0.00
18	148.900	23.86	0.33	-0.115	15.00	3.58

TOTAL = 624.100 ACRES XKSAT = 0.02 %ROCK= 3.58

DTHETA		PSIF
Dry =	0.2	= 9.4
Normal =	0.1	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
499.28	DESERT	80.00	DRY	25.00	0.00	0.00	0.35	0.280
124.82	HILLSLOPES	20.00	DRY	40.00	0.00	0.00	0.15	0.030
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

624.100 =TOTAL AREA OK AVERAGE = 28.00 TOTAL = 0.00 AVG. = 0.310
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.024

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 3.58
% EFFECTIVE IMP. = 3.58

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-9A	0.975	0.310	0.200	9.40	0.024	3.58	52.4

LOSS PARAMETERS FOR SUBBASIN: DA-9B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	349.000	78.30	0.01	-1.566	0.00	0.00
112	90.000	20.19	0.39	-0.083	0.00	0.00
98	6.700	1.50	0.37	-0.006	0.00	0.00

TOTAL = 445.700 ACRES XKSAT = 0.02 %ROCK= 0.00

DTHETA

Dry = 0.2
Normal = 0.1
Wet = 0

PSIF

= 9.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
445.70	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

445.700 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-9B	0.696	0.350	0.200	9.40	0.023	0.00	54.6

LOSS PARAMETERS FOR SUBBASIN: DA-10A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	88.300	91.79	0.35	-0.418	35.00	32.13
44	7.900	8.21	0.03	-0.125	0.00	0.00
TOTAL =	96.200 ACRES		XKSAT =	0.29	%ROCK=	32.13

DTHETA		PSIF	
Dry =	0.35	=	3.71
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
0.00	DESERT	0.00	DRY	25.00	0.00	0.00	0.35	0.000
4.81	HILLSLOPES	5.00	DRY	40.00	0.00	0.00	0.15	0.008
91.39	MOUNTAIN	95.00	DRY	50.00	0.00	0.00	0.25	0.238
96.200	=TOTAL AREA OK		AVERAGE =	49.50	TOTAL =	0.00	AVG. =	0.245
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.416

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	32.13
	% EFFECTIVE IMP. =		32.13

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10A	0.150	0.245	0.350	3.71	0.416	32.13	15.2

LOSS PARAMETERS FOR SUBBASIN: DA-10B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
44	163.000	68.69	0.03	-1.046	0.00	0.00
12	66.800	28.15	0.01	-0.563	0.00	0.00
68	4.100	1.73	0.63	-0.003	0.00	0.00
109	3.400	1.43	0.35	-0.007	35.00	0.50

TOTAL = 237.300 ACRES XKSAT = 0.02 %ROCK= 0.50

DTHETA		PSIF
Dry =	0.2	= 9.4
Normal =	0.1	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
225.43	DESERT	95.00	DRY	25.00	0.00	0.00	0.35	0.332
11.86	HILLSLOPES	5.00	DRY	40.00	0.00	0.00	0.15	0.008
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

237.300 =TOTAL AREA OK AVERAGE = 25.75 TOTAL = 0.00 AVG. = 0.340
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.50

% EFFECTIVE IMP. = 0.50

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10B	0.371	0.340	0.200	9.40	0.023	0.50	33.2

LOSS PARAMETERS FOR SUBBASIN: DA-10C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	314.000	71.66	0.01	-1.433	0.00	0.00
44	82.300	18.78	0.03	-0.286	0.00	0.00
98	41.800	9.54	0.37	-0.041	0.00	0.00
109	0.100	0.02	0.35	-0.000	35.00	0.01

TOTAL = 438.200 ACRES XKSAT = 0.02 %ROCK= 0.01

DTHETA

Dry = 0.2
Normal = 0.1
Wet = 0

PSIF

= 9.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
394.38	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
43.82	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

438.200 =TOTAL AREA OK AVERAGE = 26.50 TOTAL = 0.00 AVG. = 0.330
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.024

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.01

% EFFECTIVE IMP. = 0.01

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10C	0.685	0.330	0.200	9.40	0.024	0.01	42.9

LOSS PARAMETERS FOR SUBBASIN: DA-10D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
98	80.200	80.28	0.37	-0.347	0.00	0.00
110	11.800	11.81	0.13	-0.105	0.00	0.00
12	7.900	7.91	0.01	-0.158	0.00	0.00

TOTAL = 99.900 ACRES XKSAT = 0.25 %ROCK= 0.00

DTHETA

Dry = 0.35
Normal = 0.25
Wet = 0

PSIF

= 3.5

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
99.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

99.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350

% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.291

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10D	0.156	0.350	0.350	3.50	0.291	0.00	29.3

LOSS PARAMETERS FOR SUBBASIN: DA-10E

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	195.500	55.05	0.01	-1.101	0.00	0.00
44	110.700	31.17	0.03	-0.475	0.00	0.00
110	40.100	11.29	0.13	-0.100	0.00	0.00
98	7.900	2.22	0.37	-0.010	0.00	0.00
68	0.900	0.25	0.63	-0.001	0.00	0.00

TOTAL = 355.100 ACRES XKSAT = 0.02 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.2	=	9.4
Normal =	0.1		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
355.10	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

355.100 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10E	0.555	0.350	0.200	9.40	0.023	0.00	56.4

LOSS PARAMETERS FOR SUBBASIN: DA-10F

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	20.600	41.62	0.01	-0.832	0.00	0.00
98	14.200	28.69	0.37	-0.124	0.00	0.00
13	7.400	14.95	0.01	-0.299	0.00	0.00
110	7.300	14.75	0.13	-0.131	0.00	0.00

TOTAL = 49.500 ACRES XKSAT = 0.04 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.2

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
49.50	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

49.500 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.047

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10F	0.077	0.350	0.250	8.20	0.047	0.00	23

LOSS PARAMETERS FOR SUBBASIN: DA-10G

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	58.100	65.87	0.01	-1.317	0.00	0.00
13	12.100	13.72	0.01	-0.274	0.00	0.00
98	10.900	12.36	0.37	-0.053	0.00	0.00
110	7.100	8.05	0.13	-0.071	0.00	0.00

TOTAL = 88.200 ACRES XKSAT = 0.02 %ROCK= 0.00

DTHETA

Dry = 0.2
Normal = 0.1
Wet = 0

PSIF

= 9.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
88.20	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

88.200 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10G	0.138	0.350	0.200	9.40	0.023	0.00	27.5

LOSS PARAMETERS FOR SUBBASIN: DA-10H

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
98	31.500	59.89	0.37	-0.259	0.00	0.00
110	14.100	26.81	0.13	-0.238	0.00	0.00
18	5.400	10.27	0.33	-0.049	15.00	1.54
12	1.600	3.04	0.01	-0.061	0.00	0.00

TOTAL = 52.600 ACRES XKSAT = 0.25 %ROCK= 1.54

DTHETA		PSIF	
Dry =	0.35	=	3.5
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
49.97	DESERT	95.00	DRY	25.00	0.00	0.00	0.35	0.332
2.63	HILLSLOPES	5.00	DRY	40.00	0.00	0.00	0.15	0.008
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000
52.600	=TOTAL AREA OK		AVERAGE =	25.75	TOTAL =	0.00	AVG. =	0.340
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.293

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 1.54

% EFFECTIVE IMP. = 1.54

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10H	0.082	0.340	0.350	3.50	0.293	1.54	26

LOSS PARAMETERS FOR SUBBASIN: DA-10I

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	43.000	36.88	0.33	-0.178	15.00	5.53
12	42.100	36.11	0.01	-0.722	0.00	0.00
98	31.500	27.02	0.37	-0.117	0.00	0.00
TOTAL =	116.600 ACRES		XKSAT =	0.10	%ROCK=	5.53

DTHETA

Dry = 0.35
Normal = 0.15
Wet = 0

PSIF

= 7.5

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
99.11	DESERT	85.00	DRY	25.00	0.00	0.00	0.35	0.298
17.49	HILLSLOPES	15.00	DRY	40.00	0.00	0.00	0.15	0.023
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000
116.600	=TOTAL AREA	ERR	AVERAGE =	27.25	TOTAL =	0.00	AVG. =	0.320
					% =	0.00		

PERCENT OF SUBBASIN
DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.119

IMPERVIOUS AREA:
URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 5.53
% EFFECTIVE IMP. = 5.53

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10I	0.182	0.320	0.350	7.50	0.119	5.53	34.2

LOSS PARAMETERS FOR SUBBASIN: DA-10J

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	488.800	82.67	0.01	-1.653	0.00	0.00
18	97.500	16.49	0.33	-0.079	15.00	2.47
98	5.000	0.85	0.37	-0.004	0.00	0.00

TOTAL = 591.300 ACRES XKSAT = 0.02 %ROCK= 2.47

DTHETA

Dry = 0.2
Normal = 0.1
Wet = 0

PSIF

= 9.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
532.17	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
59.13	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

591.300 =TOTAL AREA OK AVERAGE = 26.50 TOTAL = 0.00 AVG. = 0.330
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.024

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 2.47

% EFFECTIVE IMP. = 2.47

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10J	0.924	0.330	0.200	9.40	0.024	2.47	48.5

LOSS PARAMETERS FOR SUBBASIN: DA-10K

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	128.800	48.13	0.33	-0.232	15.00	7.22
98	92.300	34.49	0.37	-0.149	0.00	0.00
110	34.700	12.97	0.13	-0.115	0.00	0.00
12	11.800	4.41	0.01	-0.088	0.00	0.00

TOTAL = 267.600 ACRES XKSAT = 0.26 %ROCK= 7.22

DTHETA PSIF

Dry = 0.35 = 3.55
Normal = 0.25
Wet = 0

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
160.56	DESERT	60.00	DRY	25.00	0.00	0.00	0.35	0.210
93.66	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
13.38	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013

267.600 =TOTAL AREA OK AVERAGE = 31.50 TOTAL = 0.00 AVG. = 0.275
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.321

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 7.22
% EFFECTIVE IMP. = 7.22

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10K	0.418	0.275	0.350	3.55	0.321	7.22	23

LOSS PARAMETERS FOR SUBBASIN: DA-10L

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	105.800	40.00	0.33	-0.193	15.00	6.00
12	44.500	16.82	0.01	-0.336	0.00	0.00
109	39.600	14.97	0.35	-0.068	35.00	5.24
98	34.000	12.85	0.37	-0.056	0.00	0.00
110	29.000	10.96	0.13	-0.097	0.00	0.00
13	11.600	4.39	0.01	-0.088	0.00	0.00

TOTAL = 264.500 ACRES XKSAT = 0.15 %ROCK= 11.24

DTHETA

Dry = 0.4
Normal = 0.25
Wet = 0

PSIF

= 6.6

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
105.80	DESERT	40.00	DRY	25.00	0.00	0.00	0.35	0.140
105.80	HILLSLOPES	40.00	DRY	40.00	0.00	0.00	0.15	0.060
52.90	MOUNTAIN	20.00	DRY	50.00	0.00	0.00	0.25	0.050

264.500 =TOTAL AREA OK AVERAGE = 36.00 TOTAL = 0.00 AVG. = 0.250
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %

NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.400

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.193

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	11.24
	% EFFECTIVE IMP. =		11.24

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10L	0.413	0.250	0.400	6.60	0.193	11.24	36.2

LOSS PARAMETERS FOR SUBBASIN: DA-10M

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
18	138.900	64.60	0.33	-0.311	15.00	9.69
98	55.900	26.00	0.37	-0.112	0.00	0.00
12	20.200	9.40	0.01	-0.188	0.00	0.00

TOTAL = 215.000 ACRES XKSAT = 0.24 %ROCK= 9.69

DTHETA		PSIF	
Dry =	0.36	=	3.81
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
161.25	DESERT	75.00	DRY	25.00	0.00	0.00	0.35	0.263
53.75	HILLSLOPES	25.00	DRY	40.00	0.00	0.00	0.15	0.038
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

215.000 =TOTAL AREA OK AVERAGE = 28.75 TOTAL = 0.00 AVG. = 0.300
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.360

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.290

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 9.69
% EFFECTIVE IMP. = 9.69

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10M	0.336	0.300	0.360	3.81	0.290	9.69	20.4

LOSS PARAMETERS FOR SUBBASIN: DA-10N

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
98	36.200	77.35	0.37	-0.334	0.00	0.00
12	10.500	22.44	0.01	-0.449	0.00	0.00
112	0.100	0.21	0.39	-0.001	0.00	0.00

TOTAL = 46.800 ACRES XKSAT = 0.16 %ROCK= 0.00

DTHETA

Dry = 0.4
Normal = 0.25
Wet = 0

PSIF

= 6.29

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
46.80	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

46.800 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.400

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.186

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10N	0.073	0.350	0.400	6.29	0.186	0.00	20.8

LOSS PARAMETERS FOR SUBBASIN: DA-100

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
98	43.700	57.50	0.37	-0.248	0.00	0.00
110	15.200	20.00	0.13	-0.177	0.00	0.00
44	14.300	18.82	0.03	-0.287	0.00	0.00
12	2.800	3.68	0.01	-0.074	0.00	0.00

TOTAL = 76.000 ACRES XKSAT = 0.16 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.4	=	6.29
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
76.00	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000
76.000	=TOTAL AREA OK		AVERAGE =	25.00	TOTAL =	0.00	AVG. =	0.350
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.400

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.186

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-100	0.119	0.350	0.400	6.29	0.186	0.00	29

LOSS PARAMETERS FOR SUBBASIN: DA-10P

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	143.000	28.85	0.13	-0.256	0.00	0.00
12	132.000	26.63	0.01	-0.533	0.00	0.00
18	114.500	23.10	0.33	-0.111	15.00	3.47
109	57.100	11.52	0.35	-0.053	35.00	4.03
112	34.500	6.96	0.39	-0.028	0.00	0.00
98	14.500	2.93	0.37	-0.013	0.00	0.00

TOTAL = 495.600 ACRES XKSAT = 0.10 %ROCK= 7.50

DTHETA

Dry = 0.35
Normal = 0.15
Wet = 0

PSIF

= 7.5

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
297.36	DESERT	60.00	DRY	25.00	0.00	0.00	0.35	0.210
123.90	HILLSLOPES	25.00	DRY	40.00	0.00	0.00	0.15	0.038
74.34	MOUNTAIN	15.00	DRY	50.00	0.00	0.00	0.25	0.038

495.600 =TOTAL AREA OK AVERAGE = 32.50 TOTAL = 0.00 AVG. = 0.285
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.125

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	7.50
	% EFFECTIVE IMP. =		7.50

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10P	0.774	0.285	0.350	7.50	0.125	7.50	39.5

LOSS PARAMETERS FOR SUBBASIN: DA-10Q

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	134.800	64.04	0.33	-0.308	15.00	9.61
112	51.700	24.56	0.39	-0.100	0.00	0.00
12	23.600	11.21	0.01	-0.224	0.00	0.00
98	0.400	0.19	0.37	-0.001	0.00	0.00

TOTAL = 210.500 ACRES XKSAT = 0.23 %ROCK= 9.61

DTHETA

Dry = 0.36
Normal = 0.25
Wet = 0

PSIF

= 4.12

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
105.25	DESERT	50.00	DRY	25.00	0.00	0.00	0.35	0.175
73.68	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
31.58	MOUNTAIN	15.00	DRY	50.00	0.00	0.00	0.25	0.038

210.500 =TOTAL AREA OK AVERAGE = 34.00 TOTAL = 0.00 AVG. = 0.265
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.360

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.291

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 9.61

% EFFECTIVE IMP. = 9.61

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10Q	0.329	0.265	0.360	4.12	0.291	9.61	30.2

LOSS PARAMETERS FOR SUBBASIN: DA-10R

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Soil Survey Used AGUILA

XKSAT
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Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	40.900	72.65	0.01	-1.453	0.00	0.00
112	15.400	27.35	0.39	-0.112	0.00	0.00

TOTAL = 56.300 ACRES XKSAT = 0.03 %ROCK= 0.00

DTHETA
========

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF
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= 10.1

LAND USE
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AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
56.30	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

56.300 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.035

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10R	0.088	0.350	0.250	10.10	0.035	0.00	23

LOSS PARAMETERS FOR SUBBASIN: DA-10S

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	609.200	92.95	0.01	-1.859	0.00	0.00
112	46.200	7.05	0.39	-0.029	0.00	0.00

TOTAL = 655.400 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
655.40	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

655.400 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10S	1.024	0.350	0.150	12.40	0.012	0.00	96.7

LOSS PARAMETERS FOR SUBBASIN: DA-10T

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
12	23.500	54.40	0.01	-1.088	0.00	0.00
112	19.700	45.60	0.39	-0.186	0.00	0.00

TOTAL = 43.200 ACRES XKSAT = 0.05 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
43.20	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

43.200 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.058

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10T	0.068	0.350	0.250	8.40	0.058	0.00	16.4

LOSS PARAMETERS FOR SUBBASIN: DA-10U

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	181.300	58.20	0.01	-1.164	0.00	0.00
112	117.900	37.85	0.39	-0.155	0.00	0.00
75	12.300	3.95	0.23	-0.025	0.00	0.00

TOTAL = 311.500 ACRES XKSAT = 0.05 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
311.50	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

311.500 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.058

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10U	0.487	0.350	0.250	8.40	0.058	0.00	44.7

LOSS PARAMETERS FOR SUBBASIN: DA-10V

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
123	279.800	45.34	0.37	-0.196	0.00	0.00
100	87.100	14.11	0.4	-0.056	20.00	2.82
12	78.800	12.77	0.01	-0.255	0.00	0.00
112	57.500	9.32	0.39	-0.038	0.00	0.00
98	39.900	6.47	0.37	-0.028	0.00	0.00
75	35.300	5.72	0.23	-0.037	0.00	0.00
118	13.100	2.12	0.42	-0.008	0.00	0.00
18	12.900	2.09	0.33	-0.010	15.00	0.31
44	6.800	1.10	0.03	-0.017	0.00	0.00
110	5.900	0.96	0.13	-0.008	0.00	0.00

TOTAL = 617.100 ACRES XKSAT = 0.22 %ROCK= 3.14

DTHETA

Dry = 0.37
Normal = 0.25
Wet = 0

PSIF

= 4.43

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
555.39	DESERT	90.00	DRY	25.00	0.00	0.00	0.35	0.315
61.71	HILLSLOPES	10.00	DRY	40.00	0.00	0.00	0.15	0.015
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

617.100 =TOTAL AREA OK AVERAGE = 26.50 TOTAL = 0.00 AVG. = 0.330
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.370

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.260

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 3.14

% EFFECTIVE IMP. = 3.14

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10V	0.964	0.330	0.370	4.43	0.260	3.14	32.5

LOSS PARAMETERS FOR SUBBASIN: DA-10W

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
123	125.500	37.27	0.37	-0.161	0.00	0.00
100	82.000	24.35	0.4	-0.097	20.00	4.87
75	62.300	18.50	0.23	-0.118	0.00	0.00
112	56.500	16.78	0.39	-0.069	0.00	0.00
12	8.900	2.64	0.01	-0.053	0.00	0.00
98	1.500	0.45	0.37	-0.002	0.00	0.00

TOTAL = 336.700 ACRES XKSAT = 0.32 %ROCK= 4.87

DTHETA		PSIF	
Dry =	0.35	=	3.87
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
269.36	DESERT	80.00	DRY	25.00	0.00	0.00	0.35	0.280
50.50	HILLSLOPES	15.00	DRY	40.00	0.00	0.00	0.15	0.023
16.84	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013

336.700 =TOTAL AREA OK AVERAGE = 28.50 TOTAL = 0.00 AVG. = 0.315
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.385

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 4.87
% EFFECTIVE IMP. = 4.87

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10W	0.526	0.315	0.350	3.87	0.385	4.87	21.8

LOSS PARAMETERS FOR SUBBASIN: DA-10X

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
100	68.900	70.81	0.4	-0.282	20.00	14.16
10	21.300	21.89	0.94	-0.006	0.00	0.00
98	3.600	3.70	0.37	-0.016	0.00	0.00
12	2.700	2.77	0.01	-0.055	0.00	0.00
75	0.800	0.82	0.23	-0.005	0.00	0.00

TOTAL = 97.300 ACRES XKSAT = 0.43 %ROCK= 14.16

DTHETA		PSIF
Dry =	0.35	= 4.23
Normal =	0.25	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
29.19	DESERT	30.00	DRY	25.00	0.00	0.00	0.35	0.105
29.19	HILLSLOPES	30.00	DRY	40.00	0.00	0.00	0.15	0.045
38.92	MOUNTAIN	40.00	DRY	50.00	0.00	0.00	0.25	0.100

97.300 =TOTAL AREA OK AVERAGE = 39.50 TOTAL = 0.00 AVG. = 0.250
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.570

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 14.16
% EFFECTIVE IMP. = 14.16

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10X	0.152	0.250	0.350	4.23	0.570	14.16	23.8

LOSS PARAMETERS FOR SUBBASIN: DA-10Y

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
100	34.800	79.45	0.4	-0.316	20.00	15.89
10	5.500	12.56	0.94	-0.003	0.00	0.00
3	3.500	7.99	0.58	-0.019	0.00	0.00

TOTAL = 43.800 ACRES XKSAT = 0.46 %ROCK= 15.89

DTHETA		PSIF	
Dry =	0.35	=	4.16
Normal =	0.25		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
32.85	DESERT	75.00	DRY	25.00	0.00	0.00	0.35	0.263
6.57	HILLSLOPES	15.00	DRY	40.00	0.00	0.00	0.15	0.023
4.38	MOUNTAIN	10.00	DRY	50.00	0.00	0.00	0.25	0.025

43.800 =TOTAL AREA ERR AVERAGE = 29.75 TOTAL = 0.00 AVG. = 0.310
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.560

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 15.89

% EFFECTIVE IMP. = 15.89

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-10Y	0.068	0.310	0.350	4.16	0.560	15.89	11.2

LOSS PARAMETERS FOR SUBBASIN: DA-11A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
109	64.700	63.87	0.35	-0.291	35.00	22.35
110	34.600	34.16	0.13	-0.303	0.00	0.00
112	2.000	1.97	0.39	-0.008	0.00	0.00

TOTAL = 101.300 ACRES XKSAT = 0.25 %ROCK= 22.35

DTHETA

Dry = 0.35
Normal = 0.25
Wet = 0

PSIF

= 3.5

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
50.65	DESERT	50.00	DRY	25.00	0.00	0.00	0.35	0.175
35.46	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
15.20	MOUNTAIN	15.00	DRY	50.00	0.00	0.00	0.25	0.038

101.300 =TOTAL AREA OK AVERAGE = 34.00 TOTAL = 0.00 AVG. = 0.265
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.316

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 22.35

% EFFECTIVE IMP. = 22.35

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11A	0.158	0.265	0.350	3.50	0.316	22.35	14

LOSS PARAMETERS FOR SUBBASIN: DA-11B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	69.600	49.50	0.33	-0.238	15.00	7.43
110	43.700	31.08	0.13	-0.275	0.00	0.00
112	26.500	18.85	0.39	-0.077	0.00	0.00
109	0.800	0.57	0.35	-0.003	35.00	0.20
TOTAL =	140.600 ACRES		XKSAT =	0.26	%ROCK=	7.62

DTHETA

Dry = 0.35

Normal = 0.25

Wet = 0

PSIF

= 3.55

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
63.27	DESERT	45.00	DRY	25.00	0.00	0.00	0.35	0.158
56.24	HILLSLOPES	40.00	DRY	40.00	0.00	0.00	0.15	0.060
21.09	MOUNTAIN	15.00	DRY	50.00	0.00	0.00	0.25	0.038
140.600	=TOTAL AREA OK		AVERAGE =	34.75	TOTAL =	0.00	AVG. =	0.255
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.331

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 7.62
% EFFECTIVE IMP. = 7.62

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11B	0.220	0.255	0.350	3.55	0.331	7.62	20.8

LOSS PARAMETERS FOR SUBBASIN: DA-11C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
112	19.500	56.85	0.39	-0.232	0.00	0.00
18	13.100	38.19	0.33	-0.184	15.00	5.73
110	1.700	4.96	0.13	-0.044	0.00	0.00

TOTAL = 34.300 ACRES XKSAT = 0.35 %ROCK= 5.73

DTHETA		PSIF
Dry =	0.35	= 4.03
Normal =	0.25	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
3.43	DESERT	10.00	DRY	25.00	0.00	0.00	0.35	0.035
30.87	HILLSLOPES	90.00	DRY	40.00	0.00	0.00	0.15	0.135
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

34.300 =TOTAL AREA OK AVERAGE = 38.50 TOTAL = 0.00 AVG. = 0.170
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.460

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 5.73

% EFFECTIVE IMP. = 5.73

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11C	0.054	0.170	0.350	4.03	0.460	5.73	9.3

LOSS PARAMETERS FOR SUBBASIN: DA-11D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	37.000	52.93	0.13	-0.469	0.00	0.00
109	28.300	40.49	0.35	-0.185	35.00	14.17
112	4.600	6.58	0.39	-0.027	0.00	0.00

TOTAL = 69.900 ACRES XKSAT = 0.21 %ROCK= 14.17

DTHETA

Dry = 0.37
Normal = 0.25
Wet = 0

PSIF

= 4.74

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
41.94	DESERT	60.00	DRY	25.00	0.00	0.00	0.35	0.210
24.47	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
3.50	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013

69.900 =TOTAL AREA OK AVERAGE = 31.50 TOTAL = 0.00 AVG. = 0.275
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.370

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.260

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 14.17

% EFFECTIVE IMP. = 14.17

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11D	0.109	0.275	0.370	4.74	0.260	14.17	28

LOSS PARAMETERS FOR SUBBASIN: DA-11E

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
110	101.400	37.35	0.13	-0.331	0.00	0.00
18	57.200	21.07	0.33	-0.101	15.00	3.16
109	50.300	18.53	0.35	-0.084	35.00	6.48
13	24.000	8.84	0.01	-0.177	0.00	0.00
12	19.600	7.22	0.01	-0.144	0.00	0.00
112	16.800	6.19	0.39	-0.025	0.00	0.00
44	2.200	0.81	0.03	-0.012	0.00	0.00

TOTAL = 271.500 ACRES XKSAT = 0.13 %ROCK= 9.64

DTHETA

Dry = 0.38
Normal = 0.21
Wet = 0

PSIF

= 6.96

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
135.75	DESERT	50.00	DRY	25.00	0.00	0.00	0.35	0.175
95.03	HILLSLOPES	35.00	DRY	40.00	0.00	0.00	0.15	0.053
40.73	MOUNTAIN	15.00	DRY	50.00	0.00	0.00	0.25	0.038

271.500 =TOTAL AREA OK AVERAGE = 34.00 TOTAL = 0.00 AVG. = 0.265
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.380

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.164

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 9.64

% EFFECTIVE IMP. = 9.64

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11E	0.424	0.265	0.380	6.96	0.164	9.64	46.1

LOSS PARAMETERS FOR SUBBASIN: DA-11F

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	116.100	68.74	0.01	-1.375	0.00	0.00
110	20.500	12.14	0.13	-0.108	0.00	0.00
112	14.900	8.82	0.39	-0.036	0.00	0.00
44	11.800	6.99	0.03	-0.106	0.00	0.00
52	5.600	3.32	0.16	-0.026	20.00	0.66

TOTAL = 168.900 ACRES XKSAT = 0.02 %ROCK= 0.66

DTHETA		PSIF	
Dry =	0.2	=	9.4
Normal =	0.1		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
168.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

168.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	0.66
	% EFFECTIVE IMP. =		0.66

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11F	0.264	0.350	0.200	9.40	0.023	0.66	29.7

LOSS PARAMETERS FOR SUBBASIN: DA-11G

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	162.900	72.95	0.01	-1.459	0.00	0.00
18	39.700	17.78	0.33	-0.086	15.00	2.67
112	16.000	7.17	0.39	-0.029	0.00	0.00
110	4.700	2.10	0.13	-0.019	0.00	0.00

TOTAL = 223.300 ACRES XKSAT = 0.03 %ROCK= 2.67

DTHETA

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF

= 10.1

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
167.48	DESERT	75.00	DRY	25.00	0.00	0.00	0.35	0.263
44.66	HILLSLOPES	20.00	DRY	40.00	0.00	0.00	0.15	0.030
11.17	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013

223.300 =TOTAL AREA ERR AVERAGE = 29.25 TOTAL = 0.00 AVG. = 0.305
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.036

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 2.67

% EFFECTIVE IMP. = 2.67

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11G	0.349	0.305	0.250	10.10	0.036	2.67	19.2

LOSS PARAMETERS FOR SUBBASIN: DA-11H

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	109.800	100.00	0.01	-2.000	0.00	0.00

TOTAL = 109.800 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
109.80	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

109.800 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11H	0.172	0.350	0.150	12.40	0.012	0.00	27.2

LOSS PARAMETERS FOR SUBBASIN: DA-11I

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	334.600	99.11	0.01	-1.982	0.00	0.00
110	3.000	0.89	0.13	-0.008	0.00	0.00

TOTAL = 337.600 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA		PSIF	
Dry =	0.15	=	12.4
Normal =	0.05		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
337.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

337.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11I	0.528	0.350	0.150	12.40	0.012	0.00	42.7

LOSS PARAMETERS FOR SUBBASIN: DA-11J

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	455.500	84.84	0.01	-1.697	0.00	0.00
110	44.400	8.27	0.13	-0.073	0.00	0.00
112	37.000	6.89	0.39	-0.028	0.00	0.00

TOTAL = 536.900 ACRES XKSAT = 0.02 %ROCK= 0.00

DTHETA		PSIF
Dry =	0.2	= 9.4
Normal =	0.1	
Wet =	0	

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
536.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

536.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.023

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11J	0.839	0.350	0.200	9.40	0.023	0.00	47.3

LOSS PARAMETERS FOR SUBBASIN: DA-11K

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
18	100.100	36.67	0.33	-0.177	15.00	5.50
12	83.800	30.70	0.01	-0.614	0.00	0.00
110	57.400	21.03	0.13	-0.186	0.00	0.00
112	24.600	9.01	0.39	-0.037	0.00	0.00
118	6.500	2.38	0.42	-0.009	0.00	0.00
100	0.600	0.22	0.4	-0.001	20.00	0.04

TOTAL = 273.000 ACRES XKSAT = 0.09 %ROCK= 5.54

DTHETA		PSIF	
Dry =	0.33	=	7.78
Normal =	0.15		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
163.80	DESERT	60.00	DRY	25.00	0.00	0.00	0.35	0.210
109.20	HILLSLOPES	40.00	DRY	40.00	0.00	0.00	0.15	0.060
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

273.000 =TOTAL AREA OK AVERAGE = 31.00 TOTAL = 0.00 AVG. = 0.270
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.330

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.111

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 5.54

% EFFECTIVE IMP. = 5.54

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11K	0.427	0.270	0.330	7.78	0.111	5.54	34

LOSS PARAMETERS FOR SUBBASIN: DA-11L

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	1134.400	79.75	0.01	-1.595	0.00	0.00
18	253.200	17.80	0.33	-0.086	15.00	2.67
110	34.800	2.45	0.13	-0.022	0.00	0.00
TOTAL =	1422.400 ACRES		XKSAT =	0.02	%ROCK=	2.67

DTHETA		PSIF	
Dry =	0.2	=	9.4
Normal =	0.1		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
1137.92	DESERT	80.00	DRY	25.00	0.00	0.00	0.35	0.280
213.36	HILLSLOPES	15.00	DRY	40.00	0.00	0.00	0.15	0.023
71.12	MOUNTAIN	5.00	DRY	50.00	0.00	0.00	0.25	0.013
1422.40	=TOTAL AREA OK		AVERAGE =	28.50	TOTAL =	0.00	AVG. =	0.315
					% =	0.00		

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.024

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	2.67
	% EFFECTIVE IMP. =		2.67

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11L	2.223	0.315	0.200	9.40	0.024	2.67	69.6

LOSS PARAMETERS FOR SUBBASIN: DA-11M

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
12	419.900	83.85	0.01	-1.677	0.00	0.00
18	35.300	7.05	0.33	-0.034	15.00	1.06
44	24.400	4.87	0.03	-0.074	0.00	0.00
112	9.000	1.80	0.39	-0.007	0.00	0.00
110	6.300	1.26	0.13	-0.011	0.00	0.00
100	5.900	1.18	0.4	-0.005	20.00	0.24

TOTAL = 500.800 ACRES XKSAT = 0.02 %ROCK= 1.29

DTHETA

Dry = 0.2
Normal = 0.1
Wet = 0

PSIF

= 9.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
400.64	DESERT	80.00	DRY	25.00	0.00	0.00	0.35	0.280
100.16	HILLSLOPES	20.00	DRY	40.00	0.00	0.00	0.15	0.030
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

500.800 =TOTAL AREA ERR AVERAGE = 28.00 TOTAL = 0.00 AVG. = 0.310
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.024

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 1.29

% EFFECTIVE IMP. = 1.29

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11M	0.783	0.310	0.200	9.40	0.024	1.29	69.5

LOSS PARAMETERS FOR SUBBASIN: DA-11N

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
12	113.600	77.65	0.01	-1.553	0.00	0.00
18	31.500	21.53	0.33	-0.104	15.00	3.23
44	1.200	0.82	0.03	-0.012	0.00	0.00

TOTAL = 146.300 ACRES XKSAT = 0.02 %ROCK= 3.23

DTHETA		PSIF	
Dry =	0.2	=	9.4
Normal =	0.1		
Wet =	0		

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
117.04	DESERT	80.00	DRY	25.00	0.00	0.00	0.35	0.280
29.26	HILLSLOPES	20.00	DRY	40.00	0.00	0.00	0.15	0.030
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

146.300 =TOTAL AREA OK AVERAGE = 28.00 TOTAL = 0.00 AVG. = 0.310
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.200

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.024

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 3.23
% EFFECTIVE IMP. = 3.23

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-11N	0.229	0.310	0.200	9.40	0.024	3.23	29.1

LOSS PARAMETERS FOR SUBBASIN: DA-12A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
112	36.500	73.15	0.39	-0.299	0.00	0.00
12	13.400	26.85	0.01	-0.537	0.00	0.00

TOTAL = 49.900 ACRES XKSAT = 0.15 %ROCK= 0.00

DTHETA

Dry = 0.4
Normal = 0.25
Wet = 0

PSIF

= 6.6

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
49.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

49.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.400

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.175

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-12A	0.078	0.350	0.400	6.60	0.175	0.00	25.9

LOSS PARAMETERS FOR SUBBASIN: DA-12B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
112	91.700	96.02	0.39	-0.393	0.00	0.00
12	3.800	3.98	0.01	-0.080	0.00	0.00

TOTAL = 95.500 ACRES XKSAT = 0.34 %ROCK= 0.00

DTHETA

Dry = 0.35
Normal = 0.25
Wet = 0

PSIF

= 3.98

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
95.50	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

95.500 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.350

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.396

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-12B	0.149	0.350	0.350	3.98	0.396	0.00	20.8

LOSS PARAMETERS FOR SUBBASIN: DA-14A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP *	% Area %R.O.
12	1542.600	100.00	0.01	-2.000	0.00	0.00

TOTAL = 1542.600 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA PSIF

Dry = 0.15 = 12.4
Normal = 0.05
Wet = 0

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
1542.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

1542.60 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14A	2.410	0.350	0.150	12.40	0.012	0.00	48.1

LOSS PARAMETERS FOR SUBBASIN: DA-14B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	507.200	96.74	0.01	-1.935	0.00	0.00
112	13.200	2.52	0.39	-0.010	0.00	0.00
98	3.900	0.74	0.37	-0.003	0.00	0.00

TOTAL = 524.300 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
524.30	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

524.300 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	0.00
	% EFFECTIVE IMP. =		0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14B	0.819	0.350	0.150	12.40	0.012	0.00	53.5

LOSS PARAMETERS FOR SUBBASIN: DA-14C

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	463.700	99.81	0.01	-1.996	0.00	0.00
112	0.900	0.19	0.39	-0.001	0.00	0.00

TOTAL = 464.600 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
464.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

464.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	0.00
	% EFFECTIVE IMP. =		0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14C	0.726	0.350	0.150	12.40	0.012	0.00	58.6

LOSS PARAMETERS FOR SUBBASIN: DA-14D

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	81.200	52.52	0.01	-1.050	0.00	0.00
98	58.000	37.52	0.37	-0.162	0.00	0.00
112	15.400	9.96	0.39	-0.041	0.00	0.00

TOTAL = 154.600 ACRES XKSAT = 0.06 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.15
Wet = 0

PSIF

= 8.6

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
154.60	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

154.600 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.070

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14D	0.242	0.350	0.250	8.60	0.070	0.00	27.8

LOSS PARAMETERS FOR SUBBASIN: DA-14E

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	425.400	100.00	0.01	-2.000	0.00	0.00

TOTAL = 425.400 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry =	0.15
Normal =	0.05
Wet =	0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
425.40	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

425.400 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14E	0.665	0.350	0.150	12.40	0.012	0.00	60.9

LOSS PARAMETERS FOR SUBBASIN: DA-14F

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	166.700	94.61	0.01	-1.892	0.00	0.00
44	8.000	4.54	0.03	-0.069	0.00	0.00
98	1.500	0.85	0.37	-0.004	0.00	0.00

TOTAL = 176.200 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry = 0.15
Normal = 0.05
Wet = 0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
176.20	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

176.200 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14F	0.275	0.350	0.150	12.40	0.012	0.00	37.9

LOSS PARAMETERS FOR SUBBASIN: DA-14G

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
112	16.600	30.18	0.39	-0.123	0.00	0.00
98	14.200	25.82	0.37	-0.111	0.00	0.00
12	14.100	25.64	0.01	-0.513	0.00	0.00
75	8.300	15.09	0.23	-0.096	0.00	0.00
10	1.800	3.27	0.94	-0.001	0.00	0.00

TOTAL = 55.000 ACRES XKSAT = 0.14 %ROCK= 0.00

DTHETA

Dry = 0.39
Normal = 0.23
Wet = 0

PSIF

= 6.78

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
55.00	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

55.000 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.390

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.163

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00
% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-14G	0.086	0.350	0.390	6.78	0.163	0.00	21.1

LOSS PARAMETERS FOR SUBBASIN: DA-15A

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	40.900	100.00	0.01	-2.000	0.00	0.00

TOTAL = 40.900 ACRES XKSAT = 0.01 %ROCK= 0.00

DTHETA

Dry =	0.15
Normal =	0.05
Wet =	0

PSIF

= 12.4

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
40.90	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

40.900 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.150

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.012

IMPERVIOUS AREA:

URBAN @	100 %	effective =	0.00
ROCK OUTCROP @	100 %	effective =	0.00
	% EFFECTIVE IMP. =		0.00

INPUT VALUES FOR MCUHP2 PROGRAM

SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-15A	0.064	0.350	0.150	12.40	0.012	0.00	18.3

LOSS PARAMETERS FOR SUBBASIN: DA-15B

Soil Survey Used AGUILA

XKSAT

Map Unit	AREA ACRES	% Area	XKSAT	log(XKSAT) *(% Area)	% ROCK OUTCROP	% Area * %R.O.
12	187.500	75.91	0.01	-1.518	0.00	0.00
112	33.400	13.52	0.39	-0.055	0.00	0.00
3	9.900	4.01	0.58	-0.009	0.00	0.00
10	8.200	3.32	0.94	-0.001	0.00	0.00
98	6.400	2.59	0.37	-0.011	0.00	0.00
113	1.200	0.49	0.39	-0.002	0.00	0.00
44	0.400	0.16	0.03	-0.002	0.00	0.00

TOTAL = 247.000 ACRES XKSAT = 0.03 %ROCK= 0.00

DTHETA

Dry = 0.25
Normal = 0.13
Wet = 0

PSIF

= 10.1

LAND USE

AREA ACRES	LAND USE type	% Area	DTHETA condition	% veg. cover	% Imp. Inc.ROW	ImpArea ACRES	IA in.	Wgtd. IA in.
247.00	DESERT	100.00	DRY	25.00	0.00	0.00	0.35	0.350
0.00	HILLSLOPES	0.00	DRY	40.00	0.00	0.00	0.15	0.000
0.00	MOUNTAIN	0.00	DRY	50.00	0.00	0.00	0.25	0.000

247.000 =TOTAL AREA OK AVERAGE = 25.00 TOTAL = 0.00 AVG. = 0.350
% = 0.00

PERCENT OF SUBBASIN DRY = 100.00 %
NORMAL = 0.00 %
WET = 0.00 %

SUBBASIN DTHETA WEIGHTED BY LAND USE = 0.250

SUBBASIN XKSAT ADJUSTED FOR VEG. = 0.035

IMPERVIOUS AREA: URBAN @ 100 % effective = 0.00
ROCK OUTCROP @ 100 % effective = 0.00

% EFFECTIVE IMP. = 0.00

INPUT VALUES FOR MCUHP2 PROGRAM

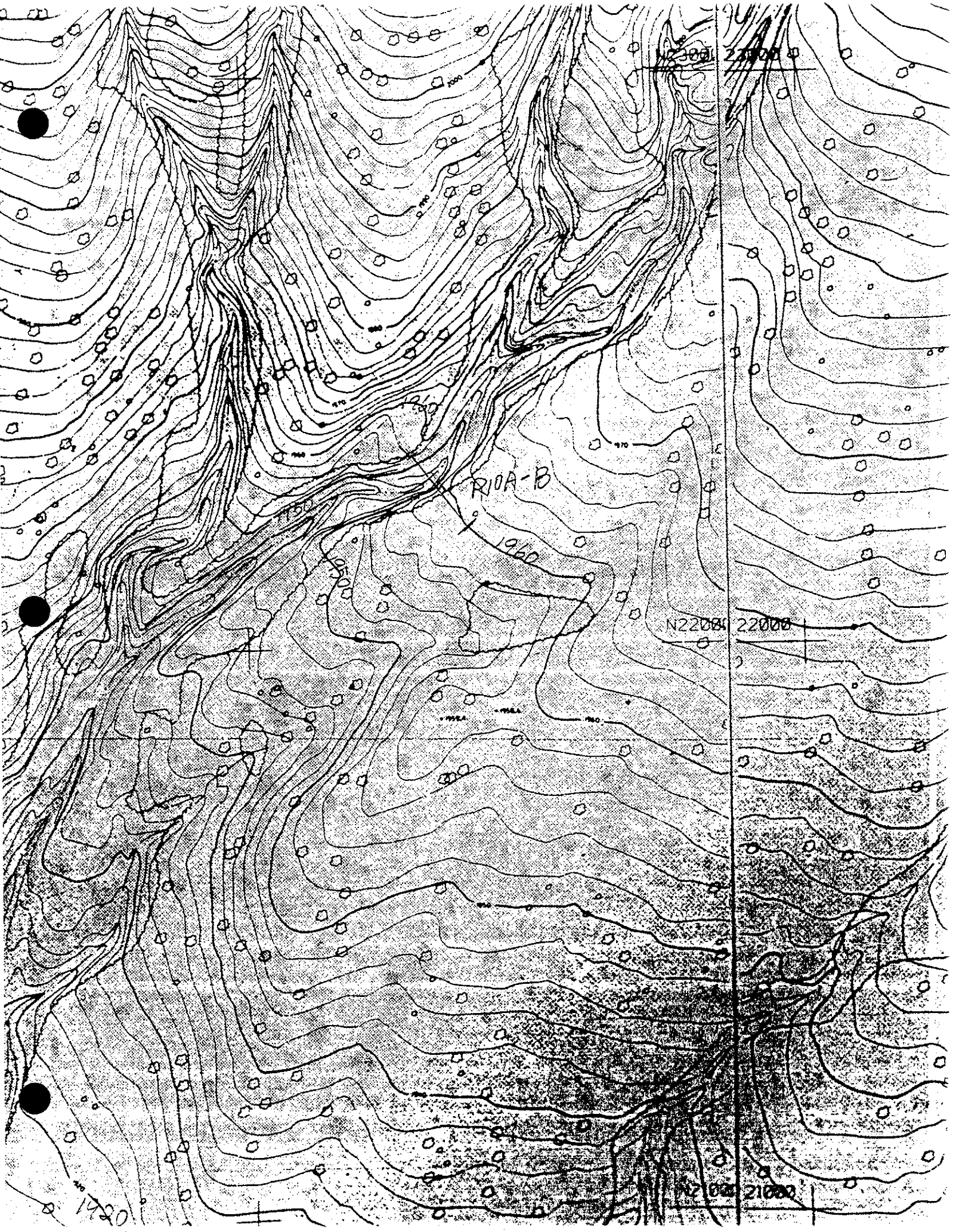
SUBBASIN	AREA sq.mi.	IA inches	DTHETA	PSIF	XKSAT adj.	RTIMP %	LAG min
DA-15B	0.386	0.350	0.250	10.10	0.035	0.00	40.1

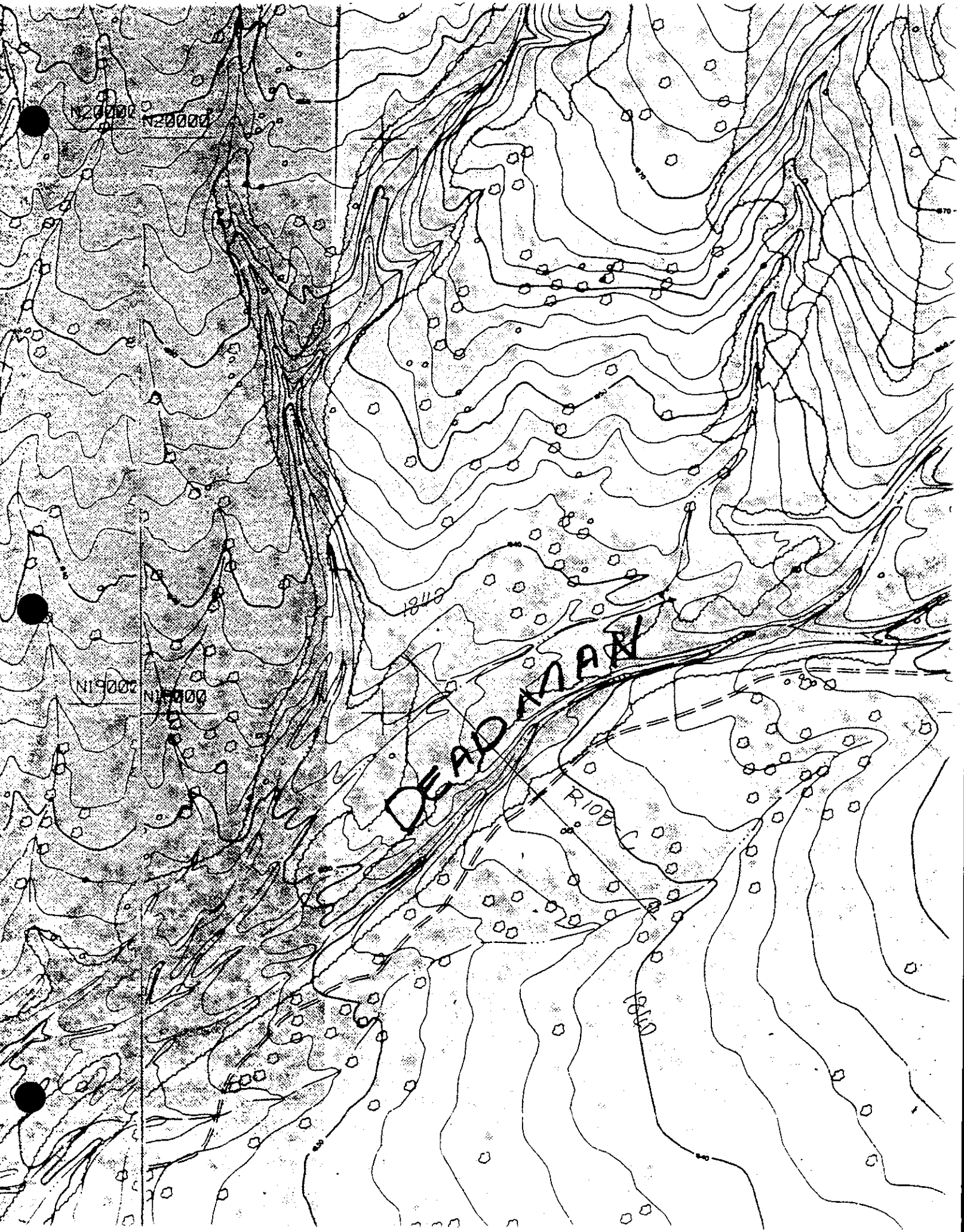
DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX D: Routing Reach Cross Section Locations


N22084 22000
R10A-B
1960
1950
1920
N22084 21000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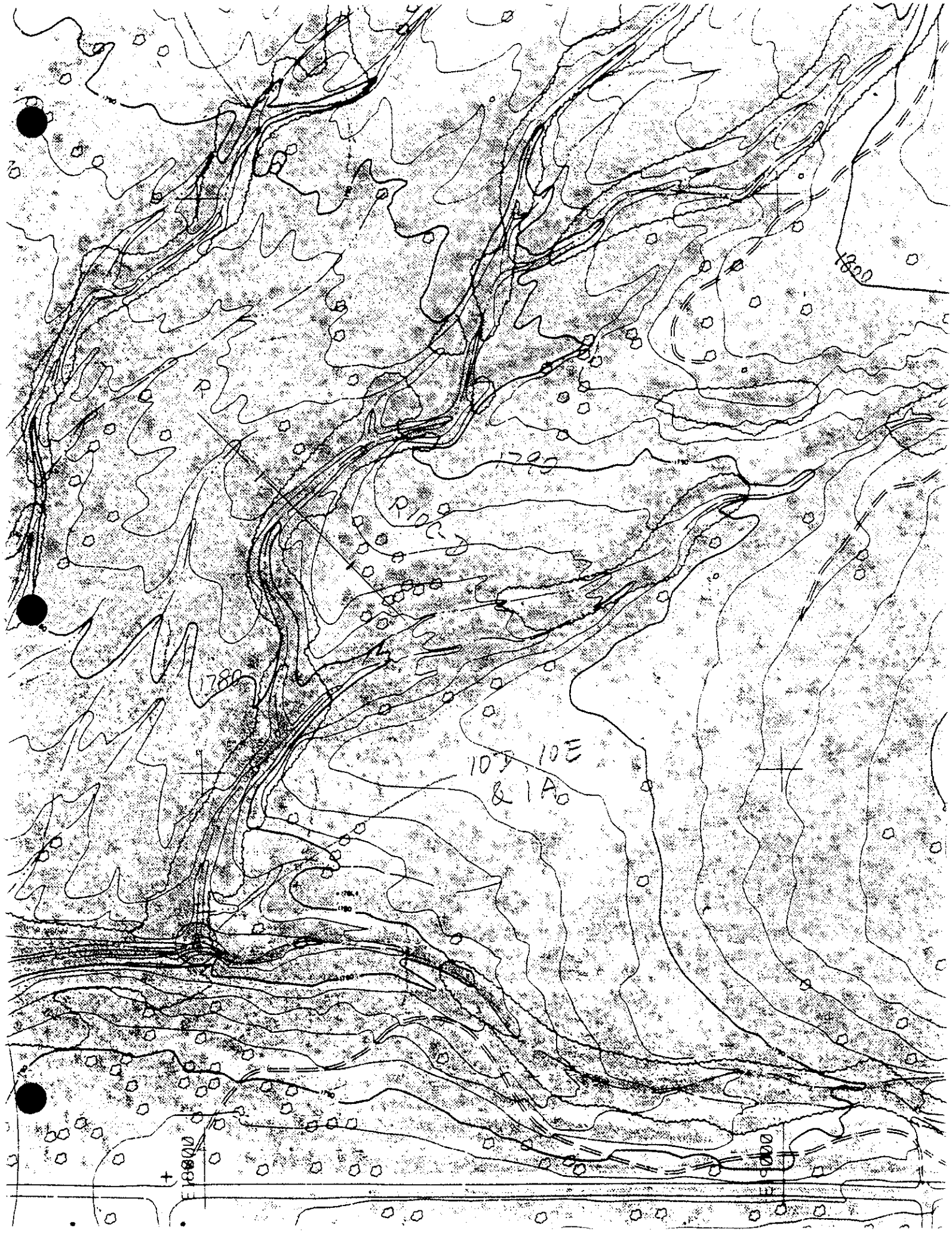
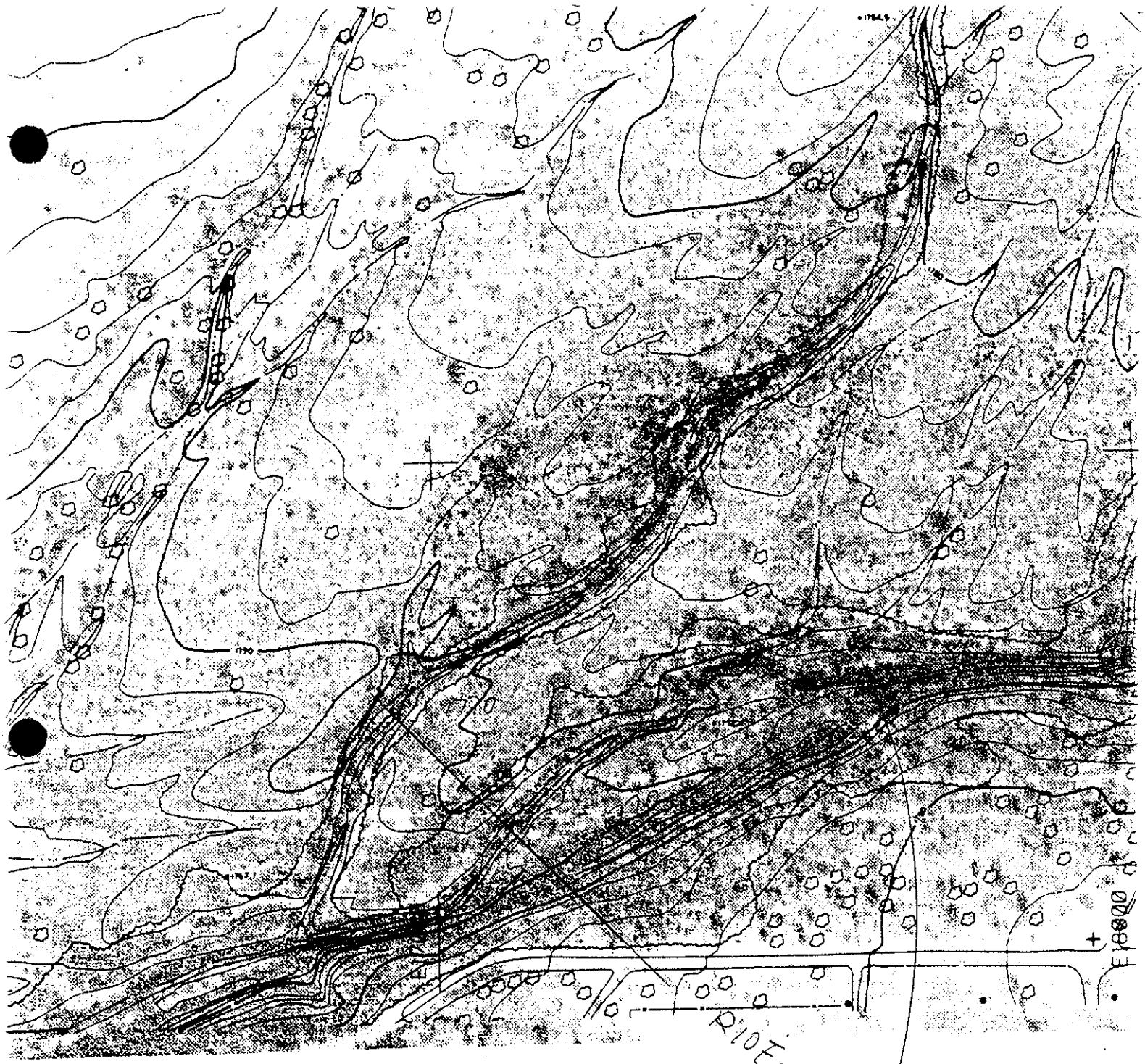
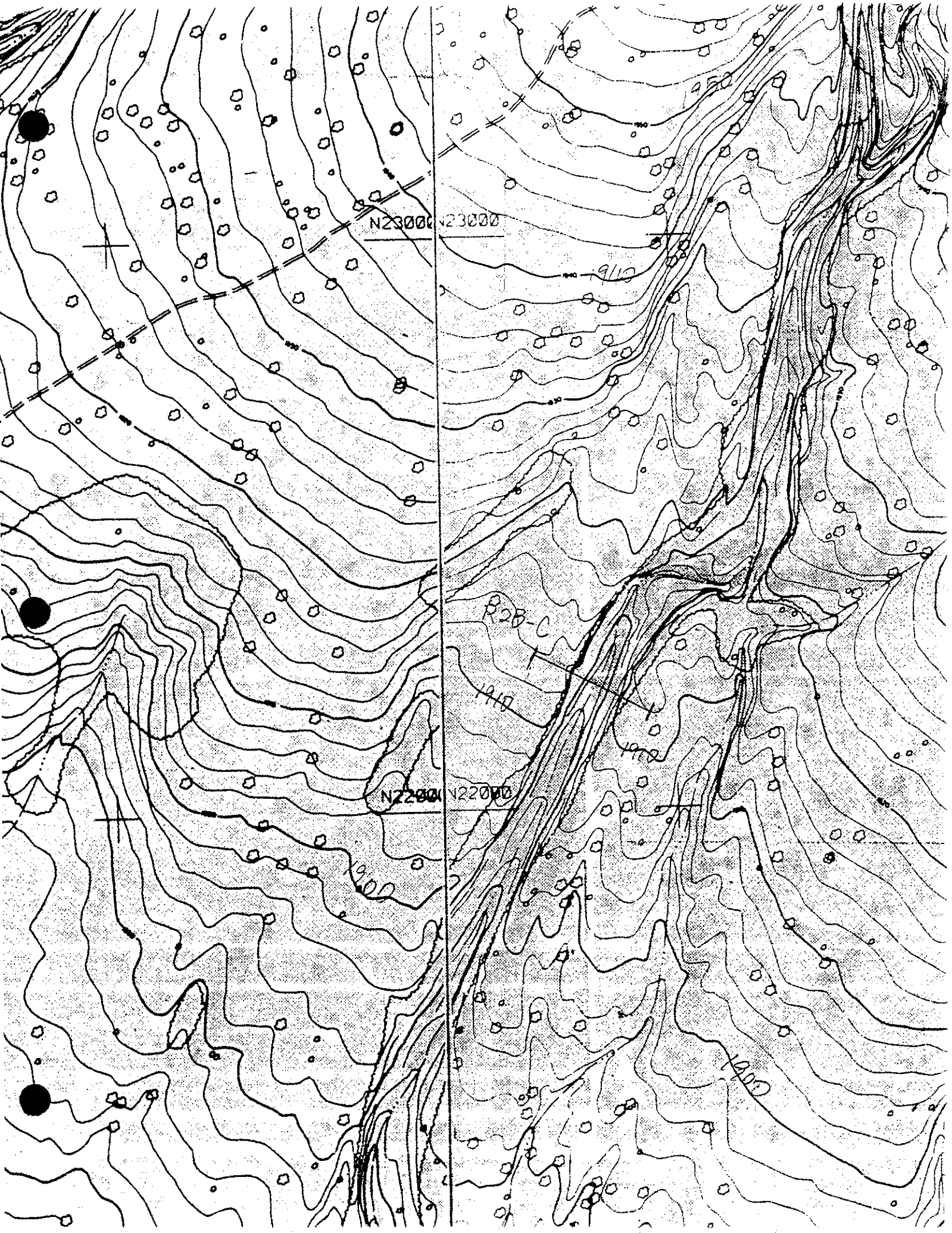
N20000
N19000
N19000
1810
DEAD MAN
R10B
840


1800
R
1790
R10
1780
10D 10E
& 1A
1800


1770
1770
1767.1
1764.9
E 18000
R10E-F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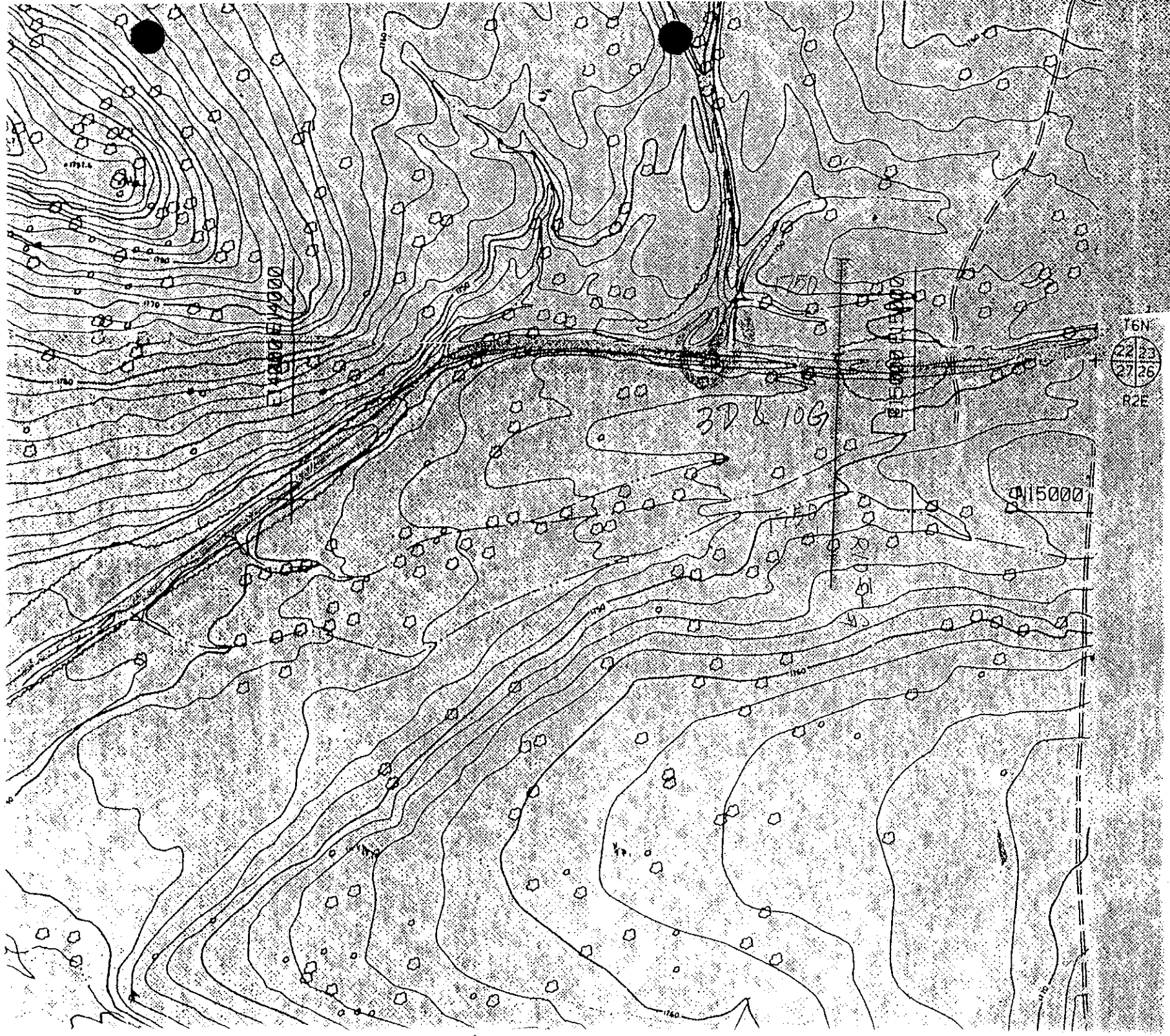
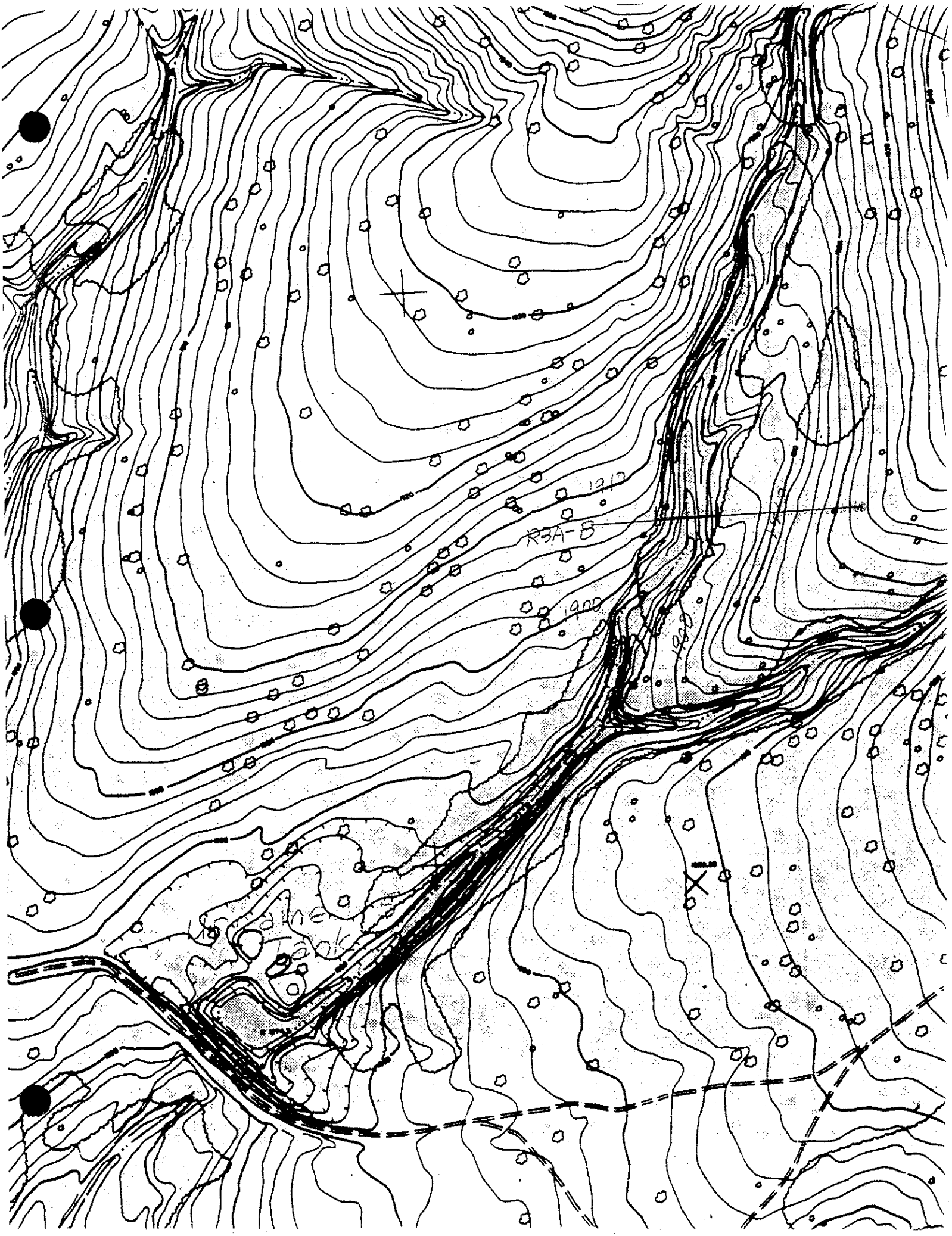
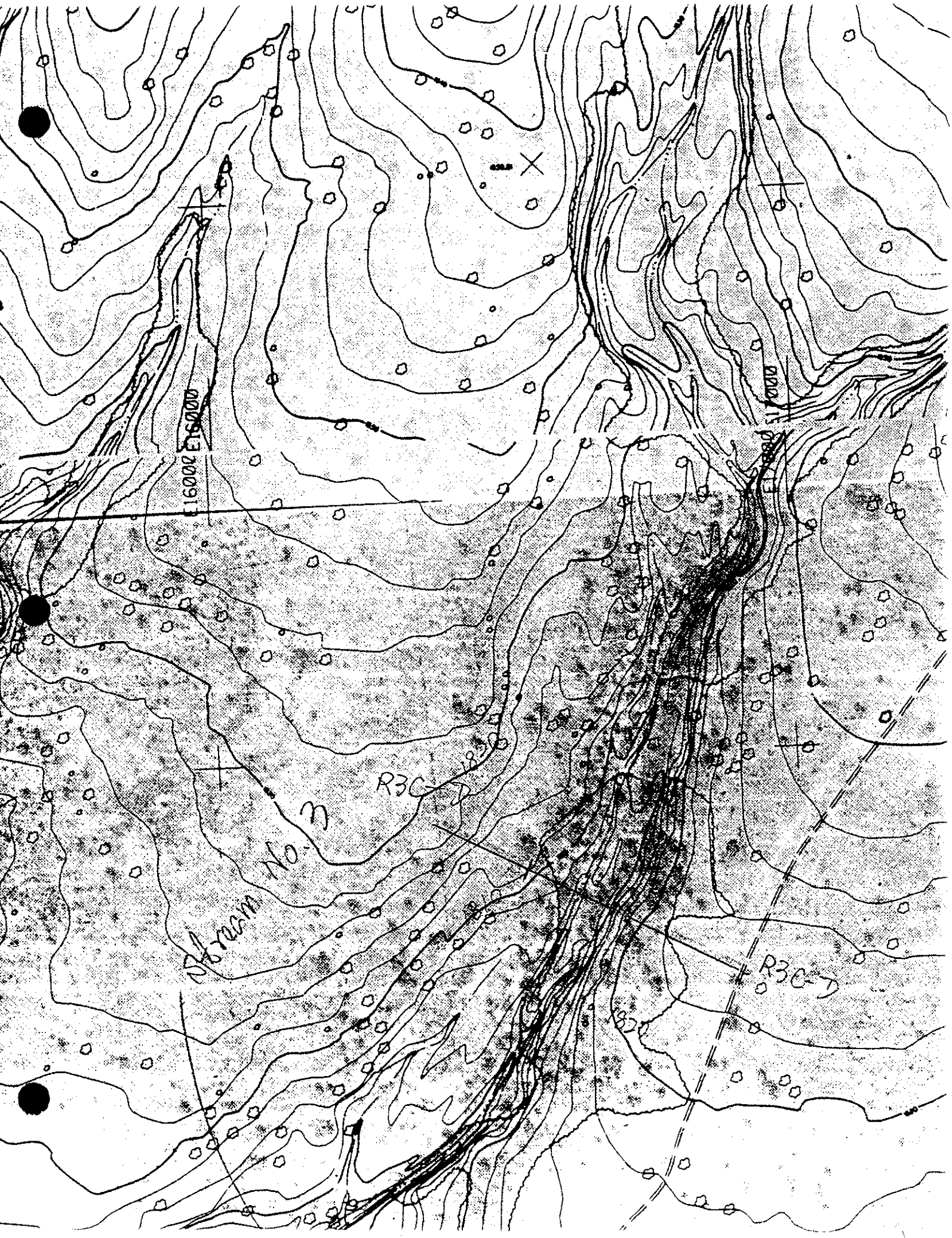
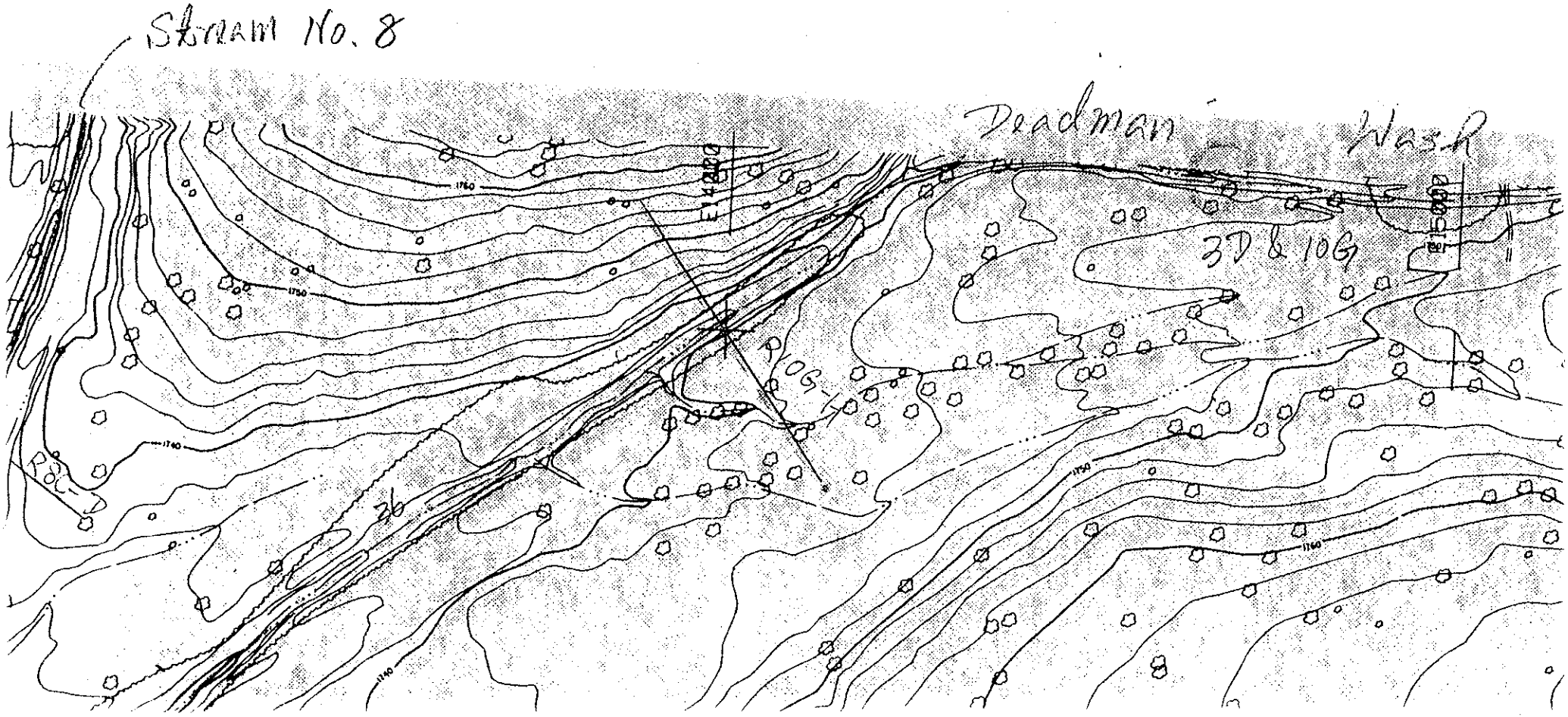
N23000
910
R2B-C
910
900
N22000
N22000
900
900

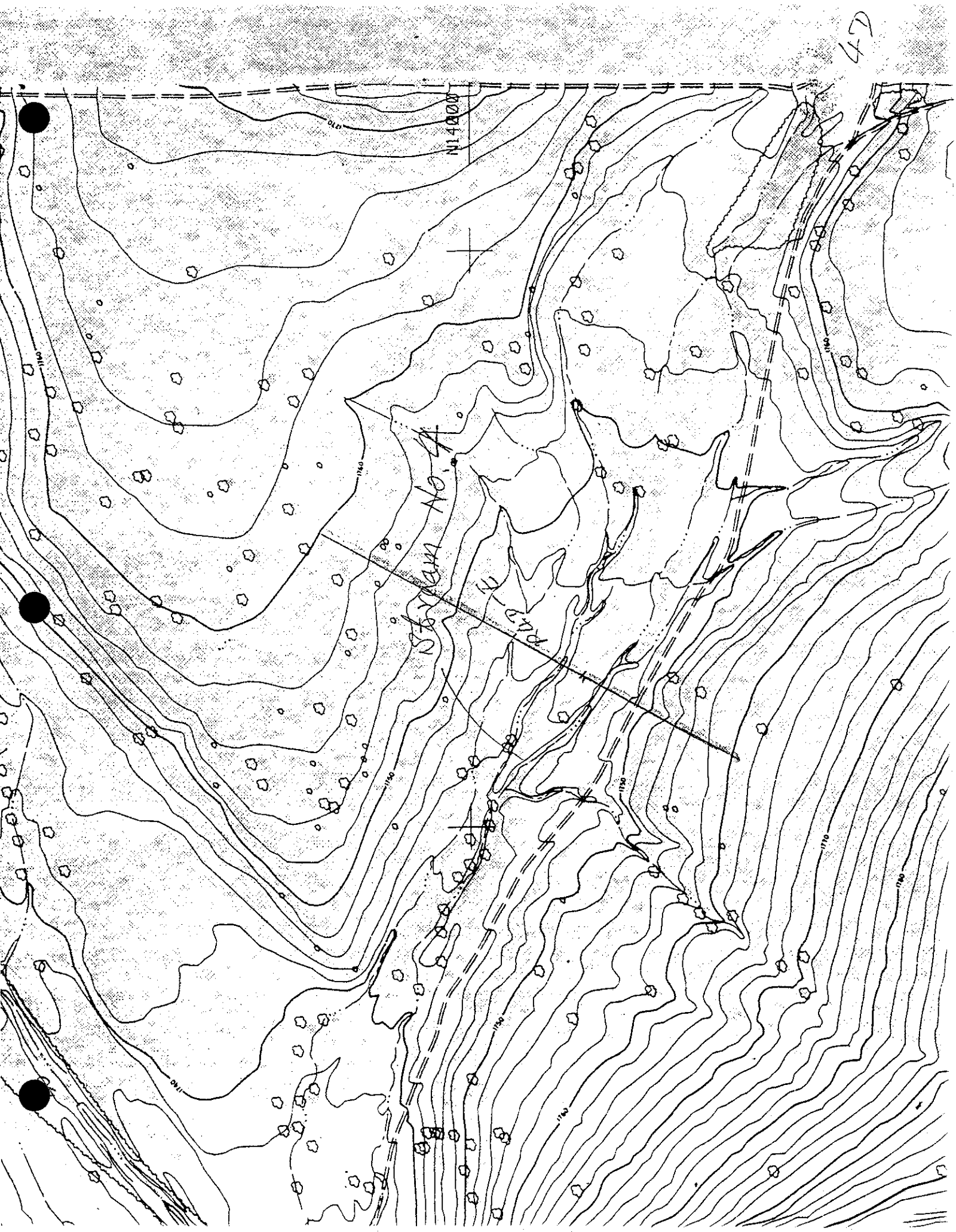

T6N
22 23
27 26
R2E
3D & 10G
115000
1160
1170
1180


1210
RBA-B
1900
1800


E16000
E16000
R3C-D
R3C-D


Stream No. 8
Deadman Wash
3D & 10G
PLOG
POC
26
1760
1750
1740

33rd Ave
Irvine Rd
1 MILE
R4C-A
R4B-AC
N
780
1755.5
1763.2
1752.6
1755.2
1759.4
1762.2
1768
1774
1784.9
1764.4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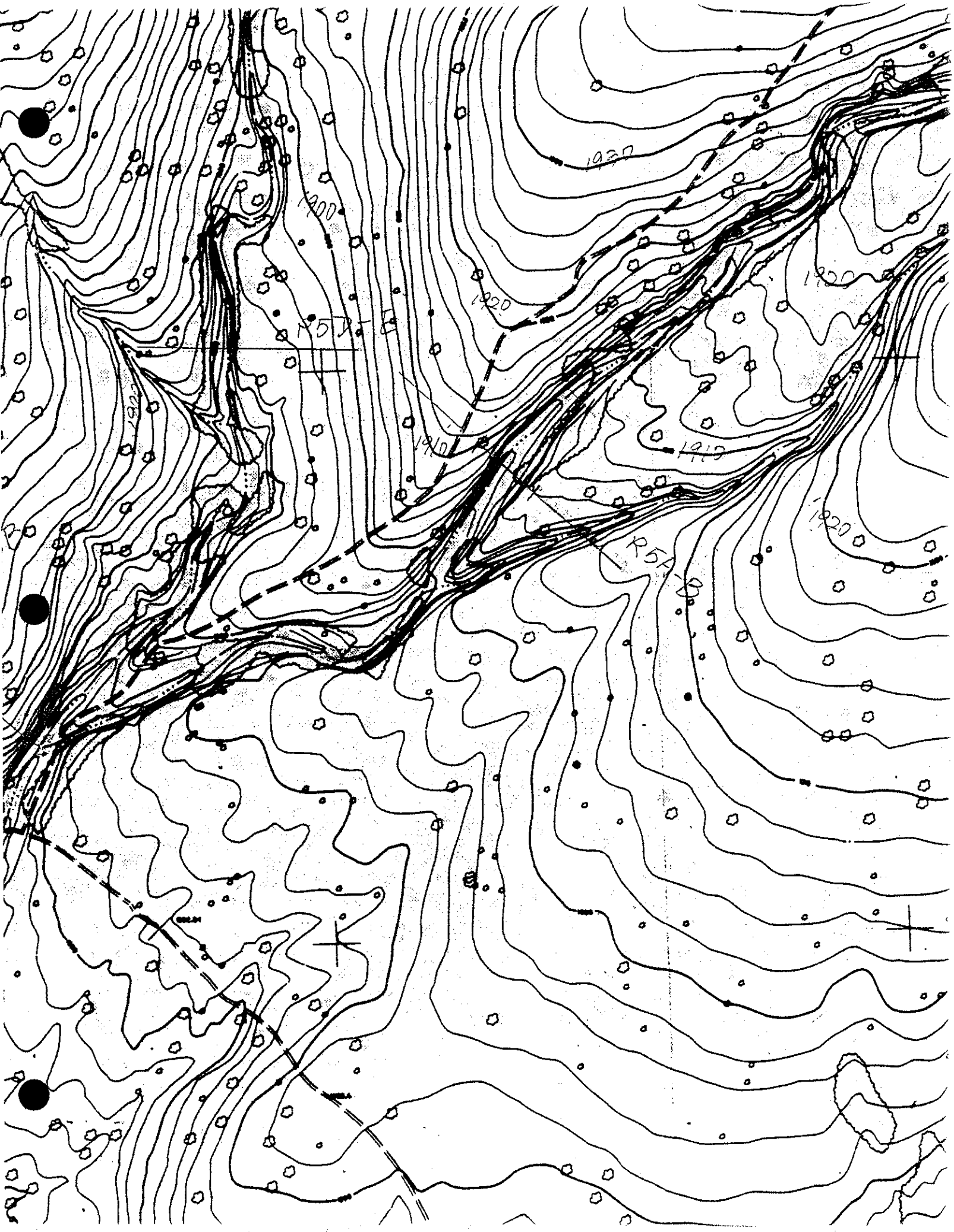
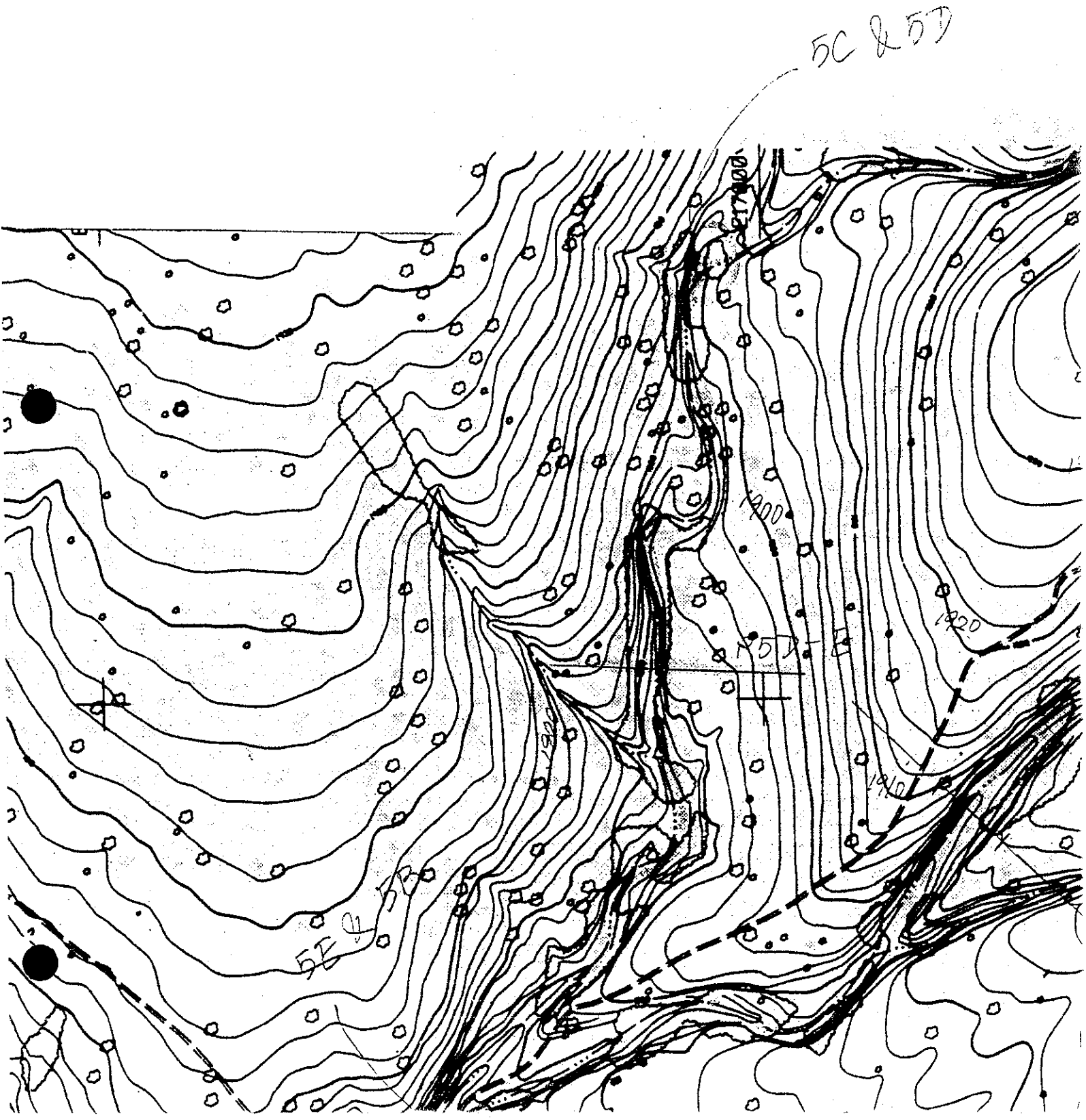
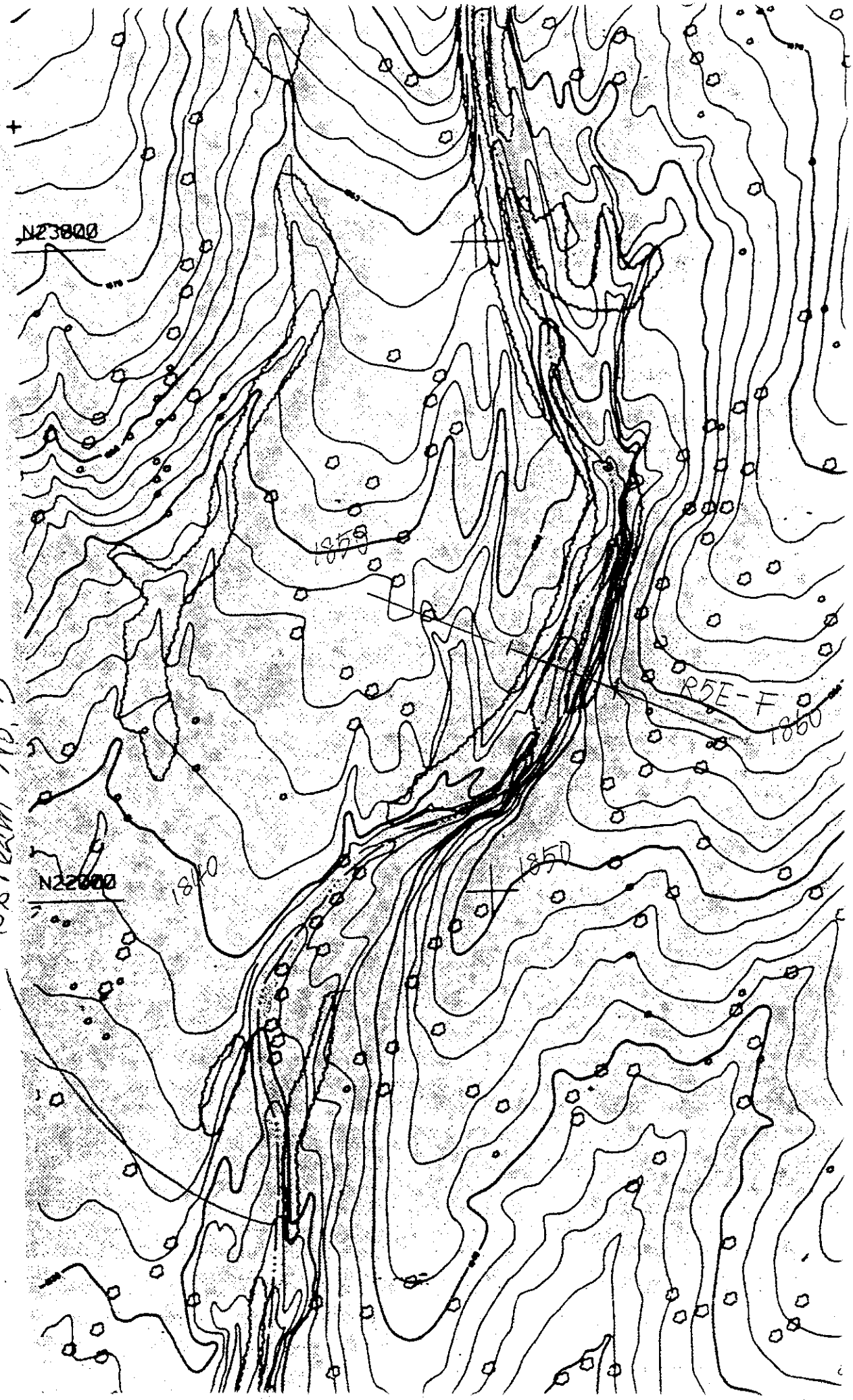
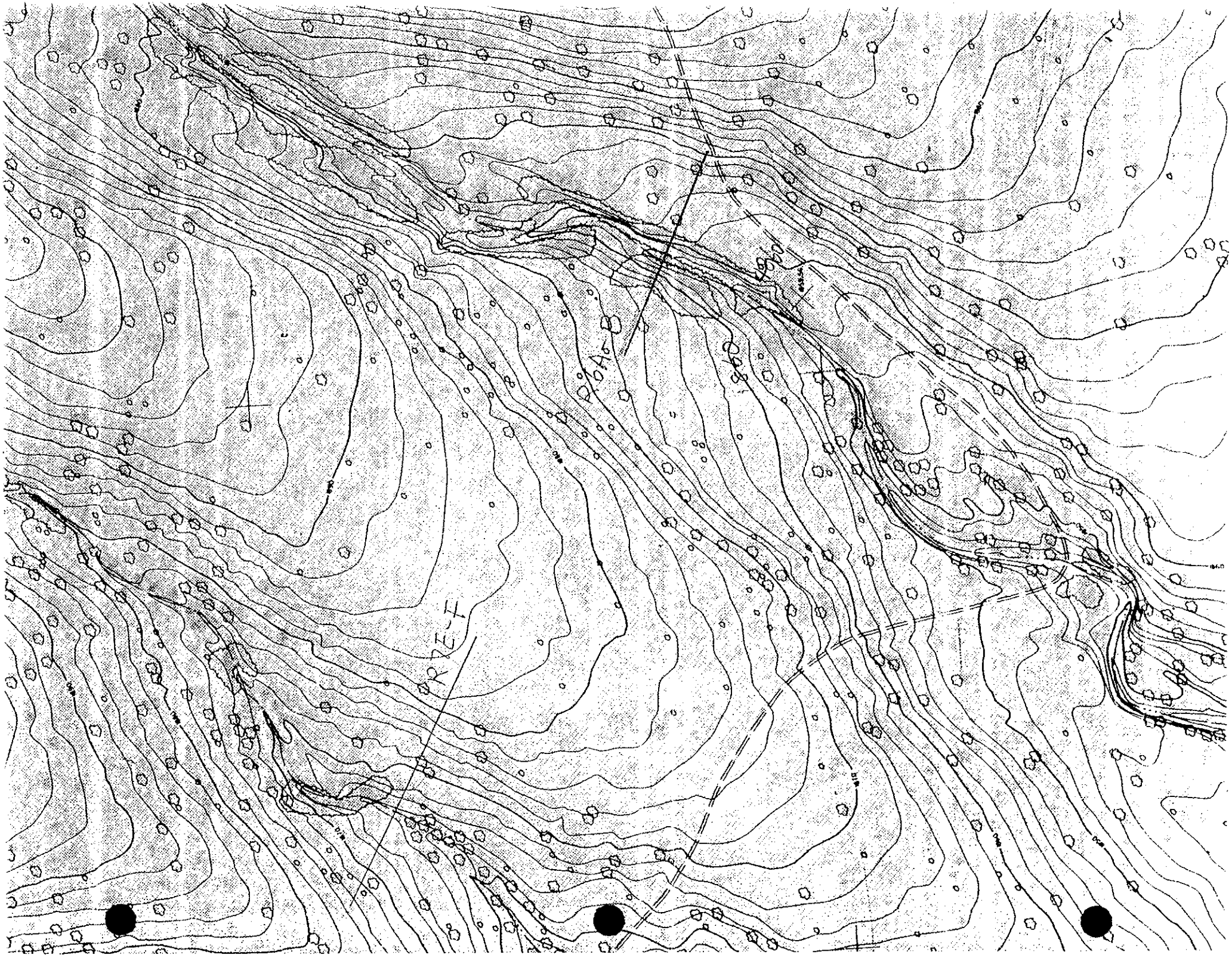
1140
1150
1160
1170
1180
Stream No. 4
Pag 2

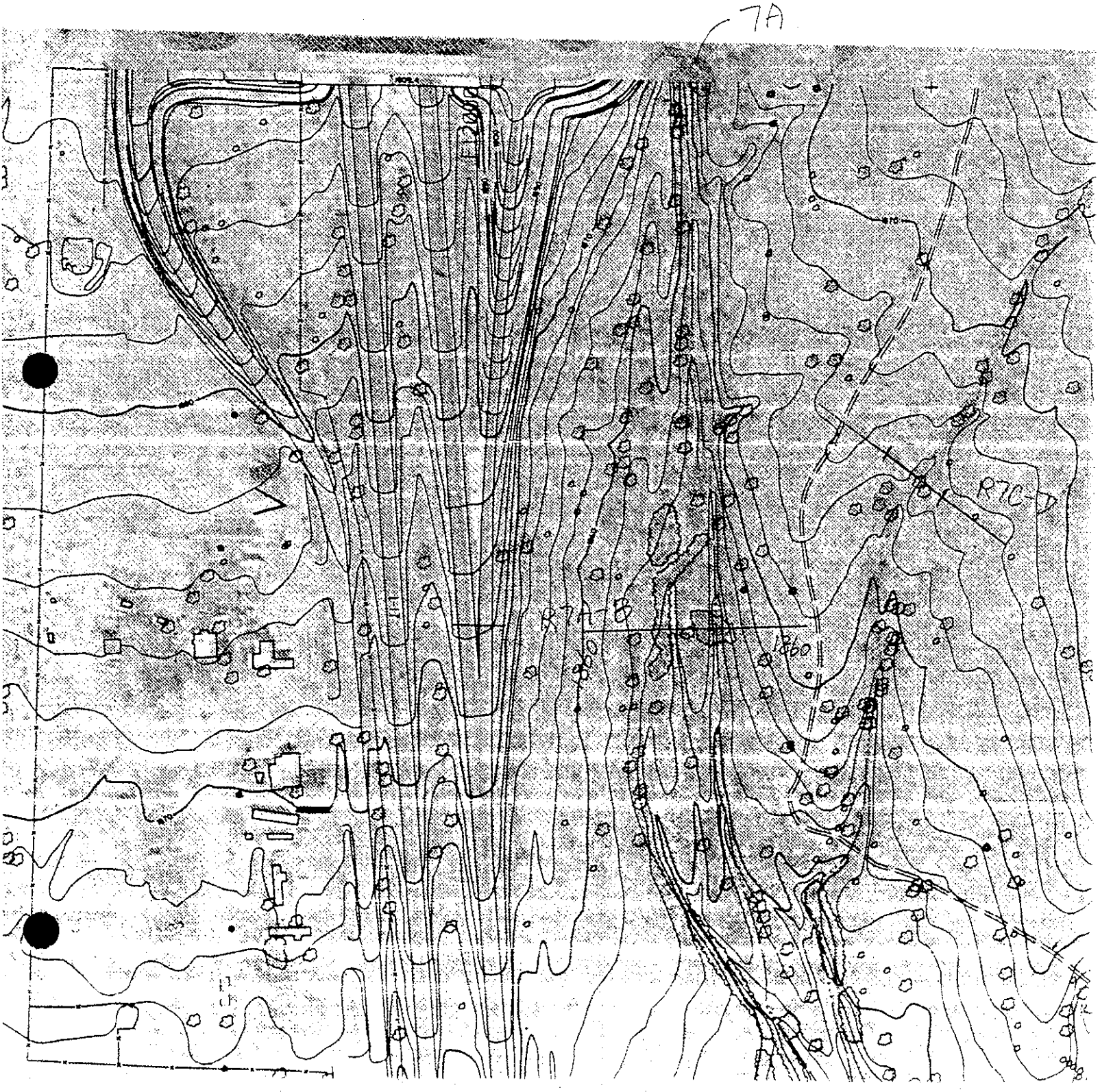

1930
1900
1920
1910
1920
1920
R5A
R5A

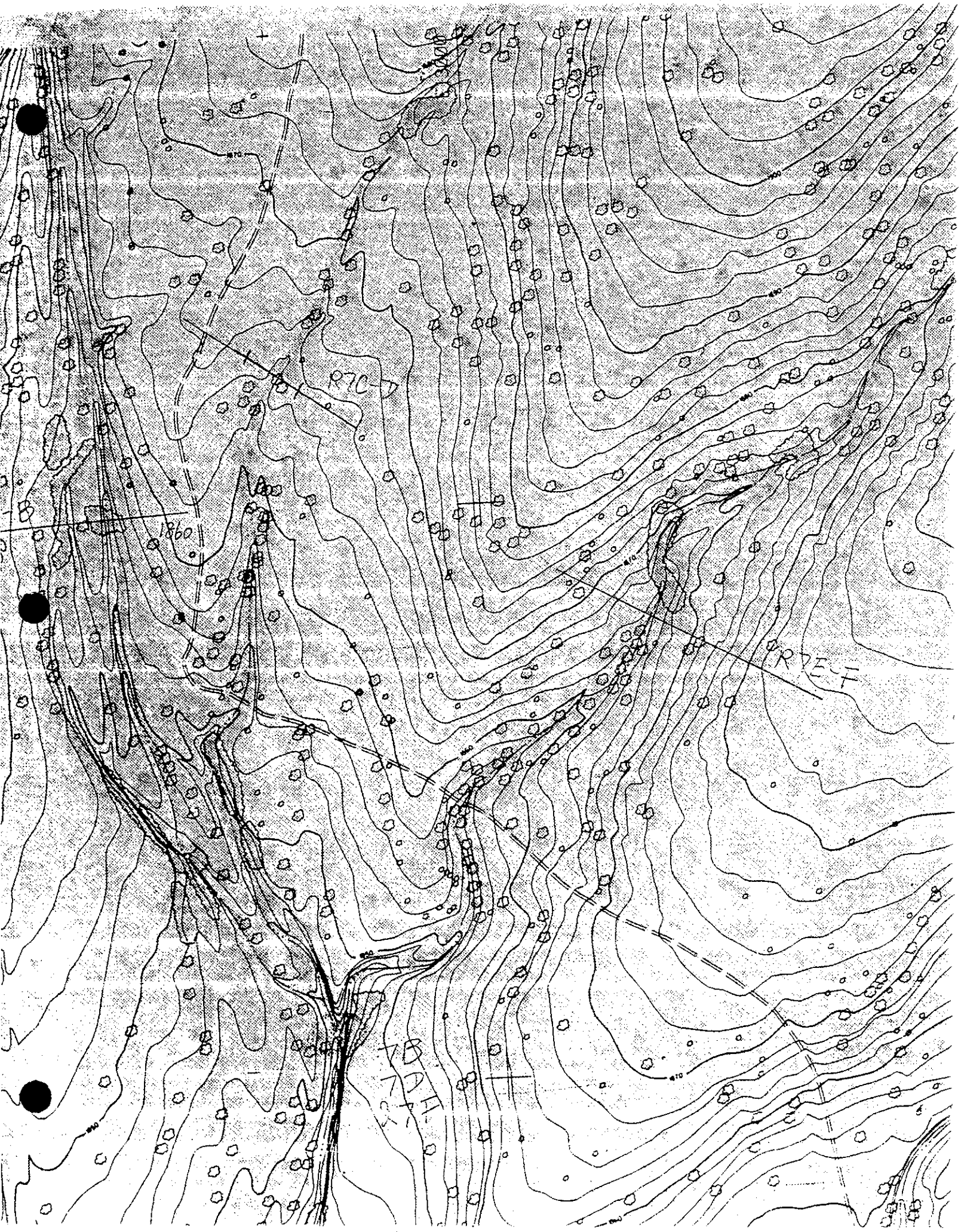

5C & 5D
1800
1920
1910
5E & 5F

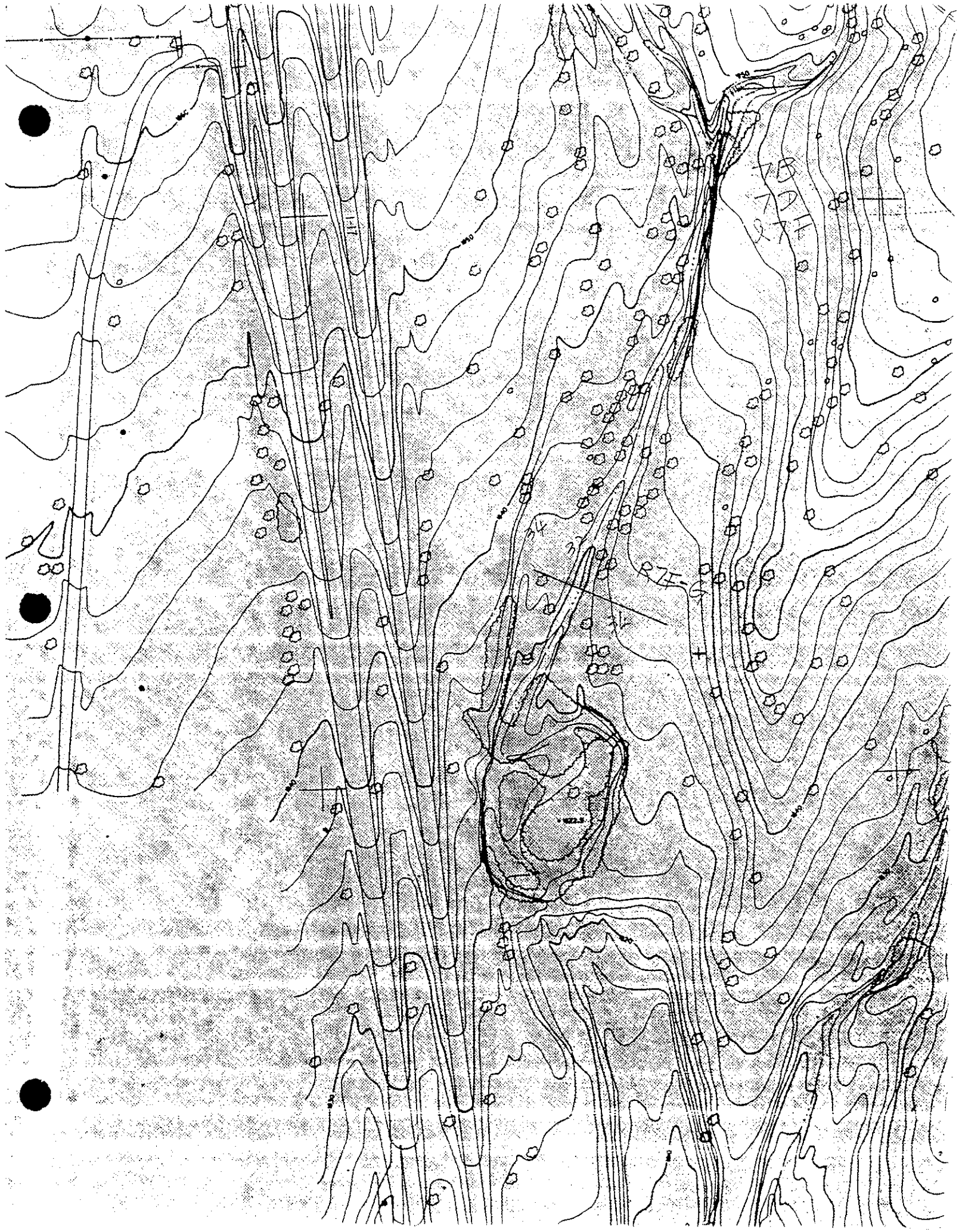


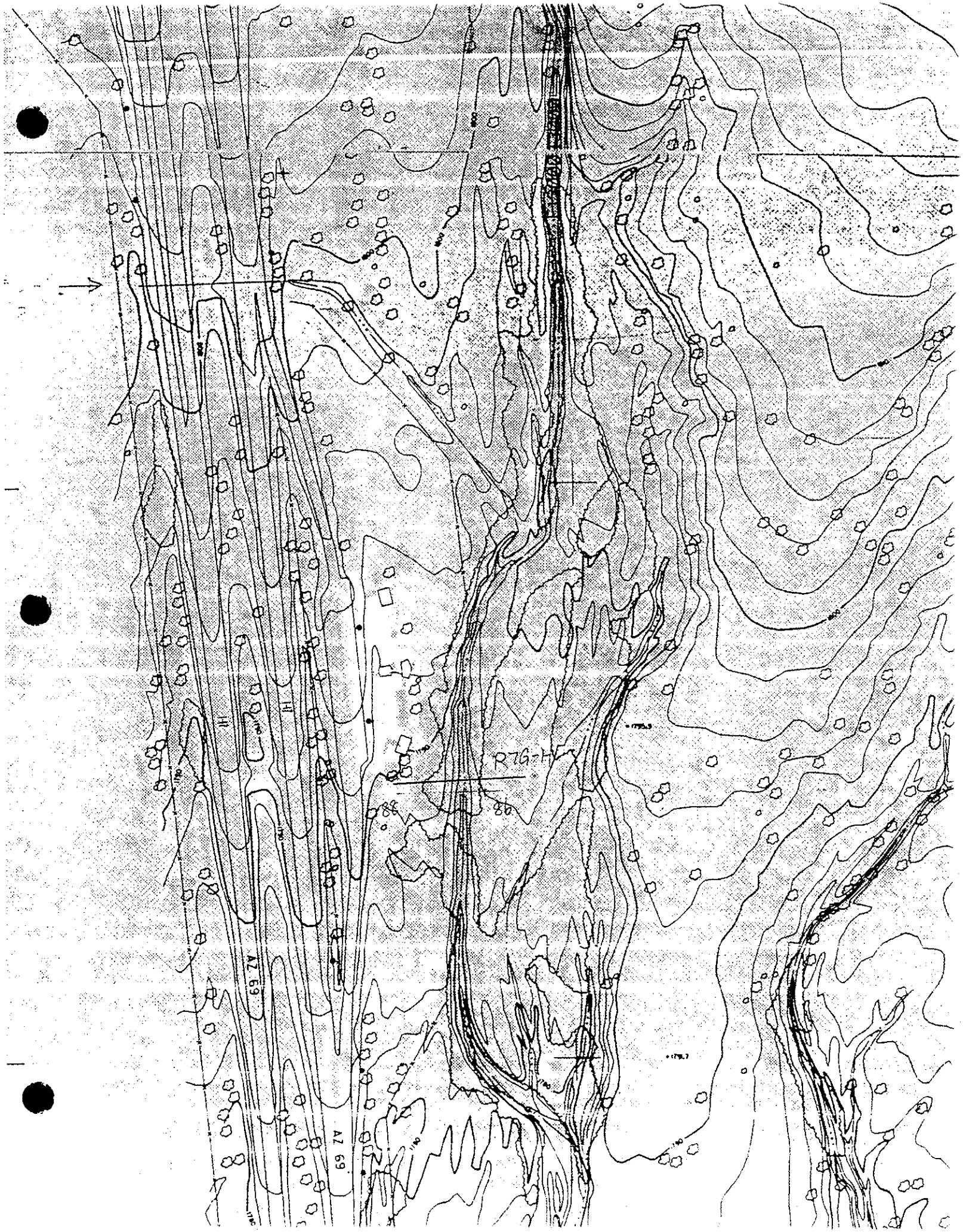
Stream No. 5

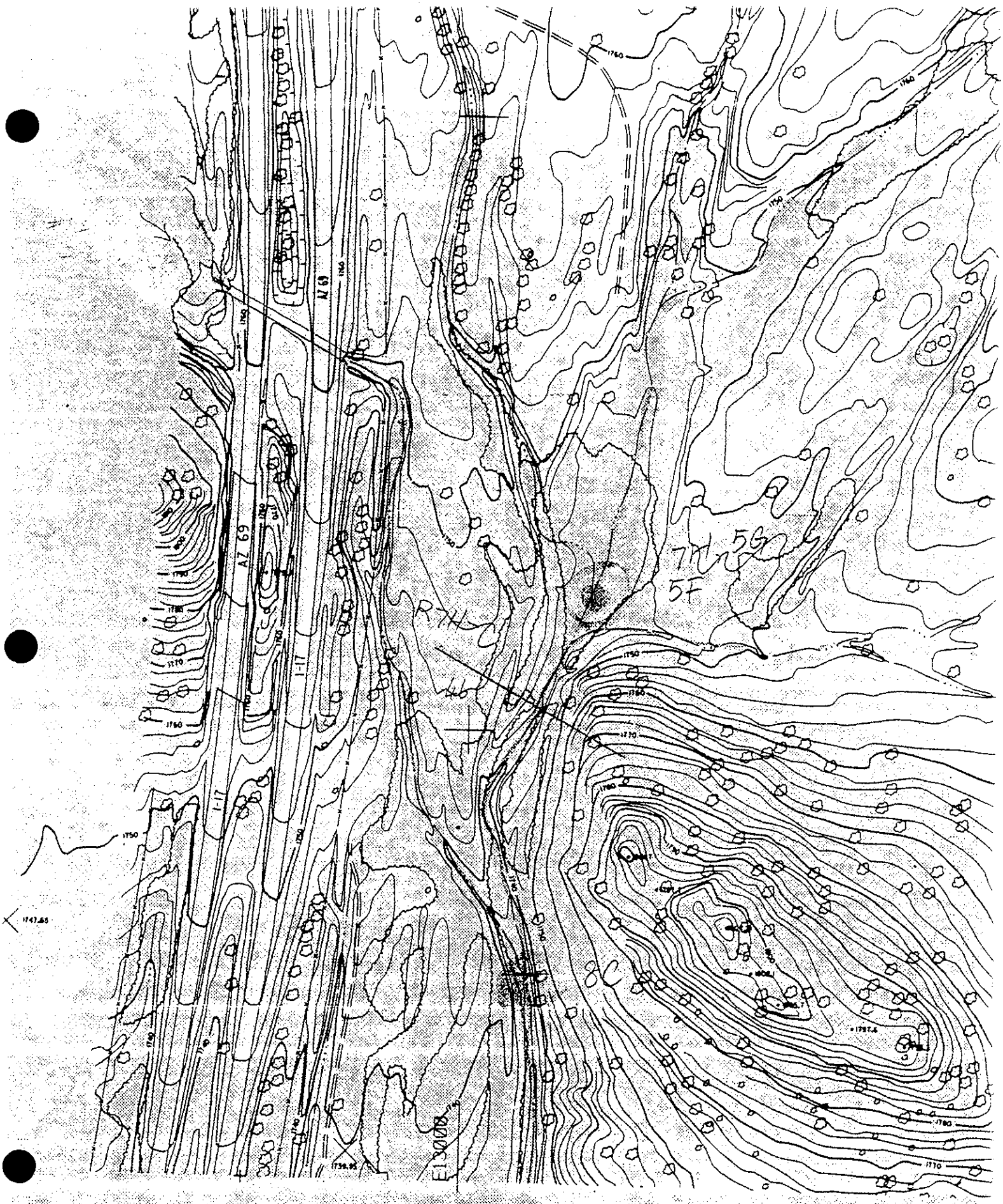

A
B
C
D
E
F


7A
R7C-D
R7A-B
1860


R7C-D
1860
R7E-F
7B
7D
7H




R7G-H
AZ 69
AZ 69


AZ 69
AZ 69
I-17
I-17
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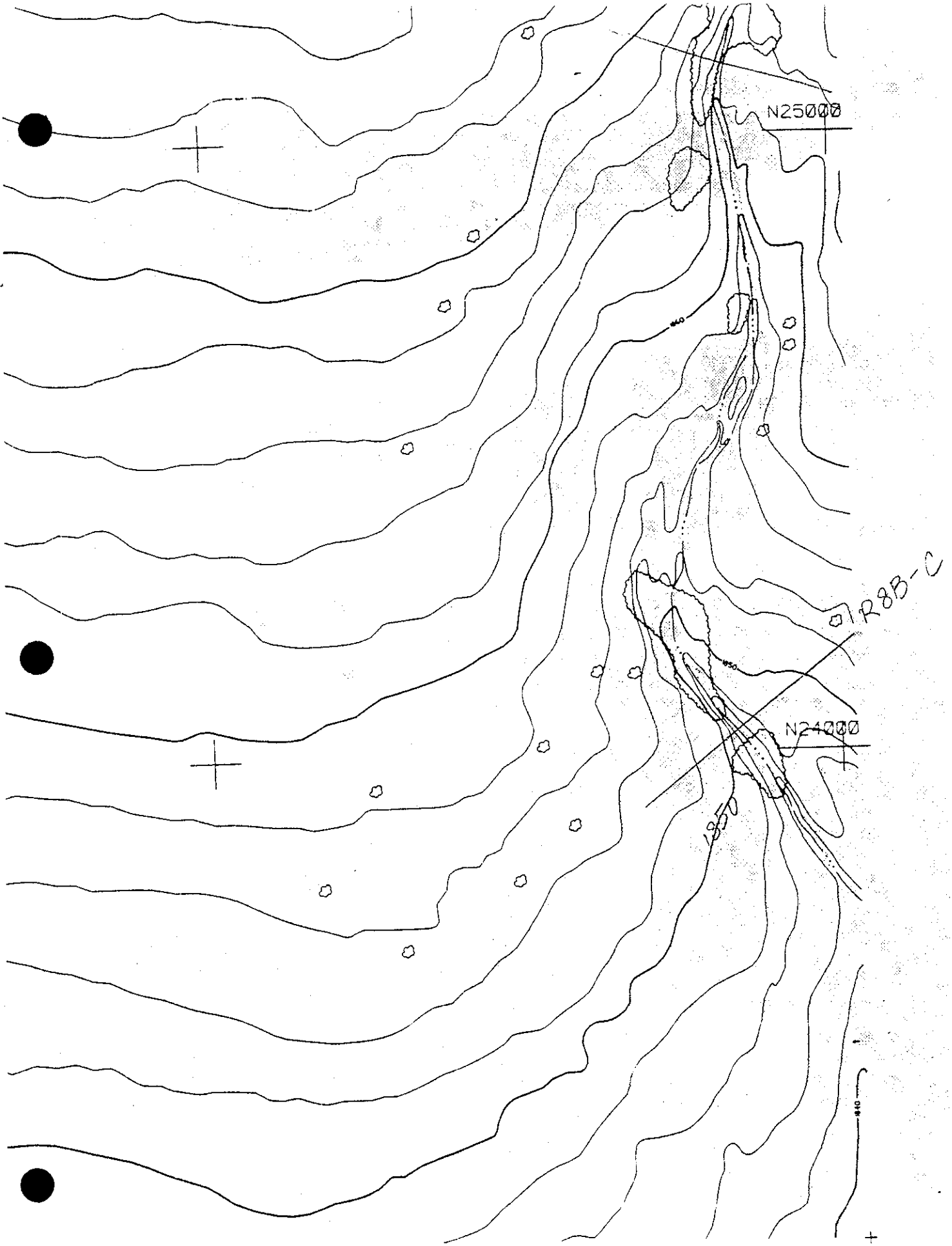
1740
1730
1720
1710
1700
7H
5G
5F
R7H
46
8C
E13008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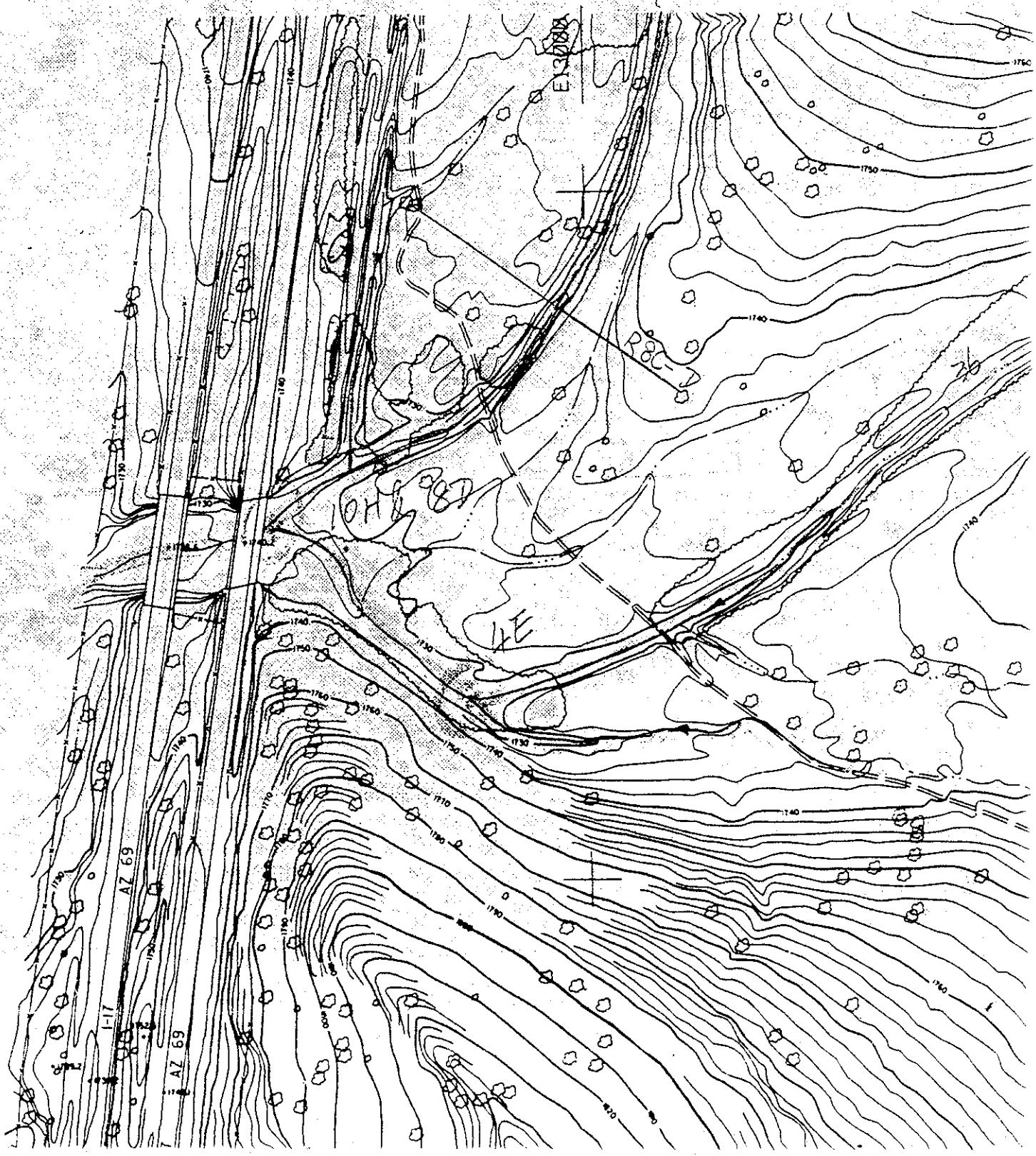
R8B-C
N24000
1850
940

Stream No. 8


AZ 69
I-17
AZ 69
1750
1740
1730
1720
1710
1700
1690
1680
1670
1660
1650
1640
1630
1620
1610
1600
1590
1580
1570
1560
1550
1540
1530
1520
1510
1500
1490
1480
1470
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1010
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960
950
940
930
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910
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890
880
870
860
850
840
830
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810
800
790
780
770
760
750
740
730
720
710
700
690
680
670
660
650
640
630
620
610
600
590
580
570
560
550
540
530
520
510
500
490
480
470
460
450
440
430
420
410
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390
380
370
360
350
340
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320
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220
210
200
190
180
170
160
150
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10
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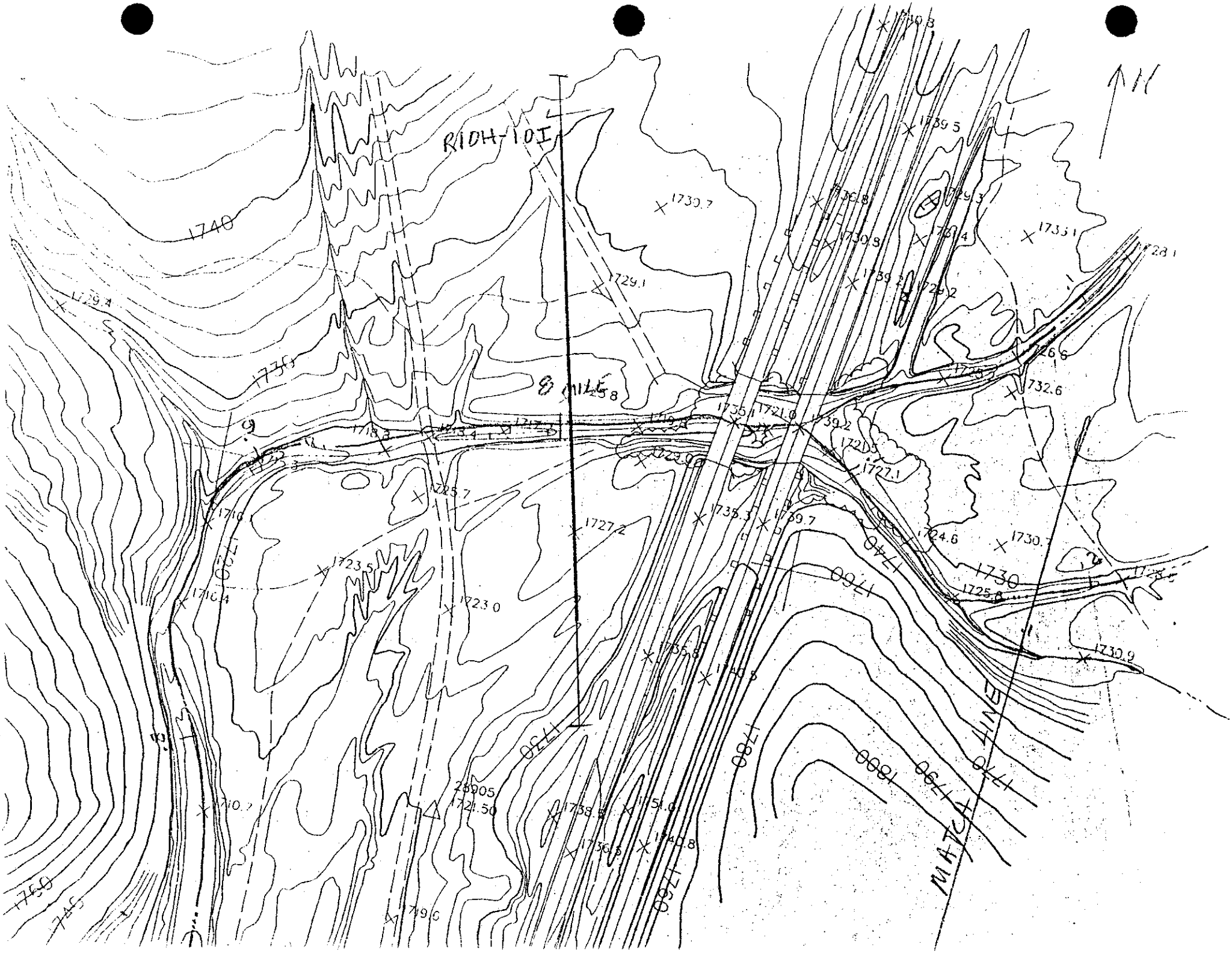
RBC
OHB
BD
LE
E13


RIDH-101
8 MILE
MATCH LINE
N
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1730
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1760
1770
1780
1800
1729.4
1729.1
1730.7
1729.5
1733.1
1728.1
1726.6
1732.6
1721.0
1727.1
1724.6
1730.7
1725.8
1730.9
1723.0
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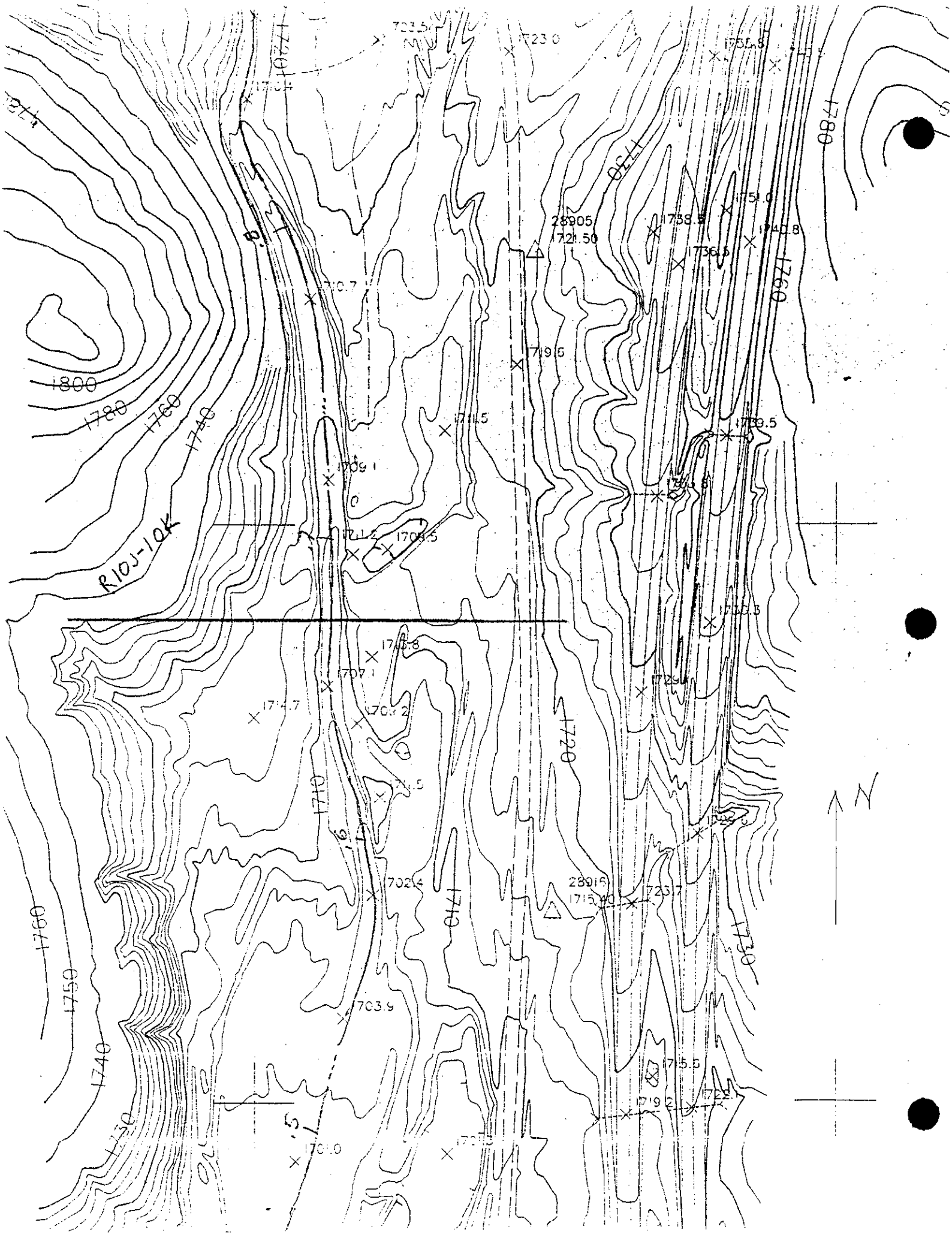
1710.4
1710.2
1749.0
26905
1721.50
1740.8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1800
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1500
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1320
1300
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160
140
120
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80
60
40
20
0
N
28905
1721.50
28916
1715.40
1723.0
1756.8
1751.0
1758.8
1740.8
1736.5
1719.5
1711.5
1709.1
1707.1
1704.7
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1703.9
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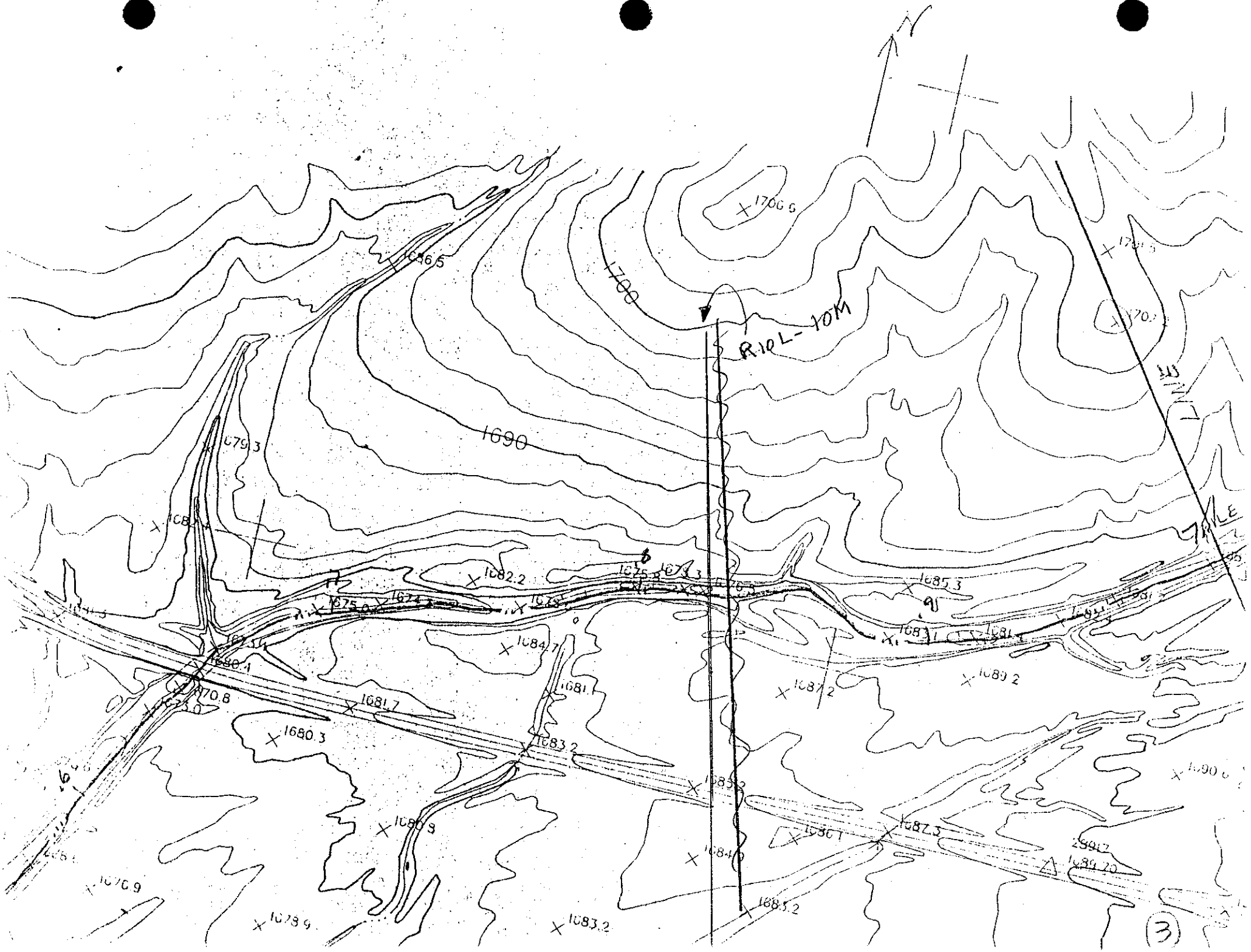
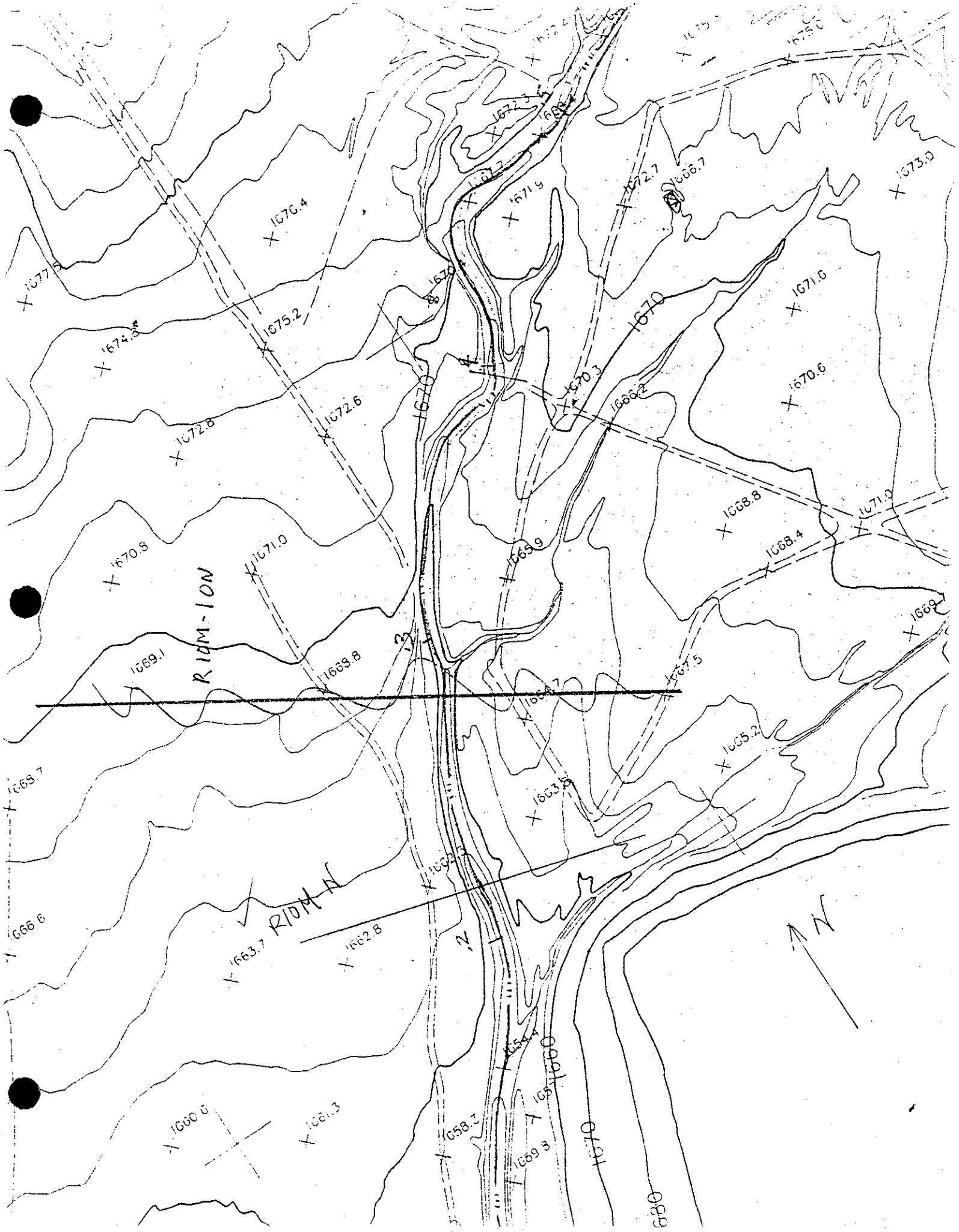
1719.2
1723.7
1729.4
1730.3
1720.5
1700.0


1690
1700
R.10L-10M
1682.2
1685.3
1680.1
1670.8
1681.7
1680.3
1683.2
1687.2
1689.2
1687.3
1684.20
1683.2
1678.9
1676.9
1683.2
(3)


RIDM-10N
RIDM-11
N
1670
1680
1690
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1672.3
1671.9
1672.7
1666.7
1673.0
1670.4
1677.5
1675.2
1674.2
1672.6
1672.8
1670.3
1666.2
1671.0
1670.6
1668.8
1671.0
1668.4
1670.8
1671.0
1669.9
1669.1
1669.8
1669.2
1667.5
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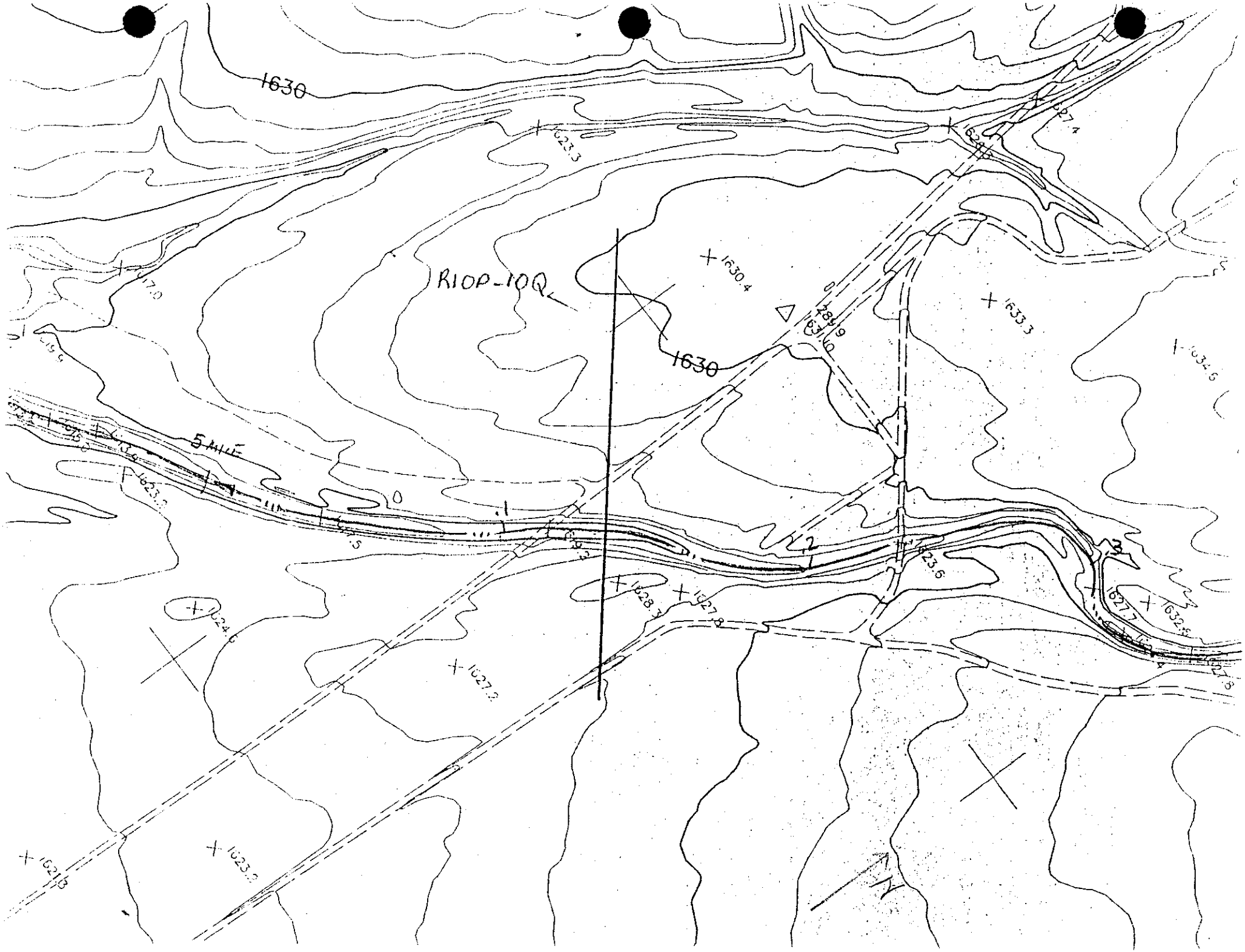
1663.7
1662.8
1660.0
1661.3
1658.3
1659.9


1630
1630
RIOP-10Q
5 MILE
1630.4
1633.3
1623.3
1627.4
1627.0
1628.3
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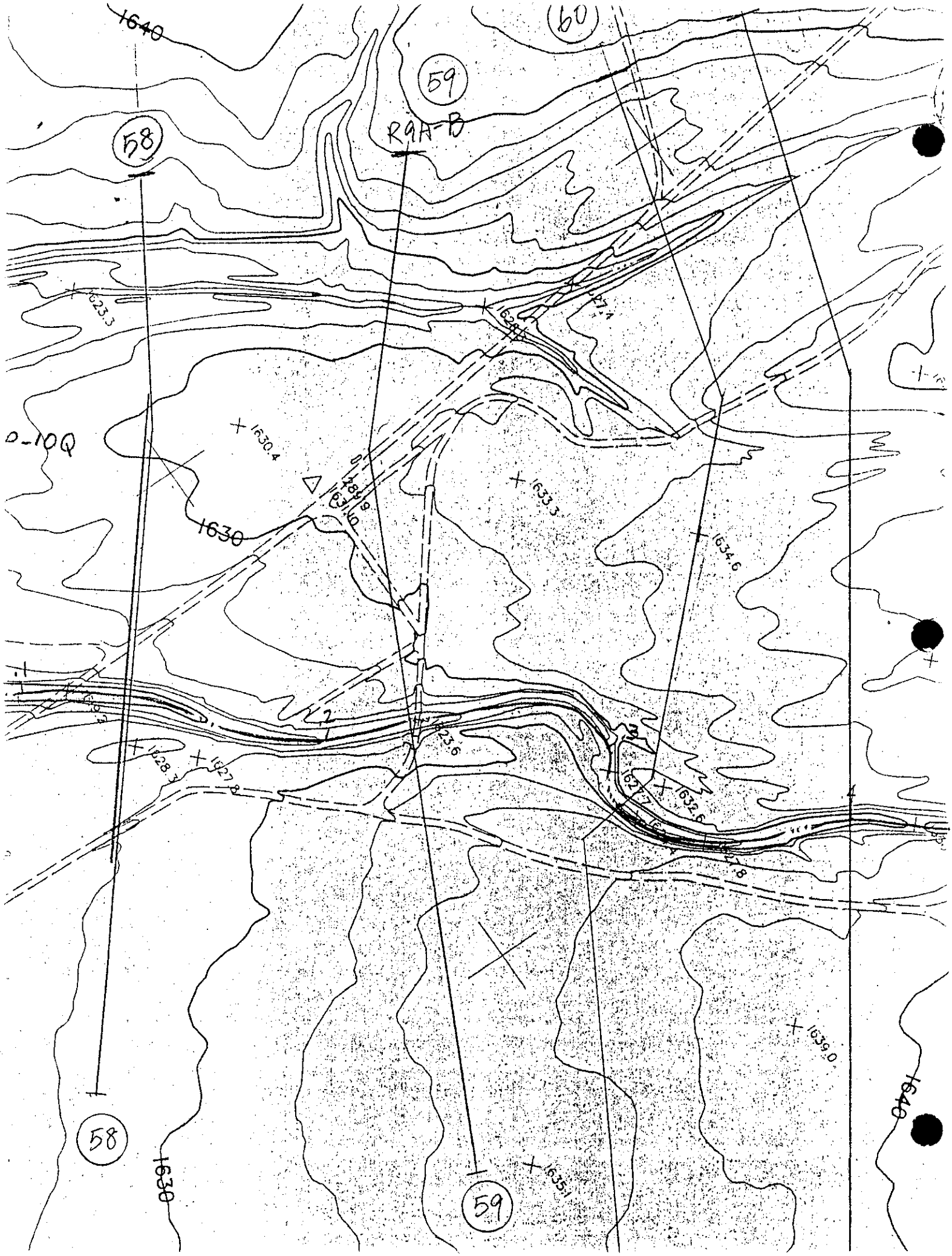
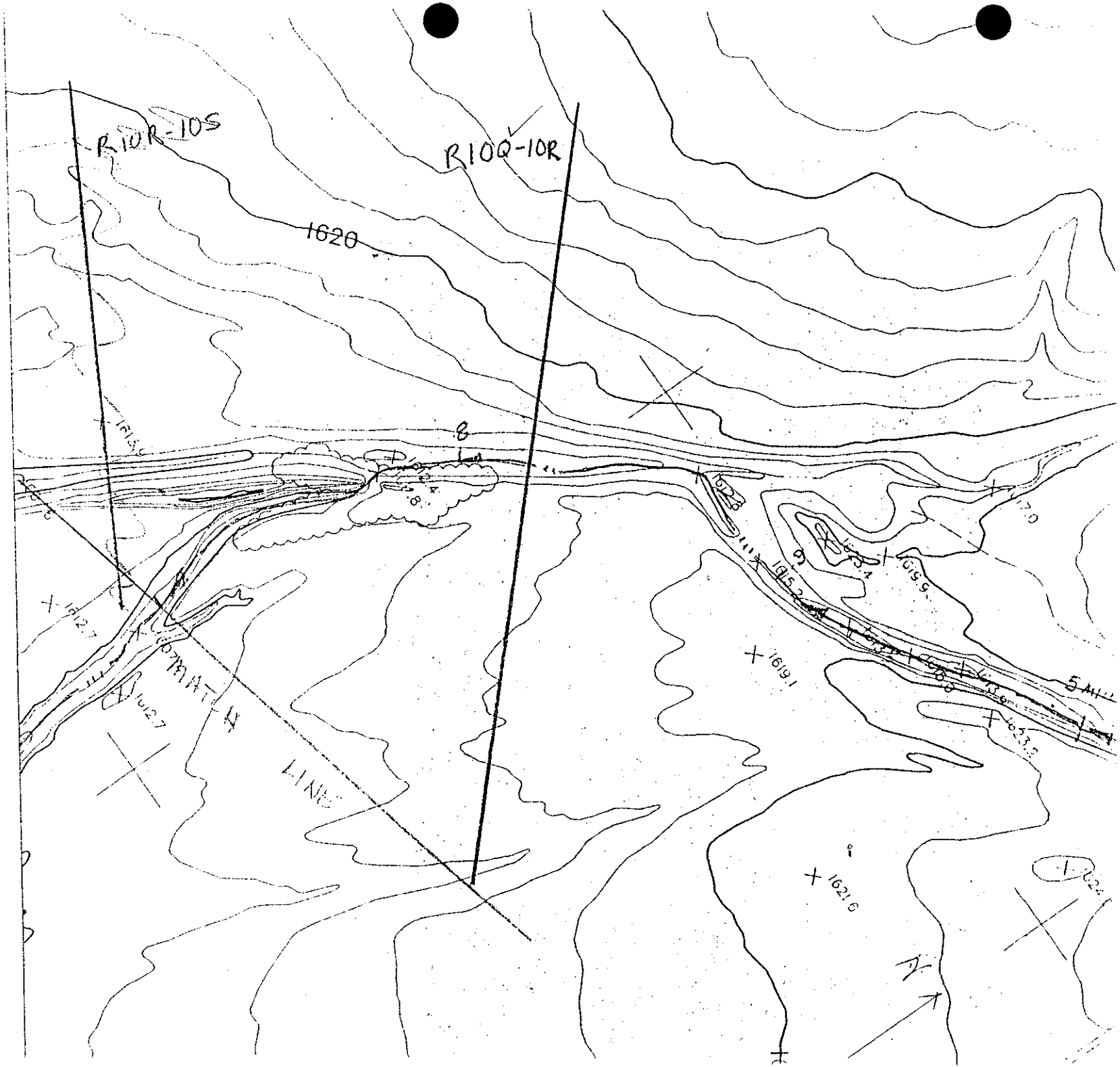
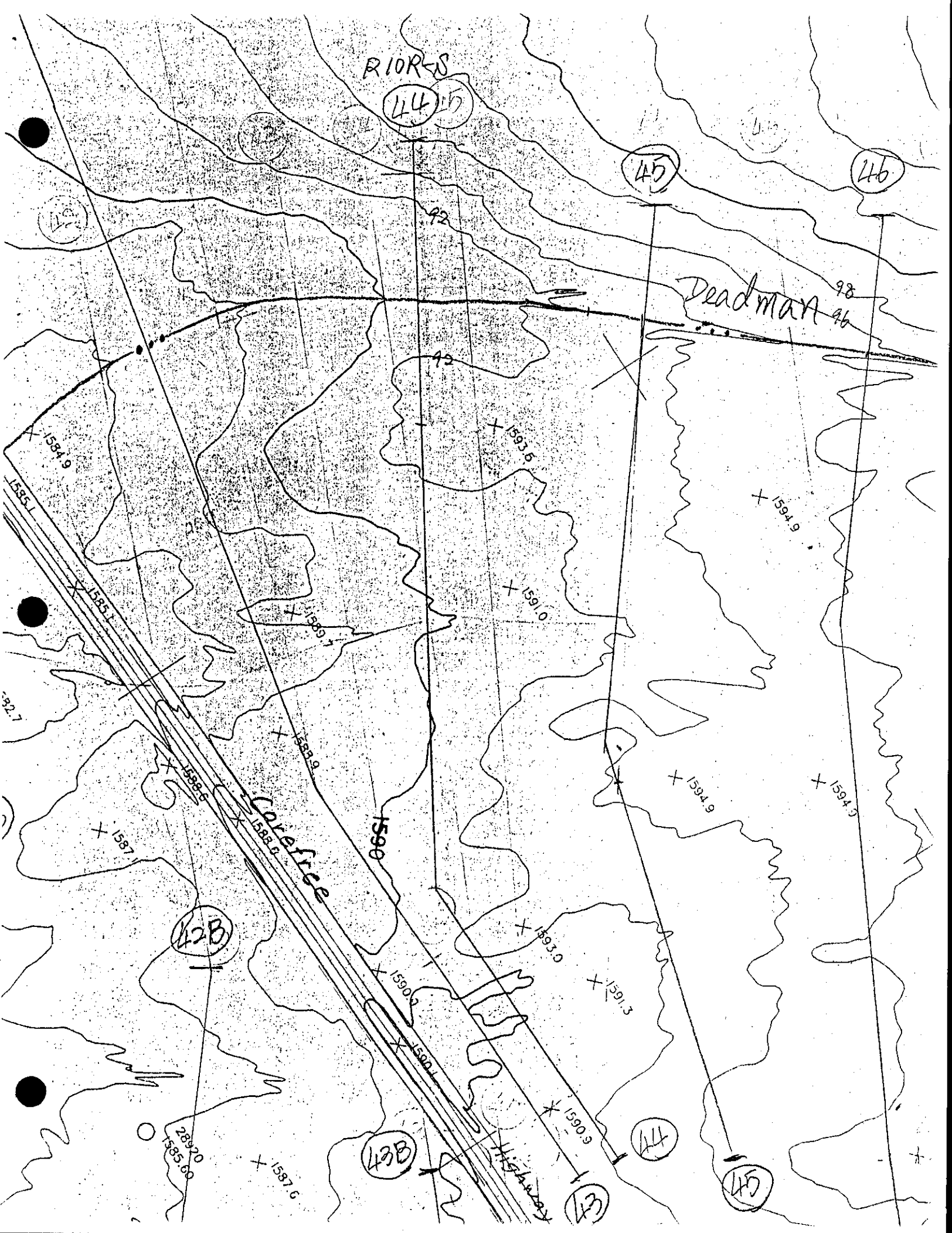
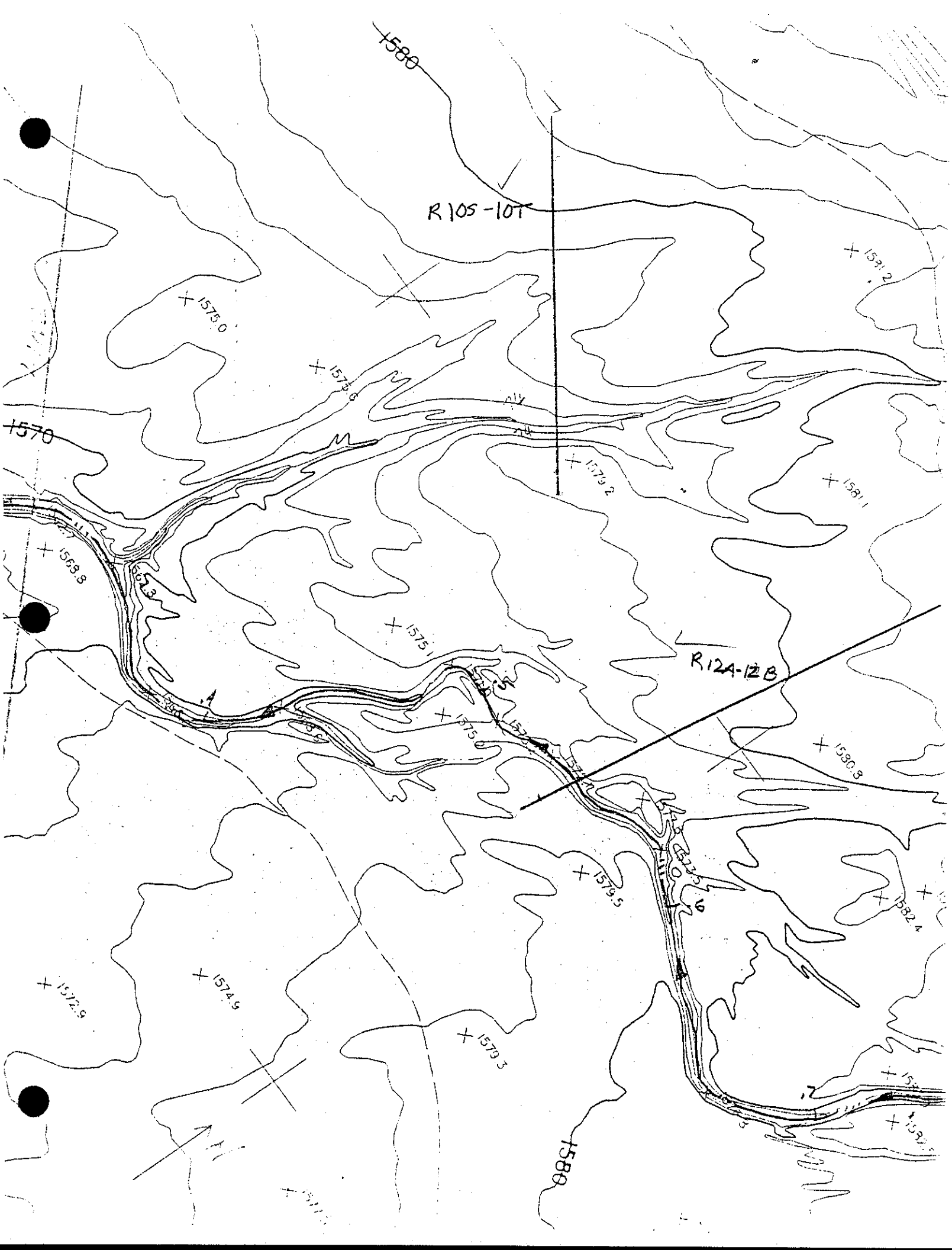
1623.6
1627.7
1632.9
1624.6
1627.2
1623.2
1621.3
1634.6


1640
60
59
58
R9A-B
1623.3
1628.4
1630.4
D-10Q
1630
1633.3
1634.6
1623.6
1628.3
1627.8
1632.6
1639.0
1635.1
1640
1630
58
59


R10R-10S
R10Q-10R
1620
1615.6
1612.7
1612.7
1619.1
1621.6
1615.2
1619.5
1633.2
5 MI
LINE


RIORES
44
45
46
Deadman
98
96
92
92
1584.9
1585.1
1585.1
1593.5
1594.9
1591.0
1589.7
1583.9
1589.5
1588.6
1587
1590
Carefree
42B
1593.0
1590.9
1590.1
1591.3
1590.3
Highway
44
45
43B
43
28920
1585.60
1587.6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R105-10T
1570
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1573.6
1579.2
1581.2
1581.1
1568.8
1575.1
R12A-12B
1575.0
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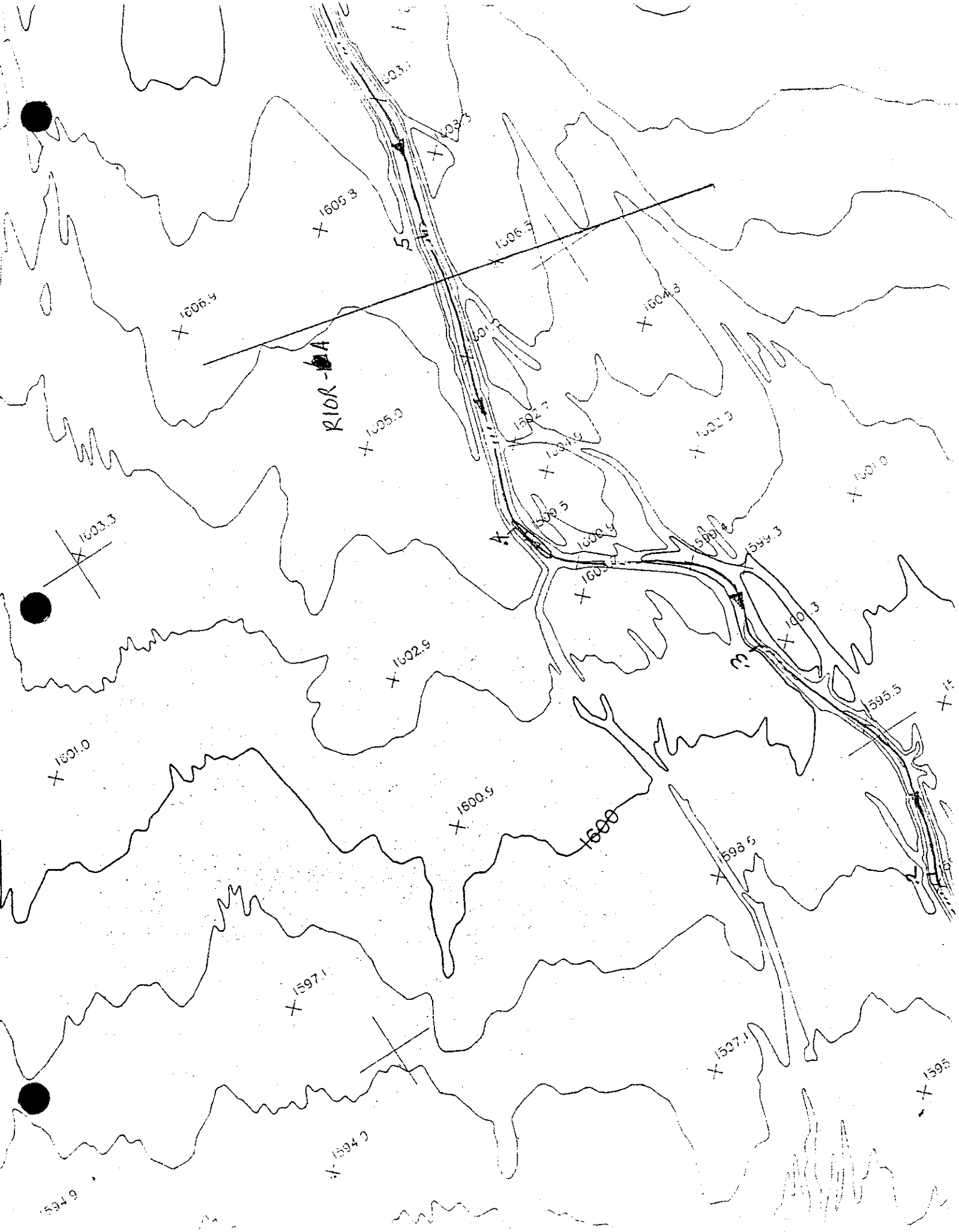
1582.4
1572.9
1574.9
1579.3
1588


RIDR-A
1600
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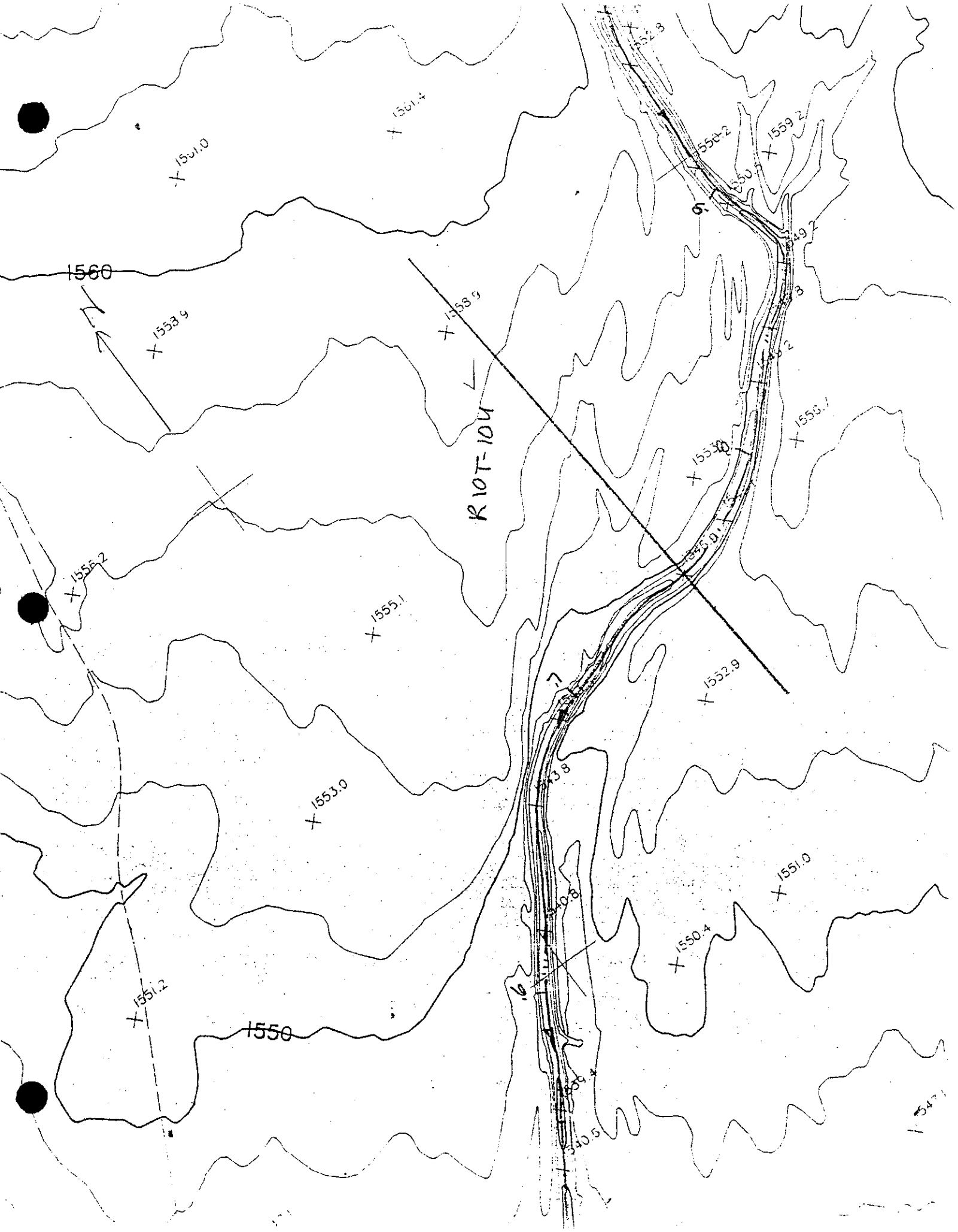
1603.3
1602.9
1601.0
1600.9
1597.1
1594.9
1595.5
1599.3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1550
R 10T-104
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1561.4
1553.9
1558.9
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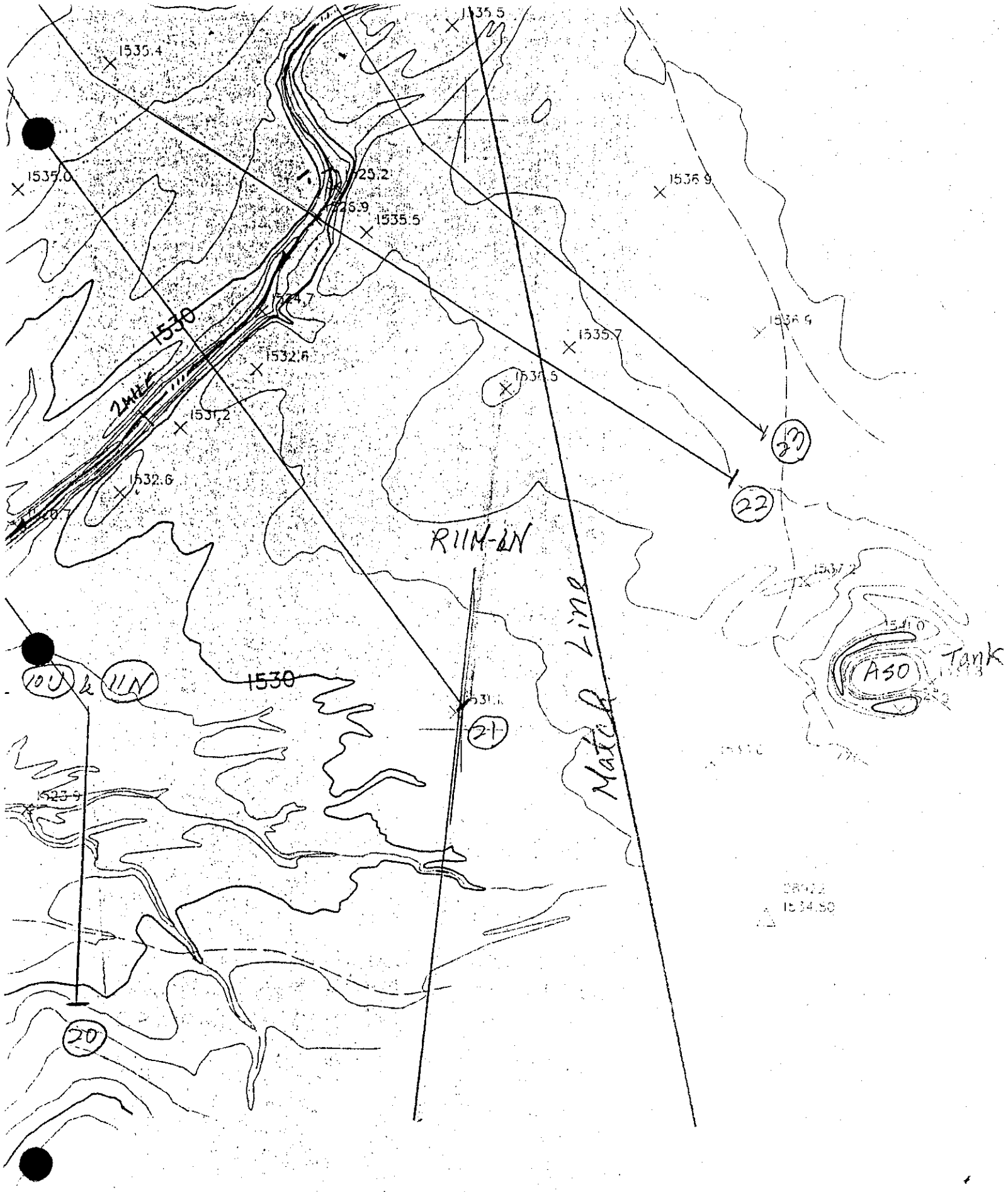
1555.1
1553.0
1551.2
1552.3
1559.2
1550.7
1549.2
1553.1
1552.9
1551.0
1550.4
1549.4
1550.5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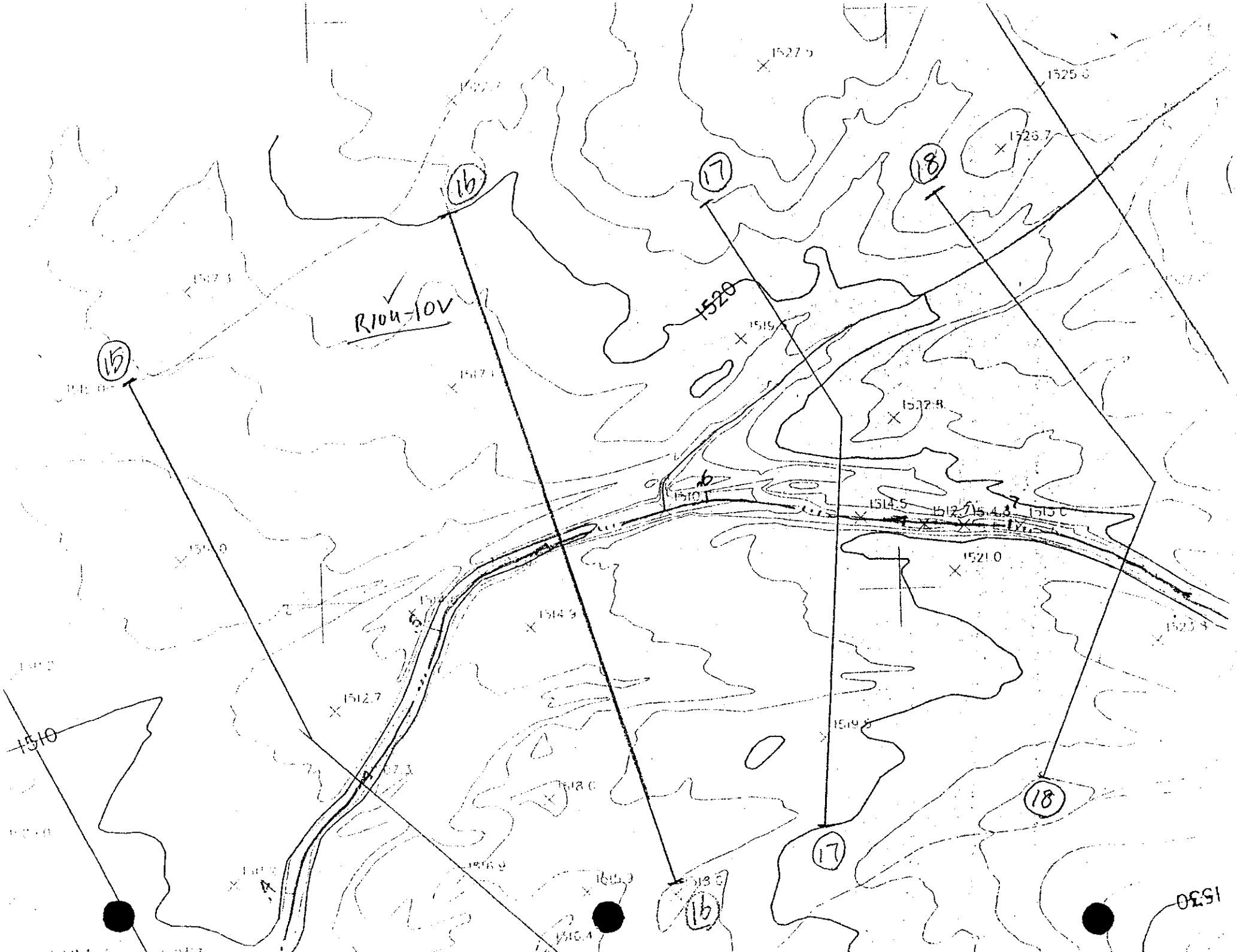
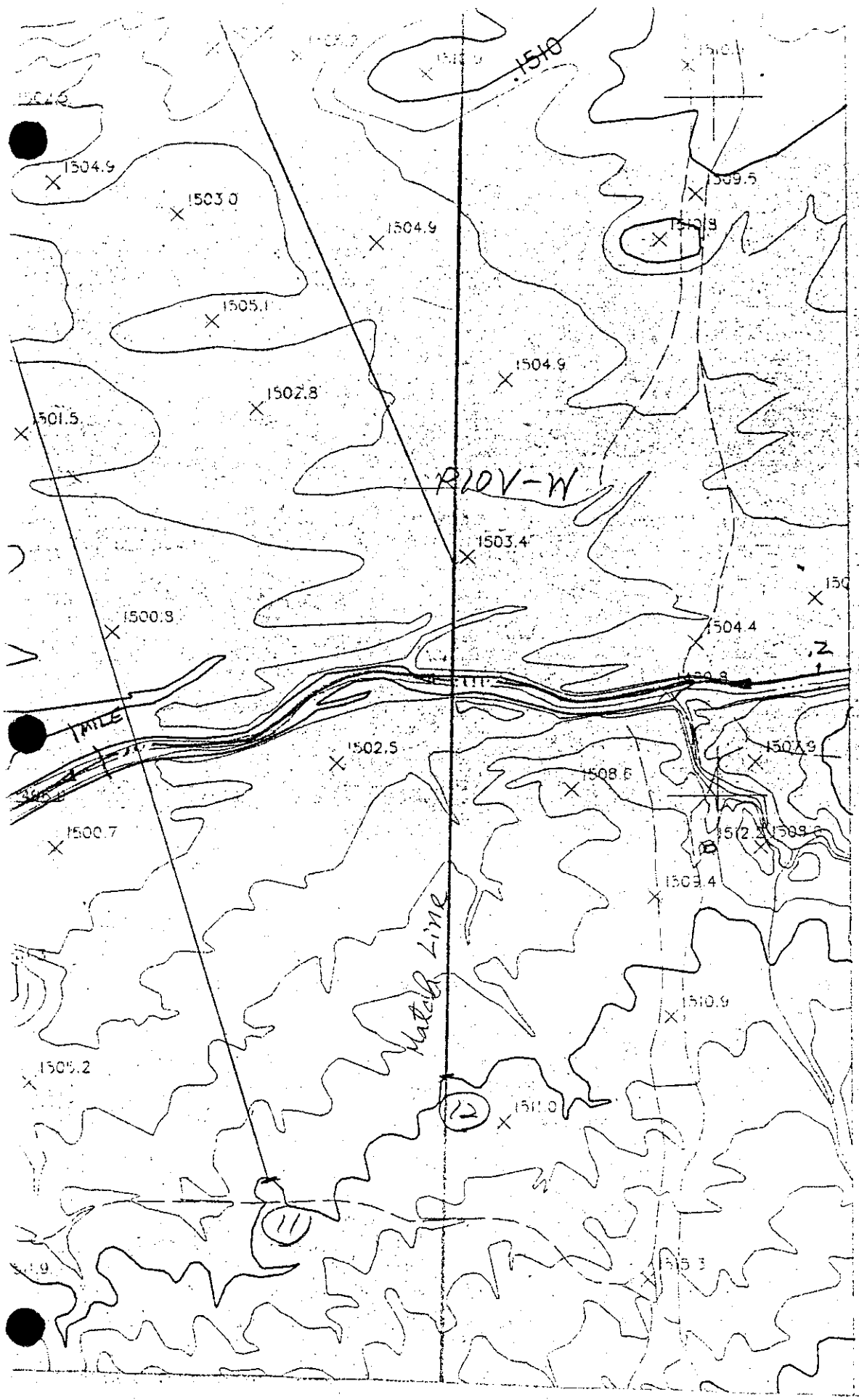
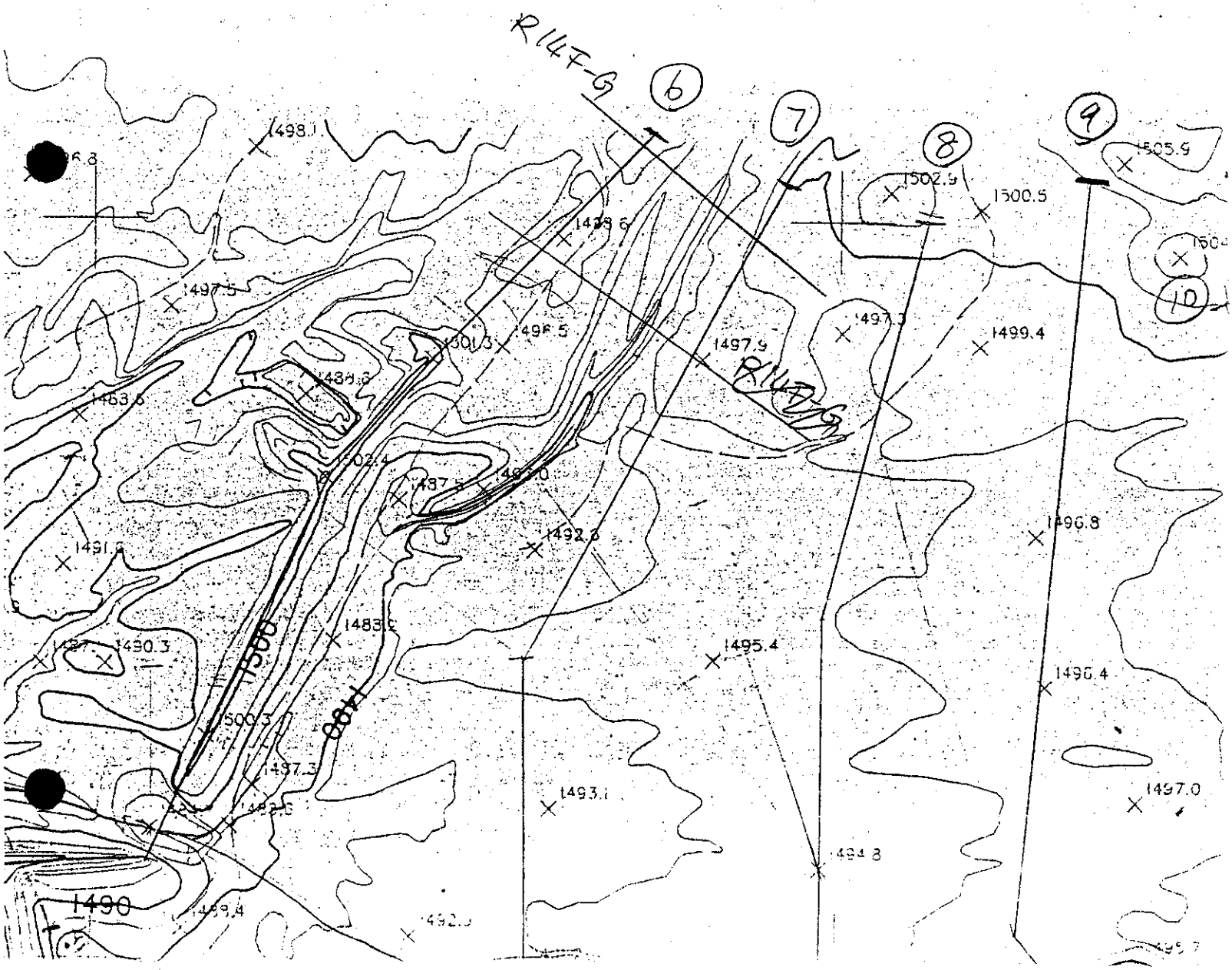
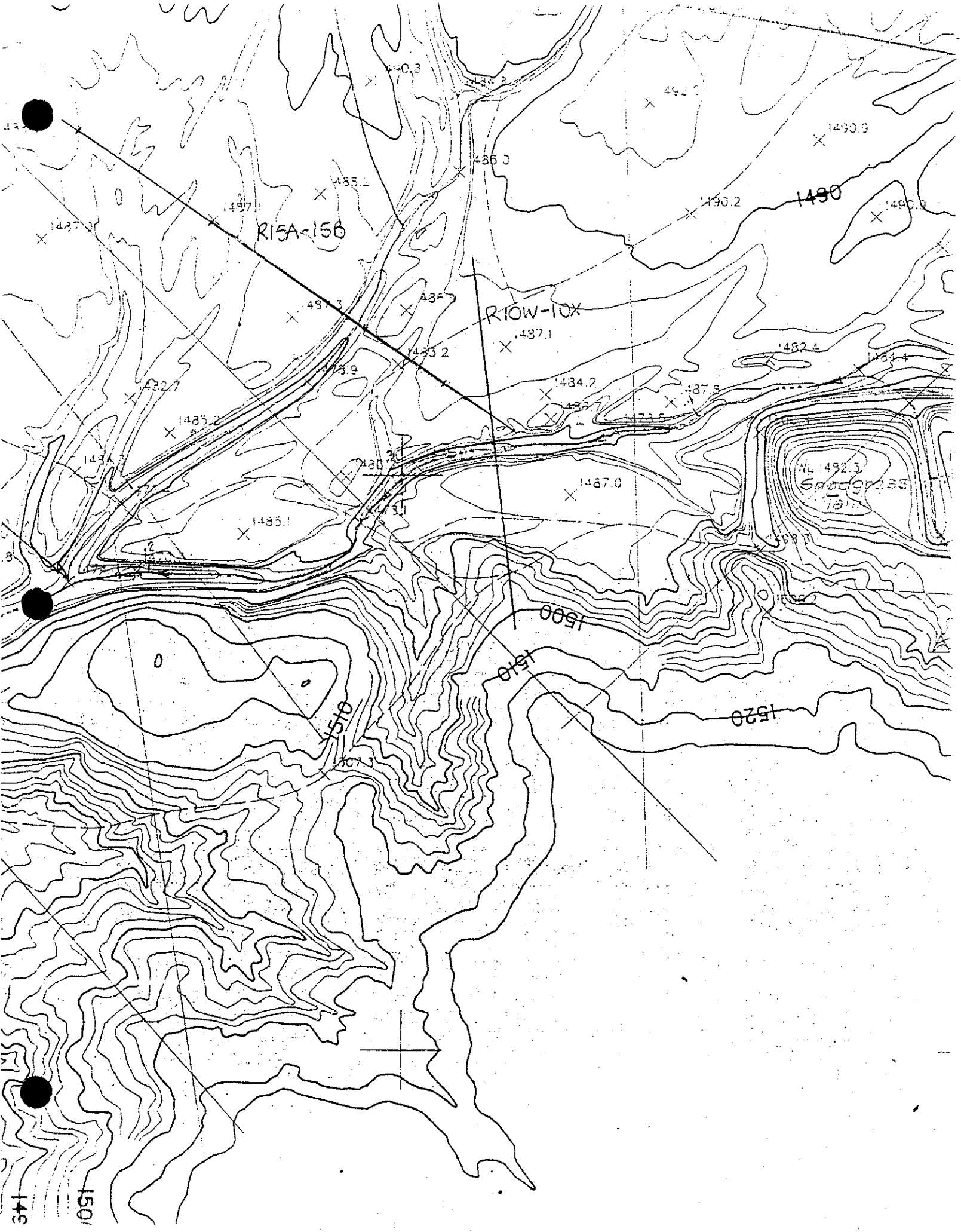
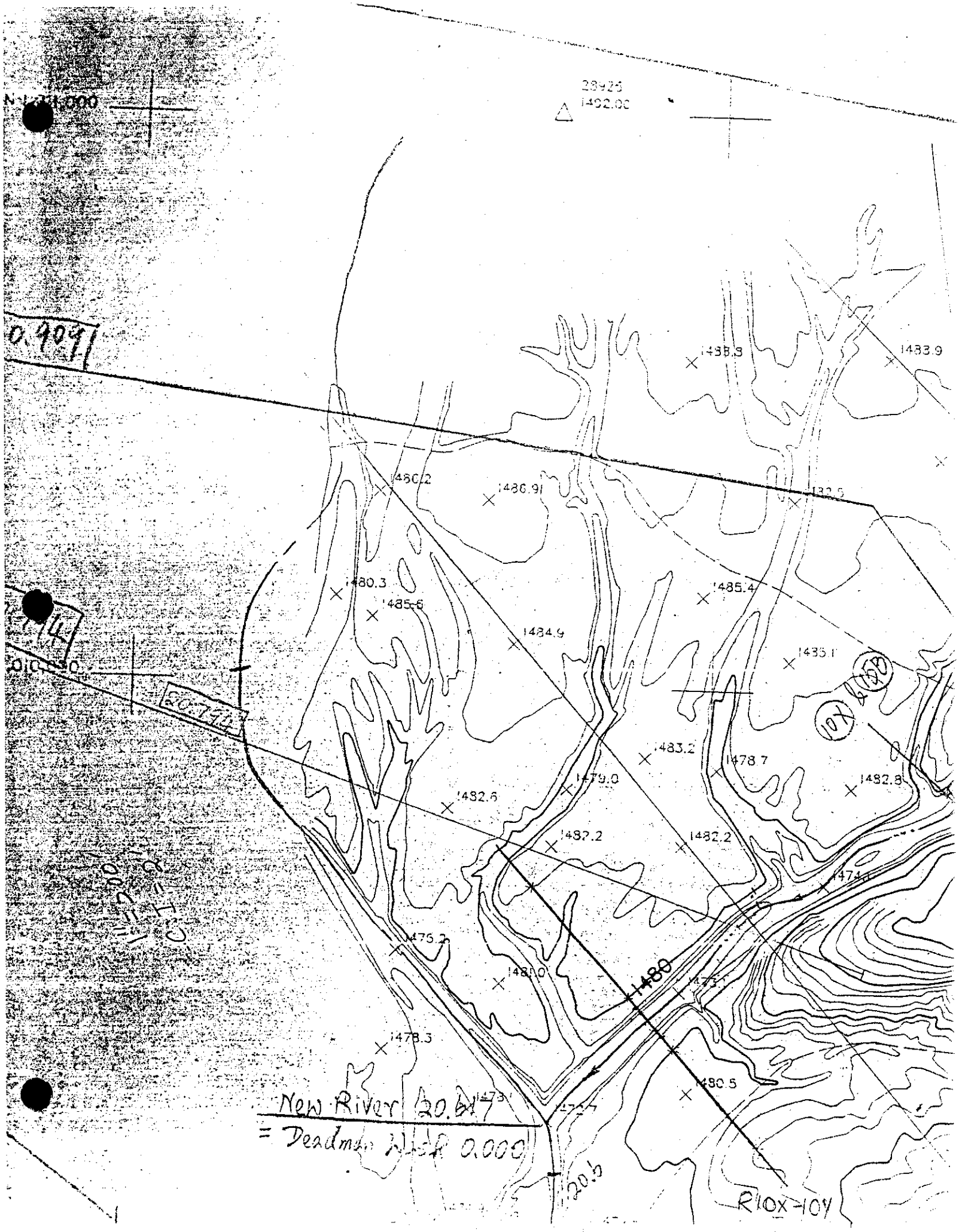
1525.2
1536.9
1535.5
1530
1524.7
1535.7
1532.6
1536.5
1531.2
1532.6
23
22
R11N-2N
Match Line
1537.2
1541.0
Tank
A50
10N & 11N
1530
21
1523.9
20


R104-10V
1520
1510
1530
15
16
17
18
1510.1
1514.5
1512.7
1515.4.3
1515.0
1521.0
1519.8
1518.6
1512.7
1527.8
1525.7
1525.6


1510
1504.9
1503.0
1504.9
1509.5
1505.1
1504.9
1502.8
1501.5
ROW-W
1503.4
1500.8
1504.4
1 MILE
1502.5
1508.6
1500.7
1509.4
Match Line
1510.9
1505.2
12
11


R147-G
6
7
8
9
10
1498.1
1497.5
1497.9
1499.4
1496.8
1495.4
1490.4
1497.0
1493.1
1491.3
1490.3
1500.3
1497.3
1490


R15A-156
R10W-10X
1490
1500
1510
1520
1486.0
1490.9
1490.2
1487.1
1484.2
1487.0
1485.1
1485.2
1487.3
1483.2
1482.4
1484.4
1487.8
1482.3
Smedgrass


28926
1492.00
0.409
1483.3
1483.9
1480.2
1486.91
1480.3
1485.6
1485.4
1484.9
1485.1
20.794
1483.2
1478.7
1479.0
1482.8
1482.6
1482.2
1482.2
1474.
1475.2
1481.0
1480
1478.3
1480.5
New River 20.617
= Deadman Wash 0.000
20.5
R10X-10Y

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX E: Culvert Hydraulic Calculations

CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R10H.DAT SUMMARY TABLE

OK.

CULV NO.	A - SITE DATA INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1721.97	1720.77	45	1 -RCB	324	146	0.012	CONVENTIONAL
2	1719.72	1719.47	45	1 -RCB	408	161	0.012	CONVENTIONAL
3	1719.72	1719.52	45	1 -RCB	408	162	0.012	CONVENTIONAL
4	1719.82	1719.47	45	1 -RCB	324	160	0.012	CONVENTIONAL
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

SUMMARY OF CULVERT FLOWS (CFS) file: R10H.DAT date:2-29-92

ELEV (FT)	TOTAL	1	2	3	4	5	6	OVERTOP	ITER
1719.72	0	0	0	0	0	0	0	0	0
1722.89	1600	74	551	538	437	0	0	0	5
1724.63	3200	363	1022	1006	812	0	0	0	3
1726.07	4800	693	1477	1459	1173	0	0	0	3
1727.34	6400	1041	1925	1906	1529	0	0	0	3
1728.52	8000	1392	2372	2351	1884	0	0	0	3
1729.62	9600	1744	2820	2797	2239	0	0	0	3
1730.67	11200	2102	3264	3241	2592	0	0	0	3
1731.66	12800	2463	3708	3684	2944	0	0	0	3
1732.62	14400	2821	4153	4127	3298	0	0	0	2
1733.55	16000	3162	4604	4578	3656	0	0	0	2

PRESS:
(1) TO PLOT TOTAL RATING CURVE
(2) TO DETERMINE SPECIFIC INFORMATION ABOUT EACH CULVERT
(3) TO SEE MULTIPLE CULVERT COMPUTATIONAL ERROR TABLE
(ENTER) TO RETURN FOR NEW RUN OR EXIT

Continued from previous page:

Pg. 2 of 34

I-17 & DEADMAN'S Wash
(South Bound Bridge)

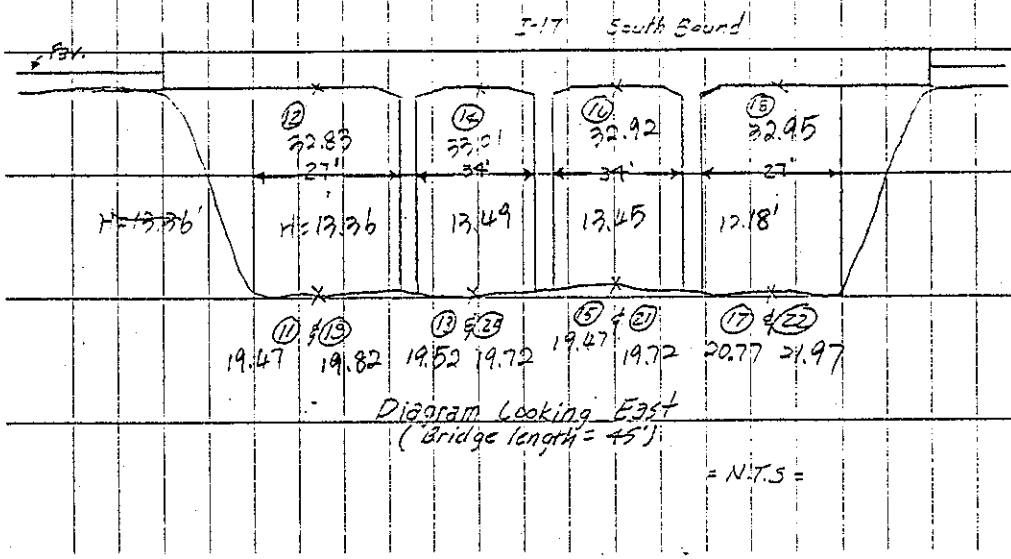


Diagram Looking East
(Bridge length = 45')

= N.T.S =

R10H

Feb. 24, 1997

By: Clear

I-17 & Deadman's Wash
(North Bound Bridge)

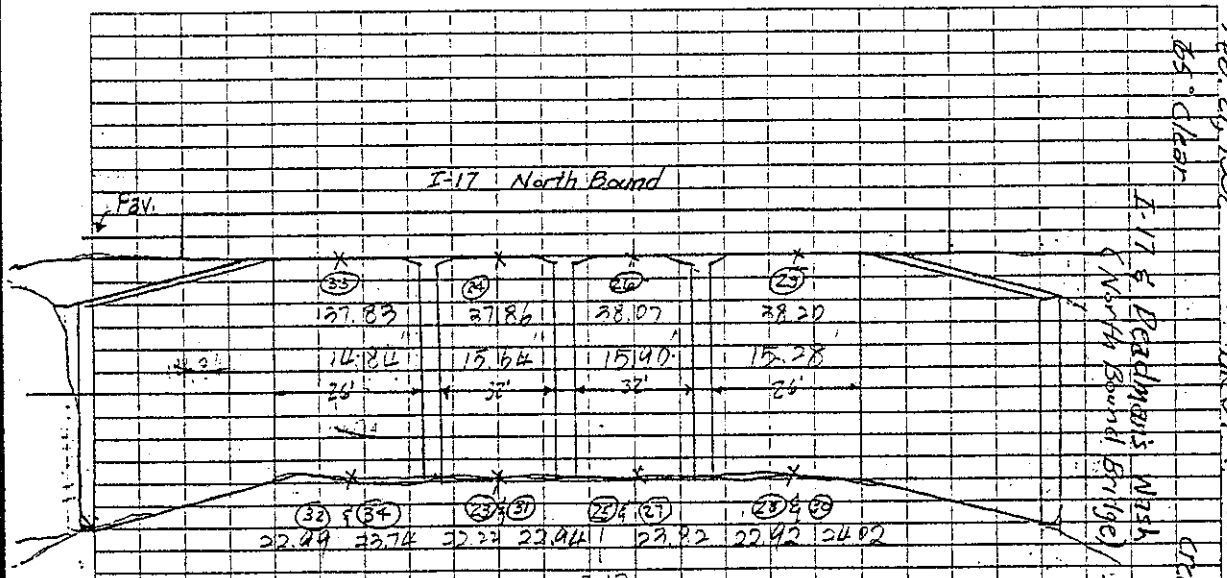


Diagram looking East:
(Bridge length = 44')

= N.T.S. =

Crew same

54

Cont. From Prev. Page
Pg. 3 of 34

*Note: See diagram prev. pg.

Sta.	+	Hi	−	Elev.
		1730.22		
11			10.75	1719.47
12			(+) 2.61	1732.83
13			10.70	1719.52
14			(+) 2.79	1733.01
15			10.75	1719.47
16			(+) 2.70	1732.92
17			9.45	1720.77
18			(+) 2.18	1732.95
19			10.40	1719.82
20			10.50	1719.72
21			10.50	1719.72
22			8.25	1721.97
23			8.00	1722.22
24			(+) 7.64	1737.86
25			8.05	1722.17
26			(+) 7.85	1738.07
27			6.40	1723.82
28			7.30	1722.92
29			(+) 7.98	1738.20
30			6.20	1724.02
T.P.# 4			7.08	1723.14
	11.00	1734.14		

Feb. 21, 1992 BK 97 55

74° clear circa 5 a.m.

Description:

Gnd shot — W. Side of bridge I-17 S. Bound
Bott. of Bridge
Gnd. shot
Bottom of bridge
Gnd. shot
Bottom of bridge
Gnd. shot
Bottom of bridge
Gnd shot — E. Side of bridge I-17 S. Bound
" "
" "
" "
Gnd. shot — W. Side of bridge I-17 N. Bound
Bottom of bridge
Gnd. Shot
Bottom of bridge
Gnd. shot — E. Side of bridge I-17 N. Bound
Gnd shot — W. Side of bridge I-17 N. Bound
Bottom of bridge — " " " " " " "
Gnd shot — E. Side of bridge I-17 N. Bound
Rock

Continued From Previous Page
Pg. 4 of 4

*Note: See diagram on page 54

Sta.	+	Hi	−	Elev.	Description	
		1734.14				
31			11.20	1722.94	Grd. Shot	E side of bridge I-77 N. Bound
32			11.15	1722.99	" "	W side " " " " "
33			(+)3.69	1737.83	Bott. of bridge	" " " " " " "
34			10.40	1723.74	Grd. Shot	E side " " " " "

Feb 21, 1992 Bk. 97 56

Crew Same

R/OM

CROSS-SECTION COORD. NO.	X (FT)	Y (FT)
1	130	1685.2
2	425	1683.2
3	735	1681.7
4	1000	1680.4
5	1260	1681.3
6	1580	1686.1

TYPE COORD. NO. TO EDIT COORD.
(I) OR (D) TO INSERT OR DELETE
(RET) TO CONTINUE LISTING *
(V) TO VIEW CROSS-SECTION

CULVERT ANALYSIS 1.1 DATE:
CULVERT FILE: OVERTOPPING DATA INPUT

SELECTED OVERTOPPING CREST

(1) SHAPE : IRREGULAR: 6 COORDINATE POINTS

(2) CROSS-SECTION DATA

(3) ROADWAY SURFACE: P

OR WEIR COEFFICIENT: 0

(4) EMBANKMENT TOP WIDTH (FT): 50

TYPE NO. TO EDIT ITEM:
(RET) TO CONTINUE
(ESC) FOR LAST MENU

CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R10M.DAT SUMMARY TABLE

CULV NO.	A - SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1672.62	1672.11	45	2 -RCP	72	72	0.012	CONVENTIONAL
2	1672.65	1671.84	45	1 -RCP	60	60	0.012	CONVENTIONAL
3	1673.74	1672.68	45	1 -RCP	48	48	0.012	CONVENTIONAL
4								
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

SUMMARY OF CULVERT FLOWS (CFS) file: R10M.DAT date:2-29-92

ELEV (FT)	TOTAL	1	2	3	4	5	6	OVERTOP	ITER
1672.62	0	0	0	0	0	0	0	0	0
1681.47	1600	627	232	143	0	0	0	637	3
1682.14	3200 ✓	669	246	152	0	0	0	2087	4
1682.61	4800	698	255	158	0	0	0	3662	3
1682.97	6400	719	262	162	0	0	0	5247	3
1683.28	8000 ✓	736	267	166	0	0	0	6826	3
1683.55	9600 ✓	751	272	169	0	0	0	8383	2
1683.80	11200 ✓	764	277	172	0	0	0	9969	2
1684.03	12800 ✓	776	280	175	0	0	0	11555	2
1684.24	14400 ✓	787	284	177	0	0	0	13141	2
1684.44	16000 ✓	797	287	179	0	0	0	14728	2

PRESS:
(1) TO PLOT TOTAL RATING CURVE
(2) TO DETERMINE SPECIFIC INFORMATION ABOUT EACH CULVERT
(3) TO SEE MULTIPLE CULVERT COMPUTATIONAL ERROR TABLE
(ENTER) TO RETURN FOR NEW RUN OR EXIT

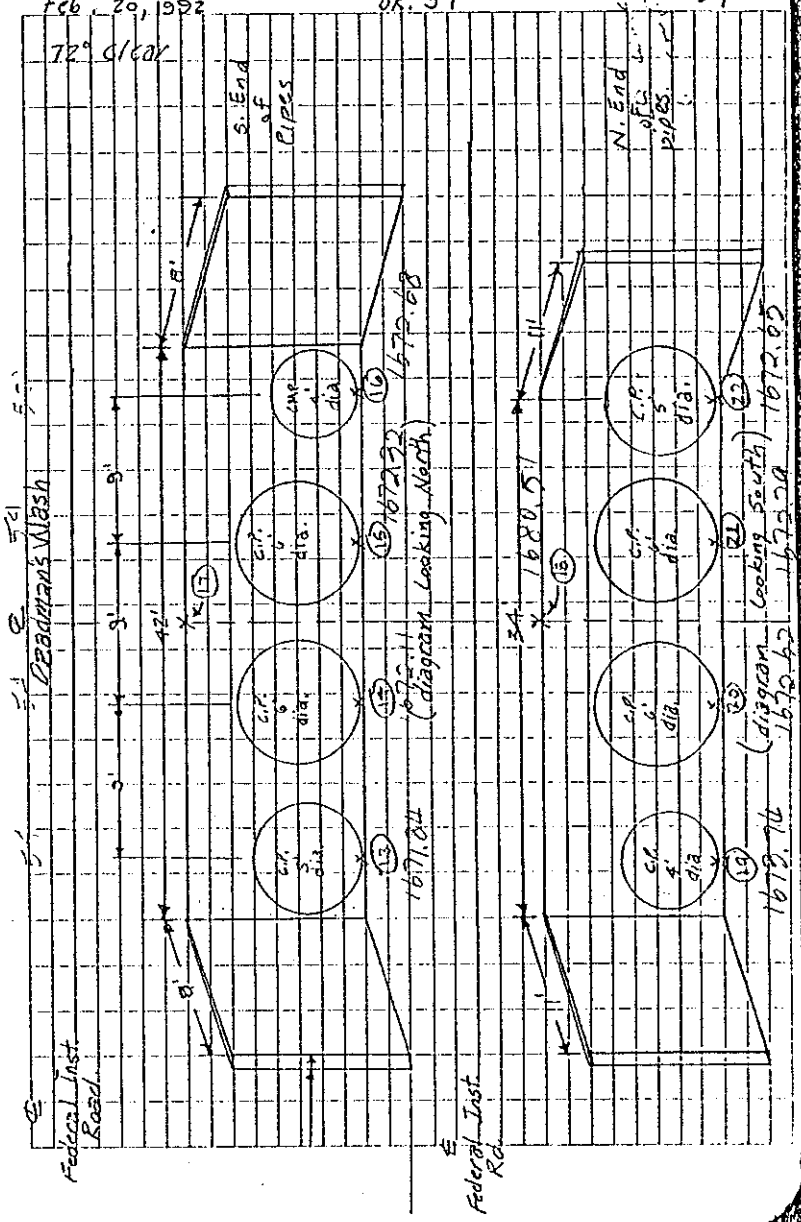
Continued From Prev. Pg.
Pg. 2 of 3

Sta.	+	Hi	−	Elev.	
		1686.48			
13			14.64	1671.84	inv.
14			14.37	1672.11	inv.
15			14.16	1672.32	inv.
16			13.80	1672.68	inv.
17			6.82	1679.66	Top Headwall S. Side
18			5.97	1680.51	TOP HEADWALL N. Side
19			12.74	1673.74	inv.
20			13.86	1672.62	inv.
21			13.69	1672.79	inv.
22			13.83	1672.65	inv.

R10M

Feb. 20, 1992 Bk. 97 51

72° Clear



CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R12A.DAT SUMMARY TABLE

CULV NO.	A - SITE DATA INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1586.38	1585.99	46	1 -CSP	68	68	0.024	CONVENTIONAL
2								
3								
4								
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

CULVERT # 1 PERFORMANCE CURVE
FOR 1 BARRELS

Q (cfs)	HW (ft)	TWE (ft)	ICH (ft)	OCH (ft)	TWH (ft)	VO (fps)
0.00	1586.99 ✓	1586.99	0.00	0.61	1.00	0.00
20.00	1588.23	1586.99	1.68	1.85	1.18	5.23
40.00	1589.07 ✓	1586.99	2.42	2.69	1.70	6.29
60.00	1589.75	1586.99	3.02	3.37	2.08	7.12
80.00	1590.30 ✓	1586.99	3.56	3.92	2.42	7.79
100.00	1590.85	1586.99	4.04	4.47	2.72	8.37
120.00	1591.33 ✓	1586.99	4.50	4.95	2.99	8.90
140.00	1591.81 ✓	1586.99	4.97	5.43	3.26	9.36
160.00	1592.27 ✓	1586.99	5.48	5.89	3.50	9.83
180.00	1592.73 ✓	1586.99	6.03	6.35	3.71	10.32
200.00	1593.19 ✓	1586.99	6.64	6.81	3.93	10.75

PRESS <V> TO PLOT PRESS <ENTER> TO CONTINUE

SUMMARY OF CULVERT FLOWS (CFS) file: R12A.DAT date:2-29-92

ELEV (FT)	TOTAL	1	2	3	4	5	6	OVERTOP	ITER
1586.38	0	0	0	0	0	0	0	0	0
1588.23	20	20	0	0	0	0	0	0	2
1589.07	40	40	0	0	0	0	0	0	2
1589.75	60	60	0	0	0	0	0	0	2
1590.30	80	80	0	0	0	0	0	0	2
1590.85	100	100	0	0	0	0	0	0	2
1591.33	120	120	0	0	0	0	0	0	2
1591.81	140	140	0	0	0	0	0	0	2
1592.07	160	151	0	0	0	0	0	12	8
1592.13	180	154	0	0	0	0	0	22	11
1592.22	200	158	0	0	0	0	0	39	9

PRESS:

(1) TO PLOT TOTAL RATING CURVE
(2) TO DETERMINE SPECIFIC INFORMATION ABOUT EACH CULVERT
(3) TO SEE MULTIPLE CULVERT COMPUTATIONAL ERROR TABLE
(ENTER) TO RETURN FOR NEW RUN OR EXIT

TOPO VERIFICATION OF STRUCTURE
@ DEADMAN'S WASH & CAREFREE HWY.
Pg. 1 of 1

Sta.	+	Hi	−	Elev.	
TBM				1585.633	
	7.24	1592.87			
T.P.#1			3.81	1589.06	
	7.18	1596.24			
T.P.#2			2.84	1593.40	
	5.70	1593.10			
①			7.03	1592.07	Top of Pipe N/S
②			12.72	1586.38	✓ Gnd.
③			7.07	1592.03	Top of Pipe S/S
④			13.11	1585.99	✓ Gnd
⑤ N. Side			7.16	1591.94	Gnd. @ 140' Rt. from ℄
⑥ N. Side			5.20	1593.90	Gnd. @ 20' Rt. from ℄

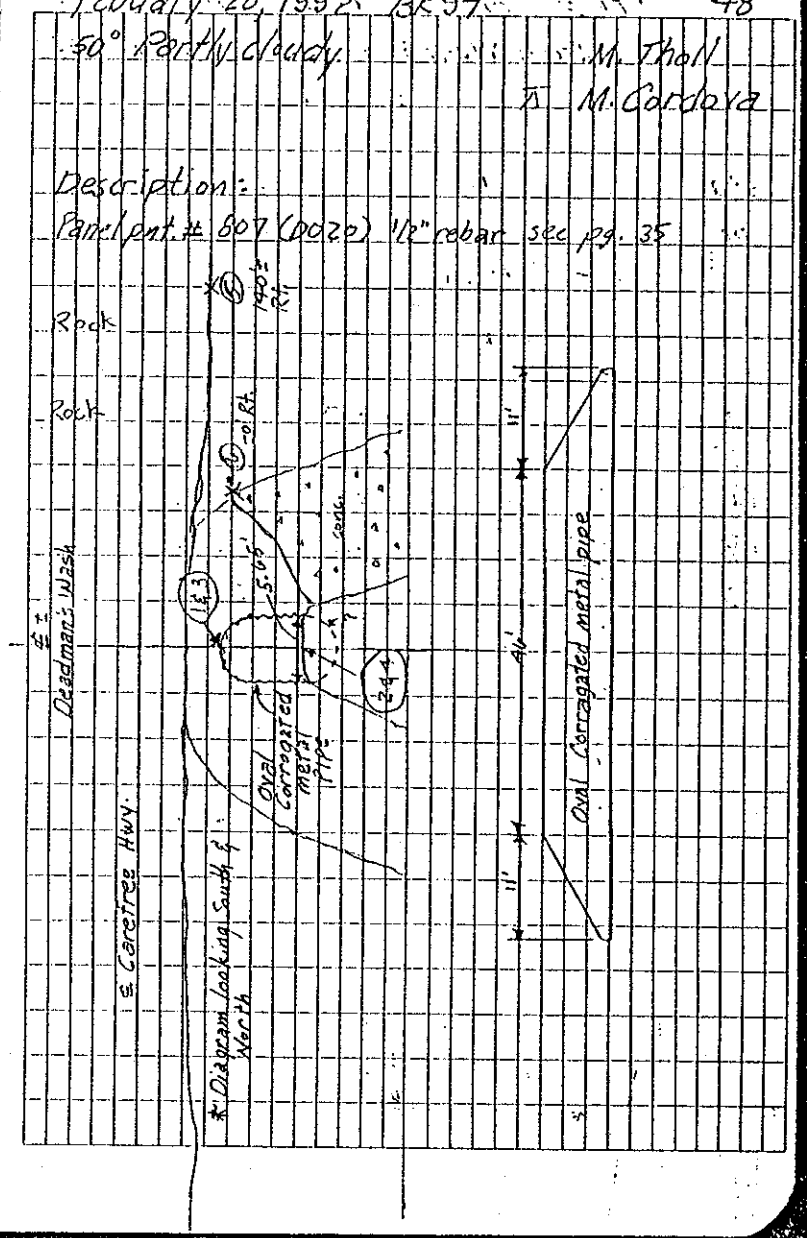
SPAN X RISE
72" X 68"

R12A

12A

February 20, 1992 BK 97 48
50° Partly cloudy M. Thon
M. Cordova

Description:
Panel pnt. # 807 (0020) 1/2" rebar see pg. 35



CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R8A.DAT SUMMARY TABLE

CULV NO.	A - SITE DATA INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1891.66	1888.34	370	2 -RCB	72	60	0.012	CONVENTIONAL
2								
3								
4								
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

SUMMARY OF CULVERT FLOWS (CFS) file: R8A.DAT date:2-29-92

ELEV (FT)	TOTAL	1	2	3	4	5	6	OVERTOP	ITER
1891.66	0	0	0	0	0	0	0	0	0
1893.63	100	100	0	0	0	0	0	0	2
1894.81	200	200	0	0	0	0	0	0	2
1895.80	300	300	0	0	0	0	0	0	2
1896.73	400	400	0	0	0	0	0	0	2
1897.73	500	500	0	0	0	0	0	0	2
1898.87	600	600	0	0	0	0	0	0	2
1899.61	700	658	0	0	0	0	0	56	8
1899.81	800	673	0	0	0	0	0	111	11
1900.05	900	690	0	0	0	0	0	195	8
1900.26	1000	704	0	0	0	0	0	282	6

PRESS:
(1) TO PLOT TOTAL RATING CURVE
(2) TO DETERMINE SPECIFIC INFORMATION ABOUT EACH CULVERT
(3) TO SEE MULTIPLE CULVERT COMPUTATIONAL ERROR TABLE
(ENTER) TO RETURN FOR NEW RUN OR EXIT

CULVERT # 1 PERFORMANCE CURVE
FOR 2 BARRELS

Q (cfs)	HW (ft)	TWE (ft)	ICH (ft)	OCH (ft)	TWH (ft)	VO (fps)
0.00	1891.66	1889.34	0.00	-2.32	1.00	0.00
100.00	1893.63	1889.34	1.97	-1.13	1.00	8.33
200.00	1894.81	1889.34	3.15	0.15	1.44	11.60
300.00	1895.80	1889.34	4.14	1.24	1.91	12.82
400.00	1896.73	1889.34	5.07	2.20	2.35	13.94
500.00	1897.73	1889.34	6.07	3.09	2.77	14.72
600.00	1898.87	1889.34	7.21	3.92	3.18	15.37
700.00	1900.20	1889.34	8.54	4.70	3.57	16.01
800.00	1901.75	1889.34	10.09	5.53	3.96	16.45
900.00	1903.54	1889.34	11.88	6.56	4.34	16.91
1000.00	1905.55	1889.34	13.89	12.12	5.00	16.67

PRESS <V> TO PLOT PRESS <ENTER> TO CONTINUE

VERIFY STRUCTURE #8 1/2 MILE N. of DESERT HILL ON I-17

Pg 1 of

Feb 24, 1992 BK 97 58

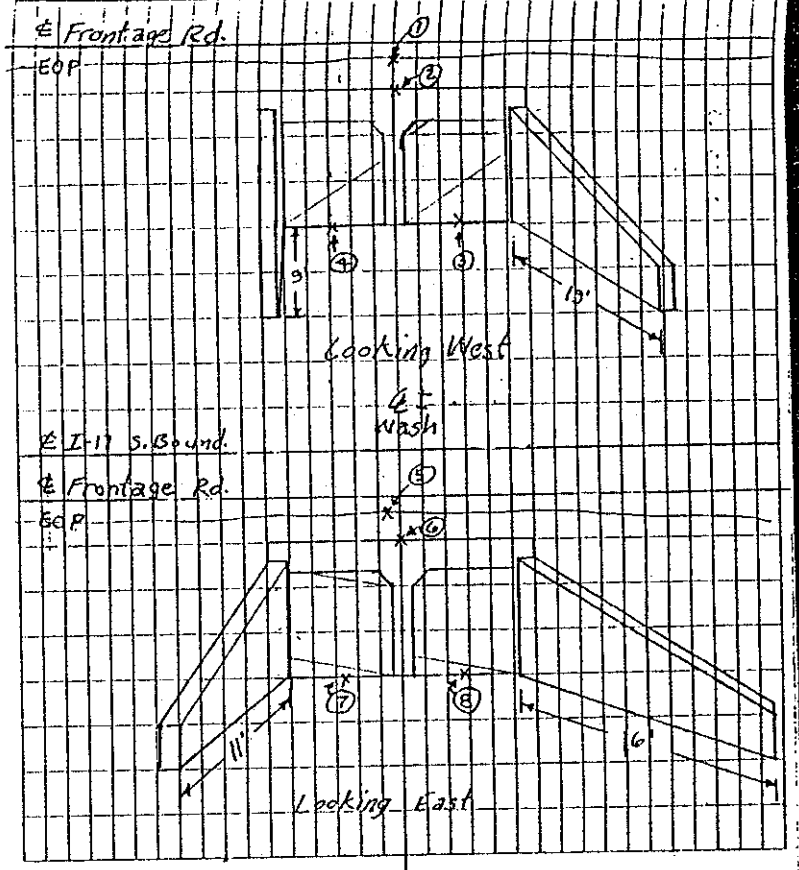
65° Clear

M Tholl
T. M. Cordova

sta.	+	Hi	-	Elev.	1899.26
①				100.00	E.O.P. @ E. side of E. Frontage Rd. on ℄ E Wash, Assumed elev.
	3.78	103.78			℄ I-17 N. Bound
②			1.18	99.30	Fnd. B.C. in headwall E:1112.23 (sta size x13)
③			11.38	92.40	→ 1891.66
④			11.37	92.41	
⑤			7.77	96.01	
⑥			7.94	95.84	
⑦			14.70	89.08	→ 1888.34
⑧			14.61	89.17	

S = 0.008973 %

R8A



Sizes = 6'W x 5'H x 370'L

CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R11B.DAT SUMMARY TABLE

CULV NO.	A - SITE DATA INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1692.03	1691.06	228	1 -RCB	72	84	0.012	CONVENTIONAL
2								
3								
4								
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

SUMMARY OF CULVERT FLOWS (CFS) file: R11B.DAT date:2-29-92

ELEV (FT)	TOTAL	1	2	3	4	5	6	OVERTOP	ITER
1692.03	0	0	0	0	0	0	0	0	0
1695.17	100	100	0	0	0	0	0	0	2
1697.05	200	200	0	0	0	0	0	0	2
1698.65	300	300	0	0	0	0	0	0	2
1700.78	400	400	0	0	0	0	0	0	2
1701.22	500	433	0	0	0	0	0	76	7
1701.44	600	448	0	0	0	0	0	143	8
1701.65	700	463	0	0	0	0	0	223	5
1701.85	800	479	0	0	0	0	0	308	4
1702.04	900	492	0	0	0	0	0	400	4
1702.22	1000	501	0	0	0	0	0	494	4

PRESS:
(1) TO PLOT TOTAL RATING CURVE
(2) TO DETERMINE SPECIFIC INFORMATION ABOUT EACH CULVERT
(3) TO SEE MULTIPLE CULVERT COMPUTATIONAL ERROR TABLE
(ENTER) TO RETURN FOR NEW RUN OR EXIT

CULVERT # 1 PERFORMANCE CURVE
FOR 1 BARRELS

Q (cfs)	HW (ft)	TWE (ft)	ICH (ft)	OCH (ft)	TWH (ft)	VO (fps)
0.00	1692.03	0.00	0.00	-0.97	0.00	0.00
100.00	1695.17	0.00	3.14	2.50	1.86	8.98
200.00	1697.05	0.00	5.02	4.55	3.09	10.79
300.00	1698.65	0.00	6.62	6.27	4.22	11.84
400.00	1700.78	0.00	8.26	8.75	5.18	12.87
500.00	1702.20	0.00	10.17	10.10	6.01	13.87
600.00	1704.50	0.00	12.47	12.02	6.79	14.74
700.00	1707.26	0.00	15.23	14.22	7.00	16.67
800.00	1710.50	0.00	18.47	16.74	7.00	19.05
900.00	1714.27	0.00	22.24	19.58	7.00	21.43
1000.00	1718.66	0.00	26.63	22.77	7.00	23.81

PRESS ‹V› TO PLOT PRESS ‹ENTER› TO CONTINUE

VERLEY STRUCTURE # S. Lmt.

SOUTH OF PIONEER Rd.

Pg. 1 of (MP 225)

Sta.	+	Hi	−	Elev.	Desc.
①				100.00	E.O.P. @
	2.26	102.26			
②		1699.72	5.18	97.08	Fnd. Alum Cap Top H/W E=1697.72 Sta= 1273+620
③		1691.06	13.84	88.42	→ 1694.52
④		1700.79	4.11	98.15	→ 1704.25
⑤		1700.19	4.71	97.55	
⑥		1692.03	12.87	89.39	→ 1695.49

S = 0.00425 %

RIIB

February 26, 1992 Pg. 97 61

65° Clear

M. Tholl

T. M. Cordova

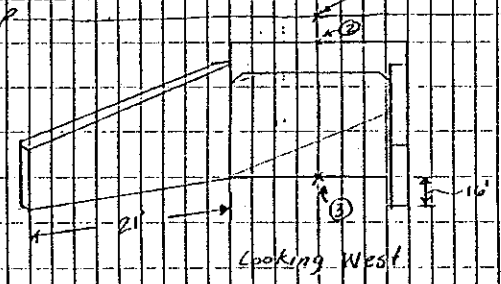
1706.1

E. Side of N. Bound I-17. Assumed elevation

℄ I-17 N. Bound

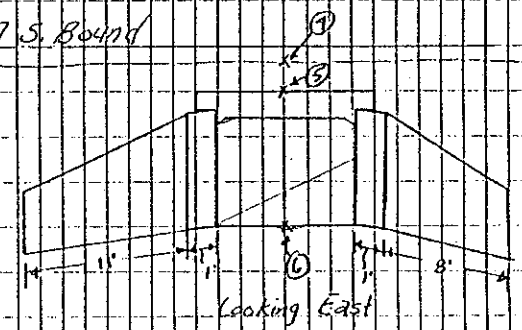
EOP

℄ Wash



℄ I-17 S. Bound

EOP



Sizes: 6'w x 7'h x 228' L

CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R11F.DAT SUMMARY TABLE

CULV NO.	A - SITE DATA INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1675.86	1674.15	195	3 -RCB	96	84	0.012	CONVENTIONAL
2								
3								
4								
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

CULVERT # 1 PERFORMANCE CURVE
FOR 3 BARRELS

Q (cfs)	HW (ft)	TWE (ft)	ICH (ft)	OCH (ft)	TWH (ft)	VO (fps)
0.00	1675.86	1675.15	0.00	-0.71	1.00	0.00
260.00	1678.20	1675.15	2.34	0.90	1.02	10.10
520.00	1679.59	1675.15	3.73	2.43	1.66	12.42
780.00	1680.78	1675.15	4.92	3.72	2.20	13.83
1040.00	1681.83	1675.15	5.97	4.87	2.70	14.91
1300.00	1682.86	1675.15	7.00	5.93	3.17	15.76
1560.00	1683.93	1675.15	8.07	6.92	3.63	16.48
1820.00	1685.11	1675.15	9.25	7.85	4.07	17.12
2080.00	1686.44	1675.15	10.58	8.74	4.51	17.67
2340.00	1687.94	1675.15	12.08	9.60	4.93	18.18
2600.00	1689.64	1675.15	13.78	10.49	5.35	18.64

PRESS <V> TO PLOT PRESS <ENTER> TO CONTINUE

CULVERT ANALYSIS 1.1 DATE: 2-29-92
CULVERT FILE NAME: R11F.DAT SUMMARY TABLE

CULV NO.	A - SITE DATA INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	B - CULVERT SHAPE, MATERIAL, INLET BARRELS SHAPE MATERIAL	SPAN (IN)	RISE (IN)	MANN. N	INLET TYPE
1	1675.86	1674.15	195	3 -RCB	96	84	0.012	CONVENTIONAL
2								
3								
4								
5								
6								

TO EDIT DATA PRESS (A) FOR SITE DATA
(B) FOR CULVERT SHAPE, MATERIAL, OR INLET DATA,
(C) FOR DISCHARGE RANGE,
(D) FOR TAILWATER DATA,
(E) FOR OVERTOPPING DATA,
(F) TO ADD OR DELETE CULVERTS,
(RET) TO CONTINUE ANALYSIS.

CULVERT # 1 PERFORMANCE CURVE
FOR 3 BARRELS

Q (cfs)	HW (ft)	TWE (ft)	ICH (ft)	OCH (ft)	TWH (ft)	VO (fps)
0.00	1675.86	1675.15	0.00	-0.71	1.00	0.00
200.00	1677.83	1675.15	1.97	0.48	1.00	8.33
400.00	1678.98	1675.15	3.12	1.77	1.40	11.47
600.00	1679.98	1675.15	4.12	2.85	1.83	12.87
800.00	1680.86	1675.15	5.00	3.82	2.24	13.93
1000.00	1681.68	1675.15	5.82	4.70	2.62	14.75
1200.00	1682.46	1675.15	6.60	5.53	2.99	15.44
1400.00	1683.26	1675.15	7.40	6.32	3.35	16.06
1600.00	1684.11	1675.15	8.25	7.07	3.70	16.58
1800.00	1685.02	1675.15	9.16	7.78	4.04	17.07
2000.00	1686.01	1675.15	10.15	8.47	4.37	17.50

PRESS <V> TO PLOT PRESS <ENTER> TO CONTINUE

SUMMARY OF CULVERT FLOWS (CFS) file: R11F.DAT date:2-29-92

ELEV (FT)	TOTAL	1	2	3	4	5	6	OVERTOP	ITER
1675.86	0	0	0	0	0	0	0	0	7
1677.83	200	200	0	0	0	0	0	0	2
1678.98	400	400	0	0	0	0	0	0	2
1679.98	600	600	0	0	0	0	0	0	2
1680.86	800	800	0	0	0	0	0	0	2
1681.68	1000	1000	0	0	0	0	0	0	2
1682.46	1200	1200	0	0	0	0	0	0	2
1683.26	1400	1400	0	0	0	0	0	0	2
1684.11	1600	1600	0	0	0	0	0	0	2
1685.10	1800	1816	0	0	0	0	0	19	7
1685.31	2000	1861	0	0	0	0	0	64	19

PRESS:

(1) TO PLOT TOTAL RATING CURVE
(2) TO DETERMINE SPECIFIC INFORMATION ABOUT EACH CULVERT
(3) TO SEE MULTIPLE CULVERT COMPUTATIONAL ERROR TABLE
(ENTER) TO RETURN FOR NEW RUN OR EXIT

Verify Structure #2 @ East End of BEN AVERY SHOOTING RANGE ON I-17

Pg. 1 of 1

Sta.	+	Hi	−	Elev.	Desc.
①				100.	1684.92 E.O.P. @ E. Side N. Bound I-17. Assumed elev.
	2.51	102.51			
②			3.24	99.27	
③			11.57	90.94	✓ 1675.86
④			11.56	90.95	
⑤			11.52	90.99	
⑥			4.63	97.88	
⑦			4.97	97.54	
⑧			13.28	89.23	✓ 1674.15
⑨			13.26	89.25	
⑩			13.28	89.23	

R = 0.004385 ✓

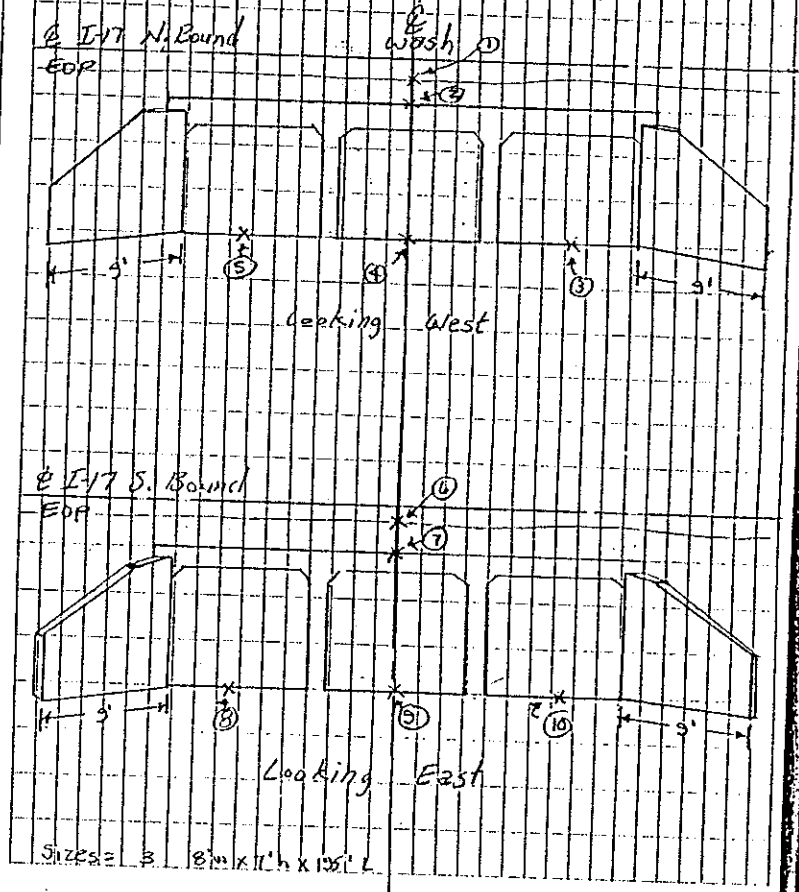
RIIF

Febuary 26, 1992 BK 97 62

70° Clear

M. Tholl

T. M. Cordova



Sizes = 3 8'w x 7'h x 136' L

DEADMAN WASH
FLOODPLAIN DELINEATION STUDY

FCD 90-65

TECHNICAL DATA NOTEBOOK
HYDROLOGY

APPENDIX F: Precipitation Calculation Summary

HNTB HOWARD NEEDLES TAMMEN & BERGENDOFF
ARCHITECTS ENGINEERS PLANNERS

Two Renaissance Square
Suite 1100
40 North Central
Phoenix, Arizona 85004
(602) 528-4300

December 9, 1991

Mr. Timothy M. Murphy
Project Manager
2801 W. Durango Street
Phoenix, Arizona 85009

RE: Deadman Wash Flood Insurance Study
Precipitation Calculation Summary
HNTB 15081-11
Maricopa County Contract No. FCD 90-65

Dear Mr. Murphy:

Enclosed is a copy of our precipitation calculation summary for the Deadman Wash Flood Insurance Study project.

If you have any questions or need additional information regarding the above, please give me a call.

Very truly yours,

HOWARD NEEDLES TAMMEN & BERGENDOFF

Richard M. Wells, P.E.
Project Manager

Enclosure

cc: Afshin Ahouraiyan - FCDMC
Gary Sun - HNTB

GS/kjt
Murphy2

Steps to be used to determine precipitation values for various durations and return periods.

STEP 1. From the precipitation maps in the manual "Hydrologic Design for Highway Drainage in Arizona", determine the precipitation values for the 6 and 24 hour duration storms for return periods of 2, 5, 10, 25, 50 and 100 years. Tabulate these values in Table 1 in the column headed 'Map Values'

Deadman Wash FIS
T6N R2E and T5N R2E

TABLE 1

Return Period (Years)	Precipitation Values (inches)			
	6 hour duration		24 hour duration	
	Map Value	Corrected Value	Map Value	Corrected Value
2	1.43	1.43	1.76	1.76
5	1.88	1.90 *	2.43	2.38 *
10	2.23	2.25 *	2.81	2.84 *
25	2.69	2.69	3.43	3.43
50	3.00	3.03 *	3.88	3.91 *
100	3.37	3.37	4.38	4.38

NOTE: There is a possibility of making an error while reading the maps because, (1) a site is not easy to locate precisely on a series of 12 maps, (2) there may be some slight registration differences in printing, and (3) precise interpolation between isolines is difficult. In order to minimize any errors in reading the maps, these values should be plotted on the diagram "Precipitation Depth versus Return Period" Fig. 1.

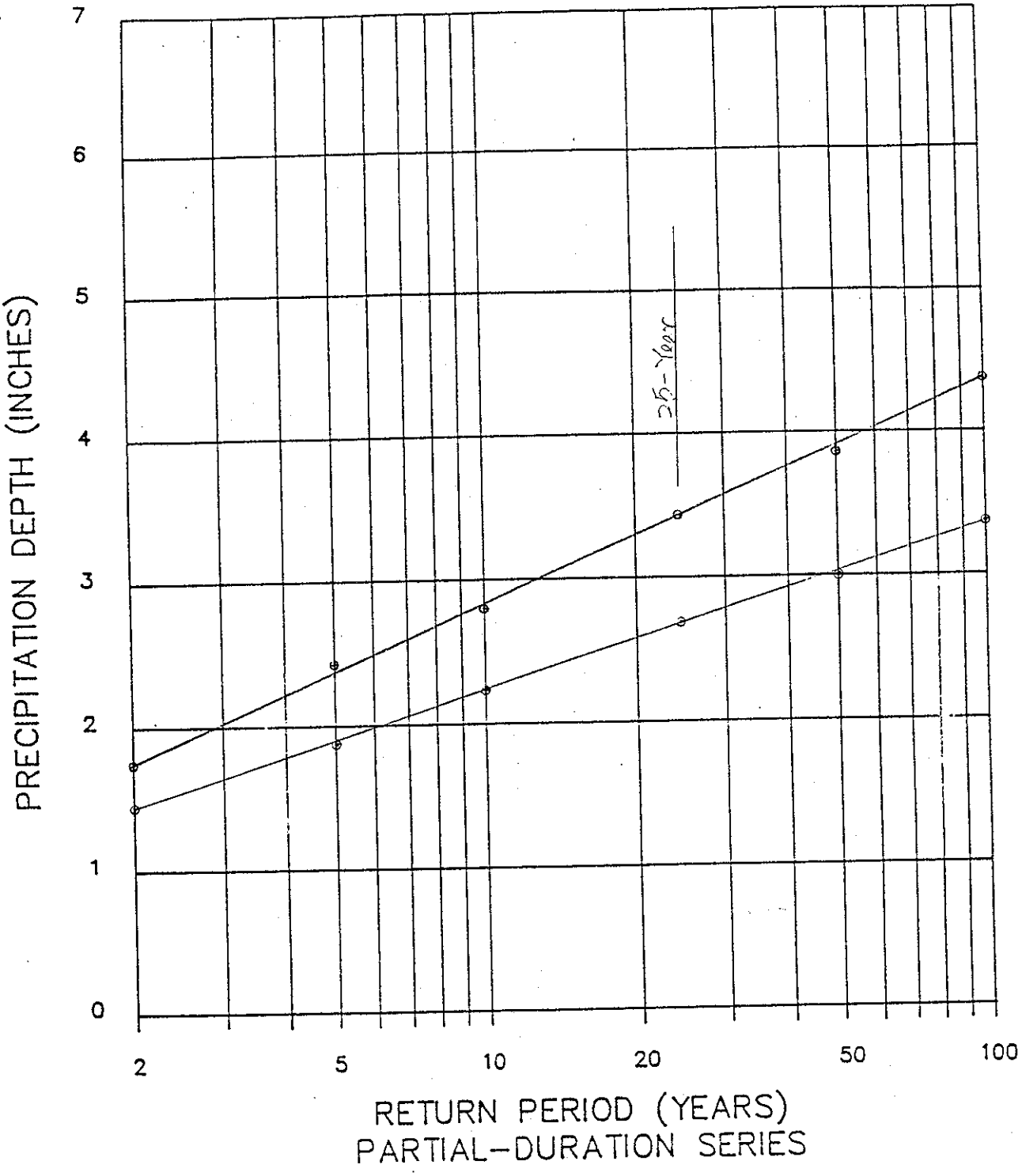


Figure 2.14
Precipitation Depth versus Return Period for Partial-Duration Series

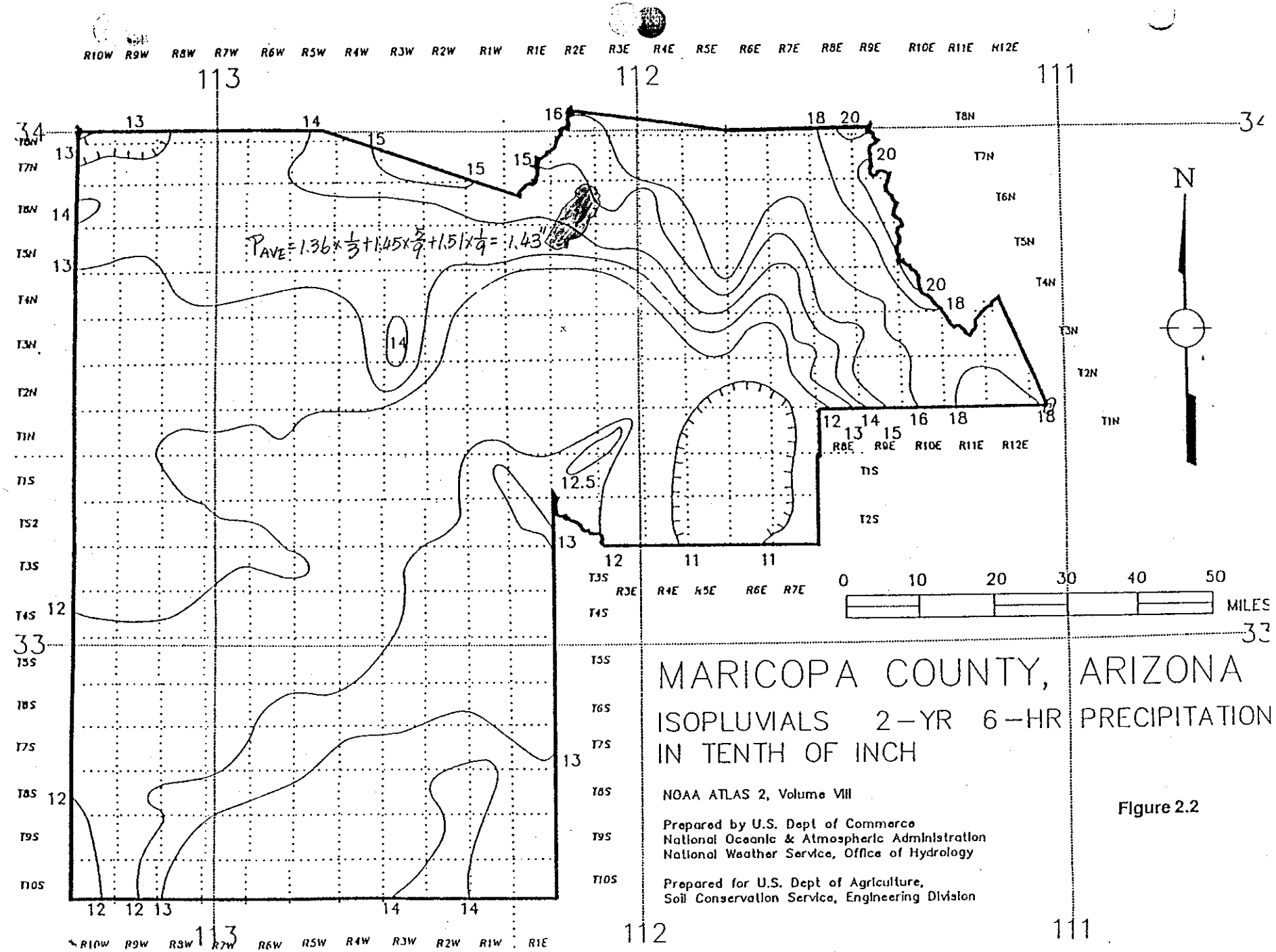

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 2-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
MILES
0 10 20 30 40 50
$P_{AVE} = 1.36 \times \frac{1}{3} + 1.45 \times \frac{2}{9} + 1.51 \times \frac{1}{9} = 1.43''$

Figure 2.2

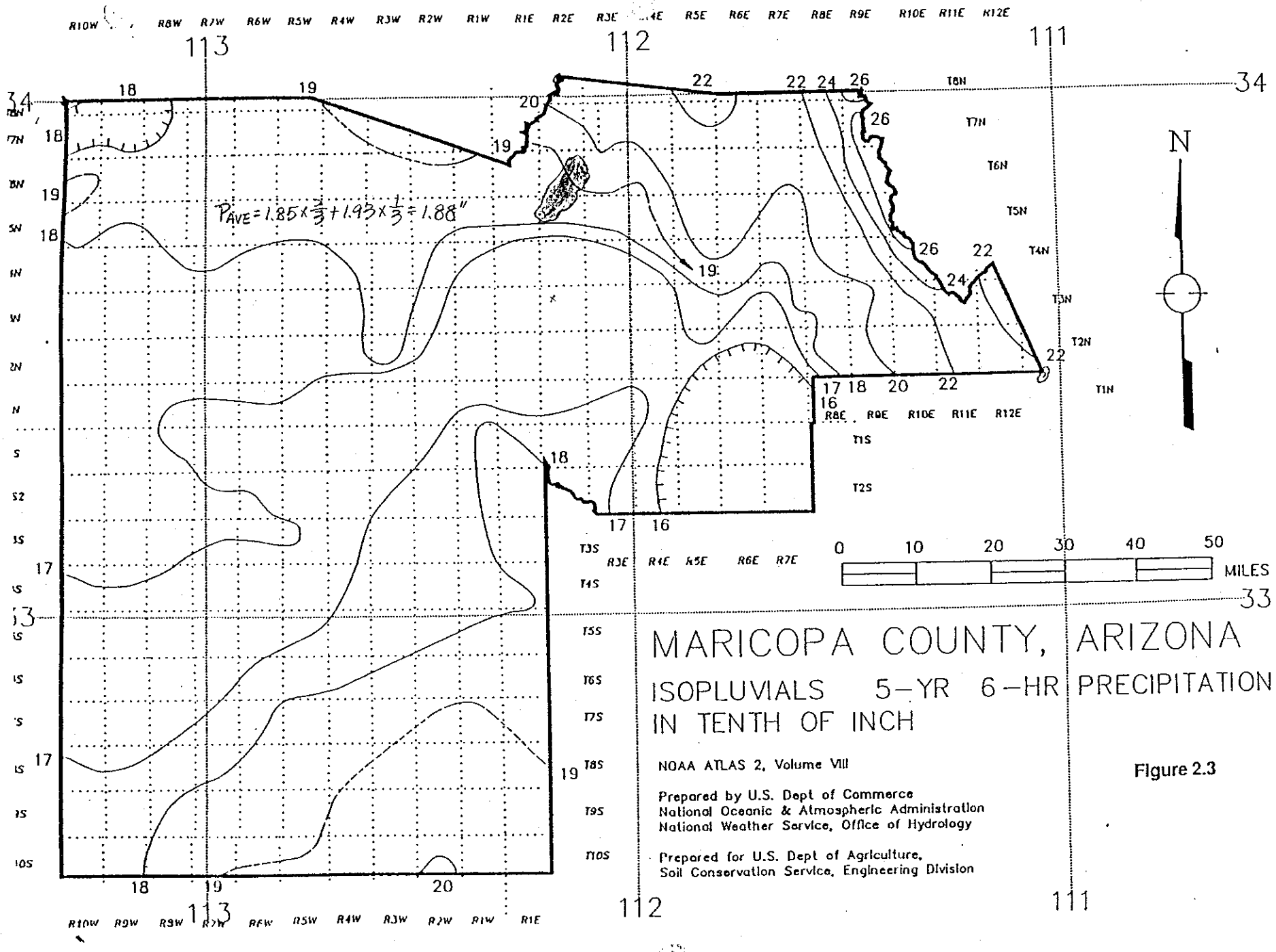
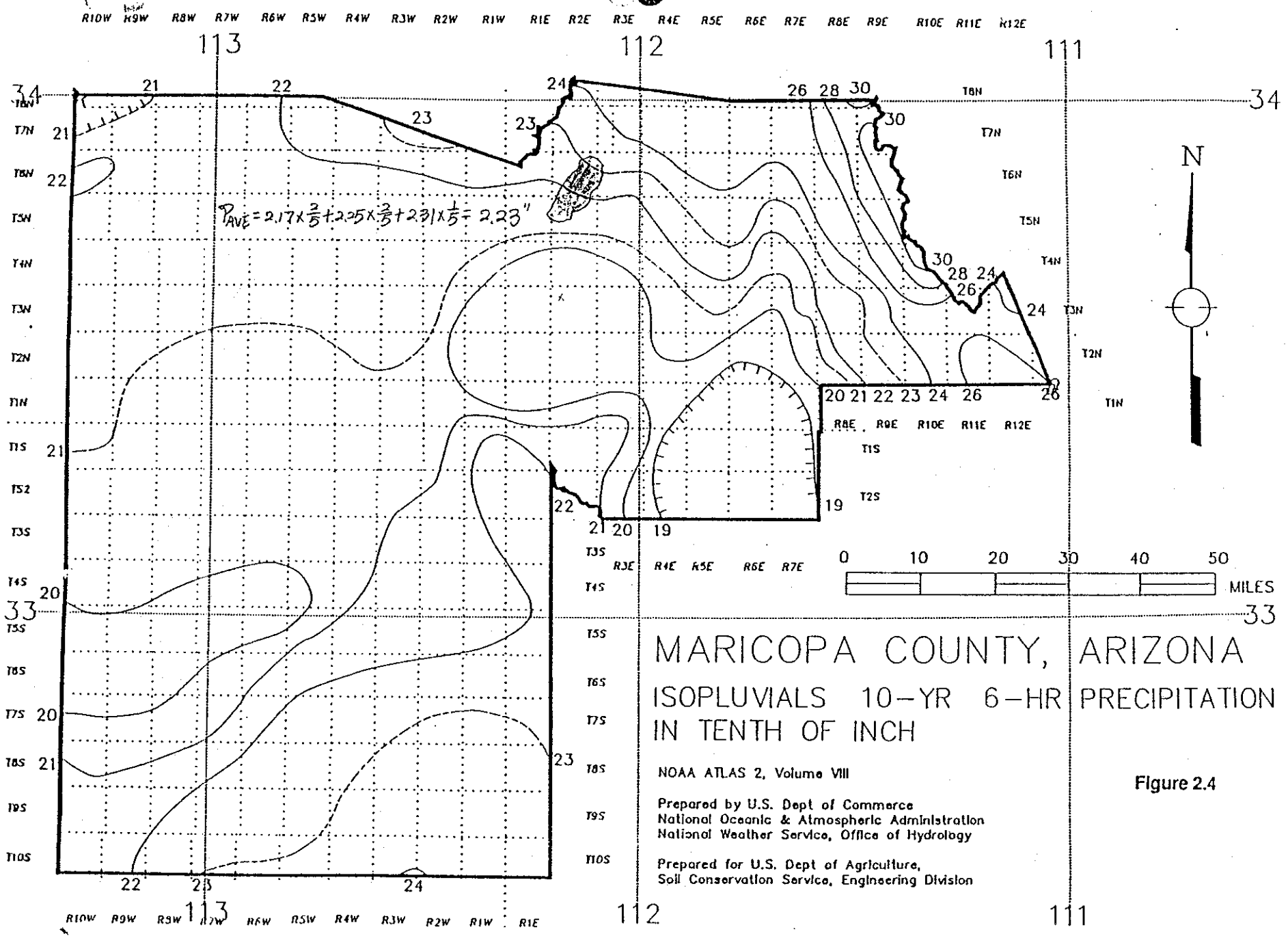

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 5-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
$P_{AVE} = 1.85 \times \frac{2}{3} + 1.93 \times \frac{1}{3} = 1.88''$
113
112
111
34
33

Figure 2.3



MARICOPA COUNTY, ARIZONA

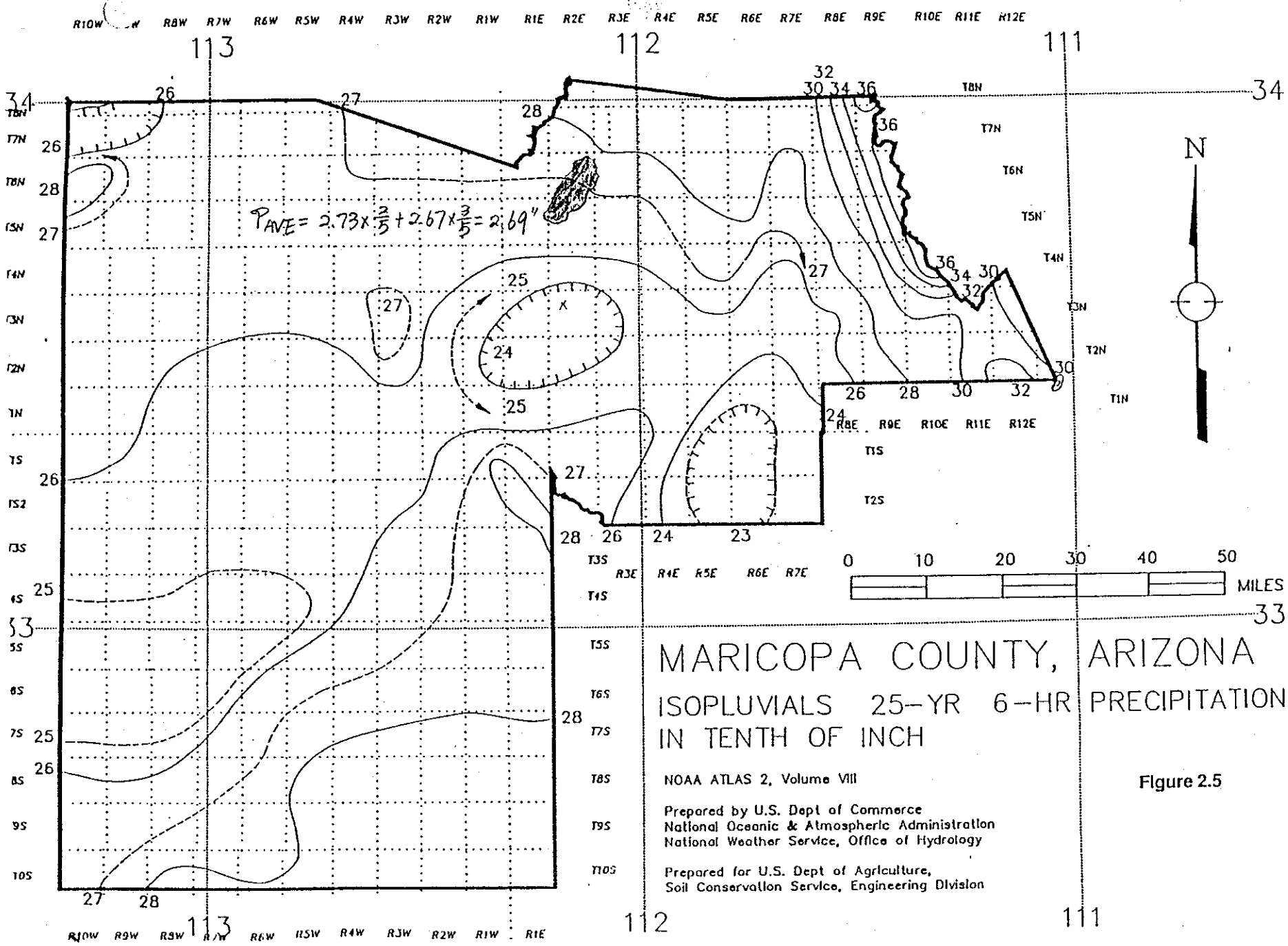
ISOPLUVIALS 10-YR 6-HR PRECIPITATION IN TENTH OF INCH

NOAA ATLAS 2, Volume VIII

Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division

Figure 2.4



MARICOPA COUNTY, ARIZONA

ISOPLUVIALS 25-YR 6-HR PRECIPITATION IN TENTH OF INCH

NOAA ATLAS 2, Volume VIII

Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division

Figure 2.5

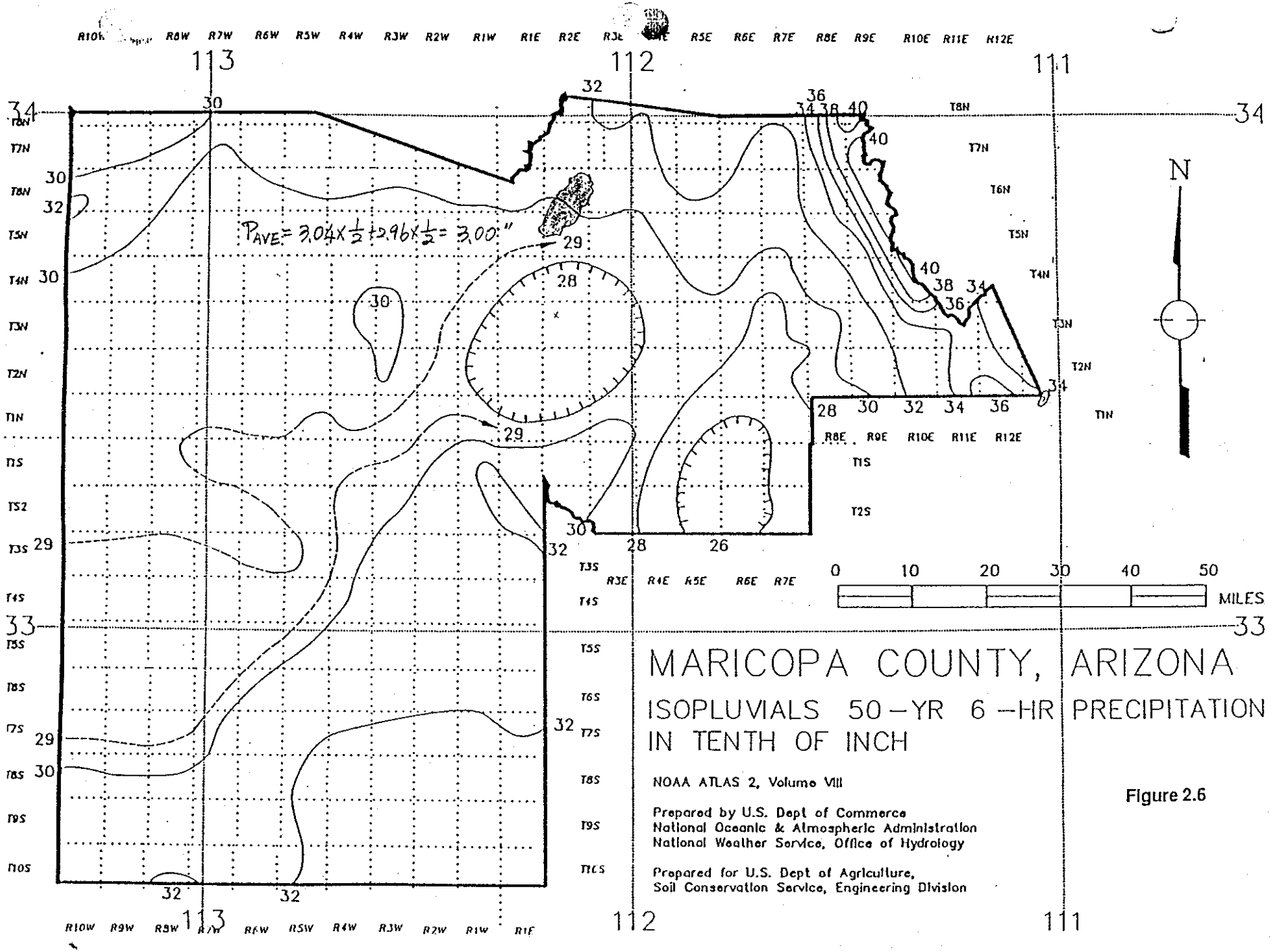
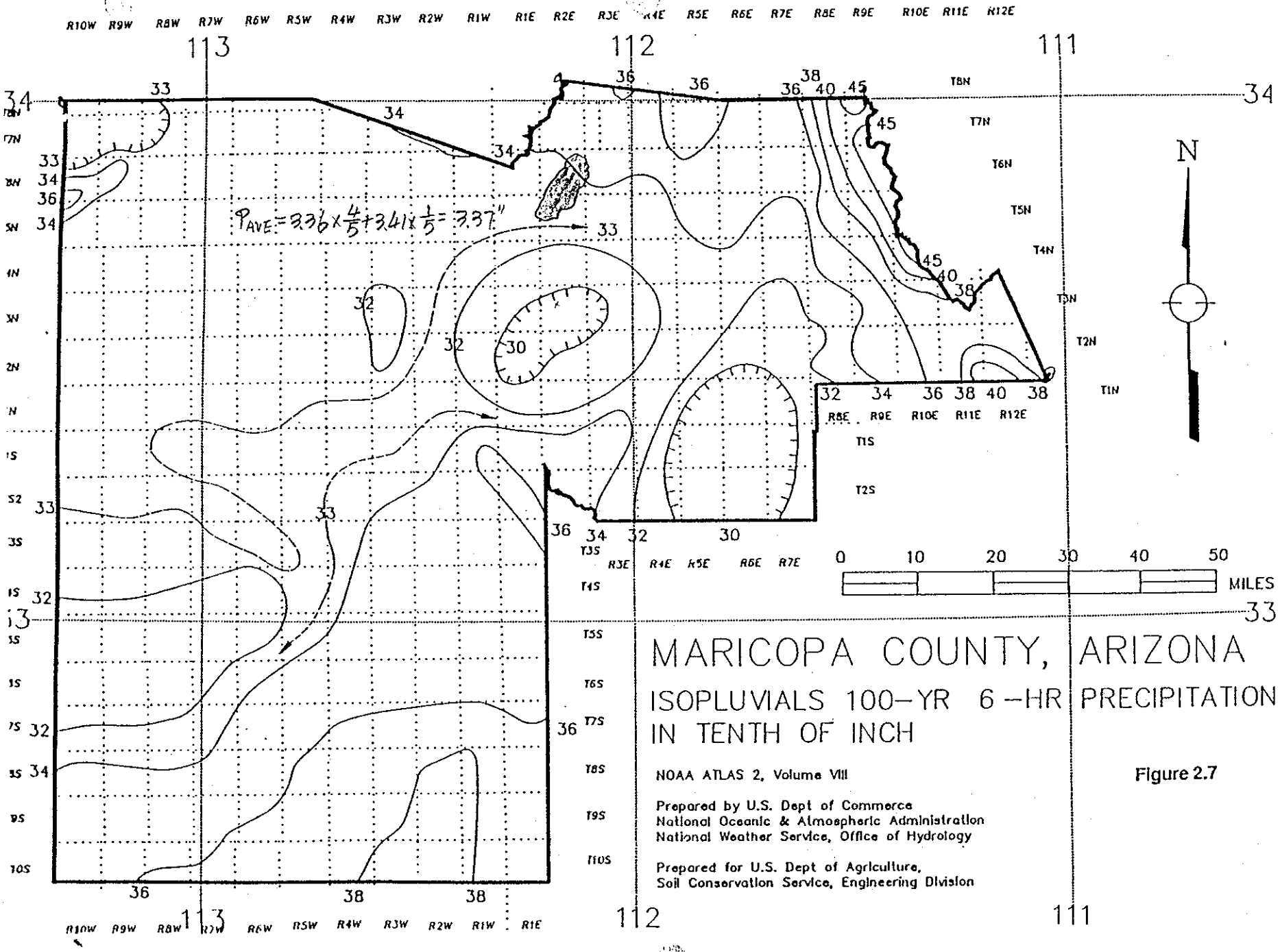

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 50-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
$P_{AVE} = 3.04 \times \frac{1}{2} + 2.96 \times \frac{1}{2} = 3.00''$
113
112
111
34
33

Figure 2.6



MARICOPA COUNTY, ARIZONA

ISOPLUVIALS 100–YR 6–HR PRECIPITATION IN TENTH OF INCH

NOAA ATLAS 2, Volume VIII

Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division

Figure 2.7

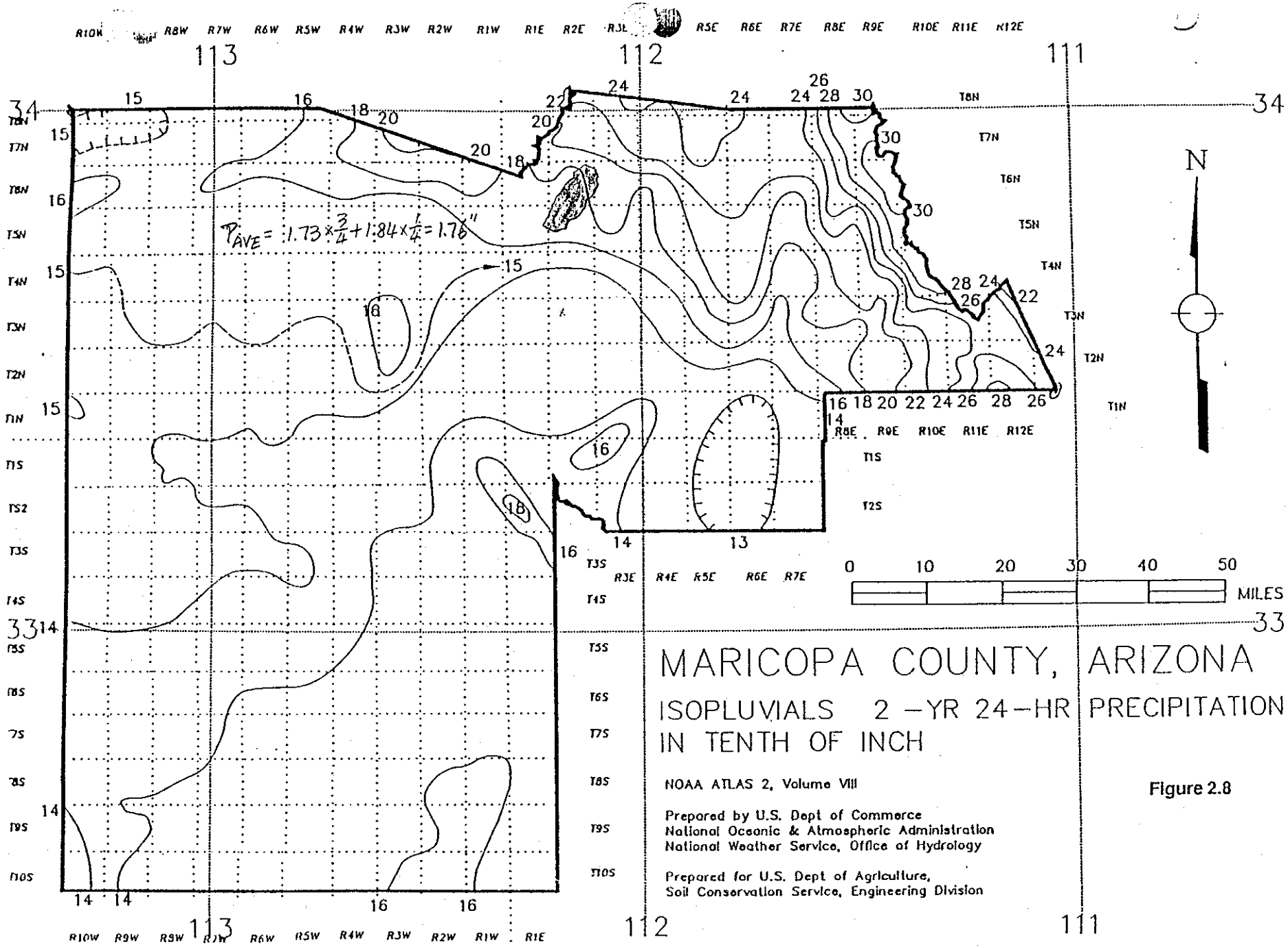

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 2 -YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
$P_{AVE} = 1.73 \times \frac{3}{4} + 1.84 \times \frac{1}{4} = 1.76''$
113
112
111
34
33

Figure 2.8

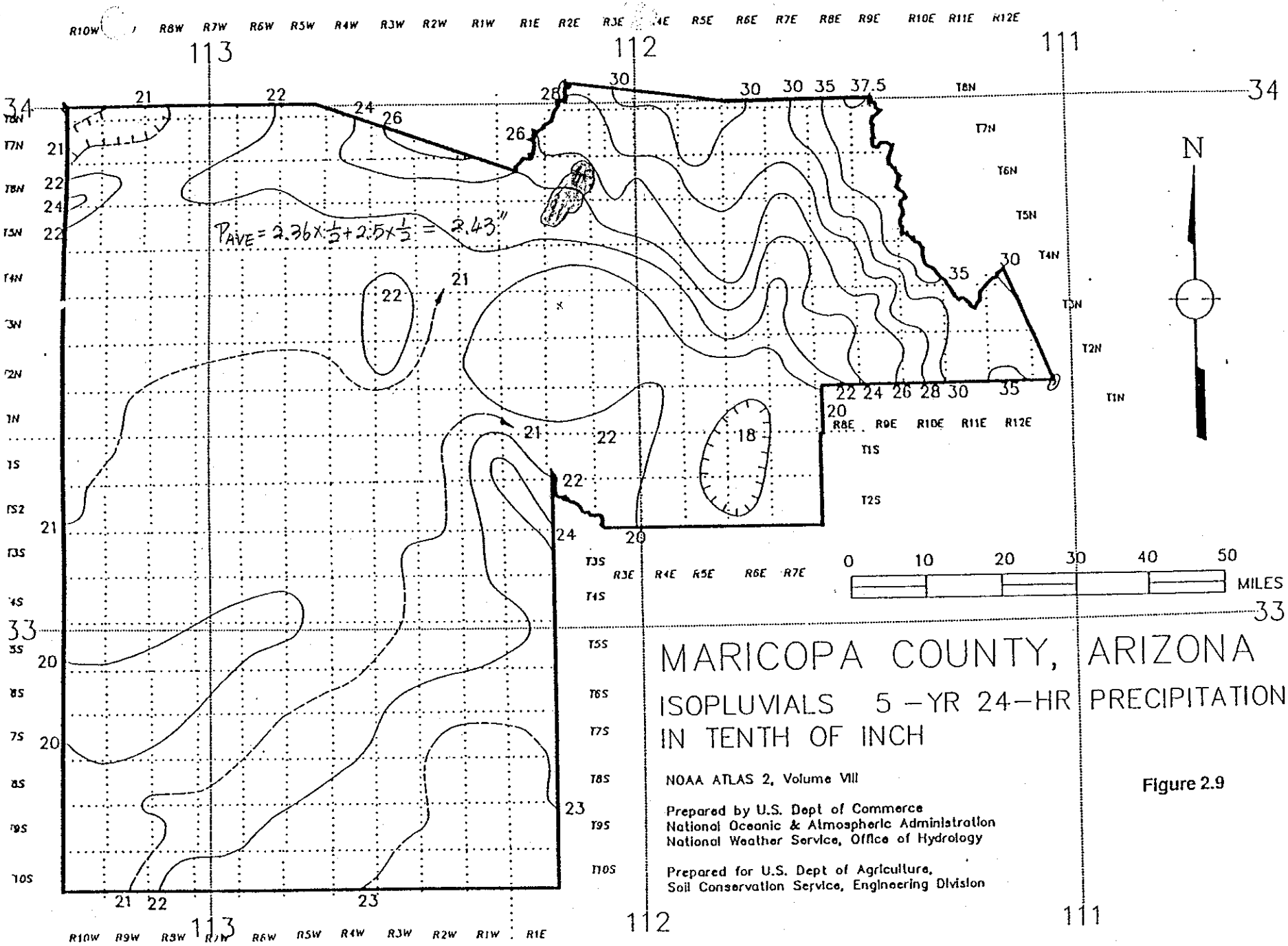

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 5 -YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
$P_{AVE} = 2.36 \times \frac{1}{2} + 2.5 \times \frac{1}{2} = 2.43''$
113
112
111
34
33

Figure 2.9

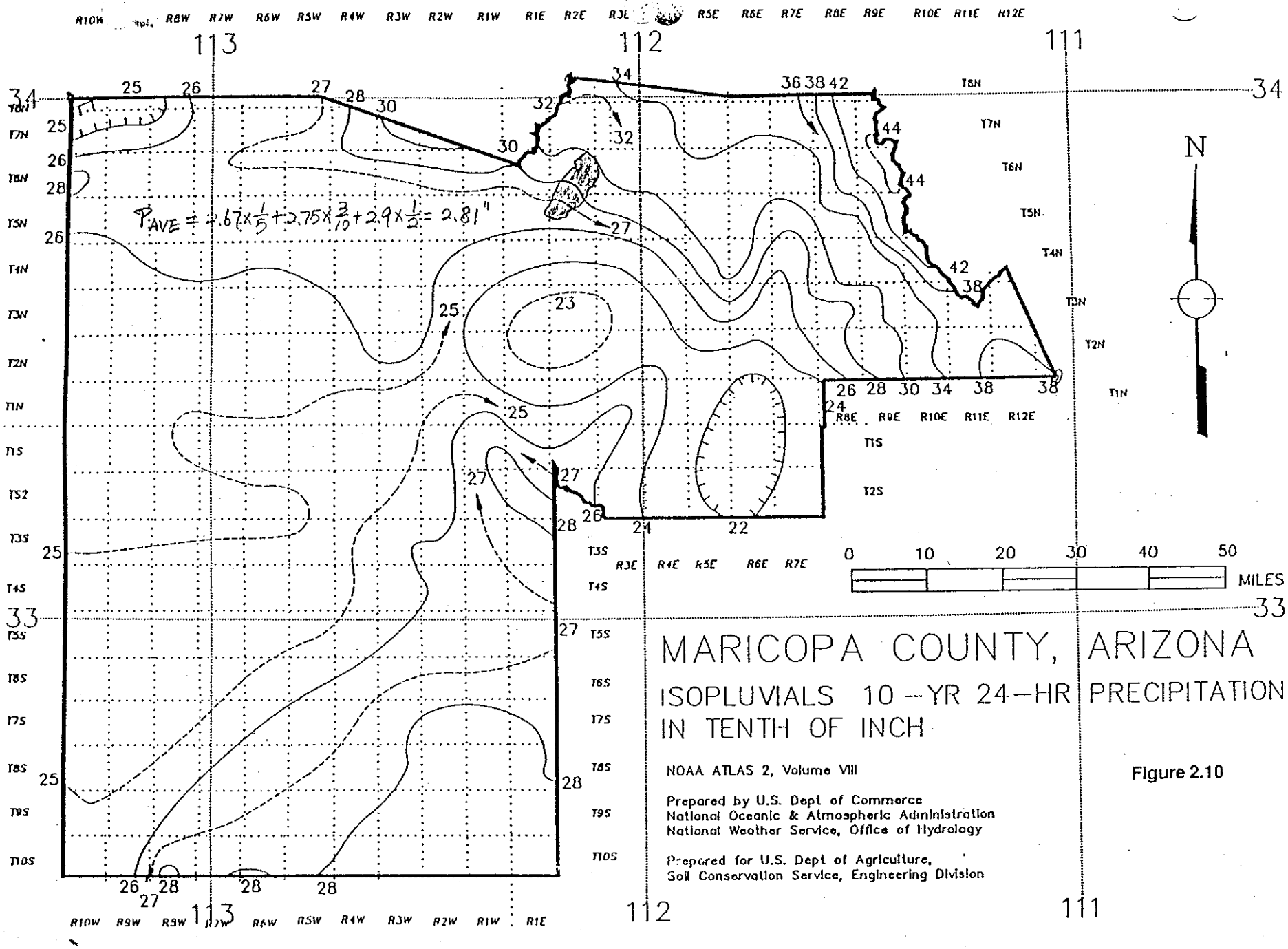
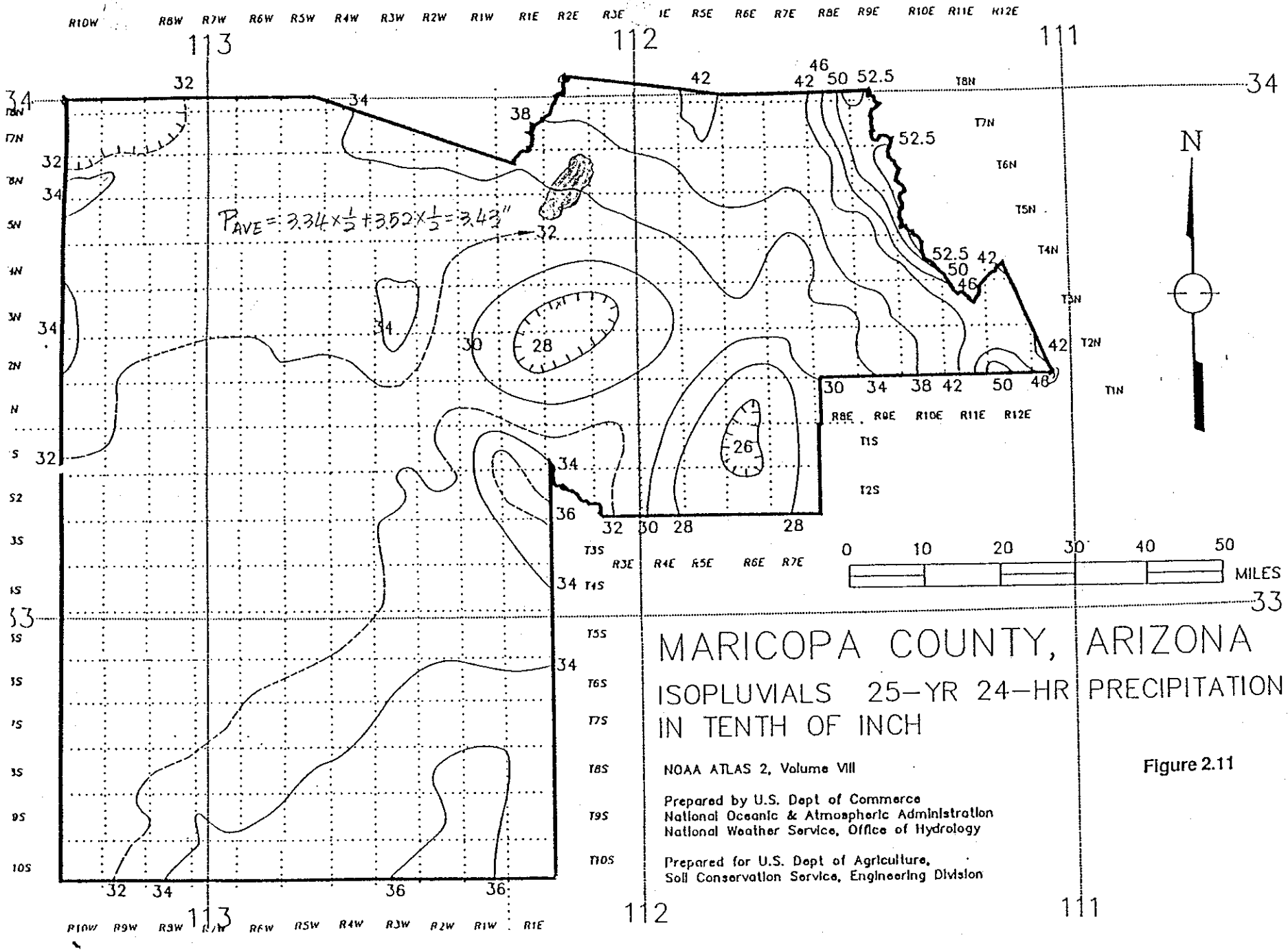

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 10-YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
113
112
111
34
33
$P_{AVE} = 2.67 \times \frac{1}{5} + 2.75 \times \frac{3}{10} + 2.9 \times \frac{1}{2} = 2.81''$

Figure 2.10



MARICOPA COUNTY, ARIZONA

ISOPLUVIALS 25-YR 24-HR PRECIPITATION IN TENTH OF INCH

NOAA ATLAS 2, Volume VIII

Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division

Figure 2.11

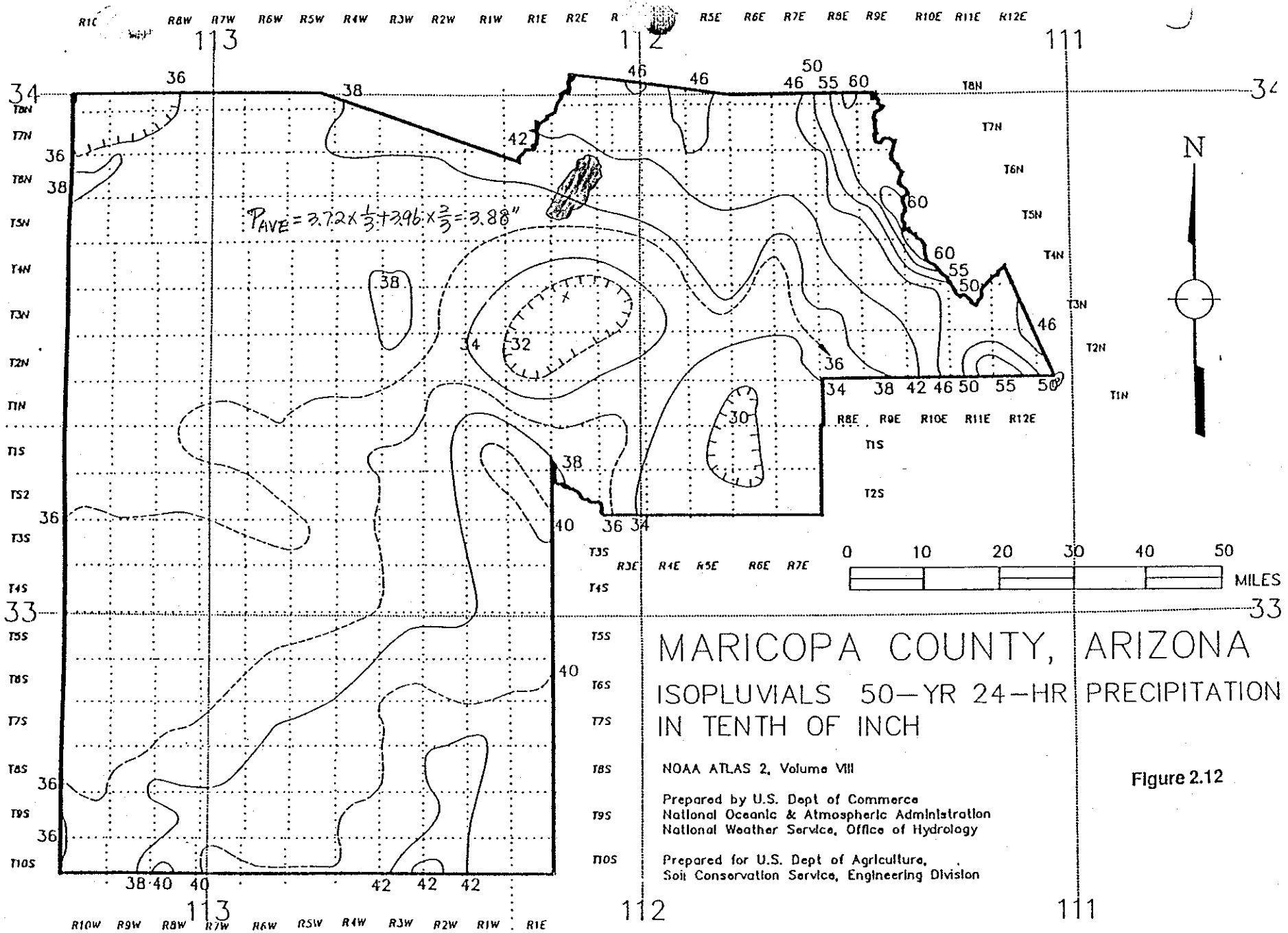
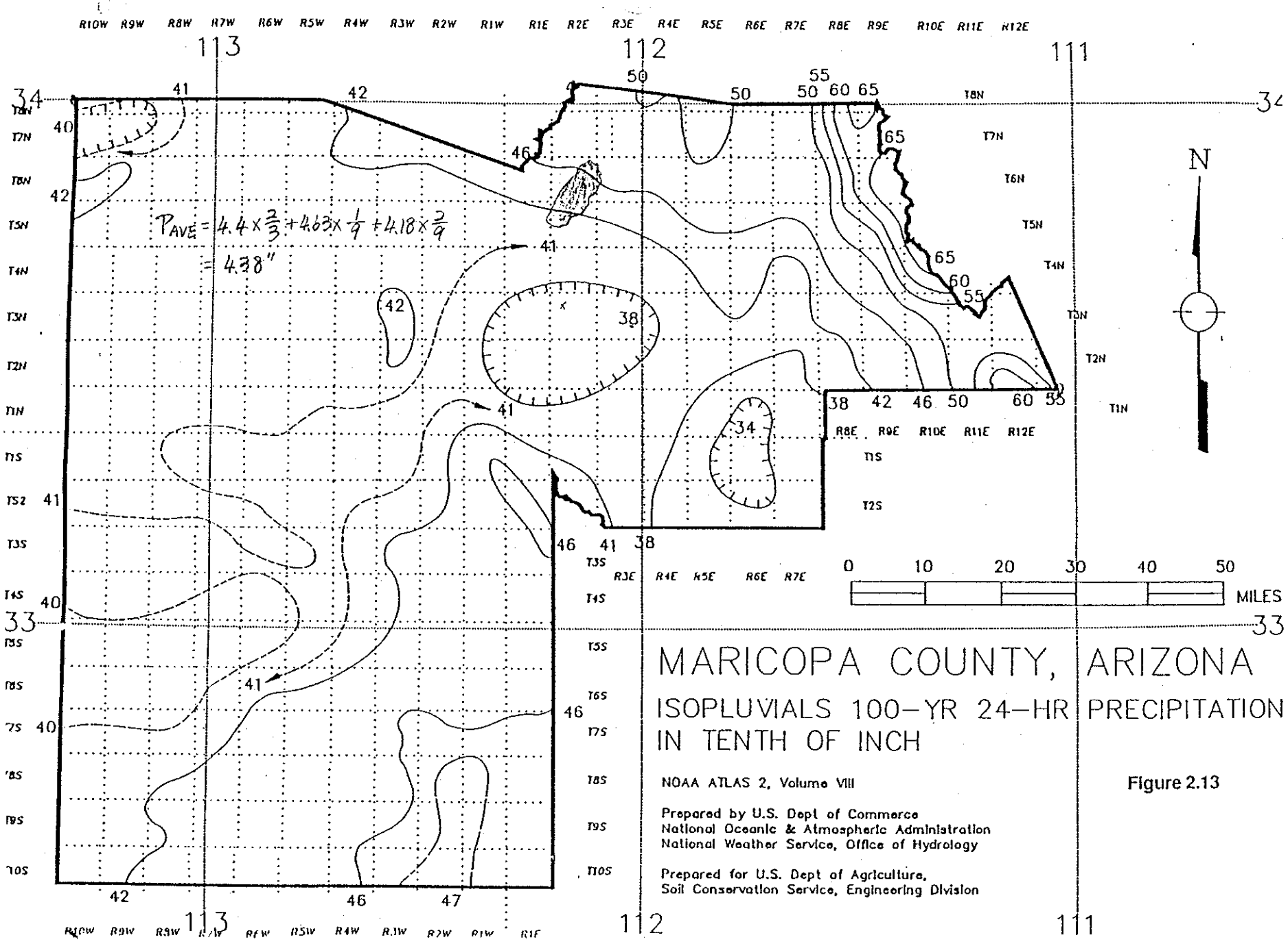

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 50—YR 24—HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
$P_{AVE} = 3.72 \times \frac{1}{3} + 3.96 \times \frac{2}{3} = 3.88''$
113
112
111
34
33

Figure 2.12



MARICOPA COUNTY, ARIZONA

ISOPLUVIALS 100-YR 24-HR PRECIPITATION IN TENTH OF INCH

NOAA ATLAS 2, Volume VIII

Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division

Figure 2.13

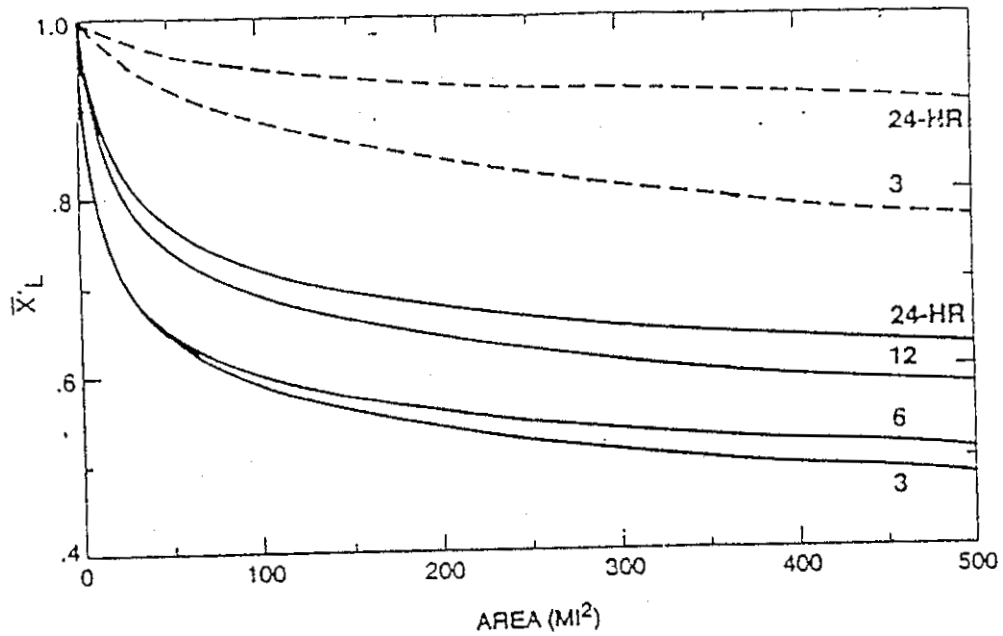


Figure 14.—$\bar{X}'_L$ (2.54-yr depth-area ratio, see sec. 4.3) for 3-, 6-, 12-, and 24-hr in southeast Arizona. Dashed lines are 3-hr and 24-hr Chicago $\bar{X}'_L$ (from TR 24)

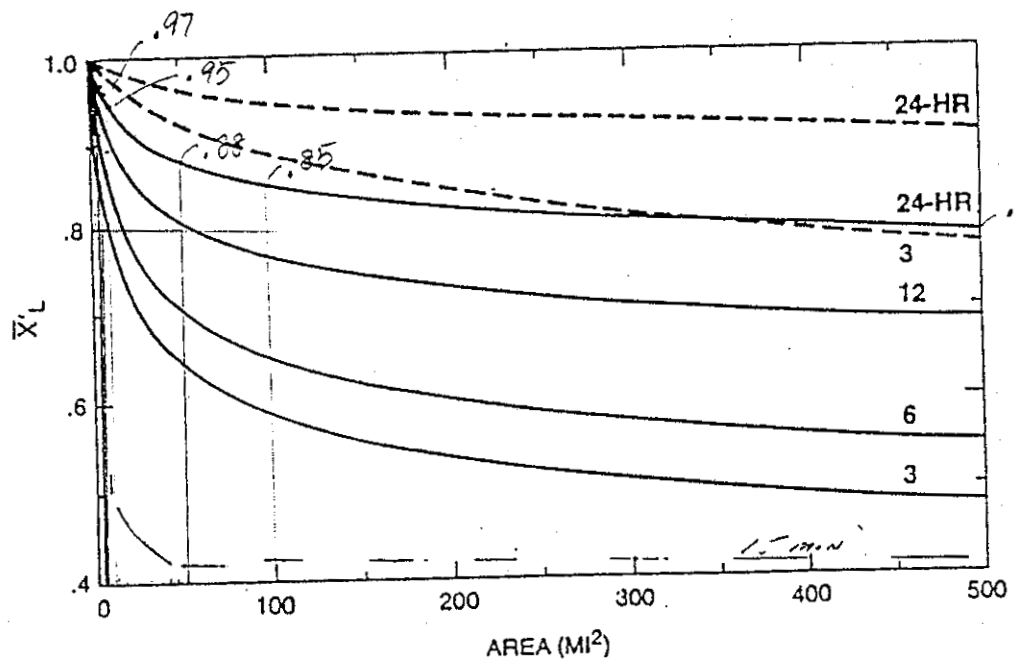


Figure 15.—Same as figure 14, but for central Arizona.

s attributed to a mixture of storm types, but still different from these found n the central Plains.

The recorder-pair data for distances greater than 15 mi contain little nformation on the structure of 1- and 2-hr storms. This is supported by the low

COPY AVAILABLE

```
ID
ID      DEADMAN WASH FLOOD INSURANCE STUDY
ID
ID      100-YEAR, 6-HOUR STORM,  FCDMD DISTRIBUTION
ID
ID      HOWARD NEEDLES TAMMEN & BERGENDOFF
ID      DECEMBER, 1991
ID      FILE:  DM6HR.HC1      CREATED BY: BGS
ID
ID
*DIAGRAM
IT      5                     300
IO      5
IN     15
JD   3.37     0.01
PC   .000     .008     .016     .025     .033     .041     .050     .058     .066     .074
PC   .087     .099     .118     .138     .216     .377     .834     .911     .931     .950
PC   .962     .972     .983     .991    1.000
JD   3.35     0.50
JD   3.30     2.80
PC   .000     .009     .016     .025     .034     .042     .051     .059     .067     .076
PC   .087     .100     .120     .163     .252     .451     .694     .837     .900     .938
PC   .950     .963     .975     .988    1.000
JD   3.10     16.0
PC   .000     .015     .020     .030     .048     .063     .076     .090     .105     .119
PC   .135     .152     .175     .222     .304     .472     .670     .796     .868     .912
PC   .946     .960     .973     .987    1.000
JD   2.73     90.0
PC   .000     .021     .035     .051     .071     .087     .105     .125     .143     .160
PC   .179     .201     .232     .281     .364     .500     .658     .773     .841     .888
PC   .927     .945     .964     .982    1.000
JD   1.92    500.0
PC   .000     .024     .043     .059     .078     .098     .119     .141     .162     .186
PC   .212     .239     .271     .321     .408     .515     .627     .735     .814     .864
PC   .907     .930     .954     .977    1.000
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ID
ID      DEADMAN WASH FLOOD INSURANCE STUDY
ID
ID      100-YEAR, 24-HOUR STORM,  SCS TYPE II DISTRIBUTION
ID
ID      HOWARD NEEDLES TAMMEN & BERGENDOFF
ID      DECEMBER, 1991
ID      FILE:  DM24HR.HC1     CREATED BY: BGS
ID
ID
*DIAGRAM
IT     5                    300
IO     5
IN    30
JD  4.38    0.01
PC  .000    .005    .011    .016    .022    .028    .035    .041    .048    .056
PC  .0683   .071    .080    .089    .098    .109    .120    .133    .147    .163
PC  .181    .204    .235    .283    .663    .735    .772    .799    .820    .838
PC  .854    .868    .880    .891    .902    .912    .921    .929    .937    .945
PC  .952    .959    .965    .972    .978    .984    .989    .995   1.000
JD  4.25    0.50
JD  4.16    10.0
JD  3.85    50.0
JD  3.72   100.0
JD  3.42   500.0
```

Depth–Area Reduction Factors for 6–Hour Duration Rainfall

(FROM HYDROLOGIC DESIGN MANUAL TABLE 2.1)

Area Sq. Mi.	Ratio to Point of Rainfall
0	1.000
0.01	1.000
0.50	0.994
1.00	0.987
2.80	0.980
10	0.940
16	0.920
20	0.910
30	0.890
40	0.870
50	0.860
90	0.810
100	0.800
200	0.720
300	0.660
400	0.610
500	0.570

Depth–Area Reduction Factors for 24–Hour Duration Rainfall

(NOAA TM NWS HYDRO–40)

Area Sq. Mi.	Ratio to Point of Rainfall
0.01	1.000
5	0.97
10	0.95
50	0.88
100	0.85
500	0.78