

The Plate you are attempting to access is not currently available.

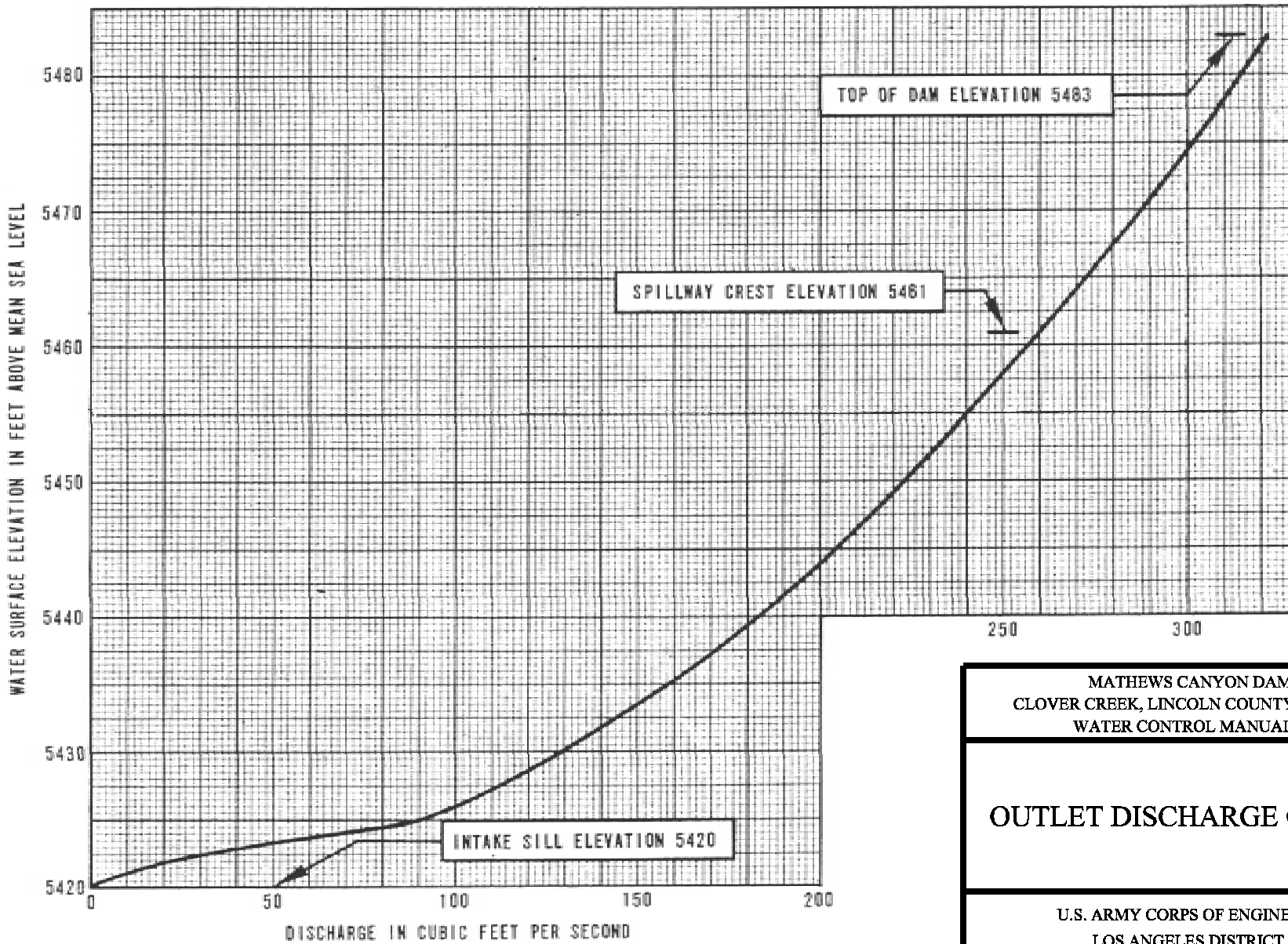
For additional information, please contact the Los Angeles District Public Affairs Office at (213) 452-3908.

The Plate you are attempting to access is not currently available.

For additional information, please contact the Los Angeles District Public Affairs Office at (213) 452-3908.

The Plate you are attempting to access is not currently available.

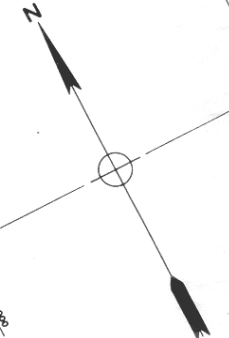
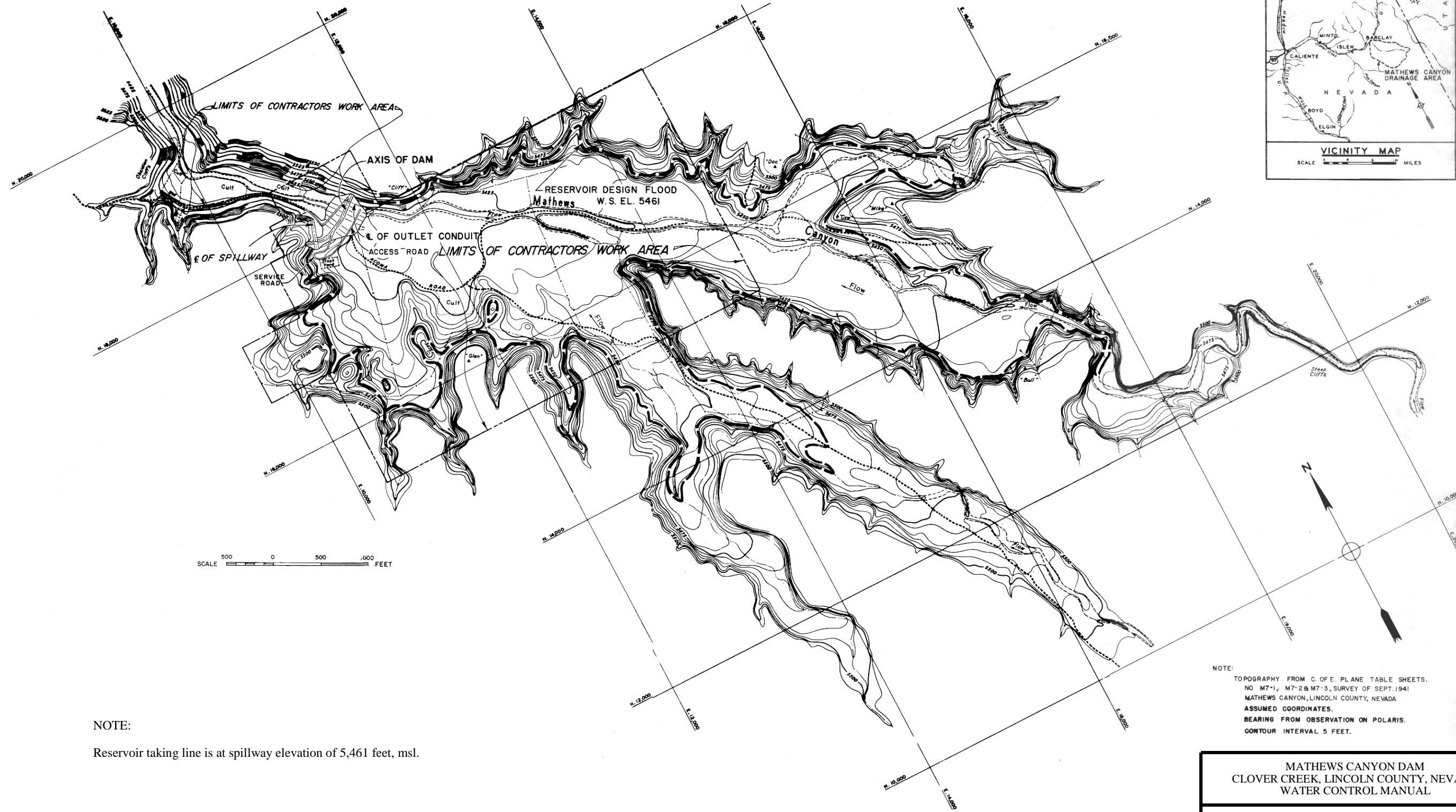
For additional information, please contact the Los Angeles District Public Affairs Office at (213) 452-3908.



MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

OUTLET DISCHARGE CURVE

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT



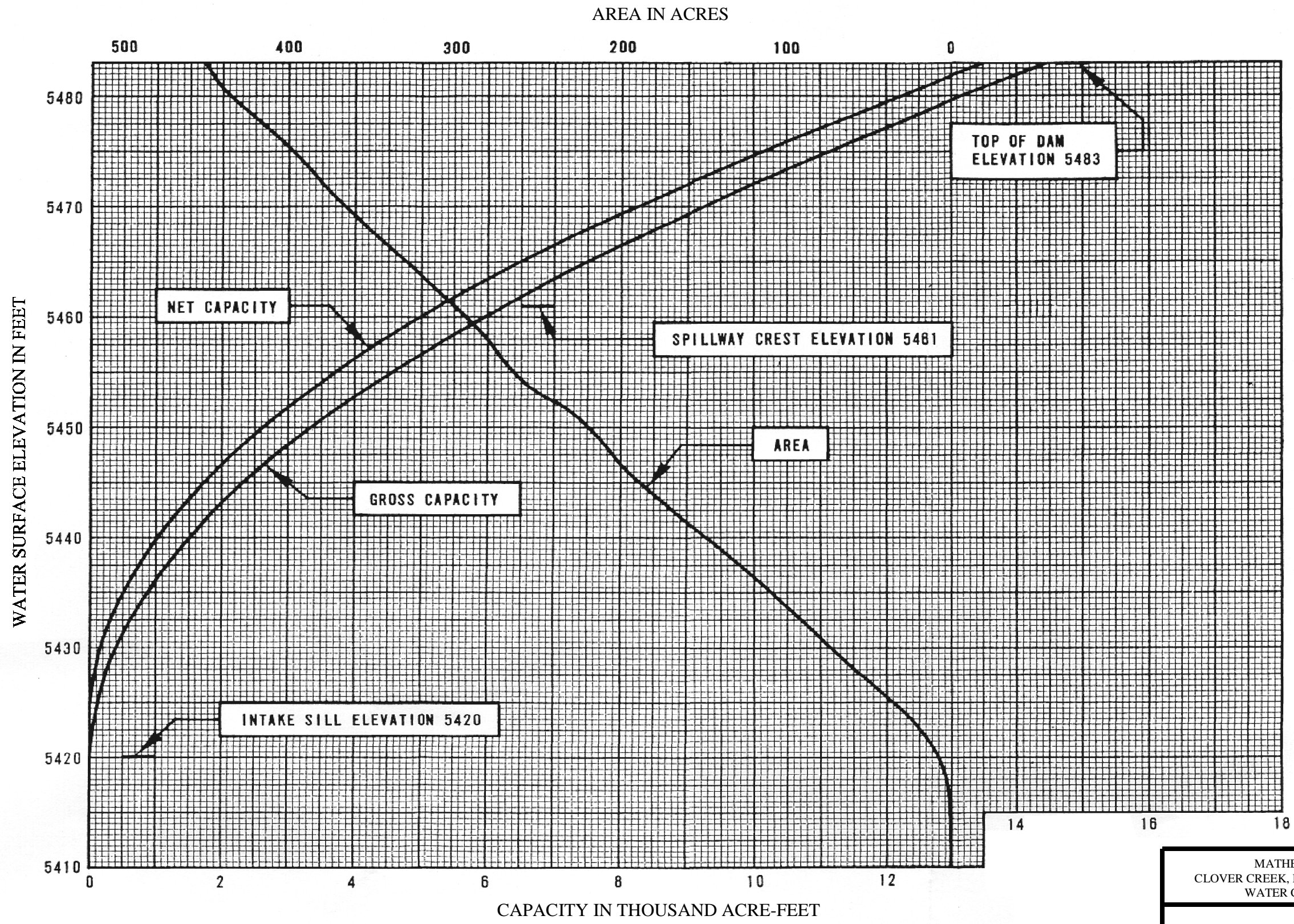
NOTE:
Reservoir taking line is at spillway elevation of 5,461 feet, msl.

NOTE:
TOPOGRAPHY FROM C. OF E. PLANE TABLE SHEETS.
NO. M7-1, M7-2 & M7-3, SURVEY OF SEPT. 1941
MATHEWS CANYON, LINCOLN COUNTY, NEVADA
ASSUMED COORDINATES.
BEARING FROM OBSERVATION ON POLARIS.
CONTOUR INTERVAL 5 FEET.

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

GENERAL PLAN OF RESERVOIR

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



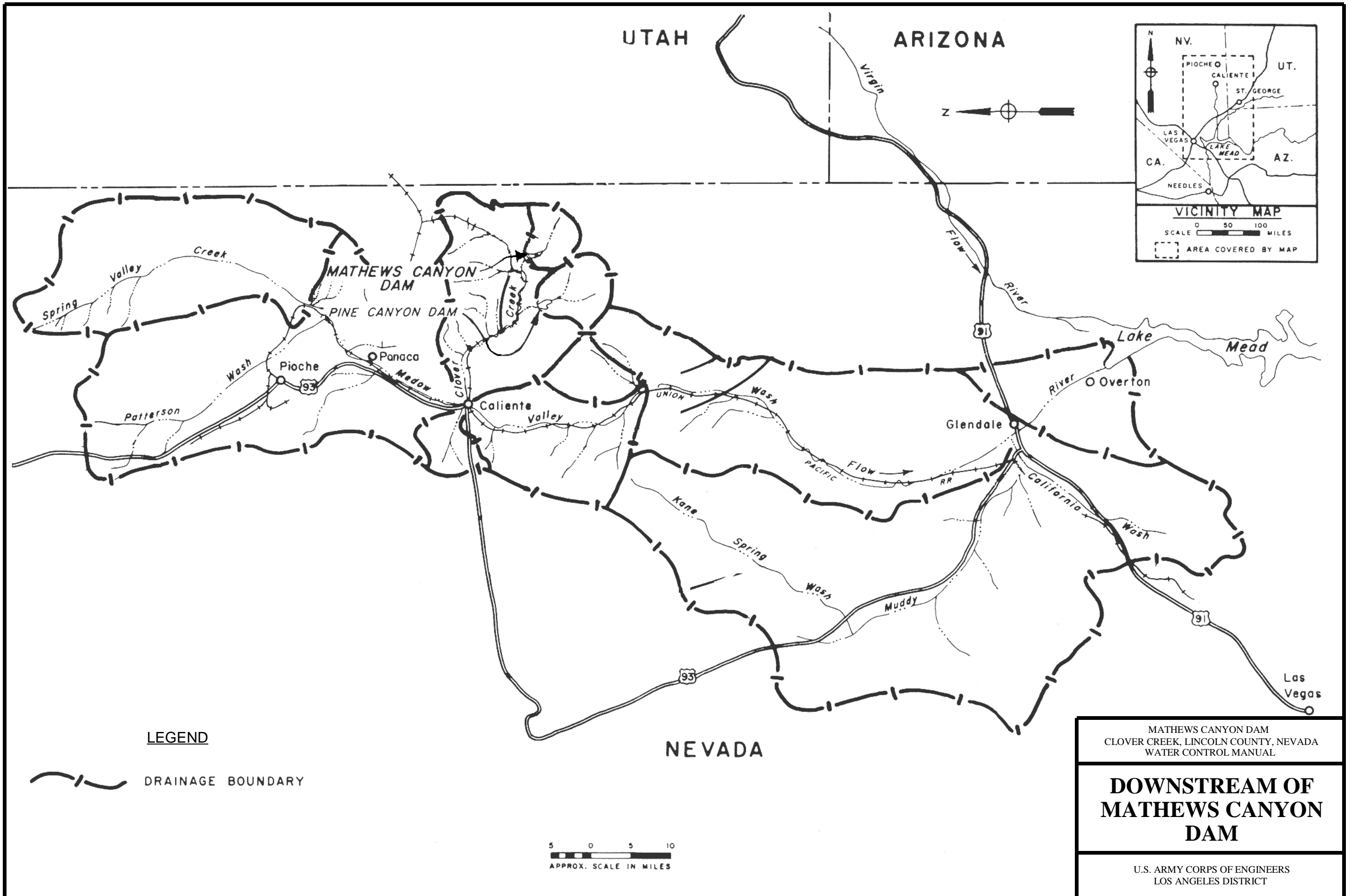
Note:

"Gross Capacity" is total capacity of the reservoir including the storage allotted for sediment accumulation.
 "Net Capacity" is total capacity of the reservoir without the additional sediment accumulation storage space.

MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

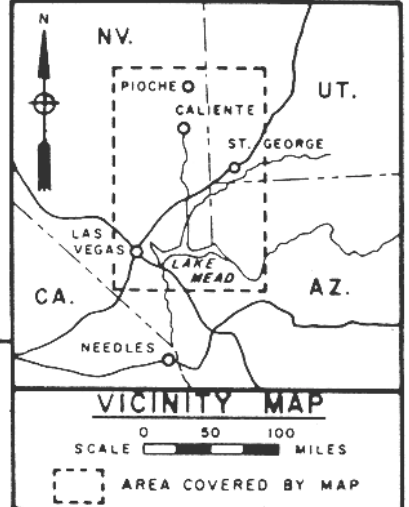
AREA AND CAPACITY CURVES
 BASED ON 1977 SURVEY

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT



UTAH

ARIZONA



LEGEND

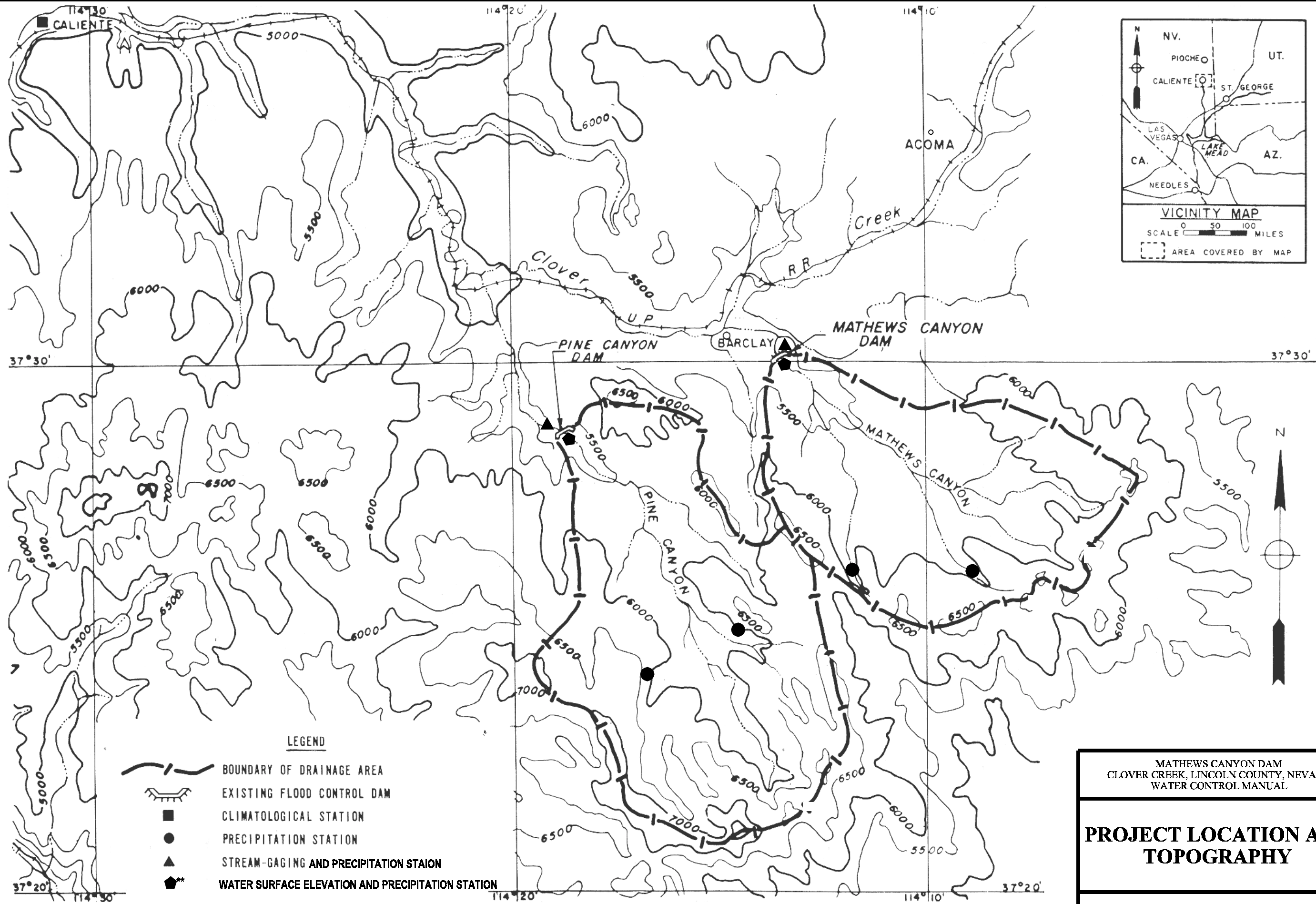
DRAINAGE BOUNDARY









MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

**DOWNSTREAM OF
MATHEWS CANYON
DAM**

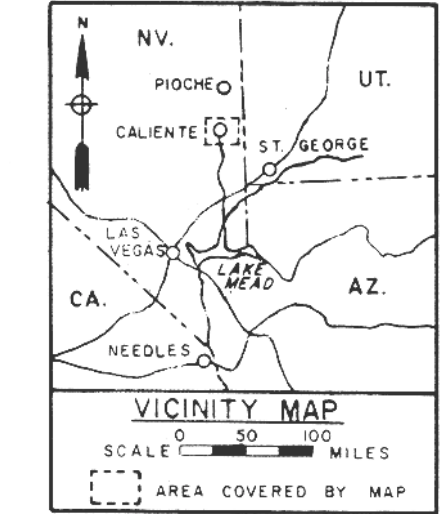
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



LEGEND

-  BOUNDARY OF DRAINAGE AREA
-  EXISTING FLOOD CONTROL DAM
-  CLIMATOLOGICAL STATION
-  PRECIPITATION STATION
-  STREAM-GAGING AND PRECIPITATION STATION
-  WATER SURFACE ELEVATION AND PRECIPITATION STATION

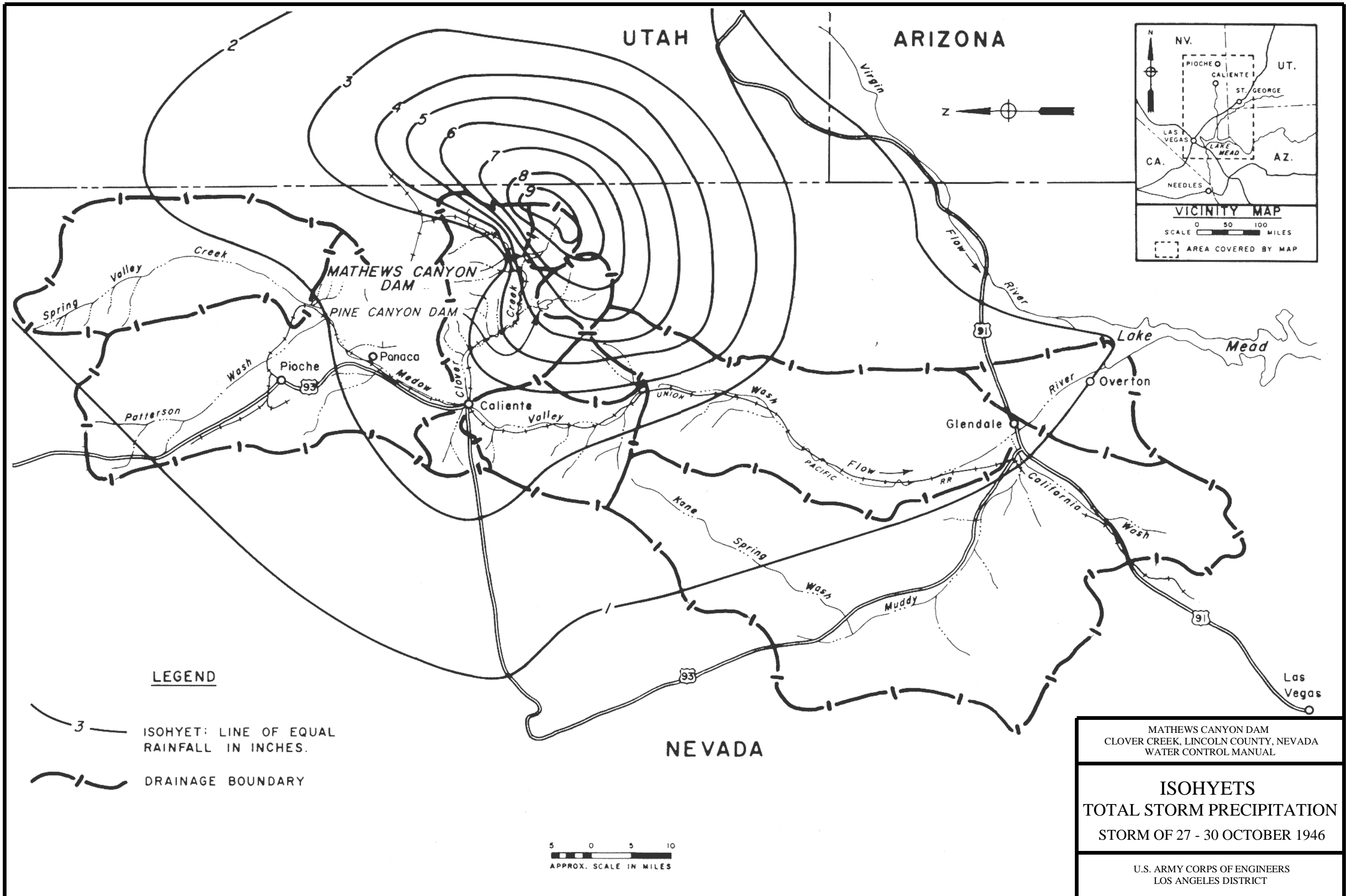
** NOTE: THESE STATIONS PROVIDE TELEMETRY DATA.

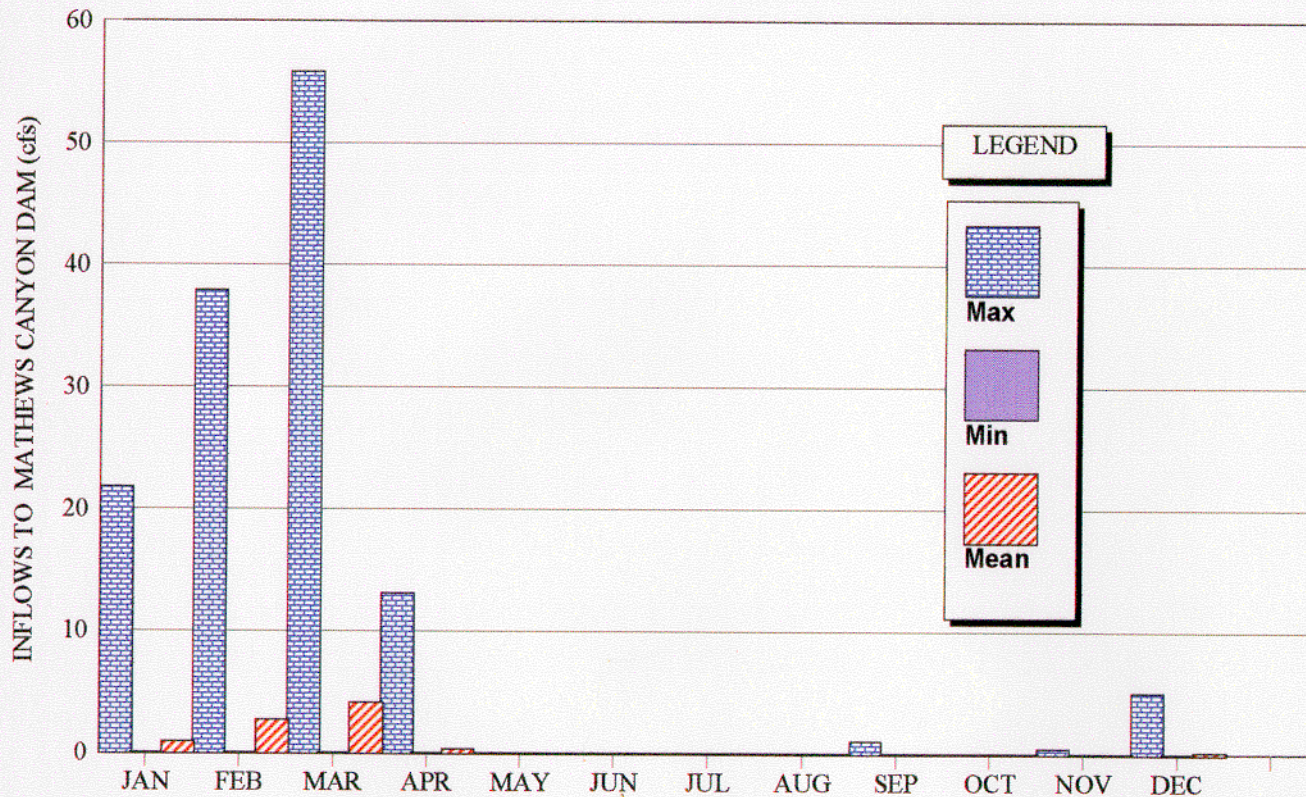


MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

PROJECT LOCATION AND TOPOGRAPHY

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT





	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Max	21.815	37.935	55.832	13.125	0.000	0.000	0.000	0.000	1.020	0.000	0.456	5.032
Min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	0.952	2.735	4.148	0.361	0.000	0.000	0.000	0.000	0.026	0.000	0.012	0.192

Note:
 Data from official records of the Corps of Engineers'
 Reservoir Regulation Section
 Period of Record from 1959 - 1997.


MATEHWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

**MONTHLY MAXIMUM, MINIMUM
 AND MEAN INFLOWS FOR
 PERIOD OF RECORD**

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1959	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1962	0.000	2.839	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.839
1963	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1965	0.000	0.000	0.000	0.947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.032	5.979
1966	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.355	1.355
1967	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.020	0.000	0.000	0.000	1.020
1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1969	21.815	0.544	27.151	13.125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	62.635
1970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.291	0.291
1972	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1973	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1974	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1975	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1976	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1977	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1978	0.000	27.242	55.832	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	83.074
1979	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1980	0.000	37.935	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	37.935
1981	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1982	0.000	0.000	1.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.807	1.813
1983	0.000	0.000	50.796	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.796
1984	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1985	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1986	0.000	0.495	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.495
1987	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.456	0.000	0.456
1988	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1990	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1991	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1992	0.000	1.531	3.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.520
1993	15.070	34.490	8.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	57.661
1994	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1995	0.238	1.588	14.913	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.739
1996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1997	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AVG	0.952	2.735	4.148	0.361	0.000	0.000	0.000	0.000	0.026	0.000	0.012	0.192	8.426

* Data from Official records
of the Corps of Engineers'
Reservoir Regulation Section
Period of Record 1959 - 1997

 Maximum inflow values

Note: Unit of all flows are in cubic feet per second.

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

MONTHLY FLOWS FOR PERIOD OF RECORD

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

WATER YEAR	DATE	WATER SURFACE ELEVATION (ft)	DATE	INFLOW** (cfs)	DATE	OUTFLOW** (cfs)
1958	-	5,420.000	-	0	-	0
1959	-	5,420.000	-	0	-	0
1960	-	5,420.000	-	0	-	0
1961	-	5,420.000	-	0	-	0
1962	13 FEB	5,421.985	12 FEB	72	12 FEB	45
1963	-	5,420.000	-	0	-	0
1964	-	5,420.000	-	0	-	0
1965	30 DEC	5,426.736	30 DEC	115	30 DEC	104
1966	7 DEC	5,422.333	6 DEC	30	7 DEC	30
1967	24 SEP	5,421.247	24 SEP	18	24 SEP	13
1968	-	5,420.000	-	0	-	0
1969	1 APR	5,428.245	21 JAN	262	26 JAN	117
1970	-	5,420.000	-	0	-	0
1971	26 DEC	5,420.920	26 DEC	14	26 DEC	9
1972	-	5,420.000	-	0	-	0
1973	-	5,420.000	-	0	-	0
1974	-	5,420.000	-	0	-	0
1975	-	5,420.000	-	0	-	0
1976	-	5,420.000	-	0	-	0
1977	-	5,420.000	-	0	-	0
1978	5 MAR	5,438.785	10 FEB	808	5 MAR	177
1979	-	Not Available	16 MAR	29	-	Not Available
1980	21 FEB	5,432.190	19 FEB	285	21 FEB	142
1981	-	5,420.000	-	0	-	0
1982	23 DEC	5,421.897	26 MAR	36	23 DEC	22
1983	4 MAR	5,445.000	3 MAR	745	4 MAR	196
1984	-	5,420.000	-	0	-	0
1985	-	5,420.000	-	0	-	0
1986	16 FEB	5,420.901	15 FEB	11	16 FEB	9
1987	7 NOV	5,420.708	6 NOV	18	6 NOV	7
1988	-	5,420.000	-	0	-	0
1989	-	5,420.000	-	0	-	0
1990	-	5,420.000	-	0	-	0
1991	-	5,420.000	-	0	-	0
1992	4 MAR	5,424.560	3 MAR	89	4 MAR	76
1993	19 JAN	5,432.316	18 JAN	469	19 JAN	143
1994	-	5,420.000	-	0	-	0
1995	13 MAR	5,429.541	11 MAR	427	12 MAR	145
1996	-	5,420.000	-	0	-	0
1997	-	5,420.000	-	0	-	0

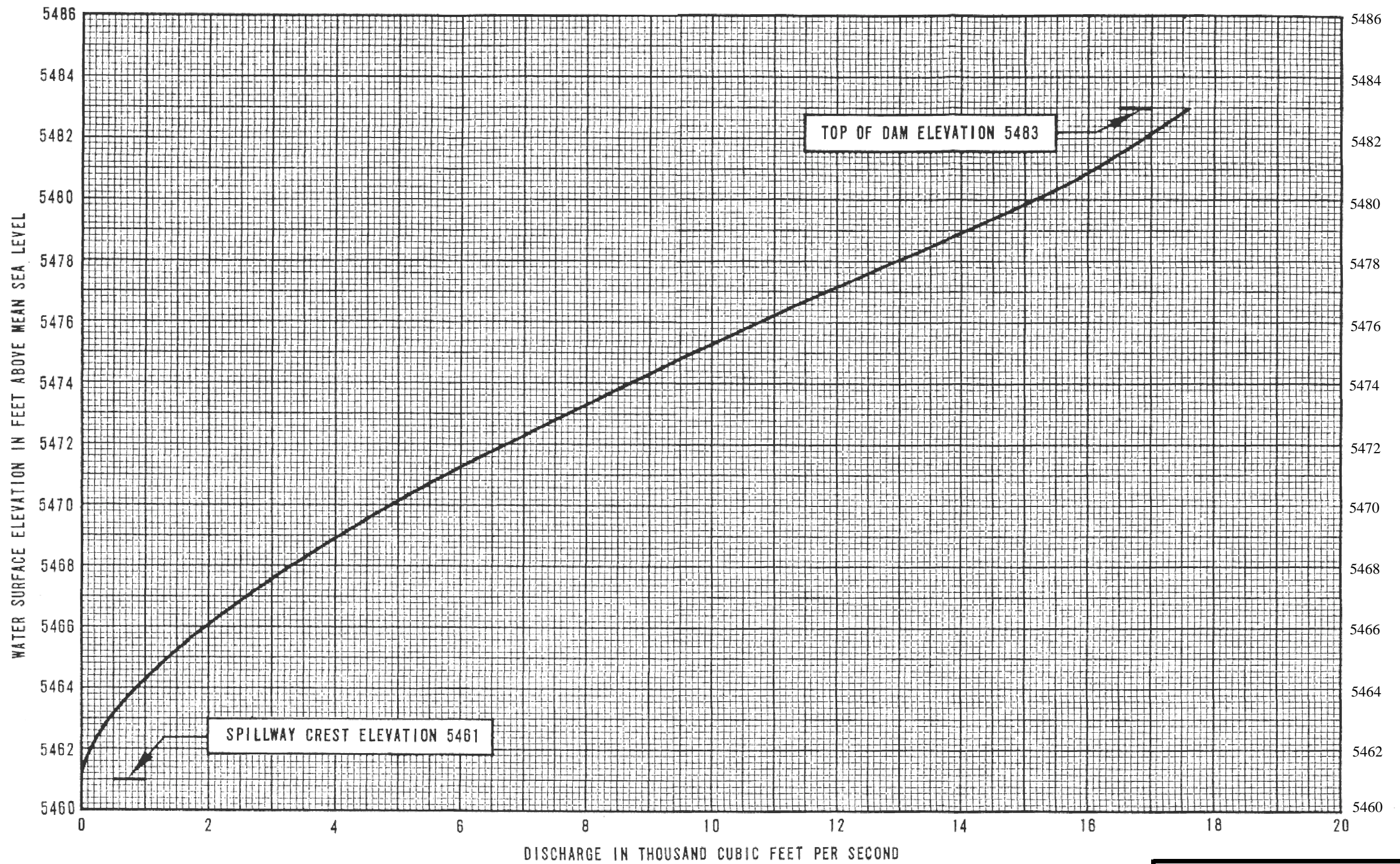
* Period of Record spans 1959 - 1997
Data from the official records of the COE's Reservoir Regulation Section.

** Inflow and Outflow values are averaged over a Period of 1 day.

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

**ANNUAL MAXIMUM INFLOWS,
OUTFLOWS AND WATER
SURFACE ELEVATIONS FOR
PERIOD OF RECORD ***

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



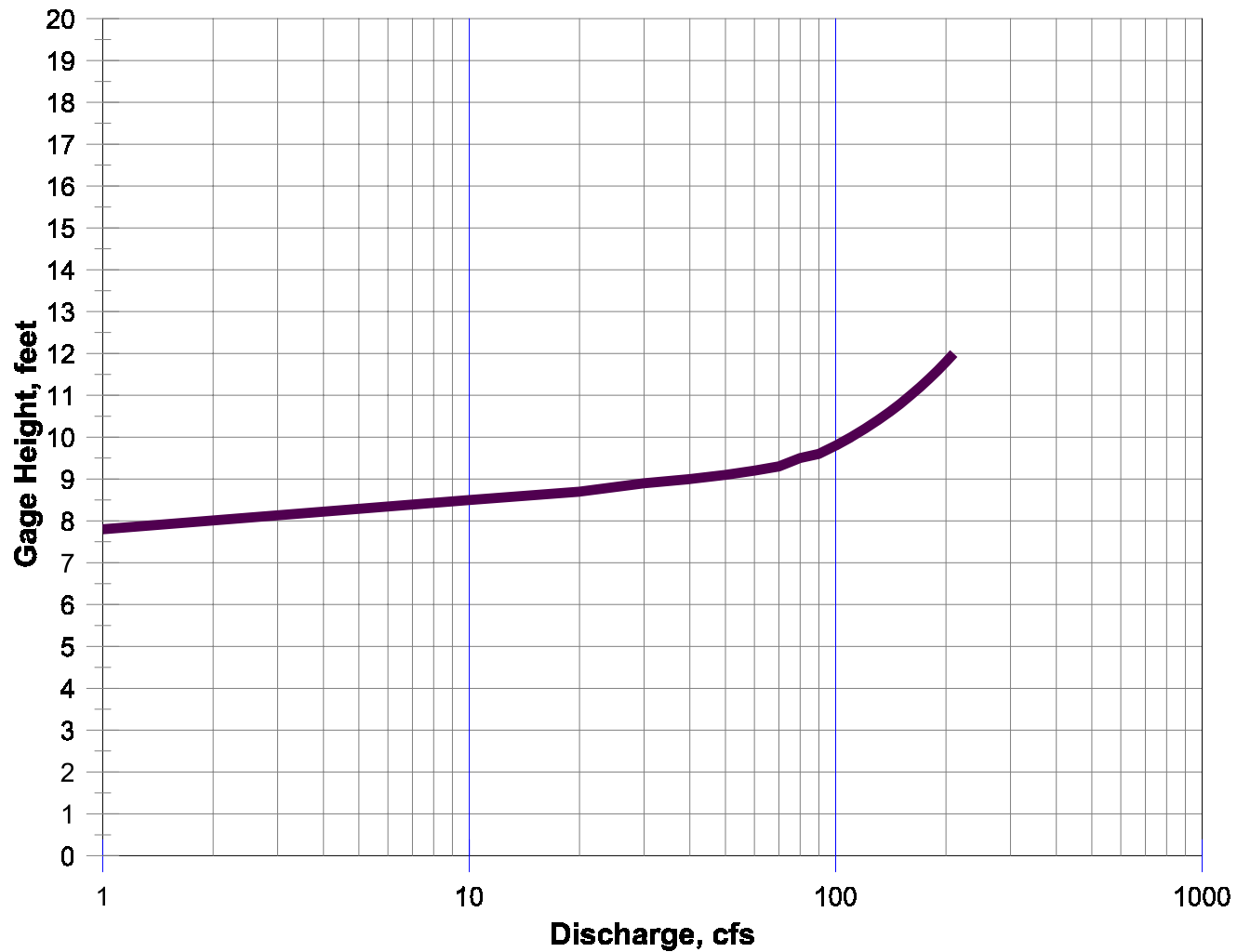
Note:

Curve was computed by the formula $Q = CLH^{3/2}$, where C is based on the P/H_d ratio of 0.33 and corrected for submergence. Corrected C values ranged from 2.96 to 3.71.

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

SPILLWAY DISCHARGE CURVE

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Notes:

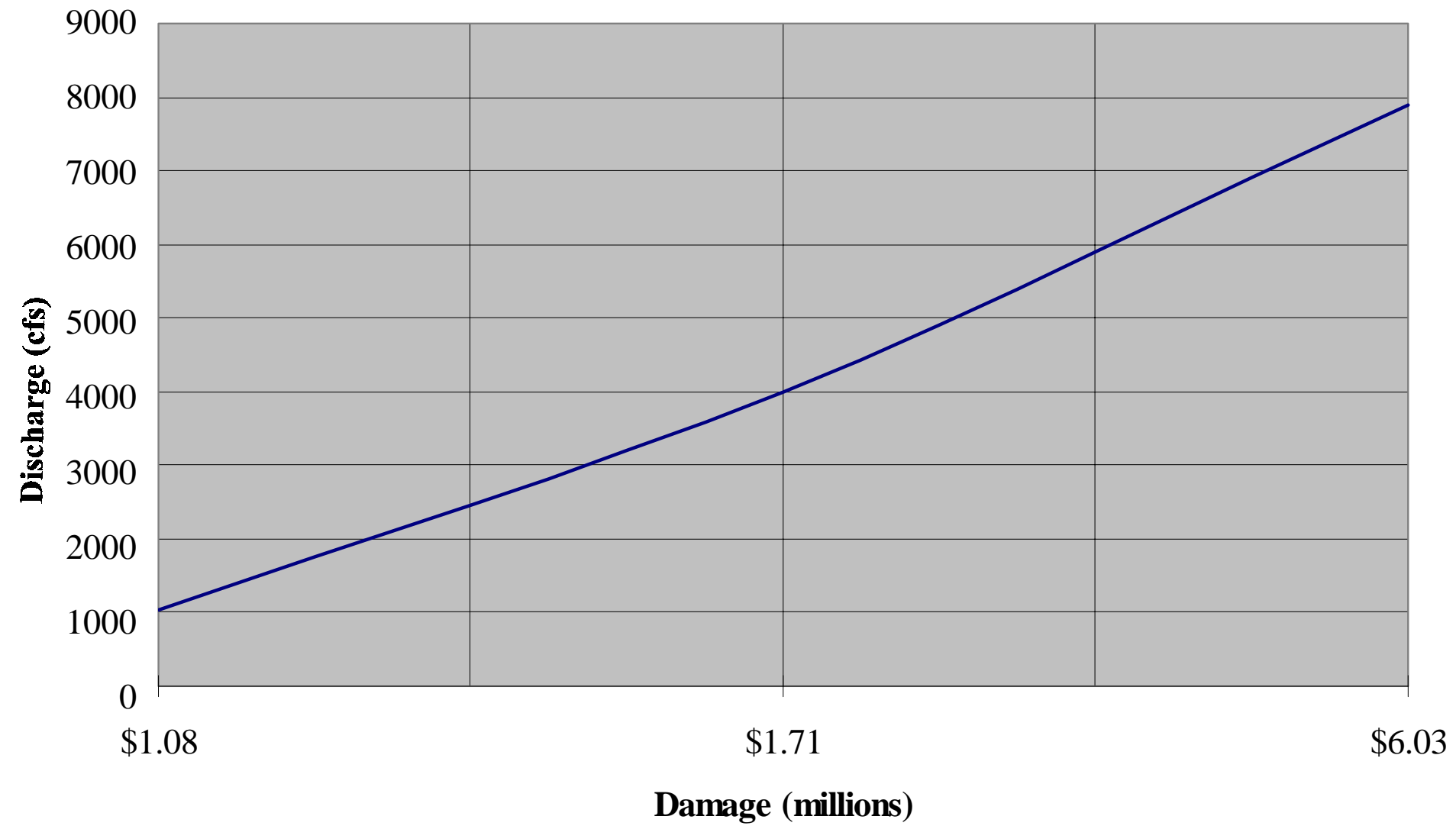
1. Rating curve supplied by U.S. Geological Survey.
2. Zero flow is at gage height of 7.4 feet.

MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

DISCHARGE RATING CURVE
 DOWNSTREAM GAGING STATION

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

Damage vs. Discharge



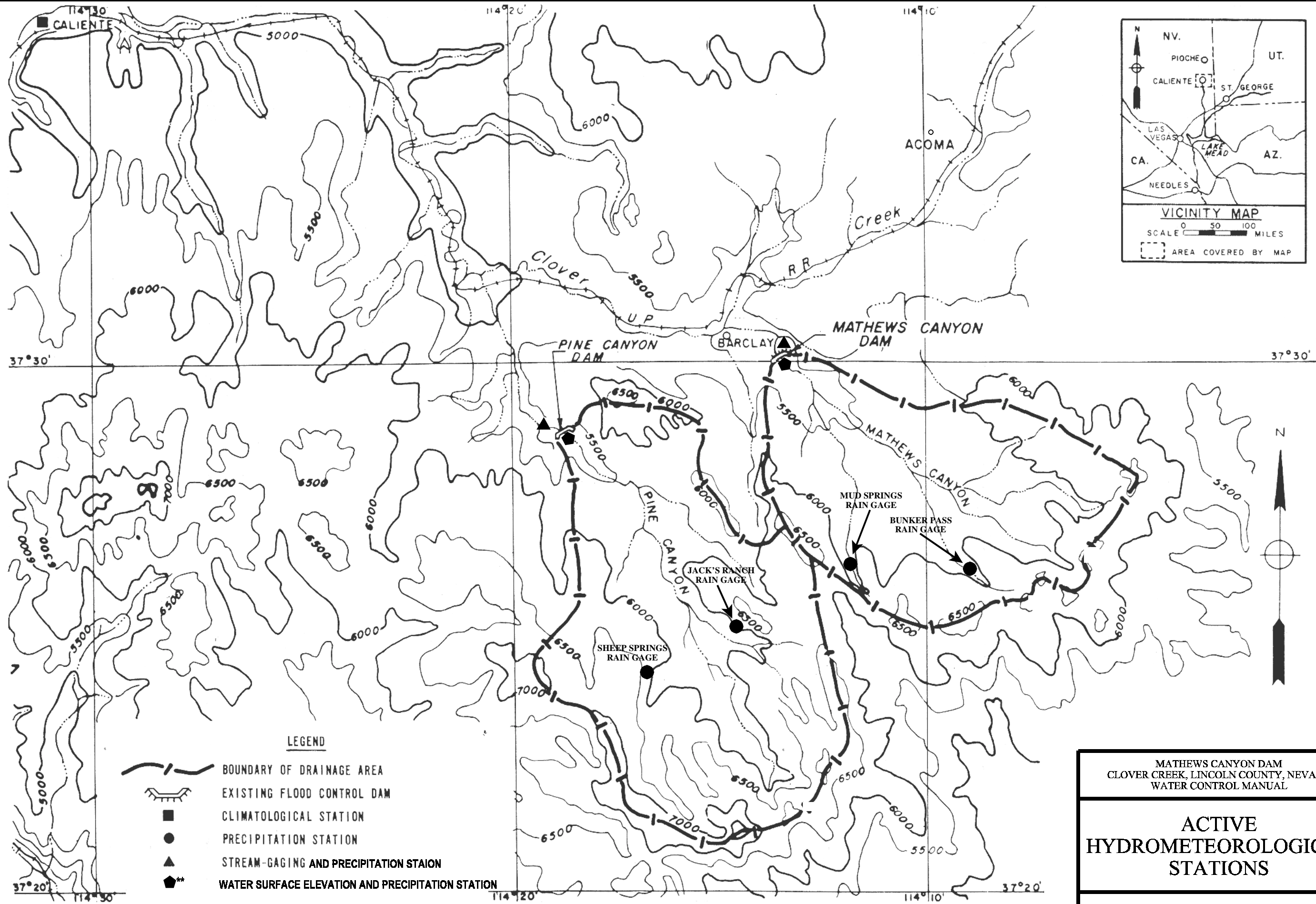
Notes:

1. The damage reach considered for the economic analysis were four overflow areas, namely Clover Creek, Caliente, Lower Meadow Valley Wash from Caliente to Muddy River, and Lower Muddy River from Meadow Valley Wash to Lake Mead. The damages prevented are discussed in Section 4-12.d.
2. The damage-discharge curve was based on Mathews Canyon and Pine Canyon Dams and Reservoirs as an interdependent unit.

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

DAMAGE - DISCHARGE CURVE

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



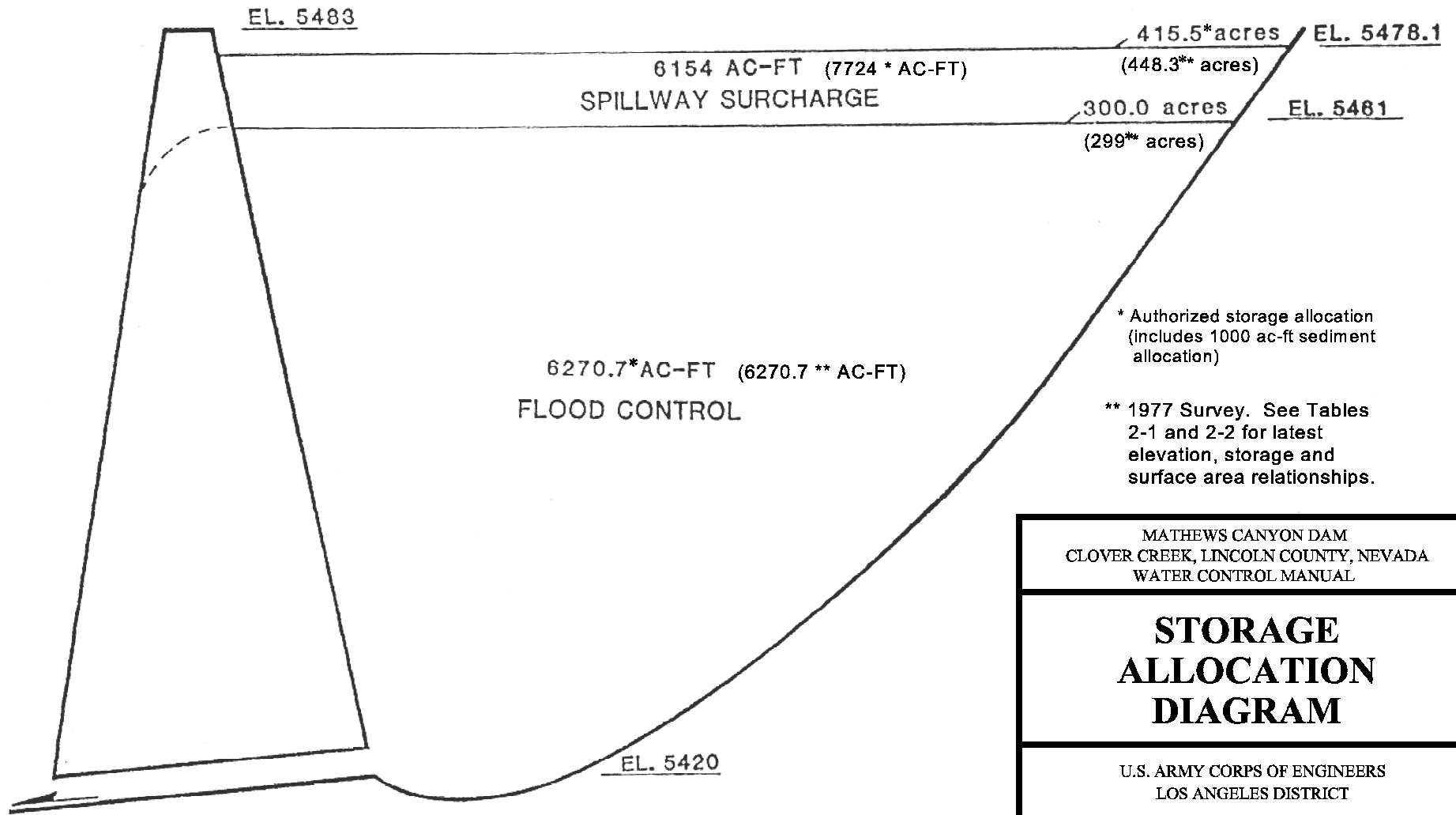
** NOTE: THESE STATIONS PROVIDE TELEMETRY DATA.

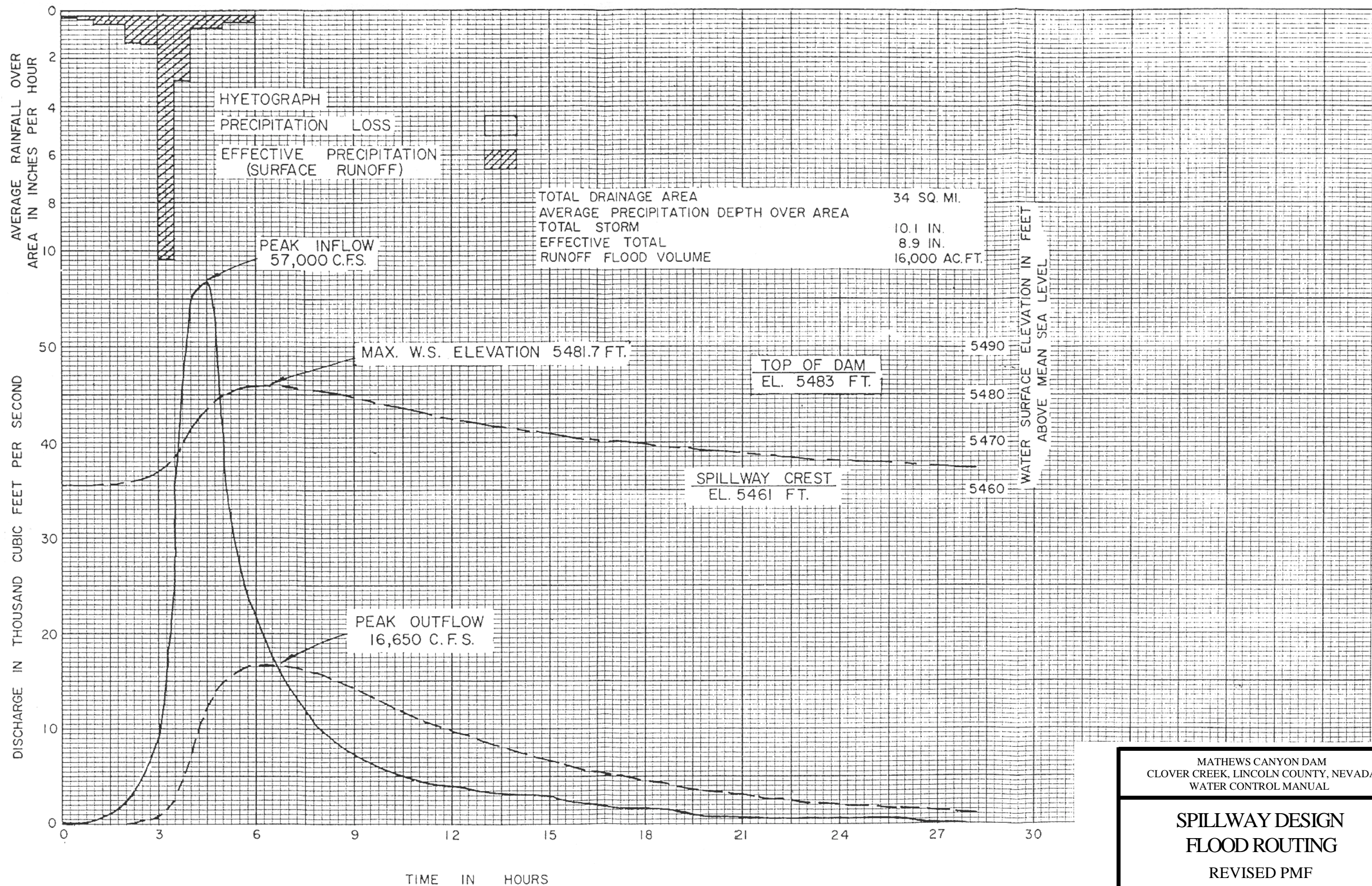
MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

**ACTIVE
 HYDROMETEOROLOGICAL
 STATIONS**

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

MATHEWS CANYON RESERVOIR, NEVADA

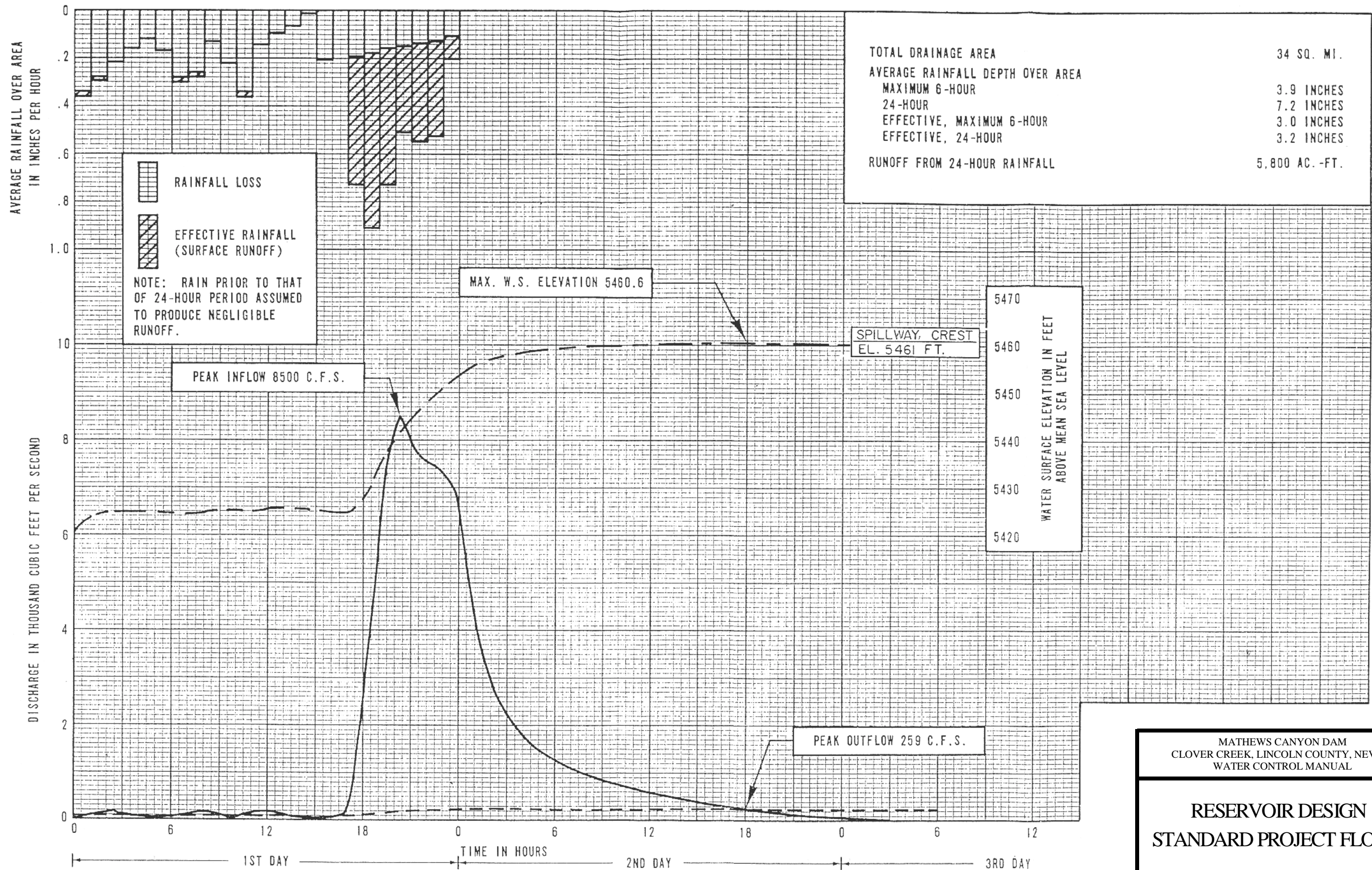




MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

**SPILLWAY DESIGN
FLOOD ROUTING**
REVISED PMF

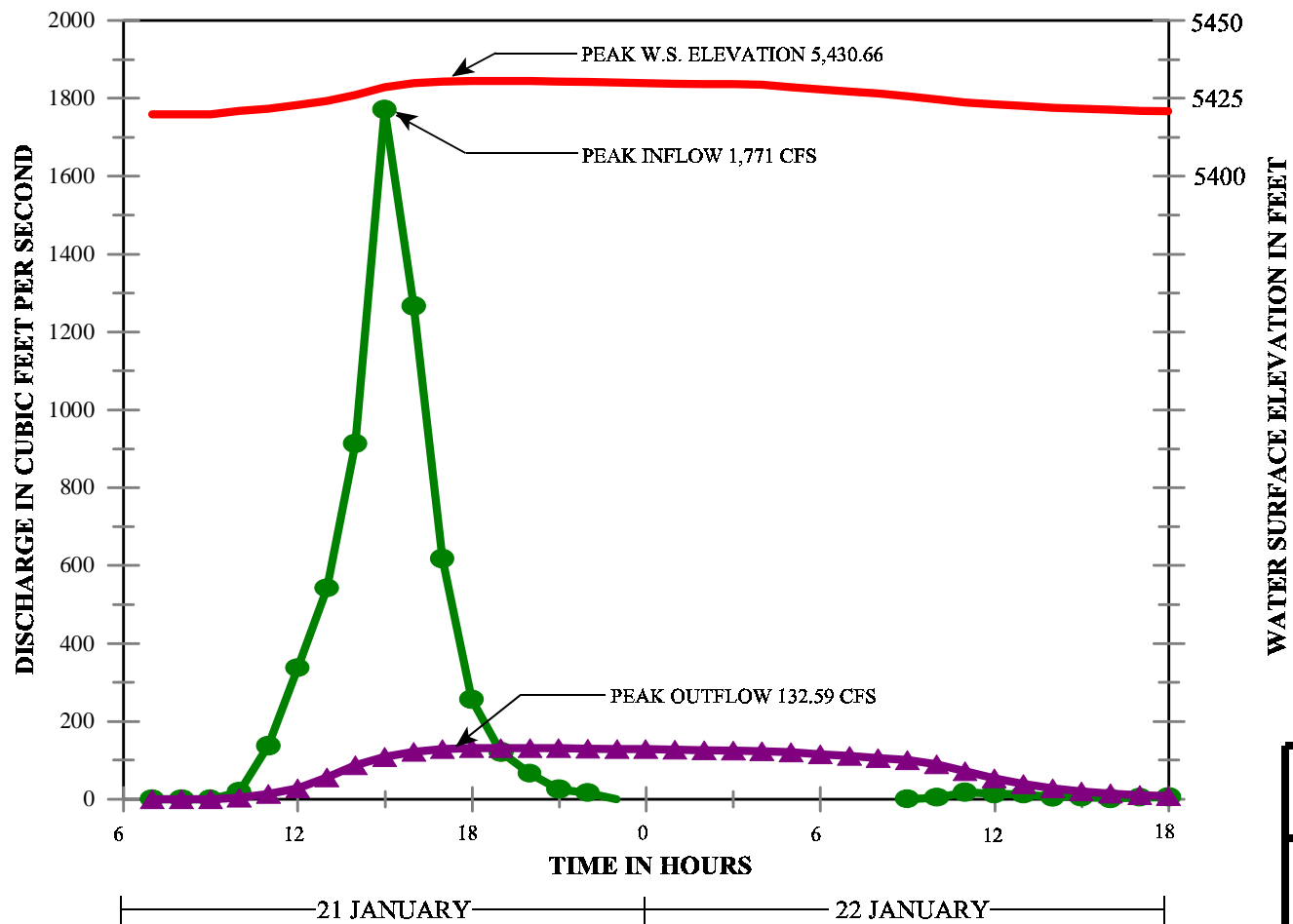
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

**RESERVOIR DESIGN
STANDARD PROJECT FLOOD**

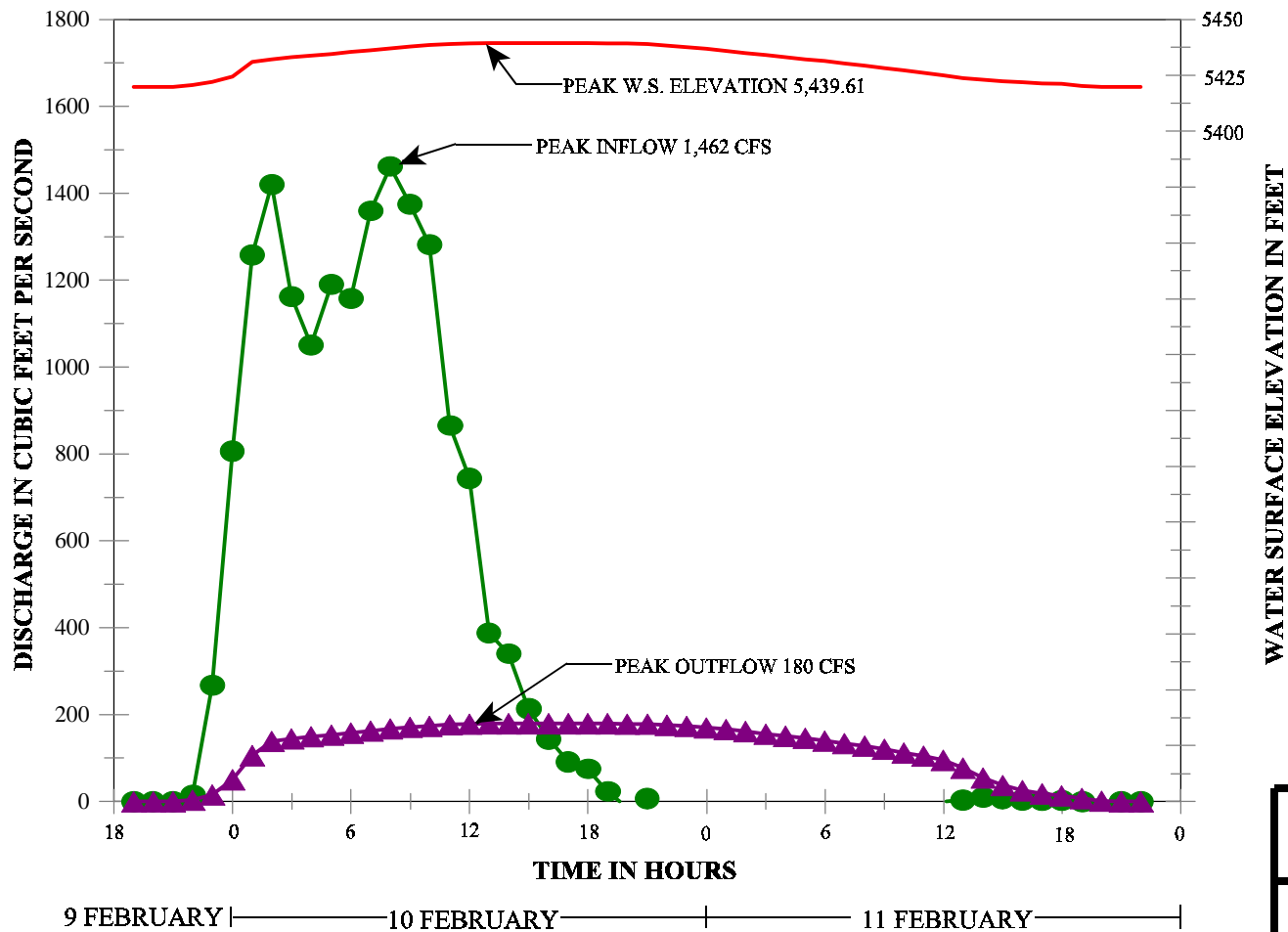
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

OPERATION HYDROGRAPHS
 21 JANUARY - 22 JANUARY 1969

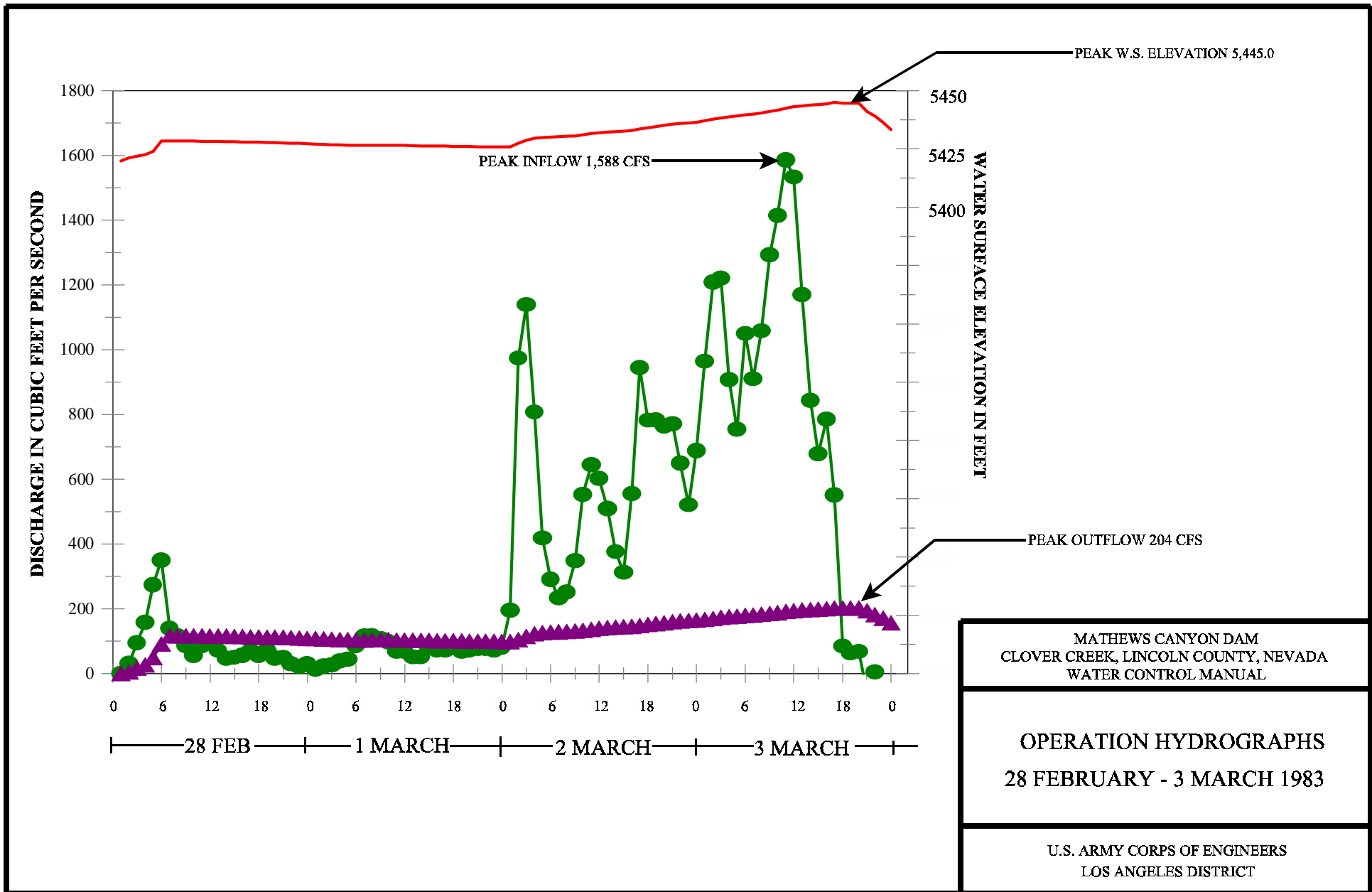
U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

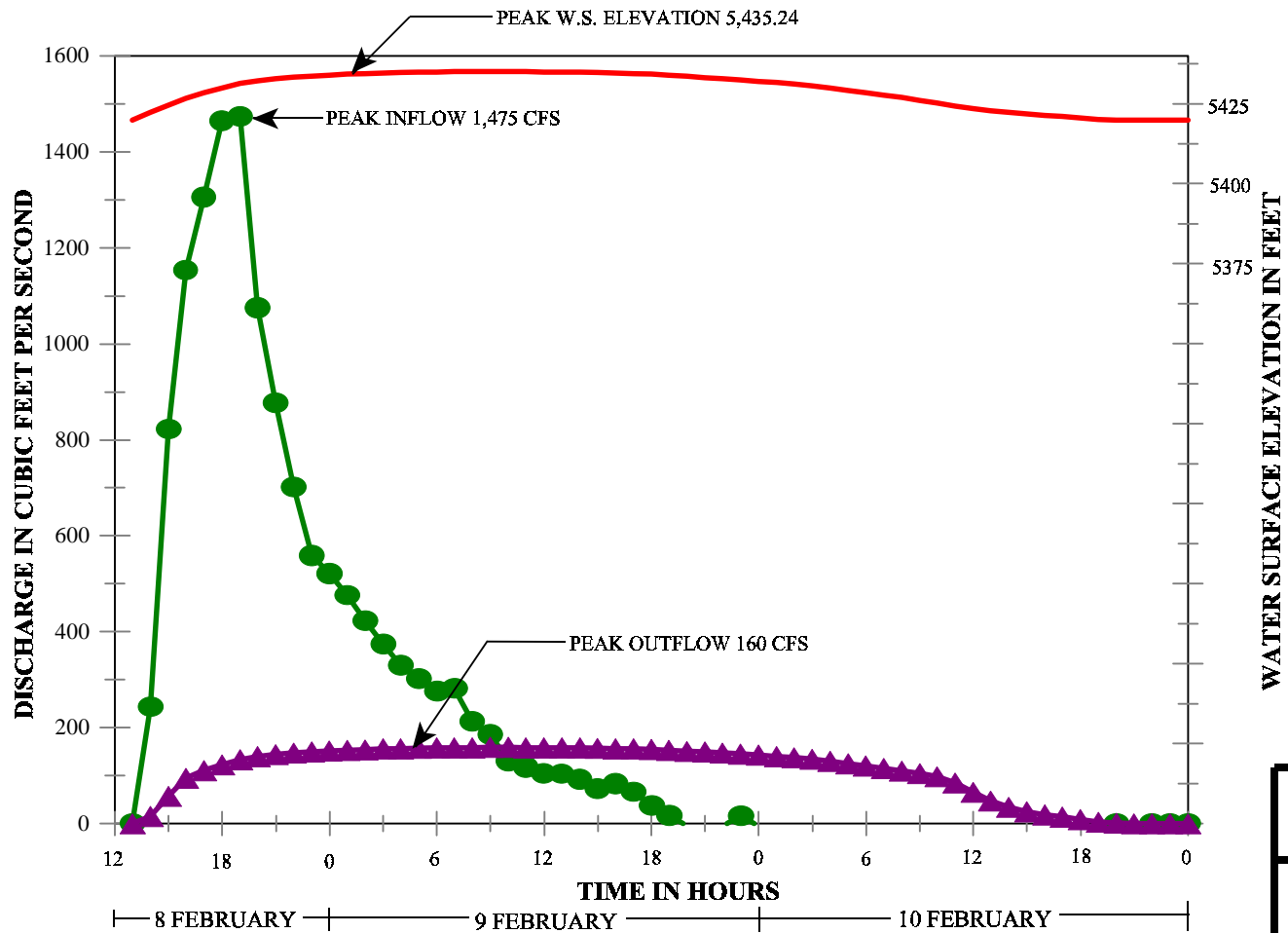


MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

OPERATION HYDROGRAPHS
 9 FEBRUARY - 11 FEBRUARY 1978

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

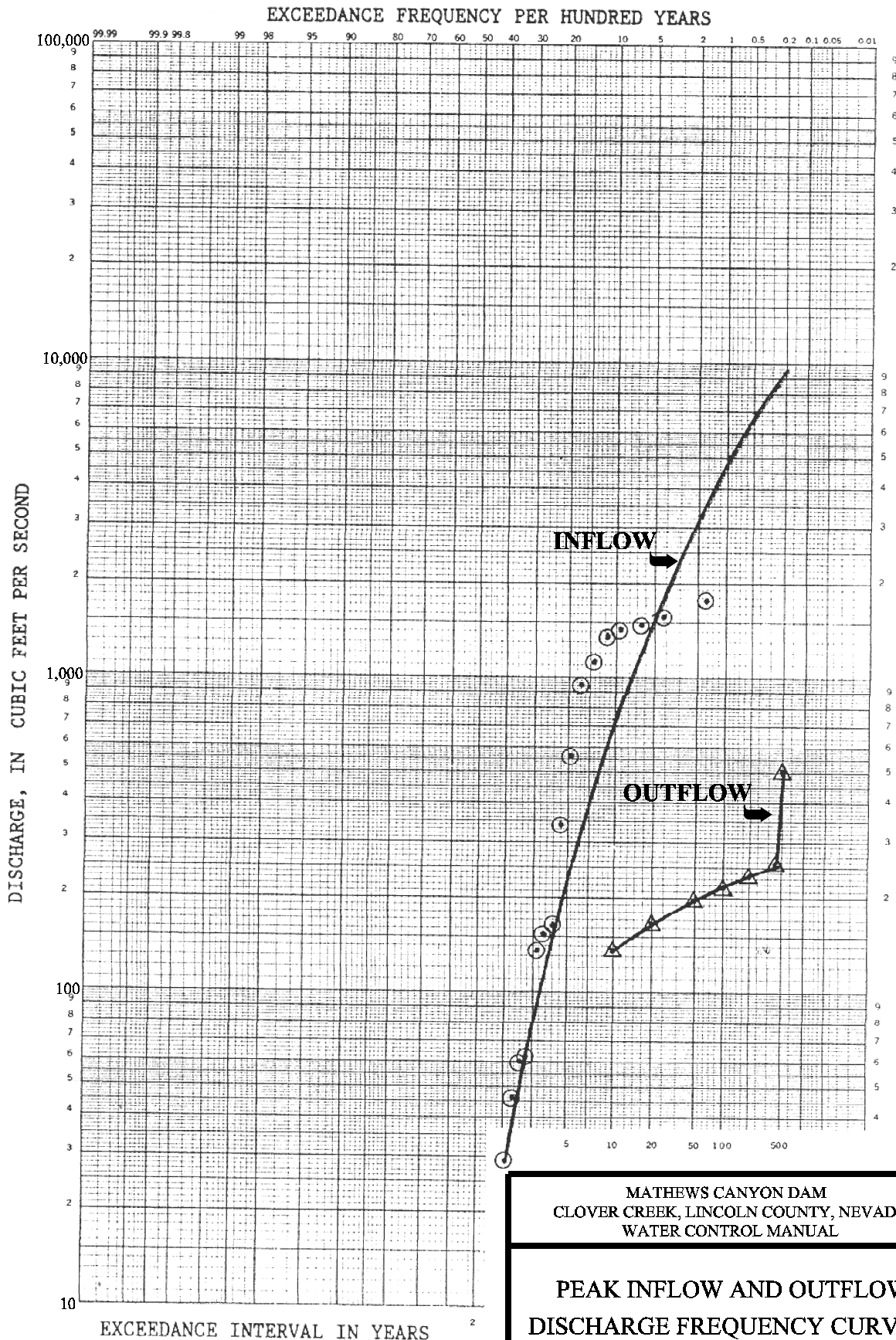




MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

OPERATION HYDROGRAPH
 8 FEBRUARY - 10 FEBRUARY 1993

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT



NOTE:
 PERIOD OF RECORD 1959 - 1997
 The pattern of peak inflows plotted for this graphical analysis is not representative of the entire period of record. Within the available 39 years of record, there were 22 years of zero (0) peaks. Refer to table on plate 8-08.

MATHEWS CANYON DAM
 CLOVER CREEK, LINCOLN COUNTY, NEVADA
 WATER CONTROL MANUAL

**PEAK INFLOW AND OUTFLOW
 DISCHARGE FREQUENCY CURVES
 PRESENT CONDITIONS**

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

YEAR	Ordered Data				PEAKS	Ordered Data			Exceedence Frequency	Exceedence Interval (yrs)
	PEAKS	1 DAY	2 DAYS	3 DAYS		1 DAY	2 DAYS	3 DAYS		
1959	0	0	0	0	0	0	0	0	98.200	1.018
1960	0	0	0	0	0	0	0	0	95.700	1.045
1961	0	0	0	0	0	0	0	0	93.200	1.073
1962	563	72	37	25	0	0	0	0	90.600	1.104
1963	0	0	0	0	0	0	0	0	88.100	1.135
1964	0	0	0	0	0	0	0	0	85.500	1.169
1965	946	115	82	55	0	0	0	0	83.000	1.205
1966	164	30	22	15	0	0	0	0	80.500	1.242
1967	138	18	16	11	0	0	0	0	77.900	1.284
1968	0	0	0	0	0	0	0	0	75.400	1.326
1969	1,771	262	158	125	0	0	0	0	72.900	1.372
1970	0	0	0	0	0	0	0	0	70.300	1.422
1971	60	14	7	5	0	0	0	0	67.800	1.475
1972	0	0	0	0	0	0	0	0	65.200	1.534
1973	0	0	0	0	0	0	0	0	62.700	1.595
1974	0	0	0	0	0	0	0	0	60.200	1.661
1975	0	0	0	0	0	0	0	0	57.600	1.736
1976	0	0	0	0	0	0	0	0	55.100	1.815
1977	0	0	0	0	0	0	0	0	52.500	1.908
1978	1,462	808	370	300	0	0	0	0	50.000	2.000
1979	29	29	29	22	0	0	0	0	47.500	2.105
1980	1,353	285	237	199	0	0	0	0	44.900	2.227
1981	0	0	0	0	1	1	1	1	42.400	2.358
1982	153	36	18	12	29	11	7	5	39.800	2.513
1983	1,588	745	688	498	46	14	9	6	37.300	2.681
1984	0	0	0	0	60	18	9	6	34.800	2.873
1985	0	0	0	0	64	18	16	11	32.200	3.105
1986	46	11	9	6	138	29	18	12	29.700	3.367
1987	64	18	9	6	153	30	22	15	27.100	3.69
1988	0	0	0	0	164	36	29	22	24.600	4.065
1989	0	0	0	0	341	72	37	25	22.100	4.525
1990	0	0	0	0	563	89	65	43	19.500	5.128
1991	0	0	0	0	946	115	82	55	17.000	5.882
1992	341	89	65	43	1,133	262	158	125	14.500	6.896
1993	1,475	469	301	202	1,353	285	237	159	11.900	8.403
1994	0	0	0	0	1,462	427	239	199	9.400	10.638
1995	1,133	427	239	159	1,475	469	301	202	6.800	14.706
1996	0	0	0	0	1,588	745	370	300	4.300	23.256
1997	0	0	0	0	1,771	808	688	498	1.760	56.818

NOTE:

Period of Record spans 1959 - 1997.

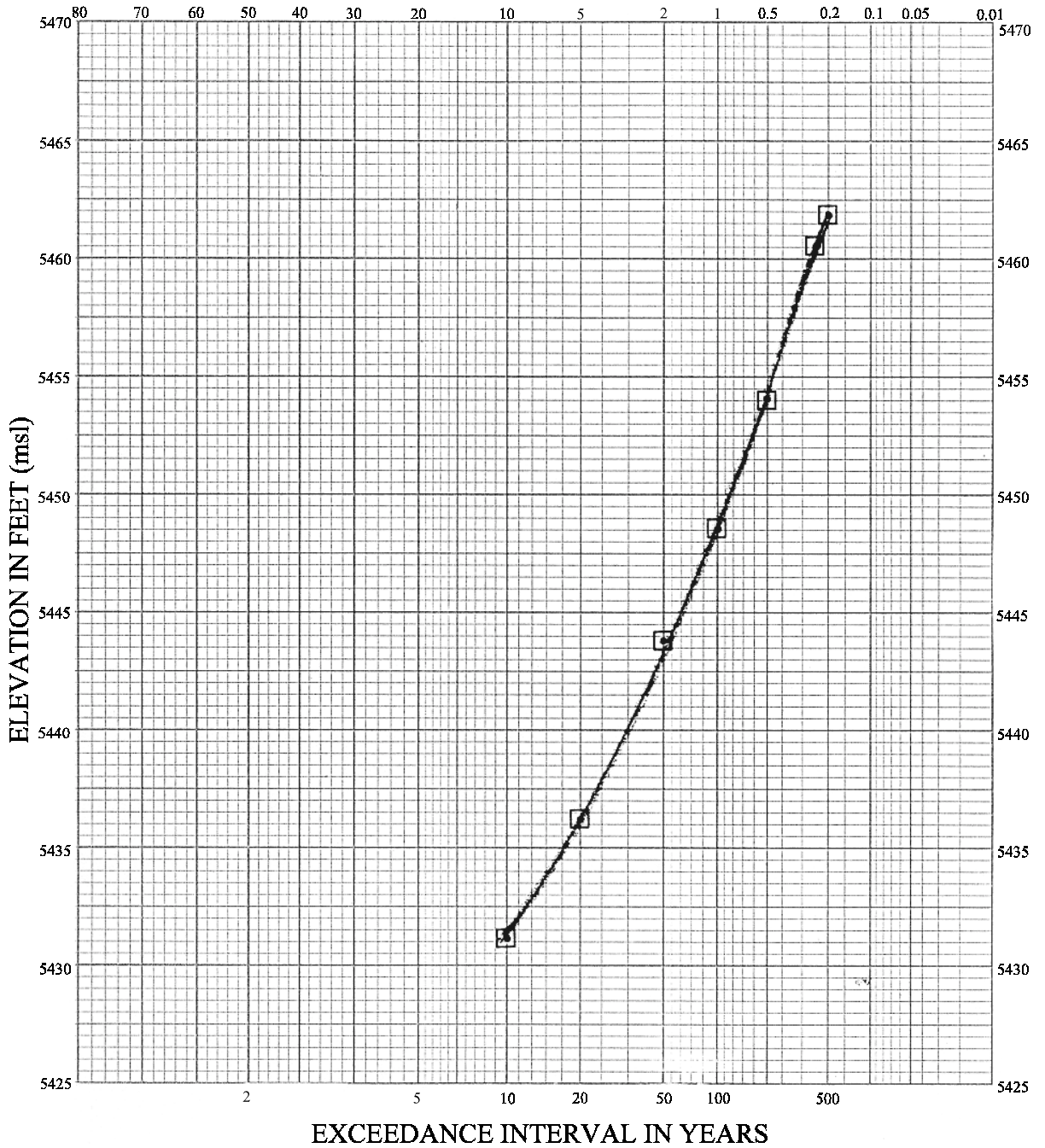
Data from the official records of the COE's Reservoir Regulation Section.

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

ANNUAL PEAK, 1-DAY, 2-DAY,
AND 3-DAY INFLOW VALUES
USED FOR FREQUENCY ANALYSIS

U.S. ARMY CORPS OF ENGINEERS
 LOS ANGELES DISTRICT

EXCEEDANCE FREQUENCY PER HUNDRED YEARS



NOTE:
PERIOD OF RECORD 1959 - 1997

MATHEWS CANYON DAM
CLOVER CREEK, LINCOLN COUNTY, NEVADA
WATER CONTROL MANUAL

FILLING FREQUENCY CURVE
PRESENT CONDITONS

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT