

RENO DRAINAGES / DISCHARGE FREQUENCY DATA
CREEKS

SOIL CONSERVATION SERVICE

SCS DATA

(784-5408
JOHN CAPURRO

TABLE 1
DISCHARGE FREQUENCY DATA

Mark Twyford
784-5879

1980 - Update SW Reno Watershed
TR-20

Evans Creek DA=10.3 sq. mi.

| Storm Duration (Hours) | Peak Discharge (CFS) | | | | |
|------------------------|----------------------|-------|--------|--------|---------|
| | 2 yr. | 5 yr. | 10 yr. | 25 yr. | 100 yr. |
| 3 | 75 | 290 | 580 | 1180 | 2880 |
| 6 | 140 | 460 | 860 | 1660 | 3760 |
| 24 | 330 | 900 | 1550 | 2740 | 5580 |

Dry Creek DA=12.6 sq. mi.

upper Dry creek 78

| | | | | | |
|----|-----|------|------|------|-------|
| 3 | 150 | 580 | 1170 | 2370 | 5800 |
| 6 | 220 | 800 | 1500 | 2900 | 6550 |
| 24 | 620 | 1700 | 2940 | 5200 | 10600 |

Rosewood Wash (North Trib. to Virginia Lake) DA=2.6 sq. mi.

| | | | | | |
|----|-----|-----|-----|------|------|
| 3 | 30 | 130 | 255 | 520 | 1270 |
| 6 | 40 | 150 | 290 | 560 | 1270 |
| 24 | 130 | 350 | 600 | 1060 | 2160 |

South Trib. to Virginia Lake DA=2.1 sq. mi.

| | | | | | |
|----|-----|-----|-----|-----|------|
| 3 | 30 | 100 | 200 | 410 | 1000 |
| 6 | 40 | 130 | 240 | 460 | 1050 |
| 24 | 100 | 270 | 470 | 830 | 1700 |

Inflow to Virginia Lake DA=4.7 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 60 | 225 | 450 | 910 | 2240 |
| 6 | 80 | 280 | 520 | 1000 | 2270 |
| 24 | 220 | 600 | 1030 | 1820 | 3700 |

SCS DATA

Table 1

-2-

Discharge Frequency Data

Thomas Creek DA=12.8 sq. mi.

| Storm Duration (Hours) | Peak Discharge (CFS) | | | | |
|------------------------------|----------------------|--------------|---------------|---------------|----------------|
| | <u>2 yr.</u> | <u>5 yr.</u> | <u>10 yr.</u> | <u>25 yr.</u> | <u>100 yr.</u> |
| 3 | 60 | 230 | 470 | 950 | 2340 |
| 6 | 120 | 410 | 780 | 1500 | 3400 |
| 24 | 330 | 900 | 1550 | 2740 | 5580 |

Whites Creek DA=9.8 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 50 | 200 | 390 | 790 | 1940 |
| 6 | 100 | 360 | 670 | 1290 | 2930 |
| 24 | 290 | 790 | 1370 | 2420 | 4930 |

Alum Creek DA=5.8 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 60 | 240 | 480 | 970 | 2400 |
| 6 | 90 | 310 | 590 | 1140 | 2580 |
| 24 | 240 | 670 | 1150 | 2040 | 4140 |

TREATMENT STRUCTURES DESIGN

Velocity - flow .1 foot per second in basin

$Q_{max} = .68$ inches per hr - 20 min duration

Major DRAINAGES

| | 5yr | 25 yr | 100 yr |
|--------------|-----|-------|--------|
| Whites Creek | 200 | 790 | 1940 |
| Thomas Creek | 230 | 950 | 2340 |
| DRY Creek | 580 | 2370 | 5800 |
| Evans Creek | 290 | 1180 | 2880 |
| Alum Creek | 240 | 970 | 2400 |

HUNTER Creek

Peavine Creek

STEAMBOAT Creek

North Evans Creek

SCS DATA

Table 1

-2-

Discharge Frequency Data

Thomas Creek DA=12.8 sq. mi.

| Storm Duration (Hours) | Peak Discharge (CFS) | | | | |
|------------------------------|----------------------|--------------|---------------|---------------|----------------|
| | <u>2 yr.</u> | <u>5 yr.</u> | <u>10 yr.</u> | <u>25 yr.</u> | <u>100 yr.</u> |
| 3 | 60 | 230 | 470 | 950 | 2340 |
| 6 | 120 | 410 | 780 | 1500 | 3400 |
| 24 | 330 | 900 | 1550 | 2740 | 5580 |

Whites Creek DA=9.8 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 50 | 200 | 390 | 790 | 1940 |
| 6 | 100 | 360 | 670 | 1290 | 2930 |
| 24 | 290 | 790 | 1370 | 2420 | 4930 |

Alum Creek DA=5.8 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 60 | 240 | 480 | 970 | 2400 |
| 6 | 90 | 310 | 590 | 1140 | 2580 |
| 24 | 240 | 670 | 1150 | 2040 | 4140 |

SCS DATA

TABLE 1
DISCHARGE FREQUENCY DATA

Evans Creek DA=10.3 sq. mi.

| Storm Duration (Hours) | Peak Discharge (CFS) | | | | |
|------------------------------|----------------------|-------|--------|--------|---------|
| | 2 yr. | 5 yr. | 10 yr. | 25 yr. | 100 yr. |
| 3 | 75 | 290 | 580 | 1180 | 2880 |
| 6 | 140 | 460 | 860 | 1660 | 3760 |
| 24 | 330 | 900 | 1550 | 2740 | 5580 |

Dry Creek DA=12.6 sq. mi.

| | | | | | |
|----|-----|------|------|------|-------|
| 3 | 150 | 580 | 1170 | 2370 | 5800 |
| 6 | 220 | 800 | 1500 | 2900 | 6550 |
| 24 | 620 | 1700 | 2940 | 5200 | 10600 |

Rosewood Wash (North Trib. to Virginia Lake) DA=2.6 sq. mi.

| | | | | | |
|----|-----|-----|-----|------|------|
| 3 | 30 | 130 | 255 | 520 | 1270 |
| 6 | 40 | 150 | 290 | 560 | 1270 |
| 24 | 130 | 350 | 600 | 1060 | 2160 |

South Trib. to Virginia Lake DA=2.1 sq. mi.

| | | | | | |
|----|-----|-----|-----|-----|------|
| 3 | 30 | 100 | 200 | 410 | 1000 |
| 6 | 40 | 130 | 240 | 460 | 1050 |
| 24 | 100 | 270 | 470 | 830 | 1700 |

Inflow to Virginia Lake DA=4.7 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 60 | 225 | 450 | 910 | 2240 |
| 6 | 80 | 280 | 520 | 1000 | 2270 |
| 24 | 220 | 600 | 1030 | 1820 | 3700 |

MAJOR DRAINAGES

SOUTHWEST

By SCS

Evans Creek DA=10.3 sq. mi.

| Storm Duration (Hours) | Peak Discharge (CFS) | | | | |
|------------------------------|----------------------|--------------|---------------|---------------|----------------|
| | <u>2 yr.</u> | <u>5 yr.</u> | <u>10 yr.</u> | <u>25 yr.</u> | <u>100 yr.</u> |
| 3 | 75 | 290 | 580 | 1180 | 2880 |
| 6 | 140 | 460 | 860 | 1660 | 3760 |
| 24 | 330 | 900 | 1550 | 2740 | 5580 |

Dry Creek DA=12.6 sq. mi.

| | | | | | |
|----|-----|------|------|------|-------|
| 3 | 150 | 580 | 1170 | 2370 | 5800 |
| 6 | 220 | 800 | 1500 | 2900 | 6550 |
| 24 | 620 | 1700 | 2940 | 5200 | 10600 |

Thomas Creek DA=12.8 sq. mi.

| Storm Duration (Hours) | Peak Discharge (CFS) | | | | |
|------------------------------|----------------------|--------------|---------------|---------------|----------------|
| | <u>2 yr.</u> | <u>5 yr.</u> | <u>10 yr.</u> | <u>25 yr.</u> | <u>100 yr.</u> |
| 3 | 60 | 230 | 470 | 950 | 2340 |
| 6 | 120 | 410 | 780 | 1500 | 3400 |
| 24 | 330 | 900 | 1550 | 2740 | 5580 |

Whites Creek DA=9.8 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 50 | 200 | 390 | 790 | 1940 |
| 6 | 100 | 360 | 670 | 1290 | 2930 |
| 24 | 290 | 790 | 1370 | 2420 | 4930 |

Alum Creek DA=5.8 sq. mi.

| | | | | | |
|----|-----|-----|------|------|------|
| 3 | 60 | 240 | 480 | 970 | 2400 |
| 6 | 90 | 310 | 590 | 1140 | 2580 |
| 24 | 240 | 670 | 1150 | 2040 | 4140 |

John Capurro S.C.S.

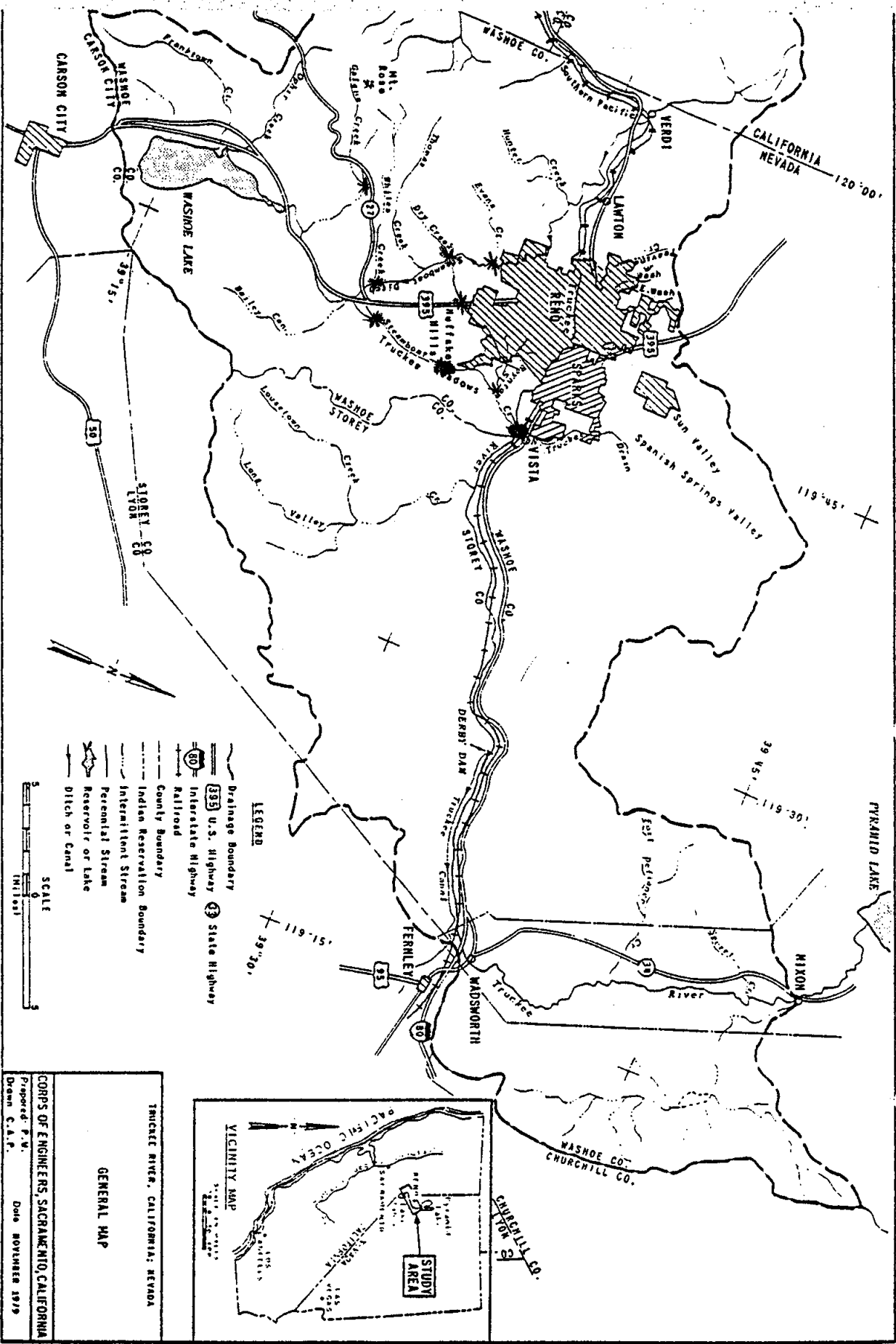
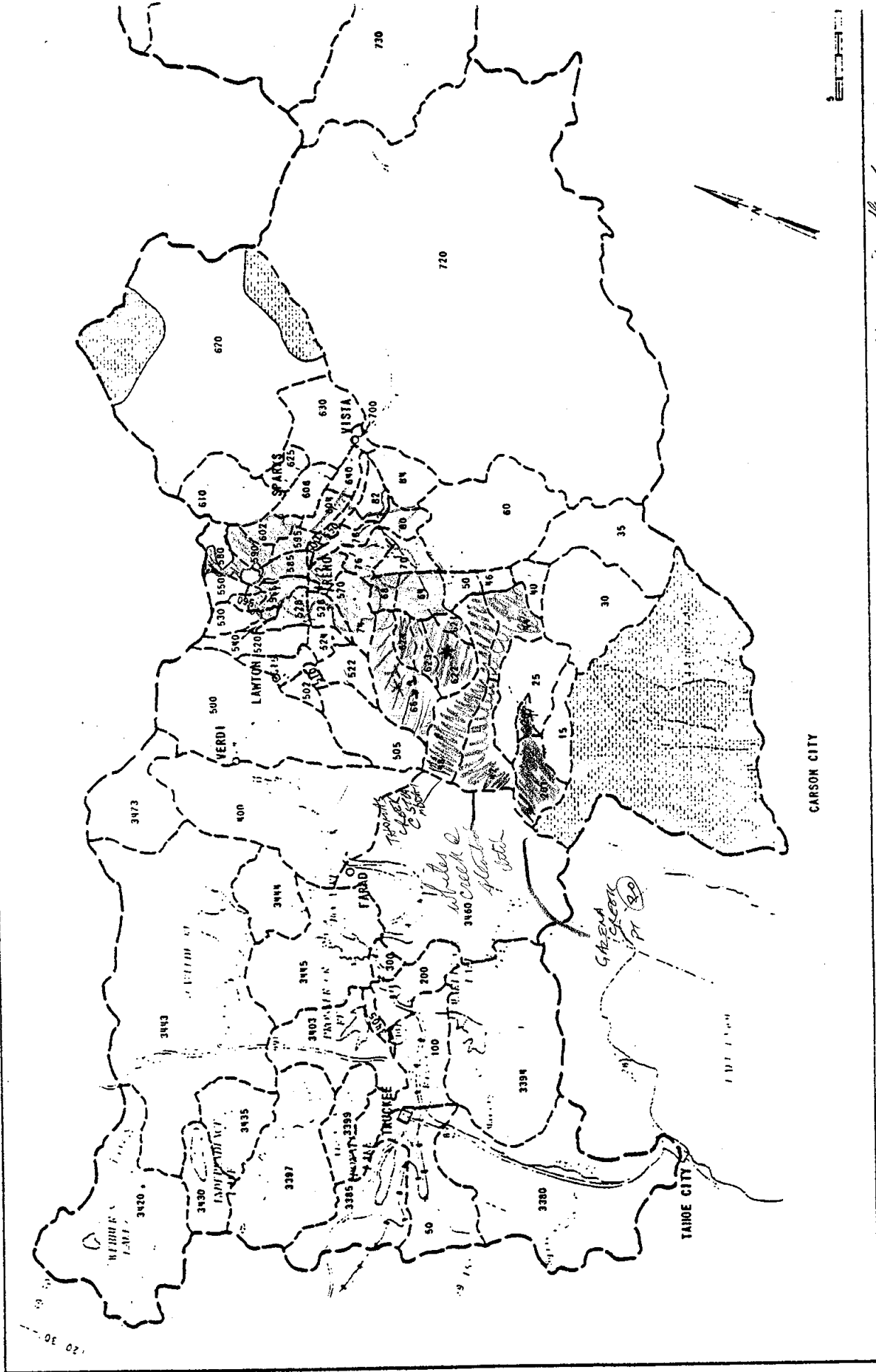


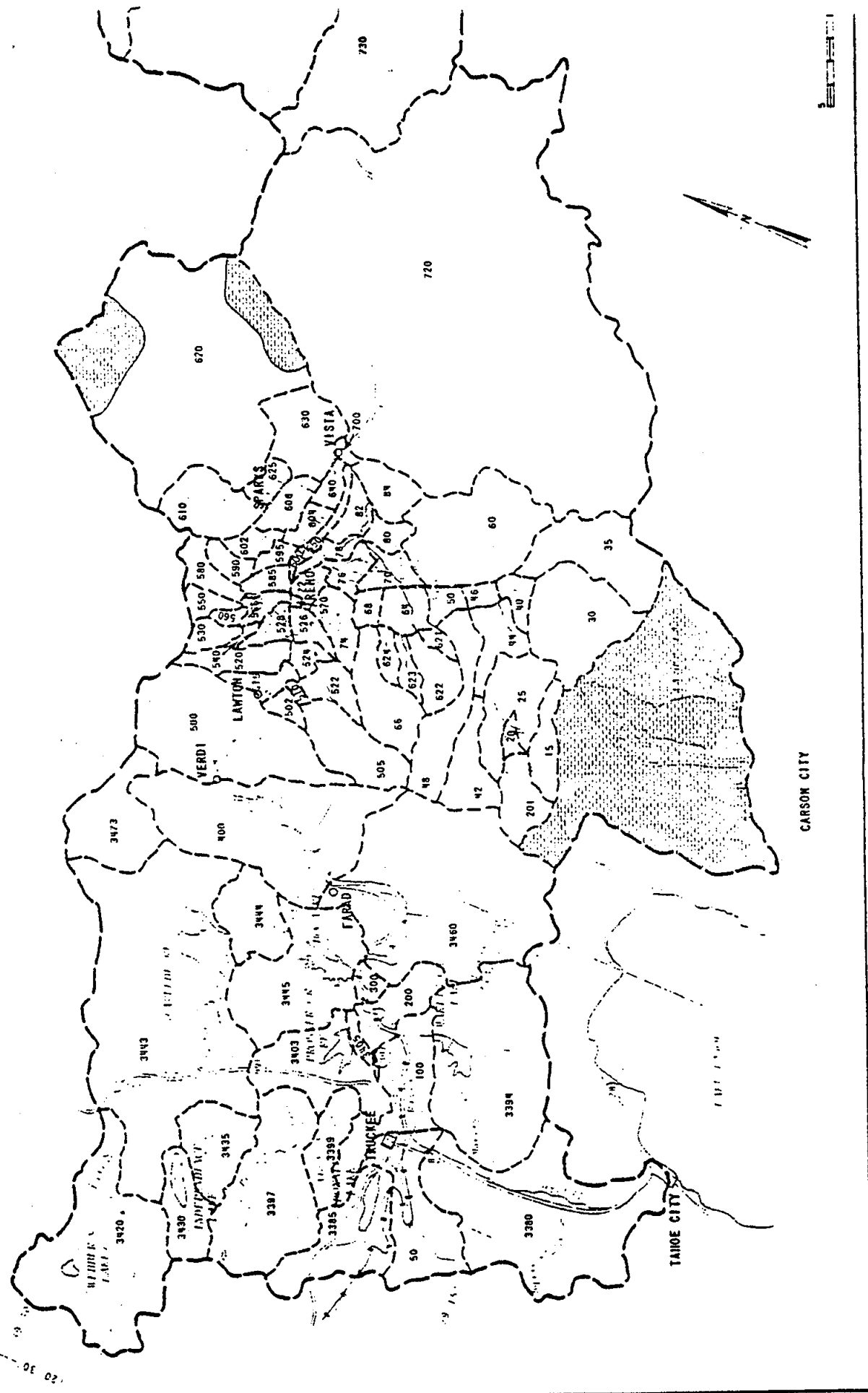
CHART 1



*1 Boyden St. @
 ** Evan Creek @
 Stambrod Creek @

* Dry Creek @
 Stambrod @
 3439

20
 30



CARSON CITY

TANOE CITY

20 30

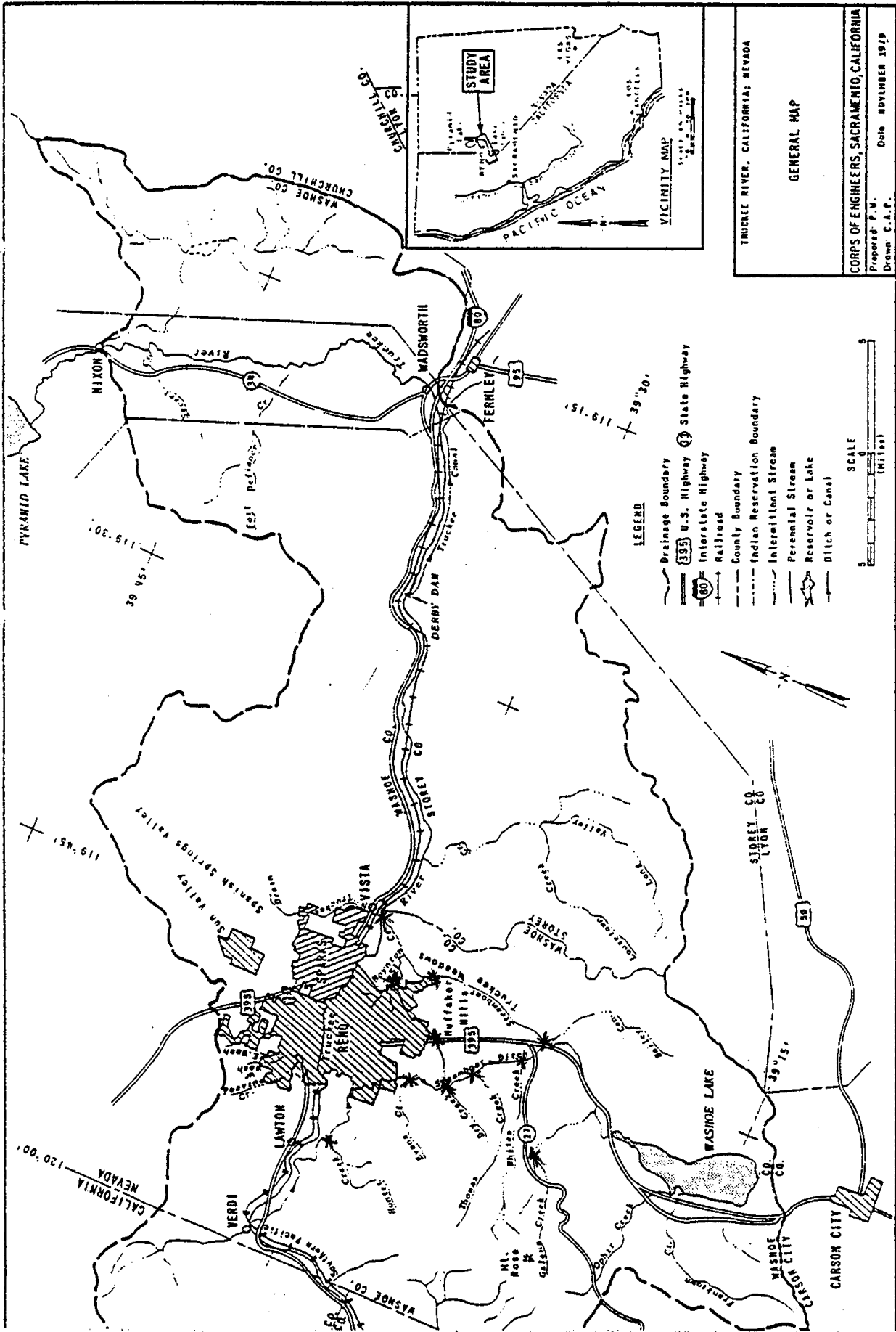


CHART I

Exceedence frequency per hundred years

99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2 .1

① General Rain Flood - SPF Peak Flow:
4,600 c.f.s.

② Cloudburst Flood - SPF Peak Flow:
14,000 c.f.s.

③ All Events Frequencies:

| 500 | 100 | 50 | 25 | 10 | YEARS |
|--------|-------|-------|-------|-----|--------|
| 18,000 | 4,700 | 2,850 | 1,700 | 840 | C.F.S. |

Peak flow in 1,000 c.f.s.

10

.1

5 10 20 50 100 200 500 1000

Exceedence interval in years

TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK FLOW FREQUENCY

BOYNTON SLOUGH BELOW DRY CREEK
(INDEX POINT 70)

Corps of Engineers, Sacramento, Calif.

Prepared: P.W.

Date: NOVEMBER 1979

Total Drainage Area: 41 sq. mi.

Exceedence frequency per hundred years

99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2 .1

-Peak Flow (cfs)-

④④ WHITES CREEK AT STEAMBOAT DITCH
(DA = 14.6 sq. mi.)

| SPF | 100 | 50 | 20 | 10 |
|-------|-------|-------|-----|-----|
| 8,700 | 3,900 | 2,100 | 960 | 520 |

④⑧ THOMAS CREEK AT STEAMBOAT DITCH
(DA = 11.4 sq. mi.)

| SPF | 100 | 50 | 20 | 10 |
|-------|-------|-------|-----|-----|
| 5,600 | 2,500 | 1,350 | 620 | 340 |

⑥22 DRY CREEK AT STEAMBOAT DITCH
(DA = 3.6 sq. mi.)

| SPF | 100 | 50 | 20 | 10 |
|-------|-------|-----|-----|-----|
| 2,650 | 1,180 | 640 | 290 | 160 |

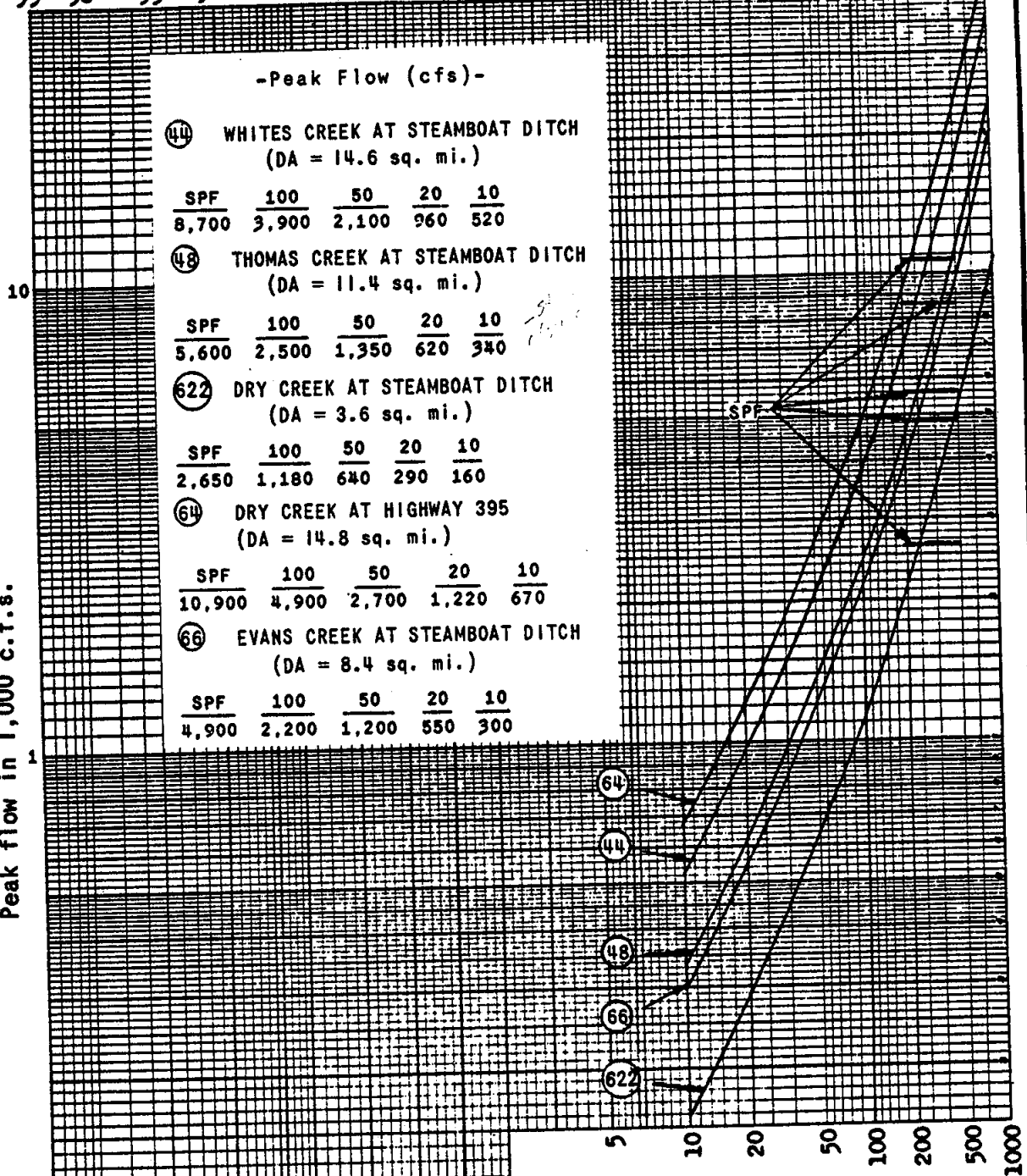
⑥④ DRY CREEK AT HIGHWAY 395
(DA = 14.8 sq. mi.)

| SPF | 100 | 50 | 20 | 10 |
|--------|-------|-------|-------|-----|
| 10,900 | 4,900 | 2,700 | 1,220 | 670 |

⑥⑥ EVANS CREEK AT STEAMBOAT DITCH
(DA = 8.4 sq. mi.)

| SPF | 100 | 50 | 20 | 10 |
|-------|-------|-------|-----|-----|
| 4,900 | 2,200 | 1,200 | 550 | 300 |

Peak flow in 1,000 c.f.s.



Exceedence interval in years

TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK FLOW FREQUENCY

DRY, EVANS, WHITES, THOMAS CREEKS
AT STEAMBOAT DITCH AND DRY CREEK
AT HIGHWAY 395

Corps of Engineers, Sacramento, Calif.

Prepared: R.C.K.

Date: NOVEMBER 1979

Exceedence frequency per hundred years

99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2 .1

-Peak Flow (cfs)-

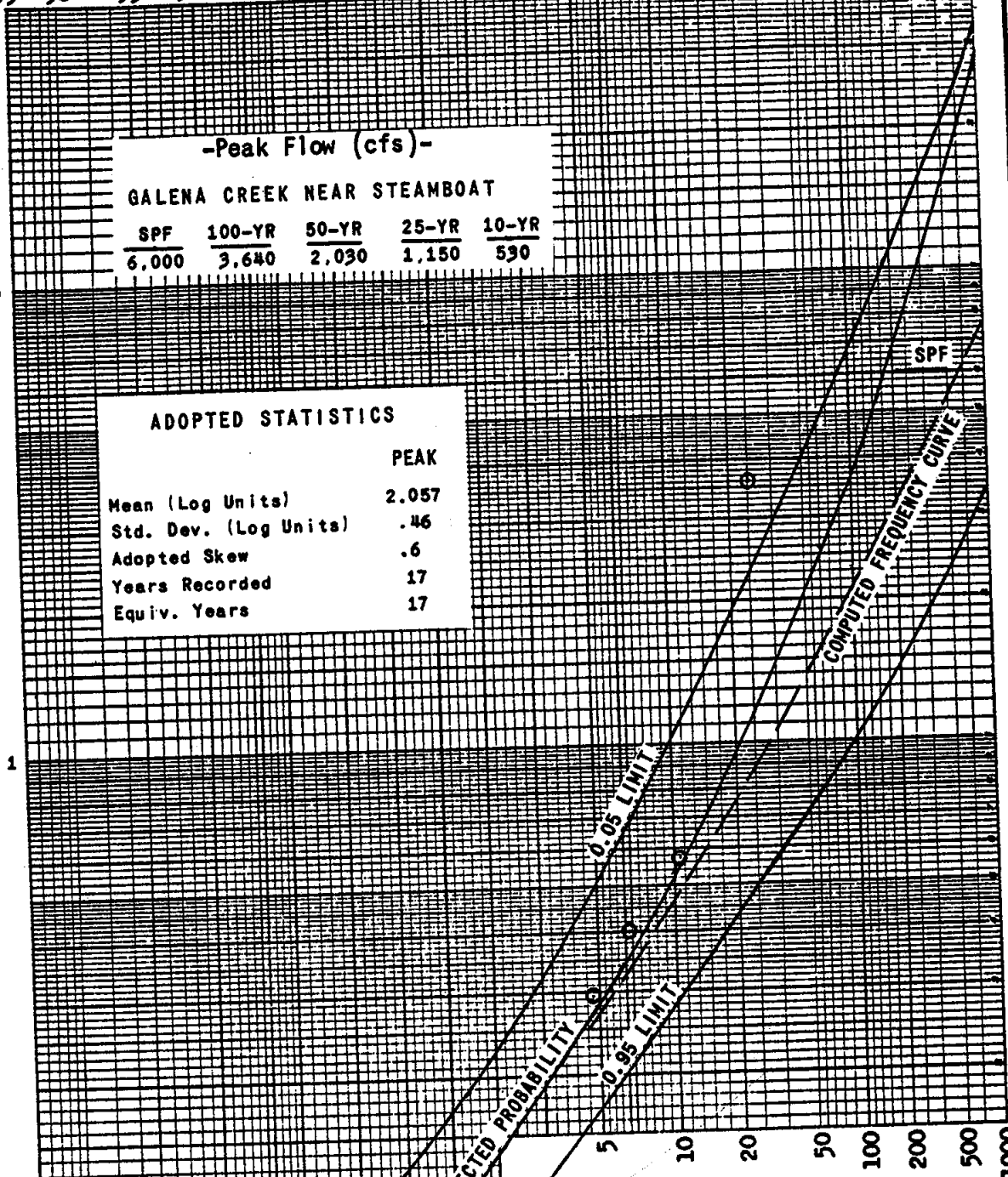
GALENA CREEK NEAR STEAMBOAT

| SPF | 100-YR | 50-YR | 25-YR | 10-YR |
|-------|--------|-------|-------|-------|
| 6.000 | 3.640 | 2.030 | 1.150 | 590 |

ADOPTED STATISTICS

| | PEAK |
|-----------------------|-------|
| Mean (Log Units) | 2.057 |
| Std. Dev. (Log Units) | .46 |
| Adopted Skew | .6 |
| Years Recorded | 17 |
| Equiv. Years | 17 |

Peak flow in 1,000 c.f.s.



TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK FLOW FREQUENCY

GALENA CREEK NEAR STEAMBOAT
U.S.G.S. 3489

Period of Record: 1962-1978
Total Drainage Area: 8.5 sq. mi.

Corps of Engineers, Sacramento, Calif.

Prepared: J.H. Date: NOVEMBER 1979

CHART 22

Exceedance frequency per hundred years

99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2 .1

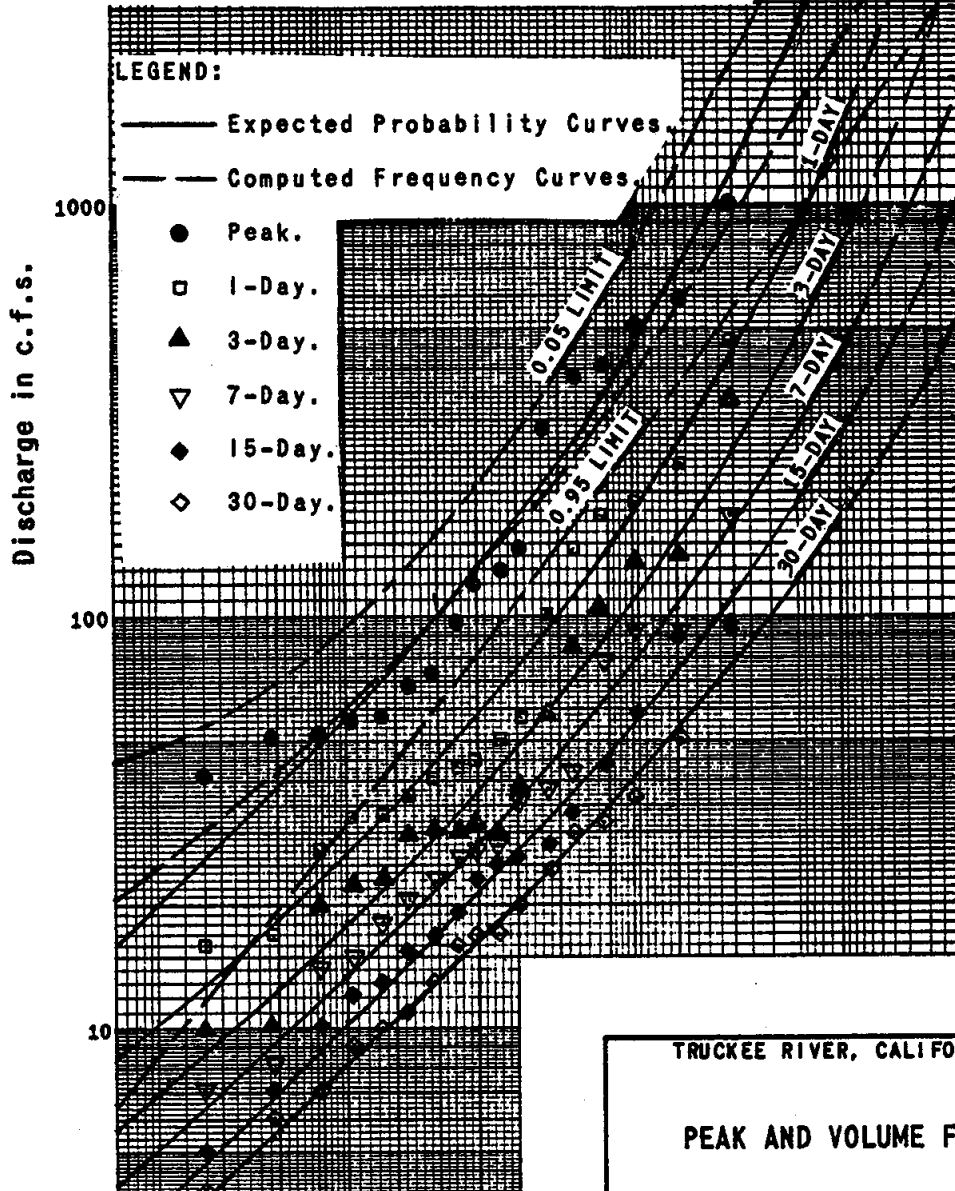
PEAK FLOWS

STEAMBOAT CREEK AT STEAMBOAT:

| SPF | 100 | 50 | 25 | 10 | YEARS |
|--------|-------|-------|-------|-----|--------|
| 15,200 | 4,640 | 2,590 | 1,480 | 670 | C.F.S. |

ADOPTED STATISTICS

| | PEAK | 1-DAY | 3-DAY | 7-DAY | 15-DAY | 30-DAY |
|------------------|-------|-------|-------|-------|--------|--------|
| Mean (Log Units) | 2.163 | 1.798 | 1.618 | 1.479 | 1.348 | 1.229 |
| S.D. (Log Units) | .46 | .42 | .40 | .38 | .37 | .35 |
| Adopted Skew | .6 | .6 | .5 | .4 | .3 | .2 |
| Years Rec. | 17 | 17 | 17 | 17 | 17 | 17 |
| Equiv. Years | 17 | 17 | 17 | 17 | 17 | 17 |



LEGEND:

- Expected Probability Curves
- Computed Frequency Curves
- Peak.
- 1-Day.
- ▲ 3-Day.
- ▽ 7-Day.
- ◆ 15-Day.
- ◇ 30-Day.

TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK AND VOLUME FREQUENCIES

STEAMBOAT CREEK AT STEAMBOAT (30)

USGS NO. 3493

CORPS OF ENGINEERS, SACRAMENTO, CALIFORNIA

Period of Record: 1962-1978

Total Drainage Area: 123.0 sq. mi.

Contributing Drainage Area: 39.3 sq. mi.
Below Washoe Lake

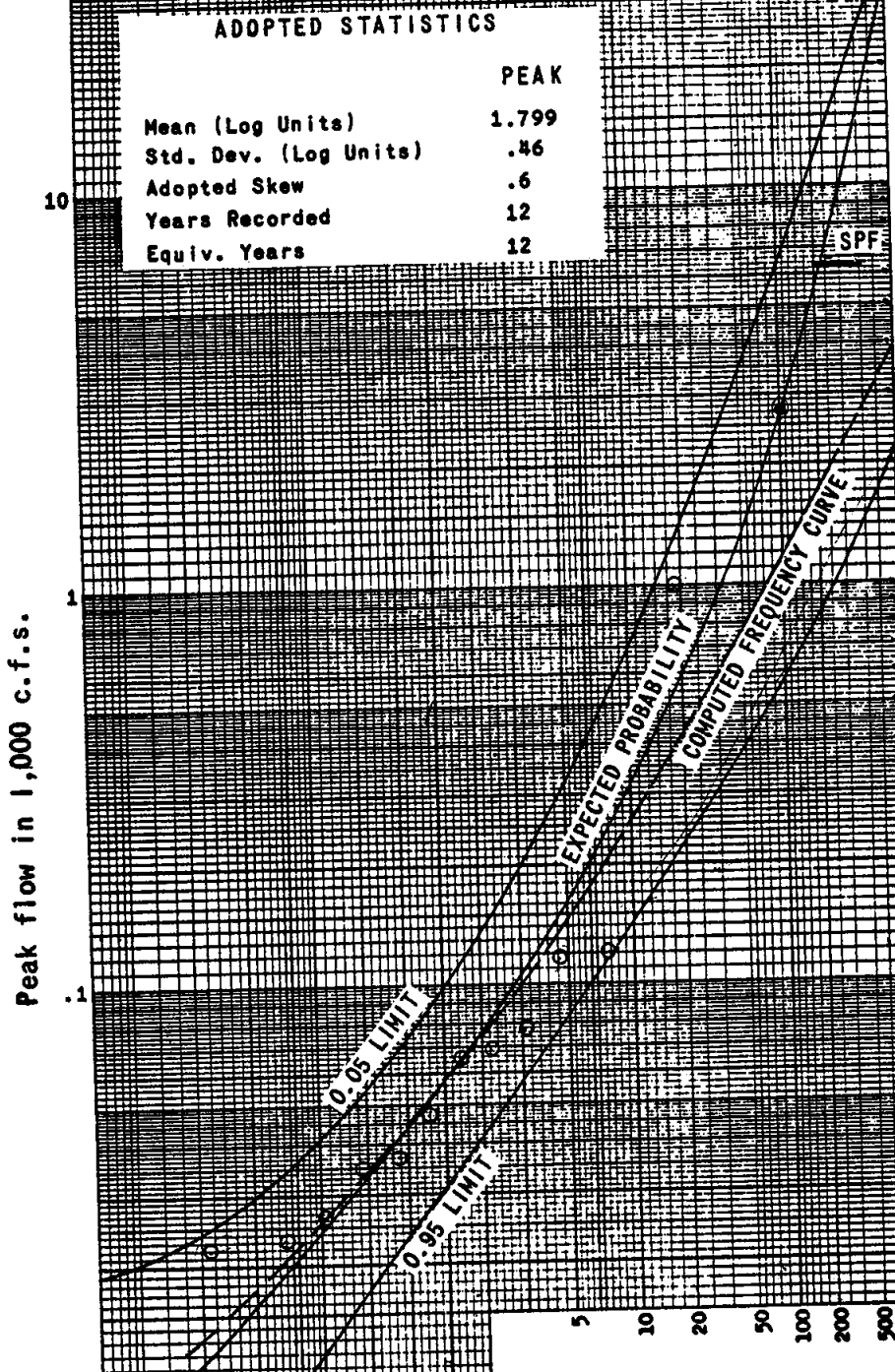
Prepared: P.W.

Drawn: C.A.P.

Date: NOVEMBER 1979

Exceedence frequency per hundred years

99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2 .1



| ADOPTED STATISTICS | |
|-----------------------|-------|
| | PEAK |
| Mean (Log Units) | 1.799 |
| Std. Dev. (Log Units) | .46 |
| Adopted Skew | .6 |
| Years Recorded | 12 |
| Equiv. Years | 12 |

4500 cfs

Period of Record: 1962-1971, 1973-1974
 Total Drainage Area: 11.5 sq. mi.

TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK FLOW FREQUENCY

HUNTER CREEK NEAR RENO
 USGS #3476

CORPS OF ENGINEERS, SACRAMENTO, CALIFORNIA

Prepared: J.H. Date: NOVEMBER 1979
 Drawn: C.A.P.

Exceedence frequency per hundred years

99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2 .1

Peak flow in 1,000 c.f.s.

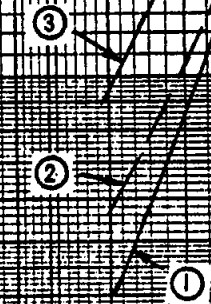
① General Rain Flood - SPF Peak Flow:
13,500 c.f.s.

② Cloudburst Flood - SPF Peak Flow:
13,600 c.f.s.

③ All Events Frequencies:

| 500 | 100 | 50 | 25 | 10 | YEARS |
|--------|-------|-------|-------|-----|--------|
| 27,000 | 7,400 | 4,100 | 2,200 | 940 | C.F.S. |

SPF



5 10 20 50 100 200 500 1000

Exceedence interval in years

TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK FLOW FREQUENCY

STEAMBOAT CREEK AT HUFFACKER HILLS
(INDEX POINT 60)

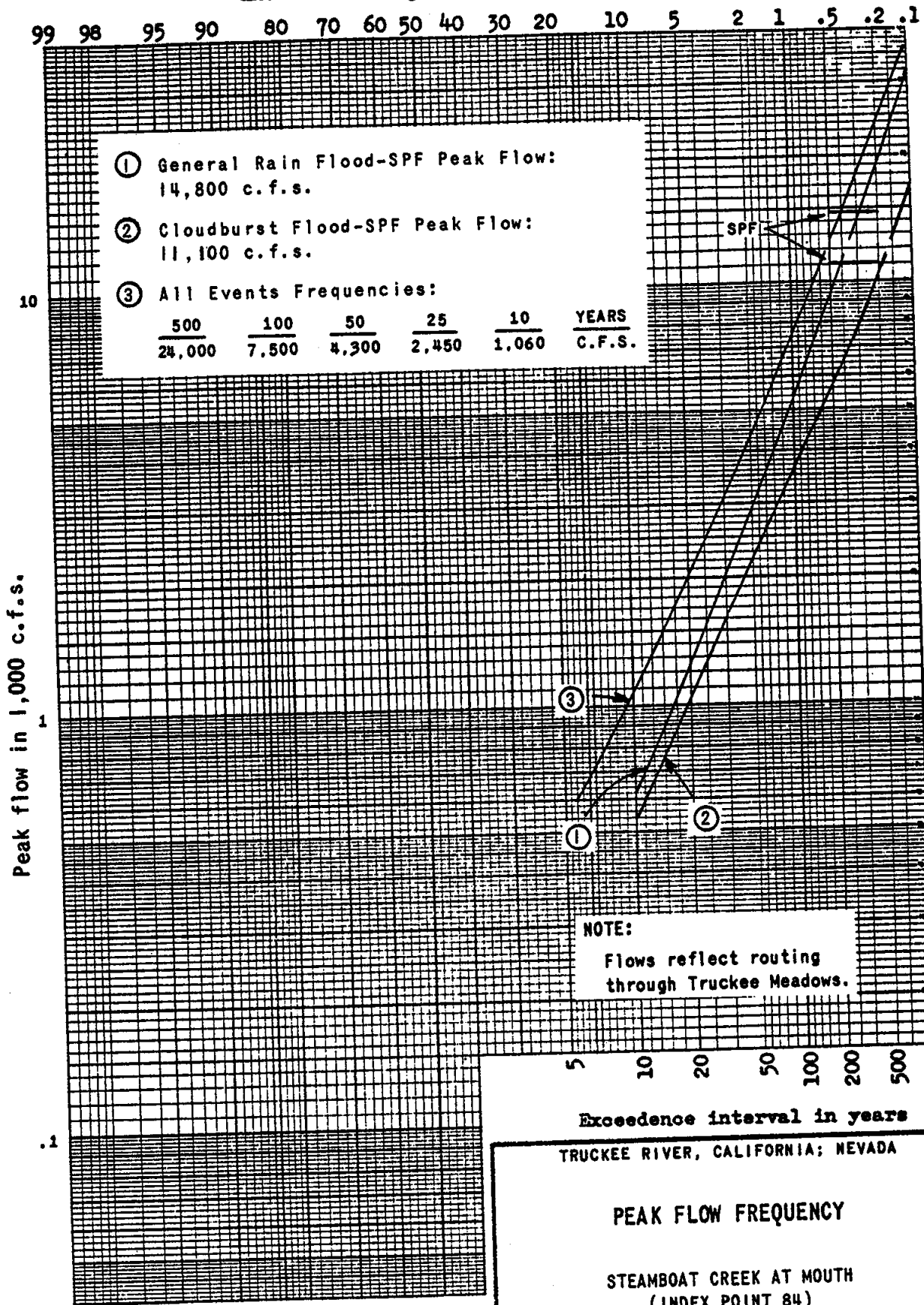
Corps of Engineers, Sacramento, Calif.

Prepared: J.H.

Date: NOVEMBER 1979

Total Drainage Area: 194.0 sq. mi.
Contributing Drainage Area: 110.4 sq. mi.

Exceedence frequency per hundred years



① General Rain Flood-SPF Peak Flow:
14,800 c.f.s.

② Cloudburst Flood-SPF Peak Flow:
11,100 c.f.s.

③ All Events Frequencies:

| YEARS | 500 | 100 | 50 | 25 | 10 |
|--------|--------|-------|-------|-------|-------|
| C.F.S. | 24,000 | 7,500 | 4,300 | 2,450 | 1,060 |

NOTE:
Flows reflect routing
through Truckee Meadows.

Total Drainage Area: 246.0 sq. mi.
Contributing Drainage Area: 162.3 sq. mi.

Exceedence interval in years

TRUCKEE RIVER, CALIFORNIA; NEVADA

PEAK FLOW FREQUENCY

STEAMBOAT CREEK AT MOUTH
(INDEX POINT 84)

Corps of Engineers, Sacramento, Calif.

Prepared: J.H. Date: NOVEMBER 1979