

FLOODING - APACHE WASH AUGUST 28, 1988

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
Interoffice Memorandum

Property of
Flood Control District of Maricopa County
Please Return to
2801 W. Durango
Phoenix, AZ 85009
File: 80-9-00-9-09/88
Date: 9/2/88

Subject: Flooding Problem of Aug. 28, 1988

To: File

From: AMM

On the morning of August 30, GRP and I visited the Apache Wash area south west of Town of Cave Creek on some drainage complaint calls. A few houses have been flooded in the area during the storm the night before. The Washes that had flooded are tributaries to Apache Wash and originate from the mountains to the south west of Apache Peak. These washes generally travel to south west direction and cross the Carefree Highway and then travel south east to join Apache Wash (see exhibit A).

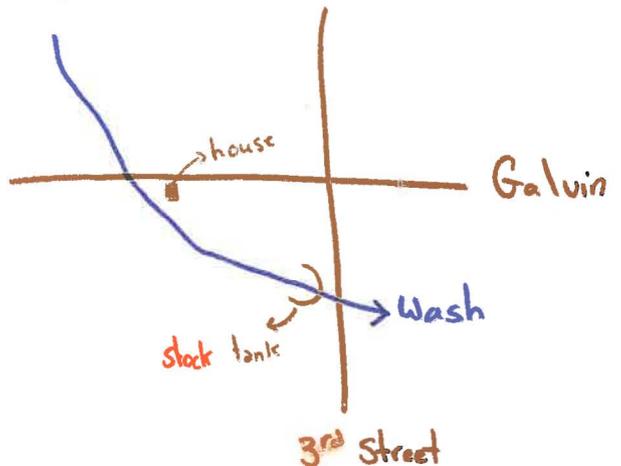
The thunderstorm that caused the flooding the night before dumped about 1.22 inches of rain on the area in a period of just over an hour starting at 2100 hrs. according to the FCD raingage #2630 which is located just to the north of the watershed (see exhibit B). An observer gage in the watershed (#21) reported a total rainfall of 1.90 inches, however that was the total precipitation for the 24 hr period which included a few erratic rainfalls prior to the 2100 hr. storm.

Following are the reports on the damages caused by the thunderstorm.

1. Cindy Kritchfield, 127 East Galvin:

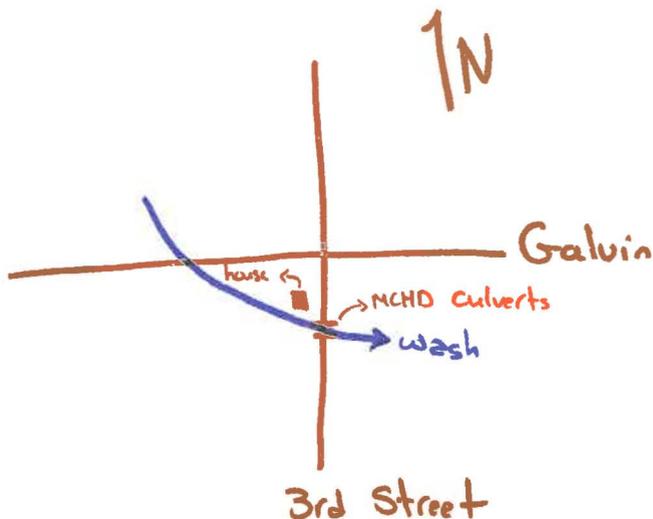
The house they live in is about 8-12 inches above grade and that may have saved their house from being flooded. The yard, garage, automobile and fence however received some damage. Water did reach the second step of the porch. She blames an abandoned stock tank that is located just down stream of her property to have caused the water to back up into their property. She didn't recall when the rain had started. The debris along the fence on the west property line were 4-6.inches high (see figures 1a-1d).

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2. Satsuki Carington, 107 West Galvin (261-3023):

She and her husband arrived home last night to find the 3rd street crossing of the wash impassable. They had to wait till about 1 a.m. to get in their house and found their bedroom to be flooded. There were high water marks and debris on the north entrance of the building. She blamed County Highway for the flooding. She indicated that the culverts installed by the Highway department are inadequate to handle the water in the wash and that they have filled the Wash in after they installed the culverts (see figures 2b-2i).



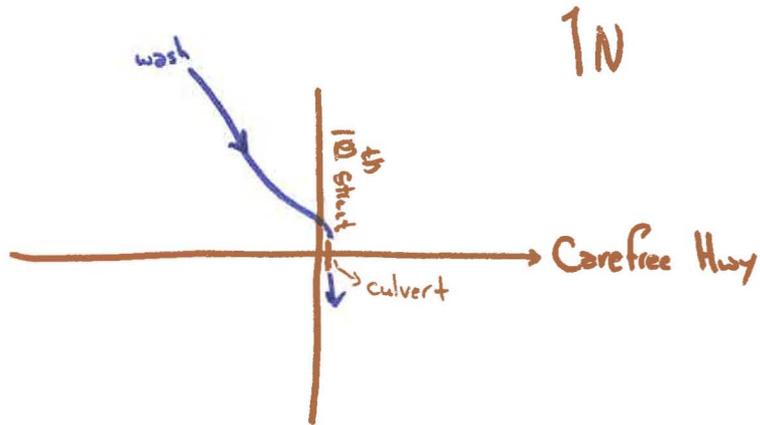
3. Linda Schmidt, 35048 North 3rd Street:

Water damage inside and outside of the house. Her husband indicated that it started raining after 8 p.m. and he decided to take drastic actions by 10 or 10:30 p.m. Water had entered the porch on the west side of the house and had backed up high enough to enter the house through the back door (see figures 3a-3i).



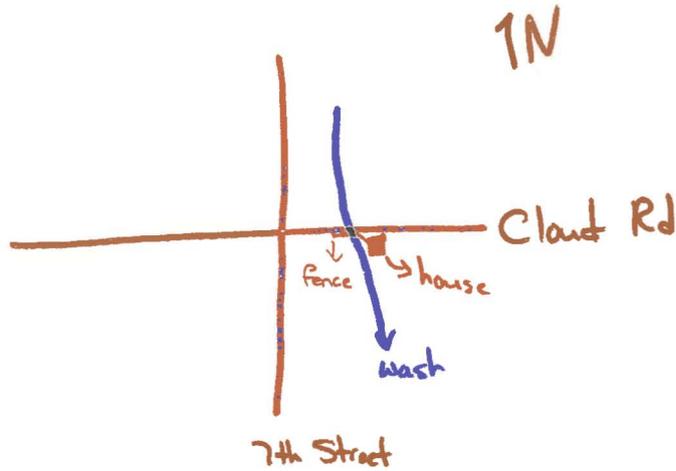
4. Water backed up behind Carefree Hwy at 10th Street:

Some high water marks we noticed in that area. Water did not appear to have over topped the Highway.



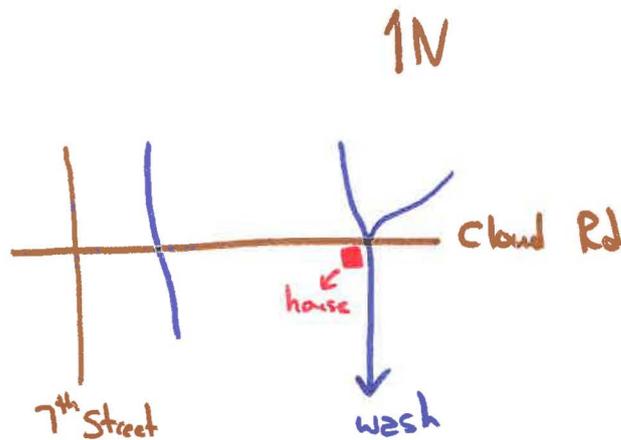
5. Randy Cooper, 831 East Cloud:

Extensive water damage inside and outside the house. Water up to 2 feet high on the perimeter of the house. The house is located in a swale adjacent to the wash and a fence chain link fence crosses the wash to the west of the residence. The flood had picked up the hot tub belonging to the neighbors to the north and had brought it over to their yard (see figures 5a-5j).



6. Ray Murrell, 1239 East Cloud:

Damage inside and outside the house. He indicated that it started raining about 7:30 or 8:00 p.m. the night before and by 10:30 p.m. the water was so high that they decided to evacuate the house. However by 11:00 pm the water had receded enough for them to return to the house. Mr. Murrell blamed the grade control structure installed by county Highway just to the south of Cloud Road in the wash to have caused enough deposition of sediment upstream that the water this time had to jump the banks to go through (see figures 6a-6k).



STATION 2630
8/29/88

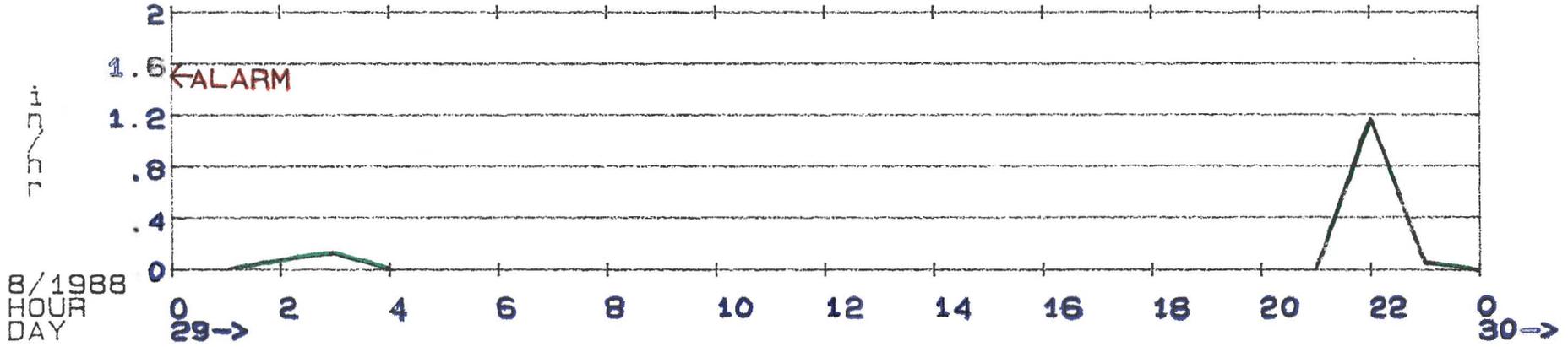


EXHIBIT B

Sensor # 2630 Skunk Creek East I- Precipitation Gage

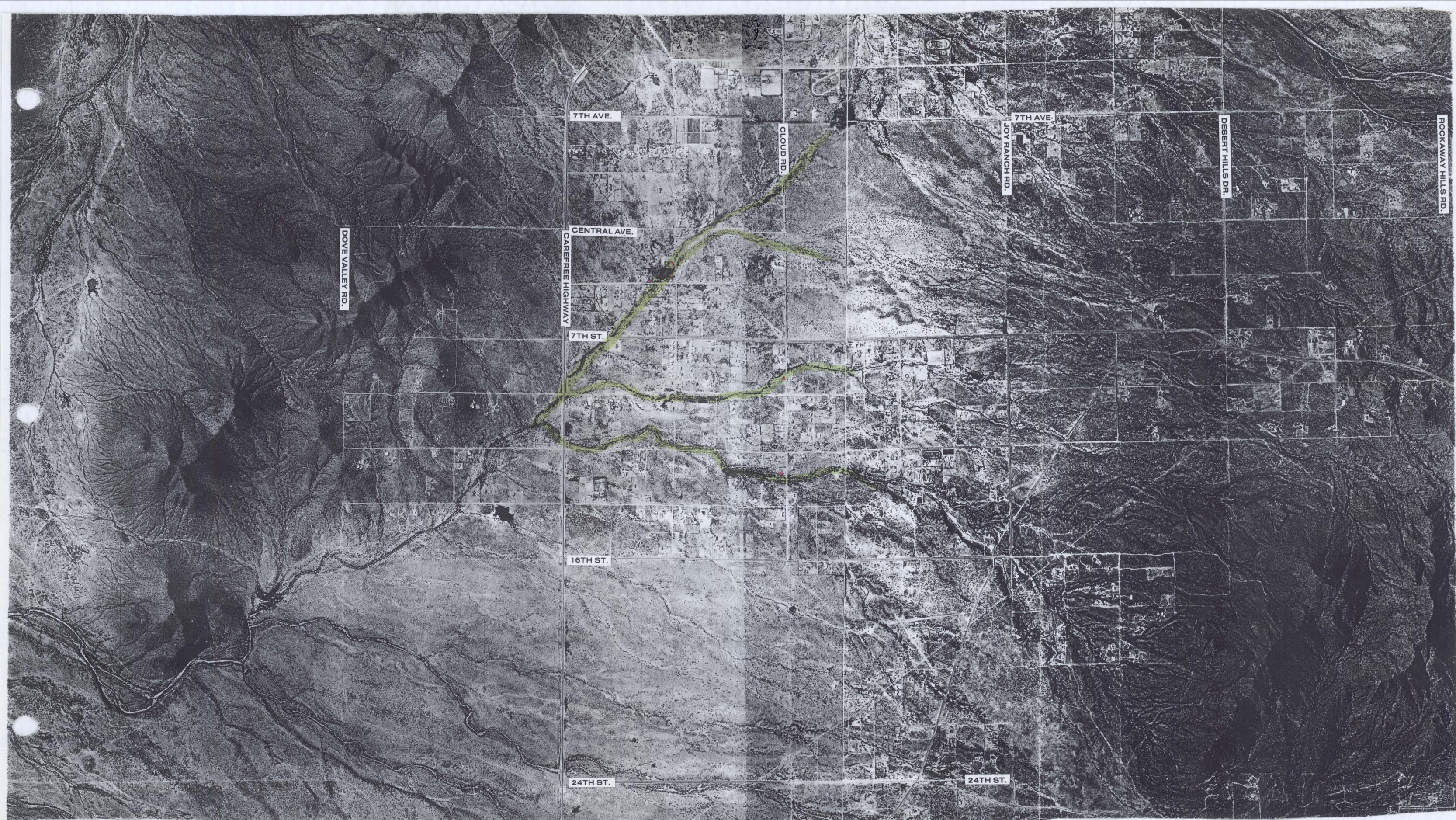
DATE	TIME	inches
08/29/88	22:09:13	10.35
08/29/88	21:49:30	10.31
08/29/88	21:43:27	10.28
08/29/88	21:41:03	10.24
08/29/88	21:39:12	10.20
08/29/88	21:36:53	10.16
08/29/88	21:34:21	10.12
08/29/88	21:33:03	10.08
08/29/88	21:32:09	10.04
08/29/88	21:29:24	9.96
08/29/88	21:28:17	9.92
08/29/88	21:27:22	9.88
08/29/88	21:26:27	9.84
08/29/88	21:25:37	9.80
08/29/88	21:24:44	9.76
08/29/88	21:23:16	9.72
08/29/88	21:21:36	9.69
08/29/88	21:20:17	9.65
08/29/88	21:18:37	9.61
08/29/88	21:15:49	9.57
08/29/88	21:11:27	9.53
08/29/88	21:07:24	9.49
08/29/88	21:06:28	9.45
08/29/88	21:05:39	9.41
08/29/88	21:04:52	9.37
08/29/88	21:04:08	9.33
08/29/88	21:03:16	9.29
08/29/88	21:02:31	9.25
08/29/88	21:01:36	9.21
08/29/88	21:01:03	9.17

111200828

DATA DOCUMENTS/INC

Cumulative Rainfall, Year to date, Station #2630

Exhibit C



ROCKAWAY HILLS DR.

DESERT HILLS DR.

JOY RANCH RD.

7TH AVE.

CLOUD RD.

7TH AVE.

CENTRAL AVE.

CAREFREE HIGHWAY

DOVE VALLEY RD.

7TH ST.

16TH ST.

24TH ST.

24TH ST.



1a. Looking south east at the residence from Galvin Ave.



1b. Another view, water topped the second step of the house.



1c. Looking EAST along Galvin, from the properties north west corner.



1d. Looking north along properties west boundary. Note the debris on fence.



2a. Looking on the north entrance to the residence, note the mud.



2b. Looking at the north entrance.





2c. Looking south along 3rd Street at the wash crossing.



2d. same as 2c.



2e. Culvert installed by County Hwy where the wash crosses 3rd Street south of Galvin.



2f. Looking north along 3rd street where the wash crosses south of Galvin.



2g. South east along 3rd Street.



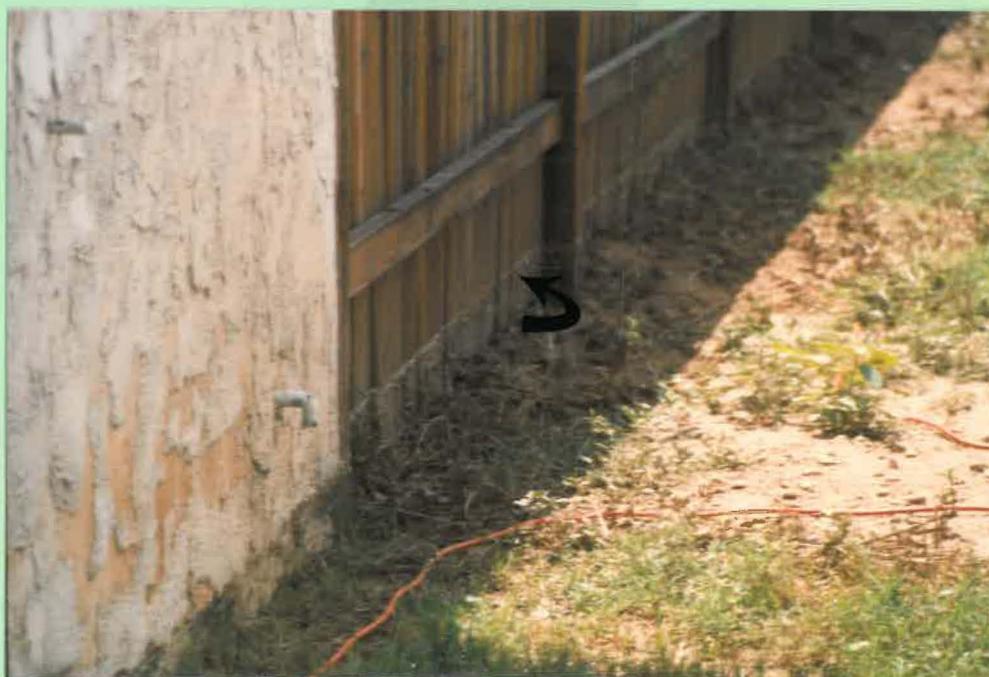
2h. South east along 3rd Street. Note debris on fence.



2i. Debris cut on fence traversing the wash, just to the east of 3rd Street.



3a. Back yard (west side) of the residence where the water ponded.



3b. High water mark on the fence.



3c. same as 3b.



3d. efforts to hold the water out of the porch, also shows high water mark.





3e. Looking north west from the residents back yard to the direction of the wash (trees)



3f. Residents car port on the east side of the residence. Most of the water flowed through the gate connecting the carport and the back porch.



3g. gate along the east fence where a lot of the flow went through

Note the high water mark on the boat.



3h. Water seeping from under the fence along the east side fence.



3i. water forcing itself through the fence and under the gate.



4a. Looking north along 10th Street from Carefree Hwy. Note the high water mark.



4b. Water ponding behind the culvert on north east corner of Carefree and 10th Street.



5a. High water mark on the north entrance to the resident.



5b. same as above.



5c. east side of the resident.



5d. High water mark inside the automobile.



5e. East yard of the residence.



5f. High water mark inside the garage.



5g. high water mark along the fence that borders the east yard.



5h. Hot tub brought over by the flood belongs to the neighbors to the north.



5i. Water has washed the ground from under the patio.



5j. The fence that traverses the wash along the south side of Cloud Rd to the east of the residence.



6a. Looking south west across the Cloud road and the Wash. This seemed to be the direction the water moved where it over topped the bank.



6b. Looking south south west at the wash crossing Cloud Rd.



6c. Looking west along Cloud Road.



6d. Same as 6c.



6e. North entrance to the residence. Note high water mark.



6f. Direction the water flowed where it over topped the bank.



6g. Same as 6f.



6h. Looking south east at Cloud Road crossing the Wash. Note grade control structure installed by County Hwy.



6i. Same as 6h.



6j. Looking North along the wash south of cloud Road. Note Grade control Structure.





6k. Car stalled facing north along the wash south of Cloud Road, .



ASSESEMENTS

1,2 and 3. Cindy Kritchfield, Satsuki Carington and Linda Schmidt:

The stock tank (pond) does not appear to be the cause of the flooding in either of the properties as originally suggested by Mrs. Kritchfield. The culverts installed by County Highway under 3rd Street appear to be under designed and could have caused some back water and ponding. With all the new development that is being placed on the upstream end of the washes and the subsequent increase in the runoff, it is hard to blame the culverts as the only source of the flooding in the area.

4. Culvert at Carefree Hwy and 10th Street:

The low grade of 12th Street allows the flood waters from the wash to the west of the street to cross it to the east, however the culvert on the north east corner of the intersection is not capable of handling this additional flow and therefore it will pond behind it (see exhibit 1).

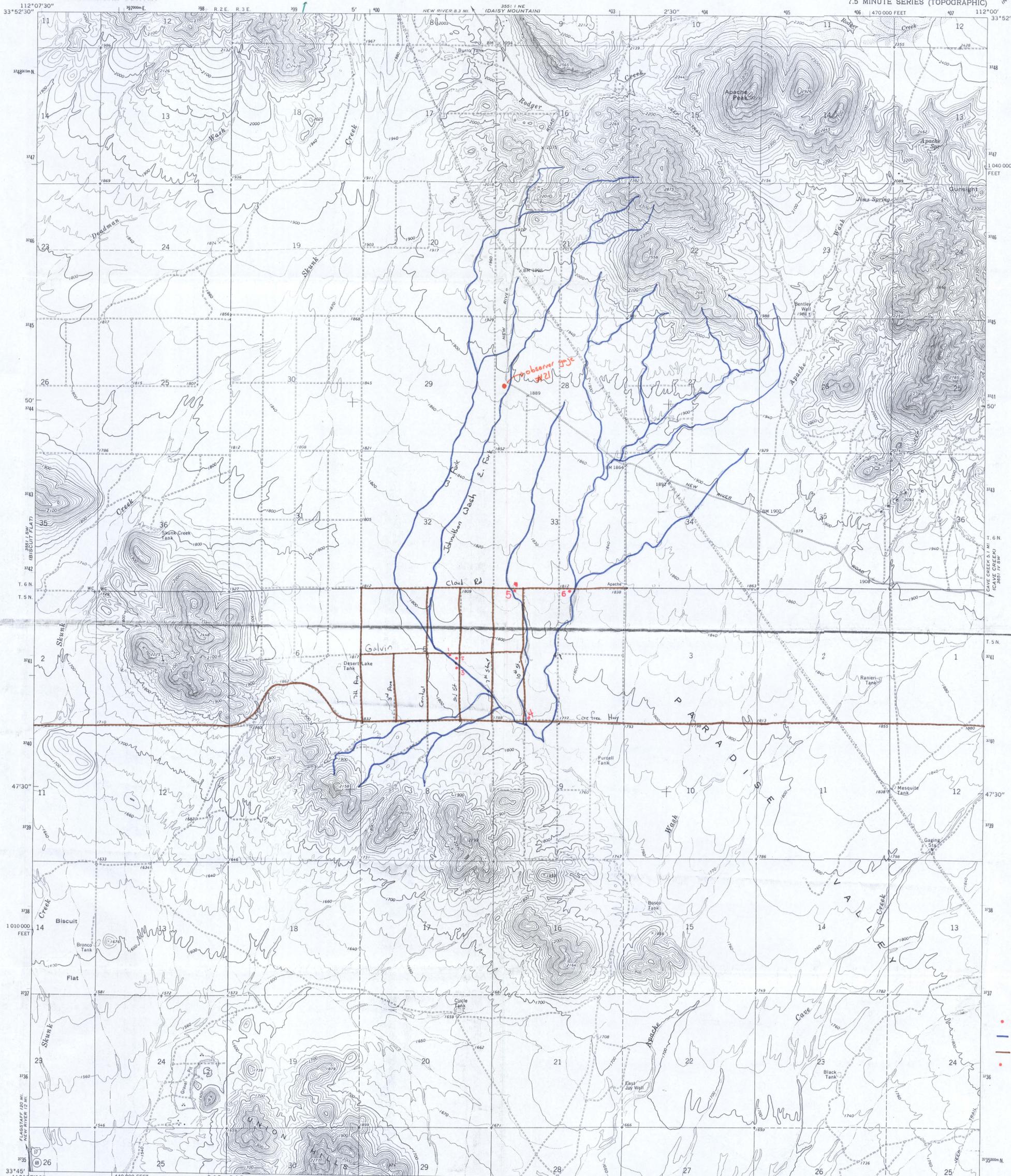
5. Randy Cooper:

I believe two factors contributed to the flooding problems in Mr. Coopers Property. The important factor being that the house was just built too low in the wash area. Second contributing factor is the chain link fence that is built across the wash and the debris caught behind it during the flood will block the wash and retard the flows.

6. Ray Murrel:

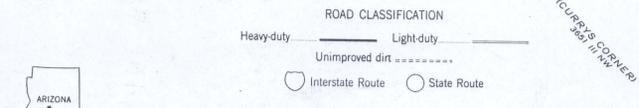
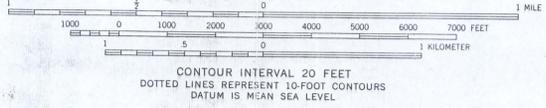
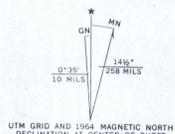
I do not believe that the grade control structure put in by the County Hwy Department has contributed to the flood. The structure has only provided to maintain the grade and not necessarily has caused deposition upstream of the road. If the grade structure was significantly above the grade (bottom of the wash downstream), then there may have been enough evidence to say that the structure has caused deposition upstream and therefore reduced the capacity of the wash.

Rain Gage
T6N R3E Sec 5
1.41" for that storm 8/29/88



• houses inundated
— washes
— Roads
— observer gage

PHOENIX 24 MI.
MAPPED, EDITED, AND PUBLISHED BY THE GEOLOGICAL SURVEY
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1964
Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue
Fine red dashed lines indicate selected fence lines



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
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NEW RIVER SE, ARIZ.
N3345-W11200/7.5

1964

AMS 3551 I SE—SERIES W988