Colorado Water Conservation Board
Floodplain Management Section

CHRONOLOGY OF FLOODS IN COLORADO

Date	Flood Source	Stream Name	Community and/or Location	Damages	References
** YEAR = 1988					
06/28/88	Rain	Ohio Creek	Gunnison County		Rocky Mountain News, 6/29/88
08/09/88	Rain	Pine Creek	Colorado Springs	$15 million in damages	Rocky Mt.News,8/10/88.Denver Post,8/16/88.D.Bunting
08/17/88	Rain	Goldsmith Gulch	Arapahoe County	$10,000 in damages	Denver Post, 8/19/88. Rocky Mountain News, 8/19/88
06/26/88	Rain	Spring Creek	Pierce		Raymond Van Why, Mayor Pierce
08/04/88	Rain	Fountain and E. Fountain Creek	Woodland Park	$8,0000 in damages	Flood Stage, CWCB Vol.4 No.3 Fall, 1988
08/16/88	Rain	Fountain and E. Fountain Creek	Woodland Park	$7,000 in damages	Flood Stage, CWCB Vol.4 No. 3 1988
07/07/88	Rain	Oak Creek	Fremont County		Flood Stage, Vol.4 No.3 Fall 1988
07/11/88	Rain	Unnamed Tributary	Logan County	$833,000 in damages	Flood Stage, Fall 1988.Sterling Journal-Advocate7/17
07/11/88	Rain	Unnamed Tributary	Morgan County	$410,000 in damages	Flood Stage, Fall 1988. Journl-Advocate, 7/17/88
07/11/88	Rain	Unnamed Tributary	Washington County	$977,000 in damages	Flood Stage, Fall 1988. Journal-Advocate, 7/17/88
07/07/88	Rain	Oak Creek and Tributary	Williamsburg		Flood Stage, CWCB Fall 1988. Citizen, 7/07/88
07/07/88	Rain and Hail	Oak Creek and Tributary	Rockdale		Flood Stage, CWCB Fall 1988. Citizen, 7/14/88
06/17/88	Rain	Caddoa Creek	Bent County		Flood Stage, CWCB Vol.4 No.3 Fall 1988
07/07/88	Rain	Harmony Ditch #1 and #2	Logan County		Sterling Journal-Advocate, 7/8/88

Colorado Water Conservation Board
Floodplain Management Section

CHRONOLOGY OF FLOODS IN COLORADO

Date	Flood Source	Stream Name	Community and/or Location	Damages	References
07/07/88	Rain	Unnamed Tributary	Logan County		Sterling Journal-Advocate, 7/8/88
07/07/88	Rain?	Owl Creek	Larimer		Sterling Journal-Advocate, 7/8/88
07/07/88	Rain and Hail	Local Drainage	Fort Collins		Sterling Journal-Advocate, 7/8/88
07/07/88	Rain	Coal Creek	Florence		Sterling Joournal-Advocate, 7/8/88
04/18/88	Snowmelt	Unnamed Trib to Oklahoma Ditch	Jackson County		Colorado Dept. of Highways, 4/18/88
05/15/88	Snowmelt	Unnamed Trib. to Oak Creek	Routt County		Colorado Dept. of Highways 5/15/88
06/25/88	Rain	Unnamed Trib. to Plum Creek	Douglas County		Colorado Dept. of Highways, 6/25/88
07/07/88	Rain	Un Trib. to Cache La Poudre	Windsor		Co. Dept. of Highways, 7/788.
07/11/88	Rain	Local Drainage	Phillips County		Journal-Advocate 7/8/8 Holyoke Enterprise, 7/11/88. Co Dept of Highways
07/14/88	Rain	Unnamed Trib to Surveyor Creek	Washington County		Colorado Dept. of Highways, 7/14/88
07/17/88	Rain	O'Neil Draw	Julesburg		Julesburg Advocate, 7/20/88.
07/17/88	Rain	Unnamed Tributary	Sedwick		Colorado Dept. of Highways
07/17/88	Rain	Unnamed Trib to Surveyor Creek	Washington County		Colorado Dept. of Highways, 7/17/88
07/18/88	Rain and Hail	Springdale Ditch	Logan County		Journal-Advocate, 7/1988. CO. Dept. of Highways7/18
07/18/88	Rain	Unnamed Tributary	Weld County		Colorado Dept. of Highways, 7/18/88
07/23/88	Rain	Unnamed Trib to Surveyor Creek	Washington County		Colorado Dept. of Highways, 7/23/88.
08/08/88	Rain	Dry Creek	Boulder County		Colorado Dept. of Highways, 8/88/88
08/09/88	Rain	Unnamed Trib to Surveyor Creek	Yuma		Colorado Dept. of Highways, 8/9/88

Colorado Water Conservation Board
Floodplain Management Section

CHRONOLOGY OF FLOODS IN COLORADO

Date	Flood Source	Stream Name	Community and/or Location	Damages	References
08/09/88	Rain	Spring Creek	Weld County		Colorado dept. of Highways, 8/9/88
08/10/88	Rain	Unnamed Trib. to Muddy Creek	Adams County		Colorado Department of Highways, 8/10/88.
08/12/88	Rain	Unnamed Trib to Rock Creek	Washington County		Colorado Dept. of Highways, 8/12/88
08/14/88	Rain	Unnamed Tributary	Sedwick County		Colorado Dept. of Highways, 8/14/88.
08/14/88	Rain	Dry Creek	Boulder County		Colorado Dept. of Highways, 8/14/88.

DOH FORM 293
FEBRUARY 1975

Copy to Staff Design

C.W 7-5-89

JUL 1989 MTCE SECTION 4

DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME N/A

FLOODING LOCATION CO 194 MP 17 - MP 18

DATE OF FLOODING MAY 14/15/16 89 CAUSE: Rainfall ☒ Snowmelt ☐ Other IRRIGATION

AMOUNT OF RAINFALL 5½" TOTAL 3 NIGHTS

DEPTH OF WATER OVER ROADWAY 18" Width ~~1~~ ½ MILE

DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other CORN COBS - WASHED OUT OF FIELDS

Amount

STRUCTURE NO. N/A CULVERT: Size 24" Type CORRAGATED

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify WASHED SHOULDERS

COMMENTS: RAIN EACH NITE. TOTALED 5½". APPROX 1" RAIN WILL CAUSE WATER ON ROAD. IRRIGATION WATER ALSO IN BORROW DITCHS

SOURCE OF INFORMATION:

Recorder W.R LEWIS (Name) (Date) Phone 456-2906

S. H. No. 194 Mile Post 17-18

SEND TO: STAFF DESIGN
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Denver CO 80222

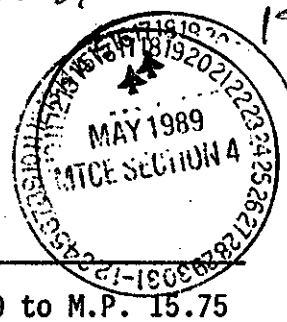
See back for Instructions and Additional Comments or Sketch.
Attach any Photos.

Otero/Bent Co.?

DOH FORM 293
FEBRUARY 1975

Y.W 5-17-89

15



DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME No Name

FLOODING LOCATION St. Charles River to Avondale Road M.P. 8.00 to M.P. 15.75

DATE OF FLOODING 5/15/89 CAUSE: Rainfall ☒ Snowmelt ☐ Other _____

AMOUNT OF RAINFALL ?

DEPTH OF WATER OVER ROADWAY 6" to 10" Width 40' Varied to fields

DEBRIS: Trees ☐ Brush ☐ Rocks ☒ Silt ☐ Other _____

Amount _____

STRUCTURE NO. _____ CULVERT: Size 30" Type Galvanized

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY _____

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify _____

COMMENTS High water from the south of Highway 50 flooded fields and highway property.

SOURCE OF INFORMATION: John Schwartz, Senior Highway Maintenance Supervisor

Recorder _____ _____ Phone 546-5427
(Name) *(Date)*

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Denver CO 80222

S. H. No. 50-C

Mile Post 8.00 to 15.75

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Pueblo Co

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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING 5-16-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Highway 138A - milepost 56.70

STRUCTURE NO. N/A

CULVERT: Size 2-36" Type Round

STREAM NAME Irrigation Ditch

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

1.8 inches of Rain in 3 hrs. ground was dry

DEPTH OF WATER OVER ROADWAY 2"

Width 20'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☑ Other _____

Amount silt covered 3/16 of tube opening

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

tube was full to top then over road for 2",

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Water ran over Road for 3 hrs.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Gene Nickolson - 474-3355 sheriff - lifetime
Conley Ebert - 463-5424 - Highway Dept. - 16 yrs.

Recorder (Name) Conley Ebert **(Date)** 5-17-89 **Phone** 446-5424

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. 138A **Mile Post** 56.70

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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING JUNE 2, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

STATE HWY 287 FROM MP 309.20 TO MP 310.00

STRUCTURE NO.

CULVERT: Size 18" & 24" Type STEEL

STREAM NAME

N A

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

1" TO 2" RAIN

DEPTH OF WATER OVER ROADWAY

2" TO 6"

Width

26'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☑ Rocks ☐ Silt ☑ Other _____

Amount WASHING BRUSH, WEEDS, & SILT PLUGS CULVERTS

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

APROX 2" TO 6" OVER ROAD & SHOULDER & AT CULVERTS

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

WASHING SHOULDERS

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

THIS AREA HAS A HISTORY OF FLOODING ANY TIME WE RECIEVE 1" OR OVER OF RAIN. THE ROAD IS TOO LOW & HAS POOR DRAINAGE.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

MAX FANNING 442-4382

ARDEN NICODEMUS 651-6270

S.H. No. US 287

Mile Post 309.20 TO 310.00

Recorder (Name) MAX FANNING

(Date) 6-5-89

Phone 442-4382

Use reverse side for any additional comments, sketches, or photographs.

DOH FORM 293
FEBRUARY 1975

DRAINAGE STRUCTURE FLOOD SUMMARY

-1 STREAM NAME _____

-2 FLOODING LOCATION M.P. 257.40 E. FRONTAGE RD (JEFFERS RD) N.B.

-3 DATE OF FLOODING 6-3-89 -4 CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

-5 AMOUNT OF RAINFALL Approx 1.5 in +

-6 DEPTH OF WATER OVER ROADWAY ? -7 Width ?

-8 DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ 9 Other _____

-10 Amount _____

-11 STRUCTURE NO. _____ -12 CULVERT: Size _____ Type _____

-13 HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY ?

-14 DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify Washed Bank Down Hill Approx 20ft Wide, Covered 18" Drain Tube That Drains Part of Interchange at U.S. 34

-15 COMMENTS Maybe Put Curb Back That Was There Before The Reconstruction of Highway.

-16 SOURCE OF INFORMATION: _____

-17 Mile Post 257.40 S. H. No. I-25 FR RD

-18 Recorder GERALD L. STEFFEN (Name) 6-6-89 (Date) Phone 493-1463

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Denver, CO 80222

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JUL 20 1989

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING June 3 · 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) From HWY 85 + 14 (Ault) North M.M. 181.6

STRUCTURE NO.

CULVERT: Size 16" Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) Heavy rain 1 mile Northwest of Ault 3" of rain fell in 1 hour. ground moisture befor storm dry.

DEPTH OF WATER OVER ROADWAY 5" to 12" of water in two locations

Width 400' in two different locations

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other culvert is to Low and will not drain

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Road a. Culvert is to low. to any amout of water. Culvert was put in. To depent dead end water from ~~field~~ west side of Hwy to east side and into a culvert that takes water South. The culvert crossing Hwy is Lower then the culvert going so. The only way to rise the culvert is to rise the road 3' to 4'. MM 181.6
600' to 700 ft of HWY is covered with water from rain or snow melt.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. #7 **Mile Post**

Recorder (Name)	(Date)	**Phone**
Russ Brown	7/18/89	897-2458

Use reverse side for any additional comments, sketches, or photographs.

DOH FORM 293
FEBRUARY 1975

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DRAINAGE STRUCTURE FLOOD SUMMARY

-1 STREAM NAME _____

-2 FLOODING LOCATION M.P. 259.32

-3 DATE OF FLOODING 6-3-89 -4 CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

-5 AMOUNT OF RAINFALL Approx. 1.5 in.

-6 DEPTH OF WATER OVER ROADWAY 2 in -7 Width 8 FT.

-8 DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ 9 Other Weeds & Hail

-10 Amount _____

-11 STRUCTURE NO. _____ -12 CULVERT: Size 18" Type Steel

-13 HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY Approx. 6" over culvert

-14 DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify Wash Shoulder & silt into Ditch & Culvert Area

-15 COMMENTS Getting a lot of surface Area To Drain. Ditch needs Deeper on County Property

-16 SOURCE OF INFORMATION: _____

-17 S. H. No. I-25 Mile Post 259.32

-18 Recorder Gerald L Steffen (Name) 6-5-89 (Date) Phone 493-1463

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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING June 3, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

State hwy 287 at mile post 310.

STRUCTURE NO.

CULVERT: Size 18" Type steel culvert

STREAM NAME

Irrigation ditch

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Ground was saturated. Rainfall was well over an inch.

DEPTH OF WATER OVER ROADWAY 4 to 5 inches

Width 14'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other Tumbleweeds

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

about 4 to 5 inches above the shoulder

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

cars were slowed, and I went off road.
Road needs to be elevated with bigger culverts.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

State Trooper Duane Bradley. and Arden Nicodemus
SR. highway mtce. man. Phone 651-6270

Recorder (Name) Arden B. Nicodemus

(Date) 6-5-89

Phone 651-6270

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. 287

Mile Post 310

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DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 6-3-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

52A 1 mile east of Colo. 119

STRUCTURE NO.

CULVERT: Size 24" Type Steel

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

2.25" of Rain fell in 24 hr Period. Irrigation Ditch to the South

DEPTH OF WATER OVER ROADWAY 9"

Width 120 yds.

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☒ Rocks ☐ Silt ☒ Other Gravel From Shoulder

Amount 5 yds.

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

12" of water from bottom of 24" Culvert to Top.

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location) To my knowledge this is the first time for having water problems. Irrigation ditch to the South left its bank because of heavy rain, and Run off from Gunbarrel estates. This Culvert also Drains Wetlands from South on Inlet Because of Run off from housing development, Box Culvert may be needed in future.

From Development

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area) Mike Day SR. Hwy maint. Wkr Dan Schaul maint. wkr. B. 442-4382 – 443-3922 Patrol 10

S.H. No. 52 | Mile Post 0.80

Recorder (Name) Dan Day SR. Hwy maint. Wkr. | (Date) 6-6-89 | **Phone** 443-3922

Use reverse side for any additional comments, sketches, or photographs.

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DOH FORM 293
FEBRUARY 1975

DRAINAGE STRUCTURE FLOOD SUMMARY

-1 STREAM NAME _____

-2 FLOODING LOCATION M.P. 962.50 West Frontage Rd. S.B.

-3 DATE OF FLOODING 6-3-89 -4 CAUSE: Rainfall ☒ Snowmelt ☐ Other _____

-5 AMOUNT OF RAINFALL Appox 1.5 in

-6 DEPTH OF WATER OVER ROADWAY None -7 Width None

-8 DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ 9 Other _____

-10 Amount _____

-11 STRUCTURE NO. _____ -12 CULVERT: Size None Type _____

-13 HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY _____

-14 DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify Washed Bank in a Couple of Places. Came off of Field Behind Fence

-15 COMMENTS Bank Was Cut Down Last Summer and Reseeded Nothing To hold Water

-16 SOURCE OF INFORMATION: _____

-17 Mile Post 962.50 S. H. No. I-25

-18 Recorder Gerald L. Steffen (Name) 6-6-89 (Date) Phone 493-1463

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DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING June 4, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

State hwy. 287 and Oxford Rd.

STRUCTURE NO.

CULVERT: Size 24" Type Steel culvert

STREAM NAME

Roadside ditch

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Ground was saturated and over 2" of rain fell

DEPTH OF WATER OVER ROADWAY

About 1 foot over road.

Width 14'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other none

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

about a foot above the shoulder of the road.

DAMAGE OR SCOUR: Yes ☑ No ☐

If yes, specify (Describe extent of damage and needed repair.)

washed southwest shoulder of road away.
we will put more shoulder material in and level it up.

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Traffic had to be slowed until high water went down.
Maybe could use a bigger culvert with this much rainfall.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.R. hwy. mtce. man Arden B. Nicodemus Phone 651-6270

S.H. No. 287 **Mile Post** 312.50

Recorder (Name) Arden B. Nicodemus | (Date) 6-5-89 | **Phone** 651-6270

Use reverse side for any additional comments, sketches, or photographs.

DOH FORM 293
FEBRUARY 1975

DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME —

FLOODING LOCATION Five and one half miles North of Bristol nine miles North of Granada on Highway 385

DATE OF FLOODING 6-4-89 CAUSE: Rainfall ☒ Snowmelt ☐ Other _____

AMOUNT OF RAINFALL 2½" to 5" with in a 20 mile area

DEPTH OF WATER OVER ROADWAY 8" to 12" Width 800'

DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other weeds

Amount 4-6 cu yards of weeds silt 1"-2" 1401 apart

STRUCTURE NO. — CULVERT: 2 Size 36" Type _____

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY shoulder of the road over the road for 800'

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify eroded shoulder on west side of road where water ran across

COMMENTS area was signed and maned traffic was able to go through. water ran across 8 hrs plus

SOURCE OF INFORMATION: John R. Schulz Sr Hwy Mtce Wkr

Roy H. Dunn Farmer Holly Co 416 w Park 719 537-6861

Recorder John R Schulz (Name) 6-5-89 (Date) Phone 719-739-5365

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S. H. No. 385 Mile Post 104.65

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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 6-8-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) this took place at the Lewis Creek Bridge mile post 15.10

STRUCTURE NO. A-24-E.

CULVERT: Size Type

STREAM NAME Lewis Creek

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) it rained 4 inches with about 8 to 10 inches of hail.

DEPTH OF WATER OVER ROADWAY none

Width

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other none

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.) water depth was 10 to 12 ft. deep passing under the bridge

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify (Describe extent of damage and needed repair.) It started to wash out the northwest aproach to the bridge. In the past years we put a lot of rip rap on that corner which saved our bridge.

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

no traffic delays or no detours due to this high water.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Kenny Crow 886-3232
Dean Fetzer 886-3121
These people work for me and lived here 0-20 years.

S.H. No. U.S. 138 Mile Post 15.10

Recorder (Name) Stanley Jasanek **(Date)** 6-13-89 **Phone** 886-2191

Use reverse side for any additional comments, sketches, or photographs.

or R.R. M.14 7-6-89

3

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING June 8-1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Hiway 6 Mile Marker 401.2

STRUCTURE NO.

CULVERT: Size 24 inch Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

2 1/4 inches

DEPTH OF WATER OVER ROADWAY 6 inches

Width 36 feet So Bound 36 foot No. Bound Lan

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☑ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Stop County + Farmers from Running [redacted]
Their water Down into our Ditches

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Dennis Hutch 522-2671
16700 Rd. 61
Fleming, Colo 80728

S.H. No.	Mile Post
6	401.2

Recorder (Name)	(Date)	Phone

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
CDOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING: 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

63A - mile point 32.6

STRUCTURE NO.: N/A

CULVERT: Size 24" Type steel

STREAM NAME: N/A

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Ground Dry - 1.8 inches in 45 minutes

DEPTH OF WATER OVER ROADWAY: 12"

Width: 60 Feet

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other wheat straw

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

Top of culvert - 2 FT - shoulder of roadway - 4 Ft.

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Water was across highway for 3 hours, first time known water at this location. Traffic was alerted of situation, then let through slowly.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Gerald L. Hoefler - 345-6568
- 3 years in area

S.H. No. 63A

Mile Post 32.6

Recorder (Name): Gerald L. Hoefler

(Date): 6-25-89

Phone: 345-6568

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

385C MILE POST 187.50

STRUCTURE NO.

CULVERT: Size 24" Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 3" TO 5" IN ABOUT 2 TO 3 HOURS GROUND WAS MOIST

DEPTH OF WATER OVER ROADWAY 2 TO 4 INCHES

Width 100'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other NONE

Amount.

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

CULVERTS ARE NOT BIG ENOUGH TO HANDLE THIS AMOUNT OF RAIN, BUT WE DO NOT GET THAT MUCH RAIN AT ONE TIME TO NEED LARGER CULVERTS IN THIS AREA. CULVERT GOING UNDER I-70 COULD BE LARGER TO HELP STOP THIS FROM HAPPENING AGIN.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

RONALD A. FRAMEL
193 17TH
BURLINGTON, CO
(719 346-7455 work#) 8 YEARS

DON HUFF
BURLINGTON CO
(719 346-7455 work#)
2 YEARS

Recorder (Name) RONALD A. FRAMEL. **(Date)** 6-26-89 **Phone** 719-346-7455

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. **Mile Post**

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

I-70 West Bound AT M.P. 436.80 Under OverPASS

STRUCTURE NO. G-27-Y overPASS #

CULVERT: Size 24 Type CULVERT

STREAM NAME none

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

4" IN About 3 HRS.

DEPTH OF WATER OVER ROADWAY 3-4"

Width 120'-140'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____

Amount.

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

3 ft Above Top of CULVERT

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify (Describe extent of damage and needed repair.)
WASHed DIRT OUT under GUARD RAIL on BOTH sides of West Bound I-70. About 20 yds of DIRT To fill In.

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

THE CULVERT IS JUST TO SMALL FOR THE AREA DRAINING TO IT DURING A HEAVY RAIN. THIS WAS THE WORST I HAVE Seen it. DRAWing on BACKside THE WATER BACKED UP Deep enough TO go ALONG RAMP And ACROSS BACK TO CULVERT And over INTERSTATE. NO TRAFFIC delAY JUST SLOW DOWN.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. 70-A Mile Post 436.80

Recorder (Name)	(Date)	Phone
James O. Duffield	6-26-89	719-346-7455

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

DATE OF FLOODING 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

U.S. 385 MM. 211.10 5.65 miles south of Jct. 36 & 385

STRUCTURE NO. No structure

CULVERT: No Culvert
Size Type

STREAM NAME None

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

5½" Rain & ½ hours of Hail

DEPTH OF WATER OVER ROADWAY 2 inches

Width 50 ft.

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____

Amount N.A.

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

N.A.

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Possible installation of culvert under private driveway.
Road was closed due to Republican River Flooding.
Water remained on road for approximately 12hrs.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Tom Barnes 6614 Hwy. 36 Joes, Colo. 303-358-4279

Recorder (Name) Tom Barnes. | (Date) 6-29-89 | **Phone** 303-358-4279

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. U.S. 385 | **Mile Post** 211.10

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DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

DATE OF FLOODING 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

U.S. 385 MM. 212.60 Co Rd. 5 4.15 miles south of Jct. 36 & 385.

STRUCTURE NO. NA.

CULVERT: Size 36" Type Metal

STREAM NAME NA.

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

5½" Rain & 1½ hours Hail.

DEPTH OF WATER OVER ROADWAY 4 inches

Width 246 ft.

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Trash from fields.

Amount Moderate

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

30"

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Ditches will need cleaning due to silt & debris washing out of Farmland.
Road was closed due to Republican River Flooding
Water remained on road approximately 12 hrs.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Tom Barnes 6614 Hwy. 36 Joes, Colo. 303-358-4279

Recorder (Name) Tom Barnes (Date) 6-29-89 **Phone** 303-358-4279

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. U.S. 385 Mile Post MM 212.60

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

DATE OF FLOODING 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

U.S. 385 MM. 210.00 - 210.70 6 miles south of Jct. 36 & 385.

STRUCTURE NO. F-27-D

CULVERT: Size Type

STREAM NAME Republican River

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Ground conditions were dry. ½ hours of Hail & 12 hours of Rain. 5½" of Rain Reported.

DEPTH OF WATER OVER ROADWAY 32" at Highest

Width 7/10 mile.

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☒ Brush ☒ Rocks ☐ Silt ☒ Other _____

Amount Substantial

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

9 ft. 7o Water was approximately 32" above deck.

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify (Describe extent of damage and needed repair.)

Concrete slope paving damaged adjacent to abutments.

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Highway was closed from Jct. 36 & 385 to Burlington from 1740 to 0521.
Flooding has occured in past.
~~Streambed needs to be cleaned upstream & downstream from Bridge.~~
Additional culverts may need to be installed under roadway north of the bridge.
Water was on roadway for 2 hrs.
Bonny Res raised 4¼' in 24hr ≅ 17,000 Avg cfs Inflow USGS

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Willard North 2898 Co. Rd. 3 Idalia, Colo. 303-354-7456 (Several Years)
Edgar Lengel 28956 Co. Rd. 2 Burlington, Colo. 303-354-7238 (Lifetime)
Tom Barnes 6614 Hwy. 36 Joes, Colo. 303-358-4279 (14yrs)

S.H. No. U.S. 385 Mile Post 210.00 - 210.70

Recorder (Name)	(Date)	Phone
Thomas R. Barnes	6-29-89	303-358-4355

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

DATE OF FLOODING 6-24-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

U.S. 385 MM 215.60 1.15 miles south of Jct. 36 & 385

STRUCTURE NO. N.A.

CULVERT: Size 24" Type metal

STREAM NAME N.A.

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 5½" rain & 1½ hours hail

DEPTH OF WATER OVER ROADWAY 3"

Width 100 ft.

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Trash from fields

Amount Moderate

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

30"

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Ditches will need to be cleaned due to silt & debris washing out of farmland.
Road was closed due to Republican River Flooding.
Water remained on road approximately 10 hrs.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Tom Barnes 6614 Hwy. 36 Joes, Colo. 303-358-4279

Recorder (Name) Tom Barnes | (Date) 6-29-89 | **Phone** 303-358-4279

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. U.S. 385 | **Mile Post** 215.60

DOH FORM 293
FEBRUARY 1975

DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME Lone Tree

FLOODING LOCATION Intersection of Lone Tree & Colo 392
80 ft from M.P. 21

DATE OF FLOODING 6-26-82 CAUSE: Rainfall ☒ Snowmelt ☐ Other ____

AMOUNT OF RAINFALL 4 or more inchs ground saturated

DEPTH OF WATER OVER ROADWAY 4 Ft. Width 2,520 ft.

DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other None

Amount ____

STRUCTURE NO. C-18-AZ CULVERT: Size ____ Type ____

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY Roadway

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify South west wing wall slope washed out.

COMMENTS Water flows North to South

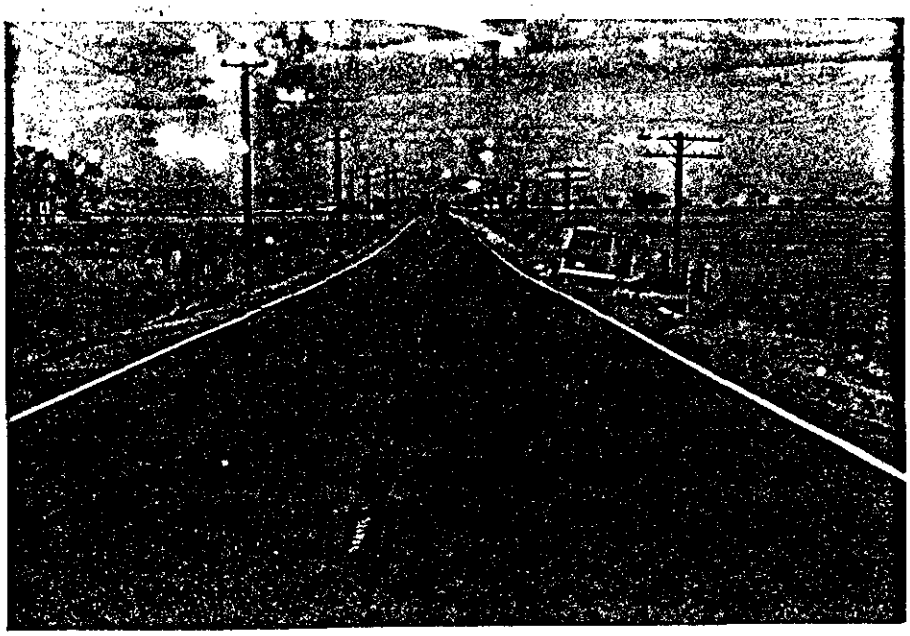
SOURCE OF INFORMATION: Patrol unit 21 personnell

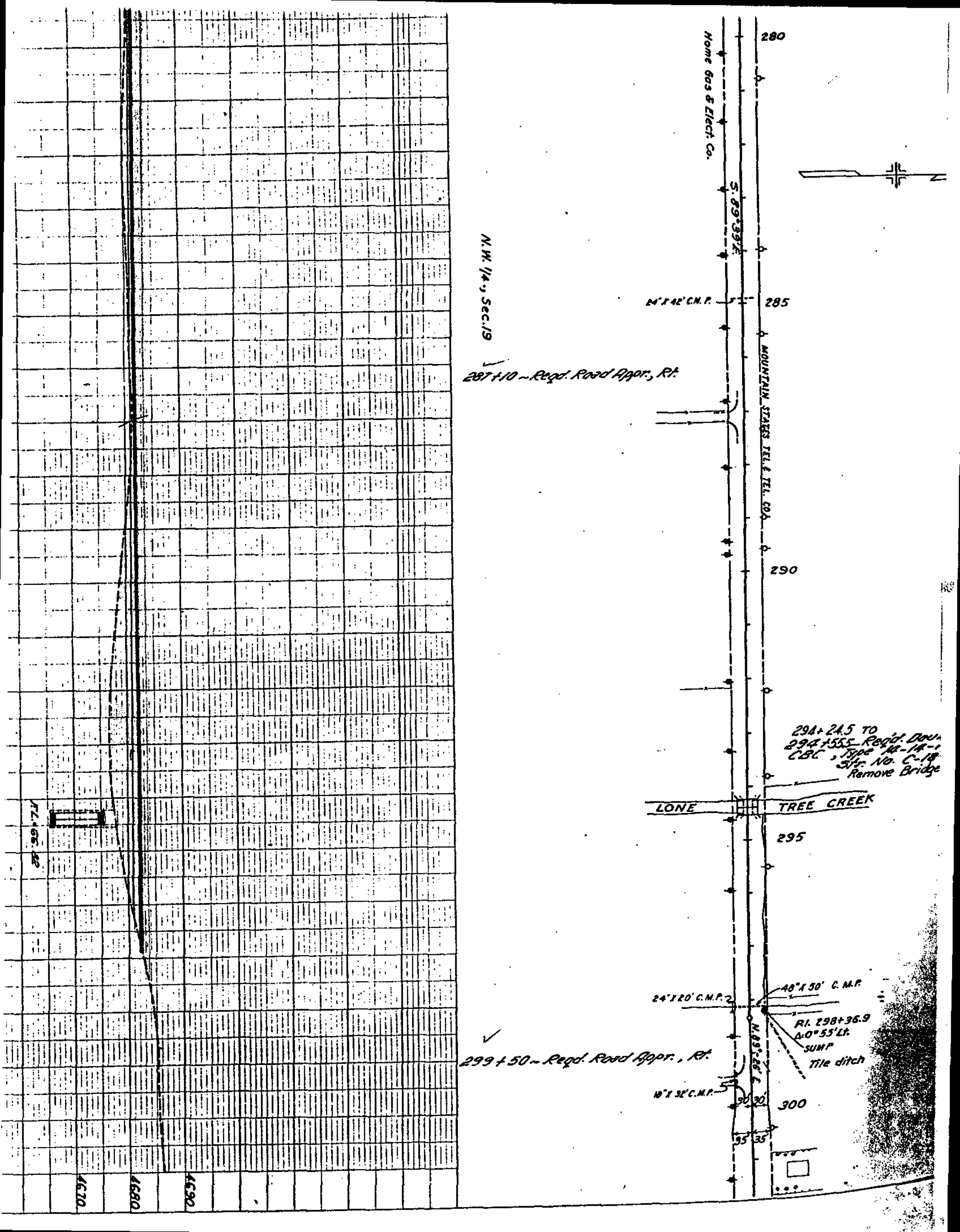
Recorder Tom Templeman M-1 (Name) 6-30-82 (Date) Phone 934-1458

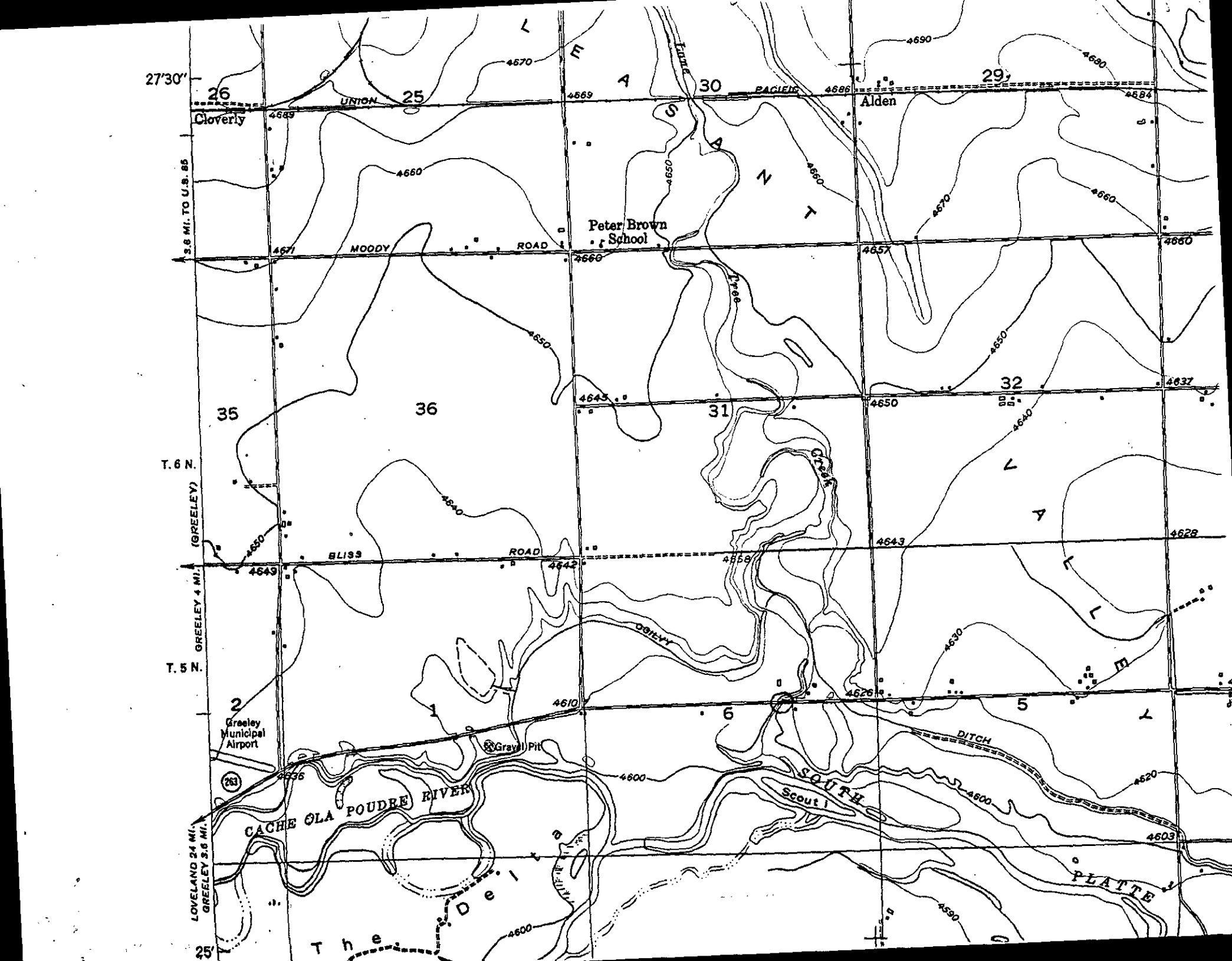
SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver CO 80222

S. H. No. 392 Mile Post 21

See back for Instructions and Additional Comments or Sketch.
Attach any Photos.




280
Home Gas & Elect. Co.
S. 89°39'E.
N.W. 1/4, Sec.19
24" X 42' C.M.P.
285
MOUNTAIN STATES TEL & TEL. CO.
287+10 ~ Reqd. Road Appr., Rt.
290
294+24.5 TO
294+55.5 Reqd. Dou
CBC, Type
Str. No. C-1
Remove Bridge
LONE
TREE CREEK
295
F.L. 4683.2
48" X 50' C.M.P.
24" X 20' C.M.P.
P.I. 298+36.9
Δ 0°55' Lt.
SUMP
Tile ditch
N.89°26'E.
299+50 ~ Reqd. Road Appr., Rt.
18" X 32' C.M.P.
300
30
30
35
35
4670
4680
4690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Cloverly
Alden
UNION
PACIFIC
3.6 MI. TO U.S. 85
MOODY
ROAD
Peter Brown School
Tree
35
36
31
32
T. 6 N.
(GREELEY)
GREELEY 4 MI.
BLISS
ROAD
Creek
T. 5 N.
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Greeley Municipal Airport
Gravel Pit
DITCH
CACHE OLA POUDRE RIVER
SOUTH
Scout
PLATTE
LOVELAND 24 MI.
GREELEY 3.6 MI.
25'
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DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 6-28-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) Hwy Junction #59C & County Road #2 & County Road #2 & Water Flowing East Across #C59 - 250' wide mm=133:60
Yuma & Phillips County Line

STRUCTURE NO.

CULVERT: Size 36" Type Corrugated

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) Deluge of Rain to the West of this Area. Dry Ground

DEPTH OF WATER OVER ROADWAY 6"

Width 250'

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other Large Amount of Rain Coming Down Very Quickly
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☒
If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. C 59 **Mile Post** 133.60

Recorder (Name) Thomas Ramirez | **(Date)** 6/28/89 | **Phone** 774-7203

Use reverse side for any additional comments, sketches, or photographs.

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DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING 6-29-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Hwy 71-D MM-170.00

STRUCTURE NO. None

CULVERT: Size — Type —

STREAM NAME —

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 1½ in - 15 min time

DEPTH OF WATER OVER ROADWAY 3 in

Width 12 FT One Lane

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other None

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

No Structure

DAMAGE OR SCOUR: Yes ☑ No ☐

If yes, specify (Describe extent of damage and needed repair.)

Some Shoulder WASHING in Spots

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

No Traffic Delays. Hard Rain Water Run Down out of Pasture & Fields. Filled Ditch Causeing Water to Run on Road

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Chester McCoy Jr. Sr. Highway Maintenance Worker

Recorder (Name) Chester McCoy Jr. | (Date) 6-30-89 | **Phone** 842-2852

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. 71-D | Mile Post 170.00

DOH FORM 293
FEBRUARY 1975

Copy to Staff Design

S.W 7-5-89

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DRAINAGE STRUCTURE FLOOD SUMMARY

JUL 1989 MTCE SECTION 4

STREAM NAME N/A

FLOODING LOCATION CO. 194 MP 17 - MP 18

DATE OF FLOODING 6-29-89 CAUSE: Rainfall ☒ Snowmelt ☐ Other ____

AMOUNT OF RAINFALL ____

DEPTH OF WATER OVER ROADWAY 4" Width 1360'

DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other ____

Amount ____

STRUCTURE NO. ____ CULVERT: Size 24" Type CORRUGATED

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY COUNTY RD 8 EASTWARD

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify ____

COMMENTS ____

SOURCE OF INFORMATION: ____

Recorder W.R LEWIS (Name) ____ (Date) Phone 456-2906

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver CO 80222

Mile Post 17-18

S. H. No. 194

See back for Instructions and Additional Comments or Sketch.
Attach any Photos.

6

DOH FORM 293
FEBRUARY 1975

J.W 7-26-89

JUL 1989
MTCE SECTION 4

DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME _____

FLOODING LOCATION M.M. 26.50

DATE OF FLOODING 7-14-89 CAUSE: Rainfall ☑ Snowmelt ☐ Other Hail

AMOUNT OF RAINFALL Unknown

DEPTH OF WATER OVER ROADWAY 1' Width 40'

DEBRIS: Trees ☑ Brush ☑ Rocks ☐ Silt ☑ Other Washed in weeds

Amount _____

STRUCTURE NO. _____ CULVERT: Size 2-24" Type Steel

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY M.M. 26.5

DAMAGE OR SCOUR: Yes ☑ No ☐

If yes, specify Damage To Shoulder

COMMENTS _____

SOURCE OF INFORMATION: _____

Recorder Bruch (Name) 7-14-89 (Date) Phone 262-3107

Dept 20 — SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver CO 80222

S. H. No. 86B Mile Post 26.5

See back for Instructions and Additional Comments or Sketch.
Attach any Photos.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 7-15-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) CR. 59 + Colo 392 M.M 25.5
10 miles East of U.S. 85 Intr.

STRUCTURE NO.

CULVERT: Size 24" Type CMP

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 1 3/10" in 15 min. Extremly dry

DEPTH OF WATER OVER ROADWAY 6"

Width 10'

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☑ Other Corn Stocks
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
5' above top of culvert

DAMAGE OR SCOUR: Yes ☐ No ☒
If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
High water at location for appox. 4 hrs.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area) Bob Broyles - 834-1265

S.H. No. 392 | Mile Post 25.5

Recorder (Name) Bob Broyles Sen. Hwy. Mtce Wrkr | (Date) 7-18-89 | **Phone** 834-1458

Use reverse side for any additional comments, sketches, or photographs.

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STATE OF COLORADO
DIVISION OF HIGHWAYS
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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 23, 1984

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)
STATE Highway 141A AT Mile Post 3

STRUCTURE NO. —

CULVERT: Size 24" Type METAL

STREAM NAME
NONE

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)
Very Dry - NO MOISTURE IN ground. AMOUNT of RAIN UNKNOWN

DEPTH OF WATER OVER ROADWAY
1 FOOT ?

Width
30 feet

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Mud from BEAN Field
Amount TO EAST OF Road.

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
5 feet

DAMAGE OR SCOUR: Yes ☐ No ☒
If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
NO KNOWN TRAFFIC DELAY —
ADD LARGER CULVERT - OR PUT BEAN field IN GRASS TO KEEP from washing. ELEVATE ROAD WILL FILL MATERIAL

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
Discovered by JOHN Gooden while Checking ROAD
Dove Creek Highway Shop 677-2612

S.H. No. 141A Mile Post 3

Recorder (Name) John Gooden (Date) July 24 1984 **Phone** 677-2612

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING 7-24-89

NOTED AUG 10 '89 J.E.S.

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

US 40 MP 11.20 - 13.00 EAST OF Blue mountain Colo

STRUCTURE NO.

CULVERT: Size Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

DRY CONDITIONS - 6IN RAINFALL (ESTIMATE)

DEPTH OF WATER OVER ROADWAY N. Side

6 INCHES OVER ONE APPROACH

Width 25 FT

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☑ Rocks ☐ Silt ☑ Other Weeds

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

3 FT

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

these culverts in this area are from 18" to 48 in they were carrying the max amount of water than this or more debris they couldn't have handled it.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

MIKE PAGE Blue mtn Colo

Recorder (Name) Larry J Kent **(Date)** 8-1-89 **Phone** 303 374-2384

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. 40 Mile Post 11.20 TO 12.60

Flash flood
Mon July 24 - 1989

This letter is in regard to a flash flood in the area of Blue Mountain Cabo US40 mp 11.20 to mp 12.60, from information Gathered at Blue Mtn from a resident it happened on July 24 1989 around 3:30 or 4:00 pm. Mines Damage to fence and Barrow pit area on North side of highway, Water Was running approx 3 Ft Deep in Barrow pit never did overflow onto Hwy But did cover one approach in the North side West Bound Barrow pit with approx 6 in Water over the top of it, this approach had an 18 in Culvert 30 FT long through it which is open, all other culverts in this area seem to have did their jobs.

We Did have one Washout around apron on 42 in Culvert 100 FT long on the Down side South side of Hwy mp 12.6(I am in the progress of filling this Washout (Shoulder area).

Jamy J Kent Sr Hwy mtce Skull Creek 3060

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 25 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)
STATE Highway 14A AT Mile Post 3

STRUCTURE NO.

CULVERT: Size 24" Type Metal

STREAM NAME
None

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) UNKNOWN Dry before rain storm

DEPTH OF WATER OVER ROADWAY
UNKNOWN

Width 300 feet

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Mud from fields to East
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
5 Feet

DAMAGE OR SCOUR: Yes ☐ No ☒
If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
fill in Roadway for 600 feet to elevate Road Surface or put in Larger Culverts

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
John Gooden
Dove Creek Highway Shop.

S.H. No. 14A Mile Post 3

Recorder (Name) John Gooden (Date) 7-26-89 **Phone** 677-2612

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 25, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)
14/A at mile post 2.3

STRUCTURE NO.

CULVERT: Size None Type

STREAM NAME
None

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) Unknown Dry before rain

DEPTH OF WATER OVER ROADWAY Unknown

Width 600 feet

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Mud from fields to East of Road.
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
3 feet

DAMAGE OR SCOUR: Yes ☐ No ☒
If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
Build-up this Section of Road.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
John Gooden 677-2612
Dove Creek Highway Shop

S.H. No. 14/A Mile Post 2.3

Recorder (Name) John Gooden (Date) 7-26-89 **Phone** 677-2612

Use reverse side for any additional comments, sketches, or photographs.

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STATE OF COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 27, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Mile Post 23 to 24 on Highway 14/A

STRUCTURE NO. —

CULVERT: Size 48" Type Steel

STREAM NAME None

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Unknown Dry before Storm

DEPTH OF WATER OVER ROADWAY Unknown

Width At each Culvert for most of Mile

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☒ Rocks ☒ Silt ☒ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify (Describe extent of damage and needed repair.) Washed out part of edge of Road. We will have to put in more rip-Rap and fill Material at both Culvert location

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

This Culvert is to small to handle the water - Should put in a 10 foot CBC - Water has flooded this section 2 time before within past 2 yrs.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

John Gordon 677-2612

S.H. No. | Mile Post

Recorder (Name)	(Date)	Phone
John Gordon	8-3-89	677-2612

Use reverse side for any additional comments, sketches, or photographs.

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STATE OF COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 29, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

34.80 mile Post Spoons Area

STRUCTURE NO.

CULVERT: Size 48" Type Steel Pipe

STREAM NAME Draw That Runs Into Boulder Creek

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 1" Culvert In Fire Area Vegetation destroyed.

DEPTH OF WATER OVER ROADWAY 4"

Width 60'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☒ Brush ☒ Rocks ☒ Silt ☒ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

3 Feet over TOP OF Culvert

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Probable Cause: Fire caused No vegetation

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area) Colo State Patrol

S.H. No. 119A **Mile Post** 34.80

Recorder (Name) [signature] **(Date)** 7-31-89 **Phone** 443-3922

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
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DIVISION OF HIGHWAYS
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other Irrgation Canal Broke. Out of Banks

DATE OF FLOODING 7-29-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) 392 M.M. 21 east of U.S. 85 appox 5.63 miles

STRUCTURE NO. C-18-AZ built 1965 2 Spans

CULVERT: Size 31' x 12' Type CBC

STREAM NAME Lone Tree Creek

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) Groud moisture condition before rain was dry. According to local residence approx. 5 to 7 inches of rain + hail

DEPTH OF WATER OVER ROADWAY

Width

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
2 ft. above the box on the west side of CBC

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location) CLosed rd. for 6 hrs. due to amount + force of water crossing road surface.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
Bob Broyles, Sen Hwy Mtce Wrk, Rt. 1 Box 454 Ault, Colo. 834-1265
Tom Templeman, Hwy Mtce Supv. Box 899 Eaton, Colo 454-2449

S.H. No. 392B | Mile Post 21

Recorder (Name) Bob Broyles Sen. Hwy Mtce Wrk. | (Date) 8-2-89 | **Phone** 834-1458

Use reverse side for any additional comments, sketches, or photographs.

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~~STATE OF~~ COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 7-29-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)
US 40 MP 5.90 TO MP 8.00 TWO miles AND Seven TENTHS EAST OF DINOSAUR Colo.

STRUCTURE NO.

CULVERT: FROM 18" TO 8 FT METAL culverts
Size ALSO 9FT X 11FT CEMENT Type BOX

STREAM NAME TWIN WASH

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)
GROUND DAMP ESTIMATE 6 TO 8 IN RAINFALL IN AREA

DEPTH OF WATER OVER ROADWAY APROX 6 IN

Width 36'

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☒ Brush ☒ Rocks ☐ Silt ☒ Other weeds
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
ANYWHERE FROM 3FT to AS much AS 20 FT

DAMAGE OR SCOUR: Yes ☒ No ☐
If yes, specify (Describe extent of damage and needed repair.)
MINOR DAMAGE TO END OF CULVERT 8 FT AT MP 5.90
DAMAGE TO 4FTx4FT APRON ON South END OF 24 IN CULVERT
MP 6.90 - MINER DAMAGE TO BORROW DITCH AND FENCE

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
6 IN OF WATER OVER HIGHWAY TRAFFIC WAS SLOWED DOWN BUT NOT STALLED, CULVERT AT MP 5.90 CONSIST OF METAL 8FT FROM N side SOUTHWARD APROX 90FT THEN IS 9FT X 11 FT CEMENT BOX THE REST OF WAY ACROSS THIS SEEMS TO CREATE A PROBLEM ON N END LOG JAMS ON ENTRANCE TO METAL 8FT IT DOES NOT HAVE AN APRON ON IT.
ALSO 24 IN CULVERTS CROSSING Hwy Should BE LARGER.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
LARRY L KENT 374-2384 ART PRYOR - 374-2375
Duration of water on Hwy APROX 2 HRS

S.H. No. 40 **Mile Post** 5.90 - 8.00

Recorder (Name) LARRY L KENT | (Date) 8-1-89 | **Phone** 374-2384

Use reverse side for any additional comments, sketches, or photographs.

Jerry J Kent
Hwy Mac
30601

Flash flood SAT
July 29 1989
630 pm

this is additional information on flash flood US 40 mp 5.90 to mp 8.00 this general area has a history of flash floods usually covering from one mile to two miles in length. also usually happens from middle of July to last of august. this particular area mp 5.90 to mp 8.00 5.90 known as twin wash will usually flood every 4 to 6 years But Generally is more confined to Twin Wash's which consist of one 8FT metal culvert approx 90 Ft Long Running into a 9FT High eleven Ft wide Cement Box culvert. 100Ft Lng.
the other wash which is approx one tenth East Approx mp 6.00 is another Cement Box Culvert 9Ft high by 11 Ft wide by 200 Ft long there always seems to be more problems with the one that is Half metal and half Cement.
also culverts Crossing Hwy Approx Seven Of them in this stretch are TWO FT may help if they were larger since they were slow in passing the water I also realize that Debris played a Part in this.

DEPARTMENT OF HIGHWAYS
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other

DATE OF FLOODING 7-29-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) Colo. 392 + Weld C.R. 59, M.M. 25.52, 10.12 miles east of U.S. 85

STRUCTURE NO.

CULVERT: Size 24" Type CMP

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) Ground dry before rainfall, approx. 5-7" of rain in about 2-4 hr. period

DEPTH OF WATER OVER ROADWAY 8"

Width 15'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.) From top of culvert to road surface is 5ft.

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location) Had water problem at same location on 7-15-89.
Land owner requests that a bigger culvert be placed at this location. If bigger tube placed, it may create another problem with the land owner down stream from this location.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
Tom Templeman - Highway mtce. Supervisor.
454-2449
Box 899 - Eaton, Colo. 80615

S.H. No. 392 B

Mile Post 25.52

Recorder (Name) Bob Broyles Sen. Hwy. Mtce. Wrk.

(Date) 8-2-89

Phone 834-1458

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other Lightning

DATE OF FLOODING 7-29-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

I-25 N. & S. under Alameda

STRUCTURE NO.

CULVERT: Size Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Unknown but it was raining real heavy at Times. Most of afternoon & evening

DEPTH OF WATER OVER ROADWAY 6-12" on # I-25 NBS. Deeper in 2-3-4 lanes.

Width Accross 4-lanes

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other Pump were hit by lightning knocking out all 3 pumps.

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☑ No ☐

If yes, specify (Describe extent of damage and needed repair.)

North 72" pump and wiring to controll box damaged
South 12" pump working but drawing High Amps, will work for short Time then Reset would kick out.

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Traffic Delay 1-lane open North & South
lightning hits pump area frequently

Lightning Rod – Possible?

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Harvey Lovato - 571-0657
Ken Ulin - 571-0657
Tom Colfelt - 571-0657
Kent Knight - 424-2664
John Windfree - 424-2664

S.H. No. I-25 Mile Post 207.47

Recorder (Name) Harvey Lovato (Date) 7-29-89 **Phone** 571-0656

Use reverse side for any additional comments, sketches, or photographs.

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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other unknown

DATE OF FLOODING 7-28-89 8⁰⁰ PM

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Alameda Pump house at I-25 and Alameda.

STRUCTURE NO.

CULVERT: Size Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

DEPTH OF WATER OVER ROADWAY

Width

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☐

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Traffic Delay 2 Lanes closed each direction
on going problem Reset Breakers working on Floats
automatically at 10⁰⁰ PM

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Charlie Cunningham
John wind free
Bill Hibbard

S.H. No. I-25 **Mile Post** 207.97

Recorder (Name) Charles M Cunningham **(Date)** 7-28-89 **Phone** 757-9574

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
DOH Form No. 293
Rev. June, 1983

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other unknown

DATE OF FLOODING 7-28-89 4⁰⁰ PM

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Alameda Pump house at I-25 and Alameda

STRUCTURE NO.

CULVERT: Size Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

Sprinkling & lightning

DEPTH OF WATER OVER ROADWAY

Width

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other unknown

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Charlie and myself (Harvey) opened control pushed Reset and pumps were started up everything look & seemed Normal.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. I-25

Mile Post 202.97

Recorder (Name)	(Date)	**Phone**
Harvey Lovato	7-28-89	571-6656

Use reverse side for any additional comments, sketches, or photographs.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 28, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

34.80 mile Post Spoons Area

STRUCTURE NO.

CULVERT: Size 48" Type Steal Pipe

STREAM NAME Draw That Runs Into Boulder Creek

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

2" Culvert In Fire area Vegatation destroyed by Fire

DEPTH OF WATER OVER ROADWAY 12"

Width 60'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☒ Brush ☒ Rocks ☒ Silt ☒ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

3 Foot over Top of culver

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location) Cause of Culvert plugging appears to be because of Lack of Vegetation From Burn area from Forest Fire Early In July 89. Nothing To stop erosion of Soil, Loose Burnt Debris washing down draw

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area) Sugarloaf Fire Dept Boulder Co. Sheriff Dept. Dan Schaul Colo Dept of Hwys. Maint. WKR. B.

S.H. No. 119 P **Mile Post** 34.80

Recorder (Name)	(Date)	Phone
Darlene Jy SH maint WKR	7-31-89	443-3922

Use reverse side for any additional comments, sketches, or photographs.

50

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☑ Snowmelt ☐ Other DITCH BURST

DATE OF FLOODING JULY 30 - 31 - 89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

HIGHWAY 37 MM 3.50 - 3.60

STRUCTURE NO.

CULVERT: Size 4 - 24" 1 - 36" Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

4 - 5 INCHES

DEPTH OF WATER OVER ROADWAY ABOUT A FOOT

Width 24' FOOT WIDE

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☑ Rocks ☐ Silt ☑ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☐ No ☑

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

TRAFFIC HAD TO BE STOPPED FOR ... TO ... THERE WAS NO DAMAGE HAD TO BE FIXED FOR 24 HOURS

THE RAIN WAS PART OF ... BUT THE MAIN ... NUMBER 2 DITCH BURST AND ...

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. 37

Mile Post 3.50

Recorder (Name)	(Date)	Phone
FRED ROSSMAN	AUG 8 89	353 4848-47

m3- **Use reverse side for any additional comments, sketches, or photographs.**

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STATE OF COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING July 30 31, 89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)
HIGHWAY 263 MM 3.25

STRUCTURE NO.

CULVERT: Size Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)
1.5 inches GROUND WAS DRY

DEPTH OF WATER OVER ROADWAY

Width

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

DAMAGE OR SCOUR: Yes ☒ No ☐
If yes, specify (Describe extent of damage and needed repair.) BANK WAS WASHED AWAY UNDER MINED ROAD WAY TOOK FIVE TAN Dump ~10yd³ ea LOADS OF PIT RUN 1 LOAD OF ROAD BASE AND A TON OF MIX

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
HAD TO BE FLAGED until it WAS FIXED AND PATCHED

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. 263 Mile Post 3.25

Recorder (Name)	(Date)	Phone
FRED POSSMAN	8, 8, 89	353 4847

m3- Use reverse side for any additional comments, sketches, or photographs.

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STATE OF COLORADO
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 7-30-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) MM- 144:80 C-59 South of HAXTUN, Colo.

STRUCTURE NO. B-26-G

CULVERT: Size 6 tubes 36" Type Galvanized

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 4" in about 2 Hrs. Dry

DEPTH OF WATER OVER ROADWAY 4"

Width 450' Wide

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Straw

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

5' ○ Top of Highway to bottom of Tubes

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

5 Hrs. Across Highway

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Dennis Born Holt 774-7435

Tom Ramirez 774-6512

S.H. No. C-59 **Mile Post** 144.80

Recorder (Name) Tom Ramirez | (Date) 7/30/89 | **Phone** 774-6512

Use reverse side for any additional comments, sketches, or photographs.

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STATE OF COLORADO
DIVISION OF HIGHWAYS
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SEND TO: STAFF DESIGN
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 7-30-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)
CS9 South of [illegible] mm 143.60

STRUCTURE NO. NONE

CULVERT: Size NONE Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)
4" in about 2 Hrs. Dry Soil

DEPTH OF WATER OVER ROADWAY 3" to 4" deep

Width 320' wide

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☑ Other Silt
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
about 2'

DAMAGE OR SCOUR: Yes ☐ No ☒
If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)
Thru Recon Survey

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)
[illegible] - Dennis Turnbeat
2 [illegible] - 2 yrs.
[illegible] 774-7435

S.H. No. C-50 **Mile Post** [illegible]

Recorder (Name) Tom Kenney **(Date)** 7/30/89 **Phone** 324-6522

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DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ■ Snowmelt ☐ Other

DATE OF FLOODING July 30, 31 89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) INTERSECTION OF HIGHWAY 37 AM 382

STRUCTURE NO.

CULVERT: Size Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)
4-5 INCHES

DEPTH OF WATER OVER ROADWAY

Width

DEBRIS: (Indicate the debris that affected the structure's capacity.)
Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____
Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)
15' TO 20 FEET DEEP

DAMAGE OR SCOUR: Yes ■ No ☐
If yes, specify (Describe extent of damage and needed repair.) JUST ABOUT WASHED OUT ROADWAY HAD TO HAUL LOT OF RIP RAP TO SECURE ROAD FROM WASHING 15 inch x 5yd

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

S.H. No. 37 Mile Post 6.97

Recorder (Name)	(Date)	Phone
FRED ROSSMAN	8-8 89	353 4847

m3.

Use reverse side for any additional comments, sketches, or photographs.

8.

DOH FORM 293
FEBRUARY 1975

DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME —

FLOODING LOCATION CO 194 MP 17/18

DATE OF FLOODING 7-31-89 CAUSE: Rainfall ☒ Snowmelt ☐ Other ~~FR~~

AMOUNT OF RAINFALL 2¼ INCHS

DEPTH OF WATER OVER ROADWAY 6-8 IN. Width 400 YDS

DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other NONE

Amount —

STRUCTURE NO. — CULVERT: Size _____ Type _____

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY 2½ MILES W. OF OVERPASS (US. 50) AND 194

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify _____

COMMENTS WATER CROSS'S ROAD EACH TIME THEIR IS A HEAVY RAIN. ~~HEAVY~~ IRRIGATION WATER NORMALLY INVOLVED

SOURCE OF INFORMATION: _____

Recorder W.R. LEWIS (Name) _____ (Date) Phone 456-2906

SEND TO: STAFF DESIGN
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Denver CO 80222

Copy to

S. H. No. 194 Mile Post 17-18

See back for Instructions and Additional Comments or Sketch.
Attach any Photos.

DOH FORM 293
FEBRUARY 1975

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DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME Indian Creek

FLOODING LOCATION US Hw 666 MP 00.5-0.7. ½ mile North of New Mexico State Line

DATE OF FLOODING 8/1/89 CAUSE: Rainfall ☒ Snowmelt ☐ Other ____

AMOUNT OF RAINFALL unknown dry conditions prior

DEPTH OF WATER OVER ROADWAY 6" Width 400'

DEBRIS: Trees ☐ Brush ☒ Rocks ☐ Silt ☒ Other ____

Amount 3-5 yard

STRUCTURE NO. P02B 3 CSG 2' 34" CULVERT: Size ____ Type ____

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY 6" over roadway for 400' were covered with mud + debris

DAMAGE OR SCOUR: Yes ☒ No ☐

If yes, specify Large amount of silt washed into borrow pit area and covered and tore out about 700' ROW fence

COMMENTS will do fence Repair as soon as dry enough to get in. Will check where water came out of channel

SOURCE OF INFORMATION: State Patrol dispatch called morning after, No major traffic delays

Recorder Charles L. Kennedy (Name) 8-2-89 (Date) Phone 565 9557

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Denver CO 80222

S. H. No. 666 Mile Post 0.5

See back for Instructions and Additional Comments or Sketch.
Attach any Photos.

Keep Copy for file

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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 8-6-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.) ~3/4 m. W J t [illegible] Cheyenne Wells

40 Highway Minute Stop

STRUCTURE NO. N/A

CULVERT: Size N/A Type

STREAM NAME N/A

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 1 8/10 inches

DEPTH OF WATER OVER ROADWAY 4 inchs

Width 200'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ N/A Rocks ☐ Silt ☐ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

N/A

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

This needs culvert to cross the road to carry water to south ditch. [illegible] start w/ senior supvr.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Barry Lemley

Recorder (Name)	(Date)	Phone
Barry Lemley	8-7-89	(719) 767-5562

Use reverse side for any additional comments, sketches, or photographs.

S.H. No.	Mile Post
40 E	469.50

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
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4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 8-6-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

40 1/2 mile east of Jct 385

STRUCTURE NO.

CULVERT: Size 18" Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

1 8/10 inches

DEPTH OF WATER OVER ROADWAY 2-4

Width 360'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ N/A Rocks ☐ Silt ☐ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

43"

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

Too much water at once culvert couldn't handle it.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Barry Lemley

Recorder (Name)	(Date)	Phone
Barry Lemley	8-7-89	767-5562

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. 40 | Mile Post 47.1 - 30

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DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING 8-6-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

40 Just west of Cemetary road

STRUCTURE NO.

CULVERT: Size 24" Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

1 inch 8 tenths

DEPTH OF WATER OVER ROADWAY 4-6 inches

Width 240'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

None

Trees ☐ Brush ☐ Rocks ☐ Silt ☐ Other _____

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

66"

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

This culvert could not handle the amount of rain fall

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Barry Lemley

Recorder (Name)	(Date)	Phone
Barry Lemley	8-7-89	767-5562

Use reverse side for any additional comments, sketches, or photographs.

S.H. No. 40 Mile Post 469.75

DOH FORM 293
FEBRUARY 1975

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DRAINAGE STRUCTURE FLOOD SUMMARY

-1 STREAM NAME _____

-2 FLOODING LOCATION Highway 61A Mile Marker 20.9

-3 DATE OF FLOODING 8-15-89 -4 CAUSE: Rainfall ☒ Snowmelt ☐ Other _____

-5 AMOUNT OF RAINFALL .8 of one inch

-6 DEPTH OF WATER OVER ROADWAY 4" -7 Width 24'

-8 DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☒ 9 Other _____

-10 Amount From 1" Tapering To 6" on Shoulder

-11 STRUCTURE NO. _____ -12 CULVERT: Size 24" Type Steel

-13 HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY 4" of mud & water over roadway

-14 DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify _____

-15 COMMENTS Can not maintain proper drainage because farmer has encroached on our right way

-16 SOURCE OF INFORMATION: _____

-18 Recorder Glen W. Gibson (Name) 8-16-89 (Date) Phone 345-6568

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HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver CO 80222

-17 S. H. No. 61A Mile Post 20.9

-19 USE *back for Instructions and Additional Comments or Sketch. Attach any Photos.*

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
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Rev. June, 1983

Send on to HQ Asstyd. section D Fleming

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING AUGUST 20, 1989

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

HWY 50B - MP. 92.5 TO MP. 92.8 - NORTH OF MP. 92.

STRUCTURE NO.

CULVERT: Size 18" Type

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.) 4"

DEPTH OF WATER OVER ROADWAY 2" to 3"

Width 200 FT.

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other WEEDS

Amount 2"

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

2 FT. FROM TOP OF CULVERT to ROADWAY SURFACE.

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

NEED to CLEAN AND SHAPE DITCHES ON BOTH SIDES OF HIGHWAY to HELP WATER DRAIN DOWN DITCH LINE INSTEAD OF OVER ROADWAY.

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area) PAINT CREW WAS PAINTING SHOULDER LINE AND ASKED ME TO TAKE a SNOWPLOW AND PLOW OFF DEBRIS - WEEDS ETC.

S.H. No. 50B **Mile Post** 92.5

Recorder (Name) T.

(Date)

Phone

Use reverse side for any additional comments, sketches, or photographs.

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STATE OF COLORADO
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Denver, CO 80222

DRAINAGE STRUCTURE FLOOD SUMMARY

CAUSE: Rainfall ☒ Snowmelt ☐ Other

DATE OF FLOODING Aug 27-89

FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)

Colo 59 Hwy Milepost 139.80

STRUCTURE NO. B-26-F

CULVERT: Size 3X3' 16" Type Galvanized

STREAM NAME

AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)

2½ hr.

DEPTH OF WATER OVER ROADWAY 3"

Width 500'

DEBRIS: (Indicate the debris that affected the structure's capacity.)

Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other Straw

Amount

WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such as the bottom of a bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)

4 ft Top of Highway To Bottom of Culvert

DAMAGE OR SCOUR: Yes ☐ No ☒

If yes, specify (Describe extent of damage and needed repair.)

COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Suggestions for improving design to alleviate problem. Also, list any other undocumented flood history at this location)

3 Hrs. Across Highway

SOURCE OF INFORMATION: (Give name of person(s) observing the highwater or damage. List address and phone number so he may be contacted for additional information. Include years familiar with area)

Dennis Bornhoft 774-1435

S.H. No.	Mile Post

Recorder (Name)	(Date)	Phone
Dennis Bornhoft	8-28-89	774-1435

Use reverse side for any additional comments, sketches, or photographs.

DOH FORM 293
FEBRUARY 1975

DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME Lubers Drainage Ditch

FLOODING LOCATION 417.80 US 50

DATE OF FLOODING 9-10 89 CAUSE: Rainfall ☒ Snowmelt ☐ Other Hail

AMOUNT OF RAINFALL 2 ½

DEPTH OF WATER OVER ROADWAY 1 foot Width 40 ft

DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt ☒ Other

Amount

STRUCTURE NO. L 25 a L = 18' CULVERT: Size Type 1 CS

HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY

DAMAGE OR SCOUR: Yes ☐ No ☐

If yes, specify

COMMENTS This Bridge has silt to bottom of stringers and as far I know never been Inspected in 20 years

SOURCE OF INFORMATION:

Recorder George Patrick (Name) 9-18-89 (Date) Phone 456-2906

SEND TO: STAFF DESIGN
HYDRAULICS UNIT
4201 East Arkansas Avenue
Denver CO 80222

S. H. No. 50 Mile Post 417.80

See back for Instructions and Additional Comments or Sketch.
Attach any Photos.

cc Bridge Inspection (Walt M.) 9-27-89

9-09-89
or
9-10-89

SH 119 MP A33 to A40 Boulder Canyon

Mud slide over road

Area where slope was denuded by fire

Colorado Water Conservation Board
Flood Control and Floodplain Management Section

FLOODS IN COLORADO DURING 1989

compiled by

William P. Stanton, P.E.

Between 20 and 30 floods occur somewhere in Colorado every year. On the average, floods in Colorado result in damages of $14.7 million per year. The 1989 flood season included a wide variety of types of floods. Furthermore, most floods in 1989 happened on a weekend or a holiday thus continuing the unusual historical trend.

Two ice jams formed on the plains early in the year. Rapidly melting snow in March made a mess of some towns without adequate drainage systems. A few irrigation structures failed causing floods. Artificial barriers for railroad embankments, highways, and ditches channeled storm water runoff into populated areas. A most unusual flood sprang up in Rico when an old mine filled with water.

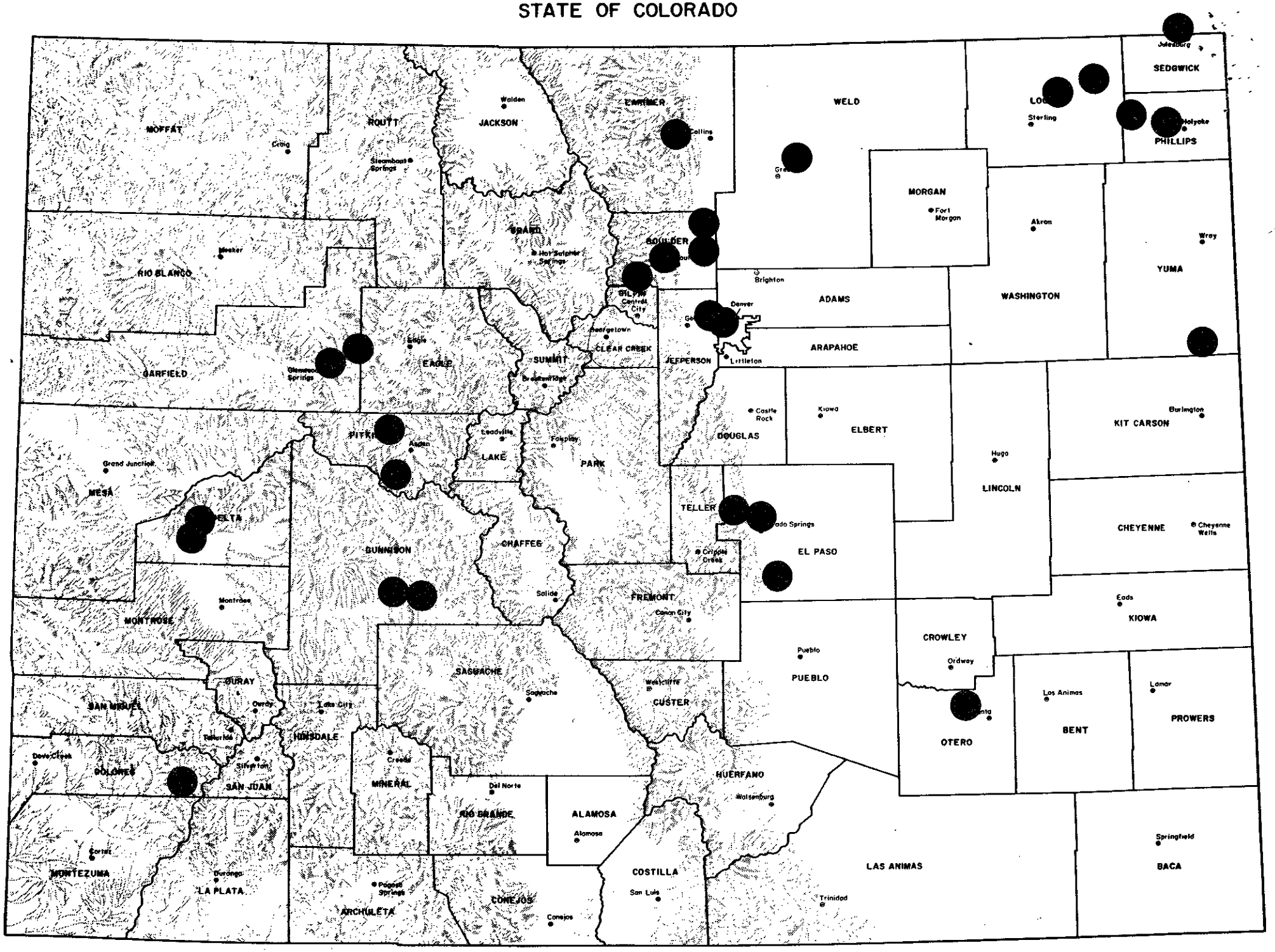
The 1989 thunderstorm season began in ernest on June 3 in the Denver metro area. Floods made no distinction between rich or poor as residents were evacuated from mobile home parks and exclusive residential neighborhoods. On June 24, 1989, parts of northeast Colorado were hit by heavy rain and baseball sized hail.

The last weekend in July was the state's busiest time for floods. A major storm system extended across the middle of the state. A couple of unhappy campers at Maroon Lake Campground were surprised by a mudflow which wiped out their campsite. Over 8 inches of rain fell in less than 18 hours in an area northeast of Greeley. Perhaps the most damaging flood occured on July 30 at a town called Paoli where people and FEMA believed floods could not happen. Logan county suffered approximately $578,000 in flood related damages. The next day, truckers driving east of Gunnison were hit broadside by a 4 foot wall of water and knocked off the road.

The failure of a small beaver dam in August made officials issue a flash flood warning for Manitou Springs. Although people were evacuated, the flood was insignificant by the time it reached the city. Heavy rain over the burned forest on Sugar Loaf Mountain near Boulder showed the importance of vegetation in flood hydrology.

The CWCB has compiled a chronology of floods in Colorado during 1989. Any person desiring more details or who has additional information to contribute should contact the CWCB.

STATE OF COLORADO



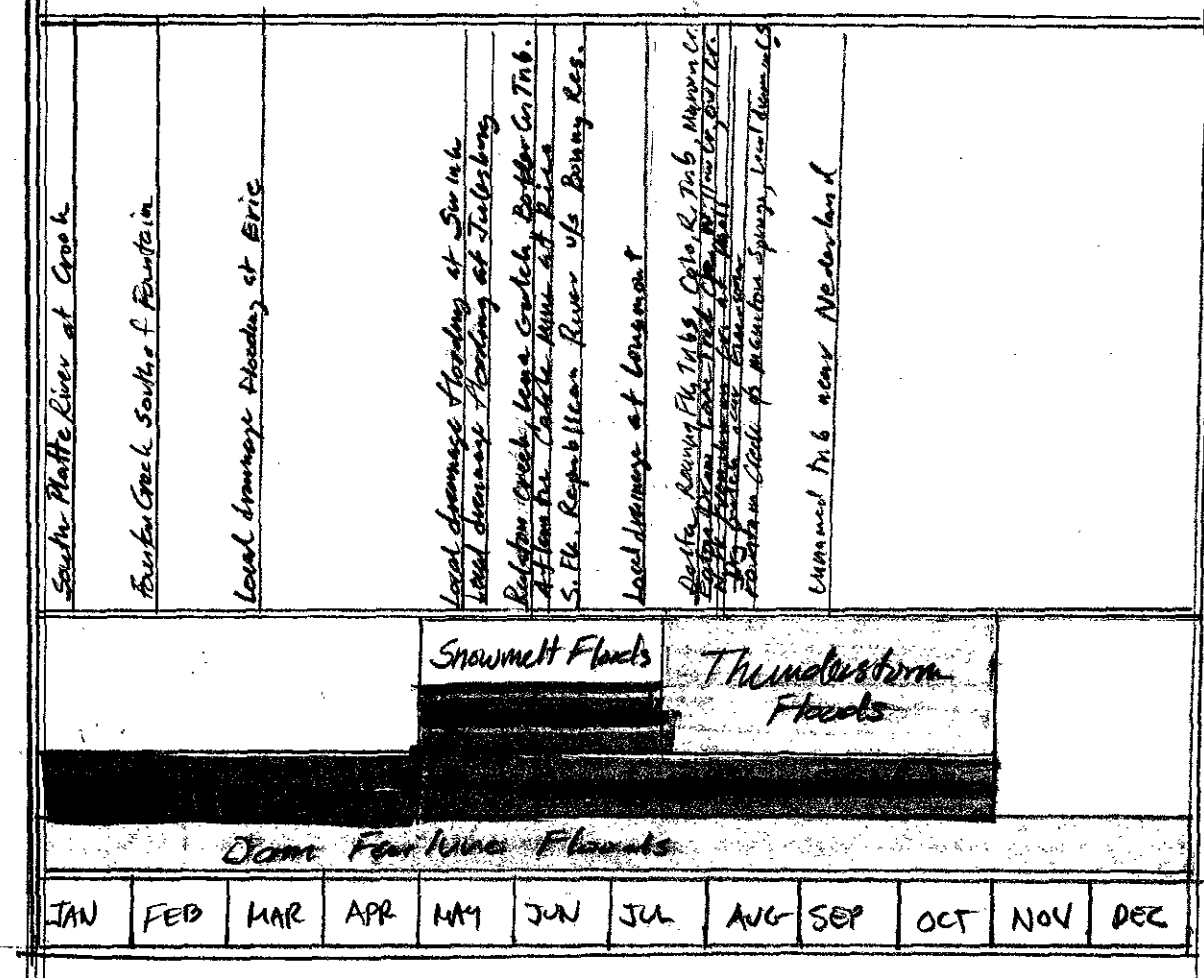
● FLOODS IN 1989

Drawn by Robert P Martinez

CHRONOLOGY OF FLOODS IN COLORADO DURING 1989

January 9, 1989	South Platte River near Crook
February 10, 1089	Fountain Creek South of Fountain
March 22, 1989	Local drainage flooding at Erie
May 14, 1989	Local drainage flooding at Swink
May 23, 1989	Local drainage flooding at Julesburg
May 25-June 7, 1989	Atlantic Cable Mine Flooding at Rico
June 3, 1989	Ralston Creek at Arvada Unnamed Tributary to Boulder Creek near Boulder Lena Gulch above Maplewood Reservoir in Jefferson County Local drainage flooding at Longmont
June 24, 1989	Simpsons Draw north of Proctor Skinner Draw north of Proctor South Fork Republican River upstream of Bonny Reservoir near Idalia
July 29, 1989	Buckhorn Creek north of Masonville Dry Gulch north of Delta Doughspoon Creek near Delta Negro Creek north of Delta Unnamed Gullies tributary to the Roaring Fork River at Phillips Curves west of Aspen Unnamed Tributary to the Colorado River in Glenwood Canyon Unnamed Tributary to Maroon Creek at Maroon Lake Campground
July 29-30, 1989	Eaton Draw downstream of Eaton Lone Tree Creek downstream of Silo Willow Creek downstream of Galeton Owl Creek near Gill Unnamed Tributary to Crow Creek near Barnesville
July 30, 1989	Local drainage flooding at Haxtun North Fork Frenchman Creek at Paoli
July 30-31, 1989	North Fork Frenchman Creek in Logan County
July 31, 1989	Dry Gulch west of Gunnison Local drainage flooding at Gunnison
August 12, 1989	Fountain Creek above Manitou Springs Pine Creek and tributaries at Colorado Springs
September 7, 1989	Unnamed tributary to Boulder Creek near Nederland

FLOODS IN COLORADO DURING 1989



Colorado Water Conservation Board
Flood Control and Floodplain Management Section

SUMMARY OF FLOODS IN COLORADO DURING 1989

compiled by

William P. Stanton

January 9, 1989 **South Platte River near Crook**

A severe cold spell lasting about eight days in early January caused the South Platte River to freeze over. Diversion ditches froze completely. With these systems completely frozen, irrigation companies closed their headgates. The sudden increase in river flow resulted in a breakup of the channel ice. A large ice dam formed at Red Lion Road about 6 miles east of Crook. With the continued cold weather, the ice jam grew extending upstream about 13 miles to the vicinity of Proctor. Farmers said the area of inundation in their fields at some places exceeded the flood of 1965. Warmer weather in the third week of January melted the channel ice and ended the problem.

Source: Larry Lang, CWCB

February 10, 1089 **Fountain Creek South of Fountain**

An ice jam developed slowly but lasted several weeks about 6 miles south of Fountain. Water flowed around the jam and across cropland and pastures. Sheetflow returning overland to the river washed out an irrigation ditch headgate causing about $10,000 in damages.

Source: Dan Bunting, El Paso County

March 22, 1989 **Local drainage flooding at Erie**

Heavy snow followed by warm weather caused rapid melting and ponding over dirt and gravel streets in town.

Sources: Scott Hahn, Town Manager
Climatological Data, Colorado,
Monthly Summaries for March & April

May 14, 1989 **Local drainage flooding at Swink**

About 1 1/2 inches of rain fell southwest of town. An old clay tile irrigation ditch passing through town overflowed. Water flooded the streets and deposited mud. The town applied for and received an energy impact grant to repair the ditch.

Source: Rick Dell, Public Works Director

May 23, 1989 **Local drainage flooding at Julesburg**

The artificial barriers of the Union Pacific railroad and U.S. Highway 385 routed stormwater runoff from the fields north of town into Julesburg. Flooding occurred at a local car dealer and caused $40,000 in damages to railroad crossing switching equipment.

Source: Muriel Nelson, Town Clerk

May 25-June 7, 1989 **Atlantic Cable Mine Flooding at Rico**

Snowmelt runoff from Silver Creek, a tributary to the Dolores River, entered a collapsed mine shaft. A series of tunnels under the town of Rico connected to the shaft caused excessive ground water pressure. Open seepage threatened four homes.

Source: Preliminary Technical Evaluation of Flooding Problems, Rico, Colorado, Colorado Geological Survey, June 9, 1989

June 3, 1989 **Ralston Creek at Arvada**

About 3 inches of rain fell in less than two hours. The resultant flood caused damage to the Valley Mobile Manor parking lot near the mouth of Ralston Creek at west 56th Avenue and Sheridan Boulevard. Authorities evacuated about 75 people from Valley Manor.

Sources: Patrick Dougherty, Civil Engineer
The Denver Post, 6/4/89, p.1B, 2B
Rocky Mountain News, 6/4/89, p. 12, 13
Kevin Stewart, UD&FCD

June 3, 1989 **Unnamed Tributary to Boulder Creek near Boulder**

The city closed Lookout Road from 63rd Street to 95th Street and 95th Street form Valmont Drive to Lookout Road due to flooding. The golf course looked like a lake, and about 20 homes at Gunbarrell Estates had basement flooding. Vehicles stalled and three cars became stuck in a ditch at Idylwild Road and Roaring Fork Trail.

Sources: The Denver Post, 6/4/89, p. 2B
Longmont Times Call, 6/4/89, p. 1A, 3A

June 3, 1989

Lena Gulch above Maplewood Reservoir in Jefferson County

Due to afternoon thunderstorms, about 150 residents of Pleasant View Mobile Home Park at Indiana Street and Old Golden Road were evacuated from their homes between 3:45 pm and 7:00 pm.

Sources: The Denver Post, 6/4/89, p.1B, 2B
Rocky Mountain News, 6/4/89, p. 12, 13
Channel 2 TV

June 3, 1989

Local drainage flooding at Longmont

An intense thunderstorm passing through town caused an already full regional detention pond northwest of town to overflow. Surface flow from the pond combined with street flows caused an old and undersized storm drainage system to be become surcharged. The pressure was enough to collapse some lines resulting in increased surface flow, street overtopping, and subsidence problems.

Sources: Scott Munns, City Engineer
Longmont Times Call, 6/4/89, p. 1A, 3A

June 24, 1989

Simpsons Draw north of Proctor
Skinner Draw north of Proctor

Between 4 and 6 inches of rain fell in the South Platte River valley east of Lewis Creek. Stormwater runoff collected against the Harmony Ditch. Approximately 200 acres of pasture and fields northeast of Proctor were flooded.

Source: Elton Watson, Water Commissioner

June 24, 1989

South Fork Republican River upstream of Bonny Reservoir near Idalia

Heavy rain and baseball sized hail at Idalia caused flooding that washed out a bridge on U.S. Highway 385. The washout closed the road between Burlington and Idalia about 5:40 pm. Four cars were caught in the flooded area.

Sources: Rocky Mountain News, 6/25/89, p.23, Sterling Journal-Advocate, 6/26/89, p.1 Channel 2 TV

July 29, 1989

Buckhorn Creek north of Masonville

Part of Buckhorn Road washed out about 13 miles above Masonville.

Source: Longmont Times Call, 7/30/89, p. 6A

July 29, 1989

Dry Gulch north of Delta

A series of thunderstorms passed north of Delta across the south flank of Grand Mesa. Runoff carried mud and debris by the trap club and onto the nine hole Delta golf course. Holes 2 and 3 were out of service for the rest of the season.

Source: Robert Watson, County Comissioner

July 29, 1989

Doughspoon Creek north of Delta
Negro Creek north of Delta

A county bridge or culvert in the "dobies" washed out completely on Negro Creek closing the road between Delta and Eckert. The depth of scour under the bridge was 12 feet. Runoff washed over the road at a culvert on Doughspoon Creek and did some damage.

Sources: Robert Watson, County Comissioner
Delta County Independent, 8/2/89, p. 14

July 29, 1989

Unnamed Gullies tributary to the Roaring Fork River at Phillips Curves west of Aspen

Two mudflows at 2:48 pm near milemarker 29 on Highway 82 a few miles south of Old Snowmass blocked traffic for over four hours. Both flows had variable widths and depths. The largest slide at one point was about 6 feet deep and 50 feet wide. The smaller slide was about 4 feet deep and 35 feet wide.

Sources: Aspen Times, 8/3/89, p. 20A
Glenwood Springs Post, 7/31/89, p. 2

July 29, 1989

Unnamed Tributary to the Colorado River in Glenwood Canyon

A mudslide at 3:24 pm and another at 8:30 pm near the east end of Glenwood Canyon closed both the eastbound and westbound lanes of Interstate 70.

Sources: Aspen Times, 8/3/89, p. 20A
Glenwood Springs Post, 7/31/89, p. 2

July 29, 1989

Unnamed Tributary to Maroon Creek at Maroon Lake Campground

Intense rain fell about 3:30 pm over a 0.5 square mile high altitude drainage basin ranging from 10,000 to 12,773 feet in elevation. This resulted in a mudflow between 80 and 100 feet wide and up to 5 feet deep. The flood damaged two vehicles, camping equipment, and campground facilities.

Sources: Bill Stanton, CWCB
Chuck Harness, USFS

July 29-30, 1989

Eaton Draw downstream of Eaton
Lone Tree Creek downstream of Silo
Willow Creek downstream of Galeton
Owl Creek near Gill
Unnamed Tributary to Crow Creek near Barnesville

Up to 8.3 inches of rain from two distinct thunderstorms fell in less than 18 hours northeast of Greeley. This caused extensive damage to farms, irrigation ditches, and roads.

Sources: Greeley Tribune, 7/31/89, p. A1, A10
Greeley Tribune, 8/1/89, p. A1
CWCB Draft Report, September 1989

July 30, 1989

Local drainage flooding at Haxtun

Three inches of rain fell in 30 minutes over the town. Runoff caused nuisance flooding on Logan Street between Bryan and Chase Streets and on Fletcher Street east of Colorado Avenue. Several basements flooded.

Sources: George Michael, Town Manager
Clark Rueter, Haxtun Weather Watcher

William Stanton

A mudflow in an unnamed tributary to Maroon Creek at Maroon Lake Campground occurred on July 29, 1989.

July 30, 1989

North Fork Frenchman Creek at Paoli

Over 7 inches of rain fell at Fleming and Sterling in the upper part of the drainage basin. Debris carried by the flood blocked the parallel bridges of U.S. Highway 36 and the Burlington Northern railroad about half a mile west of town. The backwater from the blocked bridges flooded the entire town, population of about 50 persons, filling basements and damaging all but two homes. The flood nearly destroyed the town's water system. Three families have already moved away. The town is one of 111 communities in Colorado that are not participating in the National Flood Insurance Program.

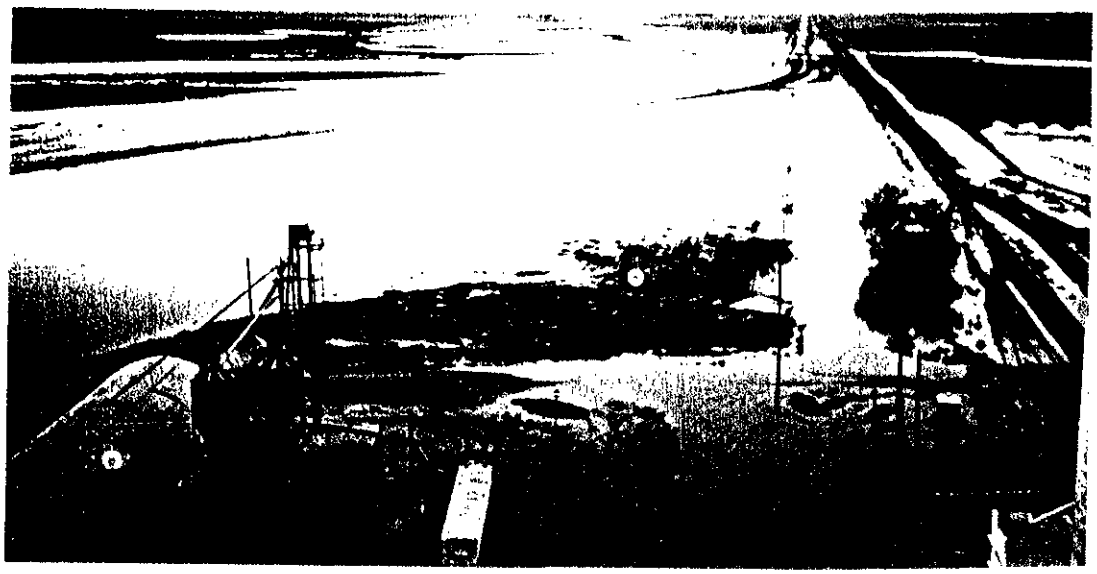
Sources: Marylin Miller, Town Clerk
Gary Johnson, Highway Department
The Haxtun Herald, 8/3/89, p. 1,4,10,12
Video tapes by local residents

July 30-31, 1989

North Fork Frenchman Creek in Logan County

Unseasonably heavy rains fell over the upper drainage basin of the North Fork of Frenchman Creek. Logan County suffered approximately $578,000 in flood related damages to county roads and bridges. A state of disaster emergency in Logan County was declared by Governor Romer on December 18, 1989. Up to $40,000 in assistance to address unmet needs, under a 50-50 state-local match requirement, was made available to the county to replace County Bridge No. 17 and to prepare a Hazard Mitigation Report.

Source: State-Local Disaster Assistance Agreement, DODES-DR-102-89, dated January 30, 1990.



Marylin Miller

This is a view of the North Fork Frenchman Creek looking west along U.S. Highway 6 from atop the grain elevator at Paoli on July 30, 1989.

July 31, 1989

Dry Gulch west of Gunnison

Up to 4 inches of rain fell in less than an hour over the 7.0 square mile Dry Creek drainage basin. A 3 to 4 foot deep wall of water swept a 22 foot long truck off Highway 50 into Tomichi Creek.

Sources: Gunnison County Times, 8/2/89, p. 1,3
Delta County Independent, 8/17/89, p.17
The Denver Post, 8/30/89

July 31, 1989

Local drainage flooding at Gunnison

An unusually slow moving but violent weather cell caused minor flooding around the city including the basement of City Hall.

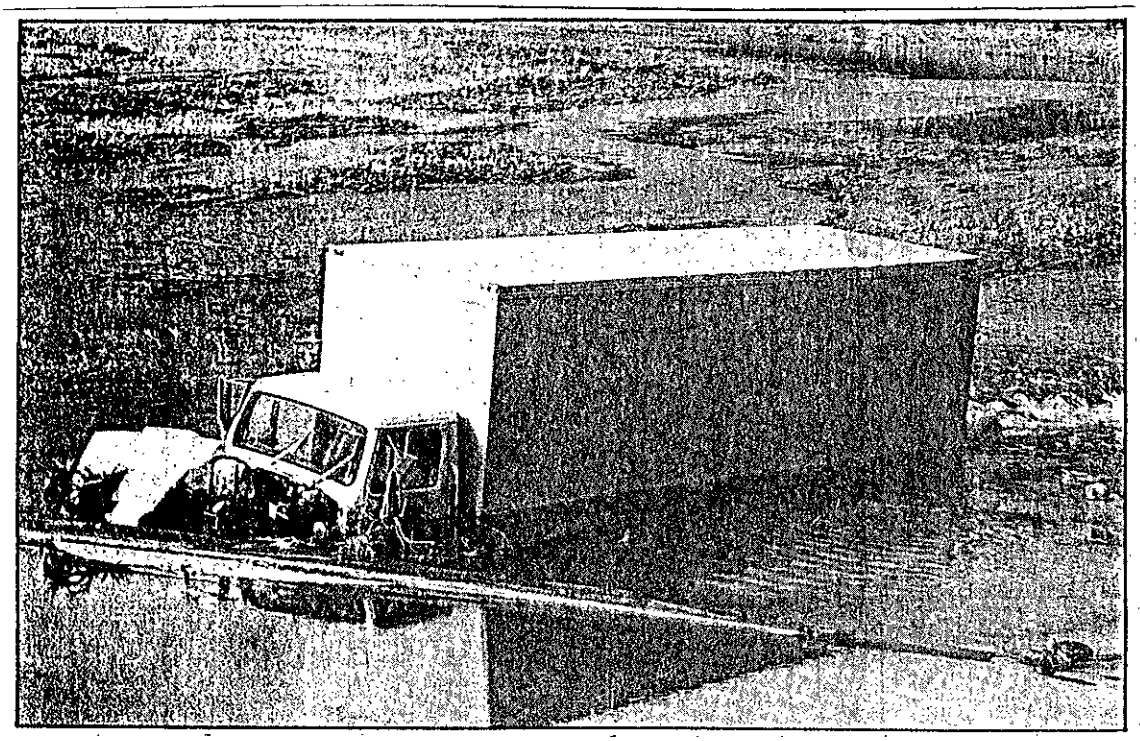
Source: Gunnison County Times, 8/2/89, p. 1,3

August 12, 1989

Fountain Creek above Manitou Springs

About 4:30 pm a beaver dam near Green Mountain Falls suddenly broke sending a rush of water down Fountain Creek. This led authorities at Manitou Springs to issue a flash flood warning. They predicted a 3 to 7 foot high wall of water would come down Fountain Creek from Ute Pass. The sheriff evacuated some residents and tourists, but no flood materialized.

Source: Colorado Springs Gazette Telegraph, 8/30/89, p. B4



Kerry Mulholland

On July 31, 1989, a 4 foot high wall of water from Dry Creek east of Gunnison hit this truck and swept it off U.S. Highway 50 into Tomichi Creek.

August 12, 1989 **Pine Creek and tributaries at Colorado Springs**

More than 3 inches (uncomfirmed) of rain fell over northern Colorado Springs. A tide of mud, sand, and water flooded several businesses in the Plaza at Chapel Hills.

Source: Colorado Springs Gazette Telegraph, 8/30/89, p. B4
Dan Bunting, El Paso County

September 7, 1989 **Unnamed tributary to Boulder Creek near Nederland**

Heavy rain fell about 7:00 pm over a burned portion of an unnamed drainage basin on Sugar Loaf Mountain. The resultant flood caused debris and boulders to close Colorado Highway 119 between Sugar Loaf Road and Barker Reservoir.

Source: Rocky Mountain News, 9/8/89

dps COLORADO DEPARTMENT OF PUBLIC SAFETY

RICHARD E. HATTEN, DIRECTOR
DIVISION OF DISASTER EMERGENCY SERVICES

Camp George West
Golden, Colorado 80401
(303) 273-1622

January 30, 1990

Mr. Don Korrey, Chairman
Logan County Board of County Commissioners
315 Main Street
Sterling, Colorado 80751

Dear Chairman Korrey:

In response to Logan County's request for State Disaster Emergency Financial Assistance, to address the impacts of flooding suffered by the county on 30 and 31 July, 1989, the Governor on 18 December 1989, issued an executive order declaring Logan County a State Disaster Area and authorized State Financial Assistance.

The Governor provided a funding source and has directed my Division to provide this assistance in accordance with the State Policy Paper pertaining to such assistance. The amount of the assistance is both limited and provided under certain specific conditions as covered in the attached State-Local Agreement. If Logan County is interested in pursuing this assistance the original copy of the Agreement should be signed by yourself, dated, and authenciated by the County Clerk, and then returned to me for our files. As indicated in the Agreement, the County should designate an agent who can represent the County's interests in this matter. Mr. Leonard Boulas, of my staff will serve as Governor's Authorized Representative and as such, will represent the state on all matters pertaining to this program. Once your agent has been designated and the Agreement consummated, Mr. Boulas will be contacting your agent to coordinate the details of the program.

There are two requirements in the State/Local Agreement that should be emphasized. These are the requirement for a Local Hazard Mitigation Report contained in item #6 of the Agreement, and the requirement that the County pursue a program of flood hazard mitigation and flood plain management contained in item #7.

My staff and I are prepared to facilitate the assistance process. If you or your staff should have questions, please call.

Sincerely,

Richard E. Hatten

Richard E. Hatten
Director, DODES
State Coordinating Officer

Enclosure: State-Local Disaster
Assistance Agreement

cc:

Bob Polestra, Office of State Planning and Budgeting
Patricia Lackner, Office of the Governor
Larry Lang, Colorado Water Conservation Board
Ron Hinton, Department of Public Safety
DODES Regional Coordinator

lb:nar:dis/p05dislt.cba

dps COLORADO DEPARTMENT OF PUBLIC SAFETY

RICHARD E. HATTEN, DIRECTOR
DIVISION OF DISASTER
EMERGENCY SERVICES

Camp George West
Golden, Colorado 80401
(303) 273-1622

January 30, 1990

Mr. Don Korrey, Chairman
Logan County Board of County Commissioners
315 Main Street
Sterling, Colorado 80751

Dear Chairman Korrey:

Subject: State-Local Disaster Assistance Agreement, DODES-DR-102-89

This letter is the State-Local Disaster Assistance Agreement for State Disaster Emergency Declaration No. DODES-DR-102-89 under Title 24 Article 33.5 CS as amended, in accordance with the State Policy Paper pertaining to State Disaster Emergency Financial Assistance in Declared Disaster Emergencies. A copy of said policy paper, Governor's Proclamation, and specific assurances are attached hereto and made a part thereof.

On 18 December 1989, the Governor determined that damage resulting from unseasonably heavy rains which occurred on July 30 and 31 caused a state of disaster emergency to exist in Logan County. The county indicated in its correspondence and it was later verified that the county had suffered approximately $578,000 in flood related damages. It was further indicated that the county was engaged to the limits of its resources in responding to the emergency needs precipitated by this disaster.

State Disaster Emergency Financial Assistance has been authorized under Title 24 Article 33.5, CS as amended to assist in addressing the unmet needs associated with this disaster. This assistance will be made available in accordance with the Governor's Proclamation of 18 December 1989 and the State Policy Paper pertaining to such assistance attached hereto. Such Disaster Emergency assistance is to be based on actual expenses incurred for disaster emergency eligible work based on a 50-50 State-Local cost sharing basis with the State share in an amount not to exceed $40,000. Specifically, this financial assistance is to be used for the following purposes:

Replacement of County Bridge No. 17.
Preparation of a Hazard Mitigation Report.

Conditions under which this assistance is provided

1. No application for assistance will be approved unless the damage to be alleviated was the result of the disaster declared by the Governor, and was, in fact, inflicted during the incident period, 30 July - 30 August 1989 covered by the Governor's Proclamation.

2. The Local Official Authorized to act as the agent for the county in all matters covered by this Agreement is listed in the attached assurances/exhibits hereto and made a part thereof.

3. State assistance shall be limited to the following area of the state: **Logan County.**

4. The county will establish and maintain an active program under this Agreement on nondiscrimination in its contracted arrangements to perform authorized recovery work.

5. The county will abide by standard procurement and accounting policies for all work performed under this agreement.

6. Within ninety (90) days from the date of consummation of this Agreement, the county will provide to the State (DODES) a Hazard Mitigation Report which indicates those activities the county will pursue to mitigate future impacts that could be caused by a disaster emergency situation of a similar nature occurring within the same impacted areas. Outline for this report is provided as an attachment to this Agreement.

7. The county agrees **to pursue a program of flood hazard mitigation and flood plain management.**

Agreed:

Richard E. Hatten
Director, DODES
State Coordinating Officer

1-31-90
Date

Don Korrey
Chairman
Logan County Board of County Commissioners

Date

CERTIFICATE

Logan County hereby certifies that _____ is designated as the County's Agent empowered to represent the County in all matters pertaining to the provision of State Disaster Emergency Financial Assistance, further that this agent is empowered to execute on behalf of the County all documents necessary to facilitate the rending of such assistance.

_____
Don Korrey
Chairman
Logan County Board of County Commissioners

_____
Date

ASSURANCES

1. The applicant agrees to maintain adequate records for the disaster recovery work to be under taken under this Agreement for audit purposes.

2. The original documentation pertaining to this disaster recovery effort will be maintained by the applicant for a period of not less than three (3) years and will be made available at a location designated by the applicant for audit purposes, should an audit be required.

3. Request for reimbursement of the State's share of an authorized project will be supported by copies of all contracts, invoices, and other documentation necessary to substantiate the costs involved.

4. The State shall perform such reviews as are necessary to verify accomplishment of approved work, as well as to certify the State's share of authorized work.

5. The applicant agrees to provide all easements and rights of way necessary to accomplish approved projects.

6. All work should be accomplished no later than 30 June 1990. The Director of DODES may approve a time extension, if the circumstances warrant it.

7. Reimbursement of the State's share for work already accomplished on an approved project will be based on actual expenses incurred.

8. Advance of Funds against the State share is authorized based on a request justifying such advance by the Applicant. In no case will such advance exceed 75% of the State share.

D0153 89

STATE OF COLORADO

EXECUTIVE CHAMBERS
136 State Capitol
Denver, Colorado 80203-1792
Phone (303) 866-2471

Roy Romer
Governor

EXECUTIVE ORDER

PROCLAMATION
DECLARING A DISASTER EMERGENCY FOR FLOODING IN LOGAN COUNTY

WHEREAS, unseasonably heavy rains which occurred on July 30 and July 31, 1989 caused flooding conditions to exist in Logan County;

WHEREAS, that flooding resulted in significant damage to county roads and bridges;

WHEREAS, the Board of County Commissioners of Logan County has by resolution declared a state of emergency to exist in Logan County and subsequently requested assistance from the State of Colorado;

WHEREAS, State Disaster Emergency Financial Assistance is necessary to ensure public health and safety through the replacement of County Bridge No. 17; and

WHEREAS, the Division of Disaster Emergency Services has validated this request and the above recitals and has recommended State Assistance be provided in this case.

NOW, THEREFORE, I, Roy Romer, Governor of the State of Colorado, under the authority vested in me under Section 24-33.5-704 of the Colorado Disaster Emergency Act of 1973, proclaim that a state of disaster emergency exists in Logan County for the reasons set forth above and that Logan County is entitled to aid, relief and assistance pursuant to the Colorado Disaster Emergency Act of 1973. This assistance to be limited to an amount of $40,000, to be administered by the State Division of Disaster Emergency Services in accordance with the state policy for such assistance, and an amount not to exceed $1,000 be provided to the Division for administering this program.

GIVEN under my hand and the Executive Seal of the State of Colorado this 18th. day of December, 1989

Roy Romer
Governor

JAN 0 5 90

MITIGATION REPORT
OUTLINE

1) Introduction
   - -Purpose
   - -Scope
   - -Authority
   - -Definitions

2) Description of the Disaster
   - -Setting
   - -People at Risk
   - -Warning
   - -Flood Magnitude
   - -Emergency Response
   - -Loss of Life and Flood Damages

3) Identification of Flood Hazards and Important Preparedness Needs
   - -Causes of Floods
   - -People and Floods
   - -Historic Flood Damages
   - -Structural and Non-Structural Needs

4) Existing Mitigation Measures
   - -Floodplain Management
   - -Dam Safety
   - -Emergency Preparedness

5) Actions to be Taken to Respond to Hazards and Needs

6) Implementation
   - -Source of Funds
   - -Follow Through Actions

Colorado Water Conservation Board
Flood Control and Floodplain Management Section

FLOODS IN COLORADO DURING 1989

compiled by

William P. Stanton, P.E.

Between 20 and 30 floods occur somewhere in Colorado every year. On the average, floods in Colorado result in damages of $14.7 million per year. The 1989 flood season included a wide variety of types of floods. Furthermore, most floods in 1989 happened on a weekend or a holiday thus continuing the unusual historical trend.

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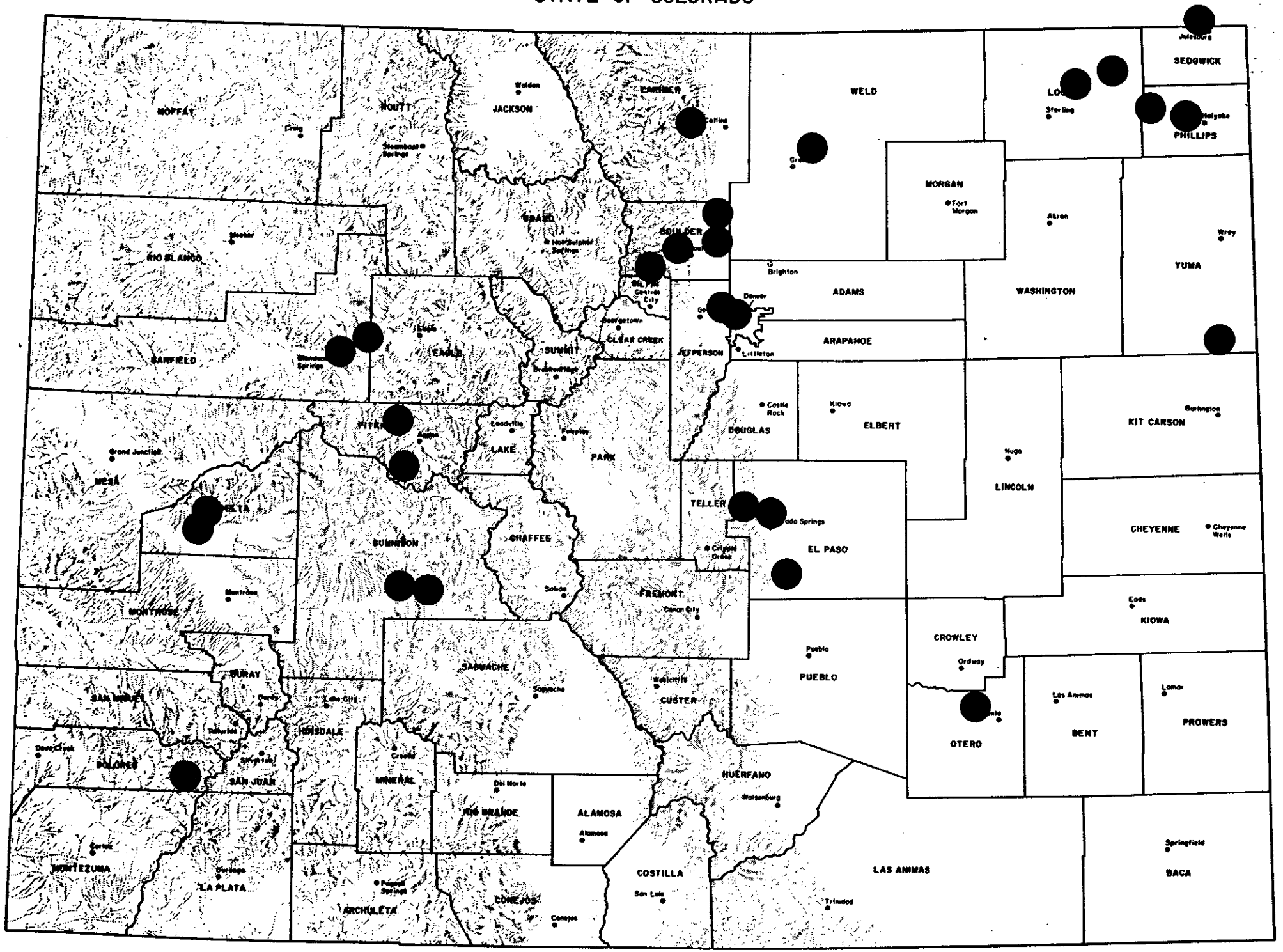
The 1989 thunderstorm season began in ernest on June 3 in the Denver metro area. Floods made no distinction between rich or poor as residents were evacuated from mobile home parks and exclusive residential neighborhoods. On June 24, 1989, parts of northeast Colorado were hit by heavy rain and baseball sized hail.

The last weekend in July was the state's busiest time for floods. A major storm system extended across the middle of the state. A couple of unhappy campers at Maroon Lake Campground were surprised by a mudflow which wiped out their campsite. Over 8 inches of rain fell in less than 18 hours in an area northeast of Greeley. Perhaps the most damaging flood occured on July 30 at a town called Paoli where people and FEMA believed floods could not happen. Logan county suffered approximately $578,000 in flood related damages. The next day, truckers driving east of Gunnison were hit broadside by a 4 foot wall of water and knocked off the road.

The failure of a small beaver dam in August made officials issue a flash flood warning for Manitou Springs. Although people were evacuated, the flood was insignificant by the time it reached the city. Heavy rain over the burned forest on Sugar Loaf Mountain near Boulder showed the importance of vegetation in flood hydrology.

The CWCB has compiled a chronology of floods in Colorado during 1989. Any person desiring more details or who has additional information to contribute should contact the CWCB.

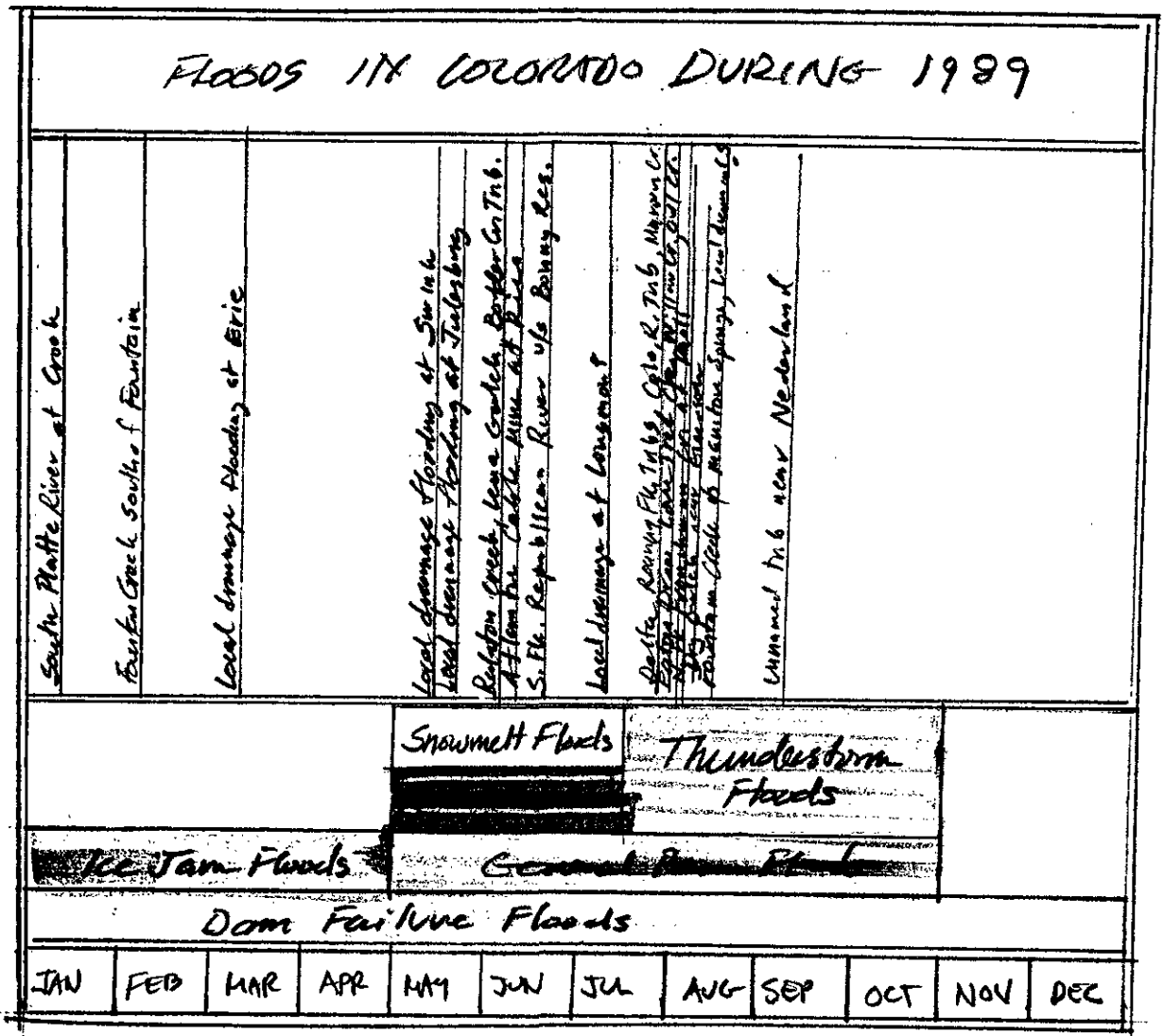
STATE OF COLORADO



FLOODS IN 1999

Drawn by Robert P. Martinez

FLOODS IN COLORADO DURING 1989



CHRONOLOGY OF FLOODS IN COLORADO DURING 1989

January 9, 1989	South Platte River near Crook
February 10, 1089	Fountain Creek South of Fountain
March 22, 1989	Local drainage flooding at Erie
May 14, 1989	Local drainage flooding at Swink
May 23, 1989	Local drainage flooding at Julesburg
May 25-June 7, 1989	Atlantic Cable Mine Flooding at Rico
June 3, 1989	Ralston Creek at Arvada Unnamed Tributary to Boulder Creek near Boulder Lena Gulch above Maplewood Reservoir in Jefferson County Local drainage flooding at Longmont
June 24, 1989	Simpsons Draw north of Proctor Skinner Draw north of Proctor South Fork Republican River upstream of Bonny Reservoir near Idalia
July 29, 1989	Buckhorn Creek north of Masonville Dry Gulch north of Delta Doughspoon Creek near Delta Negro Creek north of Delta Unnamed Gullies tributary to the Roaring Fork River at Phillips Curves west of Aspen Unnamed Tributary to the Colorado River in Glenwood Canyon Unnamed Tributary to Maroon Creek at Maroon Lake Campground
July 29-30, 1989	Eaton Draw downstream of Eaton Lone Tree Creek downstream of Silo Willow Creek downstream of Galeton Owl Creek near Gill Unnamed Tributary to Crow Creek near Barnesville
July 30, 1989	Local drainage flooding at Haxtun North Fork Frenchman Creek at Paoli
July 30-31, 1989	North Fork Frenchman Creek in Logan County
July 31, 1989	Dry Gulch west of Gunnison Local drainage flooding at Gunnison
August 12, 1989	Fountain Creek above Manitou Springs Pine Creek and tributaries at Colorado Springs
September 7, 1989	Unnamed tributary to Boulder Creek near Nederland

Colorado Water Conservation Board
Flood Control and Floodplain Management Section

SUMMARY OF FLOODS IN COLORADO DURING 1989

compiled by

William P. Stanton

January 9, 1989 **South Platte River near Crook**

A severe cold spell lasting about eight days in early January caused the South Platte River to freeze over. Diversion ditches froze completely. With these systems completely frozen, irrigation companies closed their headgates. The sudden increase in river flow resulted in a breakup of the channel ice. A large ice dam formed at Red Lion Road about 6 miles east of Crook. With the continued cold weather, the ice jam grew extending upstream about 13 miles to the vicinity of Proctor. Farmers said the area of inundation in their fields at some places exceeded the flood of 1965. Warmer weather in the third week of January melted the channel ice and ended the problem.

Source: Larry Lang, CWCB

February 10, 1089 **Fountain Creek South of Fountain**

An ice jam developed slowly but lasted several weeks about 6 miles south of Fountain. Water flowed around the jam and across cropland and pastures. Sheetflow returning overland to the river washed out an irrigation ditch headgate causing about $10,000 in damages.

Source: Dan Bunting, El Paso County

March 22, 1989 **Local drainage flooding at Erie**

Heavy snow followed by warm weather caused rapid melting and ponding over dirt and gravel streets in town.

Sources: Scott Hahn, Town Manager
Climatological Data, Colorado, Monthly Summaries for March & April

May 14, 1989 **Local drainage flooding at Swink**

About 1 1/2 inches of rain fell southwest of town. An old clay tile irrigation ditch passing through town overflowed. Water flooded the streets and deposited mud. The town applied for and received an energy impact grant to repair the ditch.

Source: Rick Dell, Public Works Director

May 23, 1989 **Local drainage flooding at Julesburg**

The artificial barriers of the Union Pacific railroad and U.S. Highway 385 routed stormwater runoff from the fields north of town into Julesburg. Flooding occurred at a local car dealer and caused $40,000 in damages to railroad crossing switching equipment.

Source: Muriel Nelson, Town Clerk

May 25-June 7, 1989 **Atlantic Cable Mine Flooding at Rico**

Snowmelt runoff from Silver Creek, a tributary to the Dolores River, entered a collapsed mine shaft. A series of tunnels under the town of Rico connected to the shaft caused excessive ground water pressure. Open seepage threatened four homes.

Source: Preliminary Technical Evaluation of Flooding Problems, Rico, Colorado, Colorado Geological Survey, June 9, 1989

June 3, 1989 **Ralston Creek at Arvada**

About 3 inches of rain fell in less than two hours. The resultant flood caused damage to the Valley Mobile Manor parking lot near the mouth of Ralston Creek at west 56th Avenue and Sheridan Boulevard. Authorities evacuated about 75 people from Valley Manor.

Sources: Patrick Dougherty, Civil Engineer
The Denver Post, 6/4/89, p.1B, 2B
Rocky Mountain News, 6/4/89, p. 12, 13
Kevin Stewart, UD&FCD

June 3, 1989 **Unnamed Tributary to Boulder Creek near Boulder**

The city closed Lookout Road from 63rd Street to 95th Street and 95th Street form Valmont Drive to Lookout Road due to flooding. The golf course looked like a lake, and about 20 homes at Gunbarrell Estates had basement flooding. Vehicles stalled and three cars became stuck in a ditch at Idylwild Road and Roaring Fork Trail.

Sources: The Denver Post, 6/4/89, p. 2B
Longmont Times Call, 6/4/89, p. 1A, 3A

June 3, 1989

Lena Gulch above Maplewood Reservoir in Jefferson County

Due to afternoon thunderstorms, about 150 residents of Pleasant View Mobile Home Park at Indiana Street and Old Golden Road were evacuated from their homes between 3:45 pm and 7:00 pm.

Sources: The Denver Post, 6/4/89, p.1B, 2B
Rocky Mountain News, 6/4/89, p. 12, 13
Channel 2 TV

June 3, 1989

Local drainage flooding at Longmont

An intense thunderstorm passing through town caused an already full regional detention pond northwest of town to overflow. Surface flow from the pond combined with street flows caused an old and undersized storm drainage system to be become surcharged. The pressure was enough to collapse some lines resulting in increased surface flow, street overtopping, and subsidence problems.

Sources: Scott Munns, City Engineer
Longmont Times Call, 6/4/89, p. 1A, 3A

June 24, 1989

Simpsons Draw north of Proctor
Skinner Draw north of Proctor

Between 4 and 6 inches of rain fell in the South Platte River valley east of Lewis Creek. Stormwater runoff collected against the Harmony Ditch. Approximately 200 acres of pasture and fields northeast of Proctor were flooded.

Source: Elton Watson, Water Commissioner

June 24, 1989

South Fork Republican River upstream of Bonny Reservoir near Idalia

Heavy rain and baseball sized hail at Idalia caused flooding that washed out a bridge on U.S. Highway 385. The washout closed the road between Burlington and Idalia about 5:40 pm. Four cars were caught in the flooded area.

Sources: Rocky Mountain News, 6/25/89, p.23,
Sterling Journal-Advocate, 6/26/89, p.1
Channel 2 TV

July 29, 1989

Buckhorn Creek north of Masonville

Part of Buckhorn Road washed out about 13 miles above Masonville.

Source: Longmont Times Call, 7/30/89, p. 6A

July 29, 1989

Dry Gulch north of Delta

A series of thunderstorms passed north of Delta across the south flank of Grand Mesa. Runoff carried mud and debris by the trap club and onto the nine hole Delta golf course. Holes 2 and 3 were out of service for the rest of the season.

Source: Robert Watson, County Comissioner

July 29, 1989

Doughspoon Creek north of Delta
Negro Creek north of Delta

A county bridge or culvert in the "dobies" washed out completely on Negro Creek closing the road between Delta and Eckert. The depth of scour under the bridge was 12 feet. Runoff washed over the road at a culvert on Doughspoon Creek and did some damage.

Sources: Robert Watson, County Comissioner
Delta County Independent, 8/2/89, p. 14

July 29, 1989

Unnamed Gullies tributary to the Roaring Fork River at Phillips Curves west of Aspen

Two mudflows at 2:48 pm near milemarker 29 on Highway 82 a few miles south of Old Snowmass blocked traffic for over four hours. Both flows had variable widths and depths. The largest slide at one point was about 6 feet deep and 50 feet wide. The smaller slide was about 4 feet deep and 35 feet wide.

Sources: Aspen Times, 8/3/89, p. 20A
Glenwood Springs Post, 7/31/89, p. 2

July 29, 1989

Unnamed Tributary to the Colorado River in Glenwood Canyon

A mudslide at 3:24 pm and another at 8:30 pm near the east end of Glenwood Canyon closed both the eastbound and westbound lanes of Interstate 70.

Sources: Aspen Times, 8/3/89, p. 20A
Glenwood Springs Post, 7/31/89, p. 2

July 29, 1989

Unnamed Tributary to Maroon Creek at Maroon Lake Campground

Intense rain fell about 3:30 pm over a 0.5 square mile high altitude drainage basin ranging from 10,000 to 12,773 feet in elevation. This resulted in a mudflow between 80 and 100 feet wide and up to 5 feet deep. The flood damaged two vehicles, camping equipment, and campground facilities.

Sources: Bill Stanton, CWCB
Chuck Harness, USFS

July 29-30, 1989

Eaton Draw downstream of Eaton
Lone Tree Creek downstream of Silo
Willow Creek downstream of Galeton
Owl Creek near Gill
Unnamed Tributary to Crow Creek near Barnesville

Up to 8.3 inches of rain from two distinct thunderstorms fell in less than 18 hours northeast of Greeley. This caused extensive damage to farms, irrigation ditches, and roads.

Sources: Greeley Tribune, 7/31/89, p. A1, A10
Greeley Tribune, 8/1/89, p. A1
CWCB Draft Report, September 1989

July 30, 1989

Local drainage flooding at Haxtun

Three inches of rain fell in 30 minutes over the town. Runoff caused nuisance flooding on Logan Street between Bryan and Chase Streets and on Fletcher Street east of Colorado Avenue. Several basements flooded.

Sources: George Michael, Town Manager
Clark Rueter, Haxtun Weather Watcher

William Stanton

A mudflow in an unnamed tributary to Maroon Creek at Maroon Lake Campground occurred on July 29, 1989.

July 30, 1989 **North Fork Frenchman Creek at Paoli**

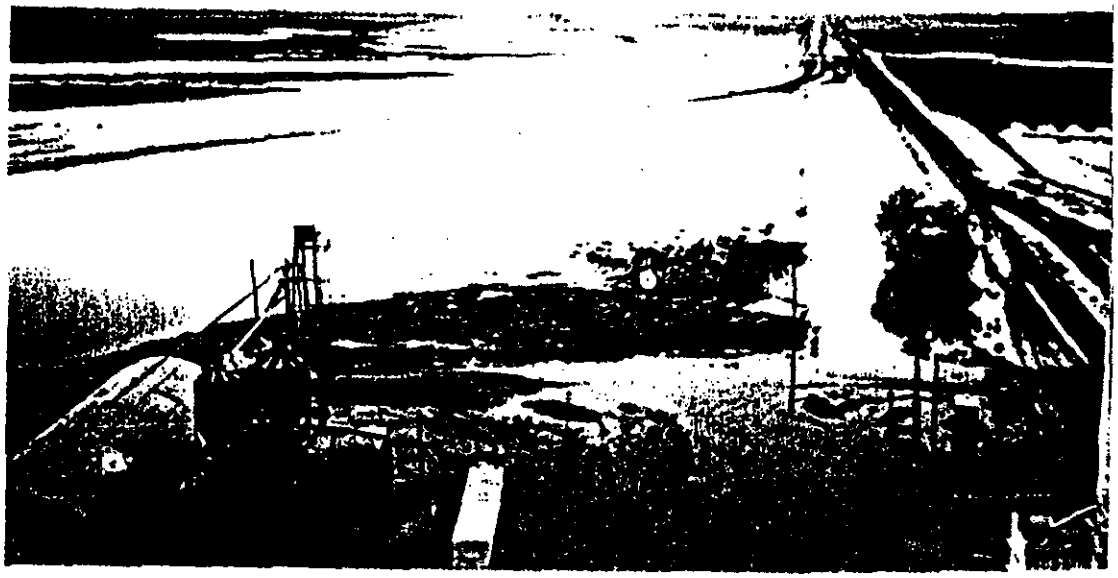
Over 7 inches of rain fell at Fleming and Sterling in the upper part of the drainage basin. Debris carried by the flood blocked the parallel bridges of U.S. Highway 36 and the Burlington Northern railroad about half a mile west of town. The backwater from the blocked bridges flooded the entire town, population of about 50 persons, filling basements and damaging all but two homes. The flood nearly destroyed the town's water system. Three families have already moved away. The town is one of 111 communities in Colorado that are not participating in the National Flood Insurance Program.

Sources: Marylin Miller, Town Clerk
Gary Johnson, Highway Department
The Haxtun Herald, 8/3/89, p. 1,4,10,12
Video tapes by local residents

July 30-31, 1989 **North Fork Frenchman Creek in Logan County**

Unseasonably heavy rains fell over the upper drainage basin of the North Fork of Frenchman Creek. Logan County suffered approximately $578,000 in flood related damages to county roads and bridges. A state of disaster emergency in Logan County was declared by Governor Romer on December 18, 1989. Up to $40,000 in assistance to address unmet needs, under a 50-50 state-local match requirement, was made available to the county to replace County Bridge No. 17 and to prepare a Hazard Mitigation Report.

Source: State-Local Disaster Assistance Agreement, DODES-DR-102-89, dated January 30, 1990.



Marylin Miller

This is a view of the North Fork Frenchman Creek looking west along U.S. Highway 6 from atop the grain elevator at Paoli on July 30, 1989.

July 31, 1989

Dry Gulch west of Gunnison

Up to 4 inches of rain fell in less than an hour over the 7.0 square mile Dry Creek drainage basin. A 3 to 4 foot deep wall of water swept a 22 foot long truck off Highway 50 into Tomichi Creek.

Sources: Gunnison County Times, 8/2/89, p. 1,3
Delta County Independent, 8/17/89, p.17
The Denver Post, 8/30/89

July 31, 1989

Local drainage flooding at Gunnison

An unusually slow moving but violent weather cell caused minor flooding around the city including the basement of City Hall.

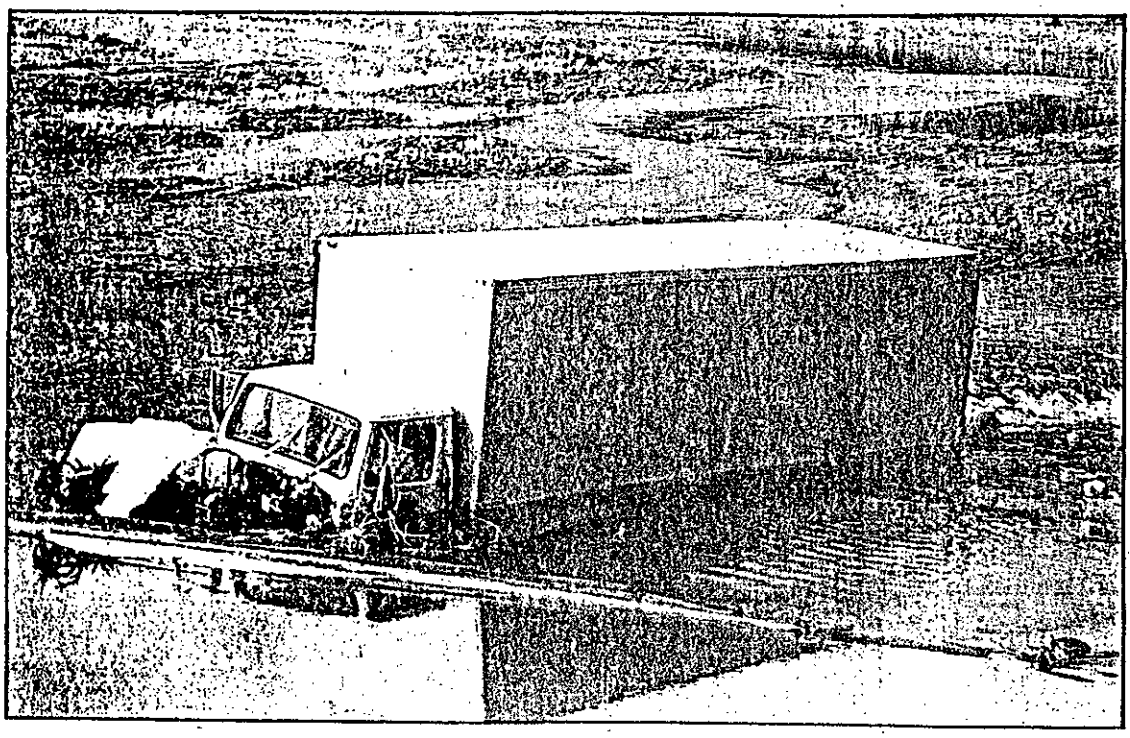
Source: Gunnison County Times, 8/2/89, p. 1,3

August 12, 1989

Fountain Creek above Manitou Springs

About 4:30 pm a beaver dam near Green Mountain Falls suddenly broke sending a rush of water down Fountain Creek. This led authorities at Manitou Springs to issue a flash flood warning. They predicted a 3 to 7 foot high wall of water would come down Fountain Creek from Ute Pass. The sheriff evacuated some residents and tourists, but no flood materialized.

Source: Colorado Springs Gazette Telegraph, 8/30/89, p. B4



Kerry Mulholland

On July 31, 1989, a 4 foot high wall of water from Dry Creek east of Gunnison hit this truck and swept it off U.S. Highway 50 into Tomichi Creek.

August 12, 1989 **Pine Creek and tributaries at Colorado Springs**

More than 3 inches (uncomfirmed) of rain fell over northern Colorado Springs. A tide of mud, sand, and water flooded several businesses in the Plaza at Chapel Hills.

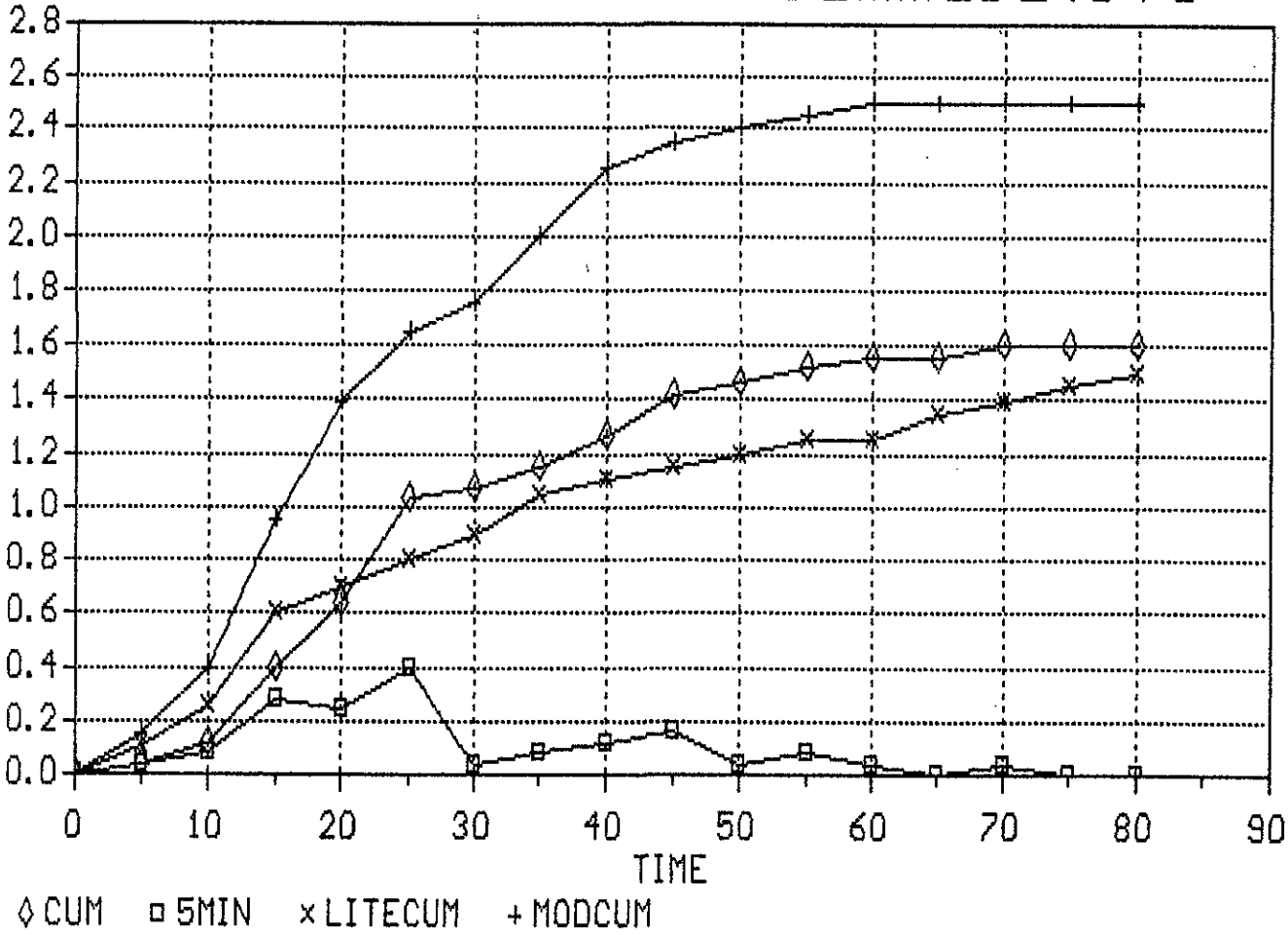
Source: Colorado Springs Gazette Telegraph, 8/30/89, p. B4
Dan Bunting, El Paso County

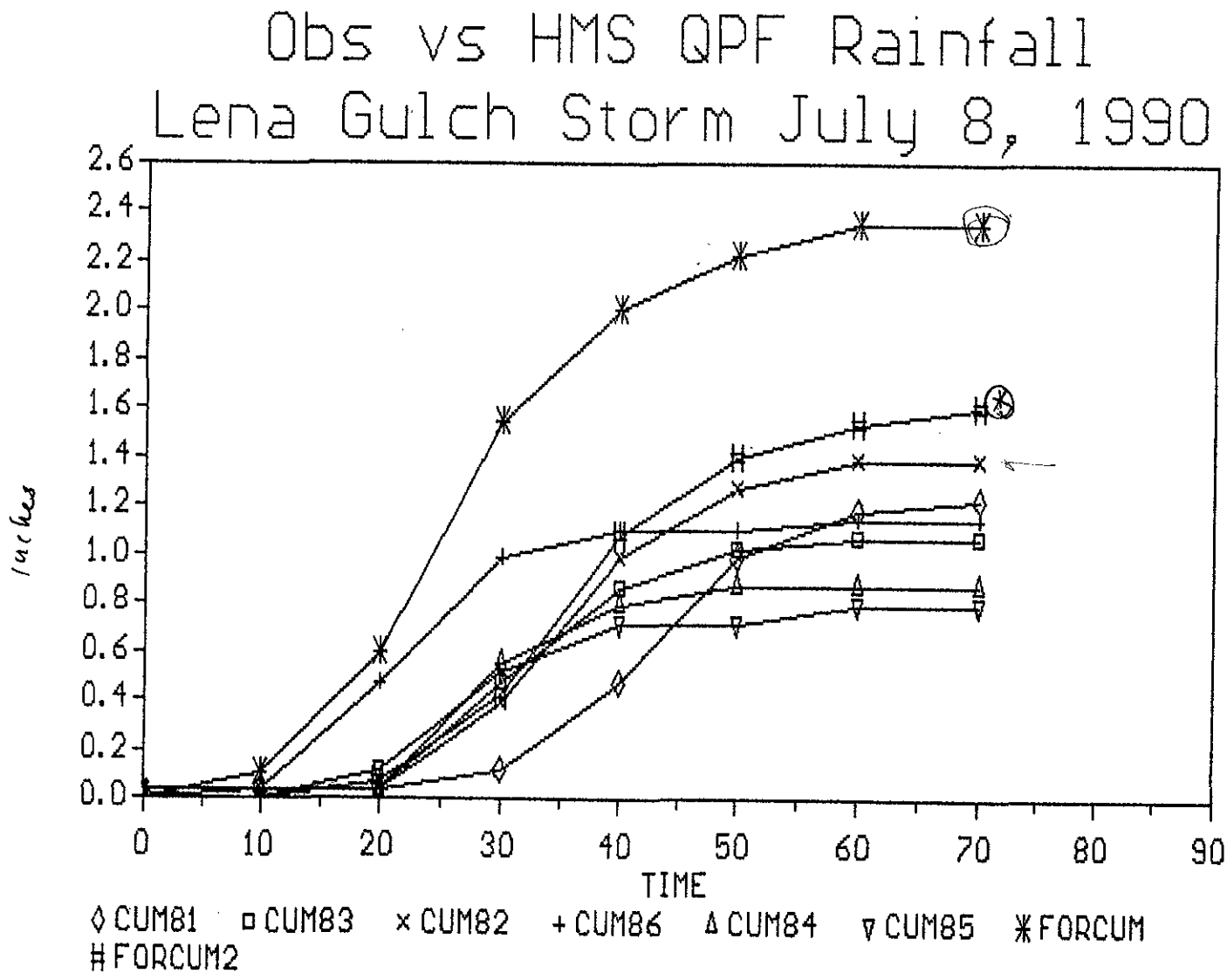
September 7, 1989 **Unnamed tributary to Boulder Creek near Nederland**

Heavy rain fell about 7:00 pm over a burned portion of an unnamed drainage basin on Sugar Loaf Mountain. The resultant flood caused debris and boulders to close Colorado Highway 119 between Sugar Loaf Road and Barker Reservoir.

Source: Rocky Mountain News, 9/8/89

Denver Urban Flood, 7-09-90
Obs vs HMS QPF Cummulative




Obs vs HMS QPF Rainfall
Lena Gulch Storm July 8, 1990
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
10
20
30
40
50
60
70
80
90
TIME
◊ CUM81
□ CUM83
× CUM82
+ CUM86
Δ CUM84
▽ CUM85
✳ FORCUM
FORCUM2