# Colorado Water Conservation Board Floodplain Management Section

#### CHRONOLOGY OF FLOODS IN COLORADO

Date	Flood Source	Stream Name	Community and/or Location	Damages	References
** YBAR =					
06/28/88	Rain	Ohio Creek	Gunnison County		Rocky Mountain
08/09/88	Rain	Pine Creek	Colorado Springs	\$15 million in damages	News, 6/29/88 Rocky Mt.News,8/10/88.De nver
08/17/88	Rain	Goldsmith Gulch	Arapahoe County	\$10,000 in damages	Post,8/16/88.D.Bun ting Denver Post,
-					8/19/88. Rocky Mountain News,
06/26/88	Rain	Spring Creek	Pierce	·	8/19/88 Raymond Van Why,
08/04/88	Rain	Fountain and E. Fountain Creek	Woodland Park	\$8,0000 in damages	Mayor Pierce 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
07/07/88	Rain	Oak Creek	Fremont County		Vol.4 No. 3 1988 Flood Stage, Vol.4
07/11/88	Rain	Unnamed Tributary	Logan County	\$833,000 in damages	No.3 Fall 1988 Flood Stage, Fall 1988.Sterling Journal-Advocate7/
07/11/88	Rain	Unnamed Tributary	Morgan County	\$410,000 in damages	17 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.
07/07/88	Rain and Hail	Oak Creek and Tributary	Rockdale		Citizen, 7/07/88 Flood Stage, CWCB Fall 1988.
06/17/88	Rain	Caddoa Creek	Bent County		Citizen, 7/14/88 Flood Stage, CWCB Vol.4 No.3 Fall
07/07/88	Rain	Harmony Ditch #1 and #2	Logan County		1988 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,
07/07/88	Rain?	Owl Creek	Larimer		7/8/88 Sterling Journal-Advocate,
07/07/88	Rain and Hail	Local Drainage	Fort Collins	·	7/8/88 Sterling
07/07/88	Rain	Coal Creek	Florence		Journal-Advocate, 7/8/88 Sterling Joournal-Advocate,
04/18/88	Snowmelt	Unnamed Trib to Oklahoma Ditch	Jackson County		7/8/88 Colorado Dept. of
05/15/88	Snowmelt	Unnamed Trib. to Oak Creek	Routt County		Highways, 4/18/88 Colorado Dept. of
06/25/88	Rain	Unnamed Trib. to Plum Creek	Douglas County		Highways 5/15/88 Colorado Dept. of
07/07/88	Rain	Un Trib. to Cache La Poudre	Windsor	,	Highways, 6/25/88 Co. Dept. of Highways, 7/788. Journal-Advocate
07/11/88	Rain	Local Drainage	Phillips County		7/8/8 Holyoke Enterprise, 7/11/88. Co Dept
07/14/88	Rain	Unnamed Trib to Surveyor Creek	Washington County		of Highways Colorado Dept. of
07/17/88	Rain	O'Neil Draw	Julesburg		Highways, 7/14/88 Julesburg
07/17/88	Rain	Unnamed Tributary	Sedwick	•	Advocate, 7/20/88. Colorado Dept. of
07/17/88	Rain	Unnamed Trib to Surveyor Creek	Washington County		Highways Colorado Dept. of
07/18/88	Rain and Hail	Springdale Ditch	Logan County		Highways, 7/17/88 Journal-Advocate, 7/1988. CO. Dept.
07/18/88	Rain	Unnamed Tributary	Weld County		of Highways7/18 Colorado Dept. of
07/23/88	Rain	Unnamed Trib to Surveyor Creek	Washington County	· · · · · · · · · · · · · · · · · · ·	Highways, 7/18/88 Colorado Dept. of
08/08/88	Rain	Dry Creek	Boulder County		Highways, 7/23/88. Colorado Dept. of
08/09/88	Rain	Unnamed Trib to Surveyor Creek	Yuma		Highways, 8/88/88 Colorado Dept. of Highways, 8/9/88

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Page No. 03/06/91

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		
08/10/88	Rain	Unnamed Trib. to Muddy Creek	•		Colorado dept. of Highways, 8/9/88 Colorado
08/12/88	Rein			•	Department of Highways, 8/10/88.
,,	104111	Unnamed Trib to Rock Creek	Washington County		Colorado Dept. of
08/14/88	Rain	Unnamed	Sedwick County		Highways, 8/12/88 Colorado Dept. of
08/14/88	Rain	Tributary Dry Creek	Boulder County		Highways, 8/14/88. Colorado Dept. of
					Highways, 8/14/88.

the state of the s	
DOH FORM 293 FEBRUARY 1975  (2345)	- <b>8</b> 4 7
Staff Nesign	089
DRAPNAGE STRUCTURE FLOOD SUMMARY  STREAM NAME  ALL  OF THE PROPERTY OF THE PRO	CTION 4 SE
STREAM NAME N/A	
FLOODING LOCATION CO 194 MP 17 - MP 18	HUNGA
	<del></del>
DATE OF FLOODING MAY 14/15/16 CAUSE: Rainfall Snowmelt Other 1881645	201
AMOUNT OF RAINFALL 51/2" TOTAL 3 NIGHTS	<del></del>
DEPTH OF WATER OVER ROADWAY 18" Width # 1/2 mile	
DEBRIS: Trees Brush Rocks Silt Other Coed Cobs - WASHED	
Amount OF FIELDS	_29 /
STRUCTURE NO CULVERT: Size Type BOPRABA	 1 27- 0
HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY	TEL
ITTOMATICA ACI CALIACED TO DAIDGE, COLVERT OR ROADWAY	***************************************
DAMACE OD SCOUDA - Van EZ Na EZ	
DAMAGE OR SCOUR: Yes 🖾 No 🗔	
If yes, specify WASHED SHOULDERS	<del></del>
	<del></del>
	······································
COMMENTS: RAIN EACH NITE TOTALED 51/2", APPROXI RAIN WILL CAUSE WATER ON ROAD, IRRIGATION WATER ALSO IN BORROW DITCHS	, "
RAID WILL CAUSE WATER ON ROAD. IRRIGATION	
CUATER ALSO IN BORROW DITCHS SOURCE OF INFORMATION:	-
	/A ==
Recorder W.R.LEWIS Phone \$56-2906	Mile Post S. H. No.
Recorder WRLEWIS Phone \$56-2906 (Name) (Date)	. Pos
	ं तं । ।
SEND TO: STAFF DESIGN	LL

Recorder <u>WRLEWIS</u> Phone <u>\$</u> (Name) (Date)	
SEND TO: STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansas Avenue Denver CO 80222	

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

Ofero/Bout Co. ?

#### DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAM	ie	No Name	<del></del>	······································	138	
FLOODING L	OCATION <u>St. Char</u>					5.75
DATE OF FL	OODING <u>5/15/89</u>			lt  0ther		
AMOUNT OF	RAINFALL ?		-	· · · · · · · · · · · · · · · · · · ·		
DEPTH OF V	ATER OVER ROADWAY	6" to 10" Wid	ith40	' Varied	to fields	-
DEBRIS: 7	rees 🔲 Brush 🔲 Ri	ocks 🛛 Silt 🗌 Oti	ner	,		
	mount			. •		
	NO					
	REFERENCED TO BRIDE					
114 41111111111111111111111111111111111	,,_,					
	SCOUR: Yes □ No f yes, specify	•	-			
	High water from th			·		
	INFORMATION:Jo	i				isor
			Dia	546-5427		S. H.
Recorder _	(Name)	(Date)	Phone	,		No.
	SEND TO:	STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansa Denver CO 80222	ıs Avenue			50-C

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

Reblo (o

SEND TO:

STAFF DESIGN **HYDRAULICS UNIT** 4201 East Arkansas Avenue Denver, CO 80222

CAUSE:	DATE OF FLOODING
<sup>○</sup> Rainfall  Snowmelt  Other	5-16-89
FLOODING LOCATION (Include SH No., direction and distant	ce from a reference point such as a highway junction, major
structure, geographical reference, or milepost.)	
H. Sh. 112 . 128 D. mile	70
HighWAY 138A- Mile post 56,	CULVERT:
11/4	Size 2 - 36" Type Round
STREAM NAME	1 COP TOUNG
prigation Ditch	*
AMOUNT OF RAINFALL (Give local reports of the depth and before the storm)	
1.8 inches of Rain in Then ain.	nd was dru
1. 8 inches of Rain in 3 hrs. Grow DEPTH OF WATER OVER ROADWAY	Width
211	20'
DEBRIS: (Indicate the debris that affected the structure's capaci	
	Other
Amount sust covered 3/16 of tube openi	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This	should be as accurate as possible.)
tute was full to top the over roa	d for z",
	v V r
DAMAGE OR SCOUR: Yes No II	
If yes, specify (Describe extent of damage and needed repair.)	
COMMENTS: (List any pertinent facts, such as traffic delays, deto	
to alleviate problem. Also, list any other undocumented flood histo	
Water Panover Road for 3 hrs.	
With the second	
SOURCE OF INFORMATION: (Give name of person(s) observi	ng the highwater or damage
List address and phone number, so he may be contacted for addition	onal information.
Include years familiar with area)	riff - hifetime
Include years familiar with area)  BONC MICKELSON - 474-3355 sher  Couley-Ebert - 463-3424 - Highway	Spent - 1/2 MA
CONTEX-EDERS - 183- 2 464 Might	של ווידים
	i ka
Recorder (Name)	(Date) Phone
lander I he st	5-17-59 2/11-241
lies reverse side for any additional	s. sketches, or photographe
Use reverse side for any additional comment	andreades, or priorographis.

SEND TO:

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

	DATE OF FLOODING
CAUSE: Rainfall ☑ Snowmelt □ Other	1
FLOODING LOCATION (Include SH No., direction and distance	ce from a reference point such as a highway junction, major
structure, geographical reference, or milepost.)	
: -	
STATE HWY 287 FROM MP 30 STRUCTURE NO.	9.30 TO MIP 3 10.60
l i	
STREAM NAME	Size 18"+24" Type STEFL
•	
AMOUNT OF RAINFALL (Give local reports of the depth and	duration of the rainfall. Indicate ground moisture condition
before the storm.)	
I TO 2" RAIN DEPTH OF WATER OVER ROADWAY	Width
2" 70 6'' DEBRIS: (Indicate the debris that affected the structure's capaci	ty.)
Trees  Brush  Rocks  Silt	
	• •
Amount WASHI'NG BRUSH, WEFDS, + SILT WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the	e 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 I	ROAD + SHOULDER + AT CULVERTS
DAMAGE OR SCOUR: Yes No If yes, specify (Describe extent of damage and needed repair.)	
in yes, specify (Describe extent of Gamage and needed repair.)	
WASHING SHOULDERS	
COMMENTS: (List any pertinent facts, such as traffic delays, det	ours, duration of highwater. Suggestions for improving design
to alleviate problem. Also, list any other undocumented flood histo	
THIS AREA HAS A HISTORY	
RECIEVE I" OR OVER OF RAI	
+ HAS POOR DRAINAGE.	
	<u></u>
SOURCE OF INFORMATION: (Give name of person(s) observi List address and phone number so he may be contacted for addition	
Include years familiar with area)	
MAX FANNING ARREN NIC	ODE ANOUS
442-4382 651-6	270 G G G
·	270 ω ω ω ω ω ω ω ω ω ω ω ω ω ω ω ω ω ω ω
Recorder (Name)	(Date) Phone
MAX FANNING	6-5-89 442-4382
Use reverse side for any additional commen	ls, sketches, or photographs.

# DRAINAGE STRUCTURE FLOOD SUPMARY

1 STREAM NAME				
2FLOODING LOCATION M.P. 257. 40	E. FRON	stope RD	(Jeffers	RO) N.B.
3DATE OF FLOODING 6-3-89 -4CAUSE:	Rainfall 🔀 Sno	owmelt [	Other <u>Hai</u>	<u>.1</u>
5AMOUNT OF RAINFALL APPOX 1.5	in +			
6DEPTH OF WATER OVER ROADWAY?	7Width	P		
8DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Si	1t  90ther _			<u>.</u>
-10Amount	•	· . ·		
1STRUCTURE NO12CULVER	T: Size	i i i i i i i i i i i i i i i i i i i	Туре	and the second second
SHIGHWATER REFERENCED TO BRIDGE, CULVER	•			
DAMAGE OR SCOUR: Yes 🗵 No 🗌				·
If yes, specify Washed	BONK DO	WN HILL	APPOX S	<u>aoft. WiDe</u>
Covered 18" DRain Tube T	hat DRains	PORTOF	INTERChang	e ATUS.3
			•	·
COMMENTS MAUBE PUT CURB 1	Back That 1	was The	Re Before	The
RECONSTURCTION of Highway				-
SOURCE OF INFORMATION:	• .		· , .	
		<del></del>		_ 
Recorder <u>Gerald L. Steffen</u> (Name)	<u>6-6-89</u> Ph (Date)	one <u>493</u>	- 1463	- · No
	•		•	•
SEND TO: STAFF DES				H
HYDRAULIC 4201 East	S UNIT : Arkansas Avei	nue		9.9
Denver CC				\cdot \delta \delta \cdot \delta \delta \cdot \delta \cdo

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

SEND TO:

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

CAUSE:	DATE OF FLOODING
Rainfall  Snowmelt  Other	June 3 . 1989
FLOODING LOCATION (Include SH No., direction and distance from structure, geographical reference, or milepost.)	a reference point such as a highway junction, major
STRUCTURE NO. CULVE	RT:
Size	e / 6 <sup>11</sup> Type
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth and duration before the storm.) Heavy rain Imile North a west of Amousture befor storm dry.	
	in two deformed Decations
DEBRIS: (Indicate the debris that affected the structure's capacity.)	
Trees □ Brush □ Rocks □ Silt □ Other £	culvertis to Low and willout drain
Amount	· ·
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwa	ater to some permanent object such as the bottom of a
bridge girder, top of the culvert, or shoulder of the roadway. This should b	e as accurate as possible.)
,	
DAMAGE OR SCOUR: Yes No	
If yes, specify (Describe extent of damage and needed repair.)	1
	l
COLUMN TO 1/1 int any marking at facts much as traffic delayer data year	ation of highwater. Suggestions for improving decises
COMMENTS: (List any pertinent facts, such as traffic delays, detours, dur to alleviate problem. Also, list any other undocumented flood history at this Road a love of 15 for low. To any a put in To depend dood end water from east side and into a culuent that takes crossing Hwy is Lower Than The culuen	is location of water Culvert was a field west side of Hwy Tur water South. The culvert
east state and this Lower Than The culver	1 gging 80. The only way
1 1	oad 3'to 4'. MM 181.6
600 to 700 ft of Hwy is covered with water	from rain or snow melt.
List address and phone number so he may be contacted for additional info	.g.,
Include years familiar with area)	
	No. Po
Recorder (Name) (Date)	Phone COO CALLES
Recorder (Name)  RUSS Brown  Use reverse side for any additional comments, sketch	189 897-2458

## DRAINAGE STRUCTURE FLOOD SUMMARY

1 STREAM NAME	
2FLOODING LOCATION M.P. 259, 32	
3DATE OF FLOODING <u>6-3-89</u> -4CAUSE: Rainfall ⊠ Snowmelt □ Other <u>Hail</u>	<del></del>
SAMOUNT OF RAINFALL APPOX . 1.5 in.	
SDEPTH OF WATER OVER ROADWAY7Width & & &	
BDEBRIS: Trees Brush Rocks Silt 90ther Weens + Hail	·
ISTRUCTURE NO12CULVERT: Size Type _ STee	
3HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY APPOX. 6" over call	
If yes, specify Wash Shoulder & SILIT INTO DITCH &	
COMMENTS GETTing a LOT of Surface Area to Drain.	
DITCH NEEDS DEEPER ON COUNTY PROPERTY	
SOURCE OF INFORMATION:	
	ر <sub>م</sub> 1
Recorder Level of Steffen 6-5-89 Phone 493-1463  (Name) (Date)	== =
(Date)	No.
SEND TO: STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansas Avenue	H
Denver_C0/80222	٢

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14

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

DAUSE:	154.20 2005110
Rainfall  Snowmelt  Other	June 3, 1989
<b>LOODING LOCATION</b> (Include SH No., direction and dista tructure, geographical reference, or milepost.)	
STATE hwy 189 AT MILE POST TRUCTURE NO.	- 3/0.  CULVERT:   Size /8"
TREAM NAME	7,002,007
TrigaTion diTeh  AMOUNT OF RAINFALL (Give local reports of the depth an before the storm.)	d duration of the rainfall. Indicate ground moisture condition
Ground was SaTuraTed. Rain For	Width  14'
TO 5 inches  DEBRIS: (Indicate the debris that affected the structure's capa	city.)
Trees D Brush D Rocks D Silt D	Other Tumble weeds
Amount WATER DEPTH AT STRUCTURE ENTRANCE: (Reference)	
oridge girder, top of the culvert, or shoulder of the roadway. Thi	s should be as accurate as possible.)
·	
f yes, specify (Describe extent of damage and needed repair	.)
COMMENTS: (List any pertinent facts, such as traffic delays, de o alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
COMMENTS: (List any pertinent facts, such as traffic delays, de to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
COMMENTS: (List any pertinent facts, such as traffic delays, de lo alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
COMMENTS: (List any pertinent facts, such as traffic delays, de to alleviate problem. Also, list any other undocumented flood his CAYS WEYE SLOWED, and I WROAD NEEDS TO BE ELEVATETA	etours, duration of highwater. Suggestions for improving design story at this location)  OPER FORS.  WITH BIGGER CULVERTS.  Eving the highwater or damage.  Itional information.
COMMENTS: (List any pertinent facts, such as traffic delays, de to alleviate problem. Also, list any other undocumented flood his CAYS WEYE SLOWED, and I was Road needs To be elevated.	etours, duration of highwater. Suggestions for improving design story at this location)  PENT OFF YOAS.  WITH BIGGEY CULVEYTS.  Eving the highwater or damage.  Itional information.  Ley. and Arden Nicodemus  One 651-6270
Road needs To be elevated  SOURCE OF INFORMATION: (Give name of person(s) obsert ist address and phone number so he may be contacted for additional design of the source o	etours, duration of highwater. Suggestions for improving design story at this location)  PENT OFF YOAS.  WITH BIGGEY CULVEYTS.  Eving the highwater or damage.  Itional information.  Ley. and Amen Nicodemus  One 651-6270  Phone  Phone
COMMENTS: (List any pertinent facts, such as traffic delays, de to alleviate problem. Also, list any other undocumented flood his Cays were slowed, and I were slowed, and I were slowed and I were slowed. To be elevated.  SOURCE OF INFORMATION: (Give name of person(s) obsert list address and phone number so he may be contacted for additionally gears familiar with area)  STATE Trooper Durane Brades SR, highway mittee. man. Phosphology.	etours, duration of highwater. Suggestions for improving design story at this location)  NENT OFF YOAD.  WITH BIGGEY CULVEYTS.  Eving the highwater or damage.  Itional information.  Ley. and Arden Nicodemus  One 651-6270

SEND TO:

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

Ve

CAUSE:				DATE OF FLOODING	
	wmelt 🗆 🕠	Other		6-3-89	
FLOODING LOCATION (In structure, geographical reference	clude SH No., di	rection and distan	ce from a referenc	ce point such as a highway junct	ion, major
andome, geographical reference	o' o' muchose)				
52A 1	mile	east of	Colo. 119		:
STRUCTURE NO.	7.11.1 T		CULVERT:		
			Size 24'	Type ste	<u>el ·                                    </u>
STREAM NAME					
					*
				infall. Indicate ground moisture ક્	
DEPTH OF WATER OVER R	A Rain Fell	1 in 24 hr	Period	Irrigation Pitch	tothe Sou
DEPTH OF WATER OVER R	OADWAY		Width		
· 411			120	ids.	
DEBRIS: (Indicate the debris	that affected the	structure's capaci	ty.)	. A	ı
Trees Brush	Rocks 🗆	Silt 🔎	Other <u>Grav</u>	el From Shoulder	
Amount 5 vds.					
WATER DEPTH AT STRUCT	TURE ENTRAN	CE: (Reference th	e highwater to som	ne permanent object such as the b	oottom of a
bridge girder, top of the culvert	, or shoulder of t	he roadway. This	should be as accu	urate as possible.)	
			N n= () 4	1. # + + +	)
12 of woter DAMAGE OR SCOUR: Y	r rom	bottom o	J ZU'Cu	1021 10 /61	<u> </u>
If yes, specify (Describe extended)			•		
/ 22/ 26 22	9				
	:				
				·	
COMMENTS: (List any pertin	ent facts, such as	s traffic delays, dete	ours, duration of hi	ghwater. Suggestions for improv	ring design
to alleviate problem. Also, list a	ny otner undocu	mented nood nist(	A. P. 1.1	" 10 my Knowled	ge This
16 The First 7	ime ros.	nguing w	etter 1 volbte	ms. Irrigation dit	ich total
				ain, and Ran offy	
Gunbarnel estate	s. This	Bulvent al.	so Drains	wetlands from South	OM TAK
Because on Run o	off from	housing dev	elopement	, Box culvent may	bee need
in future.		•			
SOURCE OF INFORMATION List address and phone number	4: (Give name o	f person(s) observi	ng the highwater o	or damage.	(O )=
Include years familiar with area	) Mile Oak	SR. Hun	maint wike	h Dan Sila. I	S.H. No.
maldiwkr. B.	11.15.1.20	111.2.00	9.9 W.M	hu In	H. No.
Middan Will 19	く これ、そり8分	ーー・イン・コファ	at Fal	IFO( I U	
					1 0 c
					S 2
Recorder (Name)			(Date)	Phone	
$O \setminus O$	د د کې	( -+ /.180	6-6-84	4143-3422	
Lala Day	everse side for any	additional commen	l ls. sketches, or pho	tographs.	<b>! I</b>
Cita .		· www.cow.com workerstall	, andtonias, or pilo		

### DRAINAGE STRUCTURE FLOOD SUPMARY

-1 STREAM NAME					
-2FLOODING LOCATION M.P. 369. 50	West	FRONTOCE	RD.	S.B.	
-3DATE OF FLOODING 6-3-89 -4CAUSE: Ra	infall 🔀 S	Snowmelt [	Other _		
-SAMOUNT OF RAINFALL APPOR 1.5 in					
-6DEPTH OF WATER OVER ROADWAY None	7Width	None			
-8DEBRIS: Trees ☐ Brush ☐ Rocks ☐ Silt					
-10Amount			,		
-11STRUCTURE NO12CULVERT:	Size _	Nove	Туре		
-i3HIGHWATER REFERENCED TO BRIDGE, CULVERT					
-J4 DAMAGE OR SCOUR: Yes ⊠ No □					. 4.3.
If yes, specify Washed B	ALIK		014	Ω	
	·.	La Cou	, PIE 07	17 laces	•
CAMP Off of Field Behind	rence				-
WE COMMENTE O			^ .	·	
15 COMMENTS BONK Was CUT DOWN	•		MA RES	espsp	<del></del>
Nothing To hold water				<u> </u>	
16 SOURCE OF INFORMATION:					
	<del></del>			•	ر. 1
18 Recorder GERALD L. STeffen	6-6-89	Phone 493	- 1463		=
(Name) (	Date)	, .		•	No.
SEND TO: STAFF DESIGN HYDRAULICS 4201 East A	UNIT .	⁄enue		<i>.</i>	1,20

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

SEND TO:

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

CAUSE:	DATE OF FLOODING
Rainfall 🖾 Snowmelt 🗆 Other	June 4, 1989
FLOODING LOCATION (Include SH No., direction and distanstructure, geographical reference, or milepost.)	ce from a reference point such as a highway junction, major
STATE hwy. 287 and OXFO	
	Size 24" Type 5TeeL culverT
STREAM NAME Roadside ditch	
<b>AMOUNT OF RAINFALL</b> (Give local reports of the depth and before the storm.)	
Ground was saturated and ou DEPTH OF WATER OVER ROADWAY	I
AhouT / FOOT OVEY road.  DEBRIS: (Indicate the debris that affected the structure's capac	ity.)
Trees  Brush Rocks Silt  Silt	Other
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This	should be as accurate as possible.)
about a foot above The should	Lder of the road.
DAMAGE OR SCOUR: Yes No 🗆	
If yes, specify (Describe extent of damage and needed repair.)	
washed southwest shoulder of we will put more shoulder	F road away.  material in and Level it up.
COMMENTS: (List any pertinent facts, such as traffic delays, dete to alleviate problem. Also, list any other undocumented flood histo	ory at this location)
Traffic had To be slowed	until high water went down.
maybe could use a bigs	ger culvert with This much
rainfall.	·
rainpare.	
	·
SOURCE OF INFORMATION: (Give name of person(s) observi	ing the highwater or damage.
List address and phone number so he may be contacted for additi Include years familiar with area)	
SR. hwy. mrce. man Arden B.	Nicodemus Phone 651-6270 3
	(Date)   Phone   Co
Recorder (Name)	
Arden & Nicodemus	0,
Use reverse side for any additional commen	its, sketches, or photographs.

#### 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 21/2 to 5" with in a 20 mile area
DEPTH OF WATER OVER ROADWAY 8" 2012" Width 800"
DEBRIS: Trees   Brush   Rocks   Silt   Other weeds
Amount 4-6 cuyards of weeds 51/4/-1/40/apare
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
ofroad where water ran across
COMMENTS area was signed and maned traffic
was able to go through. Water ran across 8 hrs plas
SOURCE OF INFORMATION: John R. Schulz St Hwy Mtce Wkr
Roy H. Dunn Farmer Holly Co \$16 w Park 537-6861 "
Recorder <u>Tohn P Schulz</u> 6-5-89 Phone 719 · 739 - 5365 = (Name)
SEND TO: STAFF DESIGN HYDRAULICS UNIT

4201 East Arkansas Avenue

Denver CO 80222

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

111e Post 104.65

SEND TO:

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

CAUSE:	_	DATE OF FLOODING	
Rainfall 🖾 Snowmelt 🗆 Other	·	6-8-89	
FLOODING LOCATION (Include SH No., direction and distanstructure, geographical reference, or milepost.)	ce from a reference	ce point such as a highway junct e at the	ion, major
	le post		
STRUCTURE NO.	CULVERT:	<del></del>	
A-24-E.	Size	Type .	
STREAM NAME Lewis Creek	•	_	
AMOUNT OF RAINFALL (Give local reports of the depth and before the storm.) it rained 4 inches with ali.			
DEPTH OF WATER OVER ROADWAY	Width		
mone	·		
DEBRIS: (Indicate the debris that affected the structure's capac	ity.)		
Trees 🗆 Brush 🗆 Rocks 📮 Silt 🗀	Other	none	
Amount		•	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This water depth was 10 to 12 ft.	should be se seen	reata ao naccibla l	
DAMAGE OR SCOUR: Yes No Describe extent of damage and needed repair.)  the morthwest aproach to years we put a big rip  haved our bridge.  COMMENTS: (List any pertinent facts, such as traffic delays, det	b rep or	a that corner	which
to allowing problem. Also, list any other undocumented flood history	orv at this location	due to this	
water.			
· rea			
SOURCE OF INFORMATION: (Give name of person(s) observ List address and phone number so he may be contacted for additi Include years familiar with area)	ing the highwater ional information.	or damage.	S.H.
Kenny Crow 886-3232 Dean Fetzer 886-3121 These people work for m 0-20 years.	e and	lived here	Post 15.
Recorder (Name)	(Date)	Phone	
Staniel Tunnel	6-13-89	886-2191	8
On P. R. W. 14 Use reverse side for any additional commer	its, sketches, or pho	tographs.	

SEND TO:

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

CAUSE: /	DATE OF FLOODING	
Rainfall   Snowmelt □ Other	June 8-1989	
FLOODING LOCATION (Include SH No., direction and structure, geographical reference, or milepost.)	distance from a reference point such as a highway junction, major	
Hiway & Mile Marker 40	1.1	
STRUCTURE NO.	CULVERI.	
	Size 24 inch Type	
STREAM NAME		·
amount of RAINFALL (Give local reports of the dependence the storm.)  2/4 inche DEPTH OF WATER OVER ROADWAY	th and duration of the rainfall. Indicate ground moisture condition	
	Width	
6-inchs	36 feet Do Bound Jan 36 foot No. Boun	dloon
<b>DEBRIS:</b> (Indicate the debris that affected the structure's	capacity.)	
Trees 🗆 Brush 🗆 Rocks 🗀 Silt 🖻	Other	
Amount		
WATER DEPTH AT STRUCTURE ENTRANCE: (Refer bridge girder, top of the culvert, or shoulder of the roadward	ence the highwater to some permanent object such as the bottom of a y. This should be as accurate as possible.)	
DAMAGE OR SCOUR: Yes D No D		
If yes, specify (Describe extent of damage and needed	epair.)	
	•	
	•	
comments: (List any pertinent facts, such as traffic delate to alleviate problem. Also, list any other undocumented flow stop county + Farmers 7.  Their water Down into	rom Runing to the	<u>-</u>
SOURCE OF INFORMATION: (Give name of person(s) List address and phone number so he may be contacted for	observing the highwater or damage.	I ma
Include years familiar with area) Quino Shilik	522-267/ No.	Mile Post
Flering, colo	80728	4
Recorder (Name)	(Date) Phone	2
Necolael (Name)		(A)
,		
Lise reverse side for any additional	comments, sketches, or photographs.	1

SEND TO:

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

AUSE:	DATE OF FLOODING
Rainfall Snowmelt Other	6-24-89
LOODING LOCATION (Include SH No., direction and distance ructure, geographical reference, or milepost.)	ce from a reference point such as a highway junction, major
120 - A. / - ASINT 37 /-	,
TRUCTURE NO.	CULVERT:
N/A	Size 24" Type Steel
TREAM NAME  N/A	
.MOUNT OF RAINFALL (Give local reports of the depth and efore the storm.)	duration of the rainfall. Indicate ground moisture condition
GROUND DOU - 1.8 inches	IN 45 Minutes
PEPTH OF WATER OVER ROADWAY	
EBRIS: (Indicate the debris that affected the structure's capaci	ty.)
rees □ Brush □ Rocks □ Silt □	Other Wheat Straw
mount	,
/ATER DEPTH AT STRUCTURE ENTRANCE: (Reference th	e highwater to some permanent object such as the bottom of a
ridge 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.
	STATE OF RUMAN STATE
f yes, specify (Describe extent of damage and needed repair.)	
!	
	*
OMMENTS: (List any pertinent facts, such as traffic delays, deto	ours, duration of highwater. Suggestions for improving design
- Augusto Propietti Viso, itsi atty other undochillelitet ilbob visto	ICV at this incation)
when we while forming To	A 3 hours, FIRST time KNOWN AFFIC WAS ALERTED OF
WHERE HI THIS COUPTON. IN	as classic
: HUATION, then Let taron	of a security.
OUDGE OF MEADURE	
OURCE OF INFORMATION: (Give name of person(s) observing address and phone number so he may be contacted for additional address.)	ng the highwater or damage.
2CUIDA Veste temiliar with areal	
GERALD L. HOEFLER - 345	ARS IN AREA
- 3 Ye	ARS IN AREA
	ω <u>ε</u>
lecorder (Name)	(Date) Phone
GERALD L. HOEFIER	6-25-89 345-6568
Use reverse side for any additional comment	s, sketches, or photographs.

SEND TO:

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

CAUSE: Rainfall  Snowmelt □ Other	DATE OF FLOODING  6-24-89
FLOODING LOCATION (Include SH No., direction and distance structure, geographical reference, or milepost.)	from a reference point such as a highway junction, major
385 C MILE POST 187. 5 STRUCTURE NO.	0
STRUCTURE NO.	Size 24 Type
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth and displayed the storm.) 3170511 IN ABOUT 2783 HE	
DEPTH OF WATER OVER ROADWAY	VIDES GROUND WAS MOIST
DEBRIS: (Indicate the debris that affected the structure's capacity	)
Trees D Brush D Rocks D Silt D O	ther NONE
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This sh	nighwater to some permanent object such as the bottom of a ould be as accurate as possible.)
DAMAGE OR SCOUR: Yes D No 🗷 If yes, specify (Describe extent of damage and needed repair.)	
in you, specify (Describe Oxion of Gamage and Hespite Tepair.)	
COMMENTS: (List any pertinent facts, such as traffic delays, detout to alleviate problem. Also, list any other undocumented flood history	at this location)
CULVERT'S ARE NOT BIG	ENOUGH TO HANDLETHIS
AMOUNT OF RAIN, BUT WE I	
THIS AREA. CULVERT GOIN	ED LARGER CULLERTS IN & UNDER I-170 COULD BE
LARGER TO HELP STOP THE	FROM HAPPENING AGIN.
SOURCE OF INFORMATION: (Give name of person(s) observing List address and phone number so he may be contacted for addition include years familiar with area)	al information.
ROUNIA: A COME	BURLTUGTON CO
RURLINGTON, CO (719346-7455 WORK#) 8YEARS	(119346-7455 WORK#) 24EARS
	Date) Phone
ROUALD A. FRAMEL.	-26-89 719-341-7455
Use reverse side for any additional comments,	sketches, or photographs.

rlo

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

CAUSE:	DATE OF FLOODING
Rainfall 🕱 Snowmelt 🛚 Other	6-24-89
FLOODING LOCATION (Include SH No., direction and distanc structure, geographical reference, or milepost.)	
I-70 West Bound AT M.P. STRUCTURE NO.	436.80 Under Over PASS
	CULVERT: Size QY Type CullerT
G-27-Y OVERPASS#	Size 24 Type CullyerT
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth and of	duration of the rainfall. Indicate ground moisture condition
before the storm.)  4" TN A bout 3 HRS	•
HETN A BOUT 3 HRS.  DEPTH OF WATER OVER ROADWAY	Width
3-44	120-140
DEBRIS: (Indicate the debris that affected the structure's capacit	у.)
Trees D Brush D Rocks D Silt D	Other
Amount.	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the	
bridge girder, top of the culvert, or shoulder of the roadway. This s	nould be as accurate as possible.)
9 CT ALAMA TAR AF	111/11007
3 f7. Above Top of DAMAGE OR SCOUR: Yes & No D	UUL VEEL
If yes, specify (Describe extent of damage and needed repair.)	KAil 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, deto	
to alleviate problem. Also, list any other undocumented flood history and the CUL VERT IS TUST TO SMO	TO THE ARRA DRAINING
THE CHAVER! IS U. A. S.	THIS WAS THE WORST I HAVE
TO IT DURING A HEAVY RAIN.	ila THE WATER BACKED UP
Seen it. DRAWing on BACKS Deep evough to go Along RAMP And OVER INTERSTATE, NO TRACTIC	AND ARTRASS BACK TO CULLIFORT
AND OVER TITLESTA TO TORCE	LOLAY TUCT SLOW DOWN
TWIEE SINIO, NO IRMITIC	de any out to a second
SOURCE OF INFORMATION: (Give name of person(s) observing	· · · · · · · · · · · · · · · · · · ·
List address and phone number so he may be contacted for additio Include years familiar with area)	TIGI INFORMATION.
	S.H. No.
	• 0
(A)	
	70 13
Recorder (Name)	(Date) Phone
SWITTEN V. COSTA COC	6-26-89 719-346-7455
/Use reverse side for any additional comments	s, sketches, or photographs.

SEND TO:

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

CAUSE:				DATE OF FLOODING	
Rainfall 🗖	Snowmelt □	Other Hail		6-24-89	
			ce from a referer	nce point such as a highway junc	tion, major
structure, geographical	•				
110 201	UM allia	cic 1.	1/ 1	Jet 31 + 381	
STRUCTURE NO	1711. ZIS.10	1.02 MIRES	CULVERT:	4 C. Just	
U.S. 385 STRUCTURE NO.	ו ג או		Size	Type	
STREAM NAME	No Structi	~^¢		• • ·	
TALLES TO THE	None				
	ALL (Give local repo	rts of the depth and	duration of the	rainfall. Indicate ground moisture	e condition
before the storm.) ک DEPTH OF WATER O					
DEPTH OF WATER O	VER ROADWAY				
	2 Seches		50 54		
DEBRIS: (Indicate the	debris that affected t	he structure's capac	ity.)		
Trees 🗆 Brush	□ Rocks □	Silt 🗆	Other		
Amount	NA.				
WATER DEPTH AT S	TRUCTURE ENTRA	ANCE: (Reference th	e highwater to so	me permanent object such as the	bottom of a
bridge girder, top of the	culvert, or shoulder of	or the roadway. This	snould be as acc	curate as possible.)	
	.1 A				
DAMAGE OR SCOUP	N.H.	No. 197			
DAMAGE OR SCOUP  If yes, specify (Desci					
in year apouny (Desci	extent of gainage	and hooded repair.			!
·				•	,
				•	<u>:</u>
COMMENTS: (List ar	ny pertinent facts, such	ı as traffic delays, dete	ours, duration of I	nighwater. Suggestions for improv	ving design
to alleviate problem. Als	so, list any other undo	cumented flood histo	ory at this location	on)	I
Possible install	lation of culu	ert under pr	rivate drive	way.	
P.J	and that P.	mbline De	or Flate	- (A.	
MORE WAS CO	sed due to Reposed on road to	THE A A	191 MA	゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚゚	I
Water YeMAIN	ied on road to	A APPROXIMATELY	V IAKOS.		
SOURCE OF INFORM	ATION: (Give name	of person(s) observi	ing the highwater	or damage.	<u> </u>
List address and phone i	number so he may be	contacted for additi	onal information		S Z
Include years familiar w		A. s		,	Mile Pos
Ton BATNES	6614 Huy. 36	Jos. Colo.	303-358-4	279	No.
			-		
		•	•		
Recorder (Name)			(Date)	Phone	
SR	4-		1-19-89	303-358-4279	
Jon Hum	Use reverse side for a	any additional commen	ts, sketches. or ph	<del></del>	11
	v.v.av elde IQI (		pit		]

SEND TO:

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

OUGOE:	DATE OF FLOODING	
Rainfall 🕅 Snowmelt 🗆 Other	6-24-89	
FLOODING LOCATION (Include SH No., direction and distance from a reference structure, geographical reference, or milepost.)	e point such as a highway junction	, major
11.5.385 MM. 212.60 Co.Rd. 5 4.15 miles so.	uth of Jet. 36 4385.	
NA Size 36	" Type Mytal	
STREAM NAME		
AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rai before the storm.)  St. Rain 9 12 hours Hail.	nfall. Indicate ground moisture co	ondition
DEPTH OF WATER OVER ROADWAY Width	-	
<b>DEBRIS:</b> (Indicate the debris that affected the structure's capacity.)		
Trees □ Brush □ Rocks □ Silt 🗷 Other <u>Trask</u>	from fields.	<del></del>
Amount Malasta	·	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some bridge girder, top of the culvert, or shoulder of the roadway. This should be as accur	e permanent object such as the bott rate as possible.)	om of a
Ph"	e shiringgal stall bely also them in a	
DAMAGE OR SCOUR: Yes No No		
If yes, specify (Describe extent of damage and needed repair.)		
	,	
·		
COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of hig to alleviate problem. Also, list any other undocumented flood history at this location.  Ditches will need cleaning due to silf & debris washing.  Read was closed due to Republican River Flooding.  Water remained on road approximately 12 los.  SOURCE OF INFORMATION: (Give name of person(s) observing the highwater of	ig out of Farmbold.	design
List address and phone number so he may be contacted for additional information. Include years familiar with area)  Tom Barnes 6614 May. 36 Jecs, Colo. 303-358-42		Mile Post M
	Phone	
1 20 00	_	
Use reverse side for any additional comments, sketches, or photo	<i>303-358 - 4-279</i> ographs.	80

SEND TO:

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

CAUSE:		DATE OF FLOODING		
Rainfall 🗷 Snowmelt 🗖	Other Har	6-24-89		
FLOODING LOCATION (Include SH No.,	direction and distance from a refere	ence point such as a highway junction, major		
structure, geographical reference, or milepost.	)			
110 DOC 44.44 DIA 0	210 70 / /	1/ ( T. 21.701		
//S. 385 MM. 210.00 STRUCTURE NO.	- 210.10 6 miles	routh of Jet. 36 + 385.		
SINUCIONE NO.	Size	Type		
F-2/-D STREAM NAME		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Republican River  AMOUNT OF RAINFALL (Give local repor	ts of the depth and duration of the	rainfall. Indicate ground moisture condition		
· · · · · · · · · · · · · · · · · · ·				
Ground conditions were dry. 12 h	ours of HAIL & 12 hours of	F Rain. 52 of Rain Reported.		
	Width 7/10 Mil	. <i>[</i>		
32" At Highest		<u>ke</u>		
DEBRIS: (Indicate the debris that affected the				
Trees ☑ Brush ☑ Rocks ☐	Silt 💆 Other			
Amount Substantial				
WATER DEPTH AT STRUCTURE ENTRA	NCE: (Reference the highwater to s	ome permanent object such as the bottom of a		
bridge girder, top of the culvert, or shoulder o	the roadway. I his should be as a	ccurate as possible.)		
00.7	1./.	( 1   2011 A   )		
9ft fo	No 🗆	WAS Approximately 32" Above deck		
If yes, specify (Describe extent of damage	-	•		
A / / / /	lation to the the			
Concrete slope paving danaged	AGJACENT TO HUNITARITS.	:		
		:		
COMMENTS: (List any pertinent facts, such	as traffic delays, detours, duration o	f highwater. Suggestions for improving design		
to alleviate problem. Also, list any other undoc	cumented flood history at this locat	ion)		
Highway was closed from Jet.	36 + 385 to Burlington &	ron 17.40 to 0521.		
Flooding has occured in prest				
Standard weeds to be chared	wystrenny + downstream	Tom Bridge,		
Additional culvert Weed to be "	istalled wider roadway	worth of the bridge.		
Additional cultures viced to be installed under readway north of the bridge. Water was on readway for 21 hrs.  Econo Fro vaised 4/4 in 24 hr = 17,000 Ava cfs Filling USS.				
SOURCE OF INFORMATION: (Give name List address and phone number so he may be	contacted for additional informatio	n. Graniage.		
Include years familiar with area)  Willard North 2898 Co.Rd. 3	Idalia, Colo. 200-221-17-6	No. 10 P		
Edgar Lengel 28956 Co. Rd. 2 D	Surlington (66. 303-354-723)	(Lisetine)		
Ton Barnes 6614 Hay. 36 J	Tars Colo. 303-358-42.	79 (14,15)		
1017 Harres 6511 11-1.74	- 7			
Recorder (Name)	(Date)	Phone		
4 17	1 40 00	302 300-41300		
JANNO K. Berrie.	ny additional comments skatches as a	hotographs		
Ose reverse side for a	ny additional comments, sketches, or p	invivographis.		
· · · · · · · · · · · · · · · · · · ·	•			

SEND TO:

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

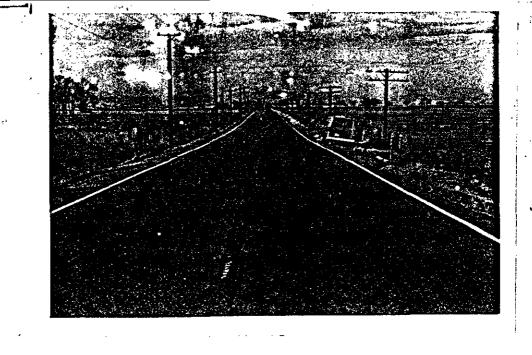
CAUSE: DATE OF FI	LOODING				
Rainfall $\square$ Snowmelt $\square$ Other $\square$	4-89				
FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)					
10 200 111 111 11 11 11 1 21 2	ac				
STRUCTURE NO ICULVERT:	<i>y</i> s				
STRUCTURE NO.  N.A.    Size 24"	Type Metal				
STREAM NAME					
N.A.  AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate	a ground majeture condition				
before the storm.)	o ground moisture condition				
DEPTH OF WATER OVER ROADWAY   Width					
- M					
<b>DEBRIS:</b> (Indicate the debris that affected the structure's capacity.)					
Trees Brush Rocks Silt DOther Trash from f	Firlds				
Amount Maderate					
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 possil	uic.)				
DAMAGE OR SCOUR: Yes D No N					
If yes, specify (Describe extent of damage and needed repair.)					
	Ì				
COMMENTS: (List any pertinent facts, such as traffic delays, detours, duration of highwater. Sugg	gestions for improving design				
to alleviate problem. Also, list any other undocumented flood history at this location)	4 & Sun / 1				
Pitches will wood to be cleaned due to sift & debris washing as Road was closed due to Republican River Flooding.	W OF THITIPING				
Mode was closed are to Republican Miver Monding.	ļ				
Water remained on road approximately 10 hrs.					
	į				
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.	<u>∞</u>   <u>×</u>				
Include years familiar with area)	S.H. N				
	No. Post				
	11.				
Tom Barnes 6614 Huy. 36 Jees, Colo. 303-358-4279	215.60 U.S. 385				
Recorder (Name) (Date) Phone					
Som Barrer 6-29-89 303-358.	4279				
Use reverse side for any additional comments, sketches, or photographs.					

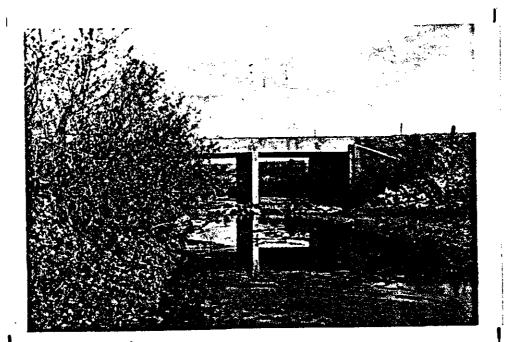
#### DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME Love Tree
FLOODING LOCATION Intersection of home Tree + Colo 392
80 ft from M.P. 21
DATE OF FLOODING 6-26-82 CAUSE: Rainfall 2 Snowmelt 0 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 No Ne
STRUCTURE NO. C-18-AZ CULVERT: Size Type
HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY Roadway
DAMAGE OR SCOUR: Yes No []  If yes, specify <u>South West wing wall Slope</u> was bed out.
COMMENTS Water flows North to South
SOURCE OF INFORMATION: Patrol wnit 21 personnell
Recorder Ton Templeman M-1 6-30-85 Phone 934-1458  (Name)  (SEND TO: STAFF DESIGN HYDRAULICS UNIT
4201 East Arkansas Avenue Denver CO 80222

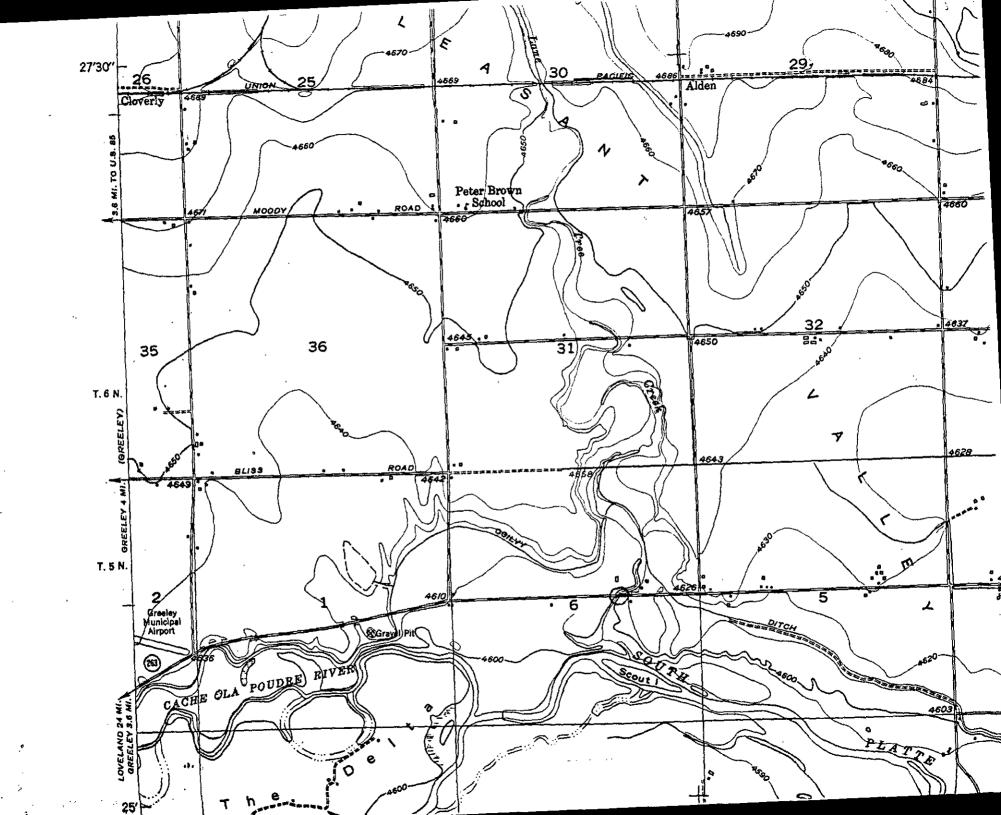
See back for Instructions and Additional Comments or Sketch. Attach any Photos.

Mila Post





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1		4670	1680		4690						V 299,	4 50	~ Re		107: , 10 <sup>-</sup> 1 32	PCMP	5	95 3	9	501 17.	<i>1 /</i> 2	- 23		



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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

Rainfall A Snowmelt Other    C-28-89	CAUSE:			DATE OF FLOODING	
FLOODING LOCATION (Includes SH No., direction and distance from a reference point such as a highway junction, major structure, geographical reference, or milepost.)  When the process of	Rainfall	Snowmelt □	Other	6-28-89	
STREAM NAME  AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)  Define of Rain to the Westof this Arca.  Depth of Water Over Roadway  Width  JSU  DEBRIS: (Indicate the debris that affected the structure's capacity.)  Trees Brush Rocks Silt Other Lorge Amount Rain  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 A fifty (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)  Phone  Amount  Recorder (Name)  Phone  Amount  Type Column Includes ground moisture condition  Width  JSU  Local Amount Amoun	structure, geographic	cal reference, or milepo	(59 - 250 W.	ance from a reference point such as a highway junct chior #59C + County Road #2 & Count cdc mm=133:60	ion, major Spend Dec
AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall. Indicate ground moisture condition before the storm.)  Defuge of Rain for the Westor-fins firea.  Depth of Water Over ROADWAY  Width  DEBRIS: (Indicate the debris that affected the structure's capacity.)  Trees Brush Rocks Silt Other Large Indicate The Journal Rocks  MATER 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 A 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)  Recorder (Name) Phone  Annual Phone  An	STRUCTURE NO.	of Millips (7	ONTY KIND	CULVERT: Size 2/" Type Carlos	2776
DEPTH OF WATER OVER ROADWAY    Width   JSD   DEBRIS: (Indicate the debris that affected the structure's capacity.)  Trees   Brush   Rocks   Silt   Other   Large   Indicate   Rain   Rain    Amount   Coming Dewn   Very   Rocks    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   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)  Recorder (Name)   (Date)   Phone   Pho	STREAM NAME				
DEBRIS: (Indicate the debris that affected the structure's capacity.)  Trees		NFALL (Give local rep Deluge of	ports of the depth and Rain to t	he West of this Area.	
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)  Phone    Oate   Phone   P	DEPTH OF WATER	OVER ROADWAY	6"	Width 250	
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	DEBRIS: (Indicate	the debris that affected	the structure's capa	acity.)	
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		h □ Rocks [	□ Silt □	Coming Down Very Dickly	in
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)  Recorder (Name) Phone  (Date) Phone					
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)  Recorder (Name)	bridge girder, top of	the culvert, or shoulder	r of the roadway. Thi	is should be as accurate as possible.)	Sitom or a
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)  Recorder (Name)  Recorder (Name)  Phone  (Date)  Phone  (Date)  Phone	DAMAGE OR SCO	UR: Yes 🗆	No 🛕		
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)  Recorder (Name)	If yes, specify (De	escribe extent of damag	ge and needed repair	<b>(.</b>	
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)  Recorder (Name)				•	
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)  Recorder (Name)					
List address and phone number so he may be contacted for additional information.  Include years familiar with area)  Recorder (Name)    Date   Phone	COMMENTS: (Lis to alleviate problem.	it any pertinent facts, su Also, list any other und	ch as traffic delays, de documented 'flood his	etours, duration of highwater. Suggestions for improvistory at this location)	ing design
List address and phone number so he may be contacted for additional information.  Include years familiar with area)  Recorder (Name)    Date   Phone		7	·		
List address and phone number so he may be contacted for additional information.  Include years familiar with area)  Recorder (Name)    Date   Phone					;
Thomas Ramirez 6/28/89 774-7203	List address and pho	ne number so he may i	ne of person(s) obser be contacted for add	rving the highwater or damage. itional information.	Mile S.H.
Thomas Ramirez 6/28/89 774-7203		•			Post /
Thomas Ramirez 6/28/89 774-7203		٠ .			
Thomas Ramirez 6/28/89 774-7203				La Intera	14 6
Use reverse side for any additional comments, sketches, or photographs.			<del></del>	6/28/89 774-7203	0
		Use reverse side to	r any additional comm	ents, sketches, or photographs.	

22

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

CAUSE:	DATE OF FLOODING
Rainfall ☑ Snowmelt ☐ Other	6-29-89
FLOODING LOCATION (Include SH No., direction and distance	
structure, geographical reference, or milepost.)	
11	ham 100 a
STRUCTURE NO.	MM - / 70.00
	Size Type
STREAM NAME	0.20
SCREAM NAME	·
AMOUNT OF RAINFALL (Give local reports of the depth and	duration of the rainfall. Indicate ground moisture condition
The state of the s	
DEPTH OF WATER OVER ROADWAY	Middle
DEPTH OF WATER OVER ROADWAY	12 FT ONE LANE
DEBRIS: (Indicate the debris that affected the structure's capaci	IV)
	Other
Trees □ Brush □ Rocks □ Silt □	Other
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference th	e highwater to some permanent object such as the bottom of a
bridge girder, top of the culvert, or shoulder of the roadway. This	snould be as accurate as possible.)
II. and in a second	
DAMAGE OR SCOUR: Yes NO D	
If yes, specify (Describe extent of damage and needed repair.)	,
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1	
Some Shoulden WAShin	rg in Spots
COMMENTS: (List any pertinent facts, such as traffic delays, deto	ours, duration of highwater. Suggestions for improving design
to alleviate problem. Also, list any other undocumented flood histo	bry at this location)
No Traffic Delays. HAL	A MAIN WATER MUNIZION
out of pasture & Fields 17	Filled Ditch CAUSEING
water to ken on Road	,
copy is a second con a copy	
·	·
SOURCE OF INFORMATION: (Give name of person(s) observi	
List address and phone number so he may be contacted for additional line (see a second	onal information.
$\sim$ 0	Hay Mile Wonter Post
Chester Mc Cont Sr.	may muce a same 11º 1g
· .	
5	(Date) Phone
Recorder (Name)	
Charter Mc Call-	6-30-89 842-2852
Use reverse side for any additional commen	ts, sketches, or photographs.

DOH FORM 293 FEERUARY 1975 Copy to Day

Cf.w 7-5-89	L
123456789/0	

SSTITE 3456789 JOJE STITE SECTION 4 STITE SECT

STREAM NAME NAME	IS MICE SEA.
FLOODING LOCATION Co. 194 MP 17- MP 18	E 22312058
The state of the state of the displacement of the transfer of	
DATE OF FLOODING 6-29-89 CAUSE: Rainfall Snowmelt Other	•
AMOUNT OF RAINFALL COMMISSION AND AND AND AND AND AND AND AND AND AN	e i kriji ji krediki. Las
DEPTH OF WATER OVER ROADWAY 4" Width 1360	
DEBRIS: Trees   Brush   Rocks   Silt   Other	
Amount Auto Auto San Amount	, ·
STRUCTURE NO. CULVERT: Size 244 Type	CORREGATEL
HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY COUNTY	RO8
EASTWARD 1000	, i • • • • • • • • • • • • • • • • • •
DAMAGE OR SCOUR: Yes \( \sigma\) No \( \sigma\)	
If yes, specify	. •
	<u> </u>
COMMENTS	
	•
SOURCE OF INFORMATION:	•
Recorder W.R LEWIS Phone 456-	2906 =
(Name) (Date)	Š.
SEND TO: STAFF DESIGN	. 1

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

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

#### DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME			MICE SECTIONA
FLOODING LOCATION	. 26.50		A ST 11012017 13 13 13 13 13 13 13 13 13 13 13 13 13
DATE OF FLOODING 7-14-89 C			
AMOUNT OF RAINFALL Lenk			
DEPTH OF WATER OVER ROADWAY _		Width	
DEBRIS: Trees Brush Ro	cks 🗌 Silt 🗹	Other <u>Was H</u>	ed in we
- Amount			
STRUCTURE NO.			Type STOOL
HIGHWATER REFERENCED TO BRIDG	•		
DAMAGE OR SCOUR: Yes No  If yes, specify	•	To s Houl	der
COMMENTS	* ***		
SOURCE OF INFORMATION:			
Recorder Bruch (Name)	<u>?</u> (Dat	- 141-89 Phone 26 te)	.1 - 3 101
Spy 2, - SEND TO:	STAFF DESIGN HYDRAULICS UN 4201 East Ark Denver CO 802	ansas Avenue	

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

SEND TO:

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

CAUSE:	DATE OF FLOODING				
Rainfall Snowmelt Other	7-15-89				
<b>FLOODING LOCATION</b> (Include SH No., direction and distance structure, geographical reference, or milepost.)					
CK. 31 - 600 312 11111 2313					
10 miles East of U.S.85 Intr.					
STRUCTURE NO.	CULVERT:				
	Size 34" Type CMP				
STREAM NAME	l l				
AMOUNT OF RAINFALL (Give local reports of the depth and	duration of the rainfall. Indicate ground moisture condition				
before the storm.)    13   15 min. Extrem!  DEPTH OF WATER OVER ROADWAY	y dry				
DEPTH OF WATER OVER ROADWAY	Width /				
<b>6</b> "	10'				
<b>DEBRIS:</b> (Indicate the debris that affected the structure's capacit	(y.)				
Trees 🗆 Brush 🖟 Rocks 🗀 Silt 🖼	Other <u>Corn</u> <u>Stocks</u>				
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 s	should be as accurate as possible.)				
51 about the of cultural					
DAMAGE OR SCOUR: Yes   No SE					
If yes, specify (Describe extent of damage and needed repair.)	l l				
	I				
·					
COMMENTS: (List any pertinent facts, such as traffic delays, deto to alleviate problem. Also, list any other undocumented flood history	ours, duration of highwater. Suggestions for improving design bry at this location)				
High water at location for appo	x. 4 hrs				
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	l				
SOURCE OF INFORMATION: (Give name of person(s) observi	ng the highwater or damage.				
List address and phone number so he may be contacted for addition	onal information.				
Include years familiar with area) Bob Broyles - 83					
	No.				
	$\mathbf{U}_{\mathbf{w}}$				
	1 1/9 1/2				
December (1)	(Date)   Phone				
0 1 11 14 5 0					
Use reverse side for any additional comments, sketches, or photographs.					
Use reverse side for any additional comment	s, sketches, or photographs.				

SEND TO:

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

CAUSE:	DATE OF FLOODING	
Rainfall Snowmelt Other	July 23, 198	9
FLOODING LOCATION (Include SH No., direction and	distance from a reference point such as a highway junction.	major
structure, geographical reference, or fillepost.)		
STATE High way 14/A AT Min	R PUST 3	
STRUCTURE NO.	CULVERT:	
	Size 24" Type hnTA)	
STREAM NAME		
NONS  AMOUNT OF RAINFALL (Give local reports of the dept	h and duration of the rainfall Indicate ground majeture co	ndition
before the storm.)		
DEPTH OF WATER OVER ROADWAY	OISTUTE IN Ground. AMOUNT of &	4/ 4 4-KNO
DEPTH OF WATER OVER ROADWAY	Width	
DEBRIS: (Indicate the debris that affected the structure's	capacity)	
DEBRIS: (Indicate the debris that affected the structure's	Other Mind Front BEAN Field	,
	_	
Amount	EAST CX ROAD.	
WATER DEPTH AT STRUCTURE ENTRANCE: (Refere bridge girder, top of the culvert, or shoulder of the roadway	ence the highwater to some permanent object such as the bott . This should be as accurate as possible.)	om of a
5 Let		
DAMAGE OR SCOUR: Yes No		
If yes, specify (Describe extent of damage and needed re	epair.)	
(Lacenta email e a a a a a a a a a a a a a a a a a a		
COMMENTS: (List any pertinent facts, such as traffic delated at alleviate problem. Also, list any other undocumented floor	ys, detours, duration of highwater. Suggestions for improving od history at this location)	design
NO KNOWN TRASSIC DELAY -		
Add LArger Culvert - Cr	PUT DEAN List	
Keep from lassling. ELEVATE	ROAD WILL FILL MATERIAL	7
f		
SOURCE OF INFORMATION: (Give name of person(s) List address and phone number so he may be contacted for	observing the nighwater or damage. r additional information.	σ s
Include years familiar with area)		Mile S.H.
Discovered by JULN Gordin Dove Oreck Highenay Shop	while Checking P. 1	ile Post
Dove Oreck Highenne Shop	1 22 2(12	-
	6//-26/2	
		K W
Recorder (Name)	(Date) Phone	12
John Bodo	July 241984 677-2612	
Use reverse side for any additional	comments, sketches, or photographs.	

SEND TO:

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

CAUSE:	DATE OF FLOODING
Rainfall Snowmelt Other	7-24-89
FLOODING (OGAFION (Include SH No., direction and distanstructure, glodgraphical reference, or milepost.)  US 40 CMP 120 - /3.00 ESTRUCTURE NOF.	co from a reference point such/as a highway junction, major
US 40 CMP 1120 - 13.00 8	CAST OF Blue MOUNTAIN COLO
omoorone 130,C.	Size Type
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth and before the storm.)  ORG CONDITIONS  DEPTH OF WATER OVER ROADWAY N. Side	duration of the rainfall. Indicate ground moisture condition  6 IN RAIN FAIL (ESTIMATE)  Width
6 INChes OVER ONE APPROACH  DEBRIS: (Indicate the debris that affected the structure's capaci	``````
, ·	Other Weed 5
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This	e highwater to some permanent object such as the bottom of a 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, dete to alleviate problem. Also, list any other undocumented flood history	ory at this location)
" all we want were	in this area are from
any mare water than this or	more debis they louldn't
any mare have Handled it.	
SOURCE OF INFORMATION: (Give name of person(s) observed List address and phone number so he may be contacted for additional contacted for addition	onal information.
Include years familiar with area)  MIKE PAGE Blue mt N	lolo Post
	40 70
Bacardon William	(Date) Phone 30.2
Recorder (Name) Lany Stent	8-1-89 374 3384 (s. sketches, or photographs.
Se reverse side for any additional commen	ts, sketches, or photographs.

Glash flood puly 24-1989 this letter is in regard to a flash flood in the mee of Blue Mountain Calo 4540, Mp 11,20 to Mp 12,60, from information resident it happened on July 24 Miner Danage to fence and Bayou pit wer on Haven Side highway Water was running 3 Ft Doep in Banow pit never obeiflow anto Hwy But Sid approach on the Houth Side West Bound Barrer pit with bin water over the top of i spproach had an 1811 long through it which is open, all other lulests in this tree Deem to have did their bold. We Did those one Washout I around appro on 42 in Rubbert 100 Ft long on Jour Side South Aide of

SEND TO:

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

3.0

CAUSE:	DATE OF FLOODING
Rainfall Snowmelt Other	July 25 1989
FLOODING LOCATION (Include SH No., direction and distar structure, geographical reference, or milepost.)	
STATE Highway 141A AT Prile	Post 3
STRUCTURE NO.	Size 24"  Type Mital
STREAM NAME	A METAL
Nene	
AMOUNT OF RAINFALL (Give local reports of the depth and	duration of the rainfall. Indicate ground moisture condition
before the storm.) YNKNBUN	Dry Defore rain Sterm
DEPTH OF WATER OVER ROADWAY	Width
לאטאאינעקל DEBRIS: (Indicate the debris that affected the structure's capac	300 feet
DEBRIS: (Indicate the debris that affected the structure's capac	city.)
Trees □ Brush □ Rocks □ Silt 🕱	Other Brud From Fields to SAST
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference t	ne 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.)
- 1: T	
DAMAGE OR SCOUR: Yes $\square$ No $\square$	
<b>1</b>	
If yes, specify (Describe extent of damage and needed repair.	)
COMMENTS: (List any pertinent facts, such as traffic delays, de	tours, duration of highwater. Suggestions for improving design
to alleviate problem. Also, list any other undocumented flood his	tory at this location)
till in ROAD lesses for box less	+ 01 0 10 1
till in ROAD leasy for 600 feet	to ALEVATE KNAD SUNFACE ON
PUT IN LARGE Culverts	
·	
SOURCE OF INFORMATION: (Give name of person(s) obser List address and phone number so he may be contacted for add	tional information
Include years familiar with area)	
Total Gooden	Mile Pos
DUVE Creek Highling	No. Post
LOVE Creek Highling	Thof.
	[53]
	To Inhana
Recorder (Name)	(Date) Phone
Jahn Lordan	7-26-89 677-2612
Use reverse side for any additional comm	ents, sketches, or photographs.

SEND TO:

STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansas Avenue

4201 East Arkansas Avenue Denver, CO 80222

CAUSE: Rainfall Snowmelt □ Other	DATE OF FLOODING
Rainfall Snowmelt Other  FLOODING LOCATION (Include SH No., direction and dist	ance from a reference point such as a highway function, major
structure, geographical reference, or milepost.)  14/A of mile foot 2.3	F
STRUCTURE NO.	CULVERT:
	Size None Type
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth a	nd duration of the rainfall. Indicate ground moisture condition
before the storm.) UNKNOWN	Dry Difore ra; N Width Goo feet
DEPTH OF WATER OVER ROADWAY	Width
YnKnown	1 600 feet
DEBRIS: (Indicate the debris that affected the structure's cap	pacity.)
	Other Nicid Fram Fields To EAU
Amount WATER DEPTH AT STRUCTURE ENTRANCE: (Reference	7 7000
3 feet  DAMAGE OR SCOUR: Yes □ No □  If yes, specify (Describe extent of damage and needed repa	
COMMENTS: (List any pertinent facts, such as traffic delays, to alleviate problem. Also, list any other undocumented flood h	nistory at this location)
Build-up This Soction of	Lond-
SOURCE OF INFORMATION: (Give name of person(s) obs List address and phone number so he may be contacted for ad Include years familiar with area)  JOHN GOODEN  679-26  DOVE Creek Highway Sh	dditional information.
Recorder (Mayne)	(Date) Phone
John Graden	7-26-19 677-2612
Use reverse side for any additional com	ments, sketches, or photographs.

SEND TO:

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

CAUSE:	DATE OF FLOODING
	ther July 22, 1989
FLOODING LOCATION (Include SH No., direstructure, geographical reference, or milepost.)	ction and distance from a reference point such as a highway junction, major
STRUCTURE NO.	On Higheran 1414
STRUCTURE NO.	CULVERT:
_	Size 4 y " Type Teel
STREAM NAME	
none	of the depth and duration of the rainfall. Indicate ground moisture condition
<b>AMOUNT OF RAINFALL</b> (Give local reports of before the storm.)	of the depth and duration of the rainfall. Indicate ground moisture condition
(la Kades	Dry before Stom
DEPTH OF WATER OVER ROADWAY	Width
	· · · · · · · · · · · · · · · · · · ·
Clinkrolin.  DEBRIS: (Indicate the debris that affected the s	tructure's capacity.)
Trees □ Brush 汉 Rocks ⊠	•
Amount	
	E: (Reference the highwater to some permanent object such as the bottom of a
bridge girder, top of the culvert, or shoulder of the	e roadway. This should be as accurate as possible.)
DAMAGE OR SCOUR: Yes 🖂 -Ne	hadala to to to a se
If yes, specify (Describe extent of damage and	I needed repair.) Washed out fort of light of
Road. but level have to	But in more rig- Ray and file Material
at \$ fort Culient los	tion of the state
COMMENTS: (List any pertinent facts, such as to alleviate problem. Also, list any other undocur	traffic delays, detours, duration of highwater. Suggestions for improving design
Δ '	small to hadde the brater -
I would fut in a	O foot CBC - Water house flooder This
section 2 time before bic	Thin fact 21 is
	37/3
SOURCE OF INFORMATION: (Give name of List address and phone number so he may be co	ntented for additional information
Include years familiar with area	
Hober Goods	_ 677-2612
<i>y</i>	
1	
	(Oate) Phone
Recorder (Name)	
John Joda	8-3-89 622-2612
Use reverse side for any	additional comments, sketches, or photographs.

SEND TO:

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

:

CAUSE:	<u> </u>	DATE OF FLOODING
Rainfall 🕅 Snowmelt 🛚	Other	July 29, 1989
FLOODING LOCATION (Include SH No., structure, geographical reference, or milepost	direction and distance from a referen-	ce point such as a highway junction, major
34,80 mile Past	SPOONS A.	^eq :
	Size L	811 Type Steel Pike
STREAM NAME  Praw That  AMOUNT OF RAINFALL (Give local repo	Runs Into	Boulder Creek
before the storm.)	_	We getation destroyed.
4"		601
<b>DEBRIS:</b> (Indicate the debris that affected t		
Trees Brush Rocks	Silt Other	
Amount WATER DEPTH AT STRUCTURE ENTRA	NCE: (Beforence the highwater to see	me permanent object such as the bottom of a
bridge girder, top of the culvert, or shoulder of	of the roadway. This should be as acc	urate as possible.)
3 Freit over	TOP OF Culvent	Show the first that the second
DAMAGE OR SCOUR: Yes ☐ If yes, specify (Describe extent of damage	7	
in yes, specify (Describe extent of damage	and nooded repairs	į
,		: :
COMMENTS: (List any pertinent facts, such to alleviate problem. Also, list any other undo	n as traffic delays, detours, duration of h	ighwater. Suggestions for improving design n)
		y Nanwegetation
		<b>'</b>
SOURCE OF INFORMATION: (Give name	e of person(s) observing the highwater	or damage.
List address and phone number so he may be include years familiar with area)	contacted for additional information.	SH ME
	000 SIRIE 1911	S.H. No.
Recorder (Name)	(Date)	Phone P
Lalmily	1'/3189	1443-2147
) se reverse side for	any additional comments, sketches, or pho	otograpns.

SEND TO:

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

CAUSE:  Rainfall   Snowmelt □	Other Dut of Banks DATE OF FLOODING 7-29-89
FLOODING LOCATION (Include SH No., o structure, geographical reference, or milepost.)	rection and distance from a reference point such as a highway junction, major 392 AM, 21 6957 of U.S. 85 9ppox 5.63 miles
STRUCTURE NO. C-18-AZ	2 Spans Size 3/ X/2 Type CBC
STREAM NAME LONE Tree Cri	pK
ARROLLING OF DAILIEAL (Circles)	of the depth and duration of the rainfall. Indicate ground moisture condition this before rain was dry. Sidence approx. 5 to 7 inches of rain + hail
DEPTH OF WATER OVER ROADWAY	Width
<b>DEBRIS:</b> (Indicate the debris that affected the	structure's capacity.)
Trees D Brush D Rocks D	Silt  Other
Amount	
DAMAGE OR SCOUR: Yes If yes, specify (Describe extent of damage a commentation). (Give name list address and phone number so he may be compared to the compared of the compared to the compared of the compare	o deposition of highwater. Suggestions for improving design mented flood history at this location) Closed rd, for 6 hrs. due Crossing road surface,
Include years familiar with area)  Bob Broyles, Sen Hwy Mice Wrk,  Tom Templemen, Huny Mice Supr. B	Otil Box 454 Auth, Calo, 834-1265  x 849 Faton, No. 454-2449
Recorder (Name)	(Date) Phone
Bot Breyler Sen. Hun Mte	
Y Use reverse side for al	additional comments, sketches, or photographs.

SEND TO:

STAFF DESIGN HYDRAULICS UNIT

4201 East Arkansas Avenue Denver, CO 80222

CAUSE: DATE OF FLOODING	
Rainfall Snowmelt Other $7-29-89$	
FLOODING LOCATION (Include SH No., direction and distance from a reference point such as a highway	y junction, major
structure, geographical reference, or milepost.)  115 40 MP 5.90 TO MP 8.00 TWO MI/ES AN	d Seven
TONTAS EAST OF DINOSAUR COLD. STRUCTURE NO. CULVERT: FROM 18" TO	Q ET MILLIODAC
Size A/So 9Ft X Type F	T COMEN I
TWIN WASh	
AMOUNT OF RAINFALL (Give local reports of the depth and duration of the rainfall, Indicate ground reports the storm)	noisture condition
GROUND SAMP ESTIMATE 6708IN PAINFAIL	IN ARCA
DEPTH OF WATER OVER ROADWAY / Width	——————————————————————————————————————
APROX 61N 36'	<u> </u>
PROX 6 / M  DEBRIS: (Indicate the debris that affected the structure's capacity.)	
Trees Brush Rocks Silt W Other 40805	
Amount	4. 1. 4 4 5.
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the highwater to some permanent object such bridge girder, top of the culvert, or shoulder of the roadway. This should be as accurate as possible.)	as the bottom of a
ANYWhere FROM 3FT to AS MUCH AS 20 FT	
DAMAGE OR SCOUR: Yes A No D	
If yes, specify (Describe extent of damage and needed repair.)	5.90
If yes, specify (Describe extent of damage and needed repair.)  MINCE DAMAGE TO END OF CULVERT 8 FT A.T M.)	24IN CUIVERT
DAMAGO TO HIXUIT APRON ON SOUTH CHIES	,
I MINER JUNINAME TO DESTURE	
COMMENTS: (List any pertinent facts, such as traffic delays, defours, duration of highwater. Suggestions fo to alleviate problem. Also, list any other undocumented flood history at this location)	
GIN OF WATER OVER HIGHWAY TRAFFIC WAS Slowed I	CFF TROWN
NOT STALLED, CULVERT AT MP 5.90 CONSIST OF METAL	8F1 FROM
N side Southward Aprox 90FT THEN IS 9FT XII FT CEMENT BO	X THE ICES!
OF WAY ACROSS THIS SCOMS TO CREATE A PROBLEM ON NEWS	WIT
NOT STATED, CHECK THEN IS 9FT XII FT CEMENT BE N Side Southward APROX 90FT THEN IS 9FT XII FT CEMENT BE OF WAY ACROSS This Seems TO CREATE A PROBLEM ON N ENC ON ENTRANCE TO METAL 8 FT IT DOES NOT HAVE AN APRON O NISO 24IN CUIVERTS CROSSING HWY Should BE LARGER,	//V     \
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 a real 4-2384 ART PRYOR - 374-2375  LARRY L KENT ART PRYOR - 374-2375  Denation of water on Huy APROX 2 1285	S.+ M
Include years tamiliar with a regard - 2387 ART PRYOR - 374.2375	Mile Post S.H. No.
LANGE TOPAL TABS	ost ost
Duration of water on Huy Mirax allow	1 1
	0 80
Recorder (Name) (Date) Phone	8
Recorder (Name)  (Date)  Phone  8-1-89  374-2-354  Use reverse side for any additional comments, sketches, or photographs.	800

Jany & Hay mice

Flashflood SAT July 29-1989 630 pm

This is additional information on Flash flood HS 40 MP 5.90 to mp 8.00 This general area has a history of flash floods usually lovening from one mile to topo 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 tood using 4 to 6 years But Gamerally is mare longined to Tain wash's which lonsist of one 8FT metal bullet appear 90FT long Running into a 9FT High llever FT wide Cenent Box Culvert. 100FT Long.

The other wash which is appropriate over touth East Approx mp 6.00 is another cament Box Culvert 9++ high by 1/ FT wide by I stop by more froblems with the one that is Half metal and half Cament.

also fulverts Crossing Hwy Aprox 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.

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

CAUSE: Rainfall ☑ Snowmelt □ Other	7-29-89	
FLOODING LOCATION (Include SH No., direction and distructure, geographical reference, or milepost.) Colo. 39)	stance from a reference point such as a highway jun  * Weld C.R. 59, M.M. 25.52, 10.1.  of b	ction, major 1 miles east 1,5, 85
STRUCTURE NO.	CULVERT: Size 24 Type C M	1 P
STREAM NAME	T	÷ . · · · · · · · · · · · · · · · · · ·
AMOUNT OF RAINFALL (Give local reports of the depth before the storm.) Ground dry before ruinfall,	and duration of the rainfall. Indicate ground moistupprox, 5-7" of rain in about 2-4 hr.	re condition period
DEPTH OF WATER OVER ROADWAY	Width 15 1	
DEBRIS: (Indicate the debris that affected the structure's ca	pacity.)	
Trees 🗆 Brush 🗀 Rocks 🗀 Silt 🗀	Other	
Amount		
water Depth at Structure Entrance: (Reference bridge girder, top of the culvert, or shoulder of the roadway. To road suface is Sft,  DAMAGE OR SCOUR: Yes \( \Pi \) No	this should be as accurate as possible.) From to	op of culvert
If yes, specify (Describe extent of damage and needed repa		:
comments: (List any pertinent facts, such as traffic delays, to alleviate problem. Also, list any other undocumented flood I same location on 7-15-89.  Land owner requests that a bigger culver placed, it may create another problem used to a coation.	t he alocal at this location. If t	lem at
s sum y (Ur),		
SOURCE OF INFORMATION: (Give name of person(s) obsilist address and phone number so he may be contacted for actinctude years familiar with area)  Tom Temple man - Highway Mtce. Supervise 454-2449  Box 899-Eaton, Colo. 80615	dditional information.	Mile Post 35.52 S.H. No. 392
Recorder (Name) Bob Broyles Son, Hwy. Mtce. Wrk.	(Date) <b>Phone</b> 8-2-89 834-1458	
Use reverse side for any additional com		1
	- ·	<b>┛</b>

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

#### **DRAINAGE STRUCTURE FLOOD SUMMARY**

CAUSE:		DATE OF FLOODING	
Rainfall 🖾 Snowmelt 🗆 Other ムラックオス	ving	7-29-89	
<b>FLOODING LOCATION</b> (Include SH No., direction and dista structure, geographical reference, or milepost.)	ince from a reference	ce point such as a highway junct	ion, major
1-25 N. + S. under Alameda			
1-25 N. & S. under Alsmede STRUCTURE NO.	CULVERT:		
	Size	Туре	
STREAM NAME			
AMOUNT OF RAINFALL (Give local reports of the depth an before the storm.)	,		
HAKNOWN but it was raining ceal DEPTH OF WATER OVER ROADWAY	heavy AT	Times. Most of After	J WOLWY:
DEPTH OF WATER OVER ROADWAY	Width		EUCHING
16-12" ON 井 1-1816 NJS, Decper 12-3-4/18  DEBRIS: (Indicate the debris that affected the structure's capa	ACCTORS	4-10Nes	
			$\nu$ . $\nu$
Trees 🗆 Brush 🗀 Rocks 🗀 Silt 🗆	Other Pump	West hit By Jighlain	3 KNOCKING
Amount	04/ /		
DAMAGE OR SCOUR: Yes No Diff yes, specify (Describe extent of damage and needed repair North 12" pump and wireing to Control South 12" pump working but drawing Reset would kick out.  COMMENTS: (List any pertinent facts, such as traffic delays, do to alleviate problem. Also, list any other undocumented flood his Traffic Delay 1-lane apen North 19th ing Kits pump Arch from Lightning Rud - Possible,  Source Of Information: (Give name of person(s) observed.)	Hox domner High Ampsi High Ampsi etours, duration of history at this location	ighwater. Suggestions for improv	
List address and phone number so he may be contacted for add Include years familiar with area)  HATULY LOUNTO - 571-0657  Ken Ulin - 571-0657  Tom Celfelt - 571-0657  Kent Knight - 424-2664  John Wind Free - 424-2664  Recorder (Name)	(Date)	Phone	Mile Post  Mile Post  5.H. No.
Odanoved Larah.	7-39-89	574-0656	

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

SEND TO:

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

CAUSE: Rainfall 回 Snowmelt ロ Other un kn	DATE OF FLOODING  2000  2-28-89	3%
FLOODING LOCATION (Include SH No., direction and dista structure, geographical reference, or milepost.)	nce from a reference point such as a highway jund	ction, major
Alameda Pump house at 1-2 STRUCTURE NO.	5 and Alamedo.	
STRUCTURE NO.	CULVERT:	=
·	Size Type	
STREAM NAME		
<b>AMOUNT OF RAINFALL</b> (Give local reports of the depth and before the storm.)	d duration of the rainfall. Indicate ground moistu	re condition
DEPTH OF WATER OVER ROADWAY	Width	
DEBRIS: (Indicate the debris that affected the structure's capa	city.)	
Trees 🗆 Brush 🗀 Rocks 🗀 Silt 🗖	Other	···-
Amount		
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference to bridge girder, top of the culvert, or shoulder of the roadway. This DAMAGE OR SCOUR:  Yes No Damage and needed repair.  COMMENTS: (List any pertinent facts, such as traffic delays, de	s should be as accurate as possible.)	
to alleviate problem. Also, list any other undocumented flood his  Tackic Delay 2 Las	et Breakers working on flow wtomatically at 100gm	_
SOURCE OF INFORMATION: (Give name of person(s) obsert List address and phone number so he may be contacted for additionally years familiar with area)  Charlic Canaingham  John wind free  Bill Hibbase  Recorder (Name)  Charlis M. Cumuingham	ving the highwater or damage.  Itional information.    (Date)	Mile Post 207, 97 S.H. No. 1-25

38

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

CAUSE:	DATE OF FLOODING
Rainfall Snowmelt Other UNKNOW	N 7-28-89 7 PM
FLOODING LOCATION (Include SH No., direction and distance	e from a reference point such as a highway junction, major
structure, geographical reference, or milepost.)	
Almada O I a de la cara	durada
Alameda Pamp house at 1-25 AM STRUCTURE NO.	CULVERT:
James Tone No.	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
DEFIN OF WATER OVER HOADWAT	***************************************
DEBRIS: (Indicate the debris that affected the structure's capacit	y.)
Trees   Brush  Rocks  Silt	• •
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This s	highwater to some permanent object such as the bottom of a hould be as accurate as possible.)
onego gnasi, top o mo canon, o conserva	,
DAMAGE OR SCOUR: Yes □ No '\$	
If yes, specify (Describe extent of damage and needed repair.)	•
	duration of highwater Congressions for improving decian
COMMENTS: (List any pertinent facts, such as traffic delays, deto to alleviate problem. Also, list any other undocumented flood histo	ry at this location)
Acharlie and myself (Harvey) ( Reset and pumps were stors	persed control pashed
Beset And pumps were store	is up everthing book & seemed
Normal.	γ ον ζ
٠.	
,	
SOURCE OF INFORMATION: (Give name of person(s) observing List address and phone number so he may be contacted for additional address.)	and independent on
Include years familiar with area)	
	Pos Pos
	\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}
Recorder (Name)	(Date) Phone
	7-28-89 571-6656
Navy Lovas side for any additional common	
Use reverse side for any additional comment	s, sketches, or photographs.

SEND TO:

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

CAUSE				DATE OF FLOODING
	Rainfall 🗗	Snowmelt □	Other	July 28, 1989
FLOOD structure	ING LOCATION, geographical	ON (Include SH No reference, or milepos	., direction and distr st.)	ance from a reference point such as a highway junction, major
	341,8	o mile	Post S	Poons area
STRUC	TURE NO.			Size 1/8" Type Steal P. Pe
STREA	N NAME	na wi) Thi	at Runs	Into Boulder Creek  Ind duration of the rainfall. Indicate ground moisture condition
AMOUN before th	NT OF RAINF/ ne storm.)	ALL (Give local rep	orts of the depth ar	nd duration of the rainfall. Indicate ground moisture condition
DEDTU	Q''	Culvert Ir	n tireare	width vegatation destroyed by fine
DEPIH	OF WATER O	VER ROADWAY		60'
DEBRIS		debris that affected	the structure's capa	acity.)
	*	19 Rocks		Other
Amount			·	
WATER bridge g	DEPTH AT S irder, top of the	TRUCTURE ENTR	ANCE: (Reference of the roadway. Th	the highwater to some permanent object such as the bottom of a is should be as accurate as possible.)
-	2 5+	·	A L	
DAMAG	SE OR SCOUP	Buer T	No 🕅	
		ribe extent of damag		
COMMI to allevia	ENTS: (List ar	ny pertinent facts, suc so, list any other und	ch as traffic delays, d ocumented flood hi	letours, duration of highwater. Suggestions for improving design istory at this location)
Plus	35124 0	iffears To	be beco	ause on Lack of Vecetition
Fro	m Bur	n area	from t	forest Fire Early Justilia
HOM	hing To	9 40tz 6	rosion e	of Soil, Loose Burnt Debnis
Nothing To Stop erosion of Soil, Loose Burn't Debris washing down draw				
SOURC List add	E OF INFORM	IATION: (Give nam number so he may b	ne of person(s) obse se contacted for add	erving the highwater or damage.
Include	years familiar w	rith area) Swr	certinat	Fine Dept
Bo	ulder c	O. Sheri	A-17- PT	Dan Schaul
Co	lo Def	T of H.	uye main	TWAR B.
		<u> </u>		
Record	er (Name)	. () . <5	Rm. Tull	(Date) Phone D 00
		Use reverse side for	r any additional comm	nents, sketches, or photographs.

*5*0

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

CAUSE:		DATE OF FLOODING	<b>∞</b> ,
Rainfall 🖾 Snowmelt 🗅	Other Direct BINGAE	1611 30 -31	-87_
FLOODING LOCATION (Include SH No., d	lirection and distance from a refer	ence point súch as á highway jur	nction, major
structure, geographical reference, or milepost.)			·
	·> / A		
Flight 37 Am 3.50 -	CULVERT:		
	i i	24// <sub>1-36</sub> //Type	
STREAM NAME		7-56	
ATTECH INNE			
AMOUNT OF RAINFALL (Give local report	s of the depth and duration of the	e rainfall. Indicate ground moist	ure condition
before the storm.)		-	
DEPTH OF WATER OVER ROADWAY	A Company of the Control of the Cont		
	•	I for my manufacture the same	1
PROUT P FOOT  DEBRIS: (Indicate the debris that affected the	e structure's canacity )	1 FOOT WILLE.	
Trees □ Brush ᠍ Rocks □	Silt 🖾 Other		
Amount		<b>S</b>	
WATER DEPTH AT STRUCTURE ENTRAI bridge girder, top of the culvert, or shoulder of	NCE: (Reference the highwater to	some permanent object such as th	ie bottom of a
COMMENTS: (List any pertinent facts, such a to alleviate problem. Also, list any other undoc TRAFFIC FAR TO BE	as traffic delays, detours, duration ou umented flood history at this loca	tion) でのトラーブデスキルー	
THE WAIN WAS PART O	2 LAOBLEM BUT	THE MAIN MES	2 S. J. W
NUMBER 2 DIFER BR.	int And Librar	E Was State College	
NUMBER 2 DIGEN ON			!
SOURCE OF INFORMATION: (Give name	of pareon/s) observing the highway	ter or damage	
List address and phone number so he may be o	contacted for additional information	on.	σ z
Include years familiar with area)			Mile Post
·			No. Pos
·	÷		"
Recorder (Name)	(Date)	Phone	
FRED ROSSMAN	1711 C X X	9 353 4847	
	ny additional comments, sketches, or		71
m.d. Use reverse side for an	•	· · · · · · · · · · · · · · · · · · ·	

SEND TO:

STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansas Avenue

Denver, CO 80222

Rainfall  Snowmelt  Other	
CLOODING LOOPTON	SULV 3031,89
FLOODING LOCATION (Include SH No., direction and structure, geographical reference, or milepost.)  Hickory 263 MM 3.25	d distance from a reference point such as a highway junction, major
STRUCTURE NO	CULVERT:
STRUCTURE NO.	
	Size Type
STREAM NAME	
before the storm.)	oth and duration of the rainfall. Indicate ground moisture condition
<u> イナーディルとドゥς G Piote A D - 10</u> DEPTH OF WATER OVER ROADWAY	PS DRV
DEPTH OF WATER OVER ROADWAY	Width
DEBRIS: (Indicate the debris that affected the structure's	s capacity.)
Trees  Brush  Rocks  Silt	□ Other
Trees Diusii Dinons Diusii Diit	- Other
Amount	
WATER DEPTH AT STRUCTURE ENTHANCE: (Refe bridge girder, top of the culvert, or shoulder of the roadwa	rence the highwater to some permanent object such as the bottom of a y. This should be as accurate as possible.)
If yes, specify (Describe extent of damage and needed	repair.) BANK WAS WAS THE TOTAL OF THE TOTAL
If yes, specify (Describe extent of damage and needed MINEO ROPD WAY TOOK I	repair.) BANK WAS WASHED AWAY UNDER TIVE TANDUMP KOADS OF DIT PUN A TON OF MIX
COMMENTS: (List any pertinent facts, such as traffic dela	ays, detours, duration of highwater. Suggestions for improving design
COMMENTS: (List any pertinent facts, such as traffic dela	ays, detours, duration of highwater. Suggestions for improving design od history at this location)  it if was fixed and part Held  observing the highwater or damage.
COMMENTS: (List any pertinent facts, such as traffic delate attended and the control of the cont	observing the highwater or damage.  observing the highwater or damage.  or additional information.
COMMENTS: (List any pertinent facts, such as traffic delate at leviate problem. Also, list any other undocumented flower that the state of the state	ays, detours, duration of highwater. Suggestions for improving design od history at this location)  THE DAND PATCHES  Observing the highwater or damage.  or additional information.
COMMENTS: (List any pertinent facts, such as traffic delete at leviate problem. Also, list any other undocumented floe HAD TO BE FLAGED until SOURCE OF INFORMATION: (Give name of person(s) List address and phone number so he may be contacted for	observing the highwater or damage.  observing the highwater or damage.  or additional information.

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

Rainfall 🗵 Snowmelt 🗆 Other	1 m m a a C
	7-30-89
FLOODING LOCATION (Include SH No., direction and distastructure, geographical reference, or milepost.) MM 12	ince from a reference point such as a highway junction, major 14:80 C-59 South of HAXTUNICO) 6-
STRUCTURE NO.	CULVERT:
B-26-6	Size 6 tubes 36" Type Galianicad
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth an before the storm.)	
4 in about 2Hrs.	Dry 101
DEPTH OF WATER OVER ROADWAY	,
DEBRIS: (Indicate the debris that affected the structure's capa	
Trees □ Brush □ Rocks □ Silt ཁ́	Other Strain
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	s should be as accurate as possible.)
1 50 7	
DAMAGE OD SCOUD: Voc D No D	of Hipporpy to Linkow of Tober.
DAMAGE OR SCOUR: Yes Do No A /	
it hest sherith. Indecting extent of damage and deeped tehan.	•1
	•
	•
COMMENTS: (List any pertinent facts, such as traffic delays, de	
to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
COMMENTS: (List any pertinent facts, such as traffic delays, de to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
to alleviate problem. Also, list any other undocumented flood his	etours, duration of highwater. Suggestions for improving design story at this location)
SOURCE OF INFORMATION: (Give name of person(s) obsertists address and phone number so he may be contacted for additional and the source of person	etours, duration of highwater. Suggestions for improving design story at this location)  (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (9)   (9)   (1)   (1)   (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (1)   (2)   (3)   (4)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (1)   (1)  (2)   (3)   (4)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9
SOURCE OF INFORMATION: (Give name of person(s) obsertists address and phone number so he may be contacted for additional and the source of person	etours, duration of highwater. Suggestions for improving design story at this location)  (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (9)   (9)   (1)   (1)   (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (1)   (2)   (3)   (4)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (1)   (1)  (2)   (3)   (4)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9
SOURCE OF INFORMATION: (Give name of person(s) obsertists address and phone number so he may be contacted for additional and the source of person	etours, duration of highwater. Suggestions for improving design story at this location)  (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (9)   (9)   (1)   (1)   (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (2)   (3)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (1)   (2)   (3)   (4)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (1)   (9)   (1)   (9)   (1)   (1)   (1)   (1)   (1)   (1)  (2)   (3)   (4)   (4)   (5)   (6)   (7)   (8)   (8)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9)   (9
SOURCE OF INFORMATION: (Give name of person(s) obserties address and phone number so he may be contacted for additional a	etours, duration of highwater. Suggestions for improving design story at this location)
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SOURCE OF INFORMATION: (Give name of person(s) obsert List address and phone number so he may be contacted for additional include years familiar with area)	estours, duration of highwater. Suggestions for improving design story at this location)  Trying the highwater or damage. itional information.  Ennis Bonn Hoft 774-7435  The Rominez 174-65-83
SOURCE OF INFORMATION: (Give name of person(s) obsertist address and phone number so he may be contacted for additional and the source of person a	etours, duration of highwater. Suggestions for improving design story at this location)  (1 ½)  Eving the highwater or damage.  Itional information.  Ennis Bonn Hoff 174-7435  The Rominez 174-65-13
SOURCE OF INFORMATION: (Give name of person(s) obsert List address and phone number so he may be contacted for additional include years familiar with area)	etours, duration of highwater. Suggestions for improving design story at this location)  Typing the highwater or damage.  Itional information.  In nis Bon N Hoft 174-7435  The Romaniez 174-6543  [Date] Phone  7/30/09 774-6532

SEND TO:

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

CAUSE: 🗸		· // / .	
Rainfall Snowmelt	Other	7-30-84	
LOODING LOCATION (Include SH N	No., direction and distance from a re	eference point such as a highway junct	ion, major
structure, geographical reference, or milep	oost.)	11 143:60	
		, , ,	
STRUCTURE NO.	CULVER'		
NONE	Size	NONE Type	
STREAM NAME			
AMOUNT OF RAINFALL (Give local rebefore the storm.)			condition
4" IN About	2Hrs. Dry	Seil	
DEPTH OF WATER OVER ROADWAY	Width	1 . 1	
3" to 4" deep		320 with	
DEBRIS: (Indicate the debris that affecte	ed the structure's capacity.)		
Trees 🗆 Brush 🗀 Rocks	□ Silt ♥ Other →	<u> </u>	
Amount			
WATER DEPTH AT STRUCTURE ENT	TRANCE: (Reference the highwater	to some permanent object such as the h	oottom of a
bridge girder, top of the culvert, or should	er of the roadway. This should be a		
Space-day to the Action	about 3		
Spanier in the second	about 3		
	No A	•	
	No 🗵	<del>,</del> , , , , , , , , , , , , , , , , , , ,	
DAMAGE OR SCOUR: Yes	No 🗵		
DAMAGE OR SCOUR: Yes	No 🗵		
DAMAGE OR SCOUR: Yes   If yes, specify (Describe extent of dama	No 风 age and needed repair.)		
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s	No 风age and needed repair.)	on of highwater. Suggestions for improv	ing design
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other un	No 风 age and needed repair.) uch as traffic delays, detours, duration ndocumented flood history at this lo	on of highwater. Suggestions for improv ocation)	ing design
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other un	No 风age and needed repair.)	on of highwater. Suggestions for improv ocation)	ing design
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other un	No 风 age and needed repair.) uch as traffic delays, detours, duration ndocumented flood history at this lo	on of highwater. Suggestions for improv ocation)	ing design
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other un	No 风 age and needed repair.) uch as traffic delays, detours, duration ndocumented flood history at this lo	on of highwater. Suggestions for improv ocation)	ing design
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DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur	No 风age and needed repair.)  uch as traffic delays, detours, duration documented flood history at this leaders.	ocation) water or damage.	ing design
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  The second of the se	No Agage and needed repair.)  uch as traffic delays, detours, duration and ocumented flood history at this leaders are of person(s) observing the high the contacted for additional inform	ocation) water or damage. ation	
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  This is address and phone number so he may Include years familiar with area)	No Age and needed repair.)  Such as traffic delays, detours, duration and commented flood history at this leads to the contacted for additional information.	water or damage.	S.H.
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  This is address and phone number so he may Include years familiar with area)	No Age and needed repair.)  Such as traffic delays, detours, duration and commented flood history at this leads to the contacted for additional information.	water or damage.	S.H.
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  The second of the se	No Age and needed repair.)  Such as traffic delays, detours, duration and commented flood history at this leads to the contacted for additional information.	water or damage.	
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  The second of the se	No Agage and needed repair.)  uch as traffic delays, detours, duration and ocumented flood history at this leaders are of person(s) observing the high the contacted for additional inform	water or damage.	S.H.
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  The second of the se	No Age and needed repair.)  Such as traffic delays, detours, duration and commented flood history at this leads to the contacted for additional information and the contacted for additional information.	water or damage. ation. 1. 5 1.00 Nile + +	S.H.
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  The second of the se	No Age and needed repair.)  Such as traffic delays, detours, duration and commented flood history at this leads to the contacted for additional information.	water or damage. ation.	S.H.
DAMAGE OR SCOUR: Yes  If yes, specify (Describe extent of dama  COMMENTS: (List any pertinent facts, s to alleviate problem. Also, list any other ur  The second of the se	No Age and needed repair.)  Such as traffic delays, detours, duration and commented flood history at this leads to the contacted for additional information and the contacted for additional information.	water or damage. ation. 1. 5 1.00 Nile + +	S.H.

SEND TO:

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

Rainfall 🛢 Snowmelt 🗅 Other	DATE OF FLOODING
<u> </u>	Sulv 30, 31, 89
FLOODING LOCATION (Include SH No., direction and distance fr structure, geographical reference, or milepost.) ルナモル SEC	om a reference point such as a highway junction, major Tion of Highway 37 Am 392
	r
STRUCTURE NO.   CU	LVERT:
	Size Type
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth and dura before the storm.)	ition of the rainfall. Indicate ground moisture condition
DEPTH OF WATER OVER ROADWAY WIG	ith
DEBRIS: (Indicate the debris that affected the structure's capacity.)	
	er
Amount	
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the hig	hwater to some permanent chiest such as the bettern of a
DAMAGE OR SCOUR: Yes No Damage and needed repair.) S ROADWAY HAD TO HAUL LOT OF FROM WAS HIMG 15 11 S COMMENTS: (List any pertinent facts, such as traffic delays, detours,	UST ABOUT WASHED OUT RIP RAP TO SECURE ROAD  Syd
to alleviate problem. Also, list any other undocumented flood history a	
to alleviate problem. Also, list any other undocumented flood history a	t this location)
to alleviate problem. Also, list any other undocumented flood history a  SOURCE OF INFORMATION: (Give name of person(s) observing the List address and phone number so he may be contacted for additional	t this location)  The highwater or damage. Information.  S.H. No. 3
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SOURCE OF INFORMATION: (Give name of person(s) observing the List address and phone number so he may be contacted for additional Include years familiar with area)  Recorder (Name)	t this location)  The highwater or damage. Information.  SH. No.  SH. No.  Phone  8, 8, 9, 353, 48, 47

# 8.

## DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME
FLOODING LOCATION CO 194 MP 17/18
DATE OF FLOODING 7-31.89 CAUSE: Rainfall Snowmelt Other #
DEPTH OF WATER OVER ROADWAY 6-8 IN. Width 200 905  DEBRIS: Trees Brush Rocks Silt Other NONE  Amount
STRUCTURE NO CULVERT: SizeType HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY 2½ miles w. of
DAMAGE OR SCOUR: Yes No 🗵  If yes, specify
COMMENTS WATER CROSS'S ROAD FACH TIME THEIR IS A HEAUY RAIN. HANDLY IRRIGATION WATER NORMALLY INVOLUES
Recorder W.R. LEWIS Phone 456-2906
SEND TO: STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansas Avenue

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

#### ~DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME Indian Creek	
FLOODING LOCATION 45 HW666 MP 205-67. 5 mile	, 
North of New Mexico State Line	
DATE OF FLOODING S/1/87 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	···
Amount $3-5$ yard  STRUCTURE NO. $\rho_{02}$ $\beta_{02}$ $\beta_{0$	
HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY 6" Over reading	
for 400' were covered with mud + debris	<del></del>
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 fonce	
comments will do fence Repair as soon as dry enough	1+05e
in. Will check where water came out of chann	<u>e_</u> [
SOURCE OF INFORMATION: State Patrol dispatch called morni	ng
after, No major traffic delaxs	S.
Recorder Charles L. Kornochy 8-2-89 Phone 565 9557 (Name) (Date)	le Post H. No.
SEND TO: STAFF DESIGN HYDRAULICS UNIT	6

4201 East Arkansas Avenue

Denver CO 80222

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

SEND TO:

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

CAUSE: Rainfall ☑ Snowmelt □ Other	DATE OF FLOODING 8-6-89	
FLOODING LOCATION (Include SH No., direction and dista structure, geographical reference, or milepost.)	nnce from a reference point such as a highway junct	ion, major ル・ルs
40 Highway Minute Stop STRUCTURE NO.	CULVERT:	
STREAM NAME	Size X/A Type	
AMOUNT OF RAINFALL (Give local reports of the depth an	•	
1 1/10 inches	d duration of the rainfall. Indicate ground moisture	condition
DEPTH OF WATER OVER ROADWAY	Width	
DEBRIS: (Indicate the debris that affected the structure's capa	200 '	
Trees Brush D Rocks D Silt D	Other	
Amount		
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference to cridge girder, top of the culvert, or shoulder of the roadway. This	the highwater to some permanent object such as the b	oottom of a
NA		
DAMAGE OR SCOUR: Yes D No D		
If yes, specify (Describe extent of damage and needed repair,	1	
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COMMENTS: (List any pertinent facts, such as traffic delays, de to alleviate problem. Also, list any other undocumented flood his	itory at this location)	ł
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start w/ senior suprivi		
•		}
SOURCE OF INFORMATION: (Give name of person(s) observations and phone number so he may be contacted for additional additi	ving the highwater or damage. 'tional information.	
include years familiar with area)		Mile S.H.
Barry Lembey		Mile Post
		40
		9
Recorder (Name)	(Date) Phone (7/9)	1
Barry Lemley	8-7-89 167-5562	50
Use reverse side for any additional comme	nis, skeiches, or pholographs.	

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

DRAINAGE STRUCTURE FLOOD SUMMARY

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

SEND TO:

CAUSE:	DATE OF FLOODING
Rainfall ≠ Snowmelt □ Other	8-6-89
FLOODING LOCATION (Include SH No., direction and distance	e from a reference point such as a highway junction, major
structure, geographical reference, or milepost.)	, , , , , , , , , , , , , , , , , , , ,
14 5	
40 12 mbe east of Jet 385	
STRUCTURE NO.	CULVERT:
	Size 18 'Type
STREAM NAME	
AMOUNT OF RAINFALL (Give local reports of the depth and of	duration of the rainfall. Indicate ground moisture condition
perore the storm.)	greate melotale containen
DEPTH OF WATER OVER ROADWAY	
	Width
DEBRIS: (Indicate the debris that affected the structure's capacit	360'
DEBRIS: (Indicate the debris that affected the structure's capacit	y.)
Trees Brush DN/A Bocks D Silt D	Other
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bridge girder, top of the culvert, or shoulder of the roadway. This si	hould be as accurate as possible.)
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43"  DAMAGE OR SCOUR: Yes □ No Ø	
If yes, specify (Describe extent of damage and needed repair.)	
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COMMENTS: (List any pertinent facts, such as traffic delays, detor	urs, duration of highwater, Suggestions for improving design
to eneviate problem. Also, list any other undocumented flood histor	ry at this location)
loo much water at one	ce culvert couldn't handle
jŧ.	3776
,···	
·	,
·	,
SOURCE OF INFORMATION: (Give name of person(s) observing	g the highwater or damage
List address and phone number so he may be contacted for addition	nal information
Include years familiar with area)	

Barry Lember Recorder (Name) Phone (Date)

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

CAUSE:	DATE OF FLOODING	
Rainfall 📈 Snowmelt 🗆 Other	8-6-89	ŀ
FLOODING LOCATION (Include SH No., direction and distant structure, geographical reference, or milepost.)	ce from a reference point such as a highway juncti	on, major
		}
40 Just west of Comptony road		Ī
STRUCTURE NO.		·
CTDT AND MARKE	Size 24" Type	
STREAM NAME		
AMOUNT OF RAINFALL (Give local reports of the depth and	duration of the rainfall. Indicate around mainture	
before the storm.)	duration of the farman, mulcate ground moisture	condition
DEPTH OF WATER OVER ROADWAY	T. C.	
	Width O /	
DEBRIS: (Indicate the debris that affected the structure's capaci	240'	
T Nove		Į
Trees Brush Brush Silt Silt	Other	
Amount		
WATER DEPTH AT STRUCTURE ENTRANCE: (Reference the bridge girder, top of the culvert, or shoulder of the roadway. This s	e highwater to some permanent object such as the bo should be as accurate as possible.)	ottom of a
66"		
66"  DAMAGE OR SCOUR: Yes □ No ☒		
If yes, specify (Describe extent of damage and needed repair.)		ł
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COMMENTS: (List any pertinent facts, such as traffic delays, deto to alleviate problem. Also, list any other undocumented flood histo	ory at this location)	1
This culvert could, not	hardle the amount	of
ran Gall		- 1
		1
SOURCE OF INFORMATION: (Give name of person(s) observing	ng the highwater or damage.	
List address and phone number so he may be contacted for addition include years familiar with area)	onal information.	S. M
Barry Lembey		Mile Po S.H. No
Darry Lemiey		Post No.
		40
December		10 %
Recorder (Name)	(Date) Phone	
Barry Lem ley	8-1-89 767-5562	
Use reverse side for any additional comments	s, skelches, or photographs.	
سندور والمناقب		8

#### DRAINAGE STRUCTURE FLOOD SUMMARY

=1 STREAM NAME	
-2 FLOODING LOCATION High way 6/4 Mile Marker 20.9	
-3 DATE OF FLOODING 8-15-89-4 CAUSE	: Rainfall 🔀 Snowmelt 🗌 Other
-5 AMOUNT OF RAINFALL 8 of ONG	= inch
-6DEPTH OF WATER OVER ROADWAY	-7 Width 24
-BDEBRIS: Trees Brush Rocks [	☐ Silt <b>X</b> 90ther
-10 Amount From 1" To	apering To Gron Shoulder
-11STRUCTURE NO12C	ULVERT: Size 24 Type 57ccl
	ULVERT OR ROADWAY 4" of Mud a Water
over roadway	
-14 DAMAGE OR SCOUR: Yes □ No 🖾	
If yes, specify	
·	
15 COMMENTS CAN NOT MAINTA	ain proper drainage because
farmer has encroached	on our right way
-16 SOURCE OF INFORMATION:	
	S.
18 Recorder Glen W. Gibson	8-16-89 Phone 345-6568
(Name)	(Date)
•	

SEND TO: STAFF DESIGN

HYDRAULICS UNIT

4201 East Arkansas Avenue

Denver CO 80222

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

Send on the section from

SEND TO:

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

CAUSE: Rainfall ☒ Snowmelt □ Other	DATE OF FLOODING
	AUGUST 20,1989
FLOODING LOCATION (Include SH No., direction an structure, geographical reference, or milepost.)	nd distance from a reference point such as a highway junction, major
HWY SOB-MP. 92.5 TO MP.	
STRUCTURE NO.	CULVERT: Size   8 " Type
STREAM NAME	70.00
AMOUNT OF RAINFALL (Give local reports of the de	epth and duration of the rainfall. Indicate ground moisture condition
before the storm.)	·
DEPTH OF WATER OVER ROADWAY	Width 206 FT.
<b>DEBRIS:</b> (Indicate the debris that affected the structure'	, , , , , , , , , , , , , , , , , , , ,
Trees 🗆 Brush 🗆 Rocks 🗀 Silt 🕽	Other WEEDS
Amount $\mathfrak{A}''$	
WATER DEPTH AT STRUCTURE ENTRANCE: (Refe bridge girder, top of the culvert, or shoulder of the roadwa	erence the highwater to some permanent object such as the bottom of a ay. This should be as accurate as possible.)
DAMAGE OR SCOUR: Yes No X	T to ROADWAY SURFACE.
If yes, specify (Describe extent of damage and needed	repair.)
COMMENTS: (List any pertinent facts, such as traffic delate alleviate problem. Also, list any other undocumented flo	lays, detours, duration of highwater. Suggestions for improving design bood history at this location)
NEED to CLEAN AND SHI	APE ditches ON both Sides of
HIGHWAY to HELD WATER	2 drain down ditch Line
instead of over Roadle	
INDIEAD OF OVER PROADCE	DAY.
SOURCE OF INFORMATION: (Give name of person(s)	
List address and phone number so be may be contacted for Include years familiar with area)	or additional information.  was Paintine SHoulder = 5
Include years familiar with area) PAINT CREW LINE AND ASKED ME TO TAK	WWAS PAINTING SHOULDER IN THE SE OF SHOW Plow AND Plow
offdebais-weeds Etc.	WAS PAINTING SHOULDER BY OF SHOULD BY OF SHOW PLOW AND PLOW OF SHOW OF
Doordon u	(Date) Phone
Recorder (Name)	(Date) Phone
Use reverse side for any additional	comments, sketches, or photographs.

SEND TO:

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

CAUSE:	DATE OF FLOODING	
Rainfall 🔼 Snowmelt 🗆 Other	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.)	$\gamma \delta (\mathcal{M}_{k}) = \infty$ . When $\gamma \delta (\mathcal{M}_{k})$	
als 59 Huy mid	CULVERT: 3X3' Size 1611 Type Galvanized	
STRUCTURE NO.	CULVERT:	
B-26-F	Size July 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.)		
DEPTH OF WATER OVER ROADWAY	Width	
3"	5001	
DEBRIS: (Indicate the debris that affected the structure's capaci	· ·	
Trees 🗆 Brush 🖟 Rocks 🗀 Silt 🔼	Other STraw	
.· Amount		
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bridge girder, top of the culvert, or shoulder of the roadway. This s	should be as accurate as possible.)	
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DAMAGE OR SCOUR: Yes No 🗟	+ High way To Botton of two per	
If yes, specify (Describe extent of damage and needed repair.)		
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COMMENTS: (List any pertinent facts, such as traffic delays, deto to alleviate problem. Also, list any other undocumented flood histo		
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3 Hrs. Heross Highway		
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SOURCE OF INFORMATION: (Give name of person(s) observing	ng the highwater or damage.	
List address and phone number so he may be contacted for additionally include years familiar with area)	and the contract of	
א פאר אווווומן with area)	onal information.  S.H. No.  Only Bonhhor T 774-1435	
<i>D</i> C "	10/15 150 1/1 10 1/4-1933 NO. POST	
Recorder (Name)	(Date) Phone	
Warnin Bounhaft	8-28-89 774-7435	
Use reverse side for any additional comments, sketches, or photographs.		

### DRAINAGE STRUCTURE FLOOD SUMMARY

STREAM NAME Lulbers Drawage Difele -
FLOODING LOCATION 4/17, 80 US 50
DATE OF FLOODING 9-10 87 CAUSE: Rainfall Snowmelt Other 4.1
DEPTH OF WATER OVER ROADWAY 1500t Width 40 Ft
DEBRIS: Trees   Brush   Rocks   Silt   Other
Amount
HIGHWATER REFERENCED TO BRIDGE, CULVERT OR ROADWAY
DAMAGE OR SCOUR: Yes No No If yes, specify
comments This Origine has silt to bottom of stringes and as for I know wever book Inspected in 20 years  Source of Information:
Recorder <u>Ceury PAnick</u> 9-18-99 Phone 456 2906 # 0 00 00 00 00 00 00 00 00 00 00 00 00
SEND TO: STAFF DESIGN HYDRAULICS UNIT 4201 East Arkansas Avenue Denver CO 80222

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

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

9-10-89

5H 119 MP A 33 to A 40

Boulder Conyin

Mud slide over road

Area where slope was denuded by fire

#### 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.

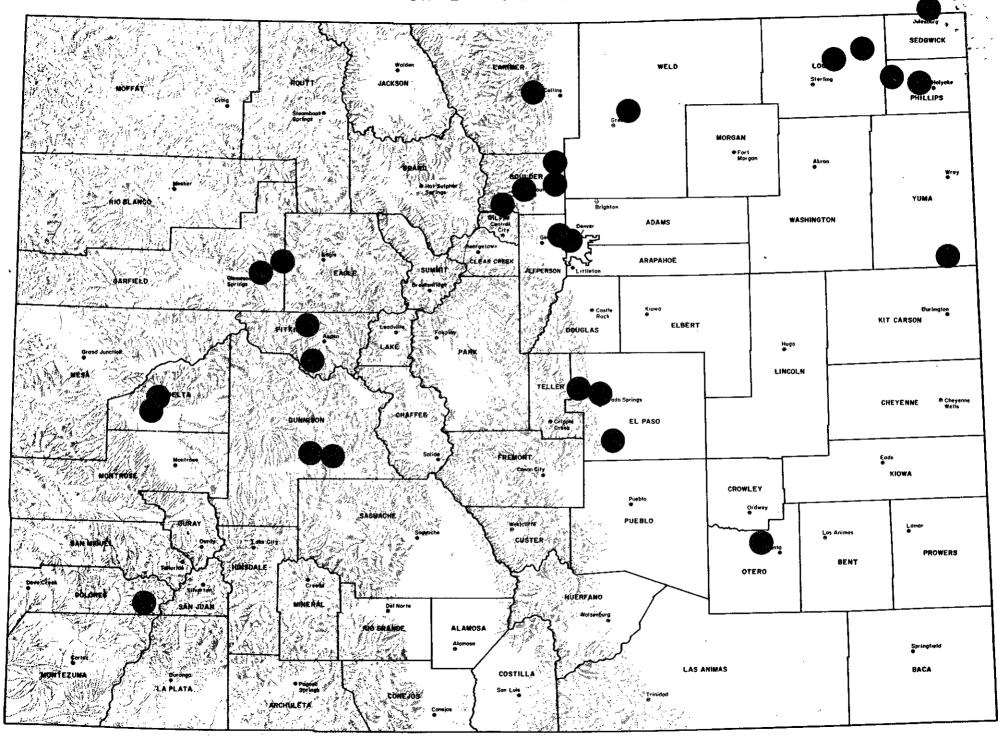
The 1989 thunderstorm season began in ernest on June 3 in the Denver metro area. Floods made no distinction between rich or poor as residents were evacuated from mobile home parks and exclusive residential neighborhoods. On June 24, 1989, parts of northeast Colorado were hit by heavy rain and baseball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



#### 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

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South Hatte River at Grook.	Low downsy Heday of Eric		lack drowned flording at Sw 14 h	Relation Creeks lead Galch Botton ConTrol. Aftern Dr. Calle turn at Disco. S. Ple. Republican Ruser of Boung Res.	tout decinary at longer on t	Latter Remove Put 1165 Cato & Tick Marry Co	Total Company	Edmused In 6 near Nesterland			
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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 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.

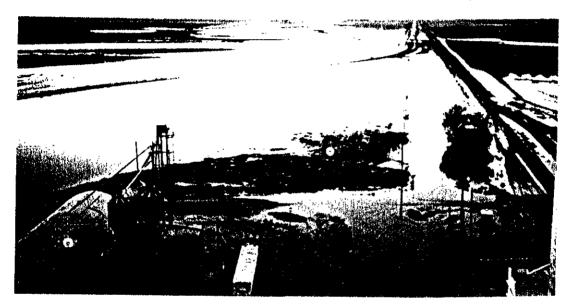
Sources: Marylin Miller, Town Clerk
Gary Johnson, Highway Department
The Haxtun Herald, 8/3/89, p. 1,4,10,12
Video tapes by local residents

July 30-31, 1989 North

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.

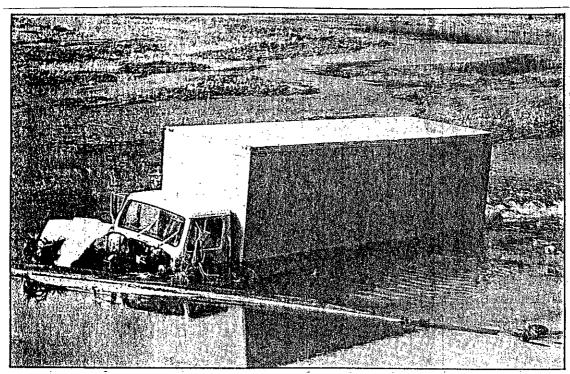
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August 12, 1989

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. 84



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.

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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.

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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

RECEIVED RICHARD E. HATTEN, DIRECTOR DIVISION OF DISASTER **EMERGENCY SERVICES** 

Camp George West COLORADO WATER303) 273-1622 Golden, Colorado 80401

CONSERVATION BOARD

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. 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. indicated in the Agreement, the County should designate an agent who can represent the County's interests in this Mr. Leonard Boulas, of my staff will serve as matter. -Governor's Authorized Representative and as such, will represent the state on all matters pertaining to this 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.

**Roy Romer** GOVERNOR

David J. Thomas **EXECUTIVE DIRECTOR** 

> Colorado State Patrol

Colorado Bureau of Investigation

Colorado Law Traling Academy

Division of

Division of Disaster **Emergency Services** 

> Division of Fire Safety



Mr. Don Korrey, Chariman January 30, 1990 page 2

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 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



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 and the State Policy Paper pertaining assistance attached hereto. Such Disaster 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.

Roy Romer GOVERNOR

David J. Thomas EXECUTIVE DIRECTOR

> Colorado State Patrol

Colorado Bureau of Investigation

Colorado Law Enforcement Trailing Academy

Division of Criminal Justice

Division of Disaster Emergency Services

> Division of Fire Safety



Mr. Don Korrey, Chairman January 30, 1990 page 2

### Conditions under which this assistance is provided

- No application for assistance will be approved unless the 1. 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.
- State assistance shall be limited to the following area of the 3. state: Logan County.
- The county will establish and maintain an active program under 4. 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

Don Korrey Chairman Logan County Board County Commissioners

<u> / - 3/- 90</u> Date

Date

## **CERTIFICATE**

Logan County hereby certifies that designated as the County's Agent em		
in all matters pertaining to the Emergency Financial Assistance,	provision of State Disaste further that this agent i	r s
empowered to execute on behalf necessary to facilitate the rending		S
	Don Korrey	
	Chairman Logan County Board of Count Commissioners	У
	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.

#### **EXECUTIVE CHAMBERS**

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



## EXECUTIVE ORDER

Roy Romer Covernor

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 Rómer 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 Mftigation 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

### 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.

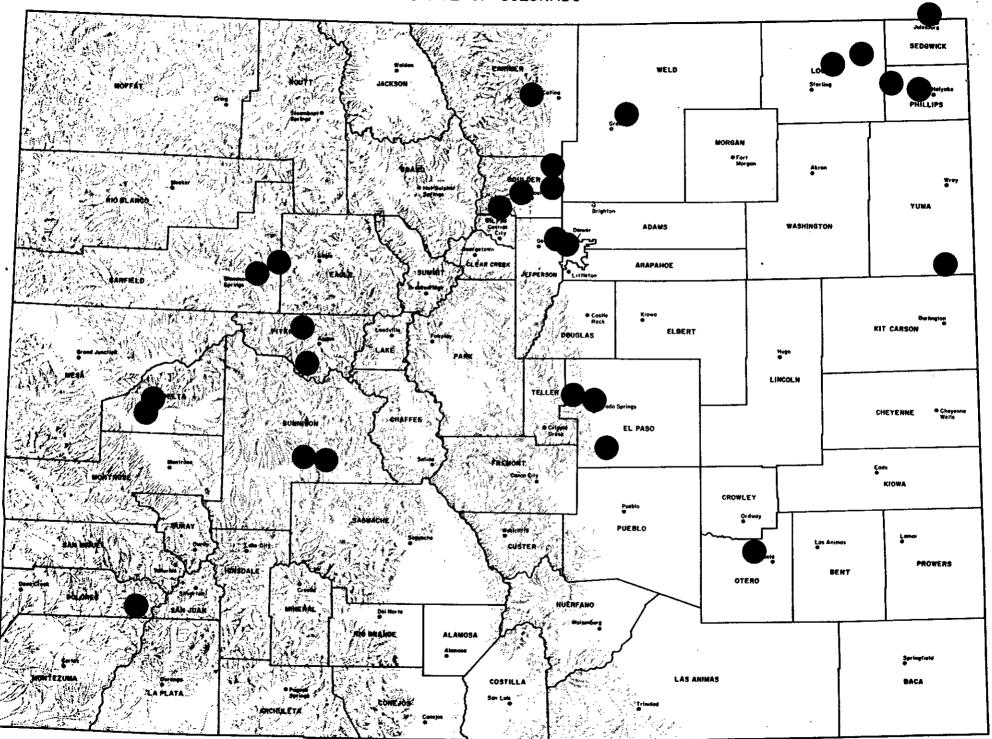
The 1989 thunderstorm season began in ernest on June 3 in the Denver metro area. Floods made no distinction between rich or poor as residents were evacuated from mobile home parks and exclusive residential neighborhoods. On June 24, 1989, parts of northeast Colorado were hit by heavy rain and baseball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



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# 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 Brie

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

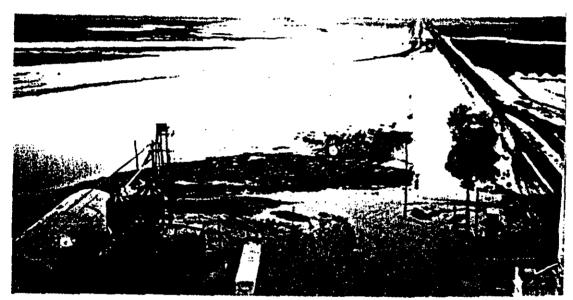
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Sources: Marylin Miller, Town Clerk
Gary Johnson, Highway Department
The Haxtun Herald, 8/3/89, p. 1,4,10,12
Video tapes by local residents

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



Marylin Hiller

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.

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July 31, 1989 Local drainage flooding at Gunnison

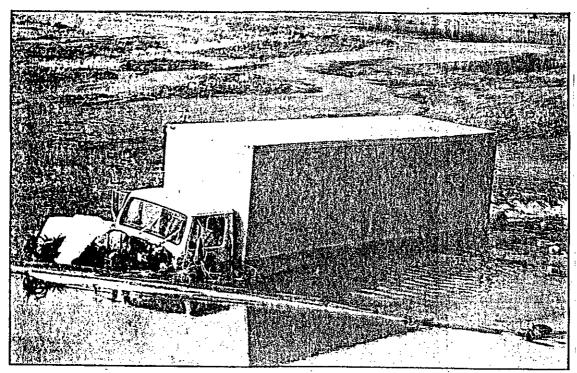
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Source: Gunnison County Times, 8/2/89, p. 1,3

August 12, 1989 Fountain Creek above Manitou Springs

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Source: Colorado Springs Gazette Telegraph, 8/30/89, p. 84



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

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

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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 2.8 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 20 10 30 50 40 60 70 80 90 TIME

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