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Colorado Springs
Denver

Engineering
Planning
Surveying

MASTER DEVELOPMENT DRAINAGE PLAN
FOR
THE WEST MONUMENT CREEK BASIN
AT PEREGRINE

MAY, 1992

Prepared For:

PEREGRINE JOINT VENTURE
7710 North Union Boulevard
Colorado Springs, Colorado 80918
(719) 531-6565

Prepared By:

JR ENGINEERING, LTD.
6455 North Union Boulevard
Suite 202
Colorado Springs, Colorado 80918
(719) 593-2593

Job Number 8030.72

MASTER DEVELOPMENT DRAINAGE PLAN FOR PEREGRINE
THE WEST MONUMENT CREEK BASIN

Engineer's Statement:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the City for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability directly caused by the negligent acts, errors or omissions on my part in preparing this report.

COLORADO REGISTERED JOSEPH W DESJARDIN 24207 PROFESSIONAL ENGINEER

Joseph W. DesJardin, Colorado PE #24207 — 5.17.92
For and on Behalf of JR Engineering, Ltd. — Date

Developer's Statement:

I, developer have read and will comply with all the requirements specified in this drainage report and plan.

Vintage Communities, Inc. as managing agent
for Peregrine Joint Venture

By: _____

Title: Land Development Manager

Address: 7710 N. Union Boulevard

Colorado Springs, Colorado 80920

City of Colorado Springs:

Filed in accordance with Section 15-3-906 of the Code of the City of Colorado Springs, 1980, as amended.

_____ for City Engr. — 5-19-92
City Engineer — Date

Conditions: Subject to "Closed Basin" Determination for West Monument Creek

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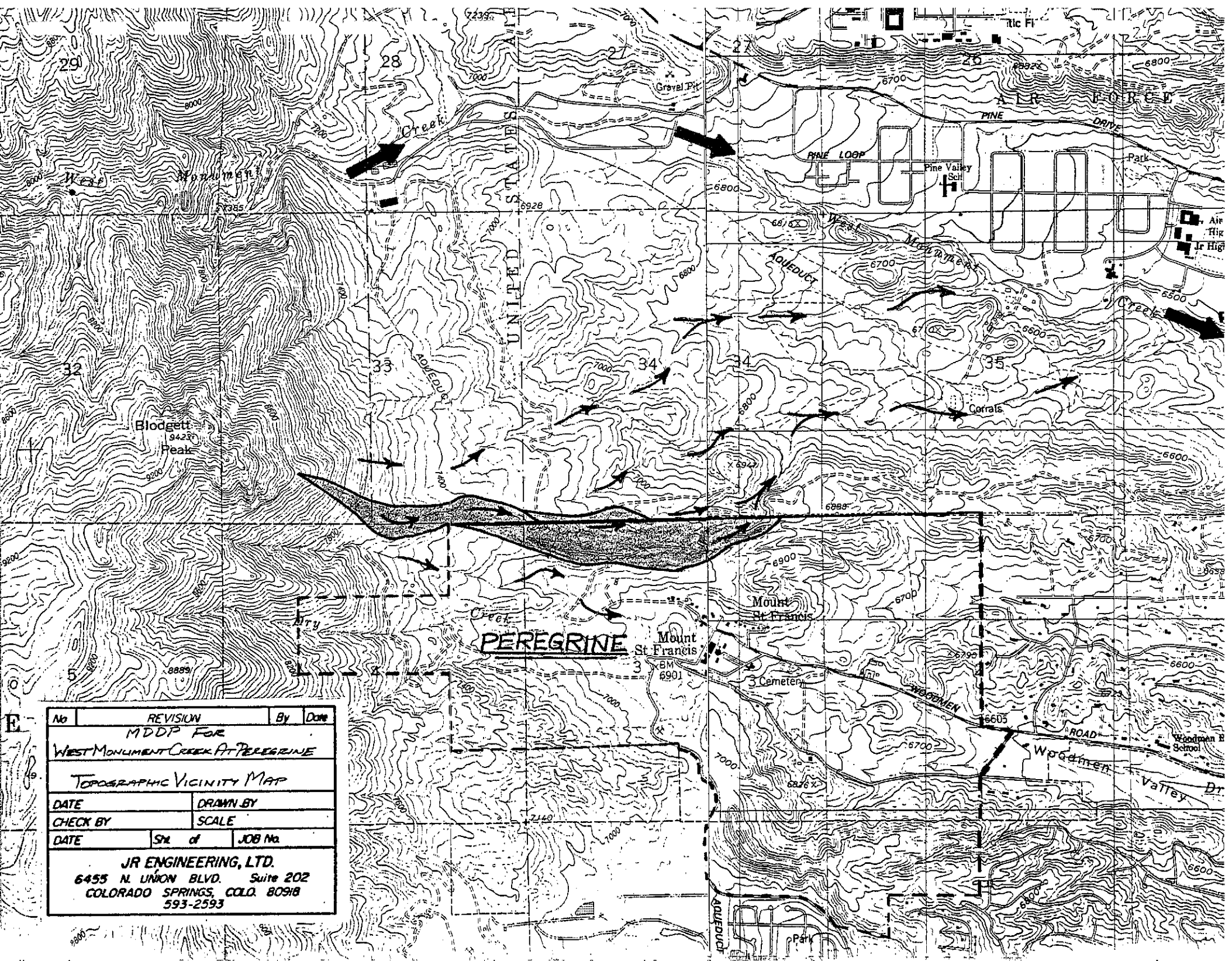
APPENDIX



No	REVISION	By	Date
	MDDP FOR WEST MONUMENT CREEK AT PEREGRINE		
	TOPOGRAPHIC VICINITY MAP		
DATE		DRAWN BY	
CHECK BY		SCALE	
DATE	Sht. of	JOB No.	

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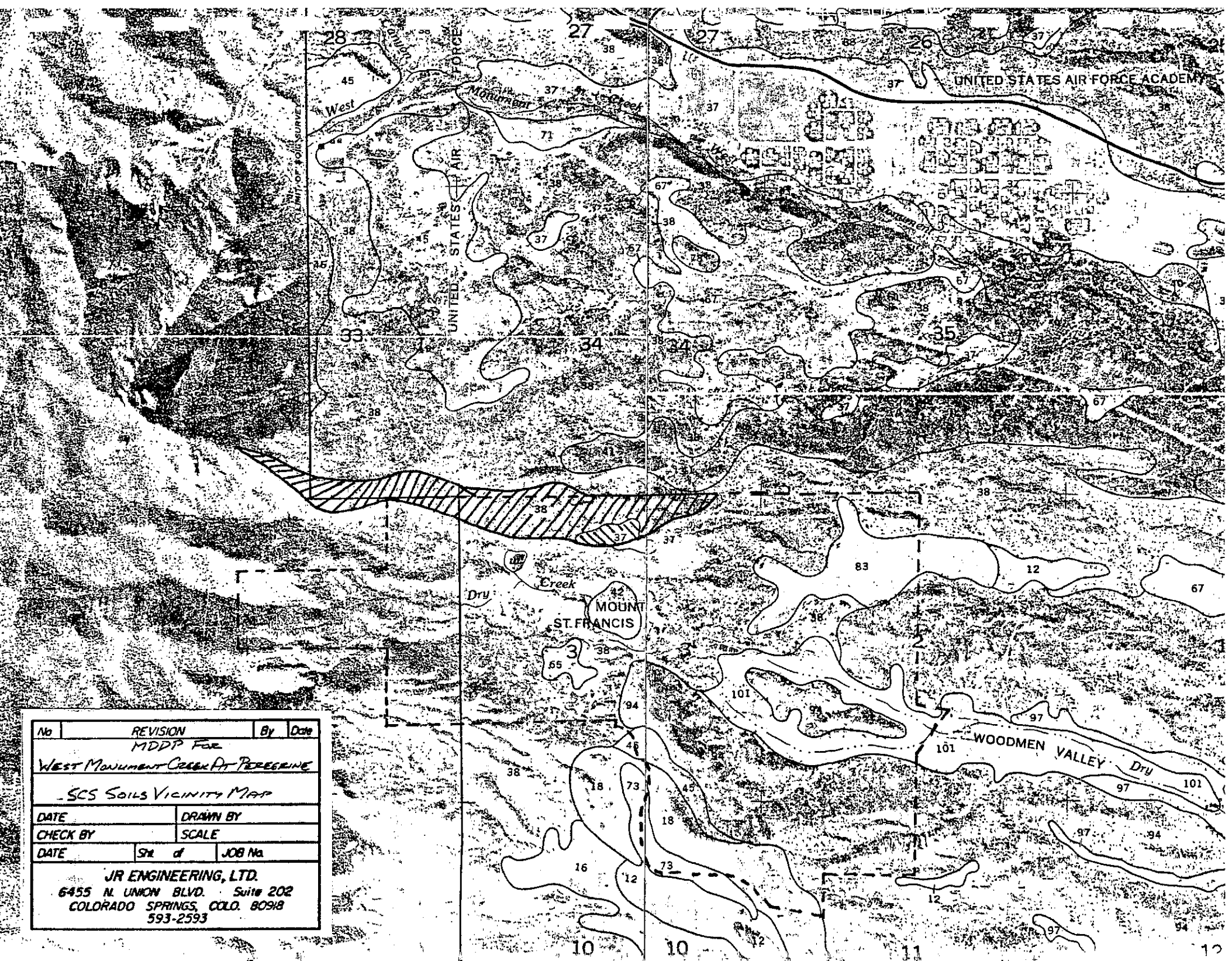
593-2593



No	REVISION	By	Date
	MDDP FOR		
	WEST MONUMENT CREEK AT PEREGRINE		
	SCS SOILS VICINITY MAP		
DATE		DRAWN BY	
CHECK BY		SCALE	
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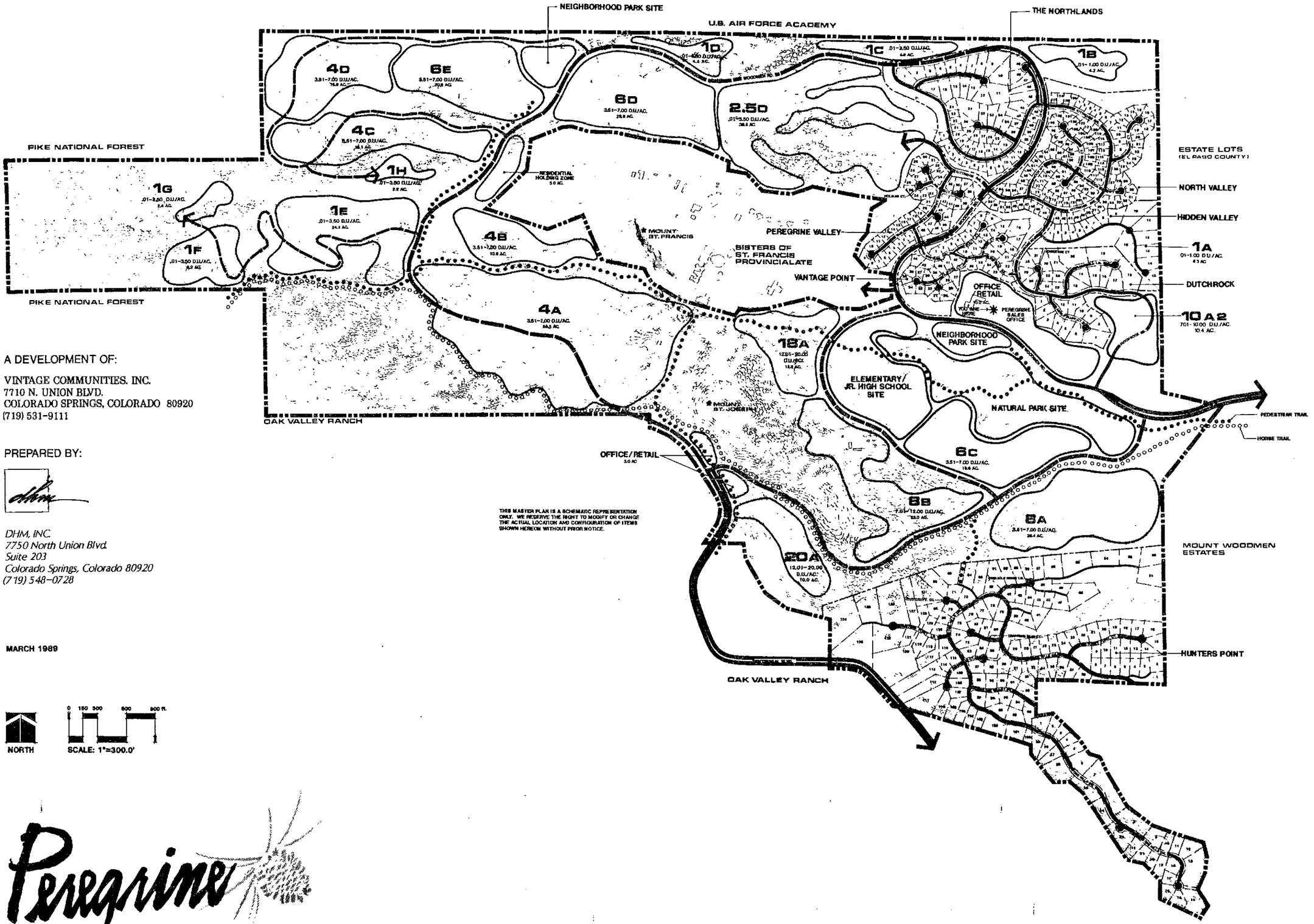

A DEVELOPMENT OF:

VINTAGE COMMUNITIES, INC.
7710 N. UNION BLVD.
COLORADO SPRINGS, COLORADO 80920
(719) 531-9111

PREPARED BY:

DHM, INC.
7750 North Union Blvd.
Suite 203
Colorado Springs, Colorado 80920
(719) 548-0728

MARCH 1989

NORTH

0 150 300 600 900 ft.
SCALE: 1"=300.0'

THIS MASTER PLAN IS A SCHEMATIC REPRESENTATION ONLY. WE RESERVE THE RIGHT TO MODIFY OR CHANGE THE ACTUAL LOCATION AND CONFIGURATION OF ITEMS SHOWN HEREON WITHOUT PRIOR NOTICE.

Peregrine

MASTER DEVELOPMENT DRAINAGE PLAN
THE WEST MONUMENT CREEK BASIN

INTRODUCTION

The purpose of this report is to present the Master Development Drainage Plan for Peregrine within the West Monument Creek Basin. The Master Development Drainage Plan illustrates the conceptual level layout and sizing of the major storm drainage improvements planned for Peregrine within the West Monument Creek Basin. This report describes the storm drainage patterns of the project area, the design criteria used, and the analysis that has been done. The Master Development Drainage Plan is intended to serve as an overall guide for planning and design of the storm drainage improvements for this basin within Peregrine, and as the basis for the more detailed preliminary and final drainage reports that will be done as the various portions of the project are developed in the future.

GENERAL PROJECT LOCATION AND DESCRIPTION

Peregrine is a 1,112 acre multi-use planned development within Sections 2, 3, 4, 10, and 11, Township 13 South, Range 67 West of the Sixth Principal Meridian, in the City of Colorado Springs, Colorado. The project is bounded by the United States Air Force Academy on the north, Pike National Forest on the west, Oak Valley Ranch and Ptmarigan Valley on the south, and Mount Woodmen Estates and unplatted unincorporated El Paso County on the east.

The portion of the West Monument Creek Basin affecting the Peregrine development (containing 70 acres +/-) is within Sections 33 and 34, Township 12 South, as well as Sections 3 and 4, Township 13 South. Please refer to the enclosed vicinity map which illustrates the general location of the subject study area.

The land uses currently planned for Peregrine include single family residential with densities between 0 and 7 dwelling units per acre, as well as parks and open space. Areas within the project that do not have a land use identification will be open space. The areas planned for these different land uses are shown on the Developed Conditions Basin Map included in the Appendix. This land use information was obtained from the "Peregrine Master Plan" approved by City Council July 10, 1984 per Resolution 227-84.

EXISTING DRAINAGE BASIN DESCRIPTION

The West Monument Creek Basin at Peregrine is tributary to West Monument Creek that flows through and south of existing Air Force Academy improvements. Please refer to the enclosed vicinity map. The 113 acre portion of the basin affecting Peregrine collects surface runoff from Blodgett Peak to flow easterly as sheet flows and natural drainage swales. After leaving the Peregrine development's north property line, the cumulative runoff flows northeasterly to the bottom of West Monument Creek. The study area does not lie within a designated floodplain as shown on the F.E.M.A. map of this area, No. 080060-0134-C, dated March 2, 1989.

The existing terrain varies from steep mountainous terrain at the western extreme of this study area, to rolling foothills with 7% to 12% natural slopes. The mountainous upstream portion is in the Pike National Forest with heavy tree cover. The lower foothills are vegetated with range grass, Gambel oak, and scattered pine trees in good condition. The U.S.D.A. Soil Conservation Service designations of soils affecting the study portion of the site include (#38) Jarre-Tecolote gravelly sandy loam, and (#37) Jarre gravelly sandy loam. Both deposits are categorized as Hydrologic Group B soils.

DRAINAGE CRITERIA

This Master Development Drainage Plan for the West Monument Creek Basin at Peregrine applies the current Drainage Criteria as defined in the October, 1987 Drainage Criteria Manual. The two historic points of discharge have contributing areas of 59 acres and 54 acres. Given that these areas are less than 100 acres, we have applied a Rational Method in our analysis of the 10-year and 100-year frequency storms.

HISTORIC RUNOFF CHARACTERISTICS

To illustrate the following discussion of historic runoff, please refer to the enclosed Existing Condition Basin Map. Pike National Forest flows constitute the offsite flows entering the site from Sub-basin 10. These flows are carried within a relatively well defined natural drainage swale to Design Point 20 where these historic flows enter the United States Air Force

Academy (USAFA) property. An additional small onsite basin also presently discharges to the USAFA property at Design Point 30, but is not included in the routed flow calculations from Design Points 10 to 20. The historic 10-year peak discharges entering the USAFA property from Design Points 20 and 30 are 22 CFS and 5 CFS. Similarly, the respective 100-year flows are 46 CFS and 10 CFS.

Historic flows within the balance of the Peregrine property consist of sheet flows that accumulate within deep natural drainage swales before entering the USAFA property. The calculated historic runoff into the USAFA property at Design Point 70 is 32 CFS for the 10-year storm and 67 CFS for the 100-year storm.

DEVELOPED RUNOFF CHARACTERISTICS

As with the previous discussion, please refer to the enclosed Developed Condition Basin Map that illustrates the following discussion. The future alignment of Woodmen Road is shown extending west from the North Basin, crossing the West Monument Creek Basin, and continuing into the Dry Creek Basin. At Design Point 40, a residential road (Blodgett Drive) intersects Woodmen Road and continues west until it too crosses into the Dry Creek Basin.

Because this future residential road is anticipated to service residential lots as shown, we have projected the interception of a 4.9 acre portion of the future Dry Creek Basin residential development. This basin transfer (Sub-basin 15) has been calculated with a 10-year storm flow of 8 CFS and a 100-year storm flow of 15 CFS.

Storm runoff from Sub-basin 15 will combine with the developed runoff of Sub-basin 45. At Design Point 45, proposed on-grade inlets will intercept a portion of the flow and discharge to a future detention pond within the Dry Creek Basin. This future pond was previously a water storage reservoir. It is currently owned by Peregrine Joint Venture and is no longer an active water storage facility. This pond will be designed as a regional detention facility in the future with appropriate outlet and overflow facilities. Routing through this facility will be detailed in the Master Development Drainage Plan for Dry Creek which is presently being updated for submittal to the City. Total runoff to Design Point 45 is calculated to be 14 CFS and 26 CFS for the 10-year storm and 100-year storm respectively. Inlet pick-up is calculated to be 10 CFS for the 10-year event and 16 CFS for the 100-year storm. This inlet pick-up will result in a basin transfer from West Monument Creek to the Dry Creek Basin. This basin transfer will effectively cancel out the previously described basin transfer from Dry Creek to West Monument Creek (Sub-basin 15). Flowby of inlets at Design Point 45 will combine with the residential flows of Sub-basin 40 at Design Point 40 where on-grade inlets are proposed. Total runoff at Design Point 40 is 16 CFS and 33 CFS for the 10-year and 100-year storms respectively. Inlet interception is calculated to be Q_{10}=12 CFS and Q_{100}=18 CFS. Intercepted runoff will be conveyed to Sub-basin 20. Interception was calculated assuming 20 foot curb opening inlets on each side of the street section.

Actual development will probably result in unequal runoff amounts on each side of the street. Inlet lengths will be determined by the actual runoff amounts and will be detailed in the Preliminary and Final Drainage Reports for this area.

Flowby of the Design Point 40 inlets will enter Sub-basin 60 at Woodmen Road. The flow will continue within the northerly street section of Woodmen Road to Design Point 60 where an on-grade inlet will pick-up a portion of the flow. Flowby of the proposed on-grade inlet will enter the north basin at the westerly filing boundary of Talon Ridge at Peregrine Filing No. 1 resulting in a minor basin transfer of West Monument Creek Basin to the North Basin. The existing regional detention pond in the North Basin located in Peregrine North Valley Filing No. 1 (at the El Paso County boundary) was not sized for this additional runoff; therefore, it is proposed to transfer runoff from the historic North Basin to West Monument Creek Basin in order to offset this flowby. Site plans indicate that it will be possible to transfer 2.5 acres of historic North Basin area to West Monument Creek. This will allow an inlet flowby of Q_{10}=4 CFS, Q_{100}=7 CFS in Woodmen Road which results in a required inlet pick-up of Q_{10}=7 CFS and Q_{100}=20 CFS.

Sub-basin 65 is comprised of a proposed single family development with an average density of 2.4 units per acre and the southerly half of Woodmen Road street section. Inlets in a sump condition at Design Point 65 will collect 100% of the storm runoff at Design Point 65. Runoff will then be conveyed under Woodmen Road to Sub-basin 70. A natural drainage swale will convey the developed runoff to Design Point 70. Easements will be provided for all public drainage facilities and natural channels which convey public stormwater runoff.

At Design Point 70, developed runoff is calculated at 34 CFS (10-year) and 71 CFS (100-year). This compares with historic runoff at Design Point 70, calculated at 32 CFS (10-year) and 67 CFS (100-year). A possible future detention pond was sized in order to attenuate peak developed discharges to below historic levels at Design Point 70. Preliminary calculations indicate a pond with a 100-year volume of 0.25 acre-foot will be adequate to fulfill this requirement. Discharge at greater than historic rates is subject to the written acceptance by an agent for the USAFA property. Discharge of the anticipated storm sewer piping, with its outlet works, and erosion protection will be subject to the review of the City during the Preliminary and Final Drainage Report(s).

The proposed diversion detailed previously at Design Point 40 will generate greater than historic runoff at the USAFA boundary at Design Point 20. A future detention pond is shown in the vicinity of Design Point 20. Preliminary calculations indicate a pond with a detention volume of 1.1 acre feet will be adequate to provide historic rates of discharge at Design Point 20. This pond and also the pond at Design Point 70 will be privately owned and maintained subject to a private maintenance agreement between the developer and City.

Previously approved grading plans for Woodmen Road and Blodgett Drive indicate street grades from 4% to 8% within Woodmen Road and 6% to 10% within Blodgett Drive. Calculated runoff at Design Point 40 in Blodgett Drive is 14 CFS (10-year) and 27 CFS (100-year). Street capacities for Blodgett Drive are calculated to be 46 CFS and 142 CFS for the 10-year and 100-year storms respectively. 100-year storm capacity was limited to 8" depth at the flowline. Limits of Type I or Type II curb and gutter will be detailed on the Preliminary and Final Drainage Reports for the respective areas.

Calculated runoff within Woodmen Road at Design Point 60 is 11 CFS (10-year) and 27 CFS (100-year). Street capacities for Woodmen Road at Design Point 60 are calculated to be 61 CFS and 146 CFS for the 10-year and 100-year storms respectively. Calculated street flows are well within City criteria.

DESIGNATED BASIN FEES

West Monument Creek Basin

Drainage Fee = 70 Acres x $0.00/Acre -0-

West Monument Creek within Peregrine is currently undergoing a request to be considered a closed basin. As a closed basin, the developer would be responsible for all drainage facilities costs, would not pay drainage fees, and would not be eligible for reimbursement of public drainage facilities.

PRELIMINARY COST ESTIMATE

Public Drainage Facilities

Item	Quantity	Unit Cost	Cost
36" RCP	180 LF	$48/LF	$ 2,400.00
18" RCP	770 LF	$24/LF	18,480.00
20' D-10-R Inlet	5 EA	$5000/EA	25,000.00
6' D-10-R Inlet	2 EA	$1800/EA	3,600.00
18" FES	2 EA	$300/EA	600.00
36" FES	1 EA	$500/EA	500.00
Rip-Rap	125 CY	$30/CY	3,750.00
Detention Pond at Design Point 20	1	LUMP SUM	31,650.00
Detention Pond at Design Point 70	1	LUMP SUM	10,500.00
Sub-Total			$102,720.00
20% Engineering & Contingencies			20,544.00
TOTAL			$123,264.00

JR Engineering, Ltd. cannot and does not guarantee that the construction cost will not vary from these opinions of probable construction costs. These opinions represent our best judgement as a design professional familiar with the construction industry and in this development.

APPENDIX

HYDROLOGIC CALCULATIONS

SHEETS 1 - 5, TABLES 1 - 3

JR ENGINEERING, LTD. CLIENT PEREGRINE JOB NO. 8030.72

PROJECT W. MON CREEK BY TEM CHK. BY DATE 4-13-92

SUBJECT HISTORIC TC's SHEET NO. 1 OF 5

CHANNEL FLOW Tc:

$Q = 1.49/n\ AR^{2/3} S^{1/2}$ $\quad n = 0.040$

$V = (37.15\ R^{2/3}) S^{1/2}$, ASSUME FLOW DEPTH = 0.5'

SIDE SLOPE	$R^{2/3}$ @ D=0.5	VELOCITY EQUATION
3:1	0.38	$V = 14.23\ S^{1/2}$
5:1	0.39	$V = 14.54\ S^{1/2}$
10:1	0.40	$V = 14.69\ S^{1/2}$
20:1	0.40	$V = 14.72\ S^{1/2}$

* USE AVERAGE VELOCITY EQUATION, $V = [14.5\ S^{1/2}$ FPS (60 s/m)]

$V = 870\ S^{1/2}$ LF/MIN

SUB-BASIN

10

1000 @ S=67%	$Tc = 1.87(1.1-0.10)\ 1000^{1/2}\ 67^{.33}$	=	14.8
800 LF @ S=33%	$Tc = 800/870\ (.33)^{1/2}$	=	1.6
1100 LF @ S=18%	$Tc = 1100/870\ (.18)^{1/2}$	=	3.0
1500 LF @ S=11%	$Tc = 1500/870\ (.11)^{1/2}$	=	5.1
		Tc =	24.5 MIN

20

550 LF @ S=13%	$Tc = 1.87(1.1-0.25)\ 550^{1/2}\ 13^{.33}$	=	16.0
2000 LF @ S=10%	$Tc = 2000/870\ (.10)^{1/2}$	=	7.3
		Tc =	23.3 MIN

DP-20

SUBBASIN 10 TC		=	24.5
2200 LF @ S=10%	$Tc = 2200/870\ (.10)^{1/2}$	=	8.0
		Tc =	32.5

JR ENGINEERING, LTD. CLIENT PEREGRINE JOB NO. 8030.72

PROJECT W. MON CREEK BY TPM CHK. BY DATE 4-13-92

SUBJECT HISTORIC TIME OF CONCENTRATION SHEET NO. 2 OF 5

SUB-BASIN

30

300 LF @ S=20% : $T_c = 1.87(1.1-0.25)\,300^{1/2}\,20^{-.33}$ = 10.2 MIN

70

1000 LF @ S=10% : $T_c = 1.87(1.1-0.25)\,1000^{1/2}\,10^{-.33}$ = 23.5

2200 LF @ S=7% : $T_c = 2200/870\,(.07)^{1/2}$ = 9.6

1200 LF @ S=13% $T_c = 1200/870\,(.13)^{1/2}$ = 3.8

DP-70 T_c = 36.9 MIN

JR ENGINEERING, LTD. CLIENT PEREGRINE JOB NO. 8030.72

PROJECT W. MON CREEK BY TEM CHK. BY DATE 4/16/92

SUBJECT DEVELOPED BASIN PARAMETERS SHEET NO. 3 OF 5

10

UNCHANGED FROM HISTORIC

DP-20

Tc - UNCHANGED FROM HISTORIC

4.1 AC REAR YARDS OF 1.7 DU/AC SINGLE FAMILY - ASSUME 10% IMP.

$C_{10} = 4.1(0.2) + 11.1(0.75)/15.2 = 0.26$, $C_{100} = 4.1(0.37) + 11.1(0.35)/15.2 = 0.36$

30

250 LF @ S = 20% : $Tc = 1.87(1.1 - 0.25)\,250^{1/2}\,20^{-.33} = 9.5$ MIN

DP-30, Tc = 9.5 MIN

C - 0.7 DU/AC - ASSUME 15% IMP.

$C_{10} = 0.28$ $C_{100} = 0.38$

15

200 LF @ S = 15%, $Tc = 1.87(1.1-0.25)\,700^{.5}\,15^{-.33}$	=	9.2
300 LF @ S = 12%, $Tc = 1.87(1.1-0.25)\,300^{.5}\,12^{-.33}$	=	12.1
300 LF @ S = 6.7, AVG VEL = 9'/s, $Tc = 300/9(60)$	=	0.6
300 LF @ S = 10%, AVG VEL = 11'/s, $Tc = 300/11(60)$	=	0.5
		22 MIN

C - 4 DU/AC, $C_{10} = 0.5$, $C_{100} = 0.6$

45

350 LF @ 10%, $Tc = 1.87(1.1-0.25)\,350^{0.5}\,10^{-.33}$	=	13.9
850 LF @ 9.2%, AVG VEL = 11'/s $Tc = 850/11(60)$	=	1.3 MIN
250 LF @ 7.3%, AVG VEL = 10'/s $Tc = 250/10(60)$	=	0.4
		16 MIN

1.7 DU/AC

$C_{10} = 0.33$, $C_{100} = 0.43$

DP - 45

T_c = T_c OF SUB-BASIN 15 + STREET T_c OF SUB-BASIN 45 = 22.0 + 1.3 + 0.4

24 MIN

4.9 - 4 DU/AC & 6.5 - 1.7 DU/AC

$C_{10} = 4.9(0.5) + 6.5(0.33)/11.4 = 0.4$, $C_{100} = 4.9(0.6) + 6.5(0.43)/11.4 = 0.5$

40

470 LF @ 10% : $T_c = 1.87(1.1 - 0.25)470^{0.5}\, 10^{-0.33}$ = 16.1

1000 LF @ 10%, AVG VEL = 11 f/s ; $T_c = 1000/11(60)$ = 1.5

500 LF @ 6% AVG VEL = 9 f/s, $T_c = 500/9(60)$ 0.9

19 MIN

1.7 DU/AC

$C_{10} = 0.33$ $C_{100} = 0.43$

DP-40

T_c = T_c OF DP-45 + 500' OF GUTTER FLOW @ 7% 24 MIN

$500/10(60)$ 0.8 MIN

25 MIN

$C_{10} = 0.4(11.4) + 0.33(12.0)/23.4 = 0.36$

$C_{100} = 11.4(0.5) + 12(0.43)/23.4 = 0.46$

60

650 LF @ 8%, $T_c = 1.87(1.1 - 0.25)650^{0.5}\, 8^{-0.33}$ = 20.4

1600 LF @ 6% AVG VEL = 9 f/s, $T_c = 1600/9(60)$ 3.0

2 AC @ 1.7 DU/AC, 1.7 AC OF STREET, 2 AC OF PARK 23 MIN

$C_{10} = 2(0.33) + 1.7(0.9) + 2(0.25)/5.7 = 0.47$, $C_{100} = 2(0.43) + 1.7(0.95) + 2(0.35)/5.7 = 0.56$

JR ENGINEERING, LTD. CLIENT PEREGRINE JOB NO. 8030.72

PROJECT W. MON CREEK BY TEM CHK. BY DATE 9/16/92

SUBJECT DEVELOPED BASIN PARAMETERS SHEET NO. 5 OF 5

DP-60

Tc = Tc TO DP-40 + 25 MIN
2100 LF OF GUTTER/ROW @ 6% 3.9 MIN

29 MIN

$C_{10} = 23.4(0.36) + 5.7(0.47)/29.1 = 0.38$

$C_{100} = 23.4(0.46) + 5.7(0.56)/29.1 = 0.48$

65

300 LF @ 6% $Tc = 1.87(1.1-0.25)300^{0.5}6^{-0.33}$ = 15.2 MIN
1400 LF @ 6% AVG. VEL = 9/3 - 140%9(60) = 2.6 MIN

18 MIN

$C_{10} = 0.37$ $C_{100} = 0.47$

70

200 LF @ 12% $Tc = 1.87(1.1-0.25)200^{0.5}12^{-0.33}$ = 9.9
1200 LF @ 13% $Tc = 1200/870(13)^{1/2}$ = 3.8

13.7

4 AC OPEN & 6.9 @ 0.7 DU/AC

$C_{10} = 4(0.25) + 6.9(0.29)/10.9 = 0.28$, $C_{100} = 4(0.35) + 6.9(0.39)/10.9 = 0.38$

DP-70

Tc = Tc TO DP-60 29.0
+ CHANNEL TO DP-70 3.8

33 MIN

$C_{10} = 29.1(0.38) + 10.9(0.28)/40 = 0.35$, $C_{100} = 29.1(0.48) + 10.9(0.38)/40 = 0.45$

BASIN	AREA In ACRES	BASIN LENGTH	BASIN HEIGHT	Tc (min.)	I_{10}	I_{100}	SOIL GROUP	LAND USE	C_{10}	C_{100}	FLOW Q_{10}	FLOW Q_{100}
10	36.6			24.5	3.0	4.6	B	OPEN	0.10	0.15	11	25
20	18.9			23.3	3.2	4.7			0.25	0.35	15	31
DP-20	55.5			32.5	2.6	3.8			0.15	0.22	22	46
DP-30	4.2			10	4.6	7.0			0.25	0.35	5	10
DP-70	53.0			37	2.4	3.6			0.25	0.35	32	67

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WEST MONUMENT CREEK
HISTORIC BASIN CALCS
TABLE 1 OF 3
8030.72 4/13/92

BASIN	AREA in ACRES	BASIN LENGTH	BASIN HEIGHT	Tc (min.)	I_{10}	I_{100}	SOIL GROUP	LAND USE	C_{10}	C_{100}	FLOW Q_{10}	FLOW Q_{100}
10	36.6			24.5	3.0	4.6	B	HISTORIC	0.10	0.15	11	25
20	17.2			23.3	3.2	4.7	B	RES/OPEN	0.26	0.36	14	29
DP-20	53.8			33	2.6	3.8	B	RES/OPEN	0.15	0.22	21	45
							EQUIVALENT CA		8.1	11.8		
15	4.9			22	3.4	5.0	B	RES	0.50	0.60	8	15
45	6.5			16	3.8	5.7	B	RES	0.33	0.43	8	16
DP-45	11.4			24	3.1	4.6	B	RES	0.40	0.50	14	26
ASSUME 20' INLET E& SIDE: INLET PICKUP (DIVERSION TO DRY CREEK)										=	10	16
								FLOW BY		=	4	10
							EQUIVALENT CA=		1.3	2.2		
40	12.0			19	3.5	5.2	B	RES	0.33	0.43	14	27
							EQUIVALENT CA =		4.0	5.2		
DP-40	(40+DP-45 FLOWBY)			25	3.0	4.5	B	RES	5.3	7.4	16	33
ASSUME 20' INLET E& SIDE: INLET PICK-UP (DIVERSION TO DP-20) CA=									4.0	4.0	12	18
								FLOW BY	=		4	15
							EQUIVALENT CA=		1.3	3.3		

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WEST MONUMENT CREEK
DEVELOPED BASIN CALCS
TABLE 2 OF 3
8030.72 4/14/92

BASIN	AREA In ACRES	BASIN LENGTH	BASIN HEIGHT	Tc (min.)	I_{10}	I_{100}	SOIL GROUP	LAND USE	C_{10}	C_{100}	FLOW Q_{10}	FLOW Q_{100}
DP-20	(DP-20 + DP-40 DIVERSION)			33	2.6	3.8	B	RES/OPEN	12.1	15.8	31	60
60	5.7			23	3.1	4.7	B	RES/OPEN	0.47	0.56	8	15
							EQUIVALENT	CA =	2.6	3.2		
DP-60	(60 + FLOWBY DP-40)			29	2.7	4.2	B	RES	3.9	6.5	11	27
	ASSUME INLET AT DP-60 + FLOWBY TO EQUAL						2.5 ACRE		2.6	4.8	7	20
	NORTH BASIN TRANSFER										4	7
NORTH BASIN TRANSFER	2.5			14	4.0	6.0	B	RES	0.37	0.47	4	7
DP-65	20.7			18	3.6	5.3	B	RES	0.37	0.47	28	52
							EQUIVALENT	CA	7.8	9.8		
70	10.9			14	4.0	6.0	B	RES/OPEN	0.28	0.38	12	25
							EQUIVALENT	CA	3.0	4.2		
DP-70	(INLET PICKUP @ DP-60 + DP-65			33	2.5	3.8	B	RES/OPEN	13.4	18.8	34	71
	+ 70)					HISTORIC TO		DP-	70		32	67
											+6%	+6%
30	4.0			10	4.6	6.9	B	RES	0.28	0.38	5	10

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WEST MONUMENT CREEK
DEVELOPED BASIN CALCS.
TABLE 3 OF 3
8030.72

4/17/92

HYDRAULIC CALCULATIONS

SHEETS 1-2

COMPUTATIONS FOR CURB OPENING INLETS

1. $L_1 = 2.49\, S_x^{0.3} F_W^{T}$
2. $L_2 = 3.27\, S_x^{0.5} F_W^{T}$
3. $L_3 = 1.65\, F_W^{T}$
4. $F_W = 16.4\,[(T-2)\,S_x]^{1/6}\, S_0^{1/2}$
5. $\frac{Q_i}{Q} = \frac{L_i}{L_1}$ $L_i < L_2$
6. $\frac{Q_i}{Q} = \left(\frac{L_i}{L_3}\right)^{0.4}$ $L_i > L_2$

.770 .462 1.65

LOCATION	DESIGN POINT	INLET #	Q (CFS)	S_0 (%)	S_x (%)	T (FT.)	F_W	$F_W T$	L_1 (FT.)	L_2 (FT.)	L_3 (FT.)	$\frac{Q_i}{Q}$ (%)	Q_i (CFS)	
10YR STORM	DP-45	1	7	7.6	2%	8.75	3.24	28.37	21.85	13.10	46.81	71%	5cfs	EACH SIDE
									ASSUME	20' INLET	$(20/46.81)^{.94}$		10cfs	BOTH SIDES
100YR STORM	DP-45	1	13	7.6	2%	12.7	3.50	44.4	34.19	20.52	73.27	58%	8cfs	ONE SIDE
									$(29/34.19)$				16cfs	BOTH SIDES
10Y STORM	DP-40	2	8	10%	2%	8.0	3.64	29.14	22.44	13.96	48.08	70%	6cfs	ONE SIDE
											$(20/48.08)^{.94}$		12cfs	BOTH SIDES
100YR STORM	DP-40	2	17	10%	2%	13.0	4.03	52.38	40.33	29.20	86.93	50%	9cfs	ONE SIDE
									$29/40.33$				18cfs	BOTH

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ON-GRADE INLET INTERCEPTION

8030.72

4/14/92

JR ENGINEERING, LTD. CLIENT PEREGRINE JOB NO. 8030.72

PROJECT W MONUMENT CR MDDP BY MH DATE 12/89

SUBJECT DEVELOPED FLOW STREET CAPACITY SHEET NO. 2 OF 2

WOODMEN ROAD : COLLECTOR STREET CLASSIFICATION

CROSS SECTION = 40' FACE TO FACE ON 60' ROW

INITIAL STORM CAPACITY : $Q = 2[151.5(S)^{.5}]$

@ DP-40, $Q = 303(.048)^{.5} = 66$ CFS

@ DP-60, $Q = 303(.04)^{.5} = 61$ CFS

MAJOR STORM CAPACITY : USE 8" MAX Q = 731 $S^{1/2}$

@ DP-40, $Q = 731(.048)^{.5} = 160$ CFS

@ DP 60 $Q = 731(.04)^{.5} = 146$ CFS

BLODGETT DRIVE : RESIDENTIAL CLASSIFICATION

CROSS SECTION = 36' FACE TO FACE ON 60' ROW

INITIAL STORM CAPACITY : USE $Q = 2[114.4(S)^{.5}]$

@ DP-15, $Q = 228.8(.10)^{.5} = 72$ CFS

@ DP-40, $Q = 228.8(.04)^{.5} = 46$ CFS

MAJOR STORM CAPACITY: USE 8" MAX Q = 709 $S^{1/2}$

@ DP-15, $Q = 709(.10)^{.5} = 224$ CFS

@ DP-40 $Q = 709(.04)^{.5} = 142$ CFS

PRELIMINARY POND SIZING/ROUTING

SHEETS 1-22

POND C DP-20
SHEETS 1 - 11

JR ENGINEERING, LTD.
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DECEMBER 6,1991

HYDROLOGIC REPORT FOR

WEST MONUMENT CREEK

UNIVERSAL RATIONAL HYDROGRAPH

Q(PEAK) = C*I*A
10 YEAR STORM FREQUENCY

BASIN IDENTIFIER DP 20
DISCHARGES INTO POND WM-3

BASIN AREA = 78.00 ACRES
RUNOFF COEFF. = 0.15
RAINFALL INT. = 2.53 IN/HR

TIME (MIN)	RUNOFF (C.F.S.)
0.0	0.0
17.0	0.7
34.0	1.5
51.0	1.6
68.0	1.8
85.0	15.7
102.0	29.6
119.0	18.8
136.0	8.0
153.0	6.4
170.0	4.9
187.0	3.2
204.0	1.5
221.0	1.3
238.0	1.1
255.0	0.9
272.0	0.8
289.0	0.8
306.0	0.8
323.0	0.4
340.0	0.0
357.0	0.0
374.0	0.0
391.0	0.0
408.0	0.0
425.0	0.0
442.0	0.0
459.0	0.0
476.0	0.0
493.0	0.0

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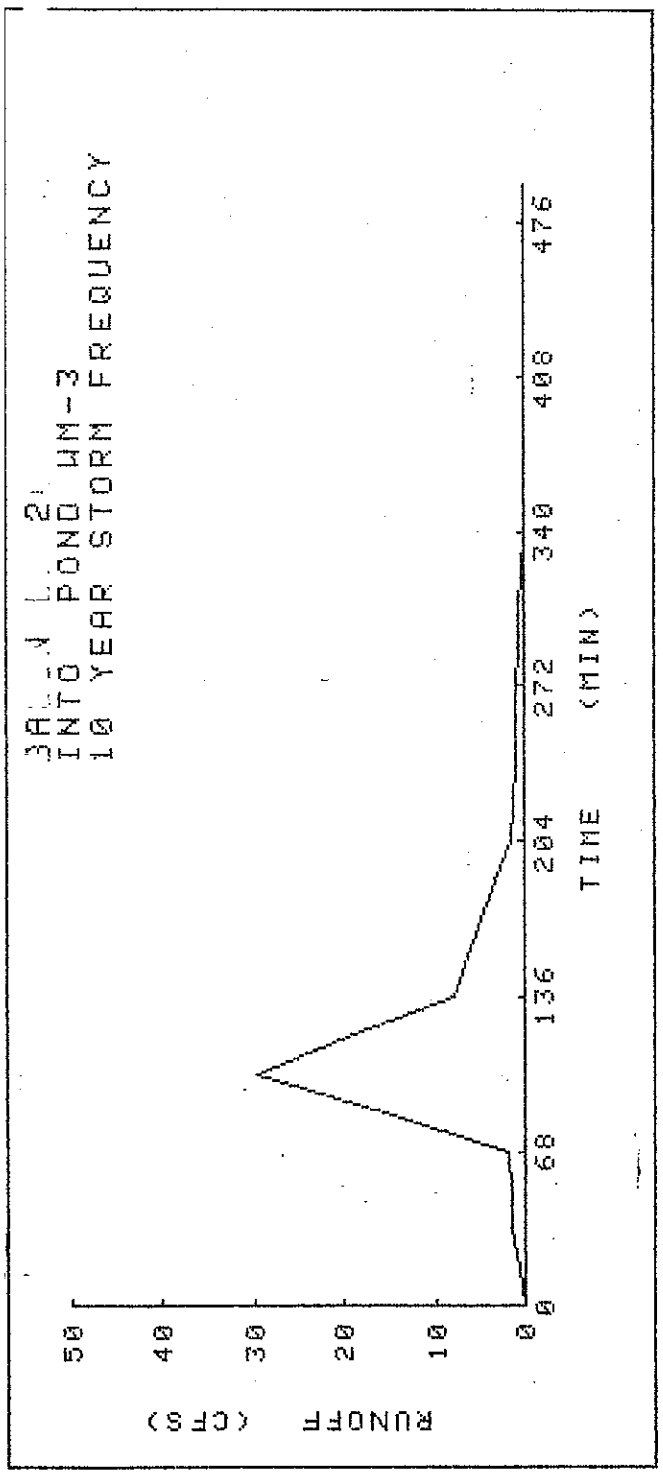
DECEMBER 6,1991

HYDROLOGIC REPORT FOR
WEST MONUMENT CREEK



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DECEMBER 6,1991

HYDROLOGIC REPORT FOR
WEST MONUMENT CREEK
HYDROGRAPH RESERVOIR ROUTING

BASIN IDENTIFIER DP 20
POND IDENTIFIER WM-3
10 YEAR STORM FREQUENCY

T	I1	I2	2S1/T	O1	2S2/T +O2	O2	2S2/T
17.0	0.0	0.7	0.0	0.0	0.7	0.4	0.4
34.0	0.7	1.5	0.4	0.4	2.2	1.1	1.1
51.0	1.5	1.6	1.1	1.1	3.1	1.6	1.6
68.0	1.6	1.8	1.6	1.6	3.4	1.7	1.7
85.0	1.8	15.7	1.7	1.7	17.5	6.8	10.7
02.0	15.7	29.6	10.7	6.8	49.2	14.9	34.3
119.0	29.6	18.8	34.3	14.9	67.8	18.3	49.5
136.0	18.8	8.0	49.5	18.3	58.0	16.5	41.5
53.0	8.0	6.4	41.5	16.5	39.3	13.0	26.3
170.0	6.4	4.9	26.3	13.0	24.6	9.1	15.5
187.0	4.9	3.2	15.5	9.1	14.5	5.9	8.6
204.0	3.2	1.5	8.6	5.9	7.5	3.7	3.9
221.0	1.5	1.3	3.9	3.7	3.1	1.5	1.5
238.0	1.3	1.1	1.5	1.5	2.4	1.2	1.2
255.0	1.1	0.9	1.2	1.2	2.0	1.0	1.0
272.0	0.9	0.8	1.0	1.0	1.8	0.9	0.9
289.0	0.8	0.8	0.9	0.9	1.6	0.8	0.8
306.0	0.8	0.8	0.8	0.8	1.6	0.8	0.8
323.0	0.8	0.4	0.8	0.8	1.1	0.6	0.6
340.0	0.4	0.0	0.6	0.6	0.4	0.2	0.2
357.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
374.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
391.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
408.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
425.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
442.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
459.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
476.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
493.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MAXIMUM ELEVATION = 58.1 FT
MAXIMUM STORAGE = 25266.5 CU FT
MAXIMUM DISCHARGE = 18.3 CFS

HISTORIC 22cfs ✓ O.K

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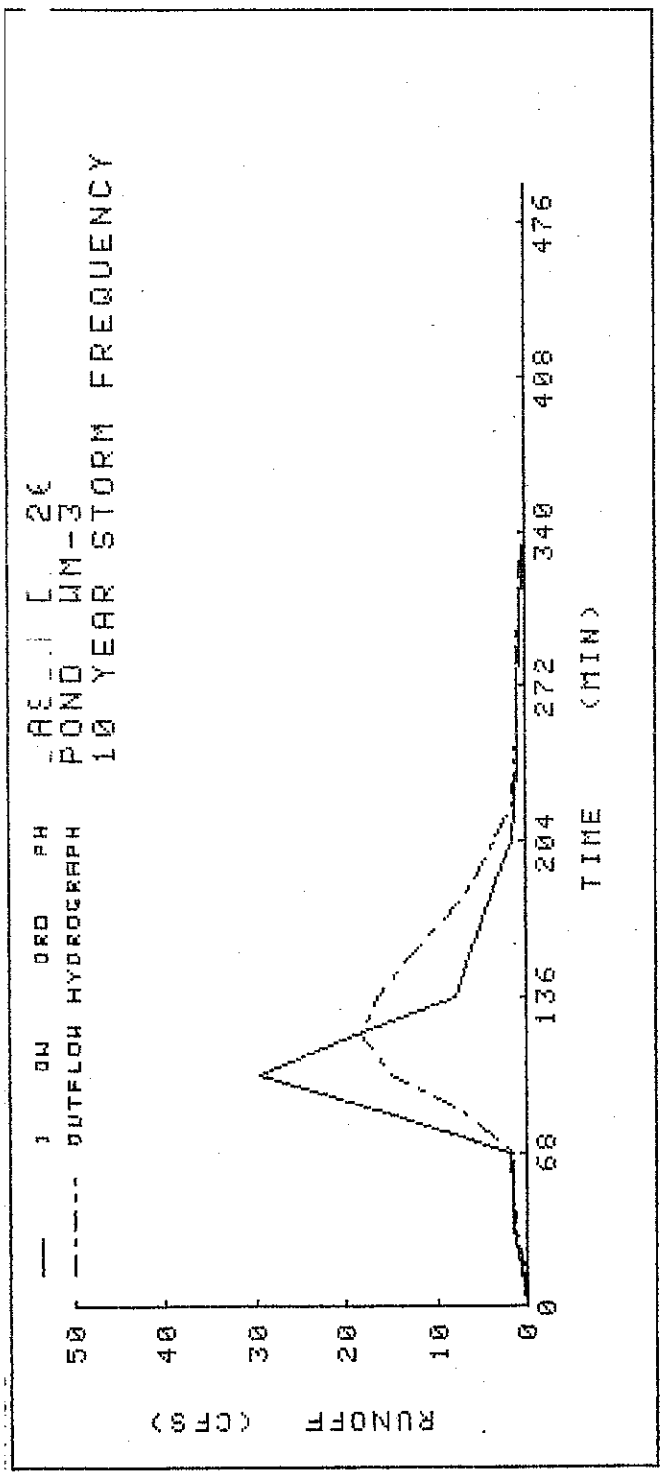
COLORADO SPRINGS, COLORADO
DECEMBER 6,1991

HYDROLOGIC REPORT FOR WEST MONUMENT CREEK



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COLORADO SPRINGS, COLORADO
DECEMBER 6,1991

HYDROLOGIC REPORT FOR

WEST MONUMENT CREEK

UNIVERSAL RATIONAL HYDROGRAPH

Q(PEAK) = C*I*A
100 YEAR STORM FREQUENCY

BASIN IDENTIFIER DP20
DISCHARGES INTO POND WM-3

BASIN AREA = 71.20 ACRES
RUNOFF COEFF. = 0.21
RAINFALL INT. = 3.90 IN/HR

TIME (MIN)	RUNOFF (C.F.S.)
0.0	0.0
17.0	1.2
34.0	2.4
51.0	2.5
68.0	2.6
85.0	30.4
102.0	58.3
119.0	36.7
136.0	15.2
153.0	11.3
170.0	7.5
187.0	5.0
204.0	2.4
221.0	1.8
238.0	1.2
255.0	1.2
272.0	1.1
289.0	0.6
306.0	0.0
323.0	0.0
340.0	0.0
357.0	0.0
374.0	0.0
391.0	0.0
408.0	0.0
425.0	0.0
442.0	0.0
459.0	0.0
476.0	0.0

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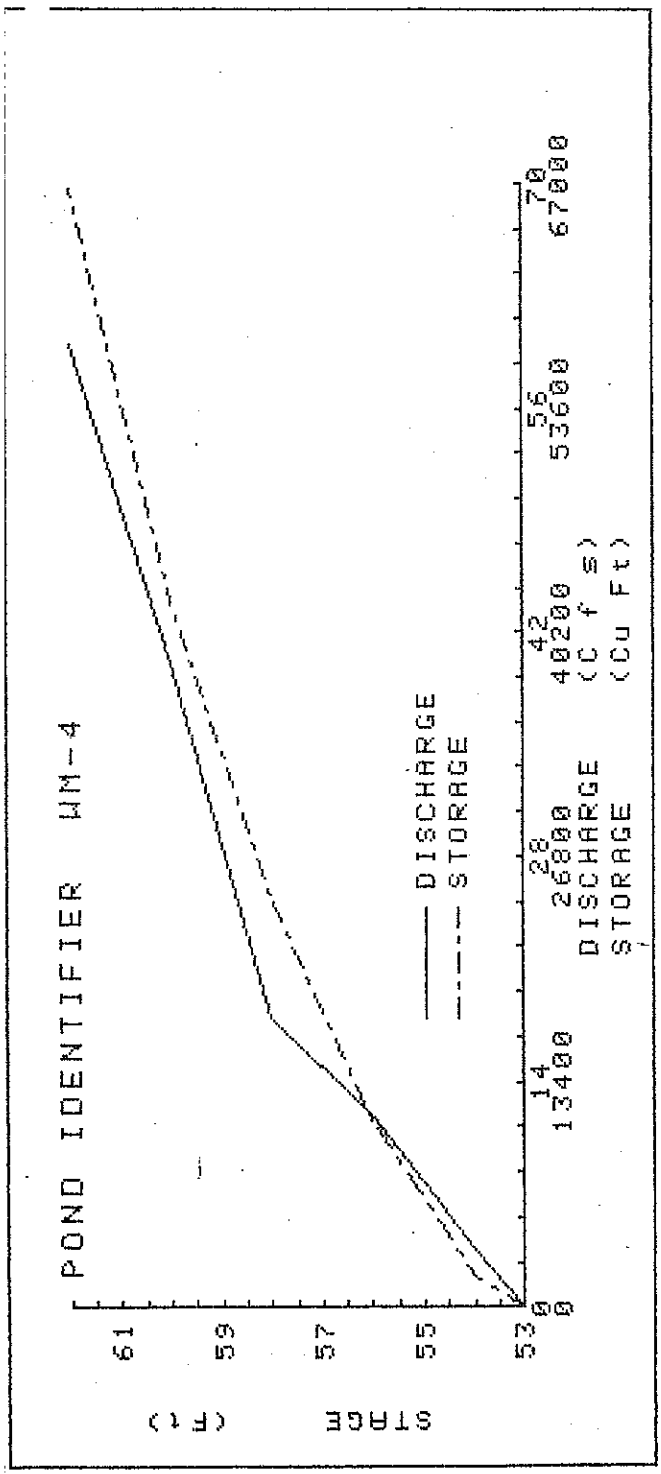
DECEMBER 6,1991

HYDROLOGIC REPORT FOR WEST MONUMENT CREEK



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DECEMBER 6,1991

HYDROLOGIC REPORT FOR
WEST MONUMENT CREEK
HYDROGRAPH RESERVOIR ROUTING

BASIN IDENTIFIER DP20
POND IDENTIFIER WM-4
100 YEAR STORM FREQUENCY

T	I1	I2	2S1/T	O1	2S2/T +O2	O2	2S2/T
17.0	0.0	1.2	0.0	0.0	1.2	0.6	0.6
34.0	1.2	2.4	0.6	0.6	3.5	1.8	1.8
51.0	2.4	2.5	1.8	1.8	4.8	2.4	2.4
68.0	2.5	2.6	2.4	2.4	5.0	2.5	2.5
85.0	2.6	30.4	2.5	2.5	33.0	11.7	21.3
02.0	30.4	58.3	21.3	11.7	98.3	30.6	67.7
119.0	58.3	36.7	67.7	30.6	132.1	42.8	89.3
136.0	36.7	15.2	89.3	42.8	98.4	30.6	67.7
53.0	15.2	11.3	67.7	30.6	63.6	17.6	46.0
170.0	11.3	7.5	46.0	17.6	47.3	14.5	32.7
187.0	7.5	5.0	32.7	14.5	30.7	11.0	19.7
04.0	5.0	2.4	19.7	11.0	16.1	6.4	9.7
221.0	2.4	1.8	9.7	6.4	7.6	3.7	3.9
238.0	1.8	1.2	3.9	3.7	3.2	1.6	1.6
55.0	1.2	1.2	1.6	1.6	2.4	1.2	1.2
72.0	1.2	1.1	1.2	1.2	2.3	1.2	1.2
289.0	1.1	0.6	1.2	1.2	1.7	0.9	0.9
306.0	0.6	0.0	0.9	0.9	0.6	0.3	0.3
23.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0
340.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
357.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
391.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
408.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
459.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
476.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
93.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MAXIMUM ELEVATION = 60.3 FT
MAXIMUM STORAGE = 45545.8 CU FT
MAXIMUM DISCHARGE = 42.8 CFS

HISTORIC 46 cfs √ O.K

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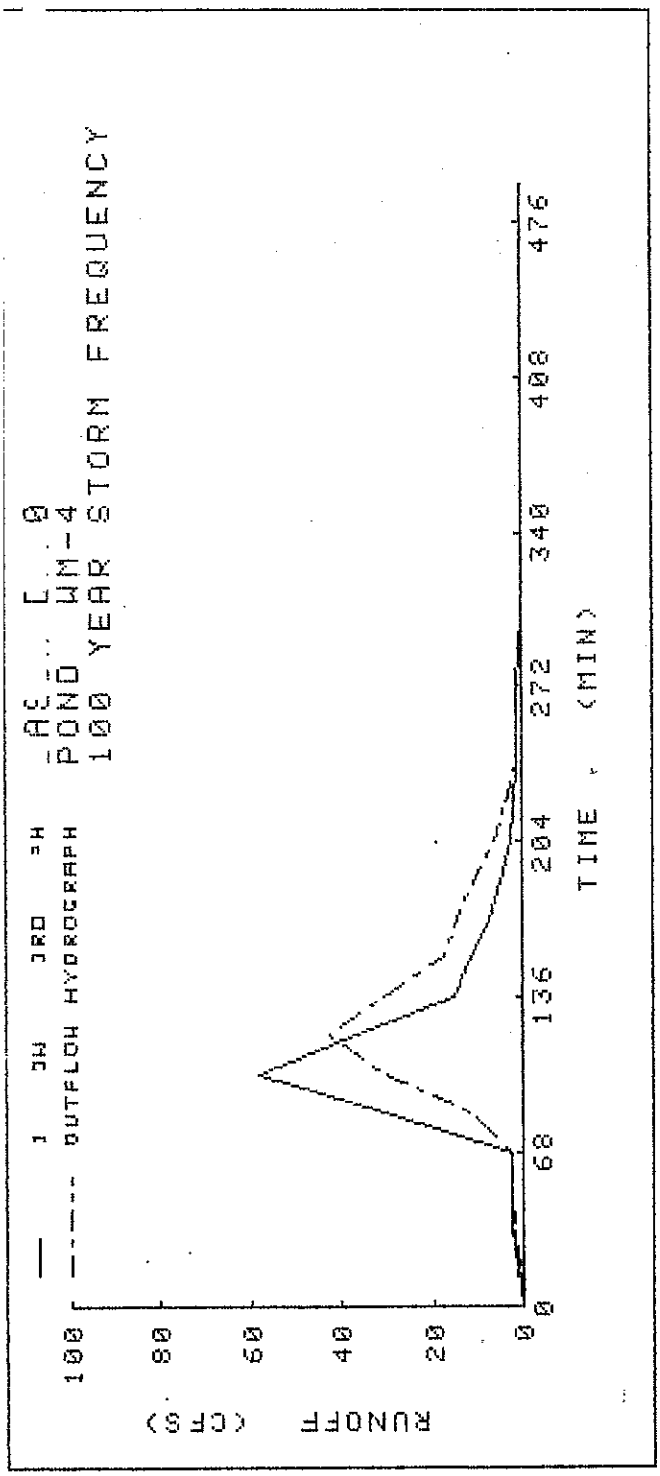
DECEMBER 6,1991

HYDROLOGIC REPORT FOR WEST MONUMENT CREEK



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DECEMBER 6,1991

CIRCULAR STANDPIPE

DIAMETER = 24.00 INCHES

ELEV. (FT.)	COEFF	FLOW (CFS)
58.50	4.00	0.00
59.00	3.36	7.46
59.50	2.03	12.75
60.00	1.37	15.81
60.50	1.02	18.13

FORMULA USED Q = COEFF*PI*DIAMETER*H^1.5

POND AT DP-70
SHEETS 12 TO 22

JR ENGINEERING, LTD.
COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

WM

UNIVERSAL RATIONAL HYDROGRAPH

Q(PEAK) = C*I*A
10 YEAR STORM FREQUENCY

BASIN IDENTIFIER 1
DISCHARGES INTO 1

BASIN AREA = 38.00 ACRES
RUNOFF COEFF. = 0.35
RAINFALL INT. = 2.57 IN/HR

TIME (MIN)	RUNOFF (C.F.S.)
0.0	0.0
16.5	0.7
33.0	1.3
49.5	1.8
66.0	2.3
82.5	18.3
99.0	34.2
115.5	21.7
132.0	9.1
148.5	7.7
165.0	6.3
181.5	4.0
198.0	1.7
214.5	1.5
231.0	1.3
247.5	1.2
264.0	1.2
280.5	0.9
297.0	0.5
313.5	0.3
330.0	0.0
346.5	0.0
363.0	0.0
379.5	0.0
396.0	0.0
412.5	0.0
429.0	0.0
445.5	0.0
462.0	0.0
478.5	0.0

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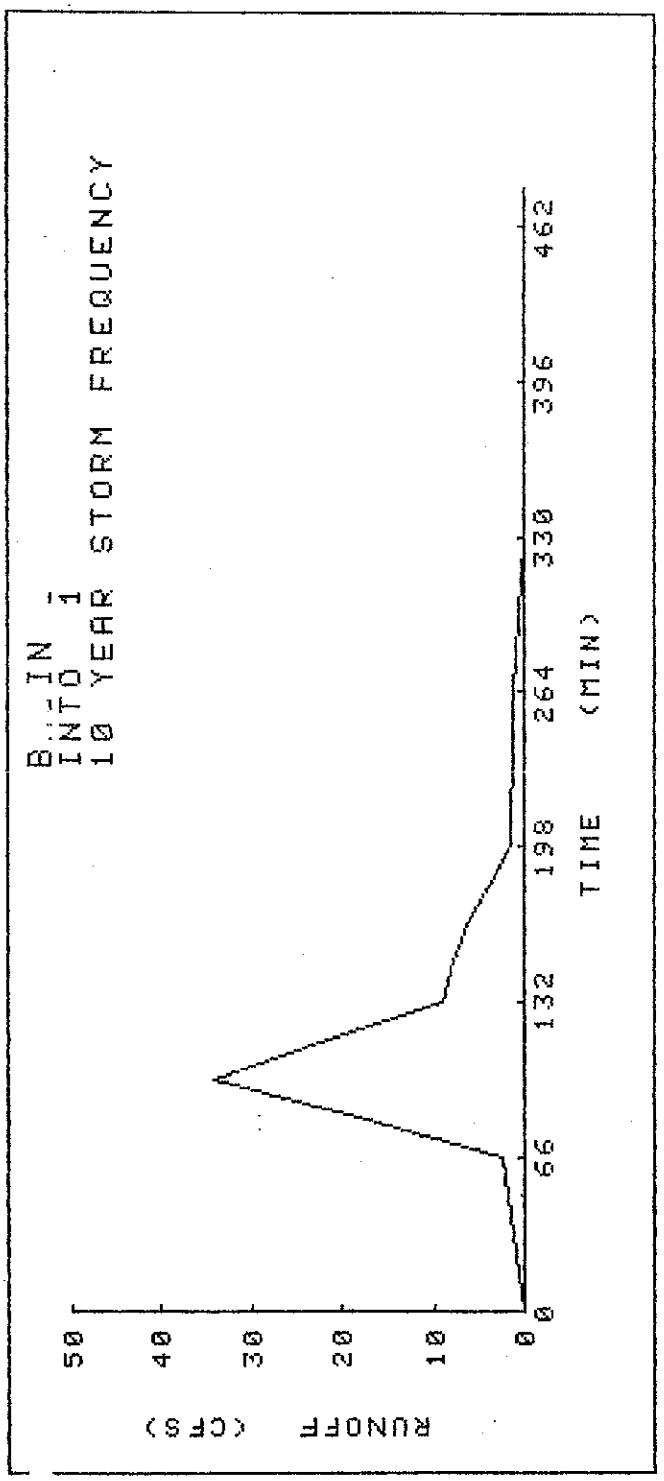
COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

WM



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COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

W.MON CREEK

STAGE, STORAGE & DISCHARGE

POND IDENTIFIER WM-70

ELEV	STORAGE (CU.FT.)	OUTFLOW (CFS)	2S/T+O (CFS)
66.0	0.0	0.0	0.0
67.0	765.0	7.0	8.5
68.0	1525.0	17.0	20.1
69.0	4160.0	29.0	37.4
70.0	6800.0	42.0	55.7
71.0	11800.0	80.0	103.8
72.0	16800.0	150.0	183.9

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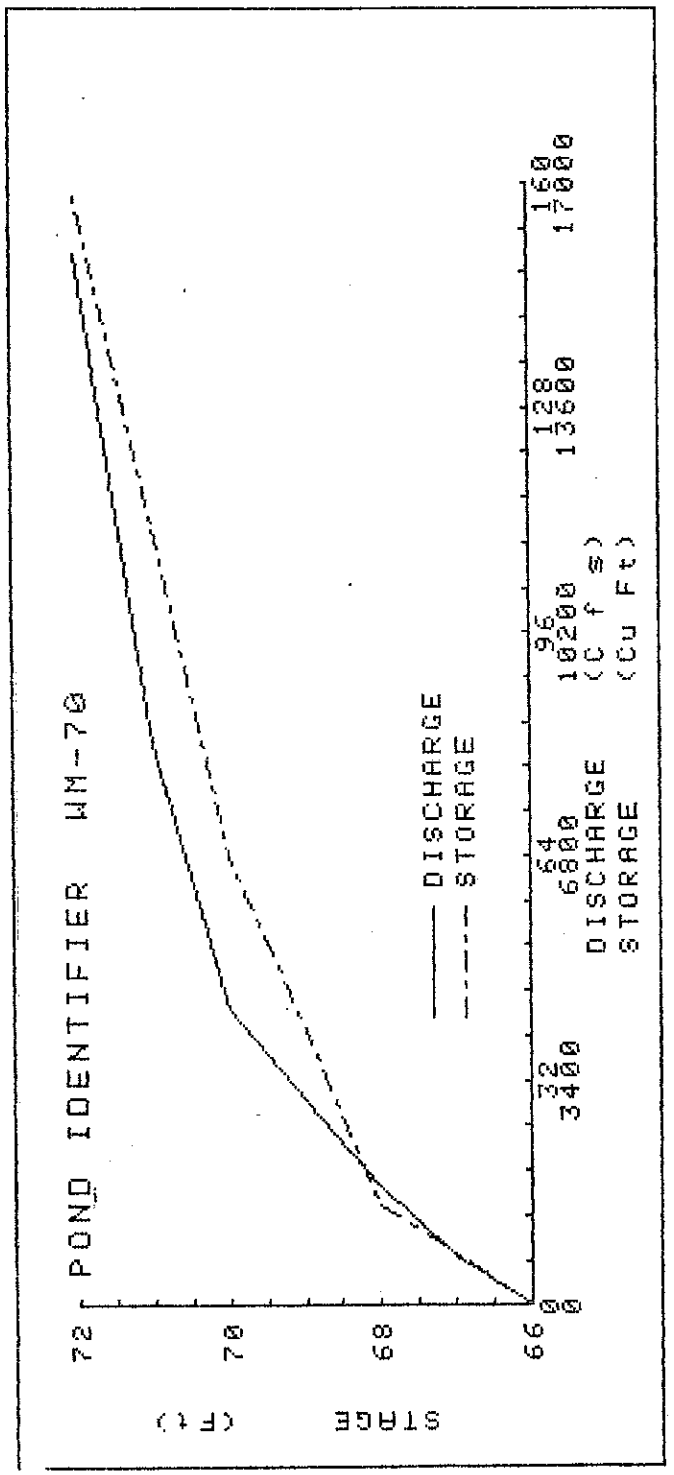
HYDROLOGIC REPORT FOR

W. MON CREEK



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MAY 12,1992

CIRCULAR STANDPIPE

DIAMETER = 42.00 INCHES

ELEV. (FT.)	COEFF	FLOW (CFS)
100.00	4.00	0.00
100.50	3.77	14.66
101.00	3.17	34.90
101.50	2.32	46.95
102.00	1.79	55.71
102.50	1.44	62.65
103.00	1.19	68.07

FORMULA USED Q = COEFF*PI*DIAMETER*H^1.5

JR ENGINEERING, LTD.
COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

WM

HYDROGRAPH RESERVOIR ROUTING

BASIN IDENTIFIER 1
POND IDENTIFIER WM-70
10 YEAR STORM FREQUENCY

T	I1	I2	2S1/T	O1	2S2/T +O2	O2	2S2/T
16.5	0.0	0.7	0.0	0.0	0.7	0.5	0.1
33.0	0.7	1.3	0.1	0.5	1.6	1.3	0.3
49.5	1.3	1.8	0.3	1.3	2.1	1.8	0.4
66.0	1.8	2.3	0.4	1.8	2.8	2.3	0.5
82.5	2.3	18.3	0.5	2.3	18.8	15.9	2.9
99.0	18.3	34.2	2.9	15.9	39.5	30.9	8.6
15.5	34.2	21.7	8.6	30.9	33.7	26.4	7.3
132.0	21.7	9.1	7.3	26.4	11.6	9.7	2.0
148.5	9.1	7.7	2.0	9.7	9.1	7.5	1.6
165.0	7.7	6.3	1.6	7.5	8.2	6.7	1.5
181.5	6.3	4.0	1.5	6.7	5.1	4.2	0.9
198.0	4.0	1.7	0.9	4.2	2.4	2.0	0.4
214.5	1.7	1.5	0.4	2.0	1.6	1.3	0.3
231.0	1.5	1.3	0.3	1.3	1.7	1.4	0.3
247.5	1.3	1.2	0.3	1.4	1.4	1.2	0.3
264.0	1.2	1.2	0.3	1.2	1.5	1.2	0.3
280.5	1.2	0.9	0.3	1.2	1.1	0.9	0.2
297.0	0.9	0.5	0.2	0.9	0.7	0.6	0.1
313.5	0.5	0.3	0.1	0.6	0.4	0.3	0.1
330.0	0.3	0.0	0.1	0.3	0.0	0.0	0.0
346.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
363.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
379.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
396.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
412.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
429.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
445.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
462.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
478.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

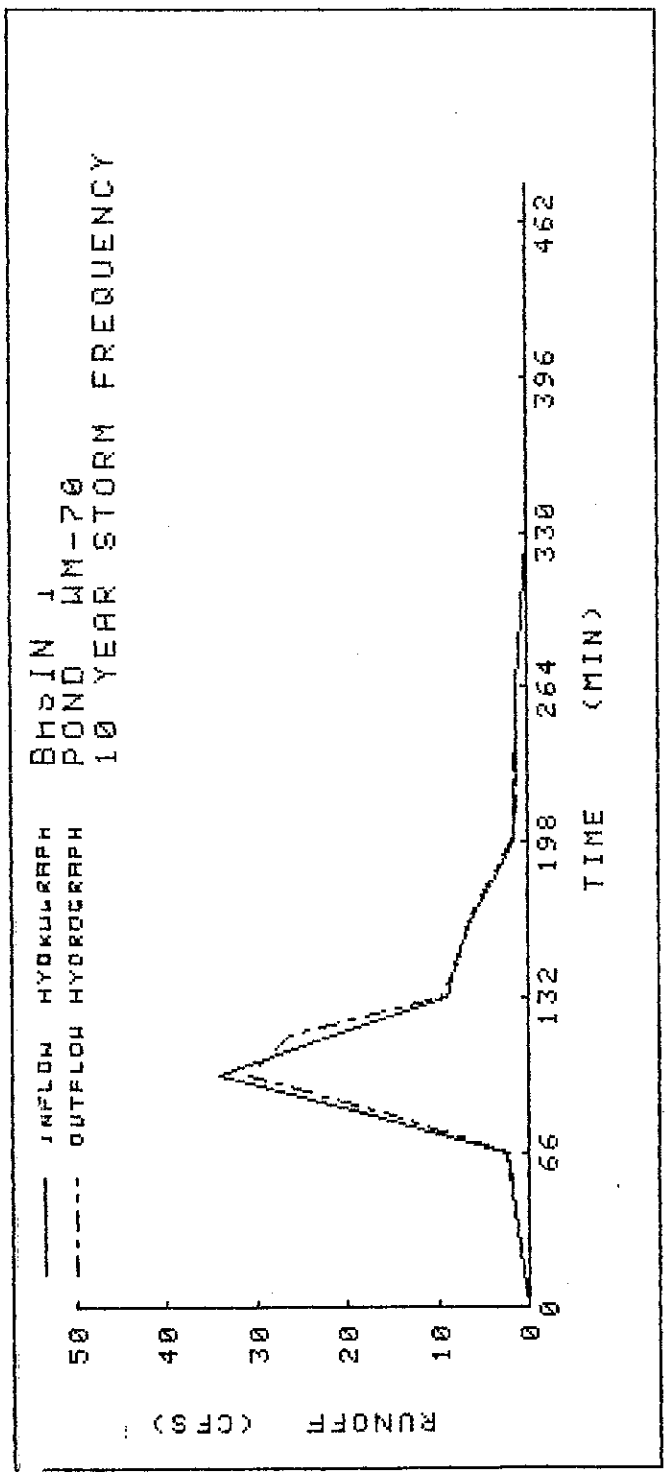
MAXIMUM ELEVATION = 69.0 FT
MAXIMUM STORAGE = 4280.1 CU FT
MAXIMUM DISCHARGE = 30.9 CFS

HISTORIC TO DP70
32 cfs V OK

JR ENGINEERING, LTD.
COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

WM



JR ENGINEERING, LTD.
COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

W. MON CREEK

UNIVERSAL RATIONAL HYDROGRAPH

Q(PEAK) = C*I*A
100 YEAR STORM FREQUENCY

BASIN IDENTIFIER DEV. TO DP-70
DISCHARGES INTO WM-70

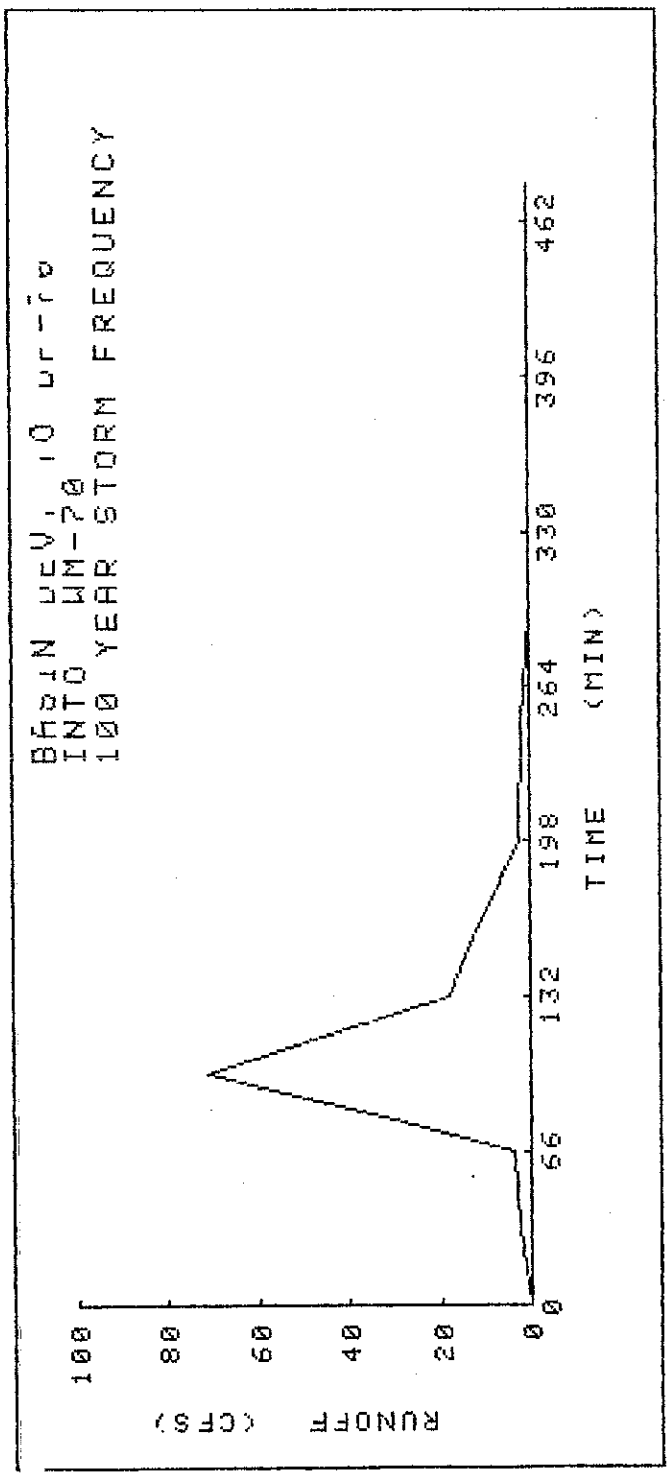
BASIN AREA = 38.00 ACRES
RUNOFF COEFF. = 0.47
RAINFALL INT. = 3.98 IN/HR

TIME (MIN)	RUNOFF (C.F.S.)
0.0	0.0
16.5	1.1
33.0	2.3
49.5	3.1
66.0	3.9
82.5	37.5
99.0	71.0
115.5	44.6
132.0	18.1
148.5	14.4
165.0	10.7
181.5	6.6
198.0	2.5
214.5	2.3
231.0	2.1
247.5	1.7
264.0	1.3
280.5	0.6
297.0	0.0
313.5	0.0
330.0	0.0
346.5	0.0
363.0	0.0
379.5	0.0
396.0	0.0
412.5	0.0
429.0	0.0
445.5	0.0
462.0	0.0
478.5	0.0

JR ENGINEERING, LTD.
COLORADO SPRINGS, COLORADO
MAY 12,1992

HYDROLOGIC REPORT FOR

W.MON CREEK



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HYDROLOGIC REPORT FOR

W. MON CREEK

HYDROGRAPH RESERVOIR ROUTING

BASIN IDENTIFIER DEV. TO DP-70
POND IDENTIFIER WM-70
100 YEAR STORM FREQUENCY

T	I1	I2	2S1/T	O1	2S2/T +O2	O2	2S2/T
16.5	0.0	1.1	0.0	0.0	1.1	0.9	0.2
33.0	1.1	2.3	0.2	0.9	2.7	2.2	0.5
49.5	2.3	3.1	0.5	2.2	3.7	3.0	0.7
66.0	3.1	3.9	0.7	3.0	4.7	3.9	0.9
82.5	3.9	37.5	0.9	3.9	38.4	29.7	8.7
99.0	37.5	71.0	8.7	29.7	87.4	67.1	20.4
15.5	71.0	44.6	20.4	67.1	68.9	52.4	16.5
32.0	44.6	18.1	16.5	52.4	26.8	21.6	5.1
148.5	18.1	14.4	5.1	21.6	16.0	13.5	2.5
65.0	14.4	10.7	2.5	13.5	14.1	11.8	2.3
81.5	10.7	6.6	2.3	11.8	7.7	6.3	1.4
198.0	6.6	2.5	1.4	6.3	4.2	3.4	0.8
214.5	2.5	2.3	0.8	3.4	2.2	1.8	0.4
231.0	2.3	2.1	0.4	1.8	3.1	2.5	0.6
247.5	2.1	1.7	0.6	2.5	1.9	1.5	0.3
264.0	1.7	1.3	0.3	1.5	1.8	1.5	0.3
280.5	1.3	0.6	0.3	1.5	0.8	0.6	0.1
297.0	0.6	0.0	0.1	0.6	0.1	0.1	0.0
313.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0
330.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
346.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
363.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
379.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
396.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
412.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
429.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
445.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
462.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
478.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MAXIMUM ELEVATION = 70.7 FT
MAXIMUM STORAGE = 10096.2 CU FT
MAXIMUM DISCHARGE = 67.1 CFS

HIST. TO DP-70
67 cfs √0.1C

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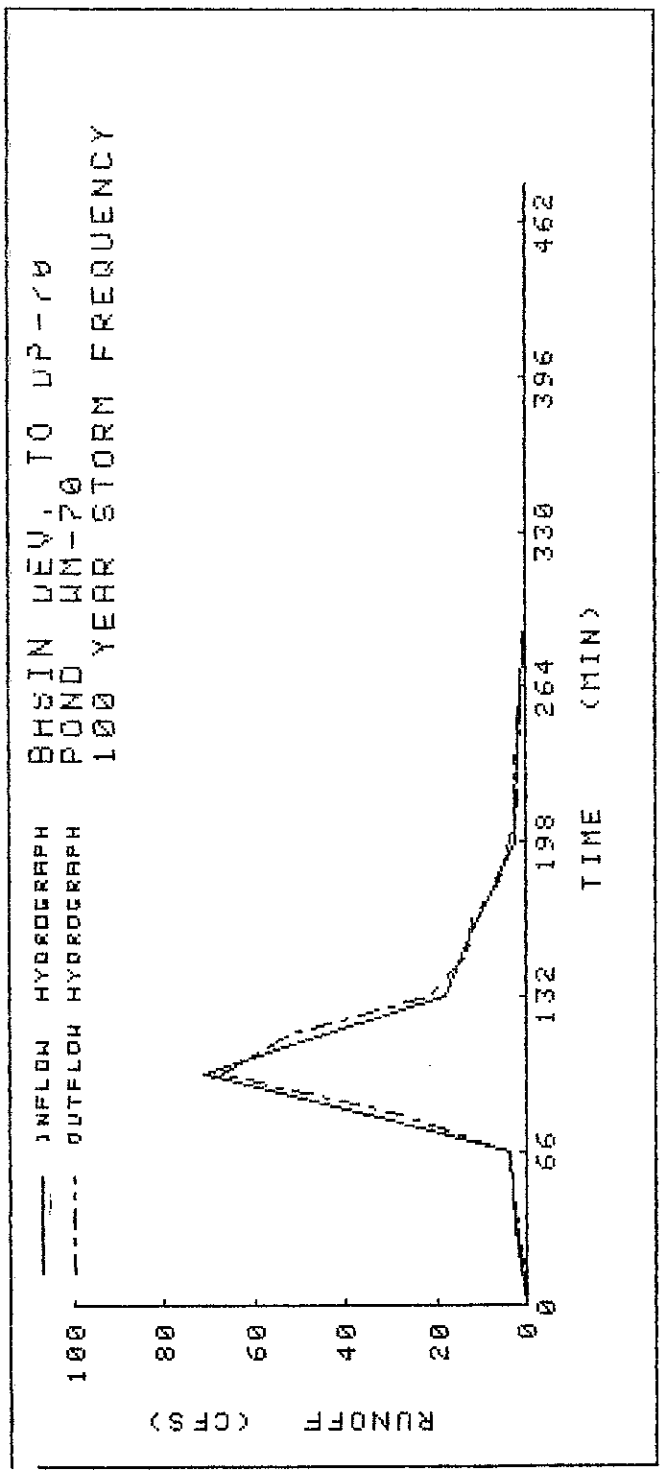
HYDROLOGIC REPORT FOR

W.MON CREEK



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS UNITED STATES AIR FORCE ACADEMY

USAF ACADEMY, COLORADO 80840-5000

REPLY TO ATTN OF: DE

17 APR 1992

SUBJECT: Peregrine Development Drainage (Your Ltr, 25 Feb 92)

TO: Mr Jerry Novak
Vintage Communities, Inc.
7710 North Union Blvd
Colorado Springs CO 80920-4098

1. We have reviewed your 25 Feb 92 letter requesting we allow you to discharge more than historic flows onto the Academy from your Peregrine development. We have analyzed the drainage situation from Peregrine proceeding down and our property from the receiving end. Due to past experience and our current policy not to accept more than historic flows from surrounding properties, we cannot accept greater than historic flows from Peregrine.

2. Ms Jan Slavens is our point of contact for this action.

THAYNE H. JUDD, Colonel, USAF
DCS/Civil Engineering

cc: Bob Adamczyk, City Engineer's Office, w/ Atch