V

Vinyard & Associates, Inc.

A

community sciences corporation

DRAINAGE REPORT

FOR

LADERA WEST UNITS 3 & 4 SUBDIVISION (MAP #G-10)

PREPARED FOR

CURB INC.

PREPARED BY

COMMUNITY SCIENCES CORPORATION
P. O. BOX 1328
CORRALES, NEW MEXICO 87048

AUGUST, 1993
REVISED NOVEMBER, 1993

RECEIVED
NOV - 8 1993
DRAINAGE ENGINEERING DIVISION

JAMES D. HUGHES, P.E.

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Corrales, New Mexico 87048
(505) 897-0000

DRAINAGE INFORMATION SHEET

PROJECT TITLE: LADERA WEST UNITS 3 & 4 ZONE ATLAS/DRNG. FILE #: G-10

LEGAL DESCRIPTION: EL RANCHO ATRISCO TRACT 4 AND A PORTION OF TRACT 7

CITY ADDRESS: NORTH OF VISTA ALEGRE BETWEEN PNM EASEMENTS

ENGINEERING FIRM: Community Sciences Corporation CONTACT: JAMES D. HUGHES, P.E.

ADDRESS: P.O. Box 1328, Corrales, N. M. 87048 PHONE: 897-0000

OWNER: CURB, INC CONTACT: BO JOHNSON

ADDRESS: 6301 INDIAN SCHOOL RD NE STE 680 PHONE: 881-9190

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

X YES DRB NO. 93-274

X COPY OF CONFERENCE RECAP SHEET PROVIDED PROJ. NO. _____

_____ NO EPC NO. _____

_____ TYPE OF SUBMITTAL:

X DRAINAGE REPORT

_____ DRAINAGE PLAN

X PRELIMINARY GRADING AND DRAINAGE PLAN

X GRADING PLAN

X EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL

X PRELIMINARY PLAT APPROVAL

_____ SITE DEVELOPMENT PLAN APPROVAL

_____ FINAL PLAT APPROVAL

_____ BUILDING PERMIT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

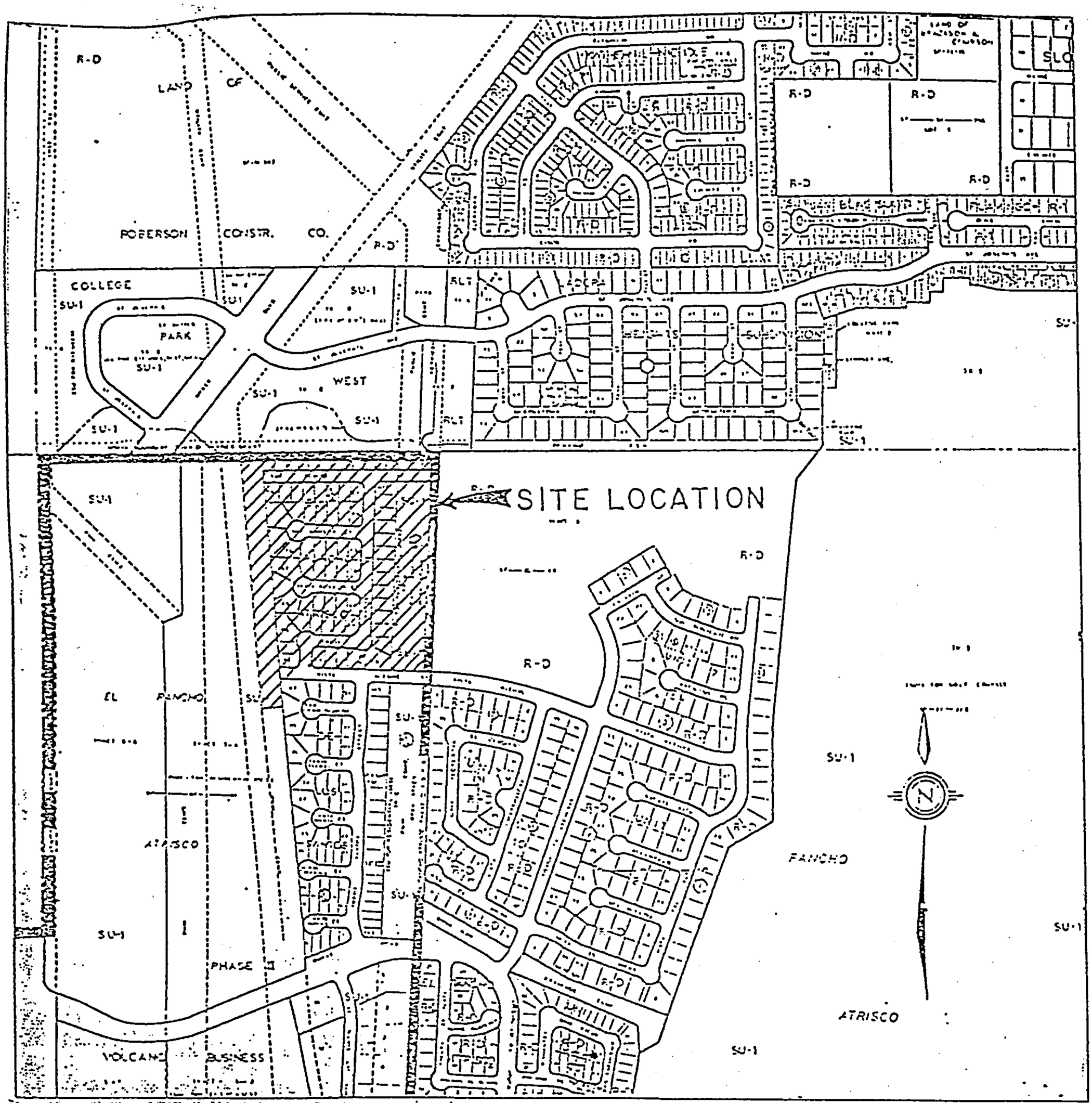
X ROUGH GRADING PERMIT APPROVAL

_____ GRADING/PAVING PERMIT APPROVAL

_____ OTHER _____(SPECIFY)

DATE SUBMITTED: _____

BY: _____



VICINITY MAP G-10-Z

APPROXIMATE SCALE: 1"=700' ±

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: G-10 DATE: 07/22/93

EPC NO.: _____ DRB NO.: _____ ZONE: _____

SUBJECT: Ladera West Units 3 & 4

STREET ADDRESS: Vista Allegre / Unser

LEGAL DESCRIPTION: Tract 4, Rancho Atrisco.

APPROVAL REQUESTED:

- ✓ PRELIMINARY PLAT
- ✓ FINAL PLAT
- ___ SITE DEVELOPMENT PLAN
- ___ BUILDING PERMIT
- ___ GRADING/PAVING PERMIT
- ___ OTHER

ATTENDANCE:

WHO	REPRESENTING
Bo Johnson	Trinity Enterprises
Doug Hughes	CSC
Gilbert Aldaz	COA

FINDINGS:

1. Need to Address offsite flows to this ~~subdivi~~ subdivision

2. It appears Vista Allegre ~~to~~ could connect to Unser in future ~~to~~ need to address the public waters from this street

3. Ponding Is Not Appropriate since there is major channel to the north, coordination with AMAFCA required to make this connection

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Gilbert Aldaz SIGNED: James D. Bailey

TITLE: 07/22/93 TITLE: Vice President CSC

DATE: Project Engineer DATE: 7-22-93

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

community sciences corporation

August 26, 1993

Cliff Anderson
AMAFCA
2600 Prospect NE
Albuquerque, NM 87107

RE: Ladera West Unit 3 and 4 Drainage to Rinconada Channel (DRB 93-274)

Dear Mr. Anderson:

The Rinconada Channel just east of Unser Boulevard is the proposed drainage outlet for Ladera West Subdivision Units 3 and 4. According to the "Northwest Mesa Drainage Management Plan" prepared by Scanlon & Associates, October, 1989, the channel flow at Unser Boulevard is 665 cfs. This flow was multiplied by a 15% bulking factor for sediment to check the adequacy of the channel along the subdivision site. This bulked flow of 765 cfs yields a flow depth of 3.44' at 12.98 fps. This was derived using n = 0.025, S_o = 1.46%, bottom width = 12', and 1.5:1 side slopes. Freeboard was calculated using the equation Freeboard = 0.7 (2 + 0.025 $Vd^{1/3}$ exponent) which equals 1.74'. This produces a total required depth of 5.2' while the channel is only lined to a depth of 4.5'.

Flows from Ladera West Units 3 and 4 and proposed fully developed off-site flows to the West will enter the channel west of the 200' PNM easement through a rundown. This addition of 70 cfs will produce a flow depth of 3.59', freeboard = 1.76', and a total required depth of 5.35'. Approximately 300' east of the rundown, the channel transitions to a 9' depth which is more than adequate to handle 100 year flow plus freeboard. The south side of the channel, adjacent to this subdivision, will be graded to provide this additional depth (see the channel cross section enclosed).

The rundown will be a 10' wide, 2' deep concrete channel to the edge of the Rinconada Channel right-of-way. It will then change to a trapezoidal channel with 12% side slopes to provide access along the Rinconada Channel.

We are seeking AMAFCA's approval for the Drainage Report and preliminary grading plan including the discharge of 70 cfs to the Rinconada Channel through the proposed concrete rundown and the proposed grading along the channel to provide both missing freeboard and your required access within the existing right-of-way. Preliminary plat is scheduled for DRB on September 7th. Fred Aguirre is questioning the need for AMAFAC sign off on the infrastructure list. Gilbert Aldaz has already told us that AMAFCA approval is needed for 1) The Drainage Report, 2) Rough grading, and 3) Construction plans/work order. Please let know about the infrastructure list signature as soon as possible. If you have any questions, please contact me at 897-0000.

Cordially,

James D. Hughes

James D. Hughes, P.E.

cc: Gilbert Aldaz
Fred Aguirre
Bo Johnson
Chuck Haeglin

Enclosure

291-02-032 - AUG 039.LET

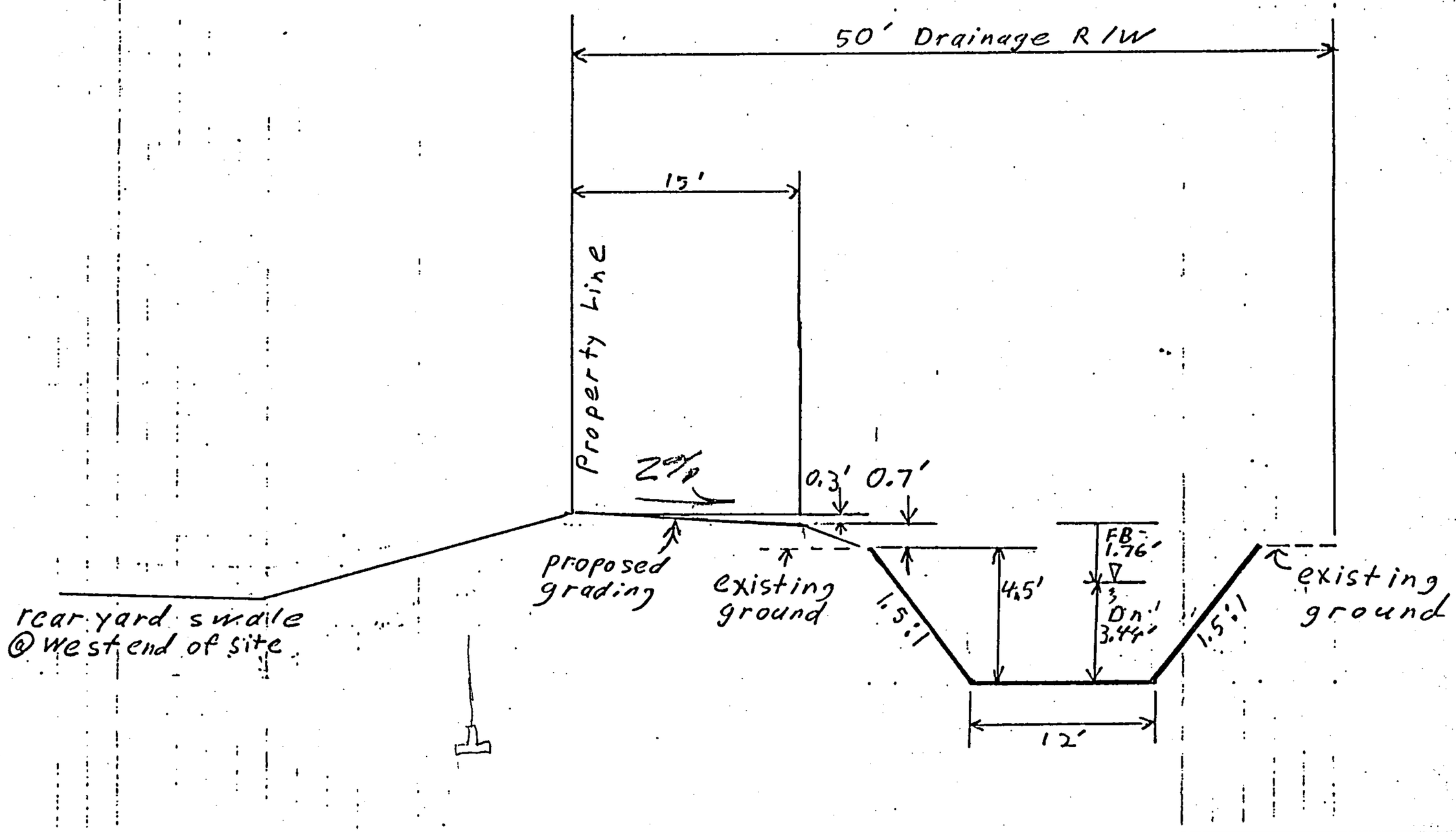
SURVEYING
LAND PLANNING
CIVIL ENGINEERING
DEVELOPMENT CONSULTANTS

P.O. Box 1328
Corrales, New Mexico 87048
(505) 897-0000

AMPAD 22-142 100 SHEETS
22-144 200 SHEETS

RINCONADA CHANNEL CROSS SECTION

Scale 1" = 10' Horiz. 1" = 5' Vert.



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APPENDIX C - OFF-SITE DRAINAGE REPORT REFERENCES

POCKET

PRELIMINARY GRADING AND DRAINAGE PLAN
DRAINAGE MASTER PLAN
UNIT 3 GRADING PLAN
UNIT 4 GRADING PLAN
OFF-SITE POND GRADING PLAN
RINCONADA CHANNEL & RUNDOWN PROFILES
TRACT 7-A BULK LAND PLAT

I. PURPOSE AND SCOPE

Curb Inc. is currently planning for the development of Ladera West Subdivision Units 3 & 4. The proposed development consists of approximately 21.10 acres and is to be subdivided into 103 single family residences.

This report presents an overall Drainage Management and Conceptual Grading Plan for approval by the City of Albuquerque in order that subsequent subdivision and development may commence.

II. ULTIMATE DESIGN FOR TRACTS 6 & 7

Post-developed conditions were also considered for El Rancho Atrisco Tracts 6 and 7. The tracts were divided into basins as seen on the drainage area map preceding "TABLES" at the end of this section and the Drainage Master Plan at the end of this report. Areas 103, 104, 105, 106, 110, 111, and 116 were considered "attached multiple unit residential" according to the DPM Section 22.2. Likewise, areas 101, 113, and 114 were classified as "single family residential" and area 115 "commercial". Area 104 was considered to drain to both San Benito Street and to the south to Vista Alegre which adds a degree of conservation to the street capacity calculations.

The combined flows of Areas 103 and 104 can enter Ladera West Unit 4 at San Benito Street. This flow of 22 cfs will combine with the on-site flow of 17 cfs for a total of 39 cfs in San Benito at Todos Santos Street. The combined flows from Areas 101, 104, 105, and 106 will produce a street flow in Area 102 (Vista Alegre) at the west side of Ladera West Unit 3 of 52 cfs. This flow will be collected in a storm drain through Area 111 and discharged into a detention pond in area 109. Storm drains from Areas 112 and 113 can be connected to the drain through 111. Finally, Area 110 will flow into Area 109 for a total flow into the pond of 132 cfs. The pond's primary discharge will be limited to the 26 cfs capacity of the down stream facilities as established in the previous drainage report to Ladera West Units 1 and 2. Areas 114, 115, and 116 have a combined flow of 97 cfs and are to be discharged to the 60" Ouray Road Storm Drain. This meets the 97 cfs capacity currently allowed (see copy of "El Rancho Atrisco Basins" in Appendix C). The location of the pond is heavily influenced by the natural terrain as it relates to the existing construction of Ouray Road. The hydraulic grade line (elevation 36.43...see Storm Drain Profile in Appendix C) in Ouray Road, at the southeast corner of Tract 7, is about 4' higher than the low spot which is located 450' north of Ouray on the east side of Tract 7. This prevents using the Ouray Road storm drain as the primary outfall for the entire area. The pond is to function as a normal detention pond with an emergency spillway to Ouray Road under developed conditions. The pond will be graded to its ultimately developed design as part of the Unit 3 construction. No developed property will drain to the pond as a result of the Ladera West Unit 3 and 4 construction, so the pond will function as a privately maintained tempoary retention facility until Tracts 6 and 7 are developed. The undeveloped peak 100 year flow into the pond will be 62 cfs. Since the pond has about 5.5 ac. ft. of storage below the emergency spillway invert and the undeveloped 100 yr. 10 day volume is only 2.5 ac. ft. there will be more than enough capacity in the temporary facility to accommodate the undeveloped runoff plus vast amounts of sediment.

III. SITE DESCRIPTION AND HISTORY

Ladera West Units 3 and 4 is a replat of El Rancho Atrisco de Los Santos and is located North of Vista Alegre, South of the Rinconada Channel, and west of the 200 foot PNM easement which borders Fairway Manor to the East (see Vicinity Map at the beginning of this report). This area is El Rancho Atrisco Tract 4 and part of Tract 7.

The site slopes to the southeast with an average slope of approximately 2%. No flood plains or arroyos exist through this site. The soil is classified by the Soil Conservation Service as "Bluepoint Loamy Sands (BCC) which are "Type A" hydrologic group soils. The Rinconda Channel has removed the previously shown flood plain along the north side of the site as now indicated on the current city flood way map.

Previous studies for undeveloped flows were conducted for a storm drain in Ouray Road (see "El Rancho Atrisco Basins" in Appendix C). These design flows are being maintained in the fully developed condition.

IV. DESIGN CRITERIA

A. Flood Control Regulations

The drainage plan presented in this report has been designed to comply with AMAFCA resolution 80-15, which requires that proposed land development projects be designed such that no flooding of private properties will occur during any storm up to and including the 100-year frequency event. Additionally, this drainage plan has been designed to comply with current "City of Albuquerque Drainage Ordinance" and Chapter 22 of the Development Process Manual (DPM), and subsequently adopted general policies of the City of Albuquerque.

1. 100-year storm

   a. Stormwater flow depth not to exceed the top of curb in any street.

   b. Jump depth to be contained within right-of-way.

2. 10-year storm:

   a. Local street - velocity times depth less than 6.5

   b. Arterial streets:

      i. Flow not to exceed a depth of 0.50
      ii. Velocity times depth less than 6.5
      iii. One driving lane in each direction free of stormwater

B. Engineering Parameters

In accordance with AMAFCA criteria, all hydrological analysis is based on the 100-year frequency, 6-hour duration storm, as represented in Section 22.2, Hydrology, of the "Development Process Manual, Volume 2, Design Criteria for the City of Albuquerque, New Mexico, January 1993".

Ten-year, 6-hour values were also used for subcatchments, in accordance with City drainage policies regarding street flow.

The four rainfalls pertinent to the study are as follows:

	10-Year	100-Year
One-Hour	1.26"	1.87"
Six-Hour	1.47"	2.20"

V. COMPUTATIONAL PROCEDURES

The analysis approach follows standard engineering practice. Key points of confluence were selected and the associated individual and aggregate contributing basins were subsequently defined.

Hydrological computations were accomplished by means of the March 1992 version of AHYMO Computer Program as developed by AMAFCA. The input parameters and resulting flows for the basins are summarized on Table 1. Summary and detailed AHYMO printouts are contained in Appendix A.

Times of concentration were estimated using the Upland Method and then converted to times to peak (Lg), in accordance with the above referenced Section 22.2 which also establishes the minimum time of concentration as 12 minutes.

Flow characteristics for conveyance swales, channels, and streets were analyzed based on the Manning equation for uniform flow. Streets are assumed to have a 2% cross slope from lip of gutter to crown and a curb and gutter per City of Albuquerque Standard details. Finished grade at the right-of-way is 0.33' above top of curb.

VI. OFF-SITE DRAINAGE

Offset drainage from the west will be intercepted by a diversion swale in a 40' wide drainage easement. Since none of that off-site area naturally drains into the Rincanada Channel to the North, it will be conveyed to the south in a 40' drainage easement all of the way to the temporary retention pond. The outlet structure will be constructed in conjunction with the future development of any of the off-site areas that drain to the pond. It will limit the discharge into Unit 1 to the 26 cfs allowed by Avid Engineering (see "Size Channel Inlet-Off-Site Flow" in Appendix C).

Current AHYMO calculations for this offsite area indicate a predeveoloped flow of 62 cfs instead of the 26 cfs used by Avid Engineering and the El Rancho Atrisco Basins report. Since down stream capacity and the Ladera West Unit 1 design were based on the 26 cfs, the pond is needed immediately. A draft of the Unit 3 pond grading and construction plans is included in Appendix C.

VII. ON-SITE DRAINAGE

Areas 107.2 and 107.3 will drain to the north in Todos Santos Street and be collected in a run down at San Benito Street. This flow of 29 cfs and the off-site flow plus Area 107.1 (41 cfs) will drain to the Rinconada Channel via a rundown.

Drainage area 108 will drain to the south through Todos Santos Street. This flow of 17.5 cfs exceeds the current 13 cfs assumed in the Unit 2 plans. Unit 1 provides a sump and storm drain to drain this street. The current design flow at the sump is 37 cfs to the north in Todos Santos Street (see page 2/5 and 3/5) of Avid Engineering Report in Appendix C. The addition of 4.5 cfs (41.5 cfs total) is less than the street capacity of 48 cfs. Page 1/5 indicated a Qmax of 50 cfs and a reserved safety capacity of 14 cfs. Page 2/5 shows a half street capacity of 25 cfs and a gutter depth of 0.6' for "Basin C". The current flow of 29.5 cfs plus our 4.5 cfs yields a half street flow of 17 cfs. Therefore, the current storm drain inlets have adequate capacity for a 17.5 cfs discharge from Unit 3. An increase of 0.5 fps in velocity through the pipes will not significantly increase the HGL. Therefore, the storm drain is adequate for these flows.

VIII. EROSION CONTROL

Control of excessive soil erosion into City streets and drainage improvements during construction will be accomplished by use of temporary lot line, water-trap berms. These will be windrowed into place following mass grading operations and left in place until each home is constructed and sold. The preliminary grading plan at the end of this report illustrates the dimensions of these berms, and they will be located along those boundaries of each lot which are common to City rights-of-way or public easements.

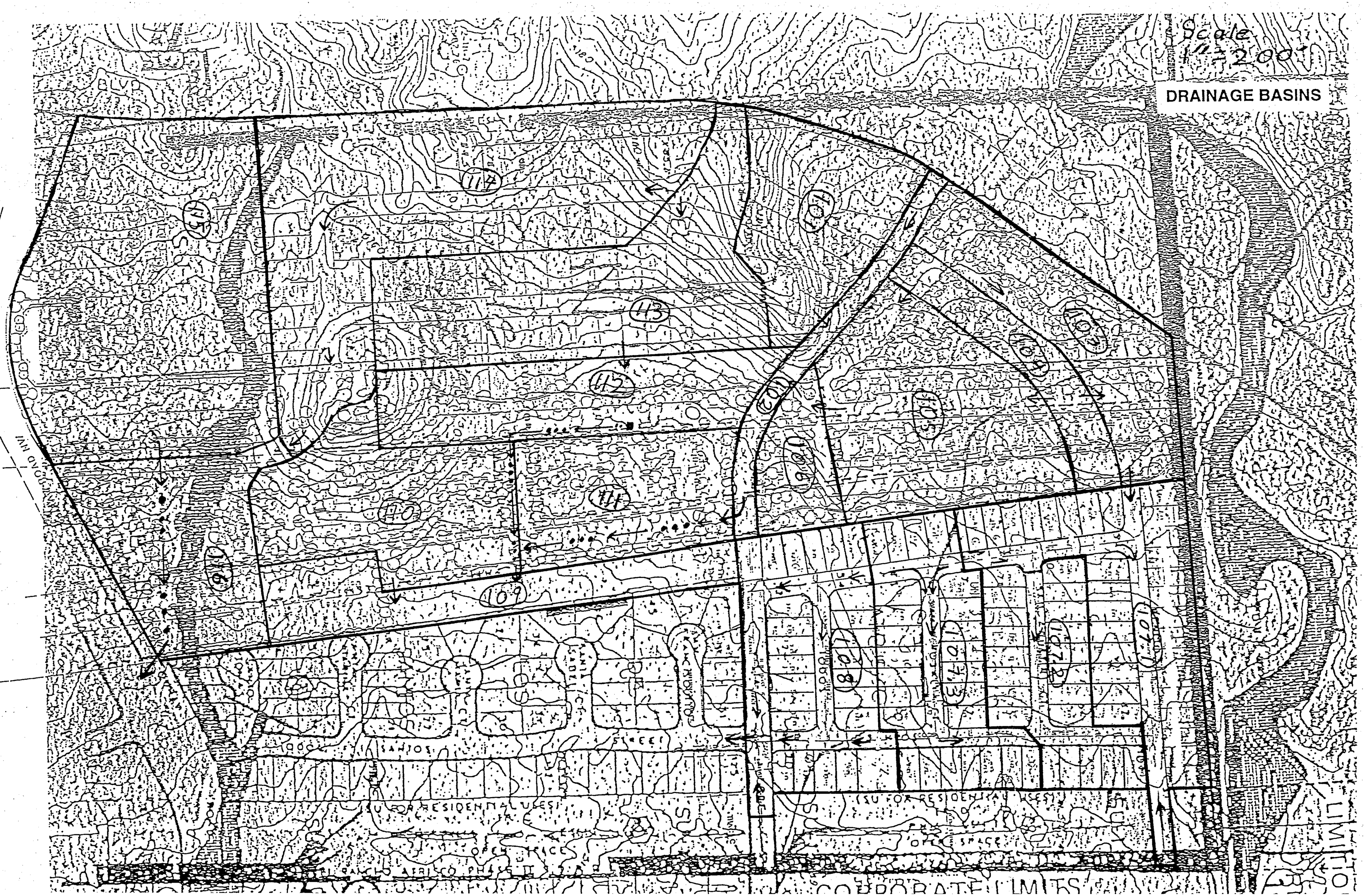
DRAINAGE BASINS
Scale 1" = 200'
114
113
112
111
110
109
108
107
106
105
104
103
102
101
SANTOS
STREET
(SU FOR RESIDENTIAL USES)
OPEN SPACE
RANCHO ARRIBA PHASE II
CORPORATE LIMITS

TABLE I

EXISTING DEVELOPMENT CONDITIONS

			LAND TREATMENT				
Basin I.D.	Area (Sq.Mi.)	T_c (Min.)	A	B	C	D	Q_{100} (cfs)
100	0.1033	18.6	90	10	0	0	62.28

Basin 100 = Basins 101-106 and 109-116

FUTURE DEVELOPMENT CONDITIONS

					LAND TREATMENT				INCREMENTAL		FUTURE TOTAL	
Basin I.D.	Area (Sq.Mi.)	Contr. Basin	Sum Area (Sq.Mi.)	T_c (Min.)	A	B	C	D	Q_{100} (cfs)	Q_{10} (cfs)	Q_{100} (cfs)	Q_{10} (cfs)
101	0.0055	-----	-----	12	0	21.5	21.5	57	12.47	8.40	12.47	8.40
102	0.0019	101,4,5,6	0.0215	12	0	5	5	90	5.10	3.49	51.81	35.13
103	0.0060	-----	-----	12	0	15	15	70	14.57	9.89	14.57	9.89
104	0.0030	103	0.0090	12	0	15	15	70	7.29	4.95	21.86	14.83
105	0.0088	104	0.0118	12	0	15	15	70	21.36	14.49	28.65	19.44
106	0.0023	105	0.0141	12	0	15	15	70	5.60	3.80	34.25	23.24
107.1	0.0084	104	0.0174	12	0	21.5	21.5	57	19.04	12.82	40.90	27.66
107.2	0.0067	107.3	0.0127	12	0	21.5	21.5	57	15.19	10.23	28.79	19.39
107.3	0.0060	-----	-----	12	0	21.5	21.5	57	13.60	9.16	13.60	9.16
108	0.0077	-----	-----	12	0	21.5	21.5	57	17.45	11.76	17.45	11.76
109	0.0050	110,111	0.0580	12	0	100	0	0	6.51	4.10	131.35	88.58
110	0.0082	-----	-----	12	0	15	15	70	19.91	13.51	19.91	13.51
111	0.0058	112,102	0.0448	12	0	15	15	70	14.08	9.56	104.99	70.97
112	0.0066	113	0.0175	12	0	25	25	50	14.39	9.65	39.09	26.29
113	0.0109	-----	-----	12	0	21.5	21.5	57	24.70	16.64	24.70	16.64
114	0.0160	-----	-----	12	0	21.5	21.5	57	36.25	24.42	36.25	24.42
115	0.0168	114	0.0328	12	0	5	5	90	44.93	30.77	81.18	55.19
116	0.0065	115	0.0393	12	0	15	15	70	15.78	94.88	10.71	64.34

TABLE 2

FLOW CHARACTERISTICS AT KEY INTERSECTIONS

STREET	LOCATION	STREET WIDTH	% SLOPE	Q100	D_N	DC	VN	V_C	Area	Topwid	F	*Jump Depth	**Pool Depth
SAN AGUSTINE	TODOS SANTOS	25' MOUNT	0.78	11.57	0.30	0.42	3.02	2.43	3.82	25.96	1.39	0.47	0.53
SANTA ROSILIA	TODOS SANTOS	25' MOUNT	0.50	8.70	0.33	0.30	1.91	2.22	4.55	26.23	0.81		
SANTA LUCIA	TODOS SANTOS	25' MOUNT	1.18	9.77	0.30	0.31	2.61	2.32	3.74	25.93	1.21	0.40	0.41
SAN BENITO	RUNDOWN	26' STAND	0.50	39.09	0.64	0.62	3.46	3.66	11.31	26.32	0.93		
SANTA TERESA	SAN BENITO	27' MOUNT	0.50	6.89	0.31	0.28	1.70	2.04	4.05	28.02	0.79		
SANTA TERESA	VISTA ALEGRE	27' MOUNT	3.00	3.49	0.19	0.22	2.73	1.79	1.28	16.43	1.72	0.35	0.28
TODOS SANTOS	SAN BENITO	28' STAND	0.50	28.79	0.56	0.53	2.97	3.23	9.70	28.29	0.89		
TODOS SANTOS	SAN AGUSTINE	28' STAND	0.50	13.60	0.44	0.41	2.21	2.54	6.16	28.22	0.83		
TODOS SANTOS	SANTA ROSILIA	28' STAND	2.90	13.96	0.34	0.41	3.91	2.56	3.57	26.14	1.86	0.67	0.54
VISTA ALEGRE	TODOS SANTOS	40' STAND	1.39	3.49	0.26	0.27	2.11	1.85	1.65	17.26	1.20	0.29	0.34
TODOS SANTOS	UNIT 1 SUMP	32' STAND	0.50	41.50	0.63	0.61	3.26	3.49	12.74	32.32	0.92		

* Jump Depth = $- D_N/2 + (D^2_N/2 + 4 * V^2_N * D_N/g)^{0.5}$

** Pool Depth = $D_c + 1.25 * V^2_c/(2g)$

APPENDIX A

AHYMO

SUMMARY AND DETAILED OUTPUT

100 YEAR PRE-DEVELOPMENT
OFF-SITE SUMMARY

```
   AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
        RUN DATE (MON/DAY/YR) = 11/03/1993
        START TIME (HR:MIN:SEC) = 17:04:23     USER NO.= J_HUGHES.S92
        INPUT FILE = LW100PR.DAT

*S                  LADERA WEST - 100 YEAR PRE-DEVELOPMENT


START               TIME=0.0 HR PUNCH CODE=0

RAINFALL            TYPE=1 RAIN QUARTER=0.0
                    RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                    RAIN DAY=2.66 IN DT=0.0333 HRS

                 COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                 DT =    .033300 HOURS       END TIME =     5.994000 HOURS
                    .0000   .0016   .0033   .0050   .0067   .0085   .0103
                    .0121   .0140   .0160   .0180   .0200   .0221   .0243
                    .0265   .0288   .0312   .0336   .0361   .0387   .0414
                    .0442   .0471   .0501   .0533   .0566   .0600   .0636
                    .0674   .0714   .0757   .0808   .0863   .0922   .1044
                    .1323   .1754   .2374   .3221   .4335   .5756   .7527
                    .9690  1.1767  1.2619  1.3336  1.3972  1.4551  1.5084
                   1.5579  1.6041  1.6474  1.6881  1.7266  1.7629  1.7973
                   1.8298  1.8607  1.8900  1.9178  1.9442  1.9515  1.9573
                   1.9627  1.9680  1.9729  1.9777  1.9823  1.9867  1.9909
                   1.9950  1.9990  2.0029  2.0066  2.0102  2.0137  2.0172
                   2.0205  2.0238  2.0269  2.0300  2.0331  2.0360  2.0389
                   2.0418  2.0446  2.0473  2.0500  2.0526  2.0552  2.0578
                   2.0603  2.0627  2.0651  2.0675  2.0698  2.0721  2.0744
                   2.0766  2.0788  2.0810  2.0832  2.0853  2.0873  2.0894
                   2.0914  2.0934  2.0954  2.0974  2.0993  2.1012  2.1031
                   2.1050  2.1068  2.1086  2.1104  2.1122  2.1140  2.1157
                   2.1174  2.1191  2.1208  2.1225  2.1242  2.1258  2.1274
                   2.1290  2.1306  2.1322  2.1338  2.1353  2.1369  2.1384
                   2.1399  2.1414  2.1429  2.1444  2.1459  2.1473  2.1487
                   2.1502  2.1516  2.1530  2.1544  2.1558  2.1571  2.1585
                   2.1599  2.1612  2.1625  2.1639  2.1652  2.1665  2.1678
                   2.1691  2.1703  2.1716  2.1729  2.1741  2.1754  2.1766
                   2.1778  2.1791  2.1803  2.1815  2.1827  2.1839  2.1850
                   2.1862  2.1874  2.1886  2.1897  2.1909  2.1920  2.1931
                   2.1943  2.1954  2.1965  2.1976  2.1987  2.1998

*                   ****************************************
COMPUTE NM HYD      ID=1 HYD NO=100.0 DA=0.1033 SQ MI
                    PER A=90.0 PER B=10.0 PER C=00.0 PER D=00.0
                    TP=-0.2083 HR MASS RAIN=-1

   K =   .243502HR    TP =   .208300HR    K/TP RATIO =  1.168997     SHAPE CONSTANT, N =  3.033690
   UNIT PEAK =   141.12    CFS   UNIT VOLUME =    .9999       B =   284.56      P60 = 1.8700
   AREA =      .103300 SQ MI    IA =    .63500 INCHES    INF =  1.62800 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=1 CODE=1

                                  PARTIAL HYDROGRAPH   100.00


   RUNOFF VOLUME =      .45880 INCHES     =       2.5276 ACRE-FEET
```

2 YEAR POST-DEVELOPMENT SUMMARY

AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992 RUN DATE (MON/DAY/YR) =11/03/1993
INPUT FILE = LW2PO.DAT USER NO.= J_HUGHES.S92

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	PAGE = 1
*S	LADERA WEST - 2 YEAR POST DEVELOPMENT										
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	.960
COMPUTE NM HYD	101.00	-	1	.00550	3.99	.130	.44437	1.499	1.133	PER IMP=	57.00
COMPUTE NM HYD	102.00	-	2	.00190	2.04	.068	.66901	1.499	1.678	PER IMP=	90.00
COMPUTE NM HYD	103.00	-	3	.00600	5.17	.171	.53287	1.499	1.346	PER IMP=	70.00
COMPUTE NM HYD	104.00	-	4	.00300	2.59	.085	.53287	1.499	1.347	PER IMP=	70.00
COMPUTE NM HYD	105.00	-	5	.00880	7.58	.250	.53286	1.499	1.346	PER IMP=	70.00
COMPUTE NM HYD	106.00	-	6	.00230	1.98	.065	.53287	1.499	1.348	PER IMP=	70.00
*S	POSSIBLE FLOWS ENTERING SITE AT VISTA ALEGRE										
*S	AREA 101 + 102										
ADD HYD	100.10	1& 2	9	.00740	6.03	.198	.50196	1.499	1.273		
*S	AREA 101 + 102 + 106										
ADD HYD	100.20	9& 6	10	.00970	8.01	.263	.50925	1.499	1.291		
*S	AREA 101 + 102 + 104 + 105 + 106										
ADD HYD	100.30	10& 5	11	.01850	15.59	.514	.52047	1.499	1.317		
ADD HYD	100.31	11& 4	11	.02150	18.18	.599	.52218	1.499	1.321		
*S	MAXIMUM FLOW ENTERING AT SAN BENITO										
*S	AREA 103 + 104										
ADD HYD	101.10	3& 4	12	.00900	7.76	.256	.53280	1.499	1.347		
COMPUTE NM HYD	107.30	-	7	.00600	4.35	.142	.44437	1.499	1.132	PER IMP=	57.00
COMPUTE NM HYD	107.20	-	8	.00670	4.86	.159	.44437	1.499	1.132	PER IMP=	57.00
*S	AREA 107.3 + 107.2										
ADD HYD	107.01	7& 8	7	.01270	9.20	.301	.44432	1.499	1.132		
COMPUTE NM HYD	107.10	-	8	.00840	6.09	.199	.44437	1.499	1.132	PER IMP=	57.00
*S	FLOW IN SAN BENITO										
*S	AREA 103 + 104 + 107.1										
ADD HYD	107.02	12& 8	9	.01740	13.84	.455	.49009	1.499	1.243		
*S	MINIMUM FLOWS TO RINCONADA CHANNEL										
*S	AREA 103 + 104 + 107.1 + 107.2 + 107.3										
ADD HYD	107.03	9& 7	10	.03010	23.05	.756	.47078	1.499	1.196		
COMPUTE NM HYD	108.00	-	8	.00770	5.58	.182	.44437	1.499	1.132	PER IMP=	57.00
*S	POSSIBLE FLOWS INTO PNM EASEMENT										
*S	AREA 102 + 108										
ADD HYD	100.40	2& 8	15	.00960	7.62	.250	.48876	1.499	1.240		
*S	AREA 101 + 102 + 108										
ADD HYD	100.50	1&15	16	.01510	11.61	.381	.47257	1.499	1.201		
*S	AREA 101 + 102 + 106 + 108										
ADD HYD	100.60	16& 6	17	.01740	13.59	.446	.48052	1.499	1.220		
*S	AREA 101 + 102 + 104 + 105 + 106 + 108										
ADD HYD	100.70	11& 8	18	.02920	23.76	.781	.50165	1.499	1.271		
*S	ADD IN AREAS 109 THROUGH 116 OFFSITE										
COMPUTE NM HYD	113.00	-	1	.01090	7.90	.258	.44437	1.499	1.132	PER IMP=	57.00
COMPUTE NM HYD	112.00	-	2	.00660	4.30	.140	.39672	1.499	1.017	PER IMP=	50.00
ADD HYD	112.10	1& 2	3	.01750	12.19	.398	.42636	1.499	1.089		
COMPUTE NM HYD	111.00	-	4	.00580	5.00	.165	.53287	1.499	1.346	PER IMP=	70.00
*S	ADD TO STORM DRAIN FROM VISTA ALEGRE										
ADD HYD	111.10	11& 4	5	.02730	23.18	.764	.52444	1.499	1.327		
*S	TOTAL STORM DRAIN FLOWS TO POND										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	109.10	5& 3	6	.04480	35.37	1.162	.48613	1.499	1.234	
COMPUTE NM HYD	110.00	-	7	.00820	7.06	.233	.53287	1.499	1.346	PER IMP= 70.00
COMPUTE NM HYD	109.00	-	8	.00500	.08	.002	.00687	1.532	.024	PER IMP= .00
*S	TOTAL FLOW INTO POND									
ADD HYD	109.10	8& 7	9	.01320	7.13	.235	.33355	1.499	.845	
ADD HYD	109.20	9& 6	9	.05800	42.51	1.396	.45140	1.499	1.145	
*S ROUTE HYDOGRAPH THRU POND										
ROUTE RESERVOIR	109.22	9	20	.05800	8.20	1.396	.45140	2.065	.221	AC-FT= .841
COMPUTE NM HYD	114.00	-	10	.01600	11.59	.379	.44437	1.499	1.132	PER IMP= 57.00
COMPUTE NM HYD	115.00	-	11	.01680	18.01	.599	.66901	1.499	1.675	PER IMP= 90.00
ADD HYD	115.10	10&11	12	.03280	29.60	.979	.55941	1.499	1.410	
COMPUTE NM HYD	116.00	-	13	.00650	5.60	.185	.53287	1.499	1.346	PER IMP= 70.00
*S	TOTAL FLOW TO OURAY STORM DRAIN									
ADD HYD	115.10	12&13	14	.03930	35.20	1.163	.55501	1.499	1.399	
FINISH										

10 YEAR POST-DEVELOPMENT SUMMARY

AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992 RUN DATE (MON/DAY/YR) =11/03/1993
INPUT FILE = LW10PO.DAT USER NO.= J_HUGHES.S92

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
*S	LADERA WEST - 10 YEAR POST DEVELOPMENT									
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.470
COMPUTE NM HYD	101.00	-	1	.00550	8.40	.448	1.52874	1.499	2.387	PER IMP= 57.00
COMPUTE NM HYD	102.00	-	2	.00190	3.49	.209	2.06075	1.499	2.870	PER IMP= 90.00
COMPUTE NM HYD	103.00	-	3	.00600	9.89	.556	1.73832	1.499	2.575	PER IMP= 70.00
COMPUTE NM HYD	104.00	-	4	.00300	4.95	.278	1.73832	1.499	2.577	PER IMP= 70.00
COMPUTE NM HYD	105.00	-	5	.00880	14.49	.816	1.73832	1.499	2.574	PER IMP= 70.00
COMPUTE NM HYD	106.00	-	6	.00230	3.80	.213	1.73832	1.499	2.579	PER IMP= 70.00
*S	POSSIBLE FLOWS ENTERING SITE AT VISTA ALEGRE									
*S	AREA 101 + 102									
ADD HYD	100.10	1& 2	9	.00740	11.89	.657	1.66525	1.499	2.511	
*S	AREA 101 + 102 + 106									
ADD HYD	100.20	9& 6	10	.00970	15.69	.870	1.68255	1.499	2.527	
*S	AREA 101 + 102 + 104 + 105 + 106									
ADD HYD	100.30	10& 5	11	.01850	30.18	1.686	1.70906	1.499	2.549	
ADD HYD	100.31	11& 4	11	.02150	35.13	1.964	1.71313	1.499	2.553	
*S	MAXIMUM FLOW ENTERING AT SAN BENITO									
*S	AREA 103 + 104									
ADD HYD	101.10	3& 4	12	.00900	14.83	.834	1.73825	1.499	2.575	
COMPUTE NM HYD	107.30	-	7	.00600	9.16	.489	1.52874	1.499	2.386	PER IMP= 57.00
COMPUTE NM HYD	107.20	-	8	.00670	10.23	.546	1.52874	1.499	2.386	PER IMP= 57.00
*S	AREA 107.3 + 107.2									
ADD HYD	107.01	7& 8	7	.01270	19.39	1.035	1.52869	1.499	2.386	
COMPUTE NM HYD	107.10	-	8	.00840	12.82	.685	1.52874	1.499	2.385	PER IMP= 57.00
*S	FLOW IN SAN BENITO									
*S	AREA 103 + 104 + 107.1									
ADD HYD	107.02	12& 8	9	.01740	27.66	1.519	1.63709	1.499	2.484	
*S	MINIMUM FLOWS TO RINCONADA CHANNEL									
*S	AREA 103 + 104 + 107.1 + 107.2 + 107.3									
ADD HYD	107.03	9& 7	10	.03010	47.05	2.555	1.59136	1.499	2.443	
COMPUTE NM HYD	108.00	-	8	.00770	11.76	.628	1.52874	1.499	2.386	PER IMP= 57.00
*S	POSSIBLE FLOWS INTO PNM EASEMENT									
*S	AREA 102 + 108									
ADD HYD	100.40	2& 8	15	.00960	15.25	.837	1.63397	1.499	2.481	
*S	AREA 101 + 102 + 108									
ADD HYD	100.50	1&15	16	.01510	23.65	1.285	1.59562	1.499	2.447	
*S	AREA 101 + 102 + 106 + 108									
ADD HYD	100.60	16& 6	17	.01740	27.44	1.498	1.61447	1.499	2.464	
*S	AREA 101 + 102 + 104 + 105 + 106 + 108									
ADD HYD	100.70	11& 8	18	.02920	46.88	2.592	1.66450	1.499	2.509	
*S	ADD IN AREAS 109 THROUGH 116 OFFSITE									
COMPUTE NM HYD	113.00	-	1	.01090	16.64	.889	1.52874	1.499	2.385	PER IMP= 57.00
COMPUTE NM HYD	112.00	-	2	.00660	9.65	.498	1.41589	1.499	2.285	PER IMP= 50.00
ADD HYD	112.10	1& 2	3	.01750	26.29	1.387	1.48615	1.499	2.347	
COMPUTE NM HYD	111.00	-	4	.00580	9.56	.538	1.73832	1.499	2.575	PER IMP= 70.00
*S	ADD TO STORM DRAIN FROM VISTA ALEGRE									
ADD HYD	111.10	11& 4	5	.02730	44.69	2.502	1.71847	1.499	2.558	
*S	TOTAL STORM DRAIN FLOWS TO POND									

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	109.10	5& 3	6	.04480	70.97	3.889	1.62772	1.499	2.475	
COMPUTE NM HYD	110.00	-	7	.00820	13.51	.760	1.73832	1.499	2.574	PER IMP= 70.00
COMPUTE NM HYD	109.00	-	8	.00500	4.10	.121	.45255	1.499	1.280	PER IMP= .00
*S	TOTAL FLOW INTO POND									
ADD HYD	109.10	8& 7	9	.01320	17.60	.881	1.25126	1.499	2.084	
ADD HYD	109.20	9& 6	9	.05800	88.58	4.770	1.54204	1.499	2.386	
*S ROUTE HYDOGRAPH THRU POND										
ROUTE RESERVOIR	109.22	9	20	.05800	15.19	4.770	1.54204	2.065	.409	AC-FT= 3.055
COMPUTE NM HYD	114.00	-	10	.01600	24.42	1.305	1.52874	1.499	2.385	PER IMP= 57.00
COMPUTE NM HYD	115.00	-	11	.01680	30.77	1.846	2.06075	1.499	2.862	PER IMP= 90.00
ADD HYD	115.10	10&11	12	.03280	55.19	3.151	1.80121	1.499	2.629	
COMPUTE NM HYD	116.00	-	13	.00650	10.71	.603	1.73832	1.499	2.574	PER IMP= 70.00
*S	TOTAL FLOW TO OURAY STORM DRAIN									
ADD HYD	115.10	12&13	14	.03930	65.90	3.754	1.79080	1.499	2.620	
FINISH										

100 YEAR POST-DEVELOPMENT SUMMARY

AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992 RUN DATE (MON/DAY/YR) =11/03/1993
INPUT FILE = LW100PO.DAT USER NO.= J_HUGHES.S92

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
										PAGE = 1
*S	LADERA WEST - 100 YEAR POST DEVELOPMENT									
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	101.00	-	1	.00550	12.47	.432	1.47109	1.499	3.543	PER IMP= 57.00
COMPUTE NM HYD	102.00	-	2	.00190	5.10	.188	1.85048	1.499	4.190	PER IMP= 90.00
COMPUTE NM HYD	103.00	-	3	.00600	14.57	.519	1.62055	1.499	3.794	PER IMP= 70.00
COMPUTE NM HYD	104.00	-	4	.00300	7.29	.259	1.62055	1.499	3.798	PER IMP= 70.00
COMPUTE NM HYD	105.00	-	5	.00880	21.36	.761	1.62055	1.499	3.793	PER IMP= 70.00
COMPUTE NM HYD	106.00	-	6	.00230	5.60	.199	1.62055	1.499	3.801	PER IMP= 70.00
*S	POSSIBLE FLOWS ENTERING SITE AT VISTA ALEGRE									
*S	AREA 101 + 102									
ADD HYD	100.10	1& 2	9	.00740	17.57	.619	1.56843	1.499	3.709	
*S	AREA 101 + 102 + 106									
ADD HYD	100.20	9& 6	10	.00970	23.16	.818	1.58076	1.499	3.731	
*S	AREA 101 + 102 + 104 + 105 + 106									
ADD HYD	100.30	10& 5	11	.01850	44.52	1.578	1.59967	1.499	3.760	
ADD HYD	100.31	11& 4	11	.02150	51.81	1.838	1.60257	1.499	3.766	
*S	MAXIMUM FLOW ENTERING AT SAN BENITO									
*S	AREA 103 + 104									
ADD HYD	101.10	3& 4	12	.00900	21.86	.778	1.62049	1.499	3.795	
COMPUTE NM HYD	107.30	-	7	.00600	13.60	.471	1.47109	1.499	3.543	PER IMP= 57.00
COMPUTE NM HYD	107.20	-	8	.00670	15.19	.526	1.47109	1.499	3.542	PER IMP= 57.00
*S	AREA 107.3 + 107.2									
ADD HYD	107.01	7& 8	7	.01270	28.79	.996	1.47105	1.499	3.542	
COMPUTE NM HYD	107.10	-	8	.00840	19.04	.659	1.47109	1.499	3.541	PER IMP= 57.00
*S	FLOW IN SAN BENITO									
*S	AREA 103 + 104 + 107.1									
ADD HYD	107.02	12& 8	9	.01740	40.90	1.437	1.54835	1.499	3.673	
*S	MINIMUM FLOWS TO RINCONADA CHANNEL									
*S	AREA 103 + 104 + 107.1 + 107.2 + 107.3									
ADD HYD	107.03	9& 7	10	.03010	69.69	2.433	1.51573	1.499	3.618	
COMPUTE NM HYD	108.00	-	8	.00770	17.45	.604	1.47109	1.499	3.541	PER IMP= 57.00
*S	POSSIBLE FLOWS INTO PNM EASEMENT									
*S	AREA 102 + 108									
ADD HYD	100.40	2& 8	15	.00960	22.55	.792	1.54612	1.499	3.670	
*S	AREA 101 + 102 + 108									
ADD HYD	100.50	1&15	16	.01510	35.02	1.223	1.51877	1.499	3.624	
*S	AREA 101 + 102 + 106 + 108									
ADD HYD	100.60	16& 6	17	.01740	40.61	1.422	1.53221	1.499	3.647	
*S	AREA 101 + 102 + 104 + 105 + 106 + 108									
ADD HYD	100.70	11& 8	18	.02920	69.27	2.442	1.56789	1.499	3.707	
*S	ADD IN AREAS 109 THROUGH 116 OFFSITE									
COMPUTE NM HYD	113.00	-	1	.01090	24.70	.855	1.47109	1.499	3.541	PER IMP= 57.00
COMPUTE NM HYD	112.00	-	2	.00660	14.39	.489	1.39061	1.499	3.407	PER IMP= 50.00
ADD HYD	112.10	1& 2	3	.01750	39.09	1.345	1.44071	1.499	3.490	
COMPUTE NM HYD	111.00	-	4	.00580	14.08	.501	1.62055	1.499	3.794	PER IMP= 70.00
*S	ADD TO STORM DRAIN FROM VISTA ALEGRE									
ADD HYD	111.10	11& 4	5	.02730	65.90	2.339	1.60638	1.499	3.772	
*S	TOTAL STORM DRAIN FLOWS TO POND									

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	109.10	5& 3	6	.04480	104.99	3.684	1.54166	1.499	3.662	
COMPUTE NM HYD	110.00	-	7	.00820	19.91	.709	1.62055	1.499	3.793	PER IMP= 70.00
COMPUTE NM HYD	109.00	-	8	.00500	6.51	.178	.66738	1.532	2.033	PER IMP= .00
*S	TOTAL FLOW INTO POND									
ADD HYD	109.10	8& 7	9	.01320	26.36	.887	1.25947	1.499	3.120	
ADD HYD	109.20	9& 6	9	.05800	131.35	4.570	1.47744	1.499	3.538	
*S ROUTE HYDOGRAPH THRU POND										
ROUTE RESERVOIR	109.22	9	20	.05800	15.66	4.570	1.47744	2.131	.422	AC-FT= 3.229
COMPUTE NM HYD	114.00	-	10	.01600	36.25	1.255	1.47109	1.499	3.540	PER IMP= 57.00
COMPUTE NM HYD	115.00	-	11	.01680	44.93	1.658	1.85049	1.499	4.178	PER IMP= 90.00
ADD HYD	115.10	10&11	12	.03280	81.18	2.913	1.66540	1.499	3.867	
COMPUTE NM HYD	116.00	-	13	.00650	15.78	.562	1.62055	1.499	3.794	PER IMP= 70.00
*S	TOTAL FLOW TO OURAY STORM DRAIN.									
ADD HYD	115.10	12&13	14	.03930	96.96	3.475	1.65797	1.499	3.855	
FINISH										

100 YEAR PRE-DEVELOPMENT
OFF-SITE DETAILED

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AHYMO SUMMARY TABLE (AHYMO392) - AMAFCA VERSION OF HYMO -     MARCH, 1992          RUN DATE (MON/DAY/YR) =11/03/1993
INPUT FILE = LW100PR.DAT                                                                      USER NO.= J_HUGHES.S92

                                FROM  TO                    PEAK        RUNOFF                TIME TO   CFS      PAGE =   1
                   HYDROGRAPH   ID    ID        AREA     DISCHARGE     VOLUME      RUNOFF      PEAK     PER
COMMAND          IDENTIFICATION NO.   NO.      (SQ MI)     (CFS)       (AC-FT)    (INCHES)   (HOURS)   ACRE     NOTATION

*S                   LADERA WEST - 100 YEAR PRE-DEVELOPMENT
START                                                                                                   TIME=       .00
RAINFALL  TYPE= 1                                                                                       RAIN6=     2.200
COMPUTE NM HYD       100.00   -    1       .10330       62.28       2.528      .45880     1.598     .942 PER IMP=     .00
FINISH
```

PEAK DISCHARGE RATE = 62.28 CFS AT 1.598 HOURS BASIN AREA = .1033 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 17:04:24

2 YEAR POST-DEVELOPMENT DETAILED

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AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
     RUN DATE (MON/DAY/YR) = 11/03/1993
     START TIME (HR:MIN:SEC) = 17:06:15     USER NO.= J_HUGHES.S92
     INPUT FILE = LW2PO.DAT

*S                  LADERA WEST - 2 YEAR POST DEVELOPMENT


START               TIME=0.0 HR PUNCH CODE=0

RAINFALL            TYPE=1 RAIN QUARTER=0.0
                    RAIN ONE=0.81 IN RAIN SIX=0.96 IN
                    RAIN DAY=1.15 IN DT=0.0333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =    .033300 HOURS       END TIME =     5.994000 HOURS
   .0000   .0008   .0016   .0024   .0032   .0040   .0049
   .0058   .0067   .0076   .0086   .0095   .0105   .0116
   .0126   .0137   .0148   .0160   .0172   .0184   .0197
   .0210   .0224   .0238   .0253   .0269   .0285   .0302
   .0320   .0339   .0359   .0382   .0405   .0431   .0484
   .0605   .0791   .1060   .1427   .1909   .2525   .3292
   .4229   .5128   .5498   .5808   .6084   .6335   .6565
   .6780   .6980   .7167   .7344   .7510   .7668   .7817
   .7958   .8091   .8218   .8339   .8453   .8485   .8511
   .8535   .8558   .8580   .8601   .8621   .8641   .8660
   .8678   .8696   .8713   .8729   .8746   .8761   .8776
   .8791   .8806   .8820   .8834   .8848   .8861   .8874
   .8887   .8899   .8911   .8923   .8935   .8947   .8958
   .8969   .8980   .8991   .9002   .9012   .9022   .9033
   .9043   .9053   .9062   .9072   .9081   .9091   .9100
   .9109   .9118   .9127   .9136   .9144   .9153   .9162
   .9170   .9178   .9186   .9195   .9203   .9211   .9218
   .9226   .9234   .9242   .9249   .9257   .9264   .9271
   .9279   .9286   .9293   .9300   .9307   .9314   .9321
   .9328   .9335   .9341   .9348   .9355   .9361   .9368
   .9374   .9380   .9387   .9393   .9399   .9406   .9412
   .9418   .9424   .9430   .9436   .9442   .9448   .9454
   .9460   .9465   .9471   .9477   .9483   .9488   .9494
   .9499   .9505   .9510   .9516   .9521   .9527   .9532
   .9537   .9543   .9548   .9553   .9558   .9564   .9569
   .9574   .9579   .9584   .9589   .9594   .9599

*                   ******************************************
COMPUTE NM HYD      ID=1 HYD NO=101.0 DA=0.0055 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   12.377    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = .81000
   AREA =      .003135 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   5.8020    CFS   UNIT VOLUME =    .9979       B =   327.02      P60 = .81000
   AREA =      .002365 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
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```
PRINT HYD            ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.00

    RUNOFF VOLUME =      .44437 INCHES     =        .1303 ACRE-FEET
    PEAK DISCHARGE RATE =      3.99 CFS  AT   1.499 HOURS   BASIN AREA =  .0055 SQ. MI.

COMPUTE NM HYD       ID=2 HYD NO=102.0 DA=0.0019 SQ MI
                     PER A=0.0 PER B=5.0 PER C=5.0 PER D=90.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   6.7512    CFS   UNIT VOLUME =    .9975       B =   526.28      P60 = .81000
    AREA =      .001710 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
    UNIT PEAK =   .46612    CFS   UNIT VOLUME =    .9699       B =   327.02      P60 = .81000
    AREA =      .000190 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=2 CODE=1

                                PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =      .66901 INCHES     =        .0678 ACRE-FEET
    PEAK DISCHARGE RATE =      2.04 CFS  AT   1.499 HOURS   BASIN AREA =   .0019 SQ. MI.

COMPUTE NM HYD       ID=3 HYD NO=103.0 DA=0.0060 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   16.582    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = .81000
    AREA =      .004200 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
    UNIT PEAK =   4.4159    CFS   UNIT VOLUME =    .9972       B =   327.02      P60 = .81000
    AREA =      .001800 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.00

    RUNOFF VOLUME =      .53287 INCHES     =        .1705 ACRE-FEET
    PEAK DISCHARGE RATE =      5.17 CFS  AT   1.499 HOURS   BASIN AREA =  .0060 SQ. MI.
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```
COMPUTE NM HYD       ID=4 HYD NO=104.0 DA=0.0030 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   8.2909    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = .81000
   AREA =      .002100 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   2.2079    CFS   UNIT VOLUME =    .9943       B =   327.02      P60 = .81000
   AREA =      .000900 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=4 CODE=1

                                   PARTIAL HYDROGRAPH  104.00


   RUNOFF VOLUME =      .53287 INCHES     =        .0853 ACRE-FEET
   PEAK DISCHARGE RATE =      2.59 CFS  AT   1.499 HOURS   BASIN AREA =   .0030 SQ. MI.


COMPUTE NM HYD       ID=5 HYD NO=105.0 DA=0.0088 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   24.320    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = .81000
   AREA =      .006160 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   6.4766    CFS   UNIT VOLUME =    .9981       B =   327.02      P60 = .81000
   AREA =      .002640 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=5 CODE=1

                                   PARTIAL HYDROGRAPH  105.00


   RUNOFF VOLUME =      .53286 INCHES     =        .2501 ACRE-FEET
   PEAK DISCHARGE RATE =      7.58 CFS  AT   1.499 HOURS   BASIN AREA =   .0088 SQ. MI.


COMPUTE NM HYD       ID=6 HYD NO=106.0 DA=0.0023 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   6.3564    CFS   UNIT VOLUME =    .9975       B =   526.28      P60 = .81000
   AREA =      .001610 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
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```
K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
UNIT PEAK =   1.6928    CFS   UNIT VOLUME =    .9925       B =   327.02      P60 = .81000
AREA =      .000690 SQ MI    IA =    .42500 INCHES    INF =  1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.00

RUNOFF VOLUME =      .53287 INCHES     =        .0654 ACRE-FEET
PEAK DISCHARGE RATE =      1.98 CFS  AT   1.499 HOURS   BASIN AREA =   .0023 SQ. MI.


*                    ****************************************
*                    ****************************************
*S                   POSSIBLE FLOWS ENTERING SITE AT VISTA ALEGRE
*S                   AREA 101 + 102
ADD HYD              ID=9 HYD NO=100.1 ID I=1 ID II=2
PRINT HYD            ID=9 CODE=1

                                PARTIAL HYDROGRAPH   100.10


RUNOFF VOLUME =      .50196 INCHES     =        .1981 ACRE-FEET
PEAK DISCHARGE RATE =      6.03 CFS  AT   1.499 HOURS   BASIN AREA =   .0074 SQ. MI.


*                    ****************************************
*S                   AREA 101 + 102 + 106
ADD HYD              ID=10 HYD NO=100.2 ID I=9 ID II=6
PRINT HYD            ID=10 CODE=1

                                PARTIAL HYDROGRAPH   100.20


RUNOFF VOLUME =      .50925 INCHES     =        .2635 ACRE-FEET
PEAK DISCHARGE RATE =      8.01 CFS  AT   1.499 HOURS   BASIN AREA =   .0097 SQ. MI.


*                    ****************************************
*S                   AREA 101 + 102 + 104 + 105 + 106
ADD HYD              ID=11 HYD NO=100.3 ID I=10 ID II=5
PRINT HYD            ID=11 CODE=1

                                PARTIAL HYDROGRAPH   100.30


RUNOFF VOLUME =      .52047 INCHES     =        .5135 ACRE-FEET
PEAK DISCHARGE RATE =     15.59 CFS  AT   1.499 HOURS   BASIN AREA =   .0185 SQ. MI.


ADD HYD              ID=11 HYD NO=100.31 ID I=11 ID II=4
PRINT HYD            ID=11 CODE=1

                                PARTIAL HYDROGRAPH   100.31
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```
RUNOFF VOLUME =      .52218 INCHES     =        .5988 ACRE-FEET
PEAK DISCHARGE RATE =      18.18 CFS  AT   1.499 HOURS   BASIN AREA =   .0215 SQ. MI.

*                  ******************************************
*S                 MAXIMUM FLOW ENTERING AT SAN BENITO
*S                 AREA 103 + 104
ADD HYD            ID=12 HYD NO=101.1 ID I=3 ID II=4
PRINT HYD          ID=12 CODE=1

                                PARTIAL HYDROGRAPH   101.10

RUNOFF VOLUME =      .53280 INCHES     =        .2557 ACRE-FEET
PEAK DISCHARGE RATE =       7.76 CFS  AT   1.499 HOURS   BASIN AREA =   .0090 SQ. MI.

*                  ******************************************
*                  ******************************************
COMPUTE NM HYD     ID=7 HYD NO=107.3 DA=0.0060 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   13.502    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = .81000
AREA =      .003420 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
UNIT PEAK =   6.3294    CFS   UNIT VOLUME =    .9981       B =   327.02      P60 = .81000
AREA =      .002580 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.30

RUNOFF VOLUME =      .44437 INCHES     =        .1422 ACRE-FEET
PEAK DISCHARGE RATE =       4.35 CFS  AT   1.499 HOURS   BASIN AREA =   .0060 SQ. MI.

*                  ******************************************
COMPUTE NM HYD     ID=8 HYD NO=107.2 DA=0.0067 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   15.078    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = .81000
AREA =      .003819 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
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```
UNIT PEAK =   7.0678    CFS   UNIT VOLUME =    .9983       B =   327.02      P60 = .81000
AREA =      .002881 SQ MI    IA =    .42500 INCHES    INF =  1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                PARTIAL HYDROGRAPH   107.20

RUNOFF VOLUME =      .44437 INCHES     =        .1588 ACRE-FEET
PEAK DISCHARGE RATE =       4.86 CFS  AT   1.499 HOURS   BASIN AREA =   .0067 SQ. MI.

*S                   AREA 107.3 + 107.2
ADD HYD              ID=7 HYD NO=107.01 ID I=7 ID II=8
PRINT HYD            ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.01

RUNOFF VOLUME =      .44432 INCHES     =        .3010 ACRE-FEET
PEAK DISCHARGE RATE =       9.20 CFS  AT   1.499 HOURS   BASIN AREA =   .0127 SQ. MI.

*                    ******************************************
COMPUTE NM HYD       ID=8 HYD NO=107.1 DA=0.0084 SQ MI
                     PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                     TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   18.903    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = .81000
AREA =      .004788 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
UNIT PEAK =   8.8612    CFS   UNIT VOLUME =    .9988       B =   327.02      P60 = .81000
AREA =      .003612 SQ MI    IA =    .42500 INCHES    INF =  1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                PARTIAL HYDROGRAPH   107.10

RUNOFF VOLUME =      .44437 INCHES     =        .1991 ACRE-FEET
PEAK DISCHARGE RATE =       6.09 CFS  AT   1.499 HOURS   BASIN AREA =   .0084 SQ. MI.

*S                   FLOW IN SAN BENITO
*S                   AREA 103 + 104 + 107.1
ADD HYD              ID=9 HYD NO=107.02 ID I=12 ID II=8
PRINT HYD            ID=9 CODE=1

                                PARTIAL HYDROGRAPH   107.02
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```
   RUNOFF VOLUME =      .49009 INCHES     =        .4548 ACRE-FEET
   PEAK DISCHARGE RATE =     13.84 CFS  AT   1.499 HOURS   BASIN AREA =   .0174 SQ. MI.


*                  ******************************************
*S                 MINIMUM FLOWS TO RINCONADA CHANNEL
*S                 AREA 103 + 104 + 107.1 + 107.2 + 107.3
ADD HYD            ID=10 HYD NO=107.03 ID I=9 ID II=7
PRINT HYD          ID=10 CODE=1

                                PARTIAL HYDROGRAPH   107.03


   RUNOFF VOLUME =      .47078 INCHES     =        .7558 ACRE-FEET
   PEAK DISCHARGE RATE =     23.05 CFS  AT   1.499 HOURS   BASIN AREA =   .0301 SQ. MI.


*                  ******************************************
*                  ******************************************
COMPUTE NM HYD     ID=8 HYD NO=108.0 DA=0.0077 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   17.328    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = .81000
   AREA =      .004389 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   8.1227    CFS   UNIT VOLUME =    .9986       B =   327.02      P60 = .81000
   AREA =      .003311 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=8 CODE=1

                                PARTIAL HYDROGRAPH   108.00


   RUNOFF VOLUME =      .44437 INCHES     =        .1825 ACRE-FEET
   PEAK DISCHARGE RATE =      5.58 CFS  AT   1.499 HOURS   BASIN AREA =   .0077 SQ. MI.


*                  ******************************************
*S                 POSSIBLE FLOWS INTO PNM EASEMENT
*S                 AREA 102 + 108
ADD HYD            ID=15 HYD NO=100.4 ID I=2 ID II=8
PRINT HYD          ID=15 CODE=1

                                PARTIAL HYDROGRAPH   100.40


   RUNOFF VOLUME =      .48876 INCHES     =        .2502 ACRE-FEET
   PEAK DISCHARGE RATE =      7.62 CFS  AT   1.499 HOURS   BASIN AREA =   .0096 SQ. MI.
```

```
*                   ******************************************
*S                  AREA 101 + 102 + 108
ADD HYD             ID=16 HYD NO=100.5 ID I=1 ID II=15
PRINT HYD           ID=16 CODE=1

                                PARTIAL HYDROGRAPH   100.50

    RUNOFF VOLUME =      .47257 INCHES     =        .3806 ACRE-FEET
    PEAK DISCHARGE RATE =     11.61 CFS  AT   1.499 HOURS   BASIN AREA =   .0151 SQ. MI.

*                   ******************************************
*S                  AREA 101 + 102 + 106 + 108
ADD HYD             ID=17 HYD NO=100.6 ID I=16 ID II=6
PRINT HYD           ID=17 CODE=1

                                PARTIAL HYDROGRAPH   100.60

    RUNOFF VOLUME =      .48052 INCHES     =        .4459 ACRE-FEET
    PEAK DISCHARGE RATE =     13.59 CFS  AT   1.499 HOURS   BASIN AREA =   .0174 SQ. MI.

*                   ******************************************
*S                  AREA 101 + 102 + 104 + 105 + 106 + 108
ADD HYD             ID=18 HYD NO=100.7 ID I=11 ID II=8
PRINT HYD           ID=18 CODE=1

                                PARTIAL HYDROGRAPH   100.70

    RUNOFF VOLUME =      .50165 INCHES     =        .7812 ACRE-FEET
    PEAK DISCHARGE RATE =     23.76 CFS  AT   1.499 HOURS   BASIN AREA =   .0292 SQ. MI.

*                   ******************************************
*                   ******************************************
*S                  ADD IN AREAS 109 THROUGH 116 OFFSITE
COMPUTE NM HYD      ID=1 HYD NO=113.0 DA=0.0109 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   24.529    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = .81000
    AREA =      .006213 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
    UNIT PEAK =   11.498    CFS   UNIT VOLUME =    .9991       B =   327.02      P60 = .81000
    AREA =      .004687 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=1 CODE=1

                                PARTIAL HYDROGRAPH   113.00
```

```
RUNOFF VOLUME =      .44437 INCHES     =        .2583 ACRE-FEET
PEAK DISCHARGE RATE =      7.90 CFS  AT   1.499 HOURS   BASIN AREA =   .0109 SQ. MI.


*                    ******************************************
COMPUTE NM HYD       ID=2 HYD NO=112.0 DA=0.0066 SQ MI
                     PER A=0.0 PER B=25.0 PER C=25.0 PER D=50.0
                     TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   13.029    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = .81000
AREA =      .003300 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
UNIT PEAK =   8.0958    CFS   UNIT VOLUME =    .9986       B =   327.02      P60 = .81000
AREA =      .003300 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=2 CODE=1

                                PARTIAL HYDROGRAPH   112.00

RUNOFF VOLUME =      .39672 INCHES     =        .1396 ACRE-FEET
PEAK DISCHARGE RATE =      4.30 CFS  AT   1.499 HOURS   BASIN AREA =   .0066 SQ. MI.


ADD HYD              ID=3 HYD NO=112.1 ID I=1 ID II=2
PRINT HYD            ID=3 CODE=1

                                PARTIAL HYDROGRAPH   112.10

RUNOFF VOLUME =      .42636 INCHES     =        .3979 ACRE-FEET
PEAK DISCHARGE RATE =     12.19 CFS  AT   1.499 HOURS   BASIN AREA =   .0175 SQ. MI.


*                    ******************************************
COMPUTE NM HYD       ID=4 HYD NO=111.0 DA=0.0058 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   16.029    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = .81000
AREA =      .004060 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
UNIT PEAK =   4.2687    CFS   UNIT VOLUME =    .9972       B =   327.02      P60 = .81000
AREA =      .001740 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
PRINT HYD            ID=4 CODE=1

                                PARTIAL HYDROGRAPH   111.00

   RUNOFF VOLUME =      .53287 INCHES     =        .1648 ACRE-FEET
   PEAK DISCHARGE RATE =      5.00 CFS  AT   1.499 HOURS   BASIN AREA = . .0058 SQ. MI.

*S                   ADD TO STORM DRAIN FROM VISTA ALEGRE
ADD HYD              ID=5 HYD NO=111.1 ID I=11 ID II=4
PRINT HYD            ID=5 CODE=1

                                PARTIAL HYDROGRAPH   111.10

   RUNOFF VOLUME =      .52444 INCHES     =        .7636 ACRE-FEET
   PEAK DISCHARGE RATE =     23.18 CFS  AT   1.499 HOURS   BASIN AREA =   .0273 SQ. MI.

*                    ****************************************
*S                   TOTAL STORM DRAIN FLOWS TO POND
ADD HYD              ID=6 HYD NO=109.1 ID I=5 ID II=3
PRINT HYD            ID=6 CODE=1

                                PARTIAL HYDROGRAPH   109.10

   RUNOFF VOLUME =      .48613 INCHES     =       1.1615 ACRE-FEET
   PEAK DISCHARGE RATE =     35.37 CFS  AT   1.499 HOURS   BASIN AREA =   .0448 SQ. MI.

*                    ****************************************
COMPUTE NM HYD       ID=7 HYD NO=110.0 DA=0.0082 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   22.662    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = .81000
   AREA =      .005740 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   6.0350    CFS   UNIT VOLUME =    .9981       B =   327.02      P60 = .81000
   AREA =      .002460 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=7 CODE=1

                                PARTIAL HYDROGRAPH   110.00

   RUNOFF VOLUME =      .53287 INCHES     =        .2330 ACRE-FEET
   PEAK DISCHARGE RATE =      7.06 CFS  AT   1.499 HOURS   BASIN AREA =   .0082 SQ. MI.
```

```
*                    ****************************************
COMPUTE NM HYD       ID=8 HYD NO=109.0 DA=0.0050 SQ MI
                     PER A=0.0 PER B=100.0 PER C=00.0 PER D=00.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .149643HR    TP =   .133300HR    K/TP RATIO =  1.122605     SHAPE CONSTANT, N =  3.151548
   UNIT PEAK =   11.026    CFS   UNIT VOLUME =    .9987       B =   293.95      P60 = .81000
   AREA =      .005000 SQ MI    IA =    .50000 INCHES    INF =  1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                   PARTIAL HYDROGRAPH  109.00

   RUNOFF VOLUME =      .00687 INCHES     =        .0018 ACRE-FEET
   PEAK DISCHARGE RATE =        .08 CFS  AT   1.532 HOURS   BASIN AREA =   .0050 SQ. MI.

*S                   TOTAL FLOW INTO POND
ADD HYD              ID=9 HYD NO=109.1 ID I=8 ID II=7
PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH  109.10

   RUNOFF VOLUME =      .33355 INCHES     =        .2348 ACRE-FEET
   PEAK DISCHARGE RATE =       7.13 CFS  AT   1.499 HOURS   BASIN AREA =   .0132 SQ. MI.

ADD HYD              ID=9 HYD NO=109.2 ID I=9 ID II=6
PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH  109.20

   RUNOFF VOLUME =      .45140 INCHES     =       1.3963 ACRE-FEET
   PEAK DISCHARGE RATE =      42.51 CFS  AT   1.499 HOURS   BASIN AREA =   .0580 SQ. MI.

PUNCH HYD            ID=9
*S ROUTE HYDOGRAPH THRU POND
ROUTE RESERVOIR      ID=20  HYD NO=109.22  INFLOW ID=9  CODE=5
                     OUTFLOW (CFS)   STORAGE (AC FT)   ELEV (FT)
                        0.0              0.00            27.00
                        1.9              0.01            27.50
                        3.7              0.09            28.00
                        5.6              0.29            28.50
                        7.4              0.64            29.00
                        9.3              1.12            29.50
                       11.1              1.69            30.00
                       13.0              2.31            30.50
                       14.9              2.95            31.00
                       16.7              3.61            31.50
                       18.6              4.29            32.00
                       20.4              5.00            32.50
```

22.3	5.73	33.00
24.1	6.48	33.50
26.0	7.25	34.00
28.3	8.05	34.50
30.5	8.87	35.00
32.8	9.72	35.50
33.0	10.58	36.00

* * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	27.00	.000	.00
.17	.00	27.00	.000	.00
.33	.00	27.00	.000	.00
.50	.00	27.00	.000	.00
.67	.00	27.00	.000	.00
.83	.00	27.00	.000	.00
1.00	.00	27.00	.000	.00
1.17	.00	27.00	.000	.00
1.33	6.64	27.51	.012	1.94
1.50	42.51	28.52	.305	5.68
1.67	21.45	29.02	.662	7.49
1.83	13.65	29.15	.786	7.98
2.00	9.92	29.20	.835	8.17
2.16	4.33	29.19	.826	8.14
2.33	1.76	29.12	.753	7.85
2.50	.91	29.03	.666	7.50
2.66	.45	28.91	.574	7.06
2.83	.19	28.78	.485	6.60
3.00	.07	28.66	.399	6.16
3.16	.03	28.54	.317	5.74
3.33	.01	28.38	.242	5.15
3.50	.00	28.22	.176	4.52
3.66	.00	28.07	.118	3.96
3.83	.00	27.86	.068	3.20
4.00	.00	27.62	.030	2.35
4.16	.00	27.22	.004	.83
4.33	.00	27.02	.000	.06
4.50	.00	27.00	.000	.00
4.66	.02	27.00	.000	.01
4.83	.04	27.01	.000	.03
5.00	.07	27.02	.000	.06
5.16	.11	27.02	.000	.09
5.33	.14	27.03	.001	.12
5.49	.17	27.04	.001	.16
5.66	.21	27.05	.001	.20
5.83	.25	27.06	.001	.23
5.99	.29	27.07	.001	.27
6.16	.12	27.05	.001	.20
6.33	.03	27.01	.000	.06
6.49	.01	27.01	.000	.02
6.66	.00	27.00	.000	.01

PEAK DISCHARGE = 8.196 CFS - PEAK OCCURS AT HOUR 2.06
MAXIMUM WATER SURFACE ELEVATION = 29.210
MAXIMUM STORAGE = .8411 AC-FT INCREMENTAL TIME= .033300HRS

PRINT HYD ID=20 CODE=1

PARTIAL HYDROGRAPH 109.22

RUNOFF VOLUME = .45140 INCHES = 1.3963 ACRE-FEET
PEAK DISCHARGE RATE = 8.20 CFS AT 2.065 HOURS BASIN AREA = .0580 SQ. MI.

```
*                    ****************************************
COMPUTE NM HYD       ID=10 HYD NO=114.0 DA=0.0160 SQ MI
                     PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   36.006    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = .81000
   AREA =      .009120 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   16.878    CFS   UNIT VOLUME =    .9995       B =   327.02      P60 = .81000
   AREA =      .006880 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=10 CODE=1
```

PARTIAL HYDROGRAPH 114.00

RUNOFF VOLUME = .44437 INCHES = .3792 ACRE-FEET
PEAK DISCHARGE RATE = 11.59 CFS AT 1.499 HOURS BASIN AREA = .0160 SQ. MI.

```
*                    ****************************************
COMPUTE NM HYD       ID=11 HYD NO=115.0 DA=0.0168 SQ MI
                     PER A=0.0 PER B=5.0 PER C=5.0 PER D=90.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   59.695    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = .81000
   AREA =      .015120 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
   UNIT PEAK =   4.1215    CFS   UNIT VOLUME =    .9970       B =   327.02      P60 = .81000
   AREA =      .001680 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=11 CODE=1
```

PARTIAL HYDROGRAPH 115.00

RUNOFF VOLUME = .66901 INCHES = .5994 ACRE-FEET
PEAK DISCHARGE RATE = 18.01 CFS AT 1.499 HOURS BASIN AREA = .0168 SQ. MI.

```
*                    ******************************************
ADD HYD              ID=12 HYD NO=115.1 ID I=10 ID II=11
PRINT HYD            ID=12 CODE=1

                                PARTIAL HYDROGRAPH   115.10


    RUNOFF VOLUME =      .55941 INCHES     =        .9786 ACRE-FEET
    PEAK DISCHARGE RATE =     29.60 CFS  AT   1.499 HOURS   BASIN AREA =   .0328 SQ. MI.


*                    ******************************************
COMPUTE NM HYD       ID=13 HYD NO=116.0 DA=0.0065 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   17.964    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = .81000
    AREA =      .004550 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .131025HR    TP =   .133300HR    K/TP RATIO =   .982936     SHAPE CONSTANT, N =  3.592510
    UNIT PEAK =   4.7839    CFS   UNIT VOLUME =    .9975       B =   327.02      P60 = .81000
    AREA =      .001950 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=13 CODE=1

                                PARTIAL HYDROGRAPH   116.00


    RUNOFF VOLUME =      .53287 INCHES     =        .1847 ACRE-FEET
    PEAK DISCHARGE RATE =      5.60 CFS  AT   1.499 HOURS   BASIN AREA =   .0065 SQ. MI.


*                    ******************************************
*S                   TOTAL FLOW TO OURAY STORM DRAIN
ADD HYD              ID=14 HYD NO=115.1 ID I=12 ID II=13
PRINT HYD            ID=14 CODE=1

                                PARTIAL HYDROGRAPH   115.10


    RUNOFF VOLUME =      .55501 INCHES     =       1.1633 ACRE-FEET
    PEAK DISCHARGE RATE =     35.20 CFS  AT   1.499 HOURS   BASIN AREA =   .0393 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 17:06:30
```

10 YEAR POST-DEVELOPMENT DETAILED

```
AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
     RUN DATE (MON/DAY/YR) = 11/03/1993
     START TIME (HR:MIN:SEC) = 17:05:14     USER NO.= J_HUGHES.S92
     INPUT FILE = LW10PO.DAT

*S                  LADERA WEST - 10 YEAR POST DEVELOPMENT


START               TIME=0.0 HR PUNCH CODE=0

RAINFALL            TYPE=1 RAIN QUARTER=0.0
                    RAIN ONE=1.26 IN RAIN SIX=2.47 IN
                    RAIN DAY=1.77 IN DT=0.0333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =    .033300 HOURS       END TIME =     5.994000 HOURS
   .0000   .0276   .0556   .0841   .1129   .1422   .1720
   .2022   .2329   .2642   .2960   .3283   .3613   .3949
   .4292   .4641   .4998   .5363   .5736   .6117   .6508
   .6909   .7320   .7743   .8178   .8625   .9087   .9565
  1.0059  1.0572  1.1105  1.1155  1.1192  1.1232  1.1314
  1.1502  1.1792  1.2210  1.2780  1.3531  1.4489  1.5682
  1.7140  1.8539  1.9113  1.9596  2.0025  2.0415  2.0774
  2.1107  2.1418  2.1710  2.1985  2.2244  2.2489  2.2720
  2.2940  2.3148  2.3345  2.3533  2.3711  2.3727  2.3734
  2.3741  2.3748  2.3754  2.3761  2.3768  2.3775  2.3782
  2.3789  2.3797  2.3804  2.3811  2.3818  2.3826  2.3833
  2.3840  2.3848  2.3855  2.3863  2.3870  2.3878  2.3885
  2.3893  2.3900  2.3908  2.3916  2.3923  2.3931  2.3939
  2.3946  2.3954  2.3962  2.3970  2.3978  2.3985  2.3993
  2.4001  2.4009  2.4017  2.4025  2.4033  2.4041  2.4049
  2.4057  2.4065  2.4073  2.4081  2.4089  2.4098  2.4106
  2.4114  2.4122  2.4130  2.4138  2.4147  2.4155  2.4163
  2.4171  2.4180  2.4188  2.4196  2.4205  2.4213  2.4221
  2.4230  2.4238  2.4246  2.4255  2.4263  2.4272  2.4280
  2.4289  2.4297  2.4305  2.4314  2.4322  2.4331  2.4340
  2.4348  2.4357  2.4365  2.4374  2.4382  2.4391  2.4400
  2.4408  2.4417  2.4425  2.4434  2.4443  2.4451  2.4460
  2.4469  2.4478  2.4486  2.4495  2.4504  2.4512  2.4521
  2.4530  2.4539  2.4548  2.4556  2.4565  2.4574  2.4583
  2.4592  2.4600  2.4609  2.4618  2.4627  2.4636  2.4645
  2.4654  2.4663  2.4672  2.4681  2.4689  2.4698

*                   ******************************************
COMPUTE NM HYD      ID=1 HYD NO=101.0 DA=0.0055 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   12.377    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.2600
AREA =      .003135 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   6.0324    CFS   UNIT VOLUME =    .9980       B =   340.01      P60 = 1.2600
AREA =      .002365 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
PRINT HYD            ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.00

    RUNOFF VOLUME =     1.52874 INCHES     =        .4484 ACRE-FEET
    PEAK DISCHARGE RATE =       8.40 CFS  AT   1.499 HOURS   BASIN AREA =  .0055 SQ. MI.

COMPUTE NM HYD       ID=2 HYD NO=102.0 DA=0.0019 SQ MI
                     PER A=0.0 PER B=5.0 PER C=5.0 PER D=90.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   6.7512    CFS   UNIT VOLUME =    .9975       B =   526.28      P60 = 1.2600
    AREA =      .001710 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
    UNIT PEAK =   .48463    CFS   UNIT VOLUME =    .9711       B =   340.01      P60 = 1.2600
    AREA =      .000190 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=2 CODE=1

                                PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =     2.06075 INCHES     =        .2088 ACRE-FEET
    PEAK DISCHARGE RATE =       3.49 CFS  AT   1.499 HOURS   BASIN AREA =   .0019 SQ. MI.

COMPUTE NM HYD       ID=3 HYD NO=103.0 DA=0.0060 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   16.582    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.2600
    AREA =      .004200 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
    UNIT PEAK =   4.5912    CFS   UNIT VOLUME =    .9974       B =   340.01      P60 = 1.2600
    AREA =      .001800 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.00

    RUNOFF VOLUME =     1.73832 INCHES     =        .5563 ACRE-FEET
    PEAK DISCHARGE RATE =       9.89 CFS  AT   1.499 HOURS   BASIN AREA =   .0060 SQ. MI.
```

```
COMPUTE NM HYD       ID=4 HYD NO=104.0 DA=0.0030 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   8.2909    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = 1.2600
   AREA =      .002100 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

   K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
   UNIT PEAK =   2.2956    CFS   UNIT VOLUME =    .9944       B =   340.01      P60 = 1.2600
   AREA =      .000900 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=4 CODE=1

                                PARTIAL HYDROGRAPH   104.00


   RUNOFF VOLUME =     1.73832 INCHES     =        .2781 ACRE-FEET
   PEAK DISCHARGE RATE =       4.95 CFS  AT   1.499 HOURS   BASIN AREA =   .0030 SQ. MI.


COMPUTE NM HYD       ID=5 HYD NO=105.0 DA=0.0088 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   24.320    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.2600
   AREA =      .006160 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
   UNIT PEAK =   6.7338    CFS   UNIT VOLUME =    .9982       B =   340.01      P60 = 1.2600
   AREA =      .002640 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=5 CODE=1

                                PARTIAL HYDROGRAPH   105.00


   RUNOFF VOLUME =     1.73832 INCHES     =        .8158 ACRE-FEET
   PEAK DISCHARGE RATE =      14.49 CFS  AT   1.499 HOURS   BASIN AREA =   .0088 SQ. MI.


COMPUTE NM HYD       ID=6 HYD NO=106.0 DA=0.0023 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   6.3564    CFS   UNIT VOLUME =    .9975       B =   526.28      P60 = 1.2600
   AREA =      .001610 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   1.7600    CFS   UNIT VOLUME =    .9926       B =   340.01      P60 = 1.2600
AREA =      .000690 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.00

RUNOFF VOLUME =     1.73832 INCHES     =        .2132 ACRE-FEET
PEAK DISCHARGE RATE =      3.80 CFS  AT   1.499 HOURS   BASIN AREA =   .0023 SQ. MI.


*                   ****************************************
*                   ****************************************
*S                  POSSIBLE FLOWS ENTERING SITE AT VISTA ALEGRE
*S                  AREA 101 + 102
ADD HYD             ID=9 HYD NO=100.1 ID I=1 ID II=2
PRINT HYD           ID=9 CODE=1

                                PARTIAL HYDROGRAPH   100.10

RUNOFF VOLUME =     1.66525 INCHES     =        .6572 ACRE-FEET
PEAK DISCHARGE RATE =     11.89 CFS  AT   1.499 HOURS   BASIN AREA =   .0074 SQ. MI.


*                   ****************************************
*S                  AREA 101 + 102 + 106
ADD HYD             ID=10 HYD NO=100.2 ID I=9 ID II=6
PRINT HYD           ID=10 CODE=1

                                PARTIAL HYDROGRAPH   100.20

RUNOFF VOLUME =     1.68255 INCHES     =        .8704 ACRE-FEET
PEAK DISCHARGE RATE =     15.69 CFS  AT   1.499 HOURS   BASIN AREA =   .0097 SQ. MI.


*                   ****************************************
*S                  AREA 101 + 102 + 104 + 105 + 106
ADD HYD             ID=11 HYD NO=100.3 ID I=10 ID II=5
PRINT HYD           ID=11 CODE=1

                                PARTIAL HYDROGRAPH   100.30

RUNOFF VOLUME =     1.70906 INCHES     =       1.6863 ACRE-FEET
PEAK DISCHARGE RATE =     30.18 CFS  AT   1.499 HOURS   BASIN AREA =   .0185 SQ. MI.


ADD HYD             ID=11 HYD NO=100.31 ID I=11 ID II=4
PRINT HYD           ID=11 CODE=1

                                PARTIAL HYDROGRAPH   100.31
```

```
RUNOFF VOLUME =     1.71313 INCHES     =       1.9644 ACRE-FEET
PEAK DISCHARGE RATE =     35.13 CFS  AT   1.499 HOURS   BASIN AREA =   .0215 SQ. MI.

*                   ******************************************
*S                  MAXIMUM FLOW ENTERING AT SAN BENITO
*S                  AREA 103 + 104
ADD HYD             ID=12 HYD NO=101.1 ID I=3 ID II=4
PRINT HYD           ID=12 CODE=1

                                PARTIAL HYDROGRAPH   101.10

RUNOFF VOLUME =     1.73825 INCHES     =        .8344 ACRE-FEET
PEAK DISCHARGE RATE =     14.83 CFS  AT   1.499 HOURS   BASIN AREA =   .0090 SQ. MI.

*                   ******************************************
*                   ******************************************
COMPUTE NM HYD      ID=7 HYD NO=107.3 DA=0.0060 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   13.502    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.2600
AREA =      .003420 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   6.5808    CFS   UNIT VOLUME =    .9982       B =   340.01      P60 = 1.2600
AREA =      .002580 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.30

RUNOFF VOLUME =     1.52874 INCHES     =        .4892 ACRE-FEET
PEAK DISCHARGE RATE =      9.16 CFS  AT   1.499 HOURS   BASIN AREA =   .0060 SQ. MI.

*                   ******************************************
COMPUTE NM HYD      ID=8 HYD NO=107.2 DA=0.0067 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   15.078    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.2600
AREA =      .003819 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
```

```
UNIT PEAK =   7.3485    CFS   UNIT VOLUME =    .9984       B =   340.01      P60 = 1.2600
AREA =      .002881 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                PARTIAL HYDROGRAPH   107.20

RUNOFF VOLUME =     1.52874 INCHES     =        .5463 ACRE-FEET
PEAK DISCHARGE RATE =      10.23 CFS  AT   1.499 HOURS   BASIN AREA =   .0067 SQ. MI.

*S                   AREA 107.3 + 107.2
ADD HYD              ID=7 HYD NO=107.01 ID I=7 ID II=8
PRINT HYD            ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.01

RUNOFF VOLUME =     1.52869 INCHES     =       1.0354 ACRE-FEET
PEAK DISCHARGE RATE =      19.39 CFS  AT   1.499 HOURS   BASIN AREA =   .0127 SQ. MI.

*                    ******************************************
COMPUTE NM HYD       ID=8 HYD NO=107.1 DA=0.0084 SQ MI
                     PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                     TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   18.903    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.2600
AREA =      .004788 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   9.2131    CFS   UNIT VOLUME =    .9988       B =   340.01      P60 = 1.2600
AREA =      .003612 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                PARTIAL HYDROGRAPH   107.10

RUNOFF VOLUME =     1.52874 INCHES     =        .6849 ACRE-FEET
PEAK DISCHARGE RATE =      12.82 CFS  AT   1.499 HOURS   BASIN AREA =   .0084 SQ. MI.

*S                   FLOW IN SAN BENITO
*S                   AREA 103 + 104 + 107.1
ADD HYD              ID=9 HYD NO=107.02 ID I=12 ID II=8
PRINT HYD            ID=9 CODE=1

                                PARTIAL HYDROGRAPH   107.02
```

```
RUNOFF VOLUME =     1.63709 INCHES     =       1.5192 ACRE-FEET
PEAK DISCHARGE RATE =     27.66 CFS  AT   1.499 HOURS   BASIN AREA =   .0174 SQ. MI.


*                   ******************************************
*S                  MINIMUM FLOWS TO RINCONADA CHANNEL
*S                  AREA 103 + 104 + 107.1 + 107.2 + 107.3
ADD HYD             ID=10 HYD NO=107.03 ID I=9 ID II=7
PRINT HYD           ID=10 CODE=1

                                PARTIAL HYDROGRAPH   107.03


RUNOFF VOLUME =     1.59136 INCHES     =       2.5546 ACRE-FEET
PEAK DISCHARGE RATE =     47.05 CFS  AT   1.499 HOURS   BASIN AREA =   .0301 SQ. MI.


*                   ******************************************
*                   ******************************************
COMPUTE NM HYD      ID=8 HYD NO=108.0 DA=0.0077 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   17.328    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.2600
AREA =      .004389 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   8.4453    CFS   UNIT VOLUME =    .9987       B =   340.01      P60 = 1.2600
AREA =      .003311 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=8 CODE=1

                                PARTIAL HYDROGRAPH   108.00


RUNOFF VOLUME =     1.52874 INCHES     =        .6278 ACRE-FEET
PEAK DISCHARGE RATE =     11.76 CFS  AT   1.499 HOURS   BASIN AREA =   .0077 SQ. MI.


*                   ******************************************
*S                  POSSIBLE FLOWS INTO PNM EASEMENT
*S                  AREA 102 + 108
ADD HYD             ID=15 HYD NO=100.4 ID I=2 ID II=8
PRINT HYD           ID=15 CODE=1

                                PARTIAL HYDROGRAPH   100.40


RUNOFF VOLUME =     1.63397 INCHES     =        .8366 ACRE-FEET
PEAK DISCHARGE RATE =     15.25 CFS  AT   1.499 HOURS   BASIN AREA =   .0096 SQ. MI.
```

```
*                  ******************************************
*                  AREA 101 + 102 + 108
ADD HYD            ID=16 HYD NO=100.5 ID I=1 ID II=15
PRNT HYD           ID=16 CODE=1

                                PARTIAL HYDROGRAPH   100.50

   RUNOFF VOLUME =     1.59562 INCHES     =       1.2850 ACRE-FEET
   PEAK DISCHARGE RATE =      23.65 CFS  AT   1.499 HOURS   BASIN AREA =   .0151 SQ. MI.

*                  ******************************************
*                  AREA 101 + 102 + 106 + 108
ADD HYD            ID=17 HYD NO=100.6 ID I=16 ID II=6
PRNT HYD           ID=17 CODE=1

                                PARTIAL HYDROGRAPH   100.60

   RUNOFF VOLUME =     1.61447 INCHES     =       1.4982 ACRE-FEET
   PEAK DISCHARGE RATE =      27.44 CFS  AT   1.499 HOURS   BASIN AREA =   .0174 SQ. MI.

*                  ******************************************
*                  AREA 101 + 102 + 104 + 105 + 106 + 108
ADD HYD            ID=18 HYD NO=100.7 ID I=11 ID II=8
PRNT HYD           ID=18 CODE=1

                                PARTIAL HYDROGRAPH   100.70

   RUNOFF VOLUME =     1.66450 INCHES     =       2.5922 ACRE-FEET
   PEAK DISCHARGE RATE =      46.88 CFS  AT   1.499 HOURS   BASIN AREA =   .0292 SQ. MI.

*                  ******************************************
*                  ******************************************
*                  ADD IN AREAS 109 THROUGH 116 OFFSITE
COMPUTE NM HYD     ID=1 HYD NO=113.0 DA=0.0109 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   24.529    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.2600
   AREA =      .006213 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

   K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
   UNIT PEAK =   11.955    CFS   UNIT VOLUME =    .9992       B =   340.01      P60 = 1.2600
   AREA =      .004687 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRNT HYD           ID=1 CODE=1

                                PARTIAL HYDROGRAPH   113.00
```

```
RUNOFF VOLUME =     1.52874 INCHES     =        .8887 ACRE-FEET
PEAK DISCHARGE RATE =     16.64 CFS  AT   1.499 HOURS   BASIN AREA =   .0109 SQ. MI.


*                   ****************************************
COMPUTE NM HYD      ID=2 HYD NO=112.0 DA=0.0066 SQ MI
                    PER A=0.0 PER B=25.0 PER C=25.0 PER D=50.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   13.029    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.2600
AREA =      .003300 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   8.4173    CFS   UNIT VOLUME =    .9987       B =   340.01      P60 = 1.2600
AREA =      .003300 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=2 CODE=1

                                PARTIAL HYDROGRAPH   112.00


RUNOFF VOLUME =     1.41589 INCHES     =        .4984 ACRE-FEET
PEAK DISCHARGE RATE =      9.65 CFS  AT   1.499 HOURS   BASIN AREA =   .0066 SQ. MI.


ADD HYD             ID=3 HYD NO=112.1 ID I=1 ID II=2
PRINT HYD           ID=3 CODE=1

                                PARTIAL HYDROGRAPH   112.10


RUNOFF VOLUME =     1.48615 INCHES     =       1.3871 ACRE-FEET
PEAK DISCHARGE RATE =     26.29 CFS  AT   1.499 HOURS   BASIN AREA =   .0175 SQ. MI.


*                   ****************************************
COMPUTE NM HYD      ID=4 HYD NO=111.0 DA=0.0058 SQ MI
                    PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   16.029    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.2600
AREA =      .004060 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
UNIT PEAK =   4.4382    CFS   UNIT VOLUME =    .9971       B =   340.01      P60 = 1.2600
AREA =      .001740 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
PRINT HYD            ID=4 CODE=1

                                PARTIAL HYDROGRAPH   111.00

    RUNOFF VOLUME =     1.73832 INCHES     =        .5377 ACRE-FEET
    PEAK DISCHARGE RATE =       9.56 CFS  AT   1.499 HOURS   BASIN AREA =  .0058 SQ. MI.

*S                   ADD TO STORM DRAIN FROM VISTA ALEGRE
ADD HYD              ID=5 HYD NO=111.1 ID I=11 ID II=4
PRINT HYD            ID=5 CODE=1

                                PARTIAL HYDROGRAPH   111.10

    RUNOFF VOLUME =     1.71847 INCHES     =       2.5021 ACRE-FEET
    PEAK DISCHARGE RATE =      44.69 CFS  AT   1.499 HOURS   BASIN AREA =   .0273 SQ. MI.

*                    ****************************************
*S                   TOTAL STORM DRAIN FLOWS TO POND
ADD HYD              ID=6 HYD NO=109.1 ID I=5 ID II=3
PRINT HYD            ID=6 CODE=1

                                PARTIAL HYDROGRAPH   109.10

    RUNOFF VOLUME =     1.62772 INCHES     =       3.8891 ACRE-FEET
    PEAK DISCHARGE RATE =      70.97 CFS  AT   1.499 HOURS   BASIN AREA =   .0448 SQ. MI.

*                    ****************************************
COMPUTE NM HYD       ID=7 HYD NO=110.0 DA=0.0082 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   22.662    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.2600
    AREA =      .005740 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
    UNIT PEAK =   6.2747    CFS   UNIT VOLUME =    .9980       B =   340.01      P60 = 1.2600
    AREA =      .002460 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=7 CODE=1

                                PARTIAL HYDROGRAPH   110.00

    RUNOFF VOLUME =     1.73832 INCHES     =        .7602 ACRE-FEET
    PEAK DISCHARGE RATE =      13.51 CFS  AT   1.499 HOURS   BASIN AREA =   .0082 SQ. MI.
```

```
*                    ****************************************
COMPUTE NM HYD       ID=8 HYD NO=109.0 DA=0.0050 SQ MI
                     PER A=0.0 PER B=100.0 PER C=00.0 PER D=00.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .141725HR    TP =   .133300HR    K/TP RATIO =  1.063205     SHAPE CONSTANT, N =  3.321420
   UNIT PEAK =   11.518    CFS   UNIT VOLUME =    .9989       B =   307.06      P60 = 1.2600
   AREA =      .005000 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                   PARTIAL HYDROGRAPH   109.00


   RUNOFF VOLUME =      .45255 INCHES     =        .1207 ACRE-FEET
   PEAK DISCHARGE RATE =       4.10 CFS  AT   1.499 HOURS   BASIN AREA =   .0050 SQ. MI.


*S                   TOTAL FLOW INTO POND
ADD HYD              ID=9 HYD NO=109.1 ID I=8 ID II=7
PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH   109.10


   RUNOFF VOLUME =     1.25126 INCHES     =        .8809 ACRE-FEET
   PEAK DISCHARGE RATE =      17.60 CFS  AT   1.499 HOURS   BASIN AREA =   .0132 SQ. MI.


ADD HYD              ID=9 HYD NO=109.2 ID I=9 ID II=6
PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH   109.20


   RUNOFF VOLUME =     1.54204 INCHES     =       4.7700 ACRE-FEET
   PEAK DISCHARGE RATE =      88.58 CFS  AT   1.499 HOURS   BASIN AREA =   .0580 SQ. MI.


PUNCH HYD            ID=9
*S ROUTE HYDOGRAPH THRU POND
ROUTE RESERVOIR      ID=20  HYD NO=109.22  INFLOW ID=9  CODE=5
                     OUTFLOW (CFS)   STORAGE (AC FT)   ELEV (FT)
                        0.0              0.00            27.00
                        1.9              0.01            27.50
                        3.7              0.09            28.00
                        5.6              0.29            28.50
                        7.4              0.64            29.00
                        9.3              1.12            29.50
                       11.1              1.69            30.00
                       13.0              2.31            30.50
                       14.9              2.95            31.00
                       16.7              3.61            31.50
                       18.6              4.29            32.00
                       20.4              5.00            32.50
```

22.3	5.73	33.00
24.1	6.48	33.50
26.0	7.25	34.00
28.3	8.05	34.50
30.5	8.87	35.00
32.8	9.72	35.50
33.0	10.58	36.00

* * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	27.00	.000	.00
.17	.58	27.03	.001	.13
.33	14.32	27.93	.078	3.44
.50	18.67	28.40	.250	5.22
.67	22.00	28.73	.448	6.41
.83	26.41	29.05	.683	7.57
1.00	32.73	29.35	.976	8.73
1.17	15.82	29.60	1.235	9.66
1.33	27.17	29.68	1.322	9.94
1.50	88.58	30.24	1.985	12.00
1.67	43.21	30.82	2.726	14.23
1.83	24.87	31.01	2.968	14.95
2.00	17.66	31.07	3.048	15.17
2.16	7.19	31.05	3.021	15.09
2.33	2.73	30.94	2.876	14.68
2.50	1.40	30.81	2.705	14.17
2.66	.72	30.67	2.527	13.64
2.83	.37	30.53	2.350	13.12
3.00	.19	30.39	2.177	12.59
3.16	.10	30.26	2.009	12.08
3.33	.05	30.13	1.848	11.58
3.50	.02	30.00	1.692	11.11
3.66	.01	29.87	1.543	10.63
3.83	.00	29.75	1.399	10.18
4.00	.00	29.62	1.262	9.75
4.16	.01	29.51	1.131	9.34
4.33	.02	29.38	1.006	8.85
4.50	.07	29.26	.888	8.38
4.66	.12	29.14	.777	7.94
4.83	.17	29.03	.673	7.53
5.00	.22	28.91	.575	7.07
5.16	.28	28.78	.484	6.60
5.33	.33	28.66	.401	6.17
5.49	.38	28.55	.324	5.77
5.66	.43	28.41	.253	5.25
5.83	.49	28.25	.191	4.66
5.99	.54	28.12	.138	4.15
6.16	.21	28.00	.090	3.69
6.33	.06	27.73	.047	2.74
6.49	.03	27.53	.015	2.02
6.66	.01	27.06	.001	.23
6.83	.00	27.01	.000	.02
6.99	.00	27.00	.000	.00

PEAK DISCHARGE = 15.187 CFS - PEAK OCCURS AT HOUR 2.06
MAXIMUM WATER SURFACE ELEVATION = 31.080
MAXIMUM STORAGE = 3.0552 AC-FT INCREMENTAL TIME= .033300HRS

```
PRINT HYD            ID=20 CODE=1

                                   PARTIAL HYDROGRAPH   109.22

    RUNOFF VOLUME =     1.54204 INCHES     =       4.7700 ACRE-FEET
    PEAK DISCHARGE RATE =     15.19 CFS  AT   2.065 HOURS   BASIN AREA =   .0580 SQ. MI.


*                    ****************************************
*                    ****************************************
COMPUTE NM HYD       ID=10 HYD NO=114.0 DA=0.0160 SQ MI
                     PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   36.006    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.2600
    AREA =      .009120 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
    UNIT PEAK =   17.549    CFS   UNIT VOLUME =    .9995       B =   340.01      P60 = 1.2600
    AREA =      .006880 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=10 CODE=1

                                   PARTIAL HYDROGRAPH   114.00

    RUNOFF VOLUME =     1.52874 INCHES     =       1.3045 ACRE-FEET
    PEAK DISCHARGE RATE =     24.42 CFS  AT   1.499 HOURS   BASIN AREA =   .0160 SQ. MI.


*                    ****************************************
COMPUTE NM HYD       ID=11 HYD NO=115.0 DA=0.0168 SQ MI
                     PER A=0.0 PER B=5.0 PER C=5.0 PER D=90.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   59.695    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.2600
    AREA =      .015120 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
    UNIT PEAK =   4.2852    CFS   UNIT VOLUME =    .9971       B =   340.01      P60 = 1.2600
    AREA =      .001680 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=11 CODE=1

                                   PARTIAL HYDROGRAPH   115.00

    RUNOFF VOLUME =     2.06075 INCHES     =       1.8464 ACRE-FEET
```

```
   PEAK DISCHARGE RATE =      30.77 CFS  AT   1.499 HOURS   BASIN AREA =   .0168 SQ. MI.


*                    ******************************************
ADD HYD              ID=12 HYD NO=115.1 ID I=10 ID II=11
PRINT HYD            ID=12 CODE=1

                                  PARTIAL HYDROGRAPH   115.10


   RUNOFF VOLUME =     1.80121 INCHES     =       3.1509 ACRE-FEET
   PEAK DISCHARGE RATE =      55.19 CFS  AT   1.499 HOURS   BASIN AREA =   .0328 SQ. MI.


*                    ******************************************
COMPUTE NM HYD       ID=13 HYD NO=116.0 DA=0.0065 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   17.964    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.2600
   AREA =      .004550 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .124821HR    TP =   .133300HR    K/TP RATIO =   .936388     SHAPE CONSTANT, N =  3.776847
   UNIT PEAK =   4.9738    CFS   UNIT VOLUME =    .9976       B =   340.01      P60 = 1.2600
   AREA =      .001950 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=13 CODE=1

                                  PARTIAL HYDROGRAPH   116.00


   RUNOFF VOLUME =     1.73832 INCHES     =        .6026 ACRE-FEET
   PEAK DISCHARGE RATE =      10.71 CFS  AT   1.499 HOURS   BASIN AREA =   .0065 SQ. MI.


*                    ******************************************
*S                   TOTAL FLOW TO OURAY STORM DRAIN
ADD HYD              ID=14 HYD NO=115.1 ID I=12 ID II=13
PRINT HYD            ID=14 CODE=1

                                  PARTIAL HYDROGRAPH   115.10


   RUNOFF VOLUME =     1.79080 INCHES     =       3.7535 ACRE-FEET
   PEAK DISCHARGE RATE =      65.90 CFS  AT   1.499 HOURS   BASIN AREA =   .0393 SQ. MI.


FINISH

   NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 17:05:29
```

100 YEAR POST-DEVELOPMENT DETAILED

```
AHYMO PROGRAM (AHYMO392) - AMAFCA VERSION OF HYMO - MARCH, 1992
     RUN DATE (MON/DAY/YR) = 11/03/1993
     START TIME (HR:MIN:SEC) = 17:02:41     USER NO.= J_HUGHES.S92
     INPUT FILE = LW100PO.DAT

*S                LADERA WEST - 100 YEAR POST DEVELOPMENT

START             TIME=0.0 HR PUNCH CODE=0

RAINFALL          TYPE=1 RAIN QUARTER=0.0
                  RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                  RAIN DAY=2.66 IN DT=0.0333 HRS

                COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =    .033300 HOURS      END TIME =    5.994000 HOURS
                   .0000   .0016   .0033   .0050   .0067   .0085   .0103
                   .0121   .0140   .0160   .0180   .0200   .0221   .0243
                   .0265   .0288   .0312   .0336   .0361   .0387   .0414
                   .0442   .0471   .0501   .0533   .0566   .0600   .0636
                   .0674   .0714   .0757   .0808   .0863   .0922   .1044
                   .1323   .1754   .2374   .3221   .4335   .5756   .7527
                   .9690  1.1767  1.2619  1.3336  1.3972  1.4551  1.5084
                  1.5579  1.6041  1.6474  1.6881  1.7266  1.7629  1.7973
                  1.8298  1.8607  1.8900  1.9178  1.9442  1.9515  1.9573
                  1.9627  1.9680  1.9729  1.9777  1.9823  1.9867  1.9909
                  1.9950  1.9990  2.0029  2.0066  2.0102  2.0137  2.0172
                  2.0205  2.0238  2.0269  2.0300  2.0331  2.0360  2.0389
                  2.0418  2.0446  2.0473  2.0500  2.0526  2.0552  2.0578
                  2.0603  2.0627  2.0651  2.0675  2.0698  2.0721  2.0744
                  2.0766  2.0788  2.0810  2.0832  2.0853  2.0873  2.0894
                  2.0914  2.0934  2.0954  2.0974  2.0993  2.1012  2.1031
                  2.1050  2.1068  2.1086  2.1104  2.1122  2.1140  2.1157
                  2.1174  2.1191  2.1208  2.1225  2.1242  2.1258  2.1274
                  2.1290  2.1306  2.1322  2.1338  2.1353  2.1369  2.1384
                  2.1399  2.1414  2.1429  2.1444  2.1459  2.1473  2.1487
                  2.1502  2.1516  2.1530  2.1544  2.1558  2.1571  2.1585
                  2.1599  2.1612  2.1625  2.1639  2.1652  2.1665  2.1678
                  2.1691  2.1703  2.1716  2.1729  2.1741  2.1754  2.1766
                  2.1778  2.1791  2.1803  2.1815  2.1827  2.1839  2.1850
                  2.1862  2.1874  2.1886  2.1897  2.1909  2.1920  2.1931
                  2.1943  2.1954  2.1965  2.1976  2.1987  2.1998

*                 ******************************************
COMPUTE NM HYD    ID=1 HYD NO=101.0 DA=0.0055 SQ MI
                  PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                  TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   12.377    CFS   UNIT VOLUME =    .9984       B =   526.28      P60 = 1.8700
   AREA =      .003135 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
   UNIT PEAK =   6.2925    CFS   UNIT VOLUME =    .9982       B =   354.67      P60 = 1.8700
   AREA =      .002365 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
PRINT HYD            ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.00

    RUNOFF VOLUME =     1.47109 INCHES     =        .4315 ACRE-FEET
    PEAK DISCHARGE RATE =      12.47 CFS  AT   1.499 HOURS   BASIN AREA =  .0055 SQ. MI.

COMPUTE NM HYD       ID=2 HYD NO=102.0 DA=0.0019 SQ MI
                     PER A=0.0 PER B=5.0 PER C=5.0 PER D=90.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =  .072649HR    TP =   .133300HR    K/TP RATIO =  .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   6.7512    CFS   UNIT VOLUME =    .9975       B =   526.28      P60 = 1.8700
    AREA =      .001710 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   .50553    CFS   UNIT VOLUME =    .9752       B =   354.67      P60 = 1.8700
    AREA =      .000190 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  .033300

PRINT HYD            ID=2 CODE=1

                                PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =     1.85048 INCHES     =        .1875 ACRE-FEET
    PEAK DISCHARGE RATE =       5.10 CFS  AT   1.499 HOURS   BASIN AREA =   .0019 SQ. MI.

COMPUTE NM HYD       ID=3 HYD NO=103.0 DA=0.0060 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   16.582    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.8700
    AREA =      .004200 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   4.7892    CFS   UNIT VOLUME =    .9978       B =   354.67      P60 = 1.8700
    AREA =      .001800 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.00

    RUNOFF VOLUME =     1.62055 INCHES     =        .5186 ACRE-FEET
    PEAK DISCHARGE RATE =      14.57 CFS  AT   1.499 HOURS   BASIN AREA =   .0060 SQ. MI.
```

```
COMPUTE NM HYD       ID=4 HYD NO=104.0 DA=0.0030 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   8.2909    CFS   UNIT VOLUME =    .9980       B =   526.28      P60 = 1.8700
    AREA =      .002100 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   2.3946    CFS   UNIT VOLUME =    .9948       B =   354.67      P60 = 1.8700
    AREA =      .000900 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=4 CODE=1

                                  PARTIAL HYDROGRAPH   104.00


    RUNOFF VOLUME =     1.62055 INCHES     =        .2593 ACRE-FEET
    PEAK DISCHARGE RATE =       7.29 CFS  AT   1.499 HOURS   BASIN AREA =   .0030 SQ. MI.


COMPUTE NM HYD       ID=5 HYD NO=105.0 DA=0.0088 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   24.320    CFS   UNIT VOLUME =    .9989       B =   526.28      P60 = 1.8700
    AREA =      .006160 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   7.0242    CFS   UNIT VOLUME =    .9986       B =   354.67      P60 = 1.8700
    AREA =      .002640 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=5 CODE=1

                                  PARTIAL HYDROGRAPH   105.00


    RUNOFF VOLUME =     1.62055 INCHES     =        .7606 ACRE-FEET
    PEAK DISCHARGE RATE =      21.36 CFS  AT   1.499 HOURS   BASIN AREA =   .0088 SQ. MI.


COMPUTE NM HYD       ID=6 HYD NO=106.0 DA=0.0023 SQ MI
                     PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   6.3564    CFS   UNIT VOLUME =    .9975       B =   526.28      P60 = 1.8700
    AREA =      .001610 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
UNIT PEAK =   1.8359    CFS   UNIT VOLUME =    .9930       B =   354.67      P60 = 1.8700
AREA =      .000690 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.00

RUNOFF VOLUME =     1.62055 INCHES     =        .1988 ACRE-FEET
PEAK DISCHARGE RATE =      5.60 CFS  AT   1.499 HOURS   BASIN AREA =   .0023 SQ. MI.


*                   ****************************************
*                   ****************************************
*S                  POSSIBLE FLOWS ENTERING SITE AT VISTA ALEGRE
*S                  AREA 101 + 102
ADD HYD             ID=9 HYD NO=100.1 ID I=1 ID II=2
PRINT HYD           ID=9 CODE=1

                                PARTIAL HYDROGRAPH   100.10


RUNOFF VOLUME =     1.56843 INCHES     =        .6190 ACRE-FEET
PEAK DISCHARGE RATE =     17.57 CFS  AT   1.499 HOURS   BASIN AREA =   .0074 SQ. MI.


*                   ****************************************
*S                  AREA 101 + 102 + 106
ADD HYD             ID=10 HYD NO=100.2 ID I=9 ID II=6
PRINT HYD           ID=10 CODE=1

                                PARTIAL HYDROGRAPH   100.20


RUNOFF VOLUME =     1.58076 INCHES     =        .8178 ACRE-FEET
PEAK DISCHARGE RATE =     23.16 CFS  AT   1.499 HOURS   BASIN AREA =   .0097 SQ. MI.


*                   ****************************************
*S                  AREA 101 + 102 + 104 + 105 + 106
ADD HYD             ID=11 HYD NO=100.3 ID I=10 ID II=5
PRINT HYD           ID=11 CODE=1

                                PARTIAL HYDROGRAPH   100.30


RUNOFF VOLUME =     1.59967 INCHES     =       1.5783 ACRE-FEET
PEAK DISCHARGE RATE =     44.52 CFS  AT   1.499 HOURS   BASIN AREA =   .0185 SQ. MI.


ADD HYD             ID=11 HYD NO=100.31 ID I=11 ID II=4
PRINT HYD           ID=11 CODE=1

                                PARTIAL HYDROGRAPH   100.31
```

```
RUNOFF VOLUME =     1.60257 INCHES     =       1.8376 ACRE-FEET
PEAK DISCHARGE RATE =     51.81 CFS  AT   1.499 HOURS   BASIN AREA =   .0215 SQ. MI.


*                  ******************************************
*S                 MAXIMUM FLOW ENTERING AT SAN BENITO
*S                 AREA 103 + 104
ADD HYD            ID=12 HYD NO=101.1 ID I=3 ID II=4
PRINT HYD          ID=12 CODE=1

                                PARTIAL HYDROGRAPH   101.10


RUNOFF VOLUME =     1.62049 INCHES     =        .7778 ACRE-FEET
PEAK DISCHARGE RATE =     21.86 CFS  AT   1.499 HOURS   BASIN AREA =   .0090 SQ. MI.


*                  ******************************************
*                  ******************************************
COMPUTE NM HYD     ID=7 HYD NO=107.3 DA=0.0060 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   13.502    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.8700
AREA =      .003420 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
UNIT PEAK =   6.8645    CFS   UNIT VOLUME =    .9984       B =   354.67      P60 = 1.8700
AREA =      .002580 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.30


RUNOFF VOLUME =     1.47109 INCHES     =        .4707 ACRE-FEET
PEAK DISCHARGE RATE =     13.60 CFS  AT   1.499 HOURS   BASIN AREA =   .0060 SQ. MI.


*                  ******************************************
COMPUTE NM HYD     ID=8 HYD NO=107.2 DA=0.0067 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   15.078    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.8700
AREA =      .003819 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
```

```
UNIT PEAK =   7.6654    CFS   UNIT VOLUME =    .9988       B =   354.67      P60 = 1.8700
AREA =      .002881 SQ MI    IA =    .42500 INCHES    INF =  1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=8 CODE=1

                                PARTIAL HYDROGRAPH   107.20

RUNOFF VOLUME =     1.47109 INCHES     =        .5257 ACRE-FEET
PEAK DISCHARGE RATE =      15.19 CFS  AT   1.499 HOURS   BASIN AREA =   .0067 SQ. MI.

*S                  AREA 107.3 + 107.2
ADD HYD             ID=7 HYD NO=107.01 ID I=7 ID II=8
PRINT HYD           ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.01

RUNOFF VOLUME =     1.47105 INCHES     =        .9964 ACRE-FEET
PEAK DISCHARGE RATE =      28.79 CFS  AT   1.499 HOURS   BASIN AREA =   .0127 SQ. MI.

*                   ******************************************
COMPUTE NM HYD      ID=8 HYD NO=107.1 DA=0.0084 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   18.903    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.8700
AREA =      .004788 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
UNIT PEAK =   9.6104    CFS   UNIT VOLUME =    .9991       B =   354.67      P60 = 1.8700
AREA =      .003612 SQ MI    IA =    .42500 INCHES    INF =  1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=8 CODE=1

                                PARTIAL HYDROGRAPH   107.10

RUNOFF VOLUME =     1.47109 INCHES     =        .6590 ACRE-FEET
PEAK DISCHARGE RATE =      19.04 CFS  AT   1.499 HOURS   BASIN AREA =   .0084 SQ. MI.

*S                  FLOW IN SAN BENITO
*S                  AREA 103 + 104 + 107.1
ADD HYD             ID=9 HYD NO=107.02 ID I=12 ID II=8
PRINT HYD           ID=9 CODE=1

                                PARTIAL HYDROGRAPH   107.02
```

```
RUNOFF VOLUME =     1.54835 INCHES     =       1.4369 ACRE-FEET
PEAK DISCHARGE RATE =     40.90 CFS  AT   1.499 HOURS   BASIN AREA =   .0174 SQ. MI.


*                  ******************************************
*S                 MINIMUM FLOWS TO RINCONADA CHANNEL
*S                 AREA 103 + 104 + 107.1 + 107.2 + 107.3
ADD HYD            ID=10 HYD NO=107.03 ID I=9 ID II=7
PRINT HYD          ID=10 CODE=1

                                PARTIAL HYDROGRAPH   107.03


RUNOFF VOLUME =     1.51573 INCHES     =       2.4332 ACRE-FEET
PEAK DISCHARGE RATE =     69.69 CFS  AT   1.499 HOURS   BASIN AREA =   .0301 SQ. MI.


*                  ******************************************
*                  ******************************************
COMPUTE NM HYD     ID=8 HYD NO=108.0 DA=0.0077 SQ MI
                   PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                   TP=-0.1333 HR MASS RAIN=-1

K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   17.328    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.8700
AREA =      .004389 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
UNIT PEAK =   8.8095    CFS   UNIT VOLUME =    .9989       B =   354.67      P60 = 1.8700
AREA =      .003311 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=8 CODE=1

                                PARTIAL HYDROGRAPH   108.00


RUNOFF VOLUME =     1.47109 INCHES     =        .6041 ACRE-FEET
PEAK DISCHARGE RATE =     17.45 CFS  AT   1.499 HOURS   BASIN AREA =   .0077 SQ. MI.


*                  ******************************************
*S                 POSSIBLE FLOWS INTO PNM EASEMENT
*S                 AREA 102 + 108
ADD HYD            ID=15 HYD NO=100.4 ID I=2 ID II=8
PRINT HYD          ID=15 CODE=1

                                PARTIAL HYDROGRAPH   100.40


RUNOFF VOLUME =     1.54612 INCHES     =        .7916 ACRE-FEET
PEAK DISCHARGE RATE =     22.55 CFS  AT   1.499 HOURS   BASIN AREA =   .0096 SQ. MI.
```

```
*                    ****************************************
*S                   AREA 101 + 102 + 108
ADD HYD              ID=16 HYD NO=100.5 ID I=1 ID II=15
PRINT HYD            ID=16 CODE=1

                                PARTIAL HYDROGRAPH   100.50

    RUNOFF VOLUME =     1.51877 INCHES     =       1.2231 ACRE-FEET
    PEAK DISCHARGE RATE =     35.02 CFS  AT   1.499 HOURS   BASIN AREA =   .0151 SQ. MI.

*                    ****************************************
*S                   AREA 101 + 102 + 106 + 108
ADD HYD              ID=17 HYD NO=100.6 ID I=16 ID II=6
PRINT HYD            ID=17 CODE=1

                                PARTIAL HYDROGRAPH   100.60

    RUNOFF VOLUME =     1.53221 INCHES     =       1.4219 ACRE-FEET
    PEAK DISCHARGE RATE =     40.61 CFS  AT   1.499 HOURS   BASIN AREA =   .0174 SQ. MI.

*                    ****************************************
*S                   AREA 101 + 102 + 104 + 105 + 106 + 108
ADD HYD              ID=18 HYD NO=100.7 ID I=11 ID II=8
PRINT HYD            ID=18 CODE=1

                                PARTIAL HYDROGRAPH   100.70

    RUNOFF VOLUME =     1.56789 INCHES     =       2.4417 ACRE-FEET
    PEAK DISCHARGE RATE =     69.27 CFS  AT   1.499 HOURS   BASIN AREA =   .0292 SQ. MI.

*                    ****************************************
*                    ****************************************
*S                   ADD IN AREAS 109 THROUGH 116 OFFSITE
COMPUTE NM HYD       ID=1 HYD NO=113.0 DA=0.0109 SQ MI
                     PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                     TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000    SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   24.529    CFS   UNIT VOLUME =    .9989      B =   526.28      P60 = 1.8700
    AREA =      .006213 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442    SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   12.471    CFS   UNIT VOLUME =    .9994      B =   354.61      P60 = 1.8700
    AREA =      .004687 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=1 CODE=1

                                PARTIAL HYDROGRAPH   113.00
```

```
    RUNOFF VOLUME =     1.47109 INCHES     =        .8552 ACRE-FEET
    PEAK DISCHARGE RATE =     24.70 CFS  AT   1.499 HOURS   BASIN AREA =   .0109 SQ. MI.


*                   ******************************************
COMPUTE NM HYD      ID=2 HYD NO=112.0 DA=0.0066 SQ MI
                    PER A=0.0 PER B=25.0 PER C=25.0 PER D=50.0
                    TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   13.029    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 1.8700
    AREA =      .003300 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   8.7802    CFS   UNIT VOLUME =    .9989       B =   354.67      P60 = 1.8700
    AREA =      .003300 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=2 CODE=1

                                PARTIAL HYDROGRAPH   112.00

    RUNOFF VOLUME =     1.39061 INCHES     =        .4895 ACRE-FEET
    PEAK DISCHARGE RATE =     14.39 CFS  AT   1.499 HOURS   BASIN AREA =   .0066 SQ. MI.


ADD HYD             ID=3 HYD NO=112.1 ID I=1 ID II=2
PRINT HYD           ID=3 CODE=1

                                PARTIAL HYDROGRAPH   112.10

    RUNOFF VOLUME =     1.44071 INCHES     =       1.3447 ACRE-FEET
    PEAK DISCHARGE RATE =     39.09 CFS  AT   1.499 HOURS   BASIN AREA =   .0175 SQ. MI.


*                   ******************************************
COMPUTE NM HYD      ID=4 HYD NO=111.0 DA=0.0058 SQ MI
                    PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                    TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   16.029    CFS   UNIT VOLUME =    .9986       B =   526.28      P60 = 1.8700
    AREA =      .004060 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   4.6296    CFS   UNIT VOLUME =    .9975       B =   354.67      P60 = 1.8700
    AREA =      .001740 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300
```

```
PRINT HYD          ID=4 CODE=1

                                PARTIAL HYDROGRAPH   111.00

    RUNOFF VOLUME =     1.62055 INCHES     =        .5013 ACRE-FEET
    PEAK DISCHARGE RATE =      14.08 CFS  AT   1.499 HOURS   BASIN AREA =  .0058 SQ. MI.

*S                 ADD TO STORM DRAIN FROM VISTA ALEGRE
ADD HYD            ID=5 HYD NO=111.1 ID I=11 ID II=4
PRINT HYD          ID=5 CODE=1

                                PARTIAL HYDROGRAPH   111.10

    RUNOFF VOLUME =     1.60638 INCHES     =       2.3389 ACRE-FEET
    PEAK DISCHARGE RATE =      65.90 CFS  AT   1.499 HOURS   BASIN AREA =   .0273 SQ. MI.

*                  ****************************************
*S                 TOTAL STORM DRAIN FLOWS TO POND
ADD HYD            ID=6 HYD NO=109.1 ID I=5 ID II=3
PRINT HYD          ID=6 CODE=1

                                PARTIAL HYDROGRAPH   109.10

    RUNOFF VOLUME =     1.54166 INCHES     =       3.6835 ACRE-FEET
    PEAK DISCHARGE RATE =     104.99 CFS  AT   1.499 HOURS   BASIN AREA =   .0448 SQ. MI.

*                  ****************************************
COMPUTE NM HYD     ID=7 HYD NO=110.0 DA=0.0082 SQ MI
                   PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                   TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   22.662    CFS   UNIT VOLUME =    .9988       B =   526.28      P60 = 1.8700
    AREA =      .005740 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   6.5453    CFS   UNIT VOLUME =    .9984       B =   354.67      P60 = 1.8700
    AREA =      .002460 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD          ID=7 CODE=1

                                PARTIAL HYDROGRAPH   110.00

    RUNOFF VOLUME =     1.62055 INCHES     =        .7087 ACRE-FEET
    PEAK DISCHARGE RATE =      19.91 CFS  AT   1.499 HOURS   BASIN AREA =   .0082 SQ. MI.
```

```
*                    ******************************************
COMPUTE NM HYD       ID=8 HYD NO=109.0 DA=0.0050 SQ MI
                     PER A=0.0 PER B=100.0 PER C=00.0 PER D=00.0
                     TP=-0.1333 HR MASS RAIN=-1

   K =   .130992HR    TP =   .133300HR    K/TP RATIO =   .982685     SHAPE CONSTANT, N =  3.593448
   UNIT PEAK =   12.269    CFS   UNIT VOLUME =    .9992       B =   327.09      P60 = 1.8700
   AREA =      .005000 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=8 CODE=1

                                   PARTIAL HYDROGRAPH   109.00


   RUNOFF VOLUME =      .66738 INCHES     =        .1780 ACRE-FEET
   PEAK DISCHARGE RATE =       6.51 CFS  AT   1.532 HOURS   BASIN AREA =   .0050 SQ. MI.


*S                   TOTAL FLOW INTO POND
ADD HYD              ID=9 HYD NO=109.1 ID I=8 ID II=7
PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH   109.10


   RUNOFF VOLUME =     1.25947 INCHES     =        .8867 ACRE-FEET
   PEAK DISCHARGE RATE =      26.36 CFS  AT   1.499 HOURS   BASIN AREA =   .0132 SQ. MI.


ADD HYD              ID=9 HYD NO=109.2 ID I=9 ID II=6
PRINT HYD            ID=9 CODE=1

                                   PARTIAL HYDROGRAPH   109.20


   RUNOFF VOLUME =     1.47744 INCHES     =       4.5702 ACRE-FEET
   PEAK DISCHARGE RATE =     131.35 CFS  AT   1.499 HOURS   BASIN AREA =   .0580 SQ. MI.


PUNCH HYD            ID=9
*S ROUTE HYDOGRAPH THRU POND
ROUTE RESERVOIR      ID=20  HYD NO=109.22  INFLOW ID=9  CODE=5
                     OUTFLOW (CFS)   STORAGE (AC FT)   ELEV (FT)
                        0.0              0.00            27.00
                        1.9              0.01            27.50
                        3.7              0.09            28.00
                        5.6              0.29            28.50
                        7.4              0.64            29.00
                        9.3              1.12            29.50
                       11.1              1.69            30.00
                       13.0              2.31            30.50
                       14.9              2.95            31.00
                       16.7              3.61            31.50
                       18.6              4.29            32.00
                       20.4              5.00            32.50
```

22.3	5.73	33.00
24.1	6.48	33.50
26.0	7.25	34.00
28.3	8.05	34.50
30.5	8.87	35.00
32.8	9.72	35.50
33.0	10.58	36.00

* * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	27.00	.000	.00
.17	.00	27.00	.000	.00
.33	.00	27.00	.000	.00
.50	.00	27.00	.000	.00
.67	.00	27.00	.000	.00
.83	.00	27.00	.000	.00
1.00	.00	27.00	.000	.00
1.17	.23	27.01	.000	.05
1.33	30.08	28.07	.119	3.97
1.50	131.35	29.52	1.145	9.38
1.67	68.29	30.57	2.394	13.25
1.83	39.73	30.97	2.910	14.78
2.00	27.20	31.15	3.153	15.45
2.16	12.87	31.21	3.226	15.65
2.33	6.24	31.14	3.133	15.40
2.50	3.88	31.03	2.991	15.01
2.66	2.54	30.91	2.831	14.55
2.83	1.75	30.78	2.664	14.05
3.00	1.27	30.64	2.494	13.55
3.16	.98	30.51	2.327	13.05
3.33	.80	30.38	2.163	12.55
3.50	.69	30.25	2.004	12.06
3.66	.63	30.13	1.850	11.59
3.83	.58	30.01	1.702	11.14
4.00	.56	29.89	1.560	10.69
4.16	.55	29.77	1.423	10.26
4.33	.54	29.65	1.292	9.84
4.50	.54	29.54	1.167	9.45
4.66	.54	29.42	1.047	9.01
4.83	.55	29.31	.934	8.56
5.00	.57	29.19	.827	8.14
5.16	.58	29.09	.725	7.74
5.33	.60	28.99	.630	7.35
5.49	.62	28.86	.540	6.89
5.66	.64	28.74	.457	6.46
5.83	.67	28.63	.380	6.06
5.99	.69	28.53	.308	5.69
6.16	.28	28.38	.241	5.14
6.33	.08	28.22	.177	4.52
6.49	.04	28.07	.119	3.98
6.66	.01	27.87	.069	3.23
6.83	.00	27.63	.031	2.37
6.99	.00	27.24	.005	.91
7.16	.00	27.02	.000	.06
7.33	.00	27.00	.000	.00

PEAK DISCHARGE = 15.661 CFS - PEAK OCCURS AT HOUR 2.13

```
MAXIMUM WATER SURFACE ELEVATION =       31.211
MAXIMUM STORAGE =        3.2291 AC-FT      INCREMENTAL TIME=     .033300HRS

PRNT HYD            ID=20 CODE=1

                                  PARTIAL HYDROGRAPH   109.22


   RUNOFF VOLUME =     1.47744 INCHES     =       4.5702 ACRE-FEET
   PEAK DISCHARGE RATE =     15.66 CFS  AT   2.131 HOURS   BASIN AREA =   .0580 SQ. MI.


*                   ****************************************
*                   ****************************************
CMPUTE NM HYD       ID=10 HYD NO=114.0 DA=0.0160 SQ MI
                    PER A=0.0 PER B=21.5 PER C=21.5 PER D=57.0
                    TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   36.006    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 = 1.8700
   AREA =      .009120 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
   UNIT PEAK =   18.305    CFS   UNIT VOLUME =    .9997       B =   354.67      P60 = 1.8700
   AREA =      .006880 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRNT HYD            ID=10 CODE=1

                                  PARTIAL HYDROGRAPH   114.00


   RUNOFF VOLUME =     1.47109 INCHES     =       1.2553 ACRE-FEET
   PEAK DISCHARGE RATE =     36.25 CFS  AT   1.499 HOURS   BASIN AREA =   .0160 SQ. MI.


*                   ****************************************
CMPUTE NM HYD       ID=11 HYD NO=115.0 DA=0.0168 SQ MI
                    PER A=0.0 PER B=5.0 PER C=5.0 PER D=90.0
                    TP=-0.1333 HR MASS RAIN=-1

   K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
   UNIT PEAK =   59.695    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.8700
   AREA =      .015120 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


   K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
   UNIT PEAK =   4.4699    CFS   UNIT VOLUME =    .9975       B =   354.67      P60 = 1.8700
   AREA =      .001680 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRNT HYD            ID=11 CODE=1

                                  PARTIAL HYDROGRAPH   115.00
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```
    RUNOFF VOLUME =     1.85049 INCHES     =       1.6580 ACRE-FEET
    PEAK DISCHARGE RATE =     44.93 CFS  AT   1.499 HOURS   BASIN AREA =   .0168 SQ. MI.


*                   ******************************************
ADD HYD             ID=12 HYD NO=115.1 ID I=10 ID II=11
PRINT HYD           ID=12 CODE=1

                                PARTIAL HYDROGRAPH   115.10


    RUNOFF VOLUME =     1.66540 INCHES     =       2.9133 ACRE-FEET
    PEAK DISCHARGE RATE =     81.18 CFS  AT   1.499 HOURS   BASIN AREA =   .0328 SQ. MI.


*                   ******************************************
COMPUTE NM HYD      ID=13 HYD NO=116.0 DA=0.0065 SQ MI
                    PER A=0.0 PER B=15.0 PER C=15.0 PER D=70.0
                    TP=-0.1333 HR MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   17.964    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.8700
    AREA =      .004550 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .118429HR    TP =   .133300HR    K/TP RATIO =   .888442     SHAPE CONSTANT, N =  3.992480
    UNIT PEAK =   5.1883    CFS   UNIT VOLUME =    .9978       B =   354.67      P60 = 1.8700
    AREA =      .001950 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD           ID=13 CODE=1

                                PARTIAL HYDROGRAPH   116.00


    RUNOFF VOLUME =     1.62055 INCHES     =        .5618 ACRE-FEET
    PEAK DISCHARGE RATE =     15.78 CFS  AT   1.499 HOURS   BASIN AREA =   .0065 SQ. MI.


*                   ******************************************
*S                  TOTAL FLOW TO OURAY STORM DRAIN
ADD HYD             ID=14 HYD NO=115.1 ID I=12 ID II=13
PRINT HYD           ID=14 CODE=1

                                PARTIAL HYDROGRAPH   115.10


    RUNOFF VOLUME =     1.65797 INCHES     =       3.4751 ACRE-FEET
    PEAK DISCHARGE RATE =     96.96 CFS  AT   1.499 HOURS   BASIN AREA =   .0393 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH        END TIME (HR:MIN:SEC) = 17:02:56
```

APPENDIX B

HYDRAULIC CALCULATIONS

TABLE OF CONTENTS

A. RUNDOWN WEIR CAPACITY

B. HEC-2 RUNDOWN ANALYSIS

C. OFF-SITE POND

D. RUNDOWN SIZING (See Rinconada Channel and Rundown Details in pocket at end of report)

RUNDOWN WEIR CAPACITY

Outlet Structure File: LWWEIR .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 11-03-1993 Time Executed: 15:17:30

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
41.75	0.0	+01
41.85	1.2	+01
41.95	6.3	+01
42.05	13.8	+01
42.15	23.0	+01
42.25	33.7	+01
42.35	45.6	+01
42.45	58.7	+01
42.53	70.0	+01
42.54	0.0	

Outlet Structure File: LWWEIR .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 11-03-1993 Time Executed: 15:17:30

Outlet Structure File: C:LWWEIR .STR
Planimeter Input File: C:LWWEIR .VOL
Rating Table Output File: C:LWWEIR .PND

Min. Elev.(ft) = 41.75 Max. Elev.(ft) = 42.54 Incr.(ft) = .1

Additional elevations (ft) to be included in table:
* *
42.53

****
SYSTEM CONNECTIVITY
****

Structure	No.		Q Table		Q Table
WEIR-XY	01	+	00	->	02

Outflow rating table summary was stored in file C:LWWEIR .PND

Outlet Structure File: LWWEIR .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 11-03-1993 Time Executed: 15:17:30

>>>>>> Structure No. 01 <<<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) =41.75 E2 (ft) =42.54

X dist.(ft)	Y elev.(ft)
0	42.53
0	41.86
21	41.75
42	41.86
42	42.53

Outlet Structure File: LWWEIR .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 11-03-1993 Time Executed: 15:17:30

Outflow Rating Table for Structure #01
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
41.75	0.0	E = Y min= 41.75
41.85	1.2	W(ft)= 38.181 Max. D(ft)= .1
41.95	6.3	W(ft)= 42.0 Max. D(ft)= .2
42.05	13.8	W(ft)= 42.0 Max. D(ft)= .3
42.15	23.0	W(ft)= 42.0 Max. D(ft)= .4
42.25	33.7	W(ft)= 42.0 Max. D(ft)= .5
42.35	45.6	W(ft)= 42.0 Max. D(ft)= .6
42.45	58.7	W(ft)= 42.0 Max. D(ft)= .7
42.53	70.0	W(ft)= 42.0 Max. D(ft)= .78
42.54	0.0	E = or > E2=42.54

HEC-2 RUNDOWN ANALYSIS
SUPERCRITICAL

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    03NOV93    TIME   17:30:59 *
 ******************************************

                                          ***************************************
                                          *  U.S. ARMY CORPS OF ENGINEERS       *
                                          *  HYDROLOGIC ENGINEERING CENTER      *
                                          *  609 SECOND STREET, SUITE D         *
                                          *  DAVIS, CALIFORNIA 95616-4687       *
                                          *          (916) 756-1104             *
                                          ***************************************

                    X    X  XXXXXXX  XXXXX           XXXXX
                    X    X  X      X    X          X    X
                    X    X  X      X                    X
                    XXXXXXX  XXXX   X        XXXXX  XXXXX
                    X    X  X      X                X
                    X    X  X      X    X          X
                    X    X  XXXXXXX  XXXXX           XXXXXXX
1
  03NOV93     17:30:59                                                PAGE    1

                                                THIS RUN EXECUTED 03NOV93    17:30:59

 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************


 T1      RUNDOWN SUBCRITICAL FLOWS
 T2
 T3      100-YR. FLOWS

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

                2.                         -1.                                42.5

 J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      1.                                                    -1.

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10.      -10.

 J6  IHLEQ     ICOPY    SUBDIV   STRTDS   RMILE

      1.


 NC     .013      .013      .013       .3        .5
 QT       2.    69.69     23.05
 X1      0.0       4.     20.51    47.49
```

X3	10.							43.	43.	
GR	40.63	20.51	40.6	24.0	40.6	34.0	40.63	47.49		
X1	6.0	4.	22.27	45.75	6.	6.	6.			
X3	10.							43.	43.	
GR	40.92	22.27	40.63	24.0	40.63	44.0	40.92	45.75		
X1	12.50	4.	23.99	44.01	6.5	6.5	6.5			
GR	43.16	23.99	40.66	24.00	40.66	44.00	43.16	44.01		
NC	.013	.013	.013	0.1	0.3					
X1	16.25	5.	23.99	44.01	3.75	3.75	3.75			
GR	43.18	23.99	40.93	24.00	40.68	34.0	40.93	44.00	43.18	44.01
X1	20.00	5.	23.99	44.01	3.75	3.75	3.75			
GR	43.20	23.99	41.20	24.00	40.70	34.0	41.20	44.00	43.20	44.01
X1	22.50				2.5	2.5	2.5		0.0125	

1

X1	25.00				2.5	2.5	2.5		0.0125	
X1	27.50				2.5	2.5	2.5		0.0125	
X1	30.00				2.5	2.5	2.5		0.0125	
X1	32.50				2.5	2.5	2.5		0.0125	
X1	35.00				2.5	2.5	2.5		0.0125	
X1	37.50				2.5	2.5	2.5		0.0125	
X1	40.00				2.5	2.5	2.5		0.0125	
X1	42.50				2.5	2.5	2.5		0.0125	
X1	45.00				2.5	2.5	2.5		0.0125	
X1	47.50				2.5	2.5	2.5		0.0125	
X1	50.00				2.5	2.5	2.5		0.0125	
X1	52.50				2.5	2.5	2.5		0.0125	
X1	55.00				2.5	2.5	2.5		0.0125	
X1	57.50				2.5	2.5	2.5		0.0125	
X1	60.00				2.5	2.5	2.5		0.0125	
X1	62.50				2.5	2.5	2.5		0.0125	
X1	65.00				2.5	2.5	2.5		0.0125	
X1	67.88	5.	23.99	44.01	2.88	2.88	2.88			
GR	43.44	23.99	41.44	24.00	40.94	34.0	41.44	44.00	43.44	44.01

NC	.013	.013	.013	.3	.5					
X1	70.5	5.	23.41	44.59	2.68	2.68	2.62			
GR	43.44	23.41	41.44	23.42	40.95	34.0	41.44	44.58	43.44	44.59
X1	75.5	5.	22.30	45.70	5.12	5.12	5.0			
GR	43.44	22.30	41.44	22.31	40.98	34.0	41.44	45.69	43.44	45.70
X1	80.5	5.	21.19	46.80	5.12	5.12	5.0			
GR	43.44	21.19	41.44	21.20	41.00	34.0	41.44	46.79	43.44	46.80
X1	85.5	5.	20.08	47.91	5.12	5.12	5.0			
GR	43.44	20.08	41.44	20.09	41.03	34.0	41.44	47.90	43.44	47.91

1

X1	90.5	5.	18.98	49.02	5.12	5.12	5.0			
GR	43.44	18.98	41.44	18.99	41.05	34.0	41.44	49.01	43.44	49.02
X1	95.5	5.	17.87	50.13	5.12	5.12	5.0			
GR	43.44	17.87	41.44	17.88	41.08	34.0	41.44	50.12	43.44	50.13
X1	100.5	5.	16.76	51.24	5.12	5.12	5.0			
GR	43.44	16.76	41.44	16.77	41.10	34.0	41.44	51.23	43.44	51.24
X1	105.5	5.	15.65	52.35	5.12	5.12	5.0			
GR	43.44	15.65	41.44	15.66	41.13	34.0	41.44	52.34	43.44	52.35
X1	110.5	5.	14.54	53.45	5.12	5.12	5.0			
GR	43.44	14.54	41.44	14.55	41.15	34.0	41.44	53.44	43.44	53.45
X1	115.6	5.	13.41	54.58	5.22	5.22	5.1			
GR	43.44	13.41	41.44	13.42	41.19	34.0	41.44	54.57	43.44	54.58
X1	117.5				1.95	1.95	1.9		0.02	
NC	.013	.013	.013	.5	.7					
X1	121.5	36.	12.99	55.01	4.	4.	4.			
GR	42.53	12.99	41.95	13.0	41.89	23.37	41.27	23.38	41.26	25.37
GR	41.88	25.38	41.88	26.12	41.26	26.13	41.25	28.12	41.87	28.13
GR	41.87	28.87	41.25	28.88	41.24	30.87	41.86	30.88	41.86	31.62
GR	41.24	31.63	41.23	33.62	41.85	33.63	41.85	34.37	41.23	34.38
GR	41.24	36.37	41.86	36.38	41.86	37.12	41.24	37.13	41.25	39.12
GR	41.87	39.13	41.87	39.87	41.25	39.88	41.26	41.87	41.88	41.88
GR	41.88	42.62	41.26	42.63	41.27	44.62	41.89	44.63	41.95	55.00
GR	42.53	55.01								
X1	122.9	5.	12.99	55.01	1.4	1.4	1.4			
GR	42.53	12.99	41.42	13.0	41.36	34.0	41.42	55.0	42.53	55.01
NC	.013	.013	.013	.3	.5					
X1	126.5	5.	12.99	55.01	3.60	3.60	3.60			
X3	10.							45.	45.	
GR	42.53	12.99	41.86	13.0	41.75	34.0	41.86	55.0	42.53	55.01
X1	128.5	3.	11.5	56.5	2.83	2.83	2.			
X3	10.							45.	45.	
GR	41.87	11.5	41.76	34.0	41.87	56.5				

```
 X1    133.0        3.       6.5      61.5       6.36       6.36       4.5
 X3     10.                                                                    45.       45.
 GR    41.92       6.5     41.78      34.0      41.92       61.5

 X1    139.5        3.       0.0      68.0       9.19       9.19       6.5
 X3     10.                                                                    45.       45.
 GR    41.99       0.0     41.82      34.0      41.99       68.0
1
    03NOV93      17:30:59                                                                                    PAGE    4


 IHLEQ = 1.  THEREFORE FRICTION LOSS (HL) IS CALCULATED AS A FUNCTION OF
 PROFILE TYPE, WHICH CAN VARY FROM REACH TO REACH.  SEE DOCUMENTATION FOR
 DETAILS.
1
 PROFILE FOR STREAM  100-YR. FLOWS


 PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


 ELEVATION    41.      41.      41.      41.      41.      42.      42.      42.      42.      42.
     SECNO   CUMDIS

      .00     0. I L     .       .       W       .   E   .       .       .       .       .       .
              1. I  L    .       .       W       .    E  .       .       .       .       .       .
              1. I   L   .       .       .W      .    E  .       .       .       .       .       .
              2. I    L  .       .       .W      .     E .       .       .       .       .       .
              2. .I    L .       .       . W     .     E .       .       .       .       .       .
              3. .I     L.       .       . W     .      E.       .       .       .       .       .
              3. .I      L.      .       . W     .      E.       .       .       .       .       .
              4. .I       L      .       .  W    .       E.      .       .       .       .       .
              4. .I       .L     .       .  W    .       E.      .       .       .       .       .
              5. .I       . L    .       .   W   .        E      .       .       .       .       .
              5. .I       .  L   .       .   W   .        E      .       .       .       .       .
              6. .I       .   L  .       .    W  .        .E     .       .       .       .       .
      6.00    6. . I      .    L .       .    W  .        .E     .       .       .       .       .
              7. . I      .      . L     .    W  .         . E   .       .       .       .       .
              7. . I      .      .       . L  W .         . E   .       .       .       .       .
              8. . I      .      .       .    W  . L       .  E  .       .       .       .       .
              8. . I      .      .       .    W  .        L  E  .       .       .       .       .
              9. . I      .      .       .    W  .        .  E  L.      .       .       .       .
              9. . I      .      .       .    W  .        .  E  .     L .       .       .       .
             10. . I      .      .       .    W  .        .  E  .       .    L  .       .       .
             10. . I      .      .       .    W  .        .   E .       .       .    L  .       .
             11. .  I     .      .       .     W .        .   E .       .       .       .    L  .
             11. .  I     .      .       .     W .        .    E .      .       .       .       L
             12. .  I     .      .       .     W .        .    E .      .       .       .       L
             12. .  I     .      .       .      W.        .     E .     .       .       .       L
      12.50  13. .  I     .      .       .      W.        .     E .     .       .       .       L
             13. .  I     .      .       .       W        .      E .    .       .       .       L
             14. .  I     .      .       .       .W       .       E.    .       .       .       L
             14. .  I     .      .       .       . W      .        E    .       .       .       L
             15. .   I    .      .       .       .  W     .        .E   .       .       .       L
             15. .   I    .      .       .       .   W    .        . E  .       .       .       L
             16. .   I    .      .       .       .    W   .        .  E .       .       .       L
             16. .   I    .      .       .       .     W  .        .   E.       .       .       L
```

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16.25  17. . I . . . . W . . E . . . L
       17. . I . . . . W . . E . . . L
       18. . I . . . . W . . E . . . L
       18. . I . . . . W. . E . . . L
       19. . I . . . . W . E . . . L
       19. . I . . . . .W . E. . . L
       20. . I . . . . . W . E . . L
20.00  20. . I . . . . . W . .E . . L
       21. . I . . . . . W . . E . L
       21. . I . . . . . W . . E . L
       22. . I . . . . . W . . E . L
       22. . I . . . . . W . . E . L
22.50  23. . I . . . . . W . . E . L
       23. . I . . . . . W . . E . L
       24. . I . . . . . W . . E . L
       24. . I . . . . . W . . E . L
       25. . I . . . . . W . . E . L
25.00  25. . I . . . . . W . . E . L
       26. . I . . . . . W . . E . L
       26. . I . . . . . W . . E . L
       27. . I . . . . . W . . E . L
       27. . I . . . . . W . . E . L
27.50  28. . I . . . . . W . . E . L
       28. . I . . . . . W . . E . L
       29. . I . . . . . W . . E . L
       29. . I . . . . . W . . E . L
       30. . I . . . . . W . . E . L
30.00  30. . I . . . . . W . . E . L
       31. . I . . . . . W . . E . L
       31. . I . . . . . W . . E . L
       32. . I . . . . . W . . E . L
       32. . I . . . . . W . . E . L
32.50  33. . I . . . . . W . . E . L
       33. . I . . . . . W . . E . L
       34. . I . . . . . W . . E . L
       34. . I. . . . . W . . E . L
       35. . I. . . . . W . . E . L
35.00  35. . I. . . . . W . . E . L
       36. . I. . . . . W . . E . L
       36. . I. . . . . W . . E . L
       37. . I. . . . . W . . E . L
       37. . I. . . . . W . . E . L
37.50  38. . I . . . . . W . . E . L
       38. . I . . . . . W . . E . L
       39. . I . . . . . W . . E . L
       39. . I . . . . . W . . E . L
       40. . I . . . . . W . . E . L
40.00  40. . I . . . . . W . . E . L
       41. . I . . . . . W. . E . L
       41. . I . . . . . W. . E . L
       42. . I . . . . . W. . E . L
       42. . I . . . . . W. . E . L
42.50  43. . .I . . . . . W. . E . L
       43. . .I . . . . . W. . E . L
       44. . .I . . . . . W. . E . L
       44. . .I . . . . . W. . E . L
       45. . .I . . . . . W. . E . L
45.00  45. . . I . . . . . W. . E . L
       46. . . I . . . . . W . E . L
       46. . . I . . . . . W . E . L
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       47. .     .I    .     .     .     .W    .    E.    .    L
       47. .     .I    .     .     .     .W    .    E.    .    L
47.50  48. .     .I    .     .     .     .W    .    E.    .    L
       48. .     .I    .     .     .     .W    .    E.    .    L
       49. .     .I    .     .     .     .W    .    E.    .    L
       49. .     .I    .     .     .     .W    .    E.    .    L
       50. .     .I    .     .     .     .W    .    E.    .    L
50.00  50. .     .I    .     .     .     .W    .    E.    .    L
       51. .     . I   .     .     .     .W    .    E.    .    L
       51. .     .I    .     .     .     .W    .    E.    .    L
       52. .     .I    .     .     .     .W    .    E     .    L
       52. .     .I    .     .     .     .W    .    E     .    L
52.50  53. .     .I    .     .     .     .W    .    E     .    L
       53. .     .I    .     .     .     . W   .    E     .    L
       54. .     .I    .     .     .     . W   .    E     .    L
       54. .     . I   .     .     .     . W   .    E     .    L
       55. .     . I   .     .     .     . W   .    E     .    L
55.00  55. .     . I   .     .     .     . W   .    E     .    L
       56. .     . I   .     .     .     . W   .    .E    .    L
       56. .     . I   .     .     .     . W   .    .E    .    L
       57. .     . I   .     .     .     .  W  .    .E    .    L
       57. .     . I   .     .     .     .  W  .    .E    .    L
57.50  58. .     . I   .     .     .     .  W  .    .E    .    L
       58. .     .  I  .     .     .     .  W  .    .E    .    L
       59. .     .  I  .     .     .     .  W  .    .E    .    L
       59. .     .  I  .     .     .     .  W  .    .E    .    L
       60. .     .  I  .     .     .     .  W  .    .E    .    L
60.00  60. .     .  I  .     .     .     .  W  .    .E    .    L
       61. .     .  I  .     .     .     .  W  .    . E    .    L
       61. .     .  I  .     .     .     .  W  .    . E    .    L
       62. .     .  I  .     .     .     .  W  .    . E    .    L
       62. .     .  I  .     .     .     .  W  .    . E    .    L
62.50  63. .     .   I .     .     .     .  W  .    . E    .    L
       63. .     .   I .     .     .     .  W  .    .  E   .    L
       64. .     .   I .     .     .     .  W  .    .  E   .    L
       64. .     .   I .     .     .     .  W  .    .  E   .    L
       65. .     .   I .     .     .     .  W  .    .  E   .    L
65.00  65. .     .    I .     .     .     .  W  .    .  E   .    L
       66. .     .    I .     .     .     .   W .    .  E   .    L
       66. .     .    I .     .     .     .   W .    .  E   .    L
       67. .     .    I .     .     .     .   W .    .  E   .    L
       67. .     .    I .     .     .     .   W .    .  E   .    L
       68. .     .    I .     .     .     .   W .    .  E   .    L
67.88  68. .     .    I .     .     .     .   W .    .  E   .    L
       69. .     .    I .     .     .     .   C W.        .  E   .    L
       69. .     .    I .     .     .     .   C  W        .  E   .    L
       70. .     .    I .     .     .     .   C  . W      .  E   .    L
       70. .     .    I .     .     .     .   C  .  W     .  E   .    L
70.50  71. .     .     I.     .     .     .   C  .    W  .  E   .    L
       71. .     .     I.     .     .     .   C  .     W.  E   .    L
       72. .     .     I.     .     .     .   C  .     W.  E   .    L
       72. .     .     I.     .     .     .   C  .     W.  E   .    L
       73. .     .     I.     .     .     .   C  .     W.  E   .    L
       73. .     .     I.     .     .     .   C  .     W.  E   .    L
       74. .     .     I.     .     .     .   C  .      W  E   .    L
       74. .     .      I.    .     .     .  C   .      W  E   .    L
       75. .     .      I.    .     .     .  C   .      W  E   .    L
       75. .     .      I.    .     .     .  C   .      .W E   .    L
75.50  76. .     .      I.    .     .     .  C   .      .W E   .    L
       76. .     .      I.    .     .     .  C   .      .W  E  .    L
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        77. .     .     I.    .     .     .     . C   .     .W    E .     L
        77. .     .     I.    .     .     .     . C   .     . W   E .     L
        78. .     .     I.    .     .     .     . C   .     . W   E .     L
        78. .     .     I.    .     .     .     . C   .     . W   E .     L
        79. .     .      I    .     .     .     . C   .     . W   E .     L
        79. .     .      I    .     .     .     . C   .     . W   E .     L
        80. .     .      I    .     .     .     . C   .     .  W  E .     L
        80. .     .      I    .     .     .     . C   .     .  W  E .     L
80.50   81. .     .      I    .     .     .     .C    .     .  W  E .     L
        81. .     .      I    .     .     .     .C    .     .  W  E .     L
        82. .     .      I    .     .     .     .C    .     .  W  E .     L
        82. .     .      I    .     .     .     .C    .     .  W  E .     L
        83. .     .     .I    .     .     .     .C    .     .  W  E .     L
        83. .     .     .I    .     .     .     .C    .     .  W  E .     L
        84. .     .     .I    .     .     .     .C    .     .  W  E .     L
        84. .     .     .I    .     .     .     .C    .     .  W  E .     L
        85. .     .     .I    .     .     .     .C    .     .  W  E .     L
        85. .     .     .I    .     .     .     .C    .     .  W  E .     L
85.50   86. .     .     .I    .     .     .     C     .     .  W  E .     L
        86. .     .     . I   .     .     .     C     .     .  W   E.     L
        87. .     .     . I   .     .     .     C     .     .  W   E.     L
        87. .     .     . I   .     .     .     C     .     .  W   E.     L
        88. .     .     . I   .     .     .     C     .     .  W   E.     L
        88. .     .     . I   .     .     .     C     .     .  W   E.     L
        89. .     .     . I   .     .     .     C     .     .  W   E.     L
        89. .     .     . I   .     .     .     C     .     .  W   E.     L
        90. .     .     . I   .     .     .     C     .     .  W   E.     L
        90. .     .     . I   .     .     .     C     .     .  W   E.     L
90.50   91. .     .     . I   .     .     .    C.     .     .  W   E.     L
        91. .     .     . I   .     .     .    C.     .     .  W   E.     L
        92. .     .     . I   .     .     .    C.     .     .  W   E.     L
        92. .     .     . I   .     .     .    C.     .     .  W   E.     L
        93. .     .     . I   .     .     .    C.     .     .  W   E.     L
        93. .     .     . I   .     .     .    C.     .     .  W   E.     L
        94. .     .     . I   .     .     .    C.     .     .  W   E.     L
        94. .     .     .  I  .     .     .    C.     .     .  W   E.     L
        95. .     .     .  I  .     .     .    C.     .     .  W   E.     L
        95. .     .     .  I  .     .     .    C.     .     .  W   E.     L
95.50   96. .     .     .  I  .     .     .    C.     .     .  W   E.     L
        96. .     .     .  I  .     .     .    C.     .     .   W  E.     L
        97. .     .     .  I  .     .     .    C.     .     .   W  E.     L
        97. .     .     .  I  .     .     .    C.     .     .   W  E.     L
        98. .     .     .  I  .     .     .    C.     .     .   W  E.     L
        98. .     .     .  I  .     .     .    C.     .     .   W  E.     L
        99. .     .     .  I  .     .     .    C.     .     .   W  E.     L
        99. .     .     .  I  .     .     .    C.     .     .   W  E.     L
       100. .     .     .  I  .     .     .    C.     .     .   W  E.     L
       100. .     .     .  I  .     .     .    C.     .     .   W  E.     L
100.50 101. .     .     .  I  .     .     .   C .     .     .   W  E.     L
       101. .     .     .  I  .     .     .   C .     .     .   W  E.     L
       102. .     .     .  I  .     .     .   C .     .     .   W  E.     L
       102. .     .     .  I  .     .     .   C .     .     .   W  E.     L
       103. .     .     .   I .     .     .   C .     .     .   W  E.     L
       103. .     .     .   I .     .     .   C .     .     .   W  E.     L
       104. .     .     .   I .     .     .   C .     .     .   W  E.     L
       104. .     .     .   I .     .     .   C .     .     .   W  E.     L
       105. .     .     .   I .     .     .   C .     .     .   W  E.     L
       105. .     .     .   I .     .     .   C .     .     .   W  E.     L
105.50 106. .     .     .    I.     .     .   C .     .     .   W  E.     L
       106. .     .     .    I.     .     .   C .     .     .    W E.     L
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        107. .         .         .         I .         .         .         C .         .         .         W E.        L
        107. .         .         .         I .         .         .         C .         .         .         W E.        L
        108. .         .         .         I .         .         .         C .         .         .         W E.        L
        108. .         .         .         I .         .         .         C .         .         .         W E.        L
        109. .         .         .         I .         .         .         C .         .         .         W E.        L
        109. .         .         .         I .         .         .         C .         .         .         W E.        L
        110. .         .         .         I .         .         .         C .         .         .         W E.        L
        110. .         .         .         I .         .         .         C .         .         .         W E.        L
110.50  111. .         .         .         I .         .         .         C .         .         .         W E.        L
        111. .         .         .         I .         .         .         C .         .         .         W E.        L
        112. .         .         .         I .         .         .         C .         .         .         W E.        L
        112. .         .         .         I .         .         .         C .         .         .         W E.        L
        113. .         .         .         I .         .         .         C .         .         .         W E.        L
        113. .         .         .         I .         .         .         C .         .         .         W E.        L
        114. .         .         .         I.          .         .         C .         .         .         W E.        L
        114. .         .         .         I.          .         .         C .         .         .         W E.        L
        115. .         .         .         I.          .         .         C .         .         .         W E.        L
        115. .         .         .         I.          .         .         C .         .         .         W E.        L
        116. .         .         .         I.          .         .         C .         .         .         W E.        L
115.60  116. .         .         .         I.          .         .         C .         .         .         W E.        L
        117. .         .         .         I           .         .         C .         .         .         W E.        L
        117. .         .         .         I           .         .         C.          .         .         W E.        L
117.50  118. .         .         .         I           .         .         C.          .         .         W E.        L
        118. .         .         .         .I          .         .         .C          .         .         W  E        L
        119. .         .         .         .I          .         .         . C         .         .         W  E        L
        119. .         .         .         .I          .         .         .  C        .         .         W  E        L
        120. .         .         .         .I          .         .         .   C       .         .         W  E        L
        120. .         .         .         .I          .         .         .         C.          .         W  .E       L
        121. .         .         .         .I          .         .         .         .C          .         W  .E       L
        121. .         .         .         .I          .         .         .         . C         .         W  .E       L
121.50  122. .         .         .         .I          .         .         .         .  C        .         W  .E   L   .
        122. .         .         .         .  I        .         .         .         C           .         W. E  L     .
        123. .         .         .         .   I       .         .         .  C        .         .         W  E L      .
122.90  123. .         .         .         .    I      .         .         .C          .         .         .W E L      .
        124. .         .         .         .     .I     .         .         . C         .         .         .W E L      .
        124. .         .         .         .      . I   .         .         .   C       .         .         W  E L      .
        125. .         .         .         .       .  I  .         .         C           .         .         W  E L      .
        125. .         .         .         .       .     I.        .         . C         .         .         W  E L      .
        126. .         .         .         .       .       . I     .         .    C      .         .         W. E L      .
        126. .         .         .         .       .       .  I    .         .      C.          .         W. EL       .
126.50  127. .         .         .         .       .       .    I  .         .        . C       .         W . EL      .
        127. .         .         .         .       .       .     I.         .        . C       .         LW. E       .
        128. .         .         .         .       .       .     I.         .         L C      .         W. E        .
        128. .         .         .         .       .       .     I.         . L      . C       .         W  E        .
128.50  129. .         .         .         .       .       .     I. L       .        .C        .         W  E        .
        129. .         .         .         .       .       .     I.  L      .        .C        .         .W E        .
        130. .         .         .         .       .       .     I.  L      .        .C        .         .W E        .
        130. .         .         .         .       .       .     I.  L      .        .C        .         .W E        .
        131. .         .         .         .       .       .     I.   L     .        .C        .         . W E       .
        131. .         .         .         .       .       .      I.  L     .        .C        .         . W E       .
        132. .         .         .         .       .       .      I.  L     .        .C        .         . W E       .
        132. .         .         .         .       .       .      I.  L     .        .C        .         .  W E      .
        133. .         .         .         .       .       .      I.   L    .        .C        .         .  W E      .
133.00  133. .         .         .         .       .       .      I.   L    .        .C        .         .  W E      .
        134. .         .         .         .       .       .      I.   L    .        .C        .         .   W E     .
        134. .         .         .         .       .       .      I.    L   .        .C        .         .   W E     .
        135. .         .         .         .       .       .      I.    L   .        .C        .         .   W E     .
        135. .         .         .         .       .       .       I    L   .        .C        .         .   W E     .
        136. .         .         .         .       .       .       I    L   .        .C        .         .   W E     .
        136. .         .         .         .       .       .       I     L  .        .C        .         .   W E     .
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          137.  .     .     .     .     .     .     I     L .     .C     .  W  E  .
          137.  .     .     .     .     .     .     I     L .     .C     .  W  E  .
          138.  .     .     .     .     .     .     I     L .     .C     .  W  E  .
          138.  .     .     .     .     .     .     .I     L.     .C     .  W  E  .
          139.  .     .     .     .     .     .     .I     L.     .C     .  W  E  .
          139.  .     .     .     .     .     .     .I     L.     .C     .  W  E  .
   139.50 140.  .     .     .     .     .     .     .I     L.     .C     .  W  E  .
1
   03NOV93      17:30:59                                                                PAGE    5


T1      RUNDOWN SUBCRITICAL FLOWS
T2
T3      2-YR. FLOWS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

              3.                         -1.                                42.5

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    15.                                                     -1.


 IHLEQ = 1.  THEREFORE FRICTION LOSS (HL) IS CALCULATED AS A FUNCTION OF
 PROFILE TYPE, WHICH CAN VARY FROM REACH TO REACH.  SEE DOCUMENTATION FOR
 DETAILS.
1
 PROFILE FOR STREAM  2-YR. FLOWS


 PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


 ELEVATION   41.     41.     41.     41.     41.     42.     42.     42.     42.     42.
    SECNO   CUMDIS

      .00    0.  I L     .  W    .E     .       .       .       .       .       .       .
             1.  I  L    .   W   . E    .       .       .       .       .       .       .
             1.  I   L   .   W   . E    .       .       .       .       .       .       .
             2.  I    L  .   W   . E    .       .       .       .       .       .       .
             2.  .I    L .    W  . E    .       .       .       .       .       .       .
             3.  .I     L.    W  . E    .       .       .       .       .       .       .
             3.  .I      L.   W  .  E   .       .       .       .       .       .       .
             4.  .I       L   W  .  E   .       .       .       .       .       .       .
             4.  .I       .L  W  .  E   .       .       .       .       .       .       .
             5.  .I       . L W  .  E   .       .       .       .       .       .       .
             5.  .I       .  L W .  E   .       .       .       .       .       .       .
             6.  .I       .   L W.   E  .       .       .       .       .       .       .
     6.00    6.  . I      .    L W.   E  .       .       .       .       .       .       .
             7.  . I      .     W.   LE  .       .       .       .       .       .       .
             7.  . I      .     W.   E  . L     .       .       .       .       .       .
             8.  . I      .     W.    E .       . L     .       .       .       .       .
             8.  . I      .      W.   E .       .       L       .       .       .       .
             9.  . I      .      W.   E .       .       .       L.      .       .       .
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        9. . I     .     W.    E .     .     .     .     L .     .     .     .     .
       10. . I     .     W.     E .    .     .     .     .     L .     .     .     .
       10. . I     .     W.     E .    .     .     .     .     .     L .     .     .
       11. .  I    .     W.     E .    .     .     .     .     .     .     .  L  .
       11. .  I    .      W     E .    .     .     .     .     .     .     .     L
       12. .  I    .      W      E.    .     .     .     .     .     .     .     L
       12. .  I    .      W      E.    .     .     .     .     .     .     .     L
12.50  13. .  I    .      W      E.    .     .     .     .     .     .     .     L
       13. .  I    .      .W      E    .     .     .     .     .     .     .     L
       14. .  I    .      . W     .E   .     .     .     .     .     .     .     L
       14. .  I    .      .  W    . E  .     .     .     .     .     .     .     L
       15. .   I   .      .   W   .  E .     .     .     .     .     .     .     L
       15. .   I   .      .    W  .   E.     .     .     .     .     .     .     L
       16. .   I   .      .     W .    E     .     .     .     .     .     .     L
       16. .   I   .      .      W .    E    .     .     .     .     .     .     L
16.25  17. .   I   .      .       W.    E    .     .     .     .     .     .     L
       17. .   I   .      .       W.     E   .     .     .     .     .     .     L
       18. .   I   .      .        W.     E. .     .     .     .     .     .     L
       18. .   I   .      .         W      E.     .     .     .     .     .     L
       19. .    I  .      .         .W      E     .     .     .     .     .     L
       19. .    I  .      .         . W     .E   .     .     .     .     .     L
       20. .    I  .      .         .  W    . E  .     .     .     .     .     L
20.00  20. .    I  .      .         .   W   .  E .     .     .     .     .     L
       21. .    I  .      .         .    W  .   E.     .     .     .     .     L
       21. .    I  .      .         .    W  .   E.     .     .     .     .     L
       22. .    I  .      .         .    W  .   E.     .     .     .     .     L
       22. .    I  .      .         .    W  .   E.     .     .     .     .     L
22.50  23. .    I  .      .         .    W  .   E.     .     .     .     .     L
       23. .    I  .      .         .    W  .   E.     .     .     .     .     L
       24. .    I  .      .         .    W  .   E.     .     .     .     .     L
       24. .    I  .      .         .    W  .   E.     .     .     .     .     L
       25. .    I  .      .         .    W  .   E.     .     .     .     .     L
25.00  25. .     I .      .         .    W  .   E.     .     .     .     .     L
       26. .     I .      .         .    W  .    E    .     .     .     .     L
       26. .     I .      .         .    W  .    E    .     .     .     .     L
       27. .     I .      .         .    W  .    E    .     .     .     .     L
       27. .     I .      .         .    W  .    E    .     .     .     .     L
27.50  28. .     I .      .         .     W .    E    .     .     .     .     L
       28. .     I .      .         .     W .     E   .     .     .     .     L
       29. .     I .      .         .     W .     E   .     .     .     .     L
       29. .     I .      .         .     W .     E   .     .     .     .     L
       30. .     I .      .         .     W .     E   .     .     .     .     L
30.00  30. .      I.      .         .     W .     E   .     .     .     .     L
       31. .      I.      .         .     W .     E   .     .     .     .     L
       31. .      I.      .         .     W .     E   .     .     .     .     L
       32. .      I.      .         .      W.    E   .     .     .     .     L
       32. .      I.      .         .      W.    E   .     .     .     .     L
32.50  33. .      I.      .         .      W.    E   .     .     .     .     L
       33. .      I.      .         .      W.     E  .     .     .     .     L
       34. .      I.      .         .      W.     E  .     .     .     .     L
       34. .       I.     .         .      W.     E  .     .     .     .     L
       35. .       I.     .         .      W.     E  .     .     .     .     L
35.00  35. .       I.     .         .      W.     E  .     .     .     .     L
       36. .       I.     .         .       W.    E  .     .     .     .     L
       36. .       I.     .         .       W.    E  .     .     .     .     L
       37. .       I.     .         .       W.     E .     .     .     .     L
       37. .       I.     .         .       W.     E .     .     .     .     L
37.50  38. .        I     .         .       W.     E .     .     .     .     L
       38. .        I     .         .       W.     E .     .     .     .     L
       39. .        I     .         .       W.     E .     .     .     .     L
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       39. .     I     .     .     W.    E .     .     .     .     .     L
       40. .     I     .     .     W.    E .     .     .     .     .     L
40.00  40. .     I     .     .     W.    E .     .     .     .     .     L
       41. .     I     .     .      W     E.     .     .     .     .     L
       41. .     I     .     .      W     E.     .     .     .     .     L
       42. .     I     .     .      W     E.     .     .     .     .     L
       42. .     I     .     .      W     E.     .     .     .     .     L
42.50  43. .     .I    .     .      W     E.     .     .     .     .     L
       43. .     .I    .     .      .W    E.     .     .     .     .     L
       44. .     .I    .     .      .W    E.     .     .     .     .     L
       44. .     .I    .     .      .W    E.     .     .     .     .     L
       45. .     .I    .     .      .W    E.     .     .     .     .     L
45.00  45. .     . I   .     .      .W    E.     .     .     .     .     L
       46. .     . I   .     .      .W     E     .     .     .     .     L
       46. .     . I   .     .      .W     E     .     .     .     .     L
       47. .     . I   .     .      .W     E     .     .     .     .     L
       47. .     . I   .     .      .W     E     .     .     .     .     L
47.50  48. .     . I   .     .      .W     E     .     .     .     .     L
       48. .     . I   .     .      . W    .E    .     .     .     .     L
       49. .     . I   .     .      . W    .E    .     .     .     .     L
       49. .     . I   .     .      . W    .E    .     .     .     .     L
       50. .     . I   .     .      . W    .E    .     .     .     .     L
50.00  50. .     . I   .     .      . W    .E    .     .     .     .     L
       51. .     .  I  .     .      . W    .E    .     .     .     .     L
       51. .     .  I  .     .      . W    .E    .     .     .     .     L
       52. .     .  I  .     .      .  W   .E    .     .     .     .     L
       52. .     .  I  .     .      .  W   .E    .     .     .     .     L
52.50  53. .     . I   .     .      . W    .E    .     .     .     .     L
       53. .     . I   .     .      . W    . E   .     .     .     .     L
       54. .     . I   .     .      . W    . E   .     .     .     .     L
       54. .     .  I  .     .      . W    . E   .     .     .     .     L
       55. .     .  I  .     .      . W    . E   .     .     .     .     L
55.00  55. .     .  I  .     .      . W    . E   .     .     .     .     L
       56. .     .  I  .     .      .  W   . E   .     .     .     .     L
       56. .     .  I  .     .      .  W   . E   .     .     .     .     L
       57. .     .  I  .     .      .  W   .  E  .     .     .     .     L
       57. .     .  I  .     .      .  W   .  E  .     .     .     .     L
57.50  58. .     .  I  .     .      .  W   .  E  .     .     .     .     L
       58. .     .   I .     .      .  W   .  E  .     .     .     .     L
       59. .     .   I .     .      .  W   .  E  .     .     .     .     L
       59. .     .   I .     .      .  W   .  E  .     .     .     .     L
       60. .     .   I .     .      .  W   .  E  .     .     .     .     L
60.00  60. .     .   I .     .      .  W   .  E  .     .     .     .     L
       61. .     .   I .     .      .   W  .   E .     .     .     .     L
       61. .     .   I .     .      .  W   .  E  .     .     .     .     L
       62. .     .   I .     .      .  W   .  E  .     .     .     .     L
       62. .     .   I .     .      .  W   .  E  .     .     .     .     L
62.50  63. .     .   I .     .      .  W   .  E  .     .     .     .     L
       63. .     .   I .     .      .   W  .  E  .     .     .     .     L
       64. .     .   I .     .      .   W  .  E  .     .     .     .     L
       64. .     .   I .     .      .   W  .  E  .     .     .     .     L
       65. .     .   I .     .      .   W  .  E  .     .     .     .     L
65.00  65. .     .    I .     .     .   W  .  E  .     .     .     .     L
       66. .     .    I .     .     .   W  .   E .     .     .     .     L
       66. .     .    I .     .     .   W  .   E .     .     .     .     L
       67. .     .    I .     .     .   W  .   E .     .     .     .     L
       67. .     .    I .     .     .   W  .   E .     .     .     .     L
       68. .     .    I .     .     .   W  .   E .     .     .     .     L
67.88  68. .     .    I .     .     .   W  .   E .     .     .     .     L
       69. .     .    I .     .     .   CW .    E .     .     .     .     L
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        69. .     .     I .     .     .     C W .   E .     .     .     .     L
        70. .     .     I .     .     .     C  W.   E .     .     .     .     L
        70. .     .     I .     .     .     C  W    E .     .     .     .     L
70.50   71. .     .      I.     .     .     C  .W   E .     .     .     .     L
        71. .     .      I.     .     .     C  . W  E .     .     .     .     L
        72. .     .      I.     .     .     C  . W  E .     .     .     .     L
        72. .     .      I.     .     .     C  . W  E .     .     .     .     L
        73. .     .      I.     .     .     C  .  W E .     .     .     .     L
        73. .     .      I.     .     .     C  .  W E .     .     .     .     L
        74. .     .     I .     .     .     C  .  W E .     .     .     .     L
        74. .     .      I.     .     .     C  .  W E .     .     .     .     L
        75. .     .      I.     .     .     C  .  W E .     .     .     .     L
        75. .     .      I.     .     .     C  .  W E .     .     .     .     L
75.50   76. .     .      I.     .     .     C  .  W E .     .     .     .     L
        76. .     .      I.     .     .     C  .   W E.     .     .     .     L
        77. .     .      I.     .     .     C  .   W E.     .     .     .     L
        77. .     .      I.     .     .     C  .   W E.     .     .     .     L
        78. .     .      I.     .     .     C  .   W E.     .     .     .     L
        78. .     .      I.     .     .     C  .   W E.     .     .     .     L
        79. .     .       I     .     .     C  .   W E.     .     .     .     L
        79. .     .       I     .     .     C  .   W E.     .     .     .     L
        80. .     .       I     .     .     C  .   W E.     .     .     .     L
        80. .     .       I     .     .     C  .   W E.     .     .     .     L
80.50   81. .     .       I     .     .    C   .   W E.     .     .     .     L
        81. .     .       I     .     .    C   .   W E.     .     .     .     L
        82. .     .       I     .     .    C   .   W E.     .     .     .     L
        82. .     .       I     .     .    C   .   W E.     .     .     .     L
        83. .     .      .I     .     .    C   .   W E.     .     .     .     L
        83. .     .      .I     .     .    C   .   W E.     .     .     .     L
        84. .     .      .I     .     .    C   .   W E.     .     .     .     L
        84. .     .      .I     .     .    C   .   W E.     .     .     .     L
        85. .     .      .I     .     .    C   .   W E.     .     .     .     L
        85. .     .      .I     .     .    C   .   W E.     .     .     .     L
85.50   86. .     .      .I     .     .    C   .   W E.     .     .     .     L
        86. .     .      . I    .     .    C   .    W E.    .     .     .     L
        87. .     .      . I    .     .    C   .    W E.    .     .     .     L
        87. .     .      . I    .     .    C   .    W E.    .     .     .     L
        88. .     .      . I    .     .    C   .    W E.    .     .     .     L
        88. .     .      . I    .     .    C   .    W E.    .     .     .     L
        89. .     .      . I    .     .    C   .    W E.    .     .     .     L
        89. .     .      . I    .     .    C   .    W E.    .     .     .     L
        90. .     .      . I    .     .    C   .    W E.    .     .     .     L
        90. .     .      . I    .     .    C   .    W E.    .     .     .     L
90.50   91. .     .      . I    .     .    C   .    W E.    .     .     .     L
        91. .     .      . I    .     .    C   .    W E.    .     .     .     L
        92. .     .      . I    .     .    C   .    W E.    .     .     .     L
        92. .     .      . I    .     .    C   .    W E.    .     .     .     L
        93. .     .      . I    .     .    C   .    W E.    .     .     .     L
        93. .     .      . I    .     .    C   .    W E.    .     .     .     L
        94. .     .      . I    .     .    C   .    W E.    .     .     .     L
        94. .     .      .  I   .     .    C   .    W E.    .     .     .     L
        95. .     .      .  I   .     .    C   .    W E.    .     .     .     L
        95. .     .      .  I   .     .    C   .    W E.    .     .     .     L
95.50   96. .     .      .  I   .     .    C   .    W E.    .     .     .     L
        96. .     .      .  I   .     .    C   .     W E.   .     .     .     L
        97. .     .      .  I   .     .    C   .     W E.   .     .     .     L
        97. .     .      .  I   .     .    C   .     W E.   .     .     .     L
        98. .     .      .  I   .     .    C   .     W E.   .     .     .     L
        98. .     .      .  I   .     .    C   .     W E.   .     .     .     L
        99. .     .      .   I  .     .    C   .     W E.   .     .     .     L
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        99.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       100.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       100.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
100.50 101.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       101.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       102.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       102.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       103.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       103.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       104.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       104.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       105.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
       105.  .     .     .  I  .     .  C  .  W E.     .     .     .     L
105.50 106.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       106.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       107.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       107.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       108.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       108.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       109.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       109.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       110.  .     .     .   I .     .  C  .  W E.     .     .     .     L
       110.  .     .     .   I .     .  C  .  W E.     .     .     .     L
110.50 111.  .     .     .    I.     .  C  .  W E.     .     .     .     L
       111.  .     .     .    I.     .   C .   WE.     .     .     .     L
       112.  .     .     .    I.     .   C .   WE.     .     .     .     L
       112.  .     .     .    I.     .   C .   WE.     .     .     .     L
       113.  .     .     .    I.     .   C .   WE.     .     .     .     L
       113.  .     .     .    I.     .   C .   WE.     .     .     .     L
       114.  .     .     .    I.     .   C .   WE.     .     .     .     L
       114.  .     .     .    I.     .   C .   WE.     .     .     .     L
       115.  .     .     .    I.     .   C .   WE.     .     .     .     L
       115.  .     .     .    I.     .   C .   WE.     .     .     .     L
       116.  .     .     .    I.     .   C .   WE.     .     .     .     L
115.60 116.  .     .     .    I.     .   C .   WE.     .     .     .     L
       117.  .     .     .     I     .   C .   WE.     .     .     .     L
       117.  .     .     .     I     .   C .   WE.     .     .     .     L
117.50 118.  .     .     .     I     .   C .   WE.     .     .     .     L
       118.  .     .     .     .I    .    C.   W E     .     .     .     L
       119.  .     .     .     .I    .     C.  W E     .     .     .     L
       119.  .     .     .     .I    .     C.  W .E    .     .     .     L
       120.  .     .     .     .I    .      C  W .E    .     .     .     L
       120.  .     .     .     .I    .      .C W . E   .     .     .     L
       121.  .     .     .     .I    .      .C W . E   .     .     .     L
       121.  .     .     .     .I    .     . C  W . E  .     .     .     L
121.50 122.  .     .     .     .I    .     . C W  . E  .     .     .  L  .
       122.  .     .     .     . I   .     . C    W  E .     .     .  L  .
       123.  .     .     .     .  I  .     .C     . W E .     .     .  L  .
122.90 123.  .     .     .     .   I .     C      .  E .     .     .  L  .
       124.  .     .     .     .    .I     . C    .   WE.     .     .  L  .
       124.  .     .     .     .    . I   .   C   .   W E.     .     .  L  .
       125.  .     .     .     .    .  I  .     C.    W E     .     .  L  .
       125.  .     .     .     .    .   I.      . C   W. E    .     .  L  .
       126.  .     .     .     .    .    . I    .  C W. E    .     .  L  .
       126.  .     .     .     .    .    .  I   .   C W  E   .     .  L  .
126.50 127.  .     .     .     .    .    .   I .     .W  E   .     .  L  .
       127.  .     .     .     .    .    .    I.     .W  E   .  L  .     .
       128.  .     .     .     .    .    .    I.     .CW E L     .     .
       128.  .     .     .     .    .    .    I.     .CW  E .     .     .
128.50 129.  .     .     .     .    .    .    I. L   .C W E .     .     .
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          129. .     .     .     .     .     .     I .  L    .C W  E .     .     .
          130. .     .     .     .     .     .     I .  L    .C  W E .     .     .
          130. .     .     .     .     .     .     I .  L    .C  W E .     .     .
          131. .     .     .     .     .     .     I .   L   .C  W E .     .     .
          131. .     .     .     .     .     .      I.   L   .C   W E .     .     .
          132. .     .     .     .     .     .      I.   L   .C   W E .     .     .
          132. .     .     .     .     .     .      I. . L   .C   W E .     .     .
          133. .     .     .     .     .     .      I.    L  .C    WE .     .     .
133.00    133. .     .     .     .     .     .      I.    L  .C    WE .     .     .
          134. .     .     .     .     .     .      I.    L  .C    W E.     .     .
          134. .     .     .     .     .     .      I.     L .C    W E.     .     .
          135. .     .     .     .     .     .      I.     L .C    W E.     .     .
          135. .     .     .     .     .     .      I     L . C   W E.     .     .
          136. .     .     .     .     .     .      I     L . C   W E.     .     .
          136. .     .     .     .     .     .      I      L.C   W E.     .     .
          137. .     .     .     .     .     .      I      L.C   W E.     .     .
          137. .     .     .     .     .     .      I      L.C   W E.     .     .
          138. .     .     .     .     .     .      I      L.C   W E.     .     .
          138. .     .     .     .     .     .     .I      L. C  W E.     .     .
          139. .     .     .     .     .     .     .I      L. C  W E.     .     .
          139. .     .     .     .     .     .     .I      L. C  W E.     .     .
139.50    140. .     .     .     .     .     .     .I      L. C  W E.     .     .
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03NOV93      17:30:59                                                          PAGE    6
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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YR. FLOWS

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.000	.00	.00	.00	40.60	69.69	41.20	41.20	41.50	30.57	4.38	15.90	12.60
*	.000	.00	.00	.00	40.60	23.05	40.89	40.89	41.03	38.52	3.03	7.61	3.71
*	6.000	6.00	.00	.00	40.63	69.69	41.30	41.30	41.63	29.37	4.58	15.21	12.86
*	6.000	6.00	.00	.00	40.63	23.05	40.96	40.96	41.12	36.77	3.17	7.28	3.80
*	12.500	6.50	.00	.00	40.66	69.69	41.38	41.38	41.74	30.46	4.84	14.40	12.63
*	12.500	6.50	.00	.00	40.66	23.05	41.00	41.00	41.18	37.20	3.35	6.88	3.78
*	16.250	3.75	.00	.00	40.68	69.69	41.53	41.53	41.89	29.63	4.82	14.46	12.80
*	16.250	3.75	.00	.00	40.68	23.05	41.15	41.15	41.32	36.42	3.34	6.90	3.82
*	20.000	3.75	.00	.00	40.70	69.69	41.67	41.67	42.03	29.33	4.83	14.44	12.87
*	20.000	3.75	.00	.00	40.70	23.05	41.29	41.29	41.47	36.90	3.37	6.84	3.79

*	22.500	2.50	.00	.00	40.71	69.69	41.68	41.68	42.05	29.81	4.85	14.37	12.76
*	22.500	2.50	.00	.00	40.71	23.05	41.31	41.31	41.48	36.38	3.36	6.87	3.82
*	25.000	2.50	.00	.00	40.73	69.69	41.69	41.69	42.06	29.68	4.84	14.38	12.79
*	25.000	2.50	.00	.00	40.73	23.05	41.32	41.32	41.49	36.56	3.36	6.86	3.81
*	27.500	2.50	.00	.00	40.74	69.69	41.71	41.71	42.07	29.72	4.85	14.38	12.78
*	27.500	2.50	.00	.00	40.74	23.05	41.33	41.33	41.51	36.50	3.36	6.86	3.82
*	30.000	2.50	.00	.00	40.75	69.69	41.72	41.72	42.08	29.71	4.85	14.38	12.79
*	30.000	2.50	.00	.00	40.75	23.05	41.34	41.34	41.52	36.52	3.36	6.86	3.81
*	32.500	2.50	.00	.00	40.76	69.69	41.73	41.73	42.10	29.71	4.85	14.38	12.79
*	32.500	2.50	.00	.00	40.76	23.05	41.36	41.36	41.53	36.51	3.36	6.86	3.81
*	35.000	2.50	.00	.00	40.78	69.69	41.74	41.74	42.11	29.71	4.85	14.38	12.79
*	35.000	2.50	.00	.00	40.78	23.05	41.37	41.37	41.54	36.51	3.36	6.86	3.81

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	37.500	2.50	.00	.00	40.79	69.69	41.76	41.76	42.12	29.71	4.85	14.38	12.79
*	37.500	2.50	.00	.00	40.79	23.05	41.38	41.38	41.56	36.51	3.36	6.86	3.81
*	40.000	2.50	.00	.00	40.80	69.69	41.77	41.77	42.13	29.71	4.85	14.38	12.79
*	40.000	2.50	.00	.00	40.80	23.05	41.39	41.39	41.57	36.51	3.36	6.86	3.81
*	42.500	2.50	.00	.00	40.81	69.69	41.78	41.78	42.15	29.71	4.85	14.38	12.79
*	42.500	2.50	.00	.00	40.81	23.05	41.41	41.41	41.58	36.51	3.36	6.86	3.81
*	45.000	2.50	.00	.00	40.83	69.69	41.79	41.79	42.16	29.71	4.85	14.38	12.79
*	45.000	2.50	.00	.00	40.83	23.05	41.42	41.42	41.59	36.51	3.36	6.86	3.81
*	47.500	2.50	.00	.00	40.84	69.69	41.81	41.81	42.17	29.71	4.85	14.38	12.79
*	47.500	2.50	.00	.00	40.84	23.05	41.43	41.43	41.61	36.51	3.36	6.86	3.81
*	50.000	2.50	.00	.00	40.85	69.69	41.82	41.82	42.18	29.71	4.85	14.38	12.79
*	50.000	2.50	.00	.00	40.85	23.05	41.44	41.44	41.62	36.51	3.36	6.86	3.81
*	52.500	2.50	.00	.00	40.86	69.69	41.83	41.83	42.20	29.71	4.85	14.38	12.79
*	52.500	2.50	.00	.00	40.86	23.05	41.46	41.46	41.63	36.51	3.36	6.86	3.81
*	55.000	2.50	.00	.00	40.88	69.69	41.84	41.84	42.21	29.71	4.85	14.38	12.79
*	55.000	2.50	.00	.00	40.88	23.05	41.47	41.47	41.64	36.51	3.36	6.86	3.81
*	57.500	2.50	.00	.00	40.89	69.69	41.86	41.86	42.22	29.71	4.85	14.38	12.79
*	57.500	2.50	.00	.00	40.89	23.05	41.48	41.48	41.66	36.51	3.36	6.86	3.81
*	60.000	2.50	.00	.00	40.90	69.69	41.87	41.87	42.23	29.71	4.85	14.38	12.79
*	60.000	2.50	.00	.00	40.90	23.05	41.49	41.49	41.67	36.51	3.36	6.86	3.81
*	62.500	2.50	.00	.00	40.91	69.69	41.88	41.88	42.25	29.71	4.85	14.38	12.79
*	62.500	2.50	.00	.00	40.91	23.05	41.51	41.51	41.68	36.51	3.36	6.86	3.81
*	65.000	2.50	.00	.00	40.93	69.69	41.89	41.89	42.26	29.71	4.85	14.38	12.79
*	65.000	2.50	.00	.00	40.93	23.05	41.52	41.52	41.69	36.51	3.36	6.86	3.81

*	67.880	2.88	.00	.00	40.94	69.69	41.91	41.91	42.27	29.71	4.85	14.38	12.79
*	67.880	2.88	.00	.00	40.94	23.05	41.53	41.53	41.71	36.51	3.36	6.86	3.81
*	70.500	2.62	.00	.00	40.95	69.69	42.15	41.89	42.33	10.59	3.45	20.20	21.42
*	70.500	2.62	.00	.00	40.95	23.05	41.64	41.53	41.74	14.41	2.48	9.31	6.07
	75.500	5.00	.00	.00	40.98	69.69	42.21	41.86	42.35	7.28	2.96	23.51	25.84
	75.500	5.00	.00	.00	40.98	23.05	41.69	41.52	41.75	9.08	2.07	11.13	7.65
	80.500	5.00	.00	.00	41.00	69.69	42.25	41.83	42.36	5.49	2.63	26.50	29.74
	80.500	5.00	.00	.00	41.00	23.05	41.70	41.51	41.76	7.53	1.89	12.20	8.40
	85.500	5.00	.00	.00	41.03	69.69	42.28	41.81	42.37	4.47	2.39	29.10	32.97
	85.500	5.00	.00	.00	41.03	23.05	41.72	41.51	41.77	6.54	1.75	13.16	9.02

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	90.500	5.00	.00	.00	41.05	69.69	42.30	41.79	42.38	3.82	2.22	31.41	35.66
	90.500	5.00	.00	.00	41.05	23.05	41.73	41.51	41.77	5.49	1.61	14.29	9.84
	95.500	5.00	.00	.00	41.08	69.69	42.31	41.78	42.38	3.28	2.06	33.79	38.47
	95.500	5.00	.00	.00	41.08	23.05	41.74	41.51	41.77	4.86	1.51	15.25	10.46
	100.500	5.00	.00	.00	41.10	69.69	42.33	41.77	42.39	2.83	1.92	36.25	41.46
	100.500	5.00	.00	.00	41.10	23.05	41.75	41.51	41.78	4.29	1.42	16.25	11.12
	105.500	5.00	.00	.00	41.13	69.69	42.34	41.76	42.39	2.55	1.82	38.31	43.67
	105.500	5.00	.00	.00	41.13	23.05	41.75	41.51	41.78	4.00	1.35	17.02	11.53
	110.500	5.00	.00	.00	41.15	69.69	42.35	41.76	42.39	2.27	1.72	40.58	46.30
	110.500	5.00	.00	.00	41.15	23.05	41.76	41.51	41.78	3.67	1.29	17.87	12.03
	115.600	5.10	.00	.00	41.19	69.69	42.35	41.76	42.39	2.10	1.64	42.46	48.14
	115.600	5.10	.00	.00	41.19	23.05	41.76	41.53	41.79	3.65	1.26	18.30	12.06
	117.500	1.90	.00	.00	41.21	69.69	42.35	41.78	42.39	2.20	1.66	41.86	47.04
	117.500	1.90	.00	.00	41.21	23.05	41.76	41.55	41.79	4.18	1.31	17.57	11.27
*	121.500	4.00	.00	.00	41.23	69.69	42.34	42.09	42.43	9.88	2.41	28.90	22.17
*	121.500	4.00	.00	.00	41.23	23.05	41.73	41.65	41.87	30.07	2.98	7.75	4.20
*	122.900	1.40	.00	.00	41.36	69.69	42.41	41.83	42.46	2.06	1.62	43.07	48.54
*	122.900	1.40	.00	.00	41.36	23.05	41.92	41.60	41.93	2.03	1.04	22.06	16.17
*	126.500	3.60	.00	.00	41.75	69.69	42.37	42.24	42.50	14.41	2.93	23.82	18.36
*	126.500	3.60	.00	.00	41.75	23.05	42.02	42.02	42.12	41.74	2.60	8.85	3.57
	128.500	2.00	.00	.00	41.76	69.69	42.41	42.23	42.52	10.37	2.59	26.90	21.64
*	128.500	2.00	.00	.00	41.76	23.05	42.07	42.02	42.14	21.11	2.07	11.15	5.02
	133.000	4.50	.00	.00	41.78	69.69	42.46	42.22	42.53	6.26	2.06	33.88	27.85
	133.000	4.50	.00	.00	41.78	23.05	42.11	42.02	42.15	11.19	1.58	14.62	6.89
	139.500	6.50	.00	.00	41.82	69.69	42.49	42.22	42.54	5.14	1.78	39.08	30.74
	139.500	6.50	.00	.00	41.82	23.05	42.13	42.06	42.16	13.12	1.52	15.16	6.36

100-YR. FLOWS

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.000	69.69	41.20	.00	.00	-1.30	26.98	.00
*	.000	23.05	40.89	-.31	.00	-1.61	26.98	.00
*	6.000	69.69	41.30	.00	.10	.00	23.48	6.00
*	6.000	23.05	40.96	-.34	.07	.00	23.48	6.00
*	12.500	69.69	41.38	.00	.08	.00	20.01	6.50
*	12.500	23.05	41.00	-.38	.04	.00	20.00	6.50
*	16.250	69.69	41.53	.00	.15	.00	20.01	3.75
*	16.250	23.05	41.15	-.38	.15	.00	20.00	3.75
*	20.000	69.69	41.67	.00	.14	.00	20.00	3.75
*	20.000	23.05	41.29	-.38	.14	.00	20.00	3.75
*	22.500	69.69	41.68	.00	.01	.00	20.00	2.50
*	22.500	23.05	41.31	-.37	.01	.00	20.00	2.50
*	25.000	69.69	41.69	.00	.01	.00	20.00	2.50
*	25.000	23.05	41.32	-.38	.01	.00	20.00	2.50
*	27.500	69.69	41.71	.00	.01	.00	20.00	2.50
*	27.500	23.05	41.33	-.38	.01	.00	20.00	2.50
*	30.000	69.69	41.72	.00	.01	.00	20.00	2.50
*	30.000	23.05	41.34	-.38	.01	.00	20.00	2.50
*	32.500	69.69	41.73	.00	.01	.00	20.00	2.50
*	32.500	23.05	41.36	-.38	.01	.00	20.00	2.50
*	35.000	69.69	41.74	.00	.01	.00	20.00	2.50
*	35.000	23.05	41.37	-.38	.01	.00	20.00	2.50
*	37.500	69.69	41.76	.00	.01	.00	20.00	2.50
*	37.500	23.05	41.38	-.38	.01	.00	20.00	2.50
*	40.000	69.69	41.77	.00	.01	.00	20.00	2.50
*	40.000	23.05	41.39	-.38	.01	.00	20.00	2.50
*	42.500	69.69	41.78	.00	.01	.00	20.00	2.50
*	42.500	23.05	41.41	-.38	.01	.00	20.00	2.50
*	45.000	69.69	41.79	.00	.01	.00	20.00	2.50
*	45.000	23.05	41.42	-.38	.01	.00	20.00	2.50
*	47.500	69.69	41.81	.00	.01	.00	20.00	2.50
*	47.500	23.05	41.43	-.38	.01	.00	20.00	2.50

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	50.000	69.69	41.82	.00	.01	.00	20.00	2.50
*	50.000	23.05	41.44	-.38	.01	.00	20.00	2.50
*	52.500	69.69	41.83	.00	.01	.00	20.00	2.50
*	52.500	23.05	41.46	-.38	.01	.00	20.00	2.50
*	55.000	69.69	41.84	.00	.01	.00	20.00	2.50
*	55.000	23.05	41.47	-.38	.01	.00	20.00	2.50
*	57.500	69.69	41.86	.00	.01	.00	20.00	2.50
*	57.500	23.05	41.48	-.38	.01	.00	20.00	2.50
*	60.000	69.69	41.87	.00	.01	.00	20.00	2.50
*	60.000	23.05	41.49	-.38	.01	.00	20.00	2.50
*	62.500	69.69	41.88	.00	.01	.00	20.00	2.50
*	62.500	23.05	41.51	-.38	.01	.00	20.00	2.50
*	65.000	69.69	41.89	.00	.01	.00	20.00	2.50
*	65.000	23.05	41.52	-.38	.01	.00	20.00	2.50
*	67.880	69.69	41.91	.00	.01	.00	20.00	2.88
*	67.880	23.05	41.53	-.38	.01	.00	20.00	2.88
*	70.500	69.69	42.15	.00	.24	.00	21.17	2.62
*	70.500	23.05	41.64	-.50	.11	.00	21.16	2.62
	75.500	69.69	42.21	.00	.07	.00	23.39	5.00
	75.500	23.05	41.69	-.53	.04	.00	23.38	5.00
	80.500	69.69	42.25	.00	.04	.00	25.60	5.00
	80.500	23.05	41.70	-.55	.02	.00	25.59	5.00
	85.500	69.69	42.28	.00	.03	.00	27.82	5.00
	85.500	23.05	41.72	-.56	.01	.00	27.81	5.00
	90.500	69.69	42.30	.00	.02	.00	30.03	5.00
	90.500	23.05	41.73	-.57	.01	.00	30.02	5.00
	95.500	69.69	42.31	.00	.02	.00	32.25	5.00
	95.500	23.05	41.74	-.58	.01	.00	32.24	5.00
	100.500	69.69	42.33	.00	.01	.00	34.47	5.00
	100.500	23.05	41.75	-.58	.01	.00	34.46	5.00
	105.500	69.69	42.34	.00	.01	.00	36.69	5.00
	105.500	23.05	41.75	-.58	.01	.00	36.68	5.00
	110.500	69.69	42.35	.00	.01	.00	38.90	5.00
	110.500	23.05	41.76	-.59	.01	.00	38.89	5.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	115.600	69.69	42.35	.00	.01	.00	41.16	5.10
	115.600	23.05	41.76	-.59	.00	.00	41.15	5.10
	117.500	69.69	42.35	.00	.00	.00	41.16	1.90
	117.500	23.05	41.76	-.59	.00	.00	41.15	1.90
*	121.500	69.69	42.34	.00	-.01	.00	42.01	4.00
*	121.500	23.05	41.73	-.61	-.03	.00	16.05	4.00
*	122.900	69.69	42.41	.00	.07	.00	42.02	1.40
*	122.900	23.05	41.92	-.50	.18	.00	42.01	1.40
*	126.500	69.69	42.37	.00	-.04	.00	42.02	3.60
*	126.500	23.05	42.02	-.36	.10	.00	42.00	3.60
	128.500	69.69	42.41	.00	.04	.00	45.00	2.00
*	128.500	23.05	42.07	-.34	.06	.00	45.00	2.00
	133.000	69.69	42.46	.00	.05	.00	55.00	4.50
	133.000	23.05	42.11	-.35	.04	.00	55.00	4.50
	139.500	69.69	42.49	.00	.02	.00	68.00	6.50
	139.500	23.05	42.13	-.36	.01	.00	68.00	6.50

1

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=      .000  PROFILE=  2  CRITICAL DEPTH ASSUMED

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CAUTION SECNO=    22.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     50.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=     50.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

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CAUTION SECNO=     62.500  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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WARNING SECNO=     70.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    121.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    121.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    122.900  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    122.900  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    126.500  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=    126.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    126.500  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    128.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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HEC-2 RUNDOWN ANALYSIS
SUBCRITICAL

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    03NOV93    TIME   17:31:43 *
 ******************************************

                                          ****************************************
                                          *  U.S. ARMY CORPS OF ENGINEERS        *
                                          *  HYDROLOGIC ENGINEERING CENTER       *
                                          *  609 SECOND STREET, SUITE D          *
                                          *  DAVIS, CALIFORNIA 95616-4687        *
                                          *          (916) 756-1104              *
                                          ****************************************

X    X  XXXXXXX  XXXXX                XXXXX
X    X  X      X    X              X    X
X    X  X      X                        X
XXXXXXX  XXXX   X         XXXXX   XXXXX
X    X  X      X                   X
X    X  X      X    X              X
X    X  XXXXXXX  XXXXX             XXXXXXX

1
  03NOV93      17:31:43                                                          PAGE    1

                                                                THIS RUN EXECUTED 03NOV93    17:31:43

 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************


T1       RUNDOWN-SUPERCRITICAL FLOWS
T2
T3       100-YR. FLOWS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

              2.                 1.      -1.                                42.5

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     1.                                                    -1.

J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

   -10.      -10.

J6  IHLEQ     ICOPY    SUBDIV   STRTDS   RMILE

     1.


NC     .013      .013      .013       .3       .5
QT       2.    69.69     23.05
X1    139.5       3.       0.0     68.0     9.19     9.19      6.5
```

X3	10.							45.	45.	
GR	41.99	0.0	41.82	34.0	41.99	68.0				
X1	133.0	3.	6.5	61.5	6.36	6.36	4.5			
X3	10.							45.	45.	
GR	41.92	6.5	41.78	34.0	41.92	61.5				
X1	128.5	3.	11.5	56.5	2.83	2.83	2.			
X3	10.							45.	45.	
GR	41.87	11.5	41.76	34.0	41.87	56.5				
X1	126.5	5.	12.99	55.01	3.60	3.60	3.60			
X3	10.							45.	45.	
GR	42.53	12.99	41.86	13.0	41.75	34.0	41.86	55.0	42.53	55.01
NC	.013	.013	.013	.5	.7					
X1	122.9	5.	12.99	55.01	1.4	1.4	1.4			
GR	42.53	12.99	41.42	13.0	41.36	34.0	41.42	55.0	42.53	55.01

1

X1	121.5	36.	12.99	55.01	4.	4.	4.			
GR	42.53	12.99	41.95	13.0	41.89	23.37	41.27	23.38	41.26	25.37
GR	41.88	25.38	41.88	26.12	41.26	26.13	41.25	28.12	41.87	28.13
GR	41.87	28.87	41.25	28.88	41.24	30.87	41.86	30.88	41.86	31.62
GR	41.24	31.63	41.23	33.62	41.85	33.63	41.85	34.37	41.23	34.38
GR	41.24	36.37	41.86	36.38	41.86	37.12	41.24	37.13	41.25	39.12
GR	41.87	39.13	41.87	39.87	41.25	39.88	41.26	41.87	41.88	41.88
GR	41.88	42.62	41.26	42.63	41.27	44.62	41.89	44.63	41.95	55.00
GR	42.53	55.01								
X1	117.5				1.95	1.95	1.9		-0.02	
NC	.013	.013	.013	.3	.5					
X1	115.6	5.	13.41	54.58	5.22	5.22	5.1			
GR	43.44	13.41	41.44	13.42	41.19	34.0	41.44	54.57	43.44	54.58
X1	110.5	5.	14.54	53.45	5.12	5.12	5.0			
GR	43.44	14.54	41.44	14.55	41.15	34.0	41.44	53.44	43.44	53.45
X1	105.5	5.	15.65	52.35	5.12	5.12	5.0			
GR	43.44	15.65	41.44	15.66	41.13	34.0	41.44	52.34	43.44	52.35
X1	100.5	5.	16.76	51.24	5.12	5.12	5.0			
GR	43.44	16.76	41.44	16.77	41.10	34.0	41.44	51.23	43.44	51.24
X1	95.5	5.	17.87	50.13	5.12	5.12	5.0			
GR	43.44	17.87	41.44	17.88	41.08	34.0	41.44	50.12	43.44	50.13
X1	90.5	5.	18.98	49.02	5.12	5.12	5.0			
GR	43.44	18.98	41.44	18.99	41.05	34.0	41.44	49.01	43.44	49.02
X1	85.5	5.	20.08	47.91	5.12	5.12	5.0			
GR	43.44	20.08	41.44	20.09	41.03	34.0	41.44	47.90	43.44	47.91
X1	80.5	5.	21.19	46.80	5.12	5.12	5.0			
GR	43.44	21.19	41.44	21.20	41.00	34.0	41.44	46.79	43.44	46.80

X1	75.5	5.	22.30	45.70	5.12	5.12	5.0			
GR	43.44	22.30	41.44	22.31	40.98	34.0	41.44	45.69	43.44	45.70
X1	70.5	5.	23.41	44.59	2.68	2.68	2.62			
GR	43.44	23.41	41.44	23.42	40.95	34.0	41.44	44.58	43.44	44.59
X1	67.88	5.	23.99	44.01	2.88	2.88	2.88			
GR	43.44	23.99	41.44	24.00	40.94	34.0	41.44	44.00	43.44	44.01
NC	.013	.013	.013	.1	.3					
X1	65.00				2.5	2.5	2.5		-0.0144	

X1	62.50	2.5	2.5	2.5	-0.0125
X1	60.00	2.5	2.5	2.5	-0.0125
X1	57.50	2.5	2.5	2.5	-0.0125
X1	55.00	2.5	2.5	2.5	-0.0125
X1	52.50	2.5	2.5	2.5	-0.0125
X1	50.00	2.5	2.5	2.5	-0.0125
X1	47.50	2.5	2.5	2.5	-0.0125
X1	45.00	2.5	2.5	2.5	-0.0125
X1	42.50	2.5	2.5	2.5	-0.0125
X1	40.00	2.5	2.5	2.5	-0.0125
X1	37.50	2.5	2.5	2.5	-0.0125
X1	35.00	2.5	2.5	2.5	-0.0125
X1	32.50	2.5	2.5	2.5	-0.0125
X1	30.00	2.5	2.5	2.5	-0.0125
X1	27.50	2.5	2.5	2.5	-0.0125
X1	25.00	2.5	2.5	2.5	-0.0125
X1	22.50	2.5	2.5	2.5	-0.0125

X1	20.00	5.	23.99	44.01	3.75	3.75	3.75			
GR	43.20	23.99	41.20	24.00	40.70	34.0	41.20	44.00	43.20	44.01
X1	16.25	5.	23.99	44.01	3.75	3.75	3.75			
GR	43.18	23.99	40.93	24.00	40.68	34.0	40.93	44.00	43.18	44.01
NC	.013	.013	.013	0.3	0.5					
X1	12.50	4.	23.99	44.01	6.5	6.5	6.5			
GR	43.16	23.99	40.66	24.00	40.66	44.00	43.16	44.01		

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 X1     6.0       4.     22.27     45.75       6.       6.       6.
 X3    10.                                                     43.      43.
 GR   40.92    22.27    40.63     24.0    40.63     44.0    40.92    45.75
1
    03NOV93    17:31:43                                                          PAGE    4


 X1     0.0       4.     20.51     47.49
 X3    10.                                                     43.      43.
 GR   40.63    20.51     40.6     24.0     40.6     34.0    40.63    47.49
1
    03NOV93    17:31:43                                                          PAGE    5


 IHLEQ = 1.  THEREFORE FRICTION LOSS (HL) IS CALCULATED AS A FUNCTION OF
 PROFILE TYPE, WHICH CAN VARY FROM REACH TO REACH.  SEE DOCUMENTATION FOR
 DETAILS.
1
 PROFILE FOR STREAM  100-YR. FLOWS


 PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

 ELEVATION   41.     41.     41.     41.     41.     42.     42.     42.     42.     42.
    SECNO   CUMDIS

   139.50    0.  .       .       .       .       .       .      .I      L.      .W      E.      .
             1.  .       .       .       .       .       .      .I      L.      .W      E.      .
             1.  .       .       .       .       .       .      .I      L.      .W      E.      .
             2.  .       .       .       .       .       .      .I      L.      .W      E.      .
             2.  .       .       .       .       .       .      I      L .      .W      E.      .
             3.  .       .       .       .       .       .      I      L .      .W      E.      .
             3.  .       .       .       .       .       .      I      L .      .W      E.      .
             4.  .       .       .       .       .       .      I      L .      .W       E      .
             4.  .       .       .       .       .       .      I     L  .      .W       E      .
             5.  .       .       .       .       .       .      I     L  .      .W       E      .
             5.  .       .       .       .       .       .     I.     L  .      .W       E      .
             6.  .       .       .       .       .       .     I.     L  .      .W       E      .
             6.  .       .       .       .       .       .     I.    L   .      .W       E      .
   133.00    7.  .       .       .       .       .       .     I.    L   .      .W       E      .
             7.  .       .       .       .       .       .     I.    L   .      .W       E      .
             8.  .       .       .       .       .       .     I.   L    .      .W      .E      .
             8.  .       .       .       .       .       .     I.   L    .      .W      .E      .
             9.  .       .       .       .       .       .     I.   L    .      .W      .E      .
             9.  .       .       .       .       .       .    I .   L    .      .W      .E      .
            10.  .       .       .       .       .       .    I .  L     .      .W      . E     .
            10.  .       .       .       .       .       .    I .  L     .      .W      . E     .
            11.  .       .       .       .       .       .    I .  L     .      .W      . E     .
   128.50   11.  .       .       .       .       .       .    I . L      .      .W      . E     .
            12.  .       .       .       .       .       .    I .       . L     . W     .  E    .
            12.  .       .       .       .       .       .    I .       .      L W     .  E    .
            13.  .       .       .       .       .       .    I .       .      . W   L .  E    .
   126.50   13.  .       .       .       .       .       .   I  .       .      . W     .  E L  .
            14.  .       .       .       .       .       .  I   .       .     WC.      . E  L  .
            14.  .       .       .       .       .       . I    .       . W C  .       E    L  .
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        15. .     .     .     .     .     I.    .     W C   .     E.    L .
        15. .     .     .     .     .   I .     .   W  .C     .    E .  L .
        16. .     .     .     .     . I   .     . W   C .     .   E  .  L .
        16. .     .     .     .    .I     .   W .  C  .     .  E   .  L .
        17. .     .     .     .   I.      . W   . C   .     . E    .  L .
122.90  17. .     .     .     .  I .      . W   .C    .     .E     .  L .
        18. .     .     .     . I  .      .     .W  C .     . E    .  L .
121.50  18. .     .     .    .I    .      .     .     . W   .   E  .  L .
        19. .     .     .    .I    .      .     .     . W   .   E  .  L .
        19. .     .     .    .I    .      .     .     . W   .   E  .  L .
        20. .     .     .    .I    .      .     .     . W   .   E  .  L .
        20. .     .     .    .I    .      .     .     . W   .  E   .  L .
        21. .     .     .    .I    .      .     .     . W   .  E   .  L .
        21. .     .     .    .I    .      .     .     . W   .  E   .  L .
        22. .     .     .    .I    .      .     .     . W   .  E   .  L .
117.50  22. .     .     .    I     .      .     .     . WC  .  E   .  L .
        23. .     .     .    I     .      .     .   W C     . E    .     L
        23. .     .     .    I     .      .    .W  C  .     .E     .     L
        24. .     .     .    I     .      .  W  .C     .    E       .     L
115.60  24. .     .     .   I.     .     W.     C .     .     E .   .     L
        25. .     .     .   I.     .     W      C .     .     E .   .     L
        25. .     .     .   I.     .     W      C .     .    E  .   .     L
        26. .     .     .   I.     .     .W     C .     .   E   .   .     L
        26. .     .     .   I.     .     .W     C .     .  E    .   .     L
        27. .     .     .   I.     .     . W    C .     .  E    .   .     L
        27. .     .     .  I .     .     . W    C .     . E     .   .     L
        28. .     .     .  I .     .     . W    C .     .E      .   .     L
        28. .     .     .   I .    .     . W   C .     . E     .   .     L
        29. .     .     .   I .    .     . W   C .     .E      .   .     L
110.50  29. .     .     .   I .    .     . W   C .     E       .   .     L
        30. .     .     .  I  .    .     .  W  C .     E       .   .     L
        30. .     .     .  I  .    .     .  W  C .     E       .   .     L
        31. .     .     .  I  .    .     .   W C .     E       .   .     L
        31. .     .     .  I  .    .     .   W C .     E       .   .     L
        32. .     .     .  I  .    .     .   W C .     E       .   .     L
        32. .     .     .  I  .    .     .    WC .     E       .   .     L
        33. .     .     .  I  .    .     .    WC .     E       .   .     L
        33. .     .     .  I  .    .     .    WC .     E       .   .     L
        34. .     .     .  I  .    .     .     W .     E       .   .     L
105.50  34. .     .     .  I  .    .     .     W .     E       .   .     L
        35. .     .     . I   .    .     .     W .     .E      .   .     L
        35. .     .     . I   .    .     .     W .     .E      .   .     L
        36. .     .     . I   .    .     .     W .     .E      .   .     L
        36. .     .     . I   .    .     .     W .     .E      .   .     L
        37. .     .     .  I  .    .     .     W .     .E      .   .     L
        37. .     .     .  I  .    .     .     W .     .E      .   .     L
        38. .     .     . I   .    .     .     W .     .E      .   .     L
        38. .     .     . I   .    .     .     W .     .E      .   .     L
        39. .     .     . I   .    .     .     W .     .E      .   .     L
100.50  39. .     .     . I   .    .     .     W .     .E      .   .     L
        40. .     .     . I   .    .     .      W.     .E      .   .     L
        40. .     .     . I   .    .     .      W.     .E      .   .     L
        41. .     .     . I   .    .     .      W.     .E      .   .     L
        41. .     .     . I   .    .     .      W.     . E     .   .     L
        42. .     .     . I   .    .     .      W.     . E     .   .     L
        42. .     .     . I   .    .     .      W.     . E     .   .     L
        43. .     .     . I   .    .     .      W.     . E     .   .     L
        43. .     .     . I   .    .     .      W.     . E     .   .     L
        44. .     .     . I   .    .     .      W.     . E     .   .     L
 95.50  44. .     .     . I   .    .     .      W.     . E     .   .     L
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	45.	.	.	. I	.	.	.	W.	.	E	.	.	L
	45.	.	.	. I	.	.	.	W.	.	E	.	.	L
	46.	.	.	. I	.	.	.	W.	.	E	.	.	L
	46.	.	.	. I	.	.	.	W.	.	E	.	.	L
	47.	.	.	. I	.	.	.	W.	.	E	.	.	L
	47.	.	.	. I	.	.	.	W.	.	E	.	.	L
	48.	.	.	. I	.	.	.	W.	.	E	.	.	L
	48.	.	.	. I	.	.	.	W.	.	E	.	.	L
	49.	.	.	. I	.	.	.	W.	.	E	.	.	L
90.50	49.	.	.	. I	.	.	.	W.	.	E	.	.	L
	50.	.	.	. I	.	.	.	W	.	E	.	.	L
	50.	.	.	. I	.	.	.	W	.	E	.	.	L
	51.	.	.	. I	.	.	.	W	.	E	.	.	L
	51.	.	.	. I	.	.	.	W	.	E	.	.	L
	52.	.	.	. I	.	.	.	W	.	E	.	.	L
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	53.	.	.	. I	.	.	.	W	.	E	.	.	L
	53.	.	.	. I	.	.	.	W	.	E	.	.	L
	54.	.	.	. I	.	.	.	W	.	E	.	.	L
85.50	54.	.	.	.I	.	.	.	W	.	E	.	.	L
	55.	.	.	.I	.	.	.	.W	.	E	.	.	L
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	56.	.	.	.I	.	.	.	.W	.	E	.	.	L
	56.	.	.	.I	.	.	.	.W	.	E	.	.	L
	57.	.	.	.I	.	.	.	.W	.	E	.	.	L
	57.	.	.	.I	.	.	.	.W	.	E	.	.	L
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	63.	.	.	I.	.	.	.	. W	.	E.	.	.	L
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	73.	.	.	I .	.	.	.	. W	.	. E	.	.	L
	74.	.	.	I .	.	.	.	. W	.	. E	.	.	L
	74.	.	.	I .	.	.	.	. W	.	. E	.	.	L

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65.00  75.  .     .     I  .     .     .     .     .  W  .     .  E  .     L
       75.  .     .    I   .     .     .     .     .  W  .     .  E  .     L
       76.  .     .    I   .     .     .     .     .  W  .     .  E  .     L
       76.  .     .    I   .     .     .     .     .  W  .     .  E  .     L
       77.  .     .    I   .     .     .     .     .  W  .     .  E  .     L
62.50  77.  .     .    I   .     .     .     .     .  WC .     .  E  .     L
       78.  .     .   I    .     .     .     .     .  WC .     .  E  .     L
       78.  .     .   I    .     .     .     .     .  WC .     .  E  .     L
       79.  .     .   I    .     .     .     .     .  WC .     .  E  .     L
       79.  .     .    I   .     .     .     .     . W C .     .  E  .     L
60.00  80.  .     .    I   .     .     .     .     . WC .     . E  .     L
       80.  .     .    I   .     .     .     .     . WC .     . E  .     L
       81.  .     .    I   .     .     .     .     . WC .     . E  .     L
       81.  .     .    I   .     .     .     .     .  W .     . E  .     L
       82.  .     .    I   .     .     .     .     .  W .     . E  .     L
57.50  82.  .     .   I    .     .     .     .     .  W .     .E   .     L
       83.  .     .   I    .     .     .     .     .  W .     .E   .     L
       83.  .     .   I    .     .     .     .     . WC .     .E   .     L
       84.  .     .   I    .     .     .     .     . W  .     .E   .     L
       84.  .     .   I    .     .     .     .     . W  .     .E   .     L
55.00  85.  .     .   I    .     .     .     .     .WC  .     .E   .     L
       85.  .     .   I    .     .     .     .     .WC  .     .E   .     L
       86.  .     .   I    .     .     .     .     W C  .     .E   .     L
       86.  .     . I      .     .     .     .     W. C .     E    .     L
       87.  .     . I      .     .     .     .     W. C .     E    .     L
52.50  87.  .     . I      .     .     .     .     W .C .     E    .     L
       88.  .     . I      .     .     .     .     W .C .     E    .     L
       88.  .     . I      .     .     .     .     W .C .     E    .     L
       89.  .     . I      .     .     .     .     W .C .     E    .     L
       89.  .     . I      .     .     .     .     W .C .     E    .     L
50.00  90.  .     . I      .     .     .     .     W .C .     E.   .     L
       90.  .     . I      .     .     .     .     W .C .     E.   .     L
       91.  .     . I      .     .     .     .     W .C .     E.   .     L
       91.  .     . I      .     .     .     .     W .C .     E.   .     L
       92.  .     . I      .     .     .     .     W .C .     E.   .     L
47.50  92.  .     . I      .     .     .     .     W C  .     E .  .     L
       93.  .     . I      .     .     .     .     WC   .     E .  .     L
       93.  .     . I      .     .     .     .     WC   .     E .  .     L
       94.  .     . I      .     .     .     .     WC   .     E .  .     L
       94.  .     . I      .     .     .     .     WC   .     E .  .     L
45.00  95.  .     . I      .     .     .     .     W.   .     E .  .     L
       95.  .     .I       .     .     .     .     W.   .     E .  .     L
       96.  .     .I       .     .     .     .     W.   .     E .  .     L
       96.  .     .I       .     .     .     .     W.   .     E .  .     L
       97.  .     .I       .     .     .     .     W.   .     E .  .     L
42.50  97.  .     .I       .     .     .     .     WC.  .     E .  .     L
       98.  .     I        .     .     .     .     WC.  .     E .  .     L
       98.  .     I        .     .     .     .     WC.  .     E .  .     L
       99.  .     I        .     .     .     .     WC.  .     E .  .     L
       99.  .     I        .     .     .     .     WC.  .     E .  .     L
40.00  100. .     I        .     .     .     .     W .  .     E .  .     L
       100. .     I        .     .     .     .     W .  .     E .  .     L
       101. .     I        .     .     .     .     W .  .     E .  .     L
       101. .     I        .     .     .     .     W .  .     E .  .     L
       102. .     I        .     .     .     .     W .  .     E .  .     L
37.50  102. .     I        .     .     .     .     WC . .     E  .     L
       103. .     I.       .     .     .     .     WC . .     E  .     L
       103. .     I.       .     .     .     .     WC . .     E  .     L
       104. .     I.       .     .     .     .     W  . .     E  .     L
       104. .     I.       .     .     .     .     WC . .     E  .     L
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35.00 105.  .     I.     .     .     .     .  WC  .     .  E  .     .     L
      105.  .     I.     .     .     .     .  WC  .     .  E  .     .     L
      106.  .     I.     .     .     .     .  WC  .     .  E  .     .     L
      106.  .    I .     .     .     .     .  WC  .     . E   .     .     L
      107.  .    I .     .     .     .     .  WC  .     . E   .     .     L
32.50 107.  .    I .     .     .     .     .  WC  .     . E   .     .     L
      108.  .    I .     .     .     .     .  WC  .     . E   .     .     L
      108.  .    I .     .     .     .     .  WC  .     . E   .     .     L
      109.  .    I .     .     .     .     .  W   .     . E   .     .     L
      109.  .     I .    .     .     .     .  W   .     . E   .     .     L
30.00 110.  .     I .    .     .     .     .  WC  .     . E   .     .     L
      110.  .    I  .    .     .     .     .  WC  .     . E   .     .     L
      111.  .    I  .    .     .     .     .  WC  .     . E   .     .     L
      111.  .    I  .    .     .     .     .  WC  .     . E   .     .     L
      112.  .    I  .    .     .     .     . W C  .     . E   .     .     L
27.50 112.  .    I  .    .     .     .     . WC   .     . E   .     .     L
      113.  .    I  .    .     .     .     . WC   .     . E   .     .     L
      113.  .    I  .    .     .     .     . WC   .     . E   .     .     L
      114.  .    I  .    .     .     .     .  W   .     . E   .     .     L
      114.  .    I  .    .     .     .     .  W   .     . E   .     .     L
25.00 115.  .    I  .    .     .     .     .  W   .     . E   .     .     L
      115.  .   I   .    .     .     .     .  W   .     . E   .     .     L
      116.  .   I   .    .     .     .     . WC   .     . E   .     .     L
      116.  .   I   .    .     .     .     . W    .     . E   .     .     L
      117.  .   I   .    .     .     .     . W    .     . E   .     .     L
22.50 117.  .   I   .    .     .     .     . WC   .     . E   .     .     L
      118.  .  I    .    .     .     .     . WC   .     . E   .     .     L
      118.  .  I    .    .     .     .     . W C  .     . E   .     .     L
      119.  .  I    .    .     .     .     .W  C  .     . E   .     .     L
      119.  .  I    .    .     .     .     .W  C  .     . E   .     .     L
20.00 120.  .  I    .    .     .     .     W  C   .     . E   .     .     L
      120.  .  I    .    .     .     .    W .  C  .     . E   .     .     L
      121.  .  I    .    .     .     .   W  . C  .     .E    .     .     L
      121.  .  I    .    .     .     .  W   .C   .     .E    .     .     L
      122.  . I     .    .     .     . W    C    .     .E    .     .     L
      122.  . I     .    .     .     .W     C.   .     .E    .     .     L
      123.  . I     .    .     .     W      C .  .     E     .     .     L
      123.  . I     .    .     .    W .     C .  .     E     .     .     L
16.25 124.  . I     .    .     .   W  .    C  .  .     E     .     .     L
      124.  . I     .    .     .   W  .   C   .  .    E .    .     .     L
      125.  . I     .    .     .   W  .  C    .  .   E  .    .     .     L
      125.  . I     .    .     .    W . C     .  .  E   .    .     .     L
      126.  . I     .    .     .    W . C     .  . E    .    .     .     L
      126.  . I     .    .     .    W .C      .  .E     .    .     .     L
      127.  . I     .    .     .     W C      .  E      .    .     .     L
12.50 127.  . I     .    .     .     WC.      .    E .  .    .     .     L
      128.  . I     .    .     .     WC.      .    E .  .    .     .     L
      128.  . I     .    .     .    WC .      .    E .  .    .     .     L
      129.  . I     .    .     .    W C .     .    E .  .    .     .     L
      129.  . I     .    .     .    W C .     .    E .  .    .     . L   .
      130.  .I      .    .     .   W C  .     .    E .  .    . L   .     .
      130.  .I      .    .     .  W  C  .     .    E .  .  L .   .     .
      131.  .I      .    .     . W   C  .     .    E  . L.   .     .     .
      131.  .I      .    .     . W   C  .     .    E  L.     .     .     .
      132.  .I      .    .     .W    C  .     L    E  .     .     .     .
      132.  .I      .    .     .W    C  .L    .    E  .     .     .     .
      133.  .I      .    .     W  L  C  .     .    E  .     .     .     .
      133.  .I      .    .  L  W    C  .     .    E  .     .     .     .
6.00  134.  .I      .  L .     W.   C  .     .    E  .     .     .     .
      134.  .I      .  L .     W.   C  .     .    E  .     .     .     .
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          135.  .I        .  L    .        W.   C    .         . E     .        .        .        .        .
          135.  .I        . L     .        W.   C    .         . E     .        .        .        .        .
          136.  .I        .L      .        W.  C     .         .E      .        .        .        .        .
          136.  .I        L       .        W.  C     .         E       .        .        .        .        .
          137.  .I       L.       .        W. C      .        E.       .        .        .        .        .
          137.  .I      L .       .        W. C      .        E.       .        .        .        .        .
          138.  .I    L   .       .        W. C      .       E .       .        .        .        .        .
          138.  I    L    .       .        W.C       .      E  .       .        .        .        .        .
          139.  I   L     .       .        W.C       .     E   .       .        .        .        .        .
          139.  I  L      .       .        WC        .     E   .       .        .        .        .        .
     .00  140.  I L       .       .        WC        .    E    .       .        .        .        .        .
1
   03NOV93     17:31:43                                                                                PAGE    6


T1      RUNDOWN SUPERCRITICAL FLOWS
T2
T3      2-YR. FLOWS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

              3.                 1.      -1.                                42.5

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    15.                                                     -1.


 IHLEQ = 1.  THEREFORE FRICTION LOSS (HL) IS CALCULATED AS A FUNCTION OF
 PROFILE TYPE, WHICH CAN VARY FROM REACH TO REACH.  SEE DOCUMENTATION FOR
 DETAILS.
1
 PROFILE FOR STREAM  2-YR. FLOWS


 PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


 ELEVATION    41.      41.      41.      41.      41.      42.      42.      42.      42.      42.
  SECNO   CUMDIS

 139.50     0.  .        .        .        .        .        .       .I      L.  W  E  .        .        .
            1.  .        .        .        .        .        .       .I      L.  W  E  .        .        .
            1.  .        .        .        .        .        .       .I      L.  W  E  .        .        .
            2.  .        .        .        .        .        .       .I      L.  W  E  .        .        .
            2.  .        .        .        .        .        .       I      L . W  E  .        .        .
            3.  .        .        .        .        .        .       I      L . W  E  .        .        .
            3.  .        .        .        .        .        .       I      L . W  E  .        .        .
            4.  .        .        .        .        .        .       I      L . W  E  .        .        .
            4.  .        .        .        .        .        .       I     L  . W  E  .        .        .
            5.  .        .        .        .        .        .       I     L  . W  E  .        .        .
            5.  .        .        .        .        .        .      I.     L  .W   E  .        .        .
            6.  .        .        .        .        .        .      I.     L  .W   E  .        .        .
            6.  .        .        .        .        .        .      I.    L   .W   E  .        .        .
 133.00     7.  .        .        .        .        .        .      I.    L   .W  E   .        .        .
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         7. .     .     .     .     .     .     I.    L  .W   E  .     .     .
         8. .     .     .     .     .     .     I.   L   .W   E  .     .     .
         8. .     .     .     .     .     .     I.   L   .W   E  .     .     .
         9. .     .     .     .     .     .     I.   L   .W   E  .     .     .
         9. .     .     .     .     .     .    I .   L   .W   E  .     .     .
        10. .     .     .     .     .     .    I .  L    .W   E  .     .     .
        10. .     .     .     .     .     .    I . .L    .W   E  .     .     .
        11. .     .     .     .     .     .    I .  L    .W   E  .     .     .
128.50  11. .     .     .     .     .     .    I . L     W    E  .     .     .
        12. .     .     .     .     .     .    I .       W L  E  .     .     .
        12. .     .     .     .     .     .    I .       W    E  L     .     .
        13. .     .     .     .     .     .    I .       W    E  .     L .   .
126.50  13. .     .     .     .     .     .     I .       W    E  .     .     L .
        14. .     .     .     .     .     .   I   .     WC . E   .     .     L .
        14. .     .     .     .     .     . I     . W C   . E   .     .     L .
        15. .     .     .     .     .     I.       W C     .E   .     .     L .
        15. .     .     .     .     .    I .    W C.       E    .     .     L .
        16. .     .     .     .     .  I    . W C  .      E .   .     .     L .
        16. .     .     .     .    .I     W. C    .     E .   .     .     L .
        17. .     .     .     .   I.    W  .C      .   E  .     .     .     L .
122.90  17. .     .     .     .  I .   W   C       .   E  .     .     .     L .
        18. .     .     .     . I  .    W  .C      .    E .     .     .     L .
121.50  18. .     .     .    .I     .    W . C     .    E .     .     .     L .
        19. .     .     .    .I     .    W . C     .    E .     .     .     L .
        19. .     .     .    .I     .    W . C     .    E .     .     .     L .
        20. .     .     .    .I     .    W . C     .    E .     .     .     L .
        20. .     .     .    .I     .    W . C     .   E  .     .     .     L .
        21. .     .     .    .I     .    W . C     .   E  .     .     .     L .
        21. .     .     .    .I     .    W . C     .   E  .     .     .     L .
        22. .     .     .    .I     .    W . C     .   E  .     .     .     L .
117.50  22. .     .     .    I      .    W  .C     .  E   .     .     .    L  .
        23. .     .     .    I      .   W   C      .  E   .     .     .       L
        23. .     .     .    I      .  W   C.      . E    .     .     .       L
        24. .     .     .    I      . W    C .     .E     .     .     .       L
115.60  24. .     .     .   I.      .W   C  .      .E     .     .     .       L
        25. .     .     .   I.      .W   C  .      E      .     .     .       L
        25. .     .     .   I.      . W  C  .     E.      .     .     .       L
        26. .     .     .   I.      . W  C  .    E .      .     .     .       L
        26. .     .     .   I.      . W C   .   E  .      .     .     .       L
        27. .     .     .   I.      . W C   .  E   .      .     .     .       L
        27. .     .     .  I .      . W C   . E    .      .     .     .       L
        28. .     .     .  I .      . W C   .E     .      .     .     .       L
        28. .     .     .  I .      .  WC   .E     .      .     .     .       L
        29. .     .     .  I .      .  WC   .E     .      .     .     .       L
110.50  29. .     .     .   I .     .  WC   .E     .      .     .     .       L
        30. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        30. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        31. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        31. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        32. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        32. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        33. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        33. .     .     .  I  .     .  WC   .E     .      .     .     .       L
        34. .     .     .  I  .     .  WC   .E     .      .     .     .       L
105.50  34. .     .     .  I  .     .  W    .E     .      .     .     .       L
        35. .     .     . I   .     .  W    .E     .      .     .     .       L
        35. .     .     . I   .     .  W    .E     .      .     .     .       L
        36. .     .     . I   .     .  W    .E     .      .     .     .       L
        36. .     .     . I   .     .  W    .E     .      .     .     .       L
        37. .     .     . I   .     .  W    .E     .      .     .     .       L
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        37. .     .     .  I  .     .  W  .E    .     .     .     .     L
        38. .     .     . I   .     .  W  .E    .     .     .     .     L
        38. .     .     . I   .     .  W  .E    .     .     .     .     L
        39. .     .     . I   .     .  W  .E    .     .     .     .     L
100.50  39. .     .     . I   .     .  W  .E    .     .     .     .     L
        40. .     .     . I   .     .  W  . E   .     .     .     .     L
        40. .     .     . I   .     .  W  . E   .     .     .     .     L
        41. .     .     . I   .     .  W  . E   .     .     .     .     L
        41. .     .     . I   .     .  W  . E   .     .     .     .     L
        42. .     .     . I   .     .  W  . E   .     .     .     .     L
        42. .     .     . I   .     .  W  . E   .     .     .     .     L
        43. .     .     . I   .     .  W  . E   .     .     .     .     L
        43. .     .     . I   .     .  W  . E   .     .     .     .     L
        44. .     .     . I   .     .  W  . E   .     .     .     .     L
95.50   44. .     .     . I   .     .  W  . E   .     .     .     .     L
        45. .     .     . I   .     .  W  . E   .     .     .     .     L
        45. .     .     . I   .     .  W  . E   .     .     .     .     L
        46. .     .     . I   .     .  W  . E   .     .     .     .     L
        46. .     .     . I   .     .  W  . E   .     .     .     .     L
        47. .     .     . I   .     .  W  . E   .     .     .     .     L
        47. .     .     . I   .     .  W  . E   .     .     .     .     L
        48. .     .     . I   .     .  W  . E   .     .     .     .     L
        48. .     .     . I   .     .  W  . E   .     .     .     .     L
        49. .     .     . I   .     .  W  . E   .     .     .     .     L
90.50   49. .     .     .I    .     .  W  . E   .     .     .     .     L
        50. .     .     .I    .     .  W  . E   .     .     .     .     L
        50. .     .     .I    .     .  W  . E   .     .     .     .     L
        51. .     .     . I   .     .  W  . E   .     .     .     .     L
        51. .     .     . I   .     .  W  . E   .     .     .     .     L
        52. .     .     . I   .     .  W  . E   .     .     .     .     L
        52. .     .     . I   .     .  W  . E   .     .     .     .     L
        53. .     .     . I   .     .  W  . E   .     .     .     .     L
        53. .     .     . I   .     .  W  . E   .     .     .     .     L
        54. .     .     . I   .     .  W  . E   .     .     .     .     L
85.50   54. .     .     .I    .     .  W  . E   .     .     .     .     L
        55. .     .     .I    .     .  W  . E   .     .     .     .     L
        55. .     .     .I    .     .  W  . E   .     .     .     .     L
        56. .     .     .I    .     .  W  . E   .     .     .     .     L
        56. .     .     .I    .     .  W  . E   .     .     .     .     L
        57. .     .     .I    .     .  W  . E   .     .     .     .     L
        57. .     .     .I    .     .  W  . E   .     .     .     .     L
        58. .     .     I     .     .  W  . E   .     .     .     .     L
        58. .     .     I     .     .  W  . E   .     .     .     .     L
        59. .     .     I     .     .  W  . E   .     .     .     .     L
80.50   59. .     .     I     .     .  W  . E   .     .     .     .     L
        60. .     .     I     .     .  W  . E   .     .     .     .     L
        60. .     .     I     .     .  W  . E   .     .     .     .     L
        61. .     .     I     .     .  W  . E   .     .     .     .     L
        61. .     .     I     .     .  W  . E   .     .     .     .     L
        62. .     .    I.     .     .  W  . E   .     .     .     .     L
        62. .     .    I.     .     .  W  . E   .     .     .     .     L
        63. .     .    I.     .     .  W  . E   .     .     .     .     L
        63. .     .    I.     .     .  W  . E   .     .     .     .     L
        64. .     .    I.     .     .  W  . E   .     .     .     .     L
75.50   64. .     .    I.     .     .  W  . E   .     .     .     .     L
        65. .     .    I.     .     .  W  . E   .     .     .     .     L
        65. .     .    I.     .     .  W  . E   .     .     .     .     L
        66. .     .    I.     .     .  W  . E   .     .     .     .     L
        66. .     .   I .     .     .  W  . E   .     .     .     .     L
        67. .     .   I .     .     .  W  . E   .     .     .     .     L
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        67. .     .     I .     .     .     W .   E   .     .     .     .     L
        68. .     .     I .     .     .     W .   E   .     .     .     .     L
        68. .     .     I .     .     .     W .   E   .     .     .     .     L
        69. .     .     I .     .     .     W .   E   .     .     .     .     L
70.50   69. .     .     I .     .     .     W .   E   .     .     .     .     L
        70. .     .    I  .     .     .     W .    E  .     .     .     .     L
        70. .     .    I  .     .     .     W .    E  .     .     .     .     L
        71. .     .    I  .     .     .     W .    E  .     .     .     .     L
        71. .     .    I  .     .     .     W .    E  .     .     .     .     L
        72. .     .    I  .     .     .     W .    E  .     .     .     .     L
67.88   72. .     .    I  .     .     .     W .    E  .     .     .     .     L
        73. .     .    I  .     .     .     W .    E  .     .     .     .     L
        73. .     .    I  .     .     .     W .    E  .     .     .     .     L
        74. .     .    I  .     .     .     W .    E  .     .     .     .     L
        74. .     .    I  .     .     .     W .    E  .     .     .     .     L
65.00   75. .     .    I  .     .     .    WC .    E  .     .     .     .     L
        75. .     .   I   .     .     .    WC .    E  .     .     .     .     L
        76. .     .   I   .     .     .    WC .    E  .     .     .     .     L
        76. .     .   I   .     .     .    WC .    E  .     .     .     .     L
        77. .     .   I   .     .     .    WC .    E  .     .     .     .     L
62.50   77. .     .   I   .     .     .    W  .   E   .     .     .     .     L
        78. .     .  I    .     .     .    W  .   E   .     .     .     .     L
        78. .     .  I    .     .     .    W  .   E   .     .     .     .     L
        79. .     .  I    .     .     .    W  .   E   .     .     .     .     L
        79. .     .  I    .     .     .    W  .   E   .     .     .     .     L
60.00   80. .     .  I    .     .     .   W   .   E   .     .     .     .     L
        80. .     .  I    .     .     .   W   .   E   .     .     .     .     L
        81. .     .   I   .     .     .   W   .   E   .     .     .     .     L
        81. .     .   I   .     .     .   W   .   E   .     .     .     .     L
        82. .     .   I   .     .     .   W   .   E   .     .     .     .     L
57.50   82. .     .  I    .     .     .  WC   .  E    .     .     .     .     L
        83. .     .  I    .     .     .  WC   .  E    .     .     .     .     L
        83. .     .  I    .     .     .  WC   .  E    .     .     .     .     L
        84. .     .  I    .     .     .  WC   .  E    .     .     .     .     L
        84. .     .  I    .     .     .  WC   .  E    .     .     .     .     L
55.00   85. .     .  I    .     .     .  W    . E     .     .     .     .     L
        85. .     .  I    .     .     .  W    . E     .     .     .     .     L
        86. .     .  I    .     .     .  W    . E     .     .     .     .     L
        86. .     . I     .     .     . WC    . E     .     .     .     .     L
        87. .     . I     .     .     . WC    . E     .     .     .     .     L
52.50   87. .     . I     .     .    .WC      . E     .     .     .     .     L
        88. .     . I     .     .     . W     . E     .     .     .     .     L
        88. .     . I     .     .     . W     . E     .     .     .     .     L
        89. .     . I     .     .     . W     .E      .     .     .     .     L
        89. .     . I     .     .     . W     .E      .     .     .     .     L
50.00   90. .     . I     .     .     . W     .E      .     .     .     .     L
        90. .     . I     .     .     . W     .E      .     .     .     .     L
        91. .     . I     .     .     . W     .E      .     .     .     .     L
        91. .     . I     .     .     . W     .E      .     .     .     .     L
        92. .     . I     .     .     . W     .E      .     .     .     .     L
47.50   92. .     . I     .     .     .W      E       .     .     .     .     L
        93. .     . I     .     .     .W      E       .     .     .     .     L
        93. .     . I     .     .     .W      E       .     .     .     .     L
        94. .     . I     .     .     .W      E       .     .     .     .     L
        94. .     . I     .     .     .W      E       .     .     .     .     L
45.00   95. .     . I     .     .     WC      E       .     .     .     .     L
        95. .     .I      .     .     WC      E       .     .     .     .     L
        96. .     .I      .     .     WC      E       .     .     .     .     L
        96. .     .I      .     .     WC      E       .     .     .     .     L
        97. .     .I      .     .     WC      E       .     .     .     .     L
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42.50  97. .      .I      .      .      W     E.     .      .      .      .      L
       98. .      I       .      .      W     E.     .      .      .      .      L
       98. .      I       .      .     WC     E.     .      .      .      .      L
       99. .      I       .      .     WC     E.     .      .      .      .      L
       99. .      I       .      .     WC     E.     .      .      .      .      L
40.00 100. .      I       .      .    WC.     E.     .      .      .      .      L
      100. .      I       .      .    WC.     E.     .      .      .      .      L
      101. .      I       .      .    WC.     E.     .      .      .      .      L
      101. .      I       .      .    WC.    E .     .      .      .      .      L
      102. .      I       .      .    WC.    E .     .      .      .      .      L
37.50 102. .      I       .      .    WC.    E .     .      .      .      .      L
      103. .     I.       .      .    WC.    E .     .      .      .      .      L
      103. .     I.       .      .    WC.    E .     .      .      .      .      L
      104. .     I.       .      .    WC.    E .     .      .      .      .      L
      104. .     I.       .      .    WC.    E .     .      .      .      .      L
35.00 105. .     I.       .      .    W .   E .     .      .      .      .      L
      105. .     I.       .      .    W .   E .     .      .      .      .      L
      106. .     I.       .      .    W .   E .     .      .      .      .      L
      106. .    I .       .      .    W .   E .     .      .      .      .      L
      107. .    I .       .      .    W .   E .     .      .      .      .      L
32.50 107. .    I .       .      .   WC .   E .     .      .      .      .      L
      108. .    I .       .      .   WC .   E .     .      .      .      .      L
      108. .    I .       .      .   WC .   E .     .      .      .      .      L
      109. .    I .       .      .   W  .   E .     .      .      .      .      L
      109. .    I .       .      .   W  .   E .     .      .      .      .      L
30.00 110. .    I .       .      .   W  .  E  .     .      .      .      .      L
      110. .   I  .       .      .   W  .  E  .     .      .      .      .      L
      111. .   I  .       .      .   WC .   E .     .      .      .      .      L
      111. .   I  .       .      .   WC .   E .     .      .      .      .      L
      112. .   I  .       .      .   WC .   E .     .      .      .      .      L
27.50 112. .   I  .       .      .   WC .   E .     .      .      .      .      L
      113. .   I  .       .      .   W  .   E .     .      .      .      .      L
      113. .   I  .       .      .   W  .   E .     .      .      .      .      L
      114. .   I  .       .      .   W  .  E  .     .      .      .      .      L
      114. .   I  .       .      .   W  .  E  .     .      .      .      .      L
25.00 115. .   I  .       .      .   W  .  E  .     .      .      .      .      L
      115. .  I   .       .      .  WC  .  E  .     .      .      .      .      L
      116. .  I   .       .      .  WC  .  E  .     .      .      .      .      L
      116. .  I   .       .      .  WC  .  E  .     .      .      .      .      L
      117. .  I   .       .      .  WC  .  E  .     .      .      .      .      L
22.50 117. .  I   .       .      .  WC  . E   .     .      .      .      .      L
      118. . I    .       .      .  W   . E   .     .      .      .      .      L
      118. . I    .       .      .  W   . E   .     .      .      .      .      L
      119. . I    .       .      .  W   . E   .     .      .      .      .      L
      119. . I    .       .      .  W   . E   .     .      .      .      .      L
20.00 120. .  I   .       .      .   W  .  E  .     .      .      .      .      L
      120. .  I   .       .      .  WC  .  E  .     .      .      .      .      L
      121. .  I   .       .      .W C   . E   .     .      .      .      .      L
      121. .  I   .       .      W. C   . E   .     .      .      .      .      L
      122. . I    .       .      W .C   . E   .     .      .      .      .      L
      122. . I    .       .    W  C     . E   .     .      .      .      .      L
      123. . I    .       .  W   C.     . E   .     .      .      .      .      L
      123. . I    .       . W    C .    .E    .     .      .      .      .      L
16.25 124. . I    .       .W     C .    .E    .     .      .      .      .      L
      124. . I    .       W     C .     E     .     .      .      .      .      L
      125. . I    .      W.     C .     E     .     .      .      .      .      L
      125. . I    .     W .    C  .    E.     .     .      .      .      .      L
      126. . I    .    W  .   C   .    E.     .     .      .      .      .      L
      126. . I    .   W   . C    .   E .     .     .      .      .      .      L
      127. . I    .  W    . C    .   E .     .     .      .      .      .      L
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12.50  127.  . I     . W     C        .     E .        .        .        .        .        .        L
       128.  . I     .  W    C        .    E  .        .        .        .        .        .        L
       128.  . I     .  W    C        .   E   .        .        .        .        .        .        L
       129.  . I     .   W   C        .   E   .        .        .        .        .        .        L
       129.  . I     .   W  C.        .  E    .        .        .        .        .        .  L     .
       130.  .I      .   W  C.        . E     .        .        .        .        .  L     .        .
       130.  .I      .    W C.        .E      .        .        .        .  L     .        .        .
       131.  .I      .    W C.        E       .        .        .     L  .        .        .        .
       131.  .I      .    W C.        E       .        .     L.        .        .        .        .
       132.  .I      .     WC.        E       .        L        .        .        .        .        .
       132.  .I      .     WC .      E.       .L       .        .        .        .        .        .
       133.  .I      .     WC .      E . L    .        .        .        .        .        .        .
       133.  .I      .      W .    L E .      .        .        .        .        .        .        .
  6.00 134.  .I      .    L W .     E .       .        .        .        .        .        .        .
       134.  .I      .   L WC .    E  .       .        .        .        .        .        .        .
       135.  .I      .  L  W .    E  .        .        .        .        .        .        .        .
       135.  .I      . L   WC .   E  .        .        .        .        .        .        .        .
       136.  .I      .L    WC .  E  .         .        .        .        .        .        .        .
       136.  .I      L    W C .  E  .         .        .        .        .        .        .        .
       137.  .I     L.   W C  .  E  .         .        .        .        .        .        .        .
       137.  .I    L .   W C  . E  .          .        .        .        .        .        .        .
       138.  .I  L  . W  C  . E  .            .        .        .        .        .        .        .
       138.  I  L   . W C   . E  .            .        .        .        .        .        .        .
       139.  I  L   . W  C  . E  .            .        .        .        .        .        .        .
       139.  I L    . W  C  . E  .            .        .        .        .        .        .        .
   .00 140.  I L    .W  C   . E  .            .        .        .        .        .        .        .
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THIS RUN EXECUTED 03NOV93 17:32:09

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 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YR. FLOWS

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	139.500	.00	.00	.00	41.82	69.69	42.22	42.22	42.38	36.95	3.23	21.60	11.47
*	139.500	.00	.00	.00	41.82	23.05	42.06	42.06	42.13	47.63	2.24	10.29	3.34
*	133.000	6.50	.00	.00	41.78	69.69	42.22	42.22	42.40	35.15	3.46	20.15	11.75
*	133.000	6.50	.00	.00	41.78	23.05	42.02	42.02	42.11	45.22	2.40	9.61	3.43
*	128.500	4.50	.00	.00	41.76	69.69	42.23	42.23	42.45	33.69	3.70	18.86	12.01
*	128.500	4.50	.00	.00	41.76	23.05	42.01	42.01	42.12	43.11	2.56	9.00	3.51
*	126.500	2.00	.00	.00	41.75	69.69	42.24	42.24	42.47	33.71	3.78	18.42	12.00

*	126.500	2.00	.00	.00	41.75	23.05	42.01	42.01	42.12	42.69	2.62	8.79	3.53
*	122.900	3.60	.00	.00	41.36	69.69	41.67	41.83	42.25	166.64	6.13	11.37	5.40
*	122.900	3.60	.00	.00	41.36	23.05	41.50	41.60	41.90	381.79	5.06	4.55	1.18
*	121.500	1.40	.00	.00	41.23	69.69	42.09	42.09	42.32	45.41	3.83	18.22	10.34
*	121.500	1.40	.00	.00	41.23	23.05	41.54	41.65	41.93	143.85	5.04	4.57	1.92
*	117.500	4.00	.00	.00	41.21	69.69	42.07	42.08	42.30	47.18	3.87	18.01	10.15
*	117.500	4.00	.00	.00	41.21	23.05	41.53	41.63	41.89	128.37	4.86	4.75	2.03
*	115.600	1.90	.00	.00	41.19	69.69	41.58	41.76	42.17	163.32	6.15	11.33	5.45
*	115.600	1.90	.00	.00	41.19	23.05	41.42	41.53	41.83	357.88	5.16	4.47	1.22
*	110.500	5.10	.00	.00	41.15	69.69	41.69	41.76	42.01	55.20	4.53	15.37	9.38
*	110.500	5.10	.00	.00	41.15	23.05	41.50	41.52	41.62	44.31	2.74	8.42	3.46
*	105.500	5.00	.00	.00	41.13	69.69	41.76	41.76	42.01	32.86	3.97	17.58	12.16
*	105.500	5.00	.00	.00	41.13	23.05	41.51	41.51	41.63	41.58	2.75	8.39	3.57
*	100.500	5.00	.00	.00	41.10	69.69	41.77	41.77	42.02	32.52	4.05	17.20	12.22
*	100.500	5.00	.00	.00	41.10	23.05	41.51	41.51	41.63	41.32	2.81	8.20	3.59

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	95.500	5.00	.00	.00	41.08	69.69	41.78	41.78	42.05	32.14	4.14	16.83	12.29
*	95.500	5.00	.00	.00	41.08	23.05	41.51	41.51	41.64	40.85	2.88	8.01	3.61
*	90.500	5.00	.00	.00	41.05	69.69	41.79	41.79	42.07	31.73	4.24	16.43	12.37
*	90.500	5.00	.00	.00	41.05	23.05	41.51	41.51	41.64	40.16	2.95	7.82	3.64
*	85.500	5.00	.00	.00	41.03	69.69	41.81	41.81	42.10	31.34	4.35	16.02	12.45
*	85.500	5.00	.00	.00	41.03	23.05	41.51	41.51	41.65	39.62	3.02	7.62	3.66
*	80.500	5.00	.00	.00	41.00	69.69	41.83	41.83	42.14	30.91	4.47	15.58	12.54
*	80.500	5.00	.00	.00	41.00	23.05	41.51	41.51	41.66	38.82	3.11	7.42	3.70
*	75.500	5.00	.00	.00	40.98	69.69	41.86	41.86	42.19	30.51	4.61	15.12	12.62
*	75.500	5.00	.00	.00	40.98	23.05	41.52	41.52	41.68	38.18	3.20	7.19	3.73
*	70.500	5.00	.00	.00	40.95	69.69	41.89	41.89	42.24	30.07	4.76	14.63	12.71
*	70.500	5.00	.00	.00	40.95	23.05	41.52	41.52	41.69	37.30	3.31	6.97	3.77
*	67.880	2.62	.00	.00	40.94	69.69	41.91	41.91	42.27	29.91	4.86	14.35	12.74
*	67.880	2.62	.00	.00	40.94	23.05	41.53	41.53	41.71	37.01	3.37	6.83	3.79
	65.000	2.88	.00	.00	40.93	69.69	41.89	41.89	42.26	30.99	4.91	14.19	12.52
	65.000	2.88	.00	.00	40.93	23.05	41.52	41.52	41.70	38.50	3.42	6.75	3.71
	62.500	2.50	.00	.00	40.91	69.69	41.88	41.88	42.26	30.88	4.90	14.21	12.54
	62.500	2.50	.00	.00	40.91	23.05	41.51	41.51	41.69	38.36	3.41	6.76	3.72
	60.000	2.50	.00	.00	40.90	69.69	41.85	41.87	42.25	33.87	5.05	13.81	11.98
	60.000	2.50	.00	.00	40.90	23.05	41.50	41.49	41.68	38.75	3.42	6.74	3.70
	57.500	2.50	.00	.00	40.89	69.69	41.87	41.86	42.23	29.51	4.84	14.41	12.83

	57.500	2.50	.00	.00	40.89	23.05	41.48	41.48	41.67	41.30	3.49	6.61	3.59
	55.000	2.50	.00	.00	40.88	69.69	41.84	41.84	42.22	31.38	4.93	14.14	12.44
	55.000	2.50	.00	.00	40.88	23.05	41.48	41.47	41.65	36.45	3.36	6.86	3.82
	52.500	2.50	.00	.00	40.86	69.69	41.76	41.83	42.20	41.27	5.36	13.00	10.85
	52.500	2.50	.00	.00	40.86	23.05	41.43	41.45	41.64	47.46	3.64	6.33	3.35
*	50.000	2.50	.00	.00	40.85	69.69	41.76	41.82	42.19	38.24	5.24	13.30	11.27
	50.000	2.50	.00	.00	40.85	23.05	41.44	41.44	41.62	39.24	3.43	6.71	3.68
*	47.500	2.50	.00	.00	40.84	69.69	41.77	41.81	42.17	35.10	5.10	13.66	11.76
	47.500	2.50	.00	.00	40.84	23.05	41.43	41.43	41.61	38.12	3.40	6.77	3.73
*	45.000	2.50	.00	.00	40.83	69.69	41.77	41.79	42.16	32.28	4.97	14.02	12.27
	45.000	2.50	.00	.00	40.83	23.05	41.42	41.42	41.60	38.69	3.42	6.74	3.71
*	42.500	2.50	.00	.00	40.81	69.69	41.77	41.78	42.15	31.21	4.92	14.16	12.47
	42.500	2.50	.00	.00	40.81	23.05	41.41	41.41	41.59	37.00	3.37	6.83	3.79

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	40.000	2.50	.00	.00	40.80	69.69	41.77	41.77	42.14	30.68	4.89	14.24	12.58
	40.000	2.50	.00	.00	40.80	23.05	41.37	41.39	41.58	47.04	3.63	6.35	3.36
	37.500	2.50	.00	.00	40.79	69.69	41.76	41.76	42.13	30.91	4.91	14.21	12.54
	37.500	2.50	.00	.00	40.79	23.05	41.38	41.38	41.56	39.23	3.43	6.71	3.68
	35.000	2.50	.00	.00	40.78	69.69	41.73	41.74	42.12	33.61	5.03	13.84	12.02
	35.000	2.50	.00	.00	40.78	23.05	41.37	41.37	41.55	38.21	3.41	6.77	3.73
	32.500	2.50	.00	.00	40.76	69.69	41.74	41.74	42.10	29.40	4.83	14.43	12.85
	32.500	2.50	.00	.00	40.76	23.05	41.36	41.36	41.54	38.77	3.42	6.73	3.70
	30.000	2.50	.00	.00	40.75	69.69	41.72	41.72	42.09	31.39	4.93	14.14	12.44
	30.000	2.50	.00	.00	40.75	23.05	41.35	41.34	41.53	36.93	3.37	6.84	3.79
	27.500	2.50	.00	.00	40.74	69.69	41.69	41.71	42.08	33.83	5.04	13.82	11.98
	27.500	2.50	.00	.00	40.74	23.05	41.31	41.33	41.52	47.33	3.64	6.34	3.35
	25.000	2.50	.00	.00	40.73	69.69	41.70	41.70	42.07	29.44	4.83	14.42	12.84
	25.000	2.50	.00	.00	40.73	23.05	41.31	41.32	41.50	39.23	3.43	6.71	3.68
	22.500	2.50	.00	.00	40.71	69.69	41.68	41.68	42.06	31.41	4.93	14.14	12.43
	22.500	2.50	.00	.00	40.71	23.05	41.31	41.31	41.49	38.24	3.41	6.76	3.73
	20.000	2.50	.00	.00	40.70	69.69	41.59	41.67	42.04	41.85	5.39	12.94	10.77
	20.000	2.50	.00	.00	40.70	23.05	41.30	41.29	41.48	38.81	3.42	6.73	3.70
	16.250	3.75	.00	.00	40.68	69.69	41.33	41.53	42.00	80.48	6.55	10.63	7.77
*	16.250	3.75	.00	.00	40.68	23.05	41.03	41.15	41.42	139.26	5.02	4.59	1.95
*	12.500	3.75	.00	.00	40.66	69.69	41.37	41.38	41.74	31.37	4.88	14.27	12.44
	12.500	3.75	.00	.00	40.66	23.05	40.87	41.00	41.34	191.24	5.50	4.19	1.67
	6.000	6.50	.00	.00	40.63	69.69	41.18	41.30	41.68	58.15	5.64	12.37	9.14

*	6.000	6.50	.00	.00	40.63	23.05	40.97	40.96	41.13	38.46	3.21	7.18	3.72
*	.000	6.00	.00	.00	40.60	69.69	41.19	41.20	41.50	31.57	4.42	15.75	12.40
*	.000	6.00	.00	.00	40.60	23.05	40.82	40.89	41.06	94.14	3.97	5.81	2.38

1

100-YR. FLOWS

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	139.500	69.69	42.22	.00	.00	-.28	68.00	.00
*	139.500	23.05	42.06	-.17	.00	-.44	68.00	.00
*	133.000	69.69	42.22	.00	-.01	.00	55.00	6.50
*	133.000	23.05	42.02	-.19	-.03	.00	55.00	6.50
*	128.500	69.69	42.23	.00	.02	.00	45.00	4.50
*	128.500	23.05	42.01	-.22	-.01	.00	45.00	4.50
*	126.500	69.69	42.24	.00	.01	.00	42.01	2.00
*	126.500	23.05	42.01	-.23	.00	.00	42.00	2.00
*	122.900	69.69	41.67	.00	-.58	.00	42.00	3.60
*	122.900	23.05	41.50	-.17	-.51	.00	42.00	3.60
*	121.500	69.69	42.09	.00	.43	.00	42.00	1.40
*	121.500	23.05	41.54	-.56	.04	.00	15.99	1.40
*	117.500	69.69	42.07	.00	-.03	.00	42.00	4.00
*	117.500	23.05	41.53	-.54	-.01	.00	16.00	4.00
*	115.600	69.69	41.58	.00	-.48	.00	41.15	1.90
*	115.600	23.05	41.42	-.16	-.11	.00	38.35	1.90
*	110.500	69.69	41.69	.00	.11	.00	38.89	5.10
*	110.500	23.05	41.50	-.19	.08	.00	38.89	5.10
*	105.500	69.69	41.76	.00	.07	.00	36.68	5.00
*	105.500	23.05	41.51	-.25	.01	.00	36.68	5.00
*	100.500	69.69	41.77	.00	.01	.00	34.46	5.00
*	100.500	23.05	41.51	-.26	-.01	.00	34.46	5.00
*	95.500	69.69	41.78	.00	.01	.00	32.24	5.00
*	95.500	23.05	41.51	-.27	.00	.00	32.24	5.00
*	90.500	69.69	41.79	.00	.01	.00	30.02	5.00
*	90.500	23.05	41.51	-.29	.00	.00	30.02	5.00
*	85.500	69.69	41.81	.00	.02	.00	27.81	5.00
*	85.500	23.05	41.51	-.30	.00	.00	27.81	5.00
*	80.500	69.69	41.83	.00	.02	.00	25.59	5.00
*	80.500	23.05	41.51	-.32	.00	.00	25.59	5.00

*	75.500	69.69	41.86	.00	.03	.00	23.38	5.00
*	75.500	23.05	41.52	-.34	.01	.00	23.38	5.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	70.500	69.69	41.89	.00	.03	.00	21.16	5.00
*	70.500	23.05	41.52	-.36	.01	.00	21.16	5.00
*	67.880	69.69	41.91	.00	.02	.00	20.00	2.62
*	67.880	23.05	41.53	-.38	.01	.00	20.00	2.62
	65.000	69.69	41.89	.00	-.02	.00	20.00	2.88
	65.000	23.05	41.52	-.37	-.02	.00	20.00	2.88
	62.500	69.69	41.88	.00	-.01	.00	20.00	2.50
	62.500	23.05	41.51	-.38	-.01	.00	20.00	2.50
	60.000	69.69	41.85	.00	-.03	.00	20.00	2.50
	60.000	23.05	41.50	-.35	-.01	.00	20.00	2.50
	57.500	69.69	41.87	.00	.01	.00	20.00	2.50
	57.500	23.05	41.48	-.39	-.02	.00	20.00	2.50
	55.000	69.69	41.84	.00	-.02	.00	20.00	2.50
	55.000	23.05	41.48	-.36	.00	.00	20.00	2.50
	52.500	69.69	41.76	.00	-.09	.00	20.00	2.50
	52.500	23.05	41.43	-.32	-.04	.00	20.00	2.50
*	50.000	69.69	41.76	.00	.00	.00	20.00	2.50
	50.000	23.05	41.44	-.32	.00	.00	20.00	2.50
*	47.500	69.69	41.77	.00	.01	.00	20.00	2.50
	47.500	23.05	41.43	-.34	-.01	.00	20.00	2.50
*	45.000	69.69	41.77	.00	.01	.00	20.00	2.50
	45.000	23.05	41.42	-.35	-.01	.00	20.00	2.50
*	42.500	69.69	41.77	.00	.00	.00	20.00	2.50
	42.500	23.05	41.41	-.36	-.01	.00	20.00	2.50
	40.000	69.69	41.77	.00	.00	.00	20.00	2.50
	40.000	23.05	41.37	-.39	-.04	.00	20.00	2.50
	37.500	69.69	41.76	.00	-.01	.00	20.00	2.50
	37.500	23.05	41.38	-.38	.00	.00	20.00	2.50
	35.000	69.69	41.73	.00	-.03	.00	20.00	2.50
	35.000	23.05	41.37	-.36	-.01	.00	20.00	2.50
	32.500	69.69	41.74	.00	.01	.00	20.00	2.50
	32.500	23.05	41.36	-.38	-.01	.00	20.00	2.50
	30.000	69.69	41.72	.00	-.02	.00	20.00	2.50
	30.000	23.05	41.35	-.36	-.01	.00	20.00	2.50

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	27.500	69.69	41.69	.00	-.03	.00	20.00	2.50
	27.500	23.05	41.31	-.38	-.04	.00	20.00	2.50
	25.000	69.69	41.70	.00	.01	.00	20.00	2.50
	25.000	23.05	41.31	-.39	.00	.00	20.00	2.50
	22.500	69.69	41.68	.00	-.02	.00	20.00	2.50
	22.500	23.05	41.31	-.37	-.01	.00	20.00	2.50
	20.000	69.69	41.59	.00	-.09	.00	20.00	2.50
	20.000	23.05	41.30	-.29	-.01	.00	20.00	2.50
	16.250	69.69	41.33	.00	-.26	.00	20.00	3.75
*	16.250	23.05	41.03	-.30	-.26	.00	20.00	3.75
*	12.500	69.69	41.37	.00	.04	.00	20.01	3.75
	12.500	23.05	40.87	-.51	-.16	.00	20.00	3.75
	6.000	69.69	41.18	.00	-.19	.00	23.48	6.50
*	6.000	23.05	40.97	-.22	.10	.00	23.48	6.50
*	.000	69.69	41.19	.00	.01	.00	26.98	6.00
*	.000	23.05	40.82	-.38	-.15	.00	26.98	6.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=   139.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   139.500  PROFILE=  2  CRITICAL DEPTH ASSUMED

CAUTION SECNO=   133.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   133.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   133.000  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=   133.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   133.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   133.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   133.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   128.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   128.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   128.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   128.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   128.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   128.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   126.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   126.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=    126.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=    126.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    126.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    126.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    122.900  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    122.900  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    121.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    121.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    121.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=    121.500  PROFILE=  2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=    121.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    117.500  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    117.500  PROFILE=  2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=    117.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=    115.600  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    115.600  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    110.500  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=    110.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=    110.500  PROFILE=  2  MINIMUM SPECIFIC ENERGY
WARNING SECNO=    110.500  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    105.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    105.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    105.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=    105.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    105.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
1
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CAUTION SECNO=    105.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    100.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    100.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    100.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=    100.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    100.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    100.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     95.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     95.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     95.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=     95.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     95.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     95.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     90.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     90.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     90.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=     90.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     90.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     90.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     85.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     85.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
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CAUTION SECNO=     85.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=     85.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     85.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     85.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     80.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     80.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     80.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=     80.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     80.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     80.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     75.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     75.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     75.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=     75.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     75.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     75.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     70.500  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     70.500  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     70.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=     70.500  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     70.500  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     70.500  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     67.880  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     67.880  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     67.880  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
1
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CAUTION SECNO=     67.880  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=     67.880  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=     67.880  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=     50.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     47.500  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     45.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=     42.500  PROFILE=  1  MINIMUM SPECIFIC ENERGY

WARNING SECNO=     16.250  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=     12.500  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=     12.500  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=      6.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=       .000  PROFILE=  1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO=       .000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
WARNING SECNO=       .000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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OFF-SITE POND EMERGENCY OVERFLOW WEIR

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-30-1993 Time Executed: 16:28:12

Outflow Rating Table for Structure #01
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages	
35.33	0.0	E = or > E2=37.8	
35.43	0.0	E = or > E2=37.8	
35.53	0.2	W(ft)= 6.308	Max. D(ft)= .09
35.63	1.0	W(ft)= 13.317	Max. D(ft)= .19
35.73	3.0	W(ft)= 20.326	Max. D(ft)= .29
35.83	6.2	W(ft)= 27.335	Max. D(ft)= .39
35.93	11.0	W(ft)= 34.344	Max. D(ft)= .49
36.03	17.6	W(ft)= 41.353	Max. D(ft)= .59
36.13	26.9	W(ft)= 44.779	Max. D(ft)= .69
36.23	38.1	W(ft)= 47.31	Max. D(ft)= .79
36.33	50.9	W(ft)= 49.841	Max. D(ft)= .89
36.43	65.2	W(ft)= 52.372	Max. D(ft)= .99
36.53	81.2	W(ft)= 54.903	Max. D(ft)= 1.09
36.63	98.6	W(ft)= 57.434	Max. D(ft)= 1.19
36.73	117.7	W(ft)= 59.965	Max. D(ft)= 1.29
36.80	131.9	W(ft)= 61.737	Max. D(ft)= 1.36
36.83	138.3	W(ft)= 62.496	Max. D(ft)= 1.39
36.93	160.5	W(ft)= 65.027	Max. D(ft)= 1.49
37.03	184.3	W(ft)= 67.558	Max. D(ft)= 1.59
37.13	209.7	W(ft)= 70.089	Max. D(ft)= 1.69
37.23	236.8	W(ft)= 72.62	Max. D(ft)= 1.79
37.33	265.5	W(ft)= 75.63	Max. D(ft)= 1.89
37.43	296.9	W(ft)= 82.942	Max. D(ft)= 1.99
37.53	330.5	W(ft)= 90.256	Max. D(ft)= 2.09
37.63	366.6	W(ft)= 97.568	Max. D(ft)= 2.19
37.73	405.3	W(ft)= 104.881	Max. D(ft)= 2.29
37.80	434.1	W(ft)= 109.999	Max. D(ft)= 2.36
37.80	0.0	E = or > E2=37.8	

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-30-1993 Time Executed: 16:28:12

>>>>>> Structure No. 01 <<<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) =35.33 E2 (ft) =37.8

X dist.(ft)	Y elev.(ft)
0	37.8
30	35.44
65	36.05
81	37.32
110	37.8

POND-2 Version: 4.01
S/N: 88020607

OFF-SITE POND VOLUME RATING TABLE

CALCULATED 10-31-1993 11:18:14
DISK FILE : C:LWPOND .VOL

Planimeter scale: 1 inch = 1 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	* Volume (acre-ft)	Volume Sum (acre-ft)
28.00	0.00	0.00	0.00	0.00	0.00
28.50	*I*	0.03	0.03	0.00	0.00
29.00	*I*	0.12	0.12	0.04	0.04
29.50	*I*	0.27	0.27	0.13	0.13
29.90	18,528.00	0.43	0.43	0.27	0.27
30.00	*I*	0.45	1.31	0.04	0.31
30.50	*I*	0.58	1.50	0.30	0.57
31.00	*I*	0.73	1.71	0.63	0.90
31.50	*I*	0.89	1.93	1.03	1.30
31.70	41,833.00	0.96	2.02	1.21	1.48
32.00	*I*	0.99	2.92	0.29	1.78
32.50	*I*	1.03	2.98	0.80	2.28
33.00	*I*	1.07	3.05	1.32	2.81
33.50	*I*	1.12	3.12	1.87	3.35
34.00	*I*	1.16	3.18	2.44	3.92
34.50	*I*	1.21	3.25	3.03	4.52
35.00	*I*	1.26	3.32	3.65	5.14
35.50	*I*	1.31	3.39	4.29	5.78
36.00	*I*	1.36	3.46	4.96	6.45
36.50	*I*	1.41	3.53	5.65	7.14
37.00	*I*	1.46	3.61	6.37	7.86
37.50	*I*	1.51	3.68	7.12	8.60
37.80	*I*	1.55	3.73	7.57	9.06
37.80	67,350.00	1.55	3.73	7.57	9.06

I ---> Interpolated area from closest two planimeter readings.

$$IA = (sq.rt(Area1) + ((Ei-E1)/(E2-E1))*(sq.rt(Area2)-sq.rt(Area1)))^2$$

where: E1, E2 = Closest two elevations with planimeter data
Ei = Elevation at which to interpolate area
Area1,Area2 = Areas computed for E1, E2, respectively
IA = Interpolated area for Ei

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

OFF-SITE POND
OUTLET STRUCTURES

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
28.00	0.0	
28.50	2.0	+01
29.00	3.4	+01
29.50	6.4	+01 +03
30.00	8.7	+01 +03
30.50	12.4	+01 +03 +05
31.00	15.3	+01 +03 +05
31.50	17.6	+01 +03 +05
32.00	19.5	+01 +03 +05
32.50	21.3	+01 +03 +05
33.00	22.9	+01 +03 +05
33.00	22.9	+01 +03 +05
33.50	24.5	+01 +03 +05
34.00	25.9	+01 +03 +05
34.50	27.2	+01 +03 +05
35.00	28.5	+01 +03 +05
35.50	29.8	+01 +03 +05 +07
36.00	46.3	+01 +03 +05 +07
36.50	108.3	+01 +03 +05 +07
37.00	210.1	+01 +03 +05 +07
37.50	354.3	+01 +03 +05 +07
37.80	468.9	+01 +03 +05 +07
37.80	0.0	

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

>>>>>> Structure No. 01 <<<<<<
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	28.5
E2 elev.(ft)?	37.8
Orifice coeff.?	.66
Invert elev.(ft)?	28.25
Datum elev.(ft) ?	28.25
Orifice area (sq ft)?	.75

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

>>>>>> Structure No. 03 <<<<<<
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	29.5
E2 elev.(ft)?	37.8
Orifice coeff.?	.66
Invert elev.(ft)?	29.25
Datum elev.(ft) ?	29.25
Orifice area (sq ft)?	.75

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

>>>>>> Structure No. 05 <<<<<<
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	30.5
E2 elev.(ft)?	37.8
Orifice coeff.?	.66
Invert elev.(ft)?	30.25
Datum elev.(ft) ?	30.25
Orifice area (sq ft)?	.75

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

>>>>>> Structure No. 07 <<<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) =35.44 E2 (ft) =37.8

X dist.(ft)	Y elev.(ft)
0	37.8
30	35.44
65	36.05
81	37.32
110	37.8

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

Outflow Rating Table for Structure #01
ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
28.00	0.0	E < E1=28.5
28.50	2.0	H = .25
29.00	3.4	H = .75
29.50	4.4	H = 1.25
30.00	5.3	H = 1.75
30.50	6.0	H = 2.25
31.00	6.6	H = 2.75
31.50	7.2	H = 3.25
32.00	7.7	H = 3.75
32.50	8.2	H = 4.25
33.00	8.7	H = 4.75
33.00	8.7	H = 4.75
33.50	9.1	H = 5.25
34.00	9.5	H = 5.75
34.50	9.9	H = 6.25
35.00	10.3	H = 6.75
35.50	10.7	H = 7.25
36.00	11.1	H = 7.75
36.50	11.4	H = 8.25
37.00	11.8	H = 8.75
37.50	12.1	H = 9.25
37.80	12.3	H = 9.55
37.80	0.0	E = or > E2=37.8

C = .66 A = .75 sq.ft.
H (ft) = Table elev. - Datum elev. (28.25 ft)
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

Outflow Rating Table for Structure #03
ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
28.00	0.0	E < E1=29.5
28.50	0.0	E < E1=29.5
29.00	0.0	E < E1=29.5
29.50	2.0	H = .25
30.00	3.4	H = .75
30.50	4.4	H = 1.25
31.00	5.3	H = 1.75
31.50	6.0	H = 2.25
32.00	6.6	H = 2.75
32.50	7.2	H = 3.25
33.00	7.7	H = 3.75
33.00	7.7	H = 3.75
33.50	8.2	H = 4.25
34.00	8.7	H = 4.75
34.50	9.1	H = 5.25
35.00	9.5	H = 5.75
35.50	9.9	H = 6.25
36.00	10.3	H = 6.75
36.50	10.7	H = 7.25
37.00	11.1	H = 7.75
37.50	11.4	H = 8.25
37.80	11.6	H = 8.55
37.80	0.0	E = or > E2=37.8

C = .66 A = .75 sq.ft.
H (ft) = Table elev. - Datum elev. (29.25 ft)
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

Outflow Rating Table for Structure #05
ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
28.00	0.0	E < E1=30.5
28.50	0.0	E < E1=30.5
29.00	0.0	E < E1=30.5
29.50	0.0	E < E1=30.5
30.00	0.0	E < E1=30.5
30.50	2.0	H = .25
31.00	3.4	H = .75
31.50	4.4	H = 1.25
32.00	5.3	H = 1.75
32.50	6.0	H = 2.25
33.00	6.6	H = 2.75
33.00	6.6	H = 2.75
33.50	7.2	H = 3.25
34.00	7.7	H = 3.75
34.50	8.2	H = 4.25
35.00	8.7	H = 4.75
35.50	9.1	H = 5.25
36.00	9.5	H = 5.75
36.50	9.9	H = 6.25
37.00	10.3	H = 6.75
37.50	10.7	H = 7.25
37.80	10.9	H = 7.55
37.80	0.0	E = or > E2=37.8

C = .66 A = .75 sq.ft.
H (ft) = Table elev. - Datum elev. (30.25 ft)
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 10-31-1993 Time Executed: 12:29:35

Outflow Rating Table for Structure #07
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
28.00	0.0	E < Y min= 35.44
28.50	0.0	E < Y min= 35.44
29.00	0.0	E < Y min= 35.44
29.50	0.0	E < Y min= 35.44
30.00	0.0	E < Y min= 35.44
30.50	0.0	E < E1=35.44
31.00	0.0	E < E1=35.44
31.50	0.0	E < E1=35.44
32.00	0.0	E < E1=35.44
32.50	0.0	E < E1=35.44
33.00	0.0	E < E1=35.44
33.00	0.0	E < E1=35.44
33.50	0.0	E < E1=35.44
34.00	0.0	E < E1=35.44
34.50	0.0	E < E1=35.44
35.00	0.0	E < E1=35.44
35.50	0.1	W(ft)= 4.205 Max. D(ft)= .06
36.00	15.4	W(ft)= 39.25 Max. D(ft)= .56
36.50	76.2	W(ft)= 54.144 Max. D(ft)= 1.06
37.00	177.0	W(ft)= 66.799 Max. D(ft)= 1.56
37.50	320.2	W(ft)= 88.061 Max. D(ft)= 2.06
37.80	434.1	W(ft)= 109.999 Max. D(ft)= 2.36
37.80	0.0	E = or > E2=37.8

APPENDIX C

OFF-SITE DRAINAGE REPORT REFERENCES

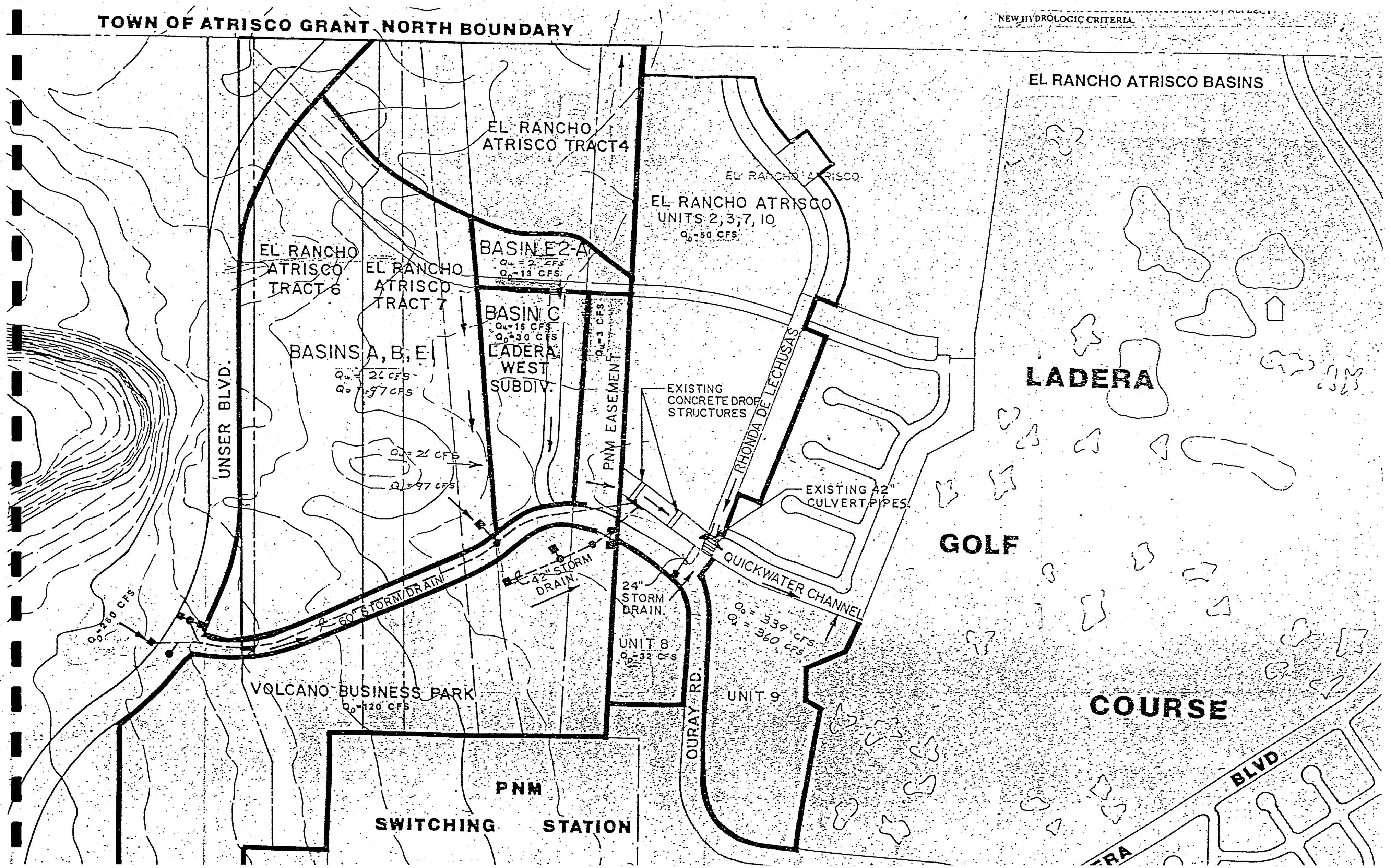
A. EL RANCHO ATRISCO BASINS

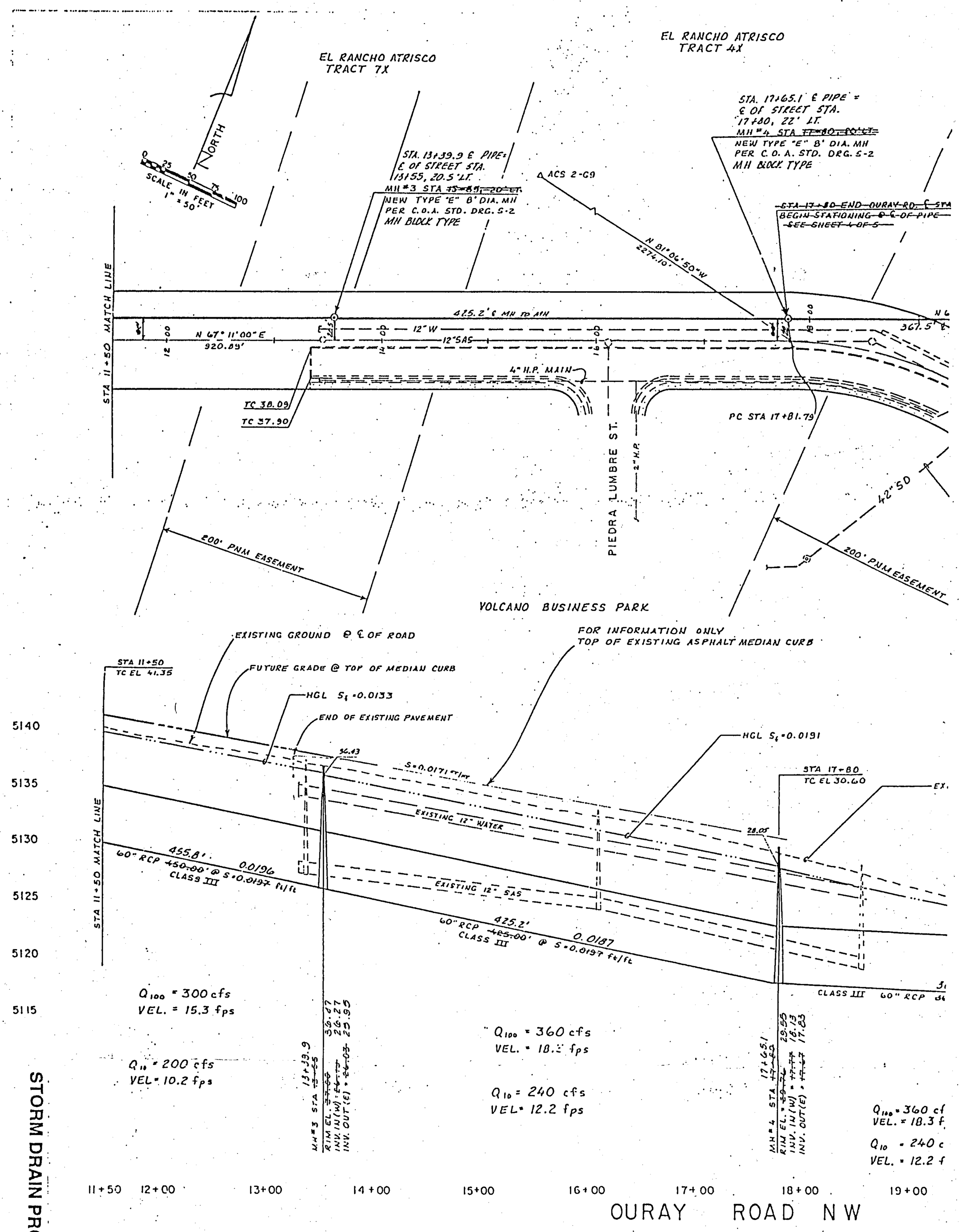
B. STORM DRAIN PROFILE

C. SIZE CHANNEL INLET - OFF-SITE FLOW

D. AVID ENGINEERING REPORT

E. UNIT 3 GRADING PLANS AND POND DESIGN DETAILS 4 POCKETS


TOWN OF ATRISCO GRANT NORTH BOUNDARY
NEW HYDROLOGIC CRITERIA
EL RANCHO ATRISCO BASINS
EL RANCHO ATRISCO TRACT4
EL RANCHO ATRISCO
EL RANCHO ATRISCO UNITS 2,3,7,10
Q_D=50 CFS
EL RANCHO ATRISCO TRACT 6
EL RANCHO ATRISCO TRACT 7
BASIN E2-A
Q_L=2 CFS
Q_D=13 CFS
BASIN C
Q_L=16 CFS
Q_D=30 CFS
LADERA WEST SUBDIV.
Q_L=3 CFS
BASINS A, B, E
Q_L=26 CFS
Q_D=97 CFS
UNSER BLVD.
PNM EASEMENT
EXISTING CONCRETE DROP STRUCTURES
RHONDA DE LECHUSAS
EXISTING 42" CULVERT PIPES
LADERA
GOLF
COURSE
Q_L=26 CFS
Q_D=97 CFS
42" STORM DRAIN
60" STORM DRAIN
Q_D=250 CFS
24" STORM DRAIN
QUICKWATER CHANNEL
Q_D=339 CFS
Q_L=360 CFS
UNIT 8
Q_D=32 CFS
UNIT 9
VOLCANO BUSINESS PARK
Q_D=120 CFS
OURAY RD.
PNM
SWITCHING STATION
BLVD


EL RANCHO ATRISCO TRACT 7X
EL RANCHO ATRISCO TRACT 4X
NORTH
SCALE IN FEET 1" = 50'
STA. 13+39.9 ℄ PIPE = ℄ OF STREET STA. 13+55, 20.5' LT.
MH #3 STA ~~75+85, 20' LT.~~
NEW TYPE "E" 8' DIA. MH PER C.O.A. STD. DRG. S-2 MH BLOCK TYPE
ACS 2-C9
STA. 17+65.1 ℄ PIPE = ℄ OF STREET STA. 17+80, 22' LT.
MH #4 STA ~~77+80, 20' LT.~~
NEW TYPE "E" 8' DIA. MH PER C.O.A. STD. DRG. S-2 MH BLOCK TYPE
~~STA 17+80 END OURAY RD. ℄ STA BEGIN STATIONING ℄ OF PIPE SEE SHEET 4 OF 5~~
N 81° 06' 50" W 2274.10'
STA 11+50 MATCH LINE
425.2' ℄ MH TO MH
N 67° 11' 00" E 920.89'
12" W
12" SAS
4" H.P. MAIN
TC 38.09
TC 37.90
PC STA 17+81.79
PIEDRA LUMBRE ST.
2" H.P.
42" SD
200' PNM EASEMENT
VOLCANO BUSINESS PARK
EXISTING GROUND @ ℄ OF ROAD
FUTURE GRADE @ TOP OF MEDIAN CURB
FOR INFORMATION ONLY TOP OF EXISTING ASPHALT MEDIAN CURB
STA 11+50 TC EL 41.35
HGL S_f = 0.0133
END OF EXISTING PAVEMENT
HGL S_f = 0.0191
STA 17+80 TC EL 30.60
S = 0.0171 ft/ft
EXISTING 12" WATER
EXISTING 12" SAS
455.8' 0.0196
60" RCP ~~450.00'~~ @ S = 0.0197 ft/ft CLASS III
425.2' 0.0187
60" RCP ~~425.00'~~ @ S = 0.0197 ft/ft CLASS III
CLASS III 60" RCP
Q_{100} = 300 cfs
VEL. = 15.3 fps
Q_{10} = 200 cfs
VEL = 10.2 fps
Q_{100} = 360 cfs
VEL. = 18.3 fps
Q_{10} = 240 cfs
VEL = 12.2 fps
MH #3 STA 13+39.9
RIM EL. ~~37.00~~ 36.47
INV. IN(W) ~~26.00~~ 26.27
INV. OUT(E) ~~25.95~~ 25.95
MH #4 STA 17+65.1
RIM EL. ~~29.76~~ 29.55
INV. IN(W) ~~17.77~~ 16.13
INV. OUT(E) ~~17.67~~ 17.83
5140
5135
5130
5125
5120
5115
11+50
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
OURAY ROAD NW
STORM DRAIN PROFILE

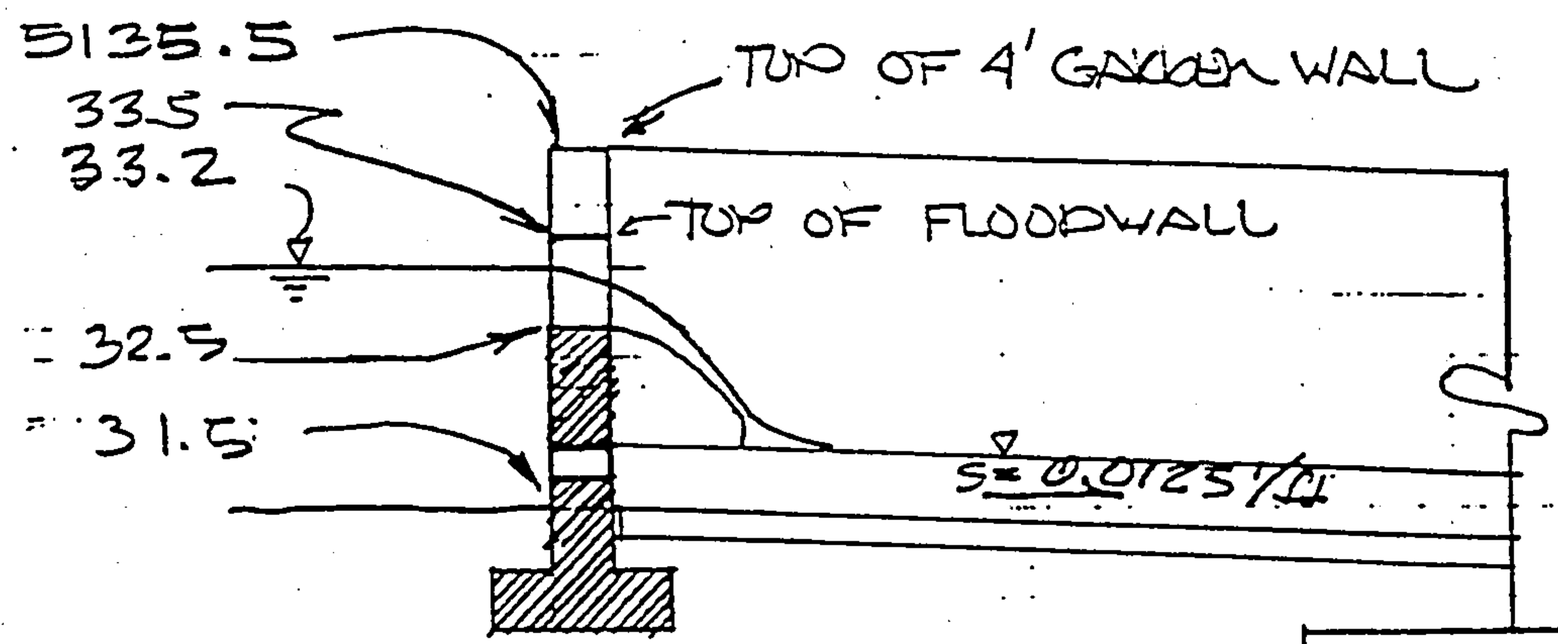
C 20 B 16 A 12

AVID ENGINEERING, INC.

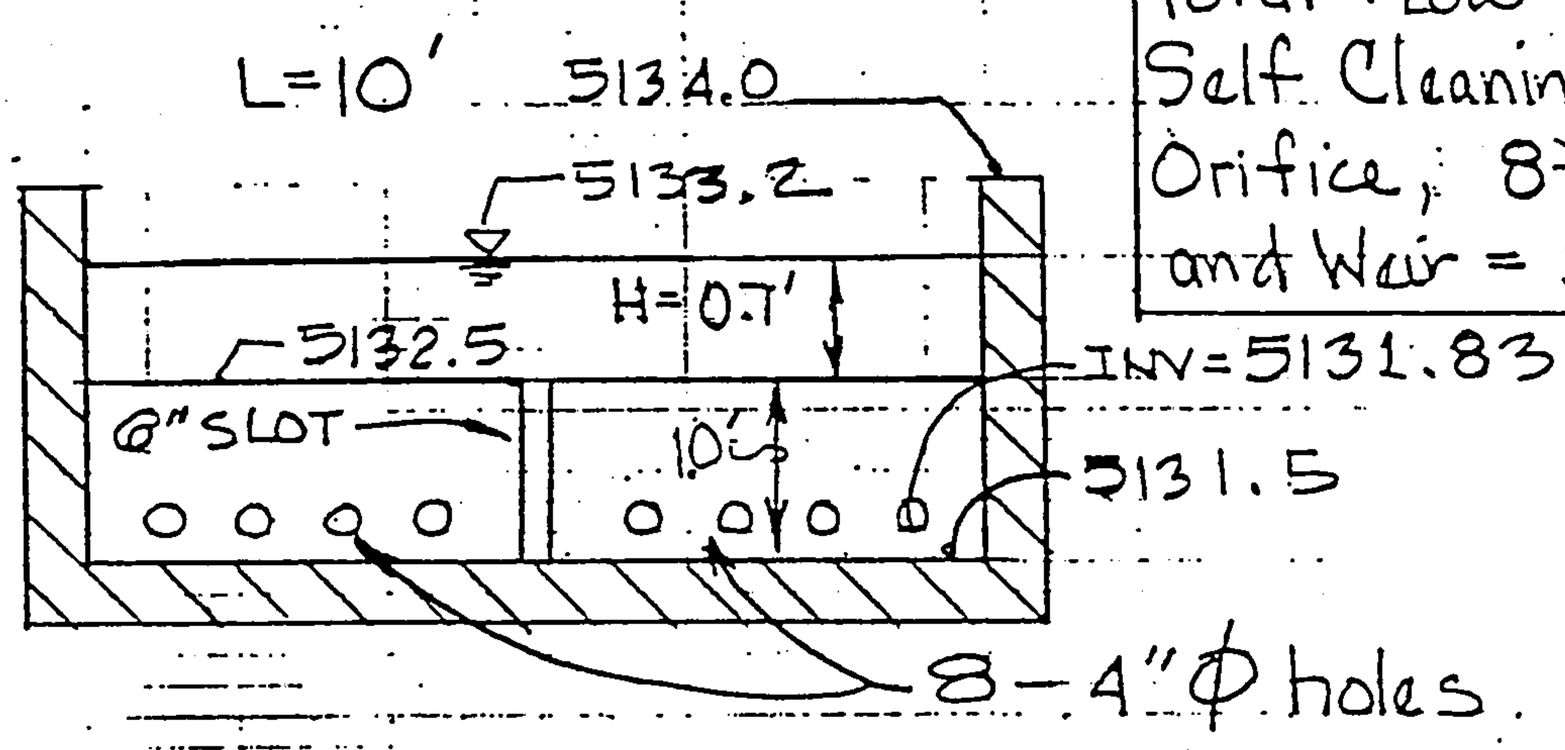
SIZE CHANNEL INLET - OFFSITE FLOW

$Q_{100} = 26.0$ cfs (BASINS A, B, & EL)

MAXIMUM WSEL = 5132.5'
SIZE WEIR TO PASS 125% of 26.0 cfs = 32.5 cfs



Total Flow for Self Cleaning Slot Orifice; 8-4" Φ holes and Weir = 37.5 cfs.



$Q_{WEIR} = \frac{2}{3}\sqrt{2g}\, L H^{3/2}$

$32.5 = \frac{2}{3}\sqrt{2 \times 32.2} \times 10' \times H^{3/2}$ $\quad H = 0.72'$

$Q_{ORIFICE} = C_s A \sqrt{2gh}$

$= 0.6 \times 1.198 \sqrt{2 \times g \times 1.7}$

$= 7.5$ cfs

8 holes = 0.6981 ft²
L SLOT = 0.5000 ft²
= 1.1981 ft²

PROJECT NAME LADERA WEST SHEET 1 OF 4
PROJECT NO. 2107.50 BY RB DATE REV 2/3/93
SUBJECT CH'D DATE

AVID ENGINEERING, INC.

DESIGN CATCH BASIN AT TODOS SANTOS AND SANTA CATARINA.

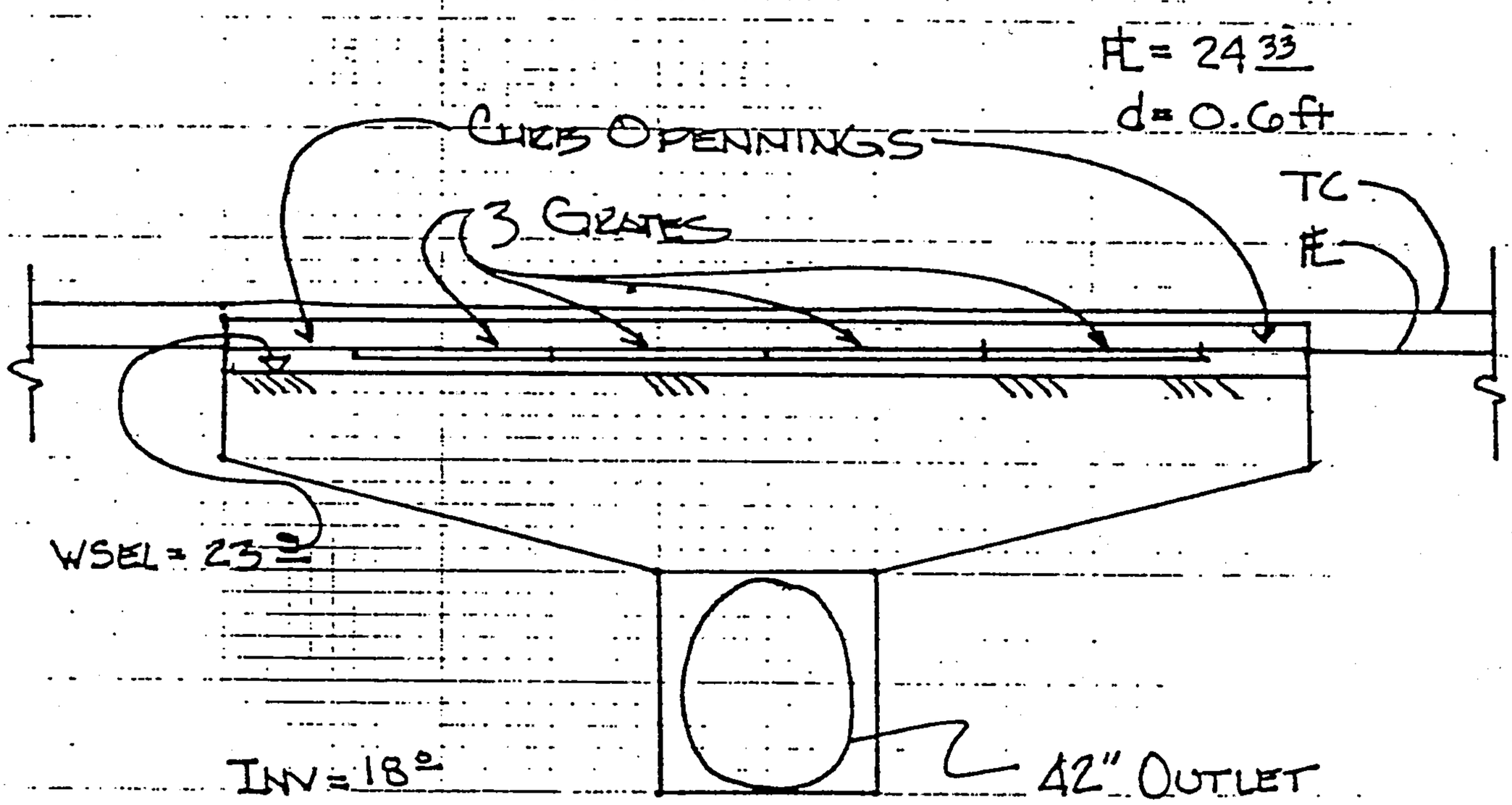
- SUMP CONDITION, SIZE INLET SO THAT FLOW DEPTH DOES NOT EXCEED 8" (CURB DEPTH).

- 100YR STREET FLOW RATE = 43 CFS, d = .75 ft (9")

USE QUADRUPLE GRATE ANALYZED AS 3 SIDED WEIR, $Q = 65.7 h^{1.5}$ (SEE NOMOGRAPH)

$Q_{max} = 50$ cfs @ d = .83' (10") [ok]

NOTE: ANALYSIS DOES NOT INCLUDE CURB INLET FLOW (approx. 14 CFS), RESERVED FOR SAFETY AND CLOGGING FACTOR.



INLET CONTROL = $1.2V^2/2g = 1.2\left(\frac{55}{9.621}\right)^2 / 64.4$

PROJECT NAME	LADERA WEST SUBD.	SHEET 1	OF 5
PROJECT NO.	2107.50	BY RLB	DATE 1/13/93
SUBJECT	HYDRAULICS	CH'D	DATE

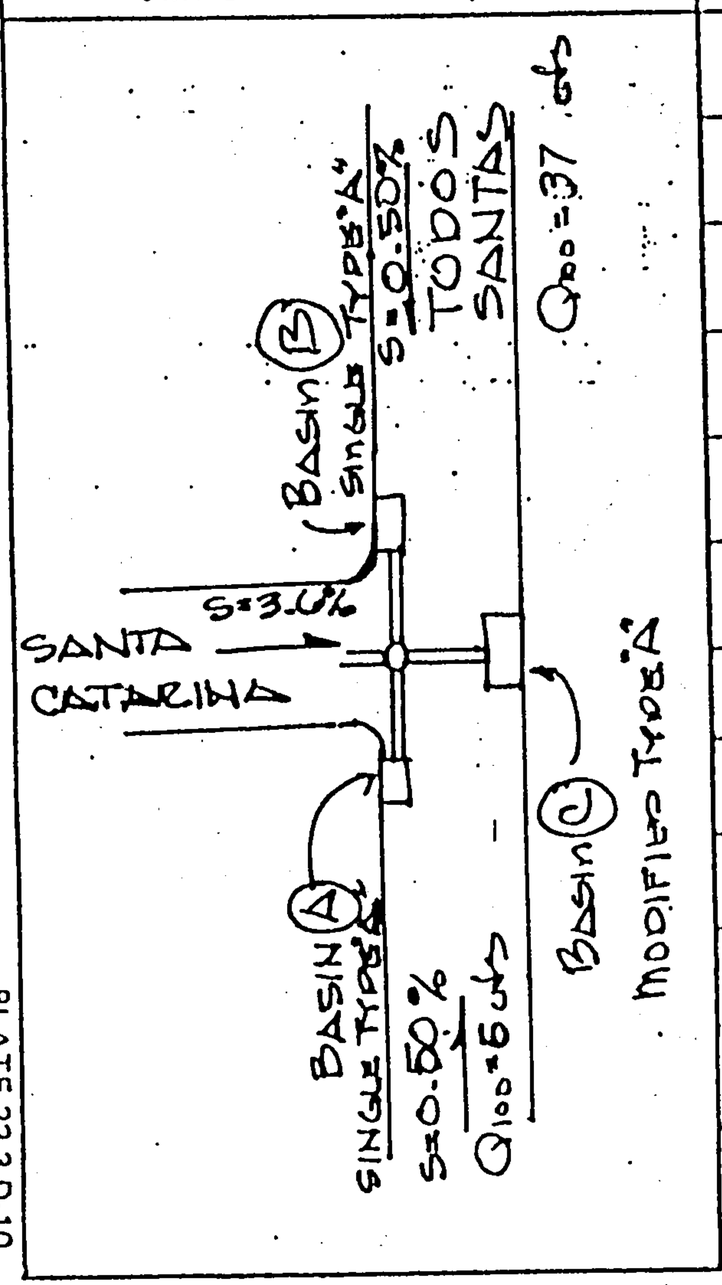
CATCH BASIN CALCULATION SHEET

Sht___of___

PROJECT _____ CALCULATED BY _____

DESIGN FREQUENCY _____ DATE _____

FLOW DIAGRAM (Indicate street slopes)



Sym.	Drain. Area	Q Total	Q Inter.	Cap. of ½ Street	Gutter "d"	C.B. No.	C.B. Size	Connector Pipe Head	Connector Pipe L	Connector Pipe Dia.	V Depth
	BASIN (A)	3.0	2.2	25 cfs*	.35'	1	"A"				
		0.8	BYPASS								
	BASIN (B)	37/2 18.5	7.2	25 cfs*	0.62	1	"A"				
		11.3	BY PASS								
	TOTAL = 6.0 + 37.0 = 43 cfs										
	43 − 2.2 + 11.3 = 29.5 BASIN (C)										
	BASIN (C)	29.5	29.5	25*	0.6'	4	A	SUMP CONDITION ANALYSIS			
		0 BY-PASS									

* BASED ON FLOW TO 0.67 depth (TOC) maximum.

4-82

80

PLATE 22.3 D-10

22.3

2/5

AVID ENGINEERING, INC.

DETERMINE LOCATION WHERE STD CURB AND GUTTER IS REQUIRED IN TODOS SANTOS.

CONTRIBUTING AREA FROM SOUTH: 2.6 acres
BY PRO RATA FOR BASINS E2-A & C

$Q_{100} = 30\text{ cfs} + 13\text{ cfs} = 43\text{ cfs}$

CONTRIBUTING AREA = 19.23 acres

$$\frac{Q_{south}}{43\text{ cfs}} = \frac{2.6\text{ acres}}{19.23\text{ acres}} \qquad Q_{south} = 6\text{ cfs}$$

$Q_{NORTH} = 43 - 6 = 37\text{ cfs}$

NOTE: FLOW RATES ARE PRO RATED FROM EACH CONTRIBUTING BASIN. THIS IS CONSERVATIVE SINCE ADDING HYDROGRAPHS RESULTS IN LESSER PEAK FLOW RATES DUE TO ATTENUATION AND VARYING TIMES OF CONCENTRATION

PROJECT NAME _____ SHEET 3 OF 5
PROJECT NO. _____ BY _____ DATE _____
SUBJECT _____ CH'D _____ DATE _____

GRATE OPEN AREA = 9.56 SF / GRATE

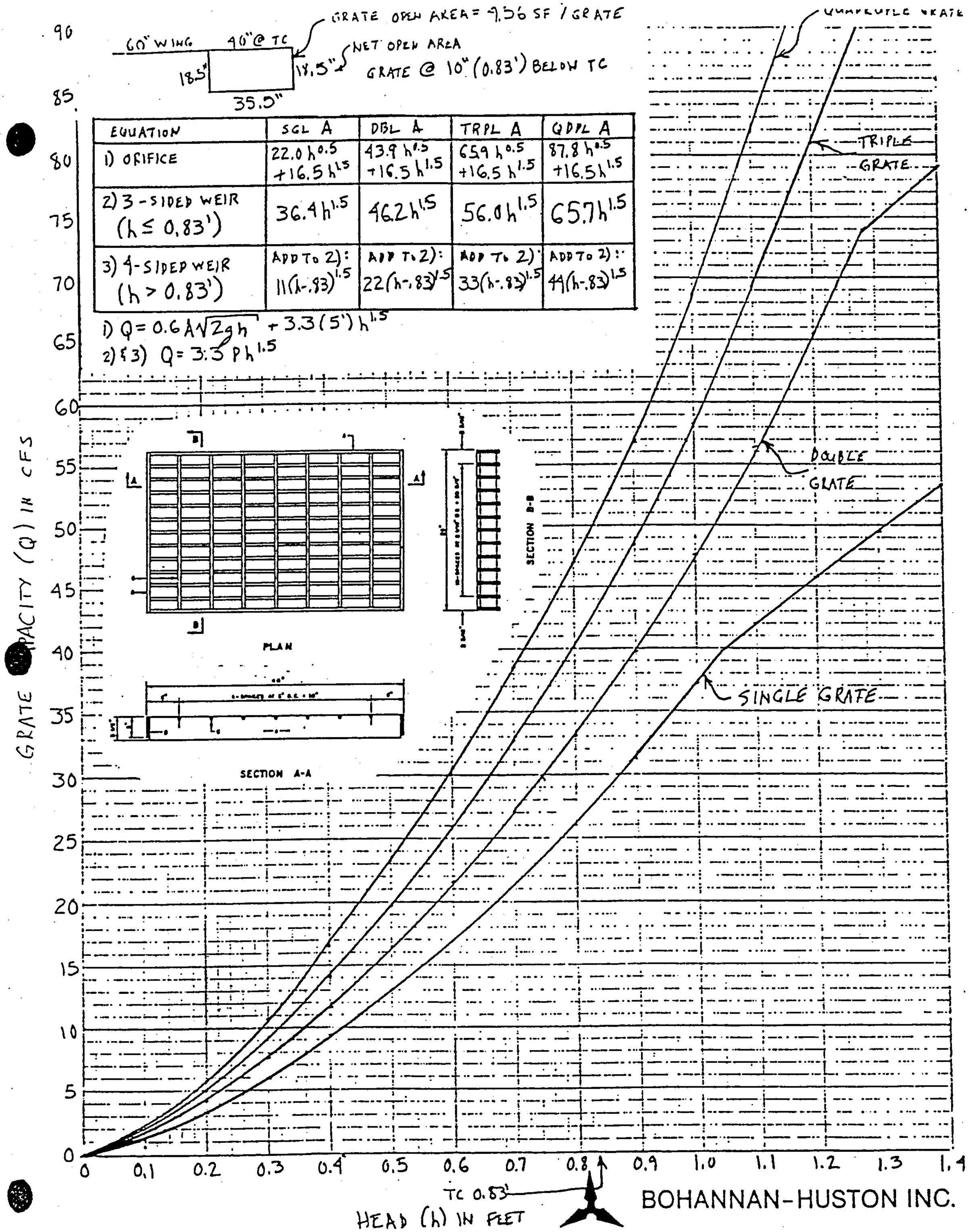
NET OPEN AREA

GRATE @ 10" (0.83') BELOW TC

EQUATION	SGL A	DBL A	TRPL A	QDPL A
1) ORIFICE	$22.0h^{0.5} + 16.5h^{1.5}$	$43.9h^{0.5} + 16.5h^{1.5}$	$65.9h^{0.5} + 16.5h^{1.5}$	$87.8h^{0.5} + 16.5h^{1.5}$
2) 3-SIDED WEIR ($h \le 0.83'$)	$36.4h^{1.5}$	$46.2h^{1.5}$	$56.0h^{1.5}$	$65.7h^{1.5}$
3) 4-SIDED WEIR ($h > 0.83'$)	ADD TO 2): $11(h-.83)^{1.5}$	ADD TO 2): $22(h-.83)^{1.5}$	ADD TO 2): $33(h-.83)^{1.5}$	ADD TO 2): $44(h-.83)^{1.5}$

1) $Q = 0.6A\sqrt{2gh} + 3.3(5')h^{1.5}$

2) & 3) $Q = 3.3Ph^{1.5}$



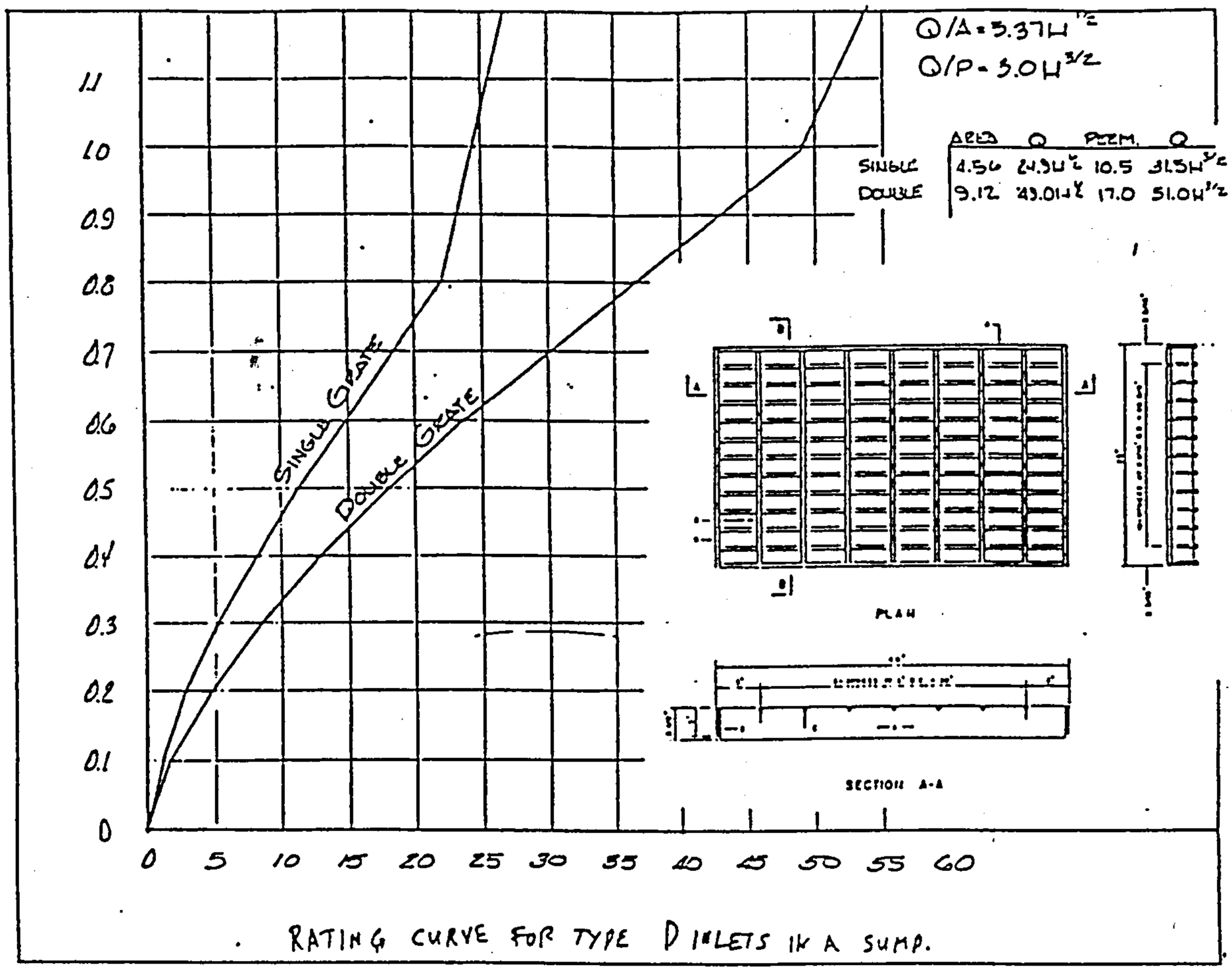
BOHANNAN-HUSTON INC.

PROJECT NAME _____ SHEET 4 OF 5

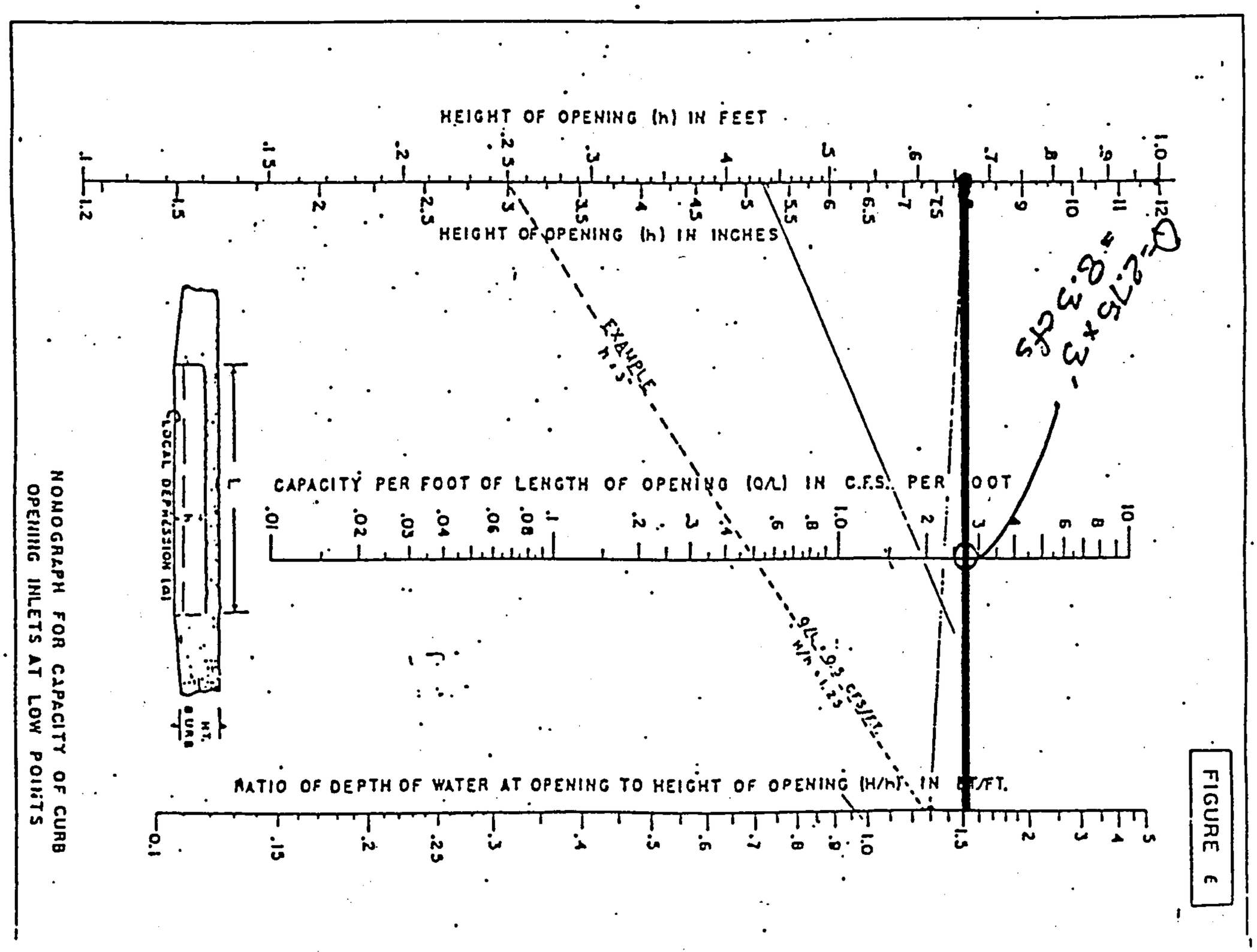
PROJECT NO. _____ BY RLB DATE _____

SUBJECT RATING CURVE FOR TYPE A INLETS CH'D _____ DATE _____

5/5

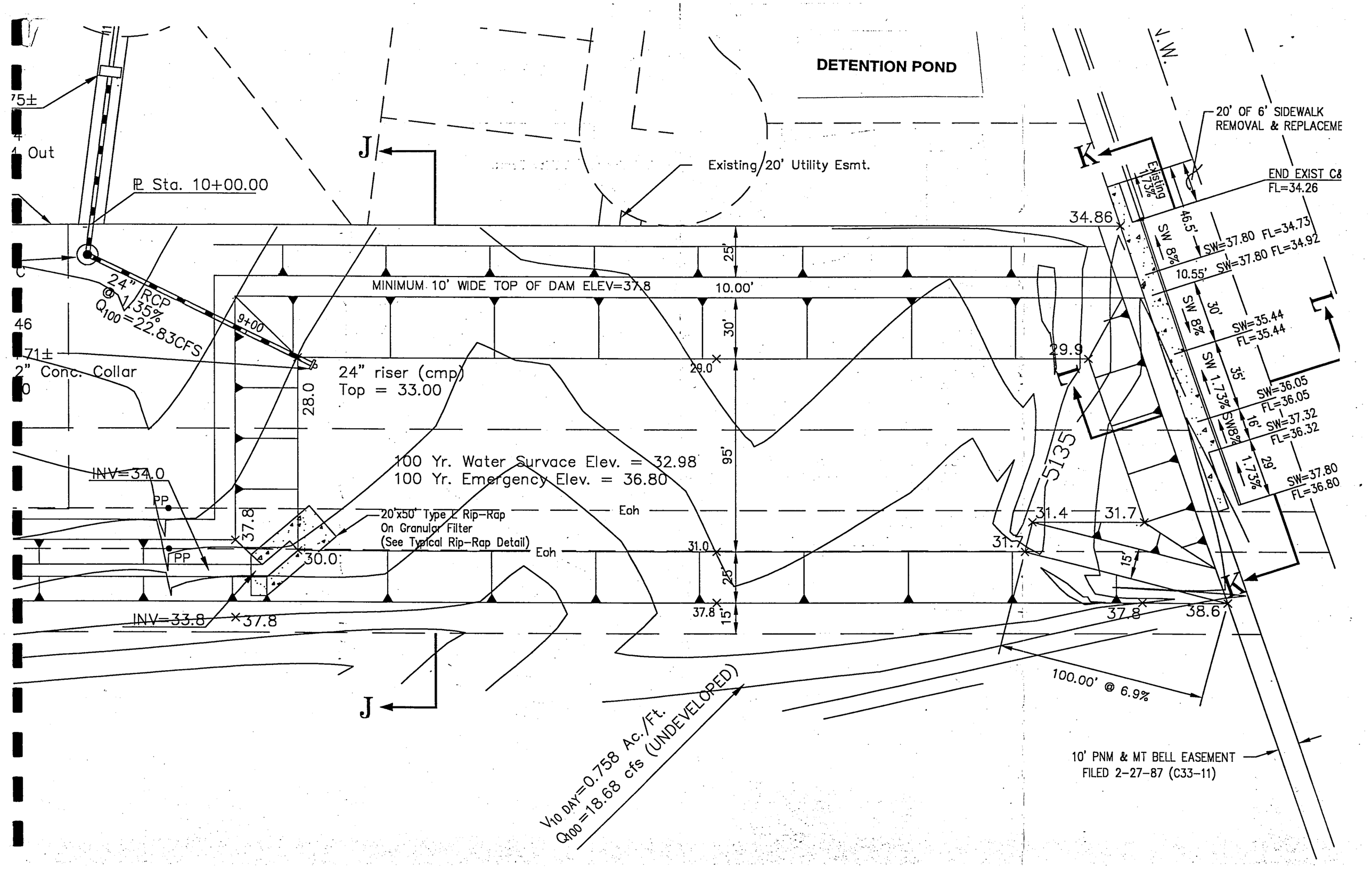


RATING CURVE FOR TYPE D INLETS IN A SUMP.



NOMOGRAPH FOR CAPACITY OF CURB OPENING INLETS AT LOW POINTS

FIGURE E


DETENTION POND
Existing 20' Utility Esmt.
℄ Sta. 10+00.00
J
K
20' OF 6' SIDEWALK REMOVAL & REPLACEME
END EXIST C&
FL=34.26
Existing 1.73%
46.5'
SW 8%
SW=37.80 FL=34.73
SW=37.80 FL=34.92
10.55'
30'
SW=35.44
FL=35.44
35'
SW 1.73%
SW=36.05
FL=36.05
16'
SW=37.32
FL=36.32
29'
SW=37.80
FL=36.80
24" RCP @ 1.35%
Q100=22.83CFS
9+00
MINIMUM 10' WIDE TOP OF DAM ELEV=37.8
10.00'
25'
30'
95'
25'
15'
24" riser (cmp)
Top = 33.00
28.0
29.0
29.9
34.86
5135
100 Yr. Water Survace Elev. = 32.98
100 Yr. Emergency Elev. = 36.80
INV=34.0
PP
37.8
30.0
20'x50' Type L Rip-Rap
On Granular Filter
(See Typical Rip-Rap Detail)
Eoh
31.0
31.4
31.7
15'
INV=33.8
37.8
38.6
100.00' @ 6.9%
V10 DAY=0.758 Ac./Ft.
Q100=18.68 cfs (UNDEVELOPED)
10' PNM & MT BELL EASEMENT
FILED 2-27-87 (C33-11)
75±
Out
46
71±
2" Conc. Collar

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Geotechnical Engineering • Materials Testing • Environmental Engineering

GEOTECHNICAL INVESTIGATION
LADERA WEST DEVELOPMENT
UNITS 3 AND 4

Prepared for:

Curb, Inc.

Project No.: 93-1-191

November 6, 1993

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HYDROLOGY DIVISION

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1.0 INTRODUCTION

This report presents the results of our geotechnical investigation for Units 3 and 4 of the Ladera West Development.

The investigation was performed to determine site subsurface conditions and based upon the conditions observed in the test holes to develop geotechnical recommendations for:

Foundation Design;

Slabs on Grade;

Lateral Earth Pressures;

Site Grading; and

Earthwork Construction.

The conclusions and recommendations presented are based on information provided to us regarding the proposed development, on subsurface conditions disclosed by the test holes, on laboratory testing, and upon the local standards of our profession at the time this report was prepared.

This investigation was not performed to determine the presence of potentially hazardous waste or radon gas. Determination of the

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presence of potentially hazardous materials was beyond the scope of this investigation and requires the use of exploration techniques and analytic testing which were not appropriate for this investigation. If desired, Vinyard & Associates, Inc. will perform an environmental audit of the site.

2.0 PROPOSED CONSTRUCTION

Based upon information obtained from personnel with Curb, Inc., we anticipate the site will be developed with a residential subdivision. The proposed buildings will be single story and will be constructed utilizing conventional wood frame construction. The ground floor will be a conventional concrete slab on grade. No basements or below grade structures are anticipated. The maximum column and bearing wall loads (dead plus live) are not anticipated to exceed ten kips and two kips per linear foot, respectively. If structure loads or configuration differ from those indicated in this report, this office should be notified.

Site grading plans indicate significant cut/fill earthwork will be required.

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3.0 SITE CONDITIONS

The site is bounded to the south by a currently undeveloped portion of Ladera West Unit 2. The site is bounded on the remaining sides by undeveloped land.

The site slopes slightly to the east. Vegetation on site consists of weeds, grasses, and occasional cacti. There is a slight amount of trash and debris scattered across the site.

4.0 SITE SUBSURFACE CONDITIONS

To explore the site subsurface conditions, eight test holes were drilled at the approximate locations shown on the Site Plan, Figure 1. As shown on the Logs of Test Holes, Figures 2 through 9, the soils encountered in the test holes consisted of slightly silty to silty fine to medium-grained sand. The soils encountered were typically loose at the ground surface and medium dense at greater depths. The site soils were slightly moist.

Neither flowing groundwater or bedrock was encountered in the test holes to a depth of fifteen feet, the maximum depth of exploration. However groundwater conditions may change with time

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due to precipitation, variations in groundwater level, seepage from ponding areas or leaking utilities.

The silty sands encountered in the test holes exhibit a limited consolidation potential under the anticipated structural loads. Significant consolidation (collapse) occurs when site soils increase in moisture content. Refer to Figures 11 through 13.

The test holes allow observation of a very small portion of the soils below the site. Significant variations in subsurface conditions may occur across the site which were not disclosed by the test holes.

5.0 LABORATORY TESTING

A laboratory testing program was performed on samples obtained during the field investigation which appeared representative of the soils encountered in the test holes. The laboratory testing program was structured to determine the physical properties of the soils encountered in the test holes necessary for development of geotechnical recommendations.

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The laboratory testing program included:

- Moisture Content;
- Dry Density;
- Sieve Analysis;
- Atterberg Limits; and
- Consolidation/Collapse.

Moisture Content and Dry Density tests were performed to evaluate the in-place soil density and moisture content. Test results help to evaluate settlement potential. Test results indicate the soils encountered in the test holes are medium dense with an average dry density of approximately 106 pcf. Natural moisture content averaged approximately three percent. Test results are presented on the Logs of Test Holes, Figures 2 through 9 and are summarized on Table 1.

Sieve Analysis and Atterberg Limits tests were performed to confirm field soil classifications and to provide information on general physical soil properties. Test results are presented on Table 1.

Consolidation/Collapse tests were performed to evaluate structure settlement and to determine the effect of water on site

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soils. The tests indicate the soils encountered in the test holes are slightly compressible under anticipated loads. Significant additional settlement occurs if the site soils are allowed to increase in moisture content. Test results are presented on Figures 11 through 13.

6.0 FOUNDATIONS

If the recommendations presented in this report are implemented particularly those regarding site grading and drainage, the proposed structures may be supported on conventional spread and strip footings. Foundations may be designed for an allowable bearing pressure of 1500 pounds per square foot. This value may be increased by one-third for short term loads due to wind and earthquakes. If it is not feasible to implement the site grading, drainage and landscaping recommendations presented herein an alternate foundation system may be required. This office should be contacted for additional recommendations.

Exterior footings should be embedded a minimum of eighteen inches below lowest adjacent grade. Interior footings should be embedded a minimum of twelve inches below finish pad grade. Spread and strip footings should be a minimum of twenty-four and eighteen

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inches wide, respectively. However, local building codes may require greater dimensions.

Lateral foundation loads will be resisted by a combination of passive soil pressure against the sides of footings and friction along the base. A passive soil resistance of 300 pounds per cubic foot may be utilized for design. Frictional resistance may be determined by multiplying foundation dead load by a coefficient of friction of 0.40.

Prior to fill placement or footing excavation, the natural soils should be scarified to a depth of eight inches and moistened to a near optimum moisture content (±3%). The exposed soils should then be compacted to a minimum of 95% of maximum density as determined by ASTM D-1557 with a minimum of ten passes of a minimum twenty ton vibratory compactor. If vibratory compaction will endanger existing structures a fully loaded scraper may be utilized. All fill below structures should be placed and compacted as detailed in the attached Appendix. Prior to pouring concrete footing excavations should be cleaned of any slough, loose soil or debris. Footing excavations should be compacted as detailed in the attached Appendix.

Foundations designed and constructed as described herein are

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not anticipated to settle more than one inch. The majority of this settlement should occur during construction. Differential settlement between adjacent column footings should not exceed one-half of the above value. The above settlement estimates are based on the assumption the site soils will not be allowed to increase in moisture content and that the site grading, drainage, earthwork, and landscaping recommendations presented in this report will be fully implemented.

The site soils are slightly to moderately collapsible if allowed to increase in moisture content. If the soils supporting footings are allowed to increase in moisture content, additional settlement of 1/8 inch per foot of wetted soil could occur.

To reduce the affect of settlement on the structure, we suggest that all stucco be fiberglass reinforced. Periodic control joints should be utilized in the stucco particularly at window and door corners. Periodic control joints should also be utilized in masonry walls.

7.0 CONCRETE SLABS-ON-GRADE

Concrete slabs-on-grade may be utilized. Slabs should be

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isolated from all foundations, stem walls, and utility lines. Frequent joints should be scored or cut in slabs to control the location of cracks.

Thickened slabs may be utilized to support interior partitions. Thickened slabs should be a minimum of twelve inches in width and should be designed to exert a maximum earth pressure of 500 pounds per square foot. Wall loads on thickened slabs should not exceed 800 pounds per linear foot. The thickness and reinforcement should be determined by a qualified structural engineer.

Prior to placing slabs or structural fill, the natural soils should be stripped of vegetation, scarified to a depth of eight inches, and moistened to a near optimum (±3%) moisture content. The exposed soils should then be compacted to a minimum of 95% of maximum density as determined by ASTM D-1557 with a minimum of ten passes of a minimum twenty ton vibratory compactor. If vibratory compaction will endanger existing structures a fully loaded scraper may be utilized. All fill below slabs should be placed and compacted as detailed in the attached Appendix.

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8.0 RETAINING WALLS

Retaining walls constructed in conjunction with this project are not anticipated to exceed three feet in height. If higher walls or unusual loading conditions such as sloping backfill, slopes below retaining wall footings or surcharges are anticipated, this office should be contacted for supplemental recommendations.

Foundations for retaining walls may be designed for a maximum toe bearing pressure of 1500 pounds per square foot. Retaining wall footings should be embedded a minimum of eighteen inches below lowest adjacent grade. Prior to placing footings, the exposed soils should be scarified to a depth of eight inches, moisture conditioned to a near optimum (±3%) moisture content and compacted to a minimum of 95% of maximum density as determined by ASTM D-1557.

We recommend that the following equivalent fluid pressures be utilized for design of retaining walls:

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Loading Condition	Equivalent Fluid Pressure*
Active Earth Pressure	32 pcf
Passive Earth Pressure	
Undisturbed Natural Soils	300 pcf
Structural Fill	400 pcf
Earth Pressure at Rest	60 pcf

* Does not include a factor of safety or hydrostatic pressure.

The above earth pressures do not include a factor of safety or hydrostatic pressure. If retaining walls are restrained against rotation (corners of basements, upper floors, etc.) the earth pressure at rest should be utilized for design.

Lateral retaining wall loads will be resisted by passive earth pressure at the toe and friction along the base of the wall. A coefficient of friction between soil and concrete of 0.4 may be used for design.

Backfill adjacent to retaining walls should be placed and compacted as detailed in the attached Appendix. Backfill adjacent to walls should be compacted with relatively light, hand operated equipment to prevent over stressing the wall and excessive lateral deflections.

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To prevent staining of concrete, the back of retaining walls should be waterproofed prior to backfilling. Weep holes should be constructed near the base of exterior walls. Perimeter drains may be necessary around interior walls.

9.0 EARTHWORK

9.1 General

The recommendations presented in this report are based upon the assumption that site earthwork will be performed as recommended in this report and the attached Appendix. Presented below is a summary of the site earthwork recommendations. Detailed earthwork procedures are presented in the attached Appendix.

9.2 Clearing and Grubbing

Prior to placing structural fill, all borrow and fill areas should be stripped of vegetation and deleterious materials. All strippings should be hauled offsite or utilized in landscaped areas.

All existing utilities, leach fields, and disturbed soil

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should be removed from below the proposed structure. The resulting excavations should be backfilled with compacted fill as detailed in the attached Appendix.

9.3 Excavation

We anticipate that on site soils can be excavated with conventional earthwork equipment. Occasional cobbles or boulders may be encountered during excavation. Cobbles and boulders should be disposed of off site or utilized for landscaping. Cobbles and boulders should not be placed within structural fills.

9.4 Natural Ground Preparation

Prior to placing structural fill and subsequent to final grading in cut areas, the exposed soils should be scarified to a depth of eight inches and moisture conditioned to a near optimum (±3%) moisture content. The exposed soils should then be compacted to a minimum of 95% of maximum density as determined by ASTM D-1557 with a minimum of ten passes of a minimum twenty ton vibratory compactor. If vibratory compaction poses a threat to nearby structures, static compaction should be utilized.

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9.5 Fill Placement and Compaction

Structural fill should be placed in horizontal lifts a maximum of eight inches in loose thickness, moisture conditioned to a near optimum moisture content and mechanically compacted. Fill below footings and slabs should be compacted to a minimum of 95% of maximum dry density as determined by ASTM D-1557. On site native soils appear suitable for re-use as engineered fill.

9.6 Observation and Testing

Placement and compaction of structural fill should be observed and tested by a qualified Geotechnical Engineer or his representative. The purpose of the observation and testing is to confirm that the recommendations presented herein are followed and to provide supplemental recommendations if subsurface conditions differ from those anticipated.

Foundation excavations should be observed by a qualified geotechnical engineer or his representative prior to placement of reinforcement or concrete. The purpose of the observation is to determine if the exposed soils are similar to those anticipated.

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10.0 SITE GRADING AND DRAINAGE

The site soils are slightly to moderately collapsible if allowed to increase in moisture content. To reduce the risk of structure settlement the site should be graded to rapidly drain away from structures. We suggest a minimum four percent gradient within at least the first ten feet away from structures in areas not protected by sidewalks and pavement. Side yards should be graded to drain rapidly. Splash blocks should be utilized below down spouts and canales. We suggest the use of roof gutters discharging to the front of the residences.

If ponding areas are required, they should be located as far away from structures as possible, a minimum of ten feet. If this criteria cannot be met, this office should be contacted for supplemental recommendations.

11.0 LANDSCAPING

Landscaping adjacent to structures should be designed and constructed to minimize the potential for wetting of soils supporting the proposed facilities. If soils supporting the proposed facilities are allowed to increase in moisture content,

significant localized settlement could occur.

Trees and shrubs within five feet of structures should be hand watered or watered using controlled drip irrigation. If drip irrigation is used, emitters should discharge no more than one gallon per hour. If grass must be planted within five feet of structures, watering should be carefully controlled to prevent overwatering. Grassed areas adjacent to structures should be sloped so that excess irrigation water will run off promptly. Sprinkler lines and drip irrigation mains should be located a minimum of five feet away from foundations.

Mowing strips, planters and sidewalks should not "dam" water adjacent to structures. If necessary, mowing strips should be perforated to allow water to flow away from structures.

All interior planters should be closed bottom and watertight.

12.0 UTILITIES

The site soils are slightly to moderately collapsible if allowed to increase in moisture content. If post construction water or sewer line leaks occur, localized settlement may result.

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Following installation, all water and sewer lines should be pressure checked for leaks. Any leaks found should be repaired. Backfill in utility line trenches below slabs and pavement should be compacted to a minimum of 90% of maximum density as determined by ASTM D-1557. To reduce the possibility of breaking utility lines with compaction equipment, heavy compactors should not be utilized.

13.0 TRENCHES AND EXCAVATIONS

All trenches greater than four feet in depth must be sloped, shored or braced or otherwise supported according to OSHA Construction and Safety Standards. Material excavated from the trench or spoil must be placed a minimum of two feet from the edge of the excavation. The spoil should be retained in an effective manner such that no loose material can fall into the excavation.

Temporary construction excavations less than six feet deep should be sloped no steeper than 1-1/2:1 (horizontal:vertical). If deeper excavations are required, this office should be contacted for supplemental recommendations. Limited raveling of slopes will occur particularly as the exposed soils dry out. Heavy equipment and material stockpiles should be located a minimum of five feet

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from the top of slope.

14.0 CLOSURE

The recommendations presented in this report are based upon the subsurface conditions disclosed by the test holes. Soil and groundwater conditions may vary between test holes and with time.

This report reflects our interpretation of the site subsurface conditions. We strongly recommend that prior to bidding all contractors perform their own subsurface investigation to form their own opinion of the site soil, rock and groundwater conditions. Should contractors elect to use this report for construction, bidding or estimating purposes, they do so at their own risk.

In a southwest climate it is particularly important to protect the soils supporting the proposed structure from an increase in moisture content. If soils supporting the structure increase in moisture content due to any cause such as poor site drainage, ponding areas, or leaking utility lines, significant structural settlement and distress may occur.

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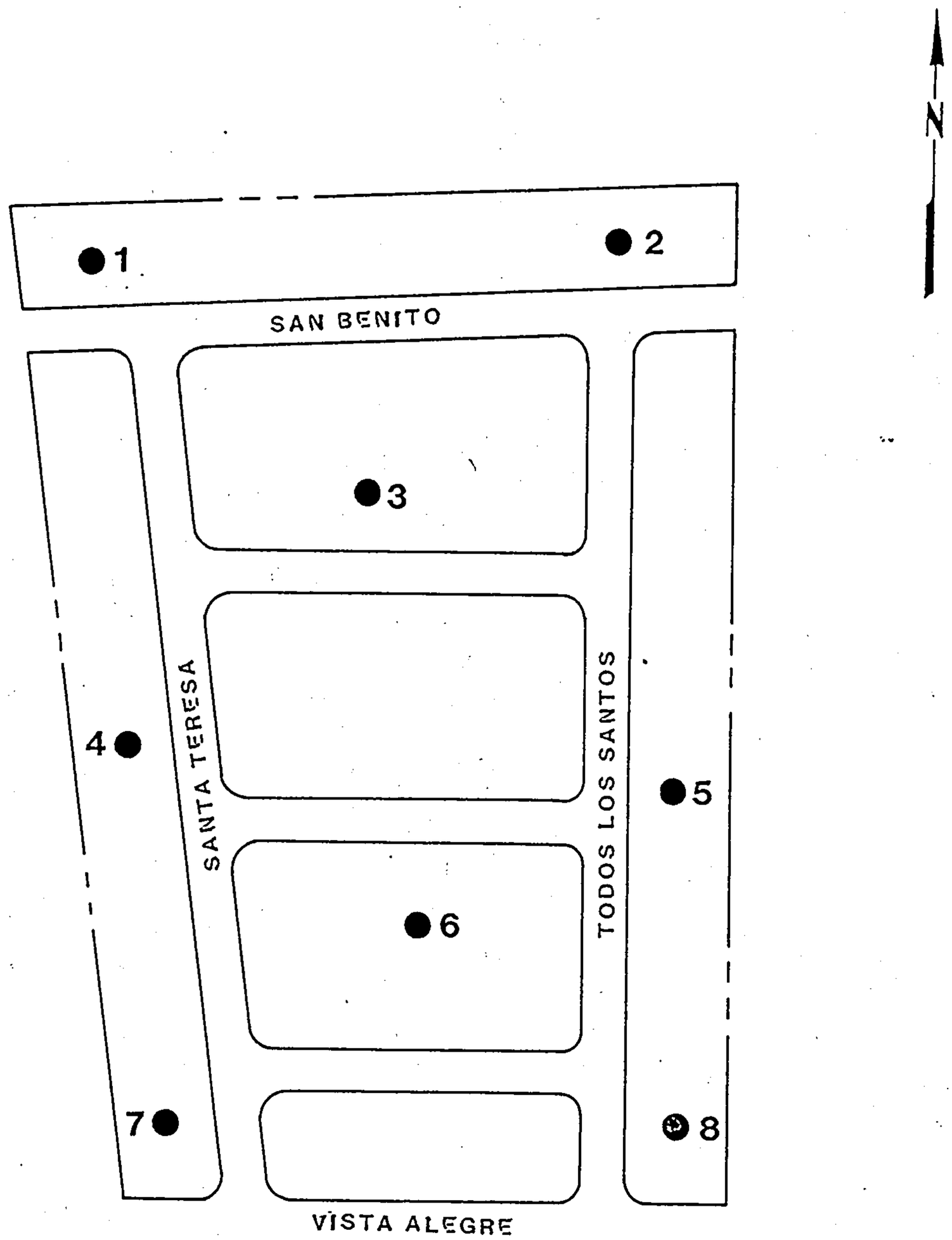
If conditions are encountered during construction which differ from those presented herein, this office should be contacted for supplemental recommendations. The staff of **Vinyard & Associates, Inc.** is available for supplemental consultation as necessary.

This office would be pleased to review site grading and drainage plans to evaluate conformance with the recommendations presented herein. All site earthwork should be observed by a qualified geotechnical engineer or his representative. **Vinyard & Associates, Inc.** would be pleased to provide these services.

Vinyard & Associates, Inc.

Martin D. Vinyard, P. E.

SITE PLAN



TEST HOLE LOCATION

FIGURE NO.: 1

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LOG OF TEST HOLE NO. 1

Project: Ladera West Units 3 & 4 — Project No. 93-1-191

Elevation - Top of Test Hole: n/a — Date Drilled: 10/26/93

Depth to Groundwater: not encountered — Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine to medium-grained, poorly graded, medium dense, slightly moist, light brown
	18	R	110	1.8	1,2		
5							
	18	R	106	1.3	1		Fine to coarse-grained
							Gravelly lens
10							
	17	S		2.1			Mostly fine-grained
15							
	12	S					Fine to coarse-grained, silty to slightly silty Very silty lens
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 2

V & A

LOG OF TEST HOLE NO. 2

Project: Ladera West Units 3 & 4 — Project No. 93-1-191

Elevation - Top of Test Hole: n/a — Date Drilled: 10/26/93

Depth to Groundwater: not encountered — Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine-grained, poorly graded, medium dense, slightly moist, light brown
	15	R		2.0			
	NR	B					
5							
	42	R	107	2.1	1		Fine to medium-grained, dense
							Gravelly lens
10							
	9	S		3.3			Very silty to silt lenses
15							
	14	S					
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 3

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LOG OF TEST HOLE NO. 3

Project: Ladera West Units 3 & 4 — Project No. 93-1-191

Elevation - Top of Test Hole: n/a — Date Drilled: 10/27/93

Depth to Groundwater: not encountered — Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine-grained, poorly graded, uniform, medium dense, slightly moist, light brown
	18	R	104	2.1			
5							
	34	R	108	2.8	1		Fine to medium-grained, dense
							Gravelly lens
10							
	24	S					
15							
	19	S					Slight fine to coarse gravel
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 4

V & A

LOG OF TEST HOLE NO. 4

Project: Ladera West Units 3 & 4 Project No. 93-1-191

Elevation - Top of Test Hole: n/a Date Drilled: 10/27/93

Depth to Groundwater: not encountered Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty to very silty, fine-grained, poorly graded, uniform, medium dense, slightly moist, light brown
	14	R	103	2.1	1,2,5		
5							
	16	R	103	4.2	1,2,5		Clayey lens
10							
	13	S		4.2	1		Very silty to silt
15							
	33	S		1.8			
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 5

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LOG OF TEST HOLE NO. 5

Project: Ladera West Units 3 & 4 — Project No. 93-1-191

Elevation - Top of Test Hole: n/a — Date Drilled: 10/26/93

Depth to Groundwater: not encountered — Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine-grained, poorly graded, medium dense, slightly moist, light brown
	11	R	106	2.5			
5							
	11	R	104	3.5	1,2,5		Very silty
10							
	10	S		3.1			Silty
15							
	12	S		2.2			
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 6

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LOG OF TEST HOLE NO. 6

Project: Ladera West Units 3 & 4 — Project No. 93-1-191

Elevation - Top of Test Hole: n/a — Date Drilled: 10/27/93

Depth to Groundwater: not encountered — Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine to medium-grained, poorly graded, uniform, medium dense, slightly moist, light brown
	23	R	101	1.8			
5							
	23	R	104	3.0	1,2,5		Silty to very silty
10							
	13	S		2.9			
							Silt lenses
15							
	22	S					Silty
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 7

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LOG OF TEST HOLE NO. 7

Project: Ladera West Units 3 & 4 — Project No. 93-1-191

Elevation - Top of Test Hole: n/a — Date Drilled: 10/26/93

Depth to Groundwater: not encountered — Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine-grained, poorly graded, dense, slightly moist, tan
	37	R	106	1.8	1		
5							
	38	R	108	1.3			
10							
	24	S		2.9			
15							
	17	S		3.4			Calcareous
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 8

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LOG OF TEST HOLE NO. 8

Project: Ladera West Units 3 & $ Project No. 93-1-191

Elevation - Top of Test Hole: n/a Date Drilled: 10/26/93

Depth to Groundwater: not encountered Drilling Method: 6" H.S.A.

Depth, feet	Blows/Foot	Sample Type	Water Content, %	Dry Density pcf	Additional Testing	Unified Classification	Material Description
						SM	SAND, silty, fine to medium-grained, poorly graded, loose, slightly moist, tan
	5	R	104	2.9	1,2,5		
5							
	11	R	104	2.7			Medium dense
10							
	15	S		1.2			Silty to slightly silty
15							
	14	S		2.9	1		Very silty to silt
							Bottom of hole at 16-1/2'
20							
25							
30							

ADDITIONAL TESTS: 1 = Sieve Analysis 2 = Atterberg Limits 3 = Direct Shear 4 = R-Value 5 = Other

Figure 9

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NOTES - LOGS OF TEST HOLES

Test hole locations were determined by compass bearing and pacing distances from known topographic points.

"Drilling Method" refers to the equipment utilized to advance the test hole. Six inch outside diameter, continuous flight, hollowstem auger was utilized.

"S" under "Sample Type" indicates a Standard Penetration test (ASTM D-1586). The Standard Penetration sampler is 2 inches in outside diameter and 1 3/8 inches inside diameter.

"R" under "Sample Type" indicates a 3 inch outside diameter by 2.5 inch inside diameter sampler. The sampler is lined with 1 inch high brass rings.

"B" under "Sample Type" indicates a bulk sample.

"Blows Per Foot" indicates the number of blows of a 140 pound hammer falling 30 inches required to drive the indicated sampler 12 inches.

"NR" under "Blows/Foot" indicates that no sample was recovered.

"Dry Density PCF" indicates the laboratory determined soil dry density in pounds per cubic foot.

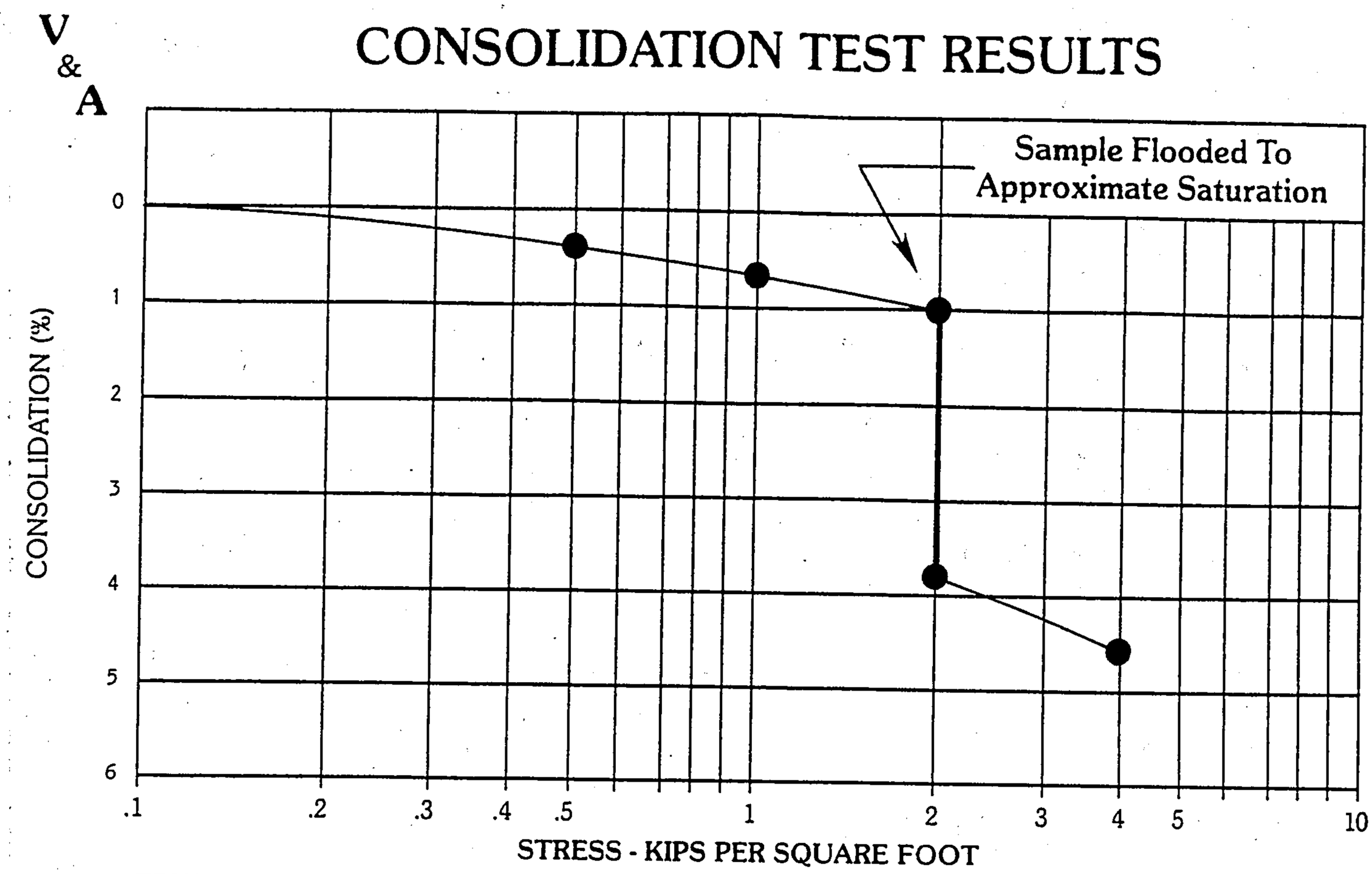
"Water Content %" indicates the laboratory determined soil moisture content in percent (ASTM D-2216).

"Unified Classification" indicates the field soil classification as per ASTM D-2488. When appropriate, the field classification is modified based upon subsequent laboratory tests.

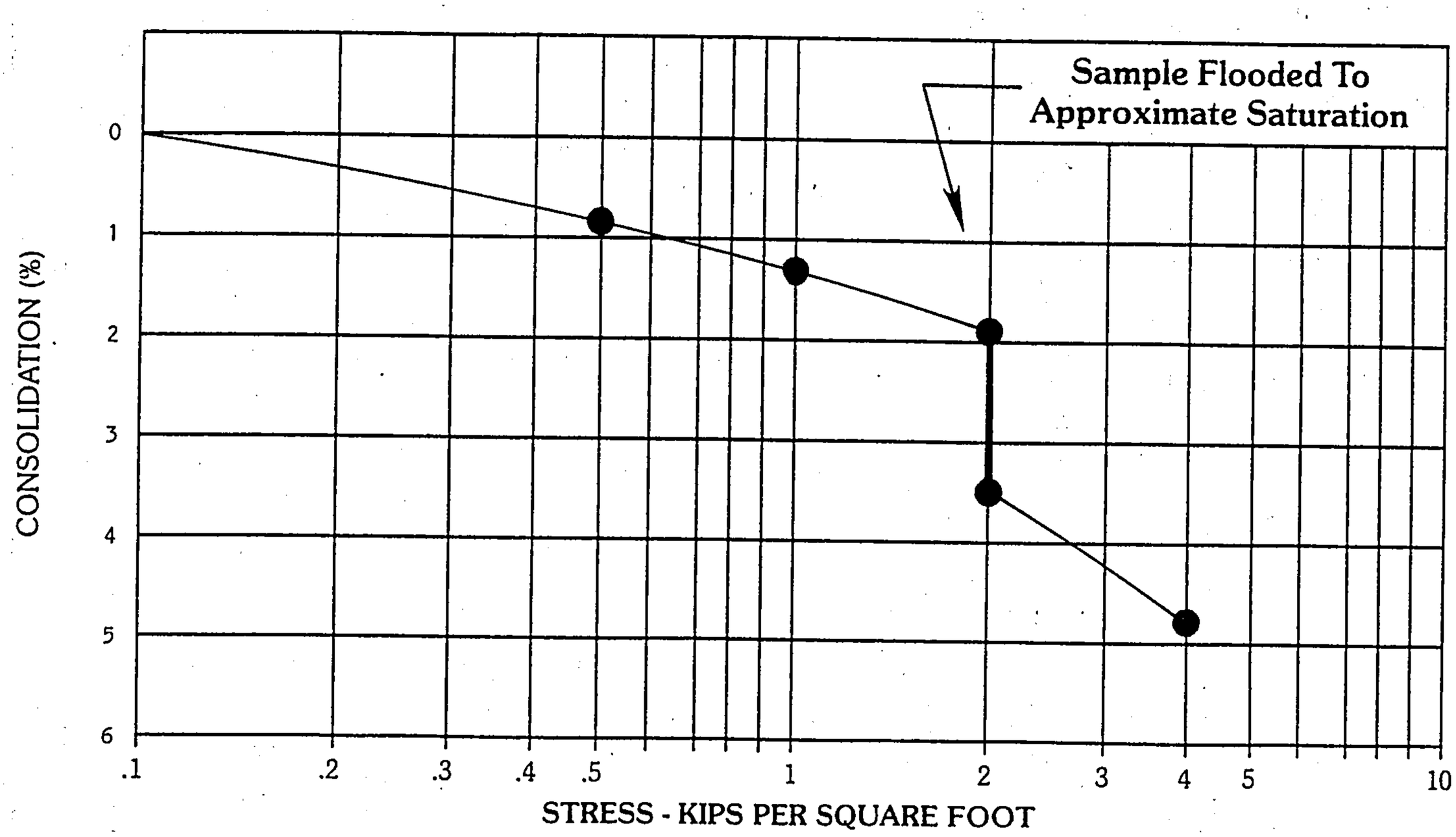
Variations in soil profile, consistency, and moisture content may occur between test holes. Subsurface conditions may also vary between test holes and with time.

Figure 10

CONSOLIDATION TEST RESULTS



TEST HOLE NUMBER 4 SAMPLE DEPTH 2 FEET
SOIL CLASSIFICATION SP-SM SOIL DESCRIPTION SAND, sli. silty
MOISTURE CONTENT (%) 2.1 DRY DENSITY (PCF) 103



TEST HOLE NUMBER 4 SAMPLE DEPTH 5 FEET
SOIL CLASSIFICATION SM SOIL DESCRIPTION SAND, very silty
MOISTURE CONTENT (%) 4.2 DRY DENSITY (PCF) 103

Project No. 93-1-191
Figure 11

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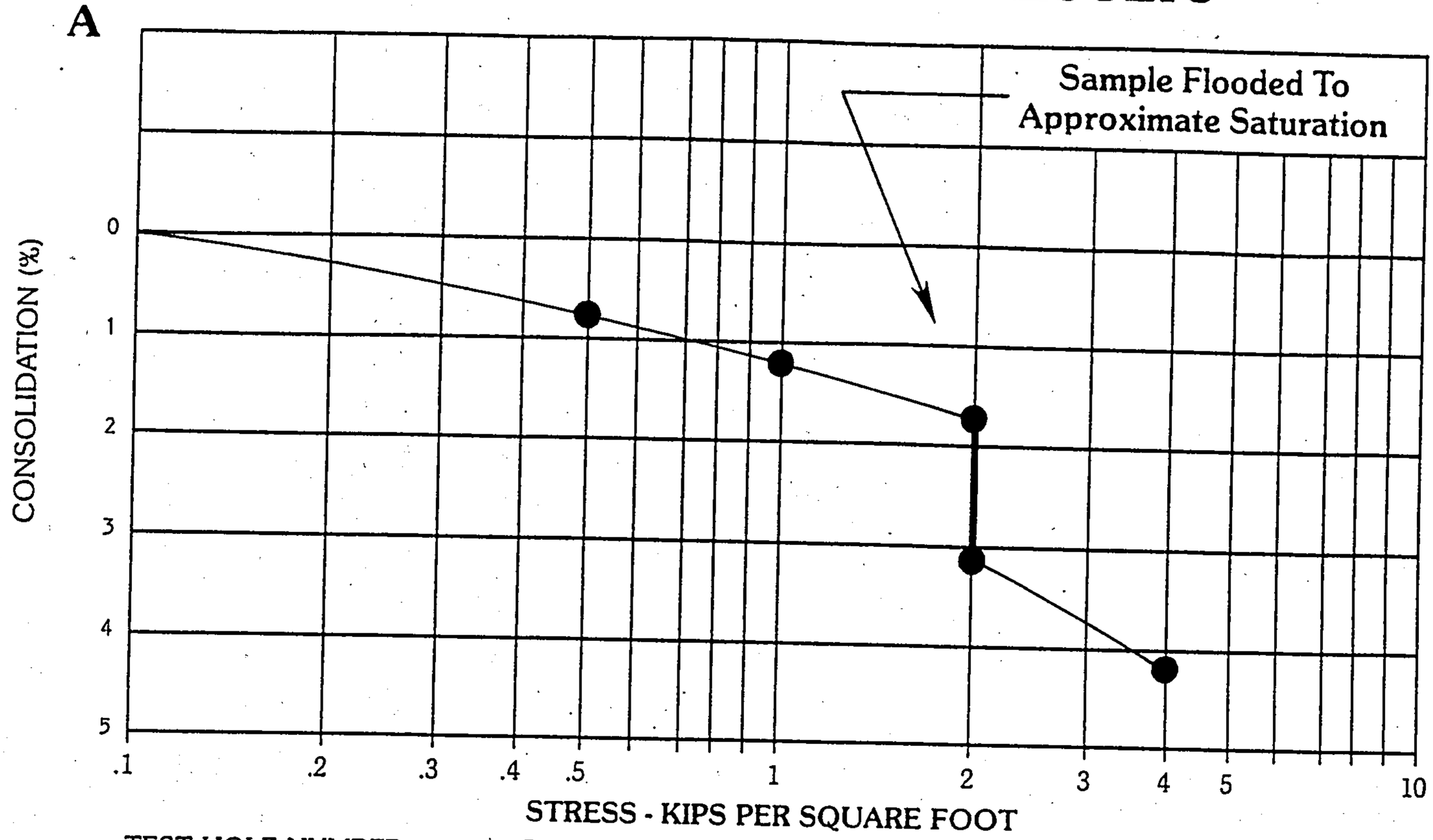
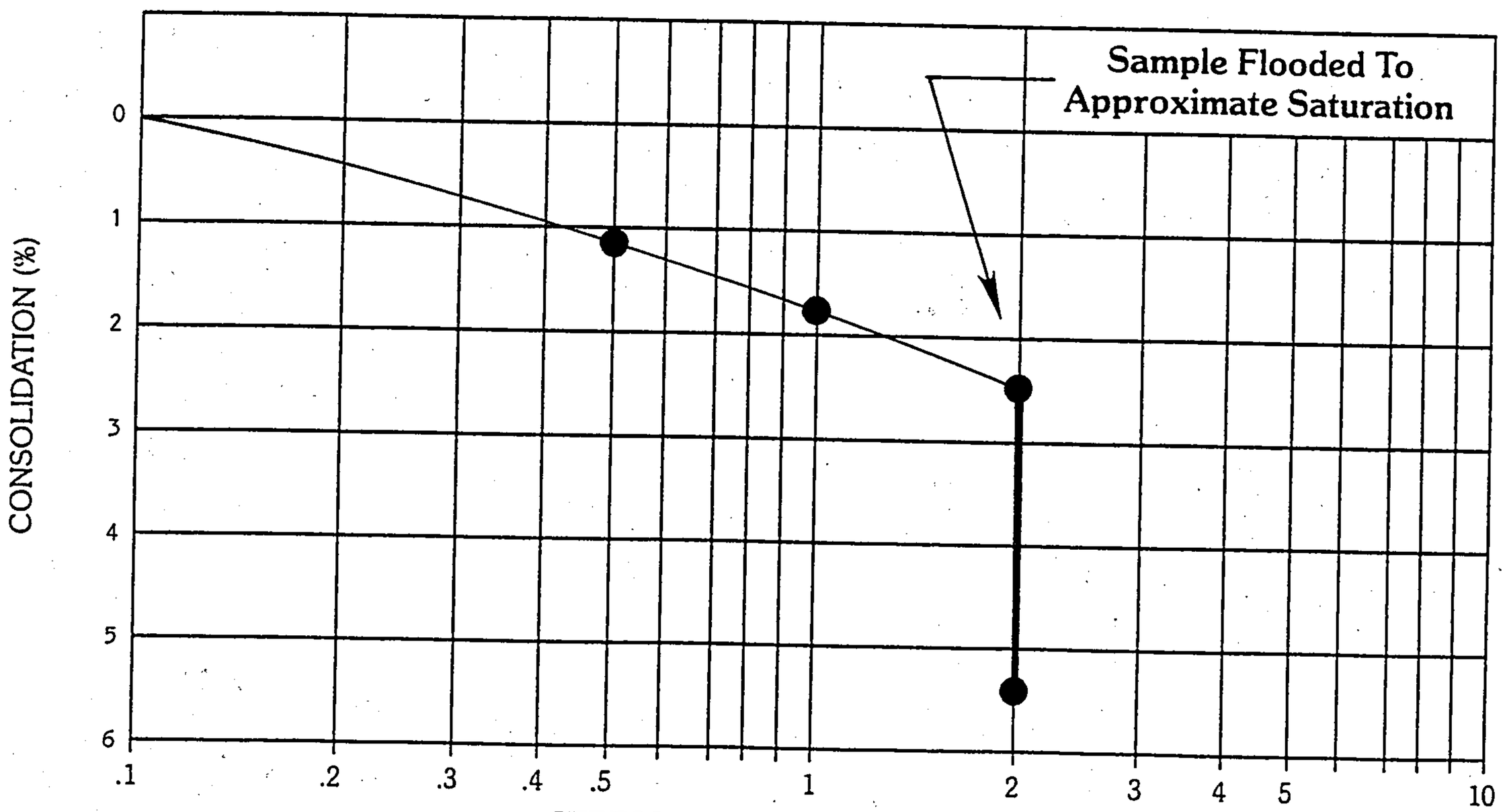
CONSOLIDATION TEST RESULTS



TEST HOLE NUMBER 5 SAMPLE DEPTH 5 FEET
SOIL CLASSIFICATION SM SOIL DESCRIPTION SAND, very silty
MOISTURE CONTENT (%) 3.5 DRY DENSITY (PCF) 104

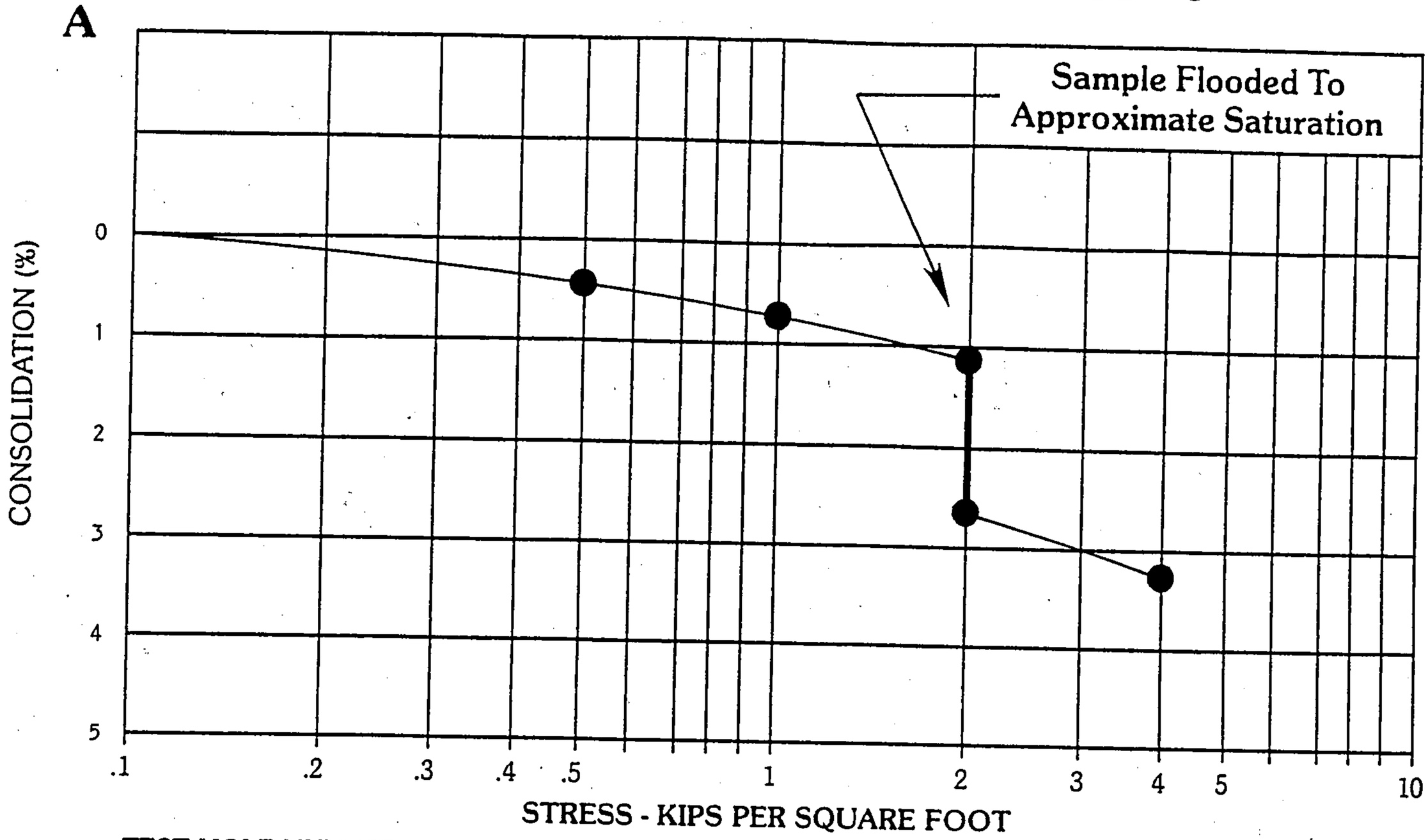


TEST HOLE NUMBER 6 SAMPLE DEPTH 5 FEET
SOIL CLASSIFICATION SM SOIL DESCRIPTION SAND, silty
MOISTURE CONTENT (%) 3.0 DRY DENSITY (PCF) 104

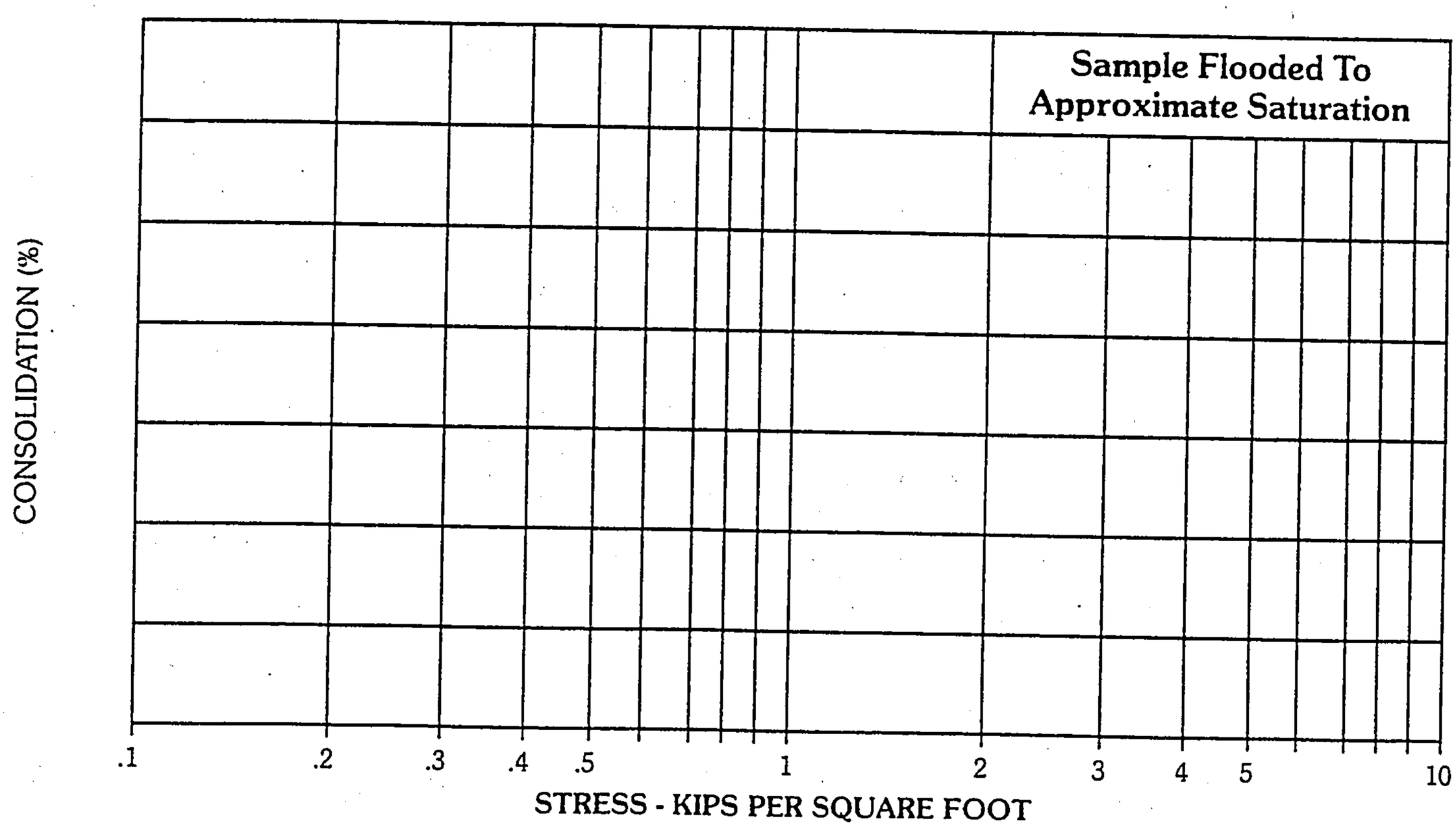
Project No. 93-1-191
Figure 12

V & A

CONSOLIDATION TEST RESULTS



TEST HOLE NUMBER 8 SAMPLE DEPTH 2 FEET
SOIL CLASSIFICATION SP-SM SOIL DESCRIPTION SAND, sli. silty
MOISTURE CONTENT (%) 2.9 DRY DENSITY (PCF) 104



TEST HOLE NUMBER _____ SAMPLE DEPTH _____ FEET
SOIL CLASSIFICATION _____ SOIL DESCRIPTION _____
MOISTURE CONTENT (%) _____ DRY DENSITY (PCF) _____

Project No. 93-1-191
Figure 13

V & A

SUMMARY OF LABORATORY TEST DATA

Test Hole No.	Depth (Feet)	Unified Classification	Natural Dry Density (pcf)	Natural Moisture Content (%)	Atterberg Limits		SIEVE ANALYSIS % PASSING BY WEIGHT										DESCRIPTION
					LL	PI	1½"	3/4"	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	
1	2	SP=SM	110	1.8	NV	NP	-	-	-	-	100	99	92	61	21	7.4	SAND, sll. silty
1	5	SP	106	1.3	-	-	-	-	-	100	99	98	91	58	8	2.6	SAND, trace silt
1	10	-	-	2.1	-	-	-	-	-	-	-	-	-	-	-	-	
2	2	-	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	
2	5	SP-SM	107	2.1	-	-	-	-	-	-	100	99	96	80	36	10.9	SAND, sll. silty
2	10	SM	-	3.3	-	-	-	-	-	-	-	100	99	96	71	29.9	SAND, very silty
3	2	-	104	2.1	-	-	-	-	-	-	-	-	-	-	-	-	
3	5	SM	108	2.8	-	-	-	-	-	-	100	99	98	77	31	12.1	SAND, silty
4	2	SP-SM	103	2.1	NV	NP	-	-	-	-	-	100	99	91	39	9.7	SAND, sll. silty
4	5	SM	103	4.2	NV	NP	-	-	-	-	-	100	99	93	65	31.4	SAND, very silty
4	10	SM	-	4.2	-	-	-	-	-	-	-	100	99	95	75	45.0	SAND, very silty
4	15	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-	-	
5	2	-	106	2.5	-	-	-	-	-	-	-	-	-	-	-	-	
5	5	SM	104	3.5	NV	NP	-	-	-	-	-	-	100	97	74	33.4	SAND, very silty
5	10	-	-	3.1	-	-	-	-	-	-	-	-	-	-	-	-	
5	15	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	
6	2	-	101	1.8	-	-	-	-	-	-	-	-	-	-	-	-	
6	5	SM	104	3.0	NV	NP	-	-	-	-	-	100	99	94	59	21.4	SAND, silty
7	2	SP-SM	106	1.8	-	-	-	-	-	-	-	100	99	82	34	7.6	SAND, sll. silty
7	10	-	-	2.9	-	-	-	-	-	-	-	-	-	-	-	-	
7	15	-	-	3.4	-	-	-	-	-	-	-	-	-	-	-	-	

NV - indicates no value

NP - indicates non-plastic

Project No. 93-1-191

Table 1

V & A

SUMMARY OF LABORATORY TEST DATA

Test Hole No.	Depth (Feet)	Unified Classi-fication	Natural Dry Density (pcf)	Natural Moisture Content (%)	Atterberg Limits		SIEVE ANALYSIS % PASSING BY WEIGHT										DESCRIPTION
					LL	PI	1½"	3/4"	3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200	
8	2	SP-SM	104	2.9	NV	NP	-	-	-	-	100	99	98	86	40	10.8	SAND, sli. silty
8	5	-	104	2.7	-	-	-	-	-	-	-	-	-	-	-	-	
8	10	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	
8	15	SM	-	2.9	-	-	-	-	-	-	100	99	96	86	47	16.7	SAND, silty

NV - indicates no value

NP - indicates non-plastic

Project No. 93-1-191

Table 1 cont.

V
&
A

APPENDIX

EARTHWORK PROCEDURES

General

The Geotechnical Engineer shall be the Owner's representative to observe and evaluate the earthwork operations. The Contractor shall cooperate with the Geotechnical Engineer in the performance of the Engineer's duties.

Clearing and Grubbing

Prior to placing structural fill all borrow areas and areas to receive structural fill shall be stripped of vegetation and deleterious materials. Strippings shall be hauled offsite or stockpiled for subsequent use in landscaped areas or non structural fill areas as designated by the Owner or his representative and approved by the Geotechnical Engineer.

Site Preparation - Fill Areas

Prior to placing structural fill the areas to be filled shall be scarified to a depth of eight inches and moisture conditioned as described below. The area to be filled shall then be compacted to a minimum of 95 percent of maximum density as determined by ASTM D-1557 with a minimum of ten passes of a vibratory compactor. The vibratory compactor shall exert a minimum dynamic force of twenty tons. If vibratory compaction techniques pose a threat to the structural integrity of near by facilities a fully loaded scraper shall be used. Any soft or "spongy" areas shall be removed as directed by the Geotechnical Engineer and replaced with structural fill as described herein.

Site Preparation - Cut Areas

Following excavation to rough grade all building and pavement areas shall be scarified to a depth of eight inches and moisture conditioned as described below. All building and paved areas shall be compacted to a minimum of 95 percent of maximum density as determined by ASTM D-1557 with a minimum of ten passes of a vibratory compactor. The vibratory compactor shall exert a minimum

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dynamic force of twenty tons. If vibratory compaction techniques pose a threat to the structural integrity of near by facilities a fully loaded scraper shall be used. Any soft or "spongy" areas shall be removed as directed by the Geotechnical Engineer and replaced with structural fill as described herein.

Foundation, Slab and Pavement Subgrade Preparation

Prior to placing reinforcement, footings, slabs, or pavement the supporting soils shall be prepared, moisture conditioned and compacted as described herein.

Fill Material

Fill material shall be non expansive soil which may be gravel, sand, silt or clay or a combination there of. Fill material shall conform to the following gradation:

Sieve Size	Percent Passing By Weight
1"	100
No. 4	70 - 100
No. 200	10 - 40

Fill material shall exhibit a plasticity index of twenty or less. No organic or decomposable material shall be utilized. Material larger than six inches shall not be placed in the fill without prior approval of the Owner or his representative and the Geotechnical Engineer. Material larger than four inches shall not be placed within twelve inches of footings or slabs. All fill material shall be approved by the Geotechnical Engineer.

Fill Placement

Fill material shall be blended as necessary to produce a homogeneous material. Fill material shall be spread in horizontal lifts no greater than eight inches in uncompacted thickness but in no case thicker than can be properly compacted with the equipment to be utilized. If fill is to be placed on slopes steeper than 5:1 (horizontal:vertical) the natural ground shall be benched with minimum three foot wide benches at maximum two foot vertical intervals.

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Moisture Conditioning

Fill material shall be dried or moistened as necessary, prior to compacting, to within ± three percent of optimum moisture content as determined by ASTM D-1557. Moisture shall be distributed uniformly throughout each lift.

Compaction

Structural fill shall be mechanically compacted to the following:

	Minimum Compaction ASTM D-1557
Foundation Support	95%
Slab Support	95%
Below Slab Utility Trenches	90%
General Site Grading	90%
Pavement Support	
Upper 6" of Subgrade	95%
All other fill below pavement	90%

Aggregate Base Course shall be compacted to a minimum of 95% of maximum density as determined by ASTM D-1557.

Asphaltic concrete shall be compacted to a minimum of 96% of maximum Marshall Density (75 Blows).

Compaction by flooding and jetting is specifically prohibited unless authorized in advance by the Owner or his representative and the Geotechnical Engineer.

Observation and Testing

The Geotechnical Engineer or his representative shall perform field density tests with a frequency and at the locations he feels appropriate. The Geotechnical Engineer or his representative will perform Proctor tests on representative samples of all fill material. To minimize delays the Earthwork Contractor is encouraged to submit soil samples prior to use for proctor testing.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 12, 1994

Bo Johnson, P.E.
Curb Inc.
6301 Indian School NE
Albuquerque, N.M. 87110

RE: ENGINEER'S CERTIFICATION FOR LADERA WEST #4 (G-10/D8)
RECEIVED JULY 29, 1994 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 7/27/94

Dear Mr. Johnson:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification of grading & drainage and releases the Financial Guaranty for Project #4450.93.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Lynda Michelle DeVanti, Project #4450.93

WPHYD/7992/jpc

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: LADERA WEST #4 ZONE ATLAS/DRNG. FILE #: G-10 Z/D8

DRB #: _____ EPC #: _____ WORK ORDER #: 4450.93

LEGAL DESCRIPTION: LADERA WEST #4 REPLAT OF TRACT C - L.W. #3

CITY ADDRESS: ~~LOTS~~ 53 LOTS

ENGINEERING FIRM: Community Sciences CONTACT: Doug Hughes

ADDRESS: P.O. Box 1328 Corrales 87048 PHONE: 897 0800

OWNER: Cwb Inc CONTACT: Bo Johnson/8999656

ADDRESS: 6301 Indian School Rd PHONE: 881 9190

ARCHITECT: None CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Same - Community Sciences CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: New Concepts CONTACT: Tom Lakemow

ADDRESS: _____ PHONE: 821 950X

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

X ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

X DRAINAGE REQUIREMENTS

X OTHER _____ (SPECIFY)

GRADING & DRAINAGE CERTIFICATION

DATE SUBMITTED: 7/29/94

BY: Bo Johnson

Bo Johnson

JUL 29 1994

7-25-94

Mr. John Curtain ,
Drainage Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque
New Mexico, 87103

RE: LADERA WEST UNIT 4, GRADING AND DRAINAGE CERTIFICATION

Dear Mr. Curtain,

Please find enclosed, a blueprint of the grading plan for the above-referenced subdivision with the "as-constructed" grades and my signed and sealed Grading and Drainage Certification added.

I find that the grading was performed in substantial compliance with the plans and specifications. Fine grading after home construction will permit the water flows on lots to discharge to the streets as designed and then to outlet into the Rinconada Channel.

All flood walls and other drainage improvements have been constructed per design and the important elevations noted.

As you know, the City performed both the inspection and surveying of all public improvement as they were constructed.

I look forward to your approval and assistance in the City's acceptance of this subdivision. You may reach me at 899-9656

Thank you for your attention to this matter.

Bo Johnson P.E.

RECEIVED
JUL 29 1994
HYDROLOGY

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 28, 1994

Bo Johnson, P.E.
Curb Inc.
6301 Indian School NE
Albuquerque, N.M. 87110

RE: ENGINEER'S CERTIFICATION FOR LADERA WEST #3 (G-10/D8)
RECEIVED JUNE 20, 1994 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 6/17/94

Dear Mr. Johnson:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification of grading & drainage and releases the Financial Guaranty for this project.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Lynda Michelle DeVanti, Project #4450.92

WPHYD/7992/jpc

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Ladera West #3 ZONE ATLAS/DRNG. FILE #: G-10 Z/D8

DRB #: _____ EPC #: _____ WORK ORDER #: Proj. # 4450.92

LEGAL DESCRIPTION: El Rancho Atrisco & Los Sontos Phase II

CITY ADDRESS: _____

ENGINEERING FIRM: Community Science CONTACT: Doug Hughes

ADDRESS: P.O Box 1328 PHONE: 897 0000

OWNER: Curb Inc CONTACT: Bo Johnson

ADDRESS: 5905 Azuelo Ct NW 6301 Indian School #688 87120 PHONE: 8999656

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Engineer. CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

X ENGINEER'S CERTIFICATION

____ OTHER _____

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

X SUBDIVISION CERTIFICATION

____ OTHER _____ (SPECIFY)

X Grading & Drainage Certification

JUN 20 1994

HYDROLOGY DIVISION

DATE SUBMITTED: 6/20/94

BY: Bo Johnson

6-15-94

Mr. John Curtain , P.E.
Drainage Engineer
City of Albuquerque
PO Box 1293
Albuquerque,
New Mexico , 87103

Re: Grading and Drainage Re-certification of Ladera West Unit 3

Dear Mr. Curtain,

Please find enclosed for you file, a revised and re-certified copy of the above referenced subdivision.

As you requested , I have had the subdivision resurveyed and have included on this re-certified print the additional grades. Please bear in mind, that the office of the City Surveyor performed all surveying for the public improvement. No significant street grade changes were constructed, and all curb and gutter and sidewalk were constructed per plan or the City's Standard Drawings. I recorded the additional grades and wall heights, noted a revision and re-dated my signature.

Although the grades for the Ladera Drainage Basin have been included here, no public water will enter this Basin until the Rinconada Unit 1 subdivision to the west is completed, which is anticipated to be in September of this year. A recorded Drainage Covenant & Agreement exists between the Owner and the City and has been delivered to your office under an earlier submittal.

I trust you will find this information satisfactory. You may reach me at 505 899-9656

Ladera West Unit 4 will soon be submitted for final approval and acceptance.

Sincerely,

Bo Johnson, PE

RECEIVED
JUN 2 0 1994

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 22, 1994

Bo Johnson, P.E.
Trinity Enterprises, Inc.
P.O. Box 2467
Santa Fe, N.M. 87501

RE: ENGINEER'S CERTIFICATION FOR LADERA WEST #3 (G-10/D8)
RECEIVED APRIL 8, 1994 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 4-5-94

Dear Mr. Johnson:

Based on the information included in the submittal referenced above, City Hydrology has the following comments that must be addressed before the Financial Guaranty will be released.

City Hydrology interprets Item 4 of the Engineer's Certification Checklist (DPM page 111) to require an as-built spot elevation at every property corner as a minimum. Retaining walls require as-built spot elevations on both sides of the wall. A copy of the checklist is attached for your information.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

WPHYD/7992/jpc

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: LAPERA WEST #3 ZONE ATLAS/DRNG. FILE #: G-10

DRB #: 93-274 EPC #: _____ WORK ORDER #: 9450.92

LEGAL DESCRIPTION: LAPERA WEST UNIT 3

CITY ADDRESS: N/O VISTA ALLEGRE

ENGINEERING FIRM: Community Science CONTACT: Billy MacArty

ADDRESS: _____ PHONE: 897 0000

OWNER: Curb Inc CONTACT: Bo Johnson

ADDRESS: 6301 INDIAN SCHOOL #680 PHONE: 881-9090

~~ARCHITECT~~: Bo Johnson ~~CONTACT~~: 899 9656

ADDRESS: 5905 Azuelo Ct PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: New Concepts Inc CONTACT: 821 9504

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER Drainage & Grading Certification

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

X SUBDIVISION CERTIFICATION

____ OTHER _____ (SPECIFY)

RECEIVED APR - 8 1994

DATE SUBMITTED: _____

BY: Bo Johnson

Richard J. Heggen
Water Resources Engineering

Drainage Report for Ladera West Units 3 & 4 Subdivision
(Map # G-10)
prepared for Curb Inc.
by Community Sciences Corp. (CSC)
August, 1993.

The subdivision contains no AMAFCA facilities and disposes of its on-site runoff thorough conventional storm sewer and street flow. The site is protected by the Rinconada Channel and contributes flow to that structure.

The Detention Pond

Development must satisfy the standard of existing runoff rates and volumes established by Avid Engineering. Offsite flow from the west will be intercepted by a temporary swale (Sec. A-A on the plate). CSC should document the sizing and freeboard of this channel, as overflow may impact the western row of lots.

To not exceed downstream storm drain capacity, a 9-foot deep pond southwest of the subdivision will retain the 100-year 7-day offsite flow. A plan figure in Appendix C shows a rough layout with several spot elevations. "A more detailed design of the pond will be provided with the with Unit 3 construction plans," (p. 3). "The pond will be graded to its ultimately developed design as part of the Unit 3 construction," (p. 1).

The pond will retain (not detain) somewhat more than 30 acre-ft. until Tracts 6 and 7 are developed. With development, the pond will be altered into a detention facility, cutting peak flow from 132 to 26 cfs. The following concerns should be addressed in the final design.

a) The size of the pond appears to call for a State Engineer permit.

b) There may be a water rights issue with this volume of retention.

c) The State Engineer may require an emergency spillway. There must be some safe way to noncatastrophically handle overtopping, as lots are adjacent.

d) Why is the low flow section of the pond specified impermeable? Every effort should be made to empty the pond quickly, particularly in its retention phase. If stored water is in fact a nuisance or legal issue, why not build a free outlet now?

The Rundown

Approximately 70 cfs will drain north into the Rinconada Channel. A 30 foot curb cut in San Benito transitions to a 10 foot rundown, 2 feet deep. CSC may have done what is reasonably possible to make it work. Flow depth is 0.93 feet where it leaves the street. Is this acceptable?

Received Comments on 1/13/94, to late for City to implement since w.o. has been issued. AMAFCA to resolve with C.S.C.

Lots 12 and 13-P1 may need some additional berming, as flow may cut over their sidewalks. A general Drainage Report need not resolve the problem, if any, but should flag such locations where subsequent engineering care is in order.

Street Hydraulics

The subdivision has the typical issues involving flow into and through intersections. I did not review the details. Given the 0.005 slopes, I expect some, perhaps acceptable, intersection complications with local drainage.

I question the jump depth formula in Table 2.

$$D_{jump} = -\frac{D_N}{2} + \sqrt{\frac{D^2_N}{2} + \frac{4\,V^2_N\,D_N}{g}}$$

This is less than the force balance

$$D_{jump} = \frac{D_N}{2}\sqrt{1 + 8F^2_1}$$

It may be that CSC's formula is empirically appropriate for crowned streets, but it's new to me. Reference it and indicate why it is appropriate.

The Rinconada Channel

I lack information to assess the overall channel capacity, but the August 26 letter of James Hughes to Cliff Anderson reasonably addresses the impact of the subdivision on the channel hydraulics. I'd like some justification for the 0.025 Manning's n. CSC should review side slopes of both the rundown and the south berm in light of access road vehicular grade and safety standards.

TRINITY ENTERPRISES, INC.
Civil Engineering, Home Building, Construction Management

Bo Johnson
President

4-6-94

MR. FRED AGUIIRRE
CITY HYDROLOGIST
CITY OF ALBUQUERQUE
PO BOX 1293
ALBUQUERQUE
NEW MEXICO 87103

RE: GRADING AND DRAINAGE CERTIFICATION
LADERA WEST UNIT 3 . CITY PROJECT 4450.92

DEAR MR, AGUIRRE

PLEASE FIND ENCLOSED A SET OF BLUELINE PRINTS OF THE GRADING AND DRAINAGE SHEETS FOR THE ABOVE REFERENCED PROJECT. I HAVE MADE THE PERTINENT "AS-CONSTRUCTED" REVISIONS , CERTIFIED , STAMPED AND SIGNED THESE PLANS AS REQUIRED BY THE CITY FOR RELEASE OF THE FINANCIAL GUARANTEE.

THANK YOU FOR YOUR EARLIEST ATTENTION TO THIS MATTER. I WOULD BE PLEASED TO DISCUSS THIS WITH YOU AT ANY TIME.

P.O. Box 2467 • Santa Fe, New Mexico 87501 • (505) 982-2587

To: Clifford Anderson (AMAFCA)

From: Gilbert Aldaz (City of Alb.)

Date: 01-13-94

Re: Review Comments by Richard Heggen dated 1/10/94

1 - FAIRWAY MANOR SUBDIVISION

Comments received from AMAFCA on 1/13/94. These comments were received too late for City to implement since W.O. has been issued. AMAFCA to resolve with Community Sciences.

2 - LADERA WEST UNITS 3 & 4

Comments received from AMAFCA on 1/13/94. These comments were received too late for City to implement since w.o. has been issued. AMAFCA to resolve with Community Sciences.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 10, 1993

James D. Hughes, P.E.
Community Sciences Corp.
P.O. Box 1328
Corrales, NM 87048

RE: DRAINAGE REPORT FOR LADERA WEST UNITS 3 & 4, (G10/D8), ENGINEER'S STAMP DATED NOVEMBER 5, 1993.

Dear Mr. Hughes:

As you are aware we provided you with signature approval on the Rough Grading permit on November 16, 1993.

With this letter we are also granting approval for Preliminary Plat.

Please be advised that prior to financial guarantee release by DRC, an Engineer's Certification must be submitted and approved by this office.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
City/County Floodplain Administrator

xc: Alan Martinez, Hydrology
File

wp+7992

TRINITY ENTERPRISES, INC.
Civil Engineering, Home Building, Construction Management

Bo Johnson
President

November 16, 1993

Mr. Gilbert Aldaz
Drainage Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: Ladera West Unit 3 & 4 Rough Grading Permit

Dear Gilbert,

This letter will request rough grading permission for the above referenced project. As usual, the developer is responsible for any construction revisions caused by further design review.

Thank you for your timely approval on this matter.

Very truly yours,

Bo Johnson, P.E.

BJ:mll

RECEIVED
NOV 16 1993
HYDROLOGY DIVISION

5905 Azuelo Ct. N.W. • Albuquerque, New Mexico 87120 • (505) 898-7266

COMMUNITY SCIENCES CORPORATION
P.O. Box 1328
CORRALES, NEW MEXICO 87048-1328

(505) 897-0000 • FAX (505) 898-2305

LETTER OF TRANSMITTAL

DATE 11-16-93	JOB NO. 291-02-620
ATTENTION Gilbert Aldaz	
RE: Ladera West Units 3 & 4	

TO City of Albuquerque - Hydrology
One Civic Plaza
Albuquerque, NM 87103

WE ARE SENDING YOU XX Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings XX Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
2			Grading Plans (set of 4 sheets)
1			Original mylar (set of 4 sheets)
1			Letter addressing October 15, 1993 comments
1			Revised off-site pond emergency spillway capacity calculations

THESE ARE TRANSMITTED as checked below:

XX For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Please review these revisions and sign the original mylars for rough grading.
Also please sign the prints for DRB

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NOV 16 1993
HYDROLOGY DIVISION

COPY TO Curb, Inc./Files

SIGNED: James D. Vaughn

40% Pre-Consumer Content • 10% Post-Consumer Content

If enclosures are not as noted, kindly notify us at once.

PRODUCT 240 NEBS Inc., Groton, Mass. 01471.

community sciences corporation

November 16, 1993

Mr. Gilbert Aldaz
Drainage Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Comments for Ladera West Units 3 & 4 per your October 15, 1993 letter.

Dear Mr. Aldaz:

The comments you have made concerning Ladera West Units 3 and 4 have been addressed as follows:

1. The rundown has been revised to be 20' wide, with a 42' weir opening, and a 12.5° taper (See details on the grading plan). HEC-2 was used for a backwater check and to analyze the sidewalk culverts (Appendix B of the Revised Drainage Report). Eight sidewalk culverts will be used to pass the 2 year storm under the sidewalk, while the 100 year storm will flow over the depressed sidewalk. A floodwall will be built in the front yards of lots 12 and 13 of Block 9 to transition from the sidewalk to the channel top. The maximum water surface will be contained within the curb (From HEC-2, WSEL = 42.22 .... Grading plan shows this does not exceed Top of Curb).

2. The rundown has been changed to 20' wide at a slope of 0.5%. The flow depth is 0.95' with 1.55' of freeboard. The slope (less than 5%), Froude number (less than 2), and length to depth ratio of 70 (less than 1000) do not meet the roll wave criteria in the DPM. Any wave action will be minimal and contained within the 1.55' of freeboard.

3. The improvements on Tract D have been shown on the grading plans.

4. There is an existing valley gutter across Vista Alegre to convey flows to Unit 2, as indicated on both the preliminary and final grading plan.

5. The offsite drainage easement and covenant has been provided with the Tract 7A Plat and should be processed with the Unit 3 work order.

6. The swale along the west boundary extends to the pond next to Ouray Road. This pond will serve as a temporary retention pond with adequate capacity for sediment until future development to the west of Ladera West. The emergency outfall will be provided with Unit 3 construction and the primary outfall, for the detention pond will be constructed with this future development. The grading plans show the concrete interface from the pond to Ouray Street.

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NOV 16 1993
HYDROLOGY DIVISION

P.O. Box 1328
Corrales, New Mexico 87048
(505) 897-0000

SURVEYING
LAND PLANNING
CIVIL ENGINEERING
DEVELOPMENT CONSULTANTS

7. Elevations along backyard swales are shown on the final grading plans. No backyard ponds are being used.

8. AMAFCA has approved the grading plans and offsite Master Plan. Their signature is still on one of the grading sheets. Since the Rinconada is the city's channel, I understand that AMAFCA approval is no longer required.

9. Side yard swales are shown on the grading plans (See Sections A, B, and C on Sheet 4).

Also per our telephone conversation of 11-15-93, the details of the pond's emergency spillway have been modified so that flows up to the top of curb in Ouray will not enter the pond (See attached revised emergency spillway calculations). Pond grading and embankment elevations were not affected, however, the emergency freeboard is now 0.7'.

If you have any further concerns regarding construction details, I will be happy to address them prior to work order. I am now confident that rough grading for ± 1.0' can proceed.

Sincerely,

James D. Hughes, P.E.

JDH:mll

CSC#291-02-620/291-02AQ.Rep.

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 11-16-1993 Time Executed: 13:23:00

>>>>>> Structure No. 07 <<<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) =35.44 E2 (ft) =37.8

X dist.(ft)	Y elev.(ft)
0	37.8
6.33	35.7
127.72	37.8

Outlet Structure File: LWPOND .STR

POND-2 Version: 4.01 S/N: 88020607
Date Executed: 11-16-1993 Time Executed: 13:23:00

Outflow Rating Table for Structure #07
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
28.00	0.0	E < Y min= 35.7
28.50	0.0	E < Y min= 35.7
29.00	0.0	E < Y min= 35.7
29.50	0.0	E < Y min= 35.7
30.00	0.0	E < Y min= 35.7
30.50	0.0	E < E1=35.44
31.00	0.0	E < E1=35.44
31.50	0.0	E < E1=35.44
32.00	0.0	E < E1=35.44
32.50	0.0	E < E1=35.44
33.00	0.0	E < E1=35.44
33.50	0.0	E < E1=35.44
34.00	0.0	E < E1=35.44
34.50	0.0	E < E1=35.44
35.00	0.0	E < E1=35.44
35.50	0.0	E = or > E2=37.8
36.00	2.8	W(ft)= 18.246 Max. D(ft)= .3
36.50	32.6	W(ft)= 48.655 Max. D(ft)= .8
37.00	109.8	W(ft)= 79.065 Max. D(ft)= 1.3
emergency Capacity → 37.10	132.1	W(ft)= 85.147 Max. D(ft)= 1.4
37.50	247.7	W(ft)= 109.474 Max. D(ft)= 1.8
37.80	363.7	W(ft)= 127.659 Max. D(ft)= 2.099
37.80	0.0	E = or > E2=37.8

DRAINAGE INFORMATION SHEET

PROJECT TITLE: LADERA WEST UNITS 3 & 4 ZONE ATLAS/DRNG. FILE #: G-10 / D 8

LEGAL DESCRIPTION: EL RANCHO ATRISCO TRACT 4 AND A PORTION OF TRACT 7

CITY ADDRESS: NORTH OF VISTA ALEGRE BETWEEN PNM EASEMENTS

ENGINEERING FIRM: Community Sciences Corporation CONTACT: JAMES D. HUGHES, P.E.

ADDRESS: P.O. Box 1328, Corrales, N. M. 87048 PHONE: 897-0000

OWNER: CURB, INC CONTACT: BO JOHNSON

ADDRESS: 6301 INDIAN SCHOOL RD NE STE 680 PHONE: 881-9190

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

X YES

X COPY OF CONFERENCE RECAP SHEET PROVIDED

_____ NO

_____ TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

_____ DRAINAGE PLAN

_____ PRELIMINARY GRADING AND DRAINAGE PLAN

X GRADING PLAN

X EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

DRB NO. 93-274

PROJ. NO. _____

EPC NO. _____

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL

_____ PRELIMINARY PLAT APPROVAL

_____ SITE DEVELOPMENT PLAN APPROVAL

_____ FINAL PLAT APPROVAL

_____ BUILDING PERMIT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

X ROUGH GRADING PERMIT APPROVAL

_____ GRADING/PAVING PERMIT APPROVAL

_____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 11/12/93

BY: _____

RECEIVED
NOV 12 1993
HYDROLOGY DIVISION

COMMUNITY SCIENCES CORPORATION
P.O. Box 1328
CORRALES, NEW MEXICO 87048-1328

(505) 897-0000 • FAX (505) 898-2305

LETTER OF TRANSMITTAL

DATE	JOB NO.
11-10-93	291-02-620

ATTENTION: Gilbert Aldaz

RE: Ladera West Unit 3 & 4

TO: COA Hydrology

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Revised Grading Plan (Set of 4)
1			Original Mylar (Set of 4)
1			Drainage Information Sheet

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS This set of grading plans has been revised to show more detail next to the off-site pond per your verbal comments with Bo Johnson on 11/8/93.

Please replace the grading plans submitted with the drainage report with these revised ones.

Original mylar submitted for rough grading approval.

RECEIVED
NOV 12 1993
HYDROLOGY DIVISION

COPY TO Curb Inc., Files

SIGNED: Billy McCarty

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If enclosures are not as noted, kindly notify us at once.

PRODUCT 240 NEBS Inc., Groton, Mass. 01471.

TO: G10 / D8

FROM: GILBERT A.

DATE: 11/08/93

PROVIDED VERBAL COMMENTS &
approval of infrastructure list for
submittal received Nov. 8, 1993 &
Approval for DRIB. ONLY. I still
need to review detailed drainage
analysis for P.P. & GRADING Approval.

JECT TITLE: Kaseman West Unit 3&4 ZONE ATLAS/DRNG. FILE #: G-10/D-8

#: _____ EPC #: _____ WORK ORDER #: _____

AL DESCRIPTION: _____

Y ADDRESS: Ouray Road - North to Rinconada Channel

INEERING FIRM: Community Sciences CONTACT: Doug Hughes

ADDRESS: P.O Box 1328 PHONE: 897 0000

Corrales N.M 87048 MR HAEFELINE

NER: Cu-5 Inc CONTACT: 881 9190

ADDRESS: 6308 Indian School Rd PHONE: 899 9656

#680

~~CHITECT~~: Bo Johnson CONTACT: _____

ADDRESS: _____ PHONE: _____

RVEYOR: Same as Engineer CONTACT: _____

ADDRESS: _____ PHONE: _____

NTRACTOR: New Concepts Inc CONTACT: Tom Lokemer

ADDRESS: _____ PHONE: 821 9504.

YPE OF SUBMITTAL:

X DRAINAGE REPORT Addendum.

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

✓ PRELIMINARY PLAT APPROVAL

___ S. DEV. PLAN FOR SUB'D. APPROVAL

___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

___ SECTOR PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ BUILDING PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

✓ GRADING PERMIT APPROVAL

___ PAVING PERMIT APPROVAL

✓ S.A.D. DRAINAGE REPORT

___ DRAINAGE REQUIREMENTS

✓ OTHER Infrastructure List Approval. (SPECIFY)

PRE-DESIGN MEETING:

___ YES

___ NO

___ COPY PROVIDED

RECEIVED
NOV - 8 1993
HYDROLOGY DIVISION

DATE SUBMITTED: Nov 5, 1993

BY: _____

COMMUNITY SCIENCES CORPORATION
P.O. Box 1328
CORRALES, NEW MEXICO 87048-1328

(505) 897-0000 • FAX (505) 898-2305

LETTER OF TRANSMITTAL

DATE	JOB NO.
11-5-93	291-02-620

ATTENTION: Gilbert Aldaz

RE: Ladera West Units 3 & 4

TO City of Albuquerque - Hydrology
P.O. Box 1293
Albuquerque, NM 87103

WE ARE SENDING YOU [X] Attached [ ] Under separate cover via _____ the following items:

[ ] Shop drawings [X] Prints [ ] Plans [ ] Samples [ ] Specifications
[ ] Copy of letter [ ] Change order [ ] _____

COPIES	DATE	NO.	DESCRIPTION
2			Revised Drainage Report for Ladera West Units 3 and 4
			including rough grading plan and first draft of work order details
1			Preliminary Plat
1			Infrastructure List

THESE ARE TRANSMITTED as checked below:

[X] For approval [ ] Approved as submitted [ ] Resubmit _____ copies for approval
[ ] For your use [ ] Approved as noted [ ] Submit _____ copies for distribution
[ ] As requested [ ] Returned for corrections [ ] Return _____ corrected prints
[ ] For review and comment [ ] _____
[ ] FOR BIDS DUE _____ 19____ [ ] PRINTS RETURNED AFTER LOAN TO US

REMARKS We are anticipating the following approval schedule:
1) Infrastructure list and Preliminary Plat approval at DRB 11-9-93 (Drainage Report)
2) Rough grading permit approval 11-10-93
3) Construction plans/work order approval 11-19-93

RECEIVED
NOV - 8 1993

COPY TO Curb, Inc., Files, Consensus Planning

SIGNED: Billy McCarty

40% Pre-Consumer Content • 10% Post-Consumer Content

If enclosures are not as noted, kindly notify us at once.

PRODUCT 240 NEBS Inc., Groton, Mass. 01471.

D.R.B. Case No.	DRB-92-307
D.R.C. Project No.	N/A
Date Submitted	11-05-93
Prel. Plat Approved	_____
Prel. Plat Expires	_____
BCPWD	_____
SPUC	_____
SPUSI	_____

EXHIBIT "A"
to Subdivision Improvements Agreement

DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LISTING
for Ladera West, Units 3 and 4

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary those items will be included in the listing and related financial guarantee if the items normally are Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

PUBLIC INFRASTRUCTURE - UNIT 3

SIZE	TYPE IMPROVEMENT	LOCATION	FROM	TO
4'	Sidewalk (North side)	Vista Alegre	West edge of Unit 3	East edge of Unit 3
1/2 Street	Residential Pavement with C & G (North side)	Vista Alegre	West edge of Unit 3	Santa Teresa St.
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Todos Santos St.	Vista Alegre St.	Lot 11, Block 5
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Teresa St.	Vista Alegre St.	Lot 11, Block 1
25' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Lucia St. .	Santa Teresa St.	Todos Santos St.
25' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Rosalia St.	Santa Teresa St.	Todos Santos St.
8"	Sanitary Sewer Line	Todos Santos St.	Vista Alegre St.	Unit 4
8"	Sanitary Sewer Line	Santa Teresa St.	Vista Alegre St.	Unit 4
8"	Sanitary Sewer Line	Santa Lucia St.	Santa Teresa St.	Todos Santos St.
8"	Sanitary Sewer Line	Santa Rosalia St.	Santa Teresa St.	Todos Santos St.
8"	Water Line	Santa Teresa St.	Vista Alegre St.	Unit 4
10"	Water Line	20' public waterline easement off-site in projected future extension of Vista Alegre	West Boundary	Unser Blvd.
6"	Water Line	Todos Santos St.	Vista Alegre St.	Unit 4
6"	Water Line	Santa Lucia St.	Santa Teresa St.	Todos Santos St.
6"	Water Line	Santa Rosalia St.	Santa Teresa St.	Todos Santos St.
Per Design	Diversion Swale	40' Drainage and access easement west of Blcoks 1, 8, and 9	Lot 1, Block 9	Lot 1, Block 1
Per Design	Diversion Swale	40' Drainage and and access easement south of Vista Alegre St. West of Unit 1	Lot 1, Block 1	Pond 440' south
Per Design	Temporary Retention Pond with emergency spillway			
Per Design	Rough Grading of both Unit 3 and Unit 4			
Per Design	Concrete Channel	Drainage Right-of-Way between Lots 12 and 13, Block 9	San Benito St.	Rinconada Channel

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NOV - 8 1993
HYDROLOGY DIVISION

D.R.B. Case No.	DRB-92-307
D.R.C. Project No.	N/A
Date Submitted	11-05-93
Prel. Plat Approved	_____
Prel. Plat Expires	_____
BCPWD	_____
SPUC	_____
SPUSI	_____

Per Design	Residential Street Lights Per DPM
Per Design	Erosion Control Measures and Sediment Basins

PUBLIC INFRASTRUCTURE - UNIT 4

SIZE	TYPE IMPROVEMENT	LOCATION	FROM	TO
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Todos Santos St.	Lot 1, Block 10	San Benito St.
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Teresa St.	Lot 1, Block 8	San Benito St.
25' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	San Benito St.	Lot 1, Block 9	East edge of Tract D
25 F-F*	Residential Pavement with 4' sidewalks and C&G both sides	San Agustine St.	Santa Teresa St.	Todos Santos St.
8"	Sanitary Sewer Line	Todos Santos St.	Unit 3	San Benito St.
8"	Sanitary Sewer Line	Santa Teresa St.	Unit 3	San Benito St.
8"	Sanitary Sewer Line	San Benito St.	West Boundary	East edge of Tract D
8"	Sanitary Sewer Line	San Agustine St.	Santa Teresa St.	Todos Santos St.
6"	Water Line	Todos Santos St.	Unit 3	San Benito St.
6"	Water Line	San Benito St.	Santa Teresa St.	East edge of Tract D
6"	Water Line	San Agustine St.	Santa Teresa St.	Todos Santos St.
8"	Water Line	Santa Teresa St.	Unit 3	San Benito St.
8"	Water Line	San Benito St.	West Boundary	Santa Teresa St.
Per Design	Residential Street Lights Per DPM			
Per Design	Erosion Control Measures and Sediment Basins			
Per Design	Flood wall	North edge of 5 COA Flood wall Maintenance easement adjacent to Rinconada right-of-way	West Boundary	Tract E

NOTES:

1. Asterisks (*) indicate street widths as appropriate for mountable curb and gutter. Where required for drainage purposes, standard curb and gutter will be used and an additional foot of street width will be provided.
2. Developer's engineer to certify grading and drainage prior to release of financial guarantees per DPM.
3. Private retaining walls to be certified by Developer's engineer prior to release of financial guarantees.
4. Financial guarantees not required for Items 2 and 3.
5. All temporary drainage facilities will require Maintenance Covenant agreement and appropriate easements.
6. All sidewalks are to be bonded in lieu of construction.
7. COA approval is conditional subject to the Developer executing Maintenance Agreement prior to approval of Unit 4 final plat.

D.R.B. Case No.	DRB-92-307
D.R.C. Project No.	N/A
Date Submitted	11-05-93
Prel. Plat Approved	_____
Prel. Plat Expires	_____
BCPWD	_____
SPUC	_____
SPUSI	_____

Prepared By: James D. Hughes 11-5-93

Print Name: James D. Hughes, P.E.

Firm: Community Sciences Corporation

Development Review Board Member Approvals:

Traffic: _____ Date: _____

Water/Liquid Waste: _____ Date: _____

Parks & Recreation: _____ Date: _____

City Engineer: _____ Date: _____

DRB Chairman: _____ Date: _____

CSC#291-02-060/291-02-AJ.REP

COMMUNITY SCIENCES CORPORATION
P.O. Box 1328
CORRALES, NEW MEXICO 87048-1328

(505) 897-0000 • FAX (505) 898-2305

LETTER OF TRANSMITTAL

6/6/08

DATE	JOB NO.
10-14-93	291-02-30

ATTENTION Cliff Anderson

RE: Ladera West 3 and 4

TO AMAFCA

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Ladera West Units 3 and 4 Offsite Master Plan
1			Revised Preliminary Plat
1			Infrastructure List

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Cliff: Please add the Master Plan to the pocket at the back of the Drainage Report. When you sign your copy of the Infrastructure List it will become the original. Please call me when it is ready and I will take it to the DRB. We will be adding a flood wall to the south side of the Rinconada Channel to provide freeboard (levee where applicable) and providing a concrete rundown connection to that channel that will have the capacity to serve the offsite area between this subdivision and Unser.

RECEIVED
OCT 18 1993

COPY TO Gilbert Aldaz, Bo Jackson, Chuck Haeglin (with enclosures)

SIGNED: J. D. Hughes

40% Pre-Consumer Content • 10% Post-Consumer Content

If enclosures are not as noted, kindly notify us at once.

PRODUCT 240 NEBS Inc., Groton, Mass. 01471.

D.R.B. Case No.	DRB-92-307
D.R.C. Project No.	N/A
Date Submitted	10-14-93
Prel. Plat Approved	_____
Prel. Plat Expires	_____
AMAFCA	_____
BCPWD	_____
SPUC	_____
SPUSI	_____

EXHIBIT "A"
to Subdivision Improvements Agreement

DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LISTING
for Ladera West, Units 3 and 4

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary those items will be included in the listing and related financial guarantee if the items normally are Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

PUBLIC INFRASTRUCTURE - UNIT 3

SIZE	TYPE IMPROVEMENT	LOCATION	FROM	TO
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Todos Santos St.	Vista Alegre St.	Lot 11, Block 5
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Teresa St.	Vista Alegre St.	Lot 11, Block 1
25' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Lucia St. .	Santa Teresa St.	Todos Santos St.
25' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Rosalia St.	Santa Teresa St.	Todos Santos St.
8"	Sanitary Sewer Line	Todos Santos St.	Vista Alegre St.	Unit 4
8"	Sanitary Sewer Line	Santa Teresa St.	Vista Alegre St.	Unit 4
8"	Sanitary Sewer Line	Santa Lucia St.	Santa Teresa St.	Todos Santos St.
8"	Sanitary Sewer Line	Santa Rosalia St.	Santa Teresa St.	Todos Santos St.
8"	Water Line	Santa Teresa St.	Vista Alegre St.	Unit 4
10"	Water Line	20' public waterline easement off-site in projected future extension of Vista Alegre	West Boundary	Unser Blvd.
6"	Water Line	Todos Santos St.	Vista Alegre St.	Unit 4
6"	Water Line	Santa Lucia St.	Santa Teresa St.	Todos Santos St.
6"	Water Line	Santa Rosalia St.	Santa Teresa St.	Todos Santos St.
Per Design	Diversion Swale	40' Drainage and access easement west of Blcoks 1, 8, and 9	Lot 1, Block 9	Lot 1, Block 1
Per Design	Diversion Swale	40' Drainage and and access easement south of Vista Alegre St.	Lot 1, Block 1	Pond 440' south
Per Design	Temporary Retention Pond	West of Unit 1	----------	----------
Per Design	Rough Grading of both Unit 3 and Unit 4			
Per Design	Concrete Channel	Drainage Right-of-Way between Lots 12 and 13, Block 9	San Benito St.	Rinconada Channel
Per Design	Residential Street Lights Per DPM			
Per Design	Erosion Control Measures and Sediment Basins			

RECEIVED
OCT 18 1993
HYDROLOGY DIVISION

D.R.B. Case No.	DRB-92-307
D.R.C. Project No.	N/A
Date Submitted	10-14-93
Prel. Plat Approved	_____
Prel. Plat Expires	_____
AMAFCA	_____
BCPWD	_____
SPUC	_____
SPUSI	_____

PUBLIC INFRASTRUCTURE - UNIT 4

SIZE	TYPE IMPROVEMENT	LOCATION	FROM	TO
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Todos Santos St.	Lot 1, Block 10	San Benito St.
27' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	Santa Teresa St.	Lot 1, Block 8	San Benito St.
25' F-F*	Residential Pavement with 4' sidewalks and C&G both sides	San Benito St.	Lot 1, Block 9	East edge of Tract D
25 F-F*	Residential Pavement with 4' sidewalks and C&G both sides	San Agustine St.	Santa Teresa St.	Todos Santos St.
8"	Sanitary Sewer Line	Todos Santos St.	Unit 3	San Benito St.
8"	Sanitary Sewer Line	Santa Teresa St.	Unit 3	San Benito St.
8"	Sanitary Sewer Line	San Benito St.	West Boundary	East edge of Tract D
8"	Sanitary Sewer Line	San Agustine St.	Santa Teresa St.	Todos Santos St.
6"	Water Line	Todos Santos St.	Unit 3	San Benito St.
6"	Water Line	San Benito St.	Santa Teresa St.	East edge of Tract D
6"	Water Line	San Agustine St.	Santa Teresa St.	Todos Santos St.
8"	Water Line	Santa Teresa St.	Unit 3	San Benito St.
8"	Water Line	San Benito St.	West Boundary	Santa Teresa St.
Per Design	Residential Street Lights Per DPM			
Per Design	Erosion Control Measures and Sediment Basins			
Per Design	Flood wall	North edge of 5 AMAFCA Flood wall Maintenance easement adjacent to AMAFCA right-of-way	West Boundary	Tract E

NOTES:

1. Asterisks (*) indicate street widths as appropriate for mountable curb and gutter. Where required for drainage purposes, standard curb and gutter will be used and an additional foot of street width will be provided.
2. Developer's engineer to certify grading and drainage prior to release of financial guarantees per DPM.
3. Private retaining walls to be certified by Developer's engineer prior to release of financial guarantees.
4. Financial guarantees not required for Items 2 and 3.
5. All temporary drainage facilities will require Maintenance Covenant agreement and appropriate easements.
6. All sidewalks are to be bonded in lieu of construction.
7. AMAFCA approval is conditional subject to the Developer executing Maintenance Agreement prior to approval of Unit 4 final plat.

D.R.B. Case No.	DRB-92-307
D.R.C. Project No.	N/A
Date Submitted	10-14-93
Prel. Plat Approved	_____
Prel. Plat Expires	_____
AMAFCA	_____
BCPWD	_____
SPUC	_____
SPUSI	_____

Prepared By: James D. Hughes
Signed Billy McCarty

Print Name: James D. Hughes, P.E.

Firm: Community Sciences Corporation

Development Review Board Member Approvals:

Traffic: _____ Date:_____

Water/Liquid Waste: _____ Date:_____

Parks & Recreation: _____ Date:_____

City Engineer: _____ Date:_____

DRB Chairman: _____ Date:_____

AMAFCA: _____ Date:_____

CSC#291-02-060/291-02-AJ.REP

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 15, 1993

James D. Hughes, P.E.
Community Sciences Corp.
P.O. Box 1328
Corrales, NM 87048

RE: DRAINAGE REPORT FOR LADERA WEST UNITS 3 & 4 (G10/D8), RECEIVED OCTOBER 8, 1993 FOR PRELIMINARY PLAT APPROVAL.

Dear Mr. Hughes:

Based on the information provided on the referenced submittal, kindly address the following comments prior to Preliminary Plat approval:

1. The rundown water depth at San Benito street may not exceed top of curb. Please check your calculations, a depth of 0.93 feet is shown which exceeds 0.67 feet.

2. You are proposing to transition this rundown into a 10 foot width with a 2 foot depth with minimal length. Please provide a computer analysis to indicate these flows will stay within this channel to include possible wave action.

3. Show the improvements that are being built by Fairway Manor along Tract D.

4. Is there a valley gutter across Vista Alegre Street to convey the flows from this development into Unit II?

5. An offsite drainage easement and covenant will be required for the swale along the west boundary of this development.

6. It appears that the swale along the west boundary will divert and concentrate flows along the west boundary of Unit II. The floodwall along Unit II was not extended up to Vista Alegre Street, how do you propose to convey these flows to the outlet in Unit I? Does the outlet in Unit I have the capacity for these additional flows?

7. Elevations along all backyard swales is required to be shown. Also if any backyard ponds are proposed include those elevations.

8. AMAFCA's signature will be required on the grading plan, this will confirm that they also agree with your offsite Master Plan.

9. Show a cross section for your typical side yard swale.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
City/County Floodplain Administrator

xc: Clifford E. Anderson, AMAFCA
Fred Aguirre, City Hydrologist
Bo Johnson, Curb Inc.
File

wp+7992

COMMUNITY SCIENCES CORPORATION
P.O. Box 1328
CORRALES, NEW MEXICO 87048-1328

(505) 897-0000 • FAX (505) 898-2305

G10/D8

LETTER OF TRANSMITTAL

DATE 10-7-93	JOB NO. 291-02-610
ATTENTION Gilbert Aldaz	
RE: Ladera West Units 3 & 4	
Off-Site Masterplan	

TO City of Albuquerque - Hydrology
P.O. Box 1293
Albuquerque, NM 87103

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Drainage Information Sheet
1			Vicinity Map
1			Master Plan

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Gilbert:
Please add this master-plan to the pocket at the end of the report. I hope it clarifies the off-site infrastructure. I believe that Note #6 helps to emphasize your two main concerns.

RECEIVED
OCT 8 1993

with enclosures

COPY TO Curb, Inc. Attn:Bo Johnson

SIGNED: Billy McCarty

40% Pre-Consumer Content • 10% Post-Consumer Content

PRODUCT 240 NEBS Inc., Groton, Mass. 01471.

If enclosures are not as noted, kindly notify us at once.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 20, 1993

James D. Hughes, P.E.
Community Sciences Corp.
P.O. Box 1328
Corrales, NM 87048

RE: DRAINAGE REPORT FOR LADERA WEST UNITS 3 & 4, RECEIVED AUGUST 30, 1993 FOR PRELIMINARY PLAT APPROVAL, (G-10/D8)

Dear Mr. Hughes:

On September 13, 1993 I contacted you by phone to inform you that a Master Drainage Plan was required for this development, in order to get an idea how everything from this development to Unser and from Ouray to the Rinconada Channel was going to develop. This Master Plan is needed since this development will effect how offsite flows are handled. To date we have not received this plan to begin our review for the above referenced site, that is the reason we are sending this letter.

Please be advised that AMAFCA's signature will be required on the Infrastructure List, or a letter from them approving the Master Plan and this development, since this site drains into their drainage facility.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
City/County Floodplain Administrator

xc: Clifford E. Anderson, AMAFCA
Fred Aguirre, City Hydrologist
Bo Johnson, Curb Inc.
File

wp+7992

community sciences corporation

August 26, 1993

G10/D8

Cliff Anderson
AMAFCA
2600 Prospect NE
Albuquerque, NM 87107

RE: Ladera West Unit 3 and 4 Drainage to Rinconada Channel (DRB 93-274)

Dear Mr. Anderson:

The Rinconada Channel just east of Unser Boulevard is the proposed drainage outlet for Ladera West Subdivision Units 3 and 4. According to the "Northwest Mesa Drainage Management Plan" prepared by Scanlon & Associates, October, 1989, the channel flow at Unser Boulevard is 665 cfs. This flow was multiplied by a 15% bulking factor for sediment to check the adequacy of the channel along the subdivision site. This bulked flow of 765 cfs yields a flow depth of 3.44' at 12.98 fps. This was derived using n = 0.025, S_0 = 1.46%, bottom width = 12', and 1.5:1 side slopes. Freeboard was calculated using the equation Freeboard = 0.7 (2 + 0.025 $Vd^{1/3}$ exponent) which equals 1.74'. This produces a total required depth of 5.2' while the channel is only lined to a depth of 4.5'.

Flows from Ladera West Units 3 and 4 and proposed fully developed off-site flows to the West will enter the channel west of the 200' PNM easement through a rundown. This addition of 70 cfs will produce a flow depth of 3.59', freeboard = 1.76', and a total required depth of 5.35'. Approximately 300' east of the rundown, the channel transitions to a 9' depth which is more than adequate to handle 100 year flow plus freeboard. The south side of the channel, adjacent to this subdivision, will be graded to provide this additional depth (see the channel cross section enclosed).

The rundown will be a 10' wide, 2' deep concrete channel to the edge of the Rinconada Channel right-of-way. It will then change to a trapezoidal channel with 12% side slopes to provide access along the Rinconada Channel.

We are seeking AMAFCA's approval for the Drainage Report and preliminary grading plan including the discharge of 70 cfs to the Rinconada Channel through the proposed concrete rundown and the proposed grading along the channel to provide both missing freeboard and your required access within the existing right-of-way. Preliminary plat is scheduled for DRB on September 7th. Fred Aguirre is questioning the need for AMAFAC sign off on the infrastructure list. Gilbert Aldaz has already told us that AMAFCA approval is needed for 1) The Drainage Report, 2) Rough grading, and 3) Construction plans/work order. Please let know about the infrastructure list signature as soon as possible. If you have any questions, please contact me at 897-0000.

Cordially,

James D. Hughes

James D. Hughes, P.E.

RECEIVED
AUG 30 1993
HYDROLOGY DIVISION

cc: Gilbert Aldaz
Fred Aguirre
Bo Johnson
Chuck Haeglin

Enclosure

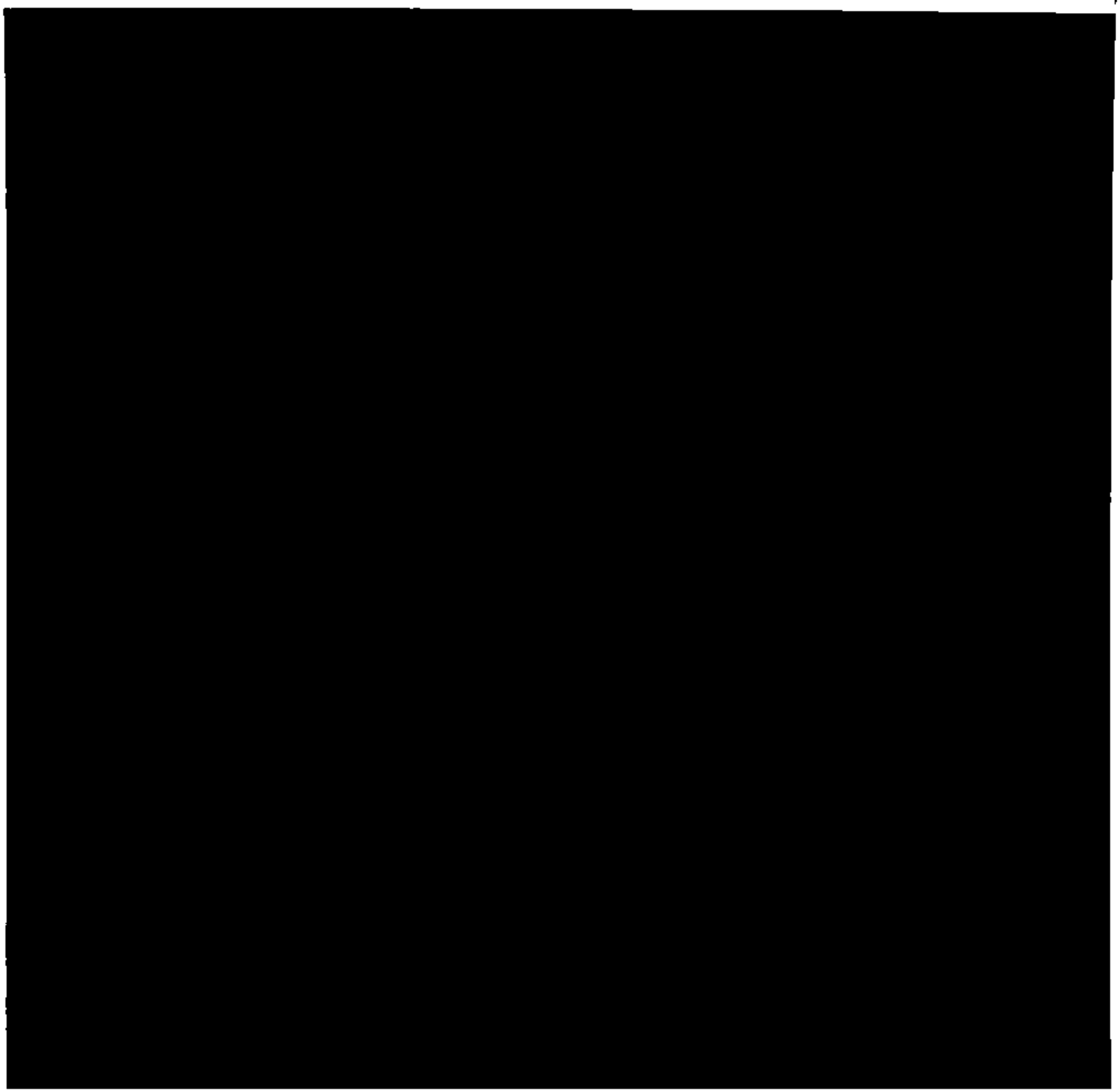
291-02-032 - AUG 039.LET

SURVEYING
LAND PLANNING
CIVIL ENGINEERING
DEVELOPMENT CONSULTANTS

P.O. Box 1328
Corrales, New Mexico 87048
(505) 897-0000

Looking south on Vista Alegre. NW. G10/D8

12-13-95

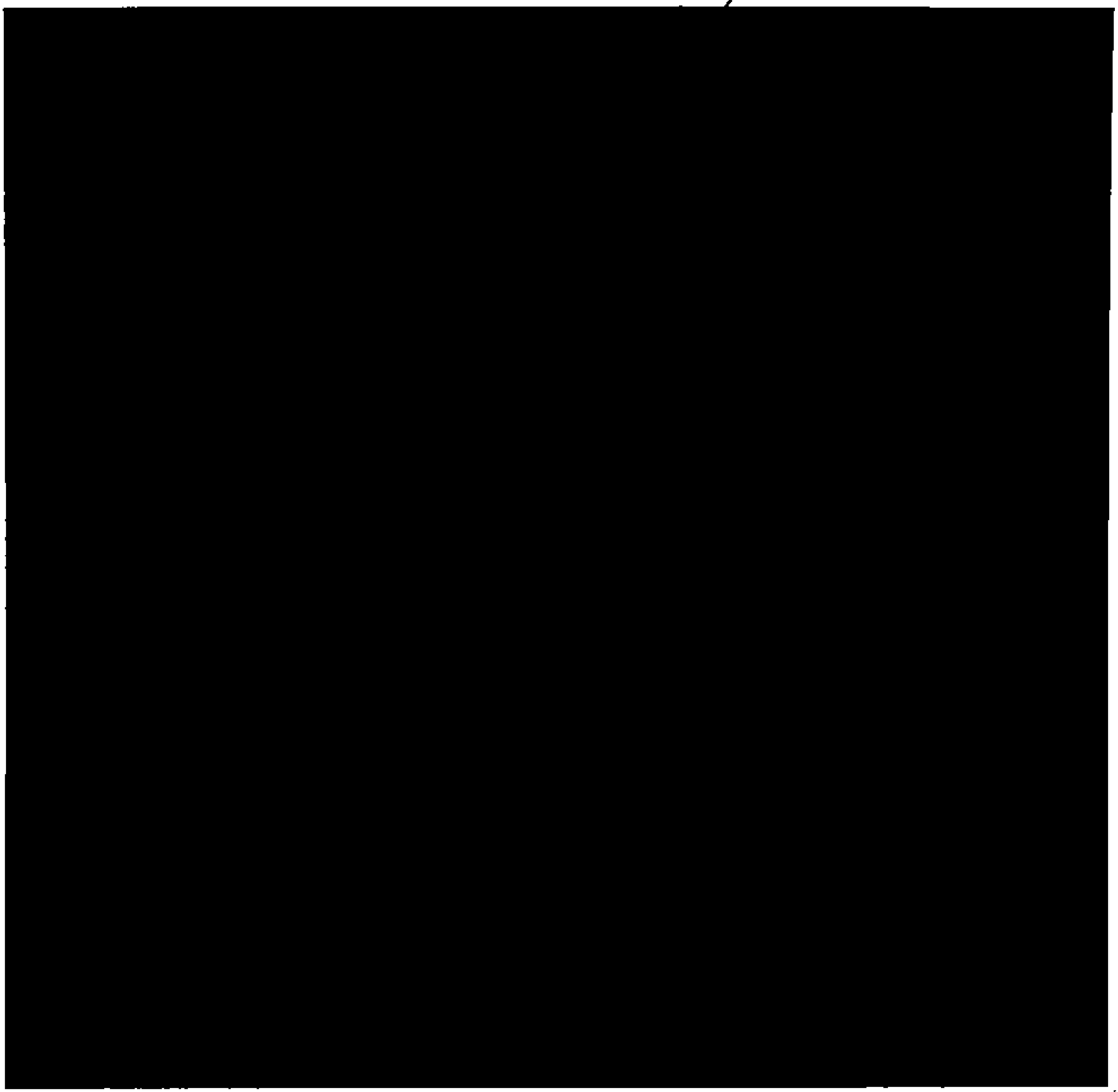


0350822815 5 POLAROID®3

12-13-85 Looking South on Vista Alegre.

Looking south on Vista Alegre NW. G-10/D8

12-13-95

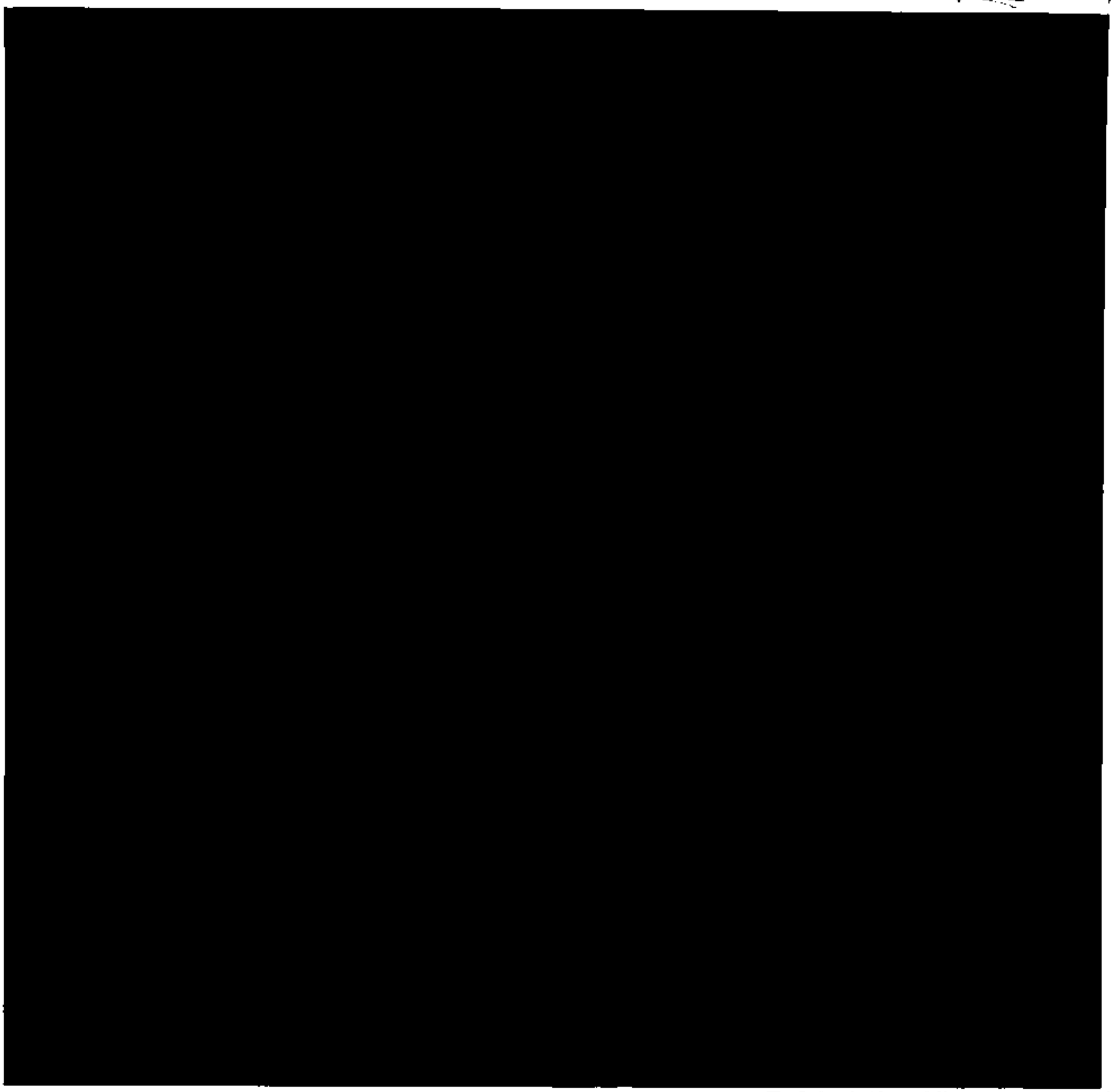


0350822815 5 POLAROID®3

12-13-95 Looking South on Vista Alegre.

Looking North on Ouray G-10/08

12-13-95

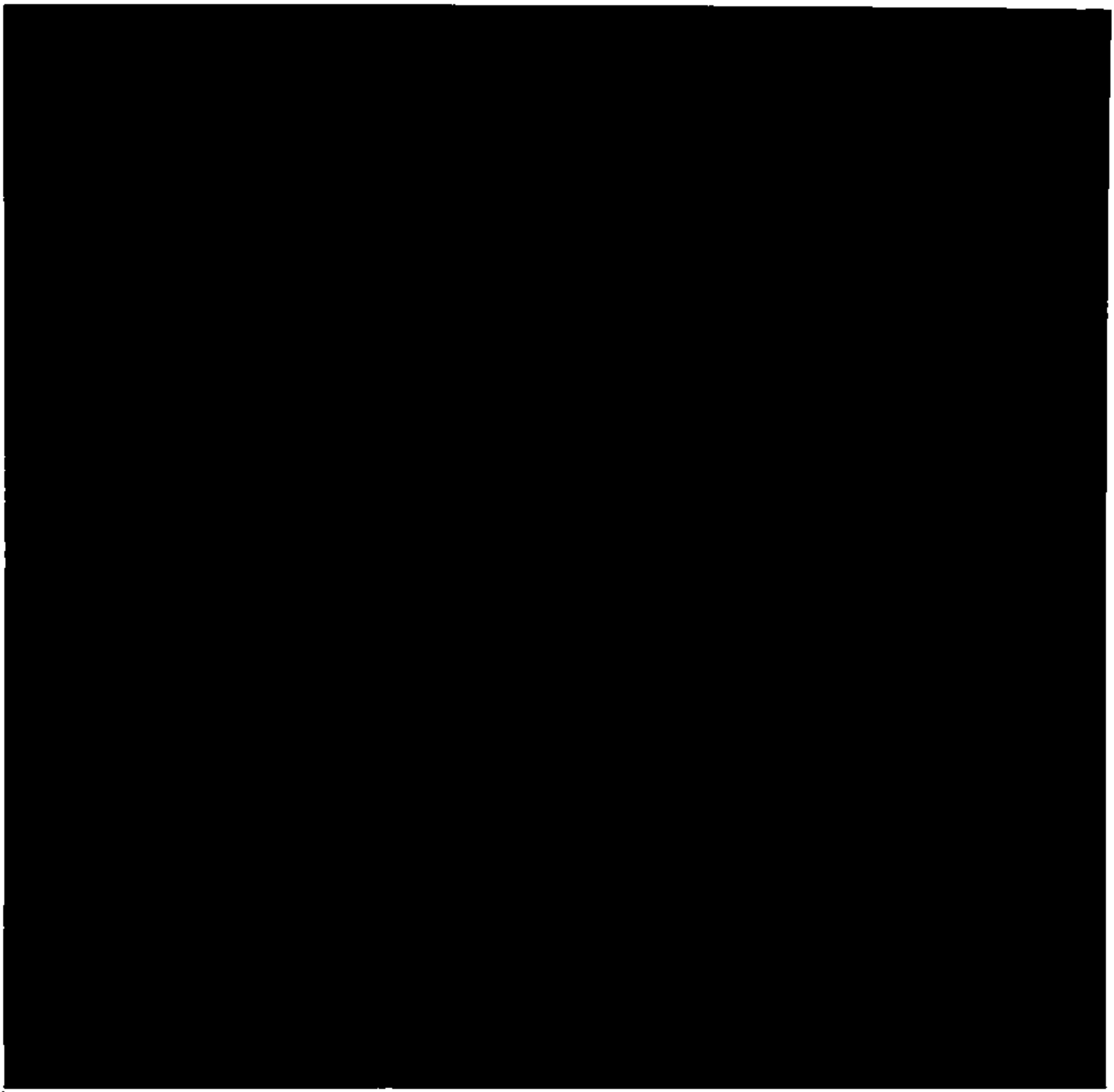


0350822815 5 POLAROID®3

12-13-95 Looking North on Quay

Lookin east on Vista Alegre N.W. G-10/D8

12-13-95



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12-13-95 Ladera West Unit 3:4