CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

February 3, 2016

David Soule, PE
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: Lot 11 – Ladera Business Park
Existing Grading and Drainage Report
DRB # 1001523 / H10D006A6
Engineer's Stamp Date – 1-11-16

Dear Mr. Soule:

Based upon the information provided in your submittal received 1-12-2016, the above referenced Drainage Report, which is a summary of the existing conditions of the site, is approved for Minor Preliminary/Final Plat action by the DRB. It is understood that the Owner of the property does not have immediate plans to develop the site. Approval of future plans will require a separate Grading and Drainage Plan submittal.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: LOTS 11A AND 11B LADERA BUSINESS PARK Building Permit #: _____ City Drainage #: H10D006A6

DRB#: 1001523 EPC#: _____ Work Order#: _____

Legal Description: LOT 11 LADERA BUSINESS PARK

City Address: 7800 LA MORADA PLACE NW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: UNSER/8 STREET PARNTER, LLC Contact: _____

Address: PO BOX 90548 ALB NM 87199

Phone#: _____ Fax#: _____ E-mail: _____

Architect: none Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

_____ TRAFFIC/ TRANSPORTATION

_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

X ~~CONCEPTUAL~~ EXISTING G & D PLAN

_____ GRADING PLAN

_____ DRAINAGE MASTER PLAN

_____ DRAINAGE REPORT

_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)

_____ TRAFFIC IMPACT STUDY (TIS)

_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

_____ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

_____ BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY

X PRELIMINARY PLAT APPROVAL

_____ SITE PLAN FOR SUB'D APPROVAL

_____ SITE PLAN FOR BLDG. PERMIT APPROVAL

X FINAL PLAT APPROVAL

_____ SIA/ RELEASE OF FINANCIAL GUARANTEE

_____ FOUNDATION PERMIT APPROVAL

_____ GRADING PERMIT APPROVAL

_____ SO-19 APPROVAL

_____ PAVING PERMIT APPROVAL

_____ GRADING/ PAD CERTIFICATION

_____ WORK ORDER APPROVAL

_____ CLOMR/LOMR

RECEIVED
JAN 12 2016
LAND DEVELOPMENT SECTION

_____ PRE-DESIGN MEETING

_____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: _____ Yes X No

DATE SUBMITTED: 1/11/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

DRAINAGE REPORT

For

LOT 11-A and11-B
LADERA BUSINESS PARK
Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

January 2016

David Soule P.E. No. 14522

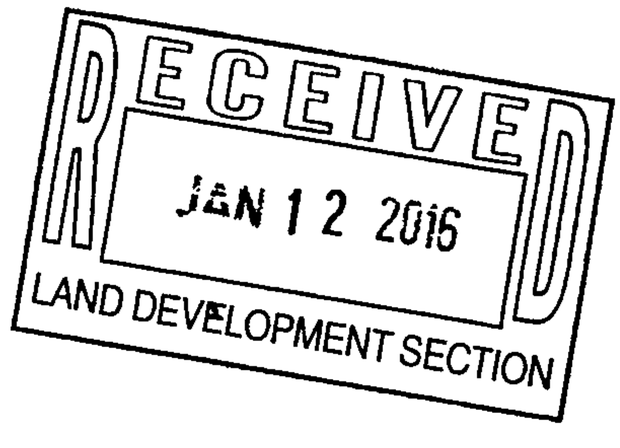


TABLE OF CONTENTS

Appendix

PURPOSE

The purpose of this report is to provide the Drainage Management Plan for the subdivision and creation of two new lots located La Morada Place, Northwest. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the subdivision does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a portion of a larger 31.2-acre parcel of land located on the south side of La Morada Place, east of Unser. The legal description of this site is lots 11, Ladera Business Park. As shown on FIRM map35013C0326H, the entire portion of lots 11A and 11B are located within Flood Zone X.

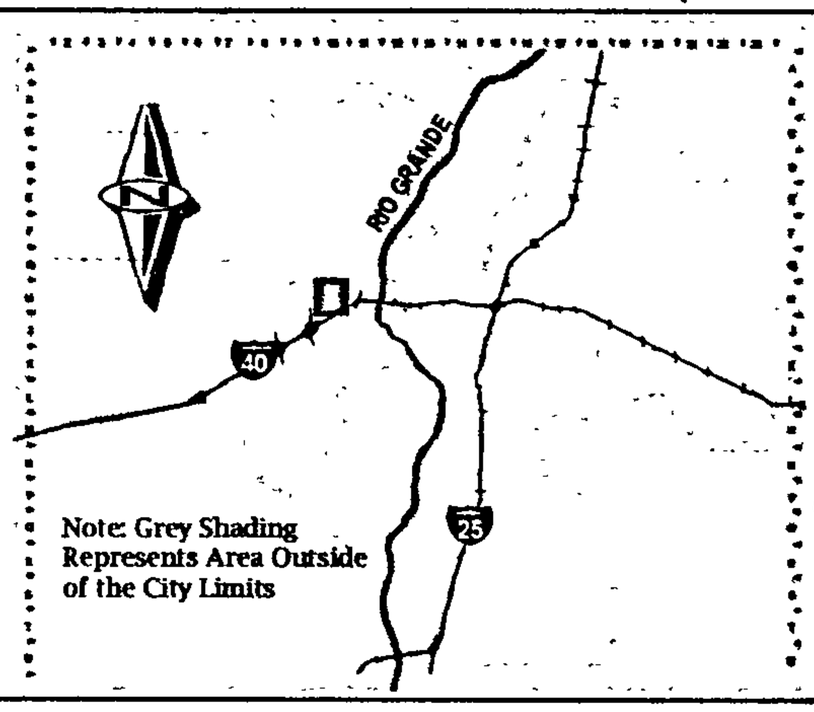
EXISTING CONDITIONS

The site is currently undeveloped, yet part of an overall business park. The site currently does not have upland flow due to a diversion and inlet upstream to the Mirehaven Channel on lot 12. The site currently drains from west to east entering an asphalt swale on lot 10. A small berm has been added at this discharge point in the interim to eliminate sediment transport onto the developed parcels. A copy of the area contours is located in Appendix A. This flow is conveyed down stream within asphalt swale parking areas to a conduit discharging to the Mirehaven channel. This site is part of a master drainage plan prepared by Mark Goodwin and Associates 11/21/02.

For more current information and more details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 2/4/2010



Zone Atlas Page:

H-10-Z

Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone

0 — 750 — 1,500 Feet

PROPOSED CONDITIONS

There are no proposed improvements. There will be no grading performed on this site. As shown in appendix B, the site is located within Basin 10 of the master drainage plan. Excerpts from this report are located within appendix B. As described within the report this is sub basin of 11 area 2. The flows generated by lots 11 thru 8 are to be conveyed within an asphalt swale (drive isle) along the southerly portion of lots 11-8 discharging to an outfall to the Ladera dam 14. As discussed within the report temporary berms do not allow lot 11 to discharge into lot 10 until lot 11 is developed. This was allowed within the master plan as an interim measure to reduce sediment from undeveloped parcels. This berm will remain until the lots are developed.

As shown in the AHYMO model, Basin 11 is anticipated to be developed as 80% D and 20%B. For the scope of this report this site will remain 100% A, and no grading will occur. A cross lot drainage easement will be granted by the plat to allow the implementation of the master drainage plan upon development of each tract. Upon development of either lot an asphalt swale must connect to the existing swale located on lot 10 or the berm removed.

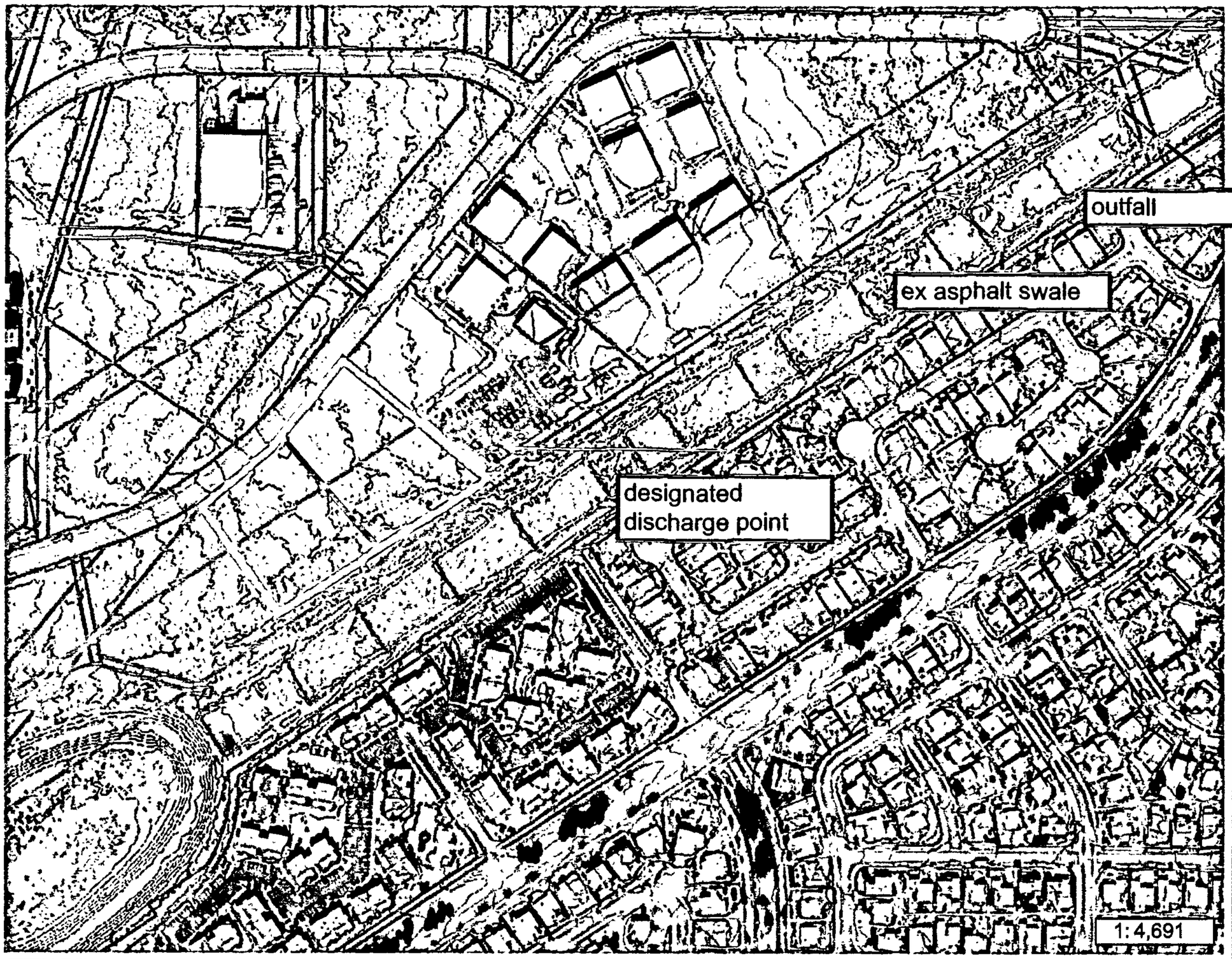
SUMMARY AND RECOMMENDATIONS

This project is a subdivision with no development of two lots within a master planned business park. The site is an identified developed basin within the master drainage plan. Cross lot drainage easements will be granted to allow for the sites to be developed independent of each other with the requirement the temporary berm be removed and the asphalt swale be continued as proposed within the master plan. The site will require grading plans upon developed which shall be designed in accordance with the Ladera Business Park Master drainage plan. Since the effected area site encompasses and area greater than 3/4 acres, a NPDES permit and Erosion and Sediment Control plan will be required prior to any construction activity.

APPENDIX A

AREA CONTOURS

AGIS LIDAR CONTOURS



Legend

- Easements
- City Parcels
- Municipal Limits
  - Corrales
  - Edgewood
  - Los Ranchos
  - Rio Rancho
  - Tijeras
  - UNINCORPORATED

Notes

0.1 0 0.05 0.1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
1/11/2016 © City of Albuquerque

This map is a user generated static output from www.cabq.gov/gis and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR LEGAL PURPOSES

APPENDIX B

Master Plan Excerpts

MASTER DRAINAGE REPORT

for

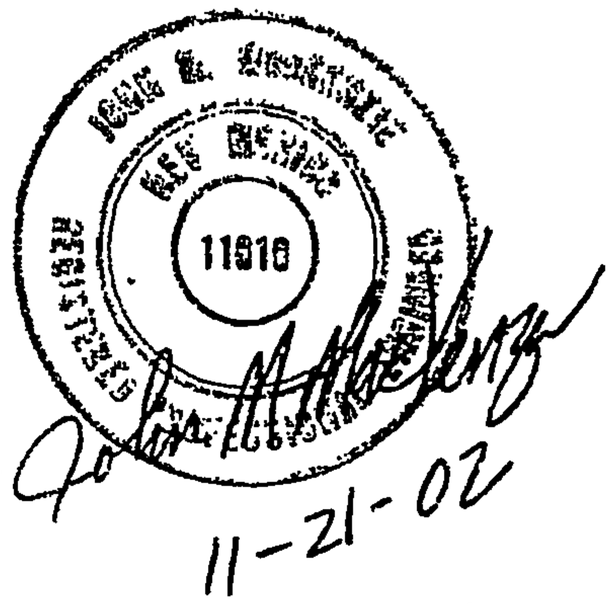
LADERA BUSINESS PARK

Prepared for:

Unser - 98th Street Partnership
8900 Washington, NE
Albuquerque, NM 87113

Prepared by:

John M. MacKenzie, PE
Mark Goodwin & Associates, PA
PO Box 90606
Albuquerque, NM 87199



April 5, 2002

Revised May 24, 2002

Revised November 21, 2002

Area II will be combined and carried in a 60" RCP to the Mirehaven Channel. A maintenance drive/emergency overflow channel extending from the cul-de-sac to the Mirehaven Channel will be built to provide for channel maintenance on the Mirehaven and maintenance of sanitary sewer manhole near the channel. The maintenance drive will also serve as an emergency overflow for the cul-de-sac should the capacity of the cul-de-sac inlets be exceeded. A pole gate will be built at the driveway entrance to restrict public access.

Tracts within **Area I** discharging directly to streets at various locations are Lot 1 (LIC), Tract 1, Tracts 4 – 6, 24 and 25. Tracts 20, and 27 – 29 are to discharge into the paved private swale along the north side of Tract 25. Tracts 2, 3 and 26 discharge into subsurface storm drain stub outs designed specifically for those lots.

Each of the tracts within **Area II** (8-11) will freely-discharge to a new private paved swale along the south side of Tracts 8 – 10. The swale is designed to discharge into a new NMSHTD median inlet just SW of the La Morada cul-de-sac. Another 36" storm drain collects and conveys this runoff into the 60" storm drain described above. The **Area II** runoff includes Tract 7, which is east of the La Morada cul-de-sac. Tract 7 will free-discharge directly east to the Ladera Dam No. 14. A site specific outfall design must be designed and approved by the City Hydrology Division and AMAFCA in conjunction with the site development of Tract 7.

Area III covers smaller lots fronting on Vista Oeste and the west end of La Morada Place. Runoff from Tracts 15 – 19 is to be accepted by Vista Oeste and then turned east in La Morada to a series of in-street drop inlets at the west boundary of Tract 12. Tracts 21 – 23 will discharge east into a private paved swale located along their east boundary. This private paved swale flows south and discharges into a double "D" drop inlet that is combined with the flow identified above. The street flow from Tracts 15 – 19 is combined with Tract 21- 23 flow and then carried in a 36" storm drain along the east boundary of Tract 12 to the SE corner of Tract 12. Private runoff from Tracts 12 –14 is conveyed in another paved swale along the west boundary of Tract 12 and then directed south into another double "D" inlet at the SE corner of Tract 12. At this point all **Area III** flows are combined before outfalling into the Mirehaven Channel in a 42" storm drain.

Both of the Mirehaven Channel outfalls are underlain by a below-grade pad consisting of type M rip-rap. Native fill is to be placed over the pad to the existing FL grade of the channel.

The hydrologic analysis utilizing AHYMO is provided in Appendix A. Nomographs and drainage calculations for street, swale, and catch basin capacities, including the storm drain's hydraulic analysis, are provided in Appendix B.

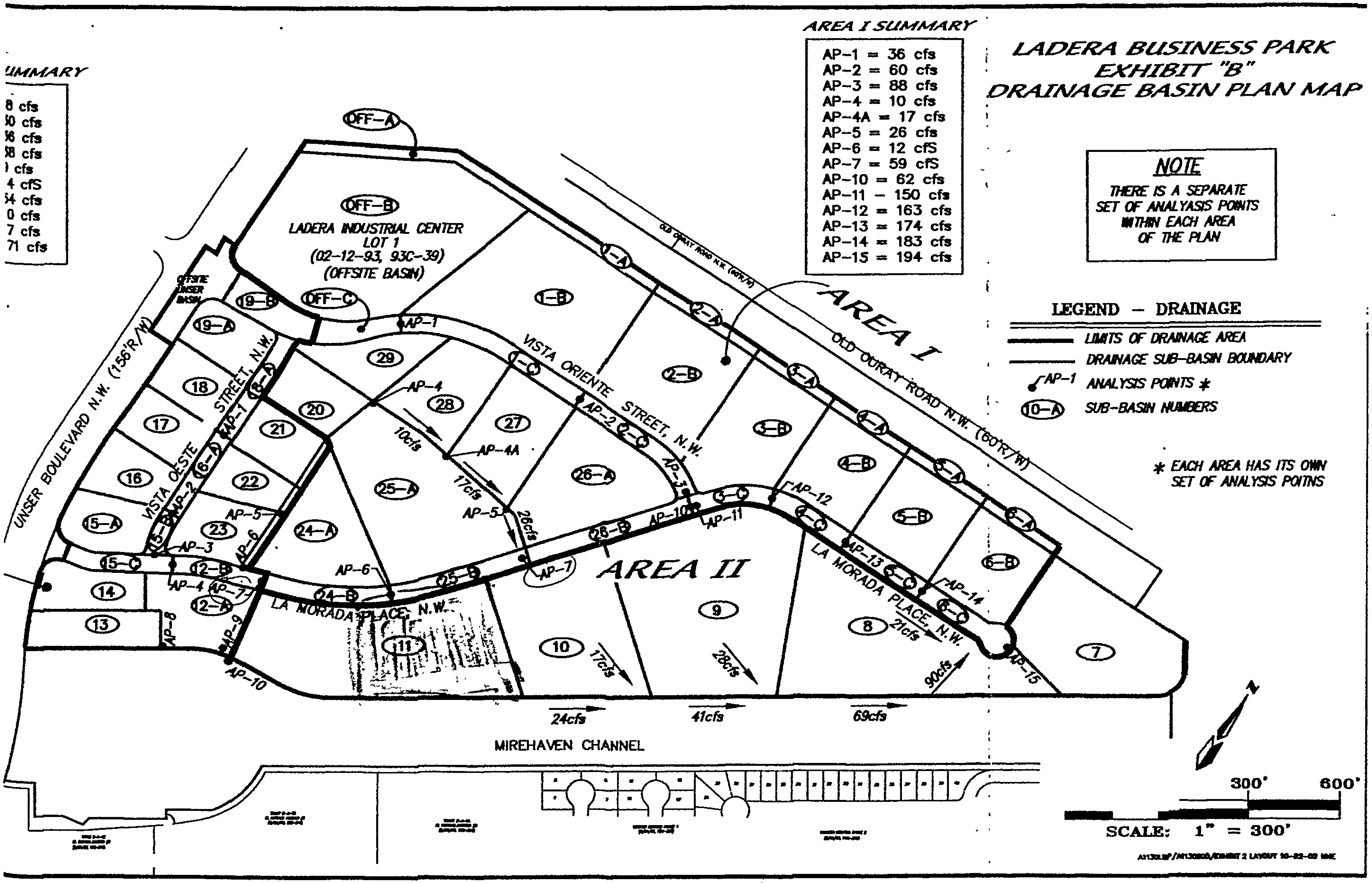
V. STREET INLETS AND STORM DRAIN SUMMARY

Vista Orienta Street

On Vista Oriente at **AP-2**, the flow is 60 cfs with a grade of 2.25%. At first set of drop inlets, with the street generating an additional 2 cfs, 13 cfs will be collected in each of the two inlets (26 cfs total), resulting in a bypass of 36 cfs reaching Vista Oriente's intersection with La Morada at **AP-11**. The 36" storm drain in lower Vista Oriente accepts 26 cfs from the inlets, 15 cfs directly from the pipe stubbed-out to Tract 2 and 11 cfs from the pipe stubbed-out to Tract 26 (52 cfs total).

La Morada Street

On La Morada Street just before its intersection with Vista Oriente (**AP-10**), there is 62 cfs of flow. With the 4 inlets on La Morada, each receiving 12.5 cfs, there remains 12 cfs in the street bypassing to **AP-11**. Combined with the 36 cfs of bypass from Vista Oriente, and the 1.6 cfs generated within the R/W (Basin AHYMO ID=29), there remains 49.6 cfs flowing in La Morada just east of the Vista Oriente intersection (**AP-12**). The 36" storm drain at this location now carries the 50 cfs just collected from the La Morada inlets and the 52 cfs caried by the 36" pipe in Vista Oriente (102 cfs total – see storm drain's hydraulic analysis in


LADERA BUSINESS PARK
EXHIBIT "B"
DRAINAGE BASIN PLAN MAP
AREA I SUMMARY
AP-1 = 36 cfs
AP-2 = 60 cfs
AP-3 = 88 cfs
AP-4 = 10 cfs
AP-4A = 17 cfs
AP-5 = 26 cfs
AP-6 = 12 cfS
AP-7 = 59 cfS
AP-10 = 62 cfs
AP-11 - 150 cfs
AP-12 = 163 cfs
AP-13 = 174 cfs
AP-14 = 183 cfs
AP-15 = 194 cfs
NOTE
THERE IS A SEPARATE SET OF ANALYSIS POINTS WITHIN EACH AREA OF THE PLAN
LEGEND - DRAINAGE
LIMITS OF DRAINAGE AREA
DRAINAGE SUB-BASIN BOUNDARY
ANALYSIS POINTS *
SUB-BASIN NUMBERS
* EACH AREA HAS ITS OWN SET OF ANALYSIS POITNS
LADERA INDUSTRIAL CENTER
LOT 1
(02-12-93, 93C-39)
(OFFSITE BASIN)
OFFSITE UNSER BASIN
AREA I
AREA II
OLD OURAY ROAD N.W. (60'R/W)
VISTA ORIENTE STREET, N.W.
LA MORADA PLACE, N.W.
VISTA OESTE STREET, N.W.
UNSER BOULEVARD N.W. (156'R/W)
MIREHAVEN CHANNEL
24cfs
41cfs
69cfs
90cfs
SCALE: 1" = 300'
300'
600'

AREA II LADERA BP (SUMMARY @ THE END)

```
     AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
          RUN DATE (MON/DAY/YR) = 06/20/2002
          START TIME (HR:MIN:SEC) = 10:48:32     USER NO.= M_GOODWN.I01
          INPUT FILE = LADBP2RE.TXT

    START     ...  .       TIME=0.0
***** LADERA BUSINESS PARK - AREA II  AHYMO\LADERATWO.DAT
***** MARCH 19, 2002 (REVISED 6/20/02)
RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                    RAIN ONE=1.87 IN RAIN SIX=2.19 IN
                    RAIN DAY=2.62 IN DT=0.0333 HR


                    COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK
AT 1.40 HR.
                    DT =     .033300 HOURS       END TIME =     5.994000 HOURS
                      .0000   .0015   .0031   .0047   .0063   .0080   .0097
                      .0114   .0132   .0151   .0169   .0189   .0209   .0229
                      .0250   .0271   .0294   .0317   .0340   .0365   .0390
                      .0417   .0444   .0473   .0502   .0533   .0566   .0600
                      .0636   .0673   .0713   .0765   .0820   .0879   .1000
                      .1280   .1711   .2330   .3177   .4291   .5713   .7484
                      .9647  1.1723  1.2575  1.3292  1.3929  1.4508  1.5041
                     1.5535  1.5997  1.6430  1.6838  1.7222  1.7586  1.7929
                     1.8255  1.8564  1.8857  1.9135  1.9399  1.9471  1.9528
                     1.9582  1.9633  1.9682  1.9729  1.9774  1.9818  1.9859
                     1.9900  1.9939  1.9977  2.0013  2.0049  2.0083  2.0117
                     2.0150  2.0182  2.0213  2.0243  2.0273  2.0302  2.0331
                     2.0359  2.0386  2.0413  2.0439  2.0465  2.0490  2.0515
                     2.0539  2.0563  2.0587  2.0610  2.0633  2.0656  2.0678
                     2.0699  2.0721  2.0742  2.0763  2.0784  2.0804  2.0824
                     2.0844  2.0863  2.0883  2.0902  2.0921  2.0939  2.0958
                     2.0976  2.0994  2.1012  2.1029  2.1046  2.1064  2.1081
                     2.1097  2.1114  2.1131  2.1147  2.1163  2.1179  2.1195
                     2.1211  2.1226  2.1242  2.1257  2.1272  2.1287  2.1302
                     2.1316  2.1331  2.1346  2.1360  2.1374  2.1388  2.1402
                     2.1416  2.1430  2.1444  2.1457  2.1471  2.1484  2.1497
                     2.1510  2.1523  2.1536  2.1549  2.1562  2.1575  2.1587
                     2.1600  2.1612  2.1625  2.1637  2.1649  2.1661  2.1673
                     2.1685  2.1697  2.1709  2.1720  2.1732  2.1743  2.1755
                     2.1766  2.1778  2.1789  2.1800  2.1811  2.1822  2.1833
                     2.1844  2.1855  2.1866  2.1877  2.1887  2.1898

****** TRACTS 7-11 - FLOW TO MIREHAVEN CHANNEL
****** LOT AREAS EXCLUDE DRAINAGE EASEMENTS

****** DEVELOPED CONDITIONS - TRACT 11 - 6.18 ACRES
COMPUTE NM HYD      ID=1 HYD NO=100.1 AREA=0.0097  SQ MI
                    PER A=0 PER B=20 PER C=0 PER D=80
                    TP=0.1333 HR MASS RAINFALL=-1

        K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE
CONSTANT, N =  7.106420
        UNIT PEAK =   30.637    CFS   UNIT VOLUME =    .9990       B =   526.28
P60 = 1.8700
        AREA =      .007760 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES
PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
.033300
```

K = .130992HR TP = .133300HR K/TP RATIO = .982685 SHAPE CONSTANT, N = 3.593448
UNIT PEAK = 4.7603 CFS UNIT VOLUME = .9975 B = 327.09 P60 = 1.8700
AREA = .001940 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

PRINT HYD ID=1 CODE=24

PARTIAL HYDROGRAPH 100.10

TIME FLOW - HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS
TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
	.000	.0	1.998	5.6	3.996 .1
5.994	.2				
	.666	.0	2.664	.5	4.662 .1
6.660	.0				
	1.332	6.6	3.330	.2	5.328 .1

RUNOFF VOLUME = 1.69760 INCHES = .8782 ACRE-FEET
PEAK DISCHARGE RATE = 24.20 CFS AT 1.499 HOURS BASIN AREA = .0097 SQ. MI.

****** DEVELOPED ONSITE AREA OF TRACT 10 (4.33 ACS.)
COMPUTE NM HYD ID=3 HYD NO=100.3 AREA=0.0068 SQ MI
PER A=0 PER B=20 PER C=0 PER D=80
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 21.477 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .005440 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

K = .130992HR TP = .133300HR K/TP RATIO = .982685 SHAPE CONSTANT, N = 3.593448
UNIT PEAK = 3.3371 CFS UNIT VOLUME = .9964 B = 327.09 P60 = 1.8700
AREA = .001360 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

PRINT HYD ID=3 CODE=24

PARTIAL HYDROGRAPH 100.30

TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS	TIME FLOW HRS	FLOW CFS
TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS

	.000	.0	1.998	4.0	3.996	.1
5.994	.1					
	.666	.0	2.664	.4	4.662	.1
6.660	.0					
	1.332	4.6	3.330	.1	5.328	.1

RUNOFF VOLUME = 1.69760 INCHES = .6157 ACRE-FEET
PEAK DISCHARGE RATE = 16.97 CFS AT 1.499 HOURS BASIN AREA = .0068 SQ. MI.

****** COMBINE HYDROGRAPHS BASINS 10 & 11
ADD HYD ID=1 HYD NO=101.1 ID=1 ID=3
PRINT HYD ID=1 CODE=24

PARTIAL HYDROGRAPH 101.10

TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS
	.000	.0	1.998	3.996	.2
5.994	.3				
	.666	.0	2.664	4.662	.2
6.660	.0				
	1.332	11.2	3.330	5.328	.2

RUNOFF VOLUME = 1.69756 INCHES = 1.4938 ACRE-FEET
PEAK DISCHARGE RATE = 41.17 CFS AT 1.499 HOURS BASIN AREA = .0165 SQ. MI.

****** DEVELOPED CONDITIONS - TRACT 9 - 7.25 ACRES
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UNIT PEAK = 35.690 CFS UNIT VOLUME = .9990 B = 526.28 P60 = 1.8700
AREA = .009040 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
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UNIT PEAK = 5.5455 CFS UNIT VOLUME = .9979 B = 327.09 P60 = 1.8700
AREA = .002260 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
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PRINT HYD ID=5 CODE=24

PARTIAL HYDROGRAPH 100.50

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5.994	.2				
	.666	.0	2.664	.6	4.662 .1
6.660	.0				
	1.332	7.7	3.330	.2	5.328 .2

RUNOFF VOLUME = 1.69760 INCHES = 1.0231 ACRE-FEET
PEAK DISCHARGE RATE = 28.19 CFS AT 1.499 HOURS BASIN AREA = .0113 SQ. MI.

****** COMBINE HYDROGRAPHS BASINS 9 & 10/11
ADD HYD ID=1 HYD NO=101.2 ID=1 ID=5
PRINT HYD ID=1 CODE=24

PARTIAL HYDROGRAPH 101.20

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
	.000	.0	1.998	16.2	3.996 .3
5.994	.4				
	.666	.0	2.664	1.4	4.662 .3
6.660	.0				
	1.332	18.9	3.330	.5	5.328 .4

RUNOFF VOLUME = 1.69757 INCHES = 2.5169 ACRE-FEET
PEAK DISCHARGE RATE = 69.36 CFS AT 1.499 HOURS BASIN AREA = .0278 SQ. MI.

****** DEVELOPED CONDITIONS - TRACT 8 - 5.40 ACRES
COMPUTE NM HYD ID=9 HYD NO=100.6 AREA=0.0084 SQ MI
PER A=0 PER B=20 PER C=0 PER D=80
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 26.531 CFS UNIT VOLUME = .9989 B = 526.28 P60 = 1.8700
AREA = .006720 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

K = .130992HR TP = .133300HR K/TP RATIO = .982685 SHAPE CONSTANT, N = 3.593448
UNIT PEAK = 4.1223 CFS UNIT VOLUME = .9970 B = 327.09 P60 = 1.8700

AREA = .001680 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033300

PRINT HYD ID=9 CODE=24

PARTIAL HYDROGRAPH 100.60

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
	.000	.0	1.998	4.9	3.996 .1
5.994	.1				
	.666	.0	2.664	.4	4.662 .1
6.660	:0				
	1.332	5.7	3.330	.1	5.328 .1

RUNOFF VOLUME = 1.69760 INCHES = .7605 ACRE-FEET
PEAK DISCHARGE RATE = 20.96 CFS AT 1.499 HOURS BASIN AREA = .0084 SQ. MI.

****** COMBINE HYDROGRAPHS BASINS 8 & 9/10/11
ADD HYD ID=1 HYD NO=101.7 ID=1 ID=9
PRINT HYD ID=1 CODE=24

PARTIAL HYDROGRAPH 101.70

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
	.000	.0	1.998	21.0	3.996 .5
5.994	.6				
	.666	.0	2.664	1.9	4.662 .4
6.660	.0				
	1.332	24.7	3.330	.6	5.328 .5

RUNOFF VOLUME = 1.69757 INCHES = 3.2774 ACRE-FEET
PEAK DISCHARGE RATE = 90.33 CFS AT 1.499 HOURS BASIN AREA = .0362 SQ. MI.

↑ COMBINED TRACTS 8-11 TO LA MORADA CUL-DE-SAC

****** DEVELOPED CONDITION - TRACT 7 - 4.49 ACRES

COMPUTE NM HYD ID=10 HYD NO=100.10 AREA=0.0070 SQ MI
PER A=0 PER B=20 PER C=00 PER D=80
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 22.109 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .005600 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR