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

May 8, 2001

Bruce Stidworthy, P.E.
Bohannan Huston
7500 Jefferson NE
Albuquerque, New Mexico 87109

RE: HOMEWOOD SUITES HOTEL (H-19/D47A)
(Arvada Ave, East of Louisiana)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 12/4/1998
ENGINEERS CERTIFICATION DATED 5/8/2001

Dear Mr. Stidworthy:

Based upon the information provided in your Engineers Certification submittal dated 5/8/2001, the above referenced site is approved for Permanent Certificate of Occupancy.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin

Teresa A. Martin
Hydrology Plan Checker
Public Works Department

BLB

C: Vickie Chavez, COA
approval file
drainage file

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Homewood Suites Hotel ZONE MAP/DRG. FILE # H-19 / D047A
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Tract B-2-A La Mesa Medical Center
CITY ADDRESS: Arvada Ave East of Louisiana

ENGINEERING FIRM: Bohannan Huston, Inc. CONTACT: Bruce Stidworthy
ADDRESS: 7500 Jefferson NE PHONE: 823-1000
CITY, STATE: Albuquerque ZIP CODE: 87109

OWNER: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: Swinterton CONTACT: Joe M.
ADDRESS: _____ PHONE: 898-8985
_____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- ____ CLOMR/LOMR
- ____ OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ____ YES
- ____ NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ 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
- X CERTIFICATE OF OCCUPANCY APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

DATE SUBMITTED: 5/8/01 BY: Bruce Stidworthy, BHI

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

HYDROLOGY SECTION DATE 4/30/01

ECTION APPROVAL

COA SDM. 50-19 # 2042363

ANS/STREET MAINT DATE

CEPTANCE.

NSTRUCTION MGT DIV. DATE

RAINAGE CERTIFICATION

JAMES R TOPMILLER, P.E., OF BOHANNAN HUSTON, N PE #9354 DO HEREBY CERTIFY THAT THE EXISTING AND PROPOSED DRAINAGE CONDITIONS OF THIS SITE ARE IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN, TO THE BEST OF MY KNOWLEDGE AND BELIEF. AS-BUILT ELEVATIONS WERE VERIFIED BY BOHANNAN HUSTON. THIS STATEMENT DOES NOT REPRESENT CERTIFICATION OF CONTRACTOR'S METHODS OR MATERIALS.

NAME

DATE

LEGEND

97.85 ~~97.50~~ — AS-BUILT ELEVATION

PROPERTY LINE

EXISTING CONTOURS

EXISTING ELEVATION AT CURB

EXISTING GROUND SPOT ELEVATION

EXISITNG WATER METER

EXISITNG ELECTRICAL POLE

SD — PROPOSED STORM DRAIN

PROPOSED STORM DRAIN INLET

PROPOSED SPOT ELEVATION
TC=TOP OF CURB, FL=FLOW LINE
TW=TOP OF WALL, BW=BOTTOM OF WALL
EX=EXISTING, TG=TOP OF GRADE

PROPOSED DIRECTION OF FLOW

(14) KEYED NOTE

WATER BLOCK

Bohannan Huston

12/4/98

Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS
SURVEYORS SOFTWARE DEVELOPERS

PROMUS HOTEL CORPORATION
HOMEWOOD SUITES
Albuquerque, New Mexico

Sheet Title

GRADING AND DRAINAGE PLAN

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 27, 1999

James Topmiller, P.E.
Bohannan-Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

Attn: Bruce Stidworthy

RE: HOMEWOOD SUITES (H19-D47A). DRAINAGE REPORT, AND GRADING & DRAINAGE PLAN FOR GRADING PERMIT AND BUILDING PERMIT APPROVALS. ENGINEER'S STAMP DATED DECEMBER 4, 1998.

Dear Mr. Topmiller:

Based on the information provided on your December 4, 1998 resubmittal, having addressed Mr. B. Montoya's review comments of November 1997, the above referenced project is approved for both Grading and Building Permits.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Andrew Garcia
File

NOTE: Includes approval of SO-19.

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

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

February 5, 2001

Bruce Stidworthy, P.E.
Bohannan Huston, Inc.
7500 Jefferson NE
Albuquerque, New Mexico 87109

RE: ENGINEERS CERTIFICATION- (H-19/D047A)
HOMEWOOD SUITES (Arvada between Louisiana and Prospect)
CERTIFICATE OF OCCUPANCY APPROVAL--*Temporary 30 day*--
ENGINEERS STAMP DATED 12/4/1998

Dear Mr. Stidworthy:

Based on the information provided on your February 5, 2001 submittal, the above referenced project is approved for a **30-DAY TEMPORARY** Certificate of Occupancy.

A Temporary Certificate of Occupancy has been issued for 30 days, until the As-Built Surveying, and SO#19 issues adjacent to the site have been completed. When these issues have been fully completed, are in substantial compliance, and an Engineers Certification has been resubmitted to the City's Hydrology office, a Permanent Certificate of Occupancy will be issued.

If I can be of further assistance, please feel free to contact me at 924-3986.

Sincerely,

Loren D. Meinz, P.E.
Senior Civil Engineer, Hydrology
C.O.A./Public Works Department

c: Teresa Martin
Vickie Chavez
File

2/20

Call from
Joe Stain
344-2226
Homewood Suites
Bohannan Huston
H19/D47A

Joe Stain
344-2226
2/21/01

(11) This ref. dwg
NOT found by Contr.
I told Stain to check
with Stidworthy of BHI

February 5, 2001

BOHANNAN-HUSTON, INC

Courtyard One

7500 JEFFERSON NE

Albuquerque

NM 87109-4335

voice 505.823 1000

fax 505 821 0892

Brad Bingham, P.E.
Hydrology Division/PWD
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Drainage Certification for Homewood Suites (City Drainage File H19-D47A). Request for Temporary Certificate of Occupancy Approval.

Dear Brad:

Based on my inspection of the site today and on previous occasions, the site appears to be constructed in substantial compliance with the approved grading and drainage plan dated 12/4/98. The survey for the site is in process, and will be submitted with our request for permanent certificate of occupancy.

Sincerely,
Bohannan Huston, Inc.

Bruce Stidworthy, P.E.
Community, Development
and Planning Group

BRUCE J. STIDWORTHY
NEW MEXICO
14523
REGISTERED PROFESSIONAL ENGINEER

BJS/am
Enclosures

cc: Josh Simpson, Swinerton & Walberg Co.

P \97342\CDP\corres\DrainCertBrad doc

HOMEWOOD SUITES DRAINAGE REPORT

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505 823 1000

fax 505 821 0892

DECEMBER 4, 1998

PREPARED FOR:

PROMUS HOTEL CORPORATION
c/o MFDB ARCHITECTS
3444 MARCONI AVENUE
SACRAMENTO, CA 95821-9234

RECEIVED
DEC 04 1998
HYDROLOGY SECTION

DRAINAGE REPORT FOR HOMEWOOD SUITES

DECEMBER 4, 1998

Prepared for:

Promus Hotel Corporation
c/o MFDB Architects
3444 Marconi Avenue
Sacramento, CA 95821-9234

Prepared by:

Bohannan Huston, Inc.
Courtyard I
7500 Jefferson NE
Albuquerque, NM 87109

JAMES R. TOPMILLER
NEW MEXICO
9354
REGISTERED PROFESSIONAL ENGINEER

PREPARED BY:

Bruce Stidworthy 12/4/98
Bruce Stidworthy, E.I. Date

UNDER THE SUPERVISION OF:

12/4/98
James R. Topmiller, P.E. Date

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PLATE 2 - EXISTING AND PROPOSED CONDITIONS BASIN MAP

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I. INTRODUCTION

The purpose of this report is to provide a Drainage Management Plan for the proposed development of a 150-unit suites hotel. The site is legally described as La Mesa Medical Center, Tract B-2-A.

II. PURPOSE

This report and the final grading plan are submitted for Hydrology Division review for the purpose of obtaining rough grading and building permit approval. No variances are requested with this submittal.

III. METHODOLOGIES AND REFERENCES

This report is prepared in accordance with DPM criteria; specifically, the procedure outlined in DPM Section 22.2.A was used. No AHYMO analysis was done for this site. This report is in compliance with the approved Woodmark at Uptown Drainage Report, dated 6/26/97 (City drainage file H19/063).

IV. SITE LOCATION AND CHARACTERISTICS

The proposed Homewood Suites is located on Arvada Ave NE, between Louisiana and Prospect, within City of Albuquerque Zone Atlas Map No. H-19. The site was formerly developed as a medical office complex. All former improvements have been removed from the site.

V. EXISTING CONDITIONS

Please see the Existing Conditions Basin Map in the Exhibits section of this report.

Currently, the site slopes from east to west at approximately 2.6%. The existing site contains a number of non-native trees, and sparse grasses and weeds. The existing site is divided into Basins E1 and E2. Basin E1 consists approximately of the north half of the site

(1.40 ac., Q100 = 4.8 cfs) and drains north to Cutler Avenue. Basin E2 consists approximately of the south half of the site (1.22ac., 4.20 cfs) and drains south to Arvada Ave. No offsite flows impact the site. Please see the existing conditions basin map and data table on the basin map in this report.

VI. PROPOSED CONDITIONS

Please see the Existing and Proposed Conditions Basin Map, Plate 2, in this report.

The drainage system for the proposed development consists primarily of underground storm drains that are capable of carrying the drainage from the site. Storm water flows are collected by three separate inlets and four area drains, all of which operate in sump condition. Appendix 2 in this report provides detailed calculations for the capacity of all components of the proposed drainage system. The paragraphs below discuss the specific drainage schemes for each of the proposed basins.

Basin 1 consists of the western portion of the site, and drains to a Type D inlet located approximately in the center of the basin. Flows from the Type D inlet are then conveyed by a 15" storm drain to the southwest corner of the site, where the storm drain daylights and flows are conveyed under the proposed sidewalk by sidewalk culverts. Basin 1 contains Pond 1, which has a maximum depth of 0.7'. Flows exiting the Type D inlet are constricted by an orifice plate in order to reduce the peak flow as required.

Basins 2 and 3 consist of the north-central portion and northeastern portion of the site, respectively. Basins 2 and 3 contain Ponds 2 and 3, which operate in a similar fashion to Pond 1.

Basin 4 consists of the southeast portion of the site, and free-discharges partly to a small-diameter, underground storm drain system, and partly by surface flow to Arvada Avenue through the front entrance of the site. Four small-area drains were required within Basin 4 in order to drain areas adjacent to the building. The proposed storm drain lines within Basin 4 daylight at the same location as the primary storm drain, in the southwest corner of the site. The small-diameter storm drain within Basin 4 operates under non-pressure flow, and discharges freely.

Basin 5 consists of a very small area at the southwest corner of the site and free-discharges a negligible flow rate of 0.11 cfs to the Arvada Avenue right-of-way. Basin 6 consists of a small strip along the north border of the site and discharges a negligible flow rate of 0.07 cfs to the Cutler Avenue right-of-way.

The total discharge from the developed site is 9.1 cfs, in accordance with the approved Woodmark at Uptown Drainage Report, dated 6/26/97 (City Drainage File H19/D63). This plan also closely conforms to the approved conceptual Drainage Management Plan for this site (see letters dated11/13/97 and 01/27/98 from Bernie Montoya addressed to James Topmiller).

VII. CONCLUSION

This report has given a comprehensive drainage management plan for the proposed development that complies with previously approved master plans. It is recommended that with this submittal, rough grading and building permit approvals be granted.

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505 823 1000

fax 505 821 0892

December 4, 1998

Mr. Bernie Montoya
Hydrology Division
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: Final Grading and Drainage Plan for Homewood Suites (H19-D47A), Building Permit Approval

Dear Mr. Montoya:

The purpose of this letter is to transmit the Drainage Report and Grading Plan for the Homewood Suites Hotel located on Arvada NE in the Uptown area. With this submittal, we are requesting building permit and grading approval for the project.

The secondary purpose of this letter is to address your comments provided in a letter addressed to James Topmiller of Bohannan Huston, Inc. dated November 13, 1997. In that letter, you approved the conceptual drainage plan for the site and provided a number of issues to be addressed prior to building permit approval. Accordingly, we offer the following:

1. Roof drain locations have been shown. Most of them connect directly to the proposed storm drain. No roof drainage is crossing sidewalks.
2. The City of Albuquerque standard drawing number for sidewalk culverts has been included on the plan.
3. A cross-section of the rundown has been provided on the plan, and an NMSH&TD standard serial has been referenced for the headwall detail.
4. The location and elevation of the benchmark for the project has been shown on the plan. We are unaware of any temporary benchmarks which exist on the site.
5. Spot elevations have been shown on the plan for all waterblocks. In addition, Appendix 3 of the report provides detailed calculations which demonstrate that the waterblock height provided is sufficient.
6. Flow line elevations for all of the proposed curbing on-site have been provided. Additionally, details showing the height of the curb are referenced on the plan.
7. Only one rundown is required for the site, and it is identified by cross-section number 3 shown on the plan.
8. The type of inlets proposed for this project is shown in the keyed notes, and hydraulic calculations for all pipes and inlets are included in Appendix 2 of the Drainage Report.

P \97342\CDP\A07-final drain\corres\Montoya,ltr.doc

FIG.1 1/2

We believe this letter and our Drainage Report adequately address all comments provided and present a comprehensive drainage management plan and grading plan for the project. Please contact me at 823-1000 if I can provide any additional information.

Sincerely,
Bohannan Huston, Inc.

Bruce J. Stidworthy, E.I.
Community Development
and Planning Group

BJS/am
Attachment

cc: Tim Hannon, MFDB Architects
James Topmiller, Bohannan Huston, Inc.

FIG.1 2/2

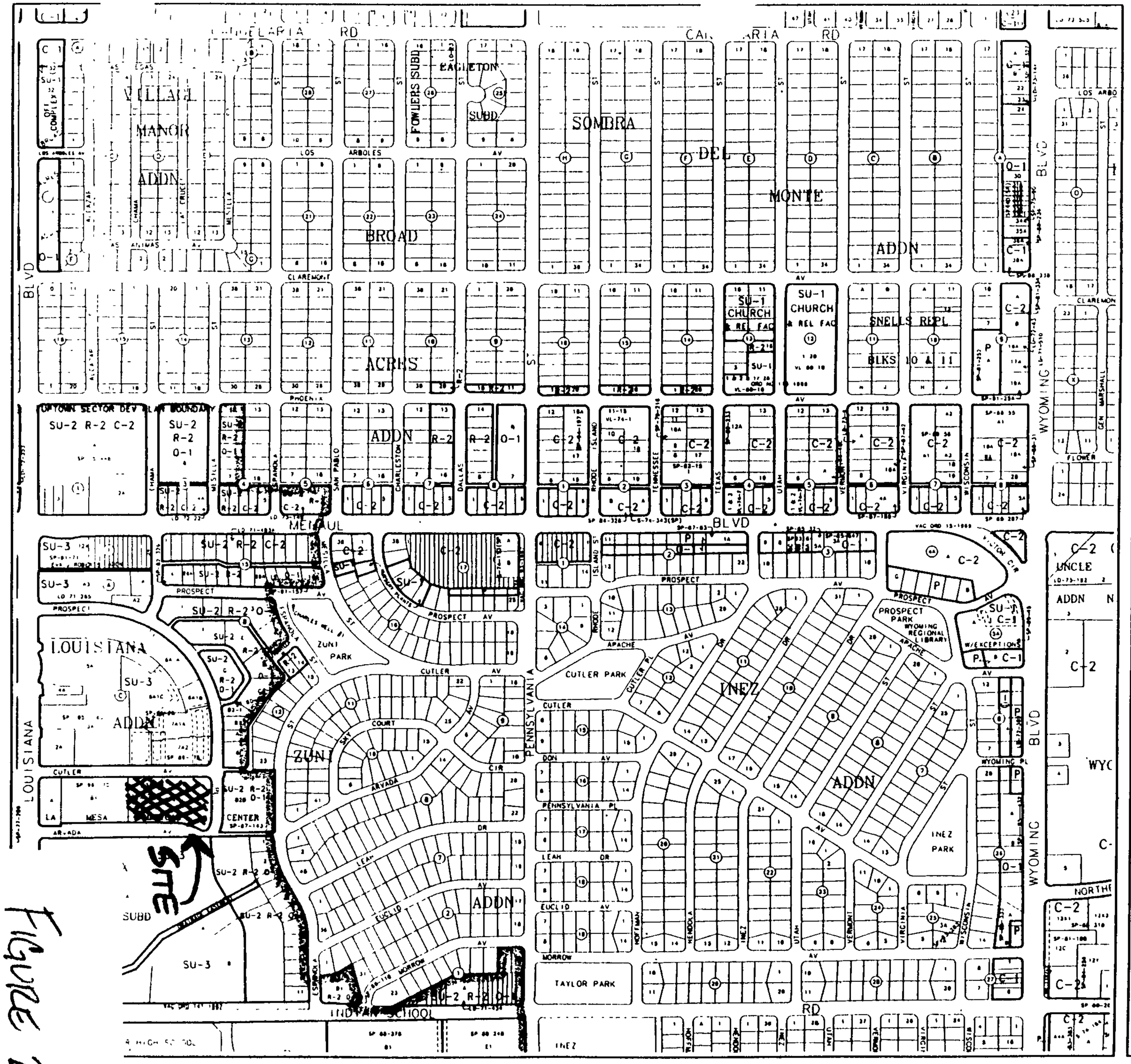


FIGURE 2

GRAPHIC SCALE IN FEET

250 0 500 1000

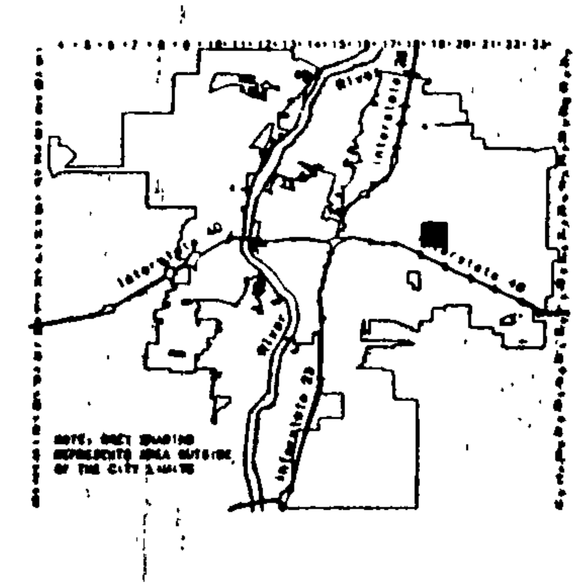
CITY OF Albuquerque

Albuquerque Geographic Information System

PLANNING DEPARTMENT

© Copyright 1997

Map Amended through October 30, 1997



LEGAL DESCRIPTION

T10N

R4E

SEC 7

UNIFORM PROPERTY CODE

1-019-059

H-19-Z

APPENDICES

APPENDIX 1 - PROPOSED CONDITION HYDROLOGIC CALCULATIONS

APPENDIX 2 - PROPOSED CONDITION HYDRAULIC CALCULATIONS

APPENDIX 3 - WATERBLOCK CALCULATIONS

APPENDIX 1

PROPOSED CONDITION HYDROLOGIC CALCULATIONS

Proposed Conditions Basin Data Table for Building Permit Approval

This table is based on the DPM Section 22.2, Zone 3 Rainfall

BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	E(100) (IN)	Vol.** (6HR)	Vol.** (24HR)
1	33782	0.78	0.0%	16.0%	2.0%	82.0%	4.60	*3.57*	2.11	*5935*	*6858*
2	20918	0.48	0.0%	10.0%	0.0%	90.0%	4.78	*2.29*	2.22	*3863*	*4490*
3	15985	0.37	0.0%	26.0%	2.0%	72.0%	4.36	*1.60*	1.96	*2616*	*3000*
4	40914	0.94	0.0%	21.8%	2.2%	76.0%	4.46	*4.19*	2.02	*6896*	*7932*
5	1595	0.04	0.0%	50.0%	50.0%	0.0%	3.03	*0.11*	1.11	*147*	*147*
6	978	0.02	0.0%	25.0%	75.0%	0.0%	3.24	*0.07*	1.20	*98*	*98*
Total	114172	2.62	0.0%	19.0%	3.0%	78.0%	4.51	*11.83*	2.05	*19545*	*22514*

97342\CDP\A01\STUDY\HYDROLOGY\BASINS.XLS

Note: This table represents the unmitigated flows generated by the developed basins, the - total discharge from the site after detention ponding is 9.1 cfs in accordance with the approved Woodmark at Uptown drainage report, dated 6/26/97 (City Drng File H19/D63)

TOTAL ALLOWABLE DISCHARGE FROM THE SITE IN CFS = 9.1

TOTAL DISCHARGE FROM BASINS 4,5,& 6 (FREE DISCHARGE) IN CFS = 4.37

ALLOWABLE DISCHARGE FROM BASINS 1-3 IN CFS = 4.73

A 1-1/1

APPENDIX 2

PROPOSED CONDITION HYDRAULIC CALCULATIONS

Detention Pond Volume Calculations

NOTE: Shaded cells require user input, all other cells should not be edited.
ASSUMPTIONS:
1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event

Project Name: **Homewood Suites**
Basin Name : **Basin 1**
Choose Zone (1 - 4) 3
Basin Area = (acres) 0.78

Exist Conditions				**Proposed Conditions**			
Treatment	Percentage	Area	Q (cfs)	Treatment	Percentage	Area	Q (cfs)
A	0.0%	0.00	0.00	A	0.0%	0.00	0.00
B	0.0%	0.00	0.00	B	16.0%	0.12	0.32
C	100.0%	0.78	2.69	C	2.0%	0.02	0.05
D	0.0%	0.00	0.00	D	82.0%	0.64	3.21
		Q Peak - exist.=	**2.69**			Peak Q Developed=	**3.59**

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? N
If No, what is the maximum allowable discharge ? 1.90

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.00
%B x E = 0.15
%C x E = 0.03
%D x E = 1.94
Weighted Avg E(in) = 2.11

Determine Tb (hours) Tb = 0.760

Determine Tc (Note: Tc is assumed to be 0.2 hours, this should be checked using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.205
Peak Duration = 0.205

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

Time to Control Q (hrs) = 0.109
Time to end of Control Q (hrs)= 0.574883
Duration of Control Q (hrs)= 0.466

Required Detention Volume (CF) = 2041.18

P:\97342\cdp\A01-Concpt Grd Drng\Study\hydrology\Detention Volume2.xls, sht Basin1

Detention Pond Volume Calculations

NOTE: Shaded cells require user input, all other cells should not be edited.
ASSUMPTIONS:
1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event

Project Name: **Homewood Suites**
Basin Name : **Basin 2**
Choose Zone (1 - 4) 3
Basin Area = (acres) 0.48

Exist Conditions				**Proposed Conditions**			
Treatment	Percentage	Area	Q (cfs)	Treatment	Percentage	Area	Q (cfs)
A	0.0%	0.00	0.00	A	0.0%	0.00	0.00
B	0.0%	0.00	0.00	B	10.0%	0.05	0.12
C	100.0%	0.48	1.66	C	0.0%	0.00	0.00
D	0.0%	0.00	0.00	D	90.0%	0.43	2.17
		Q Peak - exist.=	**1.66**			Peak Q Developed=	**2.29**

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? N
If No, what is the maximum allowable discharge ? 1.70

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.00
%B x E = 0.09
%C x E = 0.00
%D x E = 2.12
Weighted Avg E(in) = 2.22

Determine Tb (hours) Tb = 0.752

Determine Tc (Note: Tc is assumed to be 0.2 hours, this should be checked using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.198333
Peak Duration = 0.225

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

Time to Control Q (hrs) = 0.147
Time to end of Control Q (hrs)= 0.508432
Duration of Control Q (hrs)= 0.361

Required Detention Volume (CF) = 626.408

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Detention Pond Volume Calculations

NOTE: Shaded cells require user input, all other cells should not be edited.
ASSUMPTIONS:

1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event

Project Name: Homewood Suites --BP approval
Basin Name : Basin 3
Choose Zone (1 - 4) 3
Basin Area = (acres) 0.37

Exist Conditions

				Proposed Conditions			
Treatment	Percentage	Area	Q (cfs)	Treatment	Percentage	Area	Q (cfs)
A	0.0%	0.00	0.00	A	0.0%	0.00	0.00
B	0.0%	0.00	0.00	B	26.0%	0.10	0.25
C	100.0%	0.37	1.28	C	2.0%	0.01	0.03
D	0.0%	0.00	0.00	D	72.0%	0.27	1.34
		Q Peak - exist.=	**1.28**			Peak Q Developed=	**1.61**

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? N
If No, what is the maximum allowable discharge ? 1.13

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.00
%B x E = 0.24
%C x E = 0.03
%D x E = 1.70
Weighted Avg E(in) = 1.96

Determine Tb (hours)

Tb = 0.769

Determine Tc (Note: Tc is assumed to be 0.2 hrs, this should be chkd using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.213333
Peak Duration = 0.18

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

Time to Control Q (hrs) = 0.149
Time to end of Control Q (hrs)= 0.505923
Duration of Control Q (hrs)= 0.356

Required Detention Volume (CF) = 466.385

P:\97342\cdp\A01-Concpt Grd Drng\Study\hydrology\Detention Volumes2.xls, sht Basin3

***** HYDRAULIC GRADE LINE CALCULATION

Manning's n = 0.01
for pipe

Structure	Diam. (in.)	Q (cfs)	Area	HGL(up)	Low Point	HV	EGL(dn)	EGL(up)
OUTFALL				92.40	92.90	0.23	92.63	92.63
	15	3.47	1.3	92.99	94.50	0.20	93.19	93.19
Inlet #1								
	12	2.8	0.3	93.61	95.50	0.20	93.76	93.81
Bend								
	12	2.8	0.3	94.47	96.30	0.16	94.63	94.63
Inlet #2								
	8	1.1	0.7	96.03	5432.14	0.00	96.03	96.03
Inlet #3								

Pipe flow Capacity Table (non-pressure, full pipe)

Pipe Reach*	Slope	Pipe Size	Mannings n	Capacity	Peak Flow
AP1 to AP2	1.00%	10	0.013	2.20	1.91
AP2 to AP3	0.98%	8	0.013	1.20	0.74
AP2 to AP4	1.00%	10	0.013	2.20	1.17
AP4 to AP5	0.98%	8	0.013	1.20	0.90
AP4 to AP6	0.97%	10	0.013	2.16	0.27
AP6 to AP7	1.39%	8	0.013	1.43	0.18
AP6 to AP8	1.00%	10	0.013	2.20	0.09
AP8 to AP9	2.67%	8	0.013	1.98	0.09

CAPACITY ANALYSIS FOR THE (3) TYPE 'D' INLETS

Single D inlet, in sump condition with all four edges capable of accepting flows:
Open Area (for orifice calc in sq. ft.): 3.9314236
Length of Weir (feet): 8.3958333

Head (ft)	Head (in)	Weir Q	Orifice Q	Control Q
0.05	0.6	0.25	4.23	0.25
0.1	1.2	0.71	5.99	0.71
0.15	1.8	1.31	7.33	1.31
0.2	2.4	2.01	8.47	2.01
0.25	3	2.81	9.46	2.81
0.3	3.6	3.70	10.37	3.70
0.35	4.2	4.66	11.20	4.66
0.4	4.8	5.69	11.97	5.69
0.45	5.4	6.79	12.70	6.79
0.5	6	7.96	13.39	7.96
0.55	6.6	9.18	14.04	9.18
0.6	7.2	10.46	14.66	10.46
0.65	7.8	11.79	15.26	11.79
0.7	8.4	13.18	15.84	13.18
0.75	9	14.61	16.39	14.61
0.8	9.6	16.10	16.93	16.10
0.85	10.2	17.63	17.45	17.45
0.9	10.8	19.21	17.96	17.96
0.95	11.4	20.83	18.45	18.45
1	12	22.50	18.93	18.93

The Q_{100} (CFS) for basin #1 into inlet #1 carries the maximum flow into an inlet. It carries 3.57 cfs. The capacity shown above is 7.96 cfs.
∴ The inlets can handle the flows.

c:\hydrology\drng_cap\grt_cap.xls

Detention Pond Data Table and Orifice Plate Size Calculations

Detention Pond Data

Pond #	Req'd Vol (CF)	Provided Vol (CF)	100-yr Depth	Flow in (CFS)	Flow out* (CFS)	Total Flow** out (CFS)
1	2041	2100	0.7	3.59	1.9	4.73
2	626	650	0.5	2.29	1.7	2.83
3	466	500	0.7	1.61	1.13	1.13
Total	3133	3250		7.49	4.73	

NOTE*: This column is the allowable discharge from the respective basin
NOTE**: This column is the allowable discharge from the respective basin plus the allowable flow from upstream basins.

Orifice Plate size calculations

Inlet for Pond # . .	Grate Elev	Invert	Pipe Size	Head	Allowable Q (cfs)	Orifice Opening (Sq. In.)
1	94.5	91.82	15	2.06	4.73	95
2	95.5	92.8	12	2.20	2.83	55
3	96.3	93.22	8	2.75	1.13	20

Inlet Capacity Table for the 4 area drains within Basin 4

Note inlet capacity is calculated based on orifice flow

Inlet Location	Min. Req'd Open Area (ft^2)	Available Head (ft)	Inlet Capacity	Peak Q, cfs
At AP 3	0.4	0.9	1.92	0.74
At AP 5	0.4	0.9	1.92	0.90
At AP 7	0.4	0.5	1.43	0.18
At AP 9	0.4	0.2	0.90	0.09

Storm Drain Inlet Basins

This table is based on the DPM Section 22.2, Zone 3 Rainfall

BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)
A	7233.8	0.17	0.0%	21.8%	2.2%	76.0%	4.46	*0.74*
B	8776.7	0.20	0.0%	21.8%	2.2%	76.0%	4.46	*0.90*
C	850.9	0.02	0.0%	21.8%	2.2%	76.0%	4.46	*0.09*
D	1731.2	0.04	0.0%	21.8%	2.2%	76.0%	4.46	*0.18*
Total	18592.6	0.43	0.0%	21.8%	2.2%	76.0%	4.46	*1.90*

This table has basins A-D which are sub-basins of Basin 4. Basin A drains to AP3, Basin B drains to AP5, Basin C drains to AP7, and Basin D drains to AP9.

APPENDIX 3

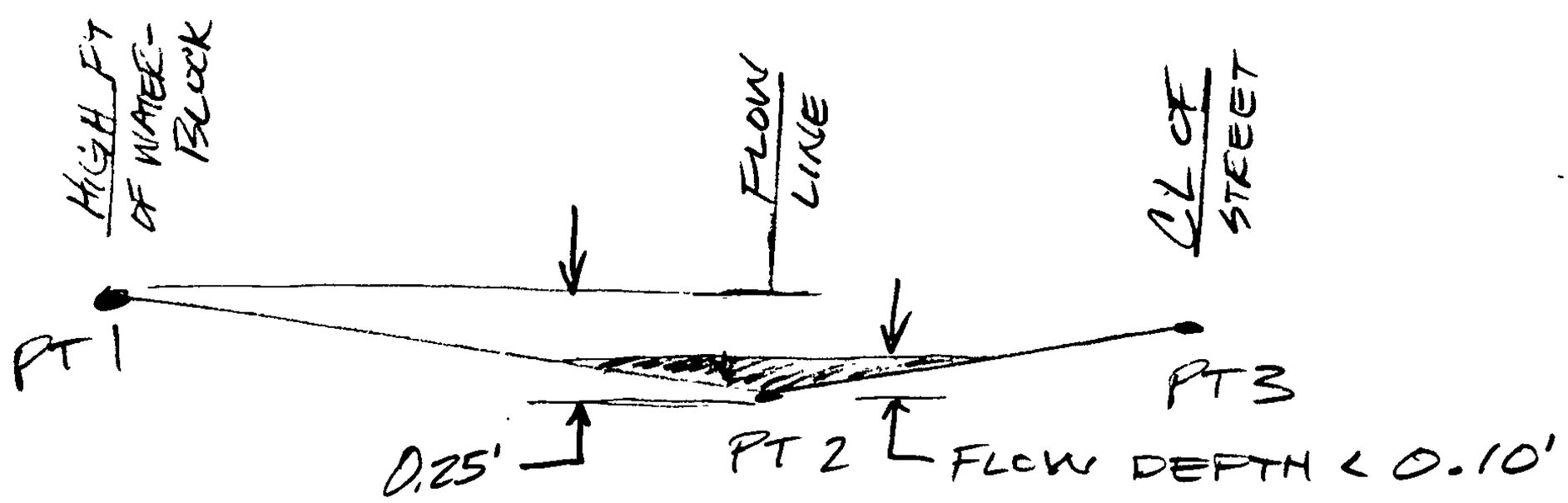
WATERBLOCK CALCULATIONS

WaterBlock Calculations for Entrance to Homewood Suites from PROSPECT PL.

MANNING'S N = .0170 SLOPE = .0070

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	1.88	2	25.00	1.63	3	45.00	2.03

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID
1.64	0.01	0.0	0.0	1.5	0.2	1.50
1.65	0.02	0.0	0.0	3.0	0.3	3.00
1.66	0.03	0.1	0.0	4.5	0.4	4.50
1.67	0.04	0.1	0.1	6.0	0.5	6.00
1.68	0.05	0.2	0.1	7.5	0.6	7.50
1.69	0.06	0.3	0.2	9.0	0.7	9.00
1.70	0.07	0.4	0.3	10.5	0.8	10.50
1.71	0.08	0.5	0.4	12.0	0.9	12.00
1.72	0.09	0.6	0.6	13.5	0.9	13.50
1.73	0.10	0.7	0.7	15.0	1.0	15.00
1.74	0.11	0.9	1.0	16.5	1.1	16.50
1.75	0.12	1.1	1.2	18.0	1.1	18.00
1.76	0.13	1.3	1.5	19.5	1.2	19.50
1.77	0.14	1.5	1.8	21.0	1.2	21.00
1.78	0.15	1.7	2.2	22.5	1.3	22.50
1.79	0.16	1.9	2.6	24.0	1.4	24.00
1.80	0.17	2.2	3.1	25.5	1.4	25.50
1.81	0.18	2.4	3.6	27.0	1.5	27.00
1.82	0.19	2.7	4.1	28.5	1.5	28.50
1.83	0.20	3.0	4.7	30.0	1.6	30.00
1.84	0.21	3.3	5.4	31.5	1.6	31.50
1.85	0.22	3.6	6.1	33.0	1.7	33.00
1.86	0.23	4.0	6.9	34.5	1.7	34.50
1.87	0.24	4.3	7.7	36.0	1.8	36.00
1.88	0.25	4.7	8.6	37.5	1.8	37.50



NOTE: THIS ENTRANCE IS VERY CLOSE TO THE HIGH PT IN PROSPECT PL., THE 100YR FLOW IS << 1.0 CFS.

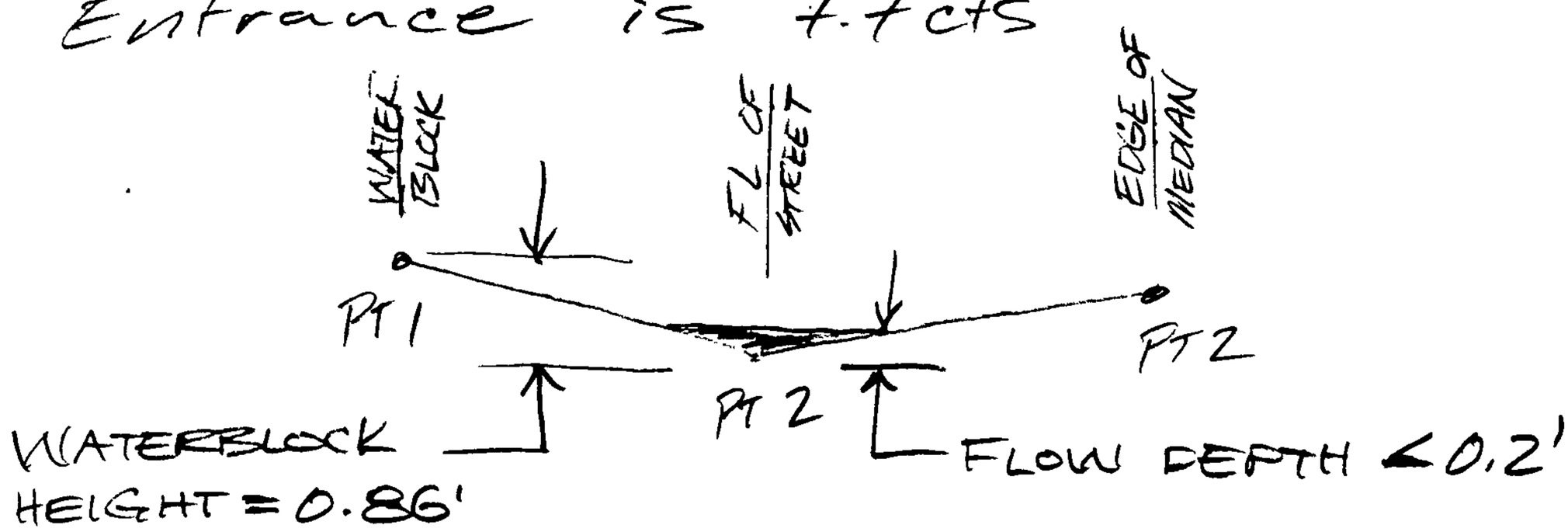
WaterBlock analysis for entrance to Homewood Suites from Arvade Ave

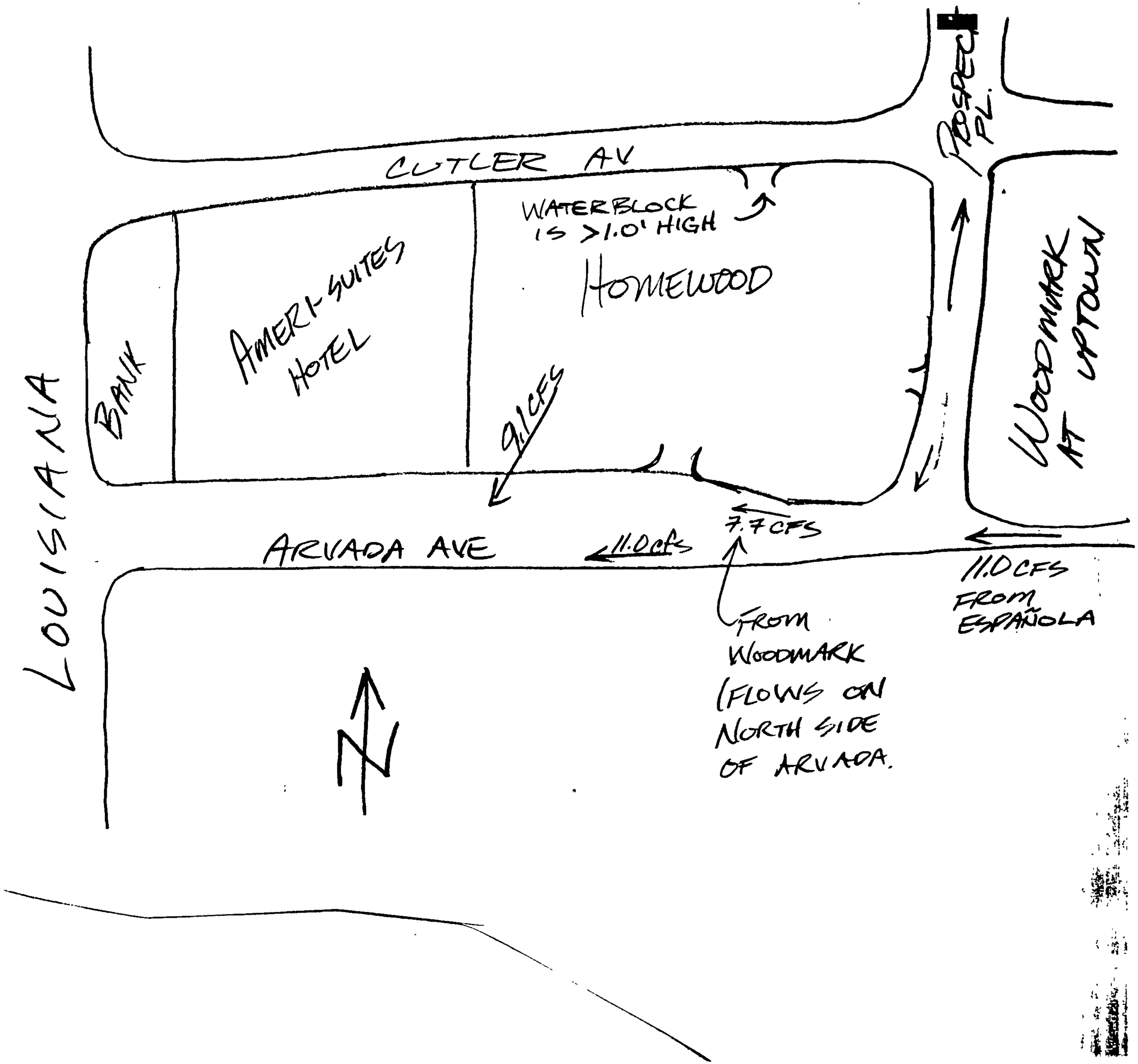
MANNING'S N = .0170 SLOPE = .0220

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	96.45	2	22.00	95.59	3	49.00	96.13

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID
95.69	0.10	0.4	0.7	7.6	1.8	7.56
95.79	0.20	1.5	4.2	15.1	2.8	15.12
95.89	0.30	3.4	12.4	22.7	3.7	22.67
95.99	0.40	6.0	26.8	30.2	4.4	30.23
96.09	0.50	9.4	48.6	37.8	5.1	37.79
96.13	0.54	11.0	59.7	40.8	5.4	40.81

PER THE WOODMARK DRNG REPORT, (the master-plan for our site), 100 YR FLOW ON NORTH SIDE OF ARVADA, UPSTREAM OF Homewood Entrance is 7.7cfs




CUTLER AV
PROSPECT PL.
WATERBLOCK IS >1.0' HIGH
HOMEWOOD
AMERI-SUITES HOTEL
BANK
9.1CFS
WOODMARK AT UPTOWN
LOUISIANA
ARVADA AVE
11.0cfs
7.7CFS
11.0CFS FROM ESPAÑOLA
FROM WOODMARK (FLOWS ON NORTH SIDE OF ARVADA.
N

A3-3/4

IV. DOWNSTREAM ANALYSIS OF KENTUCKY COURT STORM SEWER SYSTEM FOR ARVADA AVENUE AND LOUISIANA BOULEVARD SOUTH OF ARVADA AVENUE

The Woodmark grading plan calls for all onsite flows to be directed to Arvada Avenue. The flows in Arvada become part of the Kentucky Court Storm Sewer System. I am going to trace the developed flows from the Woodmark site into and through Arvada Avenue, into the outlets, through the existing storm drain pipes, and into the storm system in Louisiana. Along this path I will make recommendations on storm drain improvements that are necessary to provide downstream capacity.

FROM WOODMARK DRNG REPORT.

A. HYDROLOGIC ANALYSIS

Arvada receives flows from five basins:

1) 11 cfs from the Espanola intersection per the drainage report by James Topmiller mentioned earlier.

2) 2 cfs from the fully developed Amerisuites site (COA Project #5536.81) per the approved Amerisuites drainage plan.

3) 7.7 cfs from the fully developed Woodmark site as mentioned above.

4) 9.1 cfs from Tract B-2-A (100% of undeveloped Type C flows). (See Appendix2.)

5) 1.8 cfs from the bank site on Louisiana as ½ of fully developed (90% Type D, 10% Type B) flows.

I am allowing for enough downstream capacity in the storm drain analysis to provide discharge of the 9.1 cfs (100% of undeveloped flow) for Tract B-2-A. When this tract is developed, the difference between the developed and undeveloped flows will have to be detained on site.

B. STREET CAPACITY (SEE APPENDIX 3

Arvada was analyzed using the future street cross section as proposed in the Amerisuites construction plans. Arvada is a median street with 11 cfs (from Espanola) flowing in the southern portion and 21.3 cfs (from the developed and undeveloped basins on the northern border of

EXHIBITS

PLATE 1 - FINAL DRAINAGE/GRADING PLAN & DETAIL SHEET

PLATE 2 - EXISTING AND PROPOSED CONDITIONS BASIN MAP

PLATE 3 - PLAT

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOMEWOOD SUITES ZONE ATLAS/DRNG. FILE # H-19/D47A

DRB #: 97-499 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT B-2-A LA MESA MEDICAL CENTER

CITY ADDRESS: NORTH OF ARVADA BETWEEN LOUISIANA AND PROSPECT

ENGINEERING FIRM: BOHANNAN-HUSTON INC. CONTACT: BRUCE STIDWORTHY

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: (505) 823-1000

OWNER: PROMUS HOTEL CORP CONTACT: BRIAN MOULTON

ADDRESS: 755 CROSSOVERLAND, 38117 PHONE: 901-374-5957

ARCHITECT: MFDB ARCHITECTS CONTACT: TYLER BABCOCK

ADDRESS: 3444 MARCONI AVENUE 95821-9234 PHONE: 916-972-0131

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT

_____ DRAINAGE PLAN (CONCEPTUAL)

X FINAL GRADING & DRAINAGE PLAN

_____ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

_____ OTHER

PRE-DESIGN MEETING:

_____ YES

_____ NO

_____ COPY PROVIDED

RECEIVED
DEC 4 1998
HYDROLOGY SECTION

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL

_____ PRELIMINARY PLAT APPROVAL

_____ S. DEV. PLAN FOR SUBD. APPROVAL

_____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

_____ SECTOR PLAN APPROVAL

_____ FINAL PLAT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

X BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

X GRADING PERMIT APPROVAL

_____ PAVING PERMIT APPROVAL

_____ S.A.D. DRAINAGE REPORT

_____ DRAINAGE REQUIREMENTS

_____ OTHER (SPECIFY)

DATE SUBMITTED: 12/4/98

BY: BRUCE STIDWORTHY, BOHANNAN HUSTON

Bohannan ▲ Huston

CLIENT/COURIER TRANSMITTAL

TO: BERNIE MONTOYA
COA / PLAZA DEL SOL

Requested By: BRUCE S.

Date: 12/4/98

Time Due: ☐ This A.M. ☒ This P.M.
☐ Rush _____ ☐ By Tomorrow

Job No.: 97342 A 07

Job Name: HOMEWOOD

BOHANNAN HUSTON
Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109
voice 505.823.1000
fax 505 821.0892

DELIVERY VIA

☒ Courier ☐ Federal Express
☐ Mail ☐ UPS
☐ Other _____

PICK UP

Item: _____

ITEM NO.	QUANTITY	DESCRIPTION
1	1	Drainage Report dated 12/4/98.
2	1	Drainage Info Sheet

COMMENTS/INSTRUCTIONS

RECEIVED
DEC 04 1998
HYDROLOGY SECTION

Received By: _____ Date: _____ Time: _____

CITY OF
Albuquerque

January 27,1998

James Topmiller
Bohannan-Huston Inc.
7500 Jefferson NE
Albuquerque, New Mexico 87109

RE: REVISED CONCEPTUAL DRAINAGE PLAN FOR HOMEWOOD SUITES (H19-D47A)
REVISION DATED 1/16/98

Dear Mr. Topmiller:

Based on the information provided on your January 15,1998 resubmittal, the above referenced site is approved for Site Development Plan For Building Permit.

Please be advised that the comments sent on November 13, 1997 are still valid prior to Building Permit approval.

If I can be of further assistance, please feel free to contact me 924-3986.

C: Andrew Garcia
File

Sincerely

Bernie J. Montoya

Bernie J. Montoya CE
Associate Engineer

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOMEWOOD SUITES ZONE ATLAS/DRNG. FILE # H-19 D047A

DRB #: 97-499 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT B-2-A LA MESA MEDICAL CENTER

CITY ADDRESS: NORTH OF ARVADA BETWEEN LOUISIANA AND PROSPECT

ENGINEERING FIRM: BOHANNAN-HUSTON INC. CONTACT: BRUCE STIDWORTHY

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: (505) 823-1000

OWNER: PROMUS HOTEL CORP CONTACT: BRIAN MOULTON

ADDRESS: 755 CROSSOVERLAND, 38117 PHONE: 901-374-5957

ARCHITECT: MFDB ARCHITECTS CONTACT: TYLER BABCOCK

ADDRESS: 3444 MARCONI AVENUE 95821-9234 PHONE: 916-972-0131

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN (CONCEPTUAL)
- ____ FINAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ 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 SUBD. 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 OTHER NO APPROVAL SOUGHT, SUBMITTAL IS FOR INFORMATION ONLY (SPECIFY)

RECEIVED
JAN 15 1998
HYDROLOGY SECTION

DATE SUBMITTED: 1/16/98

BY: BRUCE STIDWORTHY, BOHANNAN HUSTON

CLIENT/COURIER TRANSMITTAL

BOHANNAN HUSTON
Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109
voice 505.823.1000
fax 505.821.0892

To: Mr. Bernie Montoya
City of Albuquerque
Hydrology Division/PWD
600 2nd Street NW
2nd Floor
Albuquerque, NM 87102

Business (505)924-3986

Requested By: Bruce Stidworthy

Date: January 16, 1998

Time Due: ☒ This A.M. ☐ This P.M.
☐ Rush ____ ☐ By Tomorrow

Job No.: 97342 b1 01 2400

Job Name: Homewood Suites

DELIVERY VIA

☒ Courier ☐ Federal Express
☐ Mail ☐ UPS
☐ Other _____

PICK UP

Item: _____
_____
_____

ITEM NO.	QUANTITY	DESCRIPTION
1	1	Drainage Information Sheet
2	1	Cover Letter
	1	Site Plan

COMMENTS / INSTRUCTIONS

RECEIVED
JAN 15 1998
HYDRO[illegible]N

REC'D BY: _____ ***DATE:*** _____ ***TIME:*** _____

January 16, 1998

BOHANNAN HUSTON
Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109
voice 505 823 1000
fax 505 821 0892

Mr. Bernie Montoya
City of Albuquerque
Hydrology Division/PWD
P.O. Box 1293
Albuquerque, NM 87103

Re: Homewood Suites "Site Plan for Building Permit" Drainage Approval Drainage File H19-D47A DRB Case No. 97-499

Dear Bernie:

As you may recall, this site was previously submitted to you and approved by the Hydrology Division for "Site Plan for Building Permit." Your approval letter contained a number of issues which needed to be addressed prior to approval of the Construction Plans for Building Permit. No approval from the Hydrology Division is sought with this submittal. This submittal is made for your information and to update your files.

At the first DRB meeting for this project, "Site Plan for Building Permit" approval was sought. The site plan was delegated to the Planning Department and Transportation Development. In addressing the comments of those departments, the site plan required replotting, thus requiring a resubmittal to DRB in order to obtain approval of the revised plan. Because Ms. Dicome has required that all of the sheets in the "Site Plan for Building Permit" package match, we have included the new site plan in our conceptual grading and drainage plan. Only minor revisions were requried and no new calculations have been performed.

Your previous approval for "Site Plan for Building Permit" is still valid, and as previously stated, this submittal is for your files only, no re-approval is sought. Should you have any questions or require further information, please contact me.

Sincerely,
Bohannan-Huston

Bruce Stidworthy, E.I.
Community Development
and Planning Group

BS/hjh

Enclosure
cc: Tyler Babcock, MFDB Architects
James Topmiller, Bohannan Huston

RECEIVED
JAN 15 1998
HYDROLOGY SECTION

H:\97342\CDP\CORRES\B101-RVSD CONCEP DWGS\MONTOYA LTR DOC

CITY OF
Albuquerque

Martin J. Chávez, Mayor

November 13,1997

James Topmiller
Bohannan-Huston Inc.
7500 Jefferson NE
Albuquerque, New Mexico 87109

RE: CONCEPTUAL DRAINAGE PLAN FOR HOMEWOOD SUITES (H19-D47A)
ENGINEER'S STAMP DATED 10/17/97

Dear Mr. Topmiller:

Based on the information provided on your October 17,1997 submittal, the above referenced site is approved for Site Development Plan for Building Permit.

Please be advised that prior to Building Permit release, the following must be addressed:

1. Roof drain location and direction. Recommend that they exit under the proposed sidewalk located around the building.

2. Identify on the plan drawing the Spec. No. For the sidewalk culvert construction.

3. Detail of the outlet structure into the sidewalk culvert.

4. Location and elevation of the B.M. and T.B.M. on the plan drawing.

5. Elevation of your proposed water block. Water block must be one foot above the flow.

6. Indicate the top of curb elevations for the proposed perimeter curbing .

7. Identification of all required rundowns.

8. Type of inlets proposed along with the Hydraulics for all the pipes and inlets.

If I can be of further assistance, please feel free to contact me at 924-3986.

C: Andrew Garcia
(File)

Sincerely

Bernie J. Montoya CE
Associate Engineer

October 17, 1997

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823.1000

fax 505 821 0892

Fred Aguirre, P.E.
City Hydrologist
City of Albuquerque
Hydrology Division/PWD
P.O. Box 1293
Albuquerque, NM 87103

Re: Homewood Suites Hotel Site, Drainage Submittal for Site Development Plan for Building Permit Approval

Dear Fred:

The enclosed conceptual grading and drainage plan is submitted for Site Development Plan for building permit approval for the Homewood Suites hotel site. The legal description for this site is "Tract B-2-A, La Mesa Medical Center." The site is located within the City of Albuquerque Zone Atlas Map number H-19.

The subject site was previously developed as a medical complex. All of the medical complex buildings have been removed from the site. Immediately west of the site is an existing AmeriSuites Hotel. Tract B-2-B east of the site is proposed for an assisted living center development called Woodmark at Uptown. The drainage study for Woodmark at Uptown was approved June 26, 1997. That plan identified the allowable developed flow rate for our site.

The enclosed plan meets all of the applicable requirements and was prepared in accordance with the DPM and the Drainage Ordinance. If you have any questions or need any further information, please contact me.

Sincerely,
Bohannan-Huston

Bruce Stidworthy

Bruce Stidworthy, E.I.
Community Development
and Planning Group

BS/hjh

Enclosure
cc: Tyler Babcock, MFDB Architects
James Topmiller, Bohannan Huston

RECEIVED
OCT 17 1997
HYDROLOGY SECTION

G \97342\CDP\A01-CONCPT GRD & DRNG\CORRES\AGUIRRE LTR.DOC

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOMEWOOD SUITES ZONE ATLAS/DRNG. FILE # H-19 417 A

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

LEGAL DESCRIPTION: TRACT B-2-A LA MESA MEDICAL CENTER

CITY ADDRESS: NORTH OF ARVADA BETWEEN LOUISIANA AND PROSPECT

ENGINEERING FIRM: BOHANNAN-HUSTON INC. CONTACT: BRUCE STIDWORTHY

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: (505) 823-1000

OWNER: PROMUS HOTEL CORP CONTACT: BRIAN MOULTON

ADDRESS: 755 CROSSOVERLAND, 38117 PHONE: 901-374-5957

ARCHITECT: MFDB ARCHITECTS CONTACT: TYLER BABCOCK

ADDRESS: 3444 MARCONI AVENUE 95821-9234 PHONE: 916-972-0131

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN (CONCEPTUAL)
- ____ FINAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ 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
- X 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 _____ (SPECIFY)

DATE SUBMITTED: 10/17/97

BY: BRUCE STIDWORTHY, BOHANNAN HUSTON

RECEIVED
OCT 17 1997
HYDROLOGY SECTION

DRAINAGE REVIEW OF THE
ARVADA AVENUE AND
ESPANOLA ST. INTERSECTION

JULY 1996

DRAINAGE REVIEW OF THE ARVADA AVENUE AND ESPANOLA ST. INTERSECTION

Prepared for:

La Mesa Investors, Ltd.
c/o Uptown Square
6605 Uptown Boulevard, NE
Albuquerque, NM 87110

AUG - 6 19

Prepared by:

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
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ALBUQUERQUE LAS CRUCES SANTA FE

DRAINAGE REVIEW OF THE ARVADA AVENUE AND ESPANOLA ST. INTERSECTION

JULY 1996

PREPARED BY:

BOHANNAN-HUSTON INC.
COURTYARD I, 7500 JEFFERSON STREET N.E.
ALBUQUERQUE, NM 87109

PREPARED FOR:

LA MESA INVESTORS, LTD.
c/o UPTOWN SQUARE
6605 UPTOWN BOULEVARD, NE
ALBUQUERQUE, NM 87110

PREPARED BY:

Mike Jeffords 7/29/96

Mike Jeffords, E.I. **Date**

UNDER THE SUPERVISION OF:

JAMES R. TOPMILLER NEW MEXICO 9354 REGISTERED PROFESSIONAL ENGINEER

Jack Topmiller 7/29/96

James Topmiller, P.E. **Date**

BOHANNAN-HUSTON INC.
ENGINEERS • PLANNERS • PHOTOGRAMMETRISTS • SURVEYORS • LANDSCAPE ARCHITECTS
ALBUQUERQUE LAS CRUCES SANTA FE

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1. PURPOSE

The purpose of this report is to provide a drainage plan for a plat and right of way vacation at the northwest corner of Arvada Ave. and Espanola St. NE. The site into which the north half of Arvada is proposed to be incorporated into is legally described as Tract B-2, La Mesa Medical Center. It consists of approximately 4.5 acres. This plan is submitted for COA Hydrology and DRB review for the purpose of obtaining final plat approval.

2. EXISTING CONDITIONS

Currently, the site is a vacant parcel of land. It is bounded on the south by Arvada Ave. (an existing paved road); on the north by Cutler Ave. (an existing paved road), a 20' alley and a 20' PUE; and on the east by Espanola St. (an existing paved road). This site is lightly vegetated with natural grasses and trees. A FEMA floodplain does not encumber the property.

Existing Tract B-2 drainage is directed with a westerly flow pattern toward both Arvada Ave. and Cutler Ave. Field review shows that Arvada is elevated above Tract B-2 such that Tract B-2 flows do not enter the Arvada right-of-way until reaching the future Prospect Ave. location and beyond. Flows on the tracts south of Arvada drain in a southwesterly direction away from Arvada. Offsite flows from basins ARV and ESP (fully developed residential areas) are being examined to determine the effect of vacating right-of-way. Basin ESP generates 42.7 cfs in its current condition during a 100 year - 6 hour storm. Approximately one quarter (Q=11cfs) of this flow is estimated to be diverted down Arvada Ave. at the Arvada - Espanola intersection. Directional momentum is a south direction causes most of the flows to bypass Arvada, and proceed south to an existing channel. Basin ARV generates 34.5 cfs in its current condition during a 100 year - 6 hour storm. It is directed southward down Espanola at the Arvada - Espanola intersection.

An existing unlined channel is located approx. 150 ft. south of Arvada on Espanola. Flows from Espanola outfall to the channel. Due the close proximity of the channel, it is likely that the original concept at this intersection would have included a water block to the west on Arvada. However, surveyed street elevations show that no water block exists to block flows.

3. PROPOSED CONDITIONS

The plat proposes to vacate 8,736 sf of the Arvada right-of-way (one half the street section at the southeast corner of the site and involving the northwest corner of the Arvada - Espanola intersection). The future Uptown Loop Road will eliminate the traffic need for the Arvada right-of-way in this area. It is also proposed that the remaining (south half) portion of the Arvada right-of-way be blocked at the west in order to discourage outside traffic from driving through this residential area. If drainage flows are also blocked, an additional 11cfs would be directed south down Espanola toward the channel south of the Espanola - Arvada intersection. This would result in an additional 3% (max.) flow in the existing channel. The channel flows are approximately 271 cfs in the 100-year event upstream of the Espanola Street crossing. After adding the 77.2 cfs of street flow in Espanola Street, the flows downstream of the crossing would be a minimum of 243 cfs.

Curb and gutter would be extended across Arvada (along the west curb line of Espanola) to block flows. The existing Arvada pavement west of Espanola would likely be removed.

4. CONCLUSION

With this presentation of the drainage scheme for the Arvada - Espanola intersection, we request final plat approval for the referenced site. The curb and gutter across the Arvada opening, and pavement removal, could be added to the plat's infrastructure list.

APPENDICES

APPENDIX A - Hydrologic & Hydraulic Calculations

SUMMARY OF HYDROLOGIC DATA

BASIN ID	AREA AC	AREA SQ.MI.	% LAND TREATMENT A	B	C	D	TIME TO PEAK	DISCHARGE CFS/AC	Q (R) CFS
ARV.	9.6	0.0150	0.0	59.0	0.0	41.0	0.1333	3.59	34.5
ESP.	11.9	0.0186	0.0	59.0	0.0	41.0	0.1333	3.59	42.7
			50	15		35			

ZONE 3: 41% LAND TREATMENT D*

* Single family Residential $\%D = 7\sqrt{(N^2)+5N}$ ← from Table A-5 DPM Section 22.2

$$N = \frac{83.5 \text{ units}}{11.9Ac + 9.6Ac} = 3.9 \frac{\text{units}}{Ac}$$

$$\%D = 7\sqrt{(3.9^2)+5(3.9)} = 41\%$$

3.08 cfs/Ac

$$ARV = 9.6\,[.50(1.87) + .15(2.60) + .35(5.02)] = 29.6 \text{ cfs}$$

$$ESP = 11.9\,[3.08 \text{ cfs/Ac}] = 36.7 \text{ cfs}$$

$$P_{60} = 2.05$$

ARV $T_c = 0.2$ hr

$$I = 0.726(\log_{10}(24.6 \times 0.2)) \times (1/0.2)^{2.05} = 5.15 \text{ in/hr}$$

ESP $T_c = 0.4$ hr

$$I = 0.726(\log_{10}(24.6 \times 0.4)) \times \left(\frac{1}{0.4}\right)^{2.05} = 3.69 \text{ in/hr}$$

ESP

$$t_c = L_1/V_1 + L_2/V_2 + L_3/V_3$$

$L_1 = 200'$ $\quad V_1 = 0.7\sqrt{0.5} = 0.5$ fps

$L_2 = 2000'$ $\quad V_2 = 2\sqrt{1.0} = 2$ fps

$$t_c = \left[\frac{200}{0.5} + \frac{2000}{2}\right] / 3600 = 0.39 \text{ hr}$$

$$t_p = \tfrac{2}{3}(0.39) = 0.26 \text{ hr}$$

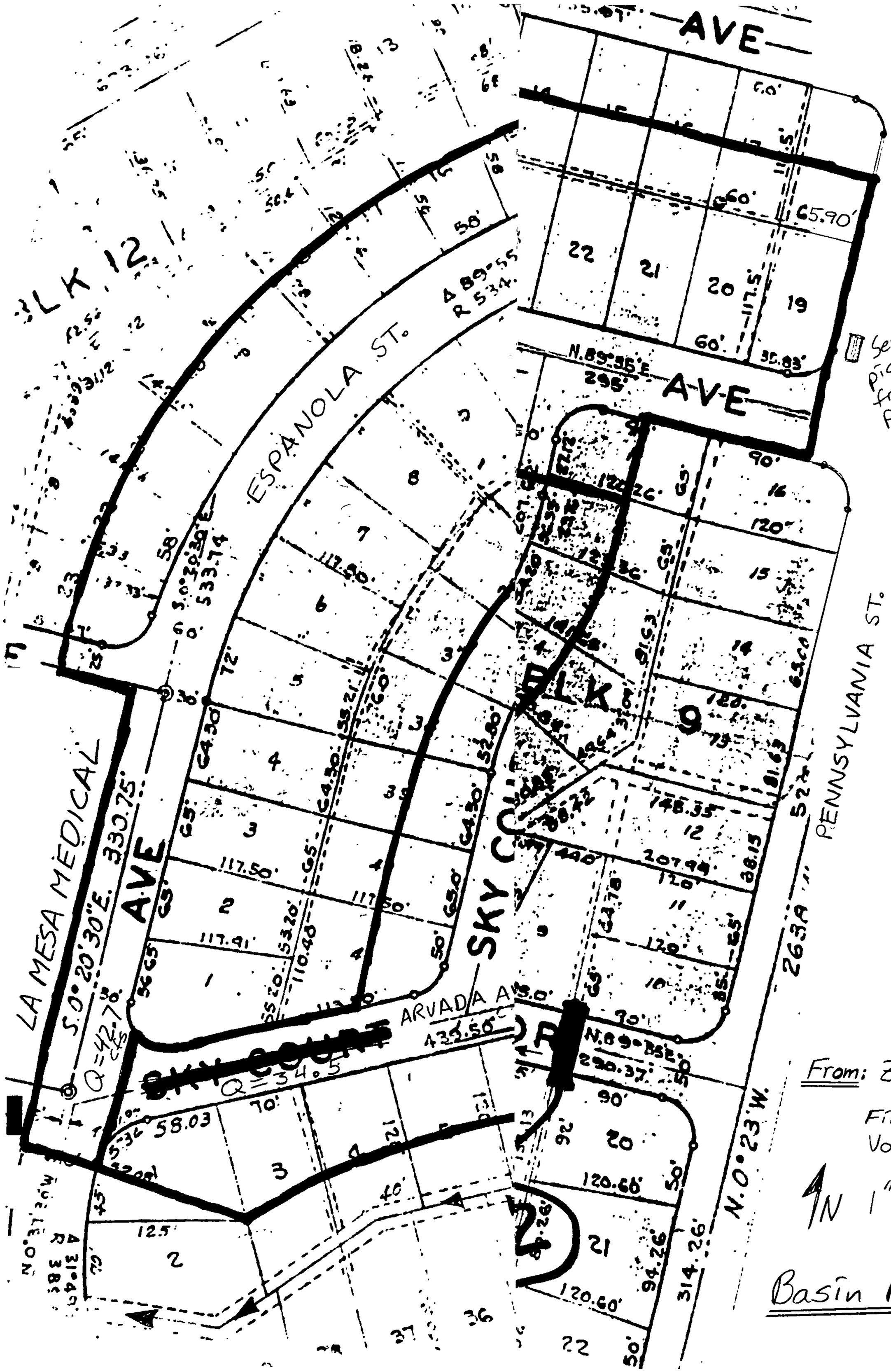
ARV

$L_1 = 150'$ $\quad V_1 = 0.5$ fps

$L_2 = 1250'$ $\quad V_1 = 2\sqrt{2.0} = 2.8$ fps

$$t_c = \left[\frac{150}{0.5} + \frac{1250}{2.8}\right] / 3600 = 0.21 \text{ hr}$$

$$t_p = 0.14 \text{ hr}$$


AVE
ESPANOLA ST.
LA MESA MEDICAL AVE
ARVADA AVE
PENNSYLVANIA ST.
BLK 9
Several inlets pick up flows from the Cutler-Pennsylvania Intersection & upstream Basins.
From: Zuni Addn. Plat
Filed: Dec. 11, 1950
Vol. D, Folio 104
N 1" = 100'

Basin Map

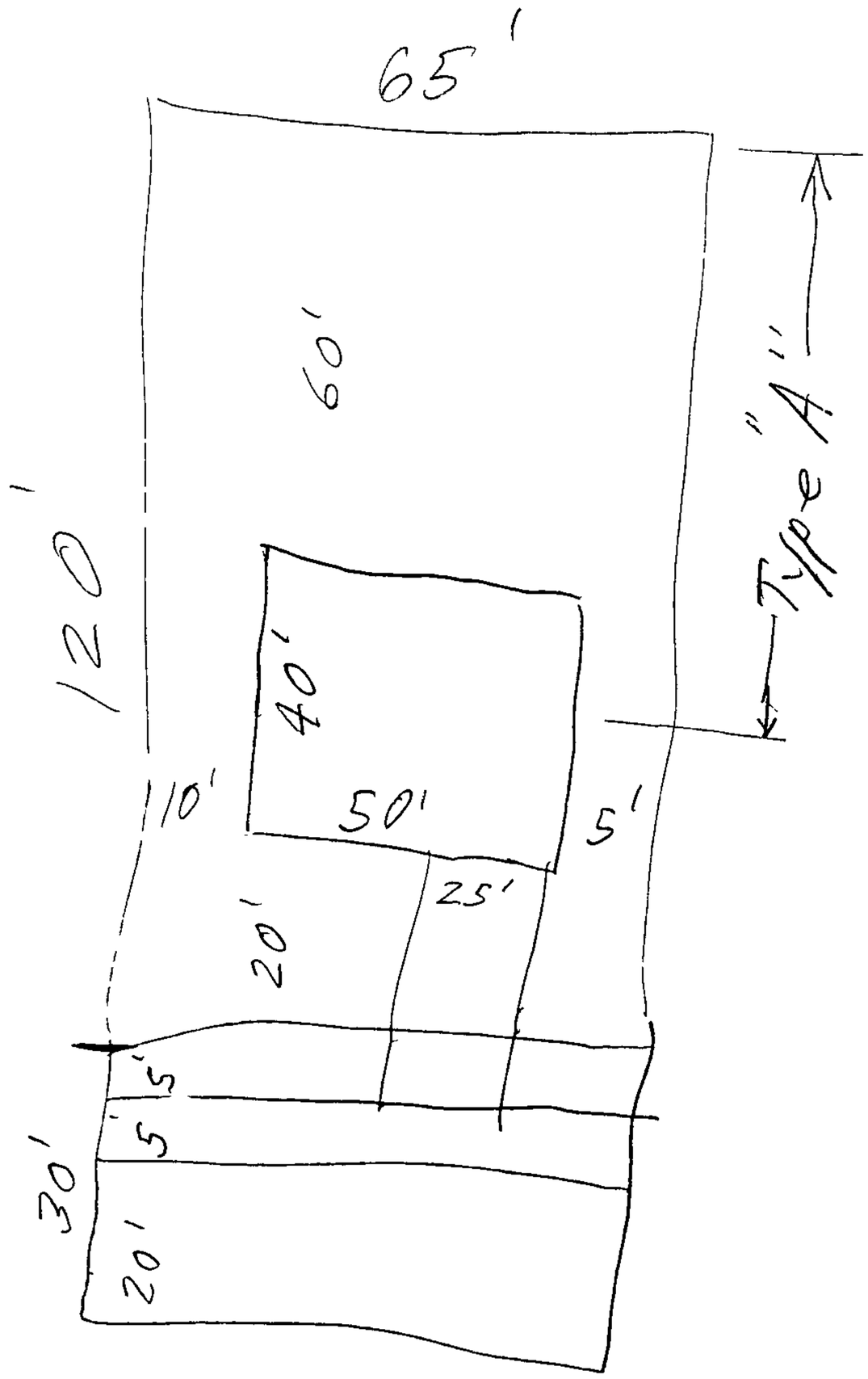
A-2

Total = 65'(120 + 30) = 9750 sf

$\frac{43560}{9750} = 4.5$ DU/Ac

A = 80' x 65' = 5200 SF

D = 25 x 65 = 1625 SF
+ 20 x 50 = 1000 SF
+ 25 x 25 = 625 SF
3250 SF

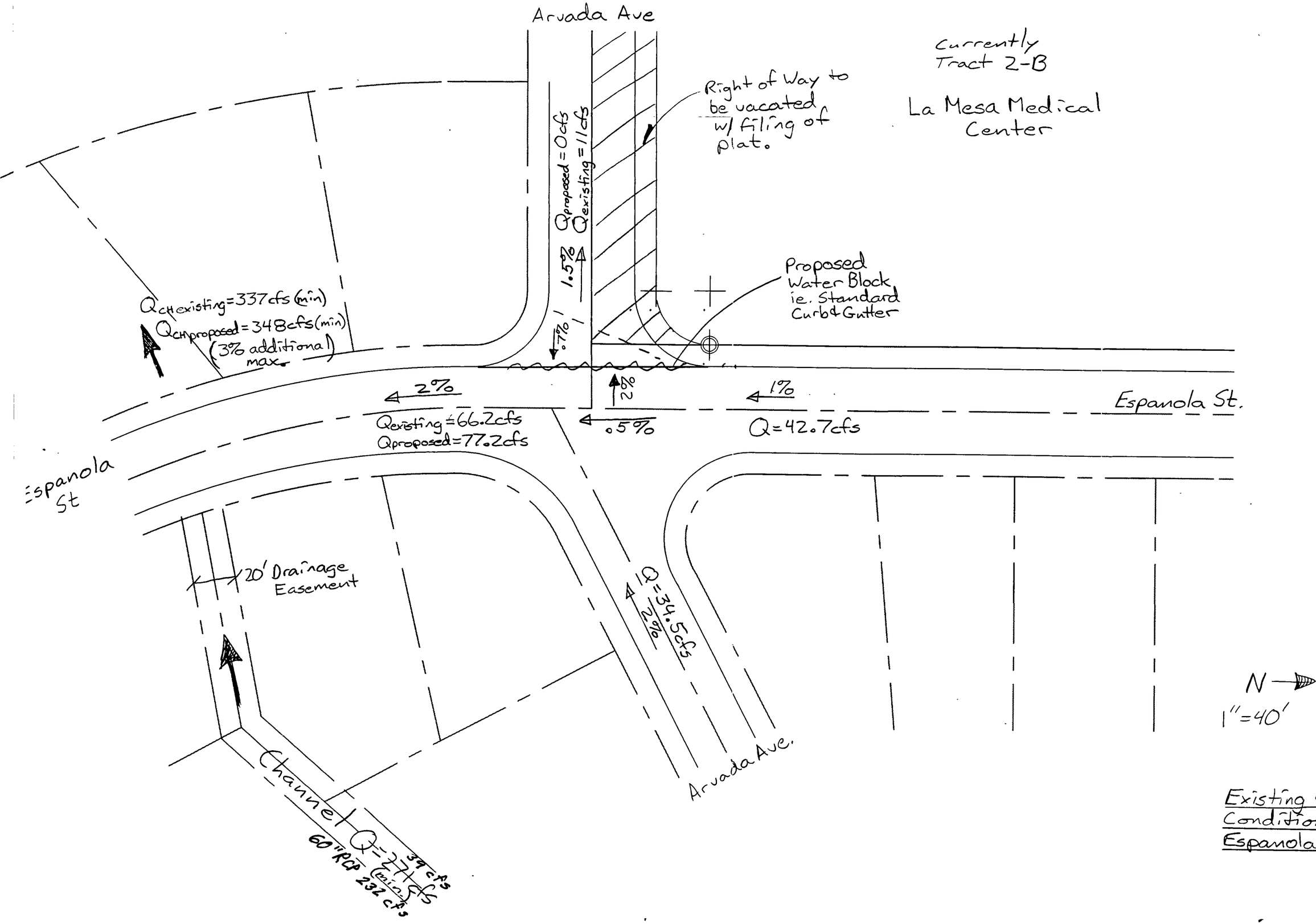


% A = $\frac{5200}{9750}$ = 53%

% D = $\frac{3250}{9750}$ = 33%

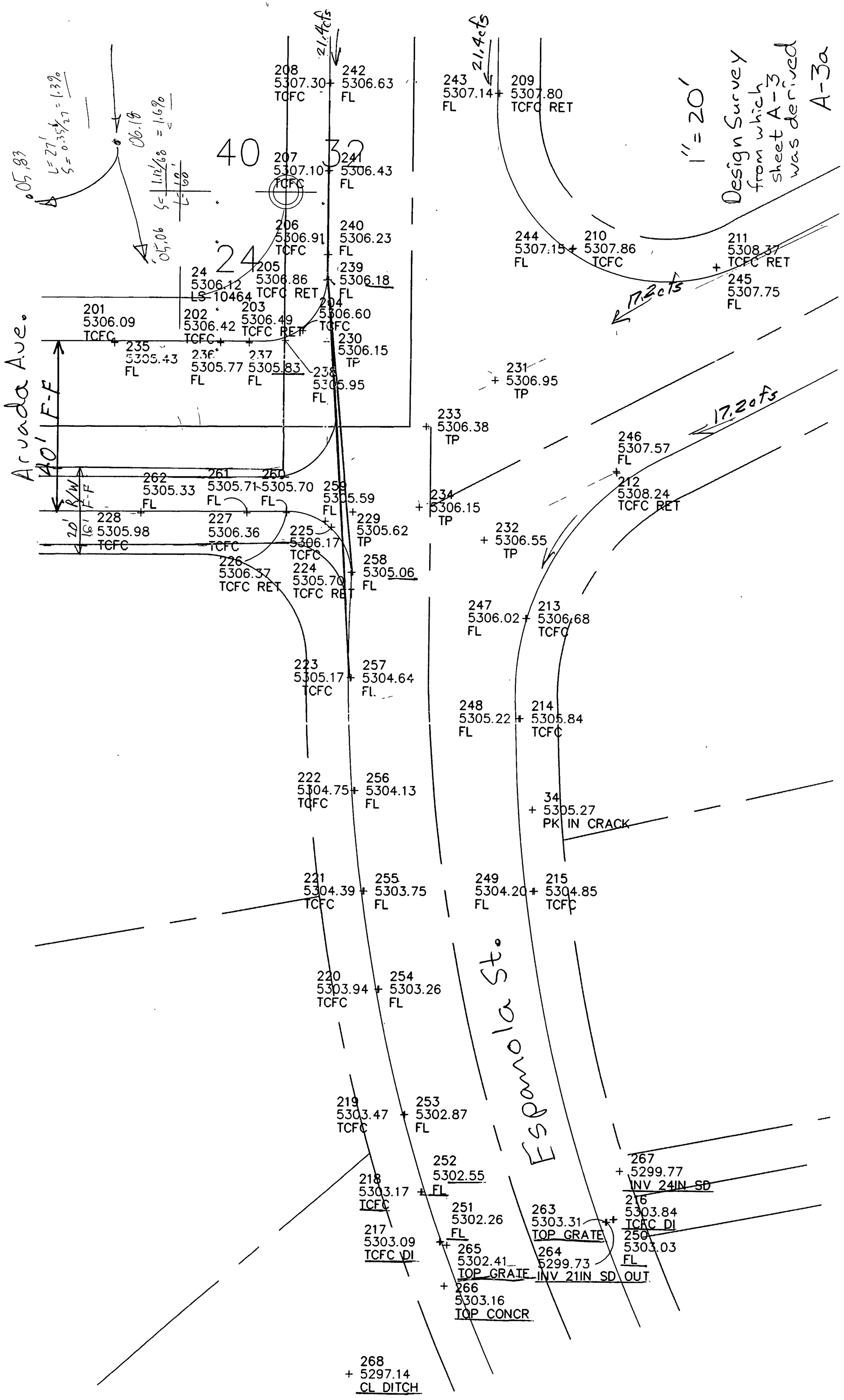
% B = 14%

Try 50% A
15% B
35% D



Existing & Proposed Conditions @ Arvada-Espanola Intersection

A-3


Arcadia Ave.
40' F-F
R/W
20'
16'
F-F
40
32
24
21.4cfs
21.4cfs
17.2cfs
17.2cfs
1" = 20'
Design Survey from which sheet A-3 was derived
A-3a
L=27' S=0.35'/27 = 1.3%
06.18
05.83
05.06
S= 1.12'/68' = 1.6%
L=68'
208 5307.30 TCFC
242 5306.63 FL
243 5307.14 FL
209 5307.80 TCFC RET
207 5307.10 TCFC
241 5306.43 FL
206 5306.91 TCFC
240 5306.23 FL
244 5307.15 FL
210 5307.86 TCFC
211 5308.37 TCFC RET
245 5307.75 FL
24 5306.12 LS 10464
205 5306.86 TCFC RET
239 5306.18 FL
201 5306.09 TCFC
202 5306.42 TCFC
203 5306.49 TCFC RET
204 5306.60 TCFC
230 5306.15 TP
235 5305.43 FL
236 5305.77 FL
237 5305.83 FL
238 5305.95 FL
231 5306.95 TP
233 5306.38 TP
246 5307.57 FL
212 5308.24 TCFC RET
262 5305.33 FL
261 5305.71 FL
260 5305.70 FL
259 5305.59 FL
234 5306.15 TP
228 5305.98 TCFC
227 5306.36 TCFC
229 5305.62 TP
225 5306.17 TCFC
232 5306.55 TP
226 5306.37 TCFC RET
224 5305.70 TCFC RET
258 5305.06 FL
247 5306.02 FL
213 5306.68 TCFC
223 5305.17 TCFC
257 5304.64 FL
248 5305.22 FL
214 5305.84 TCFC
222 5304.75 TCFC
256 5304.13 FL
34 5305.27 PK IN CRACK
221 5304.39 TCFC
255 5303.75 FL
249 5304.20 FL
215 5304.85 TCFC
Espanola St.
220 5303.94 TCFC
254 5303.26 FL
219 5303.47 TCFC
253 5302.87 FL
252 5302.55 FL
267 5299.77 INV 24IN SD
218 5303.17 TCFC
251 5302.26 FL
263 5303.31 TOP GRATE
216 5303.84 TCFC DI
217 5303.09 TCFC DI
265 5302.41 TOP GRATE
264 5299.73 INV 21IN SD OUT
250 5303.03 FL
266 5303.16 TOP CONCR
268 5297.14 CL DITCH

BASIN ARV: (ARVADA RD) STD CURB/ 32'F-F/ 50'R/W.

MANNING'S N = .0170 SLOPE = .0200

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	-9.00	0.87	4	2.00	0.13	7	32.00	0.00
2	0.00	0.67	5	16.00	0.30	8	32.00	0.67
3	0.00	0.00	6	30.00	0.41	9	41.00	0.87

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID
0.02	0.02	0.0	0.0	0.4	0.5	0.41
0.04	0.04	0.0	0.0	0.9	0.9	0.81
0.06	0.06	0.0	0.0	1.3	1.1	1.22
0.08	0.08	0.1	0.1	1.8	1.4	1.62
0.10	0.10	0.1	0.2	2.2	1.6	2.03
0.12	0.12	0.1	0.3	2.7	1.8	2.43
0.14	0.14	0.2	0.4	3.8	1.7	3.51
0.16	0.16	0.3	0.5	5.6	1.7	5.25
0.18	0.18	0.4	0.7	7.4	1.8	7.00
0.20	0.20	0.6	1.1	9.2	1.9	8.74
0.22	0.22	0.8	1.6	11.0	2.1	10.48
0.24	0.24	1.0	2.2	12.7	2.2	12.23
0.26	0.26	1.3	3.0	14.5	2.4	13.97
0.28	0.28	1.5	4.0	16.3	2.6	15.72
0.30	0.30	1.9	5.1	18.1	2.7	17.46
0.32	0.32	2.3	6.3	20.8	2.8	20.11
0.34	0.34	2.7	7.8	23.5	2.9	22.75
0.36	0.36	3.2	9.6	26.2	3.0	25.39
0.38	0.38	3.7	11.6	28.8	3.1	28.04
0.40	0.40	4.3	14.0	31.5	3.3	30.68
0.42	0.42	4.9	17.1	32.9	3.5	32.00
0.44	0.44	5.6	21.0	32.9	3.8	32.00
0.46	0.46	6.2	25.2	33.0	4.1	32.00
0.48	0.48	6.8	29.6	33.0	4.3	32.00
Q=34.5 cfs → 0.50	0.50	7.5	34.3	33.0	4.6	32.00
0.52	0.52	8.1	39.3	33.1	4.8	32.00
0.54	0.54	8.8	44.6	33.1	5.1	32.00
0.56	0.56	9.4	50.1	33.2	5.3	32.00
0.58	0.58	10.0	55.9	33.2	5.6	32.00
0.60	0.60	10.7	61.9	33.2	5.8	32.00
0.62	0.62	11.3	68.2	33.3	6.0	32.00
0.64	0.64	12.0	74.7	33.3	6.2	32.00
0.66	0.66	12.6	81.4	33.4	6.5	32.00
0.68	0.68	13.2	86.8	34.3	6.6	32.90
0.70	0.70	13.9	91.1	36.1	6.5	34.70
0.72	0.72	14.6	95.8	38.0	6.5	36.50
0.74	0.74	15.4	100.8	39.8	6.6	38.30
0.76	0.76	16.2	106.3	41.7	6.6	40.10
0.78	0.78	17.0	112.1	43.5	6.6	41.90
0.80	0.80	17.8	118.4	45.4	6.6	43.70
0.82	0.82	18.7	125.1	47.2	6.7	45.50
0.84	0.84	19.7	132.2	49.0	6.7	47.30
0.86	0.86	20.6	139.7	50.9	6.8	49.10
0.87	0.87	21.1	143.6	51.8	6.8	50.00

BASIN ESP: (ESPANOLA ST) STD CURB/ 40'F-F/ 60'R.W. (Approach Section)

MANNING'S N = .0170 SLOPE = .0100

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.87	4	12.00	0.13	7	50.00	0.00
2	10.00	0.67	5	30.00	0.50	8	50.00	0.67
3	10.00	0.00	6	48.00	0.13	9	60.00	0.87

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID
0.02	0.02	0.0	0.0	0.7	0.4	0.62
0.04	0.04	0.0	0.0	1.3	0.6	1.23
0.06	0.06	0.1	0.0	2.0	0.8	1.85
0.08	0.08	0.1	0.1	2.6	1.0	2.46
0.10	0.10	0.2	0.2	3.3	1.1	3.08
0.12	0.12	0.2	0.3	3.9	1.3	3.69
0.14	0.14	0.3	0.4	5.3	1.3	4.97
0.16	0.16	0.4	0.6	7.2	1.3	6.92
0.18	0.18	0.6	0.8	9.2	1.4	8.86
0.20	0.20	0.8	1.1	11.2	1.5	10.81
0.22	0.22	1.0	1.6	13.2	1.6	12.76
0.24	0.24	1.3	2.2	15.2	1.7	14.70
0.26	0.26	1.6	2.9	17.2	1.8	16.65
0.28	0.28	2.0	3.7	19.2	1.9	18.59
0.30	0.30	2.3	4.7	21.2	2.0	20.54
0.32	0.32	2.8	5.9	23.1	2.1	22.49
0.34	0.34	3.2	7.2	25.1	2.2	24.43
0.36	0.36	3.8	8.8	27.1	2.3	26.38
0.38	0.38	4.3	10.5	29.1	2.4	28.32
0.40	0.40	4.9	12.4	31.1	2.5	30.27
0.42	0.42	5.5	14.6	33.1	2.6	32.22
0.44	0.44	6.2	17.0	35.1	2.7	34.16
0.46	0.46	6.9	19.6	37.0	2.8	36.11
0.48	0.48	7.6	22.4	39.0	2.9	38.05
0.50	0.50	8.4	25.5	41.0	3.0	40.00
0.52	0.52	9.2	29.7	41.1	3.2	40.00
0.54	0.54	10.0	34.1	41.1	3.4	40.00
0.56	0.56	10.8	38.7	41.1	3.6	40.00
0.58	0.58	11.6	43.6	41.2	3.8	40.00
0.60	0.60	12.4	48.7	41.2	3.9	40.00
0.62	0.62	13.2	54.0	41.3	4.1	40.00
0.64	0.64	14.0	59.5	41.3	4.2	40.00
0.66	0.66	14.8	65.2	41.3	4.4	40.00
0.68	0.68	15.6	70.1	42.4	4.5	41.00
0.70	0.70	16.4	74.1	44.4	4.5	43.00
0.72	0.72	17.3	78.5	46.5	4.5	45.00
0.74	0.74	18.2	83.1	48.5	4.6	47.00
0.76	0.76	19.2	88.1	50.5	4.6	49.00
0.78	0.78	20.2	93.4	52.6	4.6	51.00
0.80	0.80	21.2	99.0	54.6	4.7	53.00
0.82	0.82	22.3	104.9	56.7	4.7	55.00
0.84	0.84	23.4	111.1	58.7	4.7	57.00
0.86	0.86	24.6	117.7	60.7	4.8	59.00
0.87	0.87	25.2	121.2	61.8	4.8	60.00

$Q = 42.7$ → $D_N = .58'$

ARVADA ACTING AS A WEIR

WEIR COEFFICENT = 2.6800
CROSS SECTION DIVIDED INTO VERTICAL SLICES 1. FEET APART

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	1.00	3	20.00	0.40	5	40.00	1.00
2	0.00	0.00	4	40.00	0.00			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA (SQ FT)	FLOW RATE (CFS)	FLOW VEL (FPS)	TOP WID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	0.27	2.00
0.04	0.04	0.08	0.03	0.42	4.00
0.06	0.06	0.18	0.09	0.52	6.00
0.08	0.08	0.32	0.19	0.60	8.00
0.10	0.10	0.50	0.34	0.67	10.00
0.12	0.12	0.72	0.53	0.74	12.00
0.14	0.14	0.98	0.78	0.80	14.00
0.16	0.16	1.28	1.10	0.86	16.00
0.18	0.18	1.62	1.47	0.91	18.00
0.20	0.20	2.00	1.91	0.96	20.00
0.22	0.22	2.42	2.43	1.00	22.00
0.24	0.24	2.88	3.02	1.05	24.00
0.26	0.26	3.38	3.69	1.09	26.00
0.28	0.28	3.92	4.44	1.13	28.00
0.30	0.30	4.50	5.28	1.17	30.00
0.32	0.32	5.12	6.21	1.21	32.00
0.34	0.34	5.78	7.22	1.25	34.00
0.36	0.36	6.48	8.33	1.29	36.00
0.38	0.38	7.22	9.54	1.32	38.00
0.40	0.40	8.00	10.84	1.36	40.00
0.42	0.42	8.80	12.25	1.39	40.00
0.44	0.44	9.60	13.73	1.43	40.00
0.46	0.46	10.40	15.29	1.47	40.00
0.48	0.48	11.20	16.92	1.51	40.00
0.50	0.50	12.00	18.61	1.55	40.00
0.52	0.52	12.80	20.37	1.59	40.00
0.54	0.54	13.60	22.18	1.63	40.00
0.56	0.56	14.40	24.06	1.67	40.00
0.58	0.58	15.20	25.99	1.71	40.00
0.60	0.60	16.00	27.97	1.75	40.00
0.62	0.62	16.80	30.01	1.79	40.00
0.64	0.64	17.60	32.10	1.82	40.00
0.66	0.66	18.40	34.24	1.86	40.00
0.68	0.68	19.20	36.43	1.90	40.00
0.70	0.70	20.00	38.66	1.93	40.00
0.72	0.72	20.80	40.94	1.97	40.00
0.74	0.74	21.60	43.27	2.00	40.00
0.76	0.76	22.40	45.64	2.04	40.00
0.78	0.78	23.20	48.06	2.07	40.00
0.80	0.80	24.00	50.52	2.10	40.00
0.82	0.82	24.80	53.02	2.14	40.00
0.84	0.84	25.60	55.56	2.17	40.00
0.86	0.86	26.40	58.14	2.20	40.00
0.88	0.88	27.20	60.76	2.23	40.00
0.90	0.90	28.00	63.42	2.27	40.00
0.92	0.92	28.80	66.12	2.30	40.00
0.94	0.94	29.60	68.86	2.33	40.00
0.96	0.96	30.40	71.64	2.36	40.00
0.98	0.98	31.20	74.45	2.39	40.00
1.00	1.00	32.00	77.31	2.42	40.00

Based on Approach Section @ $D_N = .58$ $Q_w = 26.0$ cfs

However, this does not account for the momentum of the water in Espanola, or that the total flow in ½ Espanola is Q=21.4cf

Due to these facts it would be safe to assume that ½ the half street section (¼ the total flow) would make it down Arvada. ie. Q=10.7cf ≈ Q=11cfs

BASIN ESP: (ESPANOLA ST) STD CURB/ 40'F-F/ 60'R.W. (at Intersection)

MANNING'S N = .0170 SLOPE = .0050

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.87	4	12.00	0.13	7	50.00	0.00
2	10.00	0.67	5	30.00	0.50	8	50.00	0.67
3	10.00	0.00	6	48.00	0.13	9	60.00	0.87

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID
0.02	0.02	0.0	0.0	0.7	0.3	0.62
0.04	0.04	0.0	0.0	1.3	0.4	1.23
0.06	0.06	0.1	0.0	2.0	0.6	1.85
0.08	0.08	0.1	0.1	2.6	0.7	2.46
0.10	0.10	0.2	0.1	3.3	0.8	3.08
0.12	0.12	0.2	0.2	3.9	0.9	3.69
0.14	0.14	0.3	0.3	5.3	0.9	4.97
0.16	0.16	0.4	0.4	7.2	0.9	6.92
0.18	0.18	0.6	0.6	9.2	1.0	8.86
0.20	0.20	0.8	0.8	11.2	1.0	10.81
0.22	0.22	1.0	1.1	13.2	1.1	12.76
0.24	0.24	1.3	1.5	15.2	1.2	14.70
0.26	0.26	1.6	2.0	17.2	1.3	16.65
0.28	0.28	2.0	2.6	19.2	1.3	18.59
0.30	0.30	2.3	3.3	21.2	1.4	20.54
0.32	0.32	2.8	4.2	23.1	1.5	22.49
0.34	0.34	3.2	5.1	25.1	1.6	24.43
0.36	0.36	3.8	6.2	27.1	1.7	26.38
0.38	0.38	4.3	7.4	29.1	1.7	28.32
0.40	0.40	4.9	8.8	31.1	1.8	30.27
0.42	0.42	5.5	10.3	33.1	1.9	32.22
0.44	0.44	6.2	12.0	35.1	1.9	34.16
0.46	0.46	6.9	13.8	37.0	2.0	36.11
0.48	0.48	7.6	15.8	39.0	2.1	38.05
0.50	0.50	8.4	18.0	41.0	2.1	40.00
0.52	0.52	9.2	21.0	41.1	2.3	40.00
0.54	0.54	10.0	24.1	41.1	2.4	40.00
0.56	0.56	10.8	27.4	41.1	2.5	40.00
0.58	0.58	11.6	30.8	41.2	2.7	40.00
0.60	0.60	12.4	34.4	41.2	2.8	40.00
0.62	0.62	13.2	38.2	41.3	2.9	40.00
0.64	0.64	14.0	42.1	41.3	3.0	40.00
0.66	0.66	14.8	46.1	41.3	3.1	40.00
0.68	0.68	15.6	49.6	42.4	3.2	41.00
0.70	0.70	16.4	52.4	44.4	3.2	43.00
0.72	0.72	17.3	55.5	46.5	3.2	45.00
0.74	0.74	18.2	58.8	48.5	3.2	47.00
0.76	0.76	19.2	62.3	50.5	3.2	49.00
0.78	0.78	20.2	66.0	52.6	3.3	51.00
0.80	0.80	21.2	70.0	54.6	3.3	53.00
0.82	0.82	22.3	74.2	56.7	3.3	55.00
0.84	0.84	23.4	78.6	58.7	3.4	57.00
0.86	0.86	24.6	83.3	60.7	3.4	59.00
0.87	0.87	25.2	85.7	61.8	3.4	60.00

Proposed if no diversion → to Arvada D_N=.64'

Existing 11cfs Diversion → to Arvada D_N=.58

BASIN ESP: (ESPANOLA ST) STD CURB/ 40'F-F/ 60'R.W. (after intersection approaching channel)

MANNING'S N = .0170 SLOPE = .0200

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.87	4	12.00	0.13	7	50.00	0.00
2	10.00	0.67	5	30.00	0.50	8	50.00	0.67
3	10.00	0.00	6	48.00	0.13	9	60.00	0.87

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID
0.02	0.02	0.0	0.0	0.7	0.5	0.62
0.04	0.04	0.0	0.0	1.3	0.9	1.23
0.06	0.06	0.1	0.1	2.0	1.1	1.85
0.08	0.08	0.1	0.1	2.6	1.4	2.46
0.10	0.10	0.2	0.2	3.3	1.6	3.08
0.12	0.12	0.2	0.4	3.9	1.8	3.69
0.14	0.14	0.3	0.6	5.3	1.9	4.97
0.16	0.16	0.4	0.8	7.2	1.9	6.92
0.18	0.18	0.6	1.1	9.2	2.0	8.86
0.20	0.20	0.8	1.6	11.2	2.1	10.81
0.22	0.22	1.0	2.3	13.2	2.2	12.76
0.24	0.24	1.3	3.1	15.2	2.4	14.70
0.26	0.26	1.6	4.1	17.2	2.5	16.65
0.28	0.28	2.0	5.3	19.2	2.7	18.59
0.30	0.30	2.3	6.7	21.2	2.9	20.54
0.32	0.32	2.8	8.3	23.1	3.0	22.49
0.34	0.34	3.2	10.3	25.1	3.2	24.43
0.36	0.36	3.8	12.4	27.1	3.3	26.38
0.38	0.38	4.3	14.9	29.1	3.5	28.32
0.40	0.40	4.9	17.6	31.1	3.6	30.27
0.42	0.42	5.5	20.6	33.1	3.7	32.22
0.44	0.44	6.2	24.0	35.1	3.9	34.16
0.46	0.46	6.9	27.7	37.0	4.0	36.11
0.48	0.48	7.6	31.7	39.0	4.2	38.05
0.50	0.50	8.4	36.1	41.0	4.3	40.00
0.52	0.52	9.2	42.0	41.1	4.6	40.00
0.54	0.54	10.0	48.2	41.1	4.8	40.00
0.56	0.56	10.8	54.7	41.1	5.1	40.00
0.58	0.58	11.6	61.6	41.2	5.3	40.00
0.60	0.60	12.4	68.8	41.2	5.6	40.00
0.62	0.62	13.2	76.3	41.3	5.8	40.00
0.64	0.64	14.0	84.1	41.3	6.0	40.00
0.66	0.66	14.8	92.3	41.3	6.2	40.00
0.68	0.68	15.6	99.1	42.4	6.4	41.00
0.70	0.70	16.4	104.8	44.4	6.4	43.00
0.72	0.72	17.3	111.0	46.5	6.4	45.00
0.74	0.74	18.2	117.5	48.5	6.4	47.00
0.76	0.76	19.2	124.6	50.5	6.5	49.00
0.78	0.78	20.2	132.0	52.6	6.5	51.00
0.80	0.80	21.2	139.9	54.6	6.6	53.00
0.82	0.82	22.3	148.3	56.7	6.6	55.00
0.84	0.84	23.4	157.2	58.7	6.7	57.00
0.86	0.86	24.6	166.5	60.7	6.8	59.00
0.87	0.87	25.2	171.4	61.8	6.8	60.00

Proposed Q=77.2 → D_N=.62'

Existing Q=66.2cfs → D_N=.59'

PLATES

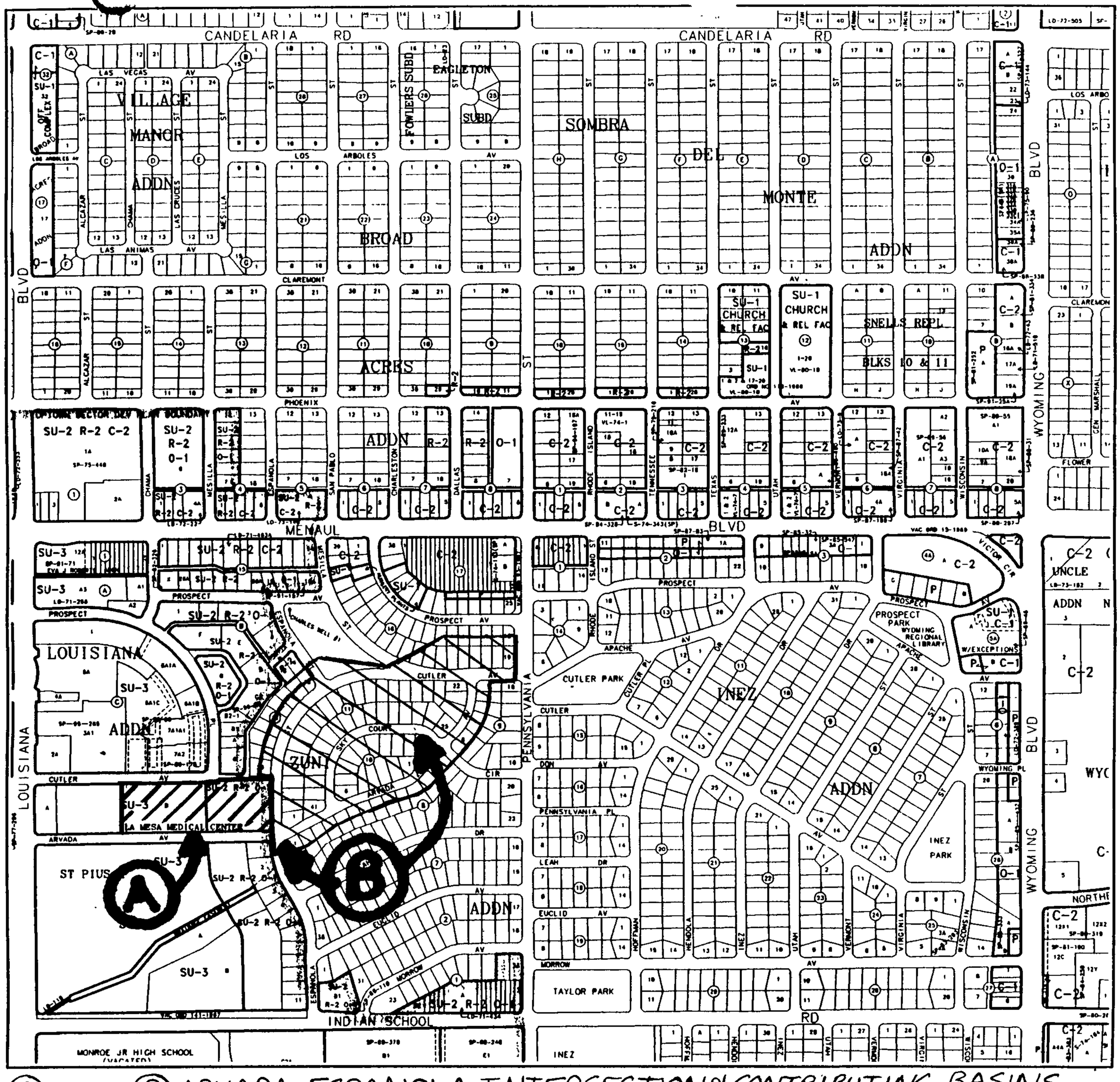
Plate 1 - Site Location: Zone Atlas Map #H-19

Plate 2 - Excerpts from NFIP Floodway Map with Existing Contours

Plate 3 - Albuquerque Master Drainage Study Sheet 3C-3

Plate 4 - Plat of Tracts B-2-A and B-2-B, La Mesa Medical Center

Plate 5 - Proposed Infrastructure List



(A) SITE (B) ARVADA-ESPANOLA INTERSECTION & CONTRIBUTING BASINS

GRAPHIC SCALE IN FEET

250 0 500 1000

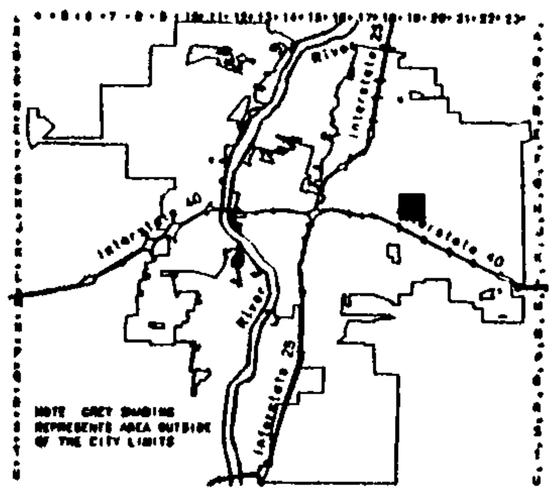
CITY OF Albuquerque

A Albuquerque G Geographic I Information S System

PLANNING DEPARTMENT

©Copyright 1996

Map Amended through February 20, 1996



LEGAL DESCRIPTION

T10N

R4E

SEC 7

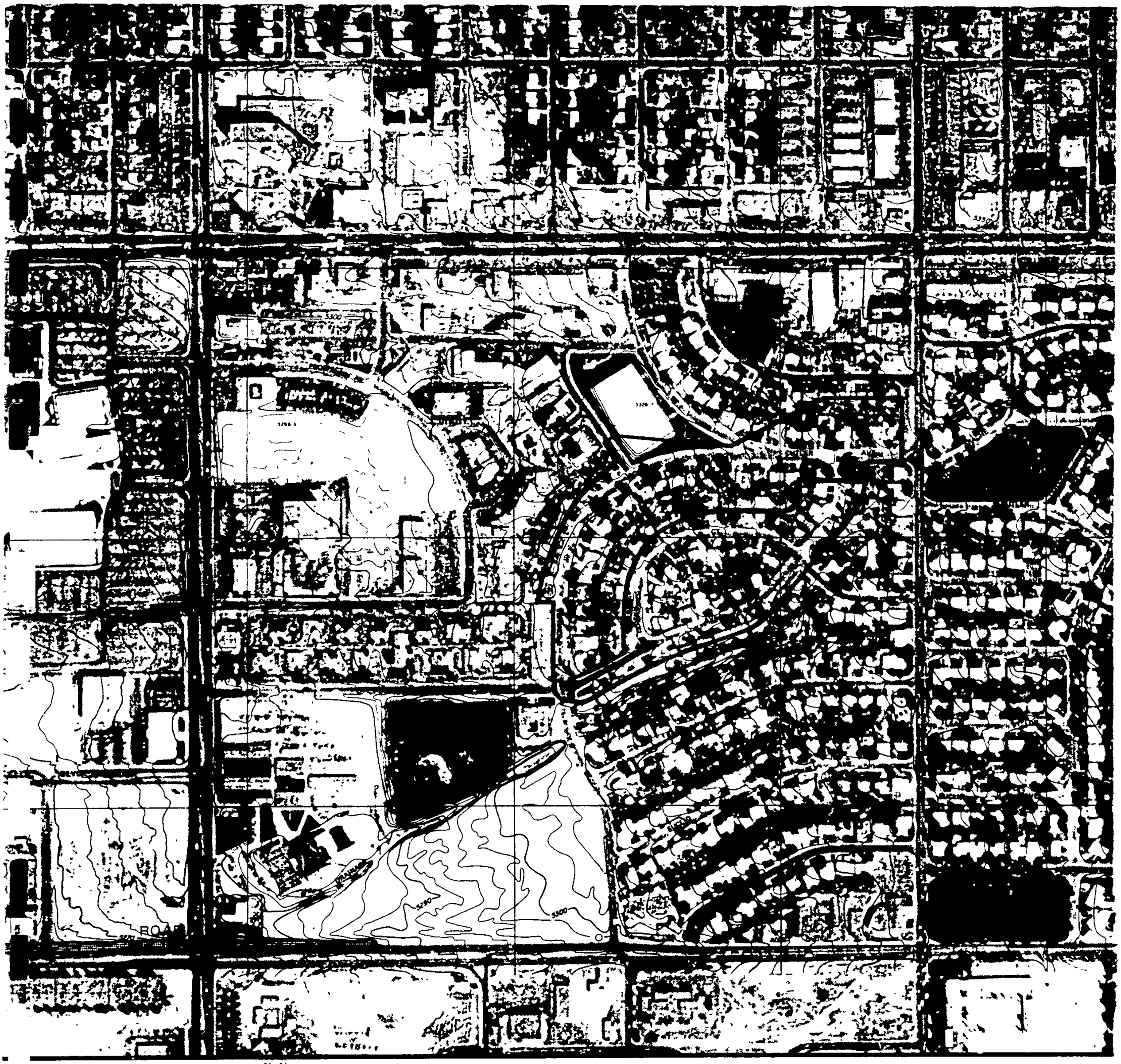
UNIFORM PROPERTY CODE

1-019-058

H-19-Z

SITE LOCATION

PLATE 1



)I VERTICAL AERIAL PHOTOGRAPHY EX-
8144, ON 10-8-80.
G CCOMPLISHED BY BOHANNAN--HUSTON,
E ITY OF ALBUQUERQUE AND THE ALBU-
CONTROL AUTHORITY. PHOTOGRAPHIC RE-
J USTON, INC.
I NATIONAL GEODETIC DATUM OF 1929

Note: Basin Boundaries have been added for emphasis.

Excerpt Taken From: NFIP FLOODWAY MAP (For City of Alb.) Panel 24 of 50 (Community Panel Number 350002 0024)

PLATE 2

DRB Case No. 96-171
DRC Project No.
Date Submitted 5/6/97

Figure 12

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

TRACTS B-2-A AND B-2-B
LA MESA MEDICAL CENTER

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.

Size	Type Improvement	Location	From	To
BOND AND CONSTRUCT				
64' F-F 90' R/W	N. HALF OF STREET SECTION W/ 4 LANES, 12' MEDIAN, STD. C&G (W/ 1' GUTTER WIDTH), STORM DRAIN (AS DETERMINED BY DRC)	UPTOWN LOOP ROAD (ARVADA)	WEST PROPERTY LINE OF TRACT B-2-A	POINT OF CURVATURE OF UPTOWN LOOP RD TO THE SOUTH (INDIAN SCHOOL RD)THEN TRANSITION TO EXISTING ARVADA RD.
40' F-F 60' R/W	FULL STREET SECTION, W/STD C&G	PROSPECT AVENUE	UPTOWN LOOP RD. (ARVADA)	CUTLER
18' WIDE F-F	ASPHALT-LINED DRAINAGE CHANNEL/BIKEWAY/PEDESTRIAN WAY, W/C&G	ARVADA R/W	PROSPECT	ESPANOLA
40' WIDE`	REMOVE EXISTING PAVEMENT & C&G	ARVADA	PROSPECT	ESPANOLA

CONSTRUCT TEMPORARY TURNAROUND AT PROSPECT AND UPTOWN LOOP RD (ARVADA), IF PROSPECT AND UPTOWN LOOP ROAD ARE NOT CONSTRUCTED SIMULTANEOUSLY

MAY 08 1997
HYDROLOGY

D:\MARYS\INFRA.LST

Size	Type Improvement	Location	From	To
ITEMS PREVIOUSLY BONDED BY SIA (DRB-96-158)				
8" DIA	SANITARY SEWER W/MH & SERVICES	UPTOWN LOOP RD (ARVADA)	WEST PROPERTY LINE TR B-2-A	ESPANOLA
10" DIA	WATERLINE W/APPURTENANCES AND FIRE HYDRANTS	UPTOWN LOOP (ARVADA)	WEST PROPERTY LINE OF TR B-2-A	ESPANOLA
10"	WATERLINE W/NECESSARY APPRUTENANCES AND FIRE HYDRANTS	PROSPECT	UPTOWN LOOP RD (ARVADA)	CUTLER
Per	Storm Drain Imp	Cutler		
DRC	Storm Drain Imp	Arvada		

Prepared by:_____
Print Name: JAMES TOPMILLER,P.E.
Firm: BOHANNA NHUSTON

****

Development Review Board Member Approval

Traffic	Date	Water	Date	Parks & Rec	Date
City Engineer	Date	AMAFCA	Date	DRB Chairman	Date

DRB Case No. 96-158
DRC Project No.
Date Submitted 7/11/96

Figure 12

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

TRACTS B-2-A AND B-2-B
LA MESA MEDICAL CENTER

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.

Size	Type Improvement	Location	From	To
BOND AND CONSTRUCT				
64' F-F 90' R/W	* NORTH HALF OF STREET SECTION W/4 LANES, 12' MEDIAN, STD. C&G (W/ 1' GUTTER WIDTH), STORM DRAIN (AS DETERMINED BY DRC)	UPTOWN LOOP ROAD (ARVADA)	WEST PROPERTY LINE OF TRACT B-2-A	PROSPECT AVENUE
42' F-F 64' R/W	* STREET SECTION, W/STD C&G	PROSPECT AVENUE	UPTOWN LOOP RD. (ARVADA)	CUTLER
ITEMS PREVIOUSLY BONDED BY SIA (DRB-96-158)				
10" DIA	WATERLINE W/NECESSARY APPURTENANCES & FIRE HYDRANTS	UPTOWN LOOP RD. (ARVADA)	WEST PROPERTY LINE OF TRACT B-2-A	ESPANOLA
8" DIA	SANITARY SEWER W/MANHOLES AND SERVICES	UPTOWN LOOP RD (ARVADA)	WEST PROPERTY LINE OF TRACT B-2-A	ESPANOLA

Prepared by:_____
Print Name: JAMES TOPMILLER, P.E.
Firm: BOHANNAN-HUSTON INC.

****

Development Review Board Member Approval

Traffic	Date	Water	Date	Parks & Rec	Date
City Engineer	Date	AMAFCA	Date	DRB Chairman	Date

* SUBJECT TO AGREEMENT W/CITY REGARDING ALLOCATION OF CONSTRUCTION EXPENSE

PLATE 5

CITY OF
Albuquerque
P.O. Box 1293 Albuquerque, NM 87103

June 3, 1997

Martin J. Chávez, Mayor

James Topmiller, PE
Bohannan Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: SUPPLEMENTAL INFORMATION FOR LA MESA MEDICAL CENTER,
TRACTS B-2-A & B-2-B (H-19/D47A)
RECEIVED MAY 8, 1997 FOR FINAL PLAT
LETTER DATED May 7, 1997

Dear Mr. Topmiller:

Based on the supplemental information, City Hydrology accepts the Drainage Report, dated 7/29/96, for Final Plat .

Based on a cursory review of the AMDS Inventory of Existing Storm Sewers, it is City Hydrology's opinion that storm drain improvements are required in Cutler & Arvada before development of Tracts B-2-A & B-2-B can proceed. Add storm drain improvements on Cutler & Arvada to the Infrastructure List.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

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

c: Andrew Garcia
Fred Aguirre, DRB 96-158

DRAINAGE INFORMATION SHEET

PROJECT TITLE: TRACTS B-2-A & B-2-B, LA MESA MEDICAL CENTER ZONE ATLAS/DRNG. FILE # H19/D47A

DRB #: 96-171, V-96-38 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: JAMES TOPMILLER

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: 823-1000

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

RECEIVED
MAY 08 1997
HYDROLOGY SECTION

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
✓ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
____ 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
____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 5/8/97

BY: JAMES TOPMILLER

May 7, 1997

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505 823.1000

fax 505 821.0892

Fred Aguirre, P.E.
City Hydrologist
City of Albuquerque
Hydrology Division/PWD
P.O. Box 1293
Albuquerque, NM 87103

R D
MAY 08 1997
HYDROLOGY SECTION

Re: La Mesa Medical Center, Tracts B-2-A and B-2-B Final Plat, Vacation of Arvada and Response to Drainage Report Comments (H19\D47A) (DRB-96-171, V-96-38)

Dear Fred:

The purpose of this letter is to transmit to you a summary of hydrological and hydraulic documentation for the proposed vacation of Arvada right-of-way and removal of existing Arvada Avenue pavement, curb and gutter. A plat executing the vacation approval is underway at DRB. This letter also serves as a response to the final correspondence from John Curtin on this subject, dated October 16, 1996.

EXISTING CONDITIONS

In its existing condition, Arvada Avenue has a 60-foot wide right-of-way and a 40-foot wide face-to-face curb width. Calculations previously reviewed and accepted show 11 cfs in the existing condition flowing off Espanola onto Arvada Avenue. Please reference the enclosed Existing Conditions sketch.

PROPOSED (INTERIM) CONDITIONS

The now-approved vacation action, and upcoming DRB plat will reduce the right-of-way by 38.5' (all taken from the north portion of the Arvada right-of-way), leaving a 21.5' right-of-way remainder to be used as a drainage channel, utility easement and a bike-way/pedestrian-way facility. Please reference the enclosed plat and proposed infrastructure list.

Also enclosed are sketches and calculations identifying the proposed drainage/bike-way/pedestrian facility. The facility is designed to carry the historic 11 cfs. However, additional constraints were placed on the drainage channel requiring a 4' wide dry portion of the channel in a 10-year storm event (which is why the channel is sloped at a 2% slope from north to south). This scheme was developed in discussions that included David Harmon, Fred Aguirre, John Curtin and myself. The enclosed calculations show the calculations which determined and satisfied the constraints of historical flows (11 cfs), the 10-year proposed hydraulic conditions (approximately 7 cfs which allows a 4' dry path) of the new drainage facility and the 100-year proposed drainage discharge (11 cfs). The channel will connect to the remaining Arvada street section until the future Uptown Loop Road is completed.

ULTIMATE CONDITIONS

In the ultimate condition, during the construction of Uptown Loop Road to Indian School, the drainage channel will be permanently connected to Uptown Loop Road or Prospect Ave..

RESPONSE TO OCTOBER 16, 1996 LETTER FROM HYDROLOGY DIVISION

The following responses are provided in the order in which comments were presented in the Hydrology letter:

1. A 21.5' wide right-of-way is reserved.
2. Prior to Work Order approval, a comprehensive drainage report for these two tracts is being supplied under the "Woodmark at Uptown" project, an assisted living center project proposed on Tract B-2-B. This project was recently heard at EPC under Z-96-39 and will go to DRB shortly. The comments and questions asked in the Hydrology letter will be resolved therein.

We believe this submittal re-addresses the drainage conditions, both existing and future, of the proposed vacation action and future platting of Arvada Avenue right-of-way. As stated previously, this is essentially a rehashing of and a resubmittal of previous calculations and agreements. With this, we request final plat approval of the referenced property. If you have any questions, please feel free to contact me at any time.

Sincerely,
Bohannan Huston

James R. Topmiller, P.E.
Vice President
Community Development
and Planning

JRT/hjh

Enclosures

cc: Ron Nelson, La Mesa Investors Ltd.
John Meyers, Meyers, Oliver & Price

flow ar sis, 18'wide, 2% cross-slope

F 96307 C2421

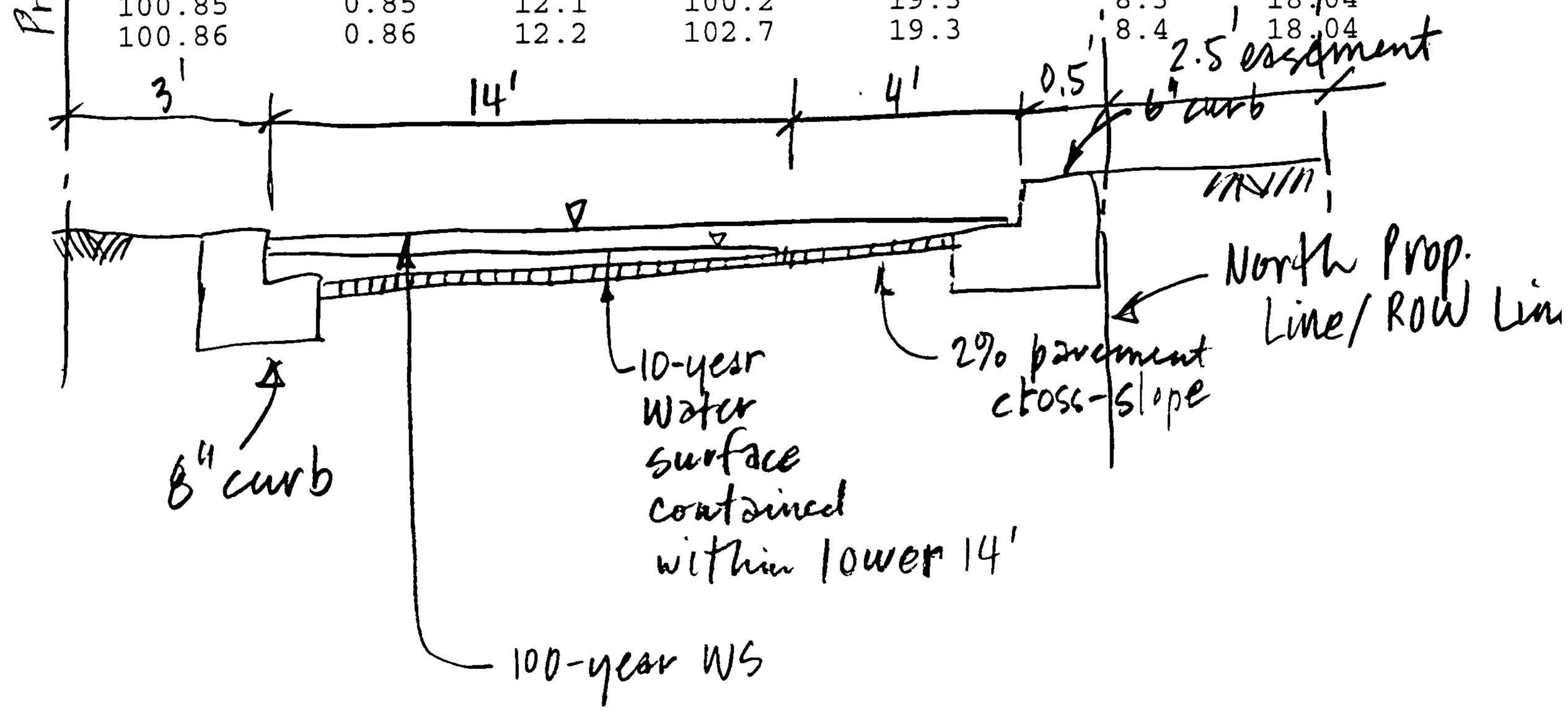
• Given to Ed Stang 12/10/96

→ Given to DRB 12/17/96

MANNING'S N = .0160 SLOPE = .0150

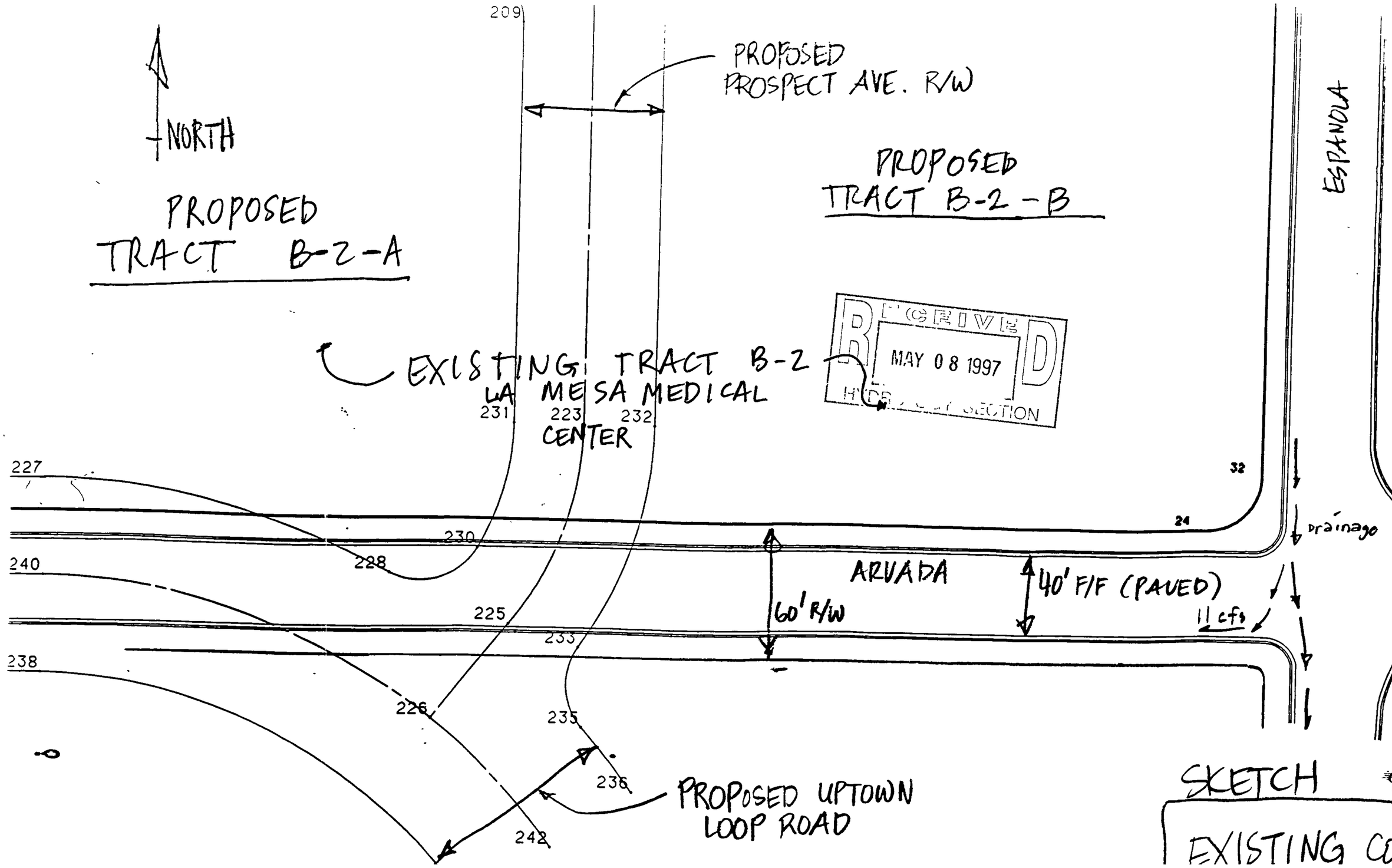
POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	101.00	3	18.00	100.36			
2	0.05	100.00	4	18.05	100.86			

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID	
100.05	0.05	0.1	0.1	2.5	1.0	2.50	
100.10	0.10	0.2	0.4	5.1	1.5	4.99	
100.15	0.15	0.6	1.1	7.6	2.0	7.49	
100.20	0.20	1.0	2.4	10.2	2.4	9.98	
100.25	0.25 ≈0.28	1.6	4.4	12.7	2.8	12.48	
100.30	0.30	2.2	7.1	15.3	3.2	14.97	10-yr
100.35	0.35	3.1	10.7	17.8	3.5	17.47	100-yr
100.40	0.40	4.0	16.1	18.4	4.1	17.97	
100.45	0.45	4.9	22.6	18.5	4.7	17.98	
100.50	0.50	5.8	29.9	18.6	5.2	17.99	
100.55	0.55	6.7	38.0	18.7	5.7	18.00	
100.60	0.60	7.6	46.8	18.8	6.2	18.00	
100.65	0.65	8.5	56.2	18.9	6.7	18.01	
100.70	0.70	9.4	66.3	19.0	7.1	18.02	
100.75	0.75	10.3	77.0	19.1	7.5	18.03	
100.80	0.80	11.2	88.4	19.2	7.9	18.03	
100.85	0.85	12.1	100.2	19.3	8.3	18.04	
100.86	0.86	12.2	102.7	19.3	8.4	18.04	



$$EGL\ (100yr) = 0.35' + \frac{3.5^2}{64.4} = 0.54',$$ use 8" curb on down hill side

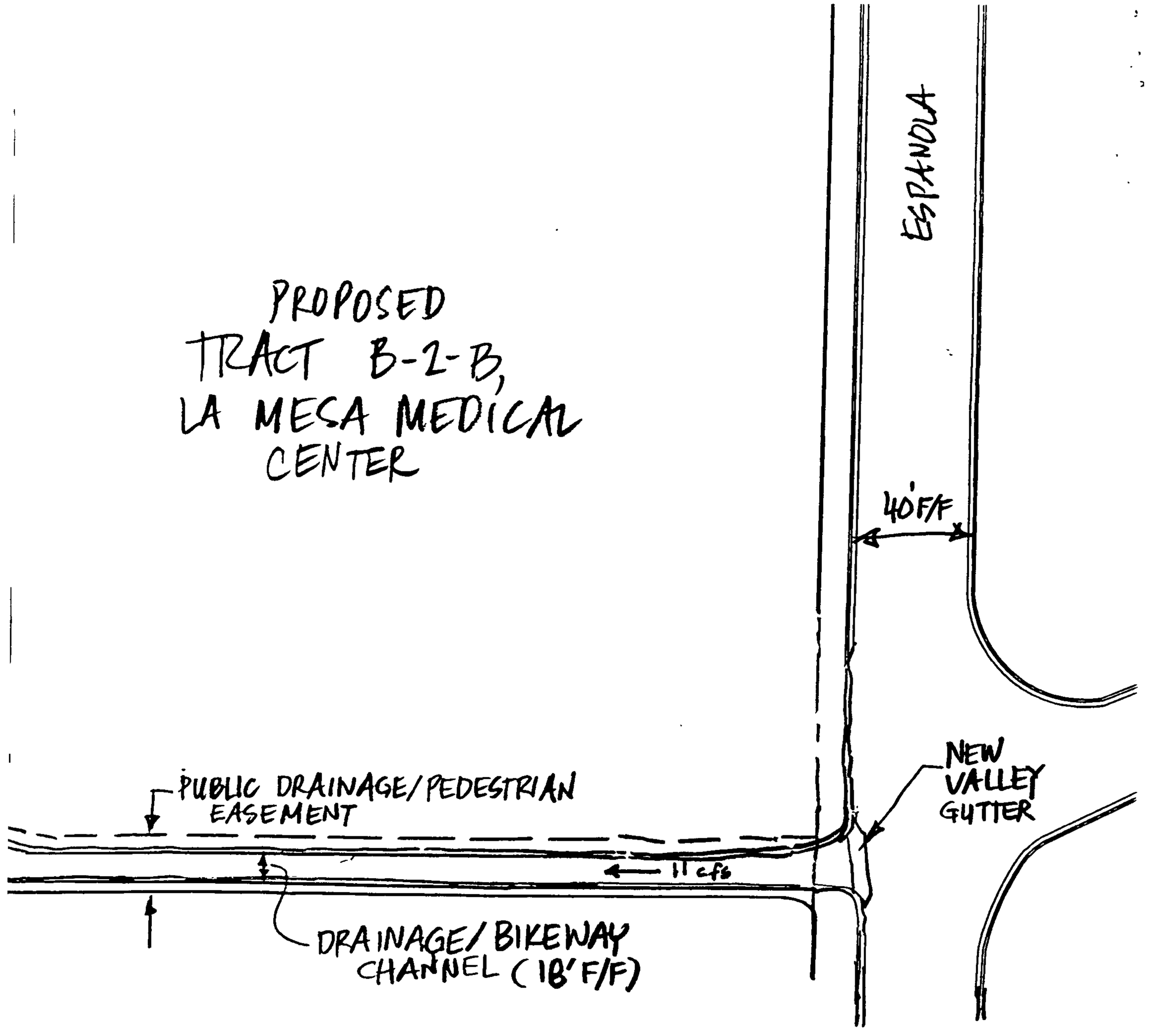
Post-it® Fax Note 7671	Date 10/3	# of pages ▸ 3
To Diane Harmon	From James Top	
Co./Dept Trans. Dev.	Co. BitE	
Phone # 768-2680	Phone # 823-1000	
Fax # ~~768-3554~~ 768-2733	Fax # 821-0892	



RECEIVED
MAY 08 1997
HYDROLOGY SECTION

SKETCH 9/24/96

EXISTING CONDITION



9/30/96

PROPOSED CONDITIONS
SKETCH

CITY OF
Albuquerque

P.O. Box 1293 Albuquerque, NM 87103

October 16, 1996

Martin J. Chávez, Mayor

James Topmiller, PE
Bohannan Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: DRAINAGE ANALYSIS FOR ARVADA & ESPANOLA (H-19/D47A)
RECEIVED SEPTEMBER 25, 1996 FOR FINAL PLAT

Dear Mr. Topmiller:

Based on the supplemental information dated 9/30/96 and the Fax dated 10/3, City Hydrology recommends the reservation a 20' wide public drainage easement when Arvada is vacated. Prior to Work Order a comprehensive Drainage Report for Tracts B-2-A & B-2-B must address the following comments:

Verify downstream capacity. What type of curb is used on the downhill side of the Arvada section? The cross section analyzed does not match standard curb & gutter. Provide street hydraulics for Prospect.

AMDS Page 3B-24 indicates that the storm drain in Cutler has a capacity of 7 cfs and the storm drain in Arvada has a capacity of 34 cfs. Based on the drainage basin for these systems, it appears that they must be improved, if either Tract B-2-A or B-2-B are developed.

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

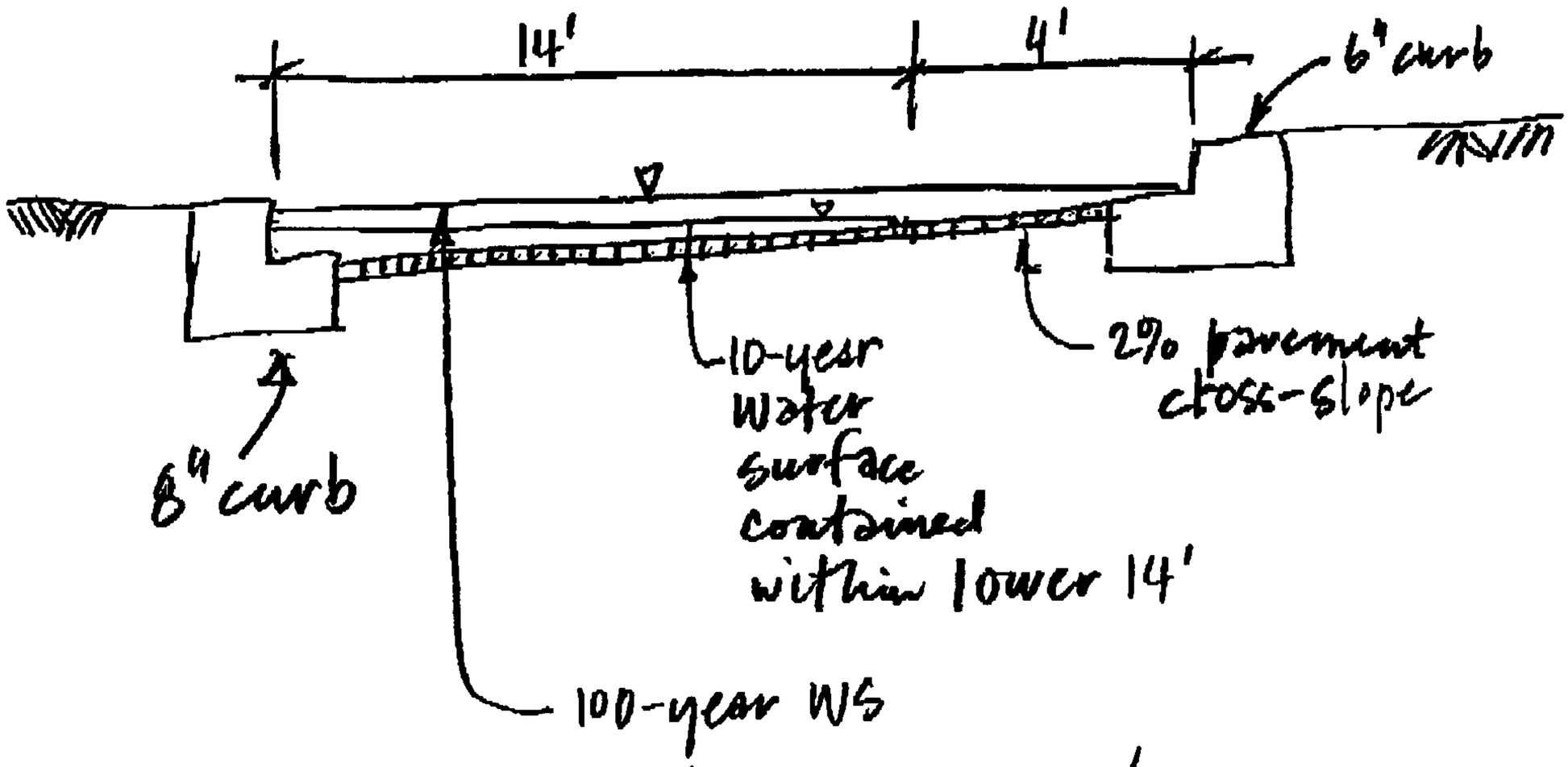
c: Andrew Garcia
Fred Aguirre, DRB 96-158
Ron Nelson, La Mesa Investors, 6605 Uptown Blvd NE 87110

flow analysis, 18'wide, 2% cross-slope

MANNING'S N = .0160 SLOPE = .0150

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	101.00	3	18.00	100.~~36~~ .44			
2	0.05	100.00	4	18.05	100.~~86~~ .94			
	2.00	100.12						

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID	
100.05	0.05	0.1	0.1	2.5	1.0	2.50	
100.10	0.10	0.2	0.4	5.1	1.5	4.99	
100.15	0.15	0.6	1.1	7.6	2.0	7.49	
100.20	0.20	1.0	2.4	10.2	2.4	9.98	
100.25	0.25 ≈0.28	1.6	4.4	12.7	2.8	12.48	
100.30	0.30	2.2	7.1	15.3	3.2	14.97	10-yr
100.35	0.35	3.1	10.7	17.8	3.5	17.47	100-yr
100.40	0.40	4.0	16.1	18.4	4.1	17.97	
100.45	0.45	4.9	22.6	18.5	4.7	17.98	
100.50	0.50	5.8	29.9	18.6	5.2	17.99	
100.55	0.55	6.7	38.0	18.7	5.7	18.00	
100.60	0.60	7.6	46.8	18.8	6.2	18.00	
100.65	0.65	8.5	56.2	18.9	6.7	18.01	
100.70	0.70	9.4	66.3	19.0	7.1	18.02	
100.75	0.75	10.3	77.0	19.1	7.5	18.03	
100.80	0.80	11.2	88.4	19.2	7.9	18.03	
100.85	0.85	12.1	100.2	19.3	8.3	18.04	
100.86	0.86	12.2	102.7	19.3	8.4	18.04	



EGL (100-yr) = $0.\cancel{35}\,.43' + \frac{3.5^2}{64.4} = 0.\cancel{54}\,.62'$, use 8" curb on downhill side

Post-it® Fax Note 7671	Date 10/3	# of pages ▸ 3
To Dave Harmon	From James Top	
Co./Dept. Trans. Dev	Co. BHI	
Phone # 768-2680	Phone # 823-1000	
Fax # 768-3229	Fax # 821-0892	

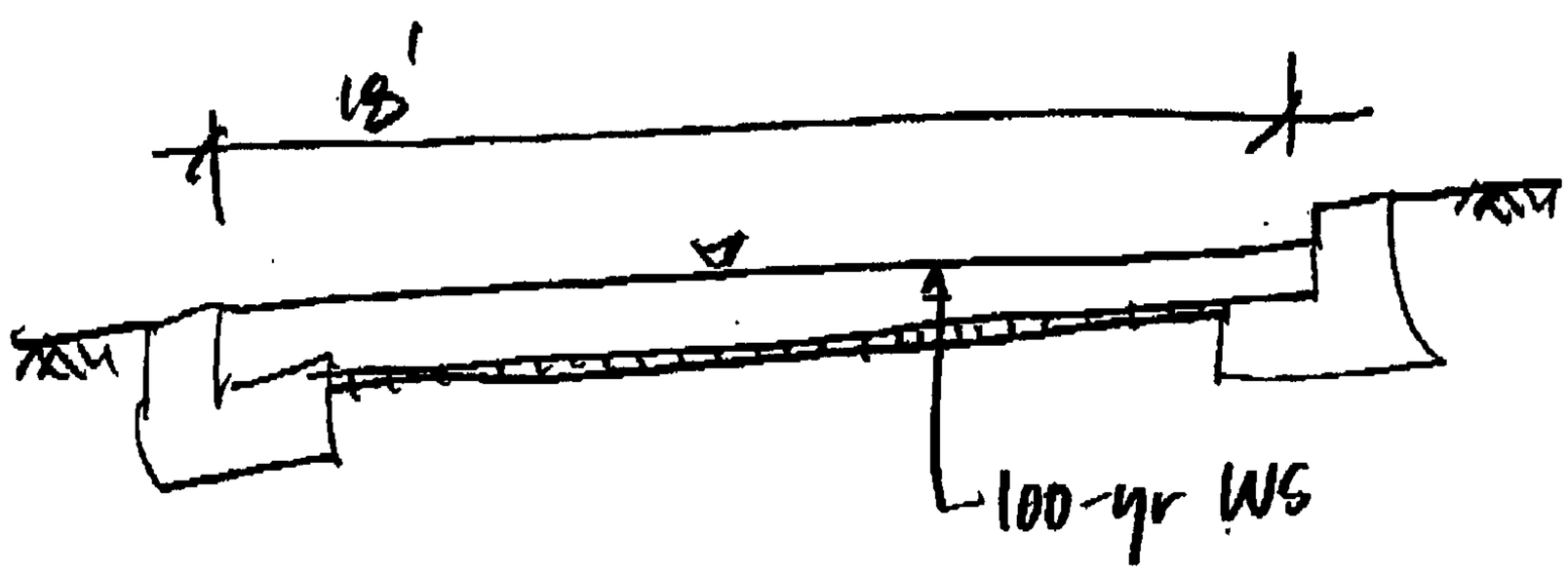
weir analysis of 18' entry, 1% cross-slope

WEIR COEFFICENT = 3.0000
CROSS SECTION DIVIDED INTO VERTICAL SLICES 1. FEET APART

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	101.00	3	18.00	100.18			
2	0.05	100.00	4	18.05	100.88			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA (SQ FT)	FLOW RATE (CFS)	FLOW VEL (FPS)	TOP WID PLUS OBSTRUCTIONS	
100.05	0.05	0.12	0.07	0.54	4.99	
100.10	0.10	0.50	0.38	0.76	9.98	
100.15	0.15	1.12	1.04	0.93	14.97	
100.20	0.20	1.98	2.13	1.08	17.96	
100.25	0.25	2.87	3.59	1.25	17.97	
100.30	0.30	3.77	5.30	1.41	17.97	
100.35	0.35	4.67	7.25	1.55	17.98	10-yr
100.40	0.40	5.57	9.40	1.69	17.99	
100.45	0.45	6.47	11.73	1.81	17.99	100-yr
100.50	0.50	7.37	14.24	1.93	18.00	
100.55	0.55	8.27	16.90	2.04	18.00	
100.60	0.60	9.17	19.71	2.15	18.01	
100.65	0.65	10.07	22.67	2.25	18.02	
100.70	0.70	10.97	25.76	2.35	18.02	
100.75	0.75	11.87	28.99	2.44	18.03	
100.80	0.80	12.77	32.33	2.53	18.03	
100.85	0.85	13.68	35.80	2.62	18.04	
100.88	0.88	14.22	37.94	2.67	18.04	

$$EGL\,(100\text{-year}) = 0.45' + \frac{1.81^2}{64.4} = 0.51'$$, use 8" curb on downhill side, 6" curb OK on uphill side



weir analysis of 22' entry, 1% cross-slope

WEIR COEFFICENT = 3.0000
CROSS SECTION DIVIDED INTO VERTICAL SLICES 1. FEET APART

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	101.00	3	22.00	100.22			
2	0.05	100.00	4	22.05	100.92			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA (SQ FT)	FLOW RATE (CFS)	FLOW VEL (FPS)	TOP WID PLUS OBSTRUCTIONS	
100.05	0.05	0.12	0.07	0.54	4.99	
100.10	0.10	0.50	0.38	0.76	9.98	
100.15	0.15	1.12	1.04	0.93	14.97	
100.20	0.20	2.00	2.14	1.07	19.96	
100.25	0.25	3.07	3.72	1.21	21.96	
100.30	0.30	4.17	5.69	1.36	21.97	
100.35	0.35	5.27	7.95	1.51	21.98	10-yr
100.40	0.40	6.37	10.48	1.64	21.98	100-yr
100.45	0.45	7.47	13.24	1.77	21.99	
100.50	0.50	8.57	16.21	1.89	22.00	
100.55	0.55	9.67	19.39	2.00	22.00	
100.60	0.60	10.77	22.75	2.11	22.01	
100.65	0.65	11.87	26.29	2.22	22.01	
100.70	0.70	12.97	30.01	2.31	22.02	
100.75	0.75	14.07	33.88	2.41	22.03	
100.80	0.80	15.17	37.91	2.50	22.03	
100.85	0.85	16.28	42.09	2.59	22.04	
100.90	0.90	17.38	46.42	2.67	22.04	
100.92	0.92	17.82	48.19	2.70	22.05	

this sheet shows that there is essentially no difference between 18' & 22' wide entry during 10-yr. storm, (both are ≈ 0.35' depth of flow)

GENERAL NOTES:

1. THESE DETAILS ARE PROVIDED FOR HIGH TRAFFIC VOLUME PRIVATE ENTRANCES TO COMMERCIAL SITES AND THE LIKE, IN LIEU OF STANDARD DRIVEPADS.

CONSTRUCTION NOTES:

A INCLUDE QUARTER POINT ELEVATIONS. SEE STD DETAIL DWG. 2420

B. WHERE INTERIOR SIDEWALK CONNECTION IS TO BE PROVIDED - CONSTRUCT CURB ACCESS RAMPS AS PER STD. DETAIL DWGS 2418 & 2441.

C INITIAL GRADE TO BE 4% OR LESS WHEN CONNECTING TO COLLECTOR OR ARTERIAL STREETS. 6% OR LESS WHEN CONNECTING TO LOCAL STREETS

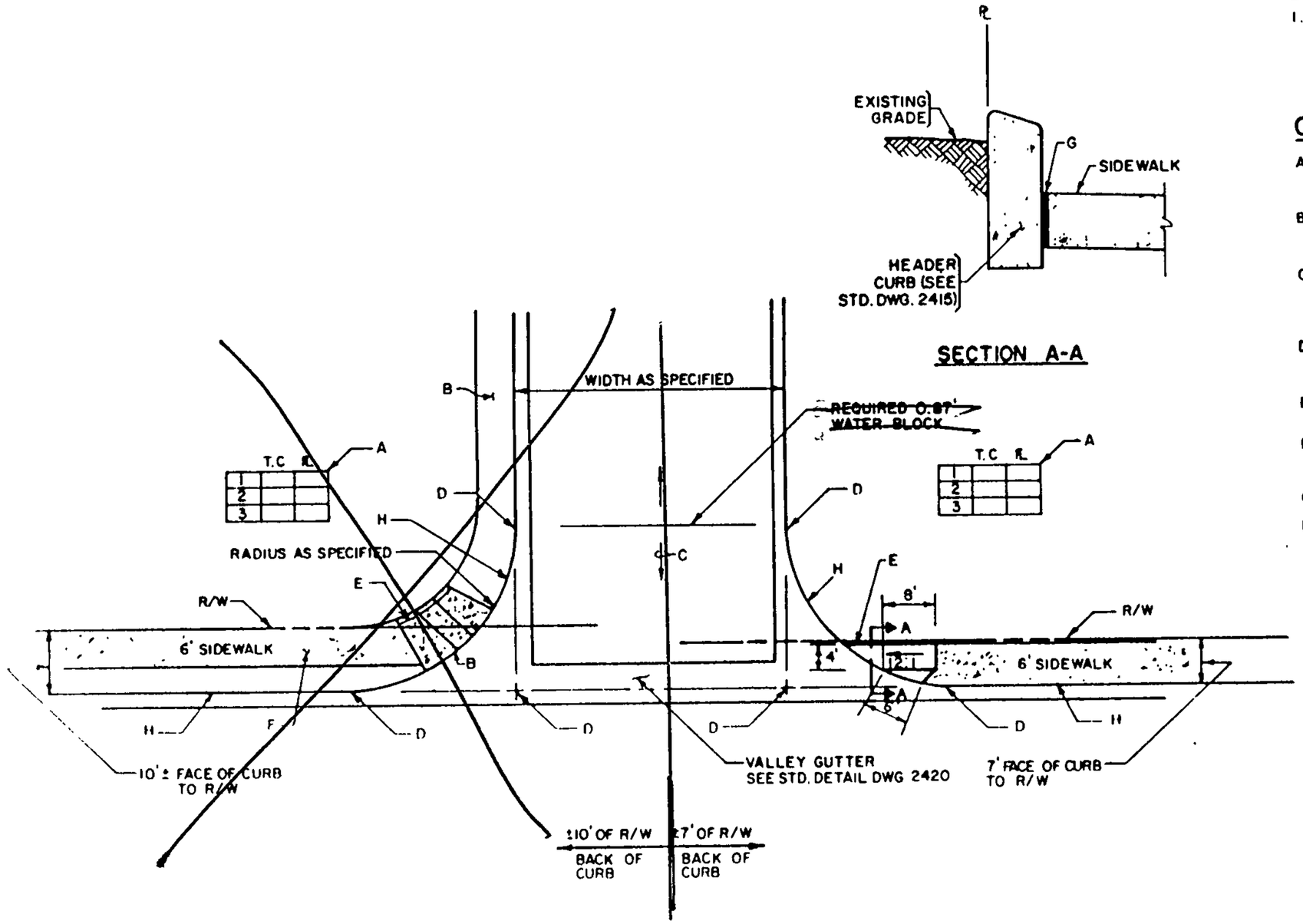
D. INCLUDE ELEVATIONS AT EACH END OF CURB RETURN AND INTERSECTIONS OF PROJECTED FLOWLINES. SEE STD. DWG. 2420.

E. AT PROPERTY LINE, CONSTRUCT HEADER CURB. SEE STD DWG 2415

F IF SIDEWALK IS AGAINST CURB, THE SIDEWALK SHOULD BE TRANSITIONED TO KEEP THE CURB ACCESS RAMP IN THE LOCATION SHOWN

G 1/2" EXPANSION JOINT MATERIAL.

H. THEORETICAL FACE OF CURB OR FLOWLINE



PRIVATE ENTRANCE

REVISIONS
1/91
11/14/91
4/4/94

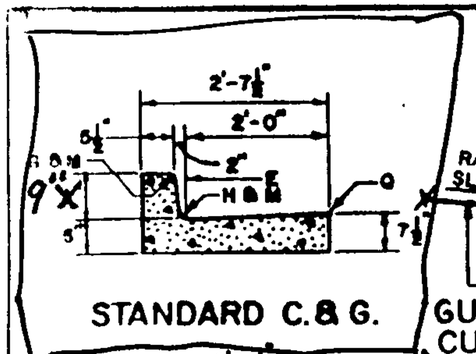
CITY OF ALBUQUERQUE

PAVING

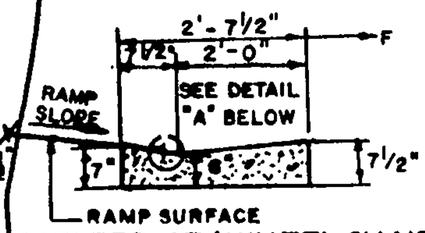
PRIVATE ENTRANCE DETAILS - ILLUSTRATING TWO SEPRATE R/W CONDITIONS.

DWG. 2426

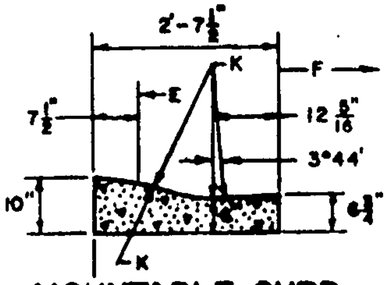
AUG 1986



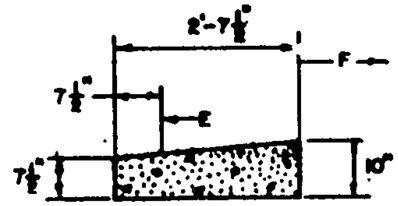
STANDARD C.& G.



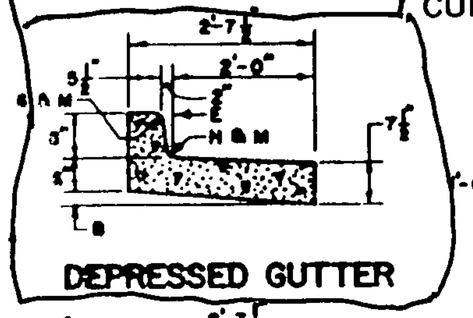
GUTTER AT (WHEELCHAIR) CURB ACCESS RAMP



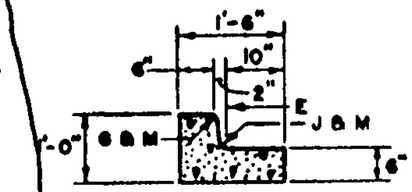
MOUNTABLE CURB ROLL TYPE



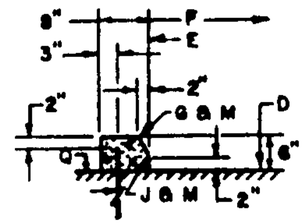
MOUNTABLE CURB ESTATE TYPE.



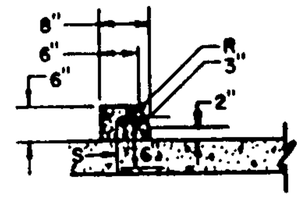
DEPRESSED GUTTER



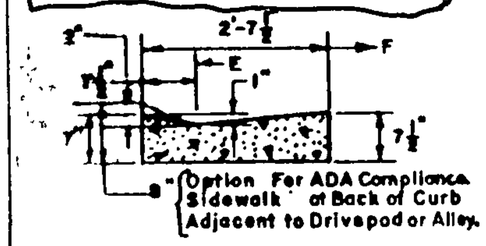
MEDIAN C.& G.



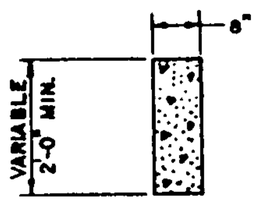
PINNED CURB TYPE I



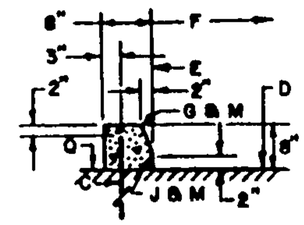
PINNED CURB TYPE III MEDIAN PCC PAVEMENT



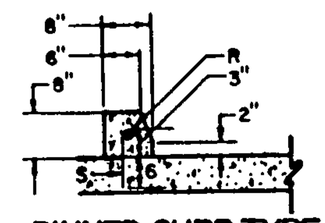
GUTTER AT DRIVEPAD OR ALLEY



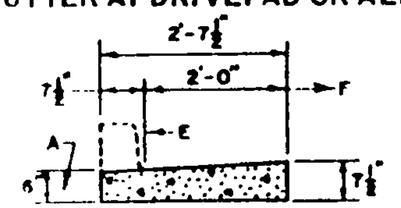
CUT-OFF WALL



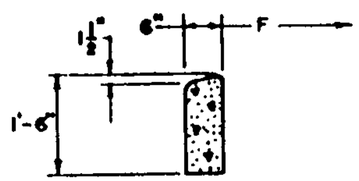
PINNED CURB TYPE II



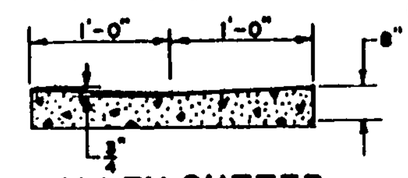
PINNED CURB TYPE IV OUTSIDE PCC PAVEMENT



RUNDOWN CURB



HEADER CURB



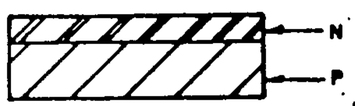
ALLEY GUTTER

P. 8" SCARIFIED AND COMPACTED SUB-GRADE. 95% MINIMUM COMPACTION AT OPTIMUM MOISTURE +/- 2%, ASTM D1557, OR OPTIMUM MOISTURE TO +4% ASTM D698, FOR SOILS WITH 35% OR GREATER MATERIAL PASSING THE No. 200 SIEVE.

Q. ASPHALT CONCRETE PAVEMENT.

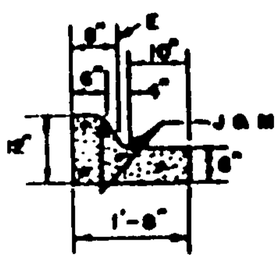
R. #4 X CONT. BETWEEN JOINTS 3" COVER AT JOINTS.

S. #3 PIN AT 3'-0" O.C. W/ STD. HOOK.

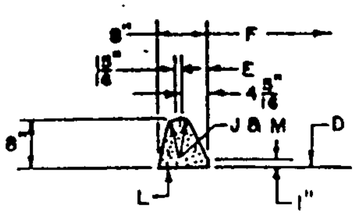


USE ONLY PER DIRECTION OR APPROVAL OF THE CITY ENGINEER

TEMPORARY OR BICYCLE PATH SECTION



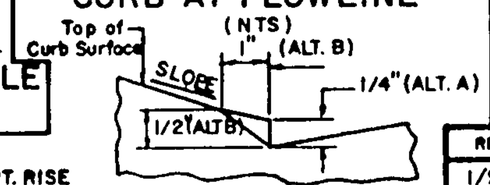
MOUNTABLE MEDIAN CURB



ASPHALT CURB

CURB AT FLOWLINE

(NTS)



DETAIL "A"

NOTE:
ALT. A - 1/4" VERT. RISE THEN SLOPE UP TO BACK OF CURB. (SEE STD DWG 2440)
ALT. B - 1/2" RISE 1" HORIZ THEN SLOPE UP TO BACK OF CURB. (SEE STD DWG 2440)

GENERAL NOTES

1. CURBS, GUTTERS AND CUT-OFF WALL WILL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE.
2. FOR STANDARD AND MEDIAN C & G ADJACENT TO ASPHALT CONCRETE PAVEMENT, PROVIDE CONTRACTION JTS. 12' MAX., SPACING, 1/2" EXP. JTS. AT CURB RETURNS & AT A MAXIMUM SPACING OF 120' BETWEEN CURB RETURNS & EACH SIDE OF SEPARATELY CONSTRUCTED DRIVEWAYS. CONTRACTION JTS., SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP AT FINISHED FACES.
3. FOR ALL OTHER C & G & CUT-OFF WALL PROVIDE CONTRACTION JTS. AT 10' MAX., SPACING, 1/2" EXP. JTS. AT CURB RETURNS & AT A MAXIMUM SPACING OF 100' BETWEEN CURB RETURNS & EACH SIDE OF SEPARATELY CONSTRUCTED DRIVEWAYS. CONTRACTION JTS. SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP AT ALL FINISHED FACES. REINFORCEMENT SHALL NOT BE USED IN CUT-OFF WALLS.
4. FOR C & G CONSTRUCTED WITH PORTLAND CEMENT CONCRETE PAVEMENT, CONTRACTION JTS. AND EXPANSION JTS. SHALL BE THE SAME AS THE PAVEMENT JOINTS.
5. ALL EDGES SHALL BE EDGED WITH A 3/8" RADIUS EDGING TOOL.
6. STANDARD C & G SHALL BE USED FOR NEW CONSTRUCTION UNLESS OTHERWISE AUTHORIZED BY THE CITY ENGINEER.
7. REMOVE & REPLACE PAVEMENT 1' WIDE ADJACENT TO LIP OF GUTTER WHEN CONSTRUCTING C&G ADJACENT TO EXISTING ASPHALT CONCRETE PAVEMENT.
8. 1/4" ISOLATION JOINT SHALL BE PLACED BETWEEN SIDEWALK AND C&G WHEN CAST ADJACENT TO EACH OTHER.
9. ADA = AMERICAN WITH DISABILITIES ACT.

CONSTRUCTION NOTES

A. REQ. CONC. CHANNEL LINING, OR CUT-OFF WALL. PROVIDE 1/4" EXP. JT. BETWEEN BACK OF CURB & CHANNEL LINING AND/OR WALL.
B. VARIABLE, DEPRESS AS NEEDED.
C. DRIVE NO. 4 BARS 18" DEEP IN HOLES DRILLED 2' O.C. IN EXIST., PAVEMENT, SEAL WITH EPOXY.
D. EXIST. A.C. OR P.C.C. PAVEMENT.
E. THEORETICAL FACE OF CURB OR FLOWLINE.
F. TRAFFIC SIDE.
G. 3/4" RADIUS.
H. 1-1/2" RADIUS.
J. 2" RADIUS.
K. 24" RADIUS.
L. TACK COAT.
M. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.
N. 4" A.C., 75BLOW/1800 LBS. STABILITY ON TEMPORARY PAVEMENT. 2" A.C., 50BLOW/1500 LBS. STABILITY ON BICYCLE PATHS.

REVISIONS
1/91
11/14/91
12/15/92
3/30/94

CITY OF ALBUQUERQUE

PAVING
CURB AND GUTTER
& TEMPORARY PAVING SECTION
DWG. 2415

AUG. 1986

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DRAINAGE ANALYSIS of ARVADA & ESPANOLA AVE. ZONE ATLAS/DRNG. FILE # H19/ D47A

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

LEGAL DESCRIPTION: TRACT B-2, LA MESA MEDICAL CENTER

CITY ADDRESS: _____

DRB # 96-158

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: JAMES TOPMILLER

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: 823-1000

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

✓ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ 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

✓ OTHER WORK ORDER (SPECIFY)

RECEIVED
SEP 25 1996
HYDROLOGY

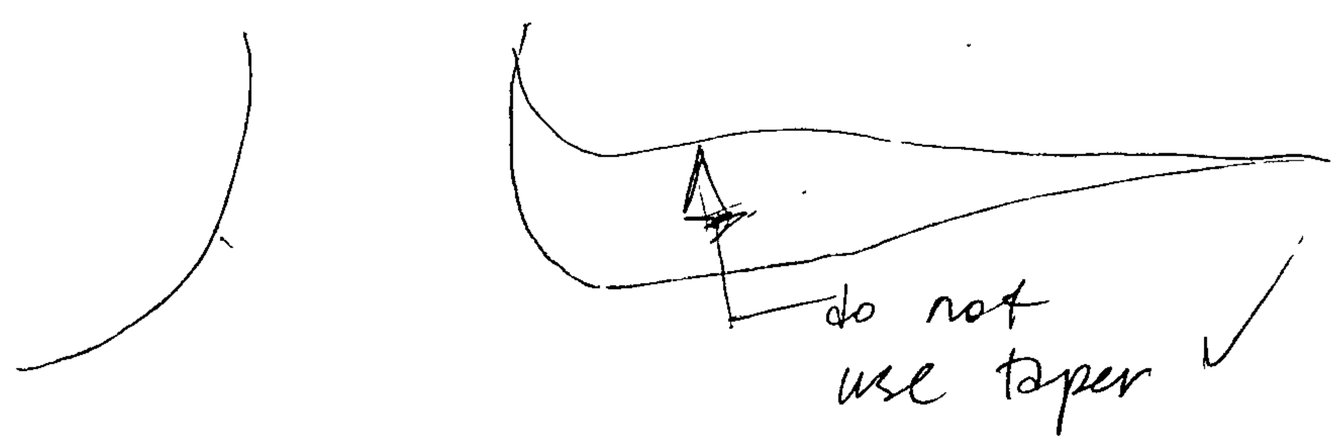
DATE SUBMITTED: 9/24/96

BY: JAMES TOPMILLER

- Add valley gutter to sketch

- use 11 cfs as design flow

-



- depressed gutter ~~curb~~ on northbound side

BOHANNAN-HUSTON INC.
COURTYARD I, 7500 JEFFERSON STREET, NE ALBUQUERQUE, NM 87109-4355
TEL (505) 823-1000 FAX (505) 821-0892

September 30, 1996

John Curtin, P.E.
City of Albuquerque
Hydrology Department
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Analysis for Arvada and Espanola (H-19/D47A)

Dear John:

The purpose of this letter is to respond to your letter dated August 28, 1996 and to follow up our meeting with you on the referenced drainage analysis.

What constraints?

Due to obvious existing downstream constraints, both from a capacity and an easement standpoint, we have revised our proposal for managing on-street drainage in Espanola and Arvada.

This proposal is revised as follows. As calculated in our original submittal to you, we will continue to allow approximately 11 cfs (100-year storm) to continue westerly on Arvada from the Espanola intersection. However, we will collect this flow in a drainage channel to be located in the southerly section of the existing Arvada right-of-way. As we've discussed, the existing Arvada pavement, curb and gutter will be removed in the Arvada right-of-way being vacated. It will be replaced by the drainage channel aforementioned and by a public drainage easement.

46' Opening

Enclosed are weir calculations calculating the needed width of the channel at its opening at Espanola and establishing that an initial opening of 16 feet is required. Calculations are also provided to show that a "manning flow" analysis requires basically a 16' width of channel at a depth of approximately 0.5'. In accordance with discussions with David Harmon, the channel/bikeway has been designed to allow a 4' wide clear ("dry") path in the 10-year design storm. Due to the intended use of the drainage channel as a pedestrian/bikeway feature, we would request that you approve the construction of asphalt and 8" curb and gutter channel as opposed to the standard City detail for drainage channel (concrete and side retaining walls). A sketch of the proposal is included. DRC approved plans will be required to remove existing pavement and construct the channel/pedestrian way/bikeway. At this time, we are requesting your approval of this concept in order to obtain final plat approval. We will establish an infrastructure list which includes these concepts within it. Enclosed is a copy of an infrastructure list that we could, with your approval, submit to the Development Review Board.

\\Mickey\sec_cdp\96307\C2421\DRNGANLY.DOC - 9/30/96

PRINCIPALS
LARRY W HUSTON, C P — KERRY L DAVIS, P E — GEORGE RADNOVICH, R L A — WILLIAM L VREEKE, P E
MICHIAL M EMERY, PE — LARRY A LARRAÑAGA, PE — SILAS V SUAZO — GORDON A WALHOOD, JR , P E
BRIAN G BURNETT, PE — HOWARD C STONE, P E — JAMES R TOPMILLER, P E — MARY E CARTER

Please review and call myself or Mike Jeffords at any time if we can answer any questions or provide additional calculations. We appreciate you working closely with us on this discussion and planning.

Sincerely,

James R. Topmiller, P.E.
Vice President and Group Manager
Community Development and Planning Group

JRT/rac

Enclosures: Calculations
Sketch
Infrastructure List

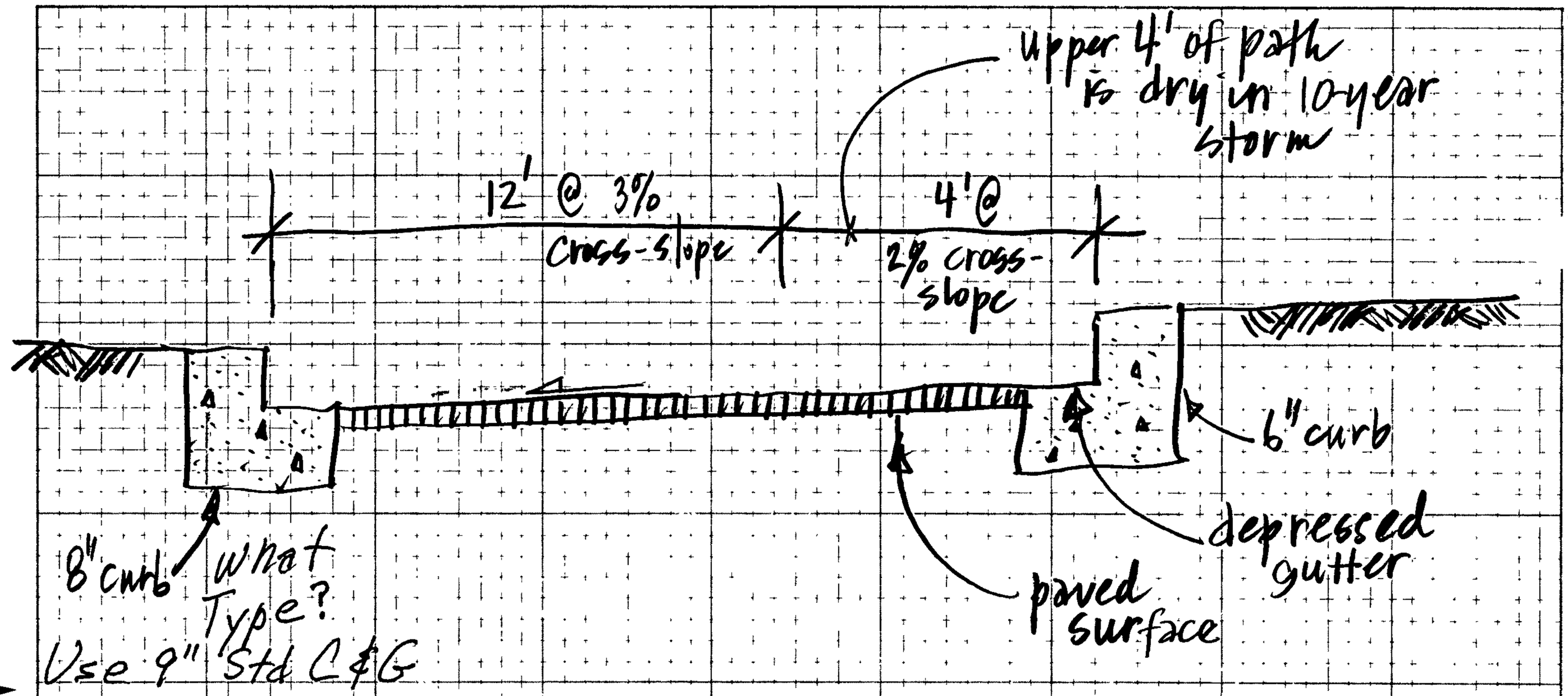
cc: Ron Nelson, Uptown Square
John Myers, Myers, Oliver & Price
Dave Harmon, COA
Mike Jeffords, BHI

PROJECT NAME ESPANOLA @ ARVADA SHEET ___ OF ___

PROJECT NO. ___ BY James T DATE 9/30/96

SUBJECT ___ CH'D ___ DATE ___

BOHANNAN-HUSTON INC.



PEDESTRIAN/BIKE PATH

NTS

NOTE:

1) Max. depth (10-year storm) = 0.35'

2) Max. depth (100-year storm) = 0.45'

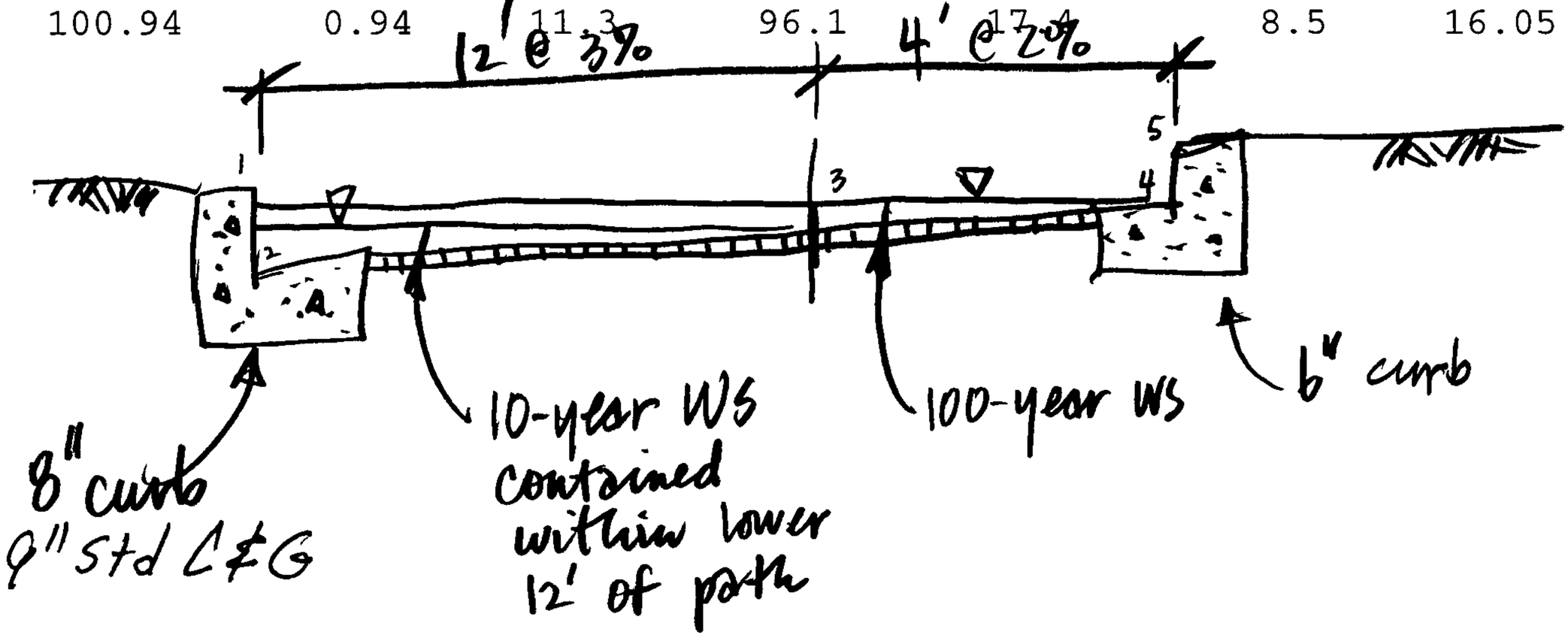
manning flow analysis

MANNING'S N = .0160 SLOPE = .0150

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	101.00	3	12.00	100.36 .42	5	16.05	100.94
2	0.05	100.00	4	16.00	100.44 .50			
	2.00	100.12						

see

WSEL (FT)	DEPTH INC	FLOW AREA (SQ FT)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WID	
100.05	0.05	0.0	0.0	1.7	1.0	1.66	
100.10	0.10	0.2	0.3	3.4	1.5	3.32	
100.15	0.15	0.4	0.7	5.1	2.0	4.99	
100.20	0.20	0.7	1.6	6.8	2.4	6.65	
100.25	0.25	1.0	2.9	8.6	2.8	8.31	
100.30	0.30	1.5	4.7	10.3	3.2	9.97	
100.35	0.35	2.0	7.1	12.0	3.5	11.64	10-year
100.40	0.40	2.7	9.9	14.4	3.7	13.97	
100.45	0.45	3.4	13.7	16.4	4.0	15.97	100-year
100.50	0.50	4.2	19.4	16.5	4.6	15.98	
100.55	0.55	5.0	25.8	16.6	5.1	15.99	
100.60	0.60	5.8	32.8	16.7	5.6	16.00	
100.65	0.65	6.6	40.5	16.8	6.1	16.00	
100.70	0.70	7.4	48.8	16.9	6.6	16.01	
100.75	0.75	8.2	57.7	17.0	7.0	16.02	
100.80	0.80	9.0	67.1	17.1	7.4	16.03	
100.85	0.85	9.8	77.0	17.2	7.8	16.03	
100.90	0.90	10.6	87.4	17.3	8.2	16.04	
100.94	0.94	11.3	96.1	17.4	8.5	16.05	



10-year EGL = $0.35' + \frac{3.5^2}{2g} = 0.54'$ @ lower curb face (WS = 100.54)

100-year EGL = $0.45' + \frac{4^2}{2g} = 0.69$ @ lower curb face (WS = 100.69) ≈ TC @ lower curb

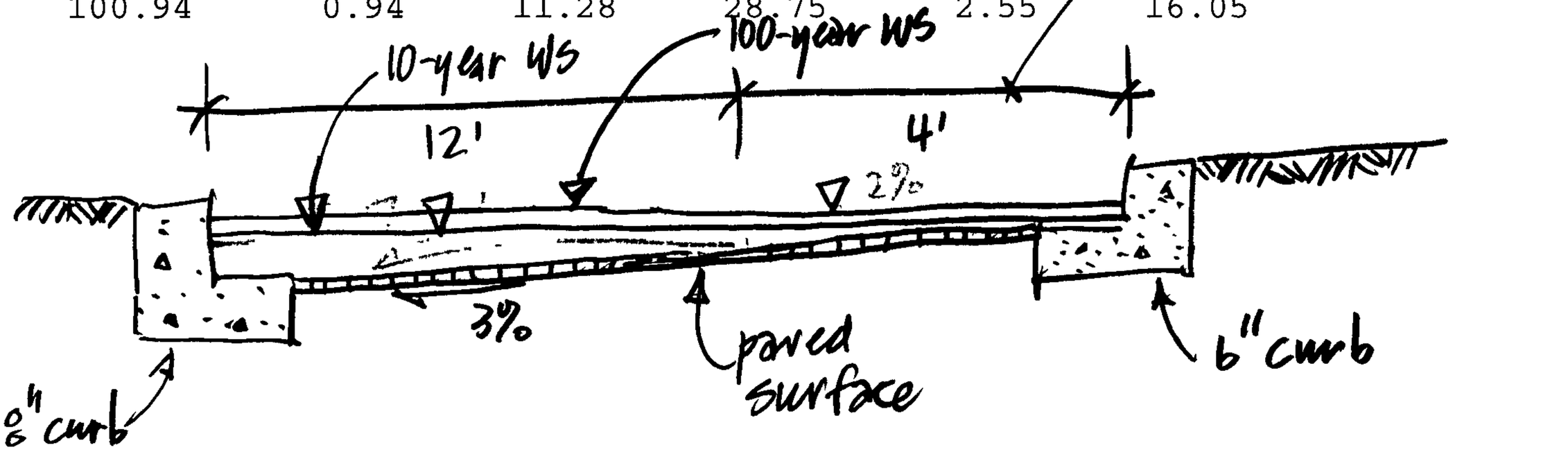
weir analysis @ entry

WEIR COEFFICENT = 3.0000

CROSS SECTION DIVIDED INTO VERTICAL SLICES 1. FEET APART

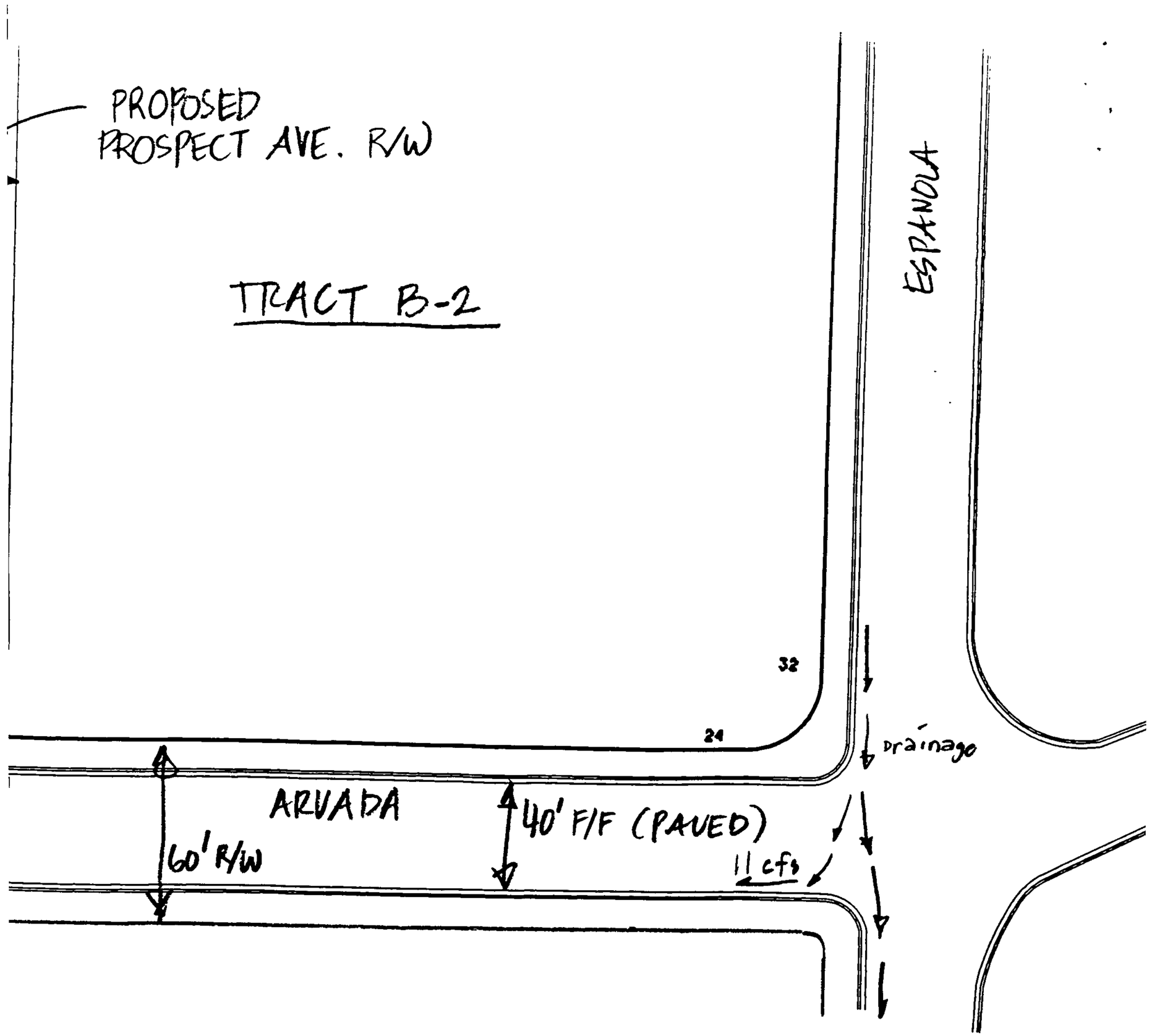
POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	101.00	3	12.00	100.36	5	16.05	100.94
2	0.05	100.00	4	16.00	100.44			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA (SQ FT)	FLOW RATE (CFS)	FLOW VEL (FPS)	TOP WID PLUS OBSTRUCTIONS	
100.05	0.05	0.04	0.02	0.53	1.66	
100.10	0.10	0.17	0.13	0.76	3.32	
100.15	0.15	0.37	0.35	0.93	4.99	
100.20	0.20	0.66	0.71	1.07	6.65	
100.25	0.25	1.04	1.25	1.20	8.31	
100.30	0.30	1.50	1.97	1.31	9.97	
100.35	0.35	2.04	2.89	1.42	11.64	
100.40	0.40	2.67	4.04	1.51	13.97	
100.45	0.45	3.43	5.47	1.59	15.97	
100.50	0.50	4.23	7.15	1.69	15.98	10-year
100.55	0.55	5.03	9.02	1.79	15.99	
100.60	0.60	5.83	11.08	1.90	16.00	100-year
100.65	0.65	6.63	13.29	2.00	16.00	
100.70	0.70	7.43	15.65	2.11	16.01	
100.75	0.75	8.23	18.14	2.20	16.02	
100.80	0.80	9.03	20.76	2.30	16.03	
100.85	0.85	9.83	23.51	2.39	16.03	
100.90	0.90	10.63	26.38	2.48	16.04	
100.94	0.94	11.28	28.75	2.55	16.05	



EGL depth @ low curb face $= 0.50' + \frac{1.69^2}{2g} = 0.54'$ (10-year)

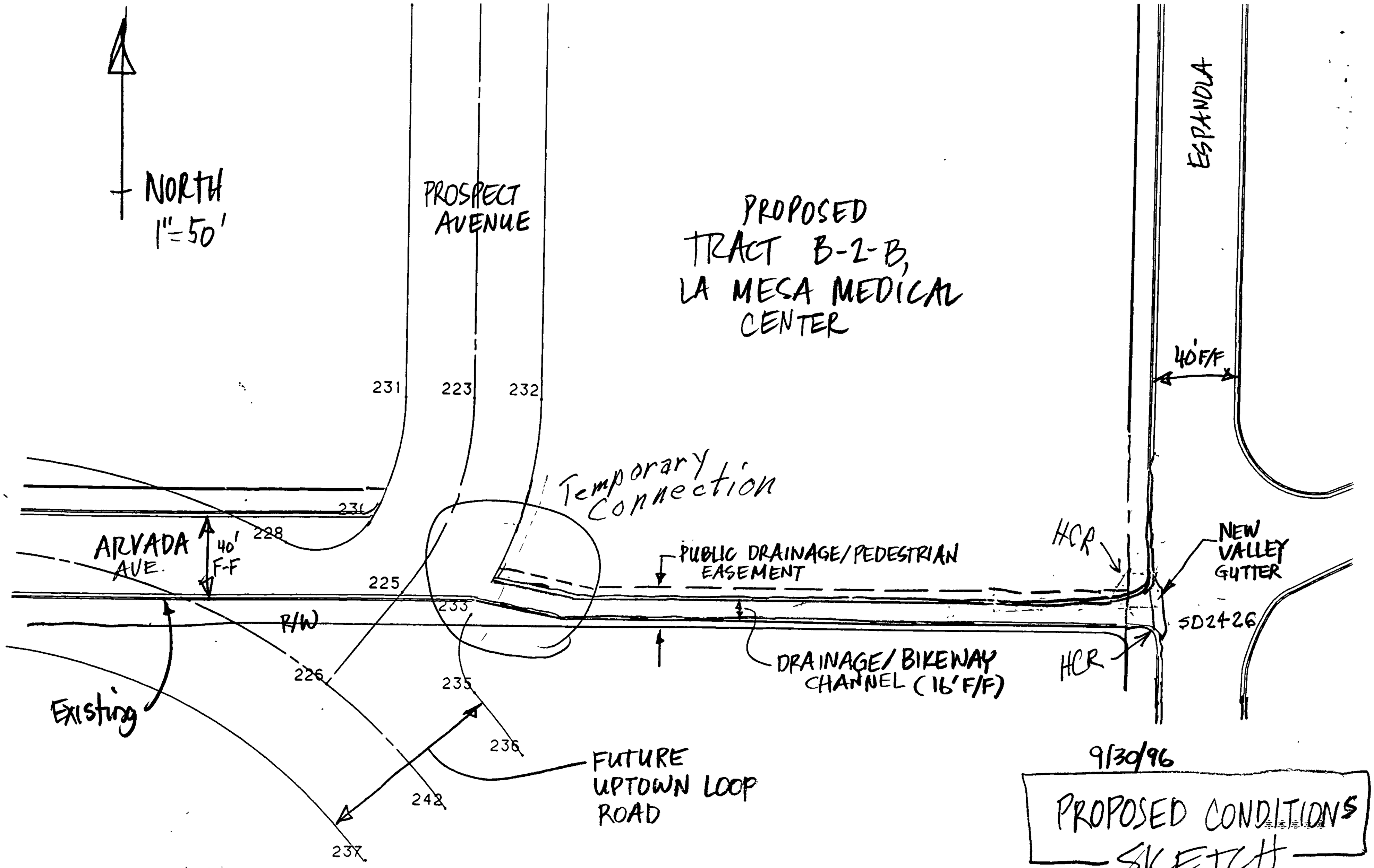
EGL depth @ " " " $= 0.60 + \frac{1.90^2}{2g} = 0.66'$ (100-year)



PROPOSED UPTOWN
LOOP ROAD

SKETCH 9/24/96

EXISTING CONDITIONS


NORTH
1"=50'
PROSPECT AVENUE
PROPOSED TRACT B-2-B, LA MESA MEDICAL CENTER
ESPANOLA
40' F/F
231
223
232
Temporary Connection
ARVADA AVE.
40' F-F
228
230
225
233
R/W
PUBLIC DRAINAGE/PEDESTRIAN EASEMENT
HCR
NEW VALLEY GUTTER
SD2426
DRAINAGE/BIKEWAY CHANNEL (16' F/F)
HCR
Existing
226
235
236
242
237
FUTURE UPTOWN LOOP ROAD
9/30/96
PROPOSED CONDITIONS SKETCH

CITY OF
Albuquerque

P.O. Box 1293 Albuquerque, NM 87103

August 28, 1996

Martin J. Chávez, Mayor

Mike Jeffords
Bohannan Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: DRAINAGE ANALYSIS FOR ARVADA & ESPANOLA (H-19/D47A)
RECEIVED AUGUST 6, 1996 FOR FINAL PLAT
ENGINEER'S STAMP DATED 7/29/96

Dear Mr. Jeffords:

Based on the information included in the submittal referenced above, City Hydrology has the following comments:

Engineer must verify downstream capacity to justify closing Arvada at Espanola. What is the capacity of the natural arroyo in the 20' drainage easement? Do the inlet discharge to the arroyo or to the 60" RCP? This arroyo is not shown on the City facilities map.

City Hydrology suggests that you calculate Tc for the basin draining to the inlets on Espanola using the equations in Part B of Section 22.2 and determine Q100 using AHYMO. On page 3B-21, AMDS indicates that the 60" RCP has a capacity of 232 cfs and the total 100 year discharge is 277 cfs upstream of Espanola. AMDS indicates on page 3B-24 that the 24" RCP in Arvada has a capacity of 34 cfs and the total 100 year discharge is 32 cfs.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

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

c: Andrew Garcia
Fred Aguirre, DRB 96-~~158~~ 171
Ron Nelson, La Mesa Investors, 6605 Uptown Blvd NE 87110

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Drainage Review of the Arvada Ave & Espanola St. Intersection ZONE ATLAS/DRNG. FILE # H-19 / D47A

DRB #: 96-158 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract B-2 La Mesa Medical Center

~~CITY ADDRESS~~: proposed Tracts B-2-A & B-2-B La Mesa Medical Center

ENGINEERING FIRM: BOHANNAN HUSTON, INC. CONTACT: Mike Jeffords

ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109 PHONE: 823-1000

OWNER: La Mesa Investors CONTACT: Ron Nelson

ADDRESS: 6605 Uptown Blvd. PHONE: 883-9662

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- [x] DRAINAGE REPORT
- [ ] DRAINAGE PLAN
- [ ] CONCEPTUAL GRADING & DRAINAGE PLAN
- [ ] GRADING PLAN
- [ ] EROSION CONTROL PLAN
- [ ] ENGINEER'S CERTIFICATION
- [ ] OTHER

PRE-DESIGN MEETING:

- [ ] YES
- [ ] NO
- [ ] COPY PROVIDED

6

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
- [x] FINAL PLAT APPROVAL (with R/W vacation)
- [ ] FOUNDATION PERMIT APPROVAL
- [ ] BUILDING PERMIT APPROVAL
- [ ] CERTIFICATE OF OCCUPANCY APPROVAL
- [ ] GRADING PERMIT APPROVAL
- [ ] PAVING PERMIT APPROVAL
- [ ] S.A.D. DRAINAGE REPORT
- [ ] DRAINAGE REQUIREMENTS
- [ ] OTHER _____ (SPECIFY)

DATE SUBMITTED: July 31, 1996 (Resent Aug 1, 1996) AUG - 6 1996

BY: Michael S Jeffords

FIGURE 6

CITY OF ALBUQUERQUE

NOTICE OF D.R.C. MEETING

8-19-96

(DATE)

DRB NO: 96-158
PROJECT NO: 553681
ZONE ATLAS: H-19

PROJECT NAME: Uptown Loop Rd. Improv.
LOCATION: E. of Louisiana Blvd.

TYPE OF PROJECT: AHBA X CIP ____ PWC ____ SAD ____ ALL PRIVATE ____

Contact Person: Pierce Rummel **Phone:** 823-1000
Firm: Bohannan-Huston

X Scheduled with the D.R.C. on 8-28-96 at 1:30 in Conf. Room 303
____ No DRC Meeting Scheduled. Please return any comments by ____

The Project Is Scheduled For:

/ / Design Report Review
/ / Pre-Design Meeting
/X/ Preliminary Plan Review
/ / Final Plan Review
/ / Signoff of Plans
/ / ____

The Project Relates To:

/✓/ Water / ✓ San. Sewer / / Paving / ✓ Storm Drainage / / ____

The Attached Package Includes:

/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only

Indicated below are the Departments/Divisions that have received project documents and/or are invited to attend. It will be the Project Managers responsiblity to notify consulting engineering firms of date and time of scheduled meetings.

/D/ DRC Chairman	Project Review Section	All Drawings
/D/ Traffic Repres	Transportation Development	All Drawings
/D/ Water Repres.	Utility Design	All Drawings
/D/ Hydro Repres.	Hydrology	All Drawings
/D/ Const. Repres.	Construction	All Drawings
/D/ Ray Chavez	Traffic Operations	All Drawings
/ / Andre Houle	Street Maintenance	All Paving
/D/ Sergio Miranda	Water (Shutoff Plan)	All Water Shutoff
/D/ Parks Repres.	Parks & Recreation	ALL Landscaping
/ /	Utility Coordinator	ALL PWC & CIP
/ / Jim Hamel	Transit Department	CIP/Memo
/ / Rick Roybal	Construction Coordinator	CIP/Memo
/ / Jim Fink	Line Maintenance	CIP & SAS/Memo
/ /	City Architect	Arch. Drawings
/ / Lee Lunsford	SAD Engineer	SAD/Memo
/ / Joe Luehring	Transportation Develop.	CIP/Memo
/ / Roger Green	Utility Design	CIP/Water & SAS
/ / John Liebendorfer	General Services Dept.	Arch. Drawings
/ / Greg Smith	PWD/Legal	Specs & Dwgs.
/ / Richard Sertich	Planning Department	CIP/Memos
/ / CIP Manager	CIP	CIP/Memos
/ / Donald Bartlett	Risk Management	Arch. Drawings
/ / ____	____	____

DRCNOTIC. 10/19/95

BOHANNAN-HUSTON INC.
COURTYARD I, 7500 JEFFERSON STREET, NE ALBUQUERQUE, NM 87109-4355
TEL (505) 823-1000 FAX (505) 821-0892

July 30, 1996

Mr. Fred Aguirre
Hydrology Division
Public Works Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Review of the Arvada Ave. & Espanola St. Intersection (DRB # 96-158)

Dear Fred:

We are submitting for your review and approval the Drainage Review of the Arvada Ave. & Espanola St. Intersection.

The acceptance of this report is a condition of final plat approval for the Plat of Tracts B-2-A and B-2-B: La Mesa Medical Center. The drainage conditions at the Arvada Ave. and Espanola St. intersection need to be reviewed in order to vacate the north half of the Arvada right of way west of the proposed Prospect St. Extension and east of Espanola St.

With this report we have shown that there are minimal effects to the drainage system when Arvada Ave. (west of Espanola St.) is blocked off.

If you have any questions or concerns please contact me or James Topmiller.

Sincerely,

Mike Jeffords, E.I.
Community Development and Planning Group

Enclosure - Drainage Report

cc: Ron Nelson, La Mesa Investors
James Topmiller, Bohannan-Huston Inc.

E \CDP\96307\C2421\AGUIRRE.LTR.doc - 7/30/96

LARRY W HUSTON, C P — KERRY L DAVIS, PE — PRINCIPALS — GEORGE RADNOVICH, R L A — WILLIAM L VREEKE, P E
MICHIAL M EMERY, PE — LARRY A LARRAÑAGA, PE — SILAS V SUAZO — GORDON A WALHOOD, JR , P E
BRIAN G BURNETT, PE — HOWARD C STONE, P E — JAMES R TOPMILLER, P E — MARY E CARTER

OFFICIAL NOTICE

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
DEVELOPMENT SERVICES DIVISION
P.O. BOX 1293, ALBUQUERQUE NEW MEXICO 87103

6. V-96-38 Bohannan-Huston Inc., agents for Uptown Square, request
ORB-96-171 Vacation (closing) of Public Right-of-Way for a portion of Arvada Avenue located adjacent to Tract B, La Mesa Medical Center zoned SU-2/SU-3 (City) and located east of Louisiana Boulevard NE and west of Espanola Street NE. (H-19) [DEFERRED FROM 5/28/96]

At the June 4, 1996, Development Review Board meeting, the Vacation was approved with the following findings and conditions:

FINDINGS AND CONDITIONS:

1. The public welfare is in no way served by retaining the right-of-way.

2. There is no convincing evidence that any substantial property right is being abridged against the will of the owner of the right.

3. Final disposition shall be through the City Real Estate Office.

4. The vacated right-of-way shall be shown on a replat within one year.

5. Prospect is provided to the City to the satisfaction of the Traffic Engineer with the platting of the vacated portion of Arvada.

6. Retention of the drainage easement(s) will be per the satisfaction of the City Engineer.

7. Easements may be required within the vacated right-of-way of Arvada Avenue and must be worked out prior to the Final Plat approval.

If you wish to appeal this decision, you must do so by June 19, 1996, in the manner described below. A nonrefundable fee of $135 is required at the time the appeal is filed.

Appeal is to the Environmental Planning Commission. Any person aggrieved with any determination of the Development Review Board may file an appeal on the Planning Division form, to the Planning Division, within 15 days of the Development Review Board's decision. The date the determination in question is issued is not included in the 15-day period for filing an appeal; if the fifteenth day falls on a Saturday, Sunday or holiday as listed in the Merit System Ordinance, the next working day is considered as the deadline for filing the appeal. Such appeal shall be heard within 45 days of its filing.

You will receive notice if any other person files an appeal. Successful applicants are reminded that other requirements of the City must be complied with, even after approval of the referenced application(s).

Please note that the vacation of all plats, rights-of-way, and easements are void after one year from the final appeal date referenced above if all conditions are not met (The effective date of Development Review Board approval is the hearing date plus the 15-day appeal period.)
(REF: Chapter 14 Article 14 Part 7-2 (E)(3)(6) Revised Ordinance.)

CITY OF AL ERQUE
PLANNING DEPARTMENT
DEVELOPMENT SERVICES DIVISION

DEVELOP..... REVIEW BOARD
April 16, 1996
V-96-38/DRB-96-171

V-96-38
DRB-96-171

Bohannan-Huston Inc., agents for Uptown Square, request Vacation (closing) of Public Right-of-Way for a portion of Arvada Avenue located adjacent to Tract B, La Mesa Medical Center zoned SU-2/SU-3 (City) and located east of Louisiana Boulevard NE and west of Espanola Street NE. (H-19)

COG	"No adverse comment."
Zoning Enforcement	"No adverse comment."
Real Estate	"If approved, final disposition shall be through the City Real Property Division. Contact the Real Property Division as soon as possible concerning estimated compensation due the City for the vacation".
Neighborhood Coordin.	Letters sent to Inez, Mark Twain, New Kimo, Snow Heights, Uptown, Winrock Villa, Zuni, Uptown Coalition Neighborhood Associations.
Office of Econ. Devel.	"No adverse comment."
APS	"No adverse comment."
U.S. West Communication	This vacation cannot be granted. U.S. West has cable on south side of Arvada which must maintain a 10 foot easement in order to approve the vacation. All easement rights to be retained. A new easement is to be provided by owner.
PNM Gas	PNM Gas Services objects to DRB-96-171 because of an existing 4" hp steel gas main on Arvada Avenue west of Espanola Street and east of Louisiana Blvd.
PNM Electric	No adverse comments for a portion of Arvada Avenue vacation request located adjacent to Tract B, La Mesa Medical Center.
Jones Intercable	"No adverse comment."
Environmental Health	No adverse comments.
Parks and General Services	"No adverse comment."
Utilities Development	No adverse comment on the proposed vacation requests provided that the entire area is retained as public utility easement or an acceptable replacement corridor is provided.

APR 1 1 1996

City Engine

No objection to the vacation request with the following conditions:

•The entire vacated Right-of-Way will be retained as a Public Drainage Easement.

•The entire vacated Right-of-Way will be incorporated into one of the adjacent tracts.

•The owner will be responsible for the maintenance of this drainage easement.

Transportation Develop.

The vacation needs to meet the requirements of the Uptown Sector Plan and all other agreements/requirements by the City for this area.

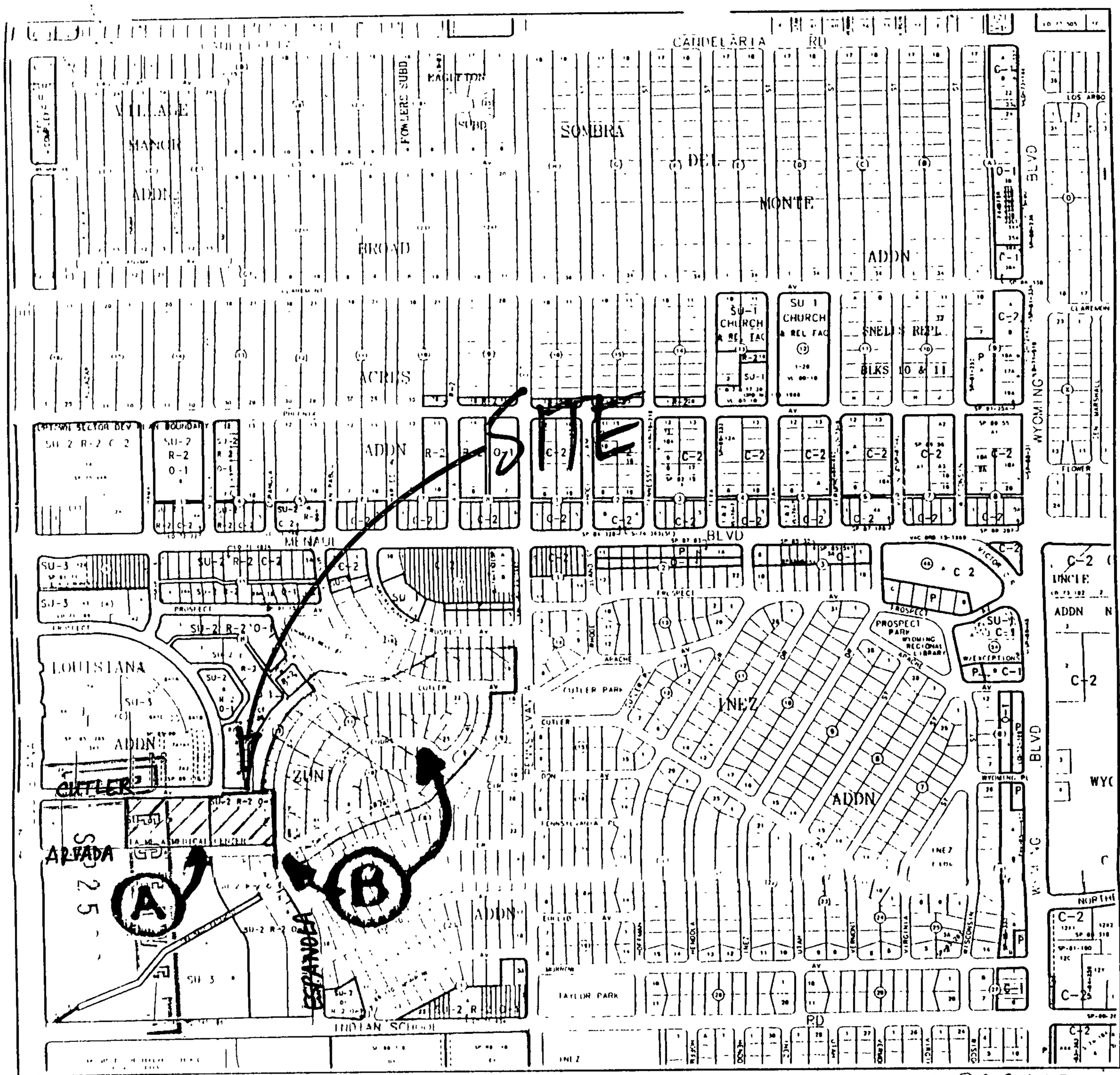
Planning Department

The Uptown Sector Plan calls for Arvada Avenue (Loop Road) to continue 760 feet east from Louisiana Blvd centerline, at which point the road will head southeast with a radius of between 280 and 500 feet and so on as described on page 32. The Sector Plan is very detailed concerning the proposed Loop Road design. The submitted diagram gives no detail of this vacation request.

A condition of approval of this request shall be that the vacation of Arvada Avenue shall be as described and dimensioned in the Uptown Sector Plan (page 32) and shall be platted as such. Also that the vacated portion of Arvada Avenue shall be retained for pedestrian, bicycles, and utility easements (page 36) as required by the Uptown Sector Plan. Note that the Sector Plan also calls for the continuation of Chama Street from Arvada Avenue (Loop Road) to Menaul Road.

<u>IT IS REQUESTED THAT THE APPLICANT AND/OR AGENT BE PRESENT AT THE HEARING</u>

cc:Uptown Square, 6605 Uptown NE, Suite 290, 87110
Bohannan-Huston Inc., 7500 Jefferson NE, 87109



GRAPHIC SCALE IN FEET

250 0 500 1000

CITY OF Albuquerque

A Automated G Geographic I Information S System

PLANNING DEPARTMENT

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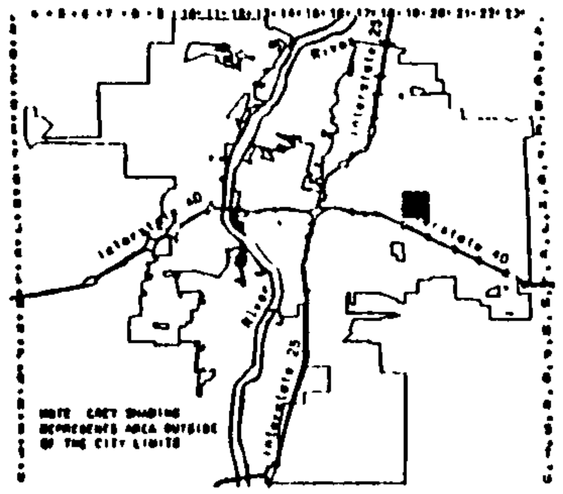
Map Amended through February 20, 1996



LEGAL DESCRIPTION

T11N
R4E
SEC 7

UNIFORM PROPERTY CODE

1-019-069

H-19-Z

SITE LOCATION

PLATE 1

FLOODPLAIN CONTRIBUTING BASINS