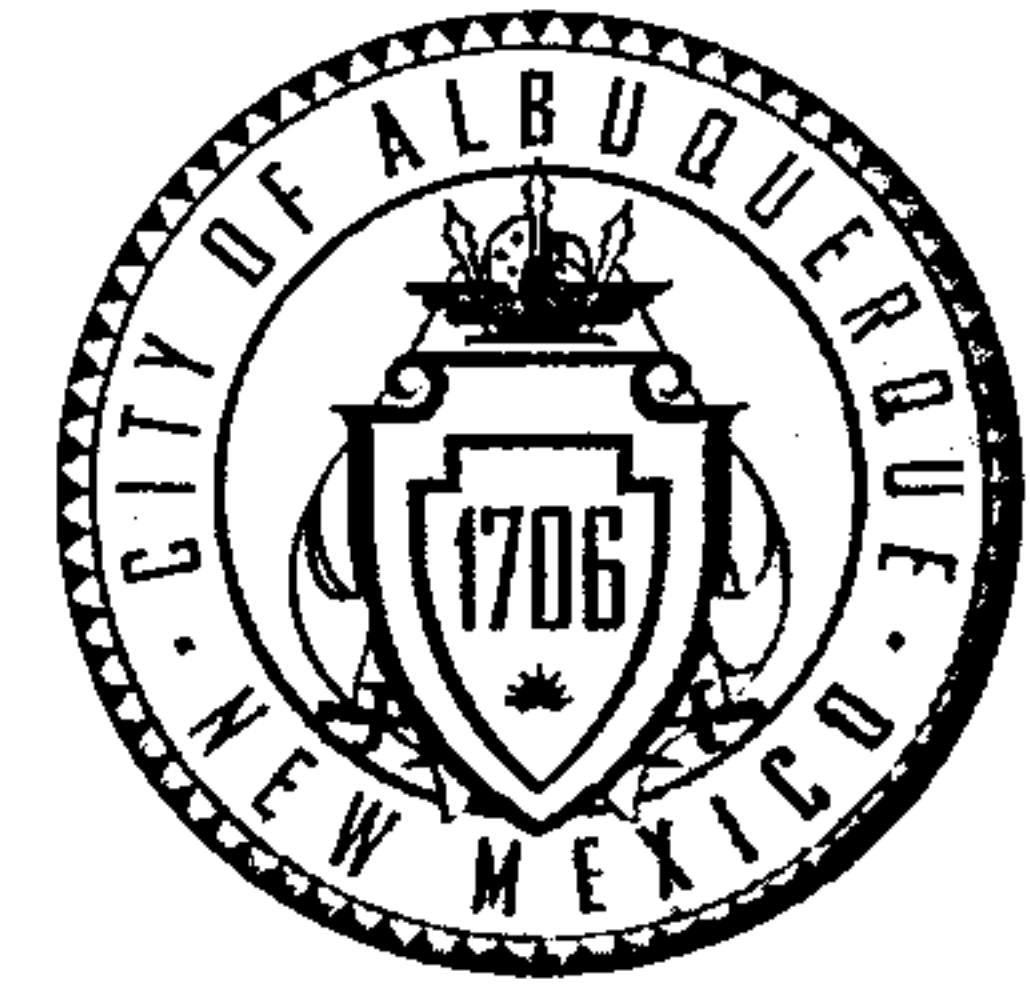


CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services



April 4, 2016

Richard J. Berry, Mayor

Åsa M. Nilson-Webber, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street N.E.
Albuquerque, NM 87108

RE: Santa Monica Estates Unit 2 (Tract 4-A-1)
Grading and Drainage Plan and Report
Stamp Date 2-26-2016 | File: D18D054F

Dear Mrs. Weber:

Based upon information provided in your submittal received 2-26-2016, the above-referenced Grading and Drainage Plan/Report is approved for Preliminary Platting action by the DRB. It is also approved for Grading Permit (ESC Permit); please coordinate with the Stormwater Quality Engineer regarding any ESC Plan updates that may be needed to proceed from Rough Grading to Final Grading.

PO Box 1293

Albuquerque

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

New Mexico 87103

www.cabq.gov

Sincerely,

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

Orig: Drainage file



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Santa Monica Estates, Unit 2 Building Permit #: _____ City Drainage #: D18/ D054F
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: Tract 4-A-1, Santa Monica Place
City Address: _____

Engineering Firm: Isaacson & Arfman, P.A. Contact: Asa Nilsson-Weber
Address: 128 Monroe Street NE - Albuquerque, NM 87108
Phone#: (505) 268-8828 Fax#: _____ E-mail: asaw@iacivil.com

Owner: Santa Monica Place Development, LLC Contact: Kurt Browning
Address: c/o Titan Development -- 6300 Riverside Plaza Lane NW, Suite 200 - Albuquerque, NM 87120
Phone#: (505) 998-0163 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

☐ ENGINEER ARCHITECT CERTIFICATION

☐ CONCEPTUAL G & D PLAN

☒ GRADING PLAN

☐ DRAINAGE MASTER PLAN

☒ DRAINAGE REPORT

☐ CLOMR/LOMR

☐ TRAFFIC CIRCULATION LAYOUT (TCL)

☐ TRAFFIC IMPACT STUDY (TIS)

☐ EROSION & SEDIMENT CONTROL PLAN (ESC)

☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY

- ☒ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
☐ FOUNDATION PERMIT APPROVAL
☒ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☐ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR

- ☐ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: February 26, 2016 By: Asa Nilsson-Weber

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: ☒

Paid \$320.00

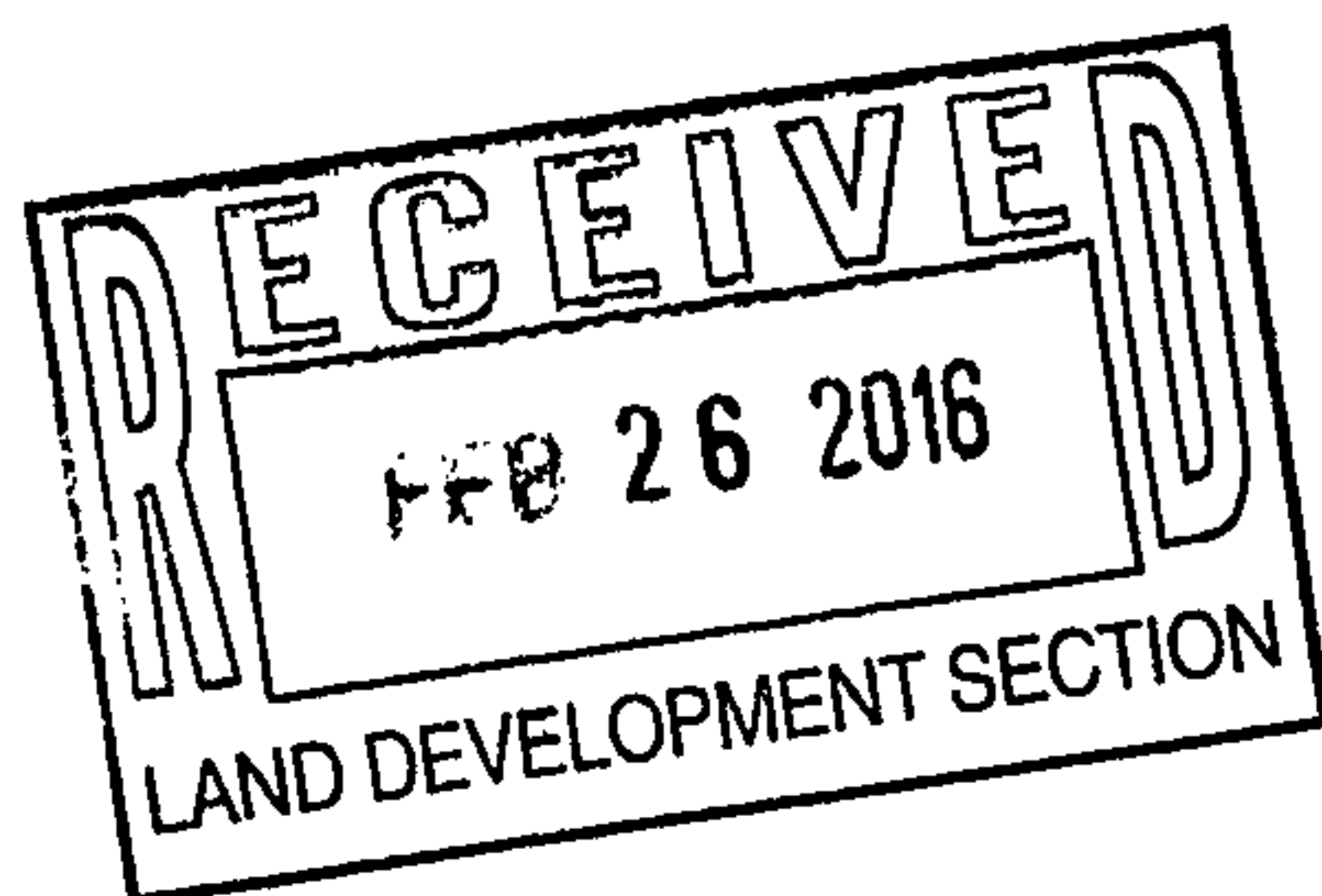
FEBRUARY 26, 2016

DRAINAGE REPORT

FOR

SANTA MONICA ESTATES, UNIT 2
(Replat of Tract 4-A-1, Santa Monica Place)

Louisiana Blvd. and Santa Monica Ave. NE



BY



ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

Thomas O. Isaacson, PE & LS [Ret.]

Fred C. Arfman, PE

Åsa Nilsson-Weber, PE

I&A Project No. 2149

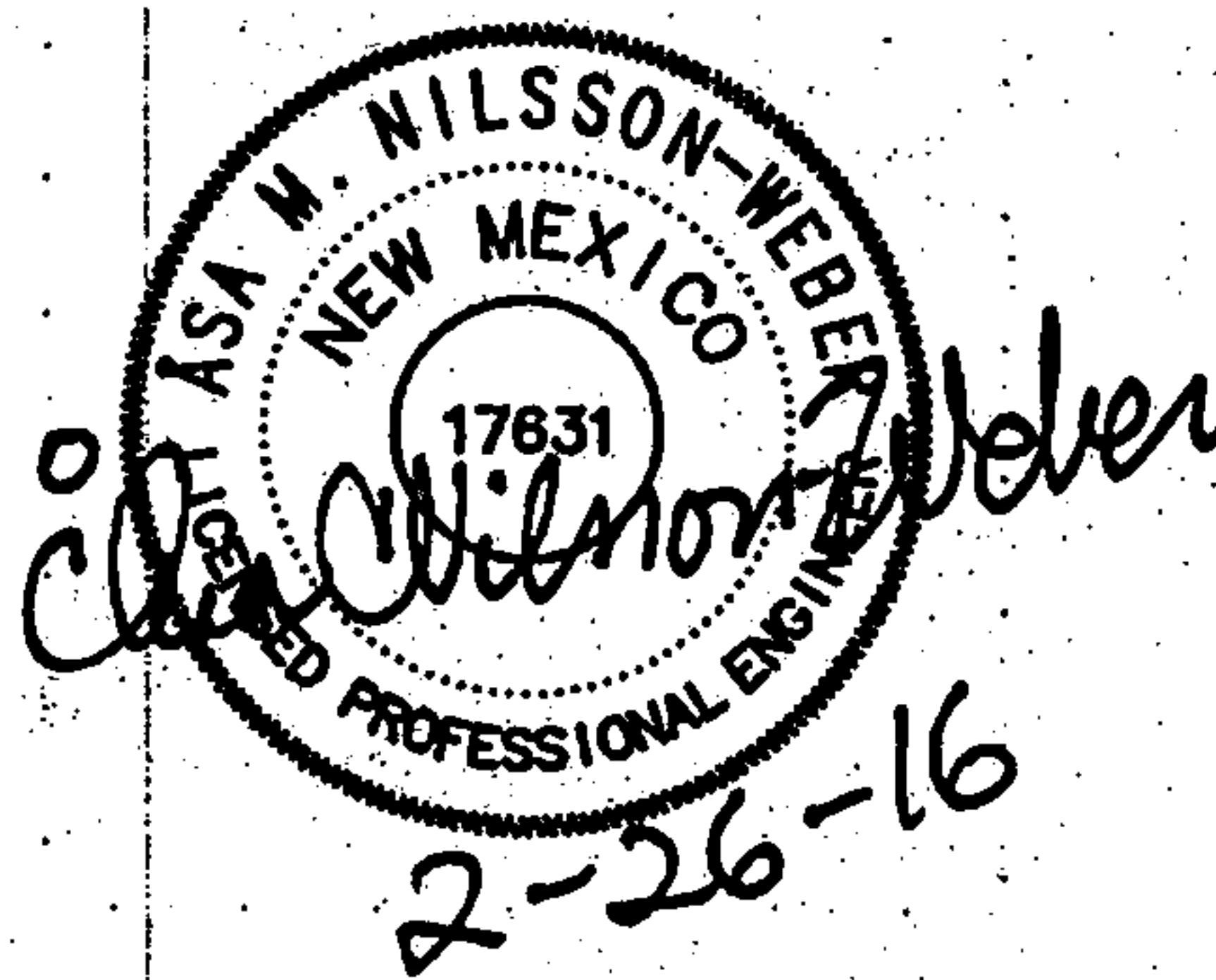
FEBRUARY 26, 2016

DRAINAGE REPORT

FOR

SANTA MONICA ESTATES, UNIT 2
(Replat of Tract 4-A-1, Santa Monica Place)

Louisiana Blvd. and Santa Monica Ave. NE



ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates

Thomas O. Isaacson, PE & LS [Ret.]
Fred C. Arfman, PE
Åsa Nilsson-Weber, PE

I&A Project No. 2149

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APPENDIX A: Hydrology Calculations

Land Treatment Table
NOAA Atlas 14 Rainfall Data
AHYMO Summary

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APPENDIX C: Storm Drain Calculations

Storm Drain Calculations (Hydraflow Storm Sewers)

I. PROJECT INFORMATION

LEGAL DESCRIPTION:

Proposed: Santa Monica Estates, Unit 2
Existing: Tract 4-A-1, Santa Monica Place

TOTAL AREA:
4.6301 Acres

FLOOD PLAIN:

Zone X

This site lies outside the 100-year flood based on FIRM Map No. 35001C0137H
Map Revision date: August 16, 2012

ENGINEER:

Isaacson & Arfman, P.A.
128 Monroe Street NE
Albuquerque, NM 87108
(505) 268-8828
Attn: Åsa Nilsson-Weber

SURVEYOR:

Surv-Tek, Inc.
(505) 897-3366
Attn: Russ P. Hugg, NMPLS No. 9750

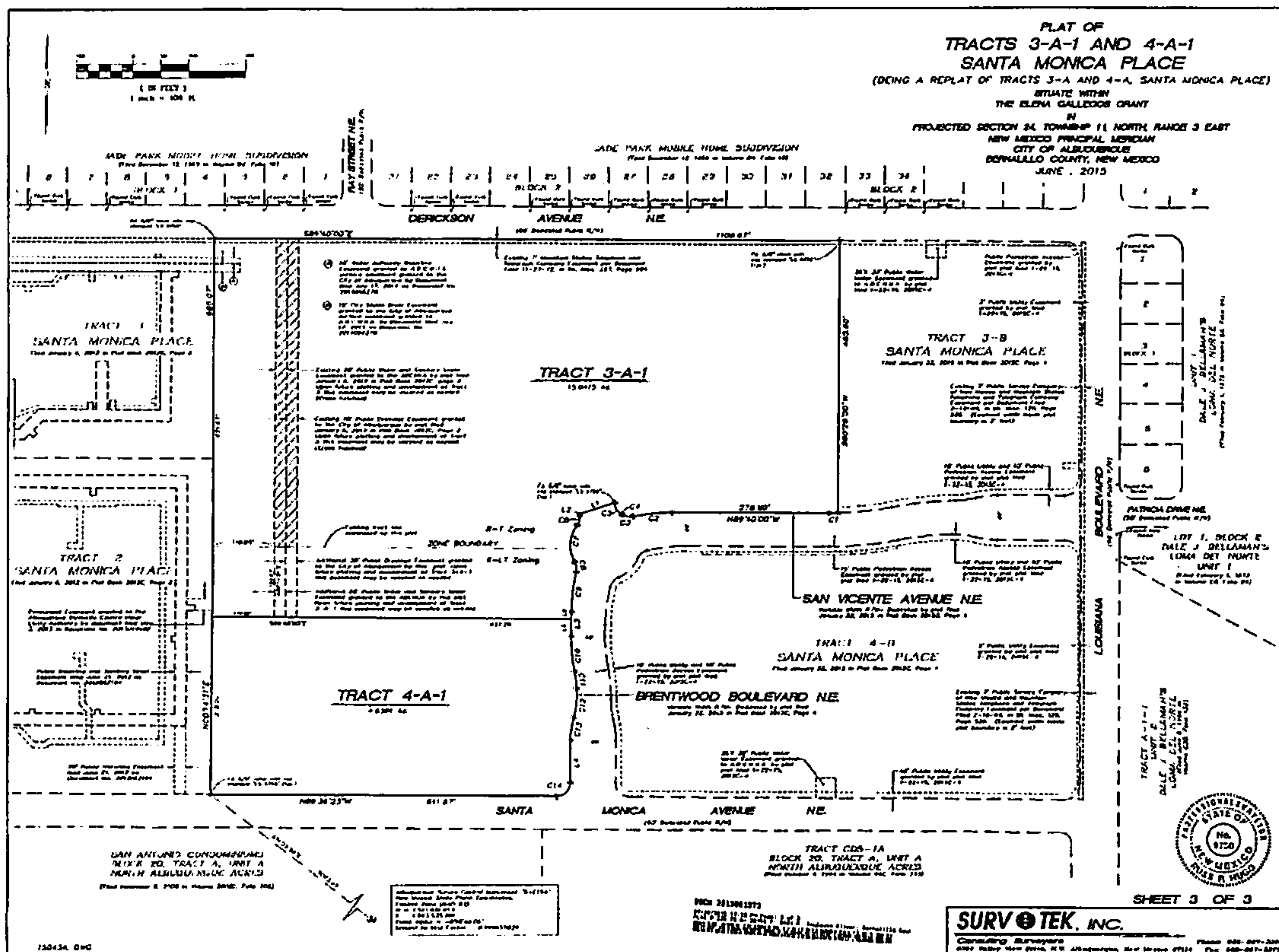
LAND OWNER:

Santa Monica Place Development, LLC
c/o Titan Development
6300 Riverside Plaza Lane NW - #200
Albuquerque, NM 87120-2617
(505) 998-0163
Attn: Kurt Browning / Brian Patterson

II. INTRODUCTION

This drainage report is for Tract 4-A-1, a proposed 24-lot residential development to be known as Santa Monica Estates and includes references to the *Master Drainage Report for Santa Monica Place* (MDR) by Isaacson & Arfman, dated October 9, 2014, and the *Drainage Report for Santa Monica Estates* (SME DR) by Isaacson & Arfman, dated October 5, 2015. The site is bound by Santa Monica Ave. NE to the south, by apartments to the west, by Brentwood Blvd to the east and by Santa Monica Estates, an 88-lot subdivision under construction, to the north. The site was previously developed as a mobile home park.

After the MDR was approved, a replat of Tracts 3-A and 4-A was filed in July 20, 2015, creating Tracts 3-A-1 and 4-A-1. The SME DR re-analyzed the allowable flows from Tract 4-A-1 based on the reduced tract size.



Plat of Tracts 3-A-1 and 4-A-1, Santa Monica Place

The purpose of this drainage report is to analyze discharge quantities and locations from Tract 4-A-1 and storm drain improvements required.

III. EXISTING CONDITIONS

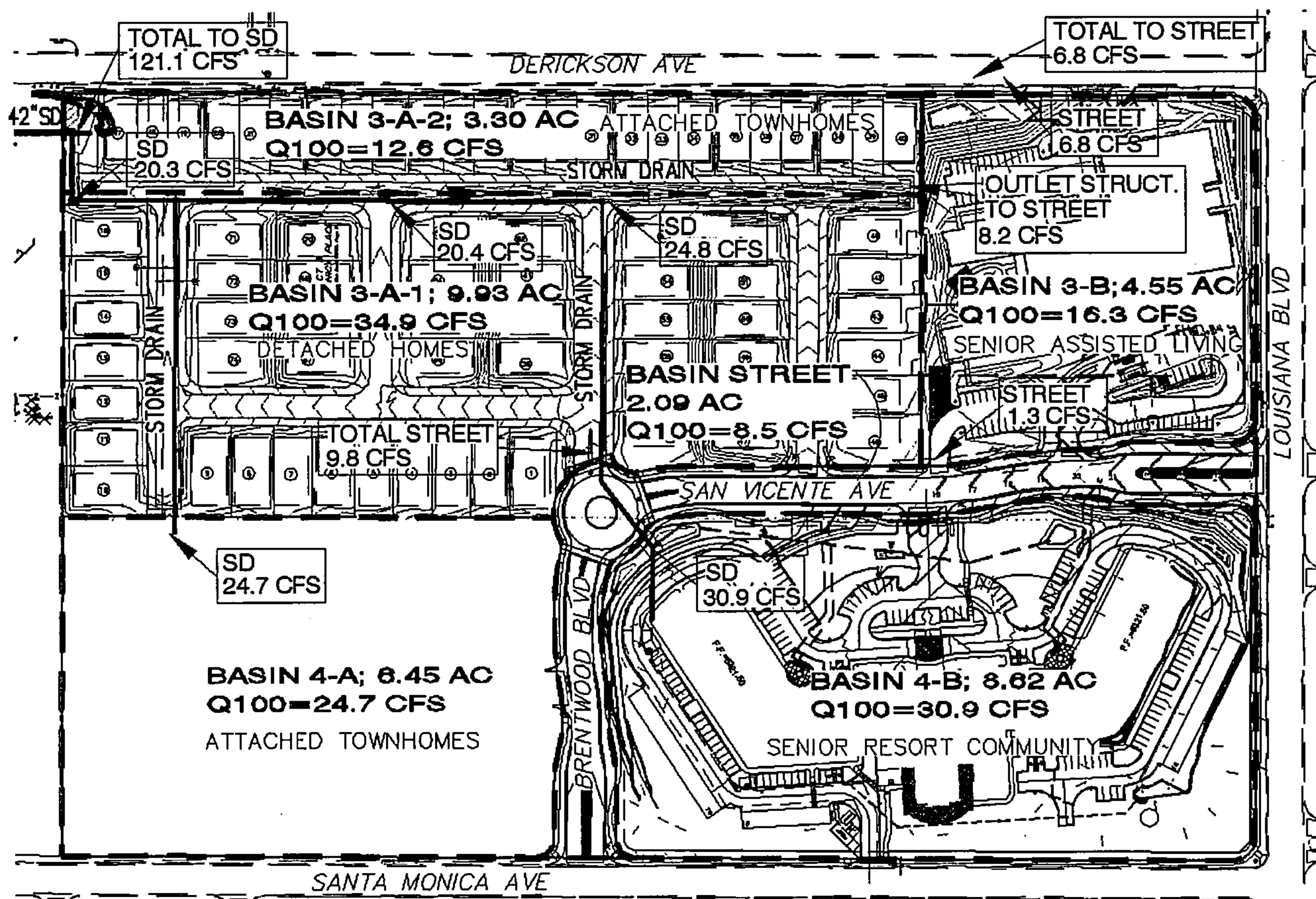
The site drains from the southeast to the northwest corner of Tract 3-A-1 (Santa Monica Estates). With the development of Santa Monica Estates (currently under construction), a storm drain system will be installed, including a 24-inch stub to Tract 4-A-1. The storm drain connects to the Derickson Ave. and San Pedro Blvd. storm drain system which discharges to the North Pino Arroyo approximately 650' north of the San Pedro Blvd. and Derickson Ave. intersection

The Tract 3-B and 4-B developments to the east and southeast will be connected to the proposed storm drain system for the Santa Monica Estates subdivision.

The San Vicente Ave. / Brentwood Blvd. improvements have been constructed, including paving, storm drain and utilities.

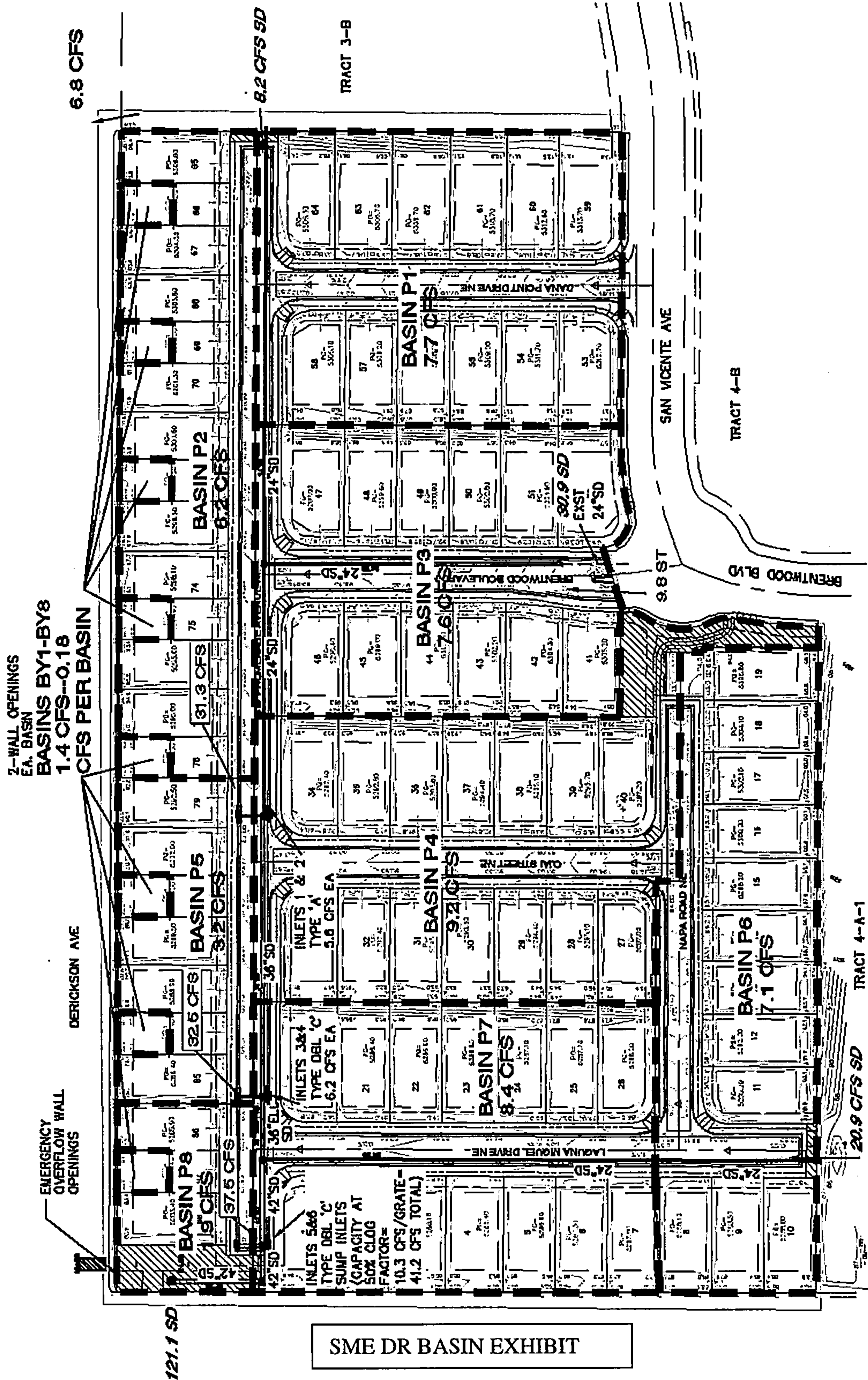
IV. BASIN EXHIBITS FROM THE MDR & SME DR

See below for the basin exhibit from the MDR dated October 9, 2014.



MDR BASIN EXHIBIT

See below for the basin exhibit from the SME DR dated October 5, 2015.



V. PROPOSED CONDITIONS

Santa Monica Estates, Unit 2 will be developed with 24 detached single-family homes.

The storm drain system for Santa Monica Estates, Unit 2, will be connected to the 24" storm drain stub that will be installed with the Santa Monica Estates project. A temporary standpipe installed with the Santa Monica Estates project shall be removed.

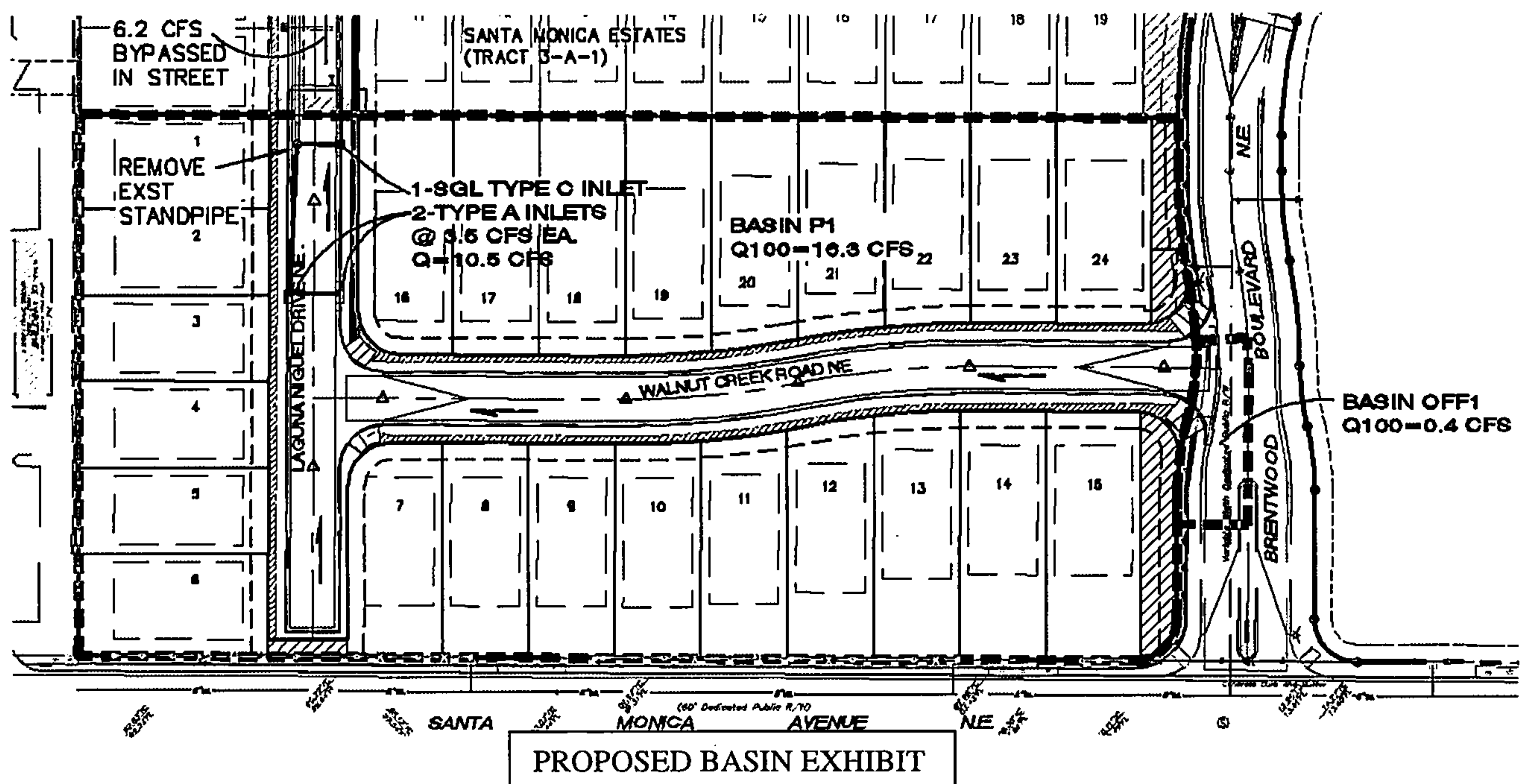
The MDR shows a total discharge to the storm drain at the northwest corner of 121.1 cfs, and the SME DR shows an allowable discharge of 20.9 from Santa Monica Estates, Unit 2.

The 100-yr, 6-hr flow rate for the site was calculated using AHYMO based on NOAA Atlas 14 rainfall data and assigned land treatments—see Appendix A. The onsite basin, Basin P1, generates 16.3 cfs, and an offsite basin, Basin OFF-1 from Brentwood Blvd. will discharge 0.4 cfs. The total discharge of 16.7 cfs is less than the allowable 20.9 cfs.

Flows will be collected in three on-grade curb inlets in Laguna Niguel Drive at the northwest end of the site. The on-grade inlet capacity was calculated from DPM Plate 22.3 D-5 based on street flow depth—see Appendix B for street capacity calculations. A total of 10.5 cfs will be captured in the inlets, and 6.2 cfs will be bypassed in Laguna Niguel Drive and be captured in the sump inlets at the west end of Promenade Ave. The two sump inlets have a full capacity of 82.4 cfs and 41.2 at 50% clogging. The total flow at the inlets including the 6.2 cfs bypassed in Laguna Niguel Dr will be 43.7 cfs—see Appendix B for street capacity calculations. Should one inlet clog 100%, the additional 2.5 cfs will be diverted to Derickson Ave. via an emergency overflow wall opening.

The area between the sidewalks and the curb and a 5-foot area in the front yards shall be depressed to allow for retention of the "first flush" storm (first .34 inches) as was done for the first phase.

See proposed basin exhibit below.



VI. SUMMARY

The following items shall be required for construction of Santa Monica Estates, Unit 2.

- Remove temporary stand pipe.
- Construct streets with curb & gutter.
- Grade first flush retention areas.
- Construct storm drain and inlets as shown on grading plan. Connect storm drain to 24-inch stub in Laguna Niguel Drive.

APPENDIX A

Hydrology Calculations

- **Land Treatment Table**
- **Noaa Atlas 14 Rainfall Data**
- **Ahymo Summary**

SANTA MONICA ESTATES UNIT 2
LAND TREATMENT TABLE

BASIN	DESCRIPTION	AREA	AREA	AREA	LAND TREATMENTS				Q100
					%				
ID		SF	AC	SQ MI	A	B	C	D	CFS
P1	Onsite Basin	201686	4.6301	0.007234	0	25	24	51	16.3
OFF1	Offsite Basin	3905	0.0896	0.000140	0	0	5	95	0.4
			4.7197						16.7

Calculations for Single Detached Homes

(Per the City of Albuquerque DPM Section 22.2, Table A-5)

Total Area

4.63

Acres

of Lots

24

lots

N =

5.18

D.U./Ac.

Percentage of Impervious Land (Type D)

%D = 7(N²+5N)^{1/2}

%D= 50.86

%

LAND TREATMENTS		
Type A=	0	%
Type B=	25	%
Type C=	24	%
Type D=	51	%
Σ=	100	%



NOAA Atlas 14, Volume 1, Version 5
Location name: Albuquerque, New Mexico, US*
Latitude: 35.1625°, Longitude: -106.5741°
Elevation: 5284 ft*
* source: Google Maps



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitania, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.171 (0.145-0.204)	0.221 (0.166-0.264)	0.298 (0.251-0.356)	0.357 (0.299-0.425)	0.438 (0.365-0.520)	0.502 (0.417-0.598)	0.570 (0.469-0.676)	0.641 (0.525-0.760)	0.738 (0.599-0.877)	0.815 (0.653-0.968)
10-min	0.260 (0.220-0.311)	0.337 (0.283-0.401)	0.454 (0.382-0.541)	0.544 (0.454-0.648)	0.666 (0.556-0.792)	0.764 (0.635-0.910)	0.868 (0.714-1.03)	0.976 (0.799-1.16)	1.12 (0.912-1.34)	1.24 (1.00-1.47)
15-min	0.322 (0.273-0.385)	0.418 (0.351-0.498)	0.562 (0.473-0.671)	0.674 (0.563-0.801)	0.826 (0.689-0.982)	0.947 (0.787-1.13)	1.08 (0.884-1.28)	1.21 (0.990-1.44)	1.39 (1.13-1.66)	1.54 (1.24-1.83)
30-min	0.434 (0.368-0.519)	0.562 (0.472-0.670)	0.757 (0.637-0.903)	0.907 (0.758-1.08)	1.11 (0.928-1.32)	1.28 (1.08-1.52)	1.45 (1.19-1.72)	1.63 (1.33-1.93)	1.88 (1.52-2.23)	2.07 (1.67-2.46)
60-min	0.537 (0.455-0.642)	0.696 (0.584-0.829)	0.937 (0.789-1.12)	1.12 (0.938-1.34)	1.38 (1.15-1.64)	1.58 (1.31-1.88)	1.79 (1.47-2.13)	2.02 (1.65-2.39)	2.32 (1.89-2.76)	2.56 (2.07-3.04)
2-hr	0.649 (0.534-0.812)	0.835 (0.686-1.04)	1.11 (0.906-1.38)	1.32 (1.08-1.64)	1.63 (1.32-2.01)	1.87 (1.51-2.31)	2.13 (1.71-2.63)	2.40 (1.92-2.95)	2.79 (2.20-3.43)	3.09 (2.42-3.81)
3-hr	0.695 (0.575-0.857)	0.885 (0.729-1.09)	1.16 (0.959-1.43)	1.38 (1.14-1.70)	1.69 (1.38-2.08)	1.94 (1.57-2.37)	2.20 (1.78-2.69)	2.48 (1.98-3.03)	2.87 (2.28-3.51)	3.19 (2.51-3.91)
6-hr	0.813 (0.676-0.994)	1.03 (0.855-1.26)	1.33 (1.11-1.62)	1.56 (1.30-1.90)	1.89 (1.56-2.29)	2.14 (1.76-2.60)	2.41 (1.97-2.92)	2.69 (2.18-3.26)	3.07 (2.48-3.72)	3.39 (2.71-4.10)
12-hr	0.897 (0.758-1.07)	1.13 (0.953-1.35)	1.44 (1.21-1.71)	1.68 (1.41-1.99)	2.01 (1.68-2.37)	2.26 (1.88-2.67)	2.53 (2.10-2.98)	2.80 (2.30-3.30)	3.17 (2.58-3.74)	3.47 (2.81-4.13)
24-hr	1.01 (0.864-1.19)	1.27 (1.08-1.48)	1.60 (1.36-1.87)	1.86 (1.59-2.17)	2.21 (1.88-2.59)	2.48 (2.10-2.90)	2.77 (2.33-3.23)	3.06 (2.56-3.57)	3.45 (2.87-4.03)	3.76 (3.11-4.41)
2-day	1.06 (0.905-1.23)	1.33 (1.14-1.54)	1.68 (1.44-1.95)	1.95 (1.67-2.26)	2.32 (1.97-2.69)	2.60 (2.20-3.03)	2.90 (2.44-3.37)	3.20 (2.69-3.73)	3.62 (3.02-4.22)	3.94 (3.27-4.61)
3-day	1.17 (1.04-1.31)	1.46 (1.30-1.64)	1.81 (1.61-2.04)	2.09 (1.85-2.35)	2.47 (2.17-2.77)	2.75 (2.42-3.09)	3.05 (2.67-3.42)	3.34 (2.92-3.76)	3.74 (3.25-4.24)	4.04 (3.50-4.64)
4-day	1.28 (1.17-1.40)	1.59 (1.45-1.74)	1.95 (1.78-2.13)	2.23 (2.04-2.43)	2.61 (2.38-2.85)	2.90 (2.64-3.16)	3.19 (2.89-3.47)	3.48 (3.15-3.79)	3.86 (3.48-4.26)	4.15 (3.72-4.66)
7-day	1.47 (1.34-1.59)	1.82 (1.67-1.97)	2.21 (2.03-2.40)	2.51 (2.31-2.73)	2.92 (2.67-3.15)	3.21 (2.94-3.47)	3.51 (3.21-3.80)	3.79 (3.46-4.10)	4.16 (3.79-4.51)	4.43 (4.02-4.80)
10-day	1.62 (1.49-1.78)	2.01 (1.85-2.18)	2.46 (2.27-2.66)	2.81 (2.59-3.04)	3.27 (3.01-3.53)	3.62 (3.32-3.90)	3.96 (3.63-4.28)	4.30 (3.93-4.65)	4.74 (4.32-5.13)	5.07 (4.60-5.48)
20-day	2.03 (1.87-2.21)	2.52 (2.32-2.75)	3.06 (2.81-3.32)	3.46 (3.18-3.76)	3.98 (3.65-4.31)	4.35 (3.99-4.71)	4.71 (4.31-5.09)	5.05 (4.61-5.45)	5.46 (4.98-5.91)	5.76 (5.24-6.23)
30-day	2.43 (2.23-2.63)	3.02 (2.77-3.26)	3.63 (3.33-3.92)	4.08 (3.74-4.40)	4.64 (4.25-4.99)	5.03 (4.61-5.41)	5.41 (4.95-5.82)	5.76 (5.27-6.19)	6.17 (5.64-6.64)	6.46 (5.89-6.95)
45-day	2.98 (2.75-3.22)	3.68 (3.40-3.98)	4.39 (4.05-4.73)	4.88 (4.50-5.26)	5.49 (5.08-5.91)	5.89 (5.44-6.34)	6.26 (5.78-6.73)	6.58 (6.07-7.07)	6.93 (6.41-7.45)	7.14 (6.61-7.68)
60-day	3.43 (3.17-3.71)	4.24 (3.92-4.58)	5.05 (4.67-5.45)	5.62 (5.20-6.05)	6.31 (5.85-6.81)	6.78 (6.28-7.31)	7.21 (6.68-7.77)	7.58 (7.03-8.18)	8.00 (7.43-8.64)	8.26 (7.69-8.91)
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.										

[Back to Top](#)

PF graphical

RUN DATE (MON/DAY/YR) =02/24/2016

USER NO.= AHYMO_Temp_User:20122010

```

*S*****
*S      SANTA MONICA ESTATES, UNIT 2
*S      24-LOT SUBDIVISION
*S      100-YEAR, 6-HOUR STORM
*S      2149DEV.DAT
*S
*S      BY ASA NILSSON WEBER
*S      ISAACSON & ARFMAN, P.A.
*S      FEBRUARY, 2016
*S*****
*S
*S      Rainfall distribution based on NOAA Atlas 14 maps
*S      Latitude=35.1625   Longitude=-106.5741
*S
*S*****
START                                     TIME=          0.00
RAINFALL  TYPE= 1 NOAA 14                RAIN6=        2.410
*S      BASIN P1 ONSITE BASIN
COMPUTE NM HYD      100.00   -      1      0.00723      16.32      0.599      1.55167      1.533      3.525 PER IMP= 51.00
*S      BASIN OFF1 OFFSITE BASIN (PORTION OF BRENTWOOD BLVD)
COMPUTE NM HYD      102.00   -      2      0.00014      0.39      0.016      2.09811      1.500      4.360 PER IMP= 95.00

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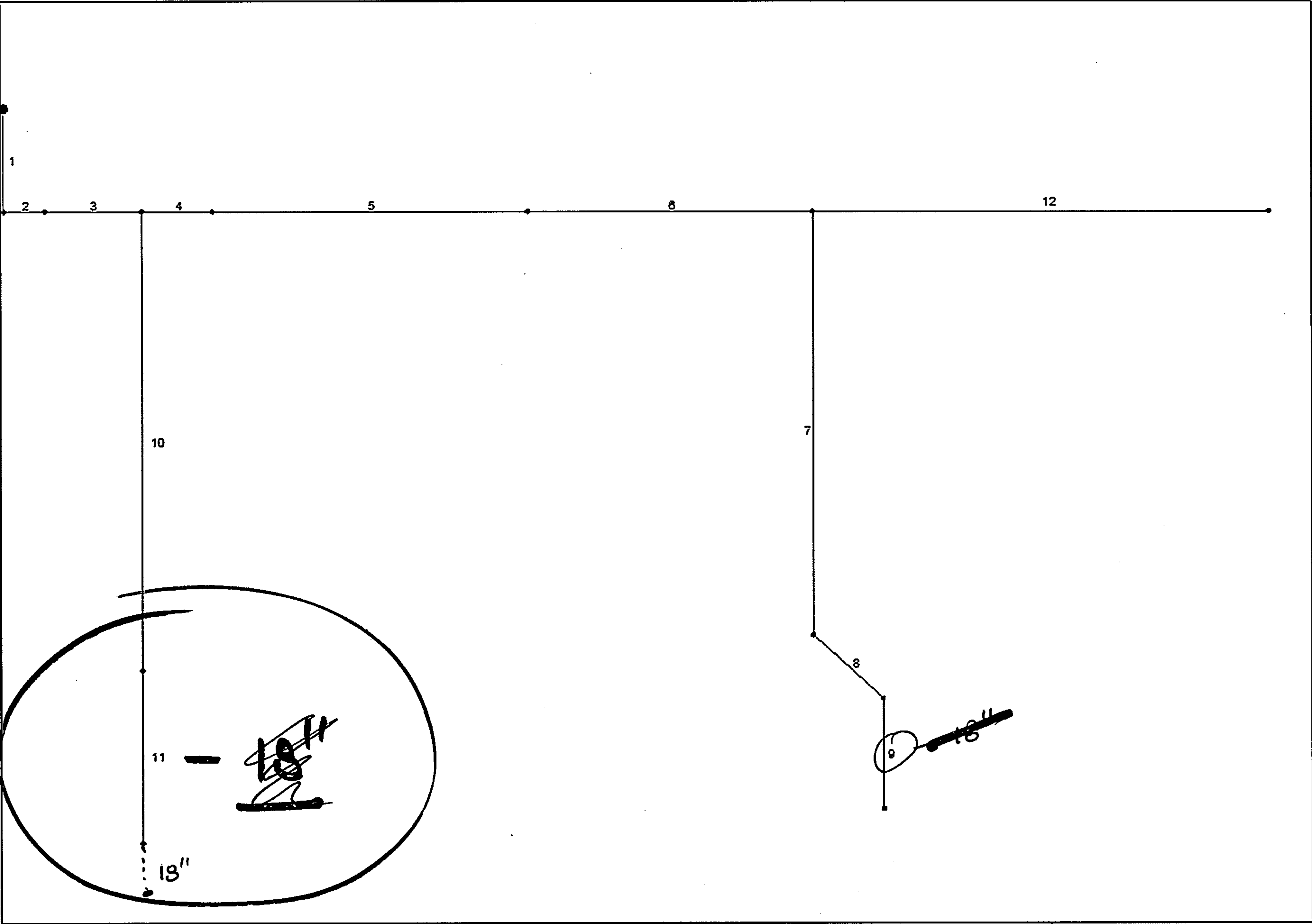
APPENDIX B
Street Capacity
Calculations

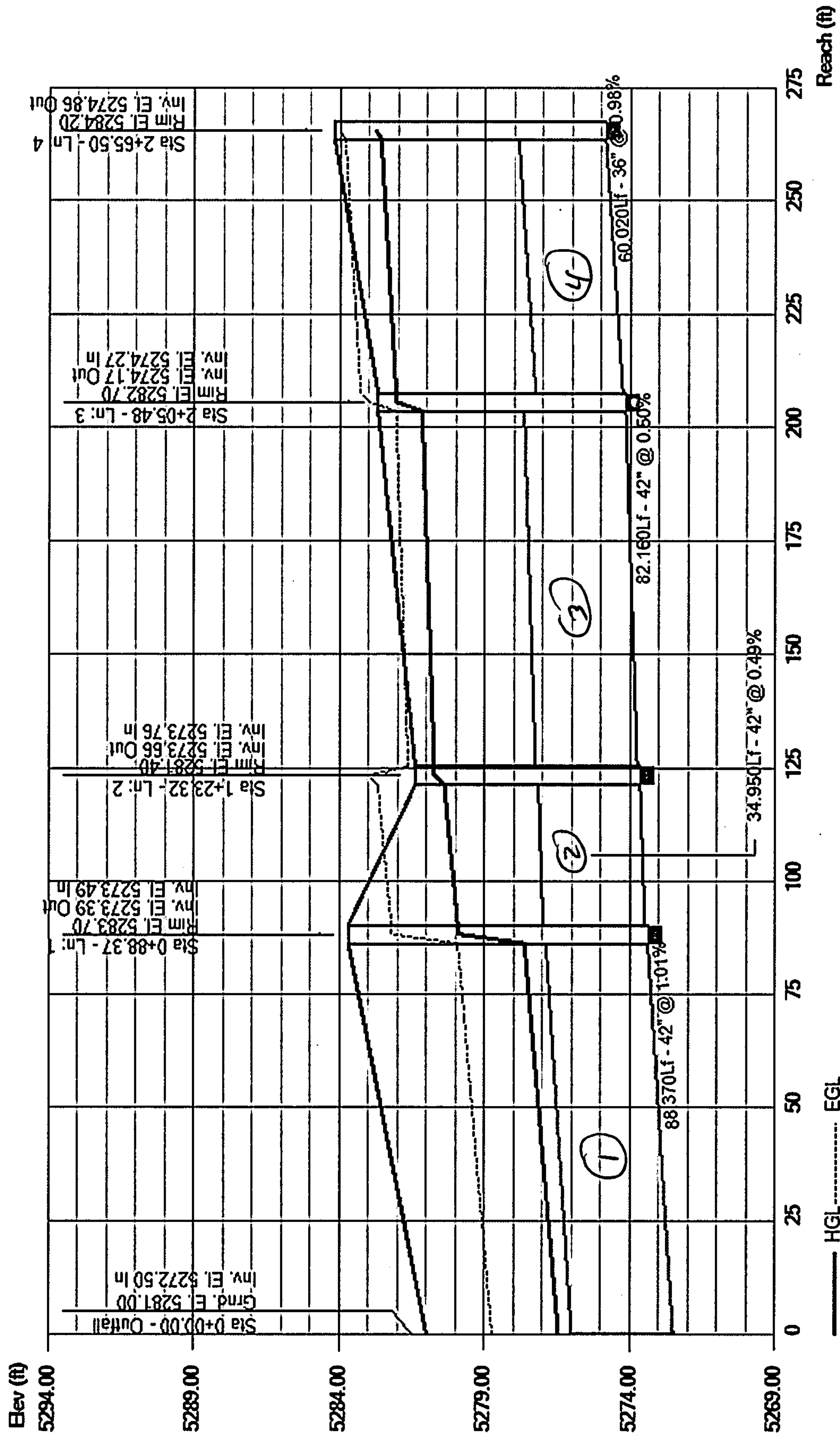
STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		PROMENADE AVE	
LOCATION:		SUMP INLETS	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.015	Road Width/2	15
Q_{100}	43.7	Curb Height	0.67
Right-of-way Width	51	1/2 Wetted Perimeter (P)	15.457
Road Width	30	1/2 Area(STD)	4.605
Curb Type	std	1/2 Area(MDN)	—
Road Cross Slope	0.02	1/2 Area(MTBL)	—
Manning's N	0.017	Discharge (1/2 Q)	21.903
Depth		0.457	
RESULTS			
<u>HGL</u>			
Q_{100} FLOW CAPACITY =		43.81 cfs	OK
at an HGL Depth=		0.46 ft	< Curb height = 0.67
			OK
<u>EGL</u>			
Velocity		4.76 fps	
$V^2/2g$		0.35 ft	
EGL Depth =		0.81 ft	< Right-of-way height = 0.87
			OK

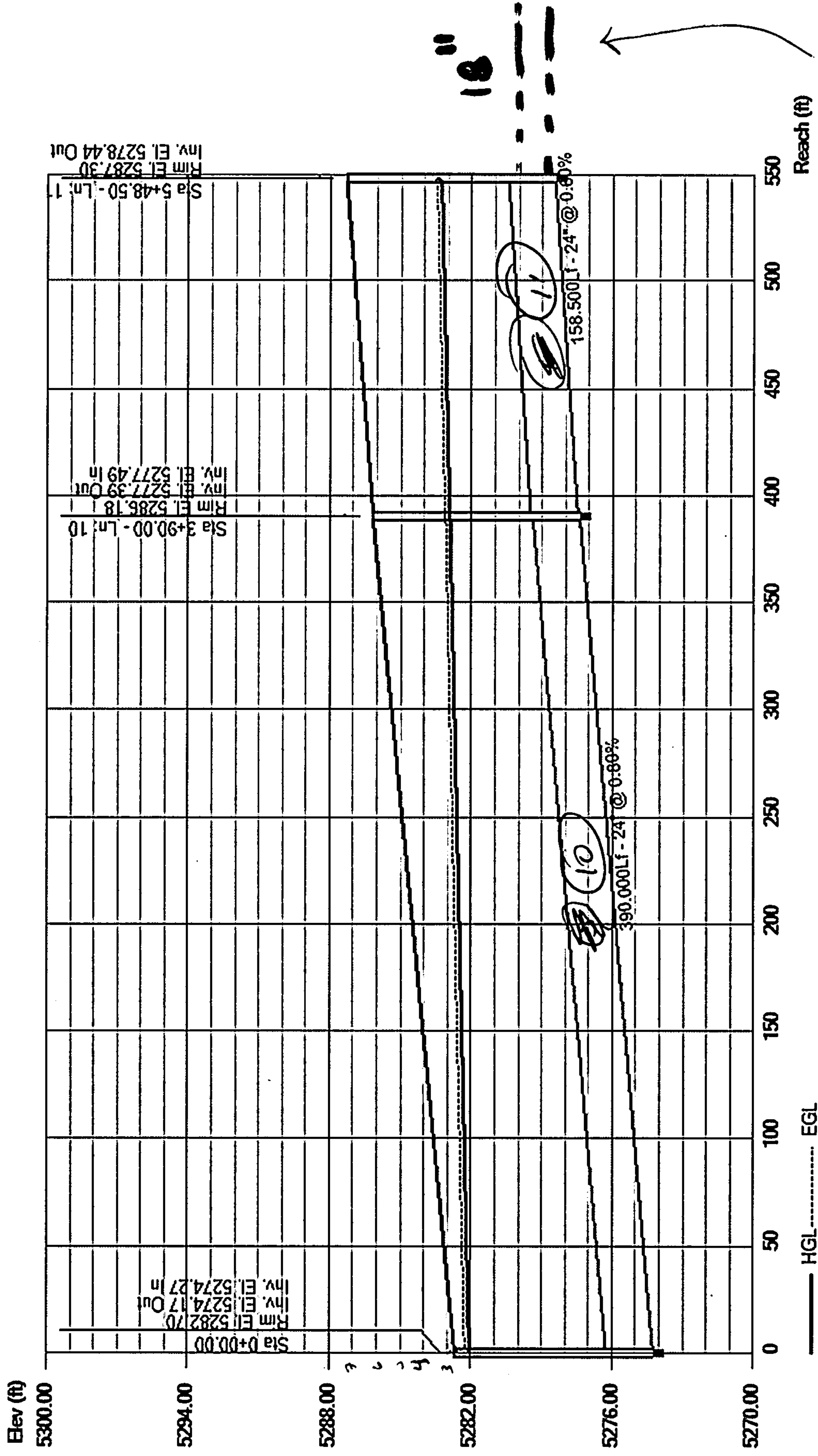
STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		LAGUNA NIGUEL DR	
LOCATION:		3 INLETS	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.015	Road Width/2	15
Q_{100}	16.7	Curb Height	0.67
Right-of-way Width	51	1/2 Wetted Perimeter (P)	15.322
Road Width	30	1/2 Area(STD)	2.580
Curb Type	std	1/2 Area(MDN)	—
Road Cross Slope	0.02	1/2 Area(MTBL)	—
Manning's N	0.017	Discharge (1/2 Q)	8.373
Depth		0.322	
RESULTS			
<u>HGL</u>			
Q_{100} FLOW CAPACITY =		16.75 cfs	OK
at an HGL Depth=		0.32 ft	< Curb height = 0.67
			OK
<u>EGL</u>			
Velocity		3.25 fps	
$V^2/2g$		0.16 ft	
EGL Depth =		0.49 ft	< Right-of-way height = 0.87
			OK

APPENDIX C
Storm Drain Calculations

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan







Make a comment that the 18" line should have been modeled instead of ~~the~~ treating it like a connector. But HGL and capacity doesn't appear to be an issue.

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data						
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-L Coe (K)
1	End	88.370	90.000	MH	0.00	0.00	0.00	0.0	5272.50	1.01	5273.39	42	Cir	0.013	1
2	1	34.950	-90.000	MH	43.70	0.00	0.00	0.0	5273.49	0.49	5273.66	42	Cir	0.013	0
3	2	82.160	0.000	MH	0.00	0.00	0.00	0.0	5273.76	0.50	5274.17	42	Cir	0.013	1
4	3	60.020	0.000	MH	12.40	0.00	0.00	0.0	5274.27	0.98	5274.86	36	Cir	0.013	0
5	4	268.600	0.000	MH	11.20	0.00	0.00	0.0	5274.96	1.55	5279.12	36	Cir	0.013	0
6	5	241.380	0.000	MH	0.00	0.00	0.00	0.0	5284.12	1.98	5288.90	24	Cir	0.013	1
7	6	360.000	90.004	MH	0.00	0.00	0.00	0.0	5289.00	2.22	5297.00	24	Cir	0.013	0
8	7	80.000	-47.891	MH	15.40	0.00	0.00	0.0	5299.10	2.50	5301.10	24	Cir	0.013	0
9	8	94.000	47.316	MH	15.50	0.00	0.00	0.0	5301.20	7.55	5308.30	18	Cir	0.013	1
10	3	390.000	90.000	MH	0.00	0.00	0.00	0.0	5274.27	0.80	5277.39	24	Cir	0.013	0
11	10	158.500	0.000	MH	10.50	0.00	0.00	0.0	5277.49	0.60	5278.44	24	Cir	0.013	1
12	6	387.460	-0.047	MH	8.20	0.00	0.00	0.0	5289.82	2.11	5298.00	24	Cir	0.013	1
Project File: 2149 SD.stm												Number of lines: 12			

Storm Sewer Summary Report

Page 1

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1		116.9	42	Cir	88.370	5272.50	5273.39	1.007	5276.45*	5277.64*	2.30	5279.94	End	Manhole
2		116.9	42	Cir	34.950	5273.49	5273.66	0.486	5279.94*	5280.41*	0.34	5280.76	1	Manhole
3		73.20	42	Cir	82.160	5273.76	5274.17	0.499	5280.76*	5281.19*	0.90	5282.09	2	Manhole
4		62.70	36	Cir	60.020	5274.27	5274.86	0.983	5282.09*	5282.62*	0.18	5282.81	3	Manhole
5		50.30	36	Cir	268.600	5274.96	5279.12	1.549	5282.81*	5284.34*	0.12	5284.45	4	Manhole
6		39.10	24	Cir	241.380	5284.12	5288.90	1.980	5286.12*	5293.34*	2.41	5295.75	5	Manhole
7		30.90	24	Cir	360.000	5289.00	5297.00	2.222	5295.75*	5302.47*	1.17	5303.64	6	Manhole
8		30.90	24	Cir	80.000	5299.10	5301.10	2.500	5303.64*	5305.13*	1.17	5306.31	7	Manhole
9		15.50	18	Cir	94.000	5301.20	5308.30	7.553	5306.31	5309.72	n/a	5309.72 j	8	Manhole
10		10.50	24	Cir	390.000	5274.27	5277.39	0.800	5282.09*	5282.93*	0.03	5282.96	3	Manhole
11		10.50	24	Cir	158.500	5277.49	5278.44	0.599	5282.96*	5283.30*	0.17	5283.47	10	Manhole
12		8.20	24	Cir	387.460	5289.82	5298.00	2.111	5295.75	5299.02	n/a	5299.02 j	6	Manhole
Project File: 2149 SD.stm									Number of lines: 12			Run Date: 2/24/2016		
NOTES: Return period = 2 Yrs. ; *Surcharged (HGL above crown). ; j- Line contains hyd. jump.														

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Gmd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	88.370	0.00	0.00	0.00	0.00	0.00	0.0	3.8	0.0	116.9	101.0	12.15	42	1.01	5272.50	5273.39	5276.45	5277.64	5281.00	5283.70	
2	1	34.950	0.00	0.00	0.00	0.00	0.00	0.0	3.7	0.0	116.9	70.15	12.15	42	0.49	5273.49	5273.66	5279.94	5280.41	5283.70	5281.40	
3	2	82.160	0.00	0.00	0.00	0.00	0.00	0.0	3.5	0.0	73.20	71.08	7.61	42	0.50	5273.76	5274.17	5280.76	5281.19	5281.40	5282.70	
4	3	60.020	0.00	0.00	0.00	0.00	0.00	0.0	3.4	0.0	62.70	66.12	8.87	36	0.98	5274.27	5274.86	5282.09	5282.62	5282.70	5284.20	
5	4	268.600	0.00	0.00	0.00	0.00	0.00	0.0	2.8	0.0	50.30	83.00	7.12	36	1.55	5274.96	5279.12	5282.81	5284.34	5284.20	5290.26	
6	5	241.380	0.00	0.00	0.00	0.00	0.00	0.0	2.5	0.0	39.10	31.83	12.45	24	1.98	5284.12	5288.90	5286.12	5293.34	5290.26	5298.70	
7	6	360.000	0.00	0.00	0.00	0.00	0.00	0.0	0.3	0.0	30.90	33.72	9.84	24	2.22	5289.00	5297.00	5295.75	5302.47	5298.70	5304.00	
8	7	80.000	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	30.90	35.76	9.84	24	2.50	5299.10	5301.10	5303.64	5305.13	5304.00	5307.20	
9	8	94.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	15.50	28.86	8.87	18	7.55	5301.20	5308.30	5306.31	5309.72	5307.20	5319.00	
10	3	390.000	0.00	0.00	0.00	0.00	0.00	0.0	0.8	0.0	10.50	20.23	3.34	24	0.80	5274.27	5277.39	5282.09	5282.93	5282.70	5286.18	
11	10	158.500	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	10.50	17.51	3.34	24	0.60	5277.49	5278.44	5282.96	5283.30	5286.18	5287.30	
12	6	387.460	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	8.20	32.86	3.85	24	2.11	5289.82	5298.00	5295.75	5299.02	5298.70	5304.35	
Project File: 2149 SD.stm																Number of lines: 12				Run Date: 2/24/2016		
NOTES: Intensity = 69.87 / (Inlet time + 13.10) ^ 0.87; Return period = Yrs. 2 ; c = cir e = ellip b = box																						

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services



February ²⁴19, 2016

Asa M. Nilson-Webber, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street N.E.
Albuquerque, NM 87108

Richard J. Berry, Mayor

RE: **Santa Monica Estates, Unit 2 (File: D18D054F)**
Rough Grading Plan
Engineer's Stamp Date 2-16-2016

Tract 4-A-1

Dear Mrs. Weber:

Based upon the information provided in your submittal received 2-16-16, the above referenced plan is approved for ESC Permit (Grading Permit). However, bear in mind that the Rough Grading Plan is based on a preliminary grading plan for a subdivision that has not been approved by the DRB nor by Hydrology. As such, any grading is at the owner's risk, and there may be differences in the final approved grading plan.

PO Box 1293 If you have any questions, you can contact me at 924-3695.

Albuquerque

New Mexico 87103

www.cabq.gov

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf recipient



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Santa Monica Estates, Unit 2 Building Permit #: _____ City Drainage #: D180054F

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

Legal Description: Tract 4-A-1, Santa Monica Place

City Address: _____

Engineering Firm: Isaacson & Arfman, P.A. Contact: Asa Nilsson-Weber

Address: 128 Monroe Street NE - Albuquerque, NM 87108

Phone#: (505) 268-8828 Fax#: _____ E-mail: asaw@iacivil.com

Owner: Santa Monica Place Development, LLC Contact: Kurt Browning

Address: c/o Titan Development -- 6300 Riverside Plaza Lane NW, Suite 200 - Albuquerque, NM 87120

Phone#: (505) 998-0163 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

☐ ENGINEER ARCHITECT CERTIFICATION

☐ CONCEPTUAL G & D PLAN

☒ GRADING PLAN ROUGH

☐ DRAINAGE MASTER PLAN

☐ DRAINAGE REPORT

☐ CLOMR/LOMR

☐ TRAFFIC CIRCULATION LAYOUT (TCL)

☐ TRAFFIC IMPACT STUDY (TIS)

☐ EROSION & SEDIMENT CONTROL PLAN (ESC)

☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: February 16, 2016 By: Asa Nilsson-Weber

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY

- ☐ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
☐ FOUNDATION PERMIT APPROVAL
☐ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☐ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR

- ☐ PRE-DESIGN MEETING
☒ OTHER (SPECIFY) ROUGH GRADING PERMIT

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____

48
24
720