CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

January 31, 2019

Mike Balaskovits, PE
Bohannan Huston, Inc.
7500 Jefferson St NE
Albuquerque, NM 87109

RE: Ascension Subdivision
Drainage Report and Grading Plan
Engineer's Stamp Date: 01/21/19
Hydrology File: B17D006

Dear Mr. Balaskovits:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your resubmittal received 01/22/2019, the Drainage Report and Grading Plan is approved for action by the DRB for Preliminary Plat and approved for Grading Permit and Work Order.

As a reminder, prior to obtaining Work Order approval, please pay the Payment in Lieu of $25,825.64. The Owner needs to bring three copies of the previously provided Treasury Form to the Building Permits and pay the fee. Then provide Hydrology with one copy showing the receipt

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Curtis Cherne, PE, ccherne@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Acension Subdivision Building Permit #: _____ Hydrology File #: _____

DRB#: 1010693 ; 17DRB-70297 EPC#: 15EPC-40070 Work Order#: _____

Legal Description: Tract 3B-3 pf Tract 3B-1, 3B-2, 3B-3 a subdivision of Tract 3B of Lands of IHS Acquisition #120 Inc.

City Address: Horizon Blvd NW

Applicant: Gamma Development, LLC Contact: CK Scott

Address: 9788 Coors Blvd Bldg C Suite 400, Albuquerque, NM 87114

Phone#: 505-350-7534 Fax#: _____ E-mail: ck@abrazohomes.com

Other Contact: Bohannan Huston Inc. Contact: Mike Balaskovits

Address: 7500 Jefferson St NE, Albuquerque, NM 87109

Phone#: 505-823-1000 Fax#: _____ E-mail: mbalaskovits@bhinc.com

TYPE OF DEVELOPMENT: ☑ PLAT ☐ RESIDENCE ☐ DRB SITE ☐ ADMIN SITE

Check all that Apply:

DEPARTMENT:

☑ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION

TYPE OF SUBMITTAL:

☐ ENGINEER/ARCHITECT CERTIFICATION
☐ PAD CERTIFICATION
☐ CONCEPTUAL G & D PLAN
☑ GRADING PLAN
☑ DRAINAGE REPORT
☐ DRAINAGE MASTER PLAN
☐ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
☐ ELEVATION CERTIFICATE
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ STREET LIGHT LAYOUT
☐ OTHER (SPECIFY) _____
☐ PRE-DESIGN MEETING?

IS THIS A RESUBMITTAL?: ☑ Yes ☐ No

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
☐ FLOODPLAIN DEVELOPMENT PERMIT
☐ OTHER (SPECIFY) _____

DATE SUBMITTED: 01-22-2019 By: Mike Balaskovits

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

Bohannan Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

January 22, 2019

Renee C. Brissette
Senior Engineer, Hydrology
Planning Department

Re: Ascension Subdivision Drainage Report and Grading Plan (Hydrology File: B17D006)

Dear Renee,

Enclosed are the responses to the comments provided on January 4, 2019. Responses are listed in red below.

1. Since the site drains into the North Diversion Channel, approval by AMAFCA will be need prior to Hydrology approval. Please contact Nicole Friedt, PE at (505) 884-2215 or nfriedt@amafca.org . Please provide an email showing the approval. AMAFCA has been contacted.

2. Drainage Report – Exhibit D. Please see image below. Basin Dev-1 should be area highlighted in blue. There is a waterblock and this area drains to the Proposed Inlet IN1. This area needs to be revised and the cfs added to the Inlet IN1. This may require a bigger inlet type. Also, Basin Dev-2 will be remainder of the development since this all drains to Proposed Inlet IN2. Both the Developed Basin Summary Table and the Inlet Table needs to adjusted. Corrected.

3. Drainage Report – Exhibit D. Please provide the HGL & EGL information to the Storm Drain Pipe Table. HGL and EGL are provided on Appendix B.

4. Drainage Report - Exhibit D. Per the DPM since there is no emergency spillway, both Inlet IN2 and the outlet pipe SDP9 need to be designed for twice the 100 yr. – 6-hour storm event. An additional inlet at Dawn Patron Trail has been added. The inlet at the end of the stub street now has the capacity to accommodate the two times one-hundred-year storm event. Per COA DPM, the outlet pipe is only required to be designed for the 100 yr – 6 hr storm event.

5. Drainage Report. Per Item #2 above, please correct Table 1 on Page 2, the Onsite Flows information on Page 3, and Table 2 on Page 4. Corrected.

6. Drainage Report – Appendix B. Dawn Patrol is now 47' R.O.W. with 28' F-F. Please rerun the street calculations. This section has been added to Appendix B.

7. Drainage Report – Appendix B. Per Item #2 above, please correct the inlet calculations for IN1. Corrected.

8. Drainage Report – Appendix B. Per Item #4 above, please correct the inlet calculations for IN2. Corrected.

9. Drainage Report – Appendix B. Please provide the HGL & EGL calculations for the storm drain pipes. This has been added.

10. Drainage Report – Appendix E (Grading Plan). Please add the adjacent property line that separates the Tract C (North Diversion Channel) and Tract 3A. Provided.

11. Drainage Report – Appendix E (Grading Plan). Please add a note to the Grading Plan that states that the Owner has elected not to provide the required Stormwater Quality volume of 4,304.27 cubic feet but instead will pay the Payment in Lieu of $25,825.64. Added.

12. Drainage Report – Exhibit F (Grading Plan Details). Please change the "Typical Cross Section A-A" to "Typical Retaining Wall Cross Section A-A". Also, please add the typical dimension from the edge of the retaining wall to the property line. Corrected.

13. As a remainder, prior to obtaining Work Order approval, please pay the Payment in Lieu of $25,825.64. The Owner needs to bring three copies of the previously provided Treasury Form to the Building Permits and pay the fee. Then provide Hydrology with one copy showing the receipt. Noted.

14. As a remainder, if the project total area of disturbance (including staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Curtis Cherne, PE, ccherne@cabq.gov, 924-3420) 14 days prior to any earth disturbance. Noted.

Sincerely,

Michael J. Balaskovits, PE
Vice President
Community Development & Planning

MJB/jcm
Enclosures

cc: CK Scott, Gamma Development, LLC
Brian McCarthy, Gamma Development, LLC

DRAINAGE REPORT FOR ASCENSION SUBDIVISION

JANUARY 2019

Prepared for:

Gamma Development, LLC

9798 Coors Blvd NW, Building C, Suite 400

Albuquerque, NM 87114

Prepared by:

Bohannan Huston

Engineering

Spatial Data

Advanced Technologies

DRAINAGE REPORT
FOR
ASCENSION
SUBDIVISION

JANUARY 21, 2019

Prepared for:

GAMMA DEVELOPMENT, LLC
9798 COORS BLVD NW, BUILDING C, SUITE 400
ALBUQUERQUE, NM 87114

Prepared by:

BOHANNAN HUSTON, INC.
COURTYARD I
7500 JEFFERSON STREET NE
ALBUQUERQUE, NM 87109

PREPARED BY:

01/21/19

Abraham Mena Ortiz, EI Date

UNDER THE SUPERVISION OF:

Michael Balaskovits, PE Date

MICHAEL BALASKOVITS
NEW MEXICO
18187
1-21-19
PROFESSIONAL ENGINEER

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EXHIBIT B - ORIGINAL BASIN MAP FROM DMP
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EXHIBIT D - ASCENSION DRAINAGE MANAGEMENT PLAN
EXHIBIT E - GRADING PLAN
EXHIBIT F - GRADING PLAN DETAILS

I. PURPOSE

The purpose of this report is to establish a drainage management plan for the Ascension Subdivision. The proposed development consists of 34 single family detached residential lots on approximately 7.75 acres. The project is located south of Balloon Fiesta Park, north of Alameda Boulevard and west of Balloon Museum Drive, in northwest Albuquerque. The site has free discharge of developed flows per the Fiesta Park Care Center Drainage Master Plan. The west half of the site surface drains to an existing concrete rundown, northwest of the property, along the North Diversion Channel and the east half drains east to Balloon Fiesta Park and ultimately discharging to the beforementioned concrete rundown. This report is submitted in support of grading plan, preliminary plat, and site plan for building permit approval by the DRB.

II. CONCEPTS AND METHODOLOGIES

Drainage conditions were analyzed utilizing the City of Albuquerque DPM Procedure for 40 Acre and Smaller Watersheds. The site is within zone 2 per Table A-1, Section 22-7 of the DPM. The 100-year, 6-hour storm event was utilized to determine peak flow rates for design of the storm drainage improvements within the project. The results are included in **APPENDIX A.** Street capacity and storm drain inlet calculations supporting this study are in **Appendix B**.

The following document was referenced in the preparation of this report:

- *Fiesta Park Care Center Drainage Master Plan (*FPCCDMP*)*, prepared by Huitt-Zollars Inc., dated July 2011.

III. SITE LOCATION AND CHARACTERISTICS

The site is bounded by the North Diversion Channel right-of-way to the west, the Balloon Fiesta paved parking lot to the north and east, and a fully developed commercial site to the south. Ascension Subdivision is currently partially developed with an existing building and paved parking areas. Grades range from one percent to ten percent. There is a ridge approximately located at the center of the property running northwest to southeast. Access to Ascension Subdivision will be from Horizon Boulevard.

IV. DEVELOPED HYDRAULIC AND HYDROLOGIC CONDITIONS

Ascension Subdivision is a proposed single-family residential development with 34 lots on 7.75 acres. Proposed street and lot configurations are shown on the **Exhibit A – Preliminary Plat.** The FPCCDMP allows for free discharge of developed flows from the site to the North Diversion Channel through an existing concrete rundown northwest of the site.

The percent impervious land treatment for the proposed conditions is determined from Table A-5 of the DPM, Section 22.2. Ascension is within FPCCDMP Basin 9, and a portion of Basins 6 and 8 (see **Exhibit B**). **Table 1** compares the land treatments from the FPCCDMP for Basins 6, 8 and 9 and for the proposed Ascension subdivision. The land treatment values for the Ascension Subdivision compare favorably to the FPCCDMP.

Table 1– Ascension Land Treatments Proposed Conditions

Basin ID	Report	LAND TREATMENT			
		A	B	C	D
Basin 6	FPCCDMP	10.0%	15.0%	25.0%	50.0%
Basin 8	FPCCDMP	10.0%	15.0%	25.0%	50.0%
Basin 9	FPCCDMP	10.0%	15.0%	25.0%	50.0%
DEV-1	Ascension DMP	0.0%	27.5%	27.5%	45.0%
DEV-2	Ascension DMP	0.0%	27.5%	27.5%	45.0%
OFFSITE 1	Ascension DMP	0.0%	0.0%	10.0%	90.0%

A. OFFSITE FLOWS

The proposed Ascension Subdivision is higher in elevation than the surrounding property, therefore, no offsite flows discharge to the property. This drainage report amends FPCCDMP Basins 6, 8 and 9 to reflect the current drainage patterns and the proposed development. As shown in **Exhibit B**, Basins 6 discharges through the Ascension site to FPCCDMP Basin 10, ultimately discharging to the North Diversion Channel. However, the offsite portion of FPCCDMP Basin 6 (Tract 3B-2-A), south of Ascension, currently drains east to Balloon Fiesta Park. A swale along the west edge of the Balloon Fiesta property conveys the flow from this portion of Basin 6 to Basin 10. This drainage pattern for the southern portion of Basin 6 will not change with the Ascension development.

As shown **Exhibit B**, Basin 8 currently discharges west to a proposed storm drain that conveys the Basin 8 flows to Basin 10, ultimately discharging to the North Diversion Channel. The offsite portion of Basin 8 (Tract 3B-2-B), south of Ascension, does not

currently drain north through Ascension. The proposed Ascension development will extend a storm drain to the southern portion of Basin 8 where a Type A inlet will be constructed in the proposed Ascension entrance road to collect the Basin 8 flow. These flows will be conveyed through the proposed Ascension Subdivision via storm drain, discharging to the North Diversion Channel.

Exhibit C shows revised Basins 6 and 8 resulting from the current drainage pattern and the proposed development. Amended Basin 9 represents the proposed Ascension Subdivision. The Amended FPCCDMP Basin Map shows the 100-year runoff and volume for Basins 6, 8 and 9 as originally presented. The revised runoff per acre for the remainder of Basins 6 and 8 varies slightly from the original FPCCDMP.

B. ONSITE FLOWS

Developed flows from Ascension will be conveyed to an existing concrete rundown north west of the property along the North Diversion Channel utilizing the proposed street network and storm drain system. See **Exhibit D** for basin locations, **Exhibit E**, and **Exhibit F**, for grading plan.

The site has been divided into two basins in the developed condition. Basin DEV-1, includes Gondola Way from the entrance to a high point midway between Balloon Glow Lane and Dawn Patrol Trail and Balloon Glow Lane. Balloon Glow Lane has capacity to convey the flow from DEV-1 (12.4 cfs) to Dawn Patrol Trail, where the flow combines with basin DEV-2. Basin DEV-2 includes Gondola Way east of the high point and Dawn Patrol Trail. Dawn Patrol Trail has capacity to convey the flow from DEV-2 (14.5 cfs). Dawn Patrol Trail has the capacity to convey the combined flow from basins DEV-1 and DEV-2 ($Q_{100} =$ 26.9 cfs). There is a single Type A inlet on grade at the intersection of Balloon Glow Lane and Dawn Patrol Trail that captures 7.3 cfs and bypasses 19.6 cfs to a double Type A inlet in sump condition at the end of Dawn Patrol Trail. This inlet provides a capacity greater than two times the one-hundred-year flow per COA DPM.

The runoff from the Basin OFFSITE 1 (see **Exhibit C**) , $Q_{100} =$ 13.8 cfs, will be intercepted by a double Type A inlet in sump condition south of the Ascension property. The storm drain inlets at the low points are in a sump condition. The inlet on the entrance road has a capacity that is greater than two times the one-hundred-year flow. See **Appendix B** for the road and inlet hydraulic analyses.

A summary of the developed onsite flows is presented in the table below.

Table 2 – Ascension Proposed Conditions

100 Year – 6 Hour Storm						
Basin ID	**Area (AC.)**	**LAND TREATMENT**				**Q(100) (CFS)**
		A	**B**	**C**	**D**	
DEV-1	3.44	0.0%	27.5%	27.5%	45.0%	**12.4**
DEV-2	4.02	0.0%	27.5%	27.5%	45.0%	**14.5**
Total	7.46					**26.9**

The runoff from the combined basins in the FPCCDMP is 3.62 cfs/acre. The runoff from the proposed Ascension subdivision is 3.60 cfs. This results in a slight decrease in the runoff from Ascension compared to the FPCCDMP.

C. FIRST FLUSH REQUIREMENTS

This project is required to meet the first flush requirements of the new City Drainage Ordinance. The first flush requirement will be met via a cash in-lieu payment and is calculated as 0.34 in. (0.44 in. - 0.1 in. initial abstraction) times the subdivision acreage times the percent impervious area times $6 per cubic foot of storage. The calculation is as follows: (0.34 in) / (12 in/ft) x 337590 sf x .45 x $6/cf = $25,825.64. The existing AMAFCA facilities provide a water treatment facility downstream of this site that treat the developed flows with the North Diversion Channel.

V. CONCLUSION

This report provides a detailed study of the developed runoff and street capacities for the proposed Ascension Subdivision. Included is the preliminary plat, existing and proposed conditions basin map, grading plan, and all necessary hydrologic and hydraulic analyses. The proposed drainage plan for Ascension can be safely conveyed by the existing and proposed improvements in this drainage plan. This drainage plan maintains the overall drainage pattern of the area, and allows for the safe management of storm runoff in the fully developed condition.

APPENDICES

APPENDIX A: **DEVELOPED AND EXISTING CONDITIONS HYDROLOGIC ANALYSIS**

APPENDIX B: **STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS**

APPENDIX A -

DEVELOPED AND EXISTING CONDITIONS

HYDROLOGIC ANALYSIS

AMENDED EXISTING BASIN SUMMARY FROM FPCCDMP								
BASIN	**AREA**		**% LAND TREATMENT**				**DISCHARGE (CFS)**	**VOLUME (AC-FT)**
I.D.	**(AC)**		**A**	**B**	**C**	**D**	**100YR**	
9	7.75		10.00%	15.00%	25.00%	50.00%	28.1	0.89
6	5.35		10.00%	15.00%	25.00%	50.00%	19.4	0.61
8*	2.77		10.00%	15.00%	25.00%	50.00%	10.1	0.32
TOTAL	**15.87**						**57.59**	**1.82**

*Basin 8 is assumed to deviate from original plan and be considered commercial development with land treatments 90% D

DEVELOPED BASIN SUMMARY								
BASIN	**AREA**		**% LAND TREATMENT**				**DISCHARGE (CFS)**	**VOLUME (AC-FT)**
I.D.	**(AC)**		**A**	**B**	**C**	**D**	**100YR**	
DEV-1	3.44		0.00%	27.50%	27.50%	45.00%	12.4	0.42
DEV-2	4.02		0.00%	27.50%	27.50%	45.00%	14.5	0.50
OFFSITE 1	3.05		0.00%	0.00%	10.00%	90.00%	13.9	0.48
TOTAL	**10.51**						**40.8**	**1.4**

APPENDIX B -

STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

47' ROW - 28 ' F-F Roll Curb

MANNING'S N = 0.017 SLOPE = 0.006

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.5	4.0	23.5	0.4	7.0	47.0	0.5
2.0	9.4	0.3	5.0	37.5	0.0			
3.0	9.5	0.0	6.0	37.6	0.3			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.010	0.010	0.004	0.001	0.788	0.195	0.773	0.011
0.020	0.020	0.015	0.005	1.577	0.310	1.546	0.021
0.030	0.030	0.035	0.014	2.365	0.407	2.320	0.033
0.040	0.040	0.062	0.030	3.153	0.492	3.093	0.044
0.050	0.050	0.097	0.055	3.941	0.571	3.866	0.055
0.060	0.060	0.139	0.090	4.730	0.645	4.639	0.066
0.070	0.070	0.189	0.135	5.518	0.715	5.412	0.078
0.080	0.080	0.247	0.193	6.306	0.782	6.185	0.090
0.090	0.090	0.313	0.265	7.095	0.846	6.959	0.101
0.100	0.100	0.387	0.351	7.883	0.907	7.732	0.113
0.110	0.110	0.468	0.452	8.671	0.967	8.505	0.125
0.120	0.120	0.557	0.570	9.459	1.024	9.278	0.136
0.130	0.130	0.653	0.706	10.248	1.081	10.051	0.148
0.140	0.140	0.758	0.860	11.036	1.135	10.825	0.160
0.150	0.150	0.870	1.034	11.824	1.189	11.598	0.172
0.160	0.160	0.990	1.228	12.613	1.241	12.371	0.184
0.170	0.170	1.117	1.444	13.401	1.292	13.144	0.196
0.180	0.180	1.253	1.681	14.189	1.342	13.917	0.208
0.190	0.190	1.396	1.942	14.977	1.392	14.690	0.220
0.200	0.200	1.546	2.227	15.766	1.440	15.464	0.232
0.210	0.210	1.705	2.536	16.554	1.488	16.237	0.244
0.220	0.220	1.871	2.871	17.342	1.535	17.010	0.257
0.230	0.230	2.045	3.233	18.130	1.581	17.783	0.269
0.240	0.240	2.227	3.621	18.919	1.626	18.556	0.281
0.250	0.250	2.416	4.038	19.707	1.671	19.330	0.293
0.260	0.260	2.613	4.483	20.495	1.715	20.103	0.306
0.270	0.270	2.818	4.957	21.284	1.759	20.876	0.318
0.280	0.280	3.031	5.462	22.072	1.802	21.649	0.331
0.290	0.290	3.251	5.998	22.860	1.845	22.422	0.343
0.300	0.300	3.479	6.566	23.648	1.887	23.196	0.355
0.310	0.310	3.715	7.165	24.437	1.929	23.969	0.368
0.320	0.320	3.959	7.799	25.225	1.970	24.742	0.380
0.330	0.330	4.210	8.465	26.013	2.011	25.515	0.393
0.340	0.340	4.474	8.967	27.781	2.004	27.282	0.402
0.350	0.350	4.756	9.527	29.548	2.003	29.049	0.412
0.360	0.360	5.055	10.147	31.316	2.007	30.816	0.423
0.370	0.370	5.371	10.907	32.700	2.031	32.200	0.434
0.380	0.380	5.698	11.797	33.700	2.070	33.200	0.447
0.390	0.390	6.035	12.732	34.700	2.110	34.200	0.459
0.400	0.400	6.382	13.713	35.701	2.149	35.200	0.472
0.410	0.410	6.739	14.741	36.701	2.187	36.200	0.484
0.420	0.420	7.106	15.817	37.701	2.226	37.200	0.497
0.430	0.430	7.483	16.942	38.701	2.264	38.200	0.510
0.440	0.440	7.870	18.116	39.701	2.302	39.200	0.522
0.450	0.450	8.267	19.341	40.702	2.340	40.200	0.535
0.460	0.460	8.674	20.618	41.702	2.377	41.200	0.548
0.470	0.470	9.091	21.947	42.702	2.414	42.200	0.561
0.480	0.480	9.518	23.328	43.702	2.451	43.200	0.573
0.490	0.490	9.955	24.764	44.702	2.488	44.200	0.586

Dawn Patrol Trail @ lot 17
Q_100 = 11.8 cfs
h = 0.45' < 0.51'

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.500	0.500	10.402	26.255	45.703	2.524	45.200	0.599
0.510	0.510	10.859	27.801	46.703	2.560	46.200	0.612

47' ROW - 28' F-F

MANNING'S N = 0.017 SLOPE = 0.017

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.5	4.0	23.5	0.4	7.0	47.0	0.5
2.0	9.4	0.3	5.0	37.5	0.0			
3.0	9.5	0.0	6.0	37.6	0.3			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.010	0.010	0.004	0.001	0.788	0.325	0.773	0.012
0.020	0.020	0.015	0.008	1.577	0.516	1.546	0.024
0.030	0.030	0.035	0.024	2.365	0.676	2.320	0.037
0.040	0.040	0.062	0.051	3.153	0.819	3.093	0.050
0.050	0.050	0.097	0.092	3.941	0.951	3.866	0.064
0.060	0.060	0.139	0.149	4.730	1.073	4.639	0.078
0.070	0.070	0.189	0.225	5.518	1.190	5.412	0.092
0.080	0.080	0.247	0.322	6.306	1.300	6.185	0.106
0.090	0.090	0.313	0.440	7.095	1.407	6.959	0.121
0.100	0.100	0.387	0.583	7.883	1.509	7.732	0.135
0.110	0.110	0.468	0.752	8.671	1.608	8.505	0.150
0.120	0.120	0.557	0.949	9.459	1.704	9.278	0.165
0.130	0.130	0.653	1.174	10.248	1.797	10.051	0.180
0.140	0.140	0.758	1.431	11.036	1.888	10.825	0.195
0.150	0.150	0.870	1.720	11.824	1.977	11.598	0.211
0.160	0.160	0.990	2.043	12.613	2.064	12.371	0.226
0.170	0.170	1.117	2.401	13.401	2.149	13.144	0.242
0.180	0.180	1.253	2.797	14.189	2.233	13.917	0.258
0.190	0.190	1.396	3.230	14.977	2.315	14.690	0.273
0.200	0.200	1.546	3.704	15.766	2.395	15.464	0.289
0.210	0.210	1.705	4.219	16.554	2.474	16.237	0.305
0.220	0.220	1.871	4.776	17.342	2.552	17.010	0.321
0.230	0.230	2.045	5.377	18.130	2.629	17.783	0.338
0.240	0.240	2.227	6.023	18.919	2.705	18.556	0.354
0.250	0.250	2.416	6.716	19.707	2.779	19.330	0.370
0.260	0.260	2.613	7.456	20.495	2.853	20.103	0.387
0.270	0.270	2.818	8.246	21.284	2.926	20.876	0.403
0.280	0.280	3.031	9.085	22.072	2.998	21.649	0.420
0.290	0.290	3.251	9.977	22.860	3.069	22.422	0.436
0.300	0.300	3.479	10.921	23.648	3.139	23.196	0.453
0.310	0.310	3.715	11.919	24.437	3.208	23.969	0.470
0.320	0.320	3.959	12.972	25.225	3.277	24.742	0.487
0.330	0.330	4.210	14.081	26.013	3.345	25.515	0.504
0.340	0.340	4.474	14.915	27.781	3.334	27.282	0.513
0.350	0.350	4.756	15.847	29.548	3.332	29.049	0.523
0.360	0.360	5.055	16.878	31.316	3.339	30.816	0.533
0.370	0.370	5.371	18.142	32.700	3.378	32.200	0.547
0.380	0.380	5.698	19.622	33.700	3.444	33.200	0.564
0.390	0.390	6.035	21.177	34.700	3.509	34.200	0.582
0.400	0.400	6.382	22.809	35.701	3.574	35.200	0.599
0.410	0.410	6.739	24.519	36.701	3.638	36.200	0.616
0.420	0.420	7.106	26.309	37.701	3.702	37.200	0.633
0.430	0.430	7.483	28.180	38.701	3.766	38.200	0.651
0.440	0.440	7.870	30.133	39.701	3.829	39.200	0.668
0.450	0.450	8.267	32.171	40.702	3.891	40.200	0.686
0.460	0.460	8.674	34.294	41.702	3.954	41.200	0.703
0.470	0.470	9.091	36.504	42.702	4.015	42.200	0.721
0.480	0.480	9.518	38.803	43.702	4.077	43.200	0.739
0.490	0.490	9.955	41.191	44.702	4.138	44.200	0.756

Intersection Balloon Glow Lane and Dawn Patrol Trail NE
Q_100 = 13.4 cfs
h = 0.48' < 0.51'

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.500	0.500	10.402	43.671	45.703	4.198	45.200	0.774
0.510	0.510	10.859	46.243	46.703	4.258	46.200	0.792

47' ROW - 28' F-F - Superelevated

MANNING'S N = 0.017 SLOPE = 0.007

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.8	4.0	11.5	0.1	7.0	37.6	1.1
2.0	9.4	0.7	5.0	35.5	0.6	8.0	47.0	1.3
3.0	9.5	0.0	6.0	37.5	0.5			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.010	0.010	0.001	0.000	0.250	0.201	0.242	0.011
0.020	0.020	0.005	0.002	0.501	0.319	0.483	0.022
0.030	0.030	0.011	0.005	0.751	0.419	0.725	0.033
0.040	0.040	0.019	0.010	1.002	0.507	0.966	0.044
0.050	0.050	0.030	0.018	1.252	0.588	1.208	0.055
0.060	0.060	0.043	0.029	1.503	0.664	1.450	0.067
0.070	0.070	0.059	0.044	1.753	0.736	1.691	0.078
0.080	0.080	0.077	0.062	2.003	0.805	1.933	0.090
0.090	0.090	0.098	0.082	2.428	0.832	2.349	0.101
0.100	0.100	0.124	0.107	2.938	0.856	2.850	0.111
0.110	0.110	0.155	0.139	3.448	0.893	3.352	0.122
0.120	0.120	0.191	0.179	3.958	0.936	3.853	0.134
0.130	0.130	0.233	0.228	4.469	0.982	4.355	0.145
0.140	0.140	0.279	0.287	4.979	1.031	4.856	0.157
0.150	0.150	0.330	0.356	5.489	1.081	5.358	0.168
0.160	0.160	0.386	0.436	5.999	1.131	5.859	0.180
0.170	0.170	0.447	0.528	6.510	1.181	6.361	0.192
0.180	0.180	0.513	0.632	7.020	1.232	6.862	0.204
0.190	0.190	0.584	0.749	7.530	1.282	7.364	0.216
0.200	0.200	0.660	0.879	8.040	1.331	7.865	0.228
0.210	0.210	0.741	1.023	8.550	1.381	8.367	0.240
0.220	0.220	0.828	1.183	9.061	1.429	8.868	0.252
0.230	0.230	0.919	1.357	9.571	1.477	9.370	0.264
0.240	0.240	1.015	1.548	10.081	1.525	9.871	0.276
0.250	0.250	1.116	1.755	10.591	1.572	10.373	0.288
0.260	0.260	1.222	1.979	11.101	1.619	10.874	0.301
0.270	0.270	1.334	2.221	11.612	1.665	11.376	0.313
0.280	0.280	1.450	2.481	12.122	1.711	11.877	0.326
0.290	0.290	1.571	2.759	12.632	1.756	12.379	0.338
0.300	0.300	1.697	3.057	13.142	1.801	12.880	0.350
0.310	0.310	1.829	3.374	13.653	1.845	13.382	0.363
0.320	0.320	1.965	3.712	14.163	1.889	13.883	0.375
0.330	0.330	2.106	4.070	14.673	1.932	14.385	0.388
0.340	0.340	2.253	4.450	15.183	1.975	14.887	0.401
0.350	0.350	2.404	4.851	15.693	2.018	15.388	0.413
0.360	0.360	2.561	5.275	16.204	2.060	15.890	0.426
0.370	0.370	2.722	5.721	16.714	2.102	16.391	0.439
0.380	0.380	2.888	6.190	17.224	2.143	16.893	0.451
0.390	0.390	3.060	6.683	17.734	2.184	17.394	0.464
0.400	0.400	3.236	7.200	18.244	2.225	17.896	0.477
0.410	0.410	3.418	7.742	18.755	2.265	18.397	0.490
0.420	0.420	3.604	8.309	19.265	2.305	18.899	0.503
0.430	0.430	3.796	8.901	19.775	2.345	19.400	0.516
0.440	0.440	3.992	9.519	20.285	2.384	19.902	0.528
0.450	0.450	4.194	10.164	20.796	2.424	20.403	0.541
0.460	0.460	4.400	10.835	21.306	2.462	20.905	0.554
0.470	0.470	4.612	11.534	21.816	2.501	21.406	0.567
0.480	0.480	4.828	12.260	22.326	2.539	21.908	0.580
0.490	0.490	5.051	12.925	23.087	2.559	22.651	0.592

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.500	0.500	5.281	13.624	23.847	2.580	23.394	0.604
0.510	0.510	5.519	14.358	24.608	2.601	24.137	0.615
0.520	0.520	5.764	15.126	25.369	2.624	24.880	0.627
0.530	0.530	6.017	15.930	26.129	2.648	25.623	0.639
0.540	0.540	6.277	16.769	26.890	2.672	26.366	0.651
0.550	0.550	6.544	17.645	27.651	2.696	27.110	0.663
0.560	0.560	6.819	18.559	28.411	2.722	27.853	0.675
0.570	0.570	7.099	19.727	28.676	2.779	28.100	0.690
0.580	0.580	7.380	21.035	28.696	2.850	28.103	0.706
0.590	0.590	7.661	22.377	28.716	2.921	28.106	0.723
0.600	0.600	7.943	23.750	28.736	2.990	28.109	0.739
0.610	0.610	8.224	25.156	28.757	3.059	28.112	0.756
0.620	0.620	8.505	26.593	28.777	3.127	28.115	0.772
0.630	0.630	8.786	28.061	28.797	3.194	28.118	0.789
0.640	0.640	9.067	29.560	28.817	3.260	28.121	0.805
0.650	0.650	9.348	31.090	28.838	3.326	28.124	0.822
0.660	0.660	9.630	32.649	28.858	3.390	28.127	0.839
0.670	0.670	9.914	33.854	29.390	3.415	28.651	0.851
0.680	0.680	10.203	35.093	29.923	3.440	29.175	0.864
0.690	0.690	10.497	36.366	30.455	3.464	29.698	0.877
0.700	0.700	10.797	37.675	30.988	3.489	30.222	0.889
0.710	0.710	11.101	39.019	31.520	3.515	30.746	0.902
0.720	0.720	11.412	40.398	32.052	3.540	31.270	0.915
0.730	0.730	11.727	41.814	32.585	3.566	31.793	0.928
0.740	0.740	12.047	43.266	33.117	3.591	32.317	0.941
0.750	0.750	12.373	44.755	33.650	3.617	32.841	0.953
0.760	0.760	12.704	46.282	34.182	3.643	33.365	0.966
0.770	0.770	13.041	47.846	34.715	3.669	33.888	0.979
0.780	0.780	13.382	49.448	35.247	3.695	34.412	0.992
0.790	0.790	13.729	51.088	35.779	3.721	34.936	1.005
0.800	0.800	14.081	52.768	36.312	3.748	35.460	1.018
0.810	0.810	14.438	54.486	36.844	3.774	35.983	1.032
0.820	0.820	14.800	56.245	37.377	3.800	36.507	1.045
0.830	0.830	15.168	58.043	37.909	3.827	37.031	1.058

Dawn Patrol Lane - IN3
Q_100 = 19.6 cfs
E = 0.57' < 0.84'

Dawn Patrol Lane - IN2
Q_100 = 26.9 cfs
E = 0.77' < 0.84'

IN1

ANALYSIS OF AN INLET IN A SUMP CONDITION - **Gondola Way**

INLET TYPE: Double Grate Type "A" with curb opening wings on both sides on inlet.

WEIR: Q=C*L*H^1.5		ORIFICE: Q=C*A*(2*G*H)**0.5	
Wing opening	Grate opeining	Grate opening	Wing opening
C= 3.0	C=3.0	C=0.6	C=0.6
L= 4.0 ft	L(double grate)=[2(2.67')+2(1.8')]=8.	A(double grate)=8.19 sf	A=2.0 sf
Q=3.0(4.0')H**1.5= 12.0H**1.5	Q=3.0(8.94)H^1.5=26.82*H^1.5	Q=4.194*(64.4*H)^0.5	Q=1.2*(64.4*H)^0.5

	WS ELEVATION	HEIGHT ABOVE INLET	Q (CFS) WEIR "A" OPENING	Q (CFS) WEIR DOUBLE GRATE	Q (CFS) ORIFICE DOUBLE GRATE	TOTAL Q (CFS)	COMMENTS:
~FL @ INLET	0.00	0.00	0.00	0.00	0.00	0.00	Flow at double "A" inlet w/ two wing openings
	0.10	0.10	0.38	0.85	12.47	1.61	Weir controls on grate analysis
	0.20	0.20	1.07	2.40	17.64	4.55	
	0.30	0.30	1.97	4.41	21.60	8.35	
	0.40	0.40	3.04	6.78	24.94	12.86	
	0.50	0.50	4.24	9.48	27.88	17.97	Q(100 yr) = 13.8 cfs is provided at this depth
	0.60	0.60	5.58	12.46	30.55	23.62	
	0.70	0.70	7.03	15.71	32.99	29.76	Q(2 x100 yr) = 27.6 cfs is provided at this depth
TOP OF CURB	0.80	0.80	8.59	19.19	35.27	36.36	
	0.90	0.90	10.25	22.90	37.41	43.39	
ROW LIMIT	1.00	1.00	12.00	26.82	39.43	50.82	

NOTE: The total runoff intercepted by the inlet at the low point in the road is:

Qr(100) = 2*[(runoff of the wing opening) + (the lesser of the weir or orifice amount taken by the double grate)].

IN3

ANALYSIS OF AN INLET IN A SUMP CONDITION - **Dawn Patrol Trail**

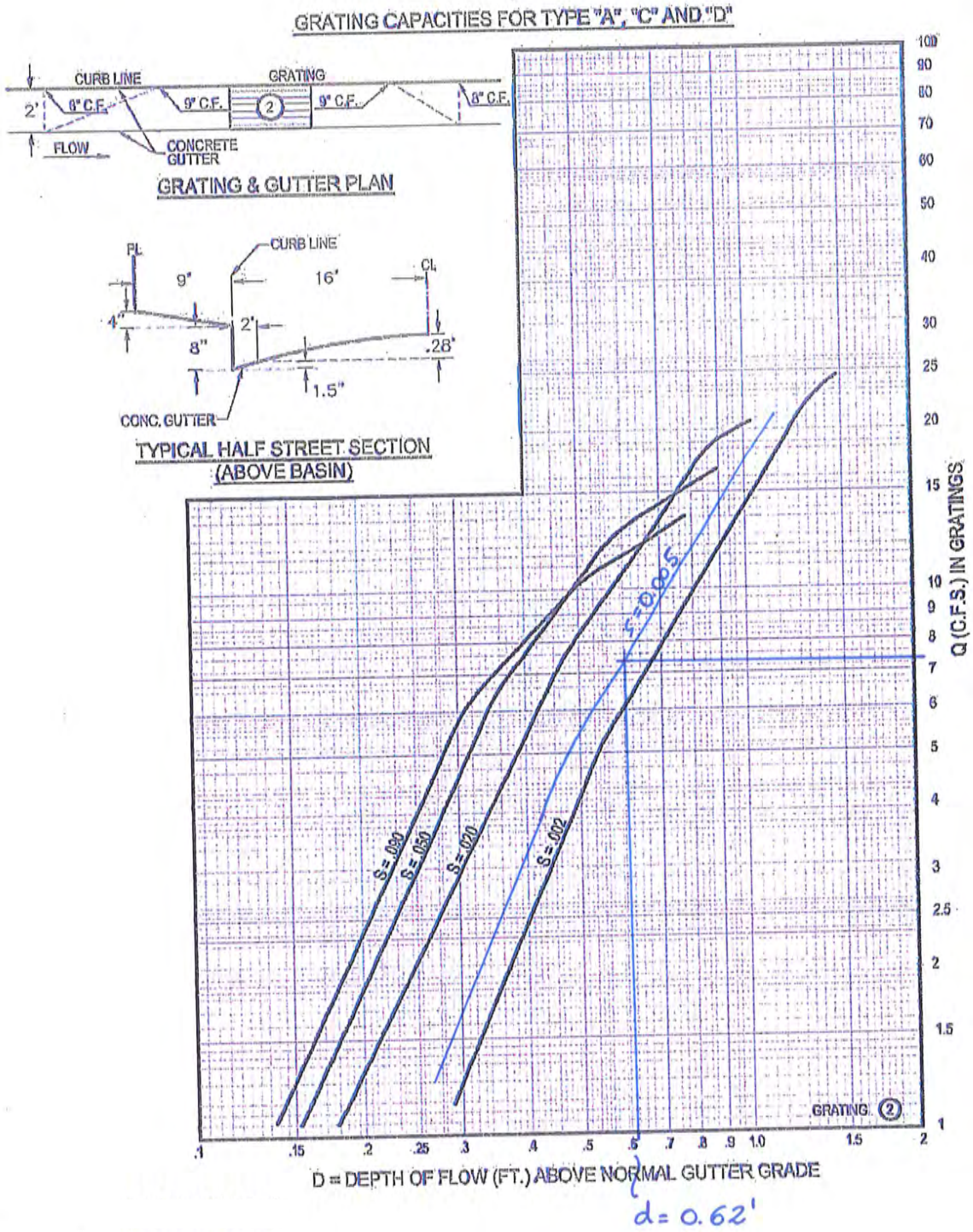
INLET TYPE: Double Grate Type "A" with curb opening wings on both sides on inlet.

WEIR: Q=C*L*H^1.5		ORIFICE: Q=C*A*(2*G*H)**0.5	
Wing opening	Grate opeining	Grate opening	Wing opening
C= 3.0	C=3.0	C=0.6	C=0.6
L= 4.0 ft	L(double grate)=[2(2.67')+2(1.8')]=8.	A(double grate)=8.19 sf	A=2.0 sf
Q=3.0(4.0')H**1.5= 12.0H**1.5	Q=3.0(8.94)H^1.5=26.82*H^1.5	Q=4.194*(64.4*H)^0.5	Q=1.2*(64.4*H)^0.5

	WS ELEVATION	HEIGHT ABOVE INLET	Q (CFS) WEIR "A" OPENING	Q (CFS) WEIR DOUBLE GRATE	Q (CFS) ORIFICE DOUBLE GRATE	TOTAL Q (CFS)	**COMMENTS:**
~FL @ INLET	0.00	0.00	0.00	0.00	0.00	0.00	Flow at double "A" inlet w/ two wing openings
	0.10	0.10	0.38	0.85	12.47	1.61	Weir controls on grate analysis
	0.20	0.20	1.07	2.40	17.64	4.55	
	0.30	0.30	1.97	4.41	21.60	8.35	
	0.40	0.40	3.04	6.78	24.94	12.86	
	0.50	0.50	4.24	9.48	27.88	17.97	
	0.60	0.60	5.58	12.46	30.55	23.62	Q(100 yr) = 19.6 cfs is provided at this depth
	0.70	0.70	7.03	15.71	32.99	29.76	
TOP OF CURB	0.80	0.80	8.59	19.19	35.27	36.36	Q(2 x100 yr) = 39.2 cfs is provided at this depth
	0.90	0.90	10.25	22.90	37.41	43.39	
ROW LIMIT	1.00	1.00	12.00	26.82	39.43	50.82	

NOTE: The total runoff intercepted by the inlet at the low point in the road is:
Qr(100) = 2*[(runoff of the wing opening) + (the lesser of the weir or orifice amount taken by the double grate)].

IN2- Dawn Patrol Lane



7.3 cfs
IN 2

d = 0.62'

Calculation Detailed Summary

Element Details			
ID	27	Notes	
Label	Base Calculation Options		

Hydraulic Summary			
Flow Profile Method	Backwater Analysis	Average Velocity Method	Actual Uniform Flow Velocity
Number of Flow Profile Steps	5	Minimum Structure Headloss	0.00 ft
Hydraulic Grade Convergence Test	0.00 ft	Minimum Time of Concentration	0.083 hours

Inlets			
Neglect Side Flow?	False	Active Components for Combination Inlets In Sag	Grate and Curb
Neglect Gutter Cross Slope For Side Flow?	False	Active Components for Combination Inlets on Grade	Grate and Curb

HEC-22 Energy Losses			
Elevations Considered Equal Within	0.50 ft	Depressed Unsubmerged Factor	1.000
Consider Non-Piped Plunging Flow?	False	Half Bench Submerged Factor	0.950
Flat Submerged Factor	1.000	Half Bench Unsubmerged Factor	0.150
Flat Unsubmerged Factor	1.000	Full Bench Submerged Factor	0.750
Depressed Submerged Factor	1.000	Full Bench Unsubmerged Factor	0.070

Headloss (AASHTO)			
Expansion, Ke	0.350	Shaping Adjustment, Cs	0.500
Contraction, Kc	0.250	Non-Piped Flow Adjustment, Cn	1.300

Bend Angle vs. Bend Loss Curve

Bend Angle (degrees)	Bend Loss Coefficient, Kb
0.00	0.000
15.00	0.190
30.00	0.350
45.00	0.470
60.00	0.560
75.00	0.640
90.00	0.700

Gravity Hydraulics

Calculation Detailed Summary

Gravity Hydraulics	
Governing Upstream Pipe Selection Method	Pipe with Maximum QV

Catchment Summary

Label	Area (User Defined) (acres)	Time of Concentration (hours)	Runoff Coefficient (Rational)	Catchment CA (acres)	Catchment Intensity (in/h)	Catchment Rational Flow (cfs)

Conduit Summary

Label	Section Type	Branch ID	Subnetwork Outfall	Flow (cfs)	Velocity (ft/s)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Depth (In) (ft)	Depth (Out) (ft)
SDP9	Circle	1	SDP10 FREE_EXT	40.80	5.77	5,062.95	5,062.85	3.21	3.37
SDP10	Circle	1	SDP10 FREE_EXT	40.80	14.51	5,061.46	5,053.45	2.08	1.26
SDP11	Circle	1	SDP10 FREE_EXT	21.20	6.75	5,063.84	5,063.14	3.16	3.30
SDP5	Circle	1	SDP10 FREE_EXT	13.90	7.61	5,066.40	5,065.32	1.94	3.78
SDP4	Circle	1	SDP10 FREE_EXT	13.90	6.37	5,066.77	5,066.59	1.84	2.03
SDP7	Circle	1	SDP10 FREE_EXT	13.90	4.42	5,064.68	5,064.51	3.61	3.74
SDP6	Circle	1	SDP10 FREE_EXT	13.90	4.42	5,065.14	5,065.02	3.70	3.85
SDP1	Circle	1	SDP10 FREE_EXT	13.90	7.70	5,069.04	5,068.60	1.34	1.87
SDP3	Circle	1	SDP10 FREE_EXT	13.90	6.31	5,067.40	5,067.13	1.88	2.10
SDP2	Circle	1	SDP10 FREE_EXT	13.90	7.68	5,067.97	5,067.66	1.34	2.04
SDP00	Circle	1	SDP10 FREE_EXT	13.90	18.74	5,070.08	5,069.74	1.38	1.94

Node Summary

Calculation Detailed Summary

Node Summary

Label	Element Type	Subnetwork Outfall	Flow (Total In) (cfs)	Flow (Total Out) (cfs)	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
SDMH3	Manhole	SDP10 FREE_EXT	13.90	13.90	5,074.18	5,065.52	5,067.84	5,067.78
SDMH4	Manhole	SDP10 FREE_EXT	13.90	13.90	5,073.45	5,064.93	5,067.31	5,067.16
SDMH5	Manhole	SDP10 FREE_EXT	13.90	13.90	5,073.07	5,064.46	5,066.77	5,066.77
SDMH6	Manhole	SDP10 FREE_EXT	13.90	13.90	5,069.93	5,061.44	5,065.50	5,065.50
SDMH7	Manhole	SDP10 FREE_EXT	13.90	13.90	5,069.28	5,061.07	5,065.32	5,064.98
SDMH8	Manhole	SDP10 FREE_EXT	40.80	40.80	5,070.41	5,059.38	5,063.16	5,062.74
SDMH1	Manhole	SDP10 FREE_EXT	13.90	13.90	5,071.95	5,067.70	5,070.32	5,069.85
SDMH2	Manhole	SDP10 FREE_EXT	13.90	13.90	5,073.68	5,066.63	5,068.78	5,068.78
IN1	Catch Basin	SDP10 FREE_EXT	13.90	13.90	5,072.74	5,068.70	5,071.33	5,071.33
IN3	Catch Basin	SDP10 FREE_EXT	21.20	21.20	5,069.00	5,060.68	5,064.69	5,064.69
IN2	Catch Basin	SDP10 FREE_EXT	40.80	40.80	5,068.27	5,059.74	5,063.57	5,063.57
SDP10 FREE_EXT	Outfall	(N/A)	(N/A)	40.80	5,055.19	5,052.19	(N/A)	(N/A)

Inlet Summary

Label	Inlet Type	Catalog Inlet Type	Catalog Inlet	Flow (Captured) (cfs)
IN1	Combination	Combination	Type A Combination 2.95 x 3.67	13.90
IN3	Combination	Combination	Type A Combination 2.95 x 3.67	7.30

Calculation Detailed Summary

Inlet Summary

Label	Inlet Type	Catalog Inlet Type	Catalog Inlet	Flow (Captured) (cfs)
IN2	Combination	Combination	Type A Combination 6.5 x 3.67	19.60

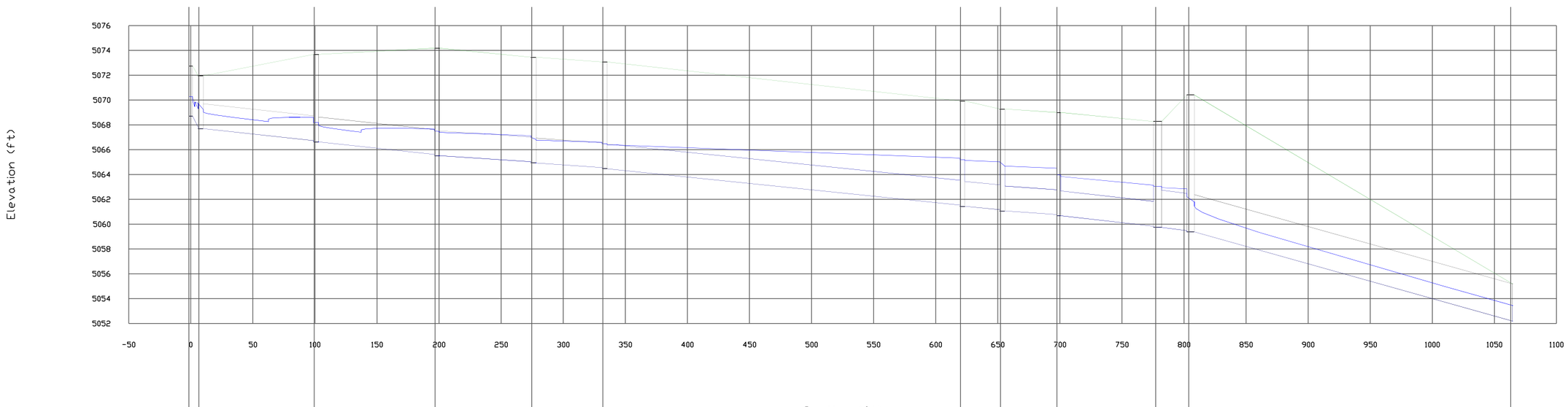
Flow (Total Bypassed) (cfs)	Bypass Target	Capture Efficiency (Calculated) (%)	Depth (Gutter) (ft)	Spread / Top Width (ft)
0.00	(N/A)	100.0	1.46	3.6
0.00	(N/A)	100.0	1.15	2.9
0.00	(N/A)	100.0	1.46	3.6

Pond Summary

Label	Element Type	Subnetwork Outfall	Flow (Total In) (cfs)	Flow (Total Out) (cfs)

Hydraulic Grade (ft)	Volume (gal)

IN1 to SDP10 FREE_EXT - Base



ID\Label	53 \ SDP00		50 \ SDP1		52 \ SDP2		51 \ SDP3		47 \ SDP4		46 \ SDP5												49 \ SDP6		48 \ SDP7		45 \ SDP11		43 \ SDP9		44 \ SDP10			
Link Length (ft)	8.0		92.9		97.4		77.8		57.3		288.1												32.2		45.5		79.6		26.7		259.2			
Rise (in)\Material	18.0 \ RC C76-A		24.0 \ RC C76-A		24.0 \ RC C76-A		24.0 \		24.0 \ RC C76-A		24.0 \ RC C76-A												24.0 \		24.0 \		24.0 \		36.0 \ RC C76-A		36.0 \ RC C76-A			
Flow (cfs)	13.90		13.90		13.90		13.90		13.90		13.90												13.90		13.90		21.20		40.80		40.80			
Slope (ft/ft)	0.112		0.010		0.010		0.006		0.006		0.010												0.008		0.007		0.011		0.010		0.028			
ID\Label	2948 \ SDMH1			41 \ SDMH2		34 \ SDMH3		35 \ SDMH4		36 \ SDMH5											37 \ SDMH6		38 \ SDMH7		30 \ IN3			31 \ IN2	39 \ SDMH8					42 \ SDP10	FREE_EXT
Ground (ft)	5075.57	5074.95		5073.68		5074.18		5073.45		5073.07											5069.93		5069.28		5069.00			5069.27	5070.41					5055.19	
Invert (ft)	5066.50	5067.70		5066.63		5065.52		5064.93		5064.46											5061.44		5061.07		5060.68			5059.74	5059.38					5052.19	
Station (ft)	0.0	8.0		100.9		198.2		276.1		333.4											621.4		653.7		699.1			778.7	805.3					1064.5	

EXHIBITS

EXHIBIT A: PRELIMINARY PLAT/PROPOSED STREET AND LOT CONFIGURATION

EXHIBIT B: ORIGINAL BASIN MAP FROM DMP

EXHIBIT C: AMENDED BASIN MAP FROM DMP

EXHIBIT D: ASCENSION DRAINAGE MANAGEMENT PLAN

EXHIBIT E: GRADING PLAN

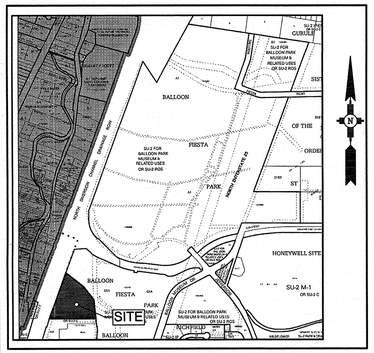
EXHIBIT F: GRADING PLAN DETAILS

EXHIBIT A -

PRELIMINARY PLAT/PROPOSED STREET AND LOT CONFIGURATION

PRELIMINARY PLAT FOR
ASCENSION SUBDIVISION

LOTS 1–34 AND TRACTS A–G
WITHIN ELENA GALLEGOS LAND GRANT
IN PROJECTED SECTIONS 11 & 14,
TOWNSHIP 11 NORTH, RANGE 3 EAST
NEW MEXICO PRINCIPAL MERIDIAN
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO
NOVEMBER 2018



VICINITY MAP

NOT TO SCALE — ZONE ATLAS B-17-Z

DRAINAGE EASEMENT NOTE:

AREAS DESIGNATED ON THE ACCOMPANYING PLAT AS "DRAINAGE EASEMENTS "ARE HEREBY DEDICATED BY THE OWNER AS A PERPETUAL EASEMENT FOR THE COMMON USE AND BENEFIT OF THE VARIOUS LOTS WITHIN THE SUBDIVISION FOR THE PURPOSE OF PERMITTING THE CONVEYANCE OF STORM WATER RUNOFF AND THE CONSTRUCTING AND MAINTAINING OF DRAINAGE FACILITIES IN ACCORDANCE WITH STANDARDS PRESCRIBED BY THE CITY OF ALBUQUERQUE. NO FENCE, WALL, PLANTING, BUILDING OR OTHER OBSTRUCTION MAY BE PLACED OR MAINTAINED IN THE EASEMENT AREA WITHOUT APPROVAL OF THE CITY ENGINEER OF THE CITY OF ALBUQUERQUE. THERE ALSO SHALL BE NO ALTERATION OF THE GRADES OR CONTOURS IN SAID EASEMENT AREA WITHOUT THE APPROVAL OF THE CITY ENGINEER. IT SHALL BE THE DUTY OF THE LOT OWNERS OF THIS SUBDIVISION TO MAINTAIN SAID DRAINAGE EASEMENT AND FACILITIES AT THEIR COST IN ACCORDANCE WITH STANDARDS PRESCRIBED BY THE CITY OF ALBUQUERQUE. THE CITY SHALL HAVE THE RIGHT TO ENTER PERIODICALLY TO INSPECT THE FACILITIES. IN THE EVENT SAID LOT OWNERS FAIL TO ADEQUATELY AND PROPERLY MAINTAIN THE DRAINAGE EASEMENT AND FACILITIES, AT ANY TIME FOLLOWING FIFTEEN (15) DAYS WRITTEN NOTICE TO SAID LOT OWNERS, THE CITY MAY ENTER UPON SAID AREA, PERFORM SAID MAINTENANCE, AND THE COST OF PERFORMING SAID MAINTENANCE SHALL BE PAID BY THE APPLICABLE LOT OWNERS PROPORTIONATELY ON THE BASIS OF LOT OWNERSHIP. IN THE EVENT LOT OWNERS FAIL TO PAY THE COST OF MAINTENANCE WITHIN THIRTY (30) DAYS AFTER DEMAND FOR PAYMENT MADE BY THE CITY, THE CITY MAY FILE A LIEN AGAINST ALL LOTS IN THE SUBDIVISION FOR WHICH PROPORTIONATE PAYMENT HAS NOT BEEN MADE. THE OBLIGATIONS IMPOSED HEREIN SHALL BE BINDING UPON THE OWNER, HEIRS, AND ASSIGNS AND SHALL RUN WITH ALL LOTS WITHIN THIS SUBDIVISION.

THE GRANTOR AGREES TO DEFEND, INDEMNIFY, AND HOLD HARMLESS, THE CITY, ITS OFFICIALS, AGENTS AND EMPLOYEES FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, SUITS, OR PROCEEDINGS OF ANY KIND BROUGHT AGAINST SAID PARTIES FOR OR ON ACCOUNT OF ANY MATTER ARISING FROM THE DRAINAGE FACILITY PROVIDED FOR HEREIN OR THE GRANTOR'S FAILURE TO CONSTRUCT, MAINTAIN OR MODIFY SAID DRAINAGE FACILITY.

KEYED NOTES

(A) EXISTING 10' PNM EASEMENT (4/15/2010, 10C–046)

(B) EXISTING 25' ABCWUA WATER & WATER REUSE EASEMENT (4/15/2010, 10C–046)

(C) EXISTING CITY OF ALBUQUERQUE WATERLINE EASEMENT (WIDTH VARIES) (BK 92–98, PG 3168–3170, DOC #92119336)

(D) EXISTING 20' PRIVATE DRAINAGE EASEMENT (4/15/2010, 10C–046) TO BE VACATED BY PLAT.

(E) EXISTING 50' PRIVATE ACCESS, DRAINAGE EASEMENT & PUBLIC UTILITY EASEMENT (4/15/2010, 10C–046)

(F) EXISTING 25' ABCWUA SAS ESMT (4/15/2010, 10C–046)

(G) EXISTING 10' MST&T ESMT (6/20/1983, BK MISC 24–A, PG 237–239, #83–40062) TO BE VACATED BY PLAT

(H) 10' PUBLIC UTILITY EASEMENT, GRANTED BY PLAT.

(I) 20' PUBLIC WATERLINE EASEMENT GRANTED TO THE ABCWUA BY PLAT.

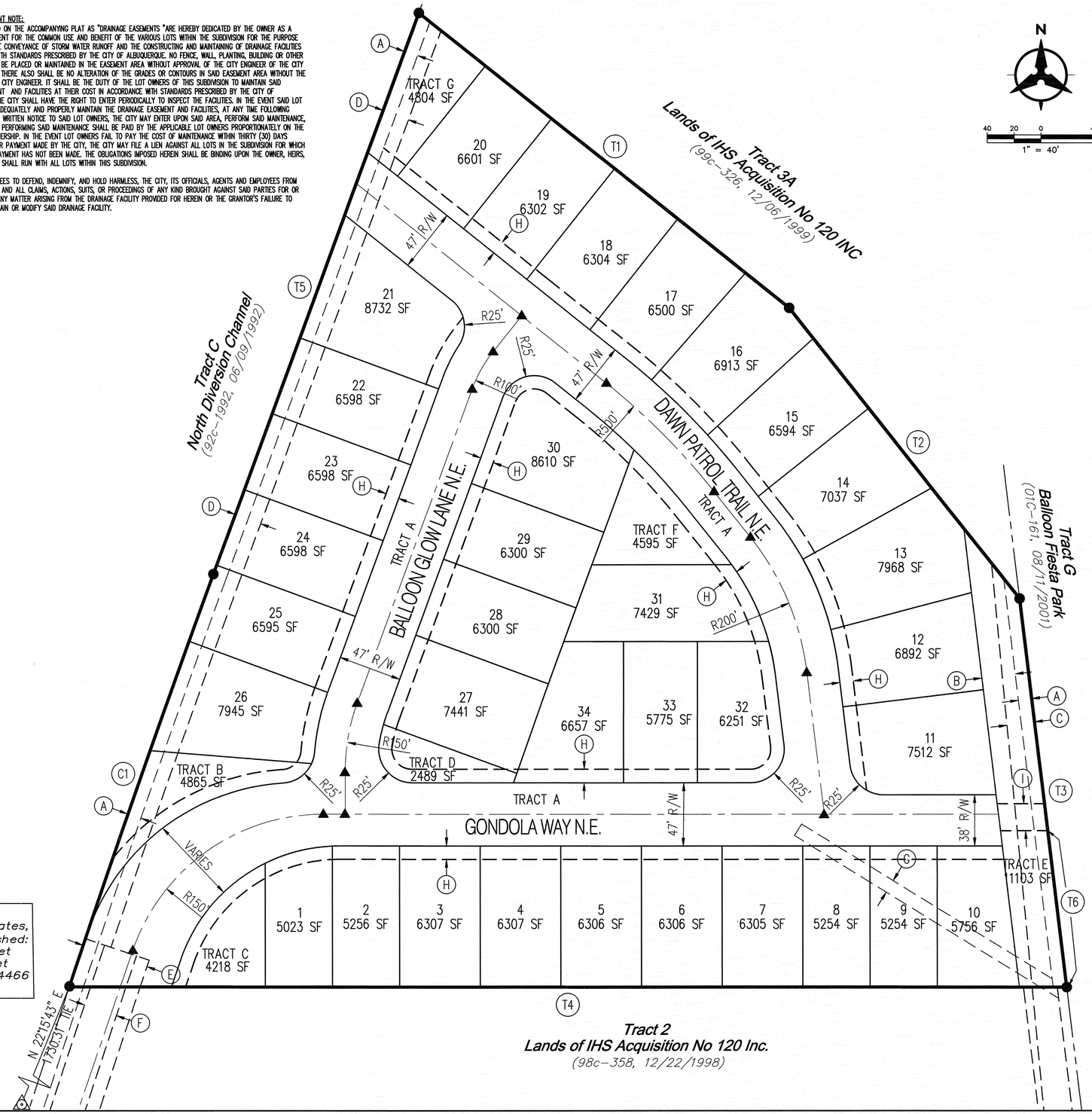
LEGEND

- SUBDIVISION BOUNDARY LINE
- NEW LOT LINE
- ADJOINING PROPERTY LINE
- ▲ CENTERLINE MONUMENT TO BE INSTALLED
- △ CITY OF ALBUQUERQUE SURVEY CONTROL MONUMENT

Tangent Table		
ID	BEARING	LENGTH
T1	S51°27'54"E	351.99'
T2	S38°24'17"E	275.85'
T3	S06°50'32"E	290.85'
T4	N89°58'28"W	742.27'
T5	N20°11'36"E	443.76'
T6	S06°50'32"E	117.15'

Curve Table				
ID	RADIUS	ARC	TANGENT	CHORD LENGTH
C1	11294.16'	325.77'	162.89'	325.75'

ACS Monument "NDC–7"
New Mexico State Plane Coordinates,
Central Zone (NAD 83) as published:
N=1,522,698.249 U.S. Survey Feet
E=1,534,340.591 U.S. Survey Feet
Ground to grid factor= 0.999674466
Mapping Angle: –00°12'16.43"



LEGAL DESCRIPTION

Tract Three-B-One (3B–1) of Lands of IHS Acquisition No. 120 Inc. as the same is shown and designated on the plat of Tracts 3B–1, 3B–2 and 3B–3, a subdivision of Tract 3B, Land of IHS Acquisition No 120, Inc. within Projected Sections 11 and 14, T11N, R3E, NMPM, City of Albuquerque, Elena Gallegos Land Grant, Bernalillo County, New Mexico, March 2010, filed in the office of the County Clerk of Bernalillo County, New Mexico on April 15, 2010, in Plat Book 2010, Page 0046, Document No. 2010031804.

GENERAL NOTES

1. EXISTING ZONING: SU–2, LOW–MEDIUM DENSITY RESIDENTIAL (LMDR)
   PROPOSED ZONING: SU–2, LOW–MEDIUM DENSITY RESIDENTIAL (LMDR)
2. GROSS ACREAGE: 7.7593 AC
   NET ACREAGE: 7.7593 AC
   NUMBER OF LOTS: 34
   NUMBER OF TRACTS: 7
   PROPOSED DENSITY: 4.38 DU/AC
3. MIN. LOT DIMENSIONS: 50' X 105'
   MINIMUM LOT AREA: 5,250 SQFT
4. STORM DRAIN IMPROVEMENTS WITHIN TRACT A ARE PRIVATE TO BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. STORM DRAIN IMPROVEMENTS IN THE NORTH DIVERSION CHANNEL RIGHT–OF–WAY ARE PUBLIC TO BE OWNED AND MAINTAINED BY THE CITY OF ALBUQUERQUE. SEWER AND WATER ARE PUBLIC TO BE OWNED AND MAINTAINED BY THE ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY, STREETS ARE PRIVATE TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATIONS.
5. LOT SETBACKS SHALL CONFORM TO THE SITE DEVELOPMENT PLAN.
6. TRACT A SHALL HAVE A BLANKET PRIVATE DRAINAGE EASEMENT, A BLANKET SUBSURFACE PUBLIC SANITARY SEWER AND WATER EASEMENT GRANTED TO THE ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY, AND A PRIVATE PEDESTRIAN AND VEHICULAR ACCESS EASEMENT. TRACT A WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
7. TRACTS B–G SHALL HAVE A BLANKET LANDSCAPE AND PRIVATE PEDESTRIAN ACCESS EASEMENT TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.

SITE DATA

ZONE ATLAS NO.	B–17–Z
ZONING	SU–2, LMDR
MILES OF FULL WIDTH STREETS CREATED	0.298 MILES
NO. OF EXISTING TRACTS	1
NO. OF LOTS CREATED	34
NO. OF HOA TRACTS CREATED	7

SURVEY NOTES:

1. ALL BOUNDARY CORNERS SHOWN (●) ARE FOUND REBAR W\CAP.
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PTS, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS (▲) AND WILL BE MARKED BY (4") ALUMINUM CAP STAMPED "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION MARKED, DO NOT DISTURB PLS 12651".
3. THE SUBDIVISION BOUNDARY WILL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
4. BASIS OF BEARINGS WILL BE NEW MEXICO STATE PLANE BEARINGS.
5. DISTANCES SHALL BE GROUND DISTANCES.
6. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, TANGENCY STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.
7. PLAT SHOWS ALL EASEMENTS OF RECORD.

APPROVED

Loren N. Risenhoover P.S. 12/17/18
CITY SURVEYOR — DATE

11/26/18
PAUL S. CAUWELS — DATE
MANAGER, C&S EQUITIES II, LLC

Bohannan ▲ Huston
www.bhinc.com 800.877.5332

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December 13, 2018 – 8:22am

EXHIBIT A

EXHIBIT B -

ORIGINAL BASIN MAP FROM DMP

EXISTING EASTDALE LITTLE LEAGUE BASEBALL FIELDS

PROPOSED ACCESS AISLE AND PARKING LOT

TRACT 1

EXISTING PARKING

BASIN 1
382,231 sq. ft.
8.77 acres
Q100, DEV – 23.79 cfs
V100, 6HR – 30,437 cf

BASIN 6
391,659 sq. ft.
8.99 acres
Q100, DEV – 32.65 cfs
V100, 6HR – 49,336 cf

Q_{100}-32.65 cfs

BASIN 10
234,647 sq. ft.
5.39 acres
Q100, DEV – 19.57 cfs
V100, 6HR – 28,571 cf

TRACT 3A

TRACT 3B-3

Q_{100}-77.67 cfs

Q_{100}-4.96 cfs

BASIN 9
59,738 sq. ft.
1.37 acres
Q100, DEV – 4.96 cfs
V100, 6HR – 7,492 cf

EXISTING FACILITY FF 5076

TRACT 3B-2-A

LOT LINE

TRACT 2

BASIN 5
167,654 sq. ft.
3.85 acres
Q100, DEV – 17.34 cfs
V100, 6HR – 28,021 cf

HORIZON BOULEVARD

TRACT 2

ALAMEDA BOULEVARD

FUTURE STORM DRAIN WITH D.I. & END SECTION

BASIN 8
245,621 sq. ft.
5.64 acres
Q100, DEV – 20.49 cfs
V100, 6HR – 30,969 cf

Q_{100}-20.49 cfs

TRACT 3B-1

Q_{100}-41.13 cfs

TRACT 3B-2-B

FF 5075

BASIN 7
216,353 sq. ft.
4.97 acres
Q100, DEV – 18.07 cfs
V100, 6HR – 27,315 cf

BASIN 3
110,257 sq. ft.
2.53 acres
Q100, DEV – 7.94 cfs
V100, 6HR – 10,378 cf

BASIN 2
422,586 sq. ft.
9.70 acres
Q100, DEV – 43.66 cfs
V100, 6HR – 70,552 cf

PAVED ACCESS ROAD

Q_{100}-63.49 cfs

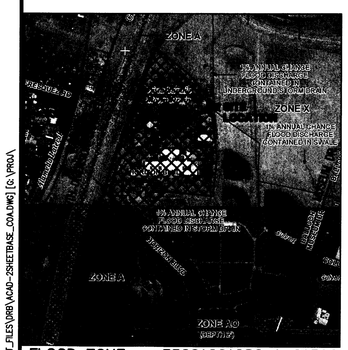
TRACT 2
BASIN 4
173,777 sq. ft.
3.99 acres
Q100, DEV – 14.51 cfs
V100, 6HR – 21,933 cf

Q_{100}-49.92 cfs

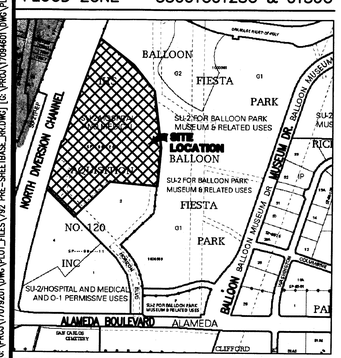
PAVED ACCESS ROAD

NORTH DIVERSION CHANNEL

Q_{100}-75.39 cfs



FLOOD ZONE 35001C0128G & 0136G



ZONE ATLAS B-17-Z & C-17-Z

FLOOD ZONE

THIS PROPERTY DOES NOT LIE IN AN AREA COVERED BY A FORMAL F.E.M.A. FLOOD STUDY. REFERENCE: FLOOD INSURANCE RATE MAP, ALBUQUERQUE, NEW MEXICO PANELS 35001C0128G & 35001C0136G EFFECTIVE DATE: NOVEMBER 26, 2008.

SOURCE OF EXISTING SURVEY

TOPOGRAPHIC SURVEY PERFORMED BY RIO GRANDE SURVEY DATED 1996

EXISTING CONDITIONS

EXISTING SITE IS IN VARIOUS STAGES OF DEVELOPMENT. HYDROLOGY PRESENTED HEREIN ARE FOR FULLY DEVELOPED CONDITIONS.

PROPOSED CONDITIONS

THE PROPOSED IMPROVEMENTS, WHICH ARE PART OF THIS PROJECT AND ANALYZED BY THIS DRAINAGE REPORT CONSIST OF A NEW PARKING LOT ON LOT 3-B-2-A. THE EXISTING BUILDING ON LOT 3-B-2-A SHALL HAVE RENOVATIONS TO THE INTERIOR AND EXTERIOR, BUT NO NEW SQUARE FOOTAGE SHALL BE ADDED TO THE FACILITY OR EXISTING ROOF DRAINAGE SHALL NOT BE MODIFIED. THIS GRANDING AND DRAINAGE PLAN IS IN ACCORDANCE WITH THE CONCEPUTAL GRADING AND DRAINAGE MASTER DEVELOPMENT PLAN INCLUDED IN THE SUBDIVISION OF TRACT 3B INTO 3-B-1, 3-B-2 AND 3-B-3. THIS APPLICATION IS FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT ON TRACT 3-B-2-A, APPROXIMATELY 4.28 ACRES. IMPROVEMENTS INCLUDE A NEW PARKING AREA WHICHI IS 39,198 SF (0.9 AC) ON PREVIOUSLY UNDISTURBED LANDS. THE APPROVED DRAINAGE MANAGEMENT PLAN FOR TRACTS 3-B-1, 3-B-2, AND 3-B-3 HAD LAND TREATMENTS OF 0% A, 5% B, 5% C, AND 90% D. THIS PROJECT IS INCOMPLIANCE WITH THESE LAND TREATMENS AND IS IN ACCORDANCE WITH PART A– PROCEDURE FOR 40 ACRE AND SMALLER BASIN SECTION 22.2–HYDROLOGY CITY OF ALB. DEVELOPMENT PROCESS MANUAL.

GENERAL LEGEND

EXISTING MINOR CONTOUR

EXISTING MAJOR CONTOUR — 61 —

FLOW DIRECTION ARROW

DISCHARGE POINT

EXISTING SW & PARKING STRIPES

BASIN BOUNDARY

100 50 0 100 200
SCALE: 1"=100'

Exhibit B

Designed By:
HUITT-ZOLLARS
Huitt-Zollars, Inc. Rio Rancho
333 Rio Rancho Drive NE, Suite 101
Rio Rancho, New Mexico 87124
Phone (505) 892-5141 Fax (505) 892-3259

RECEIVED
JUL 11 2011
HYDROLOGY SECTION

CAUWELS & STUVE
Construction & Design, L.L.C.
6001 Indian School Rd. N.E.
Suite 400
Albuquerque, New Mexico 87110
Voice: 505.266.5711
Fax: 505.255.9922
www.cauwels-stuve.com

TITLE: SITE PLAN FOR BUILDING PERMIT TRACT 3-B-2-A

DRAINAGE PLAN

City Project No.	Zone Map No.	Sheet	Of
	C-17-Z	C101	

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
RECORDED DRAWINGS ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
ALBUQUERQUE CONTROL SURVEY "ACS_NDC_7_1A_1983"
NM STATE PLANE COORDINATES
X=1,534,929.428
Y=1,524,419.502
GRID TO GROUND = 0.999674775
CENTRAL ZONE
Dcn=-0012'12.5"
ELEV=4987.20 (NGVD88)

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
JAMES A. FOLKS
NEW MEXICO
13256
REGISTERED PROFESSIONAL ENGINEER
7/8/11

NO.	DATE	REMARKS	BY

REVISIONS

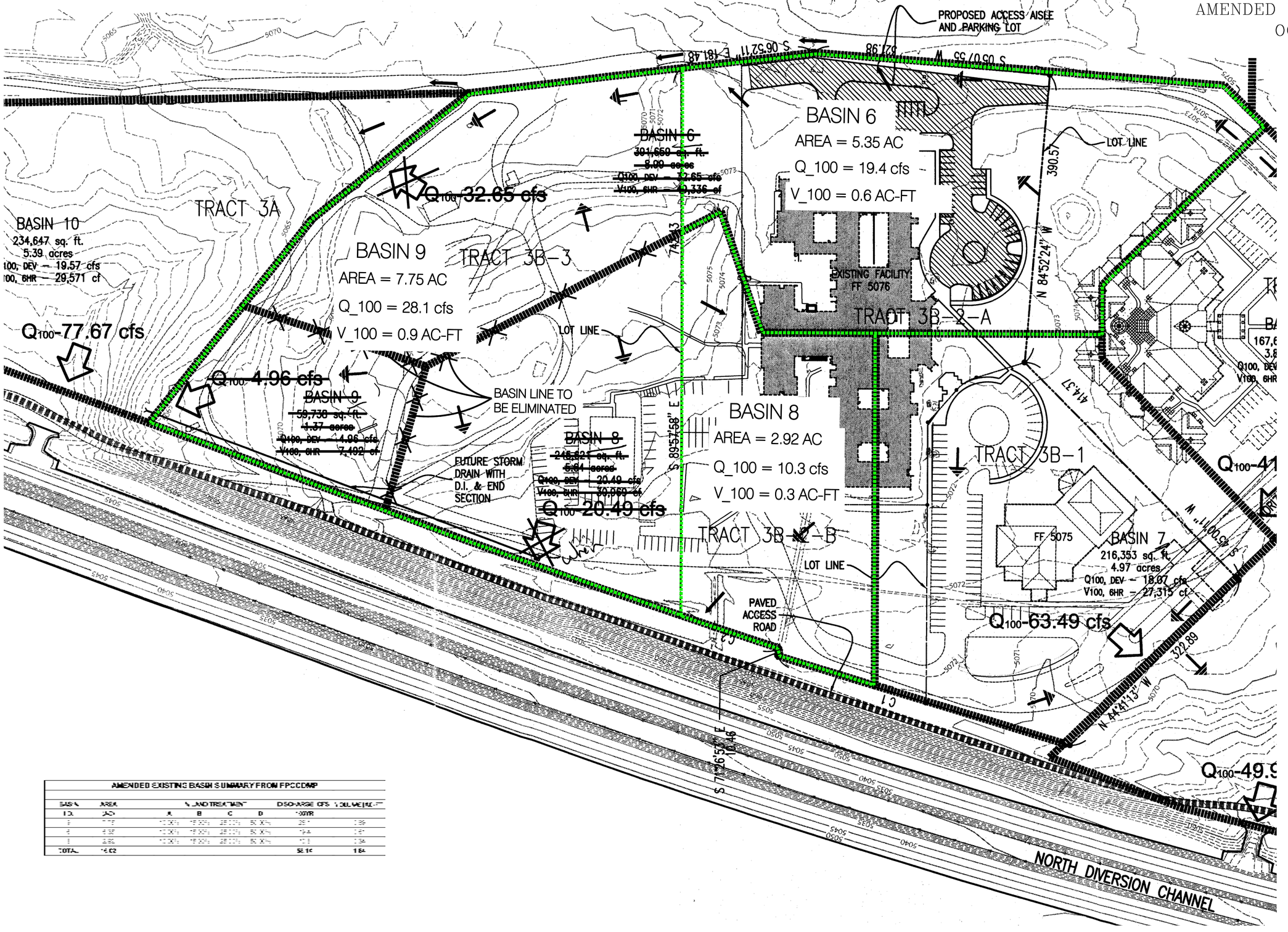
DESIGN
DESIGNED BY: DATE:
DRAWN BY: DATE:
DWG NAME: PROJ #:
CHECKED BY: DATE:

Jul 11, 2011 3:20:54pm – User:pdrew
G:\PROJ\7094601\DWG\PLOT_FILES\PDB\946 DRAINAGE.DWG
Xrefs: [G:\PROJ\7094601\DWG\PLOT_FILES\PDB\946 DRAINAGE_JRR.DWG] [G:\PROJ\7094601\DWG\PLOT_FILES\DRR\ACAD-29SHEETBASE_CDA.DWG] [G:\PROJ\7079201\DWG\PLOT_FILES\792 PRE-SHEETBASE_JRR.DWG]

EXHIBIT C -

AMENDED BASIN MAP FROM DMP

ASCENSION SUBDIVISION
AMENDED BASIN MAP FROM DMP
OCTOBER 2018



AMENDED EXISTING BASIN SUMMARY FROM FPCCDMP							
BASIN ID	AREA (AC)	% LAND TREATMENT A	B	C	D	DISCHARGE CFS 100YR	VOLUME (AC-FT)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]					[illegible]	[illegible]

LEGEND

- EXISTING BASIN BOUNDARY
- NEW BASIN BOUNDARY
- FLOW ARROW

N

60 30 0 60

1"=60'

Bohannan Huston

EXHIBIT D -

DEVELOPED CONDITIONS BASIN MAP

ASCENSION SUBDIVISION
DRAINAGE MANAGEMENT PLAN
JANUARY 2019
EXHIBIT D

DEVELOPED BASIN SUMMARY							
BASIN	AREA	% LAND TREATMENT				DISCHARGE (CFS)	VOLUME (AC-FT)
I.D.	(AC)	A	B	C	D	100YR	
DEV-1	5.44	0.0%	27.50%	27.50%	45.00%	19.4	0.42
DEV-2	4.08	0.0%	27.50%	27.50%	45.00%	14.8	0.30
OFFSITE 1	1.05	0.0%	0.00%	10.00%	90.00%	1.9	0.48
TOTAL	10.51					40.6	1.4

STORM DRAIN PIPE TABLE					
PIPE #	Size in.	Slope	Capacity[1] cfs	ACTUAL FLOW cfs	PIPE LENGTH ft
ONSITE					
SDP1	24	0.60%	17.52	13.90	318.5
SDP2	24	0.60%	17.52	13.90	15.0
SDP3	24	0.60%	17.52	13.90	23.0
SDP4	24	0.60%	17.52	13.90	27.4
SDP5	24	0.60%	17.52	13.90	127.8
SDP6	24	1.80%	30.35	13.90	54.0
SDP7	24	1.00%	22.62	13.90	126.8
SDP8	24	1.00%	22.62	21.20	126.8
SDP9	36	1.00%	66.70	40.75	27.4
SDP10	36	1.00%	66.70	40.75	213.0

1- Capacity Based on Manning's Eq w/ N= 0.013

INLET TABLE				
Inlet #	Inlet Type	Actual Flow	Avail Head ft	Capacity CFS
IN1	1-DBL COA TYPE A	13.90	0.66	50.82
IN2	1-SGL COA TYPE A	7.30	0.62	8.90
IN3	1-DBL COA TYPE A	19.60	0.66	50.82

LEGEND

BASIN BOUNDARY

FLOW ARROW

N

50 25 0 50

1"=50'

Bohannan Huston

Mon, 21-Jan-2019 - 3:47:pm, Plotted by: AORTIZ
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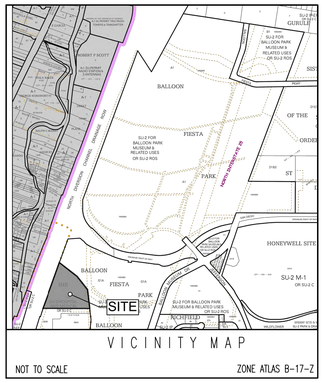
EXHIBIT E -

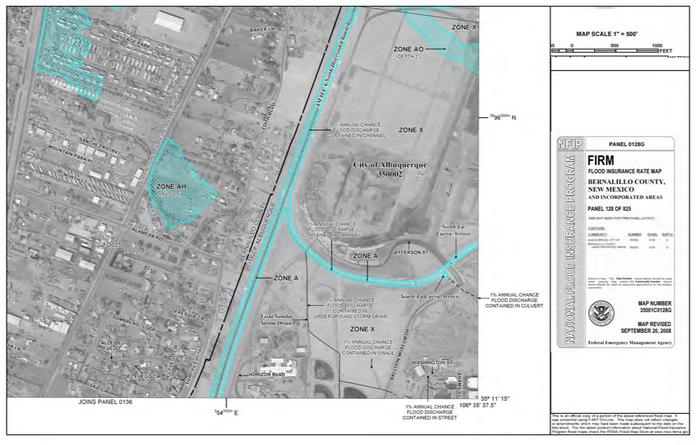
GRADING PLAN



VICINITY MAP

NOT TO SCALE

ZONE ATLAS B-17-Z



GENERAL NOTES

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LEGEND

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- 92.46 — EXISTING SPOT ELEVATION (GRND & TC)
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- PROPOSED STANDARD CURB & GUTTER
- 5470 — EXISTING CONTOUR W/ INDEX ELEVATION
- FLOW ARROW
- PROPOSED RETAINING WALL
- PROPOSED SLOPE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET
- HIGH POINT

STORM QUALITY NOTE

OWNER HAS ELECTED TO FULFILL STORMWATER QUALITY REQUIREMENTS VIA A PAYMENT IN-LIEU OF $25,825.64

N

50 25 0 50

1"=50'

AS-BUILT INFORMATION

	DATE
CONTRACTOR	
WORK STAKED BY	
AS-BUILT INSPECTED FOR ACCEPTANCE BY	
FIELD VERIFICATION BY	
DRAWINGS CORRECTED BY	

MICROFILM INFORMATION

	DATE
RECORDED BY	
NO.	

BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

MICHAEL BALAKRISHNAN
NEW MEXICO, U.S.A.
18187
1-21-19
LICENSED PROFESSIONAL ENGINEER

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: AMO DATE:12/2018
Drawn By: AMO DATE:12/2018
Checked By: MJB DATE:12/2018

Bohannan Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

ASCENSION SUBDIVISION
GRADING PLAN

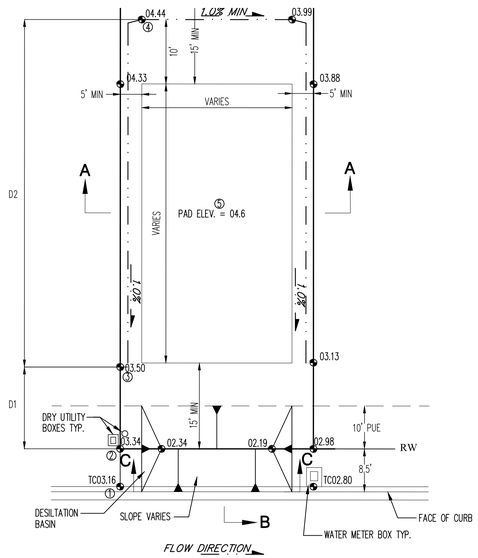
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
	B-17-Z	1	2

P:\2
January 21, 2019 - 5:01pm

EXHIBIT F -

GRADING PLAN DETAILS

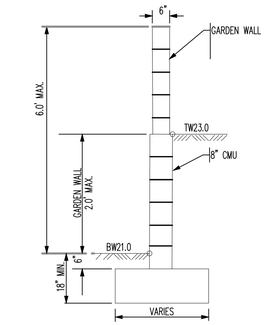


TYPICAL LOT GRADE DETAIL
WITH DESILTATION BASIN FOR SEDIMENTATION CONTROL

NOT TO SCALE

TO SET SPOT② – ADD 0.17' TO SPOT①
TO SET SPOT③ – MULTIPLY D1 BY 1.0% AND ADD TO SPOT②
TO SET SPOT④ – MULTIPLY D2 BY 1.0% AND ADD TO SPOT③
TO SET SPOT⑤ – ADD 0.2' TO SPOT④

BOTTOM OF BASIN IS 1' BELOW PROPERTY LINE ELEVATION.
SEE GRADING PLANS FOR EXACT ELEVATIONS.
CONTRACTOR SHALL CONSTRUCT TEMPORARY DESILTATION BASIN AT EACH LOT.

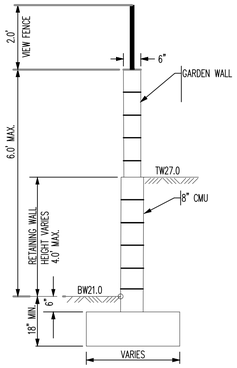


TW=FINISHED GRADE ELEVATION AT TOP OF RETAINING WALL
BW=FINISHED GRADE ELEVATION AT BOTTOM OF RETAINING WALL

TYPICAL GARDEN WALL NOMENCLATURE

NOT TO SCALE

(RETAINING HEIGHT IS TAKEN TO BE DIFFERENCE IN FINISHED GRADES ON LEFT AND RIGHT SIDE OF WALL.)



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TYPICAL RETAINING WALL NOMENCLATURE

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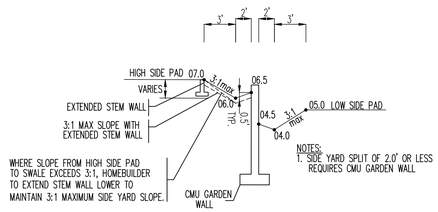
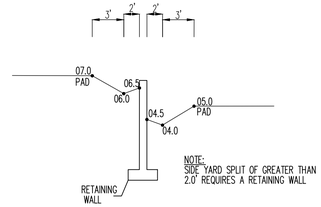


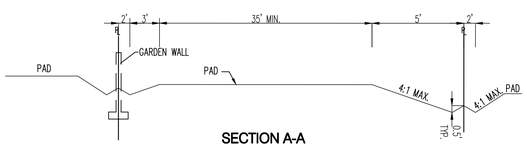
SIDE YARD GARDEN WALL DETAIL

NOT TO SCALE



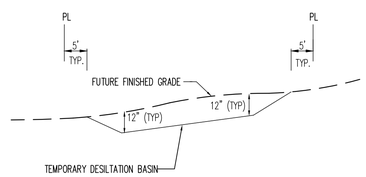
SIDE YARD RETAINING WALL DETAIL

NOT TO SCALE



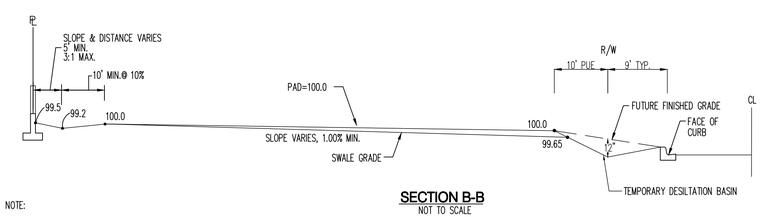
SECTION A-A
TYPICAL SIDE YARD SWALE

NOT TO SCALE



SECTION C-C

NOT TO SCALE



SECTION B-B

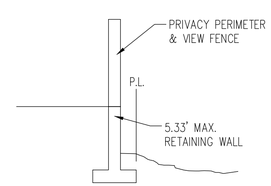
NOT TO SCALE

NOTE:

1. CONTRACTOR IS TO MASS GRADE ROADS TO 2' BEYOND FUTURE CURB. EXCESS FROM DRY UTILITY TRENCH IS TO BE USED TO BACK FILL BEHIND CURB.

2. FRONT YARDS ARE TO BE GRADED AS SHOWN ON THIS DETAIL FOR FINAL GRADING AND CERTIFICATION THIS DETAIL TO BE COORDINATED WITH.

3. HOME BUILDER TO BRING FRONT YARD TO ULTIMATE FRONT YARD GRADES AFTER HOME CONSTRUCTION IS COMPLETED. SEE ULTIMATE FRONT YARD GRADING DETAIL ON THIS SHEET.



TYPICAL RETAINING WALL CROSS SETION A-A

NOT TO SCALE

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AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
ACCEPTANCE — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

MICROFILM INFORMATION
RECORDED BY — DATE
NO.

ENGINEER'S SEAL
MICHAEL BALANDA
NEW MEXICO
18187
LICENSED PROFESSIONAL ENGINEER
1-21-19

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: SJS — DATE:07/2016
Drawn By: BJS — DATE:07/2016
Checked By: SJS — DATE:07/2016

Bohannan Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

ASCENSION SUBDIVISION
GRADING PLAN DETAILS

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
	B-17-Z	2	2

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January 21, 2019 – 5:03pm