CITY OF ALBUQUERQUE

1 B U A

June 7, 2017

David Aube, PE Hartman + Majewski Design Group 120 Vassar Dr. SE Suite 100 Albuquerque, NM 87106

Re: GAHP Casa Feliz

544 San Pablo

Request Permanent C.O. - Accepted

Engineer's Stamp dated: 12-18-15 (L19D073D)

Certification dated: 6-2-17

Dear Mr. Aube,

Based on the Certification received 6/2/2017, the site is acceptable for release of Certificate of Occupancy by Hydrology.

Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3986 or Totten Elliott at

924-3982.

Albuquerque

PO Box 1293

James Deepler

New Mexico 87103

James D. Hughes, P.E.

Principal Engineer, Planning Dept. Development and Review Services

www.cabq.gov

TE/JH

C: email: Serna, Yvette; Fox, Debi; Tena, Victoria; Sandoval, Darlene M.

II. SITE DESCRIPTION AND HISTORY

THE PROJECT CONTAINS MANY SCATTERED SITES, LOCATED AROUND A PREVIOUS PROJECT BY GREATER ALBUQUERQUQ HOUSING AUTHORITY CALLED PLAZA FELIZ. THE SITES ARE LOCATED ON ESPANOLA STREET SE, SAN PABLO STREET SE, GROVE STREET SE, BELL AVENUE SE, AND TRUMBELL AVENUE SE.

THIS AREA WAS AT ONE TIME FULLY DEVELOPED WITH A FOURPLEX ON EACH OF THE LOTS BEING REDEVELOPED BY THIS PROJECT. THE LAND WAS ORIGINALLY SUBDIVIDED IN 1944 AND WAS FULLY DEVELOPED PRIOR TO THE IMPLEMENTATION OF THE DRAINAGE ORDINANCE RESTRICTING FLOW FROM THE SITES INTO THE PUBLIC WAY. DEMOLITION OF THESE PRIOR FOURPLEXES WAS COMPLETED BY 2010 WITH THE EXCEPTION OF ONE LOT THAT STILL NEEDS TO HAVE THE BUILDING REMOVED FOR THIS PROJECT.

THE SITES WERE ALL FREE DISCHARGE INTO THE STREET, OR IN SOME CASES INTO THE ADJACENT PROPERTIES. EACH OF THE SITES WERE ANALYZED AS TYPE C SOIL TO ACCOUNT FOR THE PREVIOUSLY COMPACTED SOIL CONDITIONS. THIS INCLUDES THE LOT WITH THE EXISTING BUILDING TO BE REMOVED.

III. COMPUTATIONAL PROCEDURES

HYDROLOGIC ANALYSIS WAS PERFORMED UTILIZING THE DESIGN CRITERIA BASED ON SECTION 22.2, HYDROLOGY, OF THE DEVELOPMENT PROCESS MANUAL.

IV. PRECIPITATION

THE STORM EVENT USED FOR THE FOLLOWING CALCULATIONS IS THE 100YR-6HR STORM. THE PROJECT SITE IS LOCATED IN ZONE 3.

V. EXISTING DRAINAGE CONDITIONS (REFER TO CD EX1)

CURRENTLY THE SITES FLOW FROM EAST TO WEST AND TOWARD BELL AVENUE FROM BOTH NORTH AND SOUTH. WITH THE PRIOR DEVELOPMENT, MANY OF THE LOTS CREATED CROSS LOT DRAINAGE PATTTERNS THAT WILL BE CORRECTED WITH THIS PROJECT. HISTORICALLY THE SITES HAD BEEN DEVELOPED AS FOURPLEX UNITS WITH APPROXIMATELY 6 PARKING SPACES ON SITE. THE SITES CONTAINED MINIMAL LANDSCAPING AND WERE LIKELY 85% IMPERVIOUS (USING SURROUNDING UNITS AS A TYPICAL DEVELOPMENT DENSITY).

USING THE 85% D AND 15% C SOIL TREATMENTS THE TYPCIAL 50X135 LOT (6750 SF) CREATES A PEAK RUNOFF RATE OF 0.74 CFS AND AN EXCESS RUNOFF VOLUME OF 0.0284 ACRE FEET DURING THE 100 YEAR 6 HOUR EVENT.

TO BE MORE CONSERVATIVE, THE SITES WERE ANALYZED AS 100% C SOIL AS REQUIRED FOR SOIL COMPACTED BY HUMAN ACTIVITY. THE REDUCES THE PEAK RUNOFF RATE TO 0.53 CFS AND AN EXCESS RUNOFF VOLUME OF 0.0167 ACRE FEET DURING THE 100 YEAR 6 HOUR EVENT.

VI. PROPOSED DRAINAGE CONDITIONS

THE SCATTERED SITE HAVE BEEN ANALYZED INDIVIDUALLY. BUILDINGS HAVE BEEN ASSIGNED LETTERS AND THIS REPORT IS ORGANIZED TO FOLLOW THAT SAME ORDER.

BUILDING/SITE A IS LOCATED IN A SINGLE LOT THAT WILL HAVE A PORTION OF TRUMBELL VACATED AND IS THEREFORE SLIGHTLY LARGER THAN THE TYPICAL LOT AND CONTAINS 7425 SF. THIS SITE CURRENTLY CONTAINS AN APARTMENT BUILDING THAT WILL BE DEMOLISHED. THE SITE IS BROKEN UP INTO TWO SUB BASINS, THE FIRST FLOWING WEST TOWARD SAN PABLO AND THE OTHER TO THE EAST AND INTO TRUMBELL ON THE SOUTH. THE COMBINED FLOW RATES FOR THIS SITE 0.70 CFS WHICH IS LESS THAN THE ACTUAL CURRENT CONDITIONS OF 0.82 SF. THESE NUMBERS WERE ADJUSTED BECAUSE THE SITE CONTAINS THE 7425 SF IN LIEU OF THE TYPCIAL 6750 SF. THE INCLUSION OF SHALLOW PONDING AREAS (4" DEEP) THAT HARVEST 113 OF THE FIRST FLUSH VOLUME (91.6 CF REQUIRED) WILL FURTHER REDUCE THE PEAK RUNOFF.

BUILDING/SITE B CONTAINS 7 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 5.18 CFS (7 * 0.74 CFS). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 4.32 CSF AND AN EXCESS RUNOFF VOLUME OF 0.1520 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 576 CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 305.6 CF.

BUILDING/SITE C AND D CONTAINS 5 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 3.71 CFS (5 * 0.74 CFS). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 3.28 CSF AND AN EXCESS RUNOFF VOLUME OF 0.1156 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 454 CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 271.3 CF.

BUILDING/SITE E, F AND G CONTAINS 7 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 5.19 CFS (7 * 0.74 CFS). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 4.35 CSF AND AN EXCESS RUNOFF VOLUME OF 0.1527 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 393 CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 263.0 CF.

EXCESS RUNOFF FROM THESE SITES CAN DISCHARGE INTO ESPANOLA THROUGH THE DRIVEWAY OPENING OR THROUGH A SMALL RUNDOWN CHANNEL LOCATED ON THE SOUTH SIDE OF BUILDING G AND THROUGH A SIDEWALK CULVERT UNDER THE PUBLIC SIDEWALK.

BUILDING/SITE H CONTAINS 3 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 2.22 CFS (3 * 0.74 CFS). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 1.81 CSF AND AN EXCESS RUNOFF VOLUME OF 0.0629 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 315 CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 203.8 CF.

EXCESS RUNOFF FROM THESE SITES CAN DISCHARGE INTO ESPANOLA THROUGH THE DRIVEWAY OPENING OR THROUGH A SMALL RUNDOWN CHANNEL LOCATED ON THE SOUTH SIDE OF BUILDING H AND THROUGH A SIDEWALK CULVERT UNDER THE PUBLIC SIDEWALK.

BUILDING/SITE I CONTAINS 4 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 2.97 CFS (4 * 0.74 CFS). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 2.88 CSF AND AN EXCESS RUNOFF VOLUME OF 0.1089 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 218.3 CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 117.1 CF. THIS SITE DRAINS OUT THE SOUTHERN DRIVEWAY INTO BELL AVENUE, SE.

BUILDING/SITE J CONTAINS 4 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 3.03 CFS (SLIGHTLY LARGER DUE TO VACATED ROW ON BELL AVENUE SE THAT IS INCORPORATED INTO THE SITE). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 2.48 CSF AND AN EXCESS RUNOFF VOLUME OF 0.0848 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 308 CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 151 CF. THIS SITE DRAINS OUT THE NORTHERN DRIVEWAY INTO BELL AVENUE, SE.

BUILDING/SITE K CONTAINS 3 PARCELS AND WOULD HAVE CREATED A PEAK RUNOFF IN THE PREVIOUSLY DEVELOPED CONDITION OF 2.22 CFS (3 * 0.74 CFS). THE PROPOSED DEVELOPMENT WILL CREATE A PEAK RUNOFF OF 1.81 CSF AND AN EXCESS RUNOFF VOLUME OF 0.0629 ACRE FEET. THE SHALLOW PONDS SURROUNDING THE BUILDING WILL HARVEST 338CF WHICH EXCEEDS THE FIRST FLUSH REQUIRED VOLUME OF 102 CF.

BUILDING/SITE L IS LOCATED IN A SINGLE LOT THAT WILL HAVE A PORTION OF TRUMBELL VACATED AND IS THEREFORE SLIGHTLY LARGER THAN THE TYPICAL LOT AND CONTAINS 7425 SF. THE COMBINED FLOW RATES FOR THIS SITE 0.70 CFS WHICH IS LESS THAN THE ACTUAL CURRENT CONDITIONS OF 0.81 SF. THE INCLUSION OF SHALLOW PONDING AREAS (4" DEEP) THAT HARVEST 118 OF THE FIRST FLUSH VOLUME (91.6 CF REQUIRED) WILL FURTHER REDUCE THE PEAK RUNOFF.

VII. CONCLUSIONS

EACH INDIVIDUAL SITE HAS BEEN DESIGNED TO HARVEST MORE THAN IS REQUIRED TO MEET THE MSSSS PERMIT REQUIREMENTS FOR FIRST FLUSH VOLUMES. SITES HAVE BEEN DESIGNED TO DIRECT EXCESS RUNOFF TO THE PUBLIC STREETS WHERE PREVIOUS DEVELOPMENTS DISCHARGED IN A CROSS LOT CONFIGURATION.

EACH LOT IS STILL ALLOWING FOR FREE DISCHARGE FOR RUNOFF EXCEEDING THAT CONTAINED IN THE MSSSS REQUIREMENTS DESCRIBED ABOVE. THIS IS CONSISTENT WITH AND A REDUCTION FROM THE HISTORIC DISCHARGE RATES FROM THE PREVIOUSLY DEVELOPED LOTS.

BECAUSE THERE IS A REDUCTION IN FLOW RATES AND EXCESS RUNOFF IS DIRECTED TOWARD THE PUBLIC STREET INSTEAD OF CROSS LOT DRAINAGE, THERE SHOULD BE BENEFITS TO THE DOWNSTREAM LOTS.

Drainage	Summary

Casa Fleliz Project Numbe: 10/12/15 Dave A

Site Location

2yr. 6hr.

100 yr.

Peak Discharge (cfs)

First Flush Acre Feet

First Flush Ponding Voulme (cf)

Date:

3 Per Table A-1 COA DPM Section 22.2

Precipitaion Zone

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Existing summary																							
Basin Name	EXA	EXB	EXC & D	EXE	EXF & G	EXH	EXI	EX J	EXK	EXL				Typ 85% D	Typ 100%C								
Area (sf)	7425	47202	33742	13504	33742	20250	26999	27556	20250	7425				6750	6750								
Area (acres)	0.170	1.084	0.775	0.310	0.775	0.465	0.620	0.633	0.465	0.170				0.155	0.155								
%A Land treatment	0	0	0	0	0	0	0	0	0	0				0	0								
%B Land treatment	0	0	0	0	0	0	0	0	0	0				0	0								
%C Land treatment	15	15	15	15	15	15	15	15	15	15				15	100								
%D Land treatment	85	85	85	85	85	85	85	85	85	85				85	0								
Soil Treatment (acres)																							
Area "A"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00								
Area "B"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00								
Area "C"	0.03	0.16	0.12	0.05	0.12	0.07	0.09	0.09	0.07	0.03				0.02	0.15								
Area "D"	0.14	0.92	0.66	0.26	0.66	0.40	0.53	0.54	0.40	0.14				0.13	0.00								
Excess Runoff (acre-feet)																							
100yr. 6hr.	0.0312	0.1986	0.1420	0.0568	0.1420	0.0852	0.1136	0.1160	0.0852	0.0312	acre-ft.			0.0284	0.0167								
10yr. 6hr.	0.0194	0.1235	0.0883	0.0353	0.0883	0.0530	0.0707	0.0721	0.0530	0.0194	acre-ft.			0.0177	0.0080								
2yr. 6hr.	0.0112	0.0710	0.0508	0.0203	0.0508	0.0305	0.0406	0.0415	0.0305	0.0112	acre-ft.			0.0102	0.0026								
100yr. 24hr.	0.0373	0.2370	0.1694	0.0678	0.1694	0.1017	0.1356	0.1384	0.1017	0.0373	acre-ft.			0.0339	0.0167								
Peak Discharge (cfs)																							
	0.82	5.18	3.71	1. 4 8	3.71	2 22	2.97	3 03	2 22	0.82	ofo			0.74	0.53								
100 yr.	0.54	3.45	2.46	0.99	2.46	2.22 1.48	2.97 1.97	3.03 2.01	2.22 1.48	0.52	cfs cfs			0.74	0.33								
10yr. 2yr.	0.34	2.01	1.43	0.57	1.43	0.86	1. <i>91</i> 1.15	1.17	0.86	0.34	cfs			0.49	0.31								
Zy 1.	0.32	2.01	1.45	0.57	1.45	0.00	1.15	1.17	0.00	0.32	CIS			0.23	0.12								
Proposed summary																							
Basin Name	Pro A1	Pro A2	Pro B1	Pro B2	Pro C1	Pro C2	Pro D1	Pro E1	Pro F1	Pro F2	Pro G1	Pro H1	Pro H2	Pro I1	Pro I2	Pro I3	Pro J1	Pro J2	Pro J3	Pro K1	Pro K2	Pro L1	Pro L2
Area (sf)	2104	5321	12942	34260	4525	25692	4525	7462	4525	30721	4525	6275	13975	3257	3342	20400	5469	21808	278	6435	13815	2104	5321
Area (acres)	0.048	0.122	0.297	0.787	0.104	0.590	0.104	0.171	0.104	0.705	0.104	0.144	0.321	0.075	0.077	0.468	0.126	0.501	0.006	0.148	0.317	0.048	0.122
%A Land treatment																							
%B Land treatment	10	0	15	15	10		10	50	10		10	25	10	10			25	10		25	10	10	
%C Land treatment	25	65	25	50	25	65	25	15	25	65	25	25	60	20	65	15	25	60	50	25	60	25	65
%D Land treatment	65	35	60	35	65	35	65	35	65	35	65	50	30	70	35	85	50	30	50	50	30	65	35
Soil Treatment (acres)																							
Area "A"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area "B"	0.00	0.00	0.04	0.12	0.01	0.00	0.01	0.09	0.01	0.00	0.01	0.04	0.03	0.01	0.00	0.00	0.03	0.05	0.00	0.04	0.03	0.00	0.00
Area "C"	0.01	0.08	0.07	0.39	0.03	0.38	0.03	0.03	0.03	0.46	0.03	0.04	0.19	0.01	0.05	0.07	0.03	0.30	0.00	0.04	0.19	0.01	0.08
Area "D"	0.03	0.04	0.18	0.28	0.07	0.21	0.07	0.06	0.07	0.25	0.07	0.07	0.10	0.05	0.03	0.40	0.06	0.15	0.00	0.07	0.10	0.03	0.04
Excess Runoff (acre-feet)																							
100yr. 6hr.	0.0078	0.0169	0.0465	0.1055	0.0169	0.0818	0.0169	0.0211	0.0169	0.0978	0.0169	0.0208	0.0421	0.0125	0.0106	0.0858	0.0181	0.0657	0.0010	0.0213	0.0416	0.0078	0.0169
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38.4

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0.0259

1.75

0.0030

46.6 131.5

Copper Ave NE

Elementary School

Van Cleave Place Im

Trumbull Ave SE

Susan Ave SE

PROJECT LOCATION

San Joaquin Ave SE

Kathryn Ave SE

0.0055

46.6

0.0011

0.0101 0.0119 0.0229 0.0075

0.0105

0.75

101.9

0.0023

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101.9

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79.7

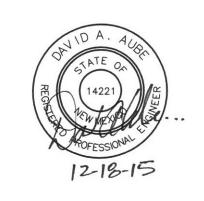
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STAMP



100% CONSTRUCTION **DOCUMENTS**

PROJECT NAME CASA FELIZ

441 ESPANOLA STREET SE, ALBUQUERQUE, NEW MEXICO 87108

GREATER ALBUQUERQUE HOUSING PATRTNERSHIP

Drainage Certification (L19D073C, DRB#1010674)

45.8

I, David A Aube. NMPE 14221, of the firm The Hartman + Majewski Design Group, Inc, hereby certify that portion of the project (Building A located at 544 San Pablo St. SE and Building L located at 448 Grove St. SE) is in substantial compliance with and in accordance with the design intent of the Grading and Drainage plan approved plan dated 12-18-15. The record information that has been edited onto the original design documents where obtained by Community sciences Corporation on May 11th, 2017. I further certify that I have personally visited the project site on June 2, 2017 and have determined by visual inspection that the actual site conditions shown on this plan to be true and correct to the best of my knowledge and belief. This certification is submitted in support of a request for Permanent Certificate of Occupancy for Building A located at 544 San Pablo St. SE and Building L located at 448 Grove St. SE.

0.0276

152.8

0.0217

178.1

0.0041

46.6

0.0011

0.0055

0.29

46.6

0.0011

The record information presented hereon is not necessarily complete and intended only to verify substantial compliance of the drainage aspects of this project. Those relying on the record documents are advised to obtain independent verification of its accuracy before using it for any other purpose.

Cochiti Rd SE

Acoma Rd SE

Bell Ave SE

Trumbull Ave SE

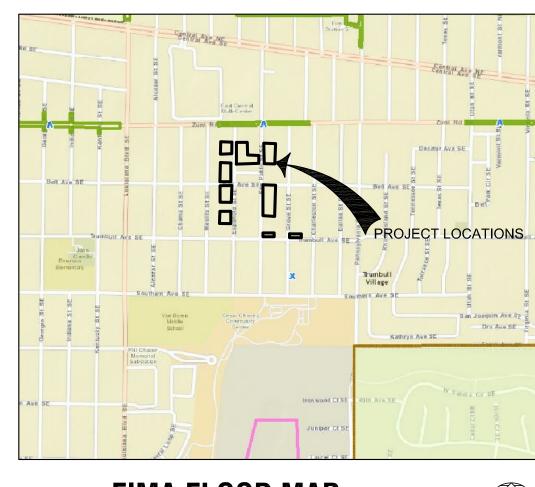
Southern Ave SE

Aps-Wilson
Middle School Ross Ave SE

Kathryn Ave SE

Zuni Rd SE





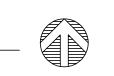
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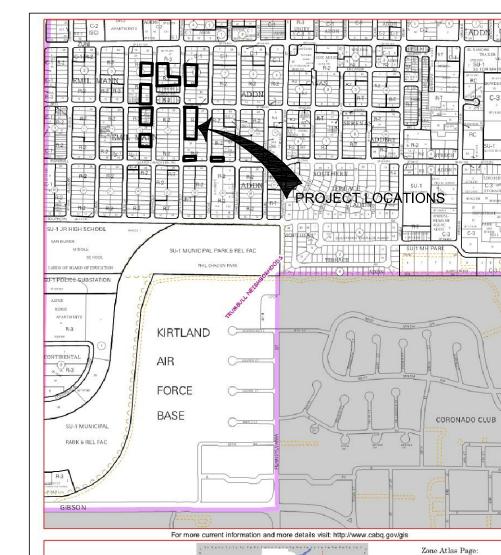
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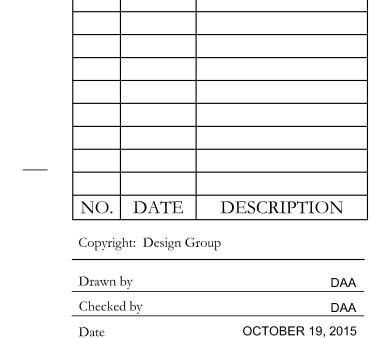
51.0

FIMA FLOOD MAP





L-19-Z ZONE ATLAS PAGE



REVISIONS

SHEET TITLE

SHEET NUMBER

Project number

OVERALL EXISTING SITE DRAINAGE PLAN

CD1

VICINITY MAPS

