

CITY OF ALBUQUERQUE



June 30, 2017

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

**Re: GAHP Casa Feliz
421 Espanola Street SE
Requested for Permanent C. O. – Not Accepted
Engineers Stamp Date 12/18/15 (L19D073F)
Certification dated: 6-7-17**

Dear Mr. Aube,

Based on the certification provided in your submittal received 6/28/2017, the above referenced site cannot be accepted for release of Certificate of Occupancy by Hydrology until the following comments are addressed:

1. The swale on the south side of the site is inadequate to prevent cross-lot drainage and this project placed about 1' of fill along the property line piled against a wooden fence. A retaining/flood wall is recommended to prevent drainage from entering the adjacent lot.
2. The calculations for the pipe and side yard swale need to be revised and constructed to prevent cross-lot drainage. The pipe should be analyzed as a culvert instead of the normal depth calculation in 6-28-2017 submittal. The headwater depth on the 12" culvert is about 0.9'. Manning's "n" value in the channel calculations also needs correction from 0.025 to 0.045 for rip-rap.
3. Using the revised capacity calculations please provide a swale with at least 4" freeboard to insure that drainage from this site will not enter the adjacent property. The adjacent site is particularly susceptible to flooding so please make sure that no drainage from this site will enter that property.

PO Box 1293

Albuquerque

New Mexico 87103

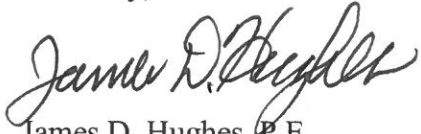
www.cabq.gov

Please revise the calculations and add a flood wall or something on the property line to accomplish the grade change and prevent cross-lot drainage.

An inspection by our office will need to take place after these corrections are made.

If you have any questions, you can contact me at 924-3986 or Totten Elliott at 924-3982.

Sincerely,

A handwritten signature in black ink, appearing to read "James D. Hughes". The signature is fluid and cursive, with the first name "James" being more prominent.

James D. Hughes, P.E.
Principal Engineer, Planning Dept.
Development and Review Services

TE/JH
C: email

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: GAHP Casa Feliz (L19D073F)

DRB #: _____

EPC#: _____

ZONE MAP/DRG. FILE #: L-19-Z

WORK ORDER#: _____

LEGAL DESCRIPTION: Lot 13-18, 18-20 Block 4, Lots 4-8, 17-18 Block 5, etc. Emil Mann Addition

CITY ADDRESS: Bldg H at 421 Espanola SE

ENGINEERING FIRM: Hartman + Majewski Design Group

ADDRESS: 120 Vassar Dr SE, Suite 100

CITY, STATE: Albuquerque, NM 87106

CONTACT: David Aube

PHONE: 505-998-6430

ZIP CODE: 87106

OWNER: Greater Albuquerque Housing Partnership

ADDRESS: 320 Gold SW, Suite 918

CITY, STATE: Albuquerque, NM

CONTACT: Felipe Rael

PHONE: 505-244-1614

ZIP CODE: 87102

ARCHITECT: Hartman + Majewski Design Group

ADDRESS: 120 Vassar Dr SE, Suite 100

CITY, STATE: Albuquerque, NM

CONTACT: Mark Wade

PHONE: 505-998-6442

ZIP CODE: 87106

SURVEYOR: Community Sciences.

ADDRESS: _____

CITY, STATE: Albuquerque, NM

CONTACT: _____

PHONE: 505-

ZIP CODE: _____

CONTRACTOR: _____

ADDRESS: _____

CITY, STATE: _____

CONTACT: _____

PHONE: _____

ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL, **REQUIRES TCL or equal**
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

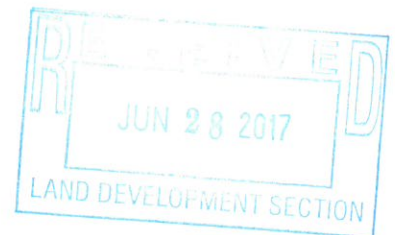
- ☐ SIA / FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY (PERM.)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

DATE SUBMITTED: June 26, 2017

BY: David Aube P.E.



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

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

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Thursday, Jun 22 2017

<Name>

Trapezoidal

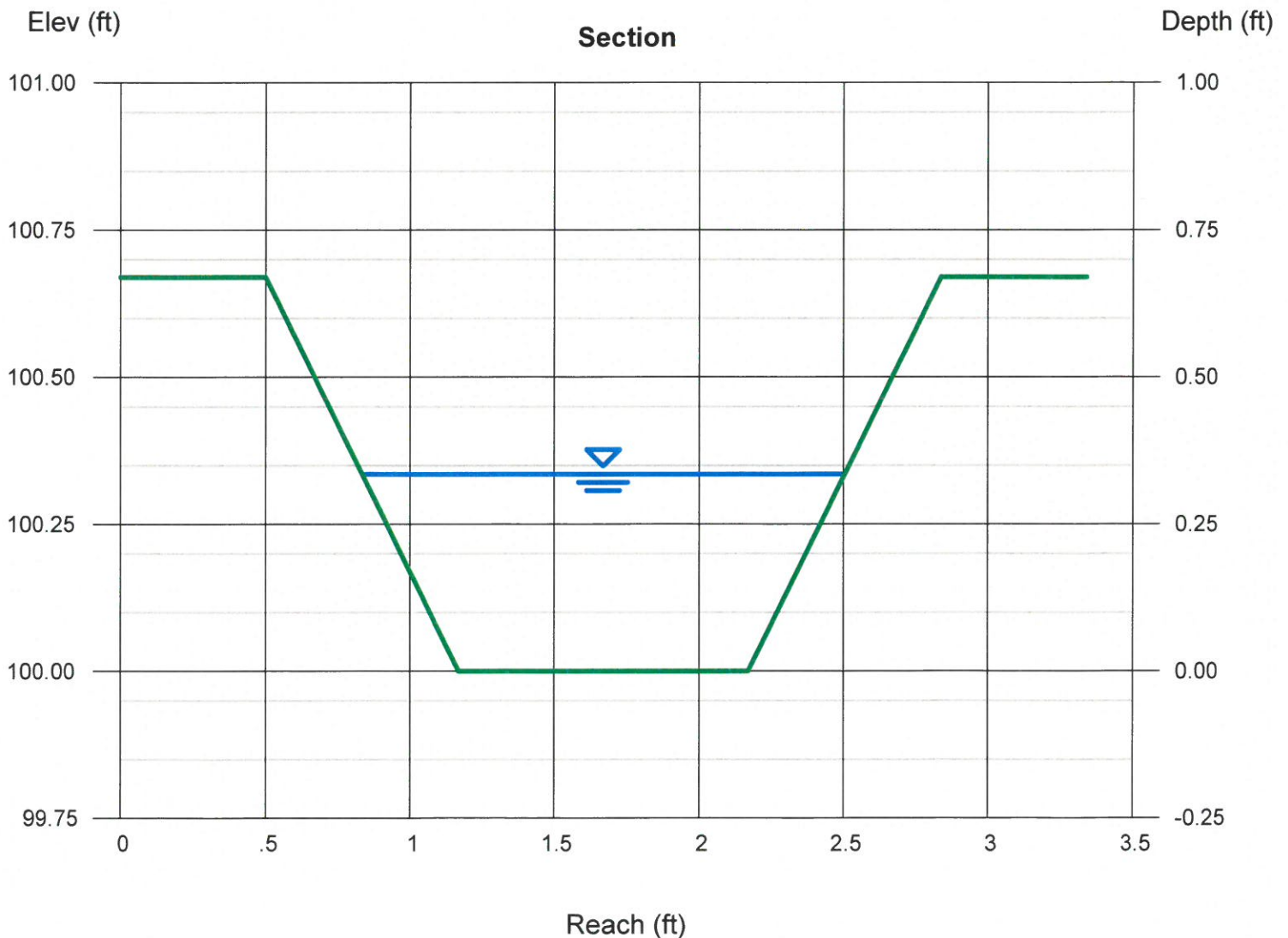
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 1.00, 1.00
Total Depth (ft) = 0.67
Invert Elev (ft) = 100.00
Slope (%) = 2.00
N-Value = 0.025

Highlighted

Depth (ft) = 0.34
Q (cfs) = 1.409
Area (sqft) = 0.45
Velocity (ft/s) = 3.15
Wetted Perim (ft) = 1.95
Crit Depth, Yc (ft) = 0.35
Top Width (ft) = 1.67
EGL (ft) = 0.49

Calculations

Compute by: Q vs Depth
No. Increments = 10



Depth	Q	Area	Veloc	Wp	Yc	TopWidth	Energy
(ft)	(cfs)	(sqft)	(ft/s)	(ft)	(ft)	(ft)	(ft)
0.07	0.092	0.071	1.29	1.19	0.07	1.13	0.09
0.13	0.293	0.152	1.93	1.38	0.14	1.27	0.19
0.20	0.582	0.241	2.41	1.57	0.21	1.40	0.29
0.27	0.954	0.340	2.81	1.76	0.28	1.54	0.39
0.34	1.409	0.447	3.15	1.95	0.35	1.67	0.49
0.40	1.948	0.564	3.46	2.14	0.43	1.80	0.59
0.47	2.572	0.689	3.73	2.33	0.50	1.94	0.69
0.54	3.285	0.823	3.99	2.52	0.58	2.07	0.78
0.60	4.090	0.967	4.23	2.71	0.65	2.21	0.88
0.67	4.989	1.119	4.46	2.90	0.67	2.34	0.98

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Thursday, Jun 22 2017

<Name>

Circular

Diameter (ft) = 1.00

Invert Elev (ft) = 100.00

Slope (%) = 2.00

N-Value = 0.012

Calculations

Compute by: Q vs Depth

No. Increments = 10

Highlighted

Depth (ft) = 0.40

Q (cfs) = 1.841

Area (sqft) = 0.29

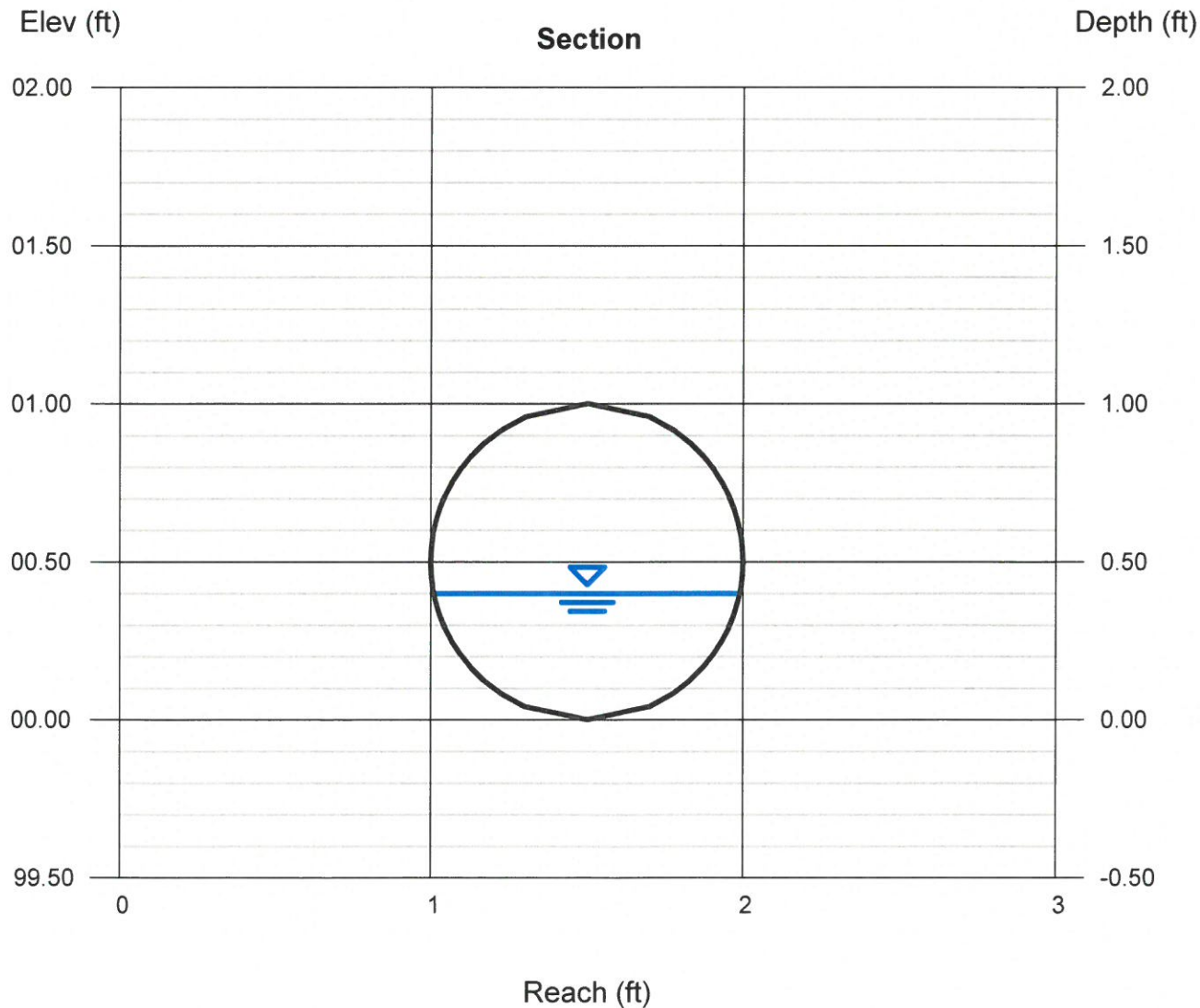
Velocity (ft/s) = 6.27

Wetted Perim (ft) = 1.37

Crit Depth, Yc (ft) = 0.58

Top Width (ft) = 0.98

EGL (ft) = 1.01



Depth	Q	Area	Veloc	Wp	Yc	TopWidth	Energy
(ft)	(cfs)	(sqft)	(ft/s)	(ft)	(ft)	(ft)	(ft)
0.10	0.115	0.041	2.79	0.64	0.14	0.60	0.22
0.20	0.483	0.113	4.29	0.93	0.29	0.80	0.49
0.30	1.071	0.198	5.39	1.16	0.44	0.92	0.75
0.40	1.841	0.294	6.27	1.37	0.58	0.98	1.01
0.50	2.747	0.395	6.96	1.57	0.72	1.00	1.25
0.60	3.679	0.493	7.46	1.77	0.82	0.98	1.46
0.70	4.579	0.588	7.78	1.98	0.90	0.92	1.64
0.80	5.335	0.674	7.92	2.22	0.94	0.80	1.77
0.90	5.817	0.745	7.81	2.50	0.95	0.60	1.85
1.00	5.456	0.785	6.95	3.14	0.94	0.00	1.75

I. PURPOSE AND SCOPE

THE PURPOSE OF THIS DRAINAGE PLAN IS TO PRESENT THE EXISTING AND PROPOSED DRAINAGE MANAGEMENT PLANS FOR THE GREATER ALBUQUERQUE HOUSING PROJECT TITLED CASA FELIZ.

II. SITE DESCRIPTION AND HISTORY

THE PROJECT CONTAINS MANY SCATTERED SITES, LOCATED AROUND A PREVIOUS PROJECT BY GREATER ALBUQUERQUO 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 PATTERNS 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 TYPICAL 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 TYPICAL 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 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

Project: Casa Feliz
Project Number: 2491
Date: 10/12/15
By: Dave A

Site Location

3 Per Table A-1 COA DPM Section 22.2

Existing summary

Basin Name	EX A	EX B	EX C & D	EX E	EX F & G	EX H	EX I	EX J	EX K	EX L	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	0.36	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
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
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
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
Peak Discharge (cfs)												
100 yr.	0.82	5.18	3.71	1.48	3.71	2.22	2.97	3.03	2.22	0.82	cfs	0.74
10yr.	0.54	3.45	2.46	0.99	2.46	1.48	1.97	2.01	1.48	0.54	cfs	0.49
2yr.	0.32	2.01	1.43	0.57	1.43	0.86	1.15	1.17	0.86	0.32	cfs	0.29

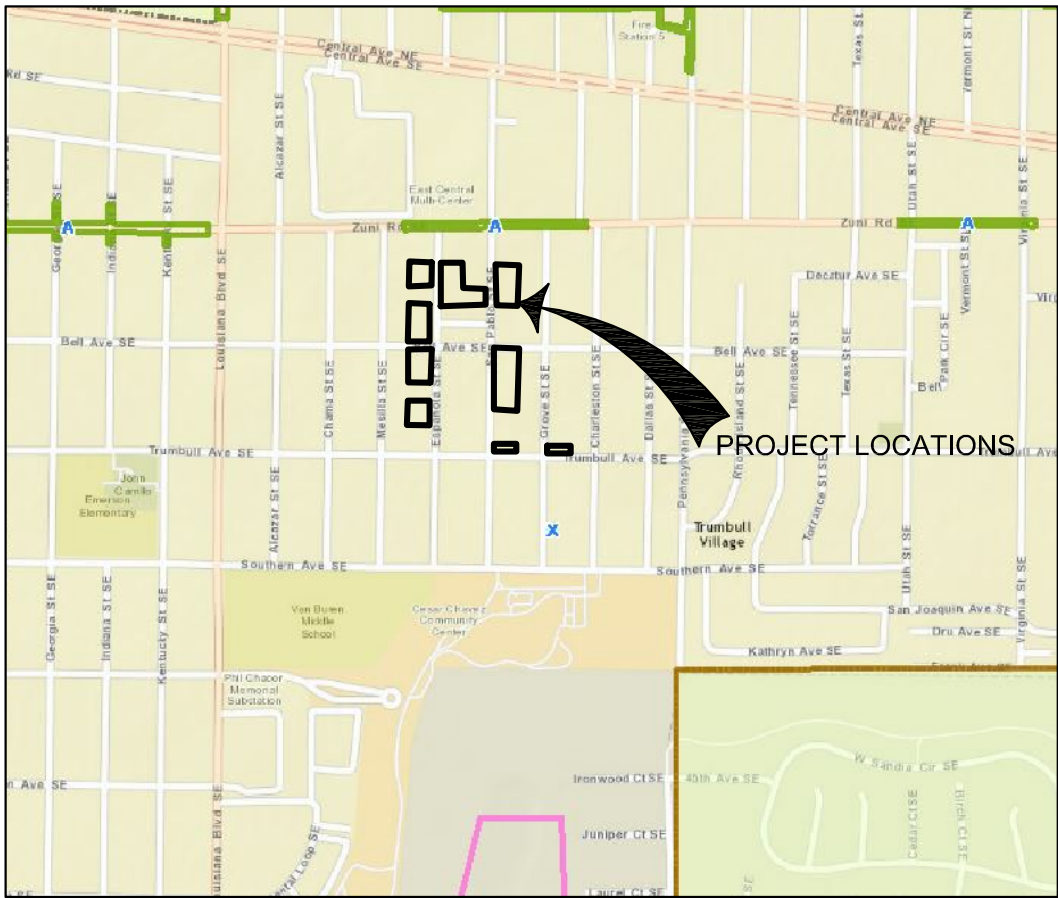
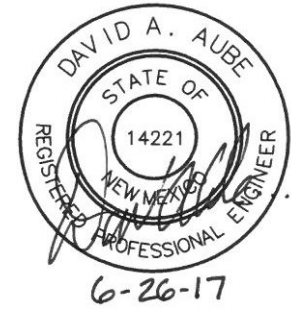
Proposed summary

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 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	10	0	15	15	10		10	50	10		10	25	10	10			25	10		25	10	10		
%B Land treatment	25	65	25	50	25	65	25	15	25	65	25	60	25	60		15	25	60	50	25	60	25	65	
%C Land treatment	65	35	60	35	65	35	65	35	65	35	65	50	30	70		85	50	30	50	50	30	65	35	
%D Land treatment																								
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	acre-ft
10yr. 6hr.	0.0047	0.0094	0.0275	0.0583	0.0101	0.0456	0.0101	0.0114	0.0101	0.0545	0.0101	0.0119	0.0229	0.0075	0.0059	0.0534	0.0104	0.0358	0.0006	0.0122	0.0227	0.0047	0.0094	acre-ft
2yr. 6hr.	0.0026	0.0045	0.0147	0.0276	0.0055	0.0217	0.0055	0.0053	0.0055	0.0259	0.0055	0.0061	0.0105	0.0042	0.0028	0.0307	0.0053	0.0164	0.0003	0.0063	0.0104	0.0026	0.0045	acre-ft
100yr. 24hr.	0.0062	0.0187	0.0539	0.1169	0.0197	0.0904	0.0197	0.0236	0.0197	0.1081	0.0197	0.0238	0.0461	0.0147	0.0118	0.1024	0.0207	0.0719	0.0011	0.0244	0.0456	0.0092	0.0187	acre-ft
Peak Discharge (cfs)																								
100 yr.	0.21	0.49	1.27	3.05	0.46	2.36	0.46	0.61	0.46	2.82	0.46	0.58	1.23	0.33	0.31	2.24	0.51	1.92	0.03	0.59	1.22	0.21	0.49	cfs
10yr.	0.14	0.30	0.81	1.86	0.29	1.47	0.29	0.36	0.29	1.75	0.29	0.36	0.75	0.22	0.19	1.49	0.31	1.17	0.02	0.37	0.74	0.14	0.30	cfs
2yr.	0.07	0.15	0.43	0.89	0.16	0.72	0.16	0.16	0.16	0.86	0.16	0.18	0.35	0.12	0.09	0.87	0.16	0.55	0.01	0.19	0.35	0.07	0.15	cfs
Roof Areas	1615	1615	5394	5394	1643	6296	1643	1355	1643	4641	1643	3598	3598	1367	0	2796	2505	2812	0	1800	1800	1615	1615	
First Flush Ponding Volume (cf)	45.8	45.8	152.8	152.8	46.6	178.1	46.6	38.4	46.6	131.5	46.6	101.9	101.9	38.7	0.0	78.4	71.0	79.7	0.0	51.0	51.0	45.8	45.8	cf
First Flush Acre Feet	0.0011	0.0011	0.0035	0.0035	0.0011	0.0041	0.0011	0.0009	0.0011	0.0030	0.0011	0.0023	0.0023	0.0009	0.0000	0.0018	0.0016	0.0018	0.0000	0.0012	0.0012	0.0011	0.0011	acre-ft

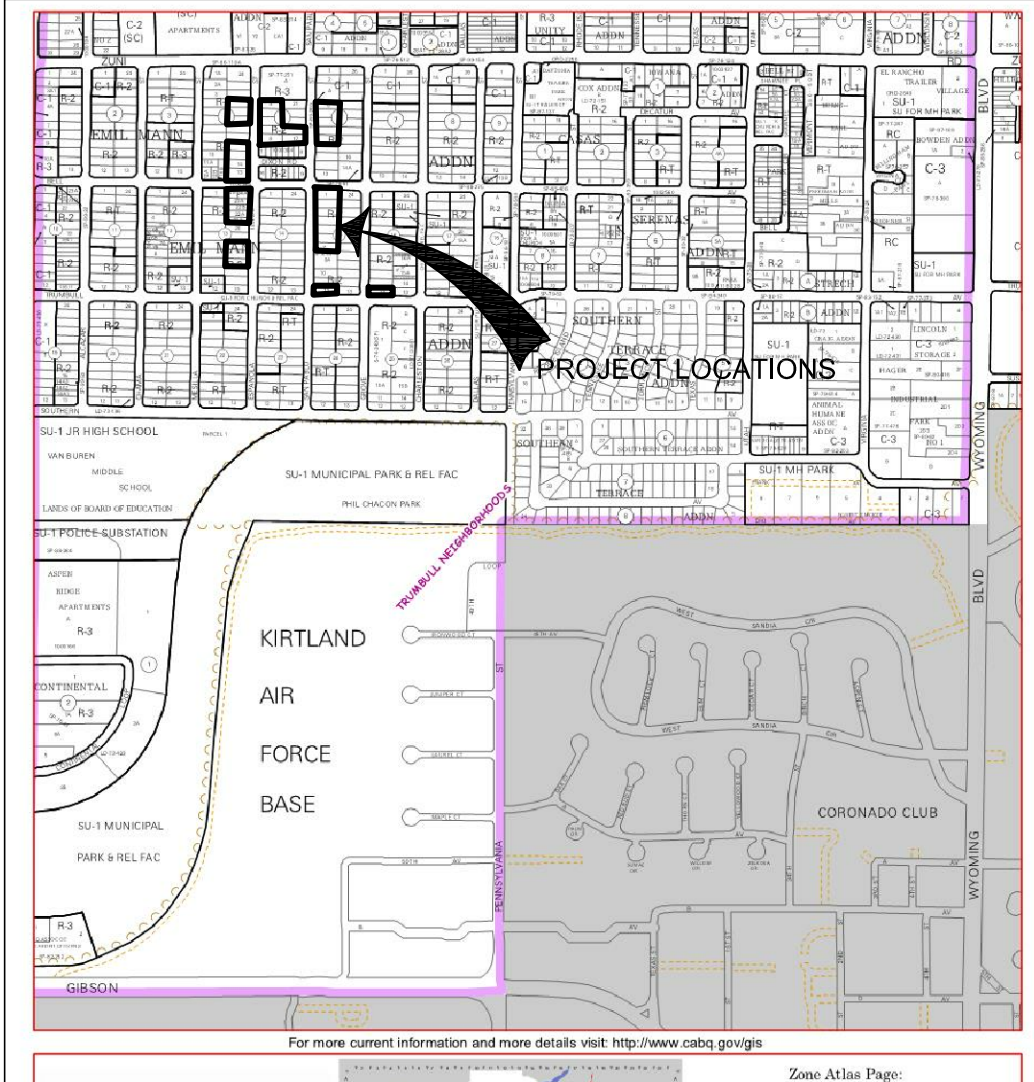
Drainage Certification (L19D073F, DRB#1010666)

I, David A Aube. NMPE 14221, of the firm The Hartman + Majewski Design Group, Inc. hereby certify that portion of the project (Building H located at 421 Espanola 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 4th, 2017. I further certify that I have personally visited the project site on June 26, 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 H located at 421 Espanola St. SE.

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.



A4 FIMA FLOOD MAP SCALE: NOT TO SCALE



A4 L-19-Z ZONE ATLAS PAGE SCALE: NOT TO SCALE

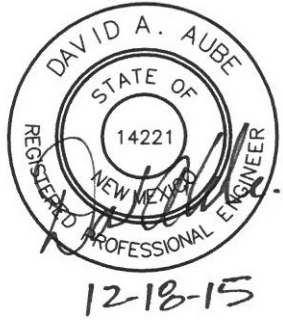


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Albuquerque New Mexico 87106
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CONSULTANT

STAMP



100% CONSTRUCTION DOCUMENTS

PROJECT NAME
CASA FELIZ

441 ESPANOLA STREET SE,
ALBUQUERQUE, NEW MEXICO 87108

GREATER ALBUQUERQUE HOUSING PATRTRNSHIP

REVISIONS

NO.	DATE	DESCRIPTION

Copyright: Design Group

Drawn by: DAA
Checked by: DAA
Date: OCTOBER 19, 2015

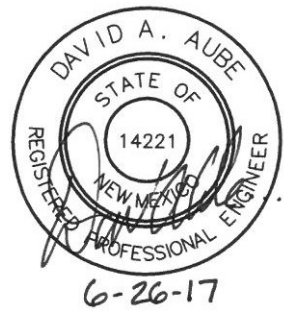
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8/14/2015 6:13:40 AM

Drainage Certification (L19D073F, DRBW1010666)

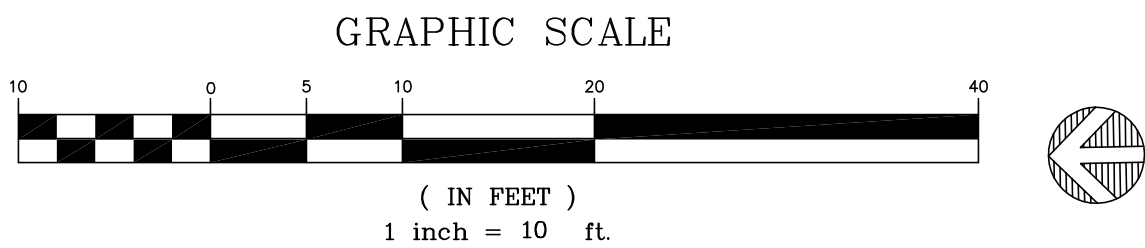
I, David A. Aube, NMPE 14221, of the firm The Hartman + Majewski Design Group, Inc., hereby certify that portion of the project (Building H located at 421 Espanola St. SE) is in substantial compliance with and in accordance with the design intent of the Grading and Drainage plan approved plan dated 12-18-15. The record information that has been edited onto the original design documents where obtained by Community Sciences Corporation on May 4th, 2017. I further certify that I have personally visited the project site on June 26, 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 H located at 421 Espanola St. SE.

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A1 ENLARGED SITE DRAINAGE PLAN - BUILDING H

1" = 10'-0"

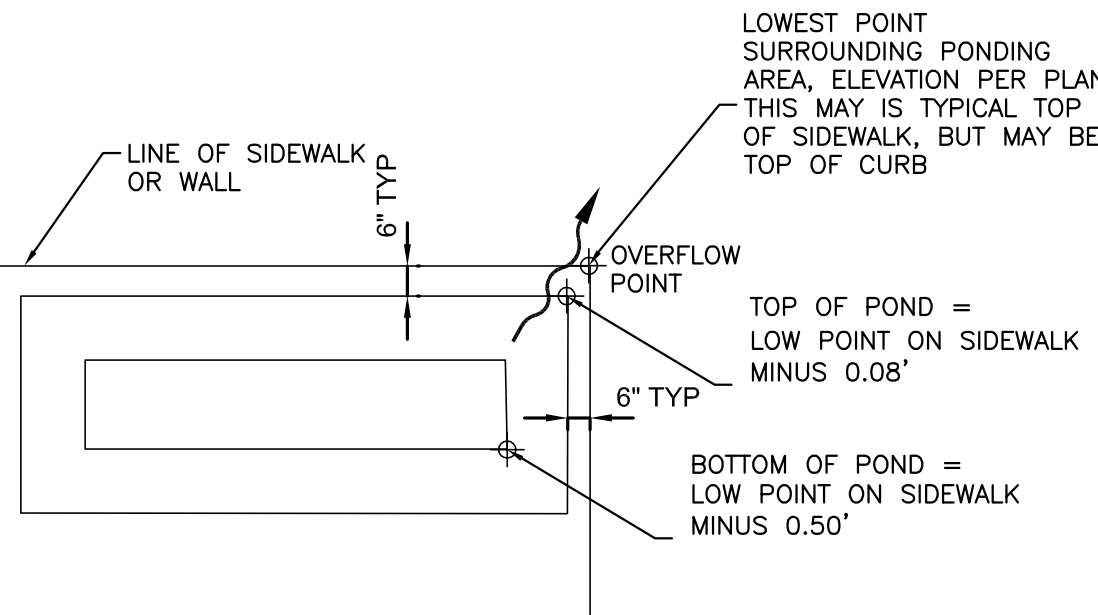


SECTION C-C THROUGH TRELLIS STRUCTURE

NOT TO SCALE

DRAINAGE PLAN GENERAL NOTES

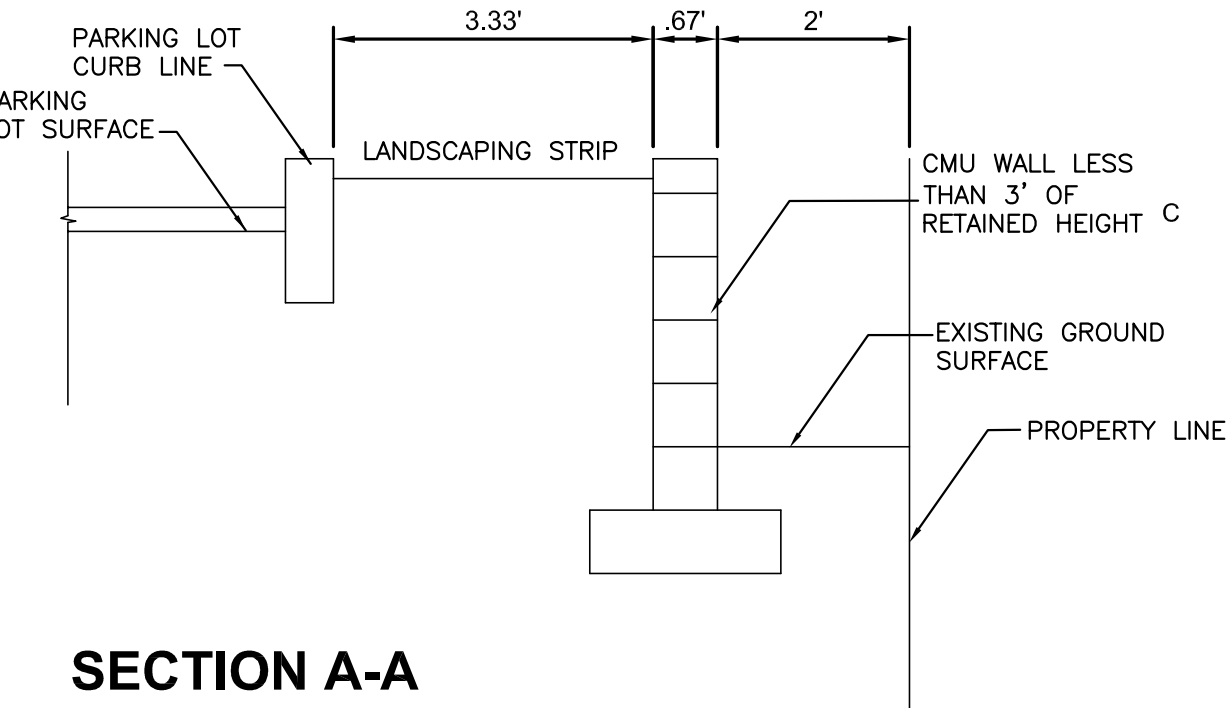
- SEE SHEET CG001 FOR COMPLETE LIST OF GENERAL NOTES AND SYMBOL/LINETYPE LEGEND THAT APPLY TO ALL SHEETS
- SEE SHEET CD-202 FOR 3" PVC DRAINAGE PIPES THROUGH SIDEWALKS AND UNDER SIDEWALKS THROUGH CITY CURB FACE.



TYPICAL POND DETAIL

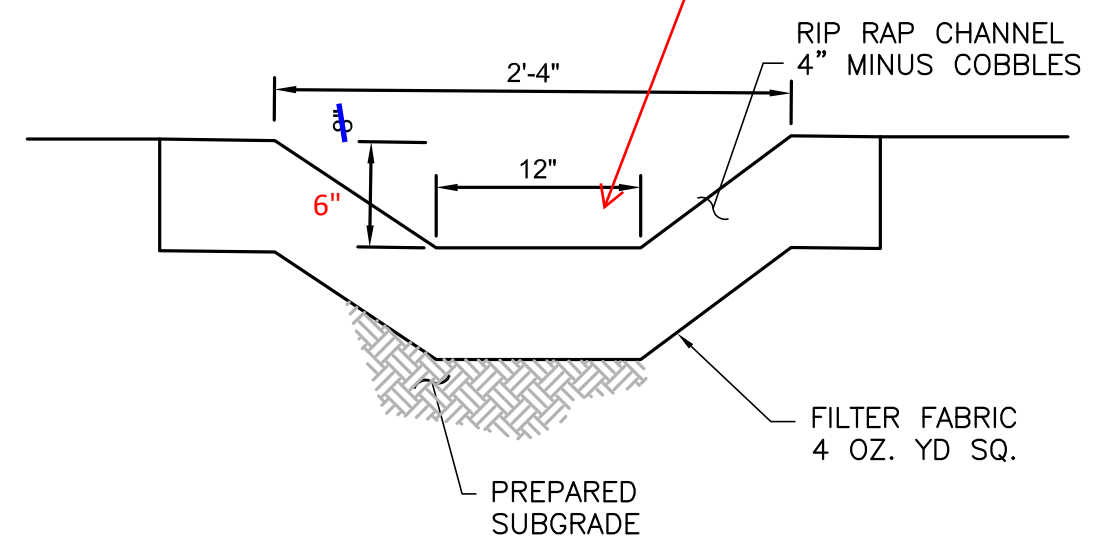
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BUILDING H					
POND	LOWEST POINT ON CURBOR TSW	TOP ELEV	BOTTOM ELEV		
A	5345.90	5345.96	5345.82	5344.75	5345.40
B	5344.30	5344.68	5344.22	5343.78	5343.80
C	5345.98		5345.90		5345.48
D	5344.16		5344.08		5343.66



SECTION A-A

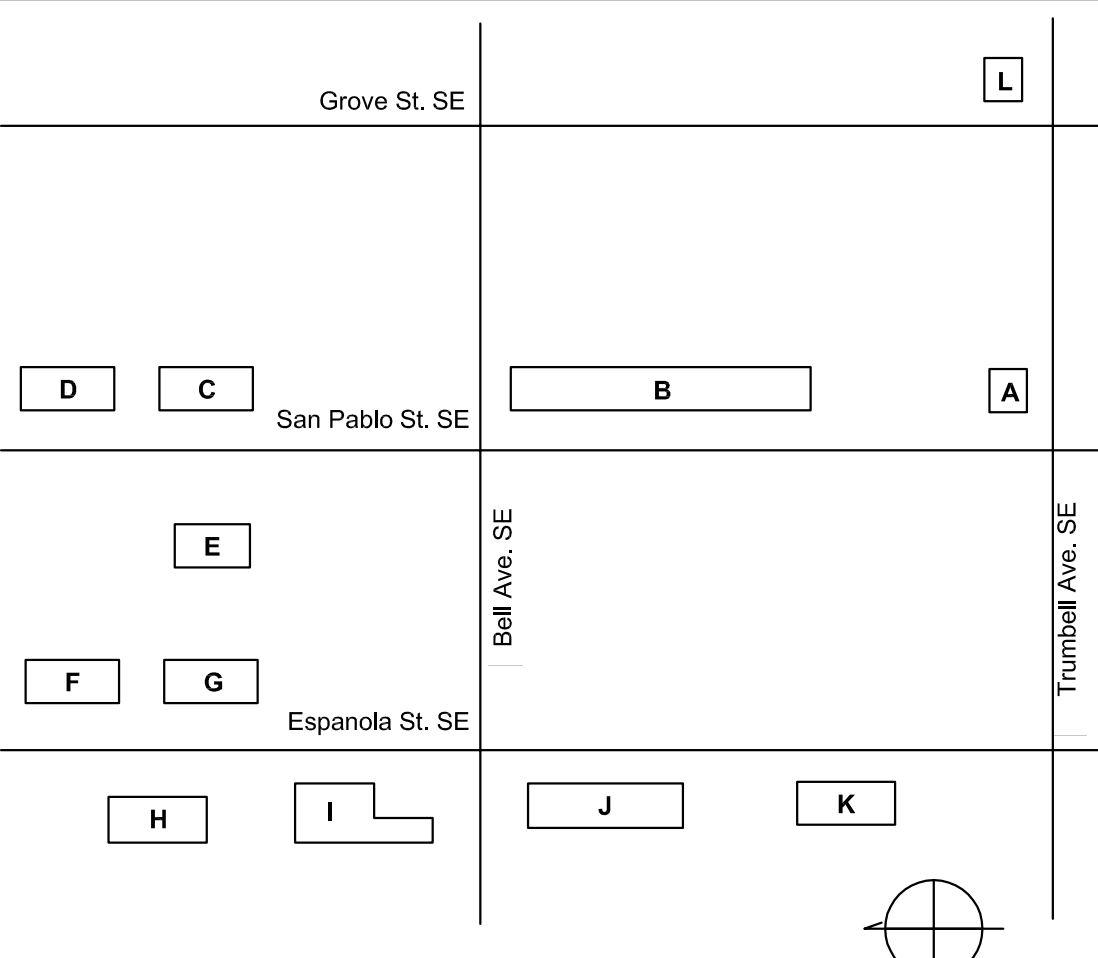
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RIP-RAP CHANNEL SECTION B-B

NOT TO SCALE

KEY PLAN



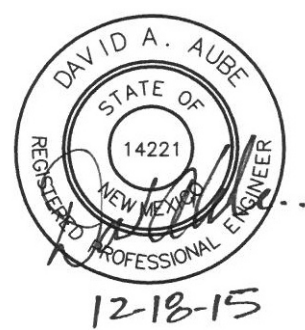
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CONSULTANT

STAMP



100% CONSTRUCTION DOCUMENTS

PROJECT NAME
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GREATER ALBUQUERQUE
HOUSING PATRTPNERSHIP

REVISIONS

NO.	DATE	DESCRIPTION

Copyright: Design Group

Drawn by: DAA
Checked by: DAA
Date: OCTOBER 19, 2015
Project number: 2491

SHEET TITLE
ENLARGED
SITE DRAINAGE PLAN

BUILDING H

SHEET NUMBER

CD-208