

# CITY OF ALBUQUERQUE



April 18, 2017

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

**Re: GAHP Casa Feliz  
418 San Pablo Street SE  
Request Permanent C.O. - Accepted  
Engineer's Stamp dated: 12-18-15 (L19D073B)  
Certification dated: 4-12-17**

Dear Mr. Aube,

Based on the Certification received 4/17/2017, the site is acceptable for release of Certificate of Occupancy by Hydrology.

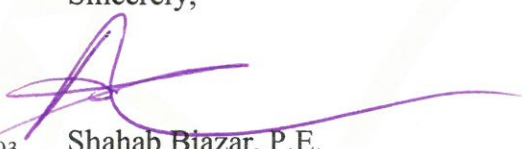
If you have any questions, you can contact me at 924-3999 or Totten Elliott at 924-3982.

PO Box 1293

Albuquerque

New Mexico 87103

Sincerely,

  
Shahab Biazar, P.E.  
City Engineer, Planning Dept.  
Development Review Services

[www.cabq.gov](http://www.cabq.gov)

TE/SB

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

## Dave Aube

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**From:** Harmon Rita T. <rharmon@cabq.gov>  
**Sent:** Tuesday, May 03, 2016 9:44 AM  
**To:** Dave Aube  
**Subject:** RE: Casa Feliz L19D073A-I

Hi Dave,

I agree that the 4" PVC pipes should be eliminated, and that the first flush ponds should overflow across the sidewalks in a sheet flow manner. Rather than resubmit a revised grading plan, with a new approval, this email serves as Hydrology's acceptance of this change and will be added to the drainage file to document the change. Please be sure to note the change on the As-built drawing when requesting C.O.

*Rita Harmon, P.E.*

Senior Engineer, Hydrology Section  
City of Albuquerque Planning Department  
Development & Review Services Division  
600 2<sup>nd</sup> St. NW, Suite 201  
Albuquerque, NM 87102  
t 505-924-3695

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**From:** Dave Aube [mailto:daube@designgroupnm.com]  
**Sent:** Monday, May 02, 2016 9:45 AM  
**To:** Harmon Rita T.  
**Cc:** Dave Aube  
**Subject:** Casa Feliz L19D073A-I

Rita  
Thanks for taking time last week to discuss the Casa Feliz project and the drainage of the small landscaping strips between the curb and sidewalk.

I took a more detailed look at the contributing basins and their peak flowrates. It appears that the max that we would see out of these basins is 0.15 cfs that could overtop the sidewalk during the 100year storm event. The average is 0.11 cfs that overflows the first flush ponding areas.

Based on these small volumes, I think that installing a 4" discharge pipe through the curb, may be causing more harm than good. The other issue is to get the grades to work the invert of the pipe discharges from the first flush ponds would need to be at the base of the pond and would reduce or eliminate any on-site storage of the first flush volumes.

At this time I would like authorization to remove the 4" discharge pipes between the shallow ponds and the public curb face.

Please let me know if you think this would be acceptable.  
Thanks  
Dave



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 PATTTURNS 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 NORTERN 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 116 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  | 0.07     | 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 | 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)

|         |      |      |      |      |      |      |      |      |      |      |     |      |      |
|---------|------|------|------|------|------|------|------|------|------|------|-----|------|------|
| 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 | 0.53 |
| 10yr.   | 0.54 | 3.45 | 2.46 | 0.99 | 2.46 | 1.48 | 1.97 | 2.01 | 1.48 | 0.54 | cfs | 0.49 | 0.31 |
| 2yr.    | 0.32 | 2.01 | 1.43 | 0.57 | 1.43 | 0.86 | 1.15 | 1.17 | 0.86 | 0.32 | cfs | 0.29 | 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      | 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     | 25     | 60     | 20     | 65     | 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     | 35     | 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   | 0.02   | 0.36   | 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 | 0.0164 | 0.0003 | 0.0063 | 0.0104 | 0.0026 | 0.0045 | 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)

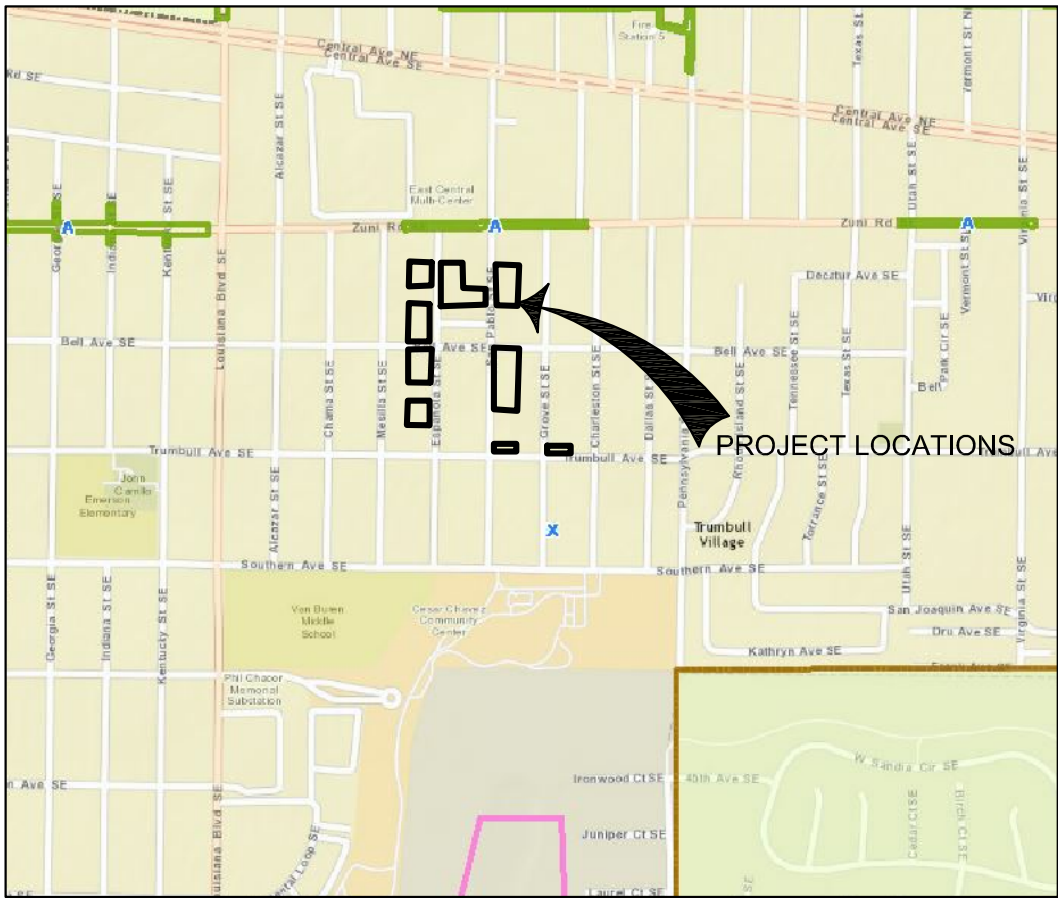
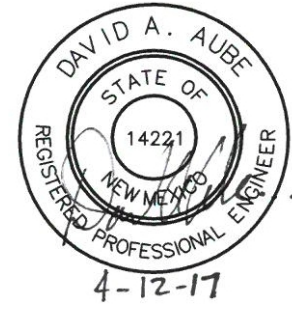
|         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| 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   | 6286   | 1643   | 1355   | 1643   | 4641   | 1643   | 3598   | 3598   | 1367   | 0      |
| 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      |
| 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 |

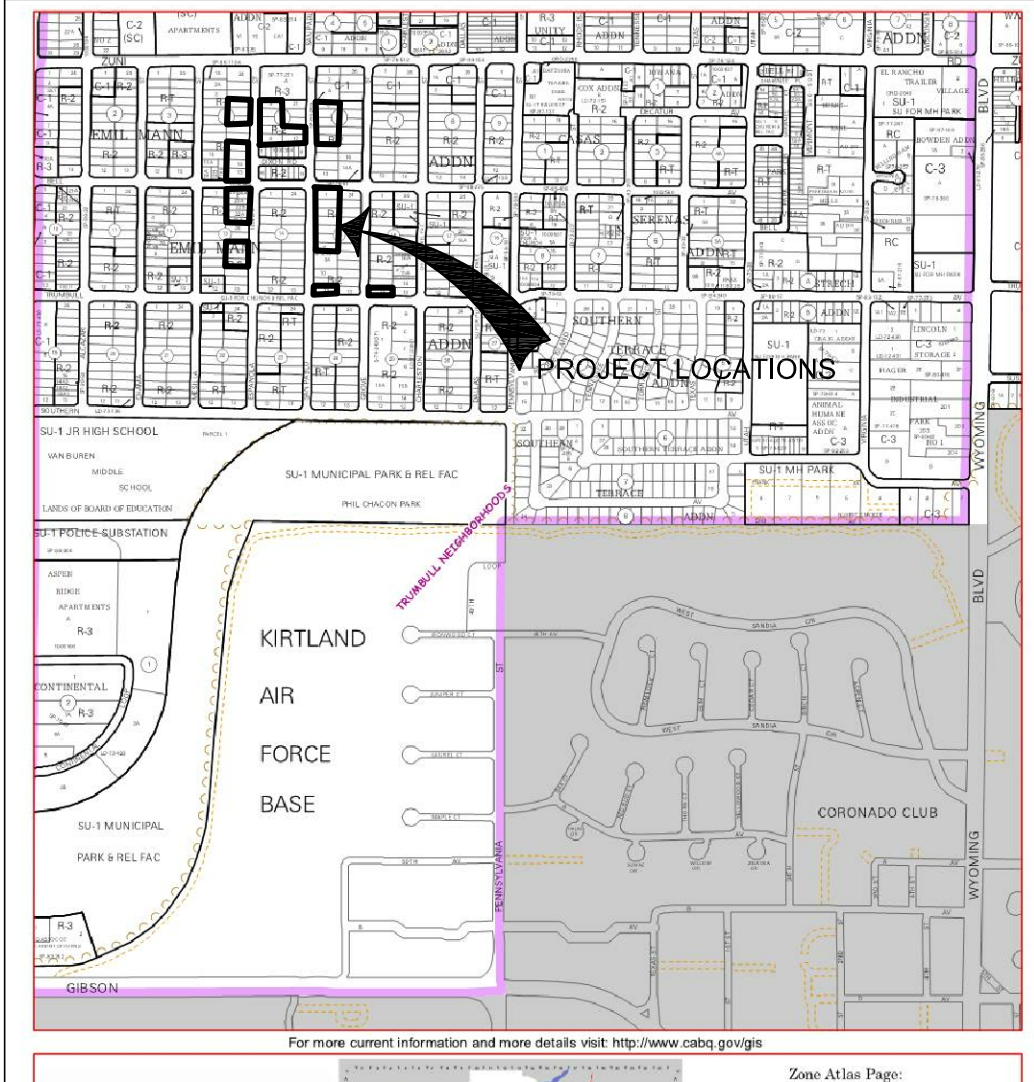
Drainage Certification (L19D073C, DRB#1010674)

I, David A Aube. NMPE 14221, of the firm The Hartman + Majewski Design Group, Inc, hereby certify that portion of the project (Buildings C and D located at 418 San Pablo Street 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 April 6, 2017. I further certify that I have personally visited the project site on April 12, 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 Buildings C and D located at 418 San Pablo Street, 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

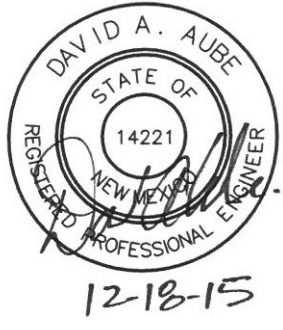


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CONSULTANT

STAMP



100% CONSTRUCTION DOCUMENTS

PROJECT NAME  
CASA FELIZ

441 ESPANOLA STREET SE,  
ALBUQUERQUE, NEW MEXICO 87108

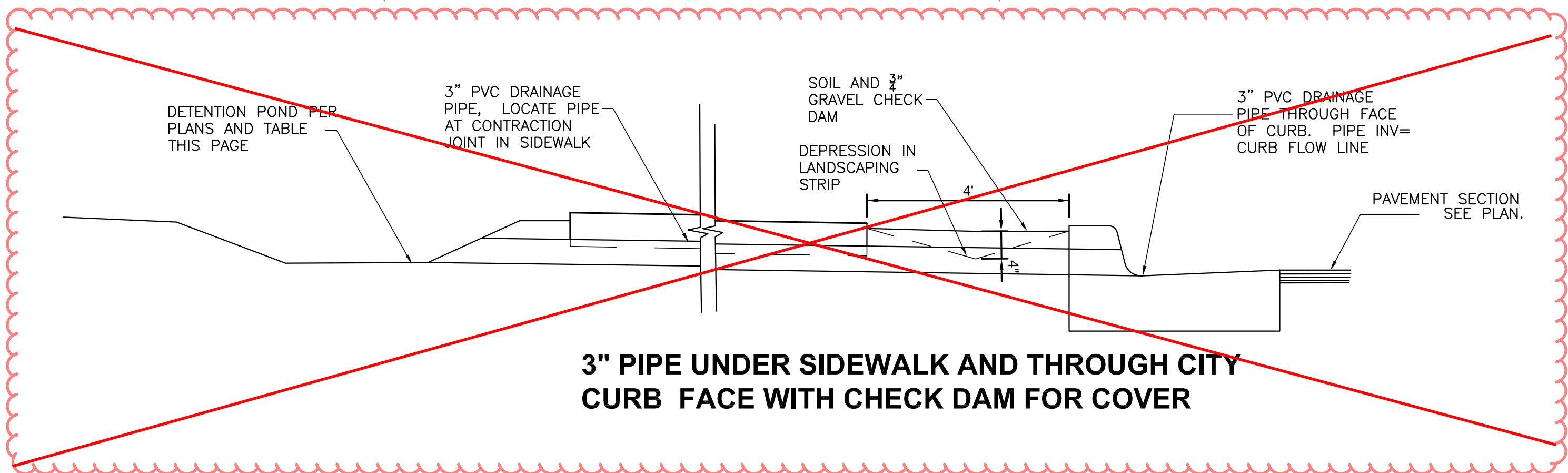
GREATER ALBUQUERQUE  
HOUSING PATRTRNSHIP

REVISIONS

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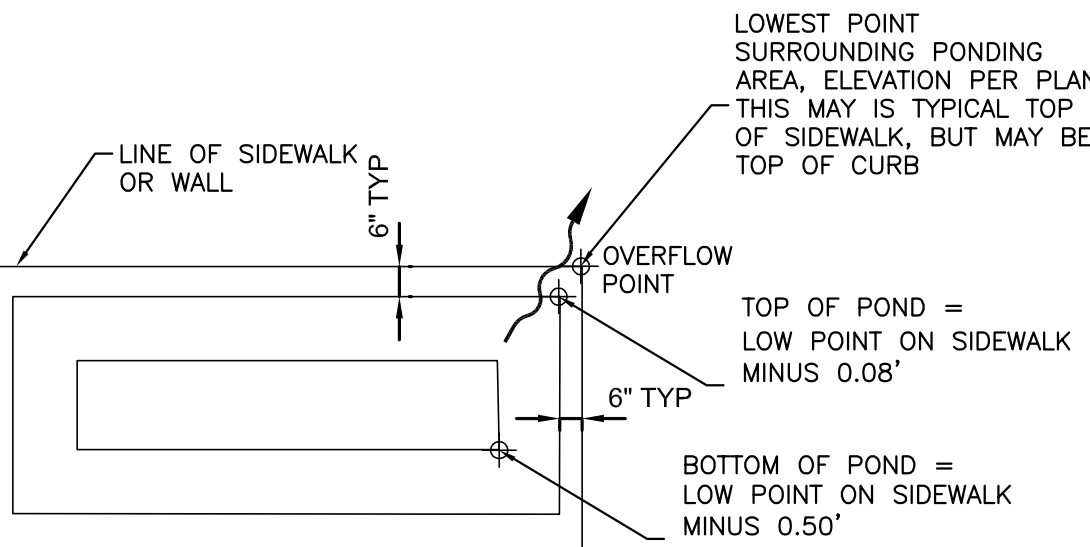


This detail requirement was removed after release of the building permit. Please refer to the email correspondence with City of Albuquerque Hydrology Staff dated May 3, 2016 attached with this submittal.



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

NOT TO SCALE

| BUILDING B |                             |          |             | As-Built    |
|------------|-----------------------------|----------|-------------|-------------|
| POND       | LOWEST POINT ON CURB OR TSW | TOP ELEV | BOTTOM ELEV | BOTTOM ELEV |
| A          | 5348.54                     | 5348.46  | 5348.04     | 47.93       |
| B          | 5348.35                     | 5348.27  | 5347.85     | 47.53       |
| C          | 5348.05                     | 5347.97  | 5347.55     | 47.07       |
| D          | 5347.72                     | 5347.64  | 5347.22     | 46.85       |
| E          | 5347.57                     | 5347.49  | 5347.07     | 46.75       |
| F          | 5347.25                     | 5347.17  | 5346.75     | 46.53       |
| G          | 5347.21                     | 5347.13  | 5346.71     | 46.84       |
| H          | 5347.03                     | 5346.95  | 5346.53     | 46.56       |
| I          | 5346.97                     | 5346.89  | 5346.47     | 46.38       |
| J          | 5346.84                     | 5346.76  | 5346.34     | 46.21       |
| K          | 5346.79                     | 5346.71  | 5346.29     | 46.38       |
| L          | 5346.70                     | 5346.62  | 5346.20     | 46.11       |
| M          | 5346.67                     | 5346.59  | 5346.17     | 45.98       |
| N          | 5346.63                     | 5346.55  | 5346.13     | 46.12       |
| O          | 5346.60                     | 5346.52  | 5346.10     | 45.86       |
| P          | 5346.56                     | 5346.48  | 5346.06     | 46.02       |
| Q          | 5346.51                     | 5346.43  | 5346.01     | 45.99       |

This pond eliminated.

dg  
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100% CONSTRUCTION DOCUMENTS

PROJECT NAME  
CASA FELIZ

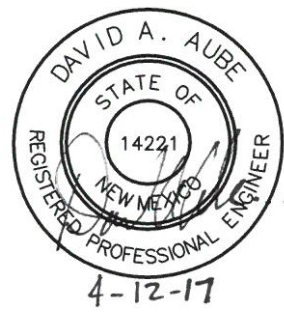
441 ESPANOLA STREET SE,  
ALBUQUERQUE, NEW MEXICO 87108

GREATER ALBUQUERQUE  
HOUSING PATRNTNSHIP

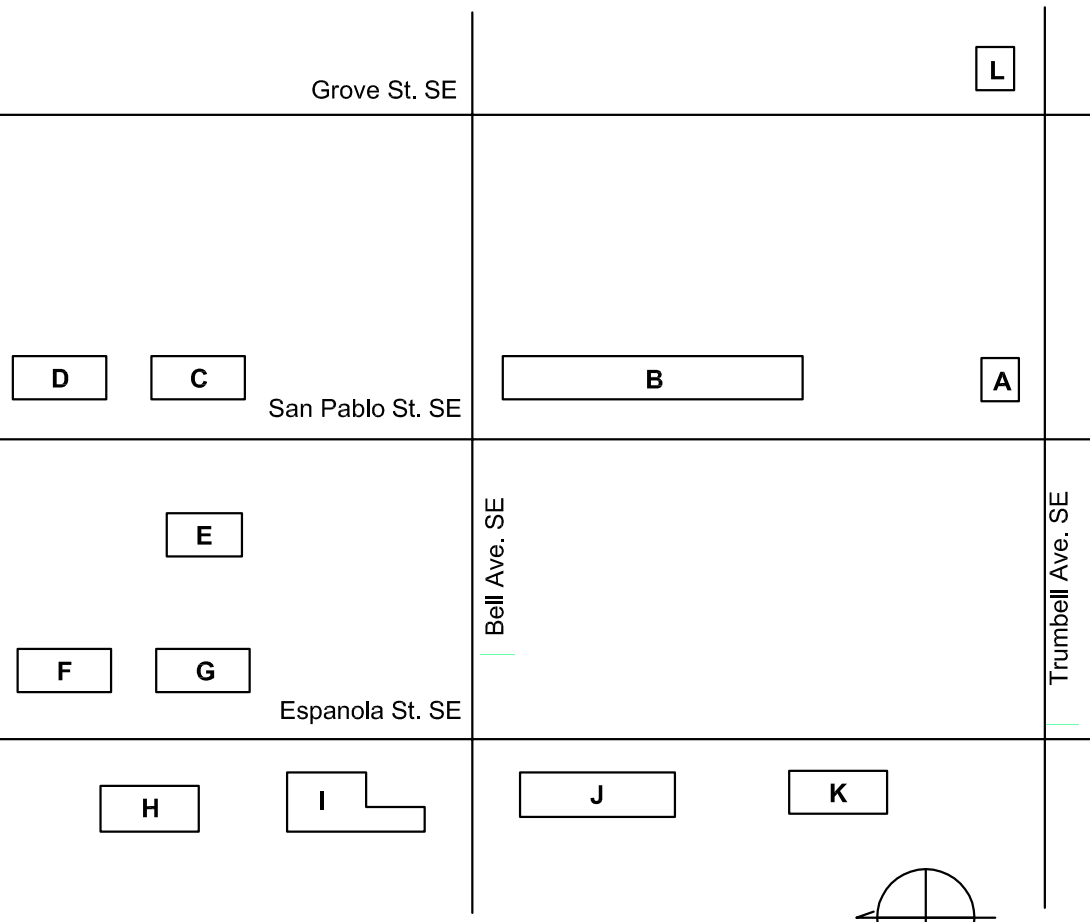
Drainage Certification (L19D073C, DRB#1010674)

I, David A. Aube, NMPE 14221, of the firm The Hartman + Majewski Design Group, Inc, hereby certify that portion of the project (Buildings C and D located at 418 San Pablo Street 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 April 6, 2017. I further certify that I have personally visited the project site on April 12, 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 Buildings C and D located at 418 San Pablo Street, 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.



KEY PLAN



REVISIONS

| NO. | DATE | DESCRIPTION |
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Drawn by: DAA  
Checked by: DAA  
Date: OCTOBER 19, 2015  
Project number: 2491

SHEET TITLE

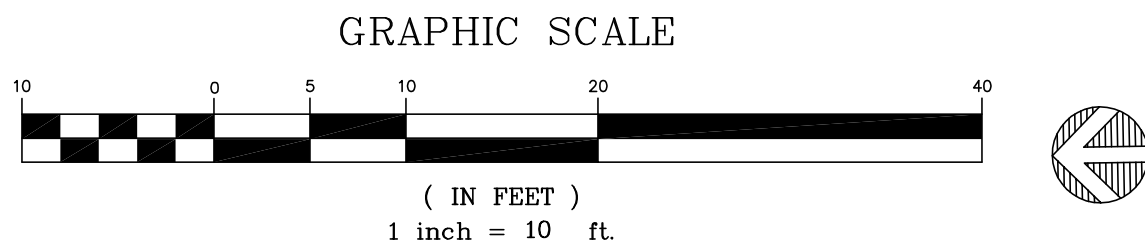
ENLARGED  
SITE DRAINAGE PLAN  
NORTHERN PART OF  
BUILDING B

SHEET NUMBER

CD-203

A1 ENLARGED SITE DRAINAGE PLAN - BUILDING B

1" = 10'-0"





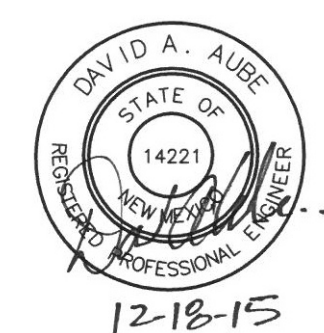


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DOCUMENTS

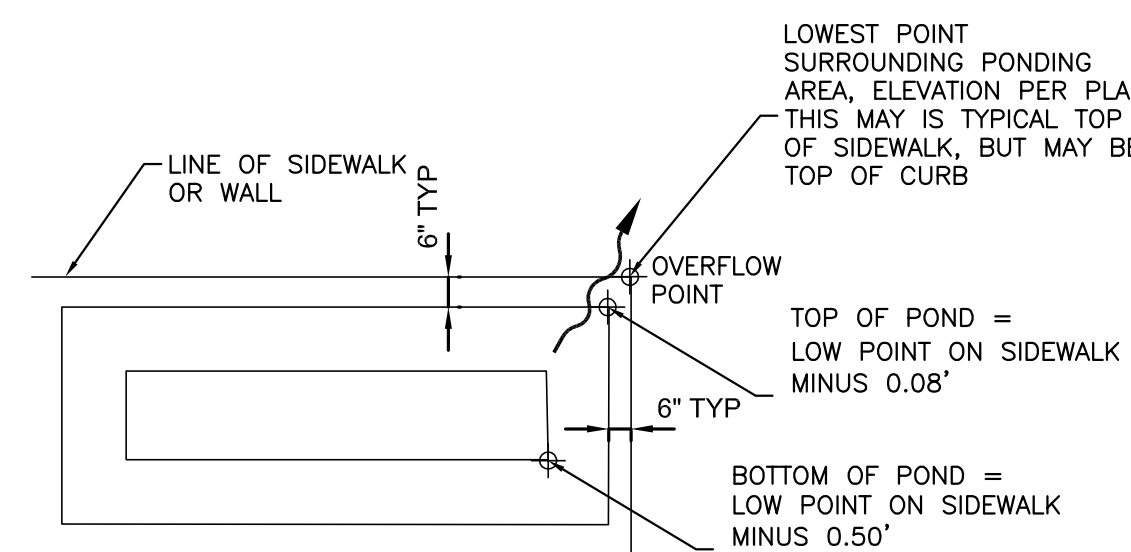
PROJECT NAME  
CASA FELIZ

441 ESPANOLA STREET SE,  
ALBUQUERQUE, NEW MEXICO 87108

GREATER ALBUQUERQUE  
HOUSING PARTNERSHIP

## 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

NOT TO SCALE

| BUILDING C & D  |             |          |             |
|-----------------|-------------|----------|-------------|
| LOWEST POINT ON |             |          |             |
| POND            | CURB OR TSW | TOP ELEV | BOTTOM ELEV |
| A               | 5353.28     | 5353.20  | 5352.56     |
| B               | 5353.08     | 5353.00  | 5352.58     |
| C               | 5352.72     | 5352.64  | 5352.30     |
| D               | 5352.92     | 5352.84  | 5352.29     |
| E               | 5353.89     | 5353.81  | 5353.39     |
| F               | 5353.67     | 5353.59  | 5353.17     |
| G               | 5353.82     | 5353.47  | 5353.65     |
| H               | 5352.94     | 5352.86  | 5352.44     |
| I               | 5352.75     | 5352.67  | 5352.15     |
| J               | 5351.28     | 5351.20  | 5350.78     |
| K               | 5351.26     | 5351.18  | 5350.76     |
| L               | 5350.85     | 5350.77  | 5350.35     |
| M               | 5350.45     | 5350.37  | 5349.95     |
| N               | 5350.22     | 5350.14  | 5349.72     |

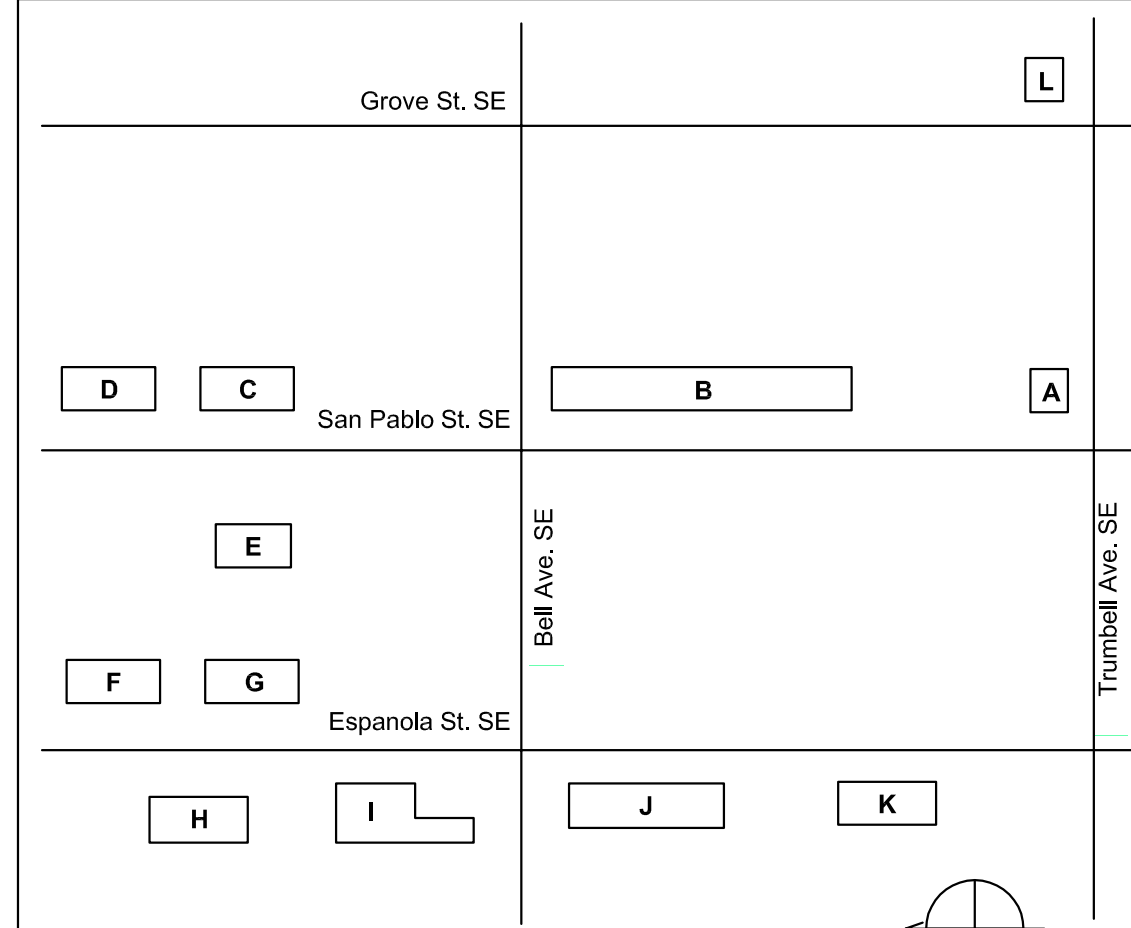
## Drainage Certification (L19D073C, DRB#1010674)

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## KEY PLAN



## REVISIONS

| NO. | DATE | DESCRIPTION |
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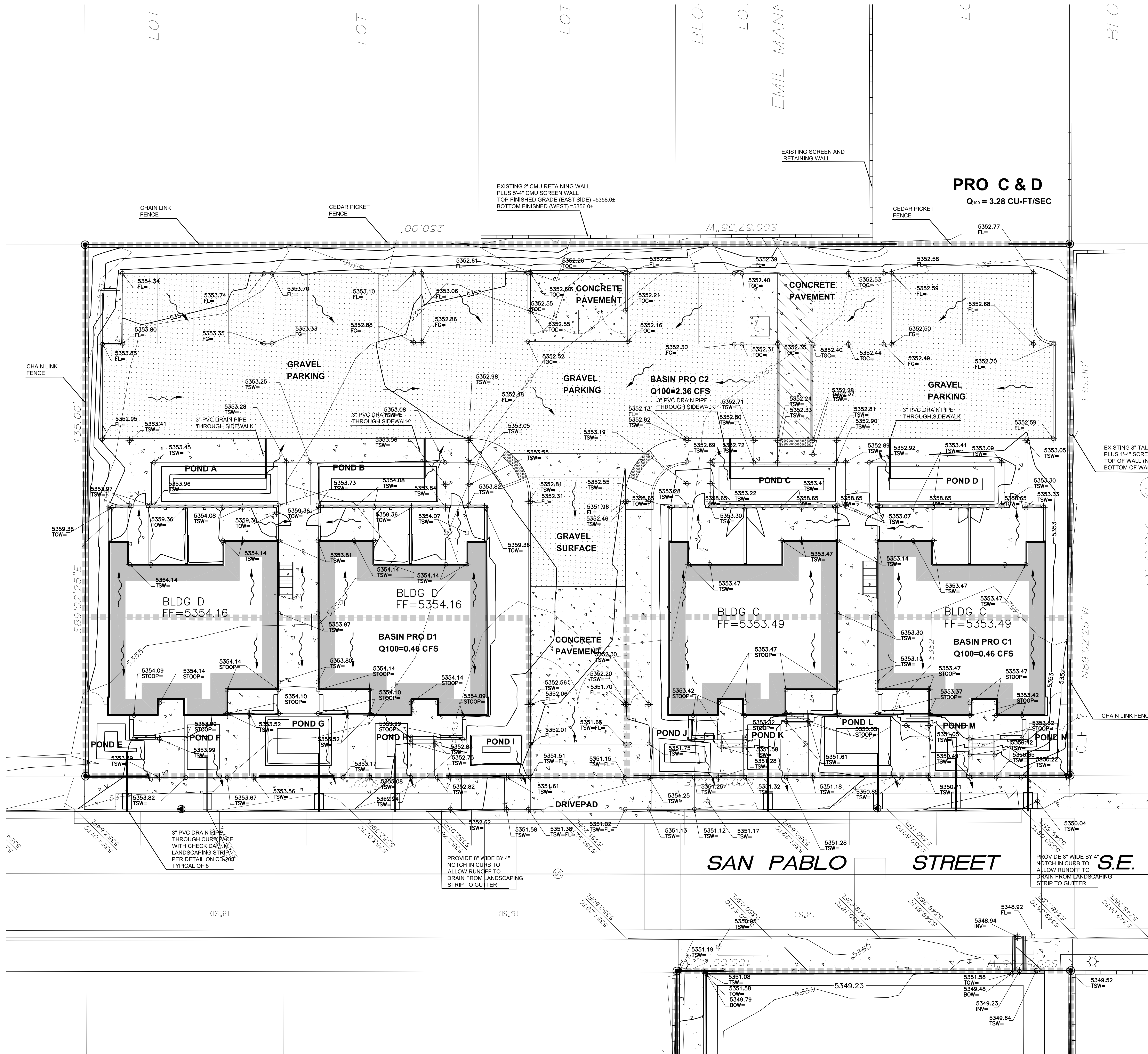
Drawn by: DAA  
Checked by: DAA  
Date: OCTOBER 19, 2015  
Project number: 2491

SHEET TITLE  
ENLARGED  
SITE DRAINAGE PLAN

BUILDINGS C AND D

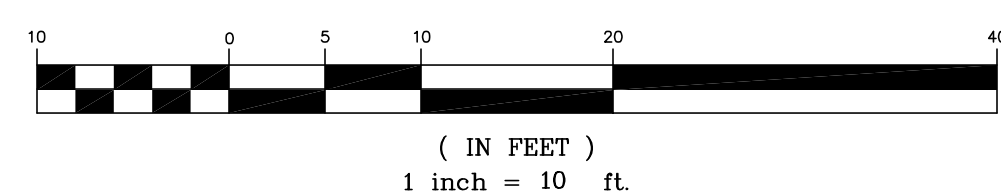
SHEET NUMBER

**CD-205**



## A1 ENLARGED SITE DRAINAGE PLAN - BUILDINGS C AND D

1" = 10'-0"





DATE: 04/06/17  
SCALE: 1" = 50'  
CREW: CFS/RGR  
DRAWN: SLN  
JOB NO. N935-01-605

Community Sciences Corporation  
LAND SURVEYING & LAND PLANNING  
P.O.Box 1328, Corrales N.M., 87048 (505) 897.0000

IMPROVEMENT LOCATION REPORT  
LOT 5-A, BLOCK 6  
EMIL MANN ADDITION  
CITY OF ALBUQUERQUE  
BERNALILLO COUNTY, NEW MEXICO

LEGEND

- (00.3) EXIST. SPOT ELEVATION BOTTOM OF POND
- (00.3) EXIST. TOP OF CURB OR TOP OF SIDEWALK

