

January 24, 2014

Traffic Engineer  
City of Albuquerque  
Transportation Development Coordination  
600 2<sup>nd</sup> Street NW  
Albuquerque, New Mexico 87102

**RE: Casitas de Colores**  
**215 Lead Avenue S.W.**  
**Zone: R-3**  
**Submittal: TCL for Final C.O.**

*Left message  
need to know  
what to do for  
K14D087A*

To Whom It May Concern:

I, Ron Witherspoon, NMRA no.2502 of the firm Dekker/Perich/Sabatini, hereby certify that the referenced portion of this project is in substantial compliance and in accordance with the design intent of the approved Site Development Plan for Building Permit dated June 15, 2012 and administratively amended December 20, 2013.

Dekker/Perich/Sabatini visited the project site on January 24, 2014 to verify construction was in accordance with the attached Site Development plan. There are no items that differ from the original plan.

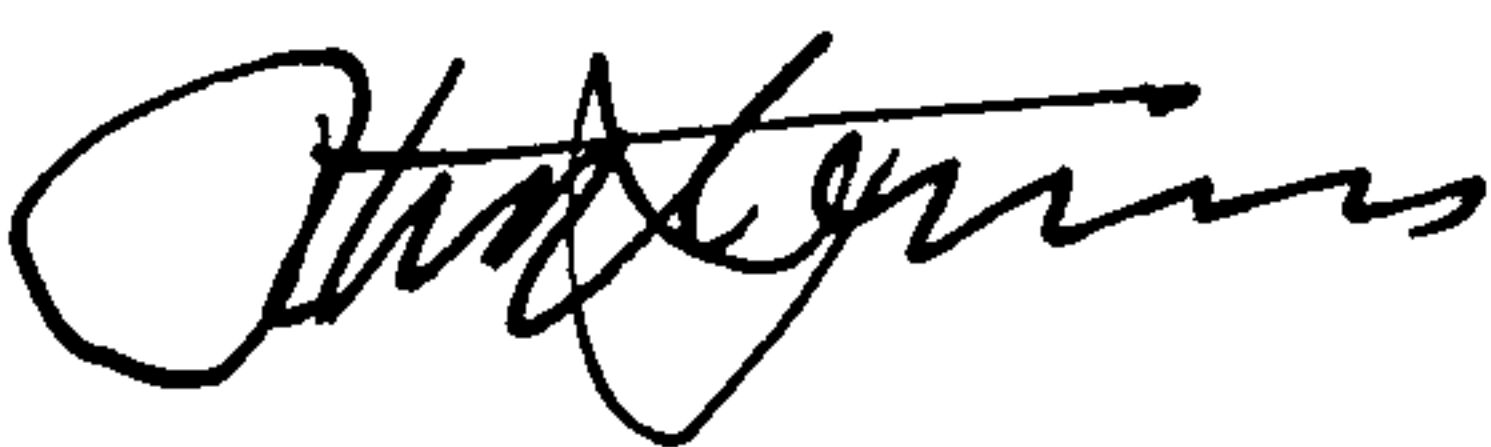
This certification is submitted in support of a request for Final Certificate of Occupancy for the entire project.

The record information presented herein is not complete and intended only to verify substantial compliance of the traffic aspects of this project as they relate to the above mentioned building. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

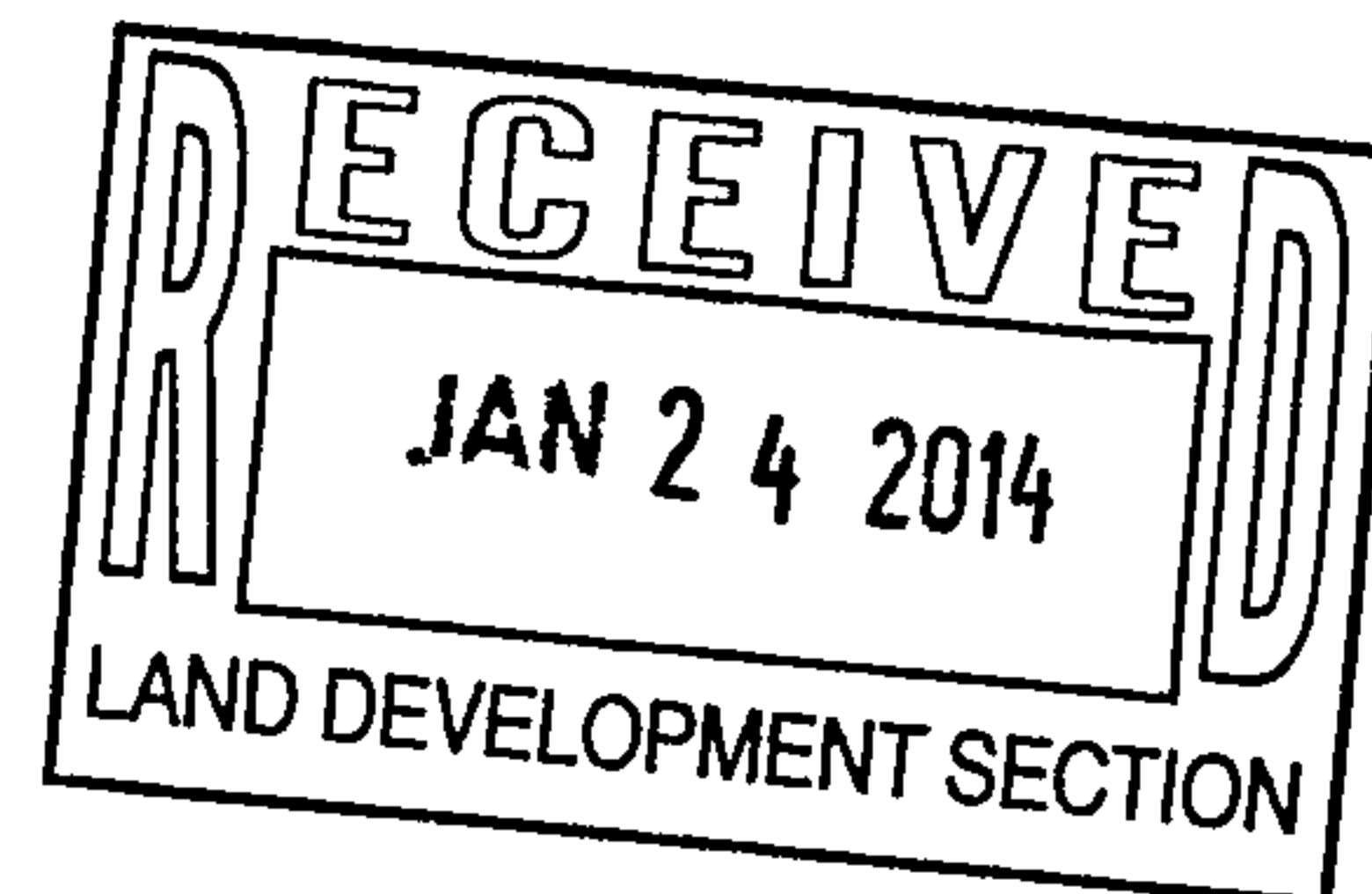
If you have any questions, please feel free to contact myself or Miriam Hicks at 761-9700.

Very truly yours,

**Dekker/Perich/Sabatini Ltd.**



Ron Witherspoon, AIA  
Principal



January 24, 2014



Traffic Engineer  
City of Albuquerque  
Transportation Development Coordination  
600 2<sup>nd</sup> Street NW  
Albuquerque, New Mexico 87102

**RE: Casitas de Colores**  
**215 Lead Avenue S.W.**  
**Zone: R-3**  
**Submittal: TCL for Final C.O.**

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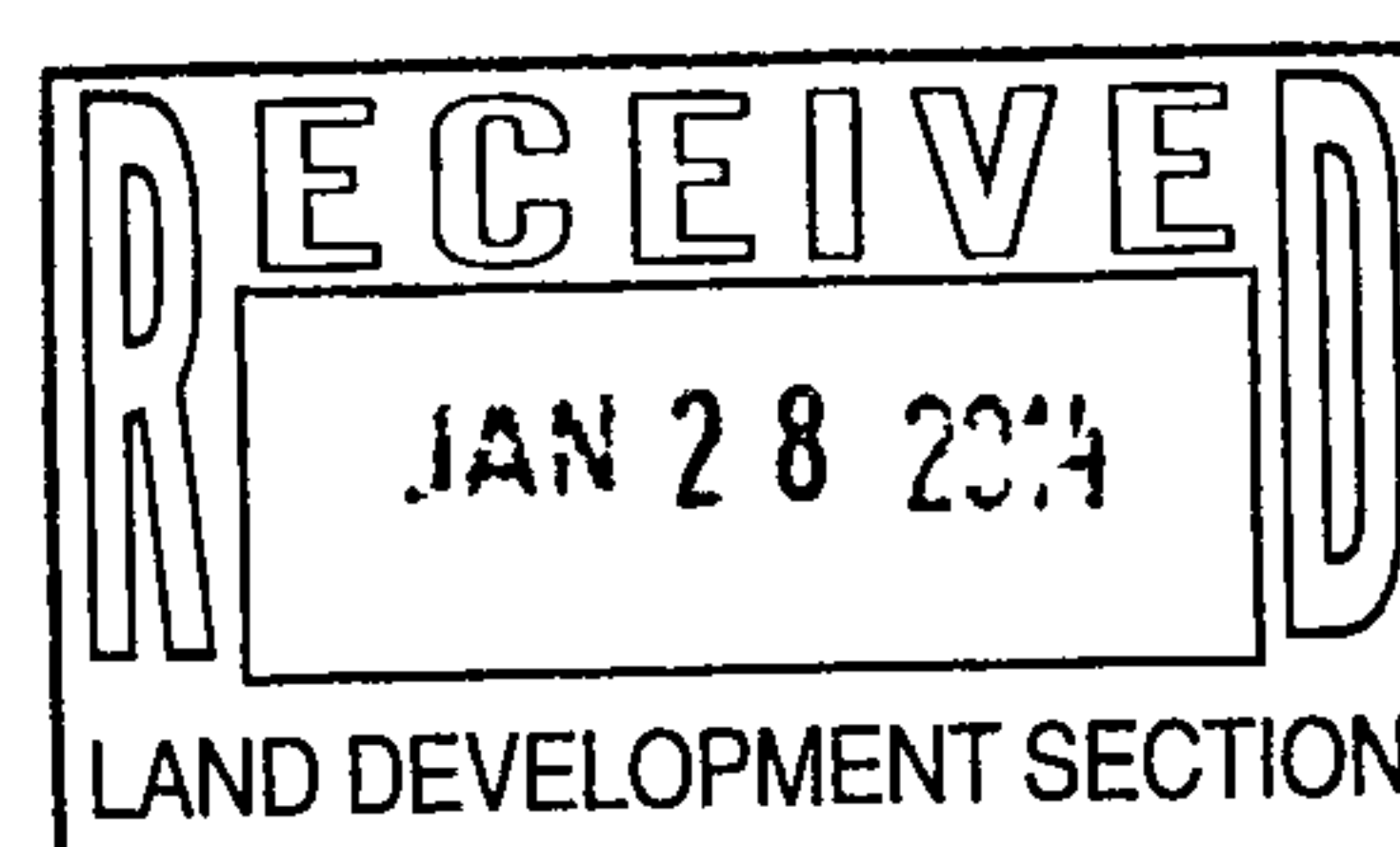
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If you have any questions, please feel free to contact myself or Miriam Hicks at 761-9700.

Very truly yours,

Dekker/Perich/Sabatini Ltd.

Ron Witherspoon, AIA  
Principal



■■■  
architecture  
interiors  
landscape  
planning  
engineering

# CITY OF ALBUQUERQUE



**Planning Department  
Transportation Development Services Section**

January 30, 2014

Ronald A. Witherspoon / R.A.  
**Dekker/Perich/Sabitini**  
7601 Jefferson NE Ste 100  
Albuquerque, NM 87109

Re: **Certification for Permanent Certificate of Occupancy (C.O.)**  
Casitas de Colores  
215 Lead Ave SW  
Administrative Amendment approval date 12-20-2013 (File # PA-11-138)

Dear Mr. Witherspoon,

Based upon the information provided in your submittal received 01-28-14, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy. This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

PO Box 1293

If you have any questions, please contact me at (505)924-3991.

Albuquerque

Sincerely,

New Mexico 87103

Kristal D. Metro, P.E.  
Traffic Engineer, Planning Dept.  
Development Review Services

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

c: Engineer  
Hydrology file  
CO Clerk





# City of Albuquerque

Planning Department

Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: Casitas de Colores **BIDG # 1,3,4** Building Permit # T201292078 City Drainage #: K14D087A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_  
Legal Description: Track A-1, Block B-1, C-1, E-1, F-1, Amended plat for Silver Townhomes Document #2012010263  
City Address: 215 Lead Ave SW, Albuquerque, NM **BIDG 1, 3, 4**  
Engineering Firm: Isaacson & Arfman, P.A. Contact: Genny Donart  
Address: 128 Monroe St. NE  
Phone#: 505.268.8828 Fax#: 505.268.2632 E-mail: gennyd@iacivil.com  
Owner: Romero Rose LLC Contact: Rob Straka  
Address: 5201 Indian School Rd NE  
Phone#: 505.764.3094 Fax#: 505.764.6604 E-mail: rob.straka@continuumllc.com  
Architect: Dekker/Perich/Sabatini Contact: Ron Witherspoon  
Address: 7601 Jefferson NE Suite 100  
Phone#: 505.761.9700 Fax#: 505.761-4222 E-mail: ronw@dpsdesign.org  
Surveyor: Rio Grande Surveying Co Contact: Rex Vogler  
Address: PO Box 7155, Albuquerque, NM 87194  
Phone#: 505.764.8891 Fax#: 505.875.3705 E-mail: \_\_\_\_\_  
Contractor: Bradbury Stamm Contact: Tiffani Lucero  
Address: 128 Monroe St. NE  
Phone#: 505.379.6466 Fax#: 505.842.5419 E-mail: tlucero@bradburystamm.com

### TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT  
☐ DRAINAGE PLAN 1st SUBMITTAL  
☐ DRAINAGE PLAN RESUBMITTAL  
☐ CONCEPTUAL G & D PLAN  
☐ GRADING PLAN  
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)  
☐ ENGINEER'S CERT (HYDROLOGY)  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT (TCL)  
☒ ENGINEER'S CERT (TCL)  
☐ ENGINEER'S CERT (DRB SITE PLAN)  
☐ ENGINEER'S CERT (ESC)  
☐ SO-19  
☐ OTHER (SPECIFY) \_\_\_\_\_

### CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

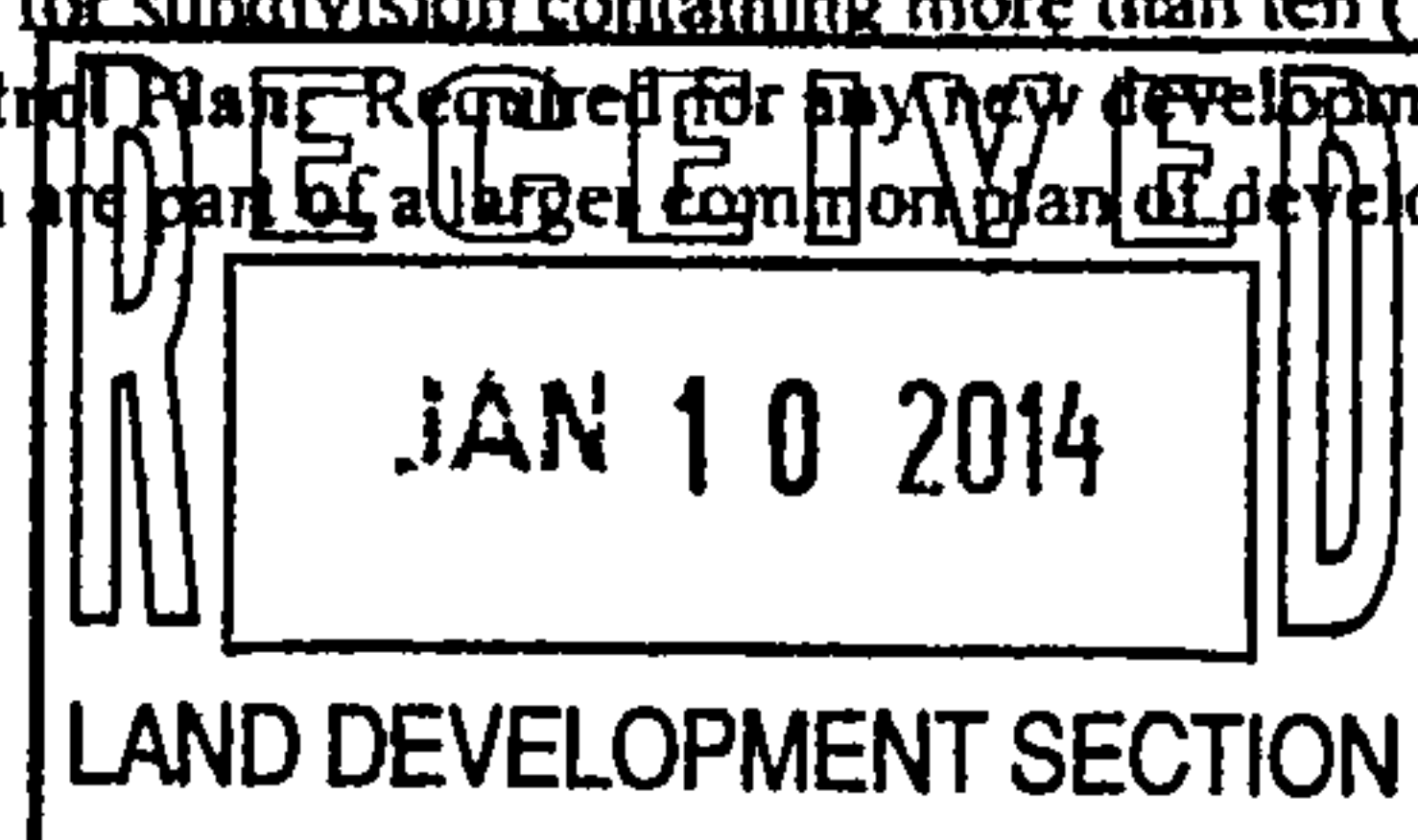
- ☐ SIA/FINANCIAL GUARANTEE RELEASE  
☐ PRELIMINARY PLAT APPROVAL  
☐ S. DEV. PLAN FOR SUB'D APPROVAL  
☐ S. DEV. FOR BLDG. PERMIT APPROVAL  
☐ SECTOR PLAN APPROVAL  
☐ FINAL PLAT APPROVAL  
☒ CERTIFICATE OF OCCUPANCY (PERM)  
☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)  
☐ FOUNDATION PERMIT APPROVAL  
☐ BUILDING PERMIT APPROVAL  
☐ GRADING PERMIT APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ WORK ORDER APPROVAL  
☐ GRADING CERTIFICATION  
☐ SO-19 APPROVAL  
☐ ESC PERMIT APPROVAL  
☐ ESC CERT. ACCEPTANCE  
☐ OTHER (SPECIFY) \_\_\_\_\_

WAS A PRE-DESIGN CONFERENCE ATTENDED: \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Copy Provided \_\_\_\_\_

DATE SUBMITTED: \_\_\_\_\_ By: \_\_\_\_\_

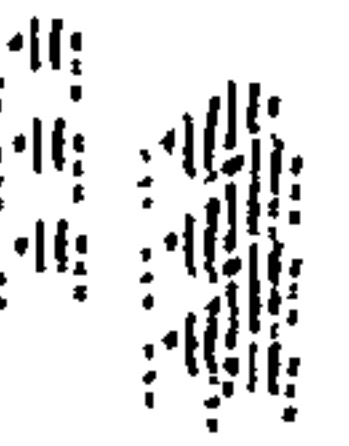
Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre that are part of a larger common plan of development



120 day - Temp CO  
Verbal. 12/19/13  
KM.

December 18, 2013



 **Dekker/Perich/Sabatini**

Traffic Engineer  
City of Albuquerque  
Transportation Development Coordination  
600 2<sup>nd</sup> Street NW  
Albuquerque, New Mexico 87102

**RE: Casitas de Colores**  
**215 Lead Avenue S.W.**  
**Zone: R-3**  
**Submittal: TCL for Final C.O. on Buildings 1, 3 and 4**

To Whom It May Concern:

I, Ron Witherspoon, NMRA no.2502 of the firm Dekker/Perich/Sabatini, hereby certify that the referenced portion of this project is in substantial compliance and in accordance with the design intent of the approved Site Development Plan for Building Permit dated June 15, 2012.

Dekker/Perich/Sabatini visited the project site on December 18, 2013 to verify construction was in accordance with the attached Site Development plan. There are no items that differ from the original plan.

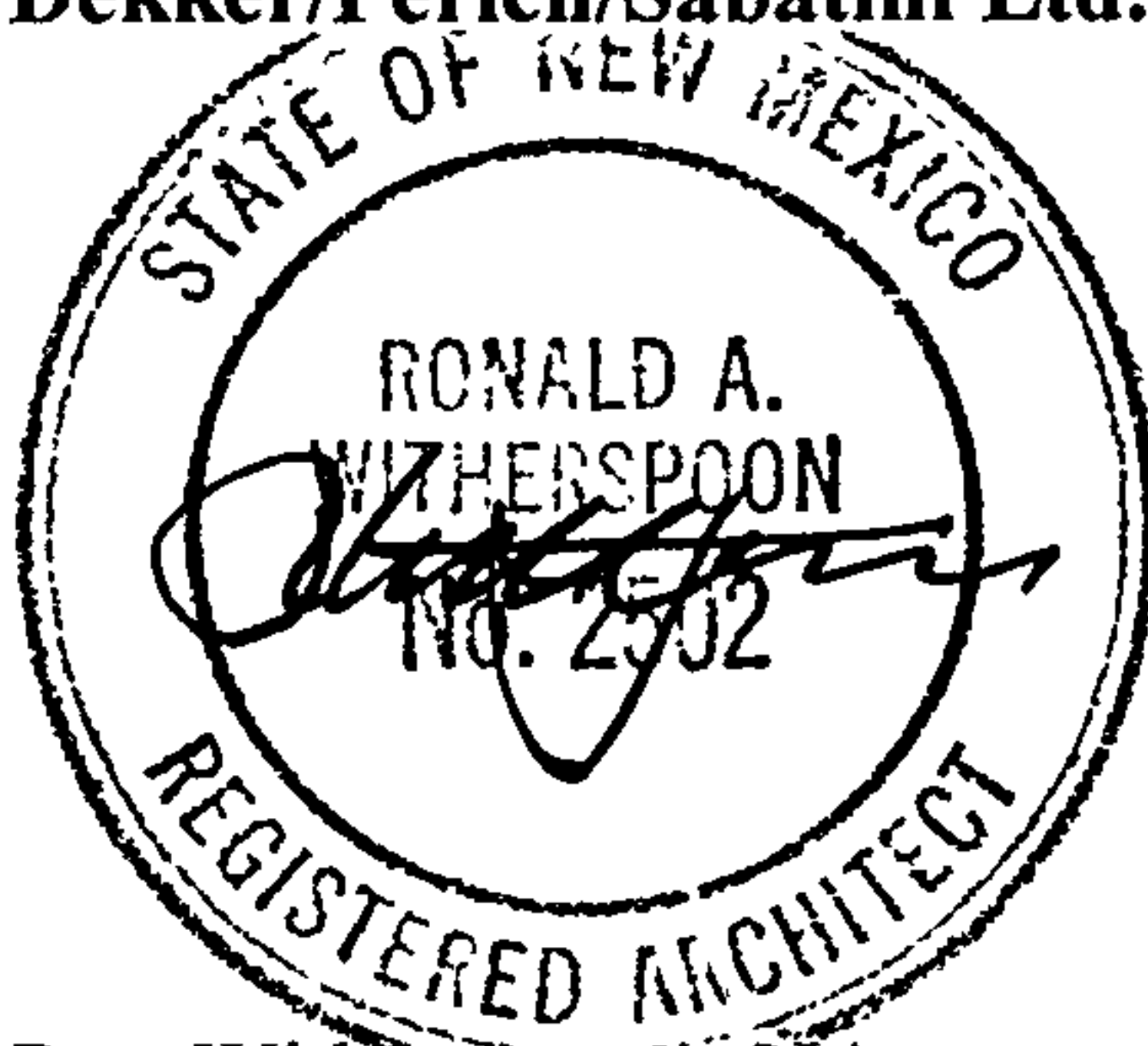
This certification is submitted in support of a request for Final Certificate of Occupancy for Buildings 1, 3 and 4. Buildings 2 and 5 are excluded from this certification.

The record information presented herein is not complete and intended only to verify substantial compliance of the traffic aspects of this project as they relate to the above mentioned building. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

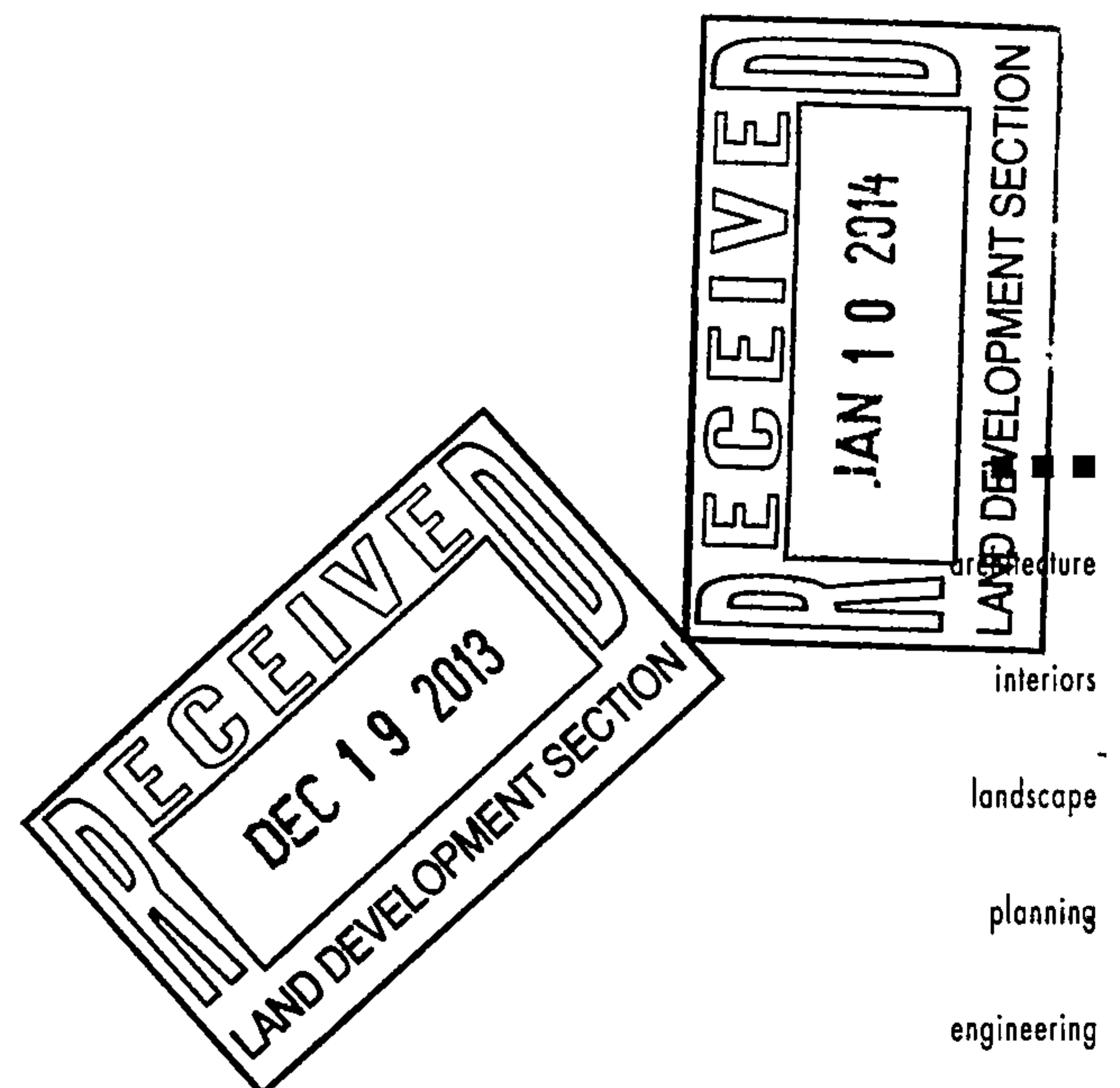
If you have any questions, please feel free to contact myself or Miriam Hicks at 761-9700.

Very truly yours,

**Dekker/Perich/Sabatini Ltd.**



Ron Witherspoon, AIA  
Principal



# CITY OF ALBUQUERQUE



**Planning Department  
Transportation Development Services Section**

January 10, 2014

Ronald A. Witherspoon / R.A.  
**Dekker/Perich/Sabitini**  
7601 Jefferson NE Ste 100  
Albuquerque, NM 87109

Re: **Certification for Permanent Certificate of Occupancy (C.O.)**  
Casitas de Colores – Building #1, #3, #4  
215 Lead Ave SW  
Architect's Stamp dated 06-15-12

Dear Mr. Witherspoon,

Based upon the information provided in your submittal received 01-10-14, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy. This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

PO Box 1293

If you have any questions, please contact me at (505)924-3991.

Albuquerque

Sincerely,

Kristal D. Metro, P.E.  
Traffic Engineer, Planning Dept.  
Development Review Services

New Mexico 87103

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

c: Engineer  
Hydrology file  
CO Clerk

• IDENTIFY (cloud BLDGS  
Being certified.)



# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development & Building Services



January 30, 2014

Richard J. Berry, Mayor

Genevieve Donart, P.E.  
Isaacson & Arfman, P.A.  
128 Monroe St. NE  
Albuquerque, New Mexico 87108

RE: **Casitas de Colores – Certified Grading and Drainage Plan (Phase 3) K14-D087A**  
215 Lead Ave. S.W.  
Request for Permanent C.O. - **Phase 3, Buildings 2 & 5– Accepted**  
P.E. Stamp: 10/23/12  
Certification dated: 01-22-2014

Dear Ms. Donart,

Based upon the information provided in your Certification received 01-23-2014, the **above referenced Certification is acceptable for release of a Permanent Certificate of Occupancy by Hydrology, for Buildings 2 and 5.** We understand that this completes your certification of the entire site approved under the subject Grading and Drainage Plan.

PO Box 1293

Hydrology is asking for an electronic copy of this certified plan, in .pdf format, for our project records. This certification can be e-mailed to me at the address below.

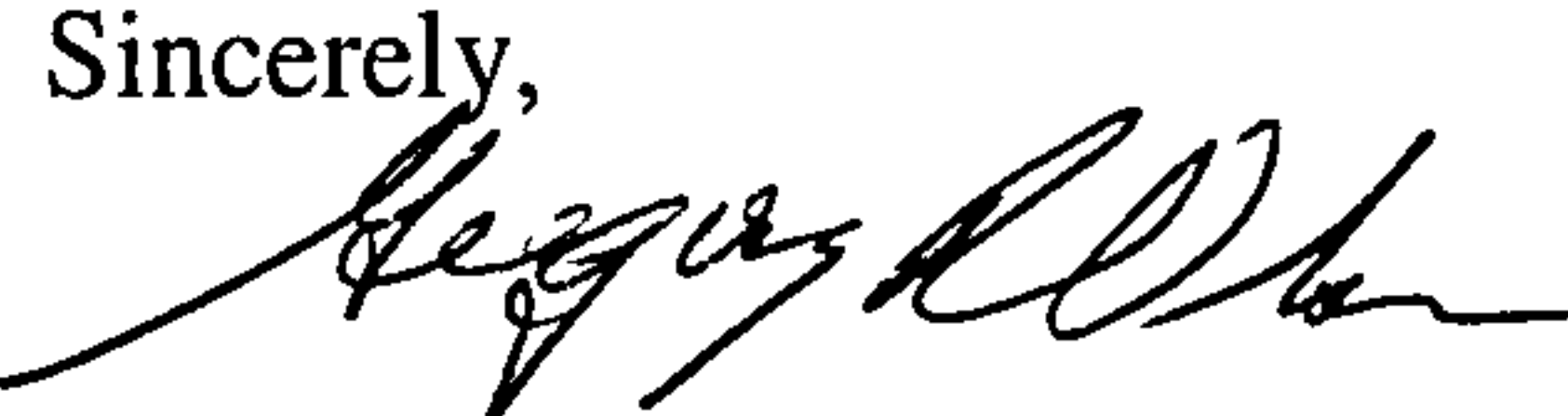
Albuquerque

If you have any questions, you may contact me by email at [grolson@cabq.gov](mailto:grolson@cabq.gov), or telephone 505-924-3695.

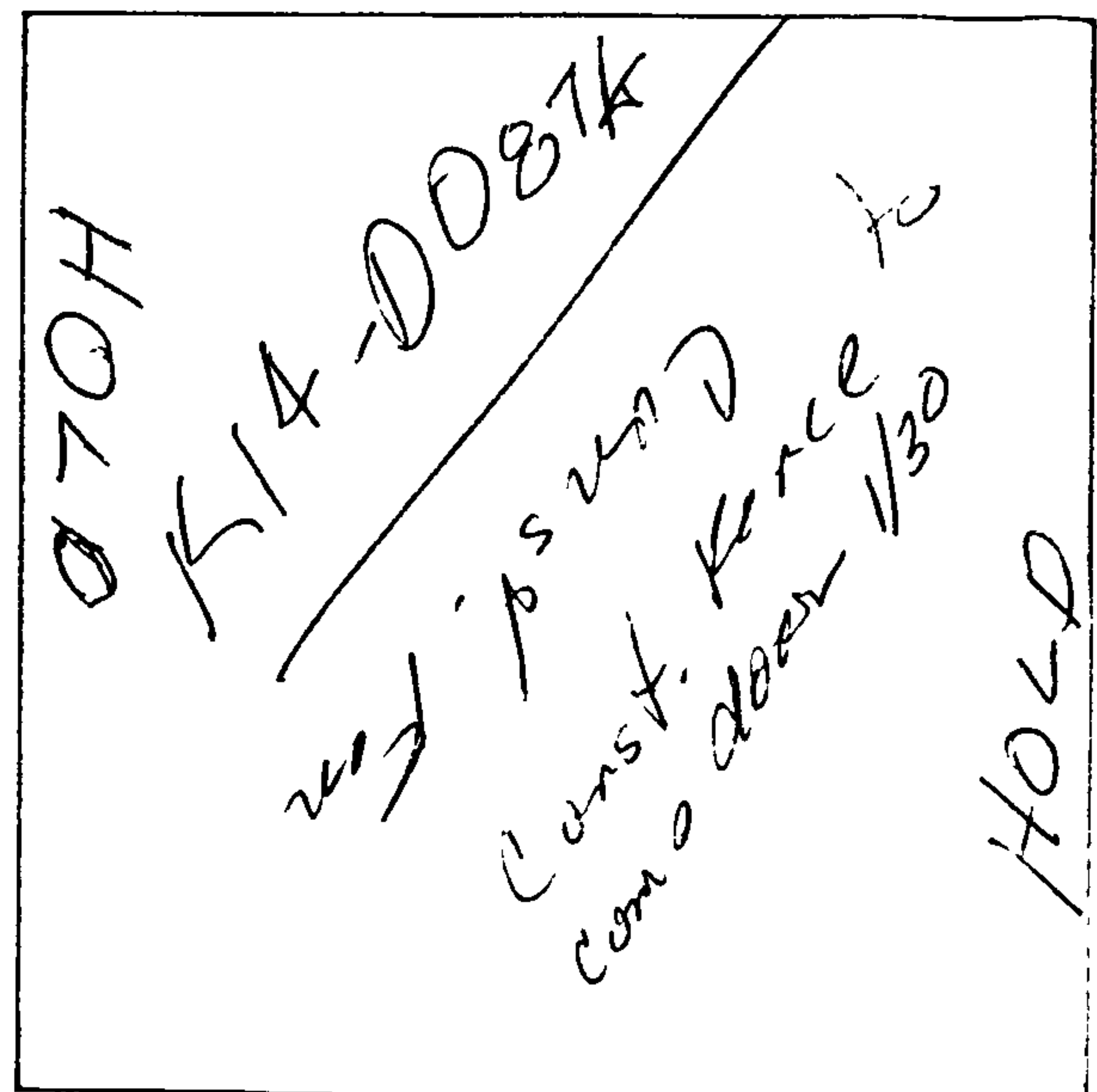
New Mexico 87103

Sincerely,

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

 1/30/14  
Gregory R. Olson, P.E.  
Senior Engineer

Orig: Drainage file K14/D087A  
c.pdf Addressee via Email [gennyd@iacivil.com](mailto:gennyd@iacivil.com)



**DRAINAGE AND TRANSPORTATION INFORMATION SHEET**  
(Rev. 12/05)

PROJECT TITLE: Casitas de Colores ZONE MAP/DRG. FILE # K14/D087A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ WORK ORDER#: \_\_\_\_\_

LEGAL DESCRIPTION: Blocks B-1, E-1, & F-1, Silver Townhomes  
CITY ADDRESS: 215 Lead Ave

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: Genny Donart  
ADDRESS: 128 MONROE NE PHONE: 268-8828  
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: Casitas de Colores, LLC CONTACT: Rochelle Capone  
ADDRESS: 5021 Indian School Rd NE, Ste 300 PHONE: 764-3094  
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Ron Witherspoon  
ADDRESS: 7601 Jefferson NE, Ste 100 PHONE: 761-9700  
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYOR: Rio Grande Surveying CONTACT: Rex Vogler  
ADDRESS: PO Box 7155 PHONE: 379-4579  
CITY, STATE: Albuquerque, NM ZIP CODE: 87194

CONTRACTOR: Gerald Martin CONTACT: Bob Cardenas  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

**TYPE OF SUBMITTAL:**

☐ DRAINAGE REPORT  
☐ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL  
☐ DRAINAGE PLAN RESUBMITTAL  
☐ CONCEPTUAL G & D PLAN  
☐ GRADING PLAN  
☐ EROSION CONTROL PLAN  
☒ ENGINEER'S CERT (HYDROLOGY)  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT  
☐ ENGINEER/ARCHITECT CERT (TCL)  
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)  
☐ ENGINEER/ARCHITECT CERT (AA)  
☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL SOUGHT:**

☐ SIA/FINANCIAL GUARANTEE RELEASE  
☐ PRELIMINARY PLAT APPROVAL  
☐ S. DEV. PLAN FOR SUB'D APPROVAL  
☐ S. DEV. FOR BLDG. PERMIT APPROVAL  
☐ SECTOR PLAN APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ FOUNDATION PERMIT APPROVAL  
☐ BUILDING PERMIT APPROVAL  
☒ CERTIFICATE OF OCCUPANCY (PERM) ***Phase 3***  
☐ CERTIFICATE OF OCCUPANCY (TEMP)  
☐ GRADING PERMIT APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ WORK ORDER APPROVAL  
☐ OTHER (SPECIFY) \_\_\_\_\_

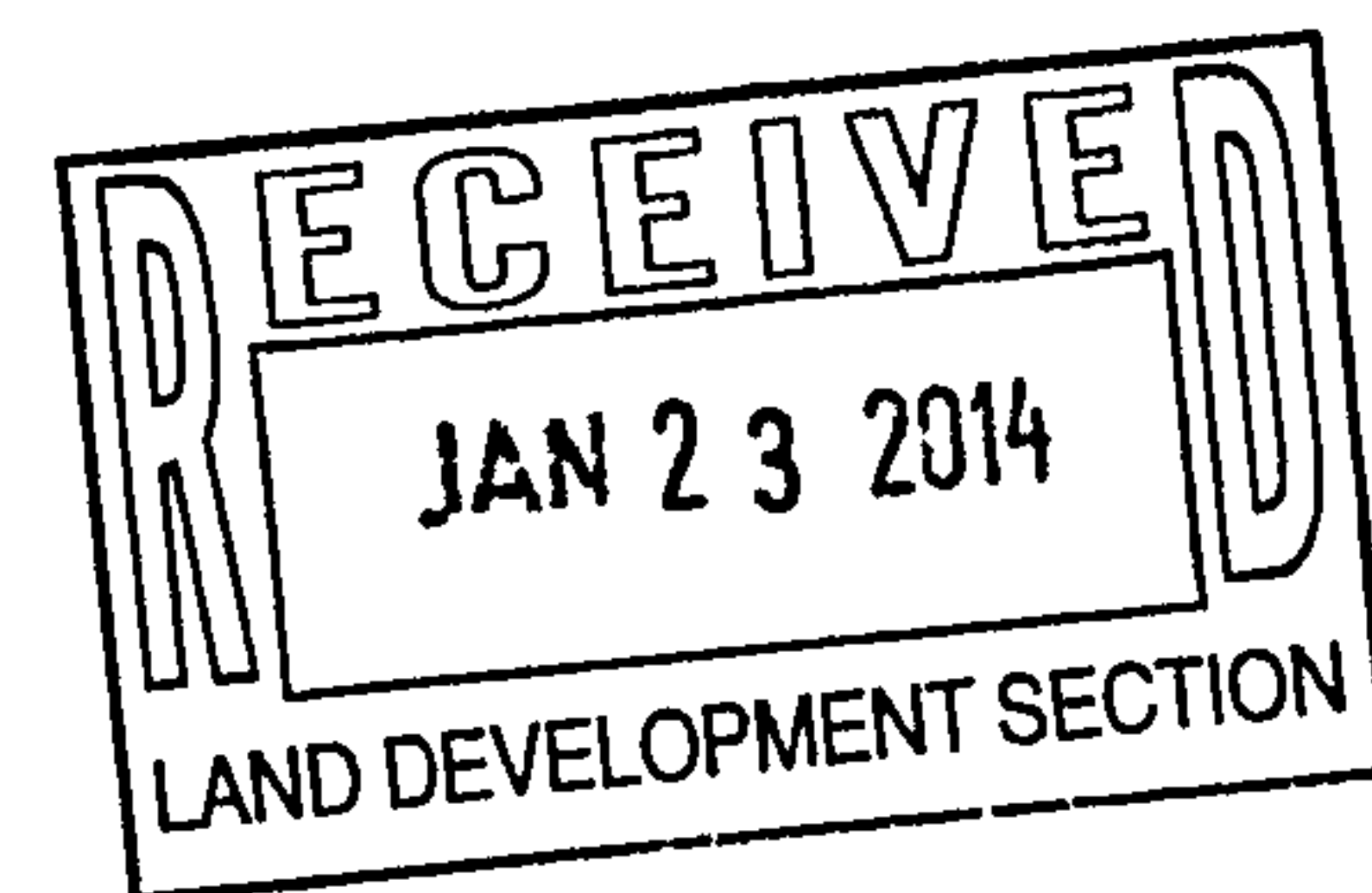
WAS A PRE-DESIGN CONFERENCE ATTENDED:

☒ YES  
☐ NO  
☐ COPY PROVIDED

SUBMITTED BY: Genevieve Donart DATE: 1/22/2014  
Isaacson & Arfman, P.A.

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

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2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.





# CITY OF ALBUQUERQUE



January 7, 2014

Genny Donart, P.E.  
Isaacson & Arfman  
128 Monroe NE  
Albuquerque, NM 87108

**Re: Casitas De Colores, 215 Lead Ave SE Bldg. 3**  
**Request for Permanent C.O. - Accepted**  
**Engineer's Stamp dated: 10-28-12 (K14/D087A)**  
**Certification dated: 1-03-14**

Dear Ms. Donart,

Based on the Certification received 1/3/2014, the site is acceptable for release of Certificate of Occupancy by the Hydrology Department.

PO Box 1293

Hydrology is asking for an electronic copy, in .pdf format, of this certification for our records. This certification can be e-mailed to: [rrael@cabq.gov](mailto:rrael@cabq.gov).

Albuquerque

If you have any questions, you can contact me at 924-3986 or Rudy Rael at 924-3977.

New Mexico 87103

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

Sincerely,

Curtis Cherne, P.E.  
Principal Engineer, Planning Dept.  
Development and Review Services

RR/CC  
C: CO Clerk—Katrina Sigala  
email

# CITY OF ALBUQUERQUE



December 19, 2013

Genevieve L. Donart, P.E.  
Isaacson & Arfman, PA  
128 Monroe NE  
Albuquerque, NM 87108

**Re: Casitas De Colores Phase I, <sup>245</sup>~~2105~~ Lead Ave. SW**  
**Request for Permanent C.O. - Accepted**  
**Engineer's Stamp dated: 10-28-12 (K14/D087A)**  
**Certification dated: 12-3-13**


Dear Ms. Donart,

Based on the Certification received 12/18/2013, the site for Phase I is acceptable for release of Certificate of Occupancy by Hydrology. Permanent CO for Phase II and Phase III will be accepted when completed.

Hydrology is asking for an electronic copy, in .pdf format, of this certification for our records. This certification can be e-mailed to: [rrael@cabq.gov](mailto:rrael@cabq.gov).

If you have any questions, you can contact me at 924-3695 or Rudy Rael at 924-3977.

Sincerely,

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

RR/SB  
C: CO Clerk—Katrina Sigala  
email

**DRAINAGE AND TRANSPORTATION INFORMATION SHEET**  
(Rev. 12/05)

PROJECT TITLE: Casitas de Colores ZONE MAP/DRG. FILE # K14/D087A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ WORK ORDER#: \_\_\_\_\_

LEGAL DESCRIPTION: Blocks B-1, E-1, & F-1, Silver Townhomes  
CITY ADDRESS: 215 Lead Ave

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: Genny Donart  
ADDRESS: 128 MONROE NE PHONE: 268-8828  
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: Casitas de Colores, LLC CONTACT: Rochelle Capone  
ADDRESS: 5021 Indian School Rd NE, Ste 300 PHONE: 764-3094  
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Ron Witherspoon  
ADDRESS: 7601 Jefferson NE, Ste 100 PHONE: 761-9700  
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYOR: Rio Grande Surveying CONTACT: Rex Vogler  
ADDRESS: PO Box 7155 PHONE: 379-4579  
CITY, STATE: Albuquerque, NM ZIP CODE: 87194

CONTRACTOR: Gerald Martin CONTACT: Bob Cardenas  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

**TYPE OF SUBMITTAL:**

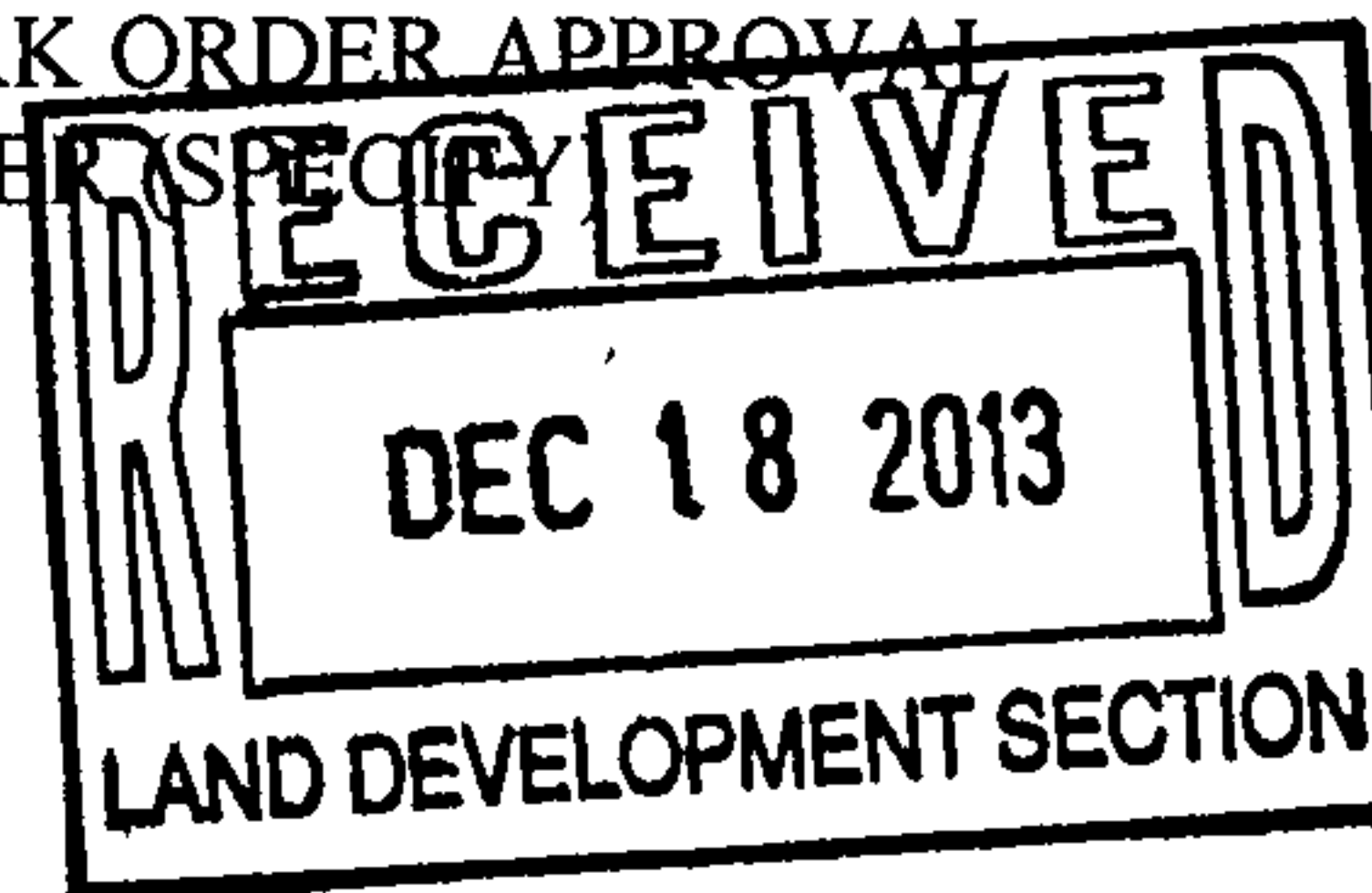
☐ DRAINAGE REPORT  
☐ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL  
☐ DRAINAGE PLAN RESUBMITTAL  
☐ CONCEPTUAL G & D PLAN  
☐ GRADING PLAN  
☐ EROSION CONTROL PLAN  
☒ ENGINEER'S CERT (HYDROLOGY)  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT  
☐ ENGINEER/ARCHITECT CERT (TCL)  
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)  
☐ ENGINEER/ARCHITECT CERT (AA)  
☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL SOUGHT:**

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☐ PRELIMINARY PLAT APPROVAL  
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☐ S. DEV. FOR BLDG. PERMIT APPROVAL  
☐ SECTOR PLAN APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ FOUNDATION PERMIT APPROVAL  
☐ BUILDING PERMIT APPROVAL  
☒ CERTIFICATE OF OCCUPANCY (PERM) Phases 1  
☐ 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



SUBMITTED BY: Genevieve Donart DATE: 12/18/2013  
Isaacson & Arfman, P.A.

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

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3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.



**DRAINAGE AND TRANSPORTATION INFORMATION SHEET**  
(Rev. 12/05)

PROJECT TITLE: Casitas de Colores ZONE MAP/DRG. FILE # K14/D087A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ WORK ORDER#: \_\_\_\_\_

LEGAL DESCRIPTION: Blocks B-1, E-1, & F-1, Silver Townhomes  
CITY ADDRESS: 215 Lead Ave

ENGINEERING FIRM: ISAACSON & ARFMAN, PA  
ADDRESS: 128 MONROE NE  
CITY, STATE: ALBUQUERQUE, NM

CONTACT: Genny Donart  
PHONE: 268-8828  
ZIP CODE: 87108

OWNER: Casitas de Colores, LLC  
ADDRESS: 5021 Indian School Rd NE, Ste 300  
CITY, STATE: Albuquerque, NM

CONTACT: Rochelle Capone  
PHONE: 764-3094  
ZIP CODE: 87108

ARCHITECT: Dekker/Perich/Sabatini  
ADDRESS: 7601 Jefferson NE, Ste 100  
CITY, STATE: Albuquerque, NM

CONTACT: Ron Witherspoon  
PHONE: 761-9700  
ZIP CODE: 87109

SURVEYOR: Rio Grande Surveying  
ADDRESS: PO Box 7155  
CITY, STATE: Albuquerque, NM

CONTACT: Rex Vogler  
PHONE: 379-4579  
ZIP CODE: 87194

CONTRACTOR: Gerald Martin  
ADDRESS: \_\_\_\_\_  
CITY, STATE: \_\_\_\_\_

CONTACT: Bob Cardenas  
PHONE: \_\_\_\_\_  
ZIP CODE: \_\_\_\_\_

**TYPE OF SUBMITTAL:**

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT
- ☐ ENGINEER/ARCHITECT CERT (TCL)
- ☐ ENGINEER/ARCHITECT CERT (DRB S.P.)
- ☐ ENGINEER/ARCHITECT CERT (AA)
- ☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL SOUGHT:**

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY (PERM) **Phase 2**
- ☐ CERTIFICATE OF OCCUPANCY (TEMP)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY) \_\_\_\_\_

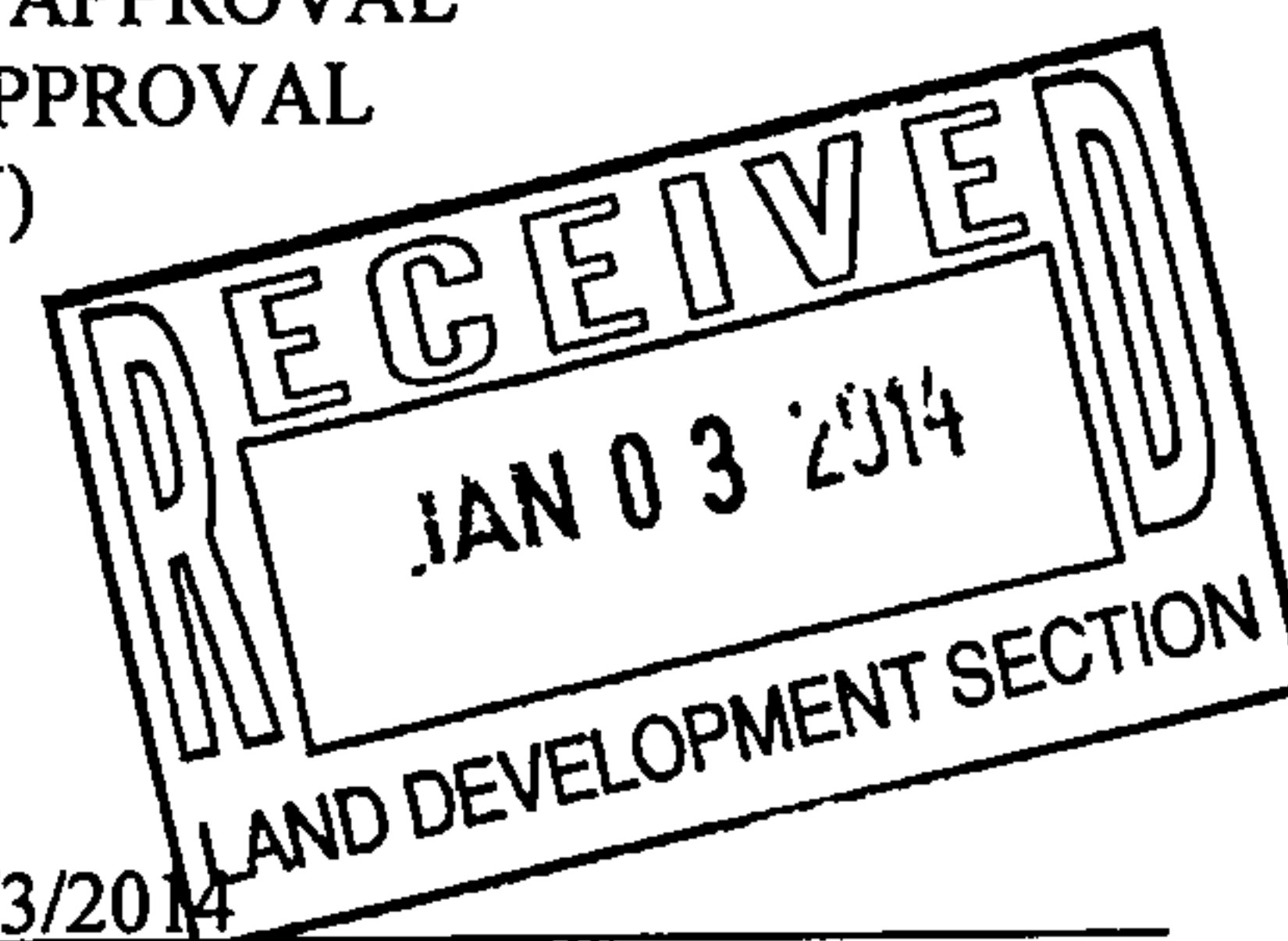
WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

SUBMITTED BY: Genevieve Donart DATE: 1/3/2014  
Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.



**DRAINAGE AND TRANSPORTATION INFORMATION SHEET**  
(Rev. 12/05)

PROJECT TITLE: Casitas de Colores ZONE MAP/DRG. FILE # K14/D087A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ WORK ORDER#: \_\_\_\_\_

LEGAL DESCRIPTION: Blocks B-1, E-1, & F-1, Silver Townhomes  
CITY ADDRESS: 215 Lead Ave

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: Genny Donart  
ADDRESS: 128 MONROE NE PHONE: 268-8828  
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: Casitas de Colores, LLC CONTACT: Rochelle Capone  
ADDRESS: 5021 Indian School Rd NE, Ste 300 PHONE: 764-3094  
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Ron Witherspoon  
ADDRESS: 7601 Jefferson NE, Ste 100 PHONE: 761-9700  
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYOR: Rio Grande Surveying CONTACT: Rex Vogler  
ADDRESS: PO Box 7155 PHONE: 379-4579  
CITY, STATE: Albuquerque, NM ZIP CODE: 87194

CONTRACTOR: Gerald Martin CONTACT: Bob Cardenas  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

**TYPE OF SUBMITTAL:**

☐ DRAINAGE REPORT  
☐ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL  
☒ DRAINAGE PLAN RESUBMITTAL  
☐ CONCEPTUAL G & D PLAN  
☒ GRADING PLAN  
☐ EROSION CONTROL PLAN  
☐ ENGINEER'S CERT (HYDROLOGY)  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT  
☐ ENGINEER/ARCHITECT CERT (TCL)  
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)  
☐ ENGINEER/ARCHITECT CERT (AA)  
☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL SOUGHT:**

☐ SIA/FINANCIAL GUARANTEE RELEASE  
☐ PRELIMINARY PLAT APPROVAL  
☐ S. DEV. PLAN FOR SUB'D APPROVAL  
☐ S. DEV. 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) \_\_\_\_\_

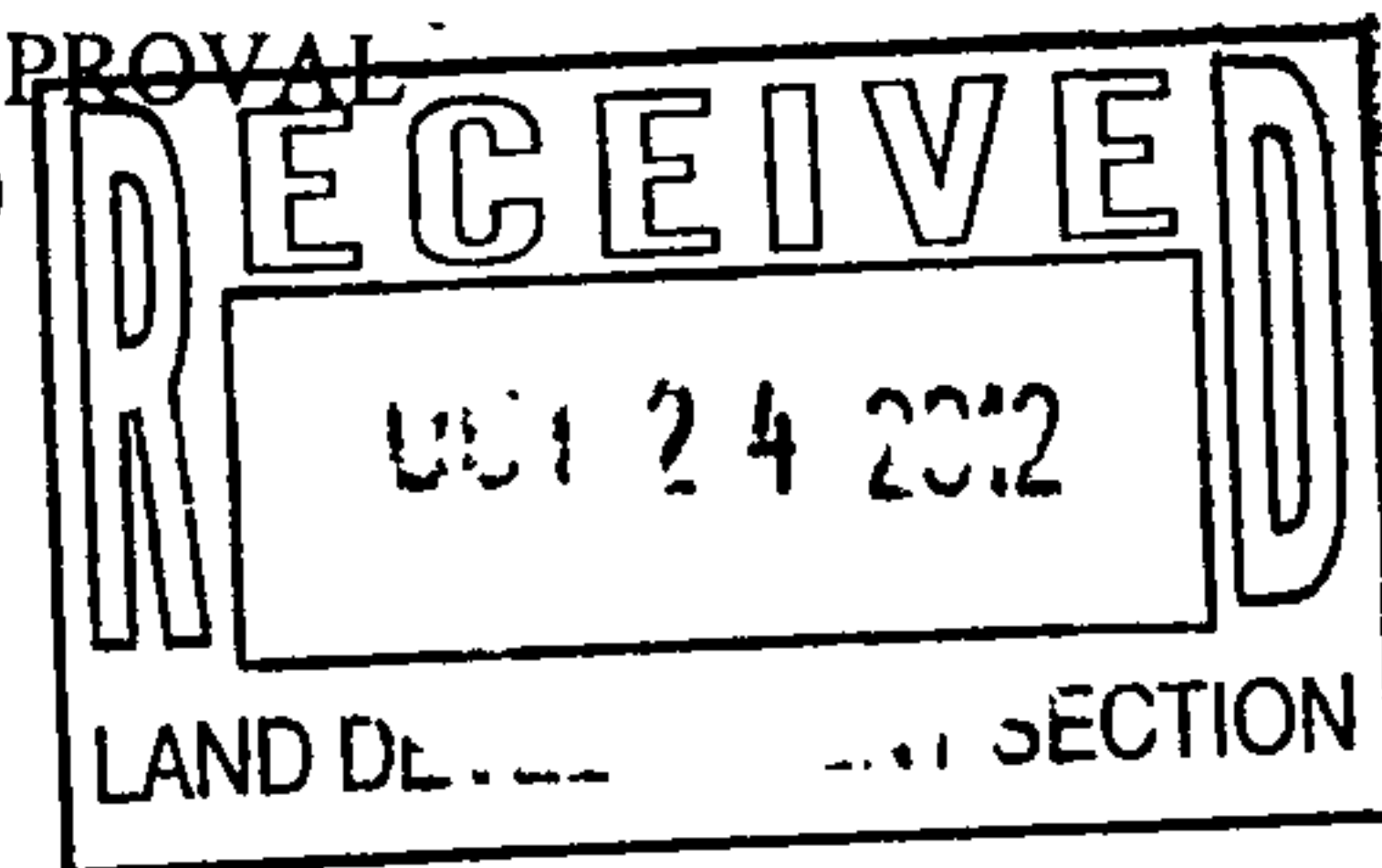
WAS A PRE-DESIGN CONFERENCE ATTENDED:

☒ YES  
☐ NO  
☐ COPY PROVIDED

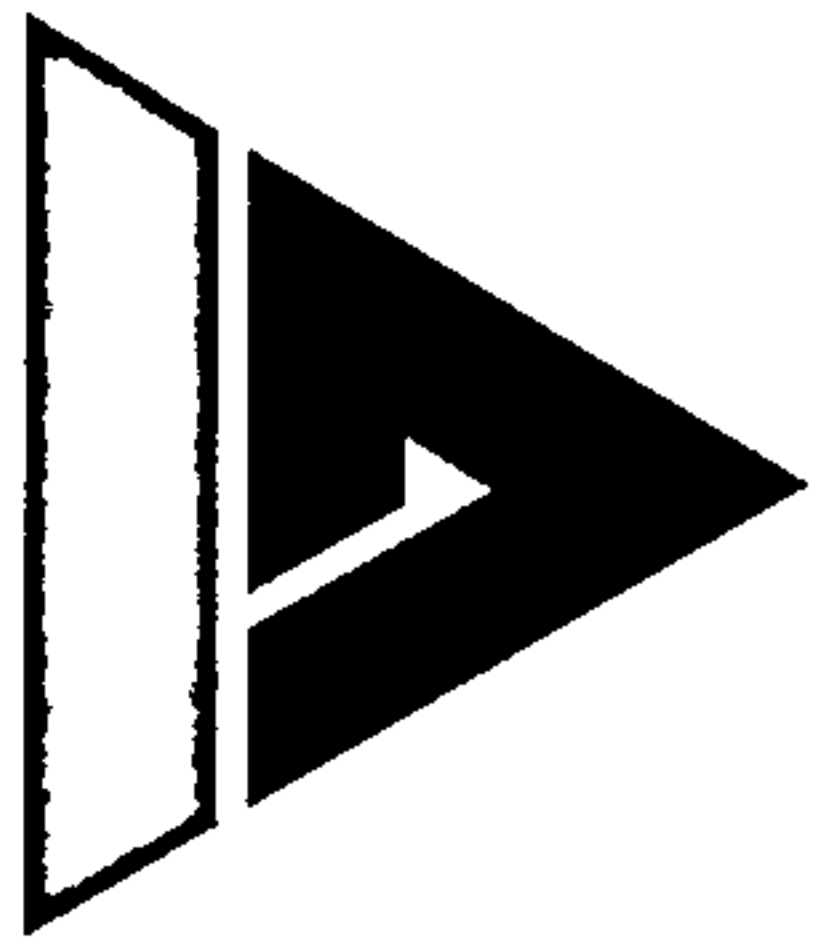
SUBMITTED BY: Genevieve Donart DATE: 10/23/2012  
Isaacson & Arfman, P.A.

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

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21202628



October 23, 2012

Mr. Gregory R. Olson, PE  
City of Albuquerque  
PO Box 1293  
Albuquerque, NM 87103



**RE: Casas de Colores (K14-D087A)**  
**Response to Hydrology Comments**

Dear Mr. Olson;

Attached is a resubmittal of the Casas de Colores Grading & Drainage Plan. I've responded to your comments in the following manner:

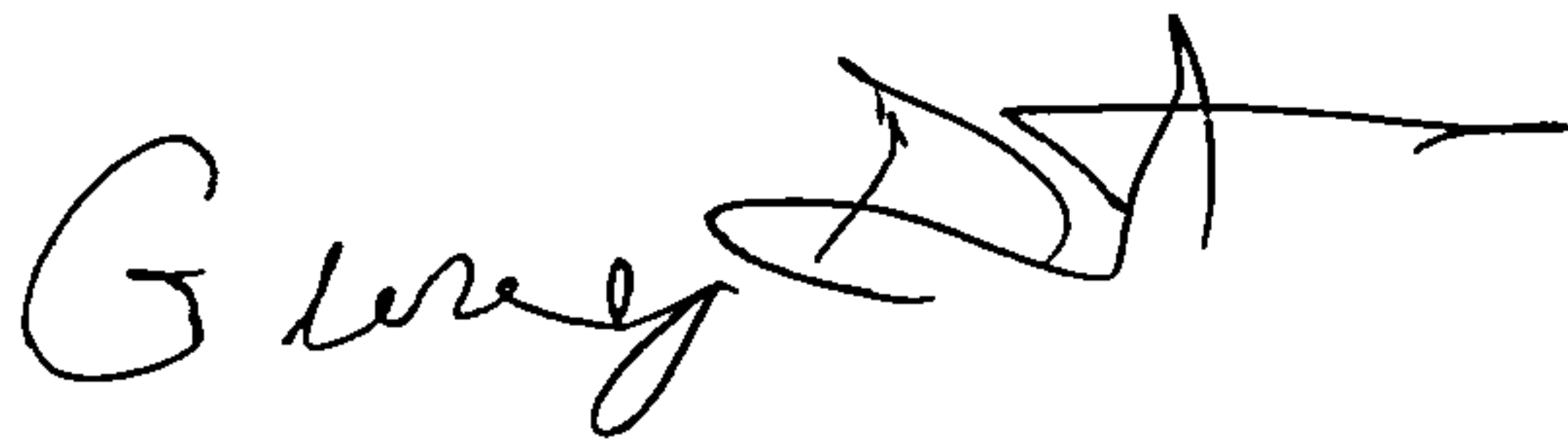
1. A Basin Map was added to sheet CG-502 that also labels the roof drain points.
2. See note 1.
3. The roof drain on the NE corner of Bldg 2 has been changed to drain directly to the overflow pipe. (I like this suggestion. Thank you!)
4. Details have been added to CG-504 showing how the force mains discharge to the sidewalk culverts. A detail has been added to sheet CG-501 showing the curb behind the sidewalk at the sidewalk culverts.
5. See note 4.
6. The rock swales are 9" thick. This was added to the details.
7. The detail has been changed.
8. These details were actually covered by the Architectural Site Details in the bldg. permit. I've changed those notes to reflect that.
9. Flow arrows were added.
10. I modified the elevations so that the overflow pipes drain back to the storm water quality manholes.
11. North arrows, scales, and street labels were added.
12. I've added some language to give the Owner some direction for maintenance, but a schedule for how often cleaning will be required will depend on the amount of accumulation of solids from the site, and should be determined based on observation with time.



To address Mr. Cherne's email of 10/22, I've attached revised AHYMO calculations for the 1/2" storm that include the 2 future parcels A-1 and C-1. The total 1/2" storm volume, including those future parcels, fits within the volume designated as stormwater detention in the cisterns.

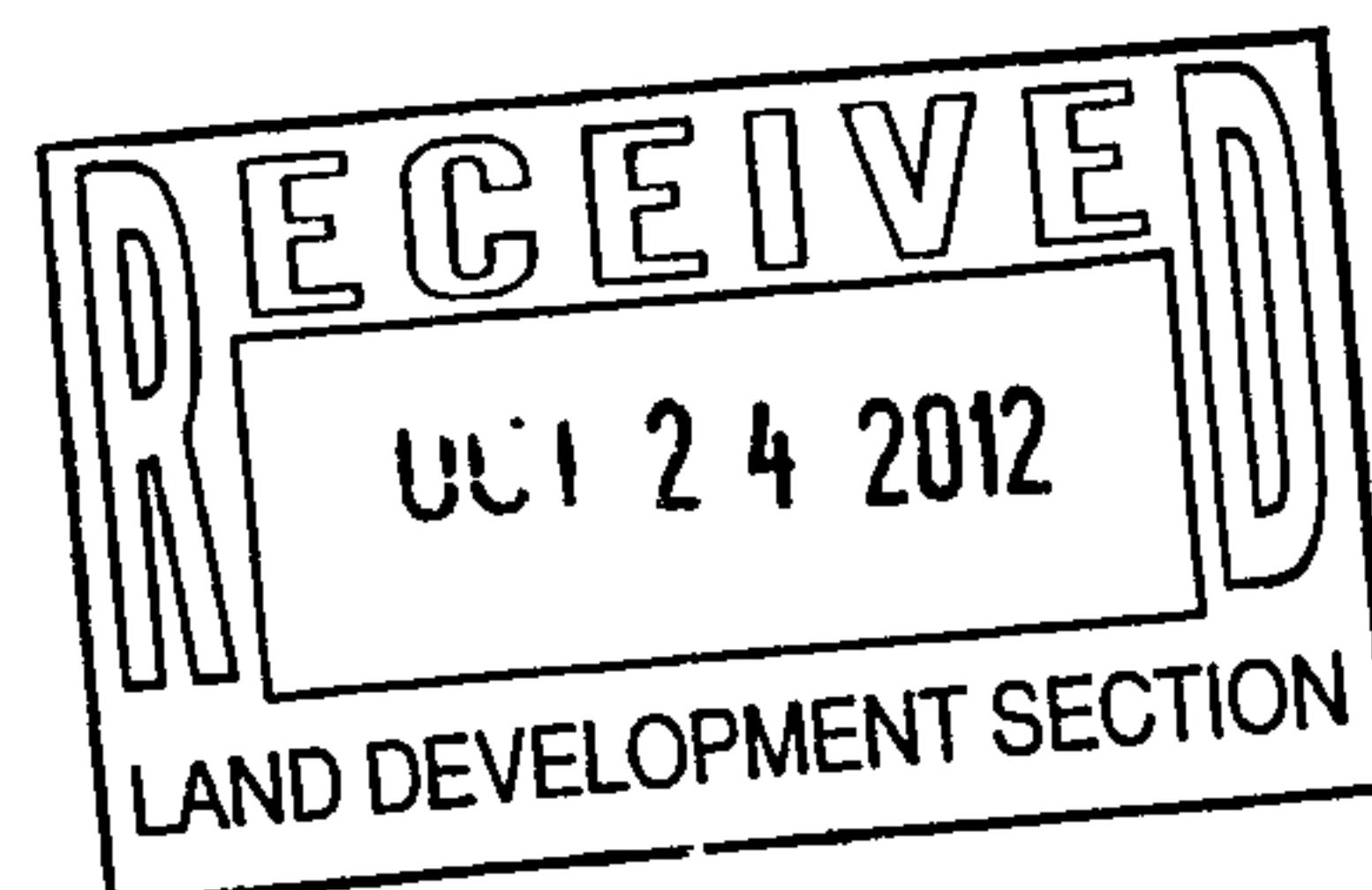
**Present & Future Required Volume =1,833 cf,  
Available volume = 1,864 cf.**

Sincerely,  
**ISAACSON & ARFMAN P.A.**

A handwritten signature in black ink, appearing to read "Genny Donart", with a stylized flourish at the end.

Genny Donart, PE  
GD/gld

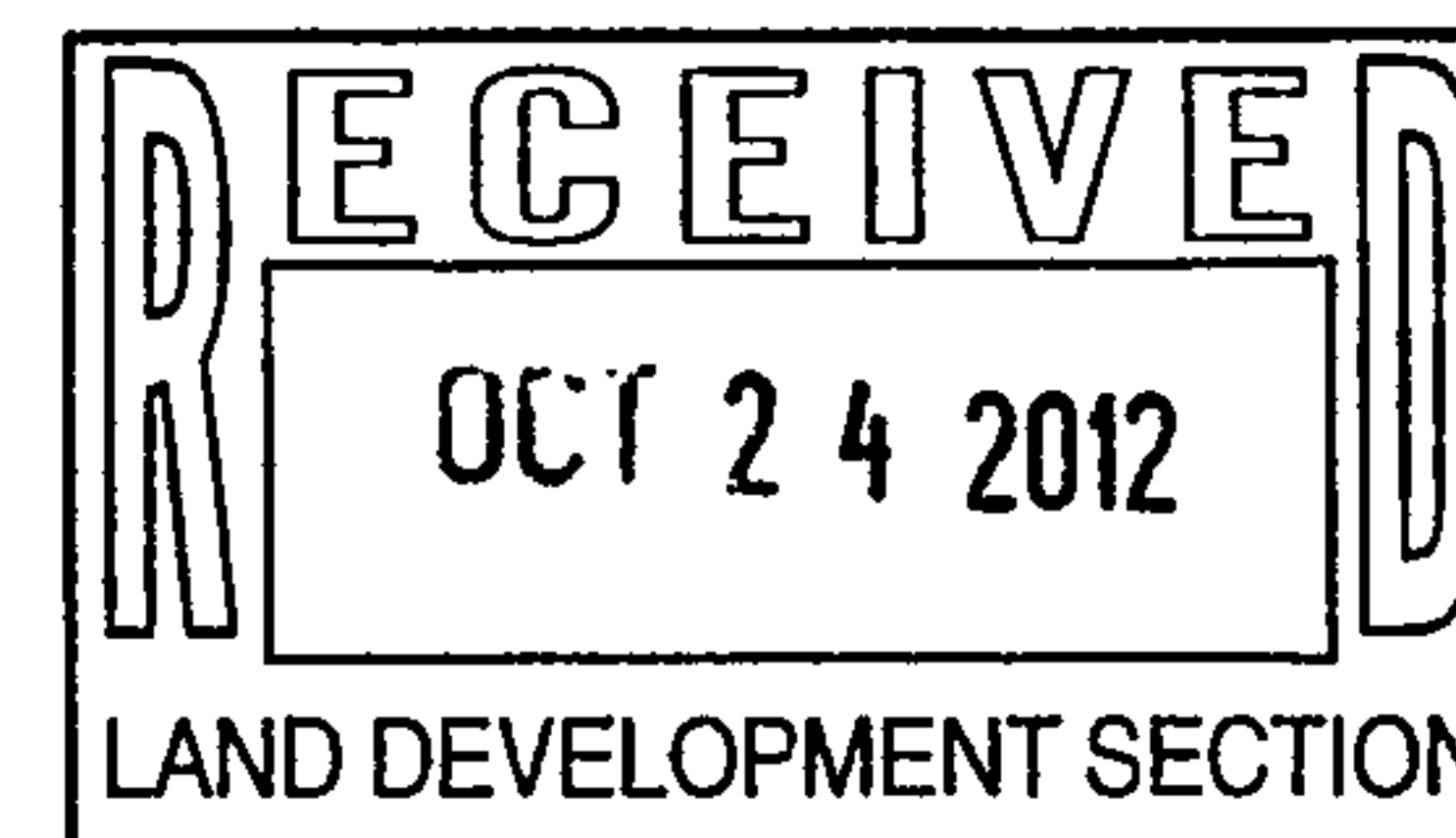
**Attachments**



COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
---------	---------------------------	-------------	-----------	--------------	----------------------	-----------------------	-----------------	----------------------	--------------	----------------------

\*S\*\*\*\*\*

\*S CASITAS DE COLORES  
 \*S DEVELOPED CONDITIONS  
 \*S 1/2" STORM  
 \*S 1925P0.5.DAT  
 \*S SEPTEMBER 2012  
 \*S BY GENNY DONART  
 \*S ISAACSON & ARFMAN, P.A.



\*S\*\*\*\*\*

START

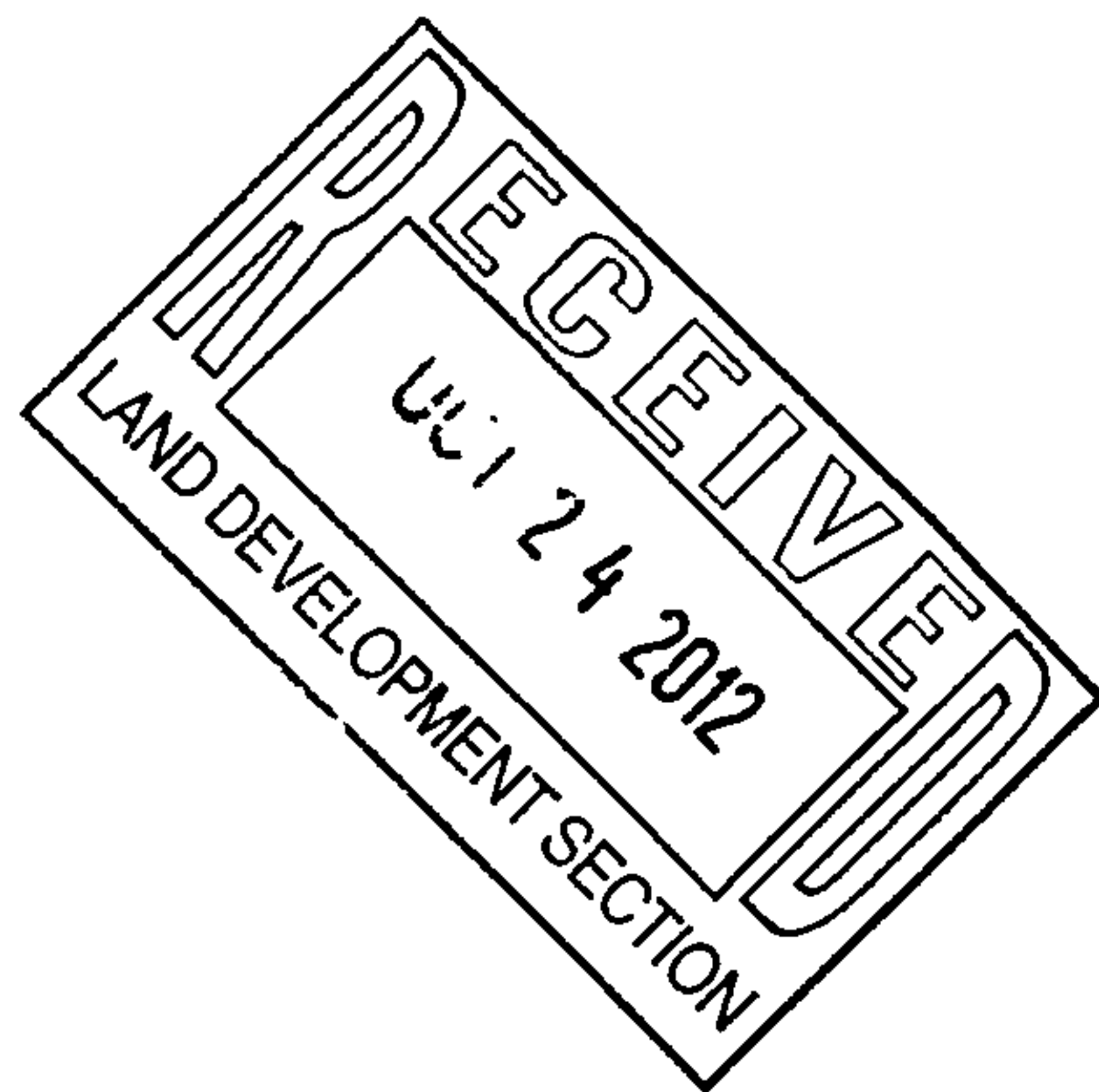
TIME= 0.00

RAINFALL TYPE= 1 NOAA 14

RAIN6= 0.500

*S TOTAL SITE	COMPUTE NM HYD	SITE -	1	0.00192	1.21	0.033	0.32591	1.533	0.984	PER IMP= 87.00
*S TOTAL SITE & FUTURE PARCELS A-1 AND C-1	COMPUTE NM HYD	FUT -	40	0.00237	1.52	0.042	0.33324	1.533	1.006	PER IMP= 89.00
*S BUILDING 1 (SOUTH) - OVERALL	COMPUTE NM HYD	B -	10	0.00085	0.53	0.014	0.31858	1.533	0.964	PER IMP= 85.00
*S BUILDING 1 (SOUTH) - ROOF TO CISTERN	COMPUTE NM HYD	B.R1 -	11	0.00036	0.26	0.007	0.37354	1.533	1.136	PER IMP= 100.00
*S BUILDING 1 (SOUTH) - ROOF TO ROAD	COMPUTE NM HYD	B.R2 -	12	0.00013	0.10	0.003	0.37354	1.533	1.151	PER IMP= 100.00
*S BUILDING 1 (SOUTH) - COURTYARD	COMPUTE NM HYD	B.CY -	13	0.00009	0.03	0.001	0.14273	1.533	0.466	PER IMP= 37.00
*S BUILDING 1 (SOUTH) - EXTERIOR	COMPUTE NM HYD	B.EXT -	14	0.00026	0.15	0.004	0.28195	1.533	0.863	PER IMP= 75.00
*S ADD ROOF TO CISTERN AND COURTYARD FLOWS	ADD HYD	B.CIST 11&13	15	0.00045	0.29	0.008	0.32616	1.533	1.001	
*S BUILDING 1 CISTERN	ROUTE RESERVOIR	B.CIST	15 16	0.00045	0.04	0.008	0.32616	1.967	0.149	AC-FT= 0.005
*S ADD ROOF TO ROAD AND EXTERIOR	ADD HYD	B.SURFACE 12&14	17	0.00040	0.25	0.007	0.31209	1.533	0.960	
*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE	*S TOTAL DISCHARGE TO LEAD AVE	ADD HYD	B.TOTAL 16&17	18	0.00085	0.29	0.015	0.31954	1.533	0.529
*S BUILDING 2 (NORTH) - OVERALL	COMPUTE NM HYD	E -	20	0.00085	0.54	0.015	0.32591	1.533	0.987	PER IMP= 87.00
*S BUILDING 2 (NORTH) - ROOF TO CISTERN	COMPUTE NM HYD	E.R1 -	21	0.00043	0.31	0.009	0.37354	1.533	1.135	PER IMP= 100.00
*S BUILDING 2 (NORTH) - ROOF TO ROAD	COMPUTE NM HYD	E.R2 -	22	0.00004	0.03	0.001	0.37354	1.533	1.213	PER IMP= 100.00
*S BUILDING 2 (NORTH) - COURTYARD	COMPUTE NM HYD	E.CY -	23	0.00013	0.05	0.001	0.17936	1.533	0.564	PER IMP= 47.00
*S BUILDING 2 (NORTH) - EXTERIOR										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 2 NOTATION
COMPUTE NM HYD	E.EXT	-	24	0.00025	0.15	0.004	0.30393	1.533	0.931	PER IMP= 81.00
*S ADD ROOF TO CISTERN AND COURTYARD FLOWS										
ADD HYD	E.CIST	21&23	25	0.00056	0.36	0.010	0.32826	1.533	1.003	
*S BUILDING 2 CISTERN										
ROUTE RESERVOIR	E.CIST	21	26	0.00043	0.04	0.009	0.37316	2.000	0.156	AC-FT= 0.006
*S ADD ROOF TO ROAD AND EXTERIOR										
ADD HYD	E.SURFACE	22&24	27	0.00029	0.18	0.005	0.31236	1.533	0.968	
*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE										
*S TOTAL DISCHARGE TO SILVER AVE										
ADD HYD	E.TOTAL	26&27	28	0.00072	0.22	0.013	0.34875	1.533	0.481	
*S BLDG 3 - OVERALL										
*S TOTAL DISCHARGE TO 2ND ST										
COMPUTE NM HYD	F	-	30	0.00022	0.16	0.004	0.36255	1.533	1.108	PER IMP= 97.00
FINISH										






- Version: S4.01a - Rel: 01a

\*S CASITAS DE COLORES -  
\*S DEVELOPED CONDITIONS  
\*S 1/2" STORM  
\*S 1925P0.5.DAT  
\*S SEPTEMBER 2012  
\*S BY GENNY DONART  
\*S ISAACSON & ARFMAN, P.A.

DT = 0.033333 HOURS                      END TIME = 5.999994 HOURS



```
*S  TOTAL SITE
COMPUTE NM HYD      ID=1 HYD NO=SITE AREA=0.0019246 SQ MI
                     PER A=0 PER B=0 PER C=13 PER D=87
                     TP=-0.1333 HR    MASS RAIN=-1
```

K = 0.072649HR      TP = 0.133300HR      K/TP RATIO = 0.545000      SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 6.6106      CFS      UNIT VOLUME = 0.9976      B = 526.28      P60 = .50000  
AREA = 0.001674 SQ MI      IA = 0.10000 INCHES      INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR      TP = 0.133300HR      K/TP RATIO = 0.866480      SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.67922      CFS      UNIT VOLUME = 0.9810      B = 361.87      P60 = .50000  
AREA = 0.000250 SQ MI      IA = 0.35000 INCHES      INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

```
PRINT HYD          ID=1    CODE=1
```

HYDROGRAPH FROM AREA SITE

RUNOFF VOLUME = 0.32591 INCHES = 0.0335 ACRE-FEET  
PEAK DISCHARGE RATE = 1.21 CFS AT 1.533 HOURS BASIN AREA = 0.0019 SQ. MI.

\*S TOTAL SITE & FUTURE PARCELS A-1 AND C-1

COMPUTE NM HYD ID=40 HYD NO=FUT SITE AREA=0.0023665 SQ MI  
PER A=0 PER B=0 PER C=11 PER D=89  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 8.3153 CFS UNIT VOLUME = 0.9981 B = 526.28 P60 = .50000  
AREA = 0.002106 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.70669 CFS UNIT VOLUME = 0.9810 B = 361.87 P60 = .50000  
AREA = 0.000260 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=40 CODE=1

HYDROGRAPH FROM AREA FUT

RUNOFF VOLUME = 0.33324 INCHES = 0.0421 ACRE-FEET → **1,833 CF required ½" storm detention**  
PEAK DISCHARGE RATE = 1.52 CFS AT 1.533 HOURS BASIN AREA = 0.0024 SQ. MI.

\*S BUILDING 1 (SOUTH) - OVERALL

COMPUTE NM HYD ID=10 HYD NO=B AREA=0.0008519 SQ MI  
PER A=0 PER B=0 PER C=15 PER D=85  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 2.8588 CFS UNIT VOLUME = 0.9955 B = 526.28 P60 = .50000  
AREA = 0.000724 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.34690 CFS UNIT VOLUME = 0.9623 B = 361.87 P60 = .50000  
AREA = 0.000128 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=10 CODE=1

HYDROGRAPH FROM AREA B

RUNOFF VOLUME = 0.31858 INCHES = 0.0145 ACRE-FEET  
PEAK DISCHARGE RATE = 0.53 CFS AT 1.533 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 1 (SOUTH) - ROOF TO CISTERNS

COMPUTE NM HYD ID=11 HYD NO=B.R1 AREA=0.0003610 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.4252 CFS UNIT VOLUME = 0.9911 B = 526.28 P60 = .50000  
AREA = 0.000361 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=11 CODE=1

HYDROGRAPH FROM AREA B.R1

RUNOFF VOLUME = 0.37354 INCHES = 0.0072 ACRE-FEET  
PEAK DISCHARGE RATE = 0.26 CFS AT 1.533 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S BUILDING 1 (SOUTH) - ROOF TO ROAD

COMPUTE NM HYD ID=12 HYD NO=B.R2 AREA=0.0001348 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1



K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.53220 CFS UNIT VOLUME = 0.9786 B = 526.28 P60 = .50000  
AREA = 0.000135 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=12 CODE=1

HYDROGRAPH FROM AREA B.R2

RUNOFF VOLUME = 0.37354 INCHES = 0.0027 ACRE-FEET  
PEAK DISCHARGE RATE = 0.10 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 1 (SOUTH) - COURTYARD  
COMPUTE NM HYD ID=13 HYD NO=B.CY AREA=0.0000917 SQ MI  
PER A=0 PER B=0 PER C=63 PER D=37  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.13395 CFS UNIT VOLUME = 0.9169 B = 526.28 P60 = .50000  
AREA = 0.000034 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.15683 CFS UNIT VOLUME = 0.9182 B = 361.87 P60 = .50000  
AREA = 0.000058 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=13 CODE=1

HYDROGRAPH FROM AREA B.CY

RUNOFF VOLUME = 0.14273 INCHES = 0.0007 ACRE-FEET  
PEAK DISCHARGE RATE = 0.03 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 1 (SOUTH) - EXTERIOR  
COMPUTE NM HYD ID=14 HYD NO=B.EXT AREA=0.0002644 SQ MI  
PER A=0 PER B=0 PER C=25 PER D=75  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.78290 CFS UNIT VOLUME = 0.9840 B = 526.28 P60 = .50000  
AREA = 0.000198 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.17944 CFS UNIT VOLUME = 0.9258 B = 361.87 P60 = .50000  
AREA = 0.000066 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=14 CODE=1

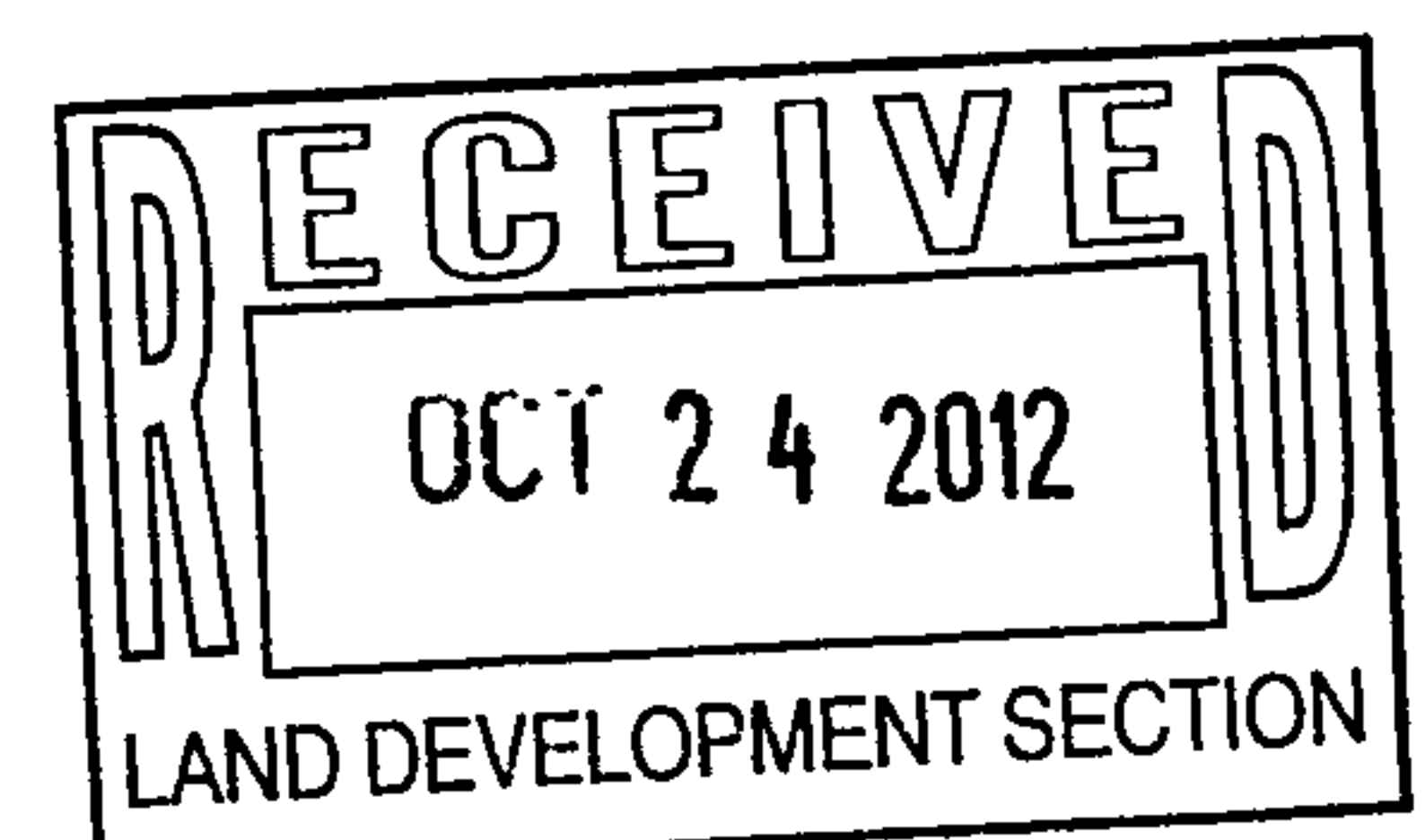
HYDROGRAPH FROM AREA B.EXT

RUNOFF VOLUME = 0.28195 INCHES = 0.0040 ACRE-FEET  
PEAK DISCHARGE RATE = 0.15 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS  
ADD HYD ID=15 HYD NO=B.CIST ID I=11 ID II=13  
PRINT HYD ID=15 CODE=1

HYDROGRAPH FROM AREA B.CIST

RUNOFF VOLUME = 0.32616 INCHES = 0.0079 ACRE-FEET  
PEAK DISCHARGE RATE = 0.29 CFS AT 1.533 HOURS BASIN AREA = 0.0005 SQ. MI.





\* ROUTE THROUGH CISTERN  
 \* DISCHARGE BY 20 GPM PUMP  
 \*S BUILDING 1 CISTERN  
 ROUTE RESERVOIR ID=16 HYD NO=B.CIST INFLOW ID=15 CODE=10  
 OUTFLOW(CFS) STORAGE(AF) ELEV(FT)  
 0 0 45.28  
 0.043 0.0001 45.30  
 0.044 0.02158 50.50  
 0.045 0.02202 53.39  
 2.2 0.02203 53.40

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	45.28	0.000	0.00
0.33	0.00	45.28	0.000	0.00
0.67	0.00	45.28	0.000	0.00
1.00	0.00	45.28	0.000	0.00
1.33	0.01	45.28	0.000	0.00
1.67	0.16	46.29	0.004	0.04
2.00	0.03	46.54	0.005	0.04
2.33	0.00	46.34	0.004	0.04
2.67	0.00	46.06	0.003	0.04
3.00	0.00	45.77	0.002	0.04
3.33	0.00	45.48	0.001	0.04

PEAK DISCHARGE = 0.043 CFS - PEAK OCCURS AT HOUR 1.97  
 MAXIMUM WATER SURFACE ELEVATION = 46.545  
 MAXIMUM STORAGE = 0.0052 AC-FT INCREMENTAL TIME= 0.033333HRS

PRINT HYD ID=16 CODE=1

#### HYDROGRAPH FROM AREA B.CIST

RUNOFF VOLUME = 0.32616 INCHES = 0.0079 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.04 CFS AT 1.967 HOURS BASIN AREA = 0.0005 SQ. MI.

\*S ADD ROOF TO ROAD AND EXTERIOR  
 ADD HYD ID=17 HYD NO=B.SURFACE ID I=12 ID II=14  
 PRINT HYD ID=17 CODE=1

#### HYDROGRAPH FROM AREA B.SURFACE

RUNOFF VOLUME = 0.31209 INCHES = 0.0066 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.25 CFS AT 1.533 HOURS BASIN AREA = 0.0004 SQ. MI.

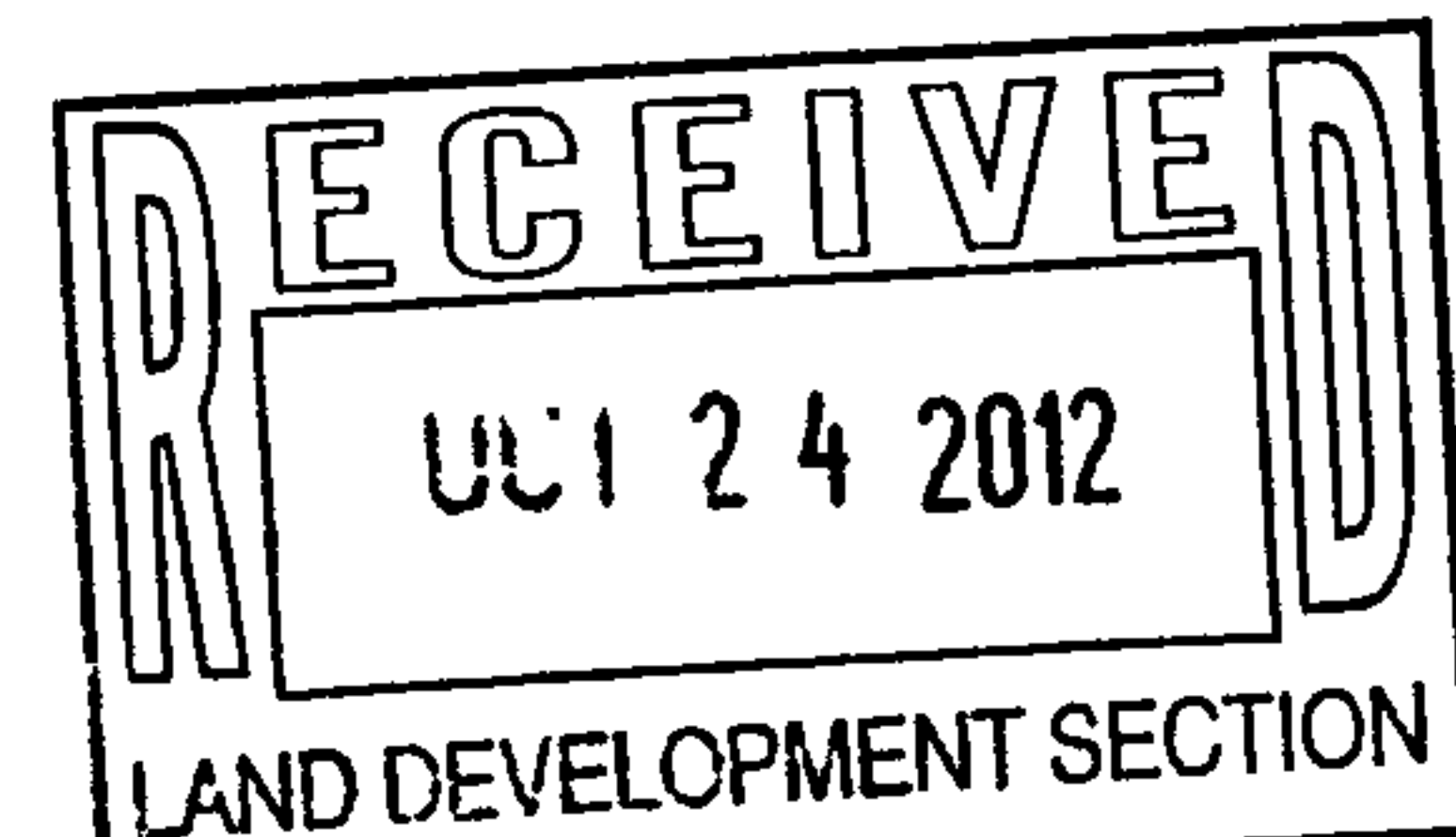
\*S ADD SURFACE FLOWS TO ROAD AND CISTERNS DISCHARGE  
 \*S TOTAL DISCHARGE TO LEAD AVE  
 ADD HYD ID=18 HYD NO=B.TOTAL ID I=16 ID II=17  
 PRINT HYD ID=18 CODE=1

#### HYDROGRAPH FROM AREA B.TOTAL

RUNOFF VOLUME = 0.31954 INCHES = 0.0145 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.29 CFS AT 1.533 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 2 (NORTH) - OVERALL  
 COMPUTE NM HYD ID=20 HYD NO=E AREA=0.0008534 SQ MI  
 PER A=0 PER B=0 PER C=13 PER D=87  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 2.9313 CFS UNIT VOLUME = 0.9955 B = 526.28 P60 = .50000



AREA = 0.000742 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.30118 CFS UNIT VOLUME = 0.9543 B = 361.87 P60 = .50000  
AREA = 0.000111 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=20 CODE=1

HYDROGRAPH FROM AREA E

RUNOFF VOLUME = 0.32591 INCHES = 0.0148 ACRE-FEET  
PEAK DISCHARGE RATE = 0.54 CFS AT 1.533 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 2 (NORTH) - ROOF TO CISTERNS  
COMPUTE NM HYD ID=21 HYD NO=E.R1 AREA=0.0004336 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.7119 CFS UNIT VOLUME = 0.9922 B = 526.28 P60 = .50000  
AREA = 0.000434 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=21 CODE=1

HYDROGRAPH FROM AREA E.R1

RUNOFF VOLUME = 0.37354 INCHES = 0.0086 ACRE-FEET  
PEAK DISCHARGE RATE = 0.31 CFS AT 1.533 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S BUILDING 2 (NORTH) - ROOF TO ROAD  
COMPUTE NM HYD ID=22 HYD NO=E.R2 AREA=0.0000389 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.15358 CFS UNIT VOLUME = 0.9286 B = 526.28 P60 = .50000  
AREA = 0.000039 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=22 CODE=1

HYDROGRAPH FROM AREA E.R2

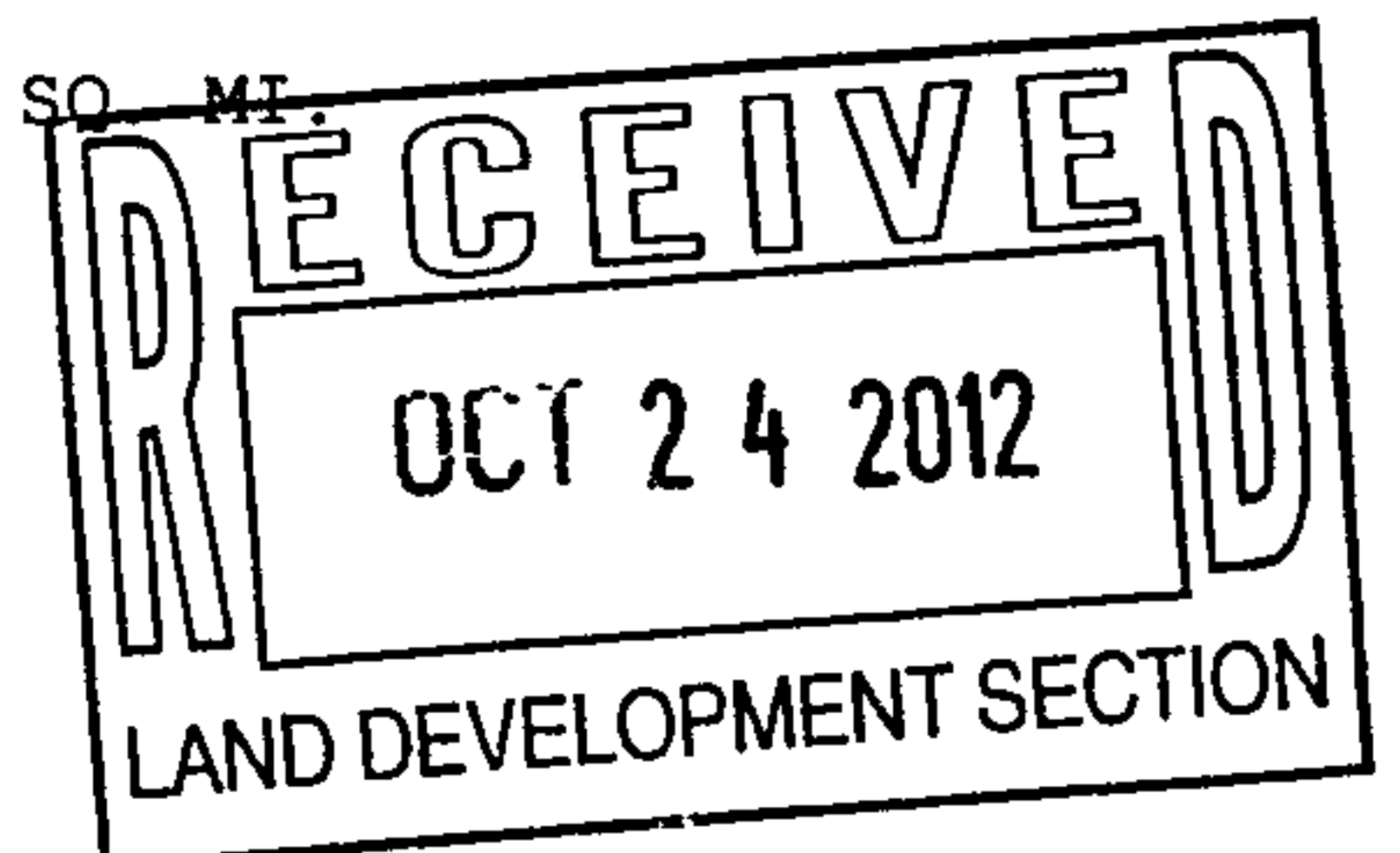
RUNOFF VOLUME = 0.37354 INCHES = 0.0008 ACRE-FEET  
PEAK DISCHARGE RATE = 0.03 CFS AT 1.533 HOURS BASIN AREA = 0.0000 SQ. MI.

\*S BUILDING 2 (NORTH) - COURTYARD  
COMPUTE NM HYD ID=23 HYD NO=E.CY AREA=0.0001300 SQ MI  
PER A=0 PER B=0 PER C=53 PER D=47  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.24123 CFS UNIT VOLUME = 0.9547 B = 526.28 P60 = .50000  
AREA = 0.000061 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.18705 CFS UNIT VOLUME = 0.9326 B = 361.87 P60 = .50000  
AREA = 0.000069 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=23 CODE=1



HYDROGRAPH FROM AREA\*E.CY

RUNOFF VOLUME = 0.17936 INCHES = 0.0012 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.05 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 2 (NORTH) - EXTERIOR

COMPUTE NM HYD ID=24 HYD NO=E.EXT AREA=0.0002509 SQ MI  
 PER A=0 PER B=0 PER C=19 PER D=81  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 0.80236 CFS UNIT VOLUME = 0.9840 B = 526.28 P60 = .50000  
 AREA = 0.000203 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
 UNIT PEAK = 0.12941 CFS UNIT VOLUME = 0.9008 B = 361.87 P60 = .50000  
 AREA = 0.000048 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=24 CODE=1

HYDROGRAPH FROM AREA E.EXT

RUNOFF VOLUME = 0.30393 INCHES = 0.0041 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.15 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS

ADD HYD ID=25 HYD NO=E.CIST ID I=21 ID II=23  
 PRINT HYD ID=25 CODE=1

HYDROGRAPH FROM AREA E.CIST

RUNOFF VOLUME = 0.32826 INCHES = 0.0099 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.36 CFS AT 1.533 HOURS BASIN AREA = 0.0006 SQ. MI.

\* ROUTE THROUGH CISTERN

\* DISCHARGE BY 20 GPM PUMPS

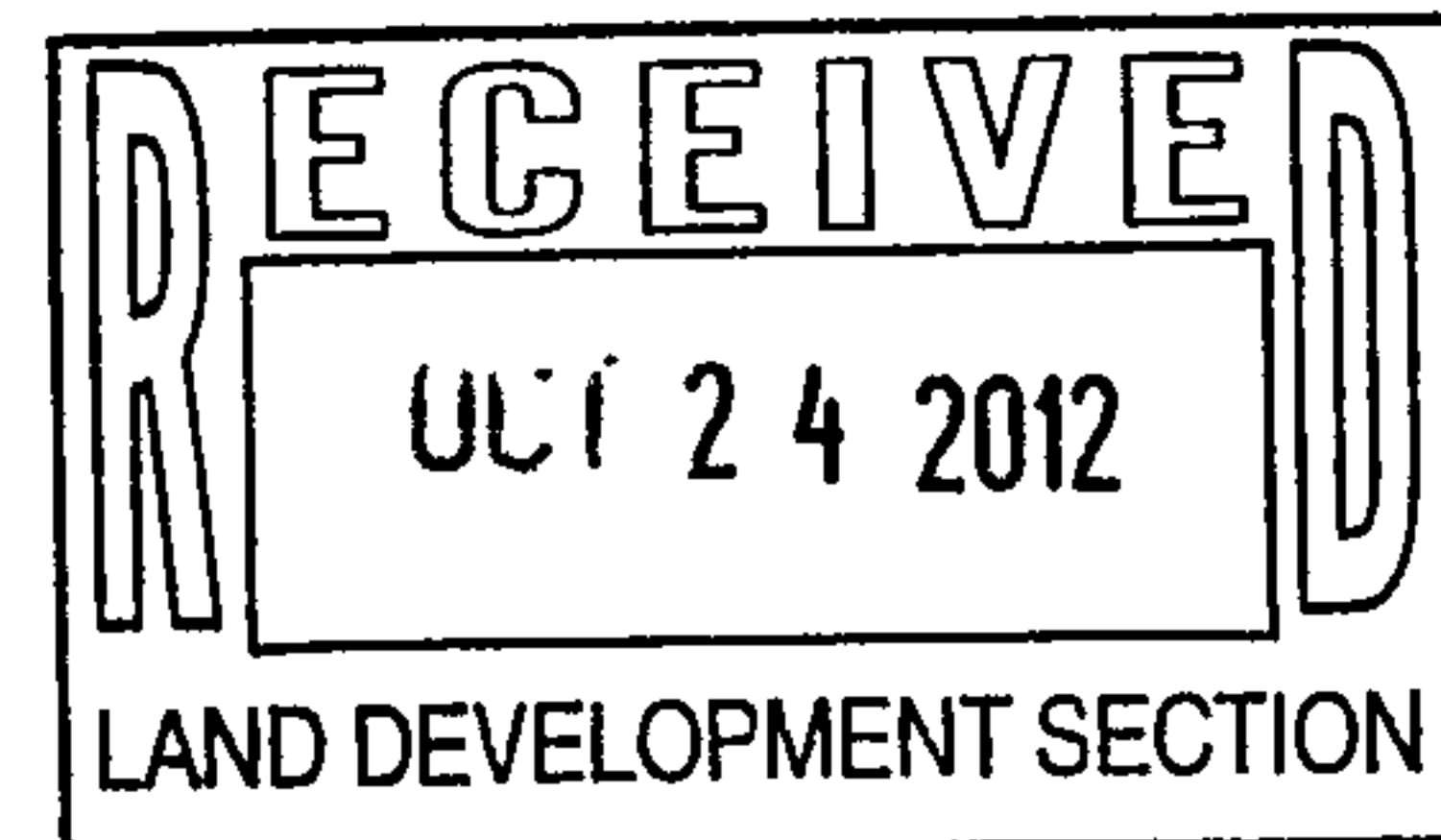
\*S BUILDING 2 CISTERN

ROUTE RESERVOIR ID=26 HYD NO=E.CIST INFLOW ID=21 CODE=10  
 OUTFLOW(CFS) STORAGE(AF) ELEV(FT)  
 0 0 45.28  
 0.043 0.0001 45.30  
 0.044 0.02158 50.50  
 0.045 0.02202 53.89  
 2.2 0.02203 53.90

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	45.28	0.000	0.00
0.33	0.00	45.28	0.000	0.00
0.67	0.00	45.28	0.000	0.00
1.00	0.00	45.28	0.000	0.00
1.33	0.01	45.28	0.000	0.00
1.67	0.18	46.39	0.005	0.04
2.00	0.04	46.70	0.006	0.04
2.33	0.00	46.52	0.005	0.04
2.67	0.00	46.24	0.004	0.04
3.00	0.00	45.95	0.003	0.04
3.33	0.00	45.66	0.002	0.04
3.67	0.00	45.38	0.000	0.04

PEAK DISCHARGE = 0.043 CFS - PEAK OCCURS AT HOUR 2.00  
 MAXIMUM WATER SURFACE ELEVATION = 46.704





MAXIMUM STORAGE = 0.0059 AC-FT INCREMENTAL TIME= 0.033333HRS

PRINT HYD ID=26 CODE=1

HYDROGRAPH FROM AREA E.CIST

RUNOFF VOLUME = 0.37316 INCHES = 0.0086 ACRE-FEET  
PEAK DISCHARGE RATE = 0.04 CFS AT 2.000 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S ADD ROOF TO ROAD AND EXTERIOR  
ADD HYD ID=27 HYD NO=E.SURFACE ID I=22 ID II=24  
PRINT HYD ID=27 CODE=1

HYDROGRAPH FROM AREA E.SURFACE

RUNOFF VOLUME = 0.31236 INCHES = 0.0048 ACRE-FEET  
PEAK DISCHARGE RATE = 0.18 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE  
\*S TOTAL DISCHARGE TO SILVER AVE  
ADD HYD ID=28 HYD NO=E.TOTAL ID I=26 ID II=27  
PRINT HYD ID=28 CODE=1

HYDROGRAPH FROM AREA E.TOTAL

RUNOFF VOLUME = 0.34875 INCHES = 0.0135 ACRE-FEET  
PEAK DISCHARGE RATE = 0.22 CFS AT 1.533 HOURS BASIN AREA = 0.0007 SQ. MI.

\*S BLDG 3 - OVERALL  
\*S TOTAL DISCHARGE TO 2ND ST  
COMPUTE NM HYD ID=30 HYD NO=F AREA=0.0002193 SQ MI  
PER A=0 PER B=0 PER C=3 PER D=97  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.83983 CFS UNIT VOLUME = 0.9862 B = 526.28 P60 = .50000  
AREA = 0.000213 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.17860E-01CFS UNIT VOLUME = 0.8797 B = 361.87 P60 = .50000  
AREA = 0.000007 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

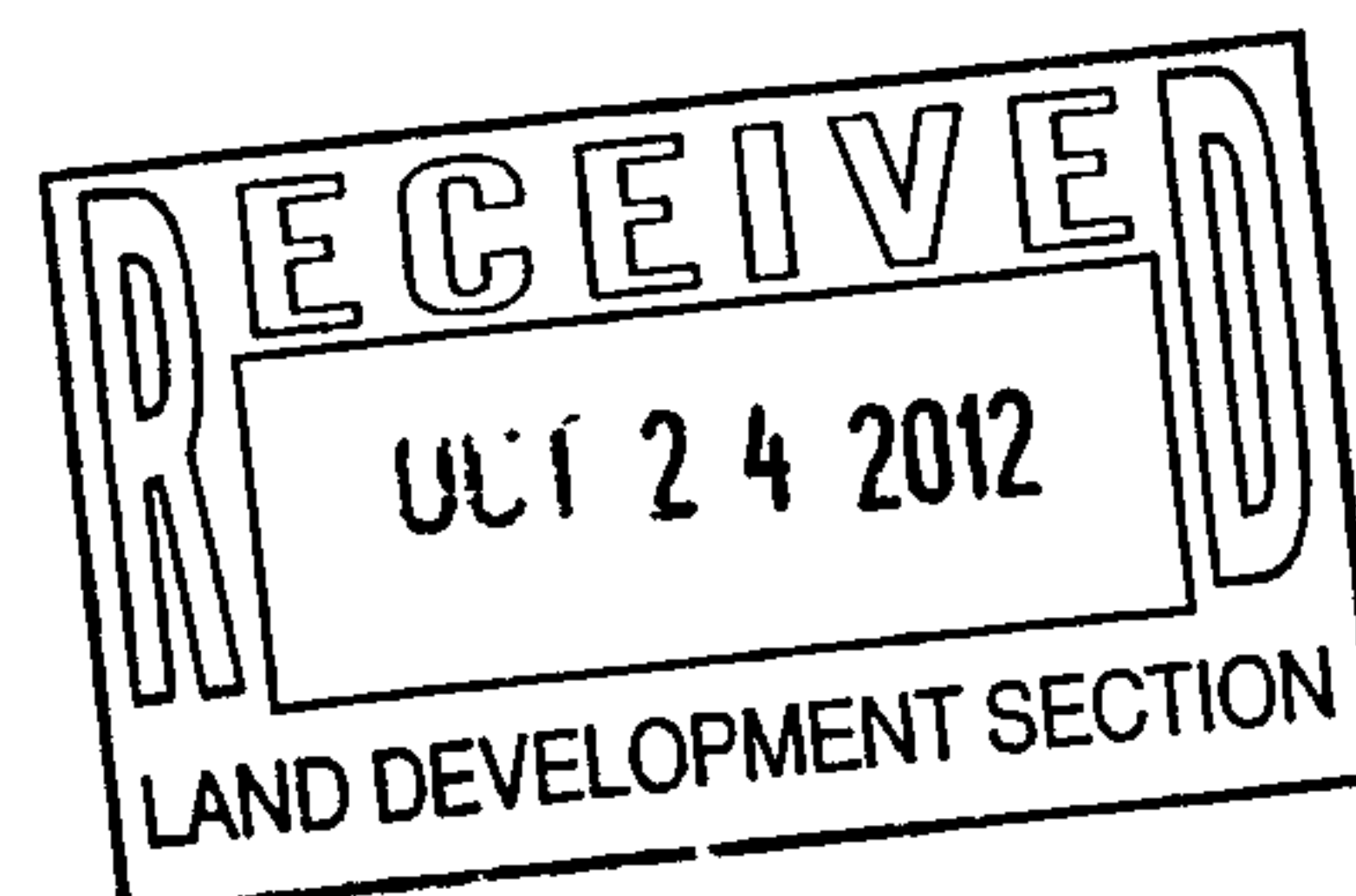
PRINT HYD ID=30 CODE=1

HYDROGRAPH FROM AREA F

RUNOFF VOLUME = 0.36255 INCHES = 0.0042 ACRE-FEET  
PEAK DISCHARGE RATE = 0.16 CFS AT 1.533 HOURS BASIN AREA = 0.0002 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 11:37:15



## **Cherne, Curtis**

---

**From:** Genny Donart [gennyd@iacivil.com]

**Sent:** Monday, October 22, 2012 9:43 AM

**To:** Cherne, Curtis ; Olson, Greg R.

**Subject:** RE: first 1/2" at casitas de colores

**Hi Curtis,**

**Based on my AHYMO calcs the 1/2" storm for the entire site generates 1,459 CF. We have a total 1,864 CF of storm detention capacity designed.**

**We should be good.**

Genny Donart, P.E.  
Registered Engineer



**Isaacson & Arfman, P.A.**

Consulting Engineering Associates

128 Monroe St. N.E.

Albuquerque, NM 87108

Phone: (505)268-8828

Fax: (505)268-2632

[gennyd@iacivil.com](mailto:gennyd@iacivil.com)

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**From:** Cherne, Curtis [mailto:CCherne@cabq.gov]

**Sent:** Monday, October 22, 2012 8:28 AM

**To:** Olson, Greg R.; Genny Donart

**Subject:** first 1/2" at casitas de colores

Greg/Genny,

I didn't go through all the calcs, but saw the roof drains in Block E-1. The first 1/2" applies to the whole site. If you wish to drain the "out-blocks" directly to the street then Blocks B-1 and E-1 will capture more than the first 1/2" to make up for the "out-blocks" discharging directly to the street.

Genny, I mention this now due to the platting action on Wednesday, wherein we would apply the applicable easements to correspond to the drainage plan.

Curtis

10/24/2012

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development & Building Services



September 28, 2012

Genevieve Donart, P.E.  
Isaacson & Arfman, P.A.  
128 Monroe St. NE  
Albuquerque, New Mexico 87108

RE: **Casitas de Colores** – Grading & Drainage Plan for Work Order & Building Permit  
215 Lead Ave. S.W. P.E. Stamp: 09/04/12 ( **K14-D087A** )

Dear Ms. Donart,

Based upon the information provided in your submittal received 9-6-2012, the above referenced plan cannot be approved for Work Order or Building Permit until the following comments are addressed:

1. Provide a drainage basin map corresponding to calculations provided. Label surface treatments there, or on the plan sheets to verify runoff rates. The Basin Table and calculations provided appear to meet the agreed criteria, however, I do need the basin map and roof drain, discharge points to verify acceptability.
2. **CG-101 & 102:** Show on the G&D plans where roof drainage from each building discharges and flows. (*Alternatively, this may be adequately shown on the basin map.*)
3. **CG-101:** Could the roof drain pipe (Key note 11) be tied to the Cistern overflow line, instead of surface discharging to the alley gutter? (possible icing problem on SW)
4. **CG-101:** Provide more detail of how the 2" PVC Force Main will connect to the existing SW Culvert on Silver Ave. Provide a safe, edge of sidewalk condition, by extending the SW culvert back of sidewalk, or other means to avoid drop-off at back edge of SW.
5. **CG-102:** Provide detail of how the Rock Swales enter the existing SW culverts. Provide a safe, edge of sidewalk condition, by extending the SW culvert back of sidewalk, or other means to avoid drop-off at back edge of SW. Also address how the 2" PVC Force Main will enter the western SW Culvert on Lead Ave.
6. **CG-501:** On Details 1 & 2, what is the depth of material in the swales?
7. **CG-501:** The "Pipe Through Walk" Detail does not address 2-4" pipes shown on plans.
8. **CG-501:** Provide missing details referred to on plans.
  - a. **"Turn-Down Sidewalk Edge"** detail referred to on CG-102. (and correct the reference page to CG-501, in Note 4 on CG-102).

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

AD



- b. **“Header Curb”** detail referred to on CG-101 & 102.
9. **CG-502 & 503:** Provide flow direction arrows by main pipes in the drainage system.
  10. **CG-502 & 503:** Water standing in the overflow pipes from the water treatment manholes may become maintenance and insect-breeding problems. These lines should be designed to drain back to the cisterns.
  11. **CG-502 & 503:** Sheets lack North Arrows and Scales associate with the plans. Also, label Lead Ave & Silver Ave. for clarity.
  12. **CG-502:** Storm Drain General Not 8 recommends monthly maintenance of the system. This or sheet CG-504 should at least outline the level of maintenance to expect, so that owner and later operator understands the importance of this maintenance.

If you have any questions, you can contact me at 924-3994.

Sincerely,

 9/28/12

Gregory R. Olson, P.E.  
Senior Engineer

Orig: Drainage file K14/D087A  
c.pdf Addressee via Email gennyd@iacivil.com

# DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 12/05)

PROJECT TITLE: Casitas de Colores ZONE MAP/DRG. FILE # K14/D087A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ WORK ORDER#: \_\_\_\_\_

LEGAL DESCRIPTION: Blocks B-1, E-1, & F-1, Silver Townhomes  
CITY ADDRESS: 215 Lead Ave

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: Genny Donart  
ADDRESS: 128 MONROE NE PHONE: 268-8828  
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: Casitas de Colores, LLC CONTACT: Rochelle Capone  
ADDRESS: 5021 Indian School Rd NE, Ste 300 PHONE: 764-3094  
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Ron Witherspoon  
ADDRESS: 7601 Jefferson NE, Ste 100 PHONE: 761-9700  
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYOR: Rio Grande Surveying CONTACT: Rex Vogler  
ADDRESS: PO Box 7155 PHONE: 379-4579  
CITY, STATE: Albuquerque, NM ZIP CODE: 87194

CONTRACTOR: Gerald Martin CONTACT: Bob Cardenas  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

## TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT  
☒ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL  
☐ DRAINAGE PLAN RESUBMITTAL  
☐ CONCEPTUAL G & D PLAN  
☒ GRADING PLAN  
☐ EROSION CONTROL PLAN  
☐ ENGINEER'S CERT (HYDROLOGY)  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT  
☐ ENGINEER/ARCHITECT CERT (TCL)  
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)  
☐ ENGINEER/ARCHITECT CERT (AA)  
☐ OTHER (SPECIFY) \_\_\_\_\_

## CHECK TYPE OF APPROVAL SOUGHT:

☐ SIA/FINANCIAL GUARANTEE RELEASE  
☐ PRELIMINARY PLAT APPROVAL  
☐ S. DEV. PLAN FOR SUB'D APPROVAL  
☐ S. DEV. 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

SUBMITTED BY: Genevieve Donart DATE: 9/6/2012  
Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.

#50 / paid  
RECEIVED  
AUG 6 - 2012  
Sept.

SEPTEMBER 4, 2012

# SUPPLEMENTAL INFORMATION

FOR

## CASITAS DE COLORES

BY



RECEIVED  
Sept. 6 2012  
AUG 6 - 2012



<b>BASIN AREAS</b>				
PROJECT NAME	Casitas de Colores			
PROJECT #	1925			
BASIN ID	AREA (sf)	AREA (Ac)	AREA (sq. mi.)	TYPE D (%)
<i>Proposed</i>				
TOTAL SITE	53,655.16	1.2318	0.00192461	87%
BLDG 1	23,750.79	0.5452	0.00085194	85%
B1 ROOF TO CISTERN	10,065.09	0.2311	0.00036104	
B1 ROOF TO RD	3,757.65	0.0863	0.00013479	
B1 COURTYARD	2,556.29	0.0587	0.00009169	37%
B1 COURTYARD LANDSCAPE	1,603.72	0.0368	0.00005753	
B1 EXTERIOR	7,371.76	0.1692	0.00026443	75%
B1 EXTERIOR LANDSCAPE	1,873.95	0.0430	0.00006722	
BLDG 2	23,791.88	0.5462	0.00085342	86%
B2 ROOF TO CISTERN	12,089.18	0.2775	0.00043364	
B2 ROOF TO RD	1,084.75	0.0249	0.00003891	
B2 COURTYARD	3,623.10	0.0832	0.00012996	47%
B2 COURTYARD LANDSCAPE	1,917.69	0.0440	0.00006879	
B2 EXTERIOR	6,994.85	0.1606	0.00025091	81%
B2 EXTERIOR LANDSCAPE	1,327.04	0.0305	0.00004760	
BLDG 3	6,112.48	0.1403	0.00021926	97%
BLDG 3 LANDSCAPE	155.74	0.0036	0.00000559	
TOTAL AREA =	161,731.13	3.7128	0.00580131	

\*S\*\*\*\*\*

\*S CASITAS DE COLORES  
 \*S DEVELOPED CONDITIONS  
 \*S 1/2" STORM  
 \*S 1925P0.5.DAT  
 \*S SEPTEMBER 2012  
 \*S BY GENNY DONART  
 \*S ISAACSON & ARFMAN, P.A.

\*S\*\*\*\*\*

START

RAINFALL TYPE= 1 NOAA 14

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1	NOTATION
*S TOTAL SITE											
COMPUTE NM HYD	SITE	-	1	0.00192	1.21	0.033	0.32591	1.533	0.984	PER IMP=	87.00
*S BUILDING 1 (SOUTH) - OVERALL											
COMPUTE NM HYD	B	-	10	0.00085	0.53	0.014	0.31858	1.533	0.964	PER IMP=	85.00
*S BUILDING 1 (SOUTH) - ROOF TO CISTERN											
COMPUTE NM HYD	B.R1	-	11	0.00036	0.26	0.007	0.37354	1.533	1.136	PER IMP=	100.00
*S BUILDING 1 (SOUTH) - ROOF TO ROAD											
COMPUTE NM HYD	B.R2	-	12	0.00013	0.10	0.003	0.37354	1.533	1.151	PER IMP=	100.00
*S BUILDING 1 (SOUTH) - COURTYARD											
COMPUTE NM HYD	B.CY	-	13	0.00009	0.03	0.001	0.14273	1.533	0.466	PER IMP=	37.00
*S BUILDING 1 (SOUTH) - EXTERIOR											
COMPUTE NM HYD	B.EXT	-	14	0.00026	0.15	0.004	0.28195	1.533	0.863	PER IMP=	75.00
*S ADD ROOF TO CISTERN AND COURTYARD FLOWS											
ADD HYD	B.CIST	11&13	15	0.00045	0.29	0.008	0.32616	1.533	1.001		
*S BUILDING 1 CISTERN											
ROUTE RESERVOIR	B.CIST	15	16	0.00045	0.04	0.008	0.32616	1.967	0.149	AC-FT=	0.005
*S ADD ROOF TO ROAD AND EXTERIOR											
ADD HYD	B.SURFACE	12&14	17	0.00040	0.25	0.007	0.31209	1.533	0.960		
*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE											
*S TOTAL DISCHARGE TO LEAD AVE											
ADD HYD	B.TOTAL	16&17	18	0.00085	0.29	0.015	0.31954	1.533	0.529		
*S BUILDING 2 (NORTH) - OVERALL											
COMPUTE NM HYD	E	-	20	0.00085	0.54	0.015	0.32591	1.533	0.987	PER IMP=	87.00
*S BUILDING 2 (NORTH) - ROOF TO CISTERN											
COMPUTE NM HYD	E.R1	-	21	0.00043	0.31	0.009	0.37354	1.533	1.135	PER IMP=	100.00
*S BUILDING 2 (NORTH) - ROOF TO ROAD											
COMPUTE NM HYD	E.R2	-	22	0.00004	0.03	0.001	0.37354	1.533	1.213	PER IMP=	100.00
*S BUILDING 2 (NORTH) - COURTYARD											
COMPUTE NM HYD	E.CY	-	23	0.00013	0.05	0.001	0.17936	1.533	0.564	PER IMP=	47.00
*S BUILDING 2 (NORTH) - EXTERIOR											
COMPUTE NM HYD	E.EXT	-	24	0.00025	0.15	0.004	0.30393	1.533	0.931	PER IMP=	81.00
*S ADD ROOF TO CISTERN AND COURTYARD FLOWS											

0.0421 A-F  
 Supp. Calculations  
 10/23/12

REQUIRED 1/2"  
 STORM DETENTION

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 2 NOTATION
ADD HYD	E.CIST	21&23	25	0.00056	0.36	0.010	0.32826	1.533	1.003	
*S	BUILDING 2 CISTERN									
ROUTE RESERVOIR	E.CIST	21	26	0.00043	0.04	0.009	0.37316	2.000	0.156	AC-FT= 0.006
*S	ADD ROOF TO ROAD AND EXTERIOR									
ADD HYD	E.SURFACE	22&24	27	0.00029	0.18	0.005	0.31236	1.533	0.968	
*S	ADD SURFACE FLOWS TO ROAD AND CISTERNS DISCHARGE									
*S	TOTAL DISCHARGE TO SILVER AVE									
ADD HYD	E.TOTAL	26&27	28	0.00072	0.22	0.013	0.34875	1.533	0.481	
*S	BLDG 3 - OVERALL									
*S	TOTAL DISCHARGE TO 2ND ST									
COMPUTE NM HYD	F	-	30	0.00022	0.16	0.004	0.36255	1.533	1.108	PER IMP= 97.00
FINISH										



- Version: S4.01a - Rel: 01a

```
START          RAINFALL BEGINS AT 0.0 HRS
RAINFALL       TYPE=1 RAIN QUARTER=0.5 RAIN ONE=0.5
               RAIN SIX=0.5 RAIN DAY=0.5 DT=0.0333333HR
```

DT = 0.033333 HOURS                      END TIME = 5.999994 HOURS

[illegible]

```
*S  TOTAL SITE
COMPUTE NM HYD      ID=1 HYD NO=SITE AREA=0.0019246 SQ MI
                     PER A=0 PER B=0 PER C=13 PER D=87
                     TP=-0.1333 HR    MASS RAIN=-1
```

```

K = 0.072649HR      TP = 0.133300HR      K/TP RATIO = 0.545000      SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 6.6106      CFS      UNIT VOLUME = 0.9976      B = 526.28      P60 = .50000
AREA = 0.001674 SQ MI      IA = 0.10000 INCHES      INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

```

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.67922 CFS UNIT VOLUME = 0.9810 B = 361.87 P60 = .50000  
AREA = 0.000250 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

```
PRINT HYD          ID=1    CODE=1
```

HYDROGRAPH FROM AREA SITE

RUNOFF VOLUME = 0.32591 INCHES = 0.0335 ACRE-FEET → 1,459 CF required ½" storm detention  
PEAK DISCHARGE RATE = 1.21 CFS AT 1.533 HOURS BASIN AREA = 0.0019 SQ. MI.

06428

01391

See 10/23/12 Calos  
00421 Acty  
1033 CF

\*S BUILDING 1 (SOUTH) - OVERALL

COMPUTE NM HYD ID=10 HYD NO=B AREA=0.0008519 SQ MI  
PER A=0 PER B=0 PER C=15 PER D=85  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 2.8588 CFS UNIT VOLUME = 0.9955 B = 526.28 P60 = .50000  
AREA = 0.000724 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.34690 CFS UNIT VOLUME = 0.9623 B = 361.87 P60 = .50000  
AREA = 0.000128 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=10 CODE=1

HYDROGRAPH FROM AREA B

RUNOFF VOLUME = 0.31858 INCHES = 0.0145 ACRE-FEET  
PEAK DISCHARGE RATE = 0.53 CFS AT 1.533 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 1 (SOUTH) - ROOF TO CISTERNS

COMPUTE NM HYD ID=11 HYD NO=B.R1 AREA=0.0003610 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.4252 CFS UNIT VOLUME = 0.9911 B = 526.28 P60 = .50000  
AREA = 0.000361 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=11 CODE=1

HYDROGRAPH FROM AREA B.R1

RUNOFF VOLUME = 0.37354 INCHES = 0.0072 ACRE-FEET  
PEAK DISCHARGE RATE = 0.26 CFS AT 1.533 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S BUILDING 1 (SOUTH) - ROOF TO ROAD

COMPUTE NM HYD ID=12 HYD NO=B.R2 AREA=0.0001348 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.53220 CFS UNIT VOLUME = 0.9786 B = 526.28 P60 = .50000  
AREA = 0.000135 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=12 CODE=1

HYDROGRAPH FROM AREA B.R2

RUNOFF VOLUME = 0.37354 INCHES = 0.0027 ACRE-FEET  
PEAK DISCHARGE RATE = 0.10 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 1 (SOUTH) - COURTYARD

COMPUTE NM HYD ID=13 HYD NO=B.CY AREA=0.0000917 SQ MI  
PER A=0 PER B=0 PER C=63 PER D=37  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.13395 CFS UNIT VOLUME = 0.9169 B = 526.28 P60 = .50000  
AREA = 0.000034 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
 UNIT PEAK = 0.15683 CFS UNIT VOLUME = 0.9182 B = 361.87 P60 = .50000  
 AREA = 0.000058 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=13 CODE=1

#### HYDROGRAPH FROM AREA B.CY

RUNOFF VOLUME = 0.14273 INCHES = 0.0007 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.03 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 1 (SOUTH) - EXTERIOR  
 COMPUTE NM HYD ID=14 HYD NO=B.EXT AREA=0.0002644 SQ MI  
 PER A=0 PER B=0 PER C=25 PER D=75  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 0.78290 CFS UNIT VOLUME = 0.9840 B = 526.28 P60 = .50000  
 AREA = 0.000198 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
 UNIT PEAK = 0.17944 CFS UNIT VOLUME = 0.9258 B = 361.87 P60 = .50000  
 AREA = 0.000066 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=14 CODE=1

#### HYDROGRAPH FROM AREA B.EXT

RUNOFF VOLUME = 0.28195 INCHES = 0.0040 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.15 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS  
 ADD HYD ID=15 HYD NO=B.CIST ID I=11 ID II=13  
 PRINT HYD ID=15 CODE=1

#### HYDROGRAPH FROM AREA B.CIST

RUNOFF VOLUME = 0.32616 INCHES = 0.0079 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.29 CFS AT 1.533 HOURS BASIN AREA = 0.0005 SQ. MI.

\* ROUTE THROUGH CISTERN  
 \* DISCHARGE BY 20 GPM PUMP  
 \*S BUILDING 1 CISTERN  
 ROUTE RESERVOIR ID=16 HYD NO=B.CIST INFLOW ID=15 CODE=10  
 OUTFLOW(CFS) STORAGE(AF) ELEV(FT)  
 0 0 45.28  
 0.043 0.0001 45.30  
 0.044 0.02158 50.50  
 0.045 0.02202 53.39  
 2.2 0.02203 53.40

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	45.28	0.000	0.00
0.33	0.00	45.28	0.000	0.00
0.67	0.00	45.28	0.000	0.00
1.00	0.00	45.28	0.000	0.00
1.33	0.01	45.28	0.000	0.00

1.67	0.16	46.29	0.004	0.04
2.00	0.03	46.54	0.005	0.04
2.33	0.00	46.34	0.004	0.04
2.67	0.00	46.06	0.003	0.04
3.00	0.00	45.77	0.002	0.04
3.33	0.00	45.48	0.001	0.04

PEAK DISCHARGE = 0.043 CFS - PEAK OCCURS AT HOUR 1.97  
 MAXIMUM WATER SURFACE ELEVATION = 46.545  
 MAXIMUM STORAGE = 0.0052 AC-FT INCREMENTAL TIME= 0.033333HRS

PRINT HYD ID=16 CODE=1

#### HYDROGRAPH FROM AREA B.CIST

RUNOFF VOLUME = 0.32616 INCHES = 0.0079 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.04 CFS AT 1.967 HOURS BASIN AREA = 0.0005 SQ. MI.

\*S ADD ROOF TO ROAD AND EXTERIOR  
 ADD HYD ID=17 HYD NO=B.SURFACE ID I=12 ID II=14  
 PRINT HYD ID=17 CODE=1

#### HYDROGRAPH FROM AREA B.SURFACE

RUNOFF VOLUME = 0.31209 INCHES = 0.0066 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.25 CFS AT 1.533 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE  
 \*S TOTAL DISCHARGE TO LEAD AVE  
 ADD HYD ID=18 HYD NO=B.TOTAL ID I=16 ID II=17  
 PRINT HYD ID=18 CODE=1

#### HYDROGRAPH FROM AREA B.TOTAL

RUNOFF VOLUME = 0.31954 INCHES = 0.0145 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.29 CFS AT 1.533 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 2 (NORTH) - OVERALL  
 COMPUTE NM HYD ID=20 HYD NO=E AREA=0.0008534 SQ MI  
 PER A=0 PER B=0 PER C=13 PER D=87  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 2.9313 CFS UNIT VOLUME = 0.9955 B = 526.28 P60 = .50000  
 AREA = 0.000742 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
 UNIT PEAK = 0.30118 CFS UNIT VOLUME = 0.9543 B = 361.87 P60 = .50000  
 AREA = 0.000111 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=20 CODE=1

#### HYDROGRAPH FROM AREA E

RUNOFF VOLUME = 0.32591 INCHES = 0.0148 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.54 CFS AT 1.533 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 2 (NORTH) - ROOF TO CISTERN  
 COMPUTE NM HYD ID=21 HYD NO=E.R1 AREA=0.0004336 SQ MI  
 PER A=0 PER B=0 PER C=0 PER D=100  
 TP=-0.1333 HR MASS RAIN=-1



K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.7119 CFS UNIT VOLUME = 0.9922 B = 526.28 P60 = .50000  
AREA = 0.000434 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=21 CODE=1

HYDROGRAPH FROM AREA E.R1

RUNOFF VOLUME = 0.37354 INCHES = 0.0086 ACRE-FEET  
PEAK DISCHARGE RATE = 0.31 CFS AT 1.533 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S BUILDING 2 (NORTH) - ROOF TO ROAD  
COMPUTE NM HYD ID=22 HYD NO=E.R2 AREA=0.0000389 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.15358 CFS UNIT VOLUME = 0.9286 B = 526.28 P60 = .50000  
AREA = 0.000039 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=22 CODE=1

HYDROGRAPH FROM AREA E.R2

RUNOFF VOLUME = 0.37354 INCHES = 0.0008 ACRE-FEET  
PEAK DISCHARGE RATE = 0.03 CFS AT 1.533 HOURS BASIN AREA = 0.0000 SQ. MI.

\*S BUILDING 2 (NORTH) - COURTYARD  
COMPUTE NM HYD ID=23 HYD NO=E.CY AREA=0.0001300 SQ MI  
PER A=0 PER B=0 PER C=53 PER D=47  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.24123 CFS UNIT VOLUME = 0.9547 B = 526.28 P60 = .50000  
AREA = 0.000061 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.18705 CFS UNIT VOLUME = 0.9326 B = 361.87 P60 = .50000  
AREA = 0.000069 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=23 CODE=1

HYDROGRAPH FROM AREA E.CY

RUNOFF VOLUME = 0.17936 INCHES = 0.0012 ACRE-FEET  
PEAK DISCHARGE RATE = 0.05 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 2 (NORTH) - EXTERIOR  
COMPUTE NM HYD ID=24 HYD NO=E.EXT AREA=0.0002509 SQ MI  
PER A=0 PER B=0 PER C=19 PER D=81  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.80236 CFS UNIT VOLUME = 0.9840 B = 526.28 P60 = .50000  
AREA = 0.000203 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.12941 CFS UNIT VOLUME = 0.9008 B = 361.87 P60 = .50000  
AREA = 0.000048 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=24 CODE=1

HYDROGRAPH FROM AREA E.EXT

RUNOFF VOLUME = 0.30393 INCHES = 0.0041 ACRE-FEET  
PEAK DISCHARGE RATE = 0.15 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS  
ADD HYD ID=25 HYD NO=E.CIST ID I=21 ID II=23  
PRINT HYD ID=25 CODE=1

HYDROGRAPH FROM AREA E.CIST

RUNOFF VOLUME = 0.32826 INCHES = 0.0099 ACRE-FEET  
PEAK DISCHARGE RATE = 0.36 CFS AT 1.533 HOURS BASIN AREA = 0.0006 SQ. MI.

\* ROUTE THROUGH CISTERN  
\* DISCHARGE BY 20 GPM PUMPS  
\*S BUILDING 2 CISTERN  
ROUTE RESERVOIR ID=26 HYD NO=E.CIST INFLOW ID=21 CODE=10  
OUTFLOW(CFS) STORAGE(AF) ELEV(FT)  
0 0 45.28  
0.043 0.0001 45.30  
0.044 0.02158 50.50  
0.045 0.02202 53.89  
2.2 0.02203 53.90

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	45.28	0.000	0.00
0.33	0.00	45.28	0.000	0.00
0.67	0.00	45.28	0.000	0.00
1.00	0.00	45.28	0.000	0.00
1.33	0.01	45.28	0.000	0.00
1.67	0.18	46.39	0.005	0.04
2.00	0.04	46.70	0.006	0.04
2.33	0.00	46.52	0.005	0.04
2.67	0.00	46.24	0.004	0.04
3.00	0.00	45.95	0.003	0.04
3.33	0.00	45.66	0.002	0.04
3.67	0.00	45.38	0.000	0.04

PEAK DISCHARGE = 0.043 CFS - PEAK OCCURS AT HOUR 2.00  
MAXIMUM WATER SURFACE ELEVATION = 46.704  
MAXIMUM STORAGE = 0.0059 AC-FT INCREMENTAL TIME= 0.033333HRS

PRINT HYD ID=26 CODE=1

HYDROGRAPH FROM AREA E.CIST

RUNOFF VOLUME = 0.37316 INCHES = 0.0086 ACRE-FEET  
PEAK DISCHARGE RATE = 0.04 CFS AT 2.000 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S ADD ROOF TO ROAD AND EXTERIOR  
ADD HYD ID=27 HYD NO=E.SURFACE ID I=22 ID II=24  
PRINT HYD ID=27 CODE=1

HYDROGRAPH FROM AREA E.SURFACE

RUNOFF VOLUME = 0.31236 INCHES = 0.0048 ACRE-FEET  
PEAK DISCHARGE RATE = 0.18 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD SURFACE FLOWS TO ROAD AND CISTERNS DISCHARGE  
\*S TOTAL DISCHARGE TO SILVER AVE  
ADD HYD ID=28 HYD NO=E.TOTAL ID I=26 ID II=27  
PRINT HYD ID=28 CODE=1

HYDROGRAPH FROM AREA E.TOTAL

RUNOFF VOLUME = 0.34875 INCHES = 0.0135 ACRE-FEET  
PEAK DISCHARGE RATE = 0.22 CFS AT 1.533 HOURS BASIN AREA = 0.0007 SQ. MI.

\*S BLDG 3 - OVERALL  
\*S TOTAL DISCHARGE TO 2ND ST  
COMPUTE NM HYD ID=30 HYD NO=F AREA=0.0002193 SQ MI  
PER A=0 PER B=0 PER C=3 PER D=97  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.83983 CFS UNIT VOLUME = 0.9862 B = 526.28 P60 = .50000  
AREA = 0.000213 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.115502HR TP = 0.133300HR K/TP RATIO = 0.866480 SHAPE CONSTANT, N = 4.101391  
UNIT PEAK = 0.17860E-01CFS UNIT VOLUME = 0.8797 B = 361.87 P60 = .50000  
AREA = 0.000007 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=30 CODE=1

HYDROGRAPH FROM AREA F

RUNOFF VOLUME = 0.36255 INCHES = 0.0042 ACRE-FEET  
PEAK DISCHARGE RATE = 0.16 CFS AT 1.533 HOURS BASIN AREA = 0.0002 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 13:54:18

\*S\*\*\*\*\*

\*S CASITAS DE COLORES  
 \*S DEVELOPED CONDITIONS  
 \*S 100 YEAR, 6 HOUR STORM  
 \*S 1925P.DAT  
 \*S SEPTEMBER 2012  
 \*S BY GENNY DONART  
 \*S ISAACSON & ARFMAN, P.A.

\*S\*\*\*\*\*

START

RAINFALL TYPE= 1 NOAA 14

TIME= 0.00

RAIN6= 2.240

PAGE = 1

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
*S TOTAL SITE										
COMPUTE NM HYD	SITE	-	1	0.00192	5.09	0.191	1.86318	1.500	4.136	PER IMP= 87.00
*S BUILDING 1 (SOUTH) - OVERALL										
COMPUTE NM HYD	B	-	10	0.00085	2.25	0.084	1.84401	1.500	4.126	PER IMP= 85.00
*S BUILDING 1 (SOUTH) - ROOF TO CISTERN										
COMPUTE NM HYD	B.R1	-	11	0.00036	1.00	0.038	1.98781	1.500	4.330	PER IMP= 100.00
*S BUILDING 1 (SOUTH) - ROOF TO ROAD										
COMPUTE NM HYD	B.R2	-	12	0.00013	0.38	0.014	1.98781	1.500	4.383	PER IMP= 100.00
*S BUILDING 1 (SOUTH) - COURTYARD										
COMPUTE NM HYD	B.CY	-	13	0.00009	0.22	0.007	1.38385	1.533	3.784	PER IMP= 37.00
*S BUILDING 1 (SOUTH) - EXTERIOR										
COMPUTE NM HYD	B.EXT	-	14	0.00026	0.69	0.025	1.74814	1.533	4.072	PER IMP= 75.00
*S ADD ROOF TO CISTERN AND COURTYARD FLOWS										
ADD HYD	B.CIST	11&13	15	0.00045	1.22	0.045	1.85749	1.500	4.212	
*S BUILDING 1 CISTERN										
ROUTE RESERVOIR	B.CIST	15	16	0.00045	1.51	0.045	1.85749	1.633	5.206	AC-FT= 0.022
*S ADD ROOF TO ROAD AND EXTERIOR										
ADD HYD	B.SURFACE	12&14	17	0.00040	1.07	0.039	1.82811	1.500	4.175	
*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE										
*S TOTAL DISCHARGE TO LEAD AVE										
ADD HYD	B.TOTAL	16&17	18	0.00085	2.23	0.084	1.84368	1.633	4.091	
*S BUILDING 2 (NORTH) - OVERALL										
COMPUTE NM HYD	E	-	20	0.00085	2.27	0.085	1.86318	1.500	4.154	PER IMP= 87.00
*S BUILDING 2 (NORTH) - ROOF TO CISTERN										
COMPUTE NM HYD	E.R1	-	21	0.00043	1.20	0.046	1.98781	1.500	4.325	PER IMP= 100.00
*S BUILDING 2 (NORTH) - ROOF TO ROAD										
COMPUTE NM HYD	E.R2	-	22	0.00004	0.11	0.004	1.98781	1.500	4.593	PER IMP= 100.00
*S BUILDING 2 (NORTH) - COURTYARD										
COMPUTE NM HYD	E.CY	-	23	0.00013	0.32	0.010	1.47972	1.533	3.817	PER IMP= 47.00
*S BUILDING 2 (NORTH) - EXTERIOR										
COMPUTE NM HYD	E.EXT	-	24	0.00025	0.67	0.024	1.80566	1.500	4.157	PER IMP= 81.00



*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS										
COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 2 NOTATION
ADD HYD	E.CIST	21&23	25	0.00056	1.52	0.056	1.86986	1.500	4.201	
*S BUILDING 2 CISTERN										
ROUTE RESERVOIR	E.CIST	21	26	0.00043	1.40	0.046	1.98711	1.633	5.050	AC-FT= 0.022
*S ADD ROOF TO ROAD AND EXTERIOR										
ADD HYD	E.SURFACE	22&24	27	0.00029	0.78	0.028	1.81697	1.500	4.215	
*S ADD SURFACE FLOWS TO ROAD AND CISTERNS DISCHARGE										
*S TOTAL DISCHARGE TO SILVER AVE										
2 ADD HYD	E.TOTAL	26&27	28	0.00072	1.93	0.074	1.91890	1.633	4.169	
*S BLDG 3 - OVERALL										
*S TOTAL DISCHARGE TO 2ND ST										
COMPUTE NM HYD	F	-	30	0.00022	0.61	0.023	1.95905	1.500	4.322	PER IMP= 97.00
FINISH										

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a  
RUN DATE (MON/DAY/YR) = 09/06/2012  
START TIME (HR:MIN:SEC) = 13:58:56 USER NO.= AHYMO\_Temp\_User:20122010  
INPUT FILE = M:\PROJECT DOCUMENTS\1900-1999\1925\CALCS\1925P.DAT

\*S\*\*\*\*\*  
\*S CASITAS DE COLORES  
\*S DEVELOPED CONDITIONS  
\*S 100 YEAR, 6 HOUR STORM  
\*S 1925P.DAT  
\*S SEPTEMBER 2012  
\*S BY GENNY DONART  
\*S ISAACSON & ARFMAN, P.A.  
\*S\*\*\*\*\*

START RAINFALL BEGINS AT 0.0 HRS  
RAINFALL TYPE=1 RAIN QUARTER=1.07 RAIN ONE=1.78  
RAIN SIX=2.24 RAIN DAY=2.58 DT=0.033333HR

6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1

DT =	0.033333 HOURS	END TIME =	5.999994 HOURS
0.0000	0.0020	0.0041	0.0062
0.0085	0.0107	0.0133	0.0158
0.0185	0.0214	0.0242	0.0305
0.0369	0.0435	0.0506	0.0577
0.0653	0.0730	0.0809	0.0889
0.0970	0.1054	0.1138	0.1227
0.1321	0.1415	0.1520	0.1626
0.1765	0.1936	0.2108	0.2338
0.2568	0.2844	0.3165	0.3487
0.3970	0.4453	0.5112	0.5946
0.6780	0.9001	1.1223	1.2950
1.4181	1.5413	1.6032	1.6651
1.7155	1.7545	1.7934	1.8205
1.8475	1.8709	1.8907	1.9104
1.9254	1.9404	1.9529	1.9628
1.9727	1.9816	1.9905	1.9986
2.0059	2.0133	2.0201	2.0269
2.0335	2.0401	2.0466	2.0497
2.0528	2.0558	2.0588	2.0617
2.0645	2.0673	2.0700	2.0727
2.0754	2.0780	2.0806	2.0831
2.0856	2.0880	2.0904	2.0928
2.0951	2.0974	2.0998	2.1020
2.1042	2.1063	2.1085	2.1106
2.1127	2.1148	2.1168	2.1188
2.1208	2.1228	2.1247	2.1267
2.1286	2.1305	2.1323	2.1342
2.1361	2.1379	2.1397	2.1415
2.1433	2.1451	2.1468	2.1486
2.1503	2.1520	2.1537	2.1554
2.1571	2.1588	2.1604	2.1621
2.1637	2.1653	2.1669	2.1685
2.1701	2.1716	2.1732	2.1748
2.1763	2.1778	2.1793	2.1809
2.1823	2.1838	2.1853	2.1868
2.1882	2.1897	2.1911	2.1926
2.1940	2.1954	2.1968	2.1982
2.1996	2.2010	2.2023	2.2037
2.2050	2.2064	2.2077	2.2091
2.2104	2.2117	2.2130	2.2143
2.2156	2.2169	2.2182	2.2194
2.2207	2.2219	2.2232	2.2244
2.2257	2.2269	2.2281	2.2293
2.2305	2.2317	2.2329	2.2341
2.2353	2.2365	2.2377	2.2388
2.2400			

\*S TOTAL SITE  
COMPUTE NM HYD ID=1 HYD NO=SITE AREA=0.0019246 SQ MI  
PER A=0 PER B=0 PER C=13 PER D=87  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 6.6106 CFS UNIT VOLUME = 0.9976 B = 526.28 P60 = 1.7800  
AREA = 0.001674 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
UNIT PEAK = 0.73418 CFS UNIT VOLUME = 0.9828 B = 391.16 P60 = 1.7800  
AREA = 0.000250 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=1 CODE=1

HYDROGRAPH FROM AREA SITE

RUNOFF VOLUME = 1.86318 INCHES = 0.1912 ACRE-FEET  
PEAK DISCHARGE RATE = 5.09 CFS AT 1.500 HOURS BASIN AREA = 0.0019 SQ. MI.

\*S BUILDING 1 (SOUTH) - OVERALL

COMPUTE NM HYD ID=10 HYD NO=B AREA=0.0008519 SQ MI  
PER A=0 PER B=0 PER C=15 PER D=85  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 2.8588 CFS UNIT VOLUME = 0.9955 B = 526.28 P60 = 1.7800  
AREA = 0.000724 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
UNIT PEAK = 0.37497 CFS UNIT VOLUME = 0.9671 B = 391.16 P60 = 1.7800  
AREA = 0.000128 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=10 CODE=1

HYDROGRAPH FROM AREA B

RUNOFF VOLUME = 1.84401 INCHES = 0.0838 ACRE-FEET  
PEAK DISCHARGE RATE = 2.25 CFS AT 1.500 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 1 (SOUTH) - ROOF TO CISTERNS  
COMPUTE NM HYD ID=11 HYD NO=B.R1 AREA=0.0003610 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.4252 CFS UNIT VOLUME = 0.9911 B = 526.28 P60 = 1.7800  
AREA = 0.000361 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=11 CODE=1

HYDROGRAPH FROM AREA B.R1

RUNOFF VOLUME = 1.98781 INCHES = 0.0383 ACRE-FEET  
PEAK DISCHARGE RATE = 1.00 CFS AT 1.500 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S BUILDING 1 (SOUTH) - ROOF TO ROAD  
COMPUTE NM HYD ID=12 HYD NO=B.R2 AREA=0.0001348 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.53220 CFS UNIT VOLUME = 0.9786 B = 526.28 P60 = 1.7800  
AREA = 0.000135 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=12 CODE=1

HYDROGRAPH FROM AREA B.R2

RUNOFF VOLUME = 1.98781 INCHES = 0.0143 ACRE-FEET  
PEAK DISCHARGE RATE = 0.38 CFS AT 1.500 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 1 (SOUTH) - COURTYARD  
COMPUTE NM HYD ID=13 HYD NO=B.CY AREA=0.0000917 SQ MI  
PER A=0 PER B=0 PER C=63 PER D=37  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.13395 CFS UNIT VOLUME = 0.9169 B = 526.28 P60 = 1.7800  
AREA = 0.000034 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
 UNIT PEAK = 0.16952 CFS UNIT VOLUME = 0.9227 B = 391.16 P60 = 1.7800  
 AREA = 0.000058 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=13 CODE=1

#### HYDROGRAPH FROM AREA B.CY

RUNOFF VOLUME = 1.38385 INCHES = 0.0068 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.22 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 1 (SOUTH) - EXTERIOR  
 COMPUTE NM HYD ID=14 HYD NO=B.EXT AREA=0.0002644 SQ MI  
 PER A=0 PER B=0 PER C=25 PER D=75  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 0.78290 CFS UNIT VOLUME = 0.9840 B = 526.28 P60 = 1.7800  
 AREA = 0.000198 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
 UNIT PEAK = 0.19396 CFS UNIT VOLUME = 0.9305 B = 391.16 P60 = 1.7800  
 AREA = 0.000066 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=14 CODE=1

#### HYDROGRAPH FROM AREA B.EXT

RUNOFF VOLUME = 1.74814 INCHES = 0.0247 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.69 CFS AT 1.533 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS  
 ADD HYD ID=15 HYD NO=B.CIST ID I=11 ID II=13  
 PRINT HYD ID=15 CODE=1

#### HYDROGRAPH FROM AREA B.CIST

RUNOFF VOLUME = 1.85749 INCHES = 0.0448 ACRE-FEET  
 PEAK DISCHARGE RATE = 1.22 CFS AT 1.500 HOURS BASIN AREA = 0.0005 SQ. MI.

\* ROUTE THROUGH CISTERN  
 \* DISCHARGE BY 20 GPM PUMP  
 \*S BUILDING 1 CISTERN  
 ROUTE RESERVOIR ID=16 HYD NO=B.CIST INFLOW ID=15 CODE=10  
 OUTFLOW(CFS) STORAGE(AF) ELEV(FT)  
 0 0 45.28  
 0.043 0.0001 45.30  
 0.044 0.02158 50.50  
 0.045 0.02202 53.39  
 2.2 0.02203 53.40

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	45.28	0.000	0.00
0.33	0.00	45.28	0.000	0.00
0.67	0.00	45.28	0.000	0.00
1.00	0.07	45.33	0.000	0.04
1.33	0.35	46.14	0.004	0.04
1.67	0.69	53.04	0.022	0.04



2.00	0.17	52.98	0.022	0.04
2.33	0.06	53.39	0.022	0.05
2.67	0.02	50.69	0.022	0.04
3.00	0.01	50.29	0.021	0.04
3.33	0.01	50.04	0.020	0.04
3.67	0.01	49.78	0.019	0.04
4.00	0.01	49.53	0.018	0.04
4.33	0.01	49.27	0.017	0.04
4.67	0.01	49.02	0.015	0.04
5.00	0.01	48.77	0.014	0.04
5.33	0.01	48.52	0.013	0.04
5.67	0.01	48.28	0.012	0.04
6.00	0.01	48.04	0.011	0.04
6.33	0.00	47.77	0.010	0.04
6.67	0.00	47.48	0.009	0.04
7.00	0.00	47.19	0.008	0.04
7.33	0.00	46.90	0.007	0.04
7.67	0.00	46.62	0.006	0.04
8.00	0.00	46.33	0.004	0.04
8.33	0.00	46.04	0.003	0.04
8.67	0.00	45.75	0.002	0.04
9.00	0.00	45.46	0.001	0.04

PEAK DISCHARGE = 1.508 CFS - PEAK OCCURS AT HOUR 1.63  
 MAXIMUM WATER SURFACE ELEVATION = 53.397  
 MAXIMUM STORAGE = 0.0220 AC-FT INCREMENTAL TIME= 0.033333HRS

PRINT HYD ID=16 CODE=1

#### HYDROGRAPH FROM AREA B.CIST

RUNOFF VOLUME = 1.85749 INCHES = 0.0448 ACRE-FEET  
 PEAK DISCHARGE RATE = 1.51 CFS AT 1.633 HOURS BASIN AREA = 0.0005 SQ. MI.

\*S ADD ROOF TO ROAD AND EXTERIOR  
 ADD HYD ID=17 HYD NO=B.SURFACE ID I=12 ID II=14  
 PRINT HYD ID=17 CODE=1

#### HYDROGRAPH FROM AREA B.SURFACE

RUNOFF VOLUME = 1.82811 INCHES = 0.0389 ACRE-FEET  
 PEAK DISCHARGE RATE = 1.07 CFS AT 1.500 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S ADD SURFACE FLOWS TO ROAD AND CISTERN DISCHARGE  
 \*S TOTAL DISCHARGE TO LEAD AVE  
 ADD HYD ID=18 HYD NO=B.TOTAL ID I=16 ID II=17  
 PRINT HYD ID=18 CODE=1

#### HYDROGRAPH FROM AREA B.TOTAL

RUNOFF VOLUME = 1.84368 INCHES = 0.0838 ACRE-FEET  
 PEAK DISCHARGE RATE = 2.23 CFS AT 1.633 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 2 (NORTH) - OVERALL  
 COMPUTE NM HYD ID=20 HYD NO=E AREA=0.0008534 SQ MI  
 PER A=0 PER B=0 PER C=13 PER D=87  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 2.9313 CFS UNIT VOLUME = 0.9955 B = 526.28 P60 = 1.7800  
 AREA = 0.000742 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
 UNIT PEAK = 0.32555 CFS UNIT VOLUME = 0.9593 B = 391.16 P60 = 1.7800  
 AREA = 0.000111 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=20 CODE=1

HYDROGRAPH FROM AREA E

RUNOFF VOLUME = 1.86318 INCHES = 0.0848 ACRE-FEET  
PEAK DISCHARGE RATE = 2.27 CFS AT 1.500 HOURS BASIN AREA = 0.0009 SQ. MI.

\*S BUILDING 2 (NORTH) - ROOF TO CISTERNS

COMPUTE NM HYD ID=21 HYD NO=E.R1 AREA=0.0004336 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.7119 CFS UNIT VOLUME = 0.9922 B = 526.28 P60 = 1.7800  
AREA = 0.000434 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=21 CODE=1

HYDROGRAPH FROM AREA E.R1

RUNOFF VOLUME = 1.98781 INCHES = 0.0460 ACRE-FEET  
PEAK DISCHARGE RATE = 1.20 CFS AT 1.500 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S BUILDING 2 (NORTH) - ROOF TO ROAD

COMPUTE NM HYD ID=22 HYD NO=E.R2 AREA=0.0000389 SQ MI  
PER A=0 PER B=0 PER C=0 PER D=100  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.15358 CFS UNIT VOLUME = 0.9286 B = 526.28 P60 = 1.7800  
AREA = 0.000039 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=22 CODE=1

HYDROGRAPH FROM AREA E.R2

RUNOFF VOLUME = 1.98781 INCHES = 0.0041 ACRE-FEET  
PEAK DISCHARGE RATE = 0.11 CFS AT 1.500 HOURS BASIN AREA = 0.0000 SQ. MI.

\*S BUILDING 2 (NORTH) - COURTYARD

COMPUTE NM HYD ID=23 HYD NO=E.CY AREA=0.0001300 SQ MI  
PER A=0 PER B=0 PER C=53 PER D=47  
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 0.24123 CFS UNIT VOLUME = 0.9547 B = 526.28 P60 = 1.7800  
AREA = 0.000061 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
UNIT PEAK = 0.20218 CFS UNIT VOLUME = 0.9376 B = 391.16 P60 = 1.7800  
AREA = 0.000069 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=23 CODE=1

HYDROGRAPH FROM AREA E.CY

RUNOFF VOLUME = 1.47972 INCHES = 0.0103 ACRE-FEET  
PEAK DISCHARGE RATE = 0.32 CFS AT 1.533 HOURS BASIN AREA = 0.0001 SQ. MI.

\*S BUILDING 2 (NORTH) - EXTERIOR  
 COMPUTE NM HYD ID=24 HYD NO=E.EXT AREA=0.0002509 SQ MI  
 PER A=0 PER B=0 PER C=19 PER D=81  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 0.80236 CFS UNIT VOLUME = 0.9840 B = 526.28 P60 = 1.7800  
 AREA = 0.000203 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784  
 UNIT PEAK = 0.13989 CFS UNIT VOLUME = 0.9044 B = 391.16 P60 = 1.7800  
 AREA = 0.000048 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=24 CODE=1

#### HYDROGRAPH FROM AREA E.EXT

RUNOFF VOLUME = 1.80566 INCHES = 0.0242 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.67 CFS AT 1.500 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD ROOF TO CISTERNS AND COURTYARD FLOWS  
 ADD HYD ID=25 HYD NO=E.CIST ID I=21 ID II=23  
 PRINT HYD ID=25 CODE=1

#### HYDROGRAPH FROM AREA E.CIST

RUNOFF VOLUME = 1.86986 INCHES = 0.0562 ACRE-FEET  
 PEAK DISCHARGE RATE = 1.52 CFS AT 1.500 HOURS BASIN AREA = 0.0006 SQ. MI.

\* ROUTE THROUGH CISTERN  
 \* DISCHARGE BY 20 GPM PUMPS  
 \*S BUILDING 2 CISTERN  
 ROUTE RESERVOIR ID=26 HYD NO=E.CIST INFLOW ID=21 CODE=10  
 OUTFLOW(CFS) STORAGE(AF) ELEV(FT)  
 0 0 45.28  
 0.043 0.0001 45.30  
 0.044 0.02158 50.50  
 0.045 0.02202 53.89  
 2.2 0.02203 53.90

\* \* \* \* \*

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	45.28	0.000	0.00
0.33	0.00	45.28	0.000	0.00
0.67	0.00	45.28	0.000	0.00
1.00	0.07	45.34	0.000	0.04
1.33	0.36	46.23	0.004	0.04
1.67	0.67	53.89	0.022	0.08
2.00	0.18	53.45	0.022	0.04
2.33	0.06	53.86	0.022	0.04
2.67	0.02	51.25	0.022	0.04
3.00	0.01	50.32	0.021	0.04
3.33	0.01	50.08	0.020	0.04
3.67	0.01	49.83	0.019	0.04
4.00	0.01	49.58	0.018	0.04
4.33	0.01	49.34	0.017	0.04
4.67	0.01	49.09	0.016	0.04
5.00	0.01	48.85	0.015	0.04
5.33	0.01	48.61	0.014	0.04
5.67	0.01	48.37	0.013	0.04
6.00	0.01	48.14	0.012	0.04

6.33	0.00	47.88	0.011	0.04
6.67	0.00	47.59	0.010	0.04
7.00	0.00	47.30	0.008	0.04
7.33	0.00	47.02	0.007	0.04
7.67	0.00	46.73	0.006	0.04
8.00	0.00	46.44	0.005	0.04
8.33	0.00	46.15	0.004	0.04
8.67	0.00	45.86	0.002	0.04
9.00	0.00	45.58	0.001	0.04
9.33	0.00	45.29	0.000	0.03

PEAK DISCHARGE = 1.401 CFS - PEAK OCCURS AT HOUR 1.63  
 MAXIMUM WATER SURFACE ELEVATION = 53.896  
 MAXIMUM STORAGE = 0.0220 AC-FT INCREMENTAL TIME= 0.033333HRS

PRINT HYD ID=26 CODE=1

#### HYDROGRAPH FROM AREA E.CIST

RUNOFF VOLUME = 1.98711 INCHES = 0.0460 ACRE-FEET  
 PEAK DISCHARGE RATE = 1.40 CFS AT 1.633 HOURS BASIN AREA = 0.0004 SQ. MI.

\*S ADD ROOF TO ROAD AND EXTERIOR  
 ADD HYD ID=27 HYD NO=E.SURFACE ID I=22 ID II=24  
 PRINT HYD ID=27 CODE=1

#### HYDROGRAPH FROM AREA E.SURFACE

RUNOFF VOLUME = 1.81697 INCHES = 0.0281 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.78 CFS AT 1.500 HOURS BASIN AREA = 0.0003 SQ. MI.

\*S ADD SURFACE FLOWS TO ROAD AND CISTERNS DISCHARGE  
 \*S TOTAL DISCHARGE TO SILVER AVE  
 ADD HYD ID=28 HYD NO=E.TOTAL ID I=26 ID II=27  
 PRINT HYD ID=28 CODE=1

#### HYDROGRAPH FROM AREA E.TOTAL

RUNOFF VOLUME = 1.91890 INCHES = 0.0740 ACRE-FEET  
 PEAK DISCHARGE RATE = 1.93 CFS AT 1.633 HOURS BASIN AREA = 0.0007 SQ. MI.

\*S BLDG 3 - OVERALL  
 \*S TOTAL DISCHARGE TO 2ND ST  
 COMPUTE NM HYD ID=30 HYD NO=F AREA=0.0002193 SQ MI  
 PER A=0 PER B=0 PER C=3 PER D=97  
 TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
 UNIT PEAK = 0.83983 CFS UNIT VOLUME = 0.9862 B = 526.28 P60 = 1.7800  
 AREA = 0.000213 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563783  
 UNIT PEAK = 0.19306E-01CFS UNIT VOLUME = 0.8817 B = 391.16 P60 = 1.7800  
 AREA = 0.000007 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR  
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033333

PRINT HYD ID=30 CODE=1

#### HYDROGRAPH FROM AREA F

RUNOFF VOLUME = 1.95905 INCHES = 0.0229 ACRE-FEET  
 PEAK DISCHARGE RATE = 0.61 CFS AT 1.500 HOURS BASIN AREA = 0.0002 SQ. MI.



FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 13:58:57

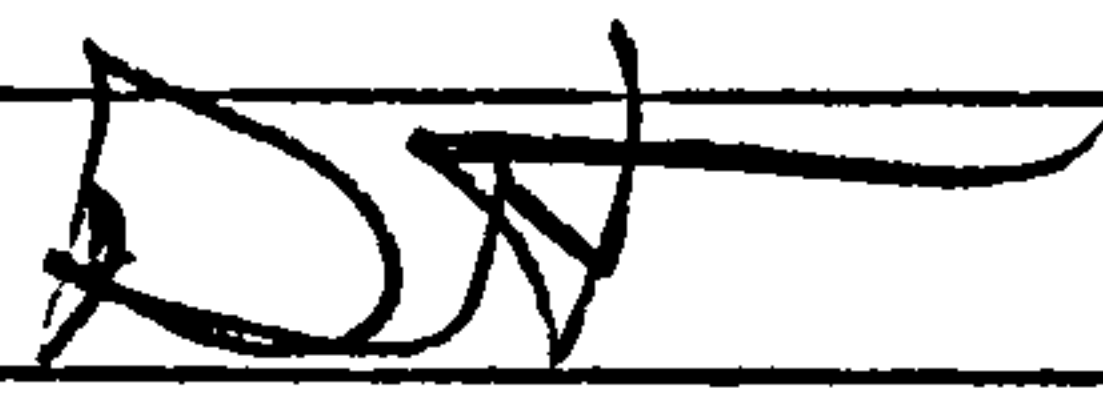
x 8-9-12

1. provide infiltration galleries at each complex.

2. 2500 gallon cistern at each complex.

3. determine pore rate to assist in the determination of the infiltration area

Ante G. Chae 8-8-12

George F. D. 

Agreed to  $\frac{1}{2}$ " of storm into a tank the pump.

# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development & Building Services



July 9, 2012

Genevieve Donart, P.E.  
Isaacson & Arfman, P.A.  
128 Monroe St. NE  
Albuquerque, New Mexico 87108

RE: **Casitas de Colores – Conceptual** Grading & Drainage Plan for Site Development  
215 Lead Ave. S.W. P.E. Stamp: N/A ( **K14-D087A** )

Dear Ms. Donart,

Based upon the information provided in your submittal dated 6-14-2012, the above referenced plan cannot be approved for Site Development Plan action by the DRB until the following comments are addressed:

1. To ensure capacity in the valley drainage system, Department policy requires the site discharge rate from valley developments to be limited to 2.75 cfs/ac, unless greater capacity to the river can be demonstrated.
2. Provide calculations to demonstrate compliance, and details of onsite detention facilities to meet the required discharge rate.
3. Provide labeling of roof lines and other impervious improvements, along with proposed permeable areas and conveyances.

PO Box 1293

Albuquerque

NM 87103

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

Albuquerque's MS4 Permit became effective March 1<sup>st</sup>, 2012. Grading and Drainage Plans and Drainage Reports must comply with the requirements of the new permit.  
(MS4 Ref: <http://www.cabq.gov/planning/landcoord/documents/EPA-NMS000101-FinalPermit.pdf> )

If you have any questions, you can contact me at 924-3994.

Sincerely,

 7/9/12

Gregory R. Olson, P.E.  
Senior Engineer

Orig: Drainage file K14/D087A  
c.pdf Addressee via Email [gennyd@iacivil.com](mailto:gennyd@iacivil.com)

**DRAINAGE AND TRANSPORTATION INFORMATION SHEET**  
(Rev. 12/05)

PROJECT TITLE: Casitas de Colores ZONE MAP/DRG. FILE # 11-14/DO87A  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ WORK ORDER#: \_\_\_\_\_

LEGAL DESCRIPTION: Blocks B-1, E-1, & F-1, Silver Townhomes  
CITY ADDRESS: 215 Lead Ave

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: Genny Donart  
ADDRESS: 128 MONROE NE PHONE: 268-8828  
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: Casitas de Colores, LLC CONTACT: Rochelle Capone  
ADDRESS: 5021 Indian School Rd NE, Ste 300 PHONE: 764-3094  
CITY, STATE: Albuquerque, NM ZIP CODE: 87108

ARCHITECT: Dekker/Perich/Sabatini CONTACT: Ron Witherspoon  
ADDRESS: 7601 Jefferson NE, Ste 100 PHONE: 761-9700  
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

SURVEYOR: Rio Grande Surveying CONTACT: Rex Vogler  
ADDRESS: PO Box 7155 PHONE: 379-4579  
CITY, STATE: Albuquerque, NM ZIP CODE: 87194

CONTRACTOR: Gerald Martin CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

**TYPE OF SUBMITTAL:**

☐ DRAINAGE REPORT  
☐ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL  
☐ DRAINAGE PLAN RESUBMITTAL  
☒ CONCEPTUAL G & D PLAN  
☐ GRADING PLAN  
☐ EROSION CONTROL PLAN  
☐ ENGINEER'S CERT (HYDROLOGY)  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT  
☐ ENGINEER/ARCHITECT CERT (TCL)  
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)  
☐ ENGINEER/ARCHITECT CERT (AA)  
☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL SOUGHT:**

☐ SIA/FINANCIAL GUARANTEE RELEASE  
☐ PRELIMINARY PLAT APPROVAL  
☒ S. DEV. PLAN FOR SUB'D APPROVAL  
☒ S. DEV. 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

SUBMITTED BY: Genevieve Donart DATE: 6/12/2012  
Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.

