

CITY OF ALBUQUERQUE

Planning Department
Suzanne Lubar, Director



Mayor Richard J. Berry

October 11, 2016

Reza Afaghpour, PE
SBS Construction and Engineering, LLC
10209 Snowflake Ct NW
Albuquerque, NM 87114

**Re: Fiesta Park Care Center Parking Addition
8820 Horizon Blvd. NE
Grading & Drainage Plan
Engineer's Stamp dated: 9-12-16 (C17D106)**

Dear Mr. Afaghpour,

Based upon the information provided in your submittal received 9/13/2016, this plan is approved for Grading Permit and Paving Permit.

PO Box 1293 Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Albuquerque When completed please provide a paper copy and a PDF of the as-build for our records.

If you have any questions, you can contact me at 924-3695 or Rudy Rael at 924-3698.

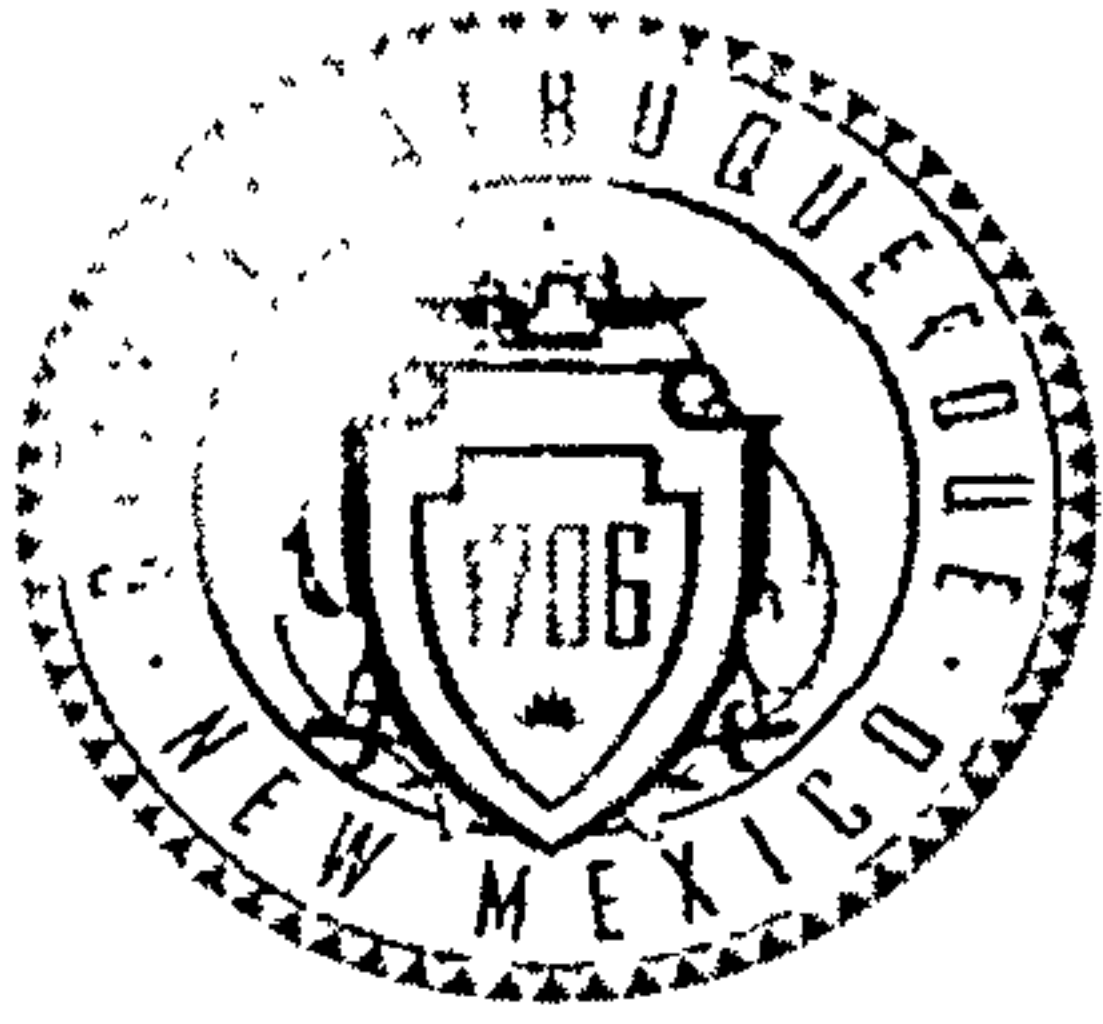
New Mexico 87103

Sincerely,

www.cabq.gov

Abiel Carrillo, P.E.
Principal Engineer
Planning Department

C: RR/AC
email

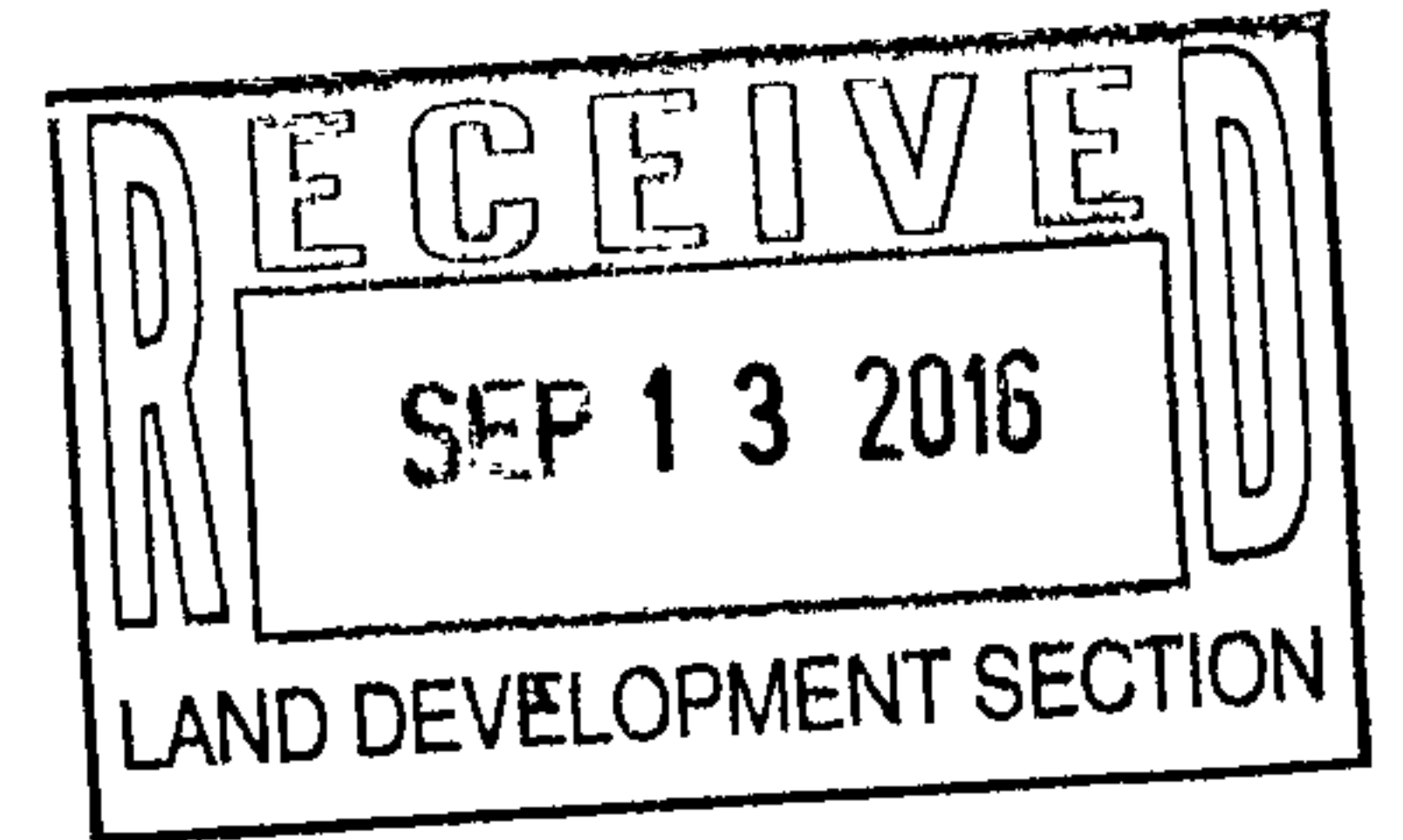


City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 10/2015)



Project Title: FIESTA PARK CARE CENTER Building Permit #: _____ Hydrology File #: C7D106
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: TRACT 3B-2-A, LAND OF IHS ACQUISITION NO. 120 INC
City Address: 8820 HORIZON BLVD., NE

Applicant: SBS CONSTRUCTION AND ENGINEERING, LLC Contact: SHAWN BIAZAR
Address: 10209 SNOWFLAKE CT., NW, ALBUQUERQUE, NM 87114
Phone#: (505) 804-5013 Fax#: (505) 897-4996 E-mail: AECLLC@AOL.COM

Other Contact: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ARCHITECT CERTIFICATION
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☒ DRAINAGE REPORT
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
☐ OTHER (SPECIFY) _____

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY
☐ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☒ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
☐ FOUNDATION PERMIT APPROVAL
☐ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☒ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR

☐ PRE-DESIGN MEETING?

IS THIS A RESUBMITTAL?: ☒ Yes ☐ No

☐ OTHER (SPECIFY) _____

DATE SUBMITTED: 9-13-2016 By: SHAWN BIAZAR

VOLUME CALCULATIONS FOR 100YR-6HR STORM

(UNDER PROPOSED CONDITIONS)

DRAINAGE BASINS

| SUB-BASIN | AREA (SF) | AREA (AC-FT) | AREA (MI ²) |
|-------------|-----------|--------------|-------------------------|
| RESIDENTIAL | 11,605.00 | 0.2664 | 0.000416 |

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V-360 = E (AA + AB + AC + AD)$$

$$V-10 \text{ Day} = V-360 + AD (P-10 \text{ Day} - P-360) / 12 \text{ in/ft}$$

$$EA = 0.53$$

$$EB = 0.78$$

$$EC = 1.13$$

$$ED = 2.12$$

$$AA = 0.00\%$$

$$AB = 0.00\%$$

$$AC = 0.00\%$$

$$AD = 100.00\%$$

$$P-60 = 2.01$$

$$P-360 = 2.35$$

$$P-1440 = 2.75$$

$$P-10 \text{ Day} = 3.95$$

$$E = 2.1200 \quad \text{IN}$$

$$V-360 = 0.0471 \quad \text{AC-FT}$$

$$V-360 = 2,050.22 \quad \text{CF}$$

VOLUME CALCULATIONS FOR 100YR-6HR STORM

(UNDER EXISTING CONDITIONS)

DRAINAGE BASINS

| SUB-BASIN | AREA (SF) | AREA (AC-FT) | AREA (MI ²) |
|-------------|-----------|--------------|-------------------------|
| RESIDENTIAL | 11,605.00 | 0.2664 | 0.000416 |

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V-360 = E (AA + AB + AC + AD)$$

$$V-10 \text{ Day} = V-360 + AD (P-10 \text{ Day} - P-360) / 12 \text{ in/ft}$$

EA = 0.53
 EB = 0.78
 EC = 1.13
 ED = 2.12

AA = 0.00%
 AB = 65.00%
 AC = 35.00%
 AD = 0.00%

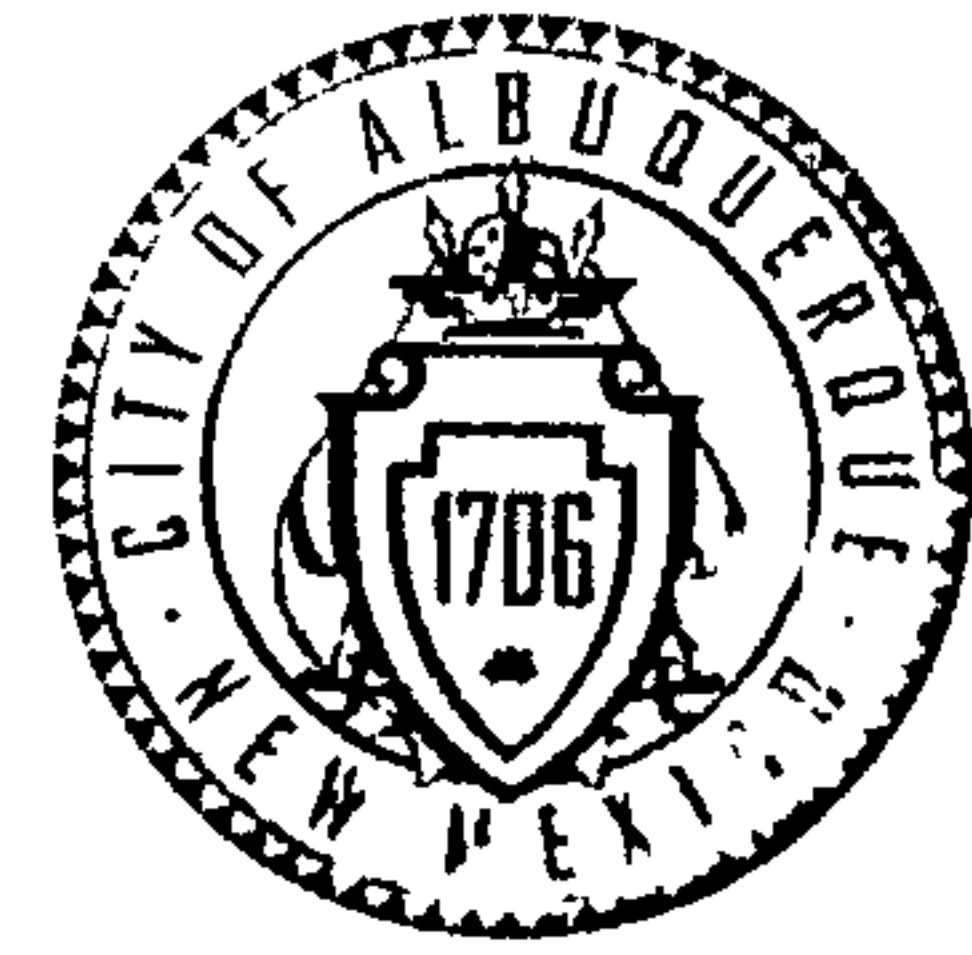
P-60 = 2.01
 P-360 = 2.35
 P-1440 = 2.75
 P-10 Day = 3.95

E = 0.9025 IN
 V-360 = 0.0200 AC-FT
 V-360 = 872.79 CF

PONDING REQUIREMENT:

(V-PROPOSED) - (V-EXISTING) = 2050.22 - 872.79
 PONDING REQUIREMENT = 1,177.42 CF
 0.02703 AC-FT

CITY OF ALBUQUERQUE



**Planning Department
Transportation Development Services Section**

April 16, 2012

Richard Rappuhn, Registered Architect
Cauwels & Stuve Construction & Design
8814 Horizon Blvd. Ne, Ste. 400
Albuquerque, NM 87113

Re: Certification for Permanent Certificate of Occupancy (**C.O.**)
Fiesta Park Care Center Revisions, [C-17/D106]
8820 Horizon Blvd. NE
Architect's Stamp Dated 04/15/12

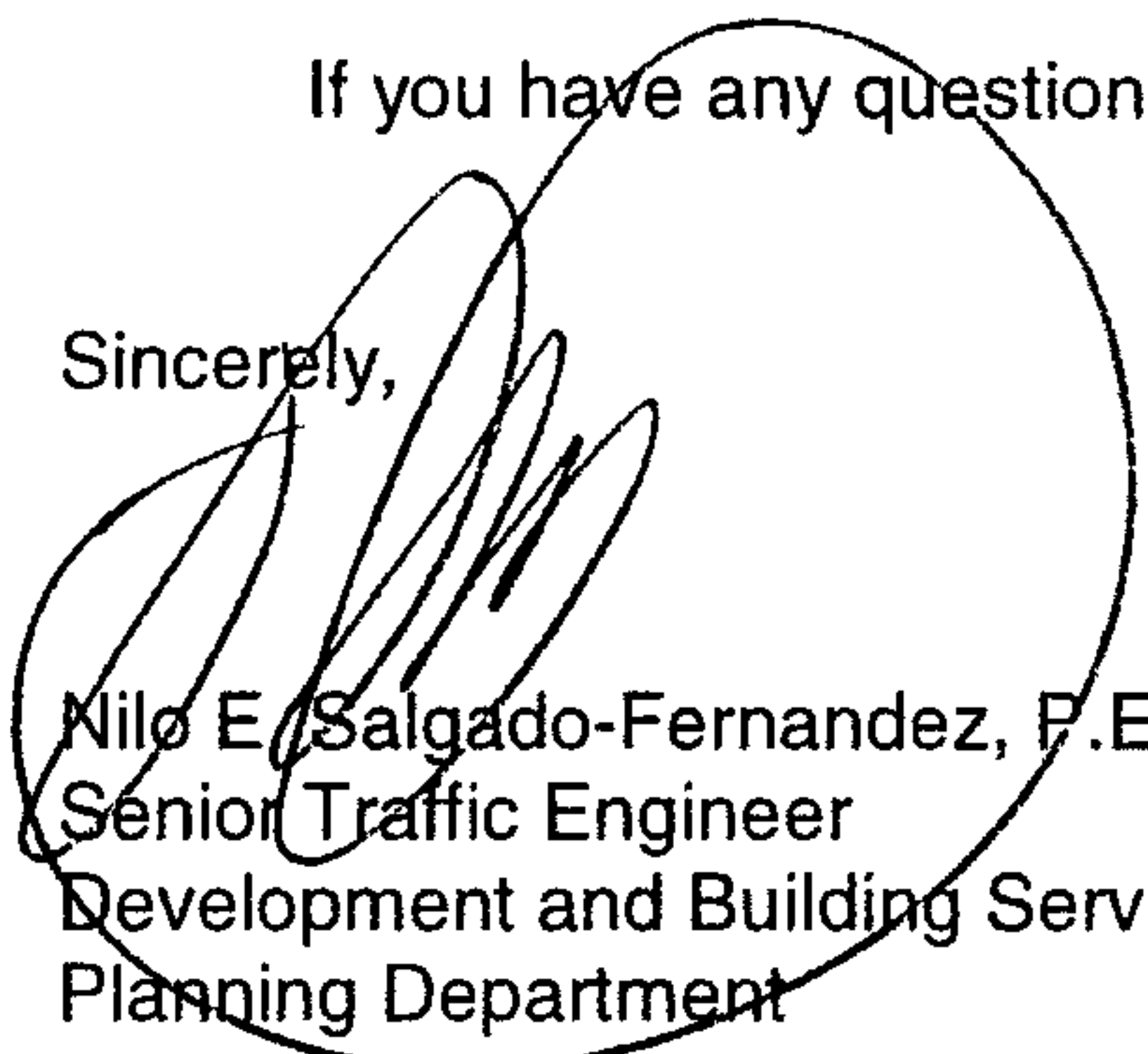
Dear Mr. Rappuhn:

Based upon the information provided in your submittal received 04-16-12,
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.

If you have any questions, please contact me at (505)924-3630.

Sincerely,


Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Cauwels & Stuve Construction & Design

Traffic Certification

To: Traffic Division
City of Albuquerque
Planning Department
600 2nd Street NW
Albuquerque, New Mexico 87102

From: Richard Rappuhn, Architect NM Registration No. 1344

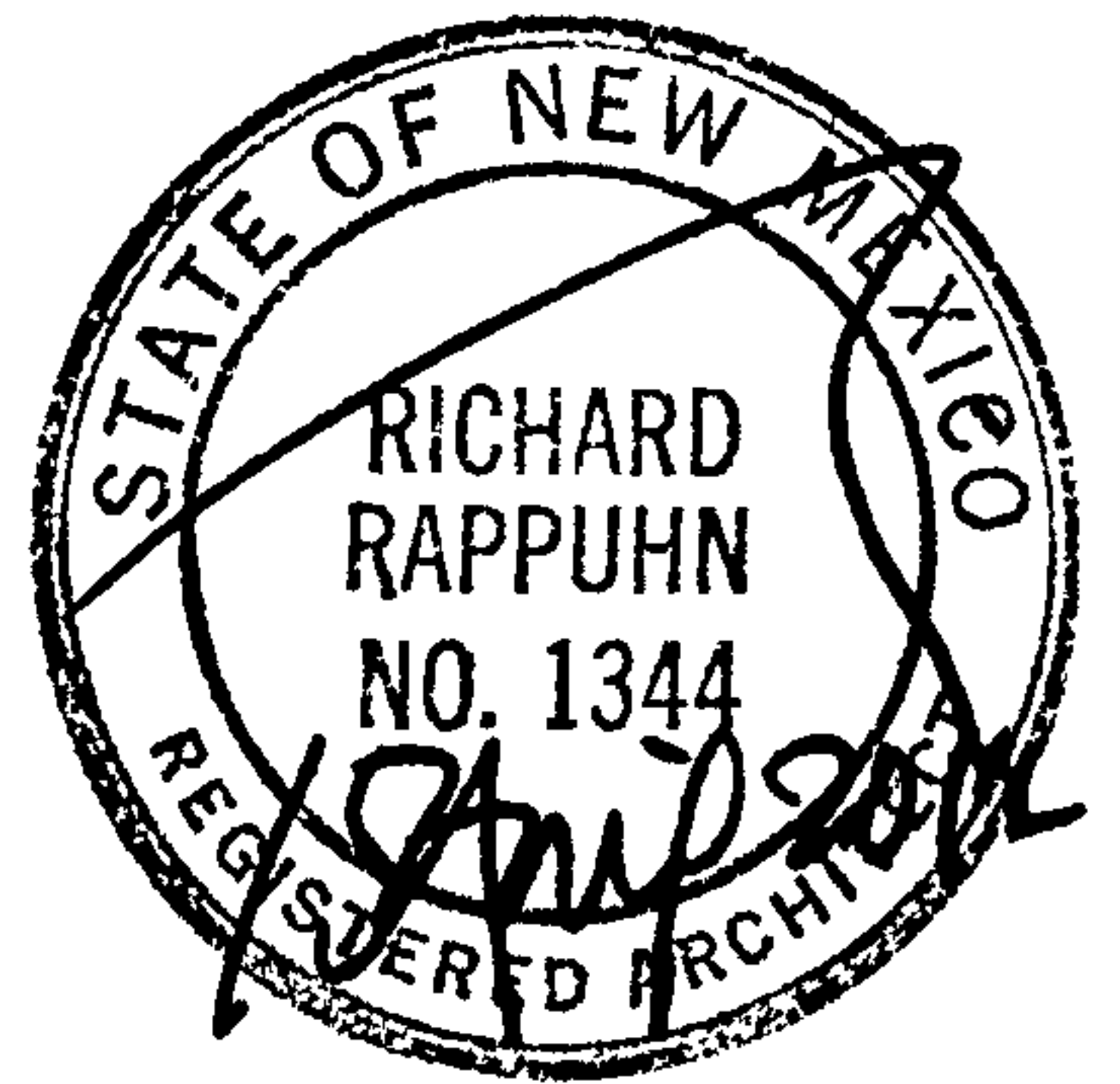
Subject: Valle Norte Tract 3B.2 Fiesta Park Care Center Revisions
8814 Horizon Boulevard NE
Traffic Certification

CC: Josh Bazinet
Mark Haley
VN3B.2 Fiesta Park Care Center; *Construction Administration File*

Date: 15 April 2012

Pages: **1; plus 3 Copies Sheet SD 1.1 Design Site Plan**

C-17/D106



I, Richard J. Rappuhn, New Mexico Registered Architect No. 1344, of Cauwels & Stuve Construction & Design certify that this Project, titled:

Valle Norte Tract 3B.2.A
Fiesta Park Care Center
8820 Horizon Boulevard NE
Albuquerque, New Mexico 87113

is in substantial compliance with and in accordance with the Design Intent of the approved Plans dated 19 August 2011.

I attest that the record information subsequently added to the Building Permit drawings and the Approved Sheet SD 1.1, Site Plan for Building Permit represents the actual conditions. In addition, I further attest that during a Site Visit conducted Monday 2 April 2012, I determined by visual inspection that the survey data provided represents the actual site conditions and is true and correct to the best of my knowledge and belief. I submit this certification and information in support of the request for this Project's Certificate of Occupancy.

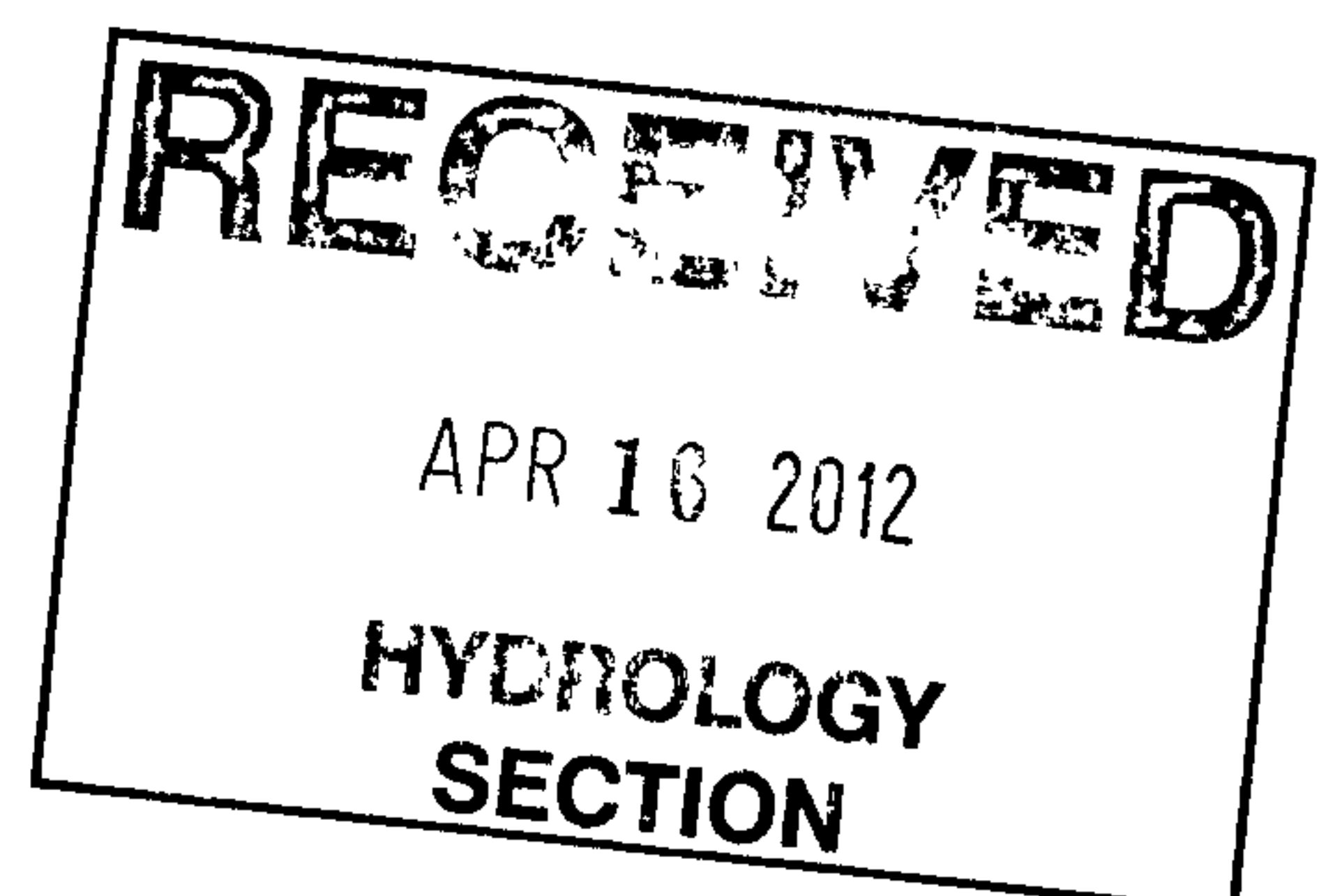
The record information presented hereon does not necessarily constitute all the complete information and intends to verify substantial compliance with the 'Traffic' aspects of this Project. Those intending to rely on this record document must obtain independent verification of this document's accuracy prior to using the information for any further purpose.

Richard J. Rappuhn, Architect NM 1344

dated

15 April 2012

Cauwels & Stuve Construction & Design
8814 Horizon Boulevard NE; Suite 400
Albuquerque, New Mexico 87113
tele 505 266 5711 ext 233
facs 505.255.9922
email rrappuhn@cauwels-stuve.com



CITY OF ALBUQUERQUE



Planning Department Transportation Development Services Section

April 13, 2012

Richard Rappuhn, Registered Architect
Cauwels & Stuve Construction & Design
8814 Horizon Blvd. Ne, Ste. 400
Albuquerque, NM 87113

Re: Request for a Certification for Permanent Certificate of Occupancy (**C.O.**) -
HIS Land Acquisition, [C-17/D106]
8820 Horizon Blvd. NE
Architect's Stamp Dated 04/02/12


Dear Mr. Rappuhn:

Based upon the information provided in your submittal received 04-10-12, Transportation Development has **DISAPPROVED** your request. The following item will need to be addressed prior to issuance of a Permanent Certificate of Occupancy:

- Provide the approved Administrative Amendment Site Plan that you are certifying as part of CO request.

If you have any questions, please contact me at (505)924-3630.

Sincerely,


Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

C-17/D106

Cauwels & Stuve Construction & Design

Traffic Certification

To: Traffic Division
City of Albuquerque
Planning Department
600 2nd Street NW
Albuquerque, New Mexico 87102

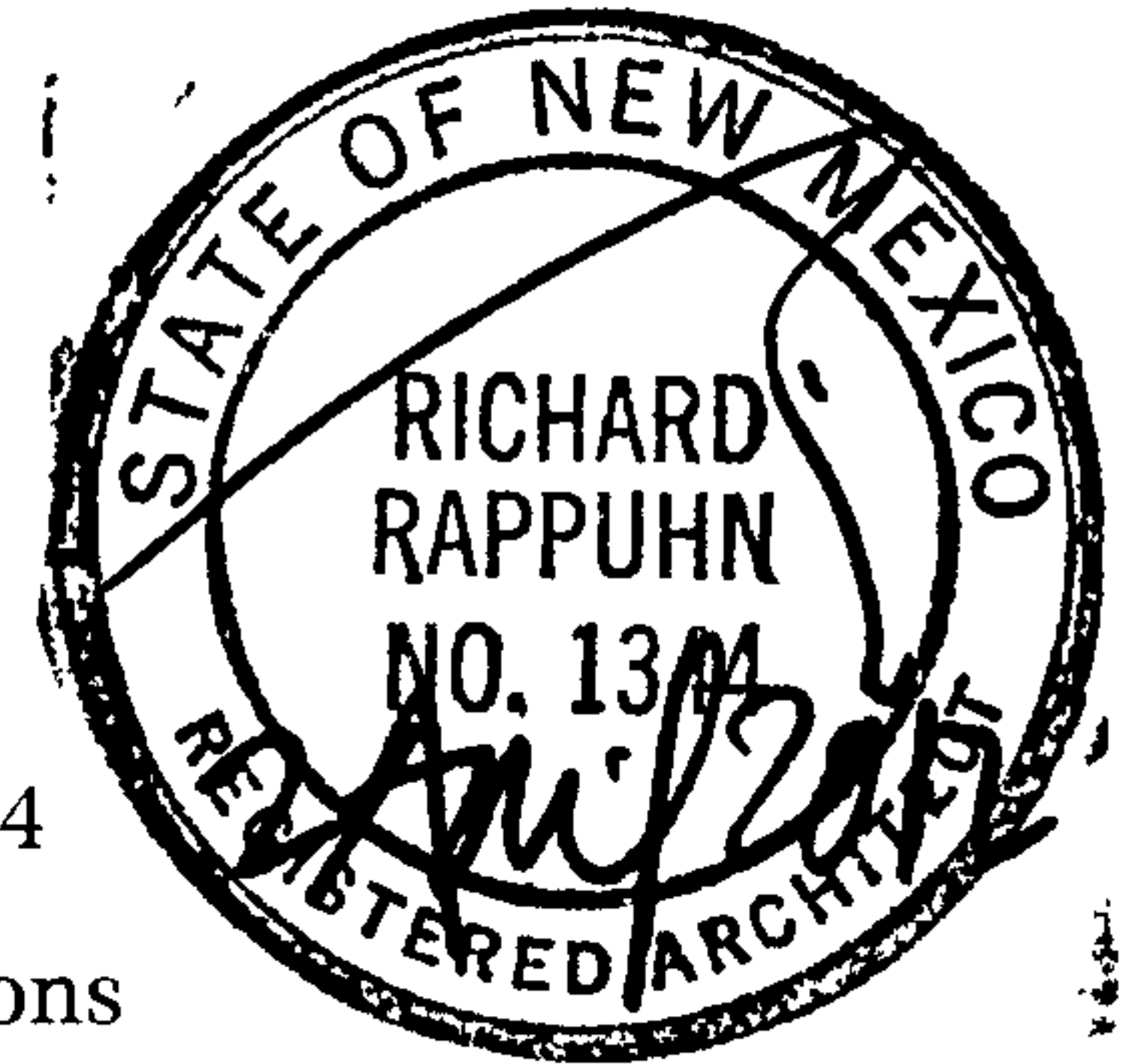
From: Richard Rappuhn, Architect NM Registration No. 1344

Subject: Valle Norte Tract 3B.2 Fiesta Park Care Center Revisions
8814 Horizon Boulevard NE
Traffic Certification

CC: Josh Bazinet
Mark Haley
VN3B.2 Fiesta Park Care Center; *Construction Administration File*

Date: 2 April 2012

Pages: **1; plus 3 Copies Sheet SD 1.1 Design Site Plan**



I, Richard J. Rappuhn, New Mexico Registered Architect No. 1344, of Cauwels & Stuve Construction & Design certify that this Project, titled:

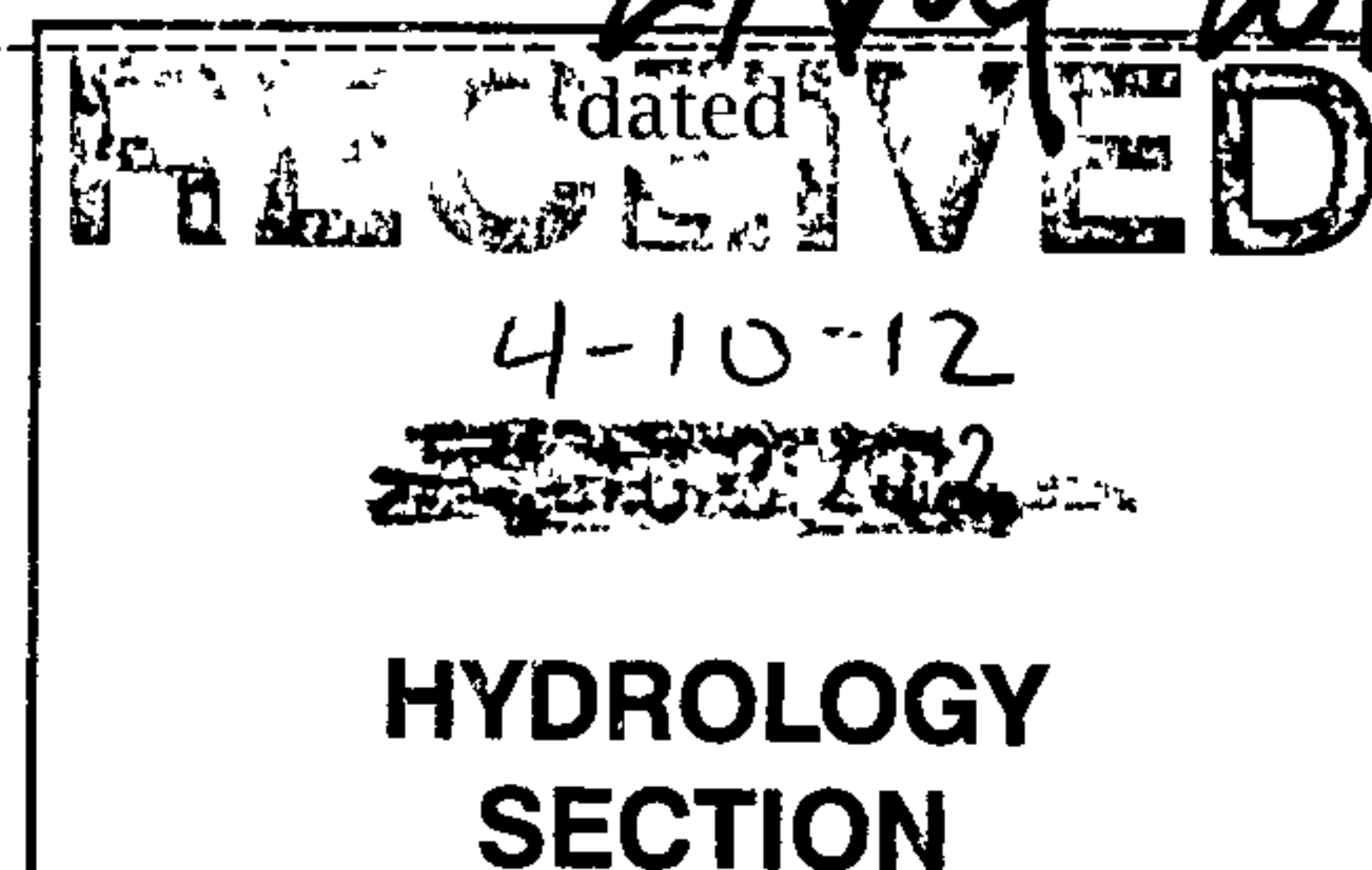
Valle Norte Tract 3B.2.A
Fiesta Park Care Center
8820 Horizon Boulevard NE
Albuquerque, New Mexico 87113

is in substantial compliance with and in accordance with the Design Intent of the approved Plans dated 19 August 2011.

I attest that the record information subsequently added to the Building Permit drawings represents the actual conditions. In addition, I further attest that during a Site Visit conducted Monday 2 April 2012, I determined by visual inspection that the survey data provided represents the actual site conditions and is true and correct to the best of my knowledge and belief. I submit this certification and information in support of the request for this Project's Certificate of Occupancy.

The record information presented hereon does not necessarily constitute all the complete information and intends to verify substantial compliance with the 'Traffic' aspects of this Project. Those intending to rely on this record document must obtain independent verification of this document's accuracy prior to using the information for any further purpose.

Richard J. Rappuhn, Architect NM 1344



Cauwels & Stuve Construction & Design
8814 Horizon Boulevard NE; Suite 400
Albuquerque, New Mexico 87113
tele 505 266 5711 ext 233
facs. 505.255 9922
email rappuhn@cauwels-stuve.com

04/12/12

10:54 AM

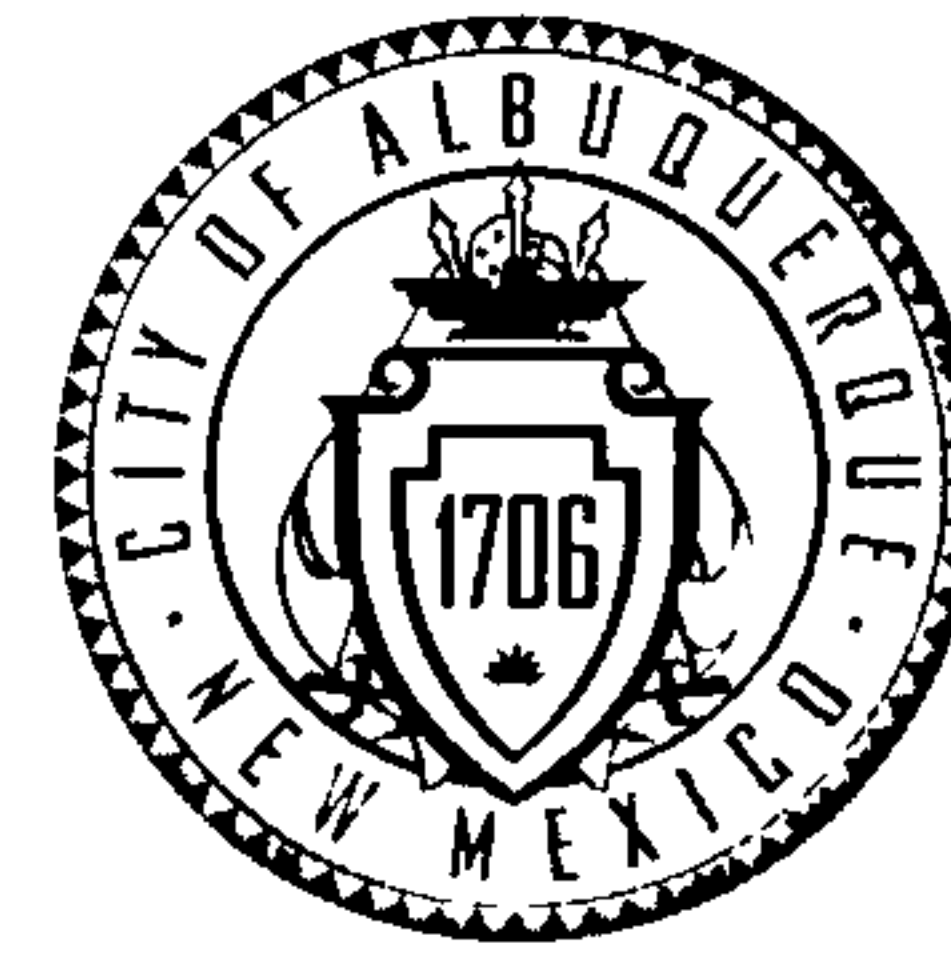
left message ^{w/} Richard
Rappuhn (phone)

266-5711

ext. 233

Need AD Site Plan
as part of Certification

CITY OF ALBUQUERQUE



March 09, 2012

Scott A. Eddings, P.E.
Huitt-Zollars, Inc.
333 Rio Rancho Blvd.
Rio Rancho, NM 87124

seddings@huitt-zollars.com

**Re: 8820 Horizon, HIS Land acquisition,
Request for Permanent C.O. - Approved
Engineer's Stamp dated: 09-27-2011, (C17/D106)
Certification dated: 02-27-12**

Dear Mr. Eddings,

Based upon the information provided in the Certification received 02-27-12, the above referenced Certification is approved for a release of a Permanent Certificate of Occupancy by Hydrology.

Hydrology is asking for an electronic copy, in .pdf format, of this certification for our records. This certification can be e-mailed to me at: tsims@cabq.gov.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Timothy E. Sims,
Plan Checker—Hydrology Section
Development and Building Services

C: CO Clerk—Katrina Sigala
File

DRAINAGE INFORMATION SHEET

(REV. 1/28/2003)

PROJECT TITLE: IHS Land Acquisition ZONE ATLAS/DRNG. FILE #: B-17-Z-8 C-17-Z/D04
DRB #: _____ EPC#: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: Tracts 3B-2-A Land of IHS Acquisition No 120 Inc.
CITY ADDRESS: Horizon Boulevard NE, Albuquerque, NM

| | | | |
|-------------------|--|-----------|----------------------|
| ENGINEERING FIRM: | <u>Huitt-Zollars, Inc.</u> | CONTACT: | <u>Scott Eddings</u> |
| ADDRESS: | <u>333 Rio Rancho Blvd</u> | PHONE: | <u>505-892-5141</u> |
| CITY, STATE: | <u>Rio Rancho, NM</u> | ZIP CODE: | <u>87124</u> |
| OWNER: | <u>C & S Equities, LLC</u> | CONTACT: | <u>Mark Haley</u> |
| ADDRESS: | <u>6001 Indian School Rd. NE, Ste. 400</u> | PHONE: | <u>505-266-5711</u> |
| CITY, STATE: | <u>Albuquerque, NM</u> | ZIP CODE: | <u>87110</u> |
| ARCHITECT: | _____ | CONTACT: | _____ |
| ADDRESS: | _____ | PHONE: | _____ |
| CITY, STATE: | _____ | ZIP CODE: | _____ |
| SURVEYOR: | <u>Huitt-Zollars, Inc.</u> | CONTACT: | <u>Dan Holmes</u> |
| ADDRESS: | <u>333 Rio Rancho Blvd.</u> | PHONE: | <u>505-892-5141</u> |
| CITY, STATE: | <u>Rio Rancho, NM</u> | ZIP CODE: | <u>87124</u> |
| CONTRACTOR: | _____ | CONTACT: | _____ |
| ADDRESS: | _____ | PHONE: | _____ |
| CITY, STATE: | _____ | ZIP CODE: | _____ |

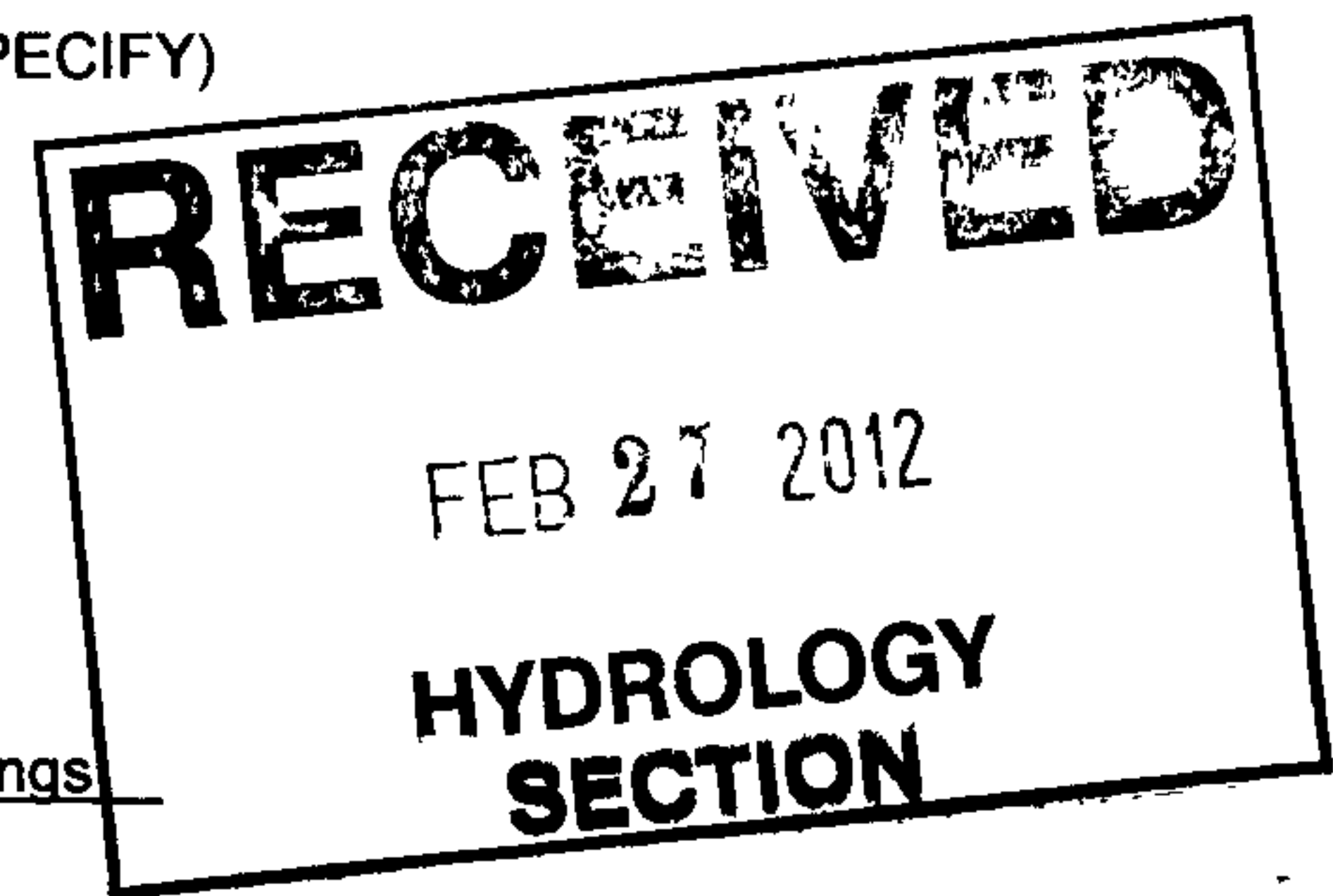
| | |
|--|---|
| CHECK TYPE OF SUBMITTAL: | CHECK TYPE OF APPROVAL SOUGHT: |
| <input type="checkbox"/> DRAINAGE REPORT | <input type="checkbox"/> SIA/FINANCIAL GUARANTEE RELEASE |
| <input type="checkbox"/> DRAINAGE PLAN 1 ST SUBMITTAL, <i>REQUIRES TCL or equal</i> | <input type="checkbox"/> PRELIMINARY PLAT APPROVAL |
| <input type="checkbox"/> DRAINAGE PLAN RESUBMITTAL | <input type="checkbox"/> S. DEV. PLAN FOR SUB'D. APPROVAL |
| <input type="checkbox"/> CONCEPTUAL GRADING & DRAINAGE PLAN | <input checked="" type="checkbox"/> S. DEV. PLAN FOR BLDG. PRMT. APPROVAL |
| <input type="checkbox"/> GRADING PLAN | <input type="checkbox"/> SECTOR PLAN APPROVAL |
| <input type="checkbox"/> EROSION CONTROL PLAN | <input type="checkbox"/> FINAL PLAT APPROVAL |
| <input checked="" type="checkbox"/> ENGINEER'S CERTIFICATION (HYDROLOGY) | <input type="checkbox"/> FOUNDATION PERMIT APPROVAL |
| <input type="checkbox"/> CLOMR/LOMR | <input type="checkbox"/> BUILDING PERMIT APPROVAL |
| <input type="checkbox"/> TRAFFIC CIRCULATION LAYOUT (TCL) | <input checked="" type="checkbox"/> CERTIFICATE OF OCCUPANCY (PERM.) |
| <input type="checkbox"/> ENGINEER'S CERTIFICATION (TCL) | <input type="checkbox"/> CERTIFICATE OF OCCUPANCY (TEMP.) |
| <input type="checkbox"/> ENGINEER'S CERT. (DRB APPR. SITE PLAN) | <input type="checkbox"/> GRADING PERMIT APPROVAL |
| <input type="checkbox"/> OTHER | <input type="checkbox"/> PAVING PERMIT APPROVAL |
| | <input type="checkbox"/> WORK ORDER APPROVAL |
| | <input type="checkbox"/> OTHER (SPECIFY) _____ |

WAS A PRE-DESIGN MEETING ATTENDED:

☐ YES
☒ NO
☐ COPY PROVIDED

DATE SUBMITTED. 2/27/12

BY: Scott Eddings

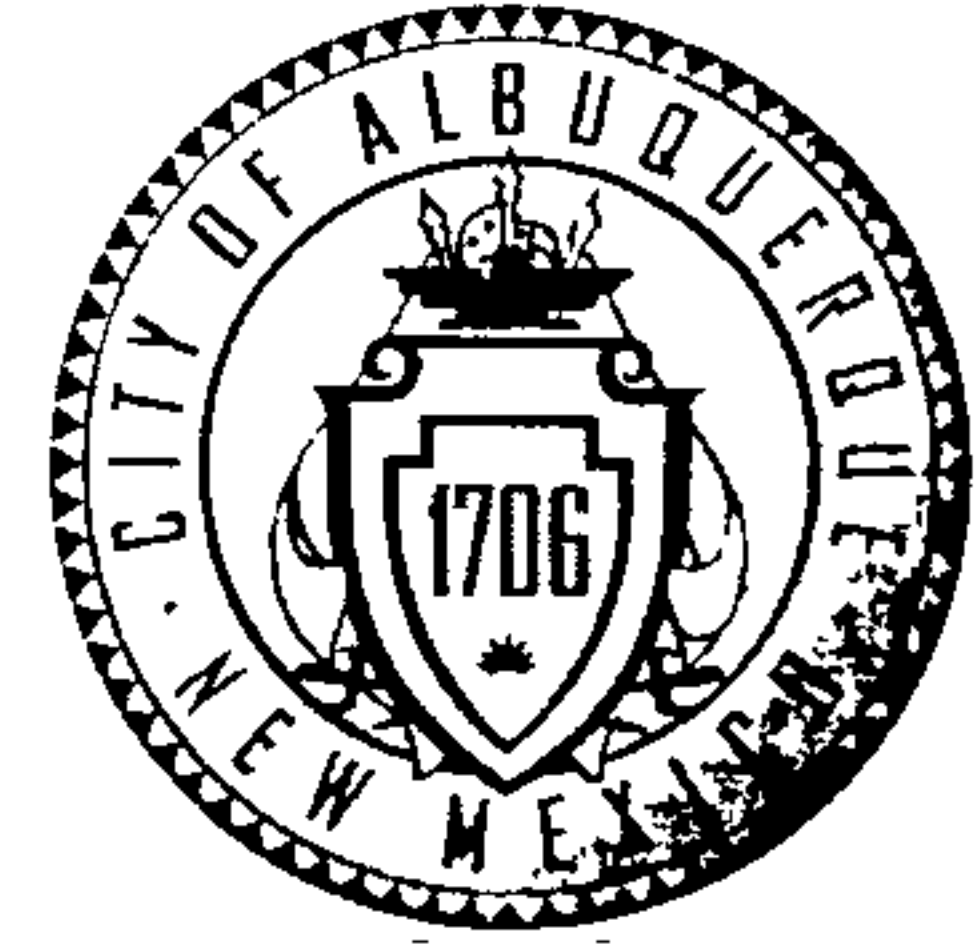


Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or More of the following levels of submittal may be required based on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

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

②

CITY OF ALBUQUERQUE



October 07, 2011

Scott Eddings, P.E.
Huitt-Zollars, Inc.
333 Rio Rancho Blvd
Rio Rancho, NM 87124

Re: IHS Land Acquisition Grading Plan and Drainage Plan For The Parking Lot Addition, Engineer's Stamp date 9-27-11 (C17/D106)

Dear Mr. Eddings,

Based upon the information provided in your submittal received 9-26-11, the above referenced Parking Lot Addition is approved for Grading and Paving Permit. Please fix the north arrow on any future submittals.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge and a Topsoil Disturbance Permit since it is disturbing $\frac{3}{4}$ of an acre or more. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Shahab Biazar, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: File

DRAINAGE INFORMATION SHEET

(REV. 1/28/2003)

C-17/D106.

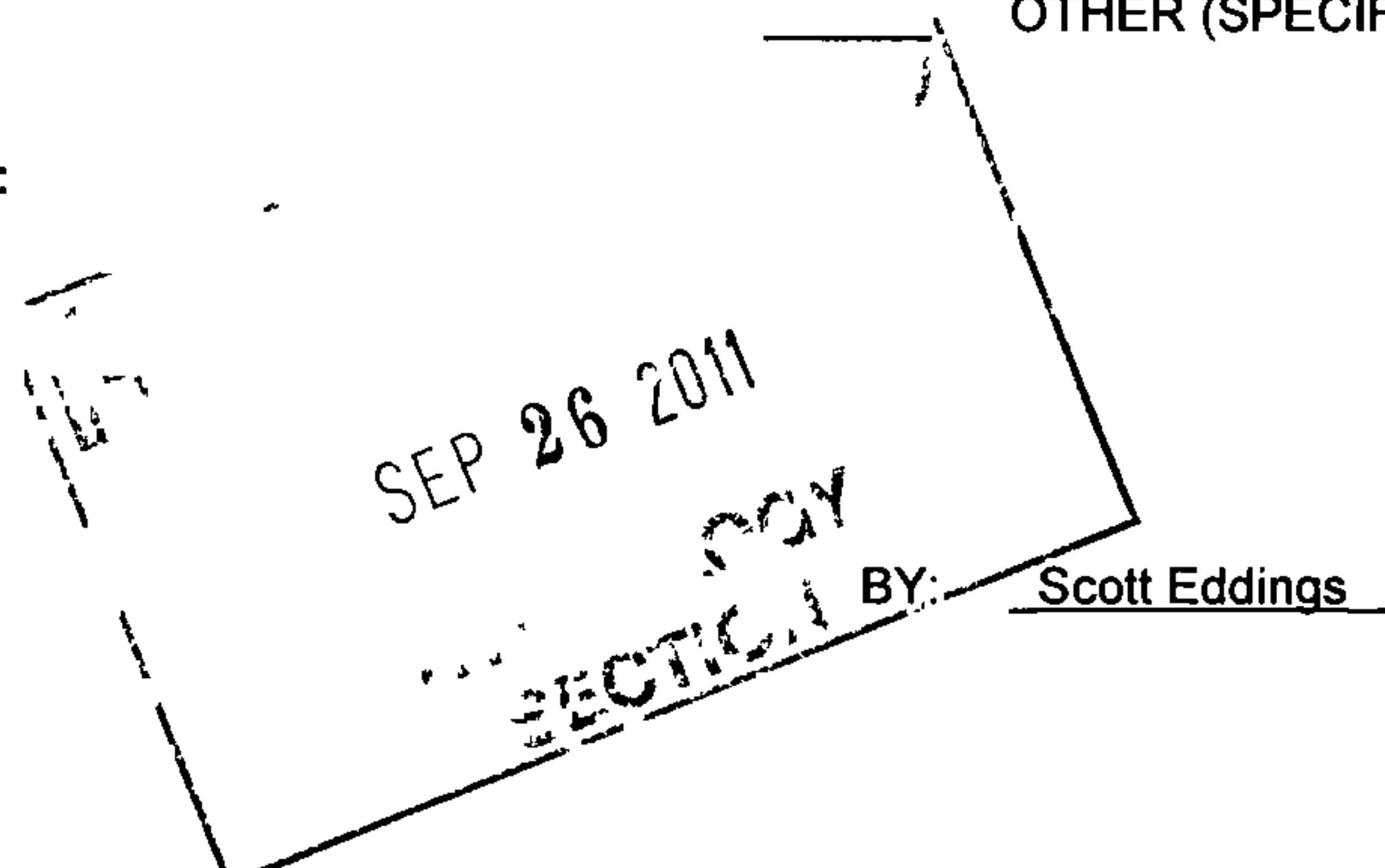
| | | | |
|--------------------|--|-------------------------|---------------|
| PROJECT TITLE: | IHS Land Acquisition | ZONE ATLAS/DRNG FILE #: | B-17-Z&C-17-Z |
| DRB #: | | EPC#: | |
| LEGAL DESCRIPTION: | Tracts 3B-2-A Land of IHS Acquisition No. 120 Inc. | | |
| CITY ADDRESS: | Horizon Boulevard NE, Albuquerque, NM | | |
| ENGINEERING FIRM: | Huitt-Zollars, Inc. | CONTACT: | Scott Eddings |
| ADDRESS: | 333 Rio Rancho Blvd | PHONE: | 505-892-5141 |
| CITY, STATE: | Rio Rancho, NM | ZIP CODE: | 87124 |
| OWNER: | C & S Equities, LLC | CONTACT: | Mark Haley |
| ADDRESS: | 6001 Indian School Rd. NE, Ste. 400 | PHONE: | 505-266-5711 |
| CITY, STATE: | Albuquerque, NM | ZIP CODE: | 87110 |
| ARCHITECT: | | CONTACT: | |
| ADDRESS: | | PHONE: | |
| CITY, STATE: | | ZIP CODE: | |
| SURVEYOR: | Huitt-Zollars, Inc. | CONTACT: | Dan Holmes |
| ADDRESS: | 333 Rio Rancho Blvd. | PHONE: | 505-892-5141 |
| CITY, STATE: | Rio Rancho, NM | ZIP CODE: | 87124 |
| CONTRACTOR: | | CONTACT: | |
| ADDRESS: | | PHONE: | |
| CITY, STATE: | | ZIP CODE: | |

| | |
|--|---|
| CHECK TYPE OF SUBMITTAL: | CHECK TYPE OF APPROVAL SOUGHT: |
| <input checked="" type="checkbox"/> DRAINAGE REPORT | <input type="checkbox"/> SIA/FINANCIAL GUARANTEE RELEASE |
| <input type="checkbox"/> DRAINAGE PLAN 1 ST SUBMITTAL, <i>REQUIRES TCL or equal</i> | <input type="checkbox"/> PRELIMINARY PLAT APPROVAL |
| <input type="checkbox"/> DRAINAGE PLAN RESUBMITTAL | <input type="checkbox"/> S. DEV. PLAN FOR SUB'D. APPROVAL |
| <input type="checkbox"/> CONCEPTUAL GRADING & DRAINAGE PLAN | <input checked="" type="checkbox"/> S. DEV. PLAN FOR BLDG. PRMT. APPROVAL |
| <input checked="" type="checkbox"/> GRADING PLAN | <input type="checkbox"/> SECTOR PLAN APPROVAL |
| <input type="checkbox"/> EROSION CONTROL PLAN | <input type="checkbox"/> FINAL PLAT APPROVAL |
| <input type="checkbox"/> ENGINEER'S CERTIFICATION (HYDROLOGY) | <input type="checkbox"/> FOUNDATION PERMIT APPROVAL |
| <input type="checkbox"/> CLOMR/LOMR | <input checked="" type="checkbox"/> BUILDING PERMIT APPROVAL |
| <input type="checkbox"/> TRAFFIC CIRCULATION LAYOUT (TCL) | <input type="checkbox"/> CERTIFICATE OF OCCUPANCY (PERM.) |
| <input type="checkbox"/> ENGINEER'S CERTIFICATION (TCL) | <input type="checkbox"/> CERTIFICATE OF OCCUPANCY (TEMP.) |
| <input type="checkbox"/> ENGINEER'S CERT. (DRB APPR. SITE PLAN) | <input type="checkbox"/> GRADING PERMIT APPROVAL |
| <input type="checkbox"/> OTHER | <input type="checkbox"/> PAVING PERMIT APPROVAL |
| | <input type="checkbox"/> WORK ORDER APPROVAL |
| | <input type="checkbox"/> OTHER (SPECIFY) |

WAS A PRE-DESIGN MEETING ATTENDED:

| | |
|-------------------------------------|---------------|
| <input type="checkbox"/> | YES |
| <input checked="" type="checkbox"/> | NO |
| <input type="checkbox"/> | COPY PROVIDED |

DATE SUBMITTED: 9/27/11

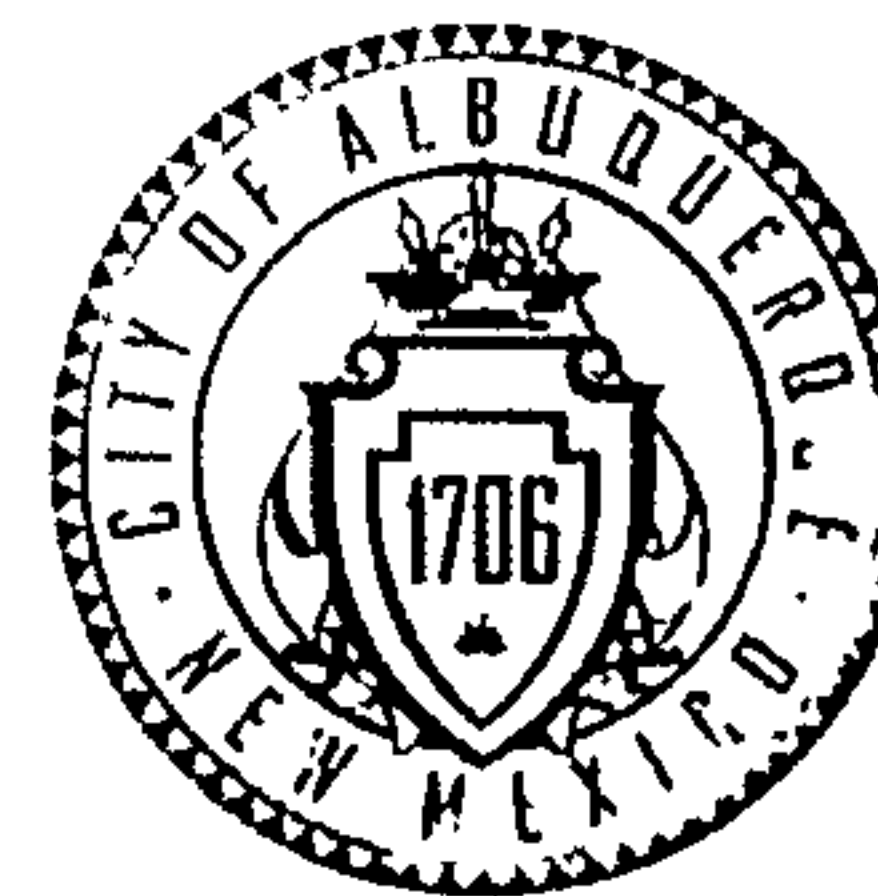


\$ 5000

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

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

CITY OF ALBUQUERQUE



August 18, 2011

Scott Eddings, P.E.
Huitt-Zollars, Inc.
333 Rio Rancho Blvd
Rio Rancho, NM 87124

RECEIVED
AUG 22 2011
HUITT-ZOLLARS

Re: IHS Land Acquisition Grading Plan and Drainage Plan
Engineer's Stamp date 7-11-11 (C17/D106)

Dear Mr. Eddings,

Based upon the information provided in your submittal received 7-11-11, the above referenced Grading Plan is approved for Site Plan for Building Permit action by the DRB.

However, Hydrology has the following comments on the Drainage Plan that should be addressed prior to future development in Basins 6, 8, 9, and 10.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

- It appears the site receives off-site flows from the baseball fields to the east of Basin 6.
- When will the "Future storm drain with D.I. and end section" be built?
There is already a building in Basin 8.

If you have any questions, you can contact me at 924-3986.

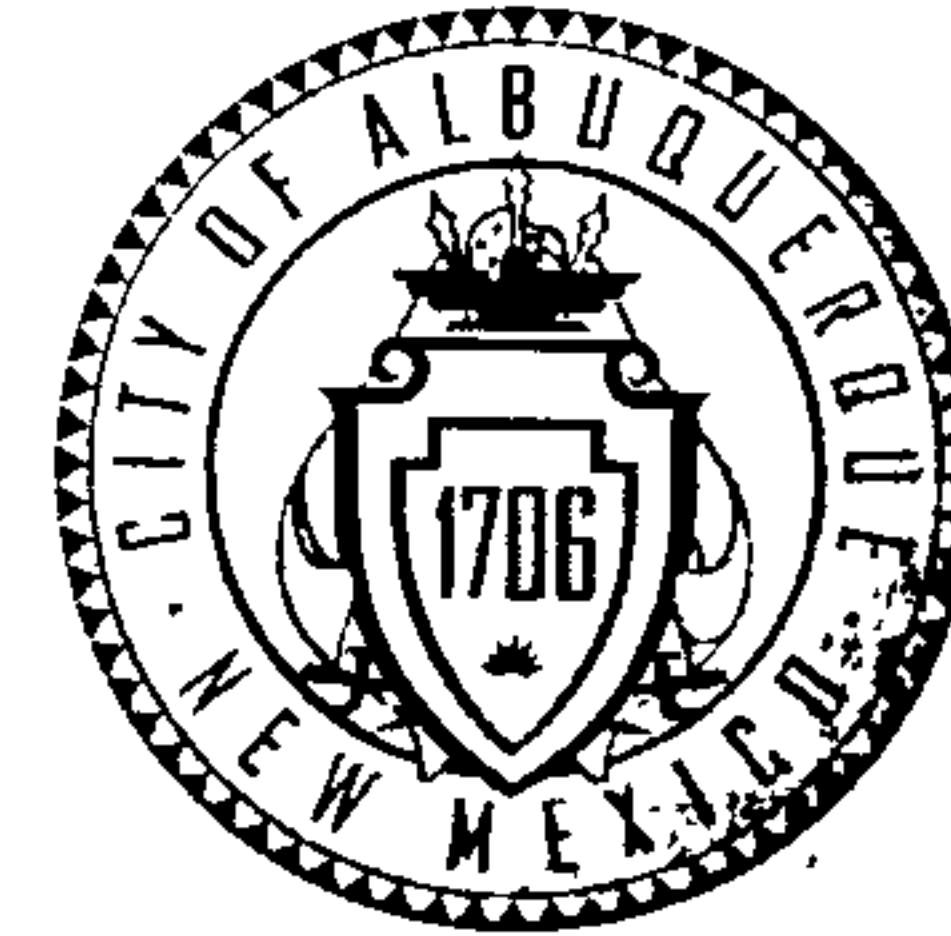
Sincerely,

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

C: File

SEP 26 2011

CITY OF ALBUQUERQUE



August 18, 2011

Scott Eddings, P.E.
Huitt-Zollars, Inc.
333 Rio Rancho Blvd
Rio Rancho, NM 87124

Re: IHS Land Acquisition Grading Plan and Drainage Plan
Engineer's Stamp date 7-11-11 (C19/D106)

Dear Mr. Eddings,

Based upon the information provided in your submittal received 7-11-11, the above referenced Grading Plan is approved for Site Plan for Building Permit action by the DRB.

However, Hydrology has the following comments on the Drainage Plan that should be addressed prior to future development in Basins 6, 8, 9, and 10.

- It appears the site receives off-site flows from the baseball fields to the east of Basin 6.
- When will the "Future storm drain with D.I. and end section" be built? There is already a building in Basin 8.

If you have any questions, you can contact me at 924-3986.

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

C: File

DRAINAGE INFORMATION SHEET

(REV. 1/28/2003)

C-17/D106

| | | | |
|--------------------|---|-------------------------|-----------------|
| PROJECT TITLE. | IHS Land Acquisition | ZONE ATLAS/DRNG FILE #. | B-17-Z & C-17-Z |
| DRB #: | | EPC#: | |
| LEGAL DESCRIPTION: | Tracts 3B-2-A Land of IHS Acquisition No 120 Inc. | | |
| CITY ADDRESS: | Horizon Boulevard NE, Albuquerque, NM | | |
| ENGINEERING FIRM: | Huitt-Zollars, Inc | CONTACT. | Scott Eddings |
| ADDRESS: | 333 Rio Rancho Blvd. | PHONE: | 505-892-5141 |
| CITY, STATE: | Rio Rancho, NM | ZIP CODE: | 87124 |
| OWNER: | C & S Equities, LLC | CONTACT: | Mark Haley |
| ADDRESS: | 6001 Indian School Rd. NE, Ste. 400 | PHONE: | 505-266-5711 |
| CITY, STATE: | Albuquerque, NM | ZIP CODE: | 87110 |
| ARCHITECT: | | CONTACT: | |
| ADDRESS: | | PHONE: | |
| CITY, STATE: | | ZIP CODE: | |
| SURVEYOR: | Huitt-Zollars, Inc. | CONTACT: | Dan Holmes |
| ADDRESS: | 333 Rio Rancho Blvd. | PHONE: | 505-892-5141 |
| CITY, STATE: | Rio Rancho, NM | ZIP CODE: | 87124 |
| CONTRACTOR: | | CONTACT: | |
| ADDRESS: | | PHONE: | |
| CITY, STATE: | | ZIP CODE: | |

CHECK TYPE OF SUBMITTAL:

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> | DRAINAGE REPORT |
| <input type="checkbox"/> | DRAINAGE PLAN 1 ST SUBMITTAL, <i>REQUIRES TCL or equal</i> |
| <input type="checkbox"/> | DRAINAGE PLAN RESUBMITTAL |
| <input type="checkbox"/> | CONCEPTUAL GRADING & DRAINAGE PLAN |
| <input checked="" type="checkbox"/> | GRADING PLAN |
| <input type="checkbox"/> | EROSION CONTROL PLAN |
| <input type="checkbox"/> | ENGINEER'S CERTIFICATION (HYDROLOGY) |
| <input type="checkbox"/> | CLOMR/LOMR |
| <input type="checkbox"/> | TRAFFIC CIRCULATION LAYOUT (TCL) |
| <input type="checkbox"/> | ENGINEER'S CERTIFICATION (TCL) |
| <input type="checkbox"/> | ENGINEER'S CERT. (DRB APPR. SITE PLAN) |
| <input type="checkbox"/> | OTHER |

CHECK TYPE OF APPROVAL SOUGHT:

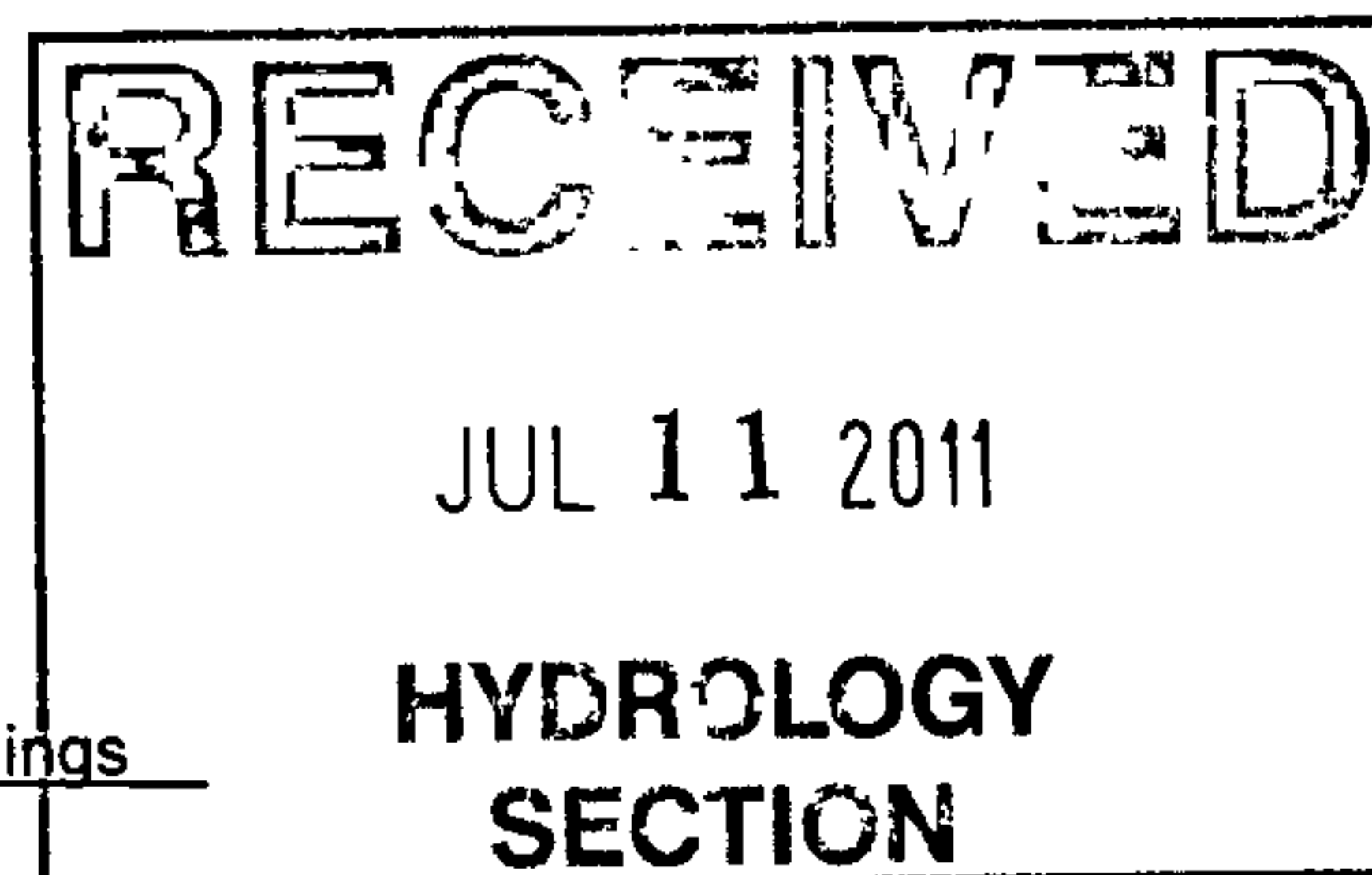
- | | |
|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> | SIA/FINANCIAL GUARANTEE RELEASE |
| <input type="checkbox"/> | PRELIMINARY PLAT APPROVAL |
| <input type="checkbox"/> | S. DEV. PLAN FOR SUB'D. APPROVAL |
| <input checked="" type="checkbox"/> | S. DEV. PLAN FOR BLDG. PRMT. APPROVAL |
| <input type="checkbox"/> | SECTOR PLAN APPROVAL |
| <input type="checkbox"/> | FINAL PLAT APPROVAL |
| <input type="checkbox"/> | FOUNDATION PERMIT APPROVAL |
| <input type="checkbox"/> | BUILDING PERMIT APPROVAL |
| <input type="checkbox"/> | CERTIFICATE OF OCCUPANCY (PERM.) |
| <input checked="" type="checkbox"/> | CERTIFICATE OF OCCUPANCY (TEMP) |
| <input type="checkbox"/> | GRADING PERMIT APPROVAL |
| <input type="checkbox"/> | PAVING PERMIT APPROVAL |
| <input type="checkbox"/> | WORK ORDER APPROVAL |
| <input type="checkbox"/> | OTHER (SPECIFY) |

WAS A PRE-DESIGN MEETING ATTENDED:

- | | |
|-------------------------------------|---------------|
| <input type="checkbox"/> | YES |
| <input checked="" type="checkbox"/> | NO |
| <input type="checkbox"/> | COPY PROVIDED |

DATE SUBMITTED: 7/11/11

BY: Scott Eddings



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

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

CITY OF ALBUQUERQUE



**Planning Department
Transportation Development Services Section**

2 February, 2011

Richard J. Rappuhm, Registered Architect.
Cauwels & Stuve Construction & Design
6001 Indian School Road NE, Ste. 400
Albuquerque, NM 87113

Re: Certification Submittal for a Permanent Building Certificate of Occupancy (C.O.)
for Valle Norte Tract 3B.1 Revisions, [C-17 / D106]
8814 Horizon Blvd. NE
Engineer's Stamp Dated 01/31/11

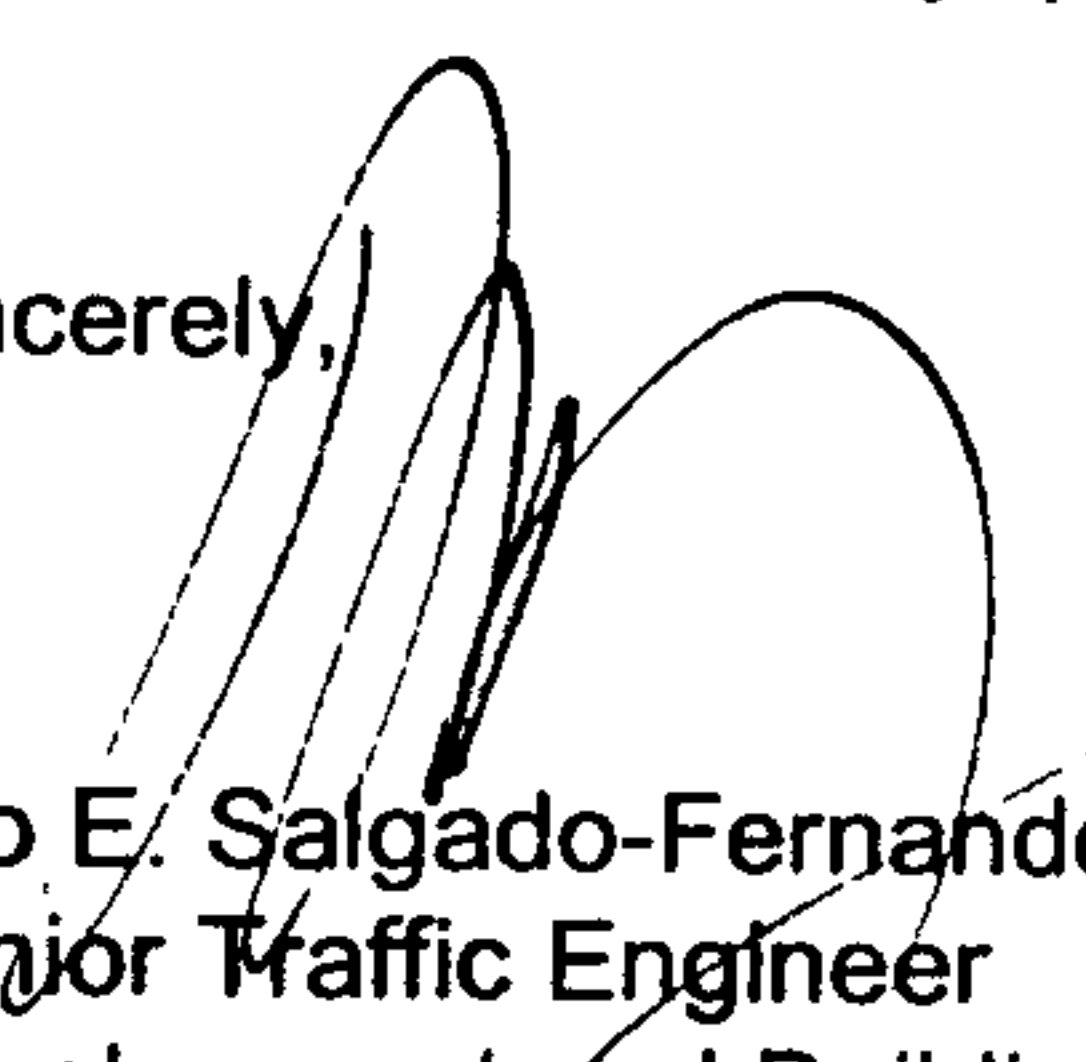
Dear Mr. Rappuhm:

Based upon the information provided in your submittal received 01-31-11,
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.

If you have any questions, please contact me at (505)924-3630.

Sincerely,


Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Cauwels & Stuve Construction & Design

Traffic Certification

To: Traffic Division
City of Albuquerque
Planning Department
600 2nd Street NW
Albuquerque, New Mexico 87102

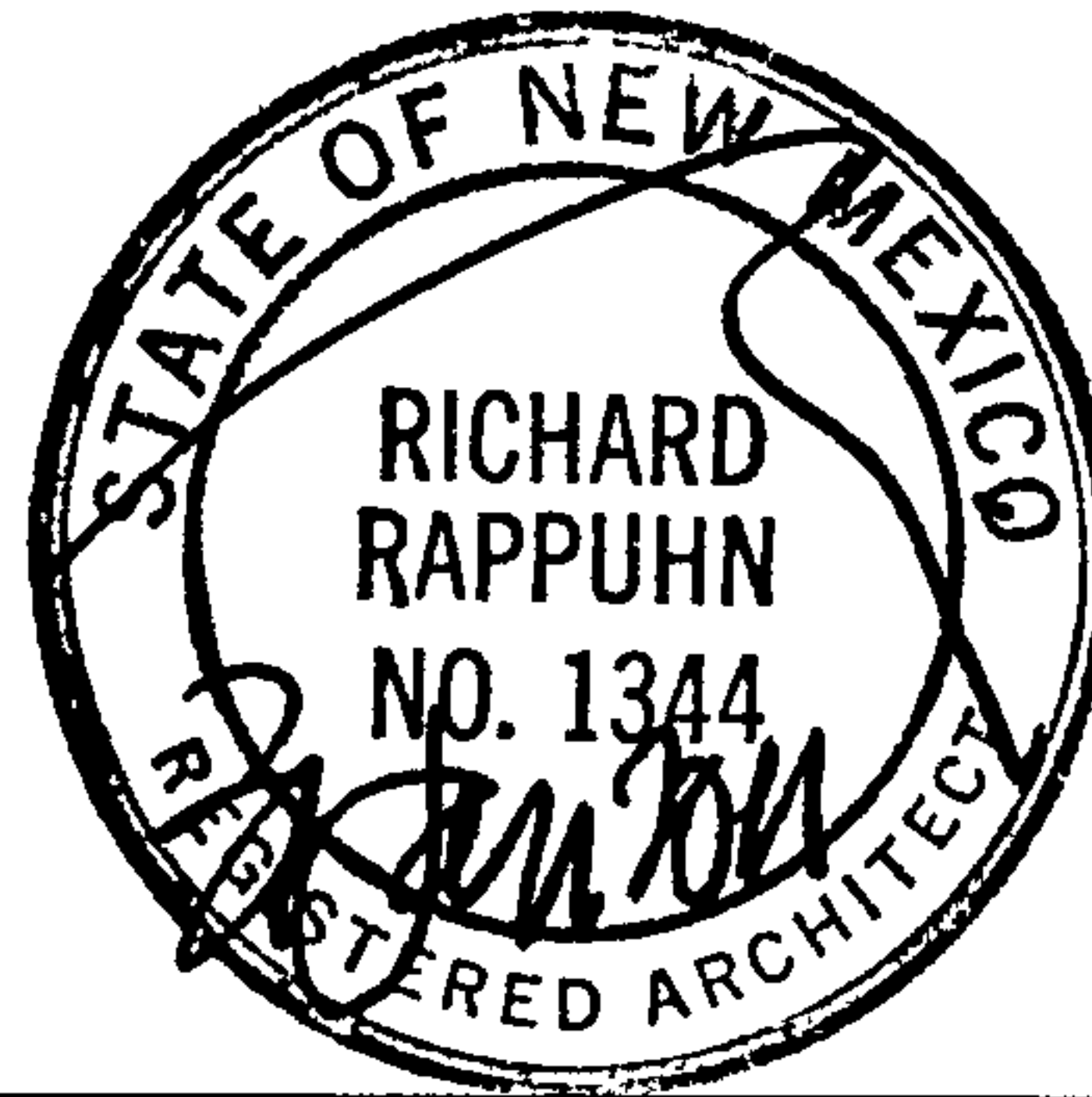
From: Richard Rappuhn, Architect NM Registration No. 1344

Subject: Valle Norte Tract 3B.1 Revisions
8814 Horizon Boulevard NE
Traffic Certification

CC: Chris Baca
Mark Haley
VN3B.1 Construction Administration File

Date: 31 January 2011

Pages: 1



I, Richard J. Rappuhn, New Mexico Registered Architect No. 1344, of Cauwels & Stuve Construction & Design certify that this Project, titled:

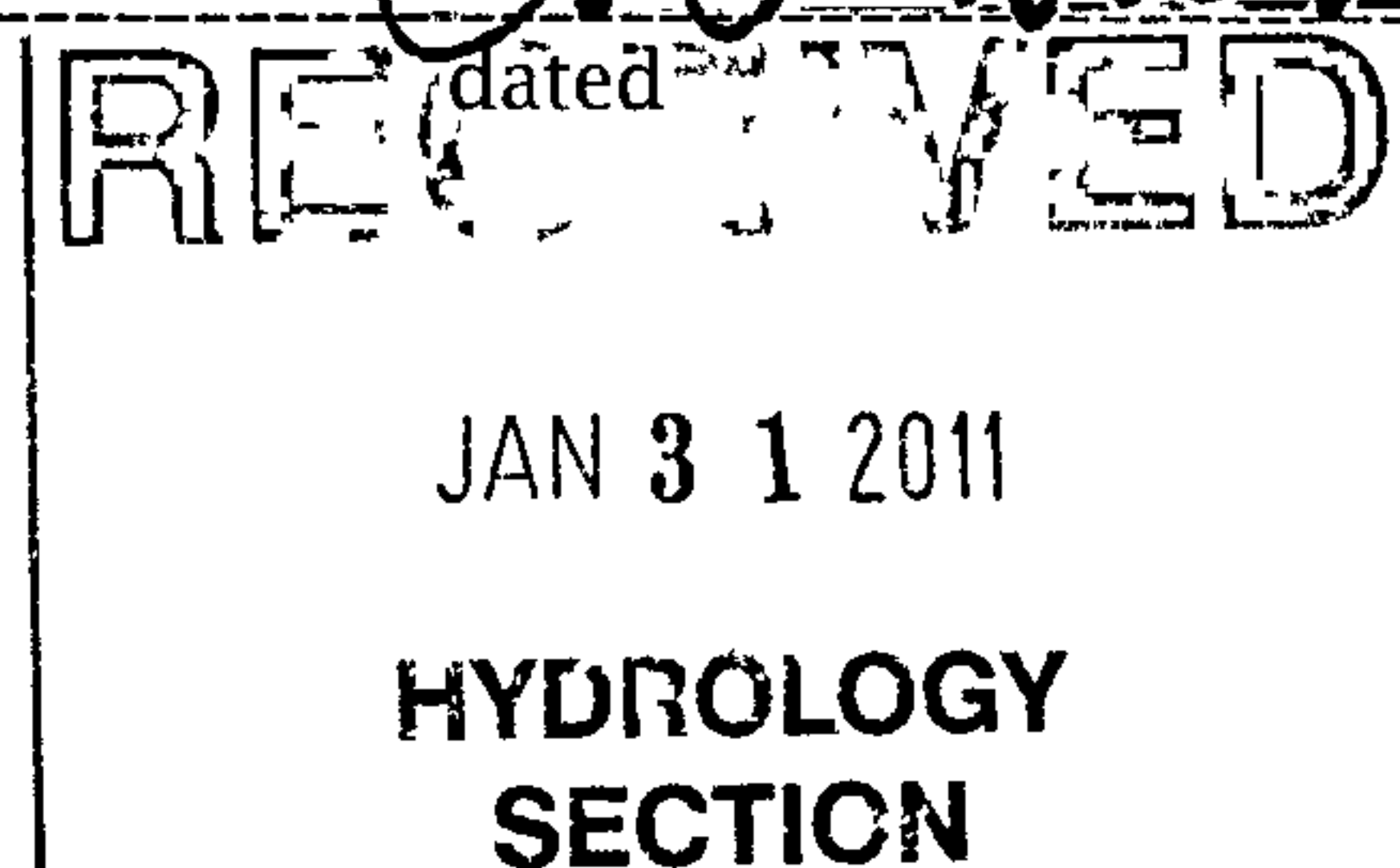
Valle Norte Tract 3B.1 Renovations
8814 Horizon Boulevard NE
Albuquerque, New Mexico 87113

is in substantial compliance with and in accordance with the Design Intent of the approved Plans dated 7 December 2009 and subsequently resubmitted and approved 19 April 2010 set and the Administrative Amendment dated 22 December 2010 changing the Parking Layout.

I attest that the record information subsequently added to the permit drawings represents the actual conditions. In addition, I further attest that during a Site Visit conducted Monday 27 December 2010, I determined by visual inspection that the survey data provided represents the actual site conditions and is true and correct to the best of my knowledge and belief. I submit this certification and information in support of the request for this Project's Certificate of Occupancy.

The record information presented hereon does not necessarily constitute all the complete information and intends to verify substantial compliance with the 'Traffic' aspects of this Project. Those intending to rely on this record document must obtain independent verification of this document's accuracy prior to using the information for any further purpose.

Richard J. Rappuhn, Architect NM 1344



8814 Horizon Boulevard NE; Suite 400
Albuquerque, New Mexico 87113
tele 505 266.5711 ext 233
facs 505 255 9922
email rrappuhn@cauwels-stuve.com

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: Valle Norte Tract 3B.1 Renovation ZONE MAP: C-17/D100
 DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Lot 3B.1
 CITY ADDRESS: 8814 Horizon Blvd NE 87113

ENGINEERING FIRM: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

OWNER: C&S Equities CONTACT: _____
 ADDRESS: c/o Cawwels Skue 8814 Horizon Blvd NE PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Richard Rappuhn CONTACT: Richard Rappuhn
 ADDRESS: 8814 Horizon Blvd NE Suite 400 PHONE: 266 9711
 CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☒ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ 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) Att
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

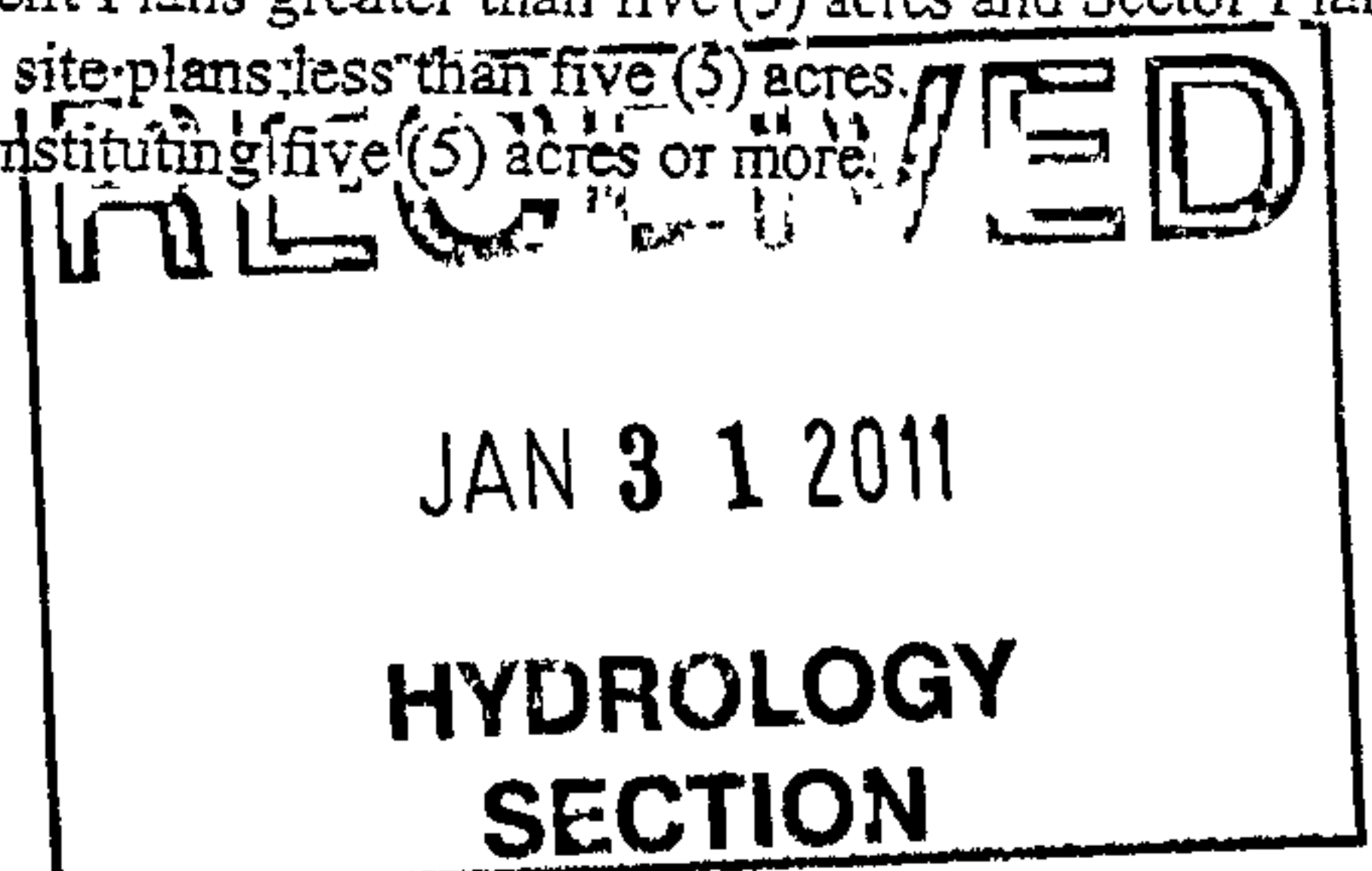
WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☐ NO
☐ COPY PROVIDED

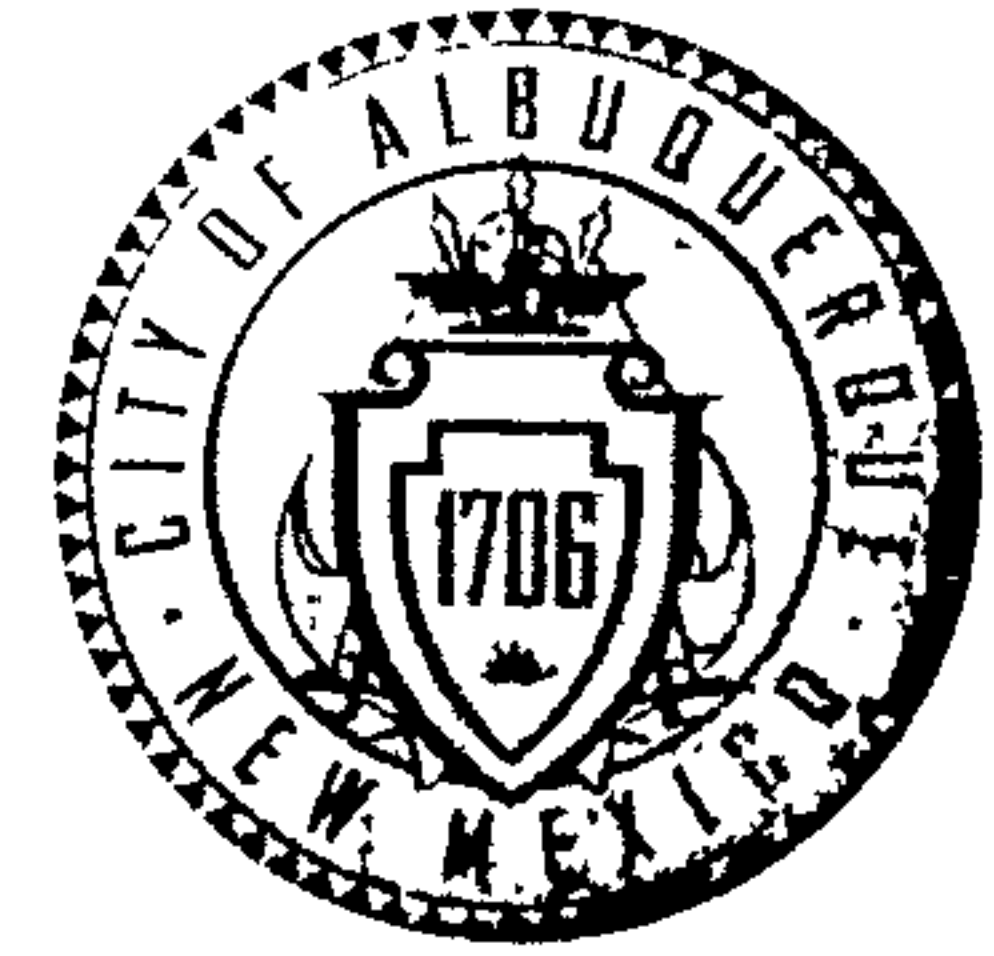
DATE SUBMITTED: 31 Jan 2011 BY: Richard Rappuhn

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.



CITY OF ALBUQUERQUE



December 13, 2010

Scott Eddings, P.E.
Huitt-Zollars, Inc.
333 Rio Rancho Blvd.
Rio Rancho, NM 87124

**Re: Integrated Health Care, 8814 Horizon, (C-17/D106),
Request for Permanent Certificate of Occupancy - Approved
Approved Engineer's Stamp date: 04/19/10,
Certification dated: 123-10-10**

Dear Mr. Eddings,

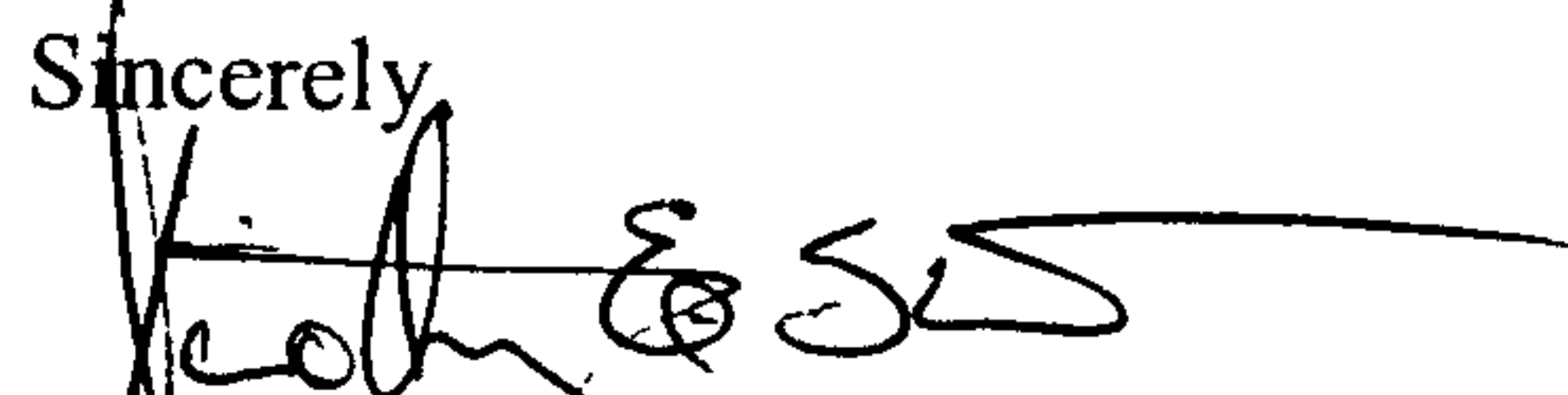
Based upon the information provided in the submittal received 12-10-10, the above referenced Certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

PO Box 1293

If you have any questions, you can contact me at 924-3982.

Sincerely,

Albuquerque


Timothy E. Sims
Plan Checker—Hydrology
Development and Building Services

NM 87103

www.cabq.gov

Copy: file
CO Clerk—Katrina Sigala

DRAINAGE INFORMATION SHEET

(REV. 1/28/2003)

PROJECT TITLE: Tract 3B-1 ZONE ATLAS/DRNG. FILE #: c-17-~~7~~D106
DRB #: _____ EPC#: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: Parcel A – Stonebridge Pointe Subdivision
CITY ADDRESS: 8814 Horizon

| | | | |
|-------------------|---|-----------|----------------------|
| ENGINEERING FIRM: | <u>Huitt-Zollars, Inc.</u> | CONTACT: | <u>Scott Eddings</u> |
| ADDRESS: | <u>333 Rio Rancho Blvd.</u> | PHONE: | <u>892-5141</u> |
| CITY, STATE: | <u>Rio Rancho, NM</u> | ZIP CODE: | <u>87124</u> |
| OWNER: | <u>Cauwels and Stuve</u> | CONTACT: | <u>Mark Haley</u> |
| ADDRESS: | <u>6001 Indian School Road NE Suite 400</u> | PHONE: | <u>266-5711</u> |
| CITY, STATE: | <u>Albuquerque, NM</u> | ZIP CODE: | <u>87110</u> |
| ARCHITECT: | <u>Cauwels and Stuvey</u> | CONTACT: | _____ |
| ADDRESS: | _____ | PHONE: | _____ |
| CITY, STATE: | _____ | ZIP CODE: | _____ |
| SURVEYOR: | <u>Huitt-Zollars, Inc.</u> | CONTACT: | _____ |
| ADDRESS: | <u>333 Rio Rancho Blvd</u> | PHONE: | _____ |
| CITY, STATE: | <u>Rio Rancho, NM</u> | ZIP CODE: | _____ |
| CONTRACTOR: | _____ | CONTACT: | _____ |
| ADDRESS: | _____ | PHONE: | _____ |
| CITY, STATE: | _____ | ZIP CODE: | _____ |

CHECK TYPE OF SUBMITTAL:

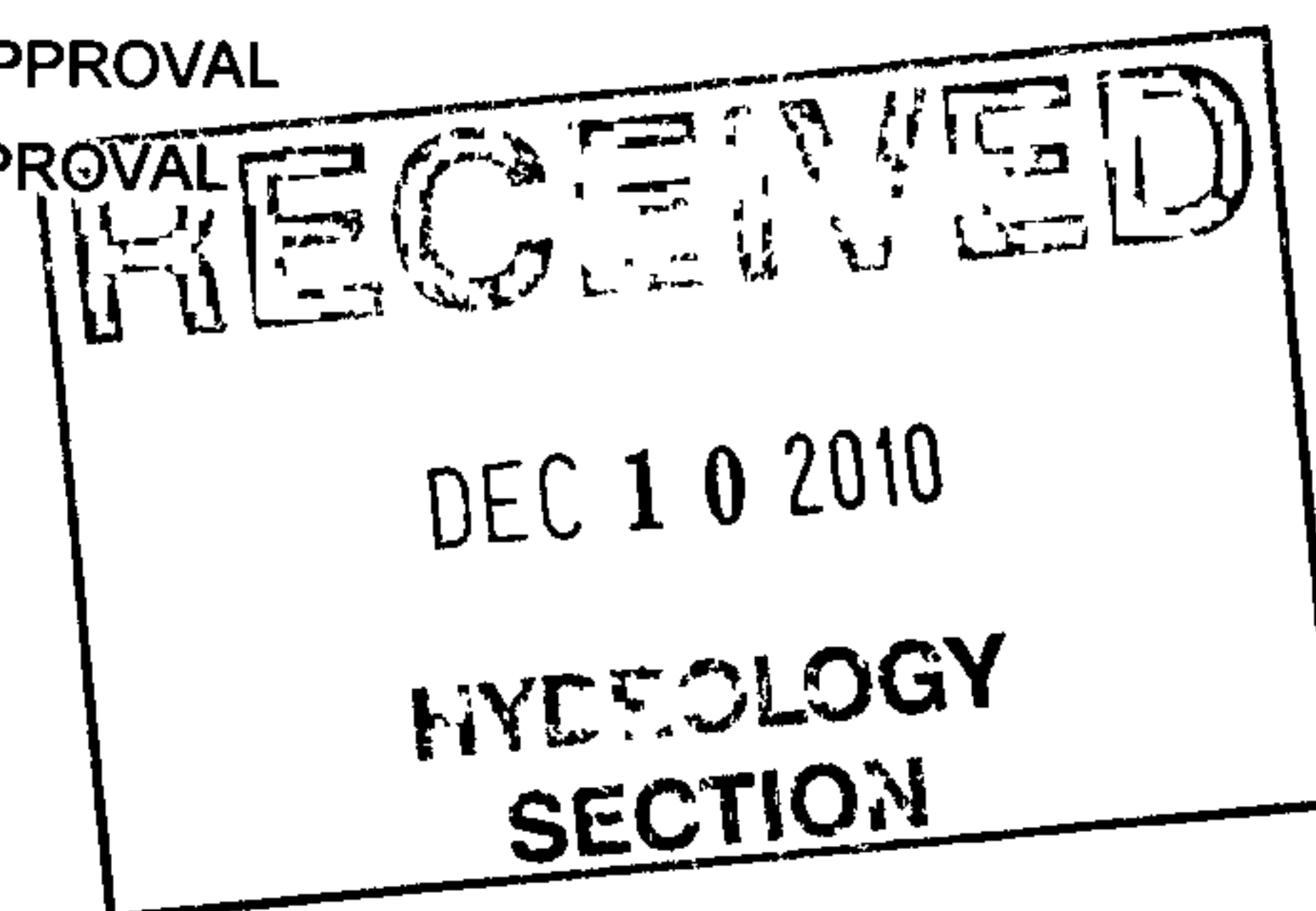
☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1ST SUBMITTAL, *REQUIRES TCL or equal*
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ ENGINEER'S CERTIFICATION (TCL)
☐ ENGINEER'S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

CHECK TYPE OF APPROVAL SOUGHT:

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

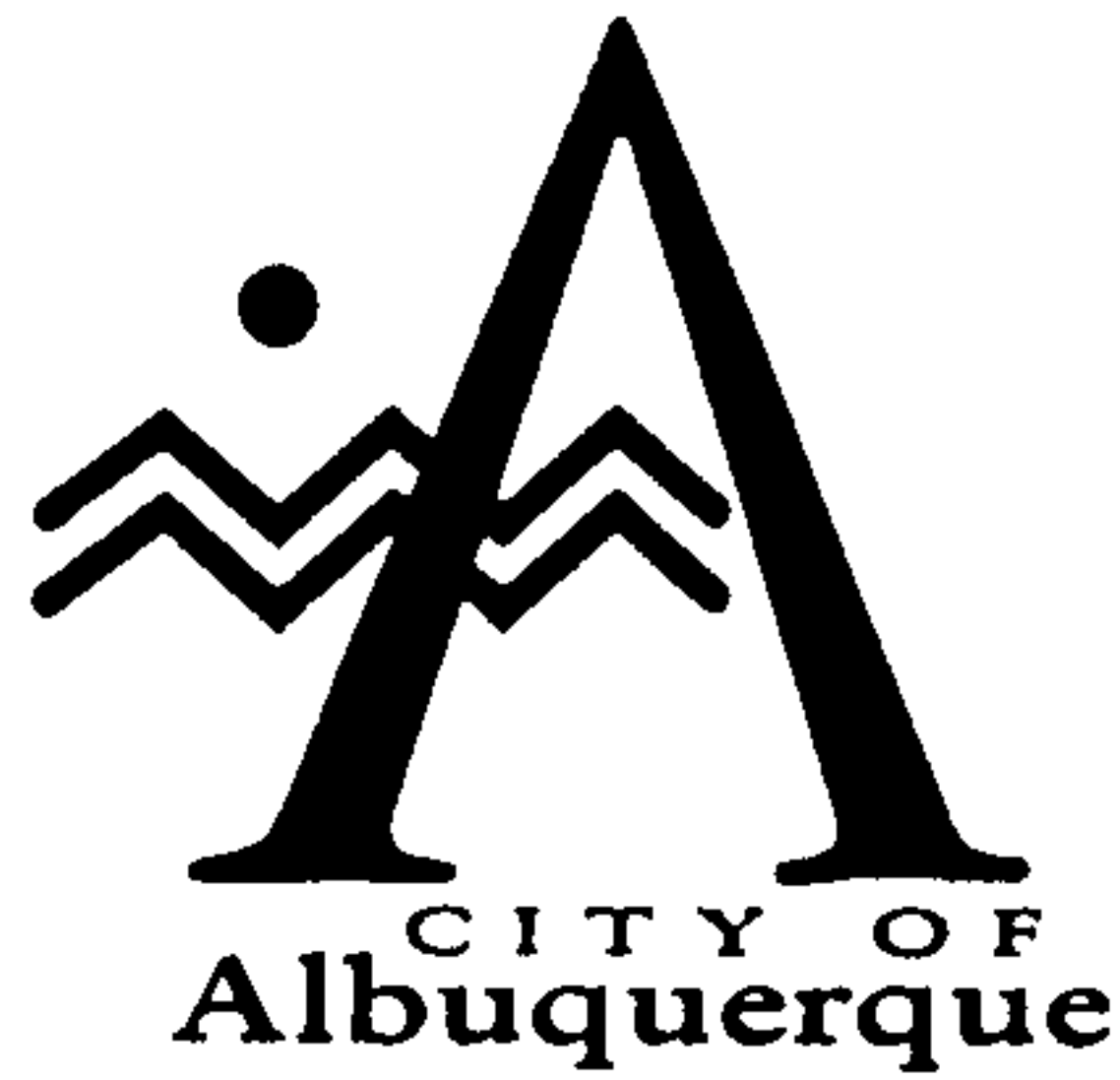
WAS A PRE-DESIGN MEETING ATTENDED:

☒ YES
☐ NO
☐ COPY PROVIDED

DATE SUBMITTED: 12/10/10BY: Scott Eddings

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

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



November 10, 1998

Kim Kemper, P.E.
Kemper-Vaughan
3700 Coors Rd. NW
Albuquerque, NM 87120

**RE: INTEGRATED HEALTH SERVICES (LANDS OF HORIZON HEALTHCARE)
(C17-D106). GRADING AND DRAINAGE PLAN FOR PRELIMINARY PLAT
APPROVAL. ENGINEER'S STAMP DATED OCTOBER 13, 1998.**

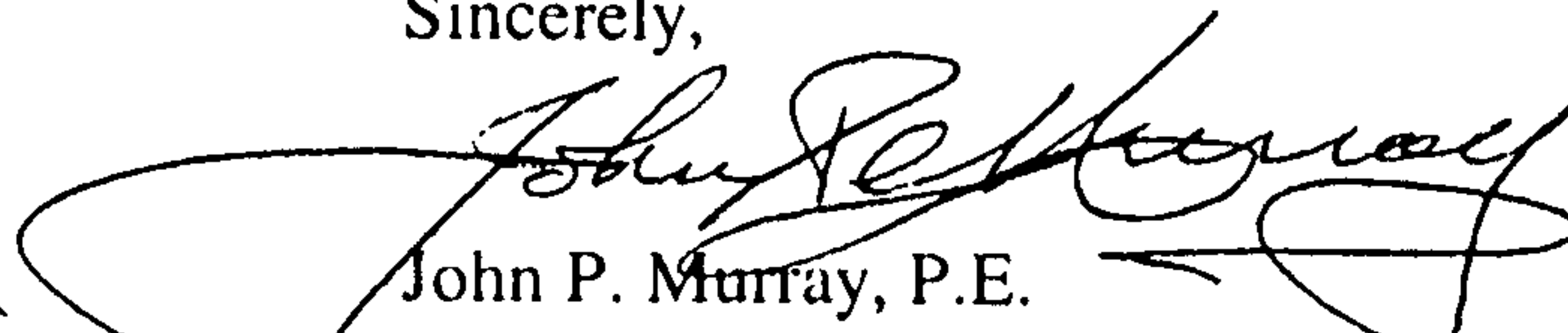
Dear Mr. Kemper:

Based on the information provided on your October 14, 1998 submittal, the above referenced project is approved for Preliminary Plat Approval.

These proposed drainage easements are based upon Grading Plans stamped June 4, 1996 and Record Drawings stamped October 14, 1997.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,



John P. Murray, P.E.
Hydrology

c: Andrew Garcia
✓ File

Good for You, Albuquerque!



DRAINAGE INFORMATION SHEET

NW 106

PROJECT TITLE: INTEGRATED HEALTH SERVICES ZONE ATLAS/DRNG. FILE #: ~~DET~~-C-17

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: LANDS OF HORIZON HEALTHCARE INC,CITY ADDRESS: 8801 HORIZON BLVD.ENGINEERING FIRM: KEMPER-VAUGHAN CONTACT: KIM R KEMPERADDRESS: 3700 COORS RD NW, SUITE C PHONE: 831-4520OWNER: INTEGRATED HEALTH SERVICES. CONTACT: JEFF STIVEADDRESS: 8801 HORIZON BLVD. PHONE: 878-6438

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: RIO GRANDE SURVEYING CONTACT: REX VOGIERADDRESS: 3700 COORS RD NW PHONE: 831-4511

CONTRACTOR: _____ CONTACT: _____

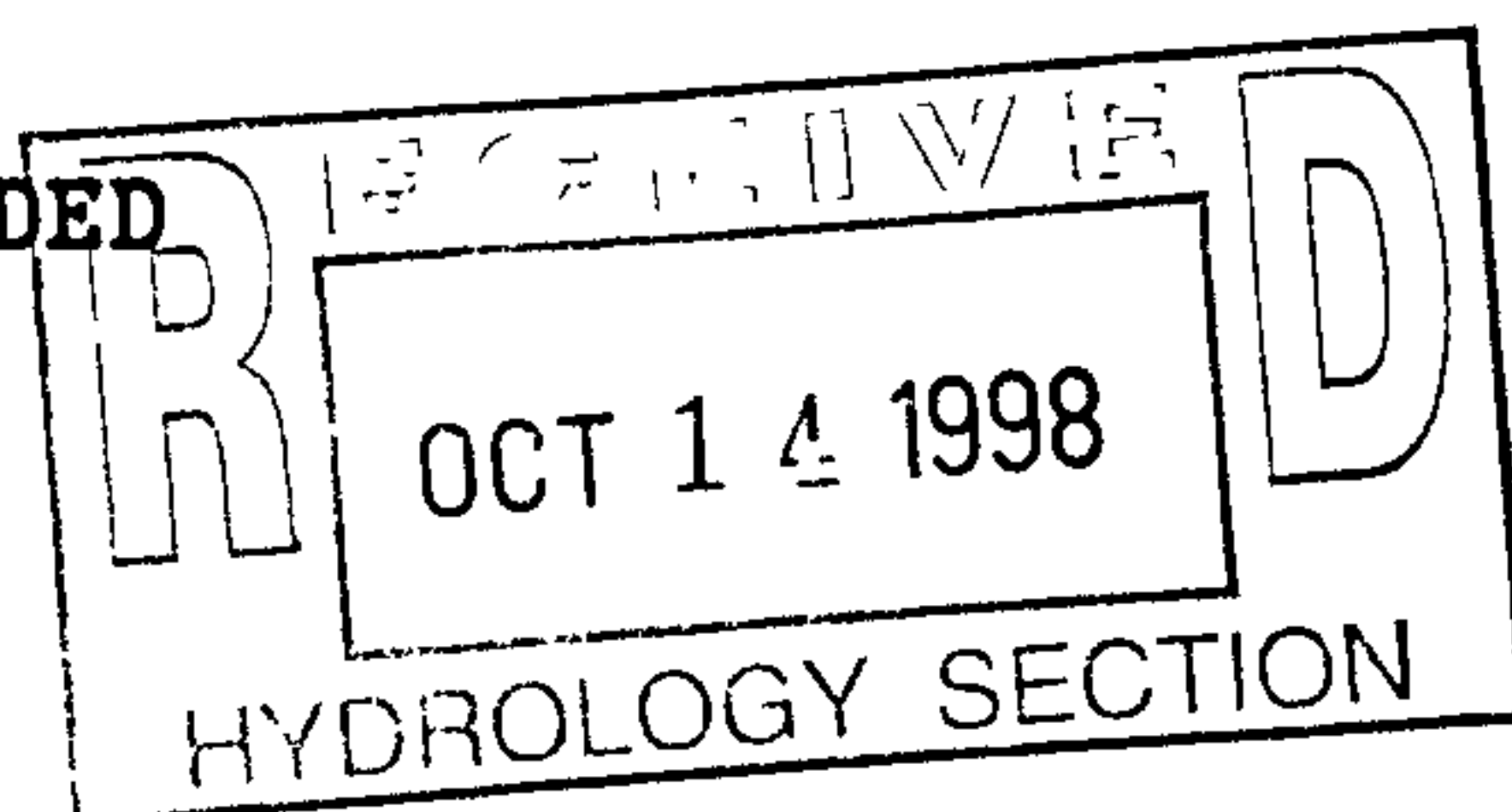
ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER _____

PRE-DESIGN MEETING:

- ☐ YES
☐ NO
☐ COPY PROVIDED



CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☒ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: 10/14/98BY: Kim R. Kemper

K**KEMPER-VAUGHAN
CONSULTING ENGINEERS**

3700 Coors Road N.W.
Albuquerque, N.M. 87120
(505) 831-4520

V

October 13, 1998

Mr. Fred Aguirre, P.E.
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Grading & Drainage Plan for Subdivision
Lands of Integrated Health Services, Inc. (Formally Land of Horizon Healthcare, Inc.)
Alameda Boulevard

Dear Fred:

Enclosed is the grading and drainage plan and supporting information for the proposed subdivision, which we brought to DRB last month (sketch plat). To recap the situation and plans for the property, the subject property has been sold twice in approximately the past year. Integrated Health Service, Inc., a company out of Baltimore Maryland, now holds the property. In its current state, there are four (4) main buildings on the large tract of land. Integrated Health Services, Inc., plans to divest itself of two (2) of the four (4) buildings; hence, the need for the proposed subdivision and the creation of private drainage easements. I should point out that there is no construction or improvements of any kind proposed to the property as part of this action.

At the time all the improvements on this property were proposed and completed it was within Bernalillo County and not the City of Albuquerque. Only recently has this parcel been annexed into the City. As such, the grading and drainage plan(s) were processed and approved through Bernalillo County Public Works. The original grading and drainage plan approved in 1996 consisted of four sheets and a drainage report. This grading plan was a rough-grading plan only. I have included this information with this submittal. Subsequent construction documents included a finish-grading plan upon which the Record Drawings were prepared to reflect as-constructed conditions. I have also included prints of these plans with this submittal. This site has been completed and occupied for approximately one (1) year.

The overall project was constructed in substantial compliance with the original plan and the drainage functions as designed with only one (1) exception. It was our intention to drain the entire site into the Northern Diversion Channel through the channel side inlet at the southern most point of the property. As a result of the Balloon Fiesta's paving of their pilot access road between this parcel and the Diversion Channel, drainage from the northern two (2) buildings (through the drop inlet and culvert) was diverted to another inlet north of the original location.

Additionally, there was continued site and building layout development subsequent to the submittal of the original grading plan. Therefore, construction documents (finish grading plans) included minor changes in the drainage scheme to accommodate the final construction. Those revisions are as follows:

Fred Aguirre
Integrated Health
10/13/98
Page 2

1. Concrete curbing enclosing riprap was added to the southern discharge point in lieu of a concrete rundown. This was coordinated with Mr. John Kelly who originally requested the concrete rundown through AMAFCA right-of-way.
2. A drop inlet and approximately 250 feet of 18" pipe was added to the project to drain the circular drive area in front of the Office Building. This we did on our own to better accommodate the drainage entering the drive area.
3. Garden-type inlets and PVC under drains were added to the courtyard area of the Assisted Living Building.
4. Additional PVC under drains were added in the area between the Assisted Living Building and the Wellness Building to accommodate changes in the sidewalk alignment.

Finally, I have provided a print of the sketch plat identifying the private drainage easements that are necessary to the subdivision.

If you should have any questions or if you need some addition data please call me.

Sincerely,

KEMPER-VAUGHAN CONSULTING ENGINEERS

A handwritten signature in black ink, appearing to read "Kim R. Kemper", with a large, stylized flourish at the end.

Kim R. Kemper, P.E.
Project Manager

DRAINAGE PLAN
FOR:
HORIZON HEALTHCARE CORPORATION
ALAMEDA BLVD.
ALBUQUERQUE, NEW MEXICO

PREPARED BY:
KEMPER-VAUGHAN CONSULTING ENGINEERS
3700 COORS ROAD NW
ALBUQUERQUE, NEW MEXICO 87120

GENERAL INFORMATION

LEGAL DESCRIPTION:

A CERTAIN PARCEL OF LAND SITUATED WITHIN THE ELLENA GALLEGOS GRANT, IN PROJECTED SECTIONS 14 AND 15, TOWNSHIP 11 NORTH, RANGE 3 EAST OF THE NEW MEXICO PRINCIPAL MERIDIAN, BERNALILLO COUNTY, NEW MEXICO, SAID PARCEL BEING THE LAND OF HORIZON HEALTHCARE CORPORATION AS THE SAME AS DESCRIBED IN THE WARRANTY DEED RECORDED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON SEPTEMBER 11, 1992 IN BOOK 92-21, PAGES 4786-4796.

BENCH MARK:

"ACS BRASS CAP 8-C17, LOCATED IN NORTHEAST ALBUQUERQUE ON WASHINGTON STREET 0.3 MILES NORTH OF LOS ANGELES BLVD."

PROJECT BENCH MARK:

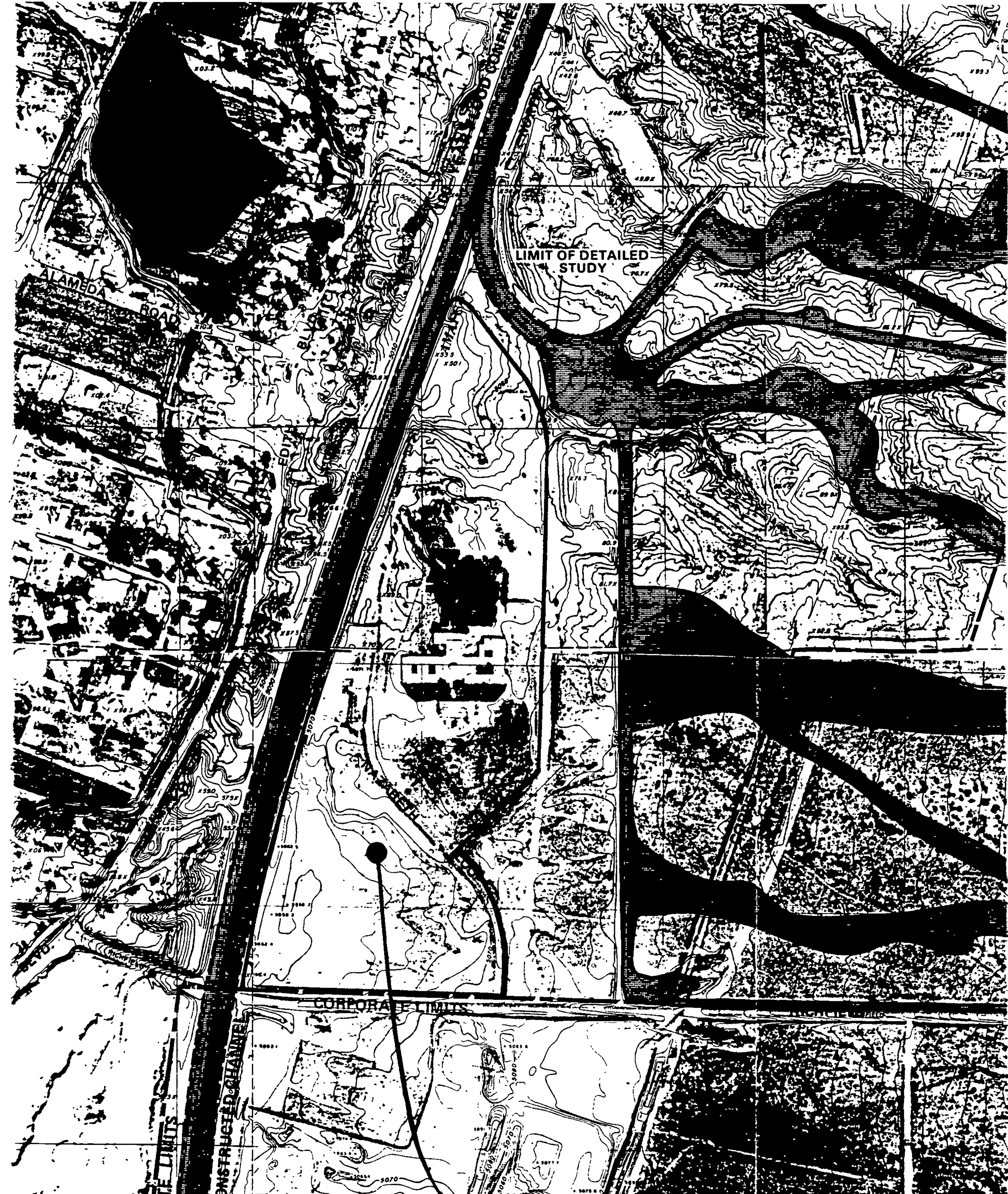
CONTROL POINT NUMBER 3 LOCATED WITHIN THE PARCEL (CENTER OF BASIN B AS SHOWN ON THE GRADING PLAN), A #4 REBAR, ELEVATION 5972.20.

CONTROL POINT NUMBER 2 LOCATED WITHIN THE ALAMEDA BLVD. RIGHT-OF-WAY (NEAR CENTERLINE) ADJACENT TO THE ENTRANCE ROAD TO THE PROJECT SITE, A NAIL AND SHINNER, ELEVATION 5070.54.

CERTIFICATION:

THE EXISTING SITE DATA, TOPOGRAPHY AND LOCATION, SHOWN ON THE GRADING PLAN FOR HORIZON HEALTHCARE CORPORATION WITH ENGINEERS SEAL DATED 5-14-96, WAS PREPARED AND PROVIDED BY BOHANNON-HUSTON, INC. OF ALBUQUERQUE NEW MEXICO. SUBSEQUENTLY, I PERSONALLY INSPECTED THE SITE AND AT THE TIME OF INSPECTION (LAST INSPECTION 5-13-96), IT APPEARED THAT NO FILLING OR GRADING HAD BEEN DONE AT THIS SITE SINCE THE PREPARATION OF THE DATA SHOWN ON THE GRADING PLAN.





FLOOD BOUNDARY MAPS 3 & 9
DATED OCTOBER 1983

PROJECT LOCATION

PROJECT OVERVIEW

THE EXISTING SITE LIES WITHIN BERNALILLO COUNTY ADJACENT TO ALAMEDA BLVD. AND THE NORTH DIVERSION CHANNEL. THERE IS AN EXISTING HOSPITAL AT THE SITE WHICH HAS BEEN IN OPERATION FOR MANY YEARS. THE PROPOSED IMPROVEMENTS TO THE SITE INCLUDE THE CONSTRUCTION OF THREE (3) NEW BUILDINGS. CONSTRUCTION OF THESE BUILDING WILL BE PHASED; HOWEVER, THEY ARE ALL PROGRAMMED TO START CONSTRUCTION THIS CALENDAR YEAR. AS SUCH, THIS PLAN ADDRESS ALL THE NEW FACILITIES AS A SINGLE PROJECT.

AS SHOWN ON SHEET 1 OF THE GRADING PLAN, THE PROPOSED SITE CAN BE DIVIDED INTO SEVERAL DISTINCT DRAINAGE AREAS OR BASINS. A SUMMARY OF EXISTING AND PROPOSED CONDITIONS FOR EACH OF THESE BASINS IS GIVEN BELOW. OTHER THAN THE SINGLE OFFSITE FLOWS IDENTIFIED BELOW (BASIN OFF-1), THERE ARE NO OFFSITE FLOWS WHICH IMPACT THIS SITE. THE SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD AREA.

BASIN A BASIN A CONTAINS NEARLY ALL OF THE EXISTING IMPROVEMENTS AT THE SITE. THIS AREA CURRENTLY DRAINS TO THE NORTH WHERE THE RUNOFF ENTERS THE NORTH DIVERSION CHANNEL THROUGH AN EXISTING SIDE INLET. WITH THE EXCEPTION OF RELOCATING A SMALL SEGMENT OF ROADWAY, NO WORK WILL BE COMPLETED IN THIS AREA UNDER THE PROPOSED PROJECT.

BASIN B CURRENTLY BASIN B IS UNDEVELOPED AND HAS A LIMITED AMOUNT OF IMPERVIOUS AREA; A SMALL AREA OF ROOF AND PARKING/ACCESS TO THE EXISTING HOSPITAL. THERE EXISTS SOME DEPRESSIONS WITHIN THIS BASIN WHICH STAND WATER DURING A RAIN EVENT. RUNOFF THEN BREACHES THE EXISTING ACCESS ROAD AND FLOWS SOUTH AND WEST TO ANOTHER SIDE INLET TO THE NORTH DIVERSION CHANNEL.

TWO (2) NEW BUILDINGS, ADDITIONAL PARKING AND A NEW ACCESS ROAD ARE PLANNED WITHIN THIS BASIN. THE PROPOSED PLAN WILL CONVEY STORM WATER TO THE NEW ACCESS ROAD AND INTO A NEW DROP INLET. THE STORM WATER WILL THEN BE PIPED TO A CONSTRUCTED CHANNEL AND THEN CONVEYED TO THE SOUTHERN MOST SIDE INLET TO THE DIVERSION CHANNEL.

BASIN OFF-1 THIS OFFSITE AREA IS CURRENTLY UNDER CONSTRUCTION. THE IMPROVEMENTS TO THIS PARCEL INCLUDE CONSTRUCTION OF NEW PARKING AND BASEBALL FIELDS FOR EASTDALE LITTLE LEAGUE. NO PROVISIONS WERE MADE IN THE PLANS FOR THIS PARK TO CONTROL/DIVERT THE STORM WATER CREATED BY THIS DEVELOPMENT. AS SUCH, THIS PLAN INCLUDES PROPOSED GRADING WHICH WILL "SLOW DOWN" THE RUNOFF FROM THIS SITE TO HELP LIMIT SEDIMENT TRANSPORT AND WILL ACCEPT THESE WATERS ONTO THE PROPOSED ENTRANCE ROAD. THIS RUNOFF WILL THEN PASS THROUGH THE SITE AND WILL BE DISCHARGED TO THE EXISTING DIVERSION INLET.

BASIN C-1 THIS AREA IS CURRENTLY UNDEVELOPED. EXCESS PRECIPITATION CURRENTLY "SHEET" FLOWS SOUTH AND WEST WHERE IT THEN FLOWS INTO THE SIDE INLET OF THE DIVERSION CHANNEL. THIS SUB-BASIN WILL COMPRISE OF ALL IMPERVIOUS AND LANDSCAPE TREATMENT UNDER THE PROPOSED PLAN. THIS SUB-BASIN WILL BE GRADED TO CONVEY STORM WATERS TO THE PARKING LOT AREA WITHIN SUB-BASIN C-2. WATERS WILL THEN PASS THROUGH THE PARKING LOT AND DISCHARGE TO THE DIVERSION CHANNEL.

BASIN C-2 THIS AREA IS CURRENTLY UNDEVELOPED. EXCESS PRECIPITATION "SHEET" FLOWS SOUTH AND WEST WHERE IT THEN FLOWS INTO THE SIDE INLET OF THE DIVERSION CHANNEL. UNDER THE PROPOSED SITE PLAN, THIS AREA WILL BE LARGELY IMPERVIOUS. STORM WATERS WILL BE CONVEYED TO AND THROUGH THE PARKING LOT TO THE DISCHARGE POINT AT THE DIVERSION CHANNEL. THIS SUB-BASIN ACCEPTS THE DISCHARGE FROM SUB-BASIN C-1 AND BASIN OFF-1.

BASIN C-3 THIS SUB-BASIN IS CURRENTLY UNDEVELOPED. CURRENT DRAINAGE PATTERNS ARE CONSISTENT WITH SUB-BASINS C-1 AND C-2 ABOVE. THIS SUB-BASIN WILL REMAIN UNIMPROVED WITH THE PROPOSED PROJECT. HOWEVER, AS PART OF THE EFFORT TO CONTROL OTHER RUNOFF AND TO HELP KEEP NUISANCE WATER OFF OF THE FUTURE BALLOON PARK ACCESS ROAD WITHIN THE AMAFCA RIGHT-OF-WAY, A BERM IS PROPOSED TO DIRECT THIS RUNOFF TO THE COMMON DISCHARGE POINT AT THE SOUTH WEST CORNER OF THE PARCEL.

THE FOLLOWING CALCULATIONS WERE DEVELOPED USING THE CITY OF ALBUQUERQUE DPM SECTION 22.2, JANUARY 1993.

SITE CHARACTERISTICS:

SITE LOCATION: ZONE 2

PRECIPITATION: P = 2.35 inches

LAND TREATMENT: EXISTING UNCOMP. GROUND - TREATMENT A
LANDSCAPE AREAS - TREATMENT B
COMP. GROUND - TREATMENT C
BUILDINGS/PAVING/CONC. - TREATMENT D

EXCESS PRECIPITATION:

| | | 100YR. | 10YR. | 2YR. |
|-------------|----|-------------|-------------|-------------|
| TREATMENT A | E= | 0.53 inches | 0.13 inches | 0.00 inches |
| TREATMENT B | E= | 0.78 inches | 0.28 inches | 0.02 inches |
| TREATMENT C | E= | 1.13 inches | 0.52 inches | 0.15 inches |
| TREATMENT D | E= | 2.12 inches | 1.34 inches | 0.79 inches |

PEAK DISCHARGE:

| | | 100YR. | 10YR. | 2YR. |
|-------------|----|---------------|---------------|---------------|
| TREATMENT A | Q= | 1.56 cfs/acre | 0.38 cfs/acre | 0.00 cfs/acre |
| TREATMENT B | Q= | 2.28 cfs/acre | 0.95 cfs/acre | 0.08 cfs/acre |
| TREATMENT C | Q= | 3.14 cfs/acre | 1.71 cfs/acre | 0.60 cfs/acre |
| TREATMENT D | Q= | 4.70 cfs/acre | 3.14 cfs/acre | 1.86 cfs/acre |

BASIN AREAS AS SHOWN ON GRADING PLAN (ALL FIGURES ARE IN ACRES)

BASIN OFF-1 - OFF-1
 BASIN B - B
 BASIN C-1 - C-1
 BASIN C-2 - C-2
 BASIN C-3 - C-3

EXISTING:

| | OFF-1 | B | C-1 | C-2 | C-3 |
|-------------|-------|-------|------|------|------|
| TREATMENT A | 0.00 | 4.93 | 0.00 | 0.00 | 0.00 |
| TREATMENT B | 0.20 | 0.25 | 0.00 | 0.00 | 0.00 |
| TREATMENT C | 8.44 | 4.93 | 2.50 | 7.90 | 5.27 |
| TREATMENT D | 0.06 | 1.04 | 0.00 | 0.23 | 0.00 |
| | 8.70 | 11.15 | 2.50 | 8.13 | 5.27 |

PROPOSED:

| | OFF-1 | B | C-1 | C-2 | C-3 |
|-------------|-------|-------|------|------|------|
| TREATMENT A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TREATMENT B | 0.20 | 3.05 | 0.54 | 1.86 | 0.00 |
| TREATMENT C | 8.44 | 1.89 | 0.00 | 0.20 | 5.17 |
| TREATMENT D | 0.06 | 6.21 | 1.96 | 6.07 | 0.10 |
| | 8.70 | 11.15 | 2.50 | 8.13 | 5.27 |

EXCESS PRECIPITATION & VOLUMETRIC RUNOFF:

EXISTING RUNOFF:

BASIN OFF-1

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.20) + (1.13)(8.44) + (2.12)(0.06)}{8.70}$$

$$V_{100-6\text{hr}} = (1.13)(8.70)/12 = 0.818 \text{ acre-ft} = 35,650 \text{ cf}$$

BASIN B

$$\text{WEIGHTED E} = \frac{(0.53)(4.93) + (0.78)(0.25) + (1.13)(4.93) + (2.12)(1.04)}{11.15}$$

$$V_{100-6\text{hr}} = (0.95)(11.15)/12 = 0.882 \text{ acre-ft} = 38,400 \text{ cf}$$

BASIN C-1

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.00) + (1.13)(2.50) + (2.12)(0.00)}{2.50}$$

$$V_{100-6\text{hr}} = (1.13)(2.50)/12 = 0.235 \text{ acre-ft} = 10,250 \text{ cf}$$

BASIN C-2

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.00) + (1.13)(7.90) + (2.12)(0.23)}{8.13}$$

$$V_{100-6\text{hr}} = (1.16)(8.13)/12 = 0.784 \text{ acre-ft} = 34,200 \text{ cf}$$

BASIN C-3

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.00) + (1.13)(5.27) + (2.12)(0.00)}{5.27}$$

$$V_{100-6\text{hr}} = (1.13)(5.27)/12 = 0.496 \text{ acre-ft} = 21,600 \text{ cf}$$

DEVELOPED RUNOFF:

BASIN OFF-1

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.20) + (1.13)(8.44) + (2.12)(0.06)}{8.70}$$

$$V_{100-6\text{hr}} = (1.13)(8.70)/12 = 0.818 \text{ acre-ft} = 35,650 \text{ cf}$$

BASIN B

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(3.05) + (1.13)(1.89) + (2.12)(6.21)}{11.15}$$

$$V_{100-6\text{hr}} = (1.58)(11.15)/12 = 1.473 \text{ acre-ft} = 64,200 \text{ cf}$$

BASIN C-1

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.54) + (1.13)(0.00) + (2.12)(1.96)}{2.50}$$

$$V_{100-6\text{hr}} = (1.83)(2.50)/12 = 0.381 \text{ acre-ft} = 16,600 \text{ cf}$$

BASIN C-2

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(1.86) + (1.13)(0.20) + (2.12)(6.07)}{8.13}$$

$$V_{100-6\text{hr}} = (1.79)(8.13)/12 = 1.212 \text{ acre-ft} = 52,800 \text{ cf}$$

BASIN C-3

$$\text{WEIGHTED E} = \frac{(0.53)(0.00) + (0.78)(0.00) + (1.13)(5.17) + (2.12)(0.10)}{5.27}$$

$$V_{100-6\text{hr}} = (1.15)(5.27)/12 = 0.504 \text{ acre-ft} = 22,000 \text{ cf}$$

PEAK DISCHARGE:

EXISTING DISCHARGE:

BASIN OFF-1

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.20) + (3.14)(8.44) + (4.70)(0.06) \\ &= 27.3 \text{ cfs} \end{aligned}$$

BASIN B

$$\begin{aligned} Q_{100} &= (1.56)(4.93) + (2.28)(0.25) + (3.14)(4.93) + (4.70)(1.04) \\ &= 28.6 \text{ cfs} \end{aligned}$$

BASIN C-1

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.00) + (3.14)(2.50) + (4.70)(0.00) \\ &= 7.9 \text{ cfs} \end{aligned}$$

BASIN C-2

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.00) + (3.14)(7.90) + (4.70)(0.23) \\ &= 25.9 \text{ cfs} \end{aligned}$$

BASIN C-3

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.00) + (3.14)(5.27) + (4.70)(0.00) \\ &= 16.5 \text{ cfs} \end{aligned}$$

DEVELOPED DISCHARGE:

BASIN OFF-1

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.20) + (3.14)(8.44) + (4.70)(0.06) \\ &= 27.3 \text{ cfs} \end{aligned}$$

BASIN B

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(3.05) + (3.14)(1.89) + (4.70)(6.21) \\ &= 42.1 \text{ cfs} \end{aligned}$$

BASIN C-1

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.54) + (3.14)(0.00) + (4.70)(1.96) \\ &= 10.4 \text{ cfs} \end{aligned}$$

BASIN C-2

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(1.86) + (3.14)(0.20) + (4.70)(6.07) \\ &= 33.4 \text{ cfs} \end{aligned}$$

BASIN C-3

$$\begin{aligned} Q_{100} &= (1.56)(0.00) + (2.28)(0.00) + (3.14)(5.17) + (4.70)(0.10) \\ &= 16.7 \text{ cfs} \end{aligned}$$

RESULTS:

VOLUMETRIC RUNOFF:

BASIN OFF-1 - NO AFFECT

BASIN B - $64,200 - 38,400 = 25,800$ cf increase

BASIN C-1 - $16,600 - 10,250 = 6,350$ cf increase

BASIN C-2 - $52,800 - 34,200 = 18,600$ cf increase

BASIN C-3 - $22,000 - 21,600 = 400$ cf increase

PEAK RUNOFF:

BASIN OFF-1 - NO AFFECT

BASIN B - $42.1 - 28.6 = 13.5$ cfs increase

BASIN C-1 - $10.4 - 7.9 = 2.5$ cfs increase

BASIN C-2 - $33.4 - 25.9 = 7.5$ cfs increase

BASIN C-3 - $16.7 - 16.5 = 0.2$ cfs increase

DRAINAGE RUNDOWN/SWALE - REQUIREMENTS/CAPACITIES

BASIN B - 42.1 cfs

SEE ANALYSIS ON - PIPE CULVERT
SECTION C1-C1 & C2-C2

BASIN C-3 - 16.7 cfs

BASIN B + BASIN C-3 = 58.8 cfs

SEE ANALYSIS ON SECTION B2-B2

BASIN C-1, C-2, & OFF-1 = 71.1 cfs

TOTAL SITE (ALL BASINS) = 129.9 cfs

SEE ANALYSIS ON - SECTION B1-B1
- CONC. RUNDOWN TO SIDE INLET OF DIVERSION
CHANNEL (WITHIN AMAFCA R/W)

BASIN C-2 - $27.3 + 33.4 + 16.7 = 77.4$ cfs

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

June 4, 1996
DROP INLET
PIPE CULVERT
BASIN B

PROGRAM INPUT DATA:

| DESCRIPTION | VALUE |
|---|--------|
| Culvert Diameter (feet)..... | 2.50 |
| FHWA Chart Number (1,2 or 3)..... | 1 |
| Scale Number on Chart (Type of Culvert Entrance)..... | 1 |
| Manning's Roughness Coefficient (n-value)..... | 0.0130 |
| Entrance Loss Coefficient of Culvert Opening..... | 0.50 |
| Culvert Length (feet)..... | 40.0 |
| Culvert Slope (feet per foot)..... | 0.0200 |

PROGRAM RESULTS:

| Flow Rate (cfs) | Tailwater Depth (ft) | Headwater Inlet Control | Headwater Outlet Control | Normal Depth (ft) | Critical Depth (ft) | Depth at Outlet (ft) | Outlet Velocity (fps) |
|--------------------|-------------------------|----------------------------|-----------------------------|----------------------|------------------------|-------------------------|--------------------------|
| 10.0 | 0.00 | 1.50 | 1.10 | 0.70 | 1.06 | 0.70 | 8.85 |
| 15.0 | 0.00 | 1.92 | 1.37 | 0.87 | 1.31 | 0.87 | 9.92 |
| 20.0 | 0.00 | 2.32 | 1.69 | 1.01 | 1.52 | 1.01 | 10.72 |
| 25.0 | 0.00 | 2.72 | 2.05 | 1.15 | 1.70 | 1.15 | 11.40 |
| 30.0 | 0.00 | 3.21 | 2.47 | 1.28 | 1.87 | 1.28 | 11.92 |
| 35.0 | 0.00 | 3.70 | 2.93 | 1.40 | 2.01 | 1.40 | 12.39 |
| 40.0 | 0.00 | 4.32 | 3.44 | 1.53 | 2.13 | 1.53 | 12.73 |
| 42.0 | 0.00 | 4.59 | 3.66 | 1.57 | 2.17 | 1.57 | 12.90 |

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

May 14, 1996
WEST PROPERTY LINE BERM
SECTION B2-B2

PROGRAM INPUT DATA:
DESCRIPTION

| DESCRIPTION | VALUE |
|--|--------|
| Channel Bottom Slope (feet per foot)..... | 0.0010 |
| Manning's Roughness Coefficient (n-value)..... | 0.0300 |
| Channel Side Slope - Left Side (horizontal/vertical).... | 10.00 |
| Channel Side Slope - Right Side (horizontal/vertical)... | 3.00 |
| Channel Bottom Width (feet)..... | 6.0 |

PROGRAM RESULTS:

| Depth (ft) | Flow Rate (cfs) | Velocity (fps) | Froude Number | Velocity Head(ft) | Energy Head(ft) | Flow Area (sq ft) | Top Width (ft) |
|---------------|--------------------|-------------------|---------------|-------------------|-----------------|----------------------|-------------------|
| 1.0 | 14.7 | 1.18 | 0.256 | 0.021 | 1.021 | 12.5 | 19.0 |
| 1.1 | 17.9 | 1.24 | 0.259 | 0.024 | 1.124 | 14.5 | 20.3 |
| 1.2 | 21.6 | 1.30 | 0.262 | 0.026 | 1.226 | 16.6 | 21.6 |
| 1.3 | 25.6 | 1.36 | 0.265 | 0.029 | 1.329 | 18.8 | 22.9 |
| 1.4 | 30.0 | 1.42 | 0.268 | 0.031 | 1.431 | 21.1 | 24.2 |
| 1.5 | 34.9 | 1.48 | 0.270 | 0.034 | 1.534 | 23.6 | 25.5 |
| 1.6 | 40.2 | 1.53 | 0.273 | 0.036 | 1.636 | 26.2 | 26.8 |
| 1.7 | 46.0 | 1.59 | 0.275 | 0.039 | 1.739 | 29.0 | 28.1 |
| 1.8 | 52.2 | 1.64 | 0.277 | 0.042 | 1.842 | 31.9 | 29.4 |
| 1.9 | 58.9 | 1.69 | 0.280 | 0.044 | 1.944 | 34.9 | 30.7 |
| 2.0 | 66.2 | 1.74 | 0.282 | 0.047 | 2.047 | 38.0 | 32.0 |

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

May 13, 1996
SECTION C2
AT DISCHARGE OF 30" CULVERT

PROGRAM INPUT DATA:
DESCRIPTION

| | VALUE |
|--|--------|
| Channel Bottom Slope (feet per foot)..... | 0.0060 |
| Manning's Roughness Coefficient (n-value)..... | 0.0300 |
| Channel Side Slope - Left Side (horizontal/vertical).... | 5.00 |
| Channel Side Slope - Right Side (horizontal/vertical)... | 5.00 |
| Channel Bottom Width (feet)..... | 6.0 |

PROGRAM RESULTS:

| Depth (ft) | Flow Rate (cfs) | Velocity (fps) | Froude Number | Velocity Head(ft) | Energy Head(ft) | Flow Area (sq ft) | Top Width (ft) |
|---------------|--------------------|-------------------|------------------|----------------------|--------------------|----------------------|-------------------|
| 0.5 | 8.6 | 2.02 | 0.574 | 0.064 | 0.564 | 4.3 | 11.0 |
| 0.6 | 12.1 | 2.24 | 0.588 | 0.078 | 0.678 | 5.4 | 12.0 |
| 0.7 | 16.2 | 2.44 | 0.600 | 0.092 | 0.792 | 6.6 | 13.0 |
| 0.8 | 21.0 | 2.62 | 0.611 | 0.107 | 0.907 | 8.0 | 14.0 |
| 0.9 | 26.4 | 2.80 | 0.621 | 0.122 | 1.022 | 9.4 | 15.0 |
| 1.0 | 32.6 | 2.96 | 0.630 | 0.136 | 1.136 | 11.0 | 16.0 |
| 1.1 | 39.5 | 3.12 | 0.638 | 0.152 | 1.252 | 12.6 | 17.0 |
| 1.2 | 47.2 | 3.28 | 0.646 | 0.167 | 1.367 | 14.4 | 18.0 |

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

May 14, 1996
WEST PROPERTY LINE BERM
SECTION B1-B1
WITHIN LANDSCAPE AREA

PROGRAM INPUT DATA:
DESCRIPTION

| | VALUE |
|--|--------|
| Channel Bottom Slope (feet per foot)..... | 0.0050 |
| Manning's Roughness Coefficient (n-value)..... | 0.0300 |
| Channel Side Slope - Left Side (horizontal/vertical).... | 20.00 |
| Channel Side Slope - Right Side (horizontal/vertical)... | 3.00 |
| Channel Bottom Width (feet)..... | 6.0 |

PROGRAM RESULTS:

| Depth (ft) | Flow Rate (cfs) | Velocity (fps) | Froude Number | Velocity Head(ft) | Energy Head(ft) | Flow Area (sq ft) | Top Width (ft) |
|---------------|--------------------|-------------------|------------------|----------------------|--------------------|----------------------|-------------------|
| 1.0 | 43.6 | 2.49 | 0.565 | 0.096 | 1.096 | 17.5 | 29.0 |
| 1.1 | 54.0 | 2.63 | 0.573 | 0.108 | 1.208 | 20.5 | 31.3 |
| 1.2 | 65.8 | 2.77 | 0.580 | 0.119 | 1.319 | 23.8 | 33.6 |
| 1.3 | 79.0 | 2.90 | 0.587 | 0.131 | 1.431 | 27.2 | 35.9 |
| 1.4 | 93.7 | 3.03 | 0.593 | 0.143 | 1.543 | 30.9 | 38.2 |
| 1.5 | 110.1 | 3.16 | 0.599 | 0.155 | 1.655 | 34.9 | 40.5 |
| 1.6 | 128.0 | 3.28 | 0.605 | 0.167 | 1.767 | 39.0 | 42.8 |
| 1.7 | 147.7 | 3.40 | 0.611 | 0.179 | 1.879 | 43.4 | 45.1 |
| 1.8 | 169.1 | 3.52 | 0.616 | 0.192 | 1.992 | 48.1 | 47.4 |
| 1.9 | 192.3 | 3.63 | 0.621 | 0.205 | 2.105 | 52.9 | 49.7 |
| 2.0 | 217.4 | 3.75 | 0.626 | 0.218 | 2.218 | 58.0 | 52.0 |

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

May 13, 1996
SECTION C1
LOCATION AS SHOWN ON PLAN

PROGRAM INPUT DATA:

| DESCRIPTION | VALUE |
|--|--------|
| Channel Bottom Slope (feet per foot)..... | 0.0060 |
| Manning's Roughness Coefficient (n-value)..... | 0.0300 |
| Channel Side Slope - Left Side (horizontal/vertical).... | 20.00 |
| Channel Side Slope - Right Side (horizontal/vertical)... | 20.00 |
| Channel Bottom Width (feet)..... | 6.0 |

PROGRAM RESULTS:

| Depth (ft) | Flow Rate (cfs) | Velocity (fps) | Froude Number | Velocity Head(ft) | Energy Head(ft) | Flow Area (sq ft) | Top Width (ft) |
|---------------|--------------------|-------------------|------------------|----------------------|--------------------|----------------------|-------------------|
| 0.5 | 14.0 | 1.75 | 0.555 | 0.047 | 0.547 | 8.0 | 26.0 |
| 0.6 | 21.0 | 1.94 | 0.570 | 0.058 | 0.658 | 10.8 | 30.0 |
| 0.7 | 29.7 | 2.12 | 0.583 | 0.070 | 0.770 | 14.0 | 34.0 |
| 0.8 | 40.4 | 2.30 | 0.594 | 0.082 | 0.882 | 17.6 | 38.0 |
| 0.9 | 53.2 | 2.46 | 0.605 | 0.094 | 0.994 | 21.6 | 42.0 |
| 1.0 | 68.1 | 2.62 | 0.614 | 0.107 | 1.107 | 26.0 | 46.0 |
| 1.1 | 85.5 | 2.78 | 0.623 | 0.120 | 1.220 | 30.8 | 50.0 |
| 1.2 | 105.3 | 2.93 | 0.632 | 0.133 | 1.333 | 36.0 | 54.0 |

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

May 14, 1996
SECTION A-A
CONC. RUNDOWN WITHIN
AMAFCA RIGHT-OF-WAY

PROGRAM INPUT DATA:

| DESCRIPTION | VALUE |
|--|--------|
| Channel Bottom Slope (feet per foot)..... | 0.0200 |
| Manning's Roughness Coefficient (n-value)..... | 0.0130 |
| Channel Side Slope - Left Side (horizontal/vertical).... | 12.00 |
| Channel Side Slope - Right Side (horizontal/vertical)... | 12.00 |
| Channel Bottom Width (feet)..... | 10.0 |

PROGRAM RESULTS:

| Depth (ft) | Flow Rate (cfs) | Velocity (fps) | Froude Number | Velocity Head(ft) | Energy Head(ft) | Flow Area (sq ft) | Top Width (ft) |
|---------------|--------------------|-------------------|------------------|----------------------|--------------------|----------------------|-------------------|
| 0.1 | 3.6 | 3.25 | 1.907 | 0.164 | 0.264 | 1.1 | 12.4 |
| 0.2 | 12.2 | 4.91 | 2.114 | 0.374 | 0.574 | 2.5 | 14.8 |
| 0.3 | 25.2 | 6.19 | 2.239 | 0.595 | 0.895 | 4.1 | 17.2 |
| 0.4 | 43.0 | 7.27 | 2.331 | 0.820 | 1.220 | 5.9 | 19.6 |
| 0.5 | 65.8 | 8.23 | 2.404 | 1.051 | 1.551 | 8.0 | 22.0 |
| 0.6 | 93.9 | 9.10 | 2.465 | 1.285 | 1.885 | 10.3 | 24.4 |
| 0.7 | 127.6 | 9.90 | 2.518 | 1.523 | 2.223 | 12.9 | 26.8 |

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(713) 895-8322. A manual with equations & flow chart is available.