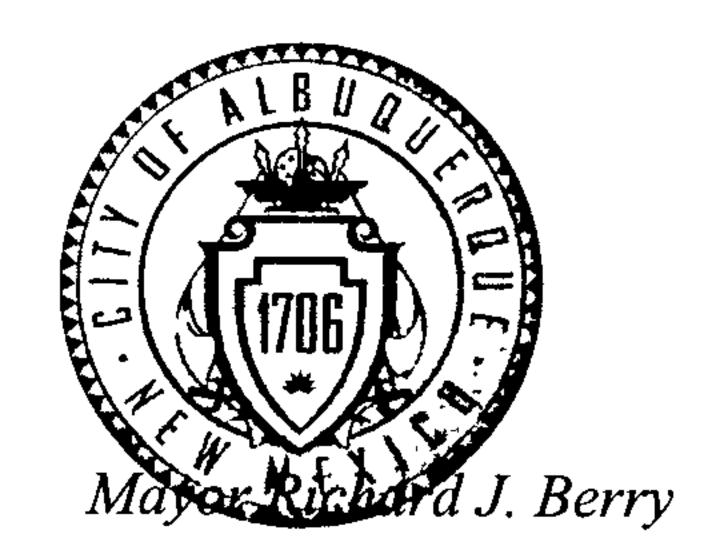
Planning Department
Suzanne Lubar, Director



November 25, 2015

Richard Dourte, P.E.

RHD Engineering, LLC

4305 Purple Sage Ave NW

Albuquerque, NM 87120

RE: First Christian Church
10101 Montgomery Blvd NE
Request Permanent C.O. - Approved

Engineers Stamp Date 4/1/15 (F21D080)

Dear Mr. Dourte,

Based on the Certification received 11/24/2015, the First Christian Church is acceptable for

release of Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3695 or Totten Elliott at 924-

Albuquerque 3982.

New Mexico 87103

www.cabq.gov

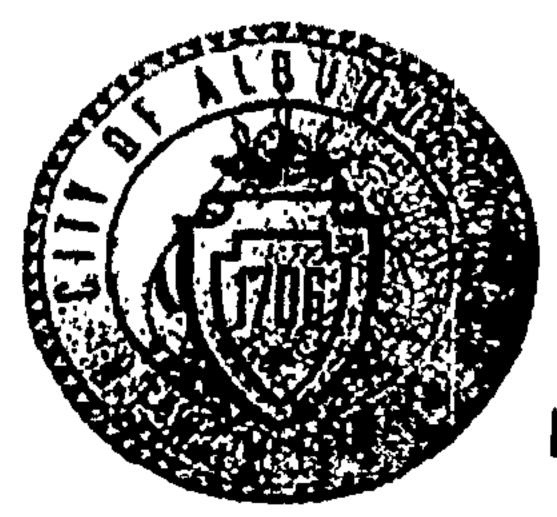
Sincerely,

Abiel Carrillo, P.E.

Principal Engineer, Planning Department

Development and Review Services

TE/AC C: File



# City of Albuquerque

## Planning Department

#### Development & Building Services Division

#### DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

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ngineering Pirm: RHD Engineering, LLC ddress: 4305 Purple Sage Ave. NW. Albi	MUERCIJE NM 87120	Contact: Richard Dourte
	X#:	E-mail: rhdengineering@outlook.com
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Simons Architecture PC  Idress: PO box 67408, Alb., NM 87193		Contact: Joe Simons
one#: 505-480-4796 Fa		E-mail: joe@simonsarchitecture.com
rveyer: Construction Sun'eys Technolo idress:	gies. Inc	Contact: John Gallegos
one#: 505-917-8921 Fa	#:	E-mail: nmsurveyor@amail.com
ntractor: dress:		Contact:
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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 Drak tage Plan: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
- 2. Drainage Plans: Required for b illding 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 sits with 1-acre or more of land disturbing area, including project less than 1-acre than an part of a larger common plan of development



April 16, 2015

Richard Dourte, PE RHD Engineering, LLC 10101 Montgomery Blvd., NE Albuquerque, NM 87120

RE: First Christian Church, 10101 Montgomery Blvd.

Grading an Drainage Plan

Engineer's Stamp Date 4-01-2015 (File: F21-D080)

Dear Mr. Dourte:

Based upon the information provided in your submittal received 4-01-15, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan in the construction sets when submitting for a building permit.

PO Box 1293

Prior to Certificate of Occupancy release, Engineer Certification per the DPM Checklist will be required.

Albuquerque

If you have any questions, you can contact me at 924-3924.

New Mexico 87103

www.cabq.gov

Sincerely,

Jeanne Wolfenbarger, P.E. Senior Engineer, Planning Dept. Development Review Services

Orig: Drainage file

c.pdf via Email: Recipient, Monica Ortiz



April 16, 2015

Richard Dourte, PE RHD Engineering, LLC 10101 Montgomery Blvd., NE Albuquerque, NM 87120

RE: First Christian Church, 10101 Montgomery Blvd.

Grading an Drainage Plan

Engineer's Stamp Date 4-01-2015 (File: F21-D080)

Dear Mr. Dourte:

Based upon the information provided in your submittal received 04-01-15, the above referenced plan is approved for SO-19.

A separate Excavation/Barricading Permit is required for SO-19 construction within City ROW. A copy of this approval letter must be on hand when applying for the permit. To obtain a C.O., the storm drain work in the City ROW must be inspected and accepted.

Please contact Jason Rodriguez, 857-8074, to schedule an inspection.

Albuquerque If you have any questions, you can contact me at 924-3924.

New Mexico 87103

www.cabq.gov

Sincerely,

Jeanne Wolfenbarger, P.E.

Senior Engineer, Planning Dept. Development Review Services

Orig: Drainage file

c.pdf: via Email: Recipient, Monica Ortiz

Jason Rodriguez, Street/Storm Drain Maintenance, JTRodriguez@cabq.gov,

Antoinette Baldonado, DMD



# City of Albuquerque

### Planning Department

#### Development & Building Services Division

#### DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: First Christian Church	در د	Building Permit #: City Drainage #: FZI 05
DRB#:	EPC#:	Work Order#:
Legal Description: Tract A-1. First Church City Address: 10101 Montgoniery blyd N		
Engineering Pirm: RHD Engineering, LL		Contact: Richard Dourte
Address: 4305 Purple Sage Ave. NW.		
hone#: 505-288-1621	Pax#:	E-mail: rhdengineering@outlook.com
)wier:		Contact:
ddress: hone#:	Fex#:	E-mail:
Architect: Simons Architecture PC		Contact: Joe Simons
hones: <u>PO box 67408, Ab., NM 87</u> 505-480-4796	193 Fax#:	E-mail: joe@simonsarchitecture.com
Address:	nologies. Inc	Contact: John Gallegos
hone#: 505-917-8921	Pax#:	E-mail: nmsurveyor@gmail.com
Contractor:	کا میں شاک کے بیاد میں بیور میں درسی ہوتا ہے۔ اور	Contact:
hone#:	Fexil:	E-mail:
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ENGINEER'S CERT (TCL)		ng permit approval
ENGINEER'S CERT (DRB SITE PLAN)	GRADD	ng permit approval <u>X</u> so-19 approval
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SO-19		ORDER APPROVAL ESC CERT. ACCEPTANCE
OTHER (SPECIFY)	GRADIN	ng certification other (specify)
WAS A PRE-DESIGN CONFERENCE ATTENDATE SUBMITTED: 4-01-15	DED: X Yes By:	No Copy Provided

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 tray be required based on the followin

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Richard H. Dourte 4305 Purple Sage Ave. NW Albuquerque, NM 87120 (505)288-1621 rhdengineering@outlook.com

March 30, 2015

Ms. Jeanne Wolfenbarger,
Senior Engineer, Planning Department
Development Review Services
600 Second Street
City of Albuquerque, NM 87102

RE: First Christian Church, 10101 Montgomery Boulevard NE Grading and Drainage Plan (F21-D080)

Dear Ms. Wolfenbarger,

Thank you for your letter dated March 27, 2015 (enclosed) regarding the above referenced project. The following is in response to your items:

- 1. The new improvement area that are contributing to the 0.13 ac area you referenced are included on the attached document. Elevation information is included on the grading plan.
- 2. The information requested in included on the attached document or on the grading plan.
- 3. The elevations have been corrected on the grading plan.
- 4. The sidewalk has been labeled, std dwg drawing has been called out and the detail for the pipe outlet and culvert have been added to the grading plan.

Thank you..

Sincerely,

Richard Dourte, PE RHD Engineering, LLC LAND DEVELOPMENT SECTION

Areas Contributing to the 0.13ac area increase of impervious area.

Areas		Flow rate	Flow (100yr 6hr)
Roof area $= 7275$ s	sf = 0.17ac	5.25cfs/ac	0.9cfs
Patio and stage	= 0.13ac	5.25cfs/ac	0.7cfs
Landscaping area	=0.09ac	3.73cfs/ac	0.3cfs

This area has two inlets, thus 1cfs per inlet, the depth of water on those inlets would be 0.25ft, see attached chart...

**1.9cfs** 

The pipe capacity for a 12 in HDPE pipe at 1% grade is:

$$Q=(1.49/n)(A)(R)^2/3(S)^1/2$$
= (1.49/0.01)(0.785)(.25)^2/3(.01)^1/2  
= 4.6cfs

Total

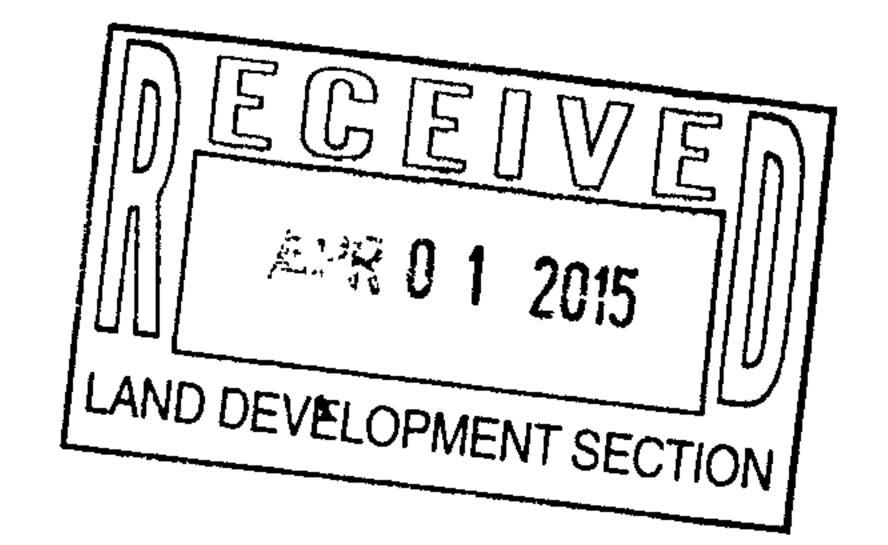
The pipe capacity for a 12 in HDPE outlet pipe at 2% grade is:

$$Q=(1.49/n)(A)(R)^2/3(S)^1/2$$
= (1.49/0.01)(0.785)(.25)^2/3(.02)^1/2  
= 6.5 cfs

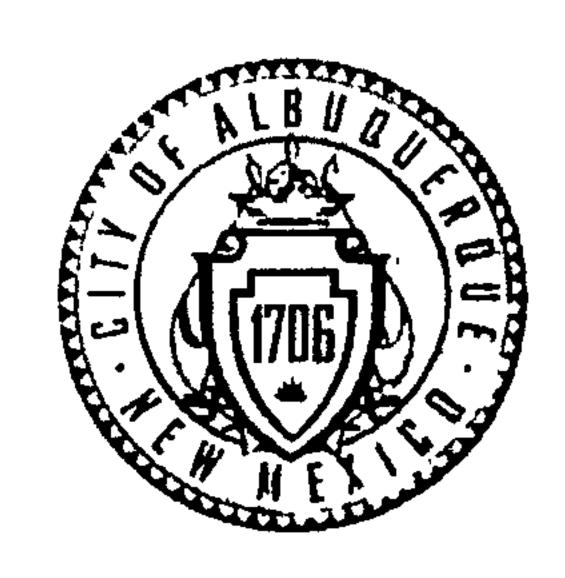
The grate capacity at the outlet for the first flush pond is 2cfs, please see the attached chart.

The sidewalk culvert capacity (per single 2ft culvert) is:

$$Q=(1.49/n)(A)(R)^2/3(S)^1/2$$
= (1.49/.013)(1.0)(.333)^2/3(.01)^1/2  
= 5cfs (each)



Thus the max flow from the outlet pipe is 2cfs that flows into the sidewalk culverts that have a capacity of 6.5cfs each.



March 27, 2015

Richard Dourte, PE RHD Engineering, LLC 10101 Montgomery Blvd., NE Albuquerque, NM 87120

RE: First Christian Church, 10101 Montgomery Blvd.

Grading and Drainage Plan

Engineer's Stamp Dated 3-09-15 (File: F21-D080)

Dear Mr. Dourte:

Based upon the information provided in your submittal received 3-9-15, the above referenced plan cannot be approved for Building Permit and for SO-19 until the following comments are addressed:

PO Box 1293

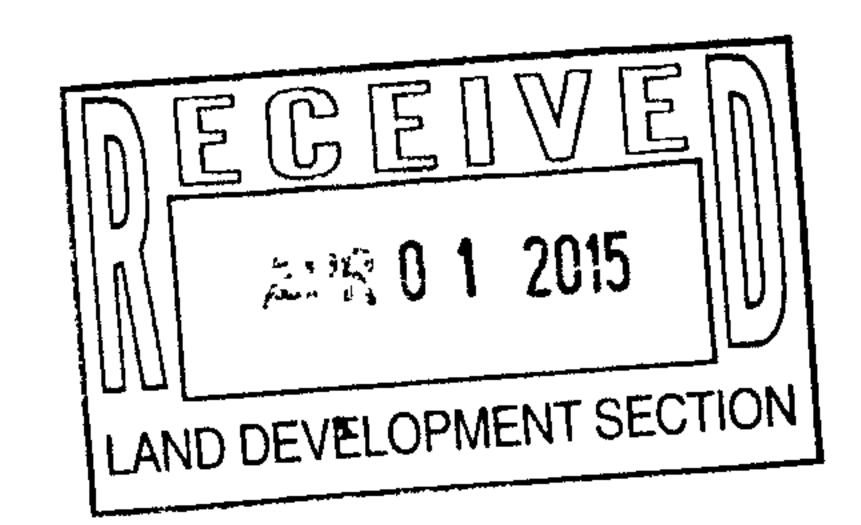
- 1) Show all new improvements that are contributing to the 0.13-acre increase in impervious area on the plan including the patio. Show elevation information for these new improvements.
- Albuquerque
- 2) For each of the proposed pipe runs, inlets, and sidewalk culverts, show capacity calculations. Label slope and flow that each pipe run is conveying.

New Mexico 87103

3) The sidewalk culvert invert elevations and the neoplast area drain invert elevations appear to be 10 feet off. The culvert invert is also higher than the 12" HDPE pipe invert. Double-check these elevations, and revise as needed.

www.cabq.gov

4) Label the existing curb and the existing sidewalk width. Call out COA Standard Dwg. 2236 for construction of the culverts. To prevent drop-off situation from sidewalk, extend sidewalk culvert 2 feet behind back of sidewalk. Show transition from 12" pipe to 2 sidewalk culverts.



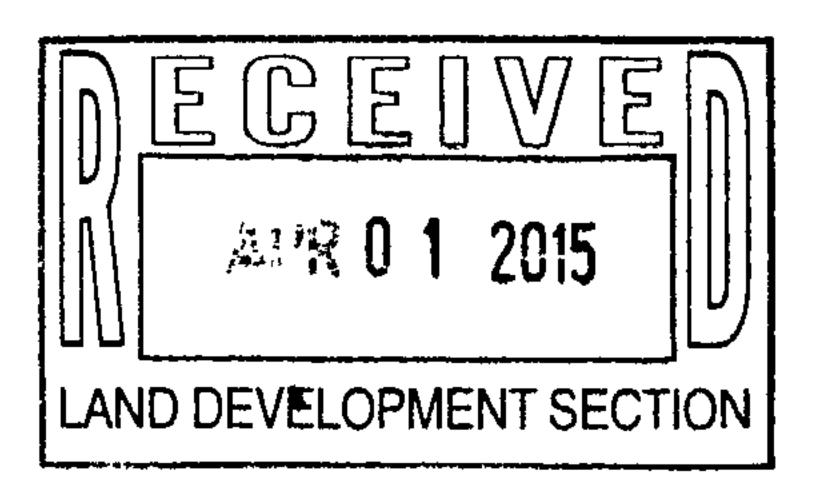
If you have any questions, you can contact me at 924-3924.

Sincerely,

Jeanne Wolfenbarger, P.E. Senior Engineer, Planning Dept. Development Review Services

Orig: Drainage file

c.pdf Addressee via Email





March 27, 2015

Richard Dourte, PE RHD Engineering, LLC 10101 Montgomery Blvd., NE Albuquerque, NM 87120

RE: First Christian Church, 10101 Montgomery Blvd. Grading and Drainage Plan Engineer's Stamp Dated 3-09-15 (File: F21-D080)

Dear Mr. Dourte:

Based upon the information provided in your submittal received 3-9-15, the above referenced plan cannot be approved for Building Permit and for SO-19 until the following comments are addressed:

PO Box 1293

1) Show all new improvements that are contributing to the 0.13-acre increase in impervious area on the plan including the patio. Show elevation information for these new improvements.

Albuquerque

2) For each of the proposed pipe runs, inlets, and sidewalk culverts, show capacity calculations. Label slope and flow that each pipe run is conveying.

New Mexico 87103

3) The sidewalk culvert invert elevations and the neoplast area drain invert elevations appear to be 10 feet off. The culvert invert is also higher than the 12" HDPE pipe invert. Double-check these elevations, and revise as needed.

www.cabq.gov

4) Label the existing curb and the existing sidewalk width. Call out COA Standard Dwg. 2236 for construction of the culverts. To prevent drop-off situation from sidewalk, extend sidewalk culvert 2 feet behind back of sidewalk. Show transition from 12" pipe to 2 sidewalk culverts.

If you have any questions, you can contact me at 924-3924.

Sincerely,

Jeanne Wolfenbarger, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

c.pdf Addressee via Email

### Drainage Report

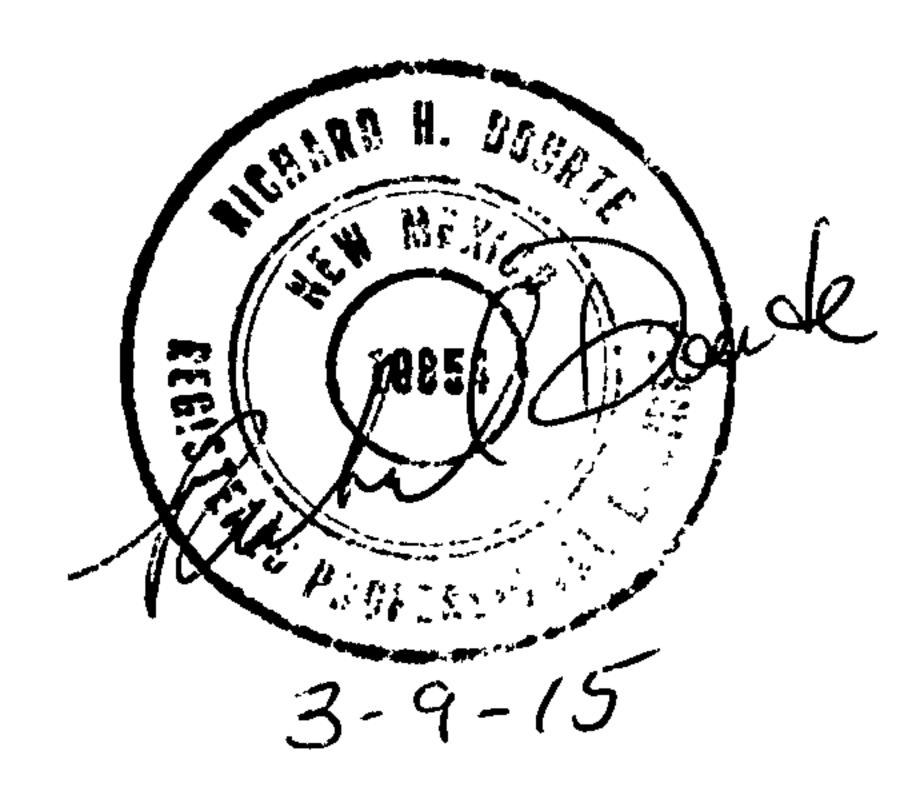
For

First Christian Church 10101 Montgomery Blvd NE Albuquerque, New Mexico

Prepared by

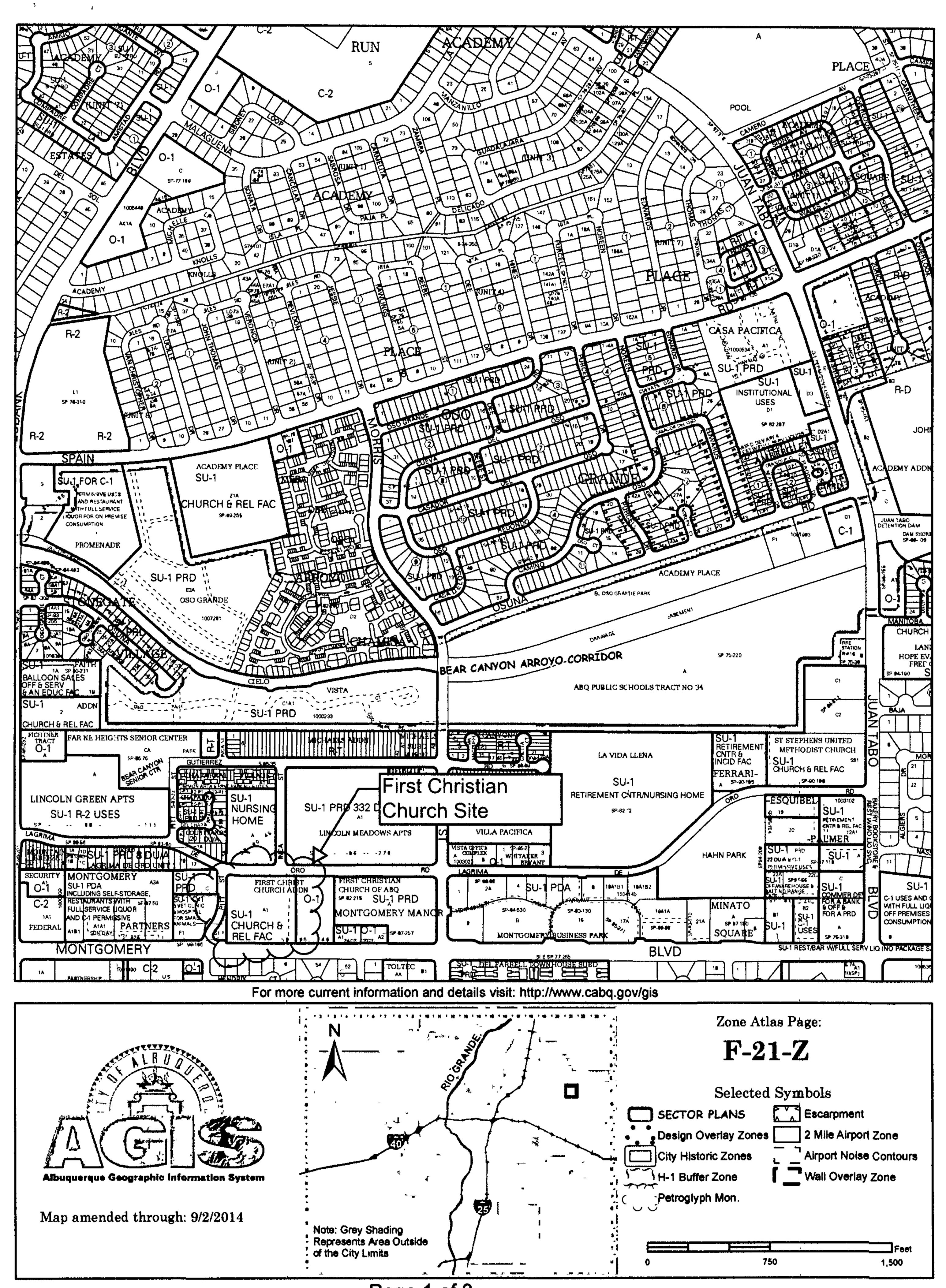
RHD Engineering, LLC Albuquerque, New Mexico

March 9, 2015



#### **Table of Contents**

Vicinity Map	page 1
Purpose	page 2
Introduction	page 2
Existing Conditions	page 2
Proposed Conditions	page 3
Summary	page 3
Appendix	
Site Hydrology/hydraulic Calculations	lix A
Site Grading and Grading PlanAppend	lix B



Page 1 of 3

#### Purpose:

The purpose of this drainage report is to provide a drainage management plan for the proposed changes to the First Christian Church. The site is approximately 4.2 acres in size. The proposed changes include increasing an existing outdoor patio enclosed by a wall along (new wall to be constructed) with a new playground that is also to be enclosed by a new wall. This drainage report and plan is prepared utilizing the City of Albuquerque Development Process Manual.

#### Introduction:

After consultation with and searching the records within the Hydrology Section of the Development Review Services Division of the Planning Department, no drainage file was found. The site, per the records in the Building Safety Division, was originally developed around 1972 and an addition was added in approximately 1979.

The proposed new improvements include a large screen wall and stage with exterior meeting area along with a new playground. The landscaping is also proposed to be improved.

FEMA Firm map 35001C0114G identifies that this site is located in zone x. Please refer to the drainage plan.

#### Existing Drainage Conditions:

The parking lot, the north sloping building roof for this site and a small landscaped area on the west side of the building (drainage basin A) drain to the southwest, then flows into Pitt street located west of this site.

The entrance to this site that directly accesses Montgomery (basin B) drains and free discharges directly into Montgomery Blvd. There are off-site flows from the east that enter this basin.

A portion of the building's roof and eastern section of landscaping (basin C) drain drains and free discharges into Montgomery Blvd. The remainder of this site (drainage basin D) drains to the south west and free discharges into Montgomery Blvd.

### Proposed Conditions:

The proposed conditions are for the drainage from basins A, B and C remain as they are today. There is no proposed changes for these areas.

The proposed condition for the drainage from basin D is to route the flows through the pond. This pond with have a controlled discharge via the outlet for this pond.

The required first flush volume of stormwater generated by the new impervious areas (the stage and the new concrete patio) will be retained within the bottom 2 feet of the pond.

#### Summary:

This site will discharge the stormwater flows in the same manner as it is today.

#### For Basin D

The peak flows will increase from 3.71 cfs to 3.91 cfs or by 0.20 cfs for the 100 yr 6 hr. event.

The excess precipitation will increase from 5,707 cf to 6,276 cf or by 569 cf for the 100 yr 6 hr event. However the first flush pond will retain 3664 cf, thus the overall excess precipitation will be reduced to 2,612 cf.

The peak The City of Albuquerque's first flush requirements will be adhered to for the construction of the proposed improvements. The first flush for the proposed improvements is 164 cf and the first flush pond (bottom 2 feet of the total pond) is 3664 cf, thus the first flush pond has a much greater capacity than what is needed.

#### APPENDIX A

### Drainage Calculations for Basin D

### Zone 4 (100yr, 6hr)

Land Treatment	Peak discharge	Excess Precipitation
Type A -	2.20 cfs/ac	0.80 inches
Type B -	2.92 cfs/ac	1.08 inches
Type C -	3.73 cfs/ac	1.46 inches
Type D -	5.25 cfs/ac	2.64 inches

#### Existing Conditions for Basin D

Roof (type D)= 8962 sf = 0.21 ac

Area other than Roof (type C)= 30,700 sf = 0.70 ac

#### Peak Flow generated

#### Excess Precipitation

#### Proposed Conditions for Basin D

Roof (type D)= 8962 sf = 0.21 ac

New concrete patio and stage (type D)= 5,780 sf = 0.13 ac

Area other than roof, new concrete patio or stage – land treatment (type C) = 24,920 sf = 0.57 ac

#### Peak Flow generated

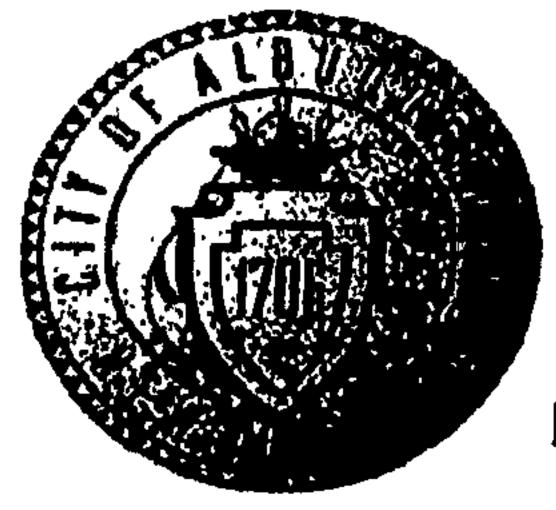
0.21 ac x 5.25 cfs = 1.10 cfs 0.13 ac x 5.25 cfs = 0.68 cfs 0.57 ac x 3.73 cfs = 2.13 cfs Total = 3.91 cfs

#### Excess Precipitation

8,962 sf x 2.64 in/12 = 1,972 cf 5.780 sf x 2.64in/12 = 1,272 cf 24,920 sf x 1.46 in/12 = 3,032 cf Total = 6,276 cf

First flush requirements (for new impervious area)

 $5,780 \text{ sf } \times 0.34 \text{ inches}/12 = 164 \text{ cf.}$ 



# City of Albuquerque

#### Planning Department

### Development & Building Services Division

### DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: First Christian Church	والمراز والمستور والمراز والمر	Building Permit #:	City Drainage #: F21D080
DRB#:	EPC#:	Work O	rder#:
Legal Description: Tract A-1 First Church	n Addition		
City Address: 10101 Montgomery blvd N	VE. Alb. NM		
Engineering Firm: RHD Engineering, LL	_C	Contact	Richard Dourte
Address: 4305 Purple Sage Ave. NW.			
Phone#: 505-288-1621	Fax#:		rhdengineering@outlook.com
Owner:		Contact	
Address:			چېرون د د د د د د د د د د د د د د د د د د د
Phone#:	Fax#:	E-mail:	
Architect: Simons Architecture PC		Contect	Joe Simons
Address: PO box 67408, Alb., NM 87	193		OCC CIMIONS
Phone#: 505-480-4796	Fax#:	E-mail:	joe@simonsarchitecture.com
Surveyor: Construction Surveys Techn			·
Surveyor: Construction Surveys Techr Address:	dologies. Inc	Contact	John Gallegos
Phone#: 505-917-8921	Fax#:	E-mail:	nmsurveyor@amail.com
Contractor:			
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DATE SUBMITTED: 3-9-15	By: //w		
			وبواغد بنزوه والمراف والقراء المالكية النفوي والكفاء والكفاف والكفاف والمالك المالك المستكن والمستكن والمداكث

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