

CITY OF ALBUQUERQUE



Richard J. Berry, Mayor

May 26, 2017

Jeffrey T. Wooten, P.E.
Wooten Engineering
1005 21st Street SE, Suite 13
Rio Rancho, NM, 87124

**RE: Nuestros Valores Charter High School
Grading Plan
Stamp Date: 5/25/17
Hydrology File: L10D007**

Dear Mr. Wooten:

PO Box 1293

Based upon the information provided in your resubmittal received 5/25/2017, the Drainage Report and Grading and Drainage Plan is approved for Building and Grading Permit.

Albuquerque

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

New Mexico 87103

Sincerely,

Renee C. Brissette

www.cabq.gov

Reneé C. Brissette, P.E.
Senior Engineer, Hydrology
Planning Department



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: _____ **Building Permit #:** _____ **City Drainage #:** _____

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: _____

City Address: _____

Engineering Firm: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Owner: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Architect: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

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) _____

CHECK 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
☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☐ No

DATE SUBMITTED: _____ **By:** _____

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____



Wooten Engineering

1005 21st Street SE, Suite 13
Rio Rancho, NM 87124
505-980-3560
jeffwooten.pe@gmail.com

May 25, 2017

Ms. Renee C. Brisette, PE
Senior Engineer, Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

VIA E-Mail: rbrisette@cabq.gov

RE: Nuestros Valores Charter High School (Hydrology File L10/D007)
Grading Plan Resubmittal, Revised 5/25/2017

Renee,

We are in receipt of your comments dated May 12, 2017 regarding the subject project. The revised plans are included with this resubmittal. Below are responses to the comments.

1. The benchmark information has been added under the Zone Atlas Page.
2. Per our prior email correspondence, Pond 'B' has been revised to capture the 100-Yr, 10-day storm.
3. AHYMO routing is not typically required for retention ponds. The calculation of the 100-Yr, 10-day storm is a direct calculation per the DPM and is reflected on the Drainage Calculations table on Sheet C102.
4. Per our prior email correspondence, Pond 'A' is to remain as existing per the prior design by Applied Engineering and Surveying, Inc. Pond 'B' has been revised to capture the 100-Yr, 10-day storm.
5. Per our prior email correspondence, Pond 'A' is to remain as existing per the prior design by Applied Engineering and Surveying, Inc. Pond 'B' has been revised to capture the 100-Yr, 10-day storm.
6. The Basin Map has been added per your request.

We believe we have addressed all engineering related comments on the plans. Please feel free to call if you have any further questions or comments concerning the revised plans.

Respectfully submitted,

WOOTEN ENGINEERING

Jeffrey T. Wooten, P.E.
Owner



Existing NVCHS Drainage Calculations												
This table is based on the COA DPM Section 22.2, Zone:1												
BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100)	Q(100)	WT E	V(100)280	V(100)1440	V(100)10day
			A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)	(CF)	(CF)
A-1	57568	1.32	0.0%	25.0%	23.0%	52.0%	3.44	4.55	1.42	6810	7808	10802
B-1	51748	1.19	0.0%	31.0%	31.0%	38.0%	3.18	3.78	1.26	5447	6103	8069
C-1	154702	3.55	85.0%	0.0%	15.0%	0.0%	1.53	5.42	0.52	6736	6736	6736
TOTAL	264018	6.06						13.75		18994	20647	25607

Proposed (Future) NVCHS Drainage Calculations												
Ultimate Development Conditions Basin Data Table												
This table is based on the COA DPM Section 22.2, Zone:1												
BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	V(100) ₃₆₀ (CF)	V(100) ₁₄₄₀ (CF)	V(100) _{10day} (CF)
			A	B	C	D						
A-1	57568	1.32	0.0%	25.0%	23.0%	52.0%	3.44	4.55	1.42	6810	7808	10802
B-1	51748	1.19	0.0%	0.0%	50.0%	50.0%	3.62	4.30	1.48	6382	7245	9832
C-1	154702	3.55	85.0%	0.0%	15.0%	0.0%	1.53	5.42	0.52	6736	6736	6736
TOTAL	264018	6.06						14.27		19929	21789	27370

DRAINAGE MANAGEMENT PLAN

INTRODUCTION

The purpose of this submittal is to provide a final grading plan and drainage management plan for the addition of two new modular classroom buildings to the existing NVCHS site located at 6800 Gonzales Road SW. The existing Pond 'B' will be regraded per the grading plan (Sheet C101) to accommodate the required storage volume as discussed below.

Existing information referenced below was obtained from a Drainage Management Plan prepared by Applied Engineering and Surveying, Inc dated September 7, 2010.

EXISTING HYDROLOGIC CONDITIONS

Both Lots 150-A and 150-B sheet flow from west to east and into three existing retention ponds, A, B, and C. Existing Pond A captures the northern two-thirds of Lot 150-B, Pond 'C' captures the entire Lot 150-A, and Pond 'B' captures the southern one-third of Lot 150-B in addition to the overflows from both Ponds 'A' and 'C'. Existing runoff rates and volumes are shown in the Drainage Calculations Table this sheet.

PROPOSED HYDROLOGIC CONDITIONS

The proposed drainage patterns and basins will generally remain the same as they are today; however, Basin B has some minor increased flows due to the addition of the two new modular buildings and the associated sidewalks. Proposed runoff rates and volumes can be found in the Drainage Calculations Table this sheet.

POND A

Pond 'A' will remain unchanged and per the original design plans by Applied Engineering and Surveying, Inc., the pond has adequate volume to contain the current runoff. The pond is sized to capture the 100-Yr, 10-day storm Volume. The pond will overflow to Pond 'B'.

POND C

This pond is existing and we are assuming that the Pond Volume matches that of the original design by Applied Engineering and Surveying. Per the pond volume calculations table this sheet, the existing capacity of this pond is 6,887 CF. Pond 'C' overflows to Pond 'B'. Upon future build-out of Lot 150-A, this pond will need to be redesigned and reconstructed based on developed conditions at that time.

POND B

Pond 'B' is being reconfigured as part of this project as shown on the grading plan. The proposed capacity of the pond is 10,335 CF which will adequately capture the required 100-Yr, 10-day volume of 9,832 CF. The spillway for Pond 'B' has been redesigned to allow for the future emergency spillway flows from both Ponds 'A' and 'C'. Reference the detail this sheet for the new spillway design.

FIRST FLUSH CALCULATIONS

Since the ponds located on site are retention ponds, they are capturing all required First Flush flows generated by the site.

CONCLUSION

This drainage management plan provides for grading and drainage elements which are capable of safely capturing the 100Yr, 10-day storm, do not burden downstream systems, and meet city requirements. The proposed improvements to the site should not have any negative impacts to facilities downstream. With this submittal, we are requesting Drainage Management Plan and Building Permit approval.

OVERFLOW SPILLWAY CALCULATIONS

POND 'A'

WEIR EQUATION; $Q = C * L * (H^{1.5})$

Given:

C = 3.0 (Weir Coefficient)

L = 6 feet (Width of Flow)

H = 0.5 feet (Depth of Flow)

$Q = 3.0 * 6 * (0.5^{1.5})$

$Q_{cap} = 12.0 \text{ cfs}$

$Q_{reqd} = 4.55 \text{ cfs}$ CHECK

POND 'B' (Based on Future Developed

Flows from Basin 'C')

WEIR EQUATION; $Q = C * L * (H^{1.5})$

Given:

C = 3.0 (Weir Coefficient)

L = 22 feet (Width of Flow)

H = 0.5 feet (Depth of Flow)

$Q = 3.0 * 22 * (0.5^{1.5})$

$Q_{cap} = 23.33 \text{ cfs}$

$Q_{reqd} = 21.71 \text{ cfs}$ CHECK

POND 'C'

EXISTING; NOT ON PROPERTY

24" STORM DRAIN CALCULATIONS

ORIFICE EQUATION; $Q = C * A * (2gH)^{0.5}$

Given:

C = 0.6 (Orifice Coefficient)

A = 3.14 sqft (Area of Opening)

2g = 64.4

H = 1.50 ft (Depth of Flow)

$Q = 18.51 \text{ cfs}$

MANNING'S EQUATION (Gravity Flow)

$Q = A * (1.486/n) * (S)^{0.5} * (R)^{0.67}$

Given:

A = 3.14 sqft

n = 0.010

S = 0.050

R = 3.14/6.28 = 0.50

$Q = 65.72 \text{ cfs}$

PIPE IS INLET CONTROLLED

RETENTION POND VOLUME CALCULATIONS

CONTOUR ELEVATION

POND 'A'

BASED ON PRIOR PLANS

5029.00

5030.00

5030.50

TOTAL

AREA (SF)

6,620 SF

8,128 SF

8,643 SF

VOLUME (CF)

1,059.0 CF

4,797.0 CF

3,172.0 CF

11,566.0 CF

10,802.0 CF

REQ'D

POND 'B'

BASED ON DESIGN

5025.00

5026.00

5027.00

5028.00

5028.50

TOTAL

1,606 SF

2,254 SF

3,036 SF

4,050 SF

4,818 SF

1,930.0 CF

2,645.0 CF

3,543.0 CF

2,217.0 CF

10,335.0 CF

9,832.0 CF

REQ'D

POND 'C'

BASED ON PRIOR PLANS

5030.00

5031.00

5031.50

TOTAL

2,589 SF

5,203 SF

6,762 SF

3,896.0 CF

2,991.0 CF

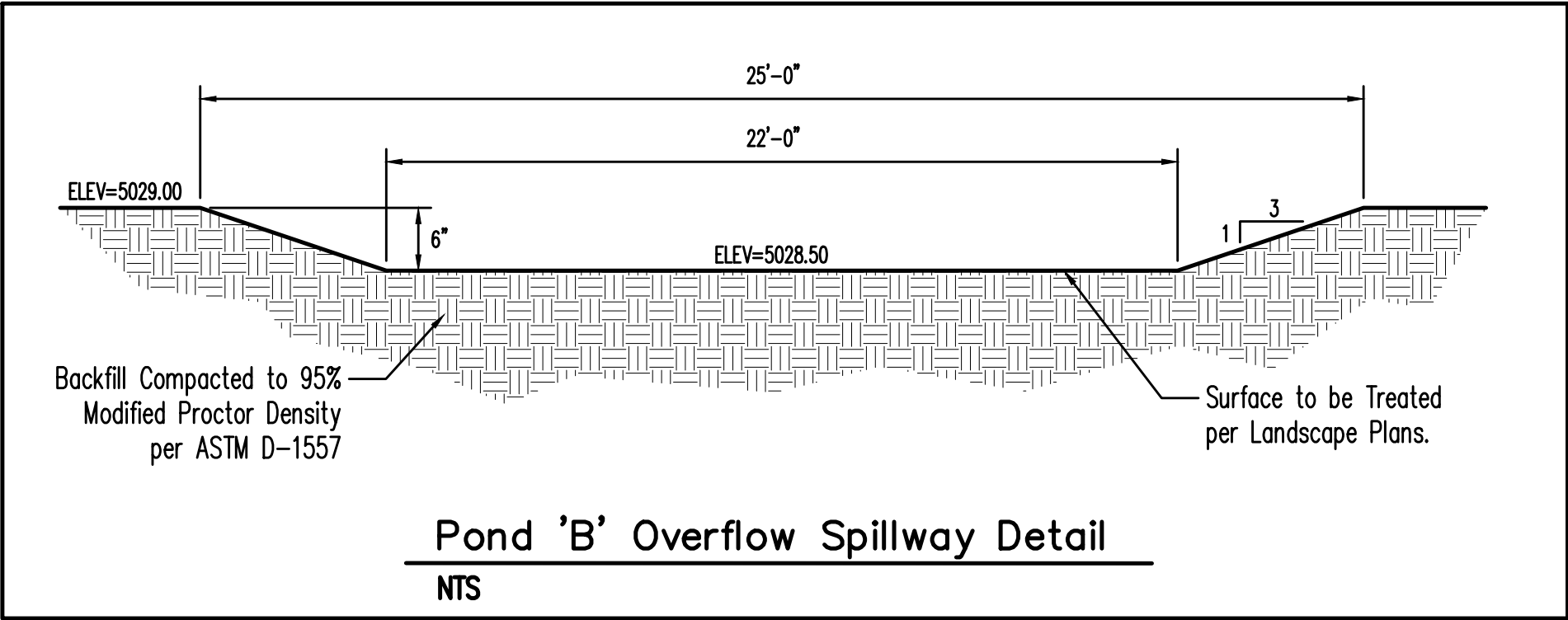
6,887.0 CF

6,736.0 CF

REQ'D

GRAND TOTAL

28,788.0 CF



Basin Map

NTS

Wooten
Engineering

1005 21st Street SE, Suite 13
Rio Rancho, N.M. 87124
Phone: (505) 980-3560



STUDIO CONSULTANTS, INC
PO BOX 1515
CEDAR CREST NM, 87008
DANIEL@ARIASCINC.COM
(505) 506-2314



NUESTROS VALORES
CHARTER HIGH SCHOOL

6800 Gonzales Road SW
Albuquerque, NM 87121



Architect/Engineer

1	5/25/2017	Revisions per City
MARK	DATE	DESCRIPTION
REVISIONS		
ISSUE	PERMIT	
PROJECT NO	2017008	
CAD DWG FILE		
DRAWN BY	JTW	
CHECKED BY	JTW	
DATE	4/12/2017	

DRAINAGE MANAGEMENT PLAN
AND DRAINAGE DETAILS

C102