CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

May 12, 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: 4/28/17
Hydrology File: L10D007

Dear Mr. Wooten:

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Based upon the information provided in your submittal received 5/9/2017, the Grading Plan **is not** approved for Building and Grading Permit. The following comments need to be addressed for approval of the above referenced project:

1. On C101, please provide benchmark information.
2. On C102, under the Proposed Hydrologic Conditions the ponds are stated to be designed for the 100-yr, 6 hr storm. Per the CoA DPM, the retention ponds are to be sized for the 100-yr, 10 day storm. Please revise.
3. Please provide the AHYMO routing output for the retention pond system.
4. On C102, according to the drainage calculations provided, the required 100-yr, 10 day storm volume for Pond A is 10,802 CF and not 6,810 CF. Pond B required volume is 9,832 CF and not 6,382. Please correct the required 100-yr, 10 day storm volume for Ponds A & B.
5. On C101 & C102, based on the above comment, Pond A & B are currently sized too small to handle the 100-yr, 10 day storm. Please resize both ponds to meet the required volume.
6. On C102, Please proved an overall drainage basin map for the three basins along with the ponds and the drainage flow arrows.

Orig: Drainage File

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

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

Sincerely,

Renee C. Brissette

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

PO Box 1293

Albuquerque

New Mexico 87103

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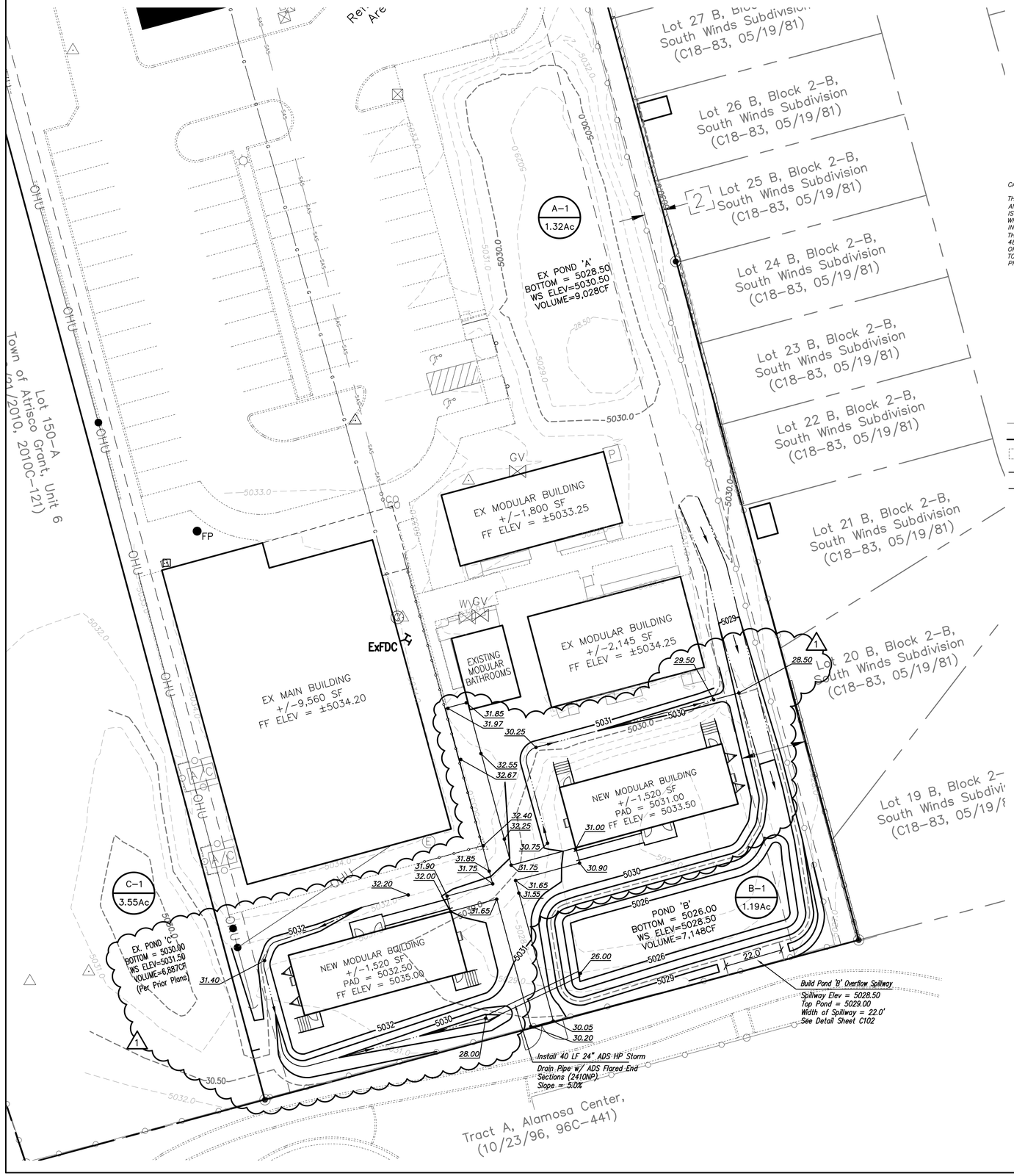
Orig: Drainage File

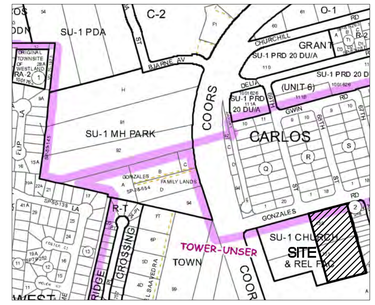


CAUTION – NOTICE TO CONTRACTOR

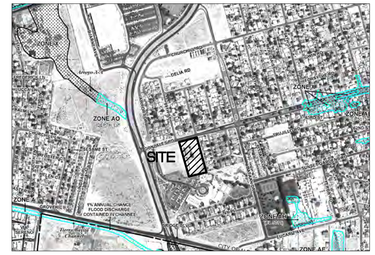
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL NEW MEXICO ONE CALL (811) AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

LEGEND

- FLOW ARROW
- 27.8 — PROPOSED TOP OF GRADE/PVMT ELEVATIONS
- FL27.8 — PROPOSED FLOW LINE/GUTTER ELEVATIONS
- TC27.8 — PROPOSED TOP OF CURB ELEVATIONS
- FGH27.8 — PROPOSED GRADE AT TOP OF WALL
- FGL27.8 — PROPOSED GRADE AT BOTTOM OF WALL
- 515 — EXISTING CONTOUR
- 515 — PROPOSED CONTOUR
- EXISTING STORM DRAIN
- FLOW LINE
- RIDGE LINE



VICINITY MAP **Zone Atlas K-10**
NTS
Legal Description: Lot 150–B, Town of Atrisco Grant, Unit 6



FIRM MAP 35001C0143G

Per FIRM Map 35001C0143G, dated September 26, 2008, the site is not located in the 'Zone X Floodplain' and determined to be within the 0.2% chance Annual Floodplain area with depths of less than 1 foot.

GRADING NOTES

1. *EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.*
2. *THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.*
3. *ALL WORK RELATIVE TO FOUNDATION CONSTRUCTION, SITE PREPARATION, AND PAVEMENT INSTALLATION, AS SHOWN ON THIS PLAN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GEOTECHNICAL INVESTIGATION," AS PROVIDED BY THE ARCHITECT OR OWNER. ALL OTHER WORK SHALL, UNLESS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT, (FIRST PRIORITY) SPECIFICATIONS, AND/OR THE CITY OF ALBUQUERQUE (COA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS (SECOND PRIORITY).*
4. *EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.*
5. *IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROPERTY BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.*
6. *THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHT–OF–WAY. THIS SHOULD BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS OR SILT FENCE AT THE PROPERTY LINES AND WETTING THE SOIL TO PROTECT IT FROM WIND EROSION.*
7. *A DISPOSAL SITE FOR ANY & ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL AND/OR A BORROW SITE CONTAINING ACCEPTABLE FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL OR BORROW SITE AND HAUL TO OR FROM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.*
8. *PAVING AND ROADWAY GRADES SHALL BE +/– 0.05' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/– 0.05' FROM BUILDING PLAN ELEVATION.*
9. *ALL PROPOSED CONTOURS AND SPOT ELEVATIONS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR PAVEMENT, MEDIANS, AND ISLANDS.*
10. *VERIFY ALL ELEVATIONS SHOWN ON PLAN FROM BASIS OF ELEVATION CONTROL STATION (IF APPLICABLE) PRIOR TO BEGINNING CONSTRUCTION.*
11. *THE CONTRACTOR SHALL PROVIDE THE SWPPP DOCUMENT (IF NECESSARY) AND SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA REQUIREMENTS WITH RESPECT TO STORM WATER DISCHARGE.*

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INTEGRITY OPPORTUNITY COURAGE FUTURE

NUESTROS VALORES
CHARTER HIGH SCHOOL
6800 Gonzales Road SW
Albuquerque, NM 87121

JEFFREY TODD WOOTEN NEW MEXICO 16892 PROFESSIONAL ENGINEER
4/28/2017
Architect/Engineer

MARK	DATE	DESCRIPTION
1	4/28/2017	Revisions per Architect
REVISIONS		
ISSUE		PERMIT
PROJECT NO		2017008
CAD DWG FILE		
DRAWN BY		JTW
CHECKED BY		JTW
DATE		4/12/2017

SITE GRADING PLAN

C101

Existing NVCHS Drainage Calculations

This table is based on the COA DPM Section 22.2, Zone: 1

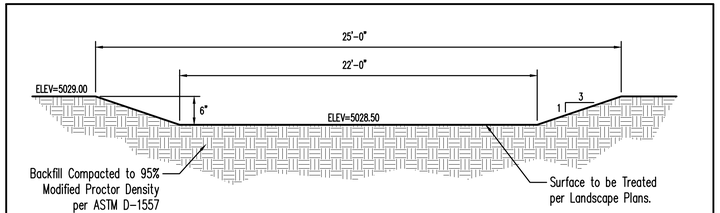
BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{1440}$ (CF)	$V(100)_{10day}$ (CF)
A-1	57568	1.32	0.0%	25.0%	23.0%	52.0%	3.44	4.55	1.42	6810	7808	10802
B-1	51748	1.19	0.0%	31.0%	31.0%	38.0%	3.18	3.78	1.26	5447	6103	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 A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{1440}$ (CF)	$V(100)_{10day}$ (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%	0.0%	50.0%	50.0%	3.62	4.30	1.48	6382	7245	9832
C-1	154702	3.55	0.0%	0.0%	50.0%	50.0%	3.62	12.86	1.48	19080	21658	29393
TOTAL	264018	6.06						21.70		32272	36711	50027



Pond 'B' Overflow Spillway Detail

NTS

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 accomadate 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 nothern 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 it was determined by the topo survey that the pond has adequate volume to contain the current runoff. The pond is sized to capture the 100–Yr, 6–Hr storm Volume and any overflows will discharge 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 7,148 CF which will adequately capture the required 100–Yr, 6Hr volume of 6,382 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 passing the 100Yr, 6Hr 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)
Qcap = 12.0 cfs

Qreqd = 4.55cfs 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)
Qcap = 23.33 cfs

Qreqd = 21.71cfs 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 = 18.51cfs

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 = 65.72cfs

PIPE IS INLET CONTROLLED

RETENTION POND VOLUME CALCULATIONS

	CONTOUR ELEVATION	AREA (SF)	VOLUME (CF)
POND 'A' BASED ON SURVEY	5028.50	592 SF	
	5029.00	3,644 SF	1,059.0 CF
	5030.00	5,950 SF	4,797.0 CF
	5030.50	6,738 SF	3,172.0 CF
	TOTAL		9,028.0 CF
		REQ'D	6,810.0 CF
POND 'B' BASED ON DESIGN	5026.00	1,862 SF	
	5027.00	2,554 SF	2,208.0 CF
	5028.00	3,494 SF	3,024.0 CF
	5028.50	4,170 SF	1,916.0 CF
	TOTAL		7,148.0 CF
		REQ'D	6,382.0 CF
POND 'C' BASED ON PRIOR PLANS	5030.00	2,589 SF	
	5031.00	5,203 SF	3,896.0 CF
	5031.50	6,762 SF	2,991.0 CF
	TOTAL		6,887.0 CF
		REQ'D	6,736.0 CF
GRAND TOTAL			22,297.0 CF

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CAD DWG FILE		
DRAWN BY		JTW
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DATE		4/12/2017

DRAINAGE MANANGEMENT PLAN AND DRAINAGE DETAILS

C102