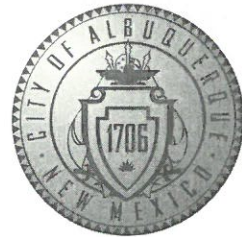


# CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services



Richard J. Berry, Mayor

February 17, 2017

Jeffrey T. Wooten  
Wooten Engineering  
1368 Reynosa Loop SE  
Rio Rancho, NM, 87124

RE: **North Towne Plaza**  
**Drainage and Grading Plan**  
**Engineer's Stamp Date 12-9-2016 (File: E19D033)**

Dear Mr. Wooten:

Based upon the information provided in your submittal received 12-12-2016, and additional information received 12/14/2016, and coordination at DRB Hearings, the above referenced plan is approved for Site Plan for Building Permit. Although the information was submitted for SPBP, the above-referenced Grading and Drainage Plan is acceptable for Building Permit approval.

PO Box 1293

Please attach a copy of this approved plan in the construction sets when submitting for the building permit. 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 924-3986.

Sincerely,

New Mexico 87103

www.cabq.gov

Abiel Carrillo, P.E.  
Principal Engineer, Planning Dept.  
Development Review Services

Orig: Drainage file



# City of Albuquerque

Planning Department  
Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: North Towne Plaza Tract A-1 Building Permit #: \_\_\_\_\_ City Drainage #: E19D033  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_  
Legal Description: Tract A-1, Block 1, Belmont Place  
City Address: 5901 Wyoming NE

Engineering Firm: Wooten Engineering Contact: Jeffrey T. Wooten, P.E.  
Address: 1005 21st Street SE, Suite A5, Rio Rancho, NM 87124  
Phone#: 505-980-3560 Fax#: N/A E-mail: jeffwooten.pe@gmail.com

Owner: \_\_\_\_\_ Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone#: \_\_\_\_\_ Fax#: \_\_\_\_\_ E-mail: \_\_\_\_\_

Architect: ARIA Studio Consultants Contact: Daniel Puzak  
Address: 21 Brokerage St, Edgewood, NM 87015  
Phone#: 505-506-2314 Fax#: N/A E-mail: daniel@ariascinc.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

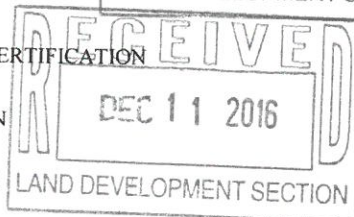
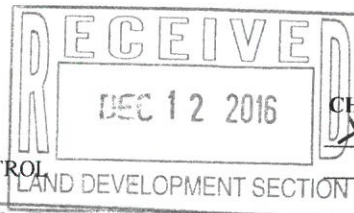
☒ TRAFFIC CIRCULATION LAYOUT (TCL)  
☐ TRAFFIC IMPACT STUDY (TIS)  
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)

☐ OTHER (SPECIFY) \_\_\_\_\_

IS THIS A RESUBMITTAL?: ☒ Yes ☐ No

DATE SUBMITTED: 12/9/2016 By: Jeffrey T. Wooten, P.E.

COA STAFF: \_\_\_\_\_ ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_

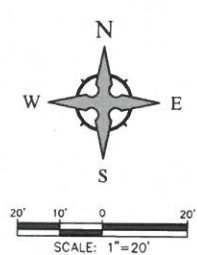


CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:  
☒ BUILDING PERMIT APPROVAL *As coordinated 2/16/17*  
☐ CERTIFICATE OF OCCUPANCY

☐ 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

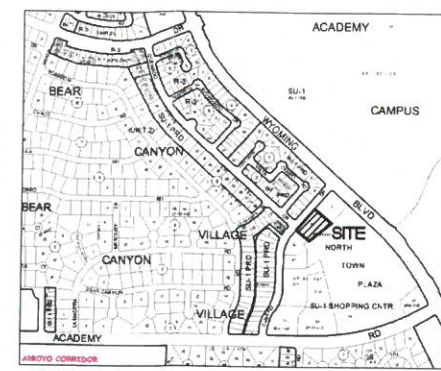
☐ PRE-DESIGN MEETING  
☐ OTHER (SPECIFY) \_\_\_\_\_





CAUTION - NOTICE TO CONTRACTOR  
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**Wooten Engineering**  
1005 21st Street SE, Suite A5  
Rio Rancho, N.M. 87124  
Phone: (505) 980-3560



**VICINITY MAP Zone Atlas E-19**  
NTS  
Legal Description: Tract A1, North Towne Plaza



**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**

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- ALL PROPOSED CONTOURS AND SPOT ELEVATIONS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR PAVEMENT, MEDIANS, AND ISLANDS.
- VERIFY ALL ELEVATIONS SHOWN ON PLAN FROM BASIS OF ELEVATION CONTROL STATION (IF APPLICABLE) PRIOR TO BEGINNING CONSTRUCTION.
- 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.

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

**NORTH TOWNE PLAZA TRACT A-1, NEW BUILDING**  
5901 WYOMING, NE  
ALBUQUERQUE, NM 87109

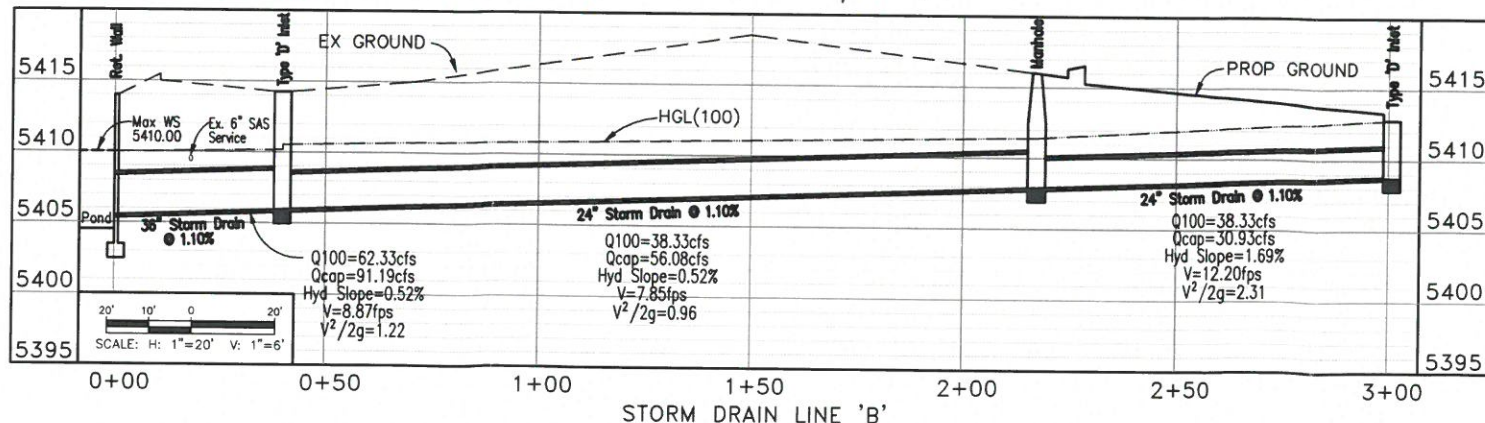
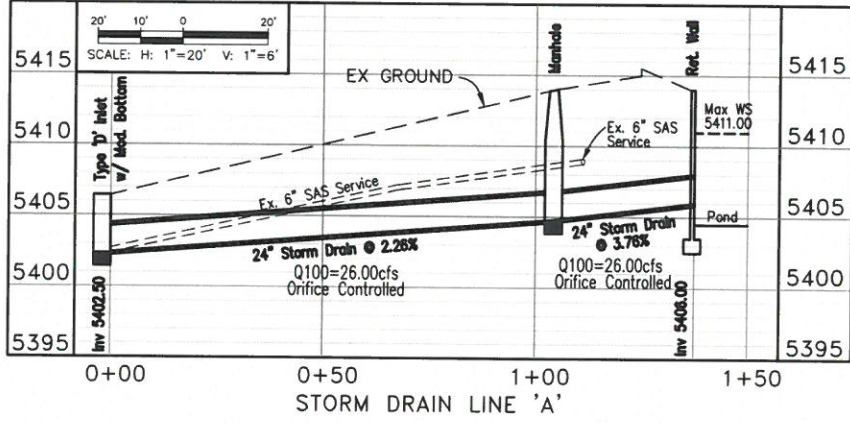
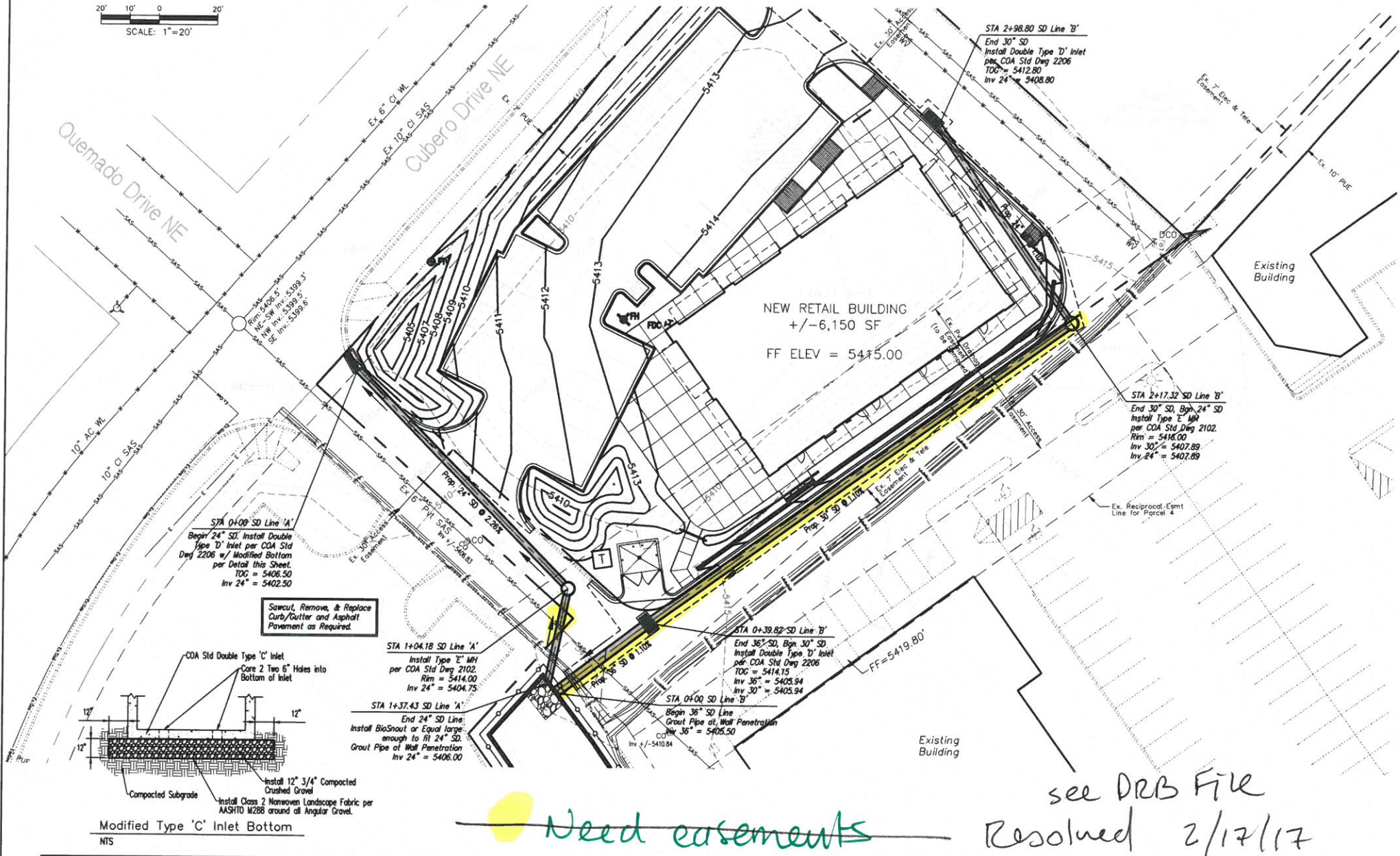
**WEINGARTEN REALTY**  
2600 Citadel Plaza Drive  
Suite 300  
Houston, Texas 77008  
813-866-6090

**JEFFREY TODD WOOTEN**  
NEW MEXICO  
16892  
PROFESSIONAL ENGINEER  
12/9/2016  
Architect/Engineer

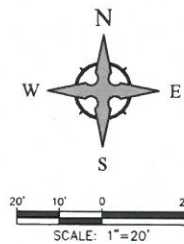
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REVISIONS		
ISSUE	DRB	
PROJECT NO	2014026	
CAD DWG FILE		
DRAWN BY	JTW	
CHECKED BY	JTW	
DATE	07/22/2016	

**STORM DRAIN PLAN**

C203







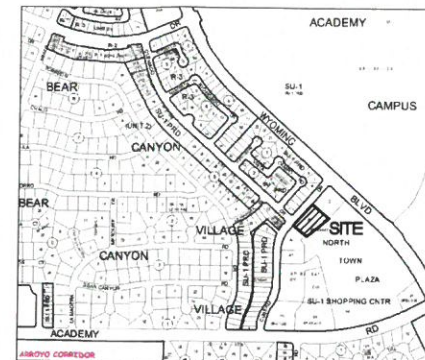
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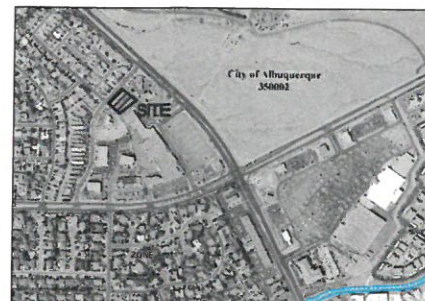
#### LEGEND

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

ALL ADA RAMPS SHALL HAVE A MAX CROSS SLOPE OF 2% AND A MAX SLOPE ALONG THE DIRECTION OF TRAVEL OF 8%.



VICINITY MAP Zone Atlas E-19  
NTS  
Legal Description: Tract A1, North Towne Plaza

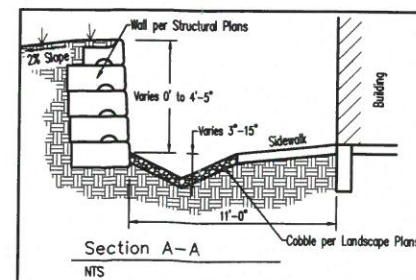


#### FIRM MAP 35001C0143Q

Per FIRM Map 35001C0143Q, 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.

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#### IMPERVIOUS AREA CALCULATIONS

PROPOSED SITE CONDITIONS  
PERVIOUS AREA: 7,572 SF  
IMPERVIOUS AREA: 22,169 SF  
TOTAL PROJECT AREA: 29,741 SF  
% IMPERVIOUS = 74.5%

#### FIRST FLUSH CALCULATION

TOTAL IMPERVIOUS AREA = 22,169 SF  
FIRST FLUSH =  $22,169 \times 0.34 / 12 = 628 \text{ CF}$

#### WATER HARVESTING POND VOLUME CALCULATIONS

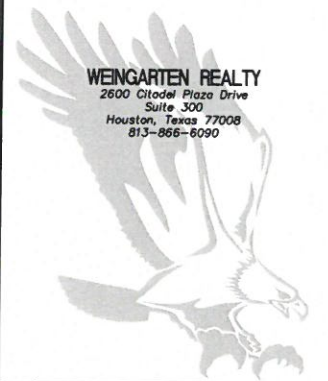
CONTOUR ELEVATION	AREA (SF)	VOLUME (CF)
POND 'A' 5412.00	514 SF	375.0 CF
5411.00	236 SF	152.0 CF
5410.00	68 SF	52.0 CF
TOTAL		579.0 CF
POND 'B' 5407.00	574 SF	416.0 CF
5406.00	258 SF	171.0 CF
5405.00	84 SF	58.0 CF
TOTAL		645.0 CF
GRAND TOTAL		1,224.0 CF

Need easement

# ARIA

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

**NORTH TOWNE PLAZA TRACT A-1, NEW BUILDING**  
5901 WYOMING, NE  
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12/14/2016  
Architect/Engineer

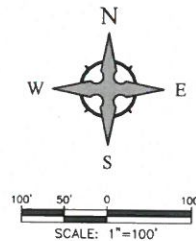
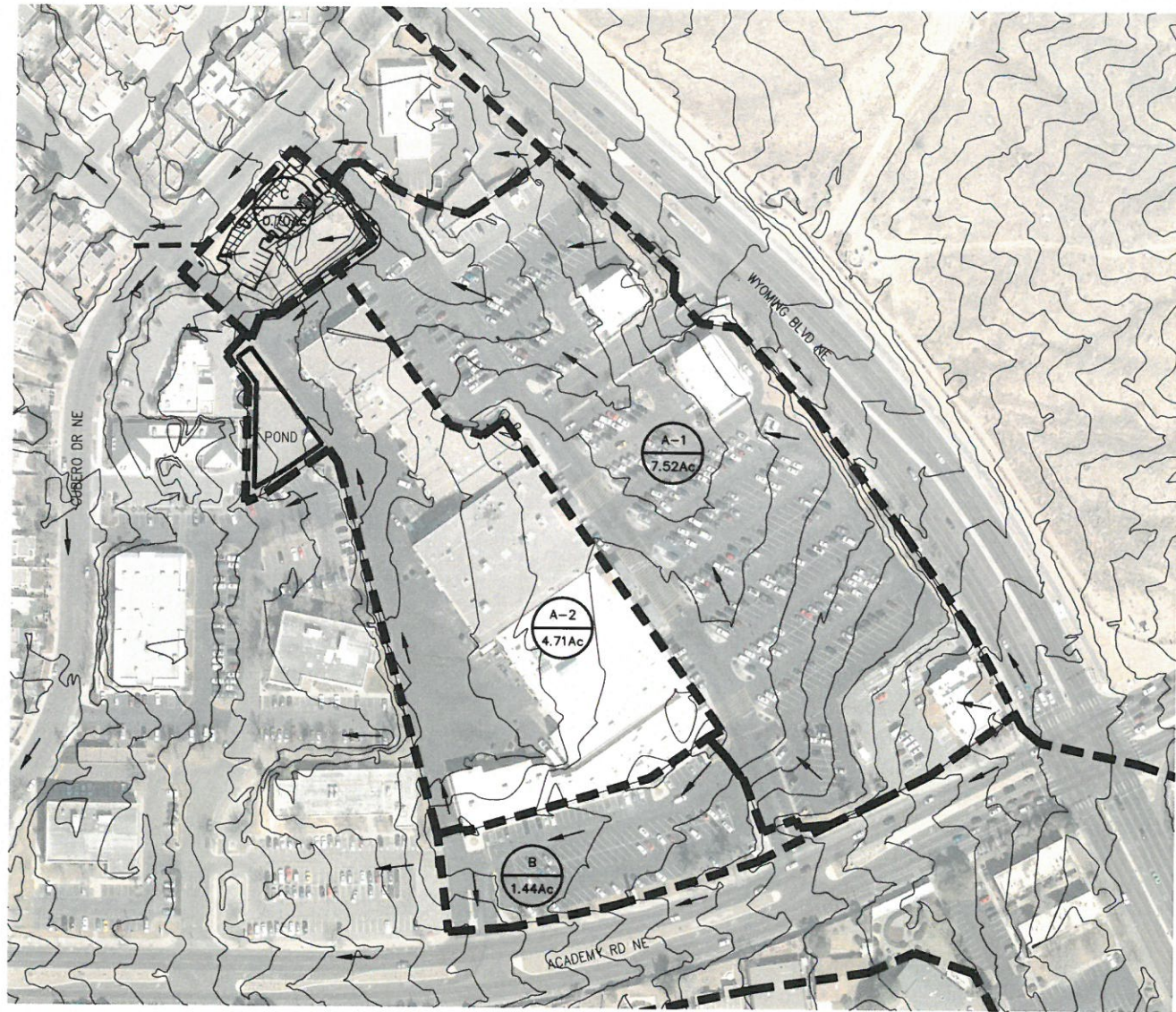
MARK	DATE	DESCRIPTION
REVISIONS		
ISSUE	DRB	
PROJECT NO	2014026	
CAD DWG FILE		
DRAWN BY	JTW	
CHECKED BY	JTW	
DATE	07/22/2016	

SITE GRADING PLAN

C201

**Wooten Engineering**  
1005 21st Street SE, Suite A5  
Rio Rancho, N.M. 87124  
Phone: (505) 980-3560





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#### DRAINAGE MANAGEMENT PLAN

##### INTRODUCTION

The purpose of this submittal is to provide a final drainage management plan for the Redevelopment within the North Towne Plaza Shopping Center located at the northwest corner of Wyoming and Academy in Albuquerque, NM. In particular, the existing detention pond is to be relocated from its existing location on Tract A-1 to the new location as shown on the attached plans on Tract A-4. The entire shopping center site contains approximately 14.37 acres.

##### EXISTING HYDROLOGIC CONDITIONS

An existing drainage study prepared by Fred Burns, P.E. of Boyle Engineering in March 1977 was found in the Plaza Del Sol basement files. This drainage study was prepared using different methodology than that required of the current DPM. We also determined in review of this study that the existing detention pond was built to a much lesser capacity than that which designed. The Drainage Study required the pond to be 2.888 acre-ft in volume with a maximum discharge rate of 9.60 cfs. However, our calculations from the recent topographic survey shows the actual pond volume to be ±0.75 acre-ft. In addition, the pond outlet was initially designed to be a single 12" storm drain and field investigation shows the outlet to consist of two 12" storm drains. Due to the discrepancies and differences in methodology, we have decided to defer back to the original undeveloped conditions for the site and analyze the pre-developed conditions accordingly. Per the Calculations table this sheet, the total existing flow leaving the site is 34.23 cfs during the 100-yr, 6-Hr Storm Event.

##### PROPOSED HYDROLOGIC CONDITIONS

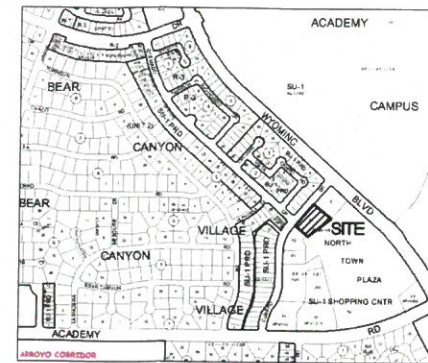
The proposed drainage patterns generally remain the same as they are today. Basin B remains unchanged and will continue to drain to Academy Rd. Basin C is currently undeveloped but will be developed as a retail building per the attached plans. This basin will drain directly to Cubero Dr without being rerouted to the new pond due to grade constraints. As part of the proposed development on Tract A-1, we will be installing new stormwater quality ponds which will assist in minimizing the peak flows into Cubero Dr. Basins A-1 and A-2 generally remain unchanged; however, the basins will be re-routed into the new pond via new 24", 30", and 36" storm drains per Sheet C203. Per the Calculations Table this sheet (AHYMO), Basins A-1 and A-2 contribute 62.33 cfs to the new pond. However, per the HEC-HMS methodology used to design the new pond, the actual peak flow into the pond is 53.10 cfs per the '100-Year Pond Routing Summary' this sheet. The slight reduction in flows is due to a different distribution used to calculate the peak. Per these same calculations, the peak flow released through the outlet of the pond has been calculated to be 26.0 cfs which is a 36.3 cfs decrease in peak flows in these two basins. The pre-developed conditions from these two basins is 26.9 cfs and therefore the peak flows from these basins are being reduced by 0.90 cfs.

##### FIRST FLUSH CALCULATIONS

Per the First Flush Calculations on Sheet C201, the total First Flush Volume required to be collected for Tract A-1 is 628 CF. Per the Water Harvesting Pond Calculations table on the same sheet, we are actually providing 1,114 CF of volume within the ponds 1.77 times that which is required.

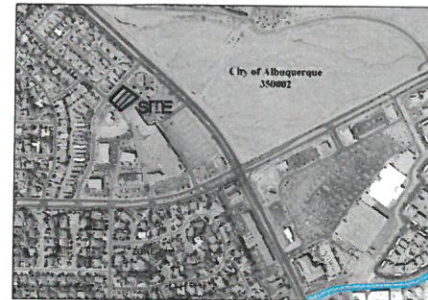
##### CONCLUSION

This drainage management plan provides for grading and drainage elements which are capable of safely passing the 100 year storm, do not burden downstream systems, and meet city requirements. In addition, the proposed water harvesting ponds will help treat stormwater runoff per the DPM. 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.



VICINITY MAP Zone Atlas E-19

Legal Description: Tract A1, North Towne Plaza



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.

#### 100 YEAR POND ROUTING SUMMARY

HEC-HMS used for Pond Analysis  
No Infiltration assumed in Calculations

##### INITIAL CONDITIONS

Starting WS Elev = 5404.50 ft  
Starting Volume = 0.00 ac-ft  
Starting Outflow = 0.00 cfs

MAXIMUM STORAGE		
Tp, min	Elev, ft	Vol, ac-ft
120.00	5410.0	1.10

ACTUAL TOP OF POND ELEVATION = 5411.0  
FREEBOARD PROVIDED = 1.0'

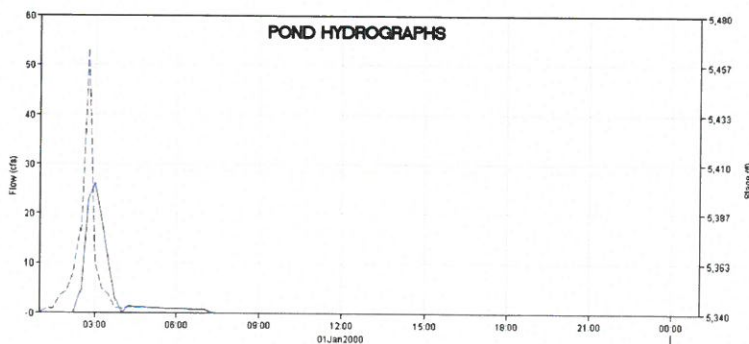
FORWARD FLOW PEAKS		
Tp, min	Qp, cfs	
Pond Inflow....	105.00	53.10
Pond Outflow....	120.00	26.00

Pond Volume Calculations			
Elevation (ft)	Area (sq.ft)	Volume (cu-ft)	Volume Sum (cu-ft)
5404.5	7,818	0	0
5405.0	8,022	3,960	3,960
5406.0	8,324	8,173	12,133
5407.0	8,624	8,474	20,607
5408.0	8,920	8,722	29,329
5409.0	9,206	9,063	38,392
5410.0	9,470	9,338	47,730
5411.0	9,684	9,577	57,307
(1.32 acre-ft)			

Existing North Towne Plaza Drainage Calculations										
This table is based on the COA DPM Section 22.2, Zone 14										
BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100) (cfs)	Q(100) (inches)	WT E	V(100)360 (CF)
A-1	327533	7.52	100.0%	0.0%	0.0%	0.0%	2.20	16.54	0.80	21826
A-2	205084	4.71	100.0%	0.0%	0.0%	0.0%	2.20	10.36	0.80	13672
B	62879	1.44	100.0%	0.0%	0.0%	0.0%	2.20	3.18	0.80	4192
C	30535	0.70	100.0%	0.0%	100.0%	0.0%	5.93	4.16	2.26	5751
TOTAL	628031	14.37						34.23		45450

Proposed North Towne Plaza Drainage Calculations										
This table is based on the COA DPM Section 22.2, Zone 14										
BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100) (cfs)	Q(100) (inches)	WT E	V(100)360 (CF)
A-1	327533	7.52	0.0%	0.0%	10.0%	90.0%	5.10	38.33	2.52	68837
A-2	205084	4.71	0.0%	0.0%	10.0%	90.0%	5.10	24.00	2.52	43102
B	62879	1.44	0.0%	0.0%	10.0%	90.0%	5.10	7.36	2.52	13215
C	30535	0.70	0.0%	0.0%	10.0%	90.0%	5.10	3.57	2.52	6417
TOTAL	628031	14.37						73.27		131571

NOTE: DETENTION POND REDUCES MAXIMUM DISCHARGE FROM BASINS A-1 AND A-2 TO 26.2 CFS



#### POND TIME-STEP RESULTS

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01-Jan-2000	01:00	0.0	0.0	5404.5	0.0
01-Jan-2000	01:15	0.8	0.0	5404.5	0.0
01-Jan-2000	01:30	0.9	0.0	5404.6	0.0
01-Jan-2000	01:45	3.3	0.1	5404.9	0.0
01-Jan-2000	02:00	4.2	0.1	5405.3	0.0
01-Jan-2000	02:15	8.1	0.3	5406.0	0.0
01-Jan-2000	02:30	17.4	0.5	5407.1	4.6
01-Jan-2000	02:45	53.1	0.9	5409.3	22.7
01-Jan-2000	03:00	10.2	1.1	5410.0	26.0
01-Jan-2000	03:15	4.9	0.8	5408.5	18.7
01-Jan-2000	03:30	3.7	0.6	5407.5	10.5
01-Jan-2000	03:45	1.0	0.5	5407.0	2.9
01-Jan-2000	04:00	0.8	0.5	5407.0	0.0
01-Jan-2000	04:15	1.2	0.5	5407.0	1.5
01-Jan-2000	04:30	1.1	0.5	5407.0	1.0
01-Jan-2000	04:45	1.1	0.5	5407.0	1.2
01-Jan-2000	05:00	1.0	0.5	5407.0	0.9
01-Jan-2000	05:15	0.9	0.5	5407.0	0.9
01-Jan-2000	05:30	0.9	0.5	5407.0	0.9
01-Jan-2000	05:45	0.9	0.5	5407.0	0.9
01-Jan-2000	06:00	0.8	0.5	5407.0	0.8
01-Jan-2000	06:15	0.8	0.5	5407.0	0.8
01-Jan-2000	06:30	0.8	0.5	5407.0	0.7
01-Jan-2000	06:45	0.7	0.5	5407.0	0.7
01-Jan-2000	07:00	0.7	0.5	5407.0	0.7
01-Jan-2000	07:15	0.0	0.5	5407.0	0.0
01-Jan-2000	07:30	0.0	0.5	5407.0	0.0
01-Jan-2000	07:45	0.0	0.5	5407.0	0.0
01-Jan-2000	08:00	0.0	0.5	5407.0	0.0
01-Jan-2000	08:15	0.0	0.5	5407.0	0.0
01-Jan-2000	08:30	0.0	0.5	5407.0	0.0
01-Jan-2000	08:45	0.0	0.5	5407.0	0.0

**Wooten Engineering**  
1005 21st Street SE, Suite A5  
Rio Rancho, N.M. 87124  
Phone: (505) 980-3560

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

**NORTH TOWNE PLAZA TRACT A-1, NEW BUILDING**  
5901 WYOMING, NE  
ALBUQUERQUE, NM 87109

**WINGARTEN REALTY**  
2600 Citadel Plaza Drive  
Suite 300  
Houston, Texas 77008  
813-866-6090

**JEFFREY TODD WOOTEN**  
NEW MEXICO  
16892  
PROFESSIONAL ENGINEER  
12/9/2016  
Architect/Engineer

MARK	DATE	DESCRIPTION
REVISIONS		
ISSUE	DRB	
PROJECT NO	2014026	
CAD DWG FILE		
DRAWN BY	JTW	
CHECKED BY	JTW	
DATE	12/9/2016	

**DRAINAGE MANAGEMENT PLAN**

**C104**