CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

October 26, 2017

Jeffery Wooten, P.E.
Wooten Engineering
1005 21st St SE, Suite A5
Rio Rancho, NM, 87124

RE: **4936 Pan American**
Grading and Drainage Plan
Engineer's Stamp Date: 10/23/17
Hydrology File: F17D032

Dear Mr. Wooten:

Based upon the information provided in your submittal received 10/24/17, the Grading and Drainage Plan cannot be approved for Grading or Building Permit until the following comments are addressed.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Prior to Grading Permit:

1. Written concurrence must be obtained from NMDOT D3 Drainage that this project can proceed. Please contact Tim Trujillo P.E (TimothyR.Trujillo@state.nm.us).
2. Update the statement under the FIRM viewports to state that a portion of this project is located in a floodplain (AO-1').
3. How much fill/cut is being placed in the floodplain? Quantify the cut/fill volume exclusive of work in the DOT ROW and show where the displaced volume will be provided. The concern for the City is that the floodplain is being filled and displaced into the adjacent properties- mainly the DOT ROW, but also the adjoining parcels north and south.

Prior to Building Permit:

4. The site must be platted.
5. Payment of the Fee-in-Lieu is required for the first flush bypass volume (51CF x $8.00/CF, per sheet C1.3).
6. How does the roof drain? Include clarifying language, flow direction, soffits, gutters, etc…

Orig: Drainage file

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

7. A Private Facility Drainage Covenant is required for the stormwater quality ponds/stormtechs. The original notarized forms, exhibits, and recording fee ($25, payable to City of Albuquerque) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants.

8. Water quality inlets are recommended at the inlets to the stormtechs to reduce sedimentation and maintenance in the stormtechs.

Prior to Certificate of Occupancy:

9. The Drainage Covenants must be recorded with Bernalillo County and a copy included with the drainage certification.

10. Payment of Fee-in-Lieu will be required for any first flush required ponding areas not constructed and certified.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Orig: Drainage file

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: 4936 Pan American Freeway NE Building Permit #: _____ City Drainage #: _____

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

Legal Description: Lot 1-A-1, Norris and Margaret Penny Addition

City Address: 4936 Pan American Freeway NE

Engineering Firm: Wooten Engineering Contact: Jeffrey T. Wooten, P.E.

Address: 1005 21st St SE, Suite 13, 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: Modulus Architects Contact: Stephen Dunbar

Address: 100 Sun Ave NE, Suite 305, Albuquerque, NM 87109

Phone#: 505-338-1499 Fax#: N/A E-mail: sdunbar@modulusarchitects.com

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

_____ TRAFFIC/ TRANSPORTATION

_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN

X 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?: X Yes _____ No

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X 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

X GRADING PERMIT APPROVAL

_____ SO-19 APPROVAL

_____ PAVING PERMIT APPROVAL

_____ GRADING/ PAD CERTIFICATION

_____ WORK ORDER APPROVAL

_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING

X OTHER (SPECIFY) _____

Need Grading Permit before Building Permit if Possible.

DATE SUBMITTED: 10/23/2017 By: Jeffrey T. Wooten, P.E.

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

Floodplain Development Permit Form

Planning Dept., City of Albuquerque

Section 1: General Provisions (Applicant to read and sign)

1. No work of any kind may start until a permit is issued.
2. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal regulatory requirements.
3. Applicant hereby gives consent to the Floodplain Administrator and his/her representative to make reasonable inspections required to verify compliance.
4. Applicant must provide a Critical Habitat for Threatened & Endangered Species report if working on or near an endangered species area.
5. The applicant certifies that all statements herein and in attachments to this application are, to the best of my knowledge, true and accurate.

Applicant Signature _____ Date 10/23/17

Applicant Printed Name JEFFREY T. WOOTEN, P.E. Phone #: 505-980-3560

Section 2: Proposed Development in Special Flood Hazard Area (to be completed by Applicant)

Brief Project Description Redevelopment of an existing Industrial Site into a new +/- 74,880 SF RETAIL FACILITY w/ ASSOCIATED PARKING & LANDSCAPING.

Applicant is (check one): Owner ____ Builder ____ Engineer/Architect ✓

Project address/Legal Disc/Location: 4936 PAN AMERICAN FREEWAY NE

Description of Work in Special Flood Hazard Area (SFHA):

A. Development Activities

Clearing ✓ Fill ✓ Drilling ____ Excavation ✓

Watercourse Alteration ____(Including Dredging and Channel Modifications)

Drainage Improvements ✓ Road, Street or Bridge Construction ✓

Water or Sewer Line Installation ✓ Paving ✓ Walls, Fences ____

Storage of Materials/Equipment for more than a year. ___ Materials Volume (cu. Ft.) ____

Other (Please Specify) _____

B. Building Development and Building Type

New Building ✓ Residential (1-4 Family) ____ Residential (More than 4 Family)____

Commercial ✓ Addition ____ Alteration ____ Demolition ____

Manufactured Home ____

If an addition or alteration:

Estimated Cost of structure before addition/alteration. _____

Estimated Cost of Project $_____ Percent of value (new/existing) _____

Is there a Grading & Drainage Plan associated with this work? Yes ✓ No ____

Drainage file Number: F17 D032

Section 3: Floodplain Determination (Completed by the Floodplain Administrator)

The proposed development is located in a SFHA Zone (circle one): A AE AH AO

And is located on FIRM Panel:_____

And is located in a Floodway: ___Yes ___No

BFE if Applicable:_____

Drainage File Number:_____

Floodplain Permit Number:_____

Building Permit / Work Order #:_____

Site specific Instructions:_____

_____

_____

_____

Signed: _____ Date: _____

Printed Name: _____

If proposed development is a building complete section 4.

Section 4: Requirements for building in a SFHA:

(To be completed by the Floodplain Administrator or Representative).

BFE (unless not available) _____ Minimum Finished Floor Elevation: _____

Minimum Lowest Adjacent Grade (LAG): _____

Change in water elevation (if in a Floodway):_____

Is flood-proofing required: YES ____ NO _____

If yes, method of flood-proofing:_____

Company certifying the flood-proofing:_____

An Elevation Certificate is required for structural development in a SFHA. A Certificate of Occupancy will not be granted until the Planning Department receives the Elevation Certificate.

Section 5: Post Development Certification:

A. For structural Development:

Elevation Certificate received on (Date): _____

Finished Floor Elevation: _____

Lowest adjacent grade: _____

The Floodplain Administrator or Representative verifies that the above information is acceptable ___ is not ____ acceptable per the City of Albuquerque Floodplain Ordinance.

B. The site was visually inspected on (Date) _____

Certificate of Occupancy approved on (Date) _____

Signature: _____ Date: _____

Printed Name: _____

StormTech MC-3500 Chamber

Storage Volume Per Chamber/End Cap ft³ (m³)

	Bare Unit Storage	Chamber/End Cap and Stone Volume — Stone Foundation Depth in. (mm)			
	ft³ (m³)	9 (230)	12 (300)	15 (375)	18 (450)
MC-3500 Chamber	109.9 (3.11)	178.9 (5.06)	184.0 (5.21)	189.2 (5.36)	194.3 (5.5)
MC-3500 End Cap	14.9 (0.42)	46.0 (1.33)	47.7 (1.35)	49.4 (1.40)	51.1 (1.45)

NOTE: Assumes 9" (230 mm) row spacing, 40% stone porosity, 12" (300 mm) stone above and includes the bare chamber/end cap volume. End cap volume assumes 6" (150 mm) stone perimeter.

Volume of Excavation Per Chamber/End Cap in yd³ (m³)

	Stone Foundation Depth			
	9" (230 mm)	12" (300 mm)	15" (375 mm)	18" (450 mm)
MC-3500	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)	13.8 (10.5)
End Cap	4.1 (3.1)	4.2 (3.2)	4.4 (3.3)	4.5 (3.5)

NOTE: Assumes 9" (230 mm) of separation between chamber rows and 24" (600 mm) of cover. The volume of excavation will vary as the depth of cover increases.

Amount of Stone Per Chamber

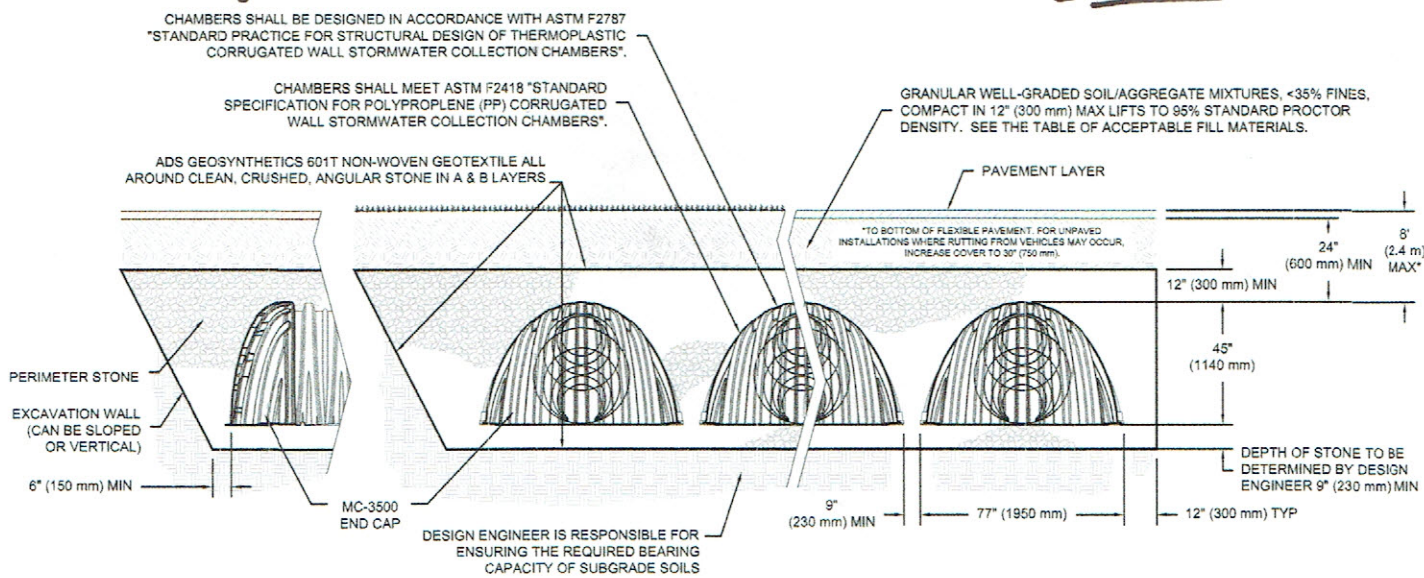
ENGLISH tons (yd³)	Stone Foundation Depth			
	9"	12"	15"	18"
MC-3500	9.1 (6.4 yd³)	9.7 (6.9 yd³)	10.4 (7.3 yd³)	11.1 (7.8 yd³)
End Cap	4.1 (2.9 yd³)	4.3 (3.0 yd³)	4.5 (3.2 yd³)	4.7 (3.3 yd³)
METRIC kg (m³)	230 mm	300 mm	375 mm	450 mm
MC-3500	8220 (4.9 m³)	8831 (5.3 m³)	9443 (5.6 m³)	10054 (6.0 m³)
End Cap	3699 (2.2 m³)	3900 (2.3 m³)	4100 (2.5 m³)	4301 (2.6 m³)

NOTE: Assumes 12" (300 mm) of stone above, and 9" (230 mm) row spacing, and 6" (150 mm) of perimeter stone in front of end caps.

Void Space = 6.9 * 0.30 = 2.07 CY/Chamber

General Cross Section * 27 = 55.9 CF/Chamber

Total Storage/Chamber = 165.8 CF; 30 Chambers * 165.8 = 4,974 CF total



*FOR COVER DEPTHS GREATER THAN 8.0' PLEASE CONTACT STORMTECH

THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

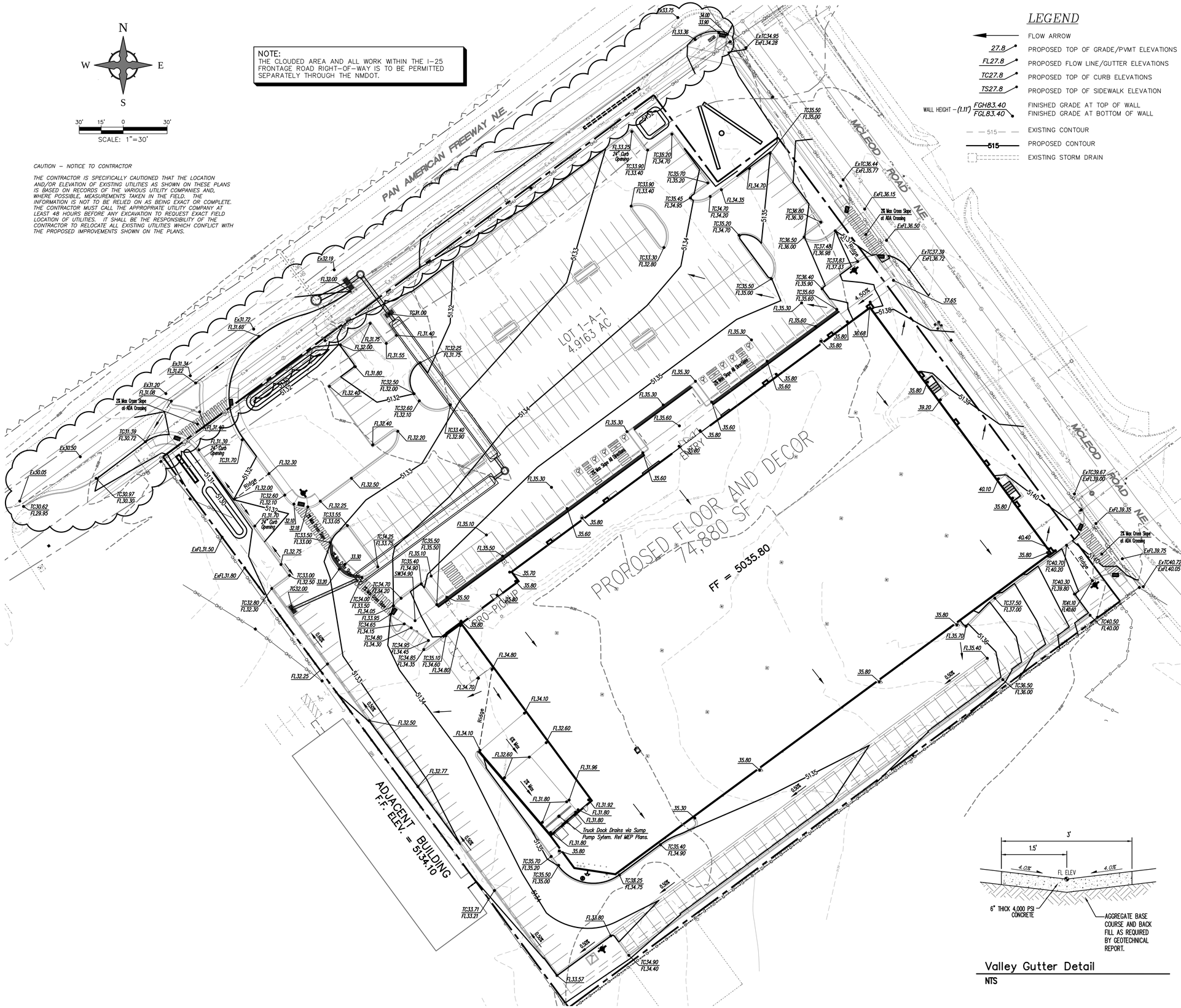
N
W E
S

30' 15' 0 30'
SCALE: 1"=30'

NOTE:
THE CLOUDED AREA AND ALL WORK WITHIN THE I-25 FRONTAGE ROAD RIGHT-OF-WAY IS TO BE PERMITTED SEPARATELY THROUGH THE NMDOT.

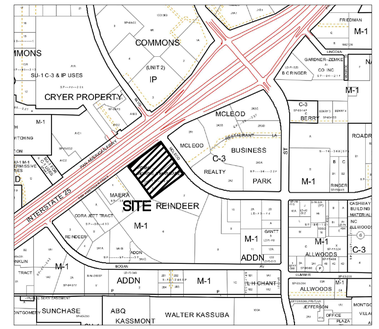
CAUTION – NOTICE TO CONTRACTOR

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 THE APPROPRIATE UTILITY COMPANY 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.



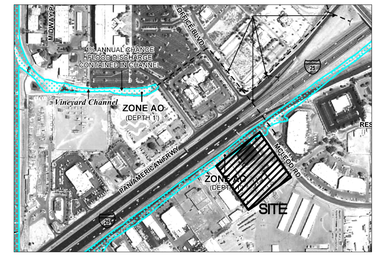
LEGEND

- FLOW ARROW
- 27.8 — PROPOSED TOP OF GRADE/PVMT ELEVATIONS
- FL27.8 — PROPOSED FLOW LINE/GUTTER ELEVATIONS
- TC27.8 — PROPOSED TOP OF CURB ELEVATIONS
- TS27.8 — PROPOSED TOP OF SIDEWALK ELEVATION
- WALL HEIGHT – (1.11') FGH83.40 / FGL83.40 — FINISHED GRADE AT TOP OF WALL / FINISHED GRADE AT BOTTOM OF WALL
- 515 — EXISTING CONTOUR
- 515 — PROPOSED CONTOUR
- EXISTING STORM DRAIN



VICINITY MAP - Zone Map F-17-Z
Legal Description: Lots Numbered One (1) and Two (2) of the Norris and Margaret Penny Addition

BENCHMARK:
ACS MONUMENT "I25-18", NAD 1983, X=1535672.415, Y=1505666.336, Z=5128.34 (NAVD 1988), GROUND TO GRID = 0.999671141



FIRM MAP 35001C0138H

Per FIRM Map 35001C0138H, dated August 16, 2012, the site is not located in the Floodplain and determined to be outside the 0.2% chance Annual Floodplain.'

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.*

Valley Gutter Detail
NTS

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

REV	DATE	BY	REVISION
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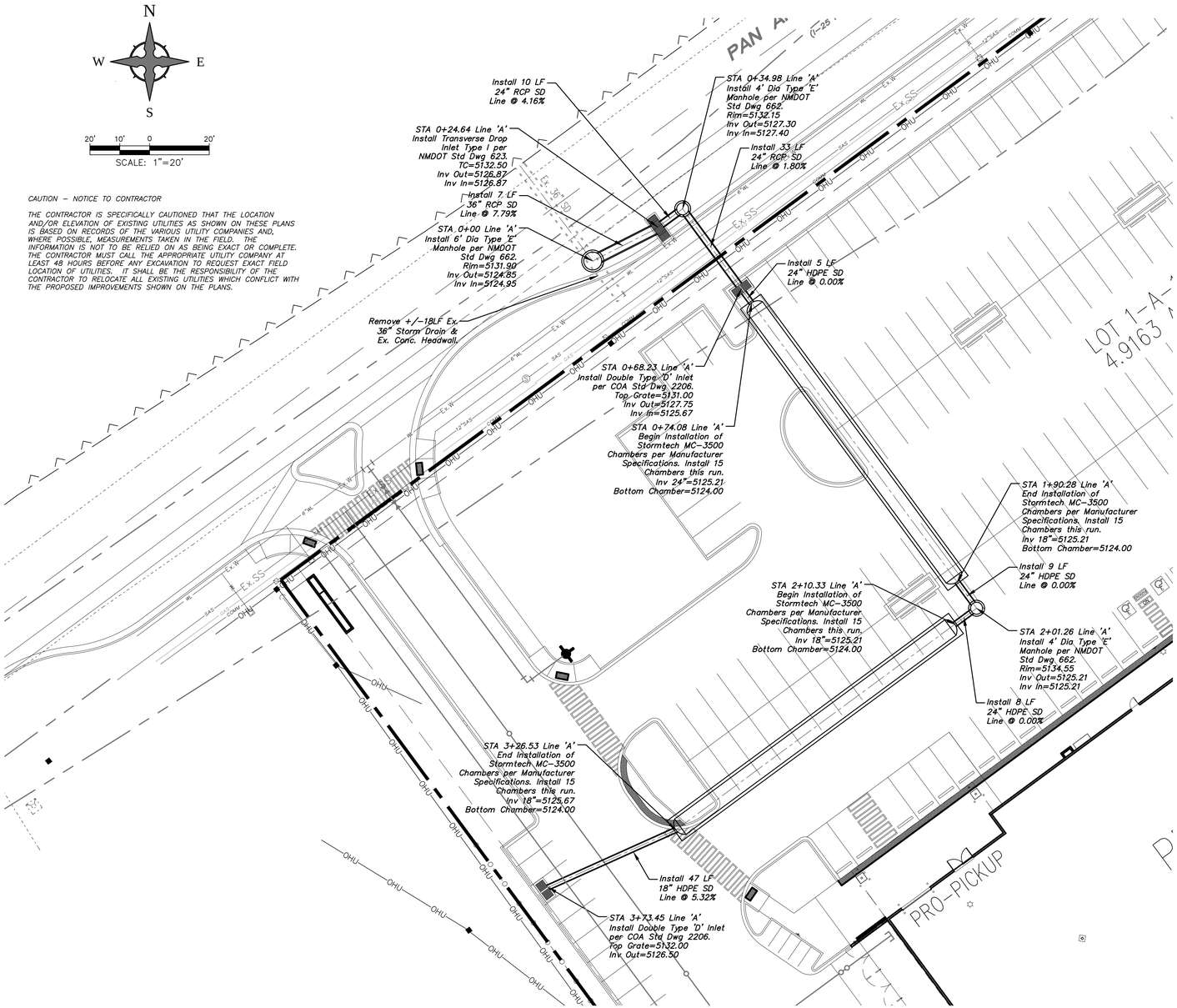
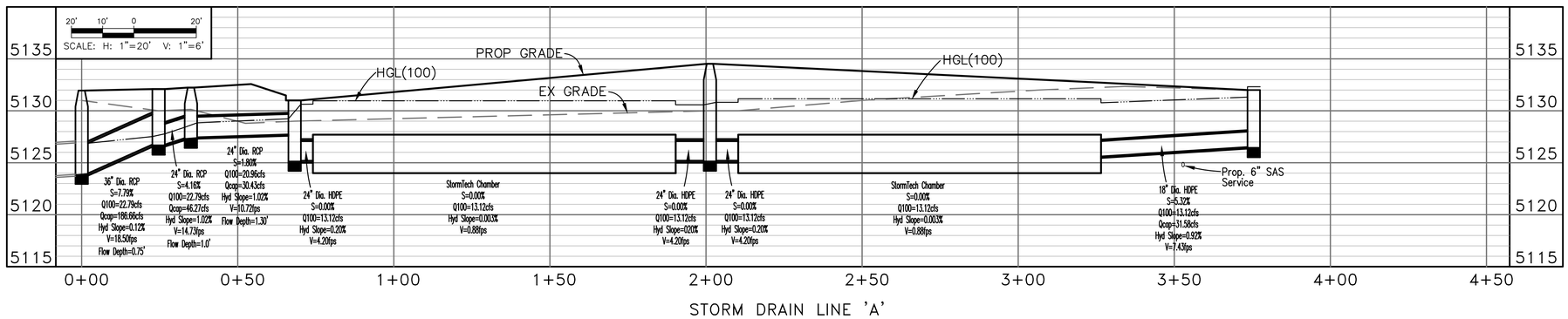
MODULUS ARCHITECTS
100 SUN AVENUE N.E., Ste 305
ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 338-1499 FAX (505) 338-1498

JEFFREY TODD WOOTEN
NEW MEXICO
16892
PROFESSIONAL ENGINEER
10/23/2017

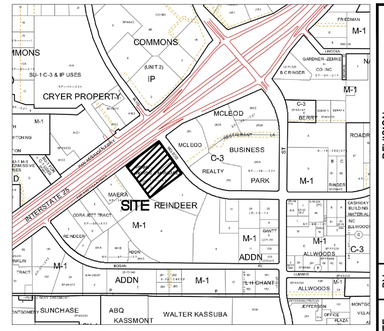
PROJECT TITLE: 4936 PAN AMERICAN FRWY NE
MCLEOD AND I25
ALBUQUERQUE, NEW MEXICO 87120
PROJECT MANAGER: JEFF WOOTEN
JOB NO.: 2017018
DRAWN BY: OLIVIA WOOTEN
SHEET TITLE: Grading Plan

DATE: 10/11/2017
SCALE: AS NOTED
sheet- C1.1
of- 2





STORM DRAIN LINE 'A'



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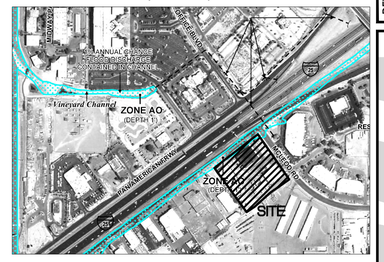

FIRM MAP 35001C0138H

Per FIRM Map 35001C0138H, dated August 16, 2012, the site is not located in the Floodplain and determined to be outside the 0.2% chance Annual Floodplain.'

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REV	DATE	BY	REVISION
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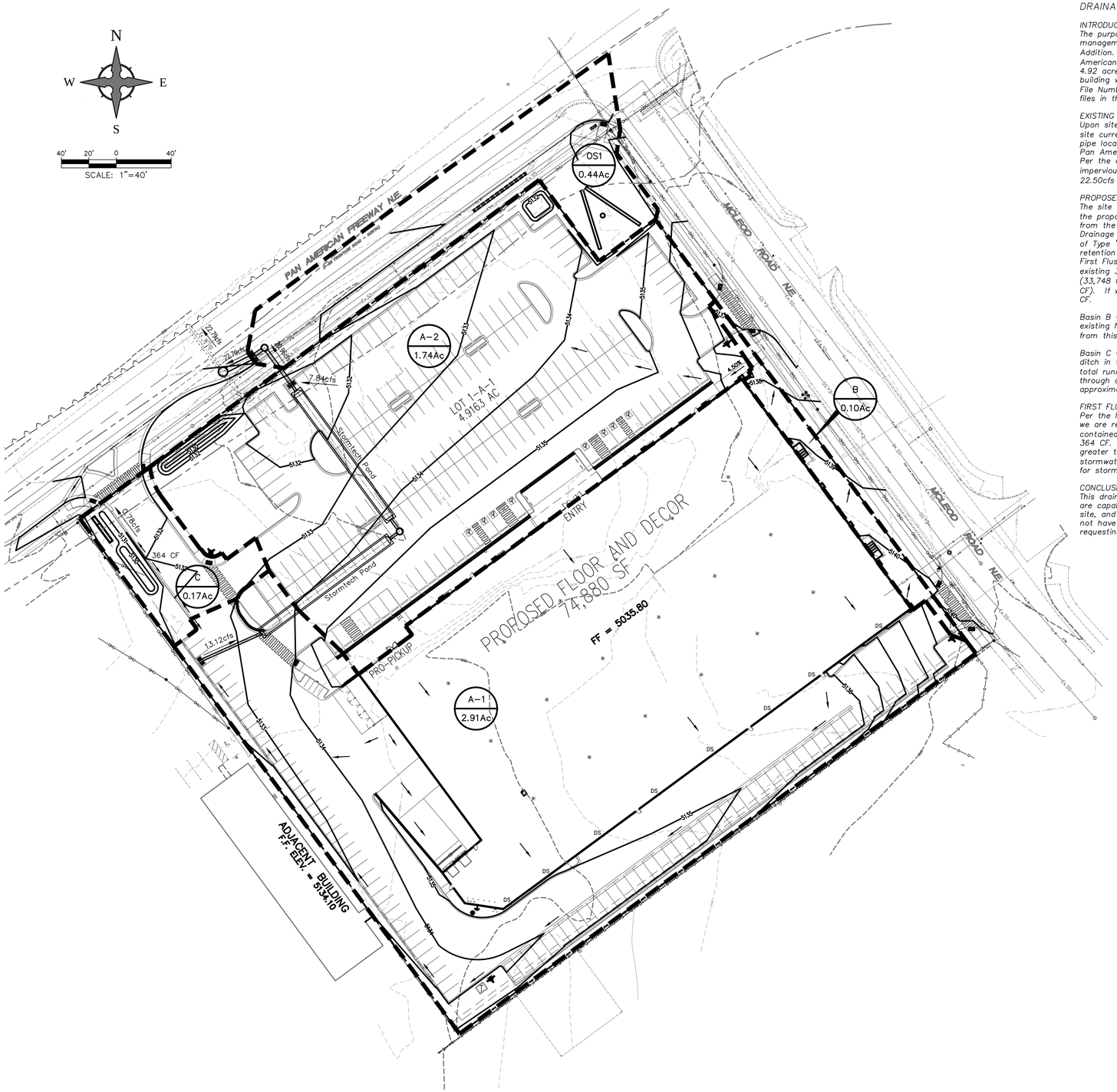
MODULUS ARCHITECTS
100 SUN AVENUE N.E., Ste 305
ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 338-1499 FAX (505) 338-1498

JEFFREY TODD WOOTEN NEW MEXICO 16892 PROFESSIONAL ENGINEER
10/23/2017

PROJECT TITLE: 4936 PAN AMERICAN FRWY NE MCLEOD AND I25 ALBUQUERQUE, NEW MEXICO 87120
DRAWN BY: OLIVIA WOOTEN
JOB NO.: 2017018
PROJECT MANAGER: JEFF WOOTEN
SHEET TITLE: Storm Drain Plan

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

DATE: 10/11/2017
SCALE: AS NOTED
sheet- C1.2 of- 2



DRAINAGE MANAGEMENT PLAN

INTRODUCTION
The purpose of this submittal is to provide a grading plan and drainage management plan for the development of Lot 1-A-1, Norris and Margaret Penny Addition. The site is located at 4936 Pan American Freeway NE (SEC of Pan American Freeway and McLeod) in Albuquerque, NM. The site contains approximately 4.92 acres. The proposed development consists of a new Floor & Decor retail building with the associated parking lot and landscaping. The current City Drainage File Numbers are F17/D018 and F17/D032; however, we were not able to locate the files in the Hydrology Department.

EXISTING HYDROLOGIC CONDITIONS
Upon site investigation and per the topographic survey provided by Surv-Tek, the site current surface drains from east to west and into an existing 36" storm drain pipe located in the frontage road of Pan American Fwy. This pipe drains under the Pan American Freeway and continues west eventually to the North Diversion Channel. Per the calculations table this sheet, the existing site was approximately 92% impervious and the total discharge into the existing 36" storm drain pipe was 22.50cfs (36,435 CF) during the 100-Yr, 6-Hr storm event.

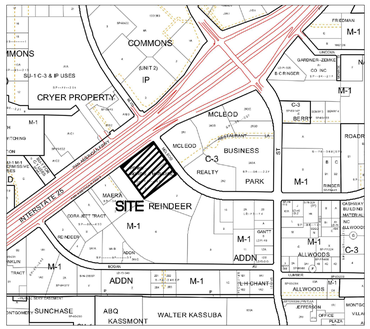
PROPOSED HYDROLOGIC CONDITIONS
The site will continue to surface drain from east to west via the parking lot. Since the proposed site has fewer impervious surfaces (approximately 88%) and the runoff from the site will be reduced, on-site detention is not being proposed. Per the Drainage Calculations Table this sheet, Basins A-1 and A-2 will drain to a couple of Type 'D' (Double) Inlets which will flow into a new Stormtech below ground retention system to provide the required Stormwater Quality Pond storage per the First Flush Calculations this sheet. The total flow discharging the site into the existing 36" pipe located in the Pan American Fwy Frontage Road is 20.96cfs (33,748 CF) during the 100-Yr, 6-Hr storm. This is a reduction of 1.54cfs (2,687 CF). If we account for the Stormtech storage, the total volume reduction is 7,661 CF.

Basin B will surface drain into McLeod, head west along McLeod and then into the existing NMDOT inlet located at the edge of the Frontage Road. The total runoff from this basin is 0.45cfs (732 CF).

Basin C will surface drain into the Frontage Road, head south along an existing bar ditch in the Frontage Road, and eventually into the North Diversion CHannel. The total runoff from this basin is 0.78cfs (1,248 CF). This drainage is being routed through a stormwater quality pond along the south property line which can contain approximately 364 CF, reducing the runoff volume to 884 CF.

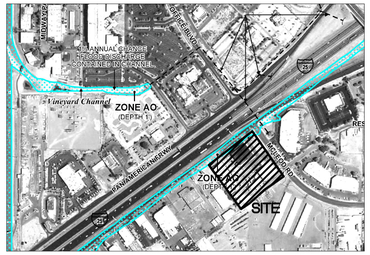
FIRST FLUSH CALCULATIONS
Per the Impervious Area and Water Harvesting Pond Calculations tables this sheet, we are required to provide Water Quality Ponding to contain 4,202 CF. The volume contained in the Stormtech system is 4,974 CF and the pond in Basin 'C' contains 364 CF. The total stormwater quality ponding provided is 5,338 CF, which is greater than that required; however, we are unable to route a total of 51 CF to the stormwater ponds so those areas will be required to pay the 'payment in lieu' fee for stormwater quality ponding.

CONCLUSION
This drainage management plan provides for grading and drainage elements which are capable of safely passing the 100 year storm, contains the First Flush from the site, and meets city requirements. The proposed improvements for the site should not have any negative impacts to facilities downstream. With this submittal, we are requesting grading permit and building permit approval.



VICINITY MAP - Zone Map F-17-Z
Legal Description: Lots Numbered One (1) and Two (2) of the Norris and Margaret Penny Addition

BENCHMARK:
ACS MONUMENT "I25-18", NAD 1983, X=1535672.415, Y=1505666.336, Z=5128.34 (NAVD 1988), GROUND TO GRID = 0.999671141



FIRM MAP 35001C0138H

Per FIRM Map 35001C0138H, dated August 16, 2012, the site is not located in the Floodplain and determined to be outside the 0.2% chance Annual Floodplain.

Existing McLeod / I25 Drainage Calculations

This table is based on the COA DPM Section 22.2, Zone: 2

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)
Existing Site	214239	**4.92**	**0.0%**	**0.0%**	**8.0%**	**92.0%**	**4.58**	***22.50***	***2.04***	***36435***	***43005***	***62715***
TOTAL	214239	**4.92**						***22.50***		***36435***	***43005***	***62715***

Proposed McLeod / I25 Drainage Calculations

Ultimate Development Conditions Basin Data Table

This table is based on the COA DPM Section 22.2, Zone: 2

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	126644	**2.91**	**0.0%**	**0.0%**	**12.0%**	**88.0%**	**4.51**	***13.12***	***2.00***	***21120***	***24835***	***35980***
A-2	75722	**1.74**	**0.0%**	**0.0%**	**12.0%**	**88.0%**	**4.51**	***7.84***	***2.00***	***12628***	***14849***	***21513***
B	4388	**0.10**	**0.0%**	**0.0%**	**12.0%**	**88.0%**	**4.51**	***0.45***	***2.00***	***732***	***860***	***1247***
C	7484	**0.17**	**0.0%**	**0.0%**	**12.0%**	**88.0%**	**4.51**	***0.78***	***2.00***	***1248***	***1468***	***2126***
OS1	19012	**0.44**	**0.0%**	**0.0%**	**33.0%**	**67.0%**	**4.19**	***1.83***	***1.79***	***2841***	***3266***	***4540***
TOTAL	233250	**5.35**						***24.02***		***38569***	***45278***	***65405***

IMPERVIOUS AREA CALCULATIONS

PROPOSED SITE CONDITIONS
TOTAL SITE AREA: 214,239 SF
PERVIOUS AREA: 25,710 SF (12%)
IMPERVIOUS AREA: 188,529 SF (88%)

FIRST FLUSH CALCULATIONS

BASIN 'A'
TOTAL IMPERVIOUS AREA = 188,529 SF
FIRST FLUSH = 188,529 * 0.26" / 12 = 4,084 CF
TOTAL VOLUME PROVIDED (STORMTECH POND) = 4,974 CF

BASIN 'B'
TOTAL IMPERVIOUS AREA = 426 SF
FIRST FLUSH = 426 * 0.26" / 12 = 9 CF
TOTAL FIRST FLUSH NOT CAPTURED = 9 CF

BASIN 'C'
TOTAL IMPERVIOUS AREA = 5,057 SF
IMP AREA CAPTURED BY POND = 3,099 * 0.26" / 12 = 67 CF
IMP AREA NOT CAPTURED BY POND = 1,958 * 0.26" / 12 = 42 CF
TOTAL POND VOLUME PROVIDED = 364 CF

☐ WATER HARVESTING POND VOLUME CALCULATIONS

STORMTECH SYSTEM UTILIZED FOR STORMWATER QUALITY POND
MODEL: MC-3500
NUMBER OF CHAMBERS INSTALLED: 30
VOLUME PROVIDED PER CHAMBER: 109.9 CF
VOLUME OF GRAVEL PER CHAMBER: 186.3 CF
VOLUME OF VOIDS PER CHAMBER: 186.3 CF * 0.30 = 55.89 CF
TOTAL WATER STORAGE PER CHAMBER: 109.9 CF + 55.89 CF = 165.8 CF
TOTAL VOLUME PROVIDED (NOT INCLUDING END CAPS): 165.8*30 = 4,974 CF

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REV	DATE	BY	REVISION
6			
5			
4			
3			
2			
1			

MODULUS ARCHITECTS
100 SUN AVENUE N.E., Ste 305
ALBUQUERQUE, NEW MEXICO 87109
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JEFFREY TODD WOOTEN
NEW MEXICO
16892
REGISTERED PROFESSIONAL ENGINEER
10/23/2017

PROJECT TITLE: 4936 PAN AMERICAN FRWY NE
MCLEOD AND I25
ALBUQUERQUE, NEW MEXICO 87120

PROJECT MANAGER: JEFF WOOTEN

JOB NO.: 2017018

DRAWN BY: OLIVIA WOOTEN

SHEET TITLE: Drainage Management Plan

DATE: 10/11/2017

SCALE: AS NOTED

sheet- C1.3 of- 2