CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

November 16, 2015

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

RE: Commercial & Apartment Building – Phase I
4th St NW and Freeman Ave NW
Grading and Drainage Plan
Engineer's Stamp Date 10-9-2015 (File: G14D066)

Dear Mr. Wooten:

Based upon the information received on 10-9-2015, the following items need to be addressed prior to Building Permit and Work Order (see comment #5) approval. Separate Grading and Paving permits are not typically required for small commercial developments.

1. The drainage plan language on Sheet C4 states that this development will accept "any offsite flows from the south as needed". It's not clear how flows from the south would enter this project with the addition of curb along the southern edge. However, if flows *will* pass through this property, then they need to be quantified and accounted for to ensure the pond operates as intended (at least estimated, in the absence of a drainage report and detailed topographic information for the adjacent property).
    a. A private drainage easement will likely be necessary if flows are planned to pass through the property, it does not appear that one exists in the plat recently presented at DRB.
2. Pond 'B' needs to show an emergency spillway.
3. Call out the curb openings for both ponds, and the pond bottom elevation for Pond 'A'.
4. A Work Order (not an SO-19) will need to be processed for the improvements to the City Right of Way. The Work Order will require a Floodplain Construction permit (NW corner of 5th and Freeman is in Zone AH).

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

5. Please include a detail of the pond outfall (the referenced "Quick Drain" can continue to just be referenced by product name/number).

6. 8" PVC is not allowed for the pipe outfall that extends into City Right of Way; instead, 12" High Performance Polypropylene Pipe may be used. The approval letter to ADS from the City Engineer and the Standard Trench Installation Detail are enclosed for reference.

7. Call out a flush transition from the sidewalk culvert surface to the existing surface at the SE corner of the project.

8. Be aware that this plan does not appear to have addressed comments from Transportation, such as minimum sidewalk widths and wheelchair ramp layouts, which will be required through the TCL review.

If you have any questions, you can contact me at 924-3986.

Sincerely,

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

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Orig: Drainage file

STORM TRENCH INSTALLATION DETAIL

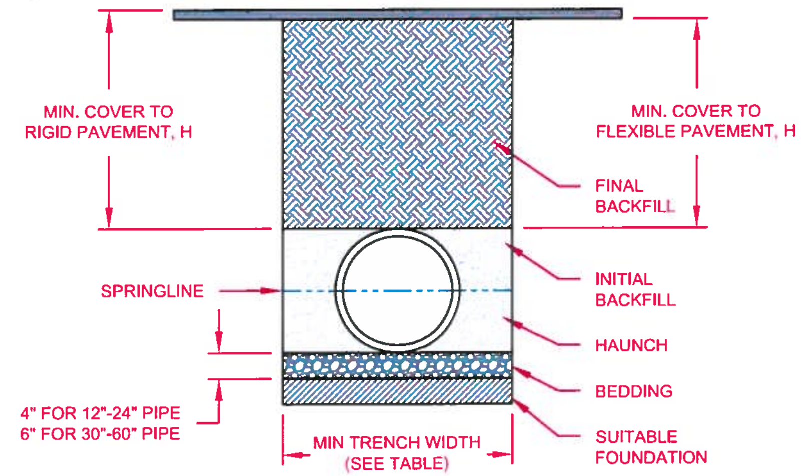


TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1200mm)
30" (750mm)	56" (1420mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1830mm)
48" (1200mm)	80" (2030mm)
60" (1500mm)	96" (2440mm)

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IVB MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. <u>FOUNDATION:</u> WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. <u>BEDDING:</u> SUITABLE MATERIAL SHALL BE CLASS I, II,OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE 90% OF MAXIMUM DENSITY PER ASTM D1557 OR AS SHOWN ON THE PLANS. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE; 6" (150mm) FOR 30"-60" (750mm-900mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.

5. <u>INITIAL BACKFILL:</u> SUITABLE MATERIAL SHALL BE CLASS I, II, OR III IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. FOR TRAFFIC APPLICATIONS; CLASS I, II OR III MATERIAL SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 90 PERCENT OF MAXIMUM DENSITY PER ASTM D1557. CLASS IV MATERIALS AS DEFINED IN ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.

6. <u>MINIMUM COVER</u>: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (300mm)	48" (1200mm)
60" (1500mm)	24" (600mm)	60" (1500mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

COA HP PP STORM TRENCH INSTALLATION DETAIL

ABC
DATE
ENG
NTS
OF

3 of 4

CITY OF ALBUQUERQUE

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

April 8, 2015

Peggy B Graham, PE, CFM
Regional Engineer/Product Manager
9830 Niwot Road
Longmont, CO 80504

RE: Updated Approval of Advanced Drainage System, Inc.'s HP (High Performance) Storm Polypropylene Pipe (PP) for Storm Drainage Applications within the Right-of-way per the Items Below

Dear Ms. Graham:

The City of Albuquerque has reviewed the submittal for your HP Storm Polypropylene Pipe (PP) and agrees to the following:

1. PP will be allowed in the right-of-way and under pavements for collectors and less. Applications with greater traffic counts will need approval by the City Engineer. The evaluation period for this product shall be one year from the first installation. At the end of one year the City will review all prior installations before adoption within the City's Standards. HP Storm pipe will be allowed to bid or value engineer on all city projects for the street classifications outlined above.
2. Referenced specifications shall include "*ASTM D2321, Underground Installation for Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications*", "*ASTM F477 Elastomeric Seals (Gaskets) for Joining Plastic Pipe*", "*ASTM F2736 - 6 to 30 in. Polypropylene (PP) Corrugated Single Wall Pipe and Double Wall Pipe*", "*ASTM F2764 - 30 to 60 in. Polypropylene (PP) Triple Wall Pipe and Fittings for Non-Pressures Sewer Applications*".
3. Pipe diameters 12" up to and including 60" diameter will be allowed.
4. A Class 1, 2 or 3 backfill materials per ASTM D2321 may be used for the bedding, haunch, and initial backfill zones per the attached trench detail. The material shall be installed per the standard installation specification and trench detail drawing.
5. Pipe shall meet the minimum joint performance requirements per ASTM D3212, a 10.8psi, gage, laboratory pressure test for 10 minutes with no visible leaks at the joint. Watertight joints shall be bell-and-spigot and gaskets shall be made of polyiosprene meeting the requirements of ASTM F477. PP pipe will be allowed in pressure applications that comply with this standard for the duration of the storm event.
6. The material and installation specifications and trench detail shall be reviewed and approved by the City of Albuquerque before publication.

Specifications for construction and materials are required to be included on the approved construction plans per this letter.

Sincerely,

Shahab Biazar, P.E.
City Engineer

Bryan Wolfe, P.E.
DMD – Construction Supervisor

Cc: Wilfred Gallegos, PE, COA
Susanne Lubar, COA
Rita Harmon, PE, COA
Peter Nichols, PE, ADS

Albuquerque - Making History 1706-2006

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Commercial & Apartment Building - Phase 1 Building Permit #: ______ City Drainage #: ______
DRB#: ______ EPC#: ______ Work Order#: ______
Legal Description: Tract 1-A, Block 1, Belmont Place
City Address: 4419 4th St NW

Engineering Firm: Wooten Engineering Contact: Jeffrey T. Wooten, P.E.
Address: 1368 Reynosa Loop SE, 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: Scott C Anderson & Associates Architects Contact: Scott Anderson
Address: 7604 Rio Penasco NW, ABQ, NM 87120
Phone#: 505-401-7575 Fax#: N/A E-mail: andersonscottc@comcast.net

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) ______

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:
_X_ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY

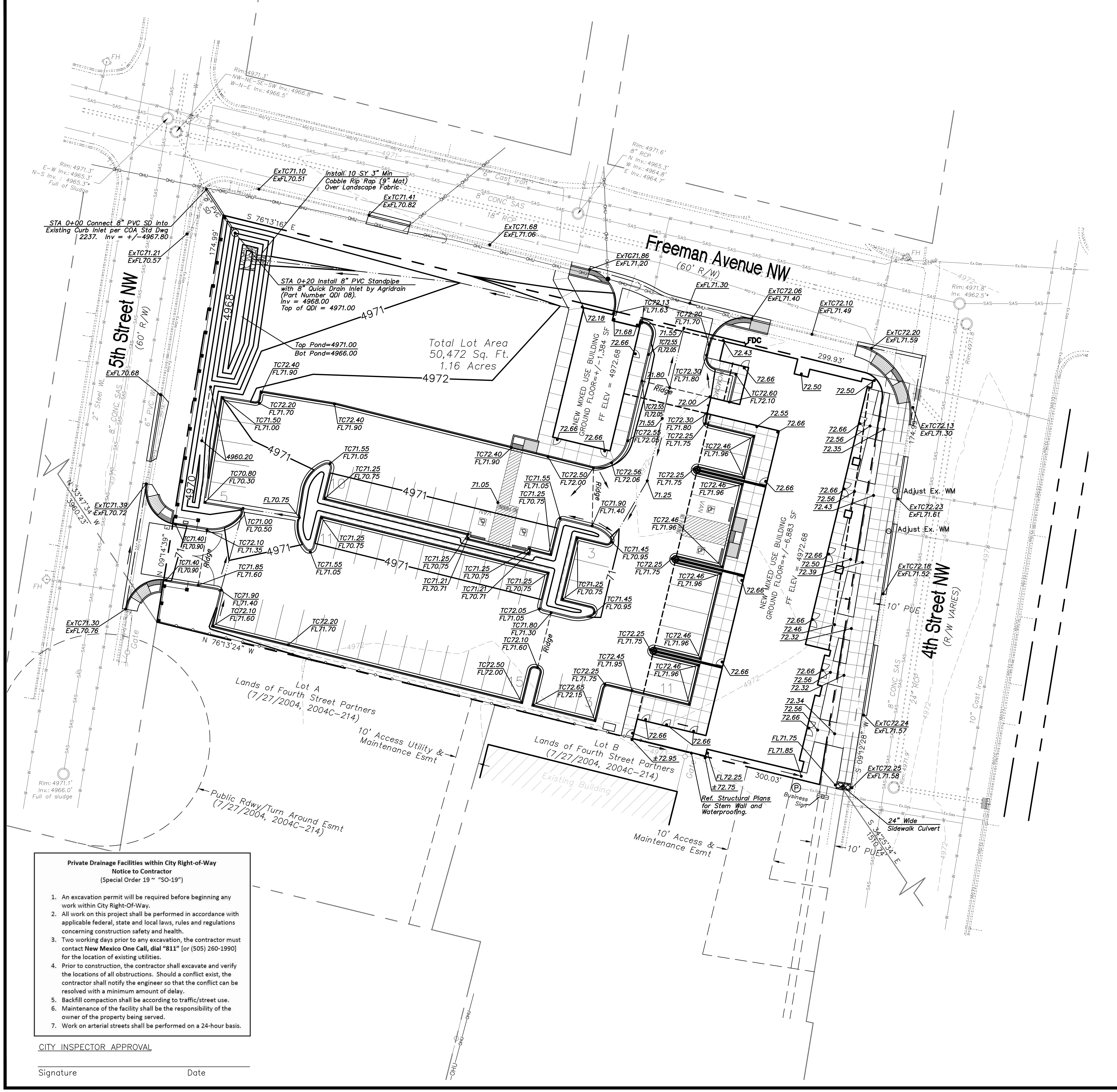
_____ PRELIMINARY PLAT APPROVAL
_____ SITE PLAN FOR SUB'D APPROVAL
_____ SITE PLAN FOR BLDG. PERMIT APPROVAL
_____ FINAL PLAT APPROVAL
_____ SIA/ RELEASE OF FINANCIAL GUARANTEE
_____ FOUNDATION PERMIT APPROVAL
_X_ GRADING PERMIT APPROVAL
_X_ SO-19 APPROVAL
_X_ PAVING PERMIT APPROVAL
_____ GRADING/ PAD CERTIFICATION
_____ WORK ORDER APPROVAL
_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING
_____ OTHER (SPECIFY) ______

IS THIS A RESUBMITTAL?: _____ Yes _X_ No

DATE SUBMITTED: 10/9/2015 By: Jeffrey T. Wooten, P.E.

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

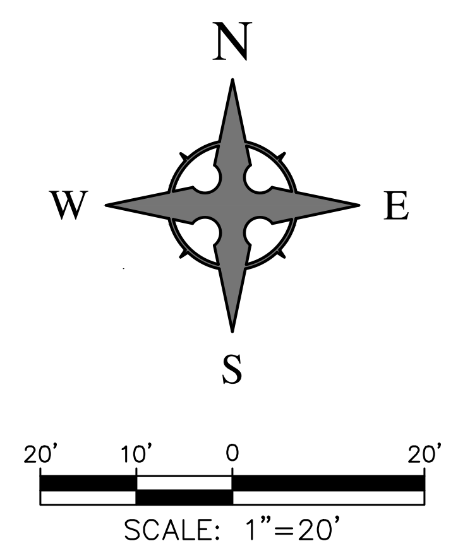


Private Drainage Facilities within City Right-of-Way
Notice to Contractor
(Special Order 19 ~ "SO-19")

1. An excavation permit will be required before beginning any work within City Right-Of-Way.
2. All work on this project shall be performed in accordance with applicable federal, state and local laws, rules and regulations concerning construction safety and health.
3. Two working days prior to any excavation, the contractor must contact **New Mexico One Call, dial "811"** [or (505) 260-1990] for the location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to traffic/street use.
6. Maintenance of the facility shall be the responsibility of the owner of the property being served.
7. Work on arterial streets shall be performed on a 24-hour basis.

CITY INSPECTOR APPROVAL

Signature Date



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
— — 515 — —	EXISTING CONTOUR
——515——	PROPOSED CONTOUR
▭- - - -	EXISTING STORM DRAIN
——…——	FLOW LINE
— — — —	RIDGE LINE

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.

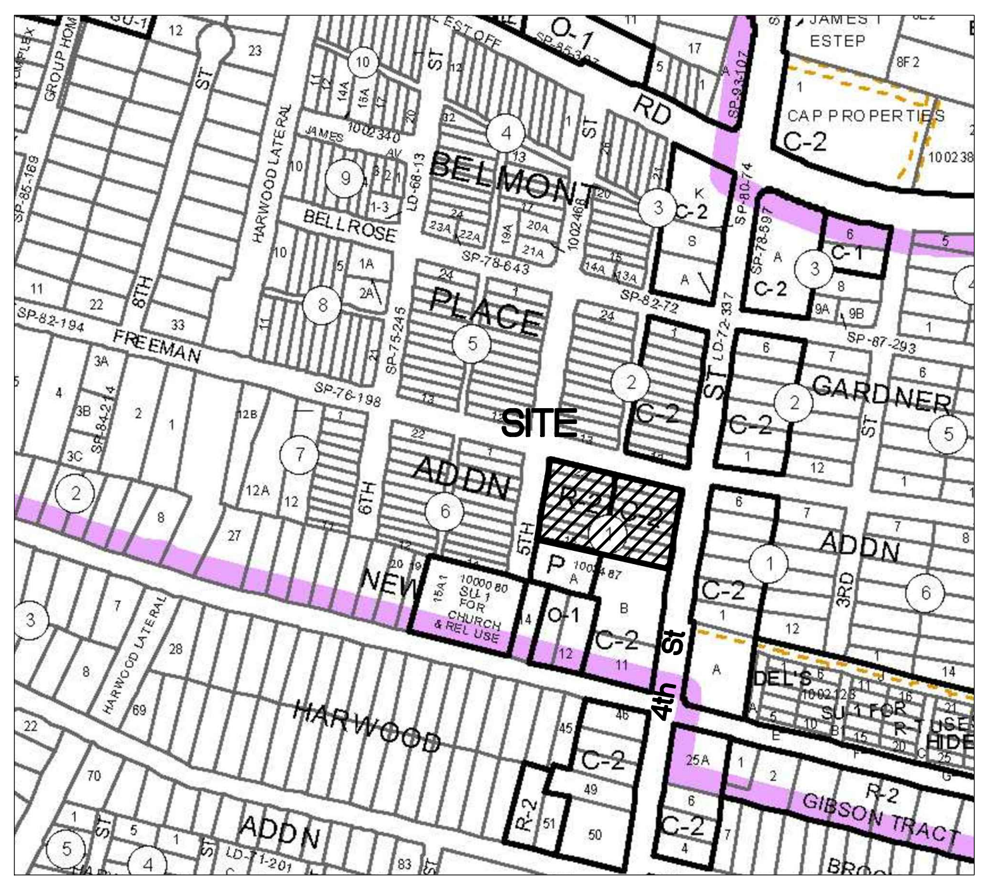
7. A DISPOSAL SITE FOR ANY & ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL AND/OR A BORROW SITE CONTAINING ACCEPTABLE FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL 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.

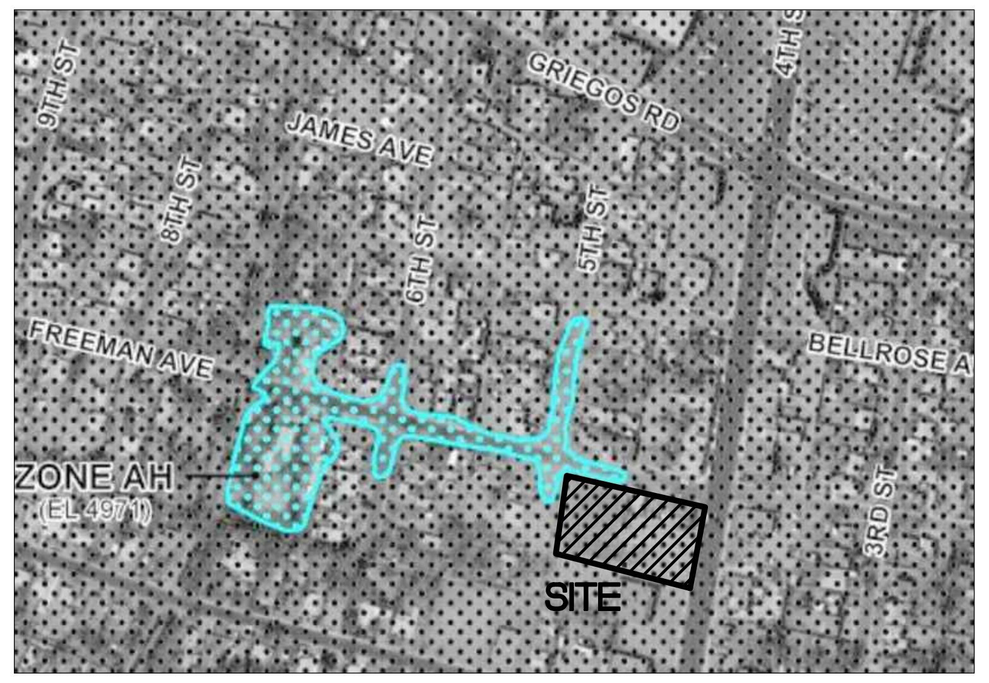
9. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR PAVEMENT, MEDIANS, AND ISLANDS.

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.



VICINITY MAP Zone Atlas G-14
NTS



FIRM MAP 35001C0119G

Per FIRM Map 35001C0119G, 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.

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.

2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 UPDATE NO. 8.

3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NM ONE CALL FOR LOCATION OF EXISTING UTILITIES. (NM ONE CALL = '811')

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.

6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

No	Revision Item	Date

SCOTT C. ANDERSON
& associates architects
7604 rio penasco nw
albuquerque, nm 87120
andersonscottc@comcast.net
505.401.7575

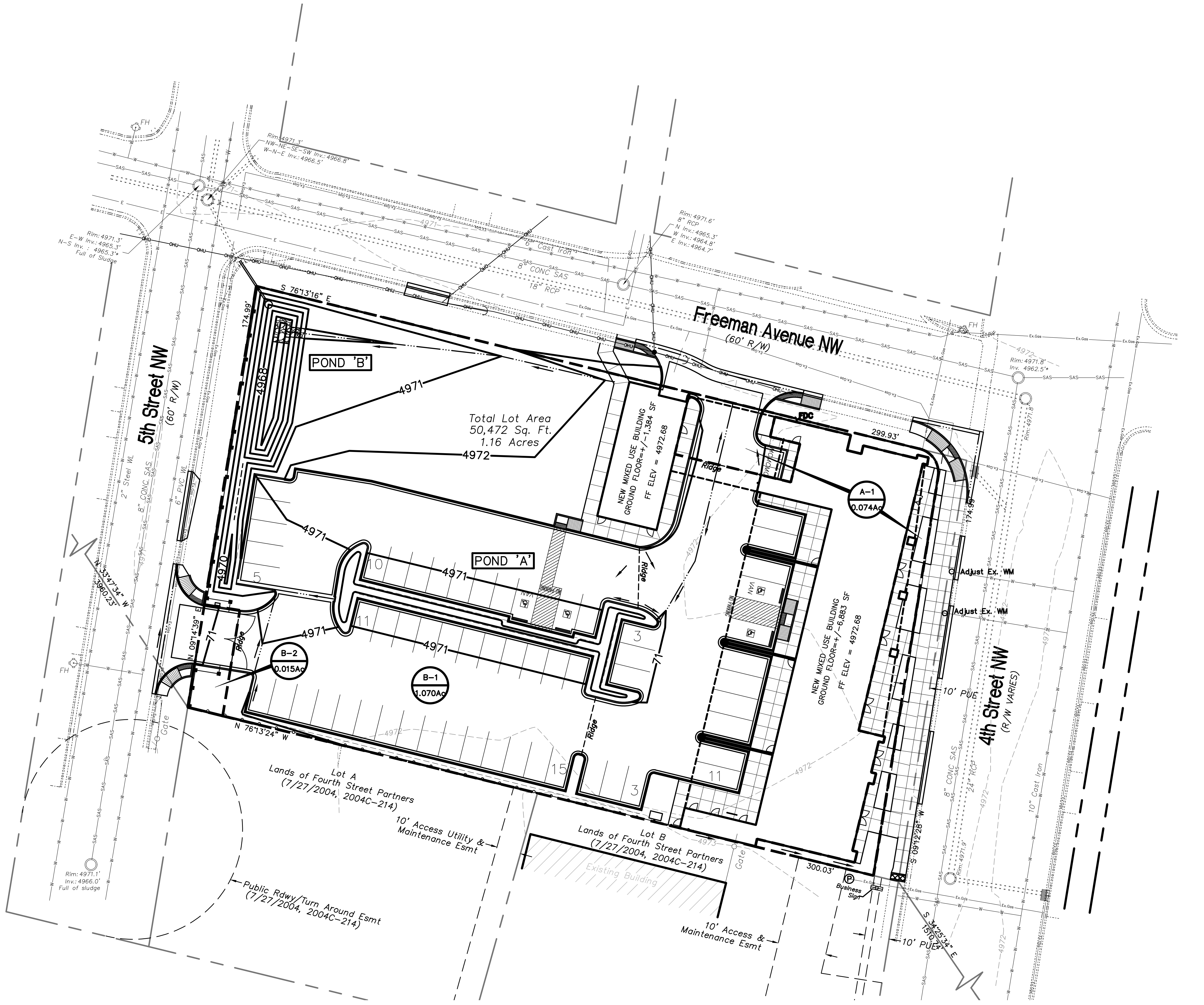
COMMERCIAL & APARTMENT BUILDING PHASE 1
4419 4th ST NW
ALBUQUERQUE, NM 87107

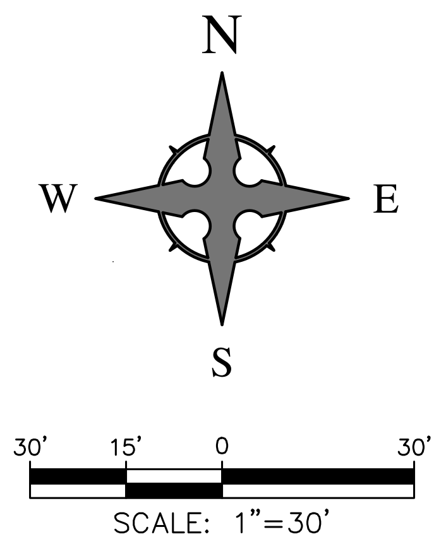
DRAWING TITLE
Grading Plan

Wooten
Engineering
1368 Reynosa Loop SE
Rio Rancho, N.M. 87124
Phone: (505) 980-3560

SEAL
JEFFREY TODD WOOTEN
16892
10/9/2015

DESIGNED	JTW	PROJECT NO	WE2014059
DRAWN	JTW	SCALE	See Plan
CHECKED	JTW	DRAWING NO	
REVIEWED	JTW		
DATE	10/5/15		C3 OF 6





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.

DRAINAGE MANAGEMENT PLAN

INTRODUCTION

The purpose of this submittal is to provide a final drainage management plan for the Redevelopment of 4419 4th St NW, located at the SWC of 4th St NW and Freeman Ave NW in Albuquerque, NM. The site contains approximately 1.16 acres. We were unable to locate an existing Drainage Study for the site; however, we did find a file with a complaint from an adjacent property owner such that a prior development intended to impede off–site flows from entering the site. The proposed grading plan will accept any off–site flows from the south as needed.

EXISTING HYDROLOGIC CONDITIONS

Although a portion of the site used to be developed as office building, the site was razed in +/–1996 and we are analyzing the site in its current condition. The site is currently undeveloped and sheet flows from east to west into adjacent roadways, Freeman Ave and 5th St. These flows ultimately drain to several existing curb inlets located at the intersection of 5th St/Freeman Ave. This storm drain system flows eastward toward 4th St. Per the Calculations table this sheet, the total existing flow leaving the site is 3.64 cfs during the 100–Yr, 6–Hr Storm Event.

PROPOSED HYDROLOGIC CONDITIONS

The proposed drainage patterns generally remain the same; however, there iare a couple of very small drainage basins (A–1 and B–2) that need to be directed directly into adjacent roadways. These two basins equate to a minimal flow rate of 0.40 cfs per the calculations table this sheet. The remaining drainage from the site is calculated to contribute a total of 4.80 cfs during the 100–Yr storm. Since the site is located in the valley area, it is our understanding that the site is limited to a discharge of 2.75 cfs/acre. The subject site is 1.16 acres, so the total allowable discharge from the site is 3.19 cfs. Subtracting Basins A–1 and B–2 (0.40 cfs) which directly discharge into adjacent roadways, the total allowable discharge from the remainder of the site is 2.79 cfs.

In order to effectively reduce the 4.80 cfs discharge from Basin B–1 to the allowable 2.79 cfs rate of discharge, we are implementing a retention pond that is larger than the required first flush rate of 0.34". The proposed ponds 'A' and 'B' provide a total volume of 3,870.50 cubic feet which equates to a total capture of 1.07" of rainfall from the site. This is over 3.0 times that of the required first flush. We are also implementing a stormwater quality outlet (8" Agrigrain outlet) to protect against trash and oils discharging from the site.

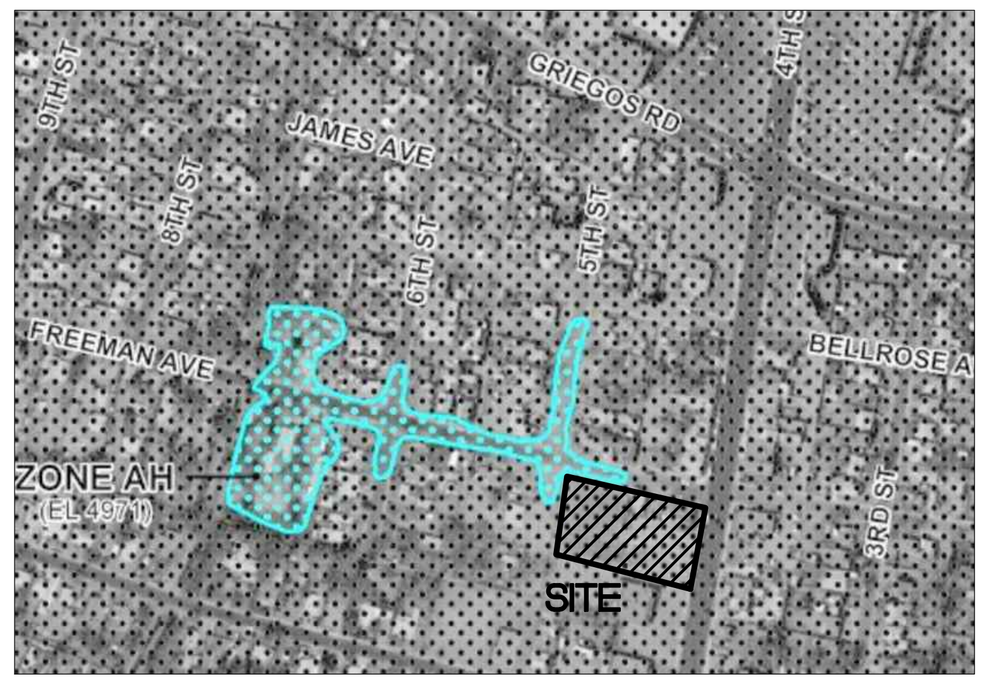
FIRST FLUSH CALCULATIONS

Per the First Flush Calculations on this sheet, the total First Flush Volume required to be collected for the site is 1,232 CF. Per the Water Harvesting Pond Calculations table this sheet, we are actually retaining 3,870.50 CF of flow from the site which is just over 3 times the quantity required.

CONCLUSION

This drainage management plan provides for grading and drainage elements which reduce the impact to downstream systems; 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 G-14**
NTS



FIRM MAP 35001C0119G

Per FIRM Map 35001C0119G, 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.

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
— — 515 — —	EXISTING CONTOUR
——515——	PROPOSED CONTOUR
☐- - - - -	EXISTING STORM DRAIN
——…——	FLOW LINE
— — — —	RIDGE LINE

IMPERVIOUS AREA CALCULATIONS

PROPOSED SITE CONDITIONS
PERVIOUS AREA: 7,000 SF
IMPERVIOUS AREA: 43,472 SF
TOTAL SITE AREA: 50,472 SF
% IMPERVIOUS = 86.13%

FIRST FLUSH CALCULATION
TOTAL IMPERVIOUS AREA = 43,472 SF
FIRST FLUSH = 43,472 * 0.34" / 12 = **1,232 CF**

☐ WATER HARVESTING POND VOLUME CALCULATIONS

	CONTOUR ELEVATION	AREA (SF)	VOLUME (CF)
POND 'A'	4970.50	1,362 SF	340.50 CF
	4969.50	0 SF	
	TOTAL		340.5 CF
POND 'B'	4970.50	1,864 SF	842 CF
	4970.00	1,504 SF	1,202 CF
	4969.00	1,202 SF	757 CF
	4968.00	614 SF	485 CF
	4967.00	356 SF	244 CF
	4966.00	132 SF	
	TOTAL		3,530 CF
	GRAND TOTAL		**3,870.50 CF**

Pre-Developed Drainage Calculations

BASIN	This table is based on the COA DPM Section 22.2, Zone: 2											
BASIN	Area	Area	Land Treatment Percentages				Q(100)	Q(100)	WT E	$V(100)_{360}$	$V(100)_{1440}$	$V(100)_{10day}$
	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)	(CF)	(CF)
Existing Site	50472	**1.159**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**3.14**	***3.64***	***1.13***	***4753***	***4753***	***4753***
TOTAL	50472	**1.159**						***3.64***		***4753***	***4753***	***4753***

Post-Developed Drainage Calculations

Ultimate Development Conditions Basin Data Table

BASIN	This table is based on the COA DPM Section 22.2, Zone: 2											
BASIN	Area	Area	Land Treatment Percentages				Q(100)	Q(100)	WT E	$V(100)_{360}$	$V(100)_{1440}$	$V(100)_{10day}$
	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)	(CF)	(CF)
A-1	3205	**0.074**	**0.0%**	**0.0%**	**14.0%**	**86.0%**	**4.48**	***0.33***	***1.98***	***529***	***621***	***897***
B-1	46629	**1.070**	**0.0%**	**0.0%**	**14.0%**	**86.0%**	**4.48**	***4.80***	***1.98***	***7699***	***9036***	***13046***
B-2	638	**0.015**	**0.0%**	**0.0%**	**14.0%**	**86.0%**	**4.48**	***0.07***	***1.98***	***105***	***124***	***179***
TOTAL	50472	**1.159**						***5.19***		***8334***	***9781***	***14121***

No	Revision Item	Date

SCOTT C. ANDERSON
& associates architects
7604 rio penasco nw
albuquerque, nm 87120
andersonscottc@comcast.net
505.401.7575

COMMERCIAL & APARTMENT BUILDING PHASE 1
4419 4th ST NW
ALBUQUERQUE, NM 87107

DRAWING TITLE
Drainage Management Plan

SEAL
JEFFREY TODD WOOTEN
16892
10/9/2015

DESIGNED	JTW	PROJECT NO	WE2014059
DRAWN	JTW	SCALE	See Plan
CHECKED	JTW	DRAWING NO	
REVIEWED	JTW		C4 OF 6
DATE	10/5/15		

Wooten Engineering
1368 Reynosa Loop SE
Rio Rancho, N.M. 87124
Phone: (505) 980-3560