CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

December 14, 2016

Hugh Floyd, P.E.
RESPEC
9820 Academy parkway East NE
Building C2
Albuquerque, NM 87109

RE: **Kiddie Academy**
Grading and Drainage Plan
Engineer's Stamp Date 11-14-2016 (File:C19D061)

Dear Mr. Floyd:

Based upon the information provided in your submittal received 11-15-2016, the above-referenced Grading and Drainage plan is approved for Building Permit. Per today's DRB hearing (#1010997), the Plan is also approved for Site Plan for Building Permit and Site Plan for Subdivision. Furthermore, the Plan is approved for SO-19 Permit, with the following condition:

1. The Contractor will need to follow the Standard SO-19 Notes (see attached). Please ensure that they are followed; the City will need to inspect the work within the Right of Way.

Please attach a copy of this approved plan in the construction sets when submitting for the building permit. Prior to Certificate of Occupancy (CO) release, Engineer Certification per the DPM checklist will be required.

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

Sincerely,

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

cc: Jason Rodriguez, DMD

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Alameda Louisiana Kiddie Academy Building Permit #: _____ City Drainage #: _____

DRB#: _____ EPC#: 101097 Work Order#: _____

Legal Description: Portions of Lots 1 & 2, Block 4, Tract 2, Unit 3 of North Albuquerque Acres in Bernalillo County, New Mexico

City Address: _____

Engineering Firm: Respec Contact: Hugh Floyd

Address: 5971 Jefferson NE, Suite 101; Albuquerque, NM 87109

Phone#: (505) 366-4187 Fax#: (505) 998-9038 E-mail: hugh.floyd@respec.com

Owner: Phil Lindborg Contact: Phil Lindborg

Address: 12809 Donette Court NE; Albuquerque, NM 87112

Phone#: (505) 450-4388 Fax#: N/A E-mail: phillindborg@comcast.net

Architect: Modulus Architects Contact: Stephen Dunbar

Address: 100 Sun Avenue NE, Ste. 305; Albuquerque, NM 87109

Phone#: (505) 338-1499 Fax#: (505) 338-1998 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

X 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

X SITE PLAN FOR SUB'D APPROVAL

X SITE PLAN FOR BLDG. PERMIT APPROVAL

_____ FINAL PLAT APPROVAL

_____ SIA/ RELEASE OF FINANCIAL GUARANTEE

_____ FOUNDATION PERMIT APPROVAL

_____ GRADING PERMIT APPROVAL

X SO-19 APPROVAL

_____ 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: 11-15-2016 By: Hugh Floyd

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

Hydrology Calculations

The following calculations are based on Albuquerque Development Process Manual, Section 22.2

NAA Scenario Runoff Rate:

Treatment Type Areas

$Area_A$ = 0 ac $Area_B$ = 0.3233 ac $Area_C$ = 0.1940 ac $Area_D$ = 0.7759 ac

Peak Discharge values based on Zone 3 from Table A-9

Q_A = 1.87 cfs/ac Q_B = 2.60 cfs/ac Q_C = 3.45 cfs/ac Q_D = 5.02 cfs/ac

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation A-10

$Q_P = Q_A \bullet Area_A + Q_B \bullet Area_B + Q_C \bullet Area_C + Q_D \bullet Area_D$ = **5.4 cfs**

Proposed Conditions Runoff Rate:

Treatment Type Areas

$Area_A$ = 0 ac $Area_B$ = 0.0706 ac $Area_C$ = 0.0706 ac $Area_D$ = 0.9955 ac

Peak Discharge values based on Zone 3 from Table A-9

Q_A = 1.87 cfs/ac Q_B = 2.60 cfs/ac Q_C = 3.45 cfs/ac Q_D = 5.02 cfs/ac

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation A-10

$Q_P = Q_A \bullet Area_A + Q_B \bullet Area_B + Q_C \bullet Area_C + Q_D \bullet Area_D$ = **5.4 cfs**

Water Quality:

$V_{WQ} = Area_D \bullet 0.34"$ = **1229 ft³**

Water Quality Pond A

Elev.	Area (Sq. Ft.)	Vol (Cu. Ft.)	Cum. (Cu. Ft.)
5306.0	34	0	0
5307.0	148	91	91
5307.5	226	93	184

Water Quality Pond B

Elev.	Area (Sq. Ft.)	Vol (Cu. Ft.)	Cum. (Cu. Ft.)
5305.5	35	0	0
5306.0	86	30	30
5307.0	243	164	194
5307.5	345	147	341

Water Quality Pond C

Elev.	Area (Sq. Ft.)	Vol (Cu. Ft.)	Cum. (Cu. Ft.)
5306.0	18	0	0
5307.0	125	71	71
5307.5	204	82	153

Water Quality Pond D

Elev.	Area (Sq. Ft.)	Vol (Cu. Ft.)	Cum. (Cu. Ft.)
5310.00	19	0	0
5311.0	108	63	63
5312.0	267	188	251
5312.85	461	310	560

Total Water Quality Volume = **1239 ft³**

SIDEWALK CULVERT

Rectangular Channel

Input

Flow	5.4 cfs
Slope	0.0238 ft/ft
Manning's n	0.013
Base Width	1.5 ft
Right Side Slope	0:1
Left Side Slope	0:1

Output

Depth	0.468 ft
Flow Area	0.702 sf
Velocity	7.69 fps
Velocity Head	0.920 ft
Top Width	1.50 ft
Froude Number	1.98
Critical Depth	0.739 ft
Critical Slope	0.00680 ft/ft

12" ADS PIPE

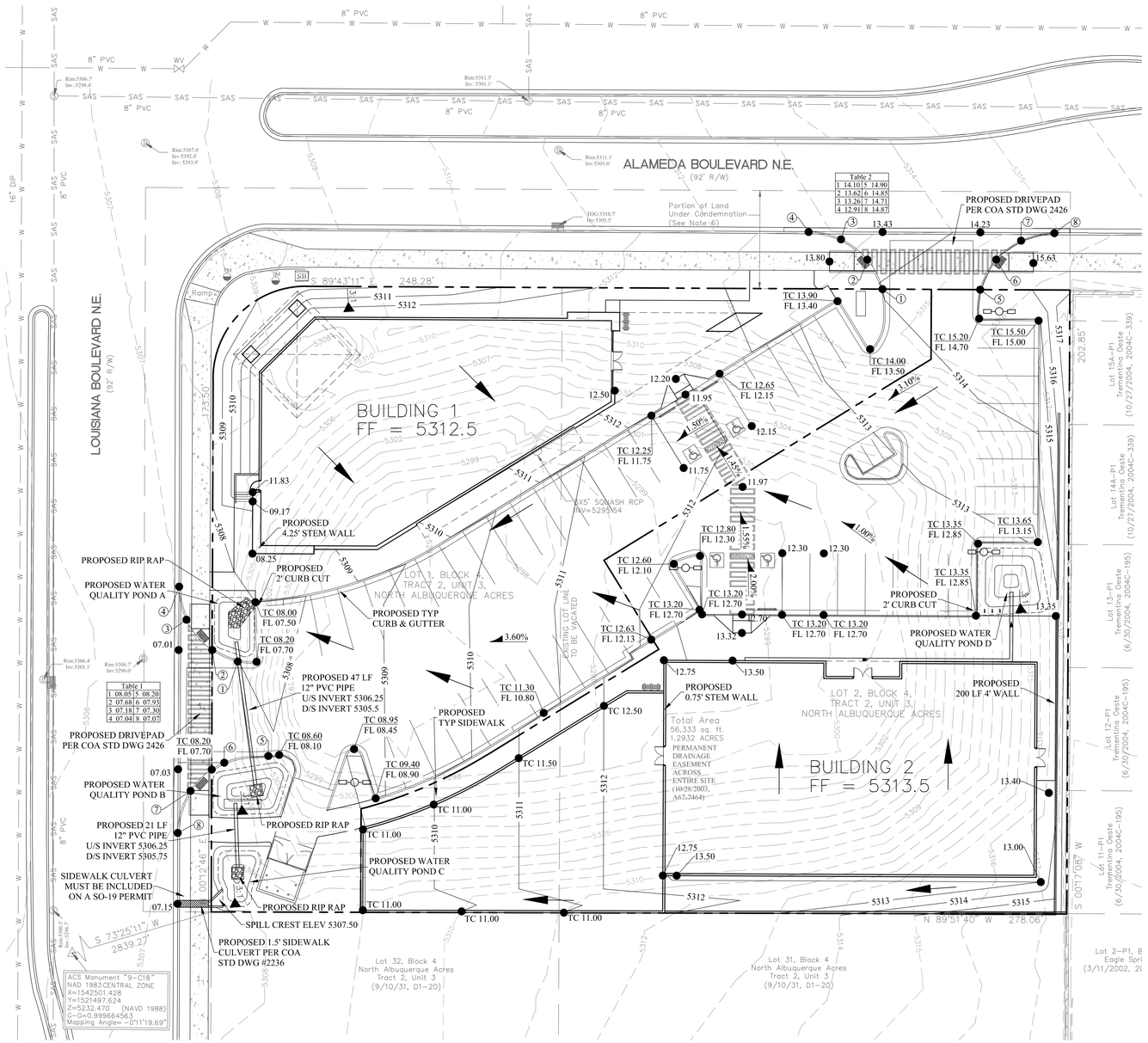
Circular Channel

Input

Flow	5.4 cfs
Slope	0.015 ft/ft
Manning's n	0.011
Diameter	12 in

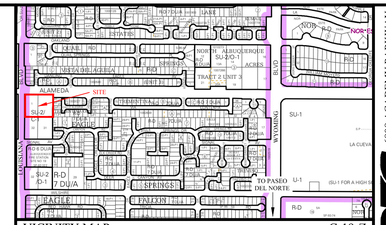
Output

Depth	0.870 ft
Flow Area	0.726 sf
Velocity	7.44 fps
Velocity Head	0.861 ft
Top Width	0.672 ft
Froude Number	1.26
Critical Depth	0.935 ft
Critical Slope	0.0142 ft/ft



LEGEND

- SANITARY SEWER MANHOLE
- WATER VALVE
- STORM DRAIN MANHOLE
- TRAFFIC MAST
- SIGNAL BOX
- INLET GRATE
- EXISTING CONTOURS (5302)
- PROPOSED CONTOURS (5312)
- PROPOSED SPOT ELEVATIONS (TC xx.xx / FL xx.xx)



Background

Lots 1 & 2 account for approximately 1.3 acres in Block 4, Tract 2, Unit 3 of North Albuquerque Acres in Bernalillo County, New Mexico. These lots are located on the southeast corner of the intersection of Alameda Boulevard and Louisiana Boulevard. The site has been previously developed to serve as a drainage pond to relieve Alameda Boulevard of excess runoff. Due to recent roadway and storm drain improvements along Alameda Boulevard, the existing pond can be eliminated per the Drainage report for the Alameda Widening Project (TEC, January 2012). Storm water from the site is restricted by the North Albuquerque Acres Drainage Plan to 5.4 cfs.

Methodology

Hydrology calculations for the properties are performed in accordance with the Albuquerque DPM Section 22.2 using the Rational Method to calculate peak flow rates to insure all flow paths are sufficient to carry flows to the water quality ponding located on-site. The water quality ponding volume required was calculated by multiplying the impervious area onsite by the first flush runoff value of 0.34". The hydrology and hydraulic calculations can be found on this sheet.

Existing Conditions

The existing site is a detention pond with 3:1 (H:V) slopes, a bottom elevation of 5297, and maximum spill crest elevation of 5307. There is a 3x5' squash reinforced concrete pipe with an invert of 5295.54 located at the bottom of the pond. Lots 1 & 2 do not appear to be receiving additional surface runoff from adjacent lands.

Proposed Conditions

The Alameda storm drain system has been constructed to convey the runoff previously held by the existing detention pond west to the San Pedro storm drain. Therefore, the existing detention pond is no longer needed per the report referenced above.

The Hydrology Report for North Albuquerque Acres by Resource Technology, Inc. in November 1998 is used to determine the allowable discharge from the site. The subject property is located in subbasin 117.4 per this report. Table B-3 on page Appendix - 19 assigns future conditions land treatment types as 0% A, 25% B, 15% C, and 60% D for this subbasin. The allowable discharge using the Rational Method and the assigned treatment types above is 5.4 cfs. The calculation is shown on the left side of this sheet.

It is proposed that the site, in general, drains from east to west toward Louisiana Boulevard. The small amount of runoff from the area south of Building 2 and the play area west of Building 2 are contained within the play area, which has a permeable surface and is recessed approximately 1'. Accordingly, this area is removed from the subbasin area for the 100 year storm water runoff. Under proposed conditions, the remainder of the site generates 5.4 cfs. See Hydrology Calculations on the left side of this sheet. Therefore, no detention ponding is required to reduce the flow rate. Runoff from the entire site enters into Pond A through a 2' curb cut located at the southwest corner of Building 1. Water then enters a 12" pipe transferring runoff from Pond A to Pond B. There is another 12" pipe that connects Pond B to Pond C. Manning's calculations for both pipes can be found on the left side of this sheet. Once a maximum water surface elevation of 5307.5 is reached, runoff begins to spill into a sidewalk culvert located at the southwest corner of the site. The Manning's calculation for the sidewalk culvert can be found on the left side of this sheet. From there water enters the storm drain system through a grate located in the median in Louisiana Boulevard.

Before Building 2 drains across the site, runoff is routed through Pond D. Once the pond has filled to a maximum water surface elevation of 5312.85, the pond discharges through a 2' curb cut into the parking lot. Pond rating curves for all ponds can be seen on the left side of this sheet. The total provided water quality pond volume for the site is 1239 cubic feet. The required volume is 1229 cubic feet. See the calculation on the left side of this sheet.

ISSUED FOR DRB
SITE PLAN

RESPEC
WATER & NATURAL RESOURCES
6808 ACADEMY PARKWAY
EAST NE, BUILDING C2
ALBUQUERQUE, NM 87109
PHONE: 505.253.9810

REVISION

DESIGNED	HWF	
DRAWN	JWS	
CHECKED	HWF	
DATE	11/14/2016	

STAMP

HUGH W. FLOYD
NEW MEXICO
16633
11/14/16
LICENSED PROFESSIONAL ENGINEER

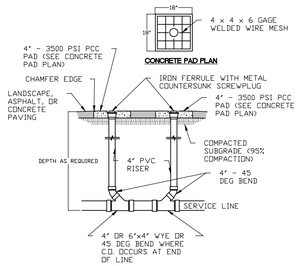
LEGAL DESCRIPTION:
PORTIONS OF LOTS 1 & 2, BLOCK 4, TRACT 2, UNIT 3 OF NORTH ALBUQUERQUE ACRES IN BERNALILLO COUNTY, NEW MEXICO

ALAMEDA & LOUISIANA COMMERCIAL DEVELOPMENT

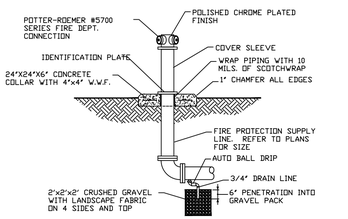
GRADING & DRAINAGE PLAN

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
40 20 0 10 20

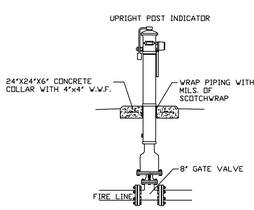
SHEET NUMBER:
C-1



TWO WAY CLEANOUT DETAIL
NTS



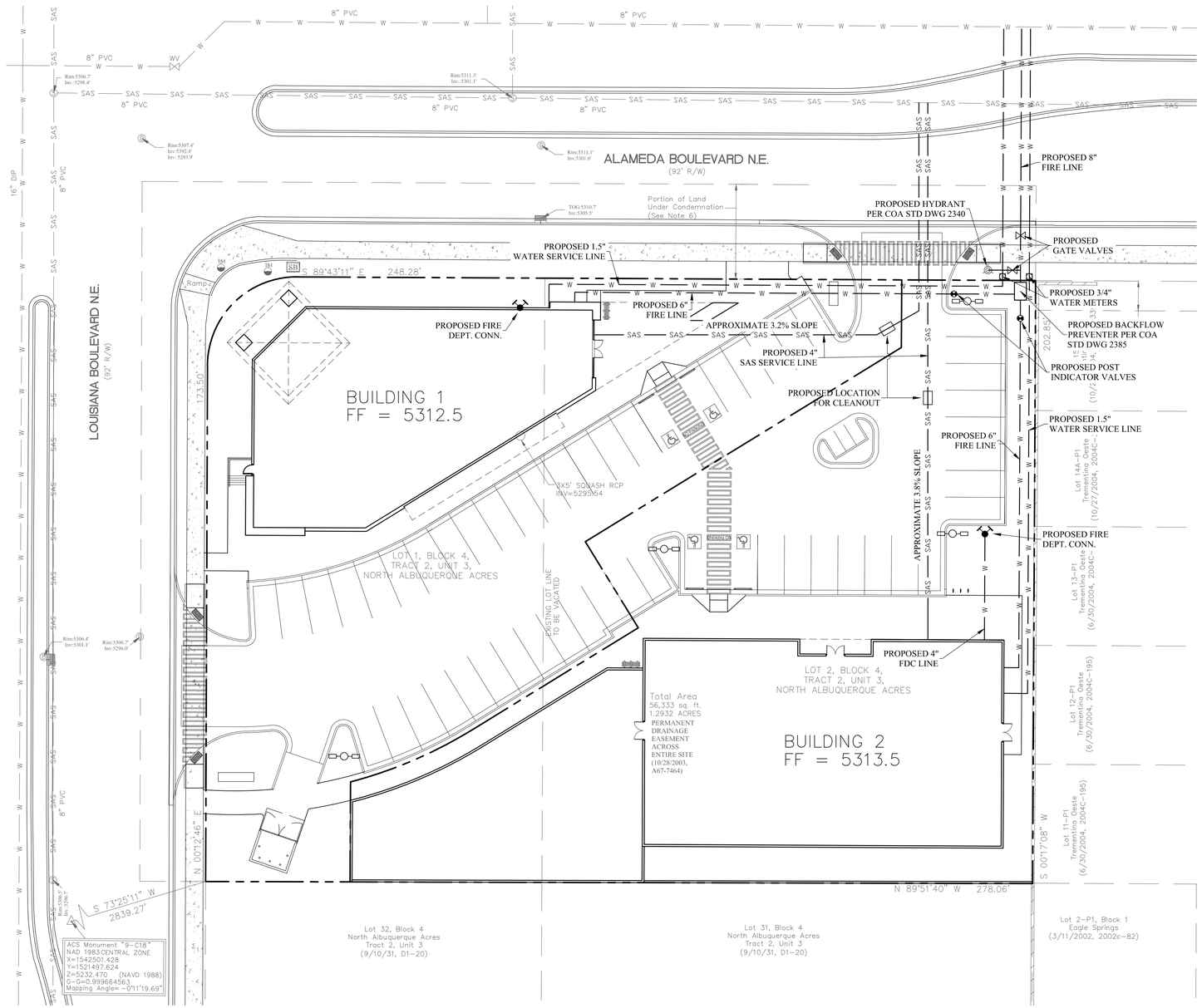
FREE STANDING FIRE DEPARTMENT CONNECTION DETAIL
NTS

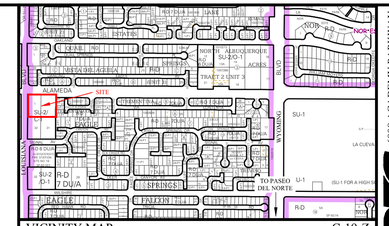


POST INDICATOR VALVE
NTS

NOTES:

1. ALL MECHANICAL JOINTS SHALL BE RESTRAINED AT THE FITTING.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM PIPE LENGTH OF 20 LF FROM ALL MECHANICAL JOINTS. ALL PIPE JOINTS WITHIN 20 LF OF A MECHANICAL JOINT SHALL BE RESTRAINED AT THE CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR SHALL RESTRAIN ALL PIPE JOINTS IN THE SPECIFIED DISTANCE LISTED IN THE TABLE ON THIS SHEET.
4. THE CONTRACTOR SHALL RESTRAIN ALL FIRE HYDRANT JOINTS FROM THE TEE ON THE MAIN TO THE FIRE HYDRANT FLANGE.





GENERAL NOTE:
ALL EXISTING UTILITY LOCATIONS AND DETAILS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL POTHOLE TO VERIFY ALL EXISTING UTILITIES.

LEGEND

- SANITARY SEWER MANHOLE
- WATER VALVE
- STORM DRAIN MANHOLE
- TRAFFIC MAST
- SIGNAL BOX
- INLET GRATE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SAS LINE
- PROPOSED SAS LINE

ISSUED FOR DRB SITE PLAN

RESPEC
WATER & NATURAL RESOURCES
6808 ACADEMY PARKWAY EAST NE, BUILDING C2
ALBUQUERQUE, NM 87109
PHONE: 505.253.9810

REVISION			
DESIGNED	HWF		
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HUGH W. FLOYD NEW MEXICO 16633 11/14/16 LICENSED PROFESSIONAL ENGINEER

LEGAL DESCRIPTION:
PORTIONS OF LOTS 1 & 2, BLOCK 4, TRACT 2, UNIT 3 OF NORTH ALBUQUERQUE ACRES IN BERNALILLO COUNTY, NEW MEXICO

ALAMEDA & LOUISIANA COMMERCIAL DEVELOPMENT

UTILITY PLAN

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
50 20 10 0 20

SHEET NUMBER:
C-2