CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

June 22, 2018

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM, 87199

RE: **North 2nd Street Storage**
5124 2nd St NW
Grading Plan Stamp Date: 6/12/18
Drainage Report Stamp Date: 6/8/18
Hydrology File: F15D052E

Dear Mr. Soule,

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the submittal received 6/13/18, the Grading Plan and Drainage Report are approved for SO-19 and Building Permit.

Prior to Certificate of Occupancy (For Information):

1. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required. The submittal/resubmittal fee for this request is: $150.
2. The sidewalk culverts must be inspected and approved by storm drain maintenance (Jason Rodriguez, jtrodriguez@cabq.gov or 857-8607).
3. The Private Facility Drainage Covenant must be recorded with Bernalillo County and a copy included with the drainage certification.
4. Provide photographs of the installed orifice plate, including one showing its dimensions and include with the drainage certification.

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

TREASURY DIVISION DAILY DEPOSIT

Transmittals for:
PROJECTS Only

City of Albuquerque Treasury
J-24 Deposit
Date: 6/21/2018 Office: ANNEX
Station ID Cashier: E39083
Batch: 9343 Trans: 11
Fund: 305 Activity ID7547210
Account: 461615 Project ID24_MS4
Dept ID: Bus.Unit: PCDMD
Alloc Amt: $696.00
Trans Amt: $696.00
Check Tendered : $696.00

Payment In-Lieu for Storm Water Quality Volume Requirement

CASH COUNT	AMOUNT	ACCOUNT NUMBER	FUND NUMBER	BUSINESS UNIT	PROJECT ID	ACTIVITY ID	AMOUNT
TOTAL CHECKS	$ 696.00	461615	305	PCDMD	24_MS4	7547210	$ 696.00
TOTAL AMOUNT						TOTAL DEPOSIT	**$696.00**

Hydrology#: F15D052E Name: North 2nd St Storage, 3576SF imp.
Payment In-Lieu For Storm Water Quality Volume Requirement

Address/Legal Description: 5124 2nd St NW
Lots1-3, North Second Business Center

DEPARTMENT NAME: Planning Department/Development Review Services, Hydrology

PREPARED BY Dana Peterson PHONE 924-3695

BUSINESS DATE 6/20/18

DUAL VERIFICATION OF DEPOSIT _____
EMPLOYEE SIGNATURE

AND BY _____
EMPLOYEE SIGNATURE

REMITTER: _____
AMOUNT: _____
BANK: _____
CHECK #: _____ DATE ON CHECK: _____

The Payment-in-Lieu can be paid at the Plaza del Sol Treasury, 600 2nd St. NW. **Bring two copies of this invoice to the Treasury** and provide a copy of the receipt to Hydrology, Suite 201, 600 2nd St. NW, or e-mail with the Hydrology submittal to PLNDRS@cabq.gov.

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: NORTH SECOND STORAGE Building Permit #: _____ City Drainage #: F15D052E

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

Legal Description: LLOTS1-3 NORTH SECOND BUSINESS CENTER

City Address: 5124 SECOND STREET NW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: MURPHY PROPERTIES Contact: _____

Address: 5124 SECOND STREET NW ALB NM87107

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

Architect: JOSEPH SIMONS Contact: _____

Address: _____

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

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

____ GRADING PERMIT APPROVAL

____ SO-19 APPROVAL

____ PAVING PERMIT APPROVAL

____ GRADING/ PAD CERTIFICATION

____ WORK ORDER APPROVAL

____ CLOMR/LOMR

____ PRE-DESIGN MEETING

____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: x Yes ____ No

DATE SUBMITTED: 6/8/18 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

REVISED
DRAINAGE REPORT

For

North Second Street Storage
Lots 1,2,3 North Second Business Park

Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

MAY 2018

David Soule P.E. No. 14522

TABLE OF CONTENTS

Appendix

Map

Site Grading and Drainage Plan

PURPOSE

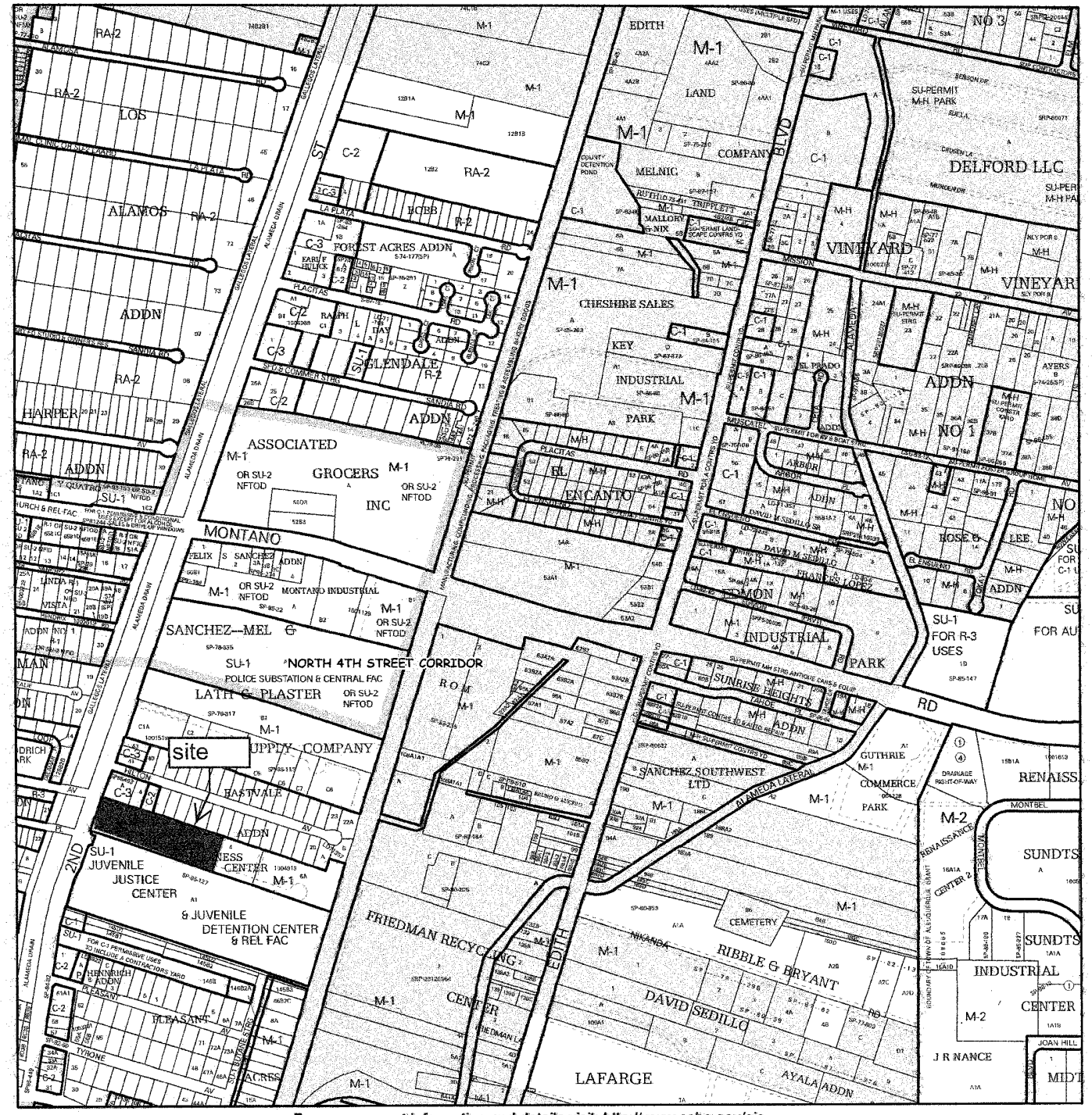
The purpose of this report is to provide the Drainage Management Plan for the development of a 2.32 acre tract of land that is being consolidated and redeveloped as storage units. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the grading does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a 2.32 -acre parcel of land located on the eastside of Second Street drive between Montano and Griegos NW. The current legal description of this site is lots 1, 2, 3 North Second Business Park. The three lots are in the process of being consolidated. As shown on FIRM map35001C0119GH, the entire site is located within Flood Zone X. The site is bound on all sides by roadways, rail road tracts and wall and is not impacted by upland flows. The site is an existing developed site, with a building on lot 3 and compacted asphalt millings and outdoor RV storage on lots 1 and 2. The site currently discharges 9.47 cfs to an inlet located at the southeast corner of this site within Second Street. The site was developed utilizing (F15-D22). The Conceptual drainage plan allowed to free discharge based upon 90% impervious. Based upon subsequent development, this appears not to be an implemented plan. The proposed improvements include the redevelopment of the existing building and the construction of several new buildings with associated paved drive isles. The site must discharge less than the existing peak flow requirements and must retain the first flush volume onsite.

EXISTING CONDITIONS

The site is currently developed. The site currently discharges developed flow of 9.47 cfs to the inlet located within Second Street at the southwest corner of this site. The flows are captured by an inlet and conveyed downstream within a city maintained storm drain. Due to rail



For more current information and details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 1/28/2016

Note: Grey Shading Represents Area Outside of the City Limits

Zone Atlas Page:

F-15-Z

Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone

0 750 1,500 Feet

road track and walls on the north and east side, as well as roadway along south side, the site is not impacted by upland flows.

PROPOSED CONDITIONS

The proposed improvements consist of interior improvements to the existing building and the construction of multiple new buildings. The area between the buildings will be paved. The buildings will drain to the interior paved access roads. The flows will be captured by a series of inline drains. The drains are connected via an 18" storm drain to a single type D inlet located at the North West corner of the storage unit areas. An 11" orifice plate is placed at the outfall of this inlet. As shown in appendix B, the orifice plate restricts the flow of 9.71 cfs to 5.73 cfs. The storage for this detention solution is provided within the access isles. The maximum predicted water surface is 4976.75. In the event of clogging the flow will exit the site via the emergency access driveway and flow directly to Second Street at an elevation of 4977.00. The throttled flow is conveyed from the onsite inlet to a first flush pond located adjacent to Second Street. This pond captures the required first flush volume of 3,369 cubic feet. The pond outfalls once full to 3-2' sidewalk culvert to be constructed directly upstream of the existing collection inlet. The site contains several smaller drainage basins, existing roadways and water blocks for the site. These basins exist therefore the resultant water quality volume for those areas not captured are 47.5 cubic feet of redeveloped and 39.1 cubic feet of new generation, creating a fee in lieu of $696.00.

SUMMARY AND RECOMMENDATIONS

This project is a redevelopment of an existing site that discharges 9.47 cfs. The site generates a flow greater than allowed, so the flow is metered by onsite detention ponding and an orifice controlled outlet. The majority of the flow passes thru a first flush pond that retains the required volume. The portions of the site that can not be captured results in a fee in lieu to be paid. The onsite storm drain and outfalls were designed to convey the flow. The ponds will overflow in an emergency or clogging situation via the emergency access roadway to the historical outfall at Second Street. The development of this site will not negatively impact the

upstream nor down stream facilities. Since the work area does exceed 1 acre, erosion and sediment Control Plan shall be required prior to any construction activity.

APPENDIX A

SITE HYDROLOGY

Weighted E Method

north second street storage

Existing Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-hr. Weighted E (ac-ft)	100-Year, 6-hr. Volume (ac-ft)	100-Year, 6-hr. Flow cfs	10-day Volume (ac-ft)
EXISTING A(FROM REPORT)													2.66	
EXISTING B	22996	0.528	0%	0	0.0%	0.000	6.0%	0.03167	94%	0.496	2.061	0.091	2.43	0.157
EXISTING C	57287	1.315	0%	0	0.0%	0.000	88.0%	1.15731	12%	0.158	1.249	0.137	4.38	0.158
PROPOSED A	32713	0.751	0%	0	0.0%	0.000	6.0%	0.04506	94%	0.706	2.061	0.129	3.46	0.223
PROPOSED B	90905	2.087	0%	0	0.0%	0.000	3.0%	0.06261	97%	2.024	2.090	0.364	9.71	0.633
TOTALPROPOSED	123618	2.838								2.73		0.492	13.17	0.857
COMPARISON				0.000		0.000		1.112		-0.548		0.356	8.794	0.699

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm (zone 2)

Ea= 0.53 Qa= 1.56
Eb= 0.78 Qb= 2.28
Ec= 1.13 Qc= 3.14
Ed= 2.12 Qd= 4.7

0.078810836

	PEAK FLOW 100-YEAR 6-HOUR	TOTAL DISCHARGE 100-YEAR 6-HR	TOTAL DISCHARGE 100-YEAR 10-DAY
Existing	9.47 CFS	0.091 AC-FT	0.157 AC-FT
Total discharge(PRIOR TO POND ROUTING)	13.17 CFS	0.492 AC-FT	0.857 AC-FT
Discharge after pond routing	9.19 CFS	0.414 AC-FT	0.778 AC-FT

water quality ponding required		3369.629 cf		
water quality ponding provided		3433.000 cf		
fee in lieu volume for bypass	redev	47.55833 cf	x 8	382
	new	39.12833 cf	x 8	314
				696

DRAINAGE NARRATIVE

This site is a repurposing of an existing site. The currently discharges to the private access road which conveys the flow to an single inlet located in second street at the southwest corner of the site. The proposed development will pond the increase in site discharge as compared to the existing. The flow will be collected by an onsite storm drain and discharge to second street directly upstream from the existing inlet. The flow will pass thru a water quality pond. The peak flow rate is reduced to less than existing and allowed by introducing an orifice plate to restrict the flow and the drive isles provide the required storage volume.

CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

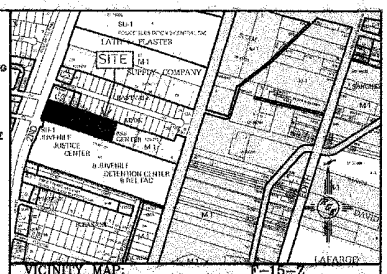
NOTICE TO CONTRACTORS

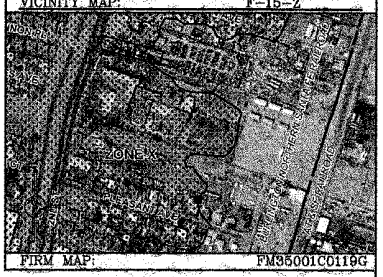
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
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.

APPROVAL	NAME	DATE
INSPECTOR		

EROSION CONTROL NOTES:

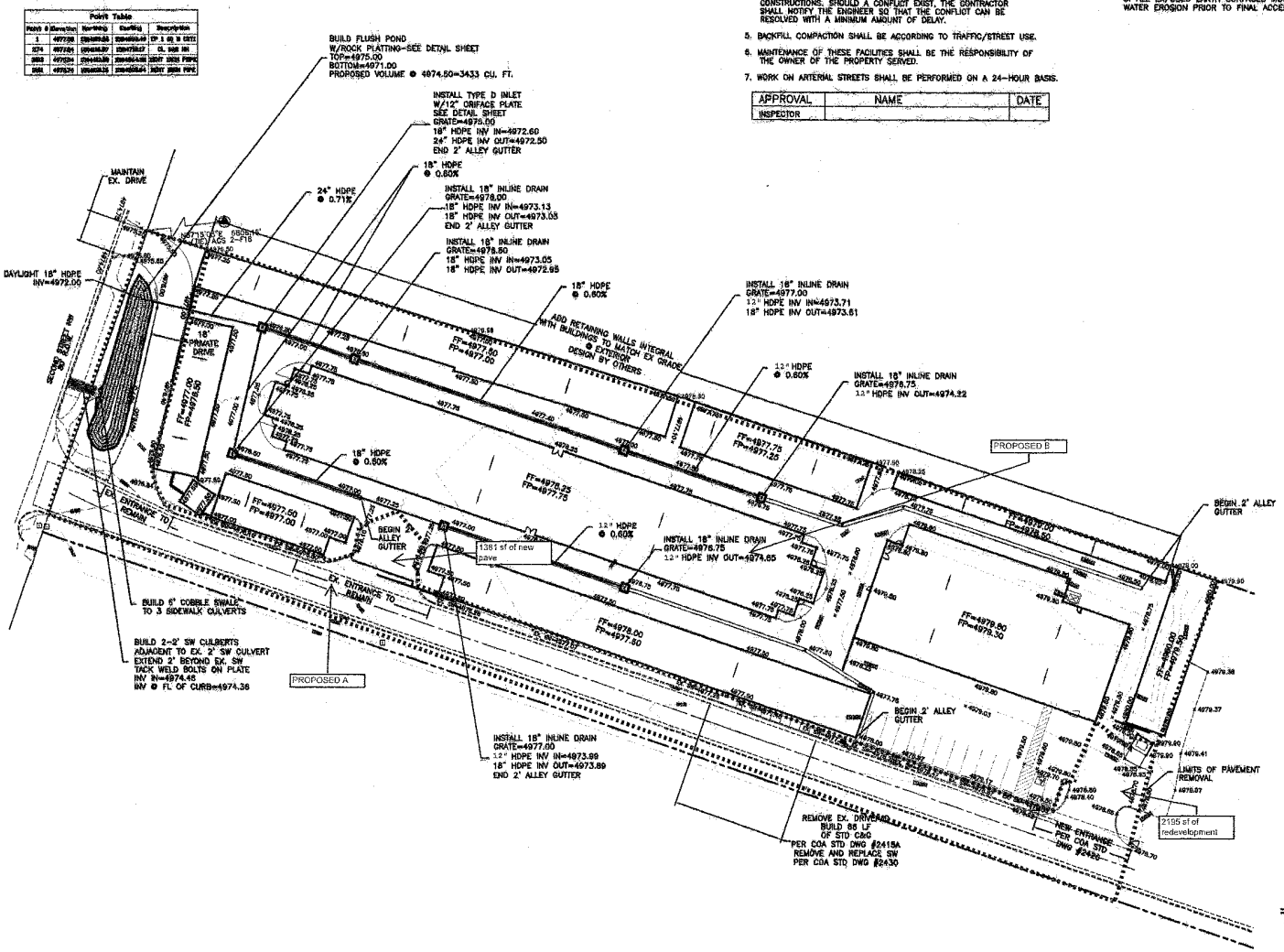
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.





LEGAL DESCRIPTION:

LOTS1, 2 & 3 NORTH SECOND STREET BUSINESS CENTER



NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL CURB AND GUTTER TO 6" HEADER UNLESS OTHERWISE NOTED.
3. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
4. ALL NEW PAVING SHALL BE 6" PCC OVER 8" SUBGRADE PREPARATION IN CONFORMANCE TO ACI 330R-08. UNLESS OTHERWISE NOTED.
5. ANY CURBS OR PAVEMENT NEGATIVELY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.
6. ALL SITE WORK SHALL CONFORM TO CITY OF ALBUQUERQUE STANDARDS FOR PUBLIC WORKS CONSTRUCTION EDITION 9

LEGEND

- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED CURB
- EXISTING CURB AND GUTTER
- PROPOSED SIDEWALK
- EXISTING SIDEWALK

N

GRAPHIC SCALE

30 15 0 15 30

SCALE: 1"=30'

ENGINEER'S SEAL

DAVID SOULE NEW MEXICO 14322 REGISTERED PROFESSIONAL ENGINEER

3/15/18

DAVID SOULE P.E. #14322

MURPHY STORAGE AND RV PARKING

GRADING AND DRAINAGE PLAN

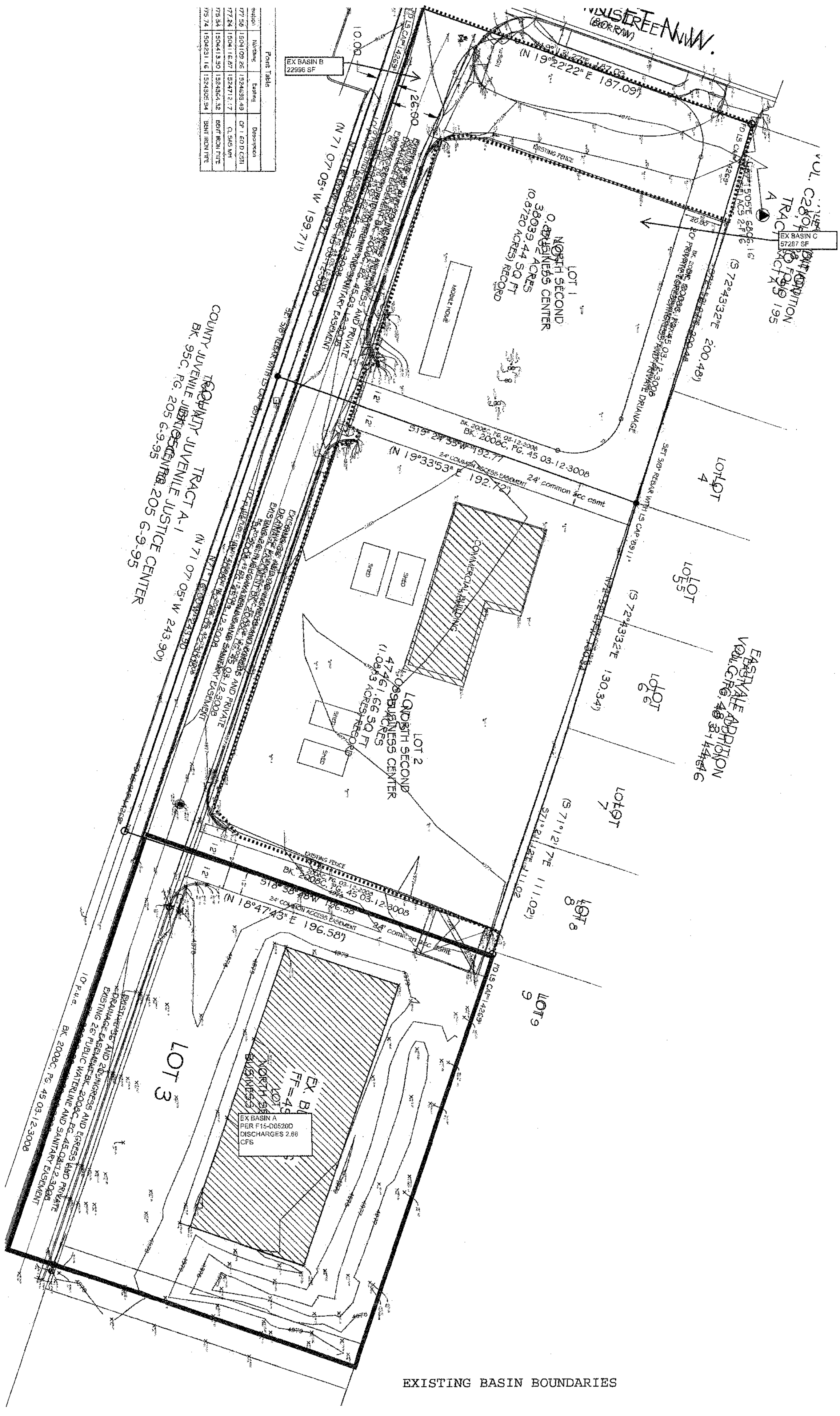
Rio Grande Engineering
1606 CENTRAL AVENUE SE SUITE 201
ALBUQUERQUE, NM 87106
(505) 975-0686

DRAWN BY WCWJ

DATE 12-14-17

SHEET # 1

JOB # 21837



EXISTING BASIN BOUNDARIES

OVERFLOW

Weir Equation:

$$Q = CLH^{3/2}$$

Q=13.17 cfs
C = 2.95
H = 0.5 ft
L = Length of weir

$$L = \frac{13.17}{2.95(0.5)^{3/2}}$$

L = 12.63 ft
Use 13 feet for length of weir

APPENDIX B

HYDRAULIC MODELING AND CALCULATIONS

VOLUME CALCULATIONS

COMMONS POND

	ACTUAL ELEV.	DEPTH (FT)	AREA SF	VOLUME PER UNIT	VOLUME CUMULATIVE	VOLUME AC-FT	Q (CFS)
	72.50	0.00	0.0000				
POND OUTLET	73.50	0.00	340.0000	170.0000	170	0.004	0.00
	76.00	2.50	360.0000	350.0000	520	0.012	5.02
	76.50	3.00	400.0000	190.0000	710	0.016	5.50
	76.75	3.25	3283.0000	460.3750	1170.375	0.027	5.73
	77.00	3.75	7769.0000	1381.5000	2551.875	0.059	6.15
	77.25	4.00	8640.0000	2051.1250	4603	0.106	6.36

Orifice Equation

Q = CA SQRT(2gH)

C =	0.6
Diameter (in)	11
Area (ft^2)=	0.659952623
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

```
*S      AHYMO -  DETENTION-NVALLEY STORAGE
*S             POND ROUTING

START                TIME=0.0   PUNCH CODE=0


RAINFALL             TYPE=2
                     QUARTER=0.0     ONE= 2.01 IN
                     SIX=2.35 IN    DAY= 2.75 IN    DT = 0.05 HR



COMPUTE NM HYD       ID=1  HYD NO=101  DA= .003253 SQ MI
                     PER A=0  PER B=0 PER C=03  PER D=97
                     TP=-.140  MASSRAIN=-1


PRINT HYD            ID=1  CODE=3


* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR
ROUTE RESERVOIR      ID=2   HYD NO=102   INFLOW=1   CODE=3
                     OUTFLOW(CFS)     STORAGE(AC-FT)     ELEV(FT)
                        0.00              0.004           73.50
                        5.02              0.012           76.00
                     5.50                 0.016        76.50
                        5.73              0.027           76.75
                        6.15              0.059           77.00
                6.36              0.106          77.25




FINISH
```

```
      AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
           RUN DATE (MON/DAY/YR) = 05/02/2018
           START TIME (HR:MIN:SEC) = 16:00:01     USER NO.=
RioGrandeSingleA41963517
           INPUT FILE = tings\Owner\Desktop\2017 jobs\1732-abq north storage
facility\pondrout031318.txt


    *S     AHYMO -  DETENTION-NVALLEY STORAGE
    *S             POND ROUTING

    START              TIME=0.0  PUNCH CODE=0


    RAINFALL           TYPE=2
                       QUARTER=0.0    ONE= 2.01 IN
                       SIX=2.35 IN   DAY= 2.75 IN   DT = 0.05 HR



                  24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE
AREAS (NM & AZ) - D1
                  DT =   0.050000 HOURS       END TIME =    24.000002 HOURS
                    0.0000  0.0023  0.0046  0.0071  0.0099  0.0127  0.0159
                    0.0203  0.0272  0.0347  0.0424  0.0509  0.0595  0.0684
                    0.0776  0.0870  0.0974  0.1084  0.1204  0.1437  0.1728
                    0.2117  0.2559  0.3104  0.3831  0.4649  0.6062  0.8258
                    1.2021  1.4666  1.6752  1.7800  1.8719  1.9379  1.9905
                    2.0362  2.0697  2.1005  2.1259  2.1418  2.1530  2.1629
                    2.1722  2.1803  2.1879  2.1953  2.2025  2.2084  2.2118
                    2.2152  2.2186  2.2217  2.2247  2.2278  2.2307  2.2336
                    2.2363  2.2391  2.2417  2.2443  2.2469  2.2494  2.2518
                    2.2542  2.2565  2.2588  2.2611  2.2633  2.2654  2.2676
                    2.2697  2.2717  2.2738  2.2758  2.2778  2.2798  2.2817
                    2.2837  2.2856  2.2874  2.2893  2.2911  2.2930  2.2948
                    2.2965  2.2983  2.3000  2.3017  2.3034  2.3051  2.3068
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                    2.3195  2.3210  2.3225  2.3240  2.3255  2.3269  2.3284
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                    2.3396  2.3409  2.3422  2.3436  2.3449  2.3462  2.3474
                    2.3487  2.3500  2.3513  2.3525  2.3538  2.3551  2.3563
                    2.3576  2.3589  2.3601  2.3614  2.3627  2.3639  2.3652
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                    2.3840  2.3853  2.3865  2.3878  2.3890  2.3903  2.3915
                    2.3927  2.3940  2.3952  2.3965  2.3977  2.3989  2.4002
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                    2.4186  2.4199  2.4211  2.4223  2.4235  2.4247  2.4260
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                    2.4357  2.4369  2.4381  2.4393  2.4405  2.4417  2.4429
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                    2.4526  2.4538  2.4550  2.4561  2.4573  2.4585  2.4597
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                    2.5021  2.5033  2.5044  2.5056  2.5068  2.5079  2.5091
                    2.5102  2.5114  2.5125  2.5137  2.5148  2.5160  2.5171
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2.5183	2.5194	2.5206	2.5217	2.5229	2.5240	2.5252
2.5263	2.5274	2.5286	2.5297	2.5309	2.5320	2.5331
2.5343	2.5354	2.5365	2.5377	2.5388	2.5399	2.5411
2.5422	2.5433	2.5445	2.5456	2.5467	2.5478	2.5490
2.5501	2.5512	2.5523	2.5535	2.5546	2.5557	2.5568
2.5579	2.5590	2.5602	2.5613	2.5624	2.5635	2.5646
2.5657	2.5668	2.5679	2.5691	2.5702	2.5713	2.5724
2.5735	2.5746	2.5757	2.5768	2.5779	2.5790	2.5801
2.5812	2.5823	2.5834	2.5845	2.5856	2.5867	2.5878
2.5889	2.5899	2.5910	2.5921	2.5932	2.5943	2.5954
2.5965	2.5976	2.5986	2.5997	2.6008	2.6019	2.6030
2.6040	2.6051	2.6062	2.6073	2.6084	2.6094	2.6105
2.6116	2.6126	2.6137	2.6148	2.6159	2.6169	2.6180
2.6191	2.6201	2.6212	2.6223	2.6233	2.6244	2.6254
2.6265	2.6276	2.6286	2.6297	2.6307	2.6318	2.6328
2.6339	2.6350	2.6360	2.6371	2.6381	2.6392	2.6402
2.6413	2.6423	2.6433	2.6444	2.6454	2.6465	2.6475
2.6486	2.6496	2.6506	2.6517	2.6527	2.6538	2.6548
2.6558	2.6569	2.6579	2.6589	2.6600	2.6610	2.6620
2.6630	2.6641	2.6651	2.6661	2.6672	2.6682	2.6692
2.6702	2.6712	2.6723	2.6733	2.6743	2.6753	2.6763
2.6774	2.6784	2.6794	2.6804	2.6814	2.6824	2.6834
2.6844	2.6854	2.6865	2.6875	2.6885	2.6895	2.6905
2.6915	2.6925	2.6935	2.6945	2.6955	2.6965	2.6975
2.6985	2.6995	2.7005	2.7015	2.7025	2.7034	2.7044
2.7054	2.7064	2.7074	2.7084	2.7094	2.7104	2.7114
2.7123	2.7133	2.7143	2.7153	2.7163	2.7172	2.7182
2.7192	2.7202	2.7211	2.7221	2.7231	2.7241	2.7250
2.7260	2.7270	2.7280	2.7289	2.7299	2.7309	2.7318
2.7328	2.7338	2.7347	2.7357	2.7366	2.7376	2.7386
2.7395	2.7405	2.7414	2.7424	2.7433	2.7443	2.7452
2.7462	2.7472	2.7481	2.7491	2.7500		

COMPUTE NM HYD ID=1 HYD NO=101 DA= .003253 SQ MI
PER A=0 PER B=0 PER C=03 PER D=97
TP=-.140 MASSRAIN=-1

K = 0.076300HR TP = 0.140000HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 11.862 CFS UNIT VOLUME = 0.9975 B = 526.28 P60 = 2.0100
AREA = 0.003155 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.112846HR TP = 0.140000HR K/TP RATIO = 0.806046 SHAPE CONSTANT, N = 4.440407
UNIT PEAK = 0.26735 CFS UNIT VOLUME = 0.9581 B = 383.54 P60 = 2.0100
AREA = 0.000098 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=3

PARTIAL HYDROGRAPH 101.00

TIME	FLOW	TIME	FLOW	TIME	FLOW

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	4.950	0.0	9.900	0.0
14.850	0.0	19.800	0.0		
0.150	0.0	5.100	0.0	10.050	0.1
15.000	0.0	19.950	0.0		
0.300	0.0	5.250	0.0	10.200	0.0
15.150	0.0	20.100	0.0		
0.450	0.0	5.400	0.0	10.350	0.0
15.300	0.0	20.250	0.0		
0.600	0.0	5.550	0.0	10.500	0.0
15.450	0.0	20.400	0.0		
0.750	0.0	5.700	0.0	10.650	0.0
15.600	0.0	20.550	0.0		
0.900	0.1	5.850	0.0	10.800	0.0
15.750	0.0	20.700	0.0		
1.050	0.6	6.000	0.0	10.950	0.0
15.900	0.0	20.850	0.0		
1.200	1.5	6.150	0.1	11.100	0.0
16.050	0.0	21.000	0.0		
1.350	3.4	6.300	0.1	11.250	0.0
16.200	0.0	21.150	0.0		
1.500	9.7	6.450	0.1	11.400	0.0
16.350	0.0	21.300	0.0		
1.650	6.1	6.600	0.1	11.550	0.0
16.500	0.0	21.450	0.0		
1.800	3.1	6.750	0.1	11.700	0.0
16.650	0.0	21.600	0.0		
1.950	1.8	6.900	0.1	11.850	0.0
16.800	0.0	21.750	0.0		
2.100	0.9	7.050	0.1	12.000	0.0
16.950	0.0	21.900	0.0		
2.250	0.5	7.200	0.1	12.150	0.0
17.100	0.0	22.050	0.0		
2.400	0.4	7.350	0.1	12.300	0.0
17.250	0.0	22.200	0.0		
2.550	0.2	7.500	0.1	12.450	0.0
17.400	0.0	22.350	0.0		
2.700	0.1	7.650	0.1	12.600	0.0
17.550	0.0	22.500	0.0		
2.850	0.1	7.800	0.1	12.750	0.0
17.700	0.0	22.650	0.0		
3.000	0.0	7.950	0.1	12.900	0.0
17.850	0.0	22.800	0.0		
3.150	0.0	8.100	0.1	13.050	0.0
18.000	0.0	22.950	0.0		
3.300	0.0	8.250	0.1	13.200	0.0
18.150	0.0	23.100	0.0		
3.450	0.0	8.400	0.0	13.350	0.0
18.300	0.0	23.250	0.0		
3.600	0.0	8.550	0.0	13.500	0.0
18.450	0.0	23.400	0.0		
3.750	0.0	8.700	0.1	13.650	0.0
18.600	0.0	23.550	0.0		
3.900	0.0	8.850	0.1	13.800	0.0
18.750	0.0	23.700	0.0		
4.050	0.0	9.000	0.0	13.950	0.0
18.900	0.0	23.850	0.0		
4.200	0.0	9.150	0.1	14.100	0.0
19.050	0.0	24.000	0.0		
4.350	0.0	9.300	0.0	14.250	0.0
19.200	0.0	24.150	0.0		

4.500	0.0	9.450	0.1	14.400	0.0
19.350	0.0	24.300	0.0		
4.650	0.0	9.600	0.0	14.550	0.0
19.500	0.0	24.450	0.0		
4.800	0.0	9.750	0.0	14.700	0.0
19.650	0.0	24.600	0.0		

RUNOFF VOLUME = 2.46628 INCHES = 0.4279 ACRE-FEET
PEAK DISCHARGE RATE = 9.70 CFS AT 1.500 HOURS BASIN AREA = 0.0033 SQ. MI.

* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR
ROUTE RESERVOIR ID=2 HYD NO=102 INFLOW=1 CODE=3

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0.00	0.004	73.50
5.02	0.012	76.00
5.73	0.027	76.75
0.059	77.00	

6.

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TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	73.50	0.004	0.00
0.15	0.00	73.50	0.004	0.00
0.30	0.00	73.50	0.004	0.00
0.45	0.00	73.50	0.004	0.00
0.60	0.00	73.50	0.004	0.00
0.75	0.00	73.50	0.004	0.00
0.90	0.07	73.52	0.004	0.04
1.05	0.63	73.77	0.005	0.53
1.20	1.48	74.18	0.006	1.37
1.35	3.37	74.98	0.009	2.98
1.50	9.70	76.75	0.027	5.73
1.65	6.12	76.75	0.027	5.73
1.80	3.10	76.75	0.027	5.73
1.95	1.83	75.66	0.011	4.34
2.10	0.94	74.01	0.006	1.03
2.25	0.54	73.79	0.005	0.58
2.40	0.35	73.69	0.005	0.38
2.55	0.17	73.60	0.004	0.19
2.70	0.10	73.55	0.004	0.11
2.85	0.06	73.53	0.004	0.07
3.00	0.04	73.52	0.004	0.04
3.15	0.03	73.52	0.004	0.03
3.30	0.02	73.51	0.004	0.02
3.45	0.02	73.51	0.004	0.02
3.60	0.02	73.51	0.004	0.02
3.75	0.02	73.51	0.004	0.02

3.90	0.02	73.51	0.004	0.02
4.05	0.02	73.51	0.004	0.02
4.20	0.02	73.51	0.004	0.02
4.35	0.02	73.51	0.004	0.02
4.50	0.03	73.51	0.004	0.03
4.65	0.03	73.51	0.004	0.03
4.80	0.03	73.52	0.004	0.03
4.95	0.03	73.52	0.004	0.03
5.10	0.03	73.52	0.004	0.03
5.25	0.04	73.52	0.004	0.04
5.40	0.04	73.52	0.004	0.04
5.55	0.04	73.52	0.004	0.04
5.70	0.04	73.52	0.004	0.04
5.85	0.05	73.52	0.004	0.05
6.00	0.05	73.52	0.004	0.05
6.15	0.05	73.53	0.004	0.05
6.30	0.05	73.53	0.004	0.05
6.45	0.05	73.53	0.004	0.05
6.60	0.05	73.53	0.004	0.05
6.75	0.05	73.53	0.004	0.05
6.90	0.05	73.53	0.004	0.05
7.05	0.05	73.53	0.004	0.05
7.20	0.05	73.53	0.004	0.05
7.35	0.05	73.53	0.004	0.05
7.50	0.05	73.53	0.004	0.05
7.65	0.05	73.53	0.004	0.05
7.80	0.05	73.53	0.004	0.05
7.95	0.05	73.53	0.004	0.05
8.10	0.05	73.53	0.004	0.05
8.25	0.05	73.53	0.004	0.05

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.05	73.52	0.004	0.05
8.55	0.05	73.52	0.004	0.05
8.70	0.05	73.52	0.004	0.05
8.85	0.05	73.52	0.004	0.05
9.00	0.05	73.52	0.004	0.05
9.15	0.05	73.52	0.004	0.05
9.30	0.05	73.52	0.004	0.05
9.45	0.05	73.52	0.004	0.05
9.60	0.05	73.52	0.004	0.05
9.75	0.05	73.52	0.004	0.05
9.90	0.05	73.52	0.004	0.05
10.05	0.05	73.52	0.004	0.05
10.20	0.05	73.52	0.004	0.05
10.35	0.05	73.52	0.004	0.05
10.50	0.05	73.52	0.004	0.05
10.65	0.05	73.52	0.004	0.05
10.80	0.05	73.52	0.004	0.05
10.95	0.05	73.52	0.004	0.05
11.10	0.05	73.52	0.004	0.05
11.25	0.05	73.52	0.004	0.05
11.40	0.05	73.52	0.004	0.05
11.55	0.05	73.52	0.004	0.05
11.70	0.05	73.52	0.004	0.05
11.85	0.05	73.52	0.004	0.05
12.00	0.05	73.52	0.004	0.05
12.15	0.05	73.52	0.004	0.05
12.30	0.05	73.52	0.004	0.05
12.45	0.05	73.52	0.004	0.05
12.60	0.05	73.52	0.004	0.05

12.75	0.05	73.52	0.004	0.05
12.90	0.05	73.52	0.004	0.05
13.05	0.05	73.52	0.004	0.05
13.20	0.05	73.52	0.004	0.05
13.35	0.05	73.52	0.004	0.05
13.50	0.05	73.52	0.004	0.05
13.65	0.05	73.52	0.004	0.05
13.80	0.05	73.52	0.004	0.05
13.95	0.05	73.52	0.004	0.05
14.10	0.05	73.52	0.004	0.05
14.25	0.05	73.52	0.004	0.05
14.40	0.05	73.52	0.004	0.05
14.55	0.05	73.52	0.004	0.05
14.70	0.05	73.52	0.004	0.05
14.85	0.05	73.52	0.004	0.05
15.00	0.05	73.52	0.004	0.05
15.15	0.04	73.52	0.004	0.04
15.30	0.05	73.52	0.004	0.05
15.45	0.04	73.52	0.004	0.05
15.60	0.04	73.52	0.004	0.04
15.75	0.04	73.52	0.004	0.04
15.90	0.04	73.52	0.004	0.04
16.05	0.04	73.52	0.004	0.04
16.20	0.04	73.52	0.004	0.04
16.35	0.04	73.52	0.004	0.04
16.50	0.04	73.52	0.004	0.04
16.65	0.04	73.52	0.004	0.04

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
16.80	0.04	73.52	0.004	0.04
16.95	0.04	73.52	0.004	0.04
17.10	0.04	73.52	0.004	0.04
17.25	0.04	73.52	0.004	0.04
17.40	0.04	73.52	0.004	0.04
17.55	0.04	73.52	0.004	0.04
17.70	0.04	73.52	0.004	0.04
17.85	0.04	73.52	0.004	0.04
18.00	0.04	73.52	0.004	0.04
18.15	0.04	73.52	0.004	0.04
18.30	0.04	73.52	0.004	0.04
18.45	0.04	73.52	0.004	0.04
18.60	0.04	73.52	0.004	0.04
18.75	0.04	73.52	0.004	0.04
18.90	0.04	73.52	0.004	0.04
19.05	0.04	73.52	0.004	0.04
19.20	0.04	73.52	0.004	0.04
19.35	0.04	73.52	0.004	0.04
19.50	0.04	73.52	0.004	0.04
19.65	0.04	73.52	0.004	0.04
19.80	0.04	73.52	0.004	0.04
19.95	0.04	73.52	0.004	0.04
20.10	0.04	73.52	0.004	0.04
20.25	0.04	73.52	0.004	0.04
20.40	0.04	73.52	0.004	0.04
20.55	0.04	73.52	0.004	0.04
20.70	0.04	73.52	0.004	0.04
20.85	0.04	73.52	0.004	0.04
21.00	0.04	73.52	0.004	0.04
21.15	0.04	73.52	0.004	0.04
21.30	0.04	73.52	0.004	0.04
21.45	0.04	73.52	0.004	0.04

21.60	0.04	73.52	0.004	0.04
21.75	0.04	73.52	0.004	0.04
21.90	0.04	73.52	0.004	0.04
22.05	0.04	73.52	0.004	0.04
22.20	0.04	73.52	0.004	0.04
22.35	0.04	73.52	0.004	0.04
22.50	0.04	73.52	0.004	0.04
22.65	0.04	73.52	0.004	0.04
22.80	0.04	73.52	0.004	0.04
22.95	0.04	73.52	0.004	0.04
23.10	0.04	73.52	0.004	0.04
23.25	0.04	73.52	0.004	0.04
23.40	0.04	73.52	0.004	0.04
23.55	0.04	73.52	0.004	0.04
23.70	0.04	73.52	0.004	0.04
23.85	0.04	73.52	0.004	0.04
24.00	0.04	73.52	0.004	0.04
24.15	0.02	73.51	0.004	0.02
24.30	0.01	73.50	0.004	0.01
24.45	0.00	73.50	0.004	0.00

PEAK DISCHARGE = 5.730 CFS - PEAK OCCURS AT HOUR 1.50
MAXIMUM WATER SURFACE ELEVATION = 76.750
MAXIMUM STORAGE = 0.0270 AC-FT INCREMENTAL TIME= 0.050000HRS

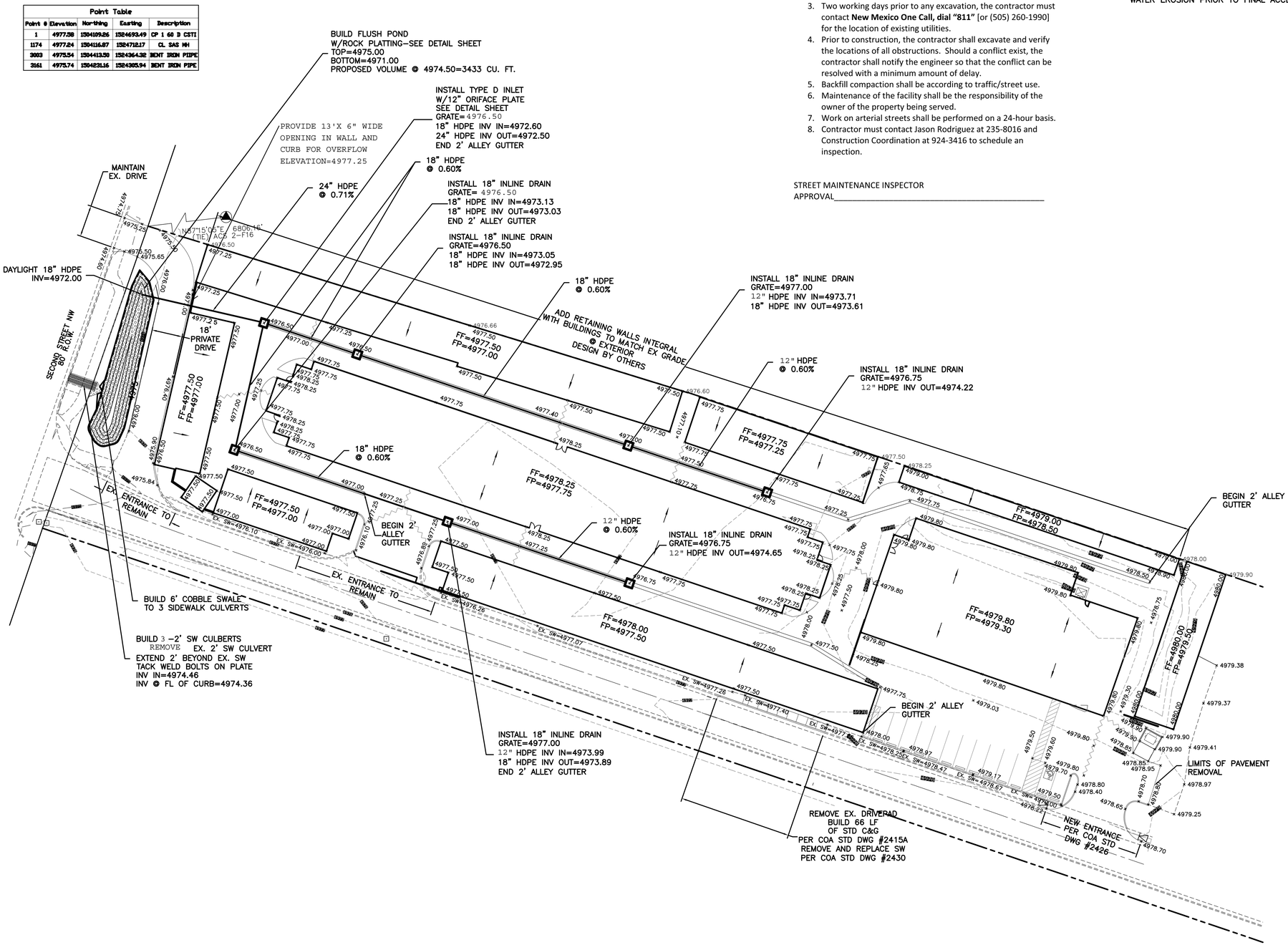
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 16:00:01

CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

Point Table				
Point #	Elevation	Northing	Easting	Description
1	4977.58	1504109.26	1524693.49	CP 1 60 D CSTI
1174	4977.24	1504116.87	1524712.17	CL SAS MH
3093	4975.54	1504413.59	1524364.32	BENT IRON PIPE
3161	4973.74	1504231.16	1524305.94	BENT IRON PIPE



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.
8. Contractor must contact Jason Rodriguez at 235-8016 and Construction Coordination at 924-3416 to schedule an inspection.

STREET MAINTENANCE INSPECTOR
APPROVAL_____

EROSION CONTROL NOTES:

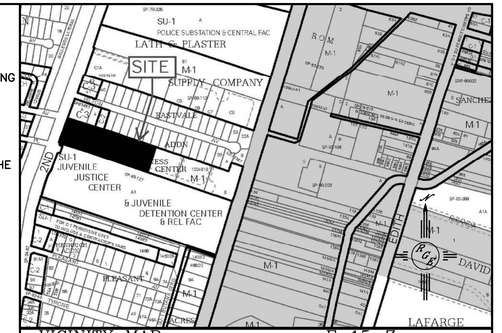
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN–OFF ON SITE DURING CONSTRUCTION.

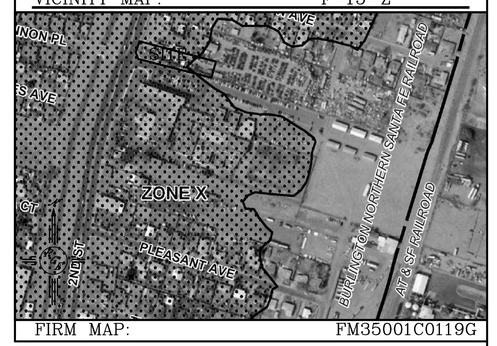
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT–OF–WAY.

4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.



VICINITY MAP: F–15–Z



FIRM MAP: FM35001C0119G

LEGAL DESCRIPTION:

LOTS1, 2 & 3 NORTH SECOND STREET BUSINESS CENTER

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

2. ALL CURB AND GUTTER TO 6" HEADER UNLESS OTHERWISE NOTED.

3. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.

4. ALL NEW PAVING SHALL BE 6" PCC OVER 8" SUBGRADE PREPARATION IN CONFORMANCE TO ACI 330R–08. UNLESS OTHERWISE NOTED.

5. ANY CURBS OR PAVEMENT NEGATIVELY IMPACTED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED TO MATCH EXISTING CONDITIONS.

6. ALL SITE WORK SHALL CONFORM TO CITY OF ALBUQUERQUE STANDARDS FOR PUBLIC WORKS CONSTRUCTION EDITION 9

LEGEND

- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT–OF–WAY
- PROPOSED CURB
- EXISTING CURB AND GUTTER
- PROPOSED SIDEWALK
- EXISTING SIDEWALK

N

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

ENGINEER'S SEAL
DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER
6/8/18
5/17/18
DAVID SOULE
P.E. #14522

MURPHY STORAGE

GRADING AND DRAINAGE PLAN

Rio Grande Engineering
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DRAWN BY WCWJ
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