CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

November 13, 2019

Vincent Carrica, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM 87109

RE: Maverik – 98th & Bluewater
9701 Bluewater Rd. NW
Grading and Drainage Plan & Drainage Report
Engineer's Stamp Date: ~~10/30/19~~ 10/29/19
Hydrology File: K09D044

Dear Mr. Carrica:

Based upon the information provided in your submittal received 10/31/2019, the Grading and Drainage Plan is approved for Building Permit, Grading Permit and SO-19 Permit.

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Dough Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

Also as a reminder, please provide a Drainage Covenant for the proposed detention pond per Chapter 17 of the DPM prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Maverik 98th & Bluewater Building Permit #: _____ Hydrology File #: _____

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

Legal Description: TR 11 PLAT OF TRACTS 1 THRU 12 AVALON SUBDIVISON UNIT 5

City Address: 9701 Bluewater Rd NW

Applicant: Tierra West, LLC Contact: Vince Carrica

Address: 5571 Midway Park Place NE Albuquerque NM 87109

Phone#: 505-858-3100 Fax#: 505-858-1118 E-mail: vcarrica@tierrawestllc.com

Other Contact: _____ Contact: _____

Address: _____

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

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE _____ DRB SITE X ADMIN SITE

IS THIS A RESUBMITTAL? _____ Yes X No

DEPARTMENT _____ TRANSPORTATION X HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
____ CONCEPTUAL G & D PLAN
X GRADING PLAN
X DRAINAGE REPORT
____ DRAINAGE MASTER PLAN
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ STREET LIGHT LAYOUT
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

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
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: 10/30/2019 By: Vince Carrica

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

DRAINAGE REPORT

For

9701 Bluewater Rd. NW
ALBUQUERQUE, NEW MEXICO

Prepared by

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109

Prepared for

Maverik
Albuquerque, NM

October 29, 2019

10/30/19

Ronald R Bohannan, PE #7868

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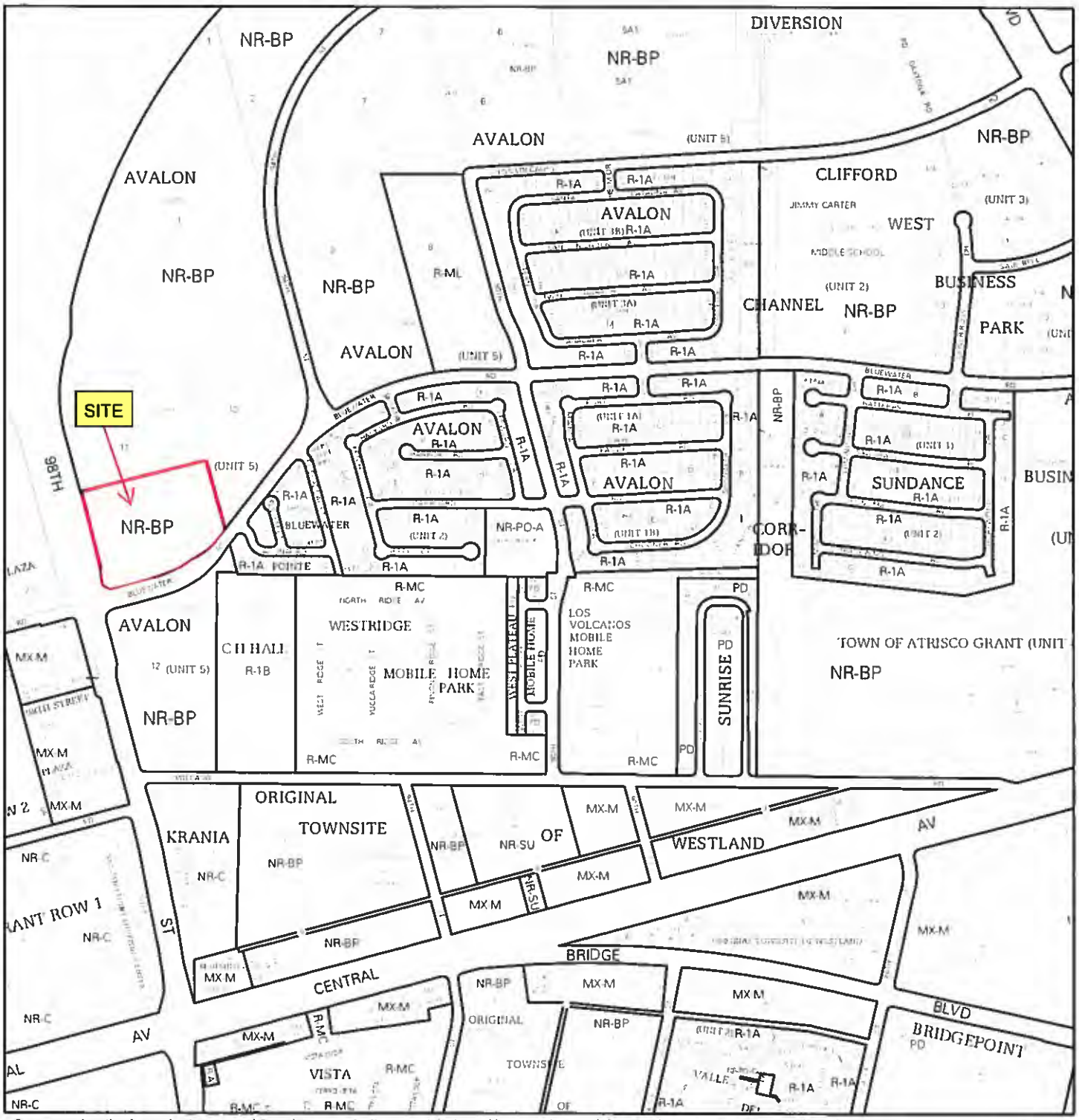


For more details about the Integrated Development Ordinance visit http://www.cabq.gov/planning/codes-policies-regulations/integrated-development-ordinance

IDO Zone Atlas
May 2018

Albuquerque Geographic Information System

IDO Zoning information as of May 17, 2018

The Zone Districts and Overlay Zones are established by the Integrated Development Ordinance (IDO).

Zone Atlas Page:

K-09-Z

- Easement
- Escarpment
- Petroglyph National Monument
- Areas Outside of City Limits
- Airport Protection Overlay (APO) Zone
- Character Protection Overlay (CPO) Zone
- Historic Protection Overlay (HPO) Zone
- View Protection Overlay (VPO) Zone

Feet

0 250 500 1,000

LOCATION

The proposed commercial development is located off Bluewater Rd NW, south of Interstate 40, east of 9th Street in southwest Albuquerque. It is comprised of approximately 3.00 acres zoned NR-BP. This report represents a drainage management and grading plan for approval by the City of Albuquerque, for Site Plan, grading and Building Permit submittal.

DRAINAGE BASIN DESIGNATION

The drainage basins for proposed conditions are as indicated on the BASIN MAP included in this report. The site consists of one onsite drainage basin.

EXISTING DRAINGE CONDITIONS

The site is currently vacant. It drains predominantly northwest to southeast. Runoff from a small upland basin that is within 98th St. right-of-way drains onto the site. This runoff will be redirected to drain to 98th St. roadway by others as part of improvements to connect Bluewater Rd to 98th Street and to construct intersection improvements.

FIRM MAP

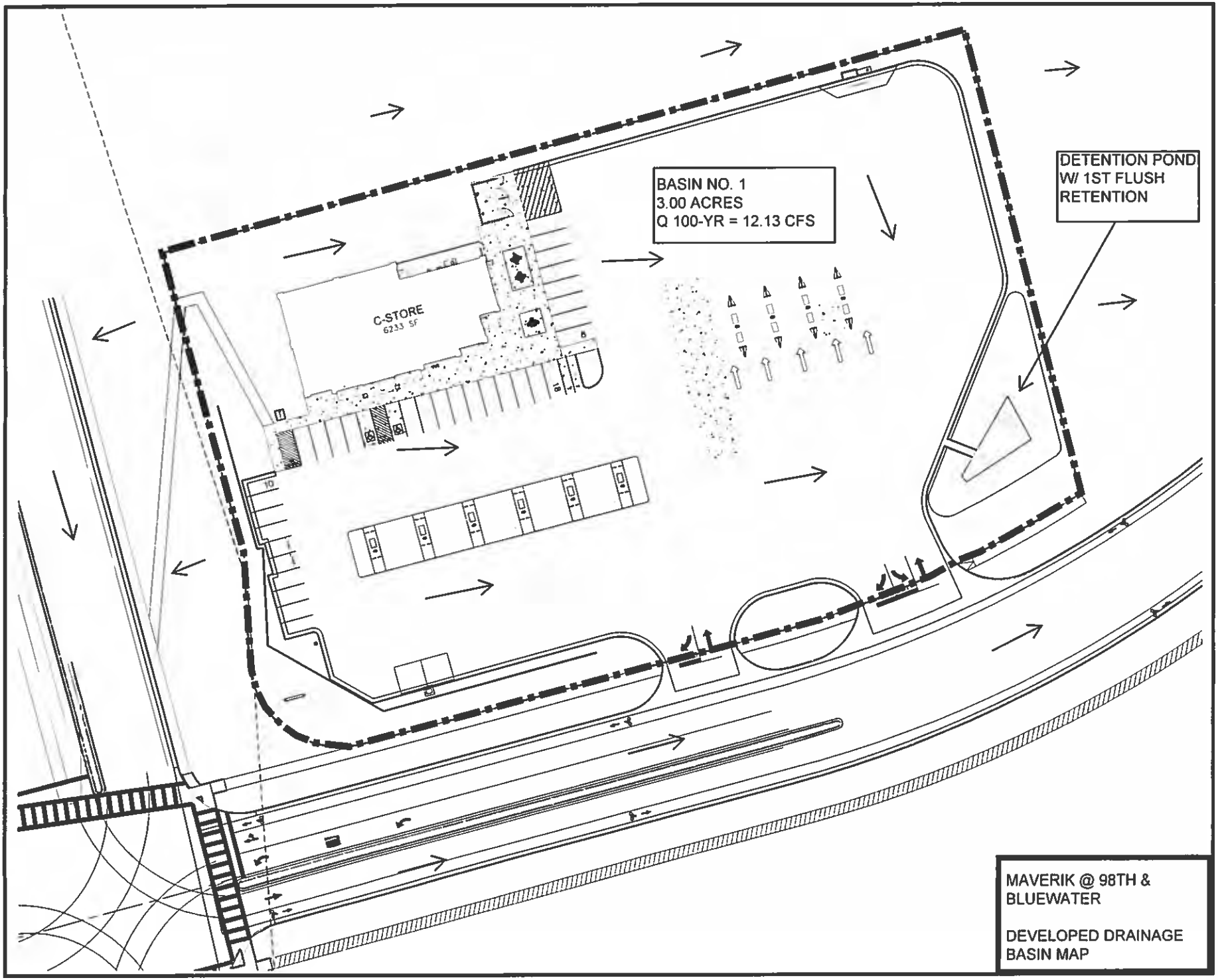
The site is not located in a flood plain as is shown on designated Flood Hazard Zone Map No. 35001C0328J dated 11/4/2016.

DESIGN-CRITERIA

The drainage plan presented in this report was prepared in accordance with the City of Albuquerque Drainage Ordinances and the Development Process Manual DPM. The hydrological analysis is based on the 100-year frequency, 24-hour duration storm. The plan will also include retention of the first flush in an on-site drainage pond. See attached Weighted E Table for excess precipitation values calculated for this site along with AHYMO analysis and pond routing.

DEVELOPED-DRAINAGE CONDITIONS

The site is proposed to be developed with a single user, Maverik C-Store. No offsite flows will enter the site. The upland flow from 98th St. right of way will be redirected to the roadway and runoff from the site adjacent to and north of the Maverik site will be


BASIN NO. 1
3.00 ACRES
Q 100-YR = 12.13 CFS
DETENTION POND
W/ 1ST FLUSH
RETENTION
C-STORE
6233 SF
MAVERIK @ 98TH &
BLUEWATER
DEVELOPED DRAINAGE
BASIN MAP

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/30/2019 at 12:02:37 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

routed to a detention pond located to the east of this site. The runoff from onsite will be directed via surface flow and storm drains to and onsite drainage pond and will then discharge to the proposed storm drain in Bluewater roadway with a controlled discharge rate equal to or less than the allowable 1.5 cfs per acre. This is in compliance with the Westpoint 40 Master Drainage Plan for fully developed conditions dated 7/25/19 (Hydrology File # K09D041) prepare by BHI. The drainage pond will retain the first flush retention volumes as required by the drainage ordinance.

Refer to enclosed Weighted E computation spreadsheet for developed runoff conditions.

SUMMARY

The proposed grading and drainage plan for the proposed development of the existing undeveloped property includes surface flows and an onsite storm drain to convey runoff to an onsite detention pond before discharging to the Bluewater Roadway at a controlled discharge rate of equal to or less than 1.5 cfs per acre.

MAVERIK @ 98TH STREET & BLUEWATER

Weighted E Method

Zone #1

Developed Basins

												100-Year		
Basin	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
				%	(acres)	%	(acres)	%	(acres)	%	(acres)			
1	130822.00	3.003	0.00469	0%	0	0%	0.000	22%	0.660717	78%	2.343	1.754	0.439	12.13
Total	130822.00	3.003	0.00469										0.439	12.13

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

FIRST FLUSH 2,891 CU.FT.
0.066 AC.FT

VOLUME CALCULATIONS

Maverik @ 98th / Bluewater

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
B.O.P. - Bottom Of Pond Elevation
T.O.P. - Top of Pond Elevation
H - Change In Water Depth

Volume = H/3 * [B1+B2+SQRT(B1*B2)]

Ab =	670.00	B.O.P.=	5214
At =	4,421.00	T.O.P. =	5220

ACTUAL ELEV.	DEPTH (FT)	AREA (SQ FT)	VOLUME (AC-FT)	Q (CFS)
5214.00	0	670	0	0.000
5215.00	1.00	1021	0.0193	0.000
5216.00	2.00	1505	0.0481	0.000
5216.50	2.50	1790	0.0670	0.000
5217.00	3.00	2075	0.0891	1.480
5218.00	4.00	2737	0.1442	2.733
5219.00	5.00	3543	0.2161	3.791
5220.00	6.00	4421	0.3073	4.611

HEIGHT ABOVE INV OUT
0
0.50
1.50
2.50
3.50

Orifice Equation
Q = CA SQRT(2gH)

C =	0.6
Diameter (in	10
Area (ft^2)=	0.545415391
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

TIERRA WEST, LLC

Project MAVERIK @ 98th / BLUEWATER Date 10/29/19

Project No. DRAINAGE REPORT

Meeting Purpose CALCS Sheet No 1 of 1

Attendees

POND RUNDOWN, 4ft CONCRETE:

WIDTH = 4ft
HEIGHT = 1ft
TOP ELEV. = 19.50
BOTTOM ELEV. = 14.00 h = 5.5ft
LENGTH = 17.5ft SLOPE = 31%

$$Q_{CAPACITY} = \frac{1.49}{n} A R^{2/3} S^{1/2} = \left(\frac{1.49}{0.013}\right) 4 (0.67)^{2/3} (0.31)^{1/2} = 195 cfs$$

$A = 4(1) = 4ft^2$
$WP = 6ft$
$R = A/WP = 4/6 = 0.67$
$n = 0.013$

$Q_{CAPACITY} \geq Q_{REQ} = 12.13cfs$ ✓

5571 Midway Park Place NE • Albuquerque, NM 87109 • (505) 858-3100 • (505) 858-1118 Fax • 1-800-245-3102 • twllc@tierrawestllc.com

```
**************************************************************
*                  Maverik @ 98th & Unser                    *
**************************************************************
* 100-YEAR, 24-HR STORM  (UNDER PROPOSED CONDITIONS) W/ routing *
**************************************************************
START                TIME=0.0
*
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                     RAIN DAY=2.66 IN DT=0.05 HR
*
*
*BASIN 1
*
COMPUTE NM HYD       ID=1 HYD NO=100.1 AREA=0.00469 SQ MI
                     PER A=0.00 PER B=0.00 PER C=22.00 PER D=78.00
                     TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
*
*
*ROUTE BASIN 1 THROUGH DETENTION POND
*
*
ROUTE RESERVOIR      ID=55 HYD NO=200.1 INFLOW ID=1 CODE=24
                     OUTFLOW (CFS) STORAGE(AC-FT) ELEVATION(FT)
                     0.000          0.0000              14.00
                     0.010          0.0193              15.00
                     0.010          0.0481              16.00
                     0.010          0.0670              16.50
                     1.480          0.0891              17.00
                     2.733          0.1442              18.00
                     3.791          0.2161              19.00
                     4.611          0.3073              20.00
*
PRINT HYD            ID=55  CODE=1
*
*
PRINT HYD            ID=55  CODE=1
*
*
FINISH
```

```
       AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
            RUN DATE (MON/DAY/YR) = 10/30/2019
            START TIME (HR:MIN:SEC) = 08:39:31     USER NO.=
AHYMO_Temp_User:20122010
            INPUT FILE = Z:\2018\2018086 Maverik 98th &
Bluewater\Drainage\hymoMaverik 98th-3.txt

    ************************************************************
    *                  Maverik @ 98th & Unser                  *
    ************************************************************
    * 100-YEAR, 24-HR STORM  (UNDER PROPOSED CONDITIONS) W/ routing *
    ************************************************************
    START               TIME=0.0
    *
    *
    RAINFALL            TYPE=2 RAIN QUARTER=0.0 IN
                        RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                        RAIN DAY=2.66 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  0.0022  0.0045  0.0069  0.0096  0.0123  0.0154
                     0.0197  0.0264  0.0336  0.0412  0.0494  0.0578  0.0664
                     0.0753  0.0844  0.0946  0.1052  0.1168  0.1387  0.1657
                     0.2020  0.2430  0.2937  0.3614  0.4375  0.5689  0.7733
                     1.1234  1.3695  1.5635  1.6610  1.7465  1.8079  1.8568
                     1.8994  1.9306  1.9592  1.9828  1.9979  2.0087  2.0183
                     2.0273  2.0352  2.0426  2.0499  2.0568  2.0625  2.0659
                     2.0692  2.0724  2.0754  2.0784  2.0813  2.0842  2.0870
                     2.0896  2.0923  2.0949  2.0974  2.0999  2.1023  2.1046
                     2.1069  2.1092  2.1115  2.1136  2.1158  2.1179  2.1199
                     2.1220  2.1240  2.1260  2.1280  2.1299  2.1318  2.1337
                     2.1356  2.1374  2.1392  2.1411  2.1428  2.1446  2.1463
                     2.1481  2.1498  2.1514  2.1531  2.1548  2.1564  2.1580
                     2.1596  2.1612  2.1628  2.1643  2.1658  2.1674  2.1689
                     2.1704  2.1718  2.1733  2.1747  2.1762  2.1776  2.1790
                     2.1804  2.1818  2.1832  2.1845  2.1859  2.1872  2.1885
                     2.1899  2.1912  2.1924  2.1937  2.1950  2.1963  2.1975
                     2.1988  2.2000  2.2013  2.2026  2.2038  2.2051  2.2064
                     2.2077  2.2089  2.2102  2.2115  2.2128  2.2141  2.2153
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                     2.2345  2.2358  2.2371  2.2383  2.2396  2.2409  2.2422
                     2.2434  2.2447  2.2460  2.2473  2.2486  2.2498  2.2511
                     2.2524  2.2537  2.2549  2.2562  2.2575  2.2588  2.2601
                     2.2613  2.2626  2.2639  2.2652  2.2664  2.2677  2.2690
                     2.2703  2.2716  2.2728  2.2741  2.2754  2.2767  2.2779
                     2.2792  2.2805  2.2818  2.2831  2.2843  2.2856  2.2869
```

```
                    2.2882  2.2894  2.2907  2.2920  2.2933  2.2946  2.2958
                    2.2971  2.2984  2.2997  2.3009  2.3022  2.3035  2.3048
                    2.3061  2.3073  2.3086  2.3099  2.3112  2.3124  2.3137
                    2.3150  2.3163  2.3176  2.3188  2.3201  2.3214  2.3227
                    2.3239  2.3252  2.3265  2.3278  2.3291  2.3303  2.3316
                    2.3329  2.3342  2.3354  2.3367  2.3380  2.3393  2.3406
                    2.3418  2.3431  2.3444  2.3457  2.3469  2.3482  2.3495
                    2.3508  2.3521  2.3533  2.3546  2.3559  2.3572  2.3584
                    2.3597  2.3610  2.3623  2.3636  2.3648  2.3661  2.3674
                    2.3687  2.3699  2.3712  2.3725  2.3738  2.3750  2.3763
                    2.3776  2.3789  2.3802  2.3814  2.3827  2.3840  2.3853
                    2.3865  2.3878  2.3891  2.3904  2.3917  2.3929  2.3942
                    2.3955  2.3968  2.3980  2.3993  2.4006  2.4019  2.4032
                    2.4044  2.4057  2.4070  2.4083  2.4095  2.4108  2.4121
                    2.4134  2.4147  2.4159  2.4172  2.4185  2.4198  2.4210
                    2.4223  2.4236  2.4249  2.4262  2.4274  2.4287  2.4300
                    2.4313  2.4325  2.4338  2.4351  2.4364  2.4377  2.4389
                    2.4402  2.4415  2.4428  2.4440  2.4453  2.4466  2.4479
                    2.4492  2.4504  2.4517  2.4530  2.4543  2.4555  2.4568
                    2.4581  2.4594  2.4607  2.4619  2.4632  2.4645  2.4658
                    2.4670  2.4683  2.4696  2.4709  2.4722  2.4734  2.4747
                    2.4760  2.4773  2.4785  2.4798  2.4811  2.4824  2.4837
                    2.4849  2.4862  2.4875  2.4888  2.4900  2.4913  2.4926
                    2.4939  2.4952  2.4964  2.4977  2.4990  2.5003  2.5015
                    2.5028  2.5041  2.5054  2.5067  2.5079  2.5092  2.5105
                    2.5118  2.5130  2.5143  2.5156  2.5169  2.5182  2.5194
                    2.5207  2.5220  2.5233  2.5245  2.5258  2.5271  2.5284
                    2.5297  2.5309  2.5322  2.5335  2.5348  2.5360  2.5373
                    2.5386  2.5399  2.5412  2.5424  2.5437  2.5450  2.5463
                    2.5475  2.5488  2.5501  2.5514  2.5527  2.5539  2.5552
                    2.5565  2.5578  2.5590  2.5603  2.5616  2.5629  2.5642
                    2.5654  2.5667  2.5680  2.5693  2.5705  2.5718  2.5731
                    2.5744  2.5757  2.5769  2.5782  2.5795  2.5808  2.5820
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                    2.6012  2.6025  2.6038  2.6050  2.6063  2.6076  2.6089
                    2.6102  2.6114  2.6127  2.6140  2.6153  2.6165  2.6178
                    2.6191  2.6204  2.6217  2.6229  2.6242  2.6255  2.6268
                    2.6280  2.6293  2.6306  2.6319  2.6332  2.6344  2.6357
                    2.6370  2.6383  2.6395  2.6408  2.6421  2.6434  2.6447
                    2.6459  2.6472  2.6485  2.6498  2.6510  2.6523  2.6536
                    2.6549  2.6562  2.6574  2.6587  2.6600

*
*
*BASIN 1
*
COMPUTE NM HYD      ID=1 HYD NO=100.1 AREA=0.00469 SQ MI
                    PER A=0.00 PER B=0.00 PER C=22.00 PER D=78.00
                    TP=-0.1333 HR MASS RAINFALL=-1
```

```
        K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE
CONSTANT, N =  7.106428
        UNIT PEAK =   14.443    CFS   UNIT VOLUME =   0.9983       B =   526.28
 P60 = 1.8700
        AREA =     0.003658 SQ MI    IA =   0.10000 INCHES    INF =   0.04000
INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
0.050000


        K =  0.105867HR    TP =  0.133300HR    K/TP RATIO =  0.794199     SHAPE
CONSTANT, N =  4.514592
        UNIT PEAK =   3.0043    CFS   UNIT VOLUME =   0.9977       B =   388.14
 P60 = 1.8700
        AREA =     0.001032 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=1

                                      PARTIAL HYDROGRAPH   100.10


       RUNOFF VOLUME =     2.12311 INCHES     =       0.5311 ACRE-FEET
       PEAK DISCHARGE RATE =      12.56 CFS  AT   1.500 HOURS   BASIN AREA =
0.0047 SQ. MI.



    *
    *
    *ROUTE BASIN 1 THROUGH DETENTION POND
    *
    *
    ROUTE RESERVOIR     ID=55 HYD NO=200.1 INFLOW ID=1 CODE=24
                            OUTFLOW (CFS) STORAGE(AC-FT) ELEVATION(FT)
                                    0.000          0.0000             14.00

                                    0.010          0.0193             15.00

                                    0.010          0.0481             16.00

                                    0.010          0.0670             16.50

                                    1.480          0.0891             17.00

                                    2.733          0.1442             18.00
```

3.791	0.2161	19.00
4.611	0.3073	20.00

* * * * * * * * * * * * * * * * * *

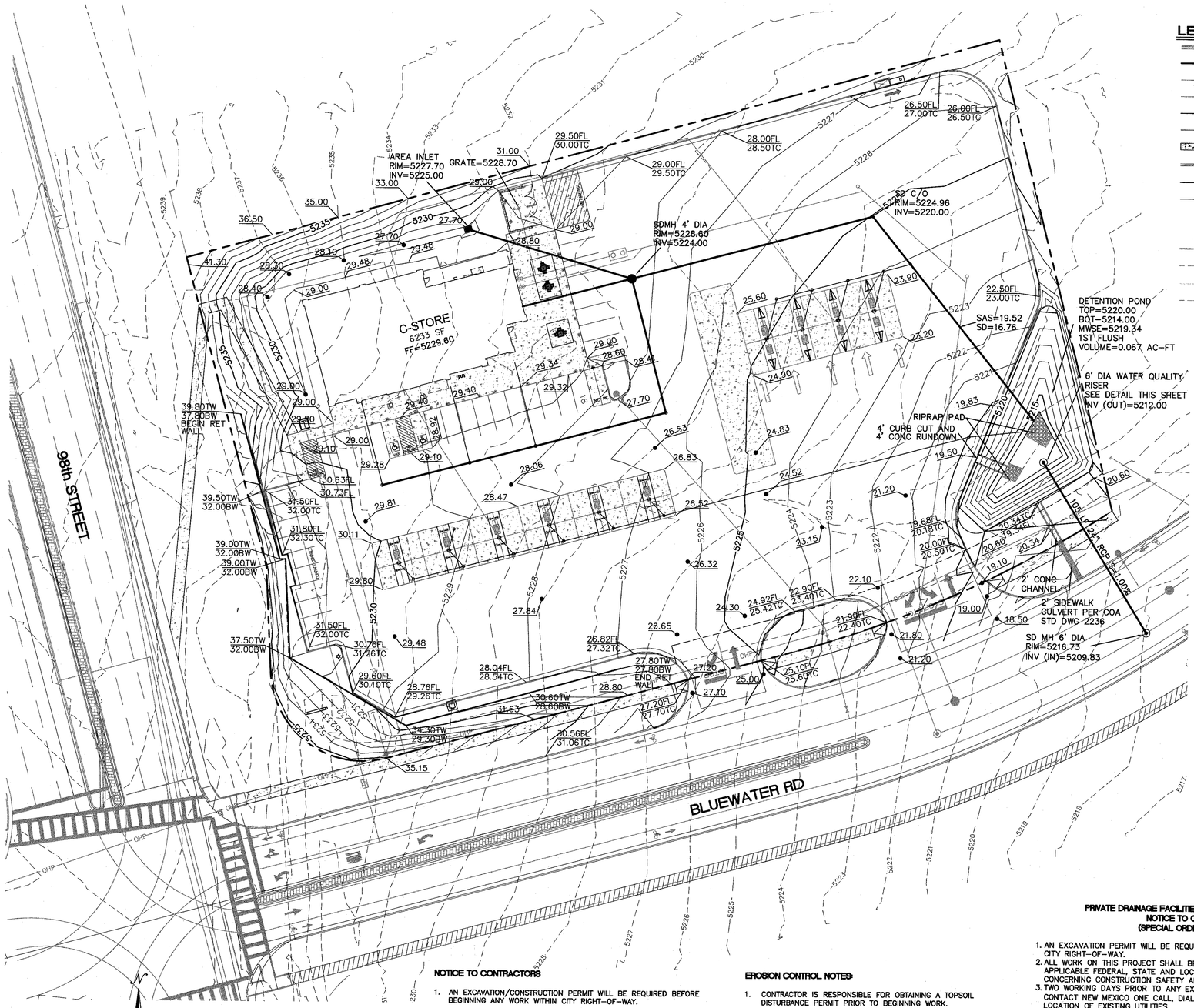
TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	14.00	0.000	0.00
1.20	1.65	14.98	0.019	0.01
2.40	0.41	17.97	0.142	2.69
3.60	0.02	16.51	0.067	0.04
4.80	0.03	16.51	0.067	0.03
6.00	0.06	16.51	0.068	0.05
7.20	0.06	16.52	0.068	0.06
8.40	0.06	16.52	0.068	0.06
9.60	0.06	16.52	0.068	0.06
10.80	0.06	16.52	0.068	0.06
12.00	0.06	16.52	0.068	0.06
13.20	0.06	16.52	0.068	0.06
14.40	0.06	16.52	0.068	0.06
15.60	0.06	16.52	0.068	0.06
16.80	0.06	16.52	0.068	0.06
18.00	0.06	16.52	0.068	0.06
19.20	0.06	16.52	0.068	0.06
20.40	0.06	16.52	0.068	0.06
21.60	0.06	16.52	0.068	0.06
22.80	0.06	16.52	0.068	0.06
24.00	0.06	16.52	0.068	0.06
25.20	0.00	16.50	0.067	0.01
26.40	0.00	16.50	0.067	0.01
27.60	0.00	16.50	0.067	0.01
28.80	0.00	16.50	0.067	0.01
30.00	0.00	16.50	0.067	0.01
31.20	0.00	16.50	0.067	0.01
32.40	0.00	16.50	0.067	0.01
33.60	0.00	16.50	0.067	0.01
34.80	0.00	16.50	0.067	0.01
36.00	0.00	16.50	0.067	0.01
37.20	0.00	16.50	0.067	0.01
38.40	0.00	16.50	0.067	0.01
39.60	0.00	16.50	0.067	0.01
40.80	0.00	16.50	0.067	0.01
42.00	0.00	16.50	0.067	0.01
43.20	0.00	16.50	0.067	0.01
44.40	0.00	16.50	0.067	0.01
45.60	0.00	16.50	0.067	0.01
46.80	0.00	16.50	0.067	0.01

48.00	0.00	16.50	0.067	0.01
49.20	0.00	16.50	0.067	0.01
50.40	0.00	16.50	0.067	0.01
51.60	0.00	16.50	0.067	0.01
52.80	0.00	16.50	0.067	0.01
54.00	0.00	16.50	0.067	0.01
55.20	0.00	16.50	0.067	0.01
56.40	0.00	16.50	0.067	0.01
57.60	0.00	16.50	0.067	0.01
58.80	0.00	16.50	0.067	0.01
60.00	0.00	16.50	0.067	0.01
61.20	0.00	16.50	0.067	0.01
62.40	0.00	16.50	0.067	0.01
63.60	0.00	16.50	0.067	0.01
64.80	0.00	16.50	0.067	0.01
66.00	0.00	16.50	0.067	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
67.20	0.00	16.50	0.067	0.01
68.40	0.00	16.50	0.067	0.01
69.60	0.00	16.50	0.067	0.01
70.80	0.00	16.50	0.067	0.01
72.00	0.00	16.50	0.067	0.01
73.20	0.00	16.50	0.067	0.01
74.40	0.00	16.50	0.067	0.01
75.60	0.00	16.50	0.067	0.01
76.80	0.00	16.50	0.067	0.01
78.00	0.00	16.50	0.067	0.01
79.20	0.00	16.50	0.067	0.01
80.40	0.00	16.50	0.067	0.01
81.60	0.00	16.50	0.067	0.01
82.80	0.00	14.98	0.019	0.01
84.00	0.00	14.93	0.018	0.01
85.20	0.00	14.88	0.017	0.01
86.40	0.00	14.84	0.016	0.01
87.60	0.00	14.80	0.015	0.01
88.80	0.00	14.76	0.015	0.01
90.00	0.00	14.72	0.014	0.01
91.20	0.00	14.68	0.013	0.01
92.40	0.00	14.65	0.013	0.01
93.60	0.00	14.62	0.012	0.01
94.80	0.00	14.59	0.011	0.01
96.00	0.00	14.56	0.011	0.01
97.20	0.00	14.53	0.010	0.01
98.40	0.00	14.50	0.010	0.01
99.60	0.00	14.48	0.009	0.00

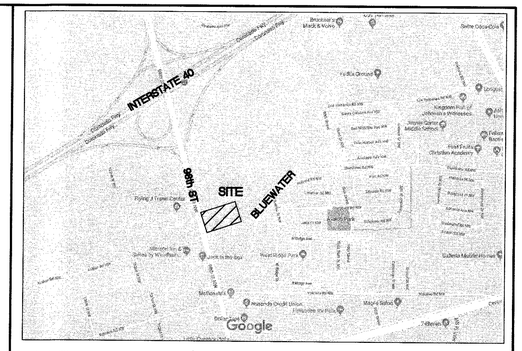
PEAK DISCHARGE = 4.071 CFS - PEAK OCCURS AT HOUR 1.80
MAXIMUM WATER SURFACE ELEVATION = 19.341

```
 MAXIMUM STORAGE =        0.2472 AC-FT      INCREMENTAL TIME=    0.050000HRS

*
PRINT HYD           ID=55  CODE=1

                                     PARTIAL HYDROGRAPH   200.10


      RUNOFF VOLUME =     2.12255 INCHES     =       0.5309 ACRE-FEET
      PEAK DISCHARGE RATE =       4.07 CFS  AT   1.800 HOURS   BASIN AREA =
0.0047 SQ. MI.



*
*
PRINT HYD           ID=55  CODE=1

                                     PARTIAL HYDROGRAPH   200.10


      RUNOFF VOLUME =     2.12255 INCHES     =       0.5309 ACRE-FEET
      PEAK DISCHARGE RATE =       4.07 CFS  AT   1.800 HOURS   BASIN AREA =
0.0047 SQ. MI.



*
*
FINISH

      NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 08:39:31
```

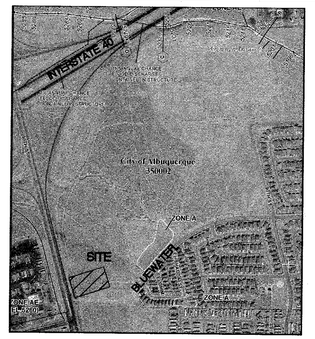


LEGEND

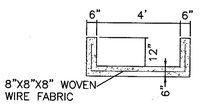
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION (FLOWLINE)
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION
- EXISTING LIGHT STANDARD



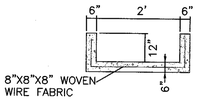
VICINITY MAP



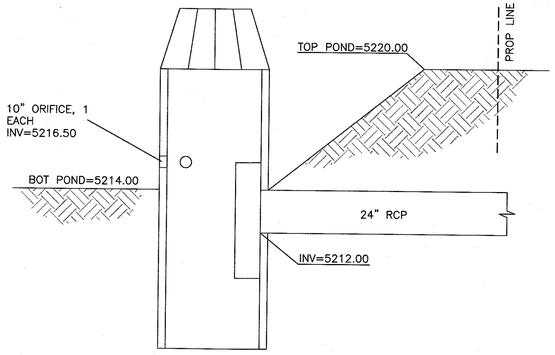
FIRM MAP 35001C0328J



CONCRETE RUNDOWN



2' CONCRETE CHANNEL



RISER DETAIL

GRAPHIC SCALE

30 0 15 30

(IN FEET)
1 inch = 30 ft.

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 HERON, 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 CONNECTIONS. 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.

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 (CITY) ACCEPTANCE OF ANY PROJECT.

PRIVATE DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY
NOTICE TO CONTRACTOR
(SPECIAL ORDER 19 " '80-19')

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 MAY BE REQUIRED ON A 24-HOUR BASIS.
8. CONTRACTOR MUST CONTACT AUGIE ARMIJO AT (505) 857-8607 AND CONSTRUCTION COORDINATION AT 924-3416 TO SCHEDULE AN INSPECTION.

CAUTION

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

MAVERIK

ENGINEER'S SEAL

RONALD R. BOHANNAN P.E. #7868

MAVERIK STORE #NM-98th ST AND BLUEWATER RD

GRADING AND DRAINAGE PLAN

TIERRA WEST, LLC
5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY	pm
DATE	10-29-19
DRAWING	2018086-GR
SHEET #	GR-1
JOB #	2018086