

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

January 23, 2019

Ronald Bohannon, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM, 87109

**RE: Maverik Fuel Center
3737 Princeton Drive NE
Grading and Drainage Plan & Drainage Report
Engineer's Stamp Date: 01/17/19
Hydrology File: G16D029**

Dear Mr. Bohannon:

Based upon the information provided in your resubmittal received 01/18/2019, the Grading and Drainage Plan is approved for Building Permit and SO-19 Permit.

PO Box 1293

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.

Albuquerque

Please provide Private Facility Drainage Covenant per Chapter 17 of the DPM prior to Permanent Release of Occupancy for the first flush ponds. Please submit these to the 4th floor of Plaza de Sol. A \$25 fee for each will be required.

NM 87103

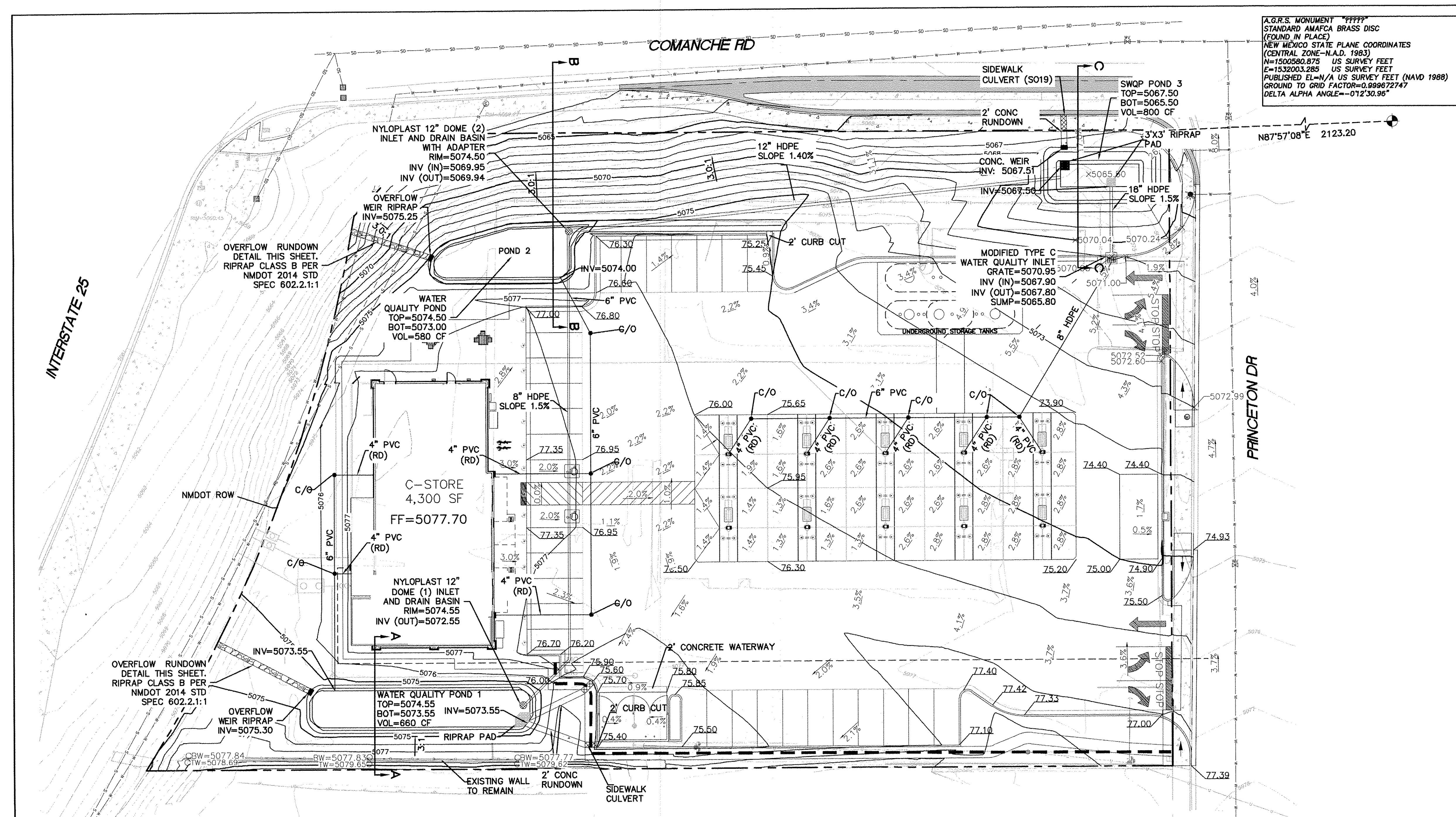
As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer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

www.cabq.gov

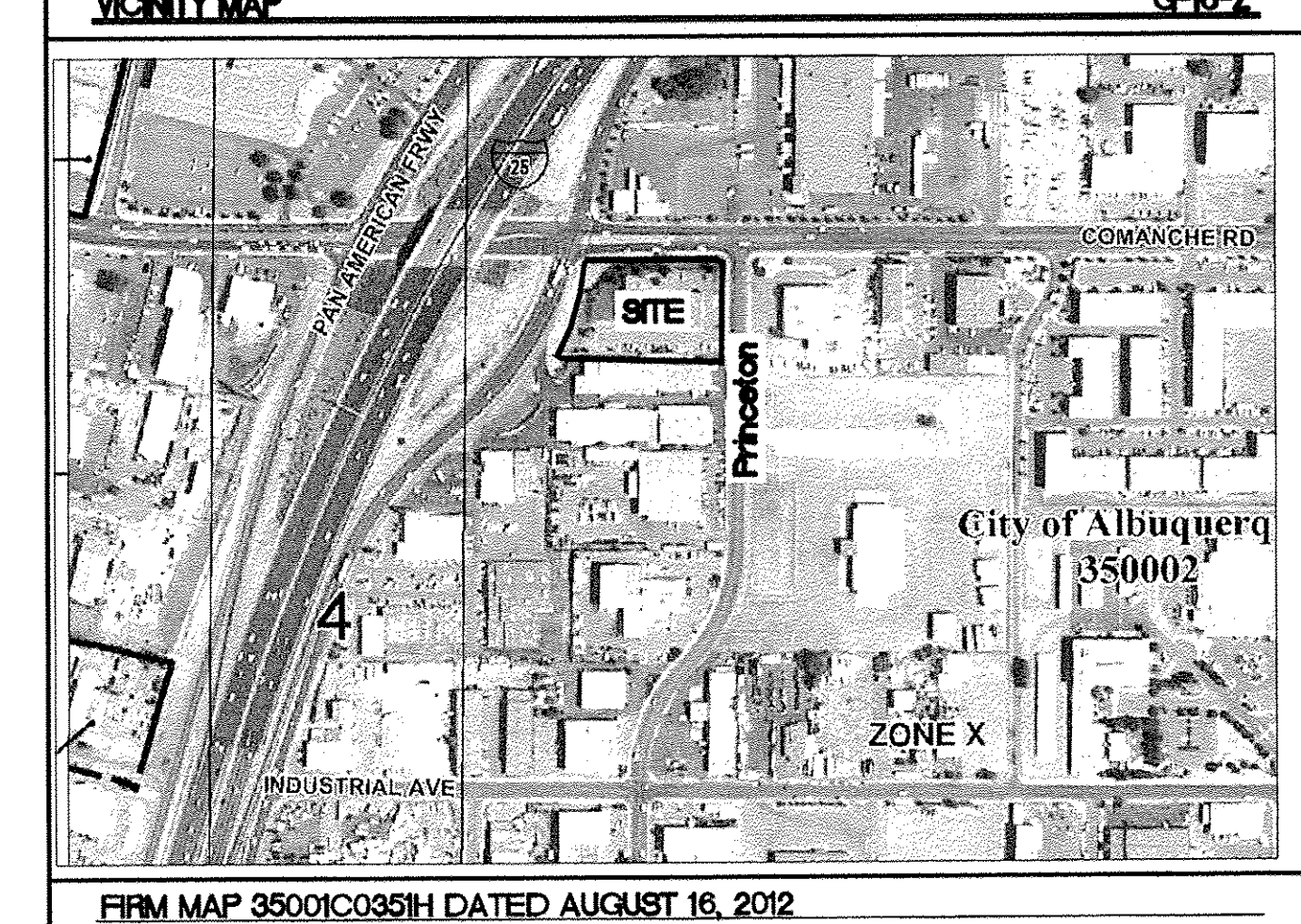
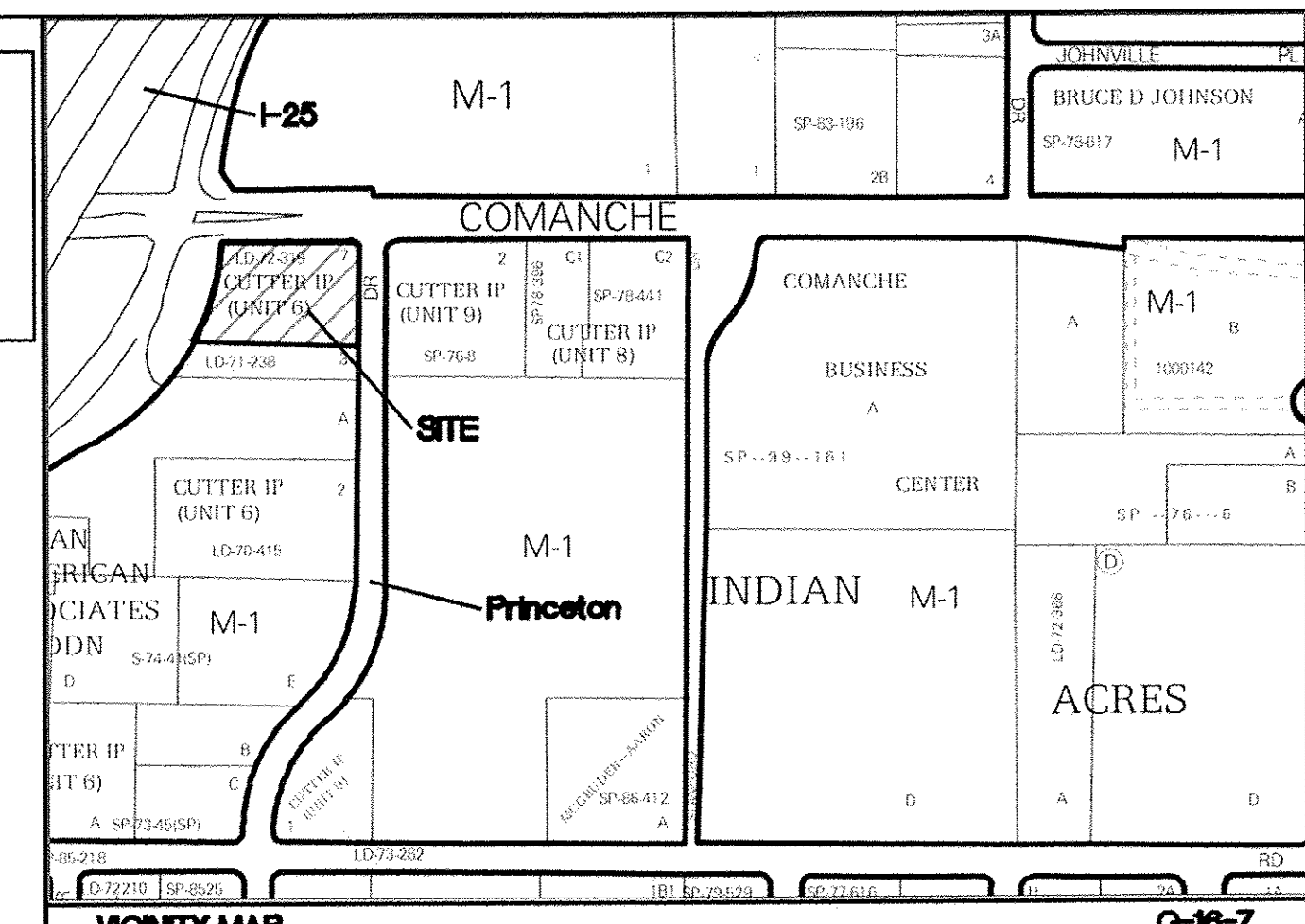
If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

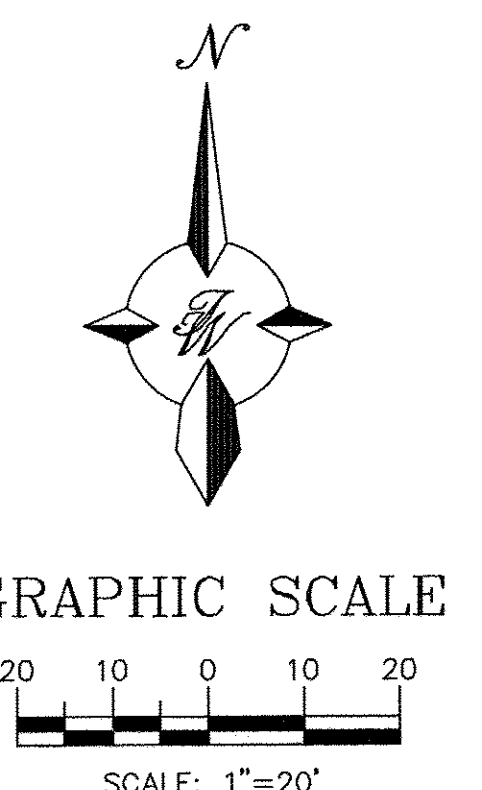
Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department



A.G.R.S. MONUMENT "99999"
STANDARD AMFCA BRASS DISC
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE-N.A.D. 1983)
N=1500580.875 US SURVEY FEET
E=1532003.285 US SURVEY FEET
PUBLISHED EL=N/A US SURVEY FEET (NAVD 1988)
GROUND TO GRID FACTOR=0.999672747
DELTA ALPHA ANGLE=-072'30.96"

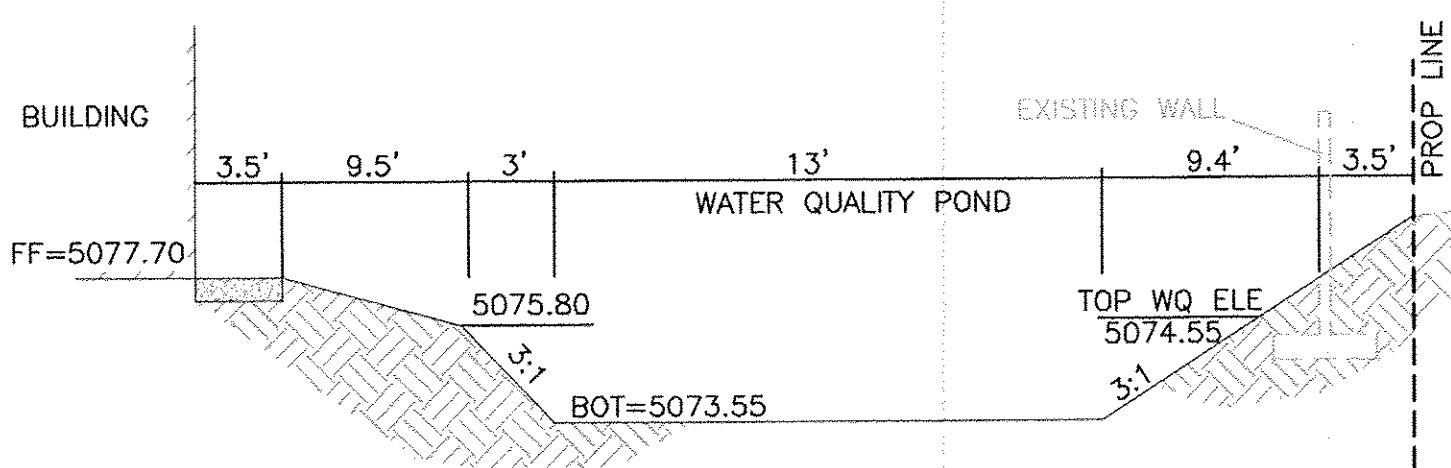


- LEGEND**
- CURB & GUTTER
 - BOUNDARY LINE
 - EASEMENT
 - SIDEWALK
 - CONTOUR MAJOR
 - CONTOUR MINOR
 - SPOT ELEVATION
 - FLOW ARROW
 - EXISTING CURB & GUTTER
 - EXISTING CONTOUR MAJOR
 - EXISTING CONTOUR MINOR
 - EXISTING SPOT ELEVATION
 - WATER BLOCK
 - ACCESSIBLE PATH
 - OVERFLOW RIPRAP/CONCRETE WEIR 2.0'W, 0.5'H, 3:1 SIDES
 - CLEANOUT

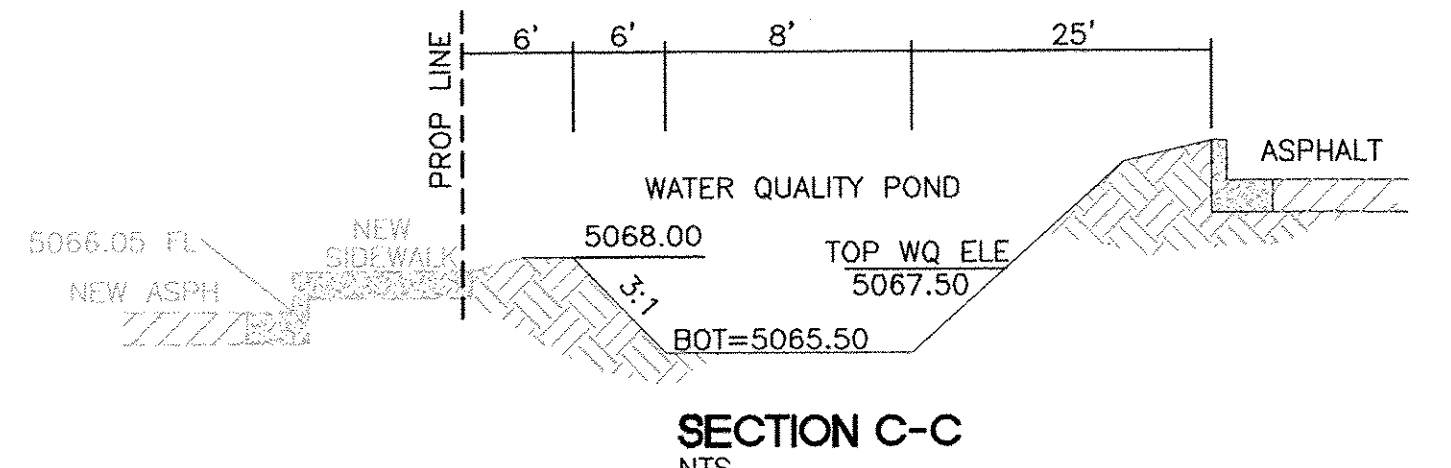


- NOTICE TO CONTRACTORS**
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
 - ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
 - 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.
 - 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.
 - BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
 - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
 - WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.
 - CONTRACTOR MUST CONTACT JASON RODRIGUEZ AT 235-8016 AND CONSTRUCTION COORDINATION AT 924-3416 TO SCHEDULE AN INSPECTION.

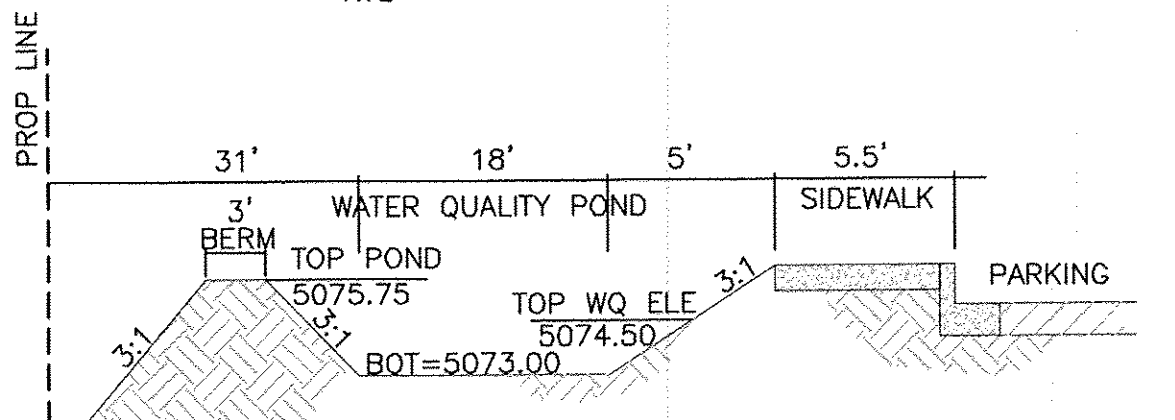
- EROSION CONTROL NOTES**
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
 - CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
 - CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
 - REPAIR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



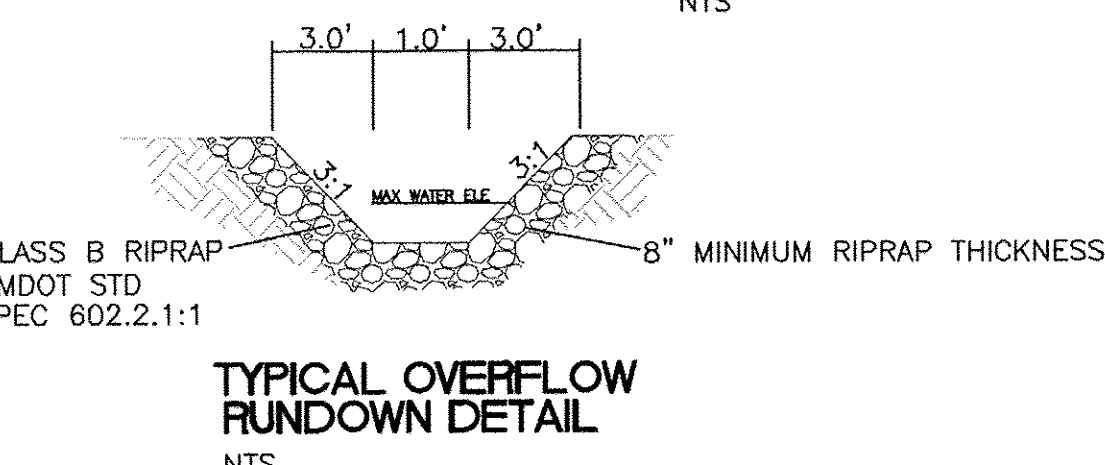
SECTION A-A
NTS



SECTION C-C
NTS



SECTION B-B
NTS



TYPICAL OVERFLOW
RUNDOWN DETAIL
NTS

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.

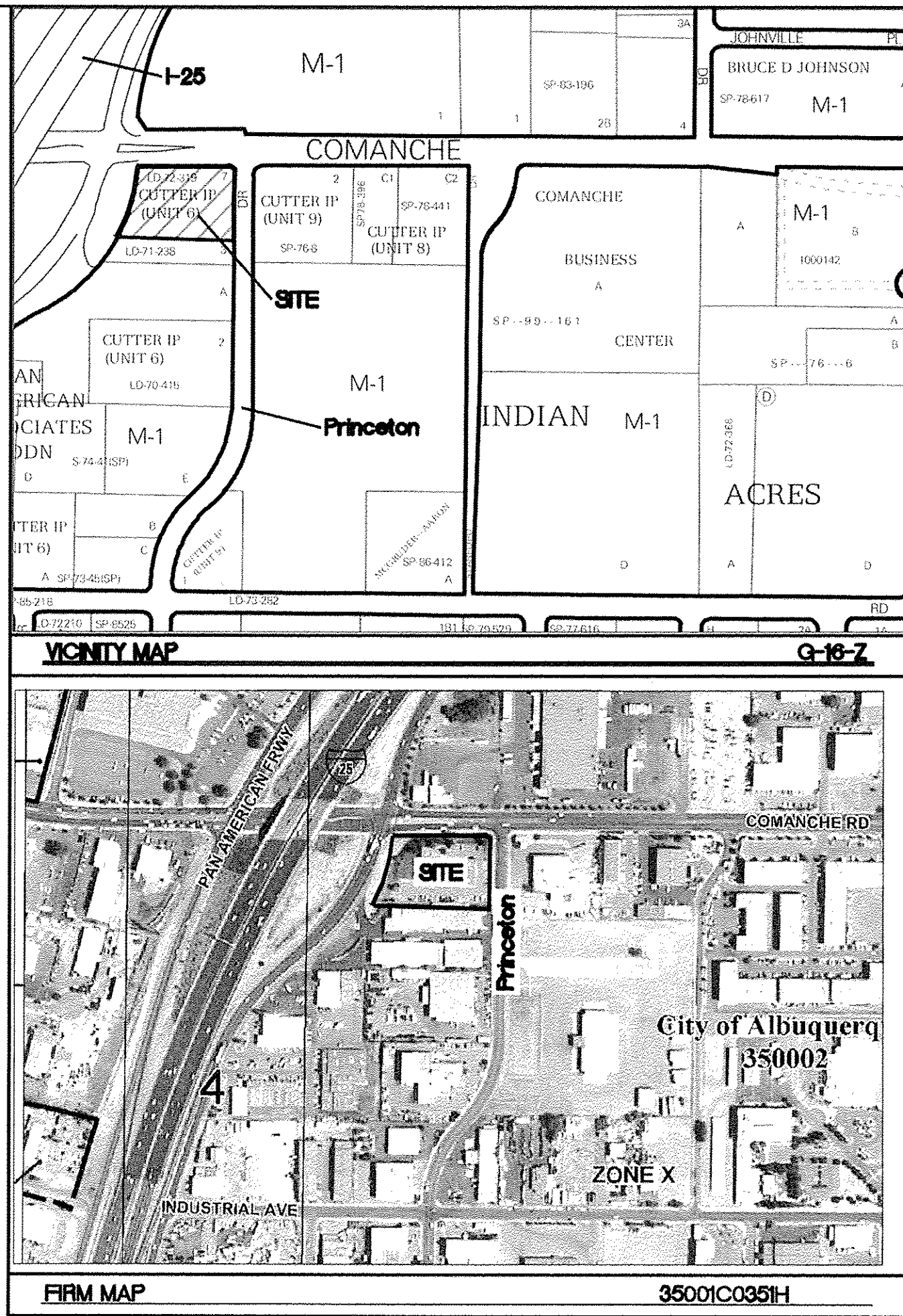


	MAVERIK INC. STORE 3737 PRINCETON DR. NE		DRAWN BY BF
	GRADING PLAN		DATE 1-17-19
	 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com		DRAWING 2018039-GR
	SHEET # C2		JOB # 2018039

INTERSTATE 25

COMANCHE RD

PRINCETON DR

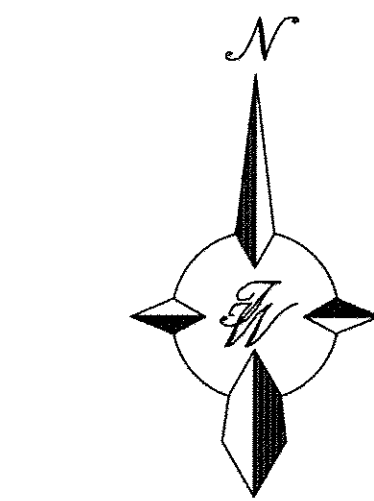


LEGEND

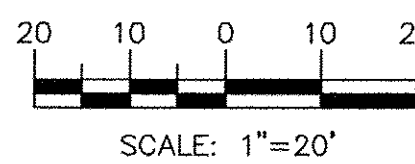
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- SIDEWALK
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION
- WATER BLOCK
- C/O DRAINAGE BASINS
- CLEANOUT

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.



GRAPHIC SCALE



PROPOSED DRAINAGE SOLUTION

THE EXPECTED TOTAL RUNOFF FROM THE SITE FOR THE 100-YEAR 6 HOUR EVENT IS 6.47 CFS WITH A VOLUME OF 0.231 AC-FT. ROOF DRAINS WILL COLLECT RUNOFF FROM THE PROPOSED C-STORE AND DISCHARGE DIRECTLY INTO THE FIRST FLUSH BASINS. PER DPM CHAPTER 22.9.E, TABLE 1 ALL FUELING STATIONS MUST DEMONSTRATE CONTROL OF OIL FROM VEHICLE PARKING AREAS. BASIN B4 COVERS THE MAJORITY OF THE PAVEMENT AREA, INCLUDING ALL OF THE SHEET FLOW GENERATED FROM THE RE-FUELING AREA UNDER THE CANOPY, AND SHEET FLOW IS DIRECTED TO A SINGLE MODIFIED OIL-WATER SEPARATOR TYPE C CURB INLET AT THE NORTH EAST CORNER OF THE SITE. THE CURB INLET HAS THE CAPACITY OF 3.87 CFS AND WILL CONVEY THE CALCULATED 2.87 CFS THAT WILL FLOW TO INLET. THE SINGLE INLET WILL BE MODIFIED TO INCLUDE A 24-INCH DEEP SUMP BOX AND INSTALLATION OF A Baffle PLATE TO RESTRICT THE PASSING OF TRASH WITH A 12-INCH BY 12-INCH EXFILTRATION OPENING AT THE BASE OF THE CONCRETE BOX TO RELEASE THE STORMWATER HELD IN THE SUMP. FOR THE DESIGNED SUMP DEPTH OF 24-INCHES THE BOX INLET WILL RETAIN 130 GALLONS WHICH IS ADEQUATE FOR ANY MAJOR FUEL SPILLS THAT MAY OCCUR DURING OPERATIONS AT THE SITE. DURING REGULAR SITE MAINTENANCE THE INLET SHALL BE CLEANED OF DEBRIS AND SEDIMENT THAT ACCUMULATES OVER TIME IN THE SUMP.

A 18-INCH STORM DRAIN IS CONNECTED TO THE INLET BOX AND DISCHARGES THE TREATED STORMWATER DIRECTLY TO THE FIRST FLUSH POND LOCATED AT THE NORTH EAST CORNER OF THE PARCEL. THE WATER QUALITY POND #3 WILL RETAIN A VOLUME OF 800 CUBIC FEET BEFORE RELEASING THE ADDITIONAL FLOW TO COMANCHE ROAD RIGHT-OF-WAY THROUGH A CONCRETE WEIR AND A 2-FOOT CONCRETE RUNDOWN / SIDEWALK CULVERT CONFORMING TO THE S019 PERMIT. ALL OTHER SITE RUNOFF GENERATED FROM THE IMPERVIOUS AREAS (BASINS B2, B4 AND B5) WILL BE CONVEYED AS SURFACE FLOWS TO THE ON-SITE CURB AND GUTTERS AND BE RELEASED VIA CURB CUTS TO THE RESPECTIVE FIRST FLUSH PONDS.

POND #1 HAS THE CAPACITY TO RETAIN A VOLUME OF 660 CUBIC FEET. AT THE DESIGNED INLET ELEVATION ADDITIONAL FLOW SHALL ENTER THE PROPOSED NYLOPLAST 12-INCH DOME INLET AND DRAIN BASIN AND BE CONVEYED THROUGH AN 8-INCH HDPE STORM PIPE. THIS STORM PIPE IS CONNECTED TO THE NYLOPLAST 12-INCH DOME INLET PROPOSED AT THE WATER QUALITY POND #2. THIS POND IS ASSOCIATED WITH THE RUNOFF FROM BASIN B5 WHICH TOTALS 0.98 CFS. IN THE CASE OF A BLOCKAGE AT AN INLET, EMERGENCY OVERFLOW RIPRAP RUNDOWNS ARE PROPOSED. THE WATER QUALITY POND #2 HAS THE CAPACITY TO RETAIN A VOLUME OF 580 CUBIC FEET. AT THE DESIGNED INLET ELEVATION THE ADDITIONAL FLOW SHALL ENTER THE INLET AND INTO THE 18-INCH HDPE STORM DRAIN. THIS STORM DRAIN PASSES THE ADDITIONAL FLOWS FROM BASINS B2 AND B5, A TOTAL OF 2.44 CFS. ALL SITE RUNOFF GENERATED FROM THE LANDSCAPED SLOPE AREAS (BASINS B1 AND B6) WILL FREELY DISCHARGE TO THE NORTH AND WEST INTO THE RESPECTIVE RIGHT-OF-WAYS. A SMALL PORTION OF RUNOFF TOTALING 0.05 CFS DISCHARGES DIRECTLY INTO THE PRINCETON DRIVE RIGHT-OF-WAY AT THE DRIVEWAY ENTRANCES (BASINS B8 AND B9). NO OFFSITE DRAINAGE IMPROVEMENTS ARE PROPOSED IN THE DOT RIGHT-OF-WAY.

Basin Descriptions

Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A				Treatment B				Treatment C				Treatment D				100-Year, 6-Hr			10-Year, 6-Hr			Water Quality Volume	
				%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs	FF Pond Required CF	FF Pond Provided CF		
1	4,793	0.11	0.00017	0%	0.000	100%	0.110	0%	0.000	0%	0.000	0%	0.000	0%	0.000	0%	0.000	0.780	0.007	0.25	0.280	0.003	0.10	0	0	0	0
2	16,120	0.37	0.00058	0%	0.000	32%	0.118	0%	0.000	68%	0.252	1.691	0.052	1.45	1.001	0.031	0.90	0.780	0.002	0.08	0.280	0.001	0.03	0	0	255	660
3	1,477	0.03	0.00005	0%	0.000	100%	0.034	0%	0.000	0%	0.000	0.780	0.002	0.08	0.280	0.001	0.03	0	0	0	0	0	0	0	0	0	0
4	26,570	0.61	0.00095	0%	0.000	0%	0.000	0%	0.000	100%	0.610	2.120	0.108	2.87	1.340	0.068	1.92	0.780	0.002	0.08	1.170	0.022	0.64	195	580	0	0
5	9,939	0.23	0.00036	0%	0.000	16%	0.037	0%	0.000	84%	0.192	1.905	0.036	0.98	1.170	0.022	0.64	0.780	0.002	0.08	1.170	0.022	0.64	195	580	0	0
6	10,066	0.23	0.00036	0%	0.000	10%	0.023	90%	0.208	0%	0.000	1.095	0.021	0.71	0.496	0.010	0.38	0.780	0.002	0.08	0.280	0.001	0.03	0	0	0	0
7	1,440	0.03	0.00005	0%	0.000	100%	0.033	0%	0.000	0%	0.000	0.780	0.002	0.08	0.280	0.001	0.03	0	0	0	0	0	0	0	0	0	0
8	397	0.01	0.00001	0%	0.000	0%	0.000	0%	0.000	100%	0.009	2.120	0.002	0.04	1.340	0.001	0.03	0	0	0	1.340	0.001	0.03	9	0	0	0
9	135	0.00	0.00000	0%	0.000	0%	0.000	0%	0.000	100%	0.003	2.120	0.001	0.01	1.340	0.000	0.01	0	0	0	1.340	0.000	0.01	3	0	0	0
Total	70,937	1.63	0.003		0.000		0.355		0.208		1.065		0.231	6.470		0.136	4.039					1,081	2,040				

CURRENT SITE DRAINAGE

NO OFFSITE FLOWS ENTER THE SITE. THE SITE IS BOUNDED BY DEVELOPED STREETS AND A BUILDING WAREHOUSE TO THE SOUTH. THE PROPERTY DRAINS TO PRINCETON DRIVE FROM THE EAST AND SOUTH SIDES; TO THE NORTH SIDE TO COMANCHE ROAD AND TO THE WEST TO THE I-25 FRONTAGE ROAD. THE ENTIRE SITE SHEET FLOWS TO THESE DISCHARGE LOCATIONS WITH NO DRAINAGE INFRASTRUCTURE INSTALLED. THE PEAK DISCHARGE CALCULATED FOR THE SITE MATCHES THE APPROVED PEAK DISCHARGE PRESENTED IN THE 1995 DRAINAGE REPORT FOR THE PARCEL OF 6.6 CFS FOR THE 100-YEAR 6 HOUR EVENT.

Excess Precipitation, E (in.)			Peak Discharge (cfs/acre)		
Zone 2	100-Year	10-Year	Zone 2	100-Year	10-Year
Ea	0.53	0.13	Qa	1.56	0.38
Eb	0.78	0.28	Qb	2.28	0.95
Ec	1.13	0.52	Qc	3.14	1.71
Ed	2.12	1.34	Qd	4.70	3.14

Pipe Capacity

Pipe	D (in)	Slope (%)	Area (ft^2)	R	Q Provided (cfs)	Velocity (ft/s)	Q Required (cfs)
PVC	4	1.00	0.09	0.083	0.23	2.58	-
PVC	6	1.00	0.20	0.125	0.66	3.39	-
HDPE	8	1.50	0.35	0.167	1.48	4.25	1.45
HDPE	18	1.40	1.77	0.375	12.46	7.05	2.44
HDPE	12	1.85	0.79	0.250	4.86	6.19	2.87

Water Quality Volume - "First Flush Pond" - Redevelopment Site

Total Impervious Area = 2Area in "Treatment D"
Retainage depth = 0.28' 0.0233 foot
Retention Volume = =0.0233 x area CF

Manning's Equation:

$Q = 1.49n \cdot A \cdot R^{2/3} \cdot S^{1/2}$

A = Area
R = D/4
S = Slope
n = 0.011 PVC
n = 0.013 HDPE



ENGINEER'S SEAL

RONALD R. BOHANNAN
P.E. #7868

MAVERIK INC. STORE
3737 PRINCETON DR. NE

DEVELOPED DRAINAGE PLAN

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

DRAWN BY
BF

DATE
1-17-19

DRAWING
2018039_DRAINAGE

SHEET #
C3

JOB #
2018039