CITY OF ALBUQUERQUE

Hydrology Section Planning Department
David S. Campbell, Director

Timothy M. Keller, Mayor

January 18, 2019

Richard Stevenson
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM, 87109

RE: 1401 Wyoming Blvd NE - Maverick
Grading Plan Engineer's Stamp Date: 1/08/2019
Hydrology File: J19D049

Based upon the information provided in your submittal received 1/8/2019, the Grading and Drainage Plan cannot be approved for Site Plan, Building Permit, and/or Grading Permit until the following conditions are addressed.

1. The oil/water separator may not discharge into the sanitary sewer. The oil/water separator maintenance should be addressed in the maintenance plan to include routine Vactor cleaning and a manifest of Vactor service with inspection notes. The separator may discharge in a "Drain Line Thru Curb". The drain line should be 4" diameter per DWG 2235.
2. Please identify all easements on the G&D Plan with book and page of recorded documents, and provide a copy of the cross lot drainage easement to Hydrology.
3. Please clarify and differentiate pavement "overlay" from areas of "removal and replacement". The entire site is paved now. If the impervious surface is removed and replaced then it is considered redevelopment and is subject to applicable permits. But overlay and/or fog seal is not subject to permits and does not require any SWQV. Please adjust the notes and hatch patterns accordingly.
4. Payment in Lieu of constructing onsite BMPs for a portion of the required SWQV will be allowed and must be received prior to approval of the G&D Plan.
5. Please provide a Drainage Covenant for onsite inlets, storm drains, oil/water separator, and BMPs prior to Certificate of Occupancy. Please submit this on the 4th floor of Plaza de Sol with a $25 check payable to Bernalillo County.
6. Show all of the work in the adjacent streets on the G&D Plan including removal of the existing driveways and reconstruction of the sidewalk and C&G.
7. After the G&D Plan is approved by Hydrology a Site Plan must be approved by the DRB with an Infrastructure List for the all of the work in the arterial and collector streets including Drain Line Thru Curb and restriping.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

8. 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.

If you have any questions, please contact me at 924-3986 or e-mail jhughes@cabq.gov.

Sincerely,

James D. Hughes, P.E.
Principal Engineer, Planning Dept.
Development and Review Services

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Maverik- 1401 Wyoming Blvd. Building Permit #: _____ Hydrology File #: J19D034

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

Legal Description: _____

City Address: 1401 Wyoming Blvd. NE Albuquerque NM 87112

Applicant: Tierra West, LLC Contact: Richard Stevenson

Address: 5571 Midway Park Place NE Albuquerque NM 87109

Phone#: 505-858-3100 Fax#: 505-858-1118 E-mail: rstevenson@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? X Yes _____ 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
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: 1/8/2019 By: Richard Stevenson

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

REV 1 DRAINAGE REPORT
For

Maverik Fuel Center
1401 Wyoming Blvd. NE
Albuquerque, NM 87112

Prepared for:

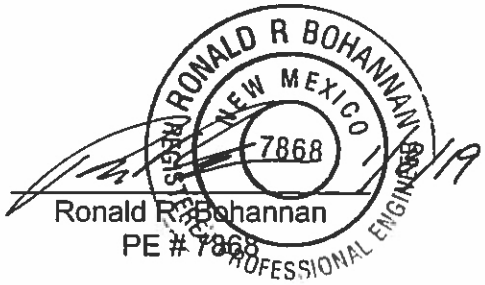
Maverik, Inc.
185 South State Street,
Salt Lake City, Utah 84111

Prepared by:

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

January, 2019

I certify that this report was prepared under my supervision, and I am a registered Professional Engineer in the State of New Mexico in good standing.



Ronald R. Bohannan
PE # 7868

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Job No. 2018055

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Appendices

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Purpose

The purpose of this report is to outline the Drainage Plan and present a solution for the re-development of two parcels to be a Maverik Gas Station and Convenience Store. The site will consist of a single-story 4,300 square foot c-store with ten gasoline refueling pumps for passenger vehicles users. The parcels will not be consolidated and therefore a cross access and drainage easement for the benefit of both tracts will be granted for each tract by the Plat. No truck refueling is proposed.

This report outlines the developed flows associated in redeveloping the 0.969 acre site and describes the on-site surface improvements needed to safely convey the developed flows. As the site is a gas station with fueling activities, the design is required to demonstrate control of oil from vehicle refueling areas and will be addressing the 80th percentile flows from the site. These provisions are included in the proposed drainage solution.

In the pre-submittal meeting with Hydrology, the City indicated that adequate downstream capacity and will not be required to be verified.

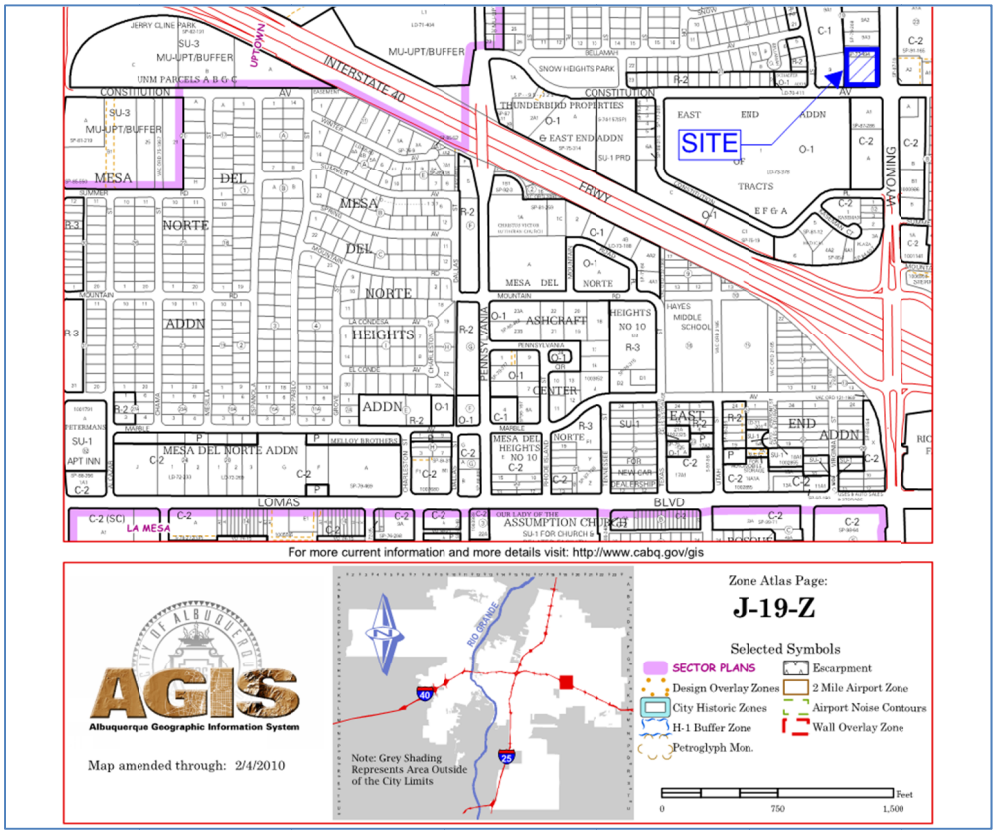


Exhibit A – Vicinity Map

Location and Background

The site is located on the northwest corner of Constitution Ave. and Wyoming Blvd. The address of the parcels is 1401 and 1415 Wyoming Blvd. NE, Albuquerque, NM 87112. The proposed redevelopment will occur across two lots legally described as being a portion of Lot 9, Block 18 of the Snow Heights Addition to the City of Albuquerque, New Mexico. Both parcels are developed with a 3,000 sq-ft single story abandoned (Circle K) gas & c-store on the southern lot, and a 4,800 sq-ft commercial building (Café Istanbul) on the northern lot. The site Hydronium number is J19D049. The site is bordered to the south by Constitution Ave, Wyoming Blvd to the east, commercial buildings to the north and mixed use office & commercial to the west.

Both parcels in their current developed condition do not have any storm water facilities or water quality features and are 95 percent impervious. The sites redesign calls for a similar drainage route to the current drainage flow. Approximately 60% of the current site is drained by sheet flow discharging into Constitution Ave. through the easterly most driveway entrance. The balance of the site either sheet flows through the second driveway entrance at the alleyway ingress/egress location on Constitution Ave. or flows to the west into the adjacent commercial lot paved parking area. There is no storm drain in Constitution Ave. along the street frontage of the site.

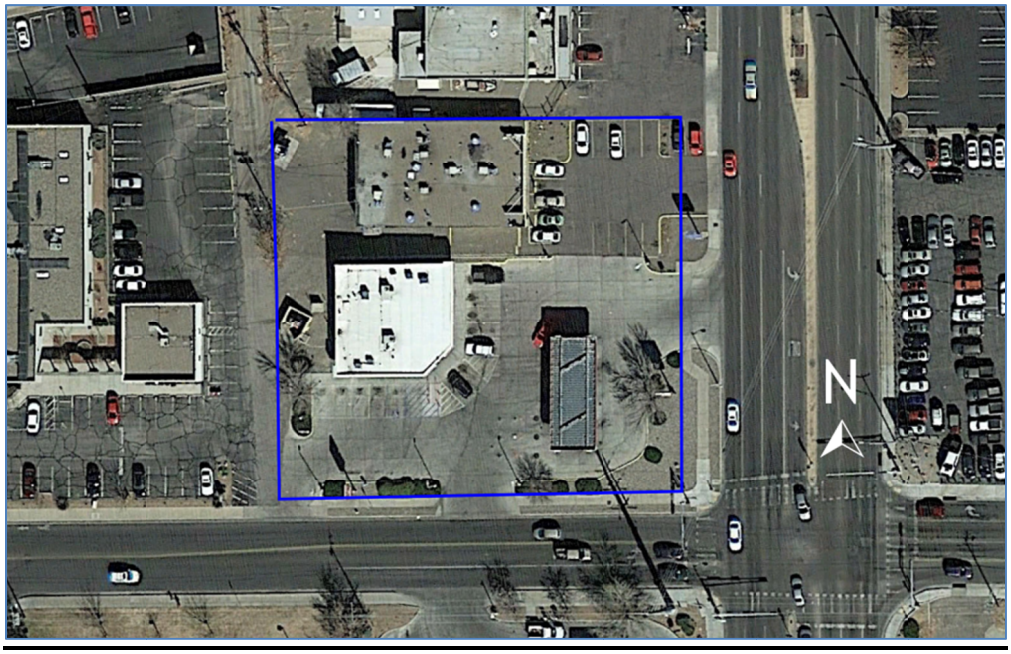


Exhibit B – Site Aerial Image

Runoff which sheet flows into Constitution Ave. are conveyed via the gutter system for approximately 2,200 lineal feet west to an existing stack of grate inlets at the intersection of Constitution Ave. and Bellamah Ave.

The approved drainage design on record at the City with reference J19-DO49, prepared by Isaacson & Arfman, P.A is dated May 25, 1988 and outlines the drainage calculations for the gas & convenience store site using the rational method outlined in the DPM current at the time of submittal.

There is no grading or drainage plan on file for the commercial lot to the north. From site inspection the alley drains to the west and ponds in the parking lot of the commercial building directly west of the site as shown in Exhibit C. At a certain elevation additional runoff can surface flow from this low area into the Virginia Apartment parking lot to the north. Although it is not reference on the grading and drainage plan for this site, from a site inspection the topography permits the flow of runoff into the driveway for the apartments at which point the runoff sheet flows to Virginia St. Historically this is the direction of flow for the commercial lot based on existing topography.

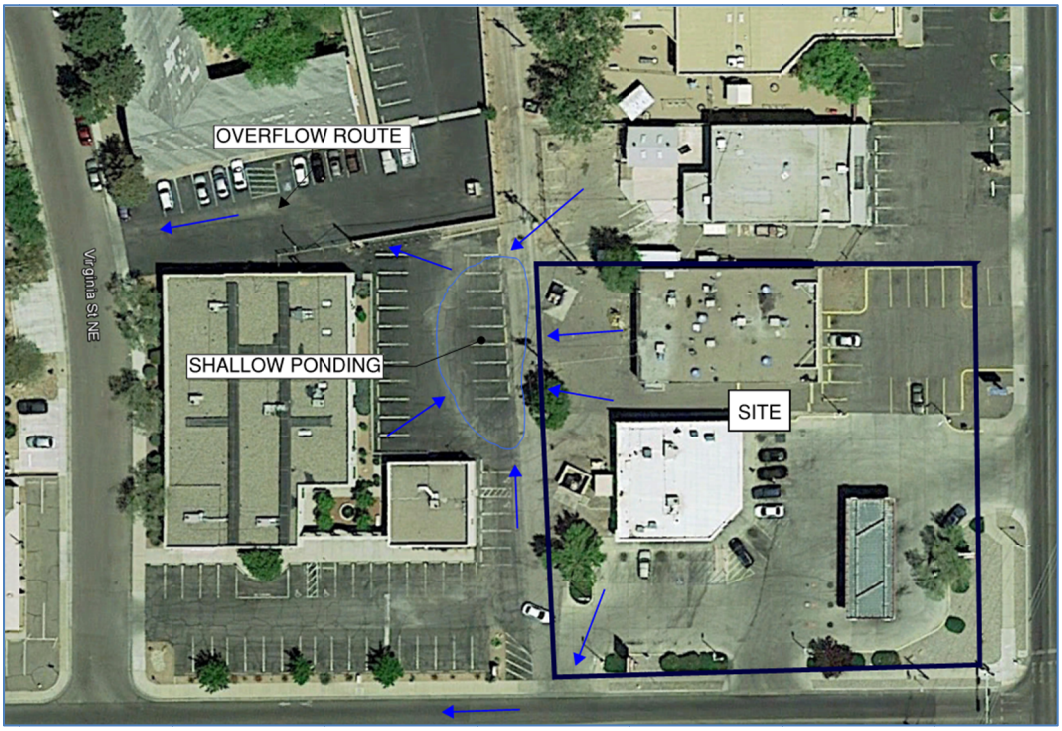


Exhibit C – Historical Flows

The approved paving permit which includes drainage and grading elevations for the Virginia St. Apartment Complex on record at the City has the reference J19-D63 prepared by Jeff Mortensen & Assoc., is dated October 25, 1988 and outlines the drainage calculations for the paving improvements. It does not reference any acceptance of offsite flows.

Flood Plain

The floodplain information is published for the site by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Bernalillo County, New Mexico and Incorporated Areas. The subject site is detailed on Community Panel Number 35001C0356H dated August 16, 2012 and is shown below.

The subject site is located within Flood Zone X, which is which is defined as, “Areas determined to be outside the 0.2% annual chance floodplain”. The site does not lie within a Flood Hazard Area as shown on the FEMA map requiring no further flood-proofing or other flood mitigation.

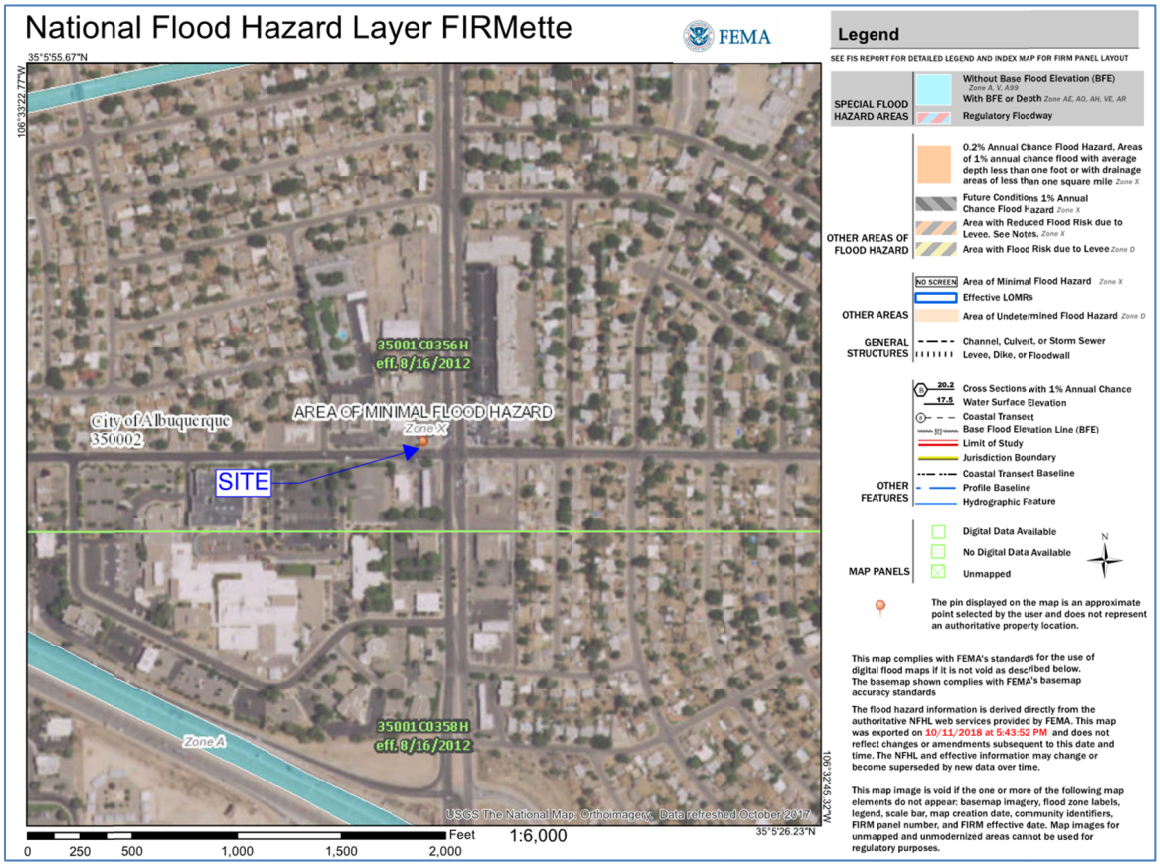


Exhibit D – FIRM Map

Calculations

The site is located within Precipitation Zone 3, between San Mateo Blvd. and Eubank Blvd. as specified in Chapter 22, Section A.1 of the City of Albuquerque Development Process Manual Volume I – Design Criteria, 2006 Revision (DPM). The principal design storm is the 100-year 6 hour event. No detention basins or retention basins are proposed and therefore longer duration design storms are not considered in the calculations. As stated in the DPM in Chapter 22 Section A.2, the 100-year 6 hour event is 2.60 inches.

The appropriate land treatments A through D, as defined in the DPM Chapter 22 Section A.3, will be applied to the various pervious and impervious areas for the proposed re-developed site.

Excess precipitation is the depth of runoff remaining after the initial volume of rainfall retained on the surface and infiltration has been subtracted from the design storm hydrograph. The DPM defines the excess precipitation for the 100-year 6 hour event in Chapter 22 Table A-8 for Zone 2 with the corresponding land treatments.

A weighted excess precipitation rate is used to calculate the volume runoff as defined in the DPM Chapter 22 (a-5, a-6). The calculation requires the sum of excess precipitation multiplied by the corresponding treatment areas divided by the total area, multiplied by the weighted excess precipitation of the watershed area.

To determine the peak discharge for the re-development the corresponding treatment areas are multiplied by the peak rate for each treatment and sum to compute the total flow. The peak rates for the treatment areas are defined in the DPM Chapter 22 Table A-9 for the 100 year event.

As this site is a re-development the storm water quality volume is calculated based on the 0.48 inch storm. To calculate the required storm water quality volume to be captured and retained onsite, the impervious areas are multiplied by 0.26 inches for the 80th percentile storm.

Existing Developed Conditions

The entire site is divided into four drainage basins; two onsite (B1 and B2) and two offsite basins (B3 and B4), consisting of Treatment B for the landscape areas and Treatment D for the impervious areas for the existing buildings and pavement areas.

The runoff and volume for the existing commercial lot north of the gas station (Basin B1) was calculated with all sheet flow entering the existing alley way and draining directly to the lot to the west, with a total runoff of 1.86 cfs. There is no drainage report for this parcel recorded with the

City. There is no landscaping across the parcel with Treatment D assigned for 100% of the area. Historically the runoff sheet flows to the alley way and ponds in the parking lot of the commercial site to the west of the parcel as discussed previously.

The peak discharge calculated for the gas station site (Basin B2) matches the approved peak discharge presented in the 1988 drainage plan for the parcel of ~2.7 cfs for the 100-year 6 hour event, as to be expected as the calculation methods listed in the DPM have not significantly changed over this time.

The only offsite flows that enter the site are generated from a 15-ft strip of pavement within the public ROW along Wyoming Blvd at the driveway entrance to the commercial site and a 15-ft landscape strip of public right-of-way between the property's east boundary and the back of the westerly curb (Basins B3 and B4 respectively). This flow amounts to 0.25 cfs and is added to the existing onsite flows. The runoff and volume calculations for the existing condition, based on the drainage criteria detailed in the DPM is included in appendix A.

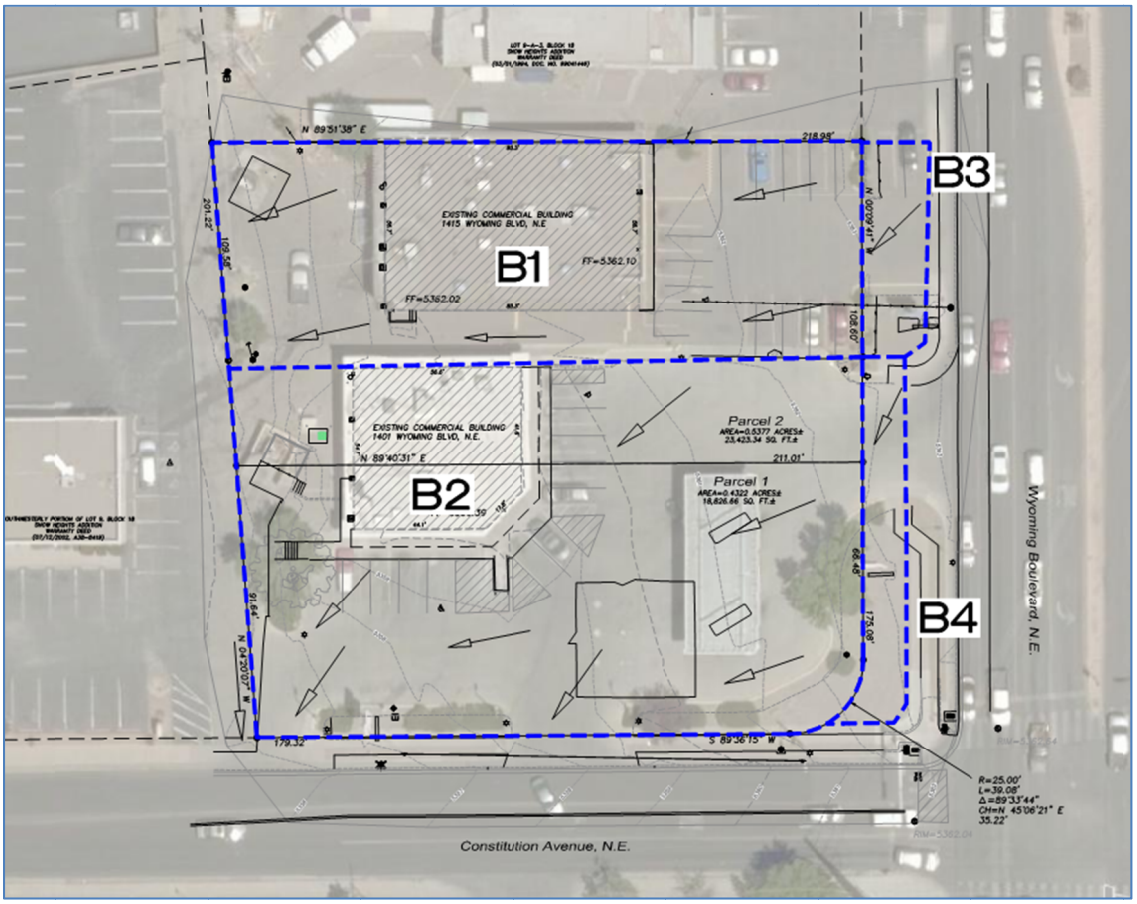


Exhibit E – FIRM Map

Proposed Conditions

The developed site is divided into seven basins, with the offsite flows (Basins 6 and 7) included in the total developed discharge. There is one BMP surface Stormwater Quality volume pond proposed to capture a portion of the required volume, with the remaining volume allowed to freely discharge with a payment in lieu made for this volume. Included in the appendix are the calculations for the proposed site conditions. The expected total runoff from the site for the 100-year 6 hour event is 4.99 cfs with a volume of 0.193 ac-ft.

Roof drains are planned for the fuel canopy with runoff collected and conveyed to an 8-inch diameter storm drain that will discharge flows directly to the oil-water separator. Roof drains will collect runoff from the c-store and discharge directly to the small SWQP located in a landscape island before discharging into Basin B2.

Per DPM Chapter 22.9.E, Table 1 all fueling stations must demonstrate control of oil from vehicle fueling areas. Basin B3 is the area covering the fueling bays. A trench drain is proposed on the west side of the fueling apron to capture all runoff generated from fuel spills or cleaning and maintenance, and flows south to the concrete oil water separator with a 450 gallon capacity. The oil water separator is a precast concrete vault that uses gravitational separation to improve the separation process of the oil water runoff which passes through before entering into the sewer system. This approach also reduces the frequency required for maintenance and cleaning. Included in the appendix is the oil water separator specification sheet. The proposed 450 gallon oil water separator is adequate to capture any major fuel spill/s that may occur during operations at the site

For Basins B1 -4, which covers the impervious areas of the parking lot area, the drive isle and the building, the runoff sheet flows to the south west corner of the parcel similar to the historic drainage flows. This sheet flow discharges directly to Constitution Ave. and does not pass through any SWQV features. The combined total runoff is 4.15 cfs for the 100-year 6 hour event.

The roof drains associated with the c-store in B1 discharge into SWQV pond #1 which has a capacity of 120 cubic feet. Additional flow is then released into the drive isle and discharges to Constitution Ave. The SWQP will be landscaped with a xeriscape theme.

The existing topography and the proposed design grading results in Basin B8 sheet flows to the west into the commercial parking lot. Historically the majority of the commercial site drained to

this area. With the redevelopment, it is expected to result in a decrease of flows to this area of 2,280 cubic feet (Historic Basin B1 minus Developed Basin B8). This will not rectify the historical ponding issues which occur on the property to the west but will decrease the flow directed to this area.

Basin B6 represents the offsite flow from the driveway entrance that flows into the site. This area is currently paved and will be resurfaced, and therefore is not included in the SWQV calculations. Basin B8 represents the existing paved alley way on the west side of the site. This area will be resurfaced and therefore is not included in the SWQV calculations.

Therefore the required SWQV generated for the impervious areas that is not being captured with onsite storage is 653 cubic feet, and therefore generates a payment in lieu fee of $5,224.

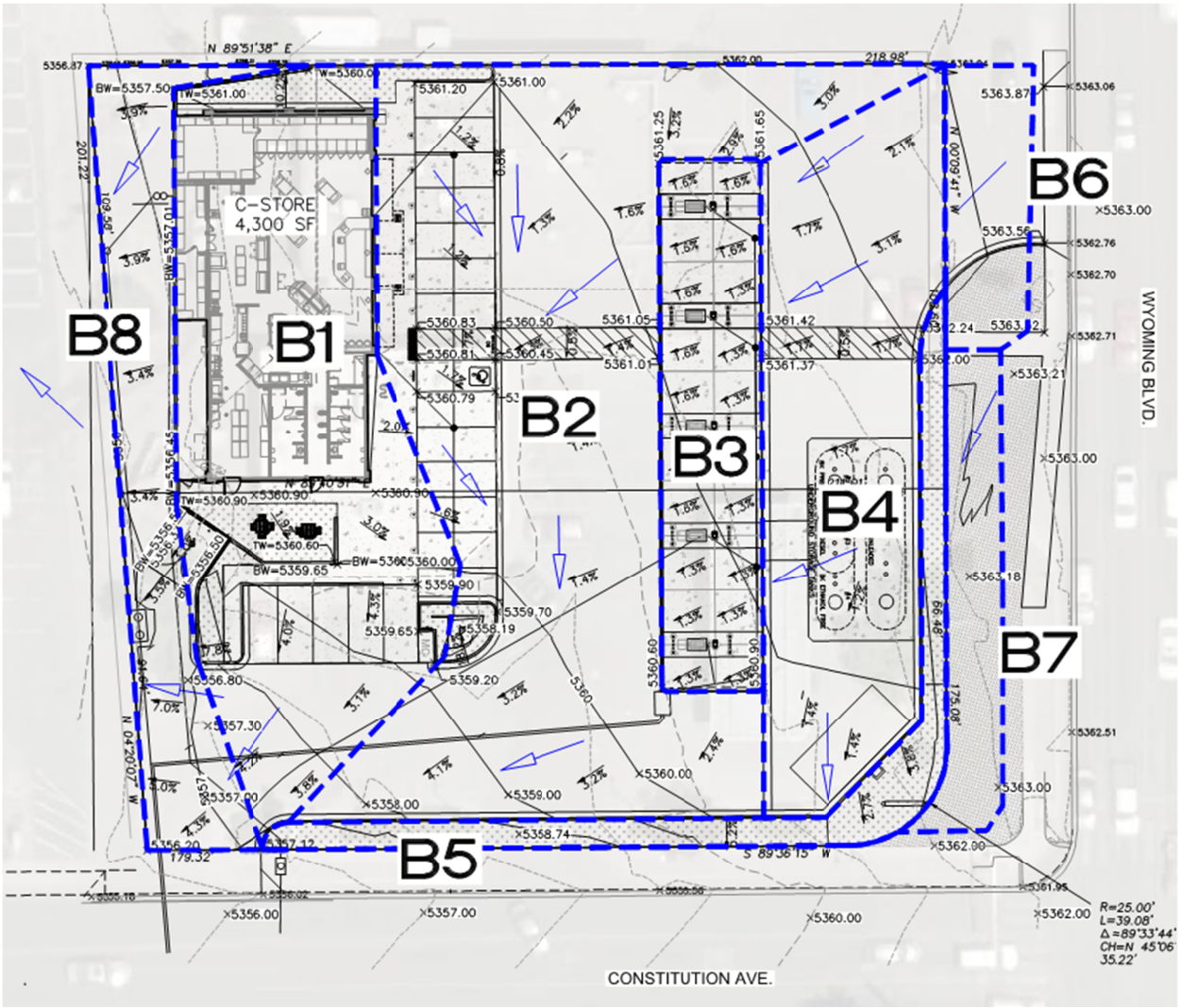


Exhibit F – Drainage Basin Map

Stormwater Quality Volume Management

As this site is a re-development, the water quality volume is calculated based on the 0.48 inch storm. To calculate the Stormwater Quality Volume the impervious area is multiplied by 0.26 inches. The formula used is SWQV= 0.26*I*43,560*(1/12) where “I” is the impervious area in acres.

The total impervious area required for management is generated from Basins B1-B4 is 0.82 acres and requires a total water quality volume of 773 cubic feet. Basin B1 is routed through SWQV pond #1 that has a total volume of 120 cubic feet. The delta 653 cubic feet of SWQV is not being managed onsite, and the developer is choosing Payment in Lieu which totals $5,224. The water quality volume calculations are detailed on the hydrology table in the appendix.

Post Construction Maintenance Responsibility

As part of the City of Albuquerque’s endeavor to uphold best management practices (BMPs) and ensure compliance with the City’s Drainage Ordinance, Stormwater Quality Ordinance and the EPA MS4 Permit, a drainage and landscape maintenance plan is proposed for this site. The stormwater features proposed have been designed for easy maintenance that comprises of periodic tasks and inspections to ensure the features operate and perform to the design criteria to which it was designed. The maintenance of the BMPs shall be the responsibility of the owner of the property. The maintenance plan detailed below and listed on the grading and drainage plan shall be recorded in the Bernalillo County Records Room.

The maintenance comprise of the following:

Responsible Party: Property Owner.

Access to surface and sub-surface stormwater quality elements: All access to the stormwater quality elements shall be accessible from Constitution Ave. and from the paved areas within the site. There is no restricted access to the location of both the surface and sub-surface elements.

REGULAR MAINTENANCE	**FREQUENCY**
LITTER MANAGEMENT	
Pick up all litter at site and in Landscape areas and remove from site	Daily
INLETS AND OUTLETS	
Visual inspection for function. Remove silt from slab aprons and debris in pavement areas. Remove all fallen vegetation around inlet and outlet	Monthly

structures.	
HARD SURFACES	
Sweep all paving regularly. Maintain pavement in autumn after leaf fall. Coordinate with Landscape Contractor if additional maintenance is required.	As required

OCCASIONAL TASKS	**FREQUENCY**
INSPECTION AND INLETS, OUTLETS AND CONTROL CHAMBERS	
Inspect surface structures removing obstructions and silt as necessary. Check there is no physical damage. For below ground control chambers, remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Yearly
POND VEGETATION	
Ensure Pond vegetation is maintained by Landscape Contractor. All weeds and all cuttings removed from site.	As required
SILT MANAGEMENT	
Inspect swales and water quality pond for silt accumulation. Excavate silt, stack and dry within 2-feet of the water quality feature, but outside the design profile where water flows, spread, rake and overseed. Protect surface from siltation and manage main area of basin for design function or appearance.	Yearly

REMEDIAL WORK	**FREQUENCY**
Inspect storm all water quality structures regularly to check for damage or failure. Undertake remedial work as required.	Yearly

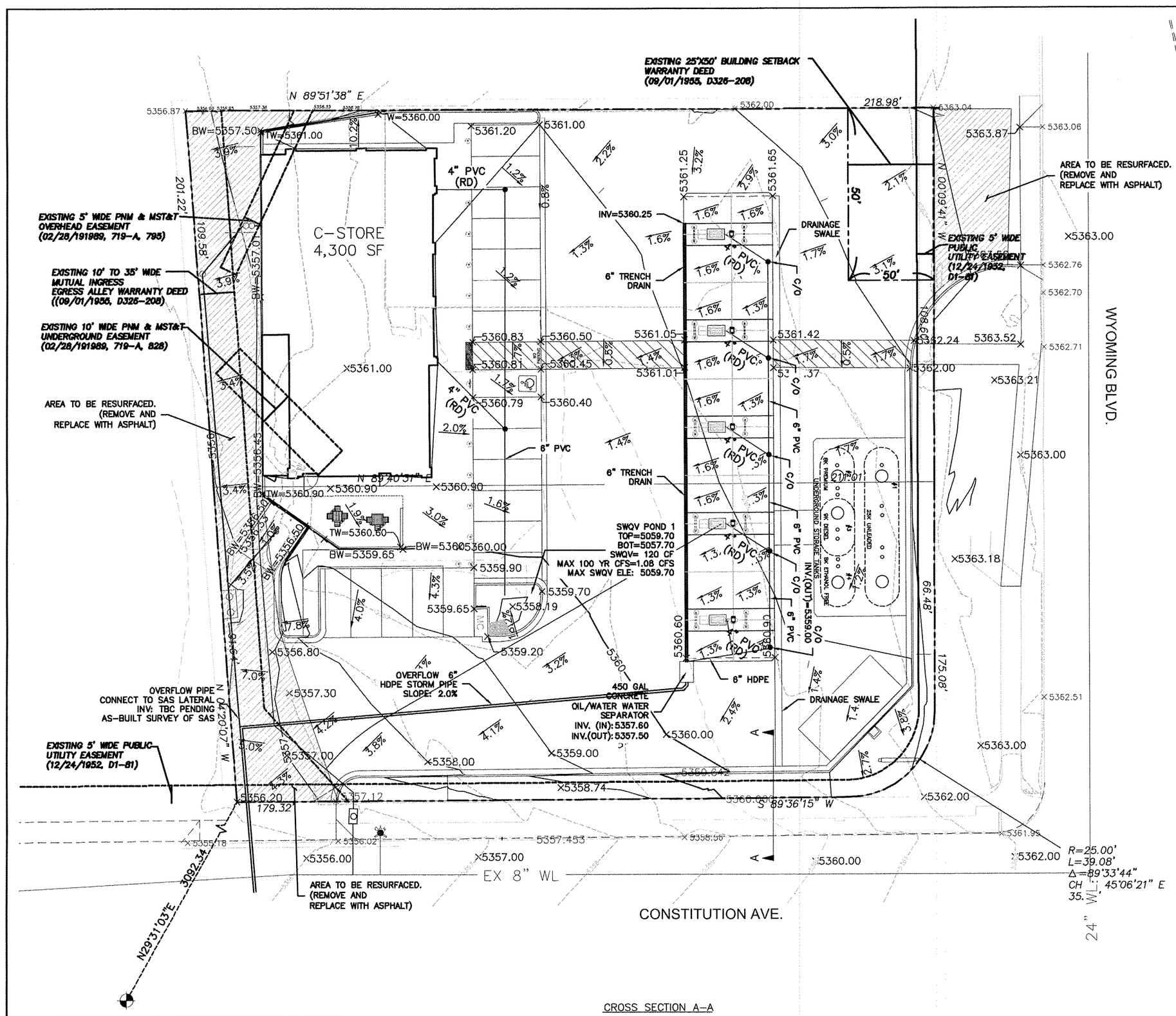
Summary

This report outlines the Drainage Plan and presents the on-site BMP SWQV ponding and drainage improvements needed to safely convey the developed flows for the re-development of the site to a Maverik Gas Station and Convenience Store.

The solution improves the existing drainage issue where the commercial parcel drains to the west and ponds, after which additional sheet flow overflows to the Virginia St. Apartment complex and drains out to the street. This runoff is now re-routed through the developed site, a portion through a SWQV pond and allowed to discharge into Constitution Ave.

Per the DPM the design is required to control the oil wash-off from vehicle refueling areas and is achieved by passing flows through the 450 gallon oil water separator. The SWQV retains a total of 120 cubic feet in a surface pond, with the remaining 653 cubic feet required to be paid in Lieu totals $5,224. The site does not increase the historic flow released from the site and the solution adheres to best practices for stormwater quality management.

APPENDIX A



A.G.R.S. MONUMENT "17_K19"
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(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE-N.A.D. 1983)
N=1,487,200.514 US SURVEY FEET
E=1,548,658.688 US SURVEY FEET
PUBLISHED EL=5344.389 US SURVEY FT (NAVD 1988)
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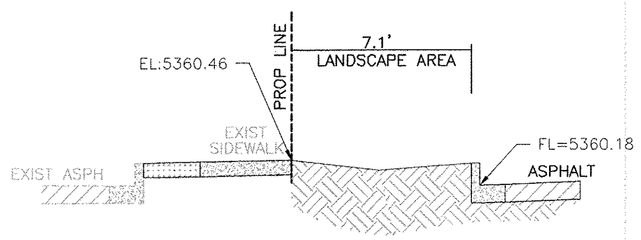
DELTA ALPHA ANGLE=-0°10'34.73"

CROSS SECTION A-A



SECTION A-A
NTS

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

LEGEND

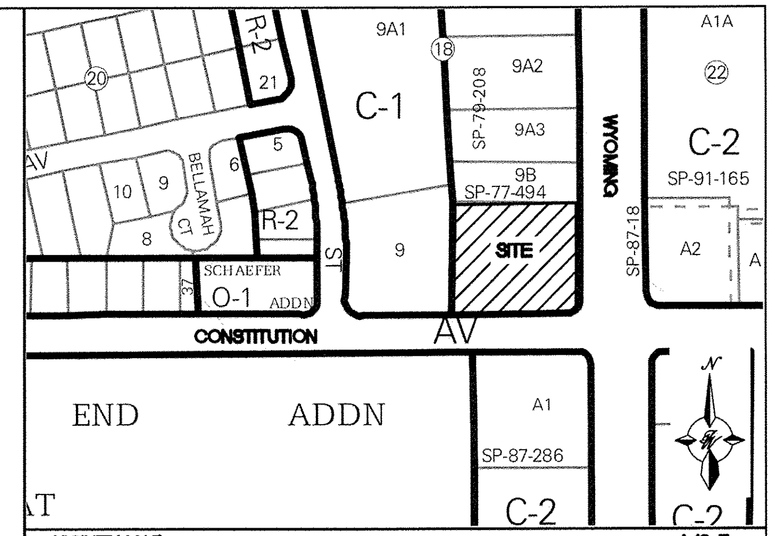
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- SIDEWALK
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- 5010 EXISTING CONTOUR MAJOR
- 5011 EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION

NOTICE TO CONTRACTORS

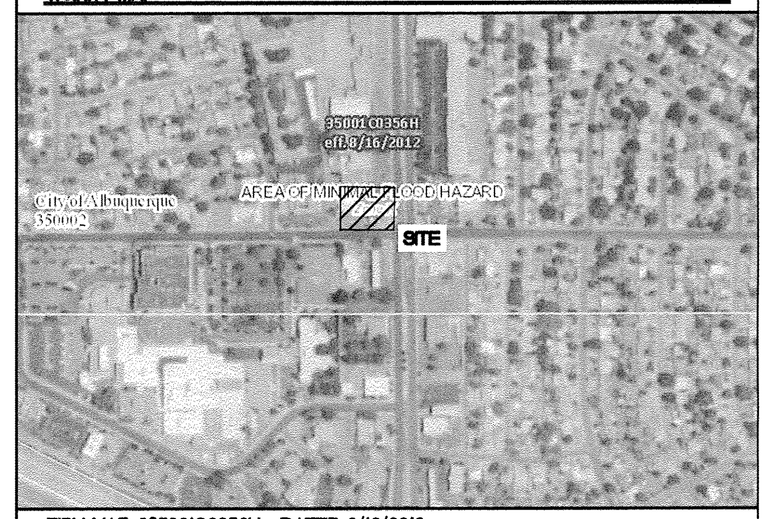
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR 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.



VICINITY MAP: J-19-Z



FIRM MAP: #35001C0356H DATED 8/16/2012

LEGAL DESCRIPTION:

A PORTION OF LOT 9, BLOCK 18 SNOW HEIGHTS

NOTES

THE PARCELS 1401 AND 1415 WYOMING BLVD. NE. WILL NOT BE CONSOLIDATED AND THEREFORE A CROSS ACCESS AND DRAINAGE EASEMENT FOR THE BENEFIT OF BOTH TRACTS WILL BE GRANTED BY DOCUMENT FOR EACH TRACT. NO TRUCK REFUELING IS PROPOSED.

BMP SWQV NOTES

THE SWQV COULD BE MANAGED ONSITE HOWEVER THE DEVELOPER IS CHOOSING PAYMENT IN LIEU. A TOTAL OF 653 CF VOLUME IS NOT BEING CAPTURED AND THEREFORE GENERATES A FEE IN LIEU OF $5,224.00

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 NEW MEXICO 7868 REGISTERED PROFESSIONAL ENGINEER

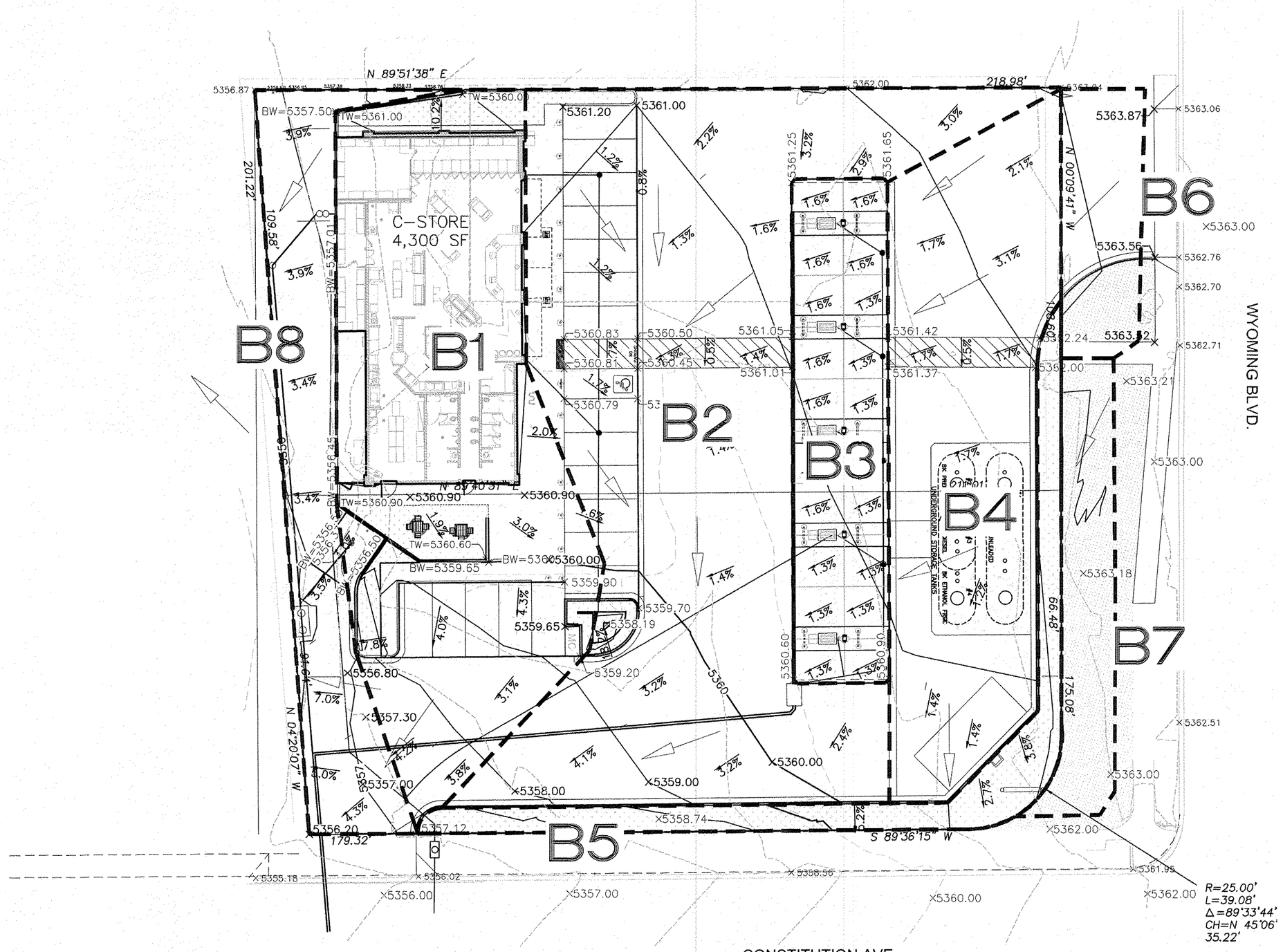
RONALD R. BOHANNAN
P.E. #7868

MAVERIK
1401 WYOMING BLVD. NE
GRADING AND DRAINAGE PLAN

DRAWN BY: RS
DATE: 1/8/2019
2018055-GR
SHEET #: C2
JOB #: 2018055

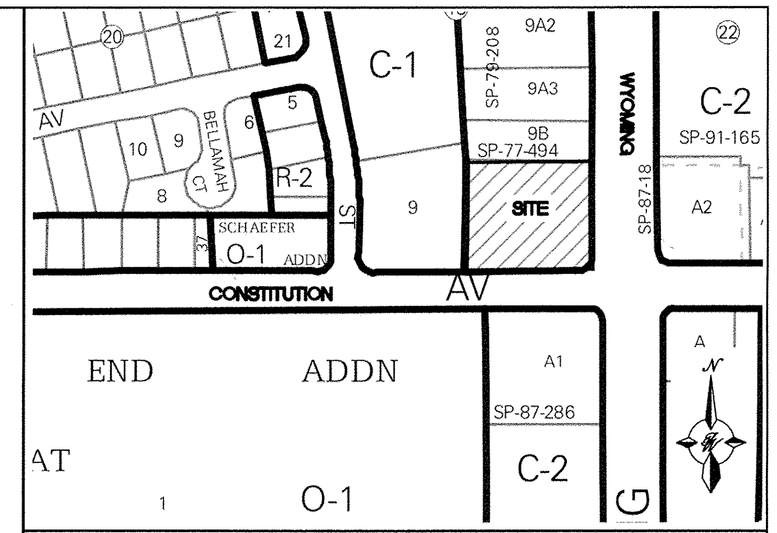
TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858-3100
www.tierrawestllc.com

Z:\2018\2018055 Maverik Wyoming & Constitution\dwg\GRAD\2018055-GR.dwg Jan 08, 2019 - 8:21am

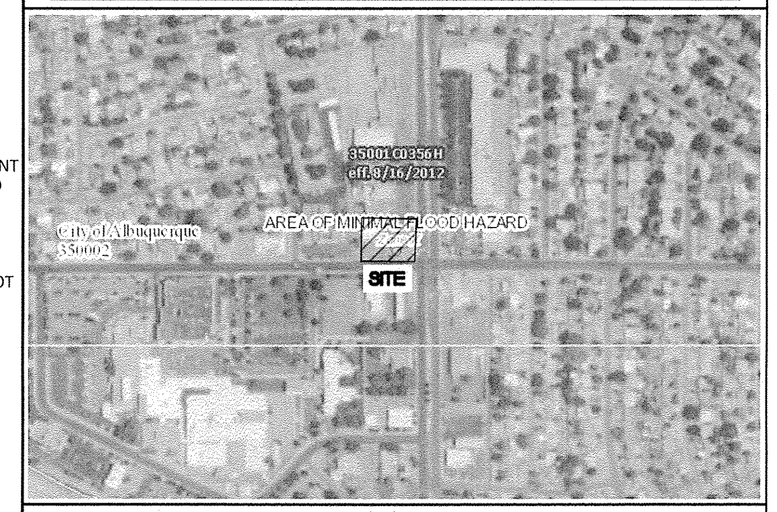


LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- DRAINAGE BASIN BOUNDARY
- FLOW DIRECTION



VICINITY MAP: J-19-Z



FIRM MAP: #35001C0356H DATED 8/16/2012

NOTES

THE PARCELS 1401 AND 1415 WYOMING BLVD. NE. WILL NOT BE CONSOLIDATED AND THEREFORE A CROSS ACCESS AND DRAINAGE EASEMENT FOR THE BENEFIT OF BOTH TRACTS WILL BE GRANTED FOR EACH TRACT. NO TRUCK REFUELING IS PROPOSED.

BMP SWQV NOTES

THE SWQV COULD BE MANAGED ONSITE HOWEVER THE DEVELOPER IS CHOOSING PAYMENT IN LIEU. A TOTAL OF 653 CUBIC FEET IN VOLUME IS NOT BEING CAPTURED AND THEREFORE GENERATES A FEE IN LIEU OF $5,224.

MAINTENANCE OF BMPS

RESPONSIBLE PARTY: PROPERTY OWNER
MAINTENANCE REQUIREMENTS AND FREQUENCY: REFER TABLE THIS PAGE
ACCESS TO BMPS: ACCESS SHALL BE PROVIDED VIA SITE ACCESS DRIVES TO SURFACE SWQV POND. ALL REMOVAL AND DISPOSAL OF LANDSCAPING AND SEDIMENT SHALL BE COMPLETED BY CERTIFIED LANDSCAPE CONTRACTOR IN ACCORDANCE WITH THE LANDSCAPE MAINTENANCE SPECIFICATION. NO DEBRIS SHALL REMAIN ONSITE AFTER TRIMMING. SEDIMENTATION MONITORING SHALL BE COMPLETED BY THE PROPERTY OWNER YEARLY. IF SILT ACCUMULATION EXCEEDS 2 INCHES ON THE SWQV POND GAUGE THEN THE POND BOTTOM SHALL BE EXCAVATED AND STACKED WITHIN 2-FEET OF THE SWQV POND BERM.
VISUAL INSPECT FOLLOWING STORM EVENTS SHALL BE COMPLETED AS REQUIRED TO ENSURE THE INFILTRATION OF THE SWQV IS ACHIEVED AT ACCEPTABLE RATES. THE SWQV, AT THE MAXIMUM 24" DEPTH, SHOULD INFILTRATE WITHIN 24 HOURS.

LEGAL DESCRIPTION:

A PORTION OF LOT 9, BLOCK 18 SNOW HEIGHTS

VECTOR CONTROL NOTES:

ALLOWING CONDITIONS SUCH AS THE ACCUMULATION OF STANDING WATER THAT CAN CONTRIBUTE TO THE BREEDING OF MOSQUITOES IS A VIOLATION OF THE CITY OF ALBUQUERQUE'S INSECT AND RODENT CONTROL ORDINANCE. MAINTENANCE OF THE RETENTION POND IS THE RESPONSIBILITY OF THE PROPERTY OWNER. IN ORDER TO PREVENT MOSQUITO BREEDING, VEGETATION SHOULD REGULARLY BE CLEARED FROM THE BASIN AND EDGES OF PONDS. THE SITE SHOULD BE MAINTAINED THROUGHOUT THE YEAR IN THIS MANNER. REMOVAL OF VEGETATION CREATES A LESS DESIRABLE SITE FOR MOSQUITO BREEDING. THIS WILL ALSO AID IN THE REDUCTION OF RODENT HARBORAGE. WHEN STANDING WATER DOES EXIST IT SHOULD BE TREATED WITH PUBLICLY AVAILABLE MOSQUITO PRODUCES (E.G. MOSQUITO DUNKS) AT THE TREATMENT RATE DESIGNATED BY THE PRODUCT LABEL. SHOULD A SITE MAINTAIN PERMANENT STANDING WATER, MOSQUITO FISH (GAMBUSIA) CAN BE OBTAINED FROM THE CITY OF ALBUQUERQUE'S ENVIRONMENTAL HEALTH DEPARTMENT FREE OF CHARGE.

REGULAR MAINTENANCE	FREQUENCY
LITTER MANAGEMENT	
Pick up all litter at site and in Landscape areas and remove from site	Daily
INLETS AND OUTLETS	
Visual inspection for function. Remove silt from slab aprons and debris in pavement areas. Remove all fallen vegetation around inlet and outlet structures.	Monthly
HARD SURFACES	
Sweep all paving regularly. Maintain pavement in autumn after leaf fall. Coordinate with Landscape Contractor if additional maintenance is required.	As required

OCCASIONAL TASKS	FREQUENCY
INSPECTION AND INLETS, OUTLETS AND CONTROL CHAMBERS	
Inspect surface structures removing obstructions and silt as necessary. Check there is no physical damage. For below ground control chambers, remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Yearly
POND VEGETATION	
Ensure Pond vegetation is maintained by Landscape Contractor. All weeds and all cuttings removed from site.	As required
SILT MANAGEMENT	
Inspect swales and water quality pond for silt accumulation. Excavate silt, stack and dry within 2-feet of the water quality feature, but outside the design profile where water flows, spread, rake and overseed. Protect surface from siltation and manage main area of basin for design function or appearance.	Yearly

REMEDIAL WORK	FREQUENCY
Inspect storm all water quality structures regularly to check for damage or failure. Undertake remedial work as required.	Yearly

Basin Descriptions											100-Year, 6-Hr			10-Year, 6-Hr			Water Quality Volume	
				Treatment A		Treatment B		Treatment C		Treatment D									
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs	SWQV Pond Required CF	FF Pond Provided
1	10,160	0.233	0.00036	0%	0.000	0%	0.000	5%	0.012	95%	0.222	2.307	0.045	1.15	1.456	0.028	0.77	209	120
2	15,170	0.348	0.00054	0%	0.000	0%	0.000	0%	0.000	100%	0.348	2.360	0.068	1.75	1.500	0.044	1.18	329	-
3	3,535	0.081	0.00013	0%	0.000	0%	0.000	0%	0.000	100%	0.081	2.360	0.016	0.41	1.500	0.010	0.28	77	-
4	7,311	0.168	0.00026	0%	0.000	0%	0.000	0%	0.000	100%	0.168	2.360	0.033	0.84	1.500	0.021	0.57	158	-
5	2,214	0.051	0.00008	0%	0.000	100%	0.051	0%	0.000	0%	0.000	0.920	0.004	0.13	0.360	0.002	0.06	0	-
6	1,575	0.036	0.00006	0%	0.000	20%	0.007	0%	0.000	80%	0.029	2.072	0.006	0.16	1.272	0.004	0.11	Resurface	-
7	1,848	0.042	0.00007	0%	0.000	100%	0.042	0%	0.000	0%	0.000	0.920	0.003	0.11	0.360	0.001	0.05	0	-
8	3,831	0.088	0.00014	0%	0.000	2%	0.002	0%	0.000	98%	0.086	2.331	0.017	0.44	1.477	0.011	0.29	Resurface	-
Total	45,644	1.048	0.00164		0.000		0.102		0.012		0.934		0.193	4.994		0.120	3.311	773	120

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)
Volume = Weighted E * Total Area
Flow = Qa*Aa + Qb*Ab + Qc*Ac + Qd*Ad
$WQV_{required}$ = 0.26"*43560*(1/12)

Excess Precipitation, E (in.)		
Zone 3	100-Year	10-Year
Ea	0.66	0.19
Eb	0.92	0.36
Ec	1.29	0.62
Ed	2.36	1.50

Peak Discharge (cfs/acre)		
Zone 3	100-Year	10-Year
Qa	1.87	0.58
Qb	2.6	1.19
Qc	3.45	2.00
Qd	5.02	3.39

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

MAVERIK

ENGINEER'S SEAL
RONALD R BOHANNAN
NEW MEXICO
7868
REGISTERED PROFESSIONAL ENGINEER
RONALD R. BOHANNAN
P.E. #7868

MAVERIK
1401 WYOMING BLVD. NE
DEVELOPED DRAINAGE PLAN

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

DRAWN BY: RS
DATE: 1/8/2019
2018055-DRAINAGE DEVELOPED
SHEET #: D1
JOB #: 2018055

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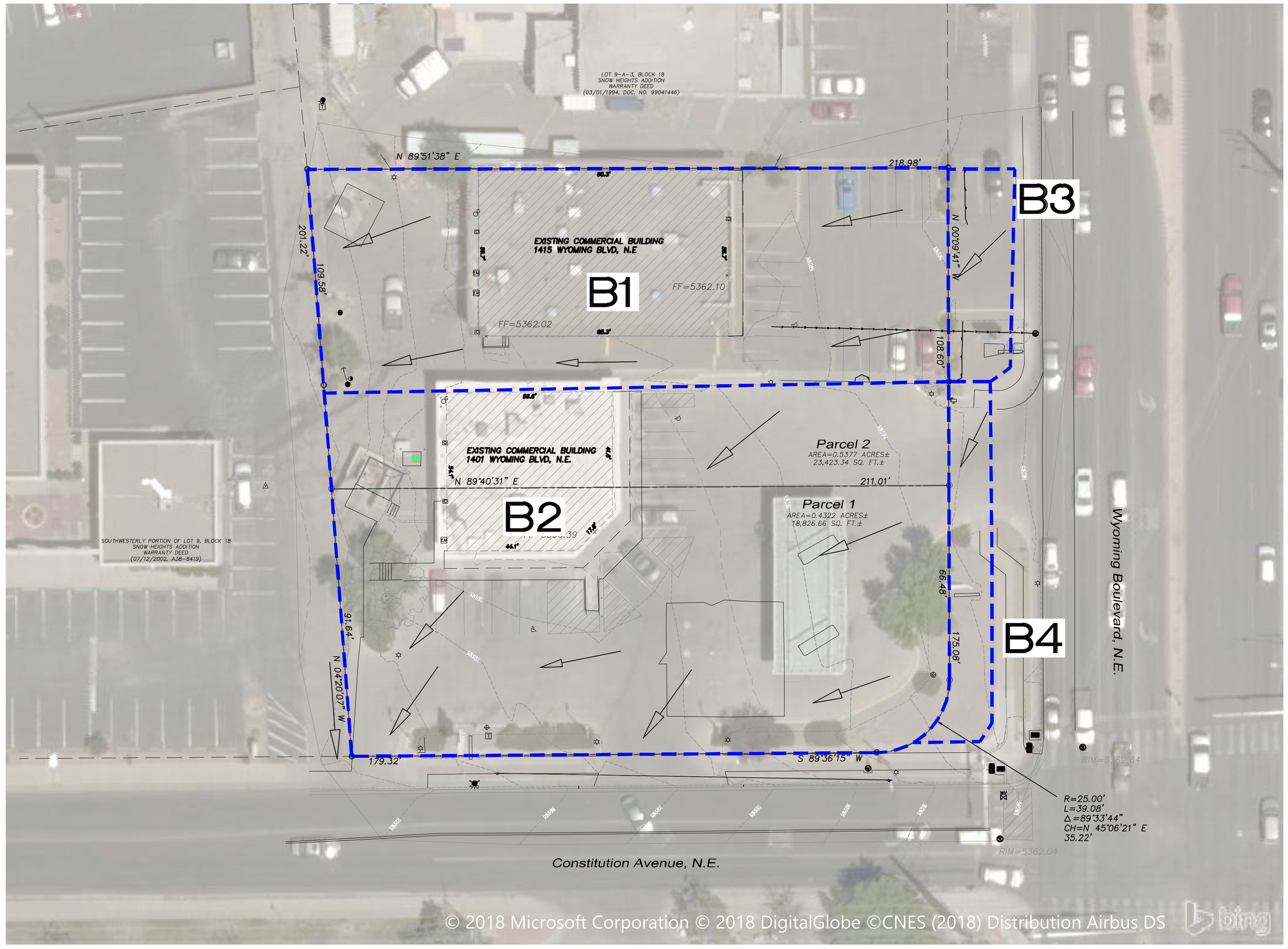

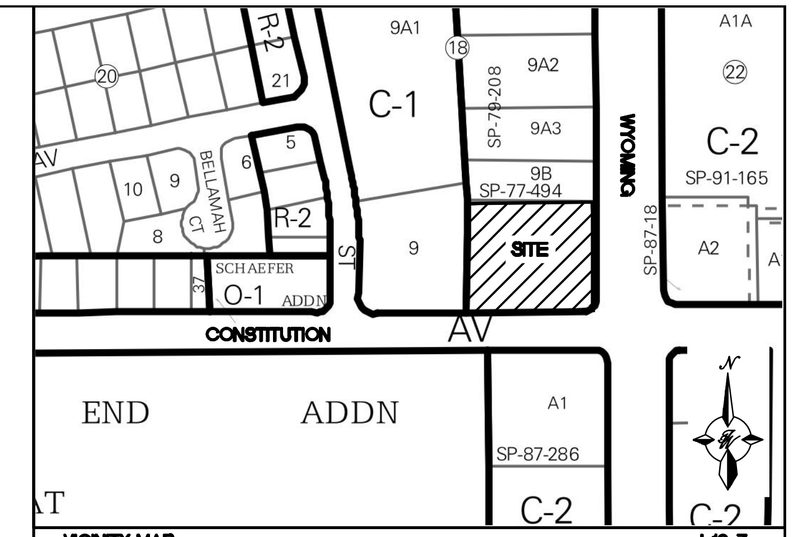

VICINITY MAP: J-19-Z

FIRM MAP: #35001C0356H DATED 8/16/2012

LEGAL DESCRIPTION:

A PORTION OF LOT 9, BLOCK 18 SNOW HEIGHTS

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- DRAINAGE BASIN BOUNDARY
- FLOW DIRECTION

Existing Conditions - Free Discharge

Basin Descriptions											100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
B1	16,168.25	0.371	0.00058	0%	0.000	0%	0.000	0%	0.000	100%	0.371	2.360	0.073	1.86	1.500	0.046	1.26
B2	26,052.80	0.598	0.00093	0%	0.000	8%	0.000	0%	0.000	92%	0.550	2.171	0.108	2.76	1.380	0.069	1.87
B3	1,575.00	0.036	0.00006	0%	0.000	20%	0.000	0%	0.000	80%	0.029	1.888	0.006	0.15	1.200	0.004	0.10
B4	1,848.00	0.042	0.00007	0%	0.000	50%	0.000	0%	0.000	50%	0.021	1.180	0.004	0.11	0.750	0.003	0.07
Total	**45,644.05**	**1.048**	**0.00164**		**0.000**		**0.000**		**0.000**		**0.972**		**0.191**	**4.88**		**0.121**	**3.29**

Equations:

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

Volume = Weighted E * Total Area

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

Excess Precipitation, E (in.)		
Zone 3	100-Year	10-Year
Ea	0.66	0.19
Eb	0.92	0.36
Ec	1.29	0.62
Ed	2.36	1.50

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Zone 3	100-Year	10-Year
Qa	1.87	0.58
Qb	2.6	1.19
Qc	3.45	2.00
Qd	5.02	3.39

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

MAVERIK

ENGINEER'S SEAL

RONALD R. BOHANNAN
P.E. #7868

MAVERIK
1401 WYOMING BLVD. NE
HISTORIC DRAIANGE PLAN

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

DRAWN BY: RS
DATE: 12/5/2018
2018055-DRAINAGE HISTORIC
SHEET # C1
JOB # 2018055

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DPM Weighted E Method

Precipitation Zone 3
Maverik @ 1401 Wyoming Blvd
TWLLC **Date** 1/8/2019

Existing Conditions - Free Discharge

Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
B1	16,168	0.371	0.00058	0%	0.000	0%	0.000	0%	0.000	100%	0.371	2.360	0.073	1.86	1.500	0.046	1.26
B2	26,053	0.598	0.00093	0%	0.000	8%	0.000	0%	0.000	92%	0.550	2.171	0.108	2.76	1.380	0.069	1.87
B3	1,575	0.036	0.00006	0%	0.000	20%	0.000	0%	0.000	80%	0.029	1.888	0.006	0.15	1.200	0.004	0.10
B4	1,848	0.042	0.00007	0%	0.000	50%	0.000	0%	0.000	50%	0.021	1.180	0.004	0.11	0.750	0.003	0.07
Total	**45,644**	**1.048**	**0.00164**		**0.000**		**0.000**		**0.000**		**0.972**		**0.191**	**4.88**		**0.121**	**3.29**

Proposed Conditions - Free Discharge

Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr			Water Quality Volume	
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs	FF Pond Required CF	FF Pond Provided
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6	1,575	0.036	0.00006	0%	0.000	20%	0.007	0%	0.000	80%	0.029	2.072	0.006	0.16	1.272	0.004	0.11	Resurface	-
7	1,848	0.042	0.00007	0%	0.000	100%	0.042	0%	0.000	0%	0.000	0.920	0.003	0.11	0.360	0.001	0.05	0	-
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Total	**45,644**	**1.048**	**0.00164**		**0.000**		**0.102**		**0.012**		**0.934**		**0.193**	**4.994**		**0.120**	**3.311**	**773**	**120**

653

Equations:

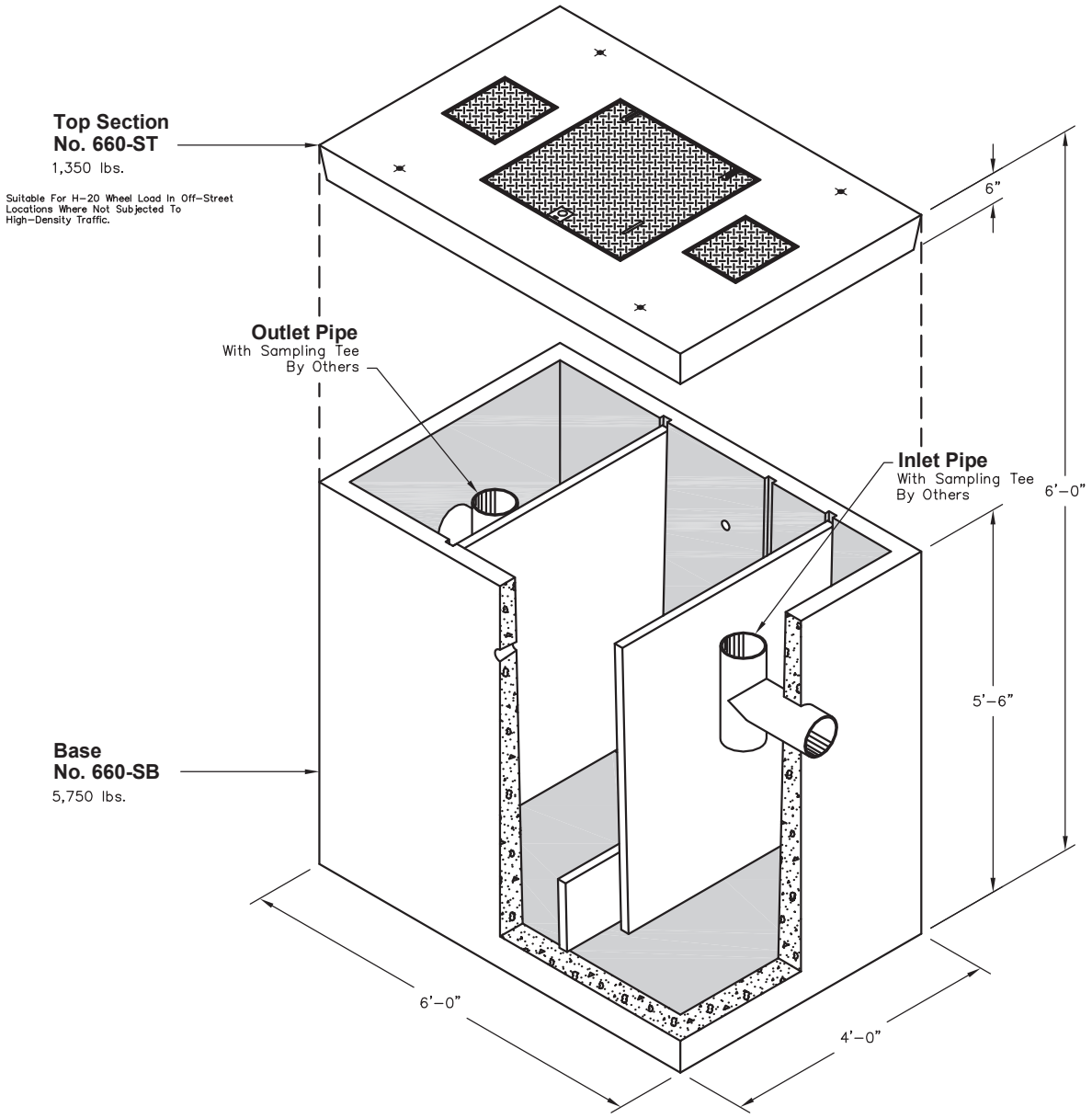
Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)
Volume = Weighted E * Total Area
Flow = Qa*Aa + Qb*Ab + Qc*Ac + Qd*Ad
$WQV_{required}$ = 0.26*A*43560*(1/12)

Excess Precipitation, E (in.)		
Zone 3	100-Year	10-Year
Ea	0.66	0.19
Eb	0.92	0.36
Ec	1.29	0.62
Ed	2.36	1.50

Peak Discharge (cfs/acre)		
Zone 3	100-Year	10-Year
Qa	1.87	0.58
Qb	2.6	1.19
Qc	3.45	2.00
Qd	5.02	3.39

660-SA OIL WATER SEPARATOR

450 Gallon Capacity



Non Skid Covers Available

FOR DETAILS, SEE REVERSE>>

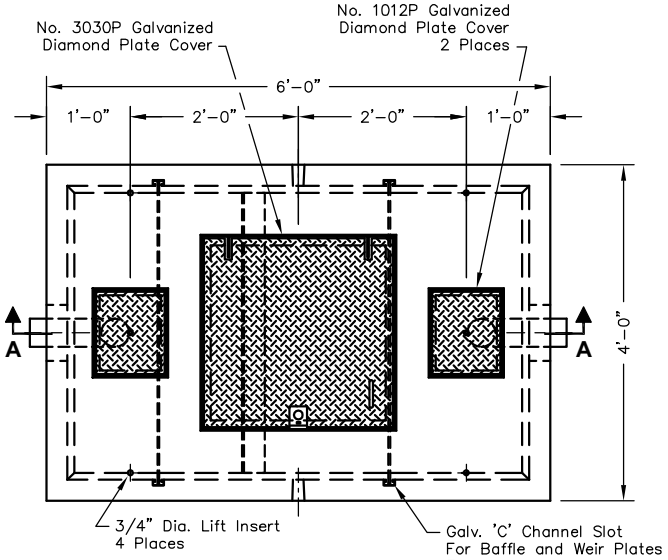
Items Shown Are Subject To Change Without Notice
Issue Date: April 2016

Mailing Address
PO Box 588
Auburn, WA 98071

Phone: 800-892-1538
Fax: 253-735-4201
Email: opauburn@oldcastle.com

opauburn.com

660-SA



PLAN VIEW

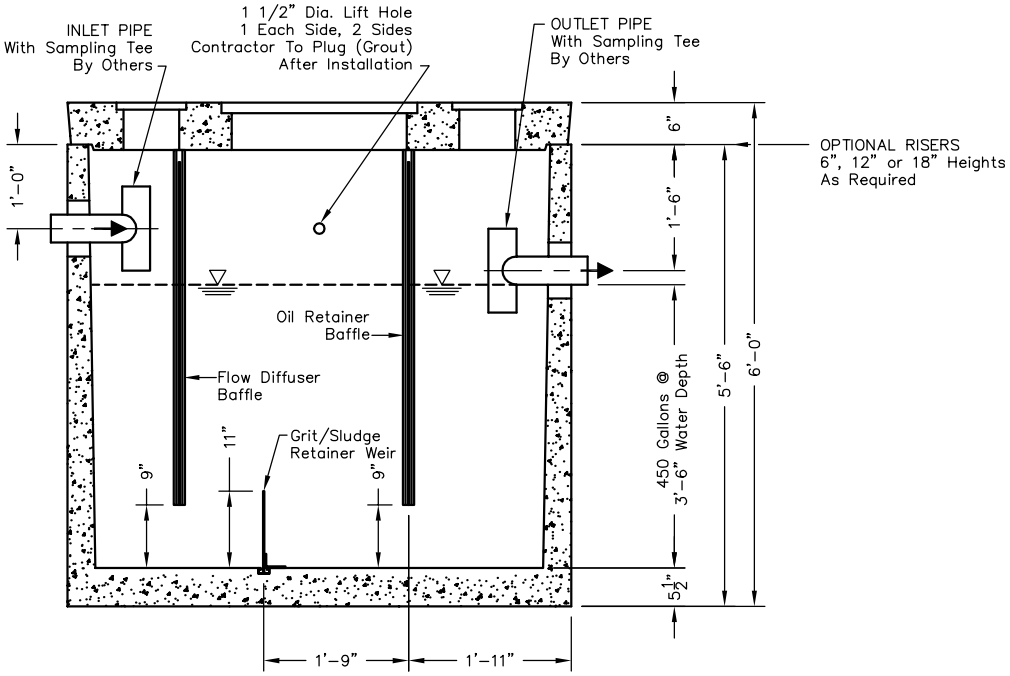
STRUCTURAL NOTES:

1. Concrete: 28 Day Compressive Strength f'c= 7000 psi
2. Rebar: ASTM A-615 Grade 60
3. Mesh: ASTM A-185 Grade 65
4. Design: ACI-318-05 Building Code
   ASTM C-890 "Minimum Structural Design Loading For Underground Precast Concrete Water and Wastewater Structures"
5. Loads: HS-20 Truck Wheel w/ 30% Impact Per AASHTO

GENERAL NOTES:

1. All Baffles and Weirs To Be Steel
2. Contractor to:
   Supply and Install All Piping & Sampling Tees
   Grout In All Pipes
   Fill With Clean Water Prior To "Start-Up" Of System
   Verify All Blockout Sizes and Locations

FOR CUSTOM APPLICATIONS
THE FOLLOWING INFORMATION IS NEEDED:
Top Of Separator Elevation:
Inlet Pipe Size:
Inlet Pipe Elevation:
Outlet Pipe Size:
Outlet Pipe Elevation:



SECTION AA

SCALE: 1/2"=1'-0"

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Velocity
	(in)	(%)	(ft^2)		(cfs)	(ft/s)
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
HDPE	24	1.40	3.14	0.500	26.84	8.54

TIERRA WEST, LLC

5571 Midway Park Pl. NE Albuquerque, NM 87109
(505) 858-3100 fax (505) 858-1118 1-800-245-3102
tierrawestllc.com

January 8, 2019

James D. Hughes, P.E.
Hydrology Planning Department
PO Box 1293
Albuquerque, NM 87103

RE: 1401 WYOMING BLVD NE MAVERIK GAS STATION
RESPONSE TO HYDROLOGY COMMENTS DATED 12/10/2018
HYDROLOGY FILE: J19D034

Dear Mr. Hughes:

Please find the following responses addressing your comments listed in the letter dated December 10, 2018:

1. Response:
   Note 8 was removed. The standard SO-19 notes was not added as the sidewalk culvert was eliminated in the redesign.

2. Response:
   The sidewalk culvert was eliminated in the redesign and the 100 year overflow from the BMP is directed through the parking lot to the west driveway, sheet flowing into Constitution Ave.

3. Response:
   The oil water separator is required to be connected to the sanitary sewer line due to the grades across the site and the DPM requirement for gas stations to provide treatment for runoff generated across the refueling areas. I have corresponded with Mr. Travis Peacock at the Water Authority and asked for written confirmation this approach is acceptable.

4. Response:
   Vector control notes were added to the maintenance notes on Sheet D1.

5. Response:
   The SWQV pond in the landscape area on the south east corner of the site was removed from the design.

6. Response:
   The SWQV pond was removed from the design and replaced with landscaping.

7. Response:
   All site easements were added to the grading plan Sheet C2.

8. Response:
   The area to the west of the building to be resurfaced will be completed with asphalt to match the existing pavement along the alleyway. The areas to be resurfaced are

labelled and hatched on the grading plan. These areas were not included in the SWQV calculations.

9. Response:
   Only one surface SWQV pond is proposed and is located in the parking lot area. The remaining SWQV is not captured and a payment in lieu fee for this volume will be paid by the developer. A total of 653 cubic feet of SWQV is not being managed onsite, and the developer is choosing Payment in Lieu which totals $5,224.

10. Response:
    The note was updated to read "is not being captured".

11. Response:
    An Erosion and Sediment Control plan and NOI will be submitted to the Stormwater Quality Engineer 14 days prior to any earth disturbance.

12. Response:
    A Private Facility Drainage Covenant will be submitted and recorded prior to occupancy.

13. Response:
    There is no offsite infrastructure improvements associated with the site development plan, however, I will confirm with Transportation this site does not have to go through DRB.

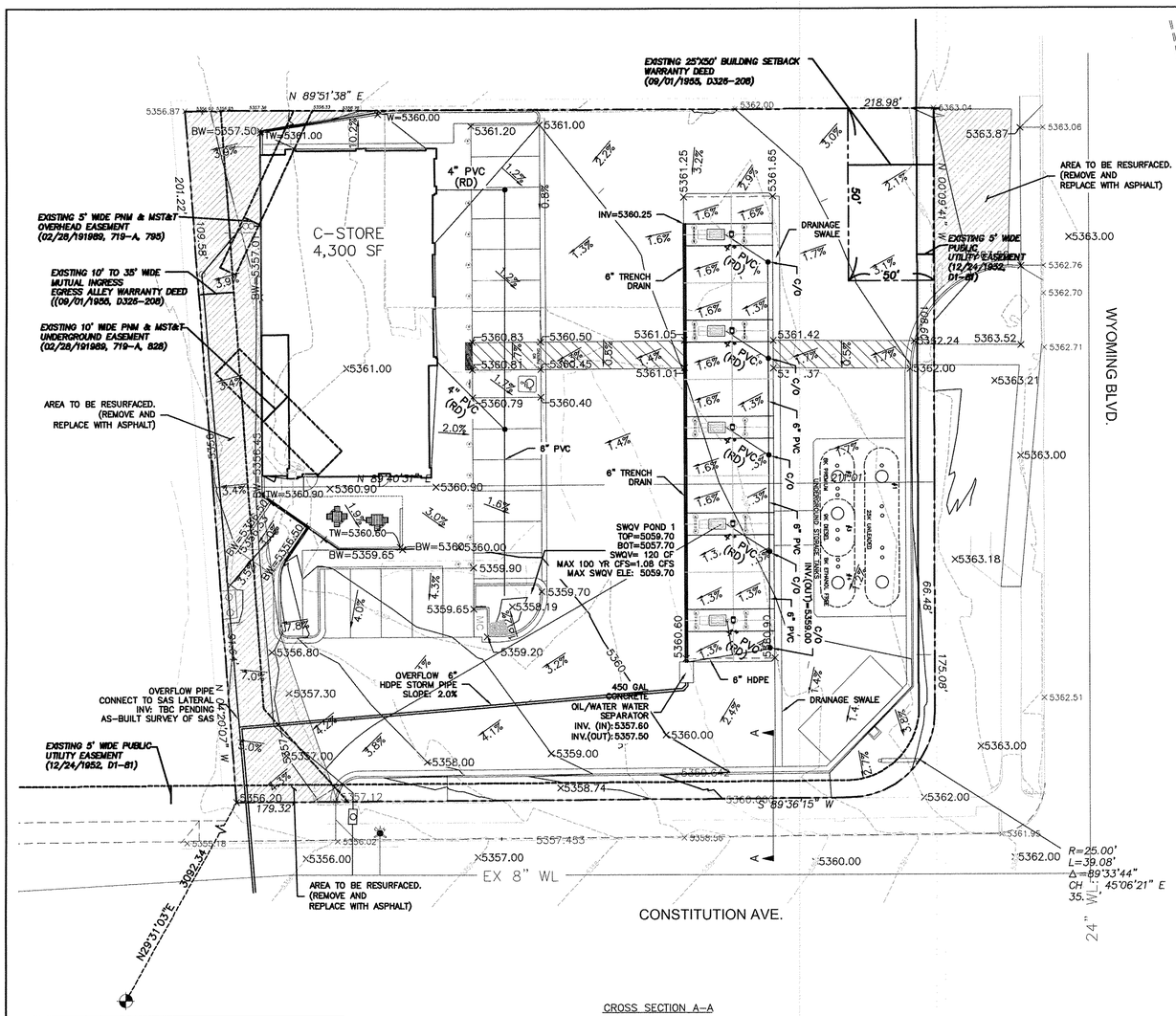
If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,

Ronald R. Bohannan, PE

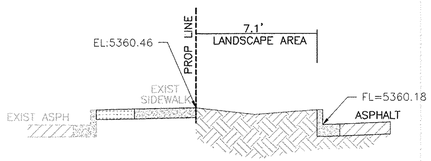
JN: 2018055

RRB/rs/kw



A.G.R.S. MONUMENT "17_K19"
STANDARD C.O.A. ALUMINUM DISC
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE-N.A.D. 1983)
N=1,487,200.514 US SURVEY FEET
E=1,548,658.688 US SURVEY FEET
PUBLISHED EL=5344.389 US SURVEY FT (NAVD 1988)
GROUND TO GRID FACTOR=0.999657877
DELTA ALPHA ANGLE=-0°10'34.73"

CROSS SECTION A-A



SECTION A-A
NTS

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

LEGEND

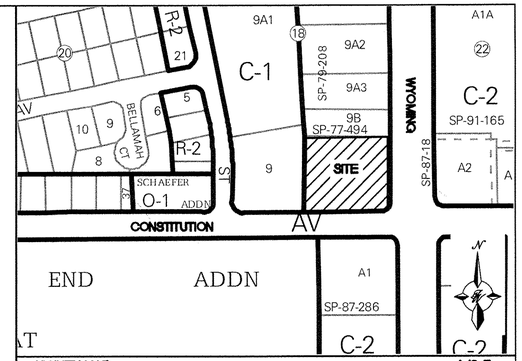
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- SIDEWALK
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- × 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- 5010 EXISTING CONTOUR MAJOR
- 5011 EXISTING CONTOUR MINOR
- × 5048.25 EXISTING SPOT ELEVATION

NOTICE TO CONTRACTORS

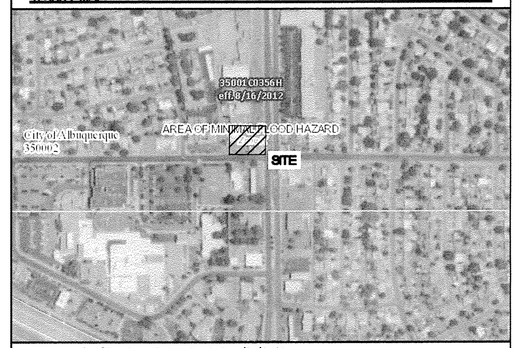
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR 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.



VICINITY MAP: J-19-Z



FIRM MAP: #35001C0356H DATED 8/16/2012

LEGAL DESCRIPTION:

A PORTION OF LOT 9, BLOCK 18 SNOW HEIGHTS

NOTES

THE PARCELS 1401 AND 1415 WYOMING BLVD. NE. WILL NOT BE CONSOLIDATED AND THEREFORE A CROSS ACCESS AND DRAINAGE EASEMENT FOR THE BENEFIT OF BOTH TRACTS WILL BE GRANTED BY DOCUMENT FOR EACH TRACT. NO TRUCK REFUELING IS PROPOSED.

BMP SWQV NOTES

THE SWQV COULD BE MANAGED ONSITE HOWEVER THE DEVELOPER IS CHOOSING PAYMENT IN LIEU. A TOTAL OF 653 CF VOLUME IS NOT BEING CAPTURED AND THEREFORE GENERATES A FEE IN LIEU OF $5,224.00

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 NEW MEXICO 7868 REGISTERED PROFESSIONAL ENGINEER

RONALD R. BOHANNAN
P.E. #7868

MAVERIK
1401 WYOMING BLVD. NE
GRADING AND DRAINAGE PLAN

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

DRAWN BY: RS
DATE: 1/8/2019
2018055-GR
SHEET #: C2
JOB #: 2018055

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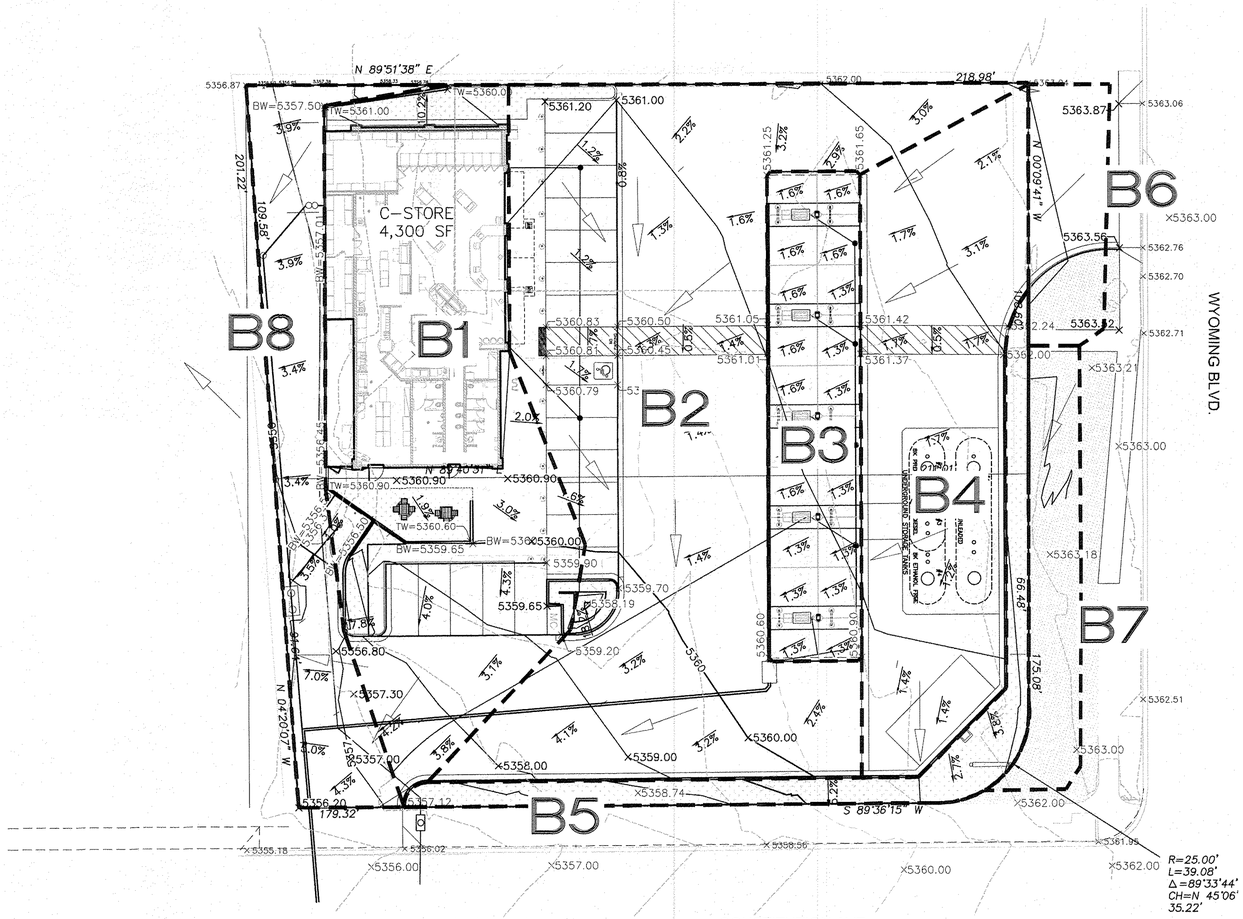
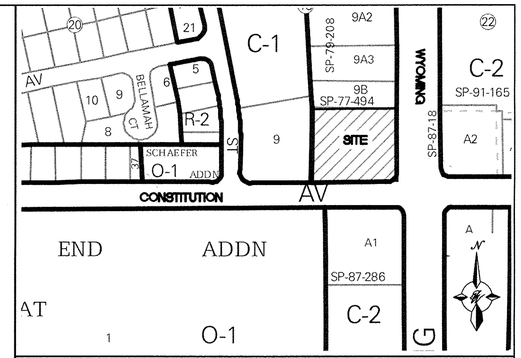
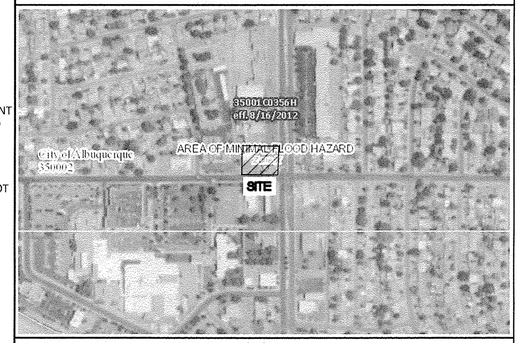


LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT–OF–WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- DRAINAGE BASIN BOUNDARY
- FLOW DIRECTION



VICINITY MAP: J-19-Z



FIRM MAP: #35001C0356H DATED 8/16/2012

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A PORTION OF LOT 9, BLOCK 18 SNOW HEIGHTS

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MAINTENANCE OF BMPS

RESPONSIBLE PARTY: PROPERTY OWNER
MAINTENANCE REQUIREMENTS AND FREQUENCY: REFER TABLE THIS PAGE
ACCESS TO BMPS: ACCESS SHALL BE PROVIDED VIA SITE ACCESS DRIVES TO SURFACE SWQV POND. ALL REMOVAL AND DISPOSAL OF LANDSCAPING AND SEDIMENT SHALL BE COMPLETED BY CERTIFIED LANDSCAPE CONTRACTOR IN ACCORDANCE WITH THE LANDSCAPE MAINTENANCE SPECIFICATION. NO DEBRIS SHALL REMAIN ONSITE AFTER TRIMMING. SEDIMENTATION MONITORING SHALL BE COMPLETED BY THE PROPERTY OWNER YEARLY. IF SILT ACCUMULATION EXCEEDS 2 INCHES ON THE SWQV POND GAUGE THEN THE POND BOTTOM SHALL BE EXCAVATED AND STACKED WITHIN 2-FEET OF THE SWQV POND BERM.
VISUAL INSPECT FOLLOWING STORM EVENTS SHALL BE COMPLETED AS REQUIRED TO ENSURE THE INFILTRATION OF THE SWQV IS ACHIEVED AT ACCEPTABLE RATES. THE SWQV, AT THE MAXIMUM 24" DEPTH, SHOULD INFILTRATE WITHIN 24 HOURS.

VECTOR CONTROL NOTES:

ALLOWING CONDITIONS SUCH AS THE ACCUMULATION OF STANDING WATER THAT CAN CONTRIBUTE TO THE BREEDING OF MOSQUITOES IS A VIOLATION OF THE CITY OF ALBUQUERQUE'S INSECT AND RODENT CONTROL ORDINANCE. MAINTENANCE OF THE RETENTION POND IS THE RESPONSIBILITY OF THE PROPERTY OWNER. IN ORDER TO PREVENT MOSQUITO BREEDING, VEGETATION SHOULD REGULARLY BE CLEARED FROM THE BASIN AND EDGES OF PONDS. THE SITE SHOULD BE MAINTAINED THROUGHOUT THE YEAR IN THIS MANNER. REMOVAL OF VEGETATION CREATES A LESS DESIRABLE SITE FOR MOSQUITO BREEDING. THIS WILL ALSO AID IN THE REDUCTION OF RODENT HARBORAGE. WHEN STANDING WATER DOES EXIST IT SHOULD BE TREATED WITH PUBLICLY AVAILABLE MOSQUITO PRODUCES (E.G. MOSQUITO DUNKS) AT THE TREATMENT RATE DESIGNATED BY THE PRODUCT LABEL. SHOULD A SITE MAINTAIN PERMANENT STANDING WATER, MOSQUITO FISH (GAMBUSIA) CAN BE OBTAINED FROM THE CITY OF ALBUQUERQUE'S ENVIRONMENTAL HEALTH DEPARTMENT FREE OF CHARGE.

REGULAR MAINTENANCE	FREQUENCY
LITTER MANAGEMENT	
Pick up all litter at site and in Landscape areas and remove from site	Daily
INLETS AND OUTLETS	
Visual inspection for function. Remove silt from slab aprons and debris in pavement areas. Remove all fallen vegetation around inlet and outlet structures.	Monthly
HARD SURFACES	
Sweep all paving regularly. Maintain pavement in autumn after leaf fall. Coordinate with Landscape Contractor if additional maintenance is required.	As required

OCCASIONAL TASKS	FREQUENCY
INSPECTION AND INLETS, OUTLETS AND CONTROL CHAMBERS	
Inspect surface structures removing obstructions and silt as necessary. Check there is no physical damage. For below ground control chambers, remove cover and inspect ensuring water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Yearly
POND VEGETATION	
Ensure Pond vegetation is maintained by Landscape Contractor. All weeds and all cuttings removed from site.	As required
SILT MANAGEMENT	
Inspect swales and water quality pond for silt accumulation. Excavate silt, stack and dry within 2-feet of the water quality feature, but outside the design profile where water flows, spread, rake and overseed. Protect surface from siltation and manage main area of basin for design function or appearance.	Yearly

REMEDIAL WORK	FREQUENCY
Inspect storm all water quality structures regularly to check for damage or failure. Undertake remedial work as required.	Yearly

Basin Descriptions											100-Year, 6-Hr			10-Year, 6-Hr			Water Quality Volume	
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs	SWQV Pond Required CF	FF Pond Provided
1	10,160	0.233	0.00036	0%	0.000	0%	0.000	5%	0.012	95%	0.222	2.307	0.045	1.15	1.456	0.028	0.77	209	120
2	15,170	0.348	0.00054	0%	0.000	0%	0.000	0%	0.000	100%	0.348	2.360	0.068	1.75	1.500	0.044	1.18	329	-
3	3,535	0.081	0.00013	0%	0.000	0%	0.000	0%	0.000	100%	0.081	2.360	0.016	0.41	1.500	0.010	0.28	77	-
4	7,311	0.168	0.00026	0%	0.000	0%	0.000	0%	0.000	100%	0.168	2.360	0.033	0.84	1.500	0.021	0.57	158	-
5	2,214	0.051	0.00008	0%	0.000	100%	0.051	0%	0.000	0%	0.000	0.920	0.004	0.13	0.360	0.002	0.06	0	-
6	1,575	0.036	0.00006	0%	0.000	20%	0.007	0%	0.000	80%	0.029	2.072	0.006	0.16	1.272	0.004	0.11	Resurface	-
7	1,848	0.042	0.00007	0%	0.000	100%	0.042	0%	0.000	0%	0.000	0.920	0.003	0.11	0.360	0.001	0.05	0	-
8	3,831	0.088	0.00014	0%	0.000	2%	0.002	0%	0.000	98%	0.086	2.331	0.017	0.44	1.477	0.011	0.29	Resurface	-
Total	**45,644**	**1.048**	**0.00164**		**0.000**		**0.102**		**0.012**		**0.934**		**0.193**	**4.994**		**0.120**	**3.311**	**773**	**120**

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)
Volume = Weighted E * Total Area
Flow = Qa*Aa + Qb*Ab + Qc*Ac + Qd*Ad
$WQV_{required}$ = 0.26"*43560*(1/12)

Excess Precipitation, E (in.)		
Zone 3	100-Year	10-Year
Ea	0.66	0.19
Eb	0.92	0.36
Ec	1.29	0.62
Ed	2.36	1.50

Peak Discharge (cfs/acre)		
Zone 3	100-Year	10-Year
Qa	1.87	0.58
Qb	2.6	1.19
Qc	3.45	2.00
Qd	5.02	3.39

GRAPHIC SCALE
20 10 0 10 20
SCALE: 1"=20'

MAVERIK

ENGINEER'S SEAL
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DRAWN BY: RS
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2018055–DRAINAGE DEVELOPED
SHEET # D1
JOB # 2018055

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