CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

February 21, 2019

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

RE: Warehouse
7601 Los Volcanes RD NW
Grading and Drainage Plan & Drainage Report
Engineer's Stamp Date: 02/05/19
Hydrology File: J10D002G

Dear Mr. Carrica:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 02/05/2019, the Grading & Drainage Plan and Drainage Report **is not** approved for Building Permit, Grading Permit, and for action by the DRB on Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

1. Sheet GR-1 & GR-2. Please clean up the Grading Plan. Whatever is going to be demolished, then please remove. Anything that is existing make lighter and anything that to be proposed, please make darker. I cannot make out what is proposed and what is staying. There are contours lines under the existing building. This doesn't happen. Also the existing building is the same line type as the proposed warehouse. Again please make the sheet better understandable of what is being proposed.

2. Sheet GR-1 & GR-2. Also if you are matching existing grades, then state this where you are doing so.

3. Please adjust the match line for Sheet GR-1 & GR-2. They currently do not line up.

4. On Sheet GR-3, please add the WSE for the SWQ volume and the WSE for the 100 yr 6 Hr storm in Section C-C.

5. Drainage Report. Is the existing outfall structure functional? If so and will remain, please state so in the report.

6. Drainage Report/Grading Plan. The volume for the 100 Yr 6 hr is 3.236 AC-FT of volume. I did a very quick calculation of the existing pond and I can only get 1.17 AC-

FT of volume. Please verify that the pond can provide for the required 3.236 AC-FT. This may need to be enlarged.

7. Drainage Report. Please add the HGL and the Top of Grate to the private storm drain system.

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.

9. Also as a reminder, please provide and Agreement & Covenant for the existing detention pond and a Drainage Covenant for the existing & proposed private storm sewer 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.

10. Standard review fee of $300 will be required at the time of resubmittal.

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: 7601 Los Volcanes Rd NW Building Permit #: _____ Hydrology File #: _____

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

Legal Description: TR C Bulk Land Plat of Tracts A Thru D Meridian Business Park II

City Address: 7601 Los Volcanes Rd NW Albuquerque NM 87121

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 __X__ DRB SITE ___ 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
__X__ 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: 2/5/2019 By: Vince Carrica

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

DRAINAGE REPORT

For

7601 LOS VOLCANES RD.
ALBUQUERQUE, NEW MEXICO

Prepared by

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

Prepared for

Maverik
Albuquerque, NM

January 31, 2019

RONALD R. BOHANNAN, PE #7868

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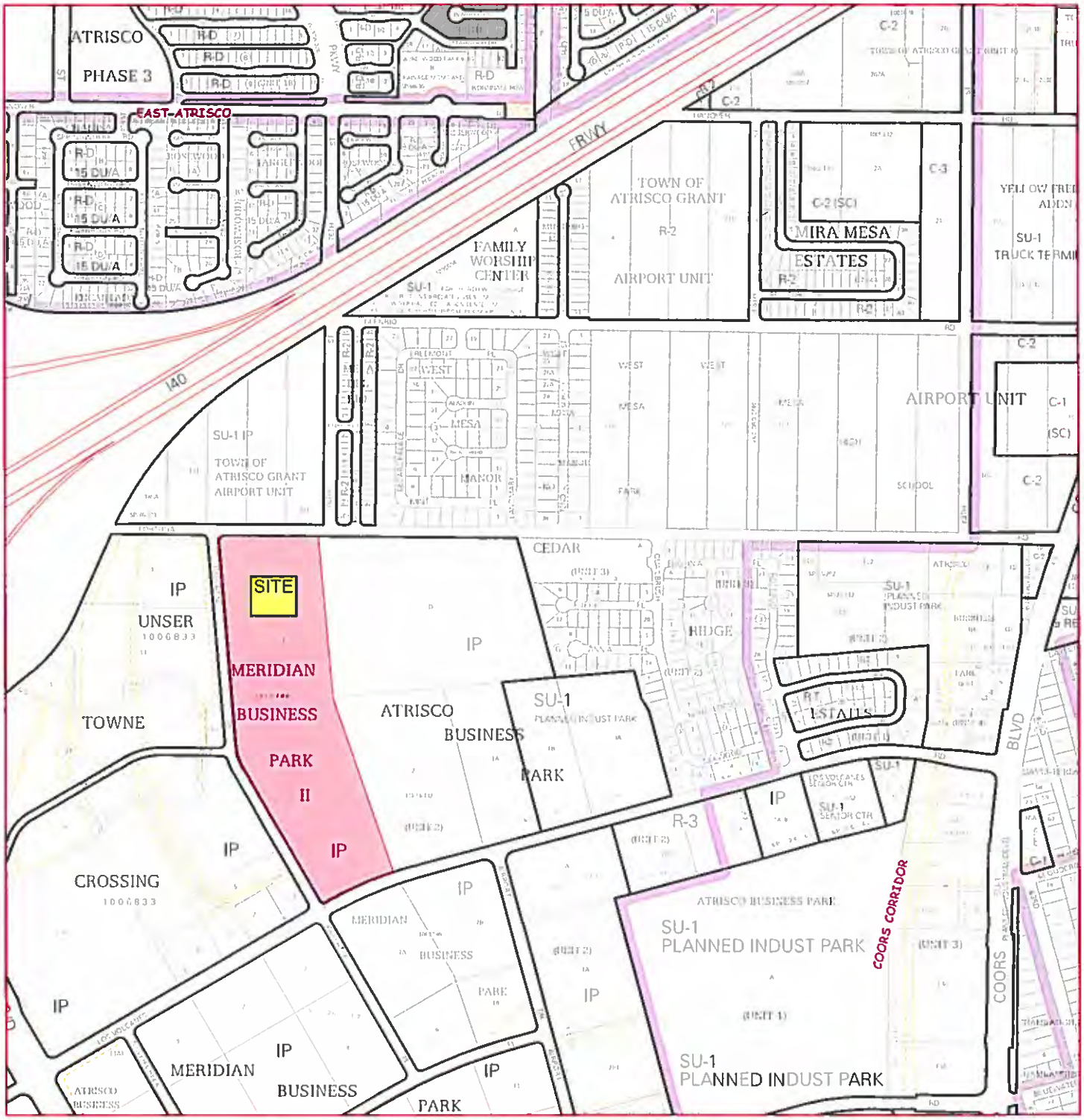


For more current information and more details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 2/4/2010

Zone Atlas Page:

J-10-Z

Selected Symbols

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

0 750 1,500 Feet

LOCATION

The proposed commercial development is located off Los Volcanes Rd NW south of Interstate 40, east of Unser Blvd in the northeast corner of Los Volcanes and Gallatin Rd in southwest Albuquerque. It is comprised of approximately 22.4 acres zoned NR-BP. This report represents a drainage management and grading plan for approval by the City of Albuquerque, for Site Plan for Building Permit, 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 is broken into fourteen onsite drainage basins. There are no upland offsite basins.

EXISTING DRAINGE CONDITIONS

The site is currently developed for FedEx Freight as a distribution center with an existing warehouse/office, and a truck shop with docks and parking fields for autos and tractor trailers. It drains predominantly northwest to southeast via surface flow and an existing onsite storm drain system, with a small area located in the northeast corner of the site that drains northeast onto Fortuna Rd. The bulk of the runoff drains to a storm drain detention pond located along Los Volcanes right of way. The outfall from this pond drains via an 18" storm drain lateral to the existing storm drain in Los Volcanes at a flow rate of 2.2 cfs, which is no more than the allowable discharge rate of 0.1 cfs per acre. This is in compliance with the Atrisco Business Park Master Drainage Plan for fully developed conditions, dated February of 1992.

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, 6-hour duration storm. The plan will also include retention of the first flush in on-site drainage ponds. See attached Weighted E Table for excess precipitation values calculated for this site.

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, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- 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 D

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

The pin displayed on the map is an approximate point selected by the user and does not represent 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 1/31/2019 at 6:10:15 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.

DEVELOPED-DRAINAGE CONDITIONS

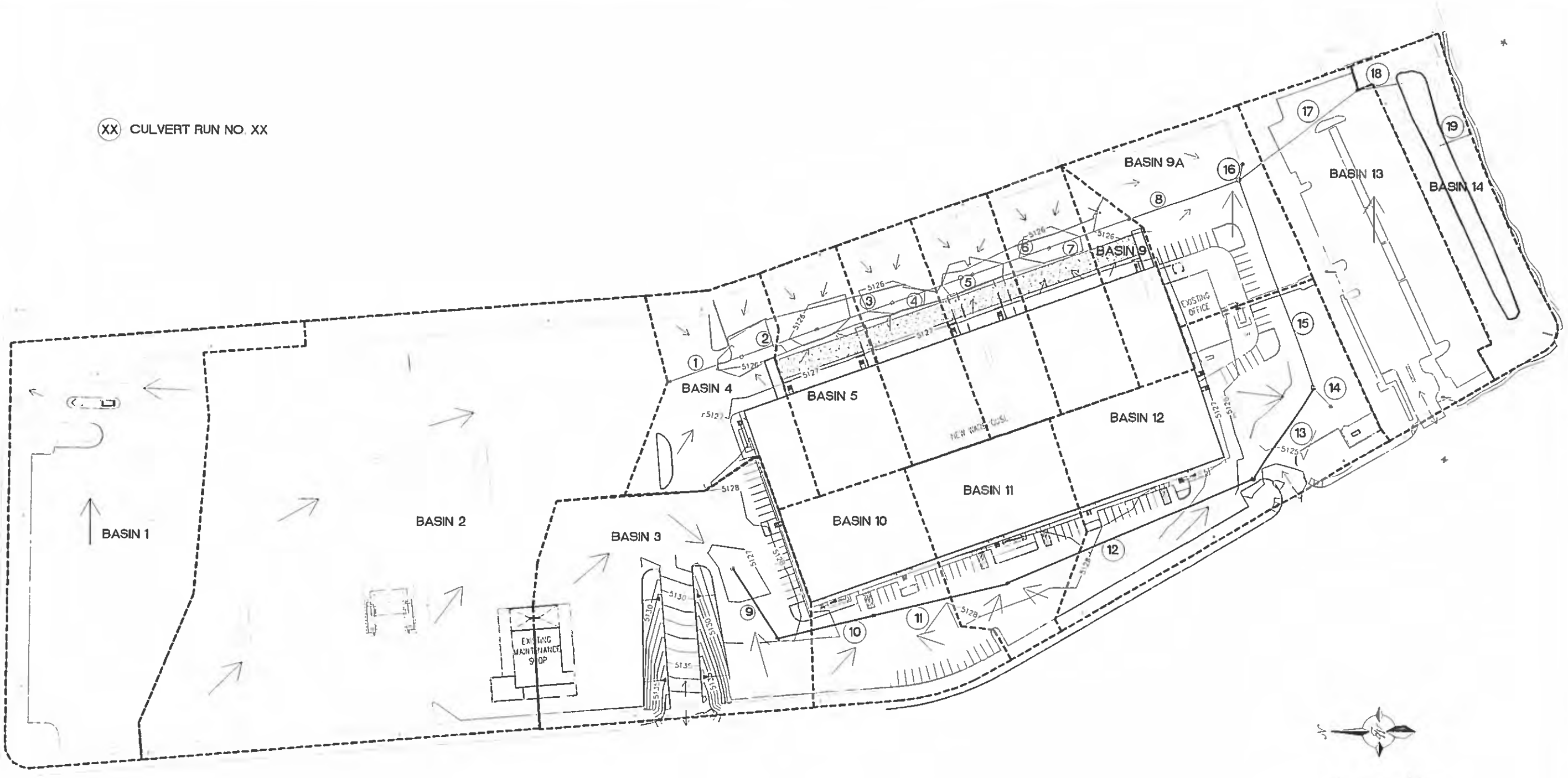
The existing FedEx warehouse building will be demolished with the exception of the floor slab and dock walls/ foundations. A larger footprint ware house will be constructed with the same finish floor elevation as the existing warehouse. Existing pavement will be removed to limits as shown on the grading plan to allow for transition of slopes from the new building footprint to existing pavement that is to remain. The existing office building immediately south of the warehouse will remain as will all existing improvements outside the limits shown on the drawing. Two new entrances will be constructed off Gallatin Rd. to allow for additional access into the overall site. Runoff from the site will continue to be conveyed to the south detention pond adjacent to Los Volcanes, via sheet flows and existing and new on site storm drains. The bulk of the improvements involve removing existing dock and parking areas and replacing them with building area. In keeping with the existing site drainage, no offsite flows will enter the site. Discharge from the existing drainage pond will remain as a controlled discharge with a rate equal to or less than the allowable 0.1 cfs per acre established for the area. The drainage ponds will retain the first flush retention volumes as required by the drainage ordinance.

Refer to enclosed Weighted E computation spreadsheet for developed runoff conditions. Storm drain capacities are listed in a table in the appendix.

SUMMARY

The proposed grading and drainage plan for the re-development of the existing developed property will maintain existing drainage patterns on site as well as maintaining the existing discharging to the storm drain in Los Volcanes at a controlled discharge rate of equal to or less than 0.1 cfs per acre.

(XX) CULVERT RUN NO. XX



GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft.

ENGINEER'S SEAL	7601 LOS VOLCANES RD NW ALBUQUERQUE, NM 87121	DRAWN BY pm
	BASIN MAP	DATE 2-5-19
		DRAWING 2018074-GR
	TIERRA WEST, LLC 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	SHEET # 1
RONALD R. BOHANNAN P.E. #7868		JOB # 2018074

7601 Los Volcanes Rd NW

Weighted E Method

Zone #1

Developed Basins

												100-Year		
Basin	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 (ac-ft)	Volume (ac-ft)	Flow cfs
1	119524.00	2.744	0.00429	0%	0	15.0%	0.412	0%	0	85.0%	2.332	1.775	0.406	11.03
2	257430.00	5.910	0.00923	0%	0	15.0%	0.886	0%	0	85.0%	5.023	1.775	0.874	23.75
3	91370.00	2.098	0.00328	0%	0	15.0%	0.315	0%	0	85.0%	1.783	1.775	0.310	8.43
4	41830.00	0.960	0.00150	0%	0	15.0%	0.144	0%	0	85.0%	0.816	1.775	0.142	3.86
5	32200.00	0.739	0.00116	0%	0	15.0%	0.111	0%	0	85.0%	0.628	1.775	0.109	2.97
6	28523.00	0.655	0.00102	0%	0	15.0%	0.098	0%	0	85.0%	0.557	1.775	0.097	2.63
7	27625.00	0.634	0.00099	0%	0	15.0%	0.095	0%	0	85.0%	0.539	1.775	0.094	2.55
8	28925.00	0.664	0.00104	0%	0	15.0%	0.100	0%	0	85.0%	0.564	1.775	0.098	2.67
9	44404.00	1.019	0.00159	0%	0	15.0%	0.153	0%	0	85.0%	0.866	1.775	0.151	4.10
9A	15357.00	0.353	0.00055	0%	0	15.0%	0.053	0%	0	85.0%	0.300	1.775	0.052	1.42
10	49103.00	1.127	0.00176	0%	0	15.0%	0.169	0%	0	85.0%	0.958	1.775	0.167	4.53
11	41520.00	0.953	0.00149	0%	0	15.0%	0.143	0%	0	85.0%	0.810	1.775	0.141	3.83
12	90117.00	2.069	0.00323	0%	0	15.0%	0.310	0%	0	85.0%	1.758	1.775	0.306	8.31
13	71476.00	1.641	0.00256	0%	0	15.0%	0.246	0%	0	85.0%	1.395	1.775	0.243	6.59
14	36059.00	0.828	0.00129	0%	0	100.0%	0.828	0%	0	0.0%	0.000	0.670	0.046	1.68
Total	975463.00	22.394	0.03499								18.331		3.236	88.35

FIRST FLUSH VOLUME = 22,624 FT3

POND BOTTOM = 8,141 FT^2

RETENTION DEPTH REQUIRED = 22,624 / 8,141 = 2.78 FT

HYDRAULIC GRADES

Culvert Run No.	Length (ft)	Inv In	Inv Out	Slope	D (in)	DEPTH (IN)	DEPTH (FT)	DIA. (IN)	SLOPE (FT/FT)	THETA	AREA (FT^2)	WP	R	Q Calculated (CFS)	v (FT/SEC)	Contributing Basins
1	100	5121.65	5121.25	0.004	30	22.53	1.88	30	0.0040	4.19	3.95	5.24	0.75	23.76	6.0	2
2	99.7	5121.25	5120.81	0.0044	30	24.90	2.08	30	0.0044	4.58	4.36	5.73	0.76	27.62	6.3	2,4
3	100	5120.81	5120.37	0.0044	30	30.00	2.50	30	0.0044	6.28	4.91	7.85	0.63	30.55	6.2	2,4,5
4	81.5	5120.37	5119.8	0.007	30	23.71	1.98	30	0.0070	4.38	4.16	5.48	0.76	33.21	8.0	2,4,5,6
5	18	5119.8	5119.67	0.0072	30	23.35	1.95	30	0.0072	4.32	4.10	5.40	0.76	33.22	8.1	2,4,5,6
6	99.7	5119.67	5118.8	0.0087	30	22.91	1.91	30	0.0087	4.25	4.02	5.32	0.76	35.76	8.9	2,4,5,6,7
7	100	5118.8	5117.8	0.01	30	22.99	1.92	30	0.0100	4.27	4.04	5.33	0.76	38.43	9.5	2,4,5,6,7,8
8	152.6	5117.8	5115.9	0.0125	30	22.82	1.90	30	0.0125	4.24	4.01	5.30	0.76	42.53	10.6	2,4,5,6,7,8,9
9	103	5121.9	5121.47	0.0042	30	11.60	0.97	30	0.0042	2.68	1.75	3.36	0.52	8.44	4.8	3
10	110	5121.47	5121.01	0.0042	30	11.60	0.97	30	0.0042	2.68	1.75	3.36	0.52	8.44	4.8	3
11	180	5121.01	5120.25	0.0042	30	14.76	1.23	30	0.0042	3.11	2.40	3.89	0.62	12.97	5.4	3,10
12	323	5120.25	5118.89	0.0042	30	17.27	1.44	30	0.0042	3.45	2.93	4.31	0.68	16.79	5.7	3,10,11
13	128	5118.89	5118.3	0.0046	30	16.75	1.40	30	0.0046	3.38	2.82	4.22	0.67	16.80	6.0	3,10,11
14	32.5	5120	5118.3	0.0523	18	7.30	0.61	18	0.0523	2.76	0.67	2.07	0.32	8.32	12.4	12
15	269.4	5118.3	5115.9	0.0089	30	17.57	1.46	30	0.0089	3.49	2.99	4.36	0.69	25.12	8.4	3,10,11,12
16	17.3	5120.4	5115.9	0.2601	18	2.02	0.17	18	0.2601	1.37	0.11	1.02	0.11	1.43	13.1	9A
17	177	5115.9	5113.3	0.0147	36	25.55	2.13	36	0.0147	4.01	5.36	6.01	0.89	69.09	12.9	2,3,4,5,6,7,8,9,9A,10,11,12
18	51.8	5113.2	5110.8	0.0463	36	18.54	1.55	36	0.0463	3.20	3.67	4.80	0.76	75.66	20.6	2,3,4,5,6,7,8,9,9A,10,11,12,13
19	40	5110.8	5103.76	0.176	18	2.76	0.23	18	0.1760	1.61	0.17	1.21	0.14	2.25	13.1	0.1 CFS per Acre Max

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50 ft.

MATCH LINE

LOS VOLCANES RD

GALLATIN PL.

NEW WAREHOUSE
FF=5131.43

EXISTING OFFICE

LOT C

NEW 6" THICK CONC. APRON

NEW ASPHALT PAVEMENT (REF. GEOTECH REPORT)

TIMBER RETAINING WALL HEIGHT=3.5 FT

INLET 2

MH 1
RIM=5127.00
INV=5121.01

DI

MH 3

EXIST WALL
TW=31.34
BW=28.67

TW=5132.81
BW=5130.29

EXIST WALL
TW=29.34
BW=27.34

EXIST WALL
TW=28.00
BW=27.34

TW=5132.27
BW=5130.65

SAS MH
RIM=5135.4
INV=5124.6 N
INV=2124.7 S

SAS MH
RIM=5134.6
INV=5123.4 N
INV=2123.5 S

SAS MH
RIM=5126.8
INV=5116.0 NW
INV=2115.9 SE

SAS MH
RIM=5118.1

SAS MH
RIM=5120.3
INV=5107.8
INV=5112.4 NW

SAS MH
RIM=5120.6

SAS MH
RIM=5120.8
INV=5112.7

STRUCTURE	RIM	INV
MH 1	5127.97	5121.47
INLET 2	5127.00	5120.25
MH 3	5126.77	5118.89

KEYED NOTES

1. REMOVE AND DISPOSE EXISTING STORM SEWER, INLETS AND MH
2. EXISTING MH TO REMAIN
3. EXISTING INLET TO REMAIN
4. EXISTING CONCRETE SLAB TO REMAIN
5. EXISTING ASPHALT & CONCRETE PAVING TO REMAIN PENDING GEOTECHNICAL INVESTIGATION

NOTICE TO CONTRACTORS

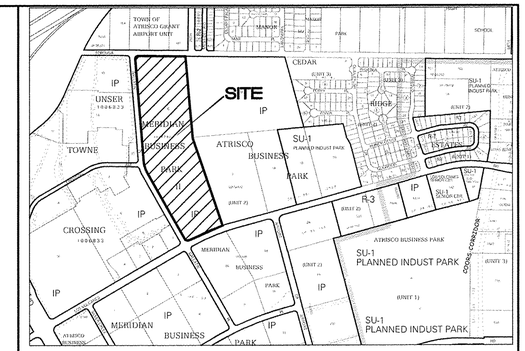
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR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

EROSION CONTROL NOTES:

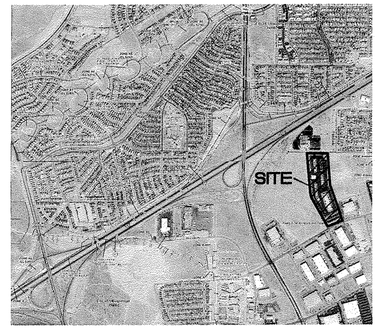
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES 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.

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.



VICINITY MAP J-10



FIRM MAP 35001C0328J

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- BUILDING
- CONCRETE
- LIMITS OF ONSITE CONSTRUCTION
- EXISTING CURB & GUTTER
- SD — EXISTING STORM SEWER LINE (TO REMAIN)
- EXISTING STORM SEWER LINE (TO BE REMOVED) ADJUST EXISTING MH RIM AND INLET GRATE TO GRADE
- SAS — EXISTING SANITARY SEWER LINE
- EXISTING WATERLINE (TO REMAIN)
- EXISTING WATERLINE (TO BE REMOVED)
- E — EXISTING ELECTRIC LINE
- EXISTING SINGLE CLEAN OUT
- DOUBLE CLEAN OUT
- EXISTING SD MANHOLE
- EXISTING INLET
- EXISTING SAS MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING POWER POLE
- EXISTING LIGHT STANDARD (TO REMAIN)
- EXISTING LIGHT STANDARD (TO BE REMOVED)
- PROPOSED FIRE HYDRANT

ENGINEER'S SEAL

RONALD R BOHANNAN NEW MEXICO 7868 REGISTERED PROFESSIONAL ENGINEER

RONALD R. BOHANNAN
P.E. #7868

7601 LOS VOLCANES RD NW ALBUQUERQUE, NM 87121

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: 2-5-19
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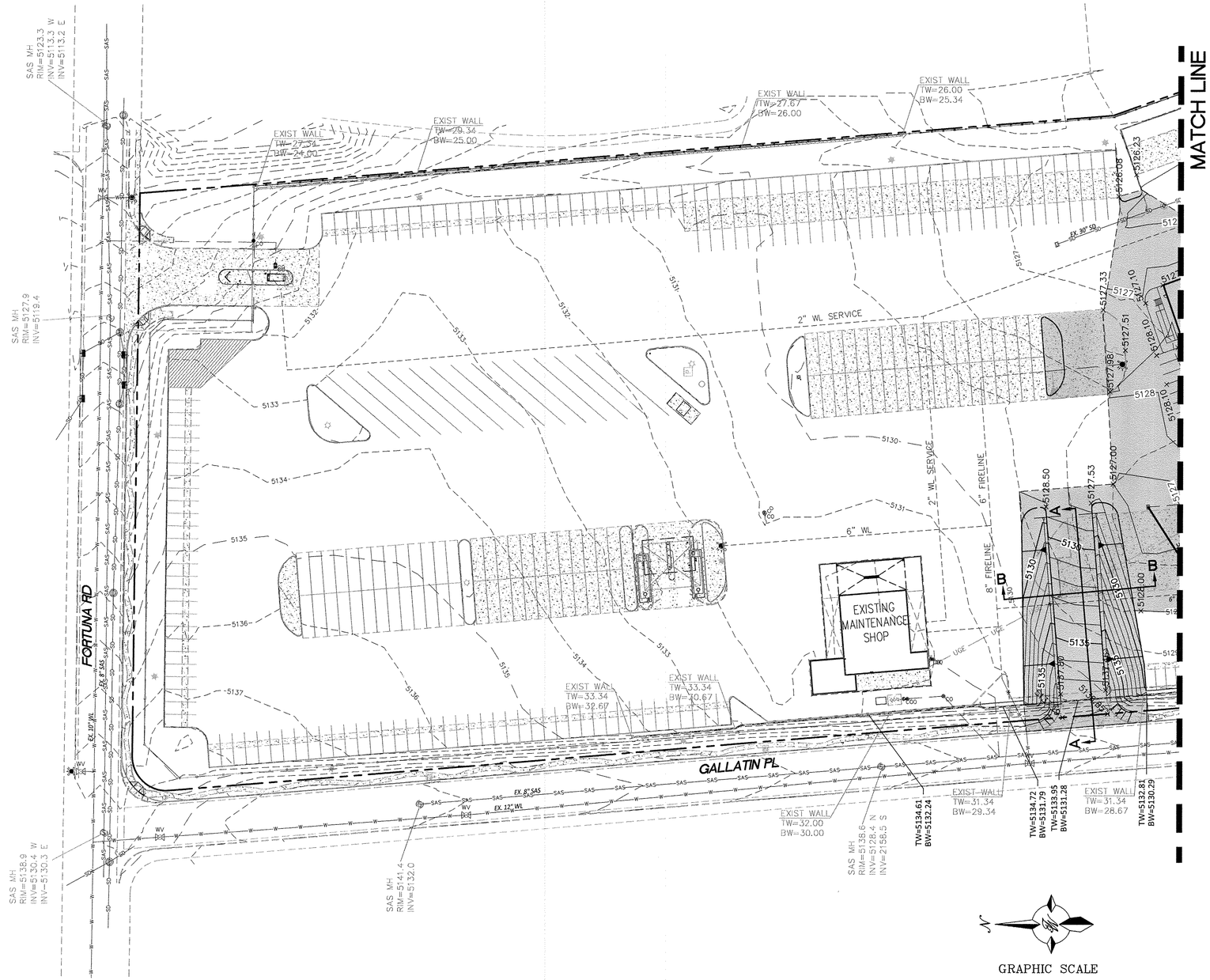


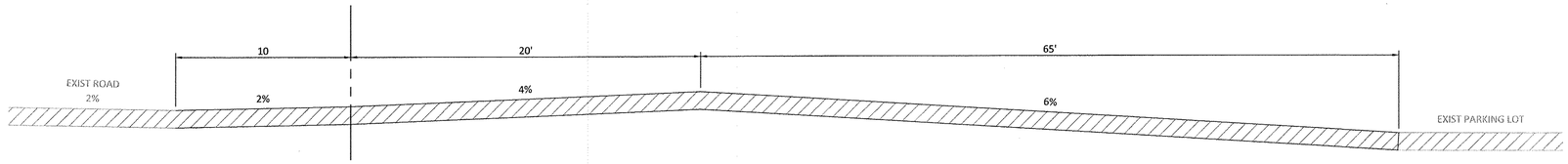
LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- BUILDING
- CONCRETE
- LIMITS OF ONSITE CONSTRUCTION
- EXISTING CURB & GUTTER
- SD — EXISTING STORM SEWER LINE (TO REMAIN)
- EXISTING STORM SEWER LINE (TO BE REMOVED) ADJUST EXISTING MH RIM AND INLET GRATE TO GRADE
- SAS — EXISTING SANITARY SEWER LINE
- EXISTING WATERLINE (TO REMAIN)
- EXISTING WATERLINE (TO BE REMOVED)
- E — EXISTING ELECTRIC LINE
- EXISTING SINGLE CLEAN OUT
- EXISTING DOUBLE CLEAN OUT
- EXISTING SD MANHOLE
- EXISTING INLET
- EXISTING SAS MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING POWER POLE
- EXISTING LIGHT STANDARD (TO REMAIN)
- EXISTING LIGHT STANDARD (TO BE REMOVED)
- PROPOSED FIRE HYDRANT

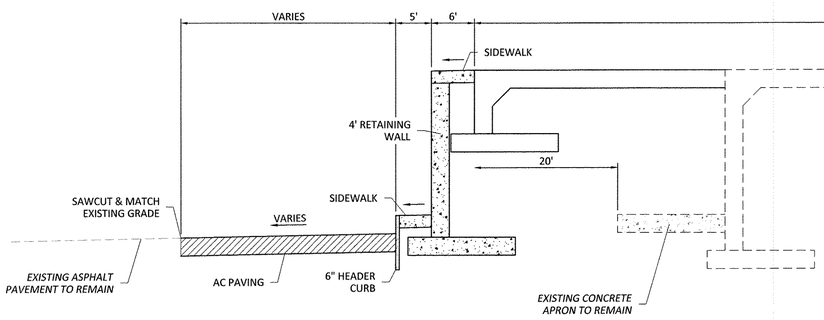
CAUTION:

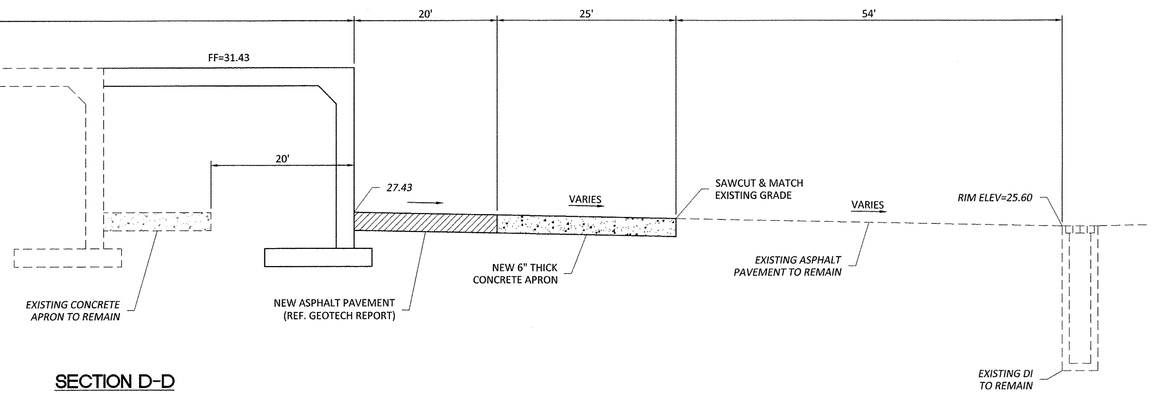
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND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

ENGINEER'S SEAL RONALD R BOHANNAN NEW MEXICO 7868 REGISTERED PROFESSIONAL ENGINEER RONALD R. BOHANNAN P.E. #7868	7601 LOS VOLCANES RD NW ALBUQUERQUE, NM 87121 GRADING AND DRAINAGE PLAN	DRAWN BY pm DATE 2-5-19 DRAWING 2018074-GR SHEET # GR-2 JOB # 2018074
	TIERRA WEST, LLC 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	

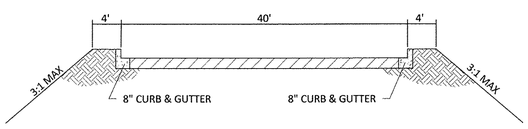


SECTION A-A
NTS

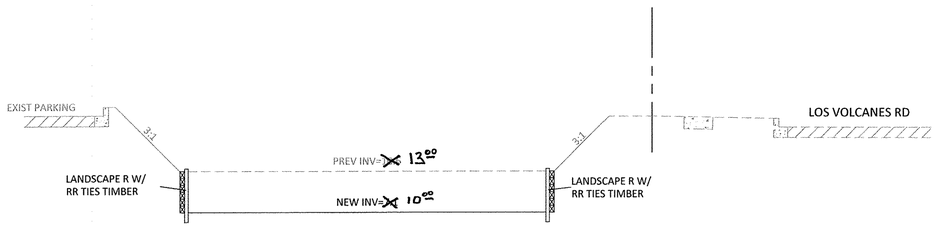




SECTION D-D
NTS



SECTION B-B
NTS



SECTION C-C
NTS

ENGINEER'S SEAL

RONALD R BOHANNAN NEW MEXICO 7868 REGISTERED PROFESSIONAL ENGINEER

RONALD R. BOHANNAN
P.E. #7868

7601 LOS VOLCANES RD NW
ALBUQUERQUE, NM 87121

GRADING SECTIONS

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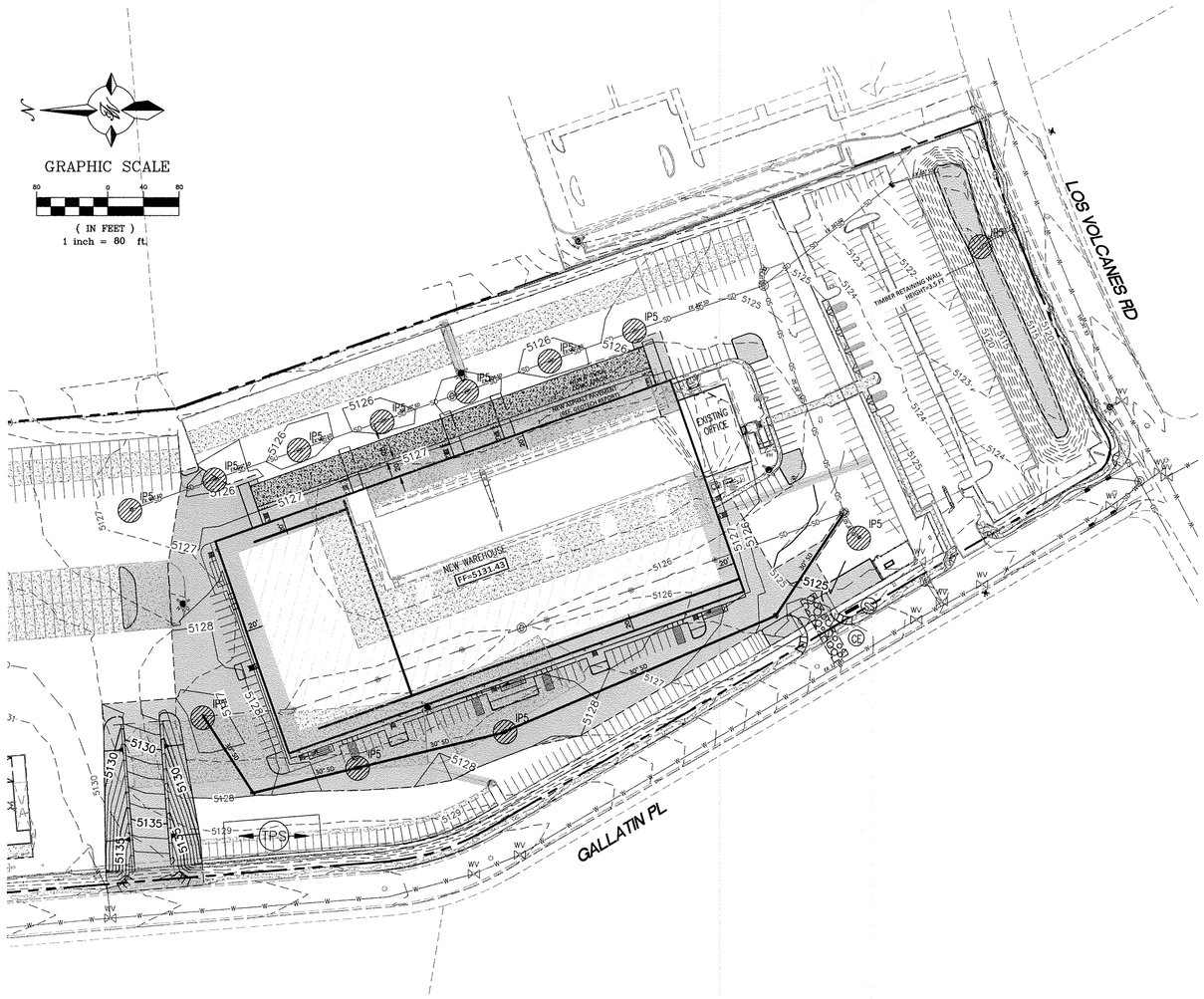

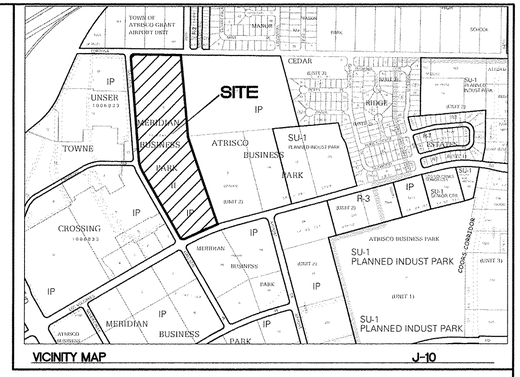

BMP MAINTENANCE:

ALL MEASURES STATED IN THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR UNTIL FINAL STABILIZATION OF THE SITE IS ACHIEVED. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AT THE END OF THE WORKDAY BY A QUAILIFIED MEMBER OF THE SWPPP COMPLIANCE TEAM.

THE OPERATOR WITH CONTROL OF THE SITES DAILY ACTIVITIES IS RESPONSIBLE TO MAINTAIN, CLEAN AND REPAIR EROSION CONTROLS IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED, IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION. SEDIMENT SHALL BE REMOVED TO INSURE PROPER FLOWS. INLET PROTECTION TYPES MAY NEED TO BE MODIFIED DURING THE CONSTRUCTION PROGRESS.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND OF VEGETATION IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RE-SEEDED AS NEEDED.
3. SILT FENCES, WADDLES OR OTHER CONTROLS SHALL BE REPLACED OR REPAIRED TO PROPER FUNCTIONING CONDITION, IF DAMAGED. SEDIMENT AND SOIL SHALL BE REMOVED WHEN REACHES ONE-HALF THE HEIGHT OF THE CONTROL.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING, EXTENDING OR OTHERMODIFICATIONS TO THE CONSTRUCTION EXITS AS CONDITIONS DEMAND. SITE TRAFFIC SHOULD BE LIMITED TO THE CONTROLLED EXITS ONLY.
5. SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.
6. REFERENCE THE SWPPP BOOK FOR ALL EROSION CONTROL MAINTENANCE PROCEDURES AND FREQUENCIES. CONSULT THE SWPPP PREPARER WITH ANY QUESTIONS REGARDING THIS SWPPP AND ITS REQUIREMENTS.

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT FROM THE LOCAL JURISDICTIONAL AUTHORITY PRIOR TO BEGINNING WORK.
2. THE OPERATOR WITH CONTROL OF THE DAILY SITES ACTIVITIES IS RESPONSIBLE FOR MAINTAINING RUN-OFF and RUN ON OF SITE DURING CONSTRUCTION.
3. THE OPERATOR WITH CONTROL OF THE DAILY SITES ACTIVITIES 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.
4. ALL EXPOSED EARTH SURFACES MUST HAVE APPROPRIATE CONTROLS TO PROTECT FROM WIND AND WATER EROSION DURING ALL PHASES OF THE PROJECT.
5. STOCKPILES INACTIVE FOR 14 DAYS ARE REQUIRED TO HAVE TEMPORARY STABILIZATION OR APPROPRIATE COVER TO CONTROL WIND AND WATER EROSION.
6. THE OPERATOR WITH CONTROL OF THE DAILY SITES ACTIVITIES IS REQUIRED TO MAINTAIN ALL SITE BMP'S IN GOOD CONDITION FOR THE DURATION OF THE PROJECT UNTIL A NOTICE OF TERMINATION IS ACCEPTED BY THE EPA.
7. IF SITE EARTH DISTURBANCES EXCEED 5 ACRES AT ANY ONE TIME, TEMPORARY AND/OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS WHEN AREA BECOMES INACTIVE OR EARTH DISTURBING ACTIVITIES ARE COMPLETE. SITE EARTH DISTURBANCES OF LESS THAN 5 ACRES, HAVE 14 DAYS TO PROVIDE TEMPORARY OR PERMANENT STABILIZATION WHEN AREA BECOMES INACTIVE OR EARTH DISTURBING ACTIVITIES ARE COMPLETE.

GENERAL EROSION NOTES:

A. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS COMPRISED OF THE SWPPP BOOK, THE 2017 GENERAL CONSTRUCTION PERMIT, THIS DRAWING ("TEMPORARY EROSION CONTROL AND SEDIMENTATION PLAN"), STANDARD DETAILS ("TEMPORARY EROSION CONTROL AND SEDIMENTATION DETAILS"), EPA NOTICE OF INTENT PERMIT AND ALL SUBSEQUENT REPORTS, CORRECTIVE ACTIONS AND EROSION CONTROL RELATED DOCUMENTS.

B. ALL OPERATORS AS DESIGNATED, CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH SITE ACTIVITIES RELATED TO STORM WATER POLLUTION PREVENTION SHALL REVIEW A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), THE 2017 CONSTRUCTION GENERAL PERMIT, THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), THE CLEAN WATER ACT OF 1972 AND BECOME FAMILIAR WITH THEIR CONTENTS.

C. THE OPERATOR IN CONTROL OF DAILY SITE ACTIVITIES SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS THAT MAY OCCUR AT NO ADDITIONAL COST TO PROJECT OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.

D. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO ALL FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. OPERATOR WITH CONTROL OF DAILY SITE ACTIVITIES SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY, LOCAL JURISDICTIONAL AUTHORITY OR SWPPP COMPLIANCE INSPECTOR.

E. THE TEMPORARY EROSION CONTROL AND SEDIMENTATION PLAN IS A WORKING DOCUMENT AND IS REQUIRED TO BE UPDATED WITHIN 24 HOURS OF ANY CHANGES WHEN BMP'S ARE REPAIRED, RELOCATED OR REMOVED BY NOTING ON THE PLAN THE AREAS AND DATES OF THE REPAIRS, RELOCATIONS OR REMOVALS. AN ACTIVE COPY OF THE PLAN SHALL BE POSTED IN THE JOB SITE TRAILER ONSITE AND MUST BE MAINTAINED CURRENT AT ALL TIMES.

F. CONTRACTOR SHALL MINIMIZE CLEARING AND EARTH DISTURBANCE TO THE MAXIMUM ACREAGE AS REQUIRED BY THE EPA CONSTRUCTION GENERAL PERMIT.

G. CONTRACTOR SHALL DENOTE ON THIS PLAN, THE LOCATION OF TEMPORARY PARKING, STORAGE, PORTABLE SANITARY FACILITIES, OFFICE TRAILERS, AND ALL SUPPORT AREAS. RELOCATIONS OF EACH SHALL ALSO BE DOCUMENTED AS THEY OCCUR.

H. ALL WASH OUT WATER USED FOR CONCRETE, MASONRY, PAINT AND OTHER MATERIALS SHALL HAVE ADEQUATE SIGNAGE WITH PROPER CONTAINMENT AND DISPOSED OF PROPERLY WHEN CAPACITY REACHES 50% OR PER VENDOR RECOMMENDATIONS. VENDORS AND TRADESMEN SHALL BE INFORMED OF THE REQUIREMENTS TO USE THE WASH OUT.

I. A SPILL KIT SHALL BE READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS. A DISCHARGE OF ANY MATERIAL IN A QUANTITY THAT MAY WITHIN REASONABLE PROBABILITY CAUSE, INJURE OR BE DETRIMENTAL TO HUMN HEALTH, ANIMAL OR PLANT LIFE, OR PROPERTY, OR INTERFERE WITH THE PUBLIC WELFARE MUST BE REPORTED TO THE NEW MEXICO ENVIRONMENTAL DEPARTMENT HOTLINE AT (505) 827-9329 FOR EMERGENCIES OR FOR NON EMERGENCIES AT (866)-428-6535.
IF UNSURE IF THE SPILL IS OF A SIGNIFICANT QUANTITY, THE SPILL SHOULD BE REPORTED TO THE HOTLINE AND INFORMATION PROVIDED WITH DETAILS OF THE SPILL FOR FURTHER ACTIONS.

J. DUST DURING CONSTRUCTION OPERATIONS SHALL BE FREQUENTLY CONTROLLED BY WATER SUPPRESSION METHODS ONLY, EARTH DISTURBING OPERATIONS SHALL CEASE IF HIGH WINDS ABOVE 35 MPH ARE PRESENT. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS IS STRICTLY PROHIBITED. OTHER CHEMICALS USED FOR DUST SUPPRESSION MUST BE APPROVED BY THE EPA PRIOR TO THEIR USE.

K. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED, COVERED, LEAK PROOF CONTAINERS. CONTAINERS SHALL BE DISPOSED OF PROPERLY WHEN CAPACITY IS REACHED. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER.

L. ALL STORM WATER POLLUTION PREVENTION MEASURES AND CONTROLS PRESENTED ON THIS PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE INITIATED PER THE SEQUENCE OF CONSTRUCTION AS NOTED.

M. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS BEEN TEMPORARILY SUSPENDED FOR 14 DAYS, SHALL HAVE TEMPORARILY STABILIZATION IN PLACE NO LATER THAN 14 DAYS FROM THE LAST DATE OF CONSTRUCTION ACTIVITY OCCURRING THESE AREAS.

N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL HAVE PERMANENT CONTROLS IN PLACE NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS.

O. IF THE ACTION OF VEHICLES OR EQUIPMENTS TRAVELING OVER THE CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD FROM LEAVING THE SITE. THEN THE LENGTH OF THE EXIT SHOULD BE EXTENDED TO PROVIDE ADDITIONAL TIRE ROTATIONS, LARGER ROCK MAY BE USED TO CREATE A SUFFICIENT JARRING MOTION OR INSTALL A TIRE WASH OFF WITH A SEDIMENT TRAP BEFORE LEAVING THE SITE.

P. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

Q. THE OPERATOR IN CHARGE OF THE DAILY SITES ACTIVITIES WILL BE RESPONSIBLE FOR REMOVING SEDIMENT OR SOILS ACCUMULATING MORE THAN 50% OF THE DESIGN CAPACITY IN DETENTION PONDS, SILT FENCING OR OTHER SIMILAR EROSION CONTROLS.

R. ON-SITE & OFFSITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES, AS REQUIRED PER THE CONSTRUCTION GENERAL PERMIT. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE ESC PLAN AND PERMITTED IN ACCORDANCE WITH LOCAL AUTHORITIES HAVING JURISDICTIONAL CONTROL.

S. SLOPES SHALL BE LEFT WITH CROSS SLOPE GRADING PATTERN AND IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION RILLS. EXCESSIVE SLOPES MAY REQUIRE ADDITIONAL INDUSTRY STANDARD CONTROLS TO PREVENT EROSION.

T. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE OPERATOR IN CONTROL OF THE SITE'S DAILY ACTIVITIES SHALL BE RESPONSIBLE FOR ADJUSTING AND MAINTAINING ALL EROSION CONTROL TO PREVENT EROSION T.

U. ALL DISTURBED AREAS SHALL BE SUPPRESSED BY WATER AND ALL CONTROLS LEFT IN GOOD WORKING CONDITION AT THE END OF EACH WORKING DAY, THIS INCLUDES REPLACEMENT OF SILT FENCING AND/OR OTHER SURFACE CONTROLS, TRACK OUT SWEPT CLEAN, BACKFILL OF OPEN TRENCHES AND ANY OTHER EROSION CONTROLS.

LEGEND

- BOUNDARY LINE
- RIGHT OF WAY LINE
- XXX CONTOUR ELEVATIONS
- STORM DRAIN

EROSION DETAILS

- CE TEMPORARY STONE CONSTRUCTION EXIT
- IP INLET PROTECTION
- SB SB TEMPORARY SEDIMENT BASIN
- SS SS SWPPP SIGN

EROSION NOTES

- TPS TPS TEMPORARY PARKING AND STORAGE

SEQUENCE OF CONSTRUCTION:

1. INSTALL INLET PROTECTION
2. COMPLETE DEMOLITION OF STRUCTURES.
3. PROVIDE POSITIVE DRAINAGE TO SEDIMENT BASIN DURING GRADING OPERATIONS.
4. START BUILDING SITE CONSTRUCTION, FINISH GRADING
5. INSTALL PAVING
6. COMPLETE FINISH STABILIZATION
7. REMOVE ALL BMP'S

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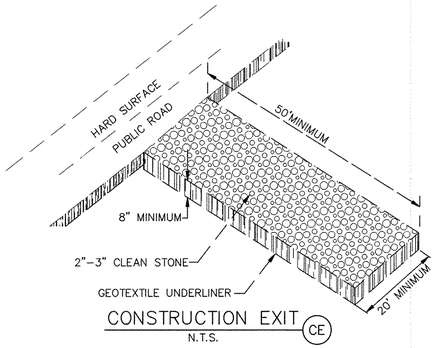
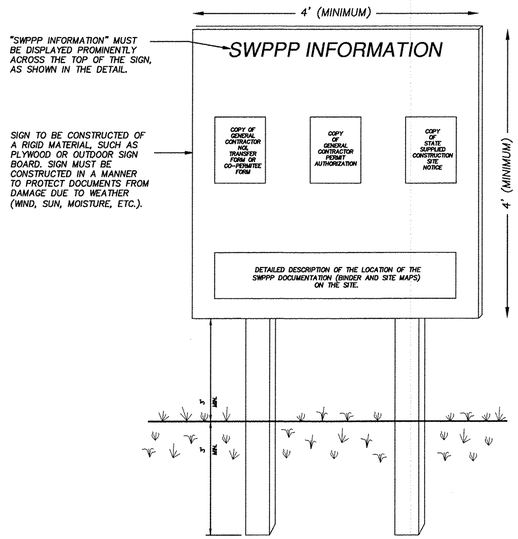


CONSTRUCTION EXIT (CE)

N.T.S.

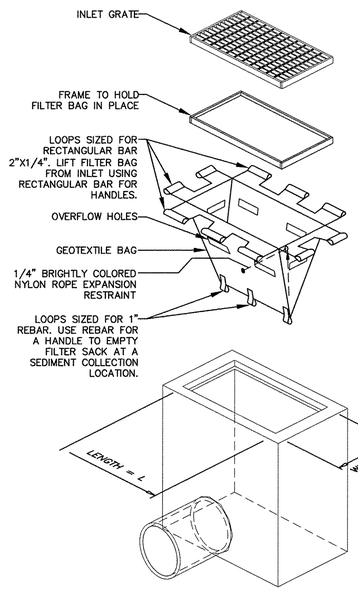


NOTES:

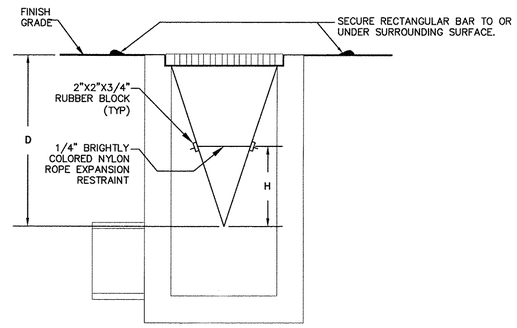
1) *THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE CONSTRUCTION EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE AND VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.*
2) *ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE–OF–TERMINATION (NOT) IS FILED FOR THE PERMIT.*
3) *CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCY.*
4) *SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT–OF–WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.*
5) *CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE SWPPP INFORMATION SIGN.*

SWPPP INFORMATION SIGN (SS)

N.T.S.



ISOMETRIC VIEW



SECTION VIEW
(FILTER SACK INSTALLED)

NOTES:

1. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
2. PLACE AN OIL ABSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
3. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
4. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
5. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

MAINTENANCE NOTES:

1. INLET PROTECTION DEVICES MUST BE INSPECTED FOR SEDIMENT ACCUMULATION WITHIN THE CATCH BASIN. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. REMOVAL OF SEDIMENT ACCUMULATED IN OR ADJACENT TO A STORM DRAIN INLET MUST BEGIN IMMEDIATELY UPON DISCOVERY, WITH COMPLETION OF THE ACTIVITY OCCURRING NO LATER THAN THE END OF THE FOLLOWING BUSINESS DAY.
3. INLET PROTECTION DEVICES SHALL BE INSPECTED FOR UNINTENDED BYPASS OR IMPROPER FLOW–RATES THAT MAY CAUSE DOWNSTREAM FLOODING.
4. CONTACT THE CEC FOR ALTERNATE INLET PROTECTION IF THE DESIGNED PROTECTION MAY IMPACT DOWNSTREAM BMPS, ADJACENT SLOPES, ETC., DUE TO PONDING ISSUES. ENSURE THAT NO UNDERMINING OF INLET PROTECTION DEVICES HAS OCCURRED.
5. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D–4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D–4632	20 %
PUNCTURE	ASTM D–4833	120 LBS
MULLEN BURST	ASTM D–3786	800 PSI
TRAPEZOID TEAR	ASTM D–4533	120 LBS
UV RESISTANCE	ASTM D–4355	80 %
APPARENT OPENING SIZE	ASTM D–4751	40 US SIEVE
FLOW RATE	ASTM D–4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D–4491	0.55 SEC –1

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D–4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D–4632	20 %
PUNCTURE	ASTM D–4833	135 LBS
MULLEN BURST	ASTM D–3786	420 PSI
TRAPEZOID TEAR	ASTM D–4533	45 LBS
UV RESISTANCE	ASTM D–4355	90 %
APPARENT OPENING SIZE	ASTM D–4751	20 US SIEVE
FLOW RATE	ASTM D–4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D–4491	1.5 SEC –1

(IP5) INLET PROTECTION FILTER SACK

N.T.S.

FOR USE ONLY IN PAVED AREAS WHERE SEDIMENT LOADS ARE EXPECTED TO BE VERY LOW. FILTER SACK MUST HAVE OVERFLOW HOLES TO PREVENT PONDING.

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