CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

May 25, 2018

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

RE: **Utility Trailer Sales**
8201 Daytona Rd NW
Grading Plan Stamp Date: 5/14/18
Drainage Report Stamp Date: 5/14/18
Hydrology File: K09D026B

Dear Mr. Carrica,

PO Box1293

Albuquerque

NM 87103

www.cabq.gov

Based on the information provided in your submittal received on 5/16/18, the grading plan and drainage report are approved for Site Plan for Building Permit (only) with the following conditions:

1. Label the grading plan as “Conceptual, not for Construction” or similar. This will be checked at DRB.
2. The pond and swale with an Agreement and Covenant and a Public Drainage Easement on Tract2 need to be included on the infrastructure list.
3. The Public Drainage Easement and the Agreement and Covenant on the NE corner of Tract3 need to be included on the infrastructure list.

Prior to Building Permit:

4. The grading in the SE corner of the site does not support the proposed drainage pattern. For instance the contours and spot elevations do not indicate a swale along the property line, connecting the two first flush ponds. The SE corner is lower than the InvertOut of the adjoining pond riser (5012.00’ vs ~5010.20’-5011.00’). The grading in this area will need to be reworked to ensure a clear flow path from Pond A to Pond B to the 18” RCP into Daytona. Pond B bottom and InvertOut will likely need to be lowered.

5. There are a few proposed spot elevations and contours across the property line onto Bruckner’s property. Please correct to show no grading across the property line here. If this work is required, written and signed permission will need to be obtained from the property owner.

6. A Drainage Covenant will be required for the stormwater quality ponds. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee ($25, payable to City of Albuquerque) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants.

7. Additional comments may be provided at Building Permit, based on the outcome of the above remarks and level of detail shown on plans.

Prior to Certificate of Occupancy:

8. The Drainage Covenant will need to be recorded with Bernalillo County and a copy included with the drainage certification.

9. Either a recorded SIA with financial guarantee or close-out of the public work order is required prior to issuing C.O.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

PO Box1293

Albuquerque

NM 87103

www.cabq.gov

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 10/2015)

Project Title: Utility Trailer Sales Building Permit #: _____ Hydrology File #: _____

DRB#: 1008585 EPC#: 18-EPC-40004 Work Order#: _____

Legal Description: Tract 3 Plat of TRS 1 Thru 12 Avalon Subdivision Unit 5

City Address: 8201 Daytona 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: _____

Check all that Apply:

DEPARTMENT:

_X_ HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
_X_ GRADING PLAN
____ DRAINAGE MASTER PLAN
_X_ DRAINAGE REPORT
____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

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
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ **PRE-DESIGN MEETING?**

____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: _X_ Yes ____ No

DATE SUBMITTED: 5/16/2018 By: Vince Carrica

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

TIERRA WEST, LLC

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

May 15, 2018

Dana Peterson, P.E.
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RE: Utility Trailer Sales
8201 Daytona Rd NW
Grading Plan Stamp Date: 4/30/18
Drainage Report Stamp Date: 4/30/18
Hydrology File: K09D026B

Dear Mr. Peterson:

Please find the following responses addressing your comments listed below:

Prior to Site Plan for Building Permit:

1. There may be a need for additional inlets in Daytona to contain future developed flows in the street. Provide street capacity analysis in Daytona. You may assume the subject site as discharging directly into the storm drain as you've proposed; however the upstream contributing basins will need to be assumed as discharging to the street.
   Response: Analysis Point AP-1.1 of the I-40 South Unser Mini DMP (K09D026) shows a flow rate at the subject site's SE corner equal to 66.5 cfs. Deducting the 17.37 cfs runoff on this site from that flow rate leaves 49.13 cfs for the upland flows to the west that would be contributing to flow in Daytona Rd. A 36" storm drain is proposed to be constructed through the frontage of the subject property to the west end of Daytona. The storm drain is shown to have a capacity of 78.56 cfs, which can handle the upland flows of 49.13 cfs. The Daytona roadway also has a minimum capacity of 52.41 cfs at the proposed 3.81%. Roadway capacity calculation sheets have been added to the report.

2. Include inlet protection for the two new RCP stubouts to keep floatables and sediment from washing into the storm drain (ported riser or similar).
   Response: Water quality manholes/ported risers were added to the RCP outfall pipes from the proposed ponds.

3. Provide written permission from the adjoining property (Tract 2) for work on their property. A public drainage easement and an agreement and covenant are required for the maintenance of the realigned swale and the pond, as these facilities convey public water.
   Response: Titan Development is preparing a letter giving permission for the work on their property along. We will follow the letter up with an easement for the drainage swale through their property. They are also preparing a public

access easement for the portion of the roadway turnaround that falls on their property.

4. Provide a public drainage easement and an agreement and covenant for the riprap and gabions in the NE corner.
   Response: We are working on a drainage agreement/easement and covenant for the existing drainage facilities in the NE corner of the site. Per our phone conversation this will be provided prior to building permit.

5. Include project datum.
   Response: A site bench mark is included on the grading plan and the tie information back to the local AGRS monument has been added.

6. This grading plan includes existing and proposed contours and spot elevations showing regrading of the I-40 bar ditch and grading at both median drain outfalls. Provide written concurrence from NMDOT D# Drainage that this project can proceed. All work in NMDOT's ROW will need to be included on the infrastructure list.
   Response: As previously stated, no grading will be performed in the I-40 right of way. The previous plan incorrectly showed a change in the contours (existing to proposed). This has been corrected on the current plan.

7. The upstream offsite basins need to be delineated and included in your analysis. Demonstrate that the diversion swales are adequately sized to convey these flows from the I-40 ROW to the receiving storm drain along Daytona.
   Response: An upstream offsite basin Exhibit has been added to the report along with a calculation of the available capacity of the proposed drainage swale and its adequacy to convey the flows is shown.

Prior to Building Permit

8. A Drainage Covenant will be required for the storm water quality ponds. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee ($25, payable to City of Albuquerque) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants.
   Response: Understood

9. Additional comments will likely be provided at Building Permit, based on the outcome of the above remarks and level of detail shown on plans.
   Response: Understood

Prior to Certificate of Occupancy

10. The drainage Covenant will need to be recorded with Bernalillo County and a copy included with the drainage certification.
    Response: Understood

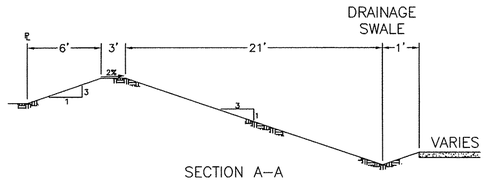
11. Either a recorded SIQ with financial guarantee or close-out of the public work order is required prior to issuing C.O.
    Response: Understood

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

Sincerely,

Vincent Carrica, PE

JN: 2017041
VC/kw



A.G.R.S. MONUMENT "REWARD"
STANDARD A.G.R.S. BRASS TABLET
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE–N.A.D. 1983)
N=1,487,364.053
E=1,491,190.816
PUBLISHED EL=5316.686 (NAVD 1988)
GROUND TO GRID FACTOR=0.999975006
DELTA ALPHA ANGLE=–01°12.28"

SITE BENCHMARK
SET CP–CHISLED "+"
N=1,488,571.239
E=1,494,618.639
ELEV=5233.259

EXISTING 30" CMP W/CONCRETE BLANKET

DRAINAGE SWALE

DESILTING POND BOT=5222.00
18" RCP INV=5226.00
WATER QUALITY MH (SEE DETAIL "A" THIS SHEET)

6'ø SDMH
RIM=5225.51
INV IN=5217.00(W)
INV IN=5217.00(N)
INV OUT=5216.90(E)

Interstate 40
(NMF I-40-3(28) 140)
R.O.W. WIDTH VARIES

EXISTING DRAINAGE SWALE

EXISTING EDGE OF PAVEMENT

ACCESS CONTROLLED

Tract 3
AREA=5.5229 ACRES±
(240,578 SQ. FT.±

12" PVC SD S=2.0%

FF=5218.20

TRACT 2, UNIT 5
AVALON SUBDIVISION
(05/22/2014, 2014C-046)

DRAINAGE SWALE

DRAINAGE SWALE

DRAINAGE SWALE

FIRST FLUSH POND "A"
TOP=5210.60
BOTTOM=5208.60
VOLUME=2,580ft³

18" RCP
S=3.70%

FIRST FLUSH POND "B"
TOP=5212.00
BOTTOM=5209.00
VOLUME=1,912ft³

36" RCP
S=1.38%

36" RCP
S=1.06%

36" RCP
S=4.10%

36" RCP
S=3.23%

18" RCP INV=5212.00
WATER QUALITY MH
(SEE DETAIL "B" THIS SHEET)

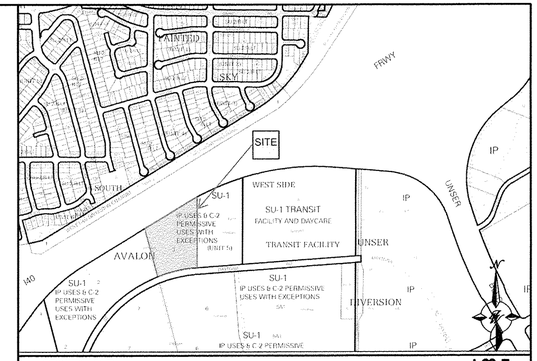
TRACT B–21–A,
UNIT 5
TOWN OF ATRISCO GRANT
(10/30/2012, 2012C–128)

Daytona Road N.W.
(60' R.O.W.)

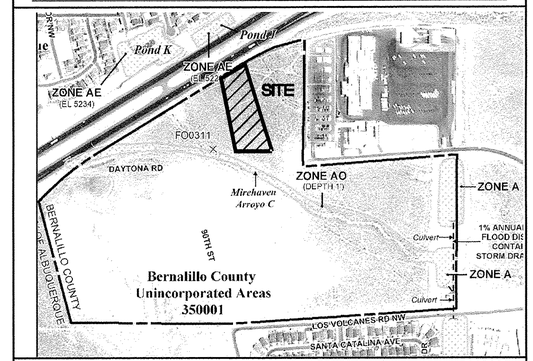
6'ø SDMH
RIM=5217.09
INV IN=5202.03(W)
INV IN=5202.00(N)
INV OUT=5201.93(E)

LEGEND

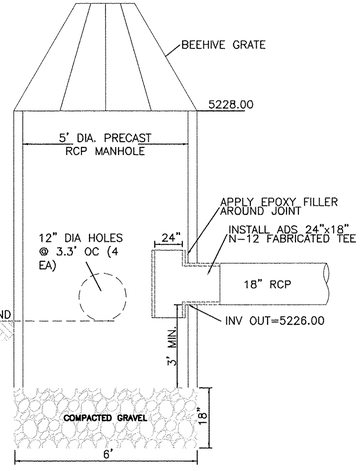
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT–OF–WAY
- BUILDING
- SIDEWALK
- SCREEN WALL
- RETAINING WALL
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION



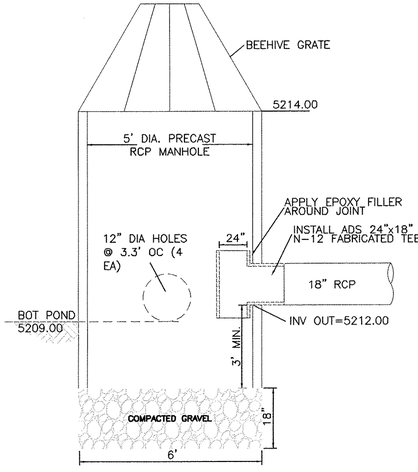
VICINITY MAP: J-09-Z



FIRM MAP: 350002



WATER QUALITY MANHOLE
NTS DETAIL "A"



WATER QUALITY MANHOLE
NTS DETAIL "B"

N

GRAPHIC SCALE
40 20 0 20 40
SCALE: 1"=40'

ENGINEER'S SEAL
RONALD R. BOHANNAN
NEW MEXICO
7864
REGISTERED PROFESSIONAL ENGINEER

VINCENT P. CARRICA
P.E. #16212

UTILITY TRAILER SALES
ALBUQUURQUE NM
CONCEPTUAL GRADING AND DRAINAGE PLAN

DRAWN BY: LA
DATE: 05/23/20118
2017041–GRADING 2
SHEET #: C2
JOB #: 2017041

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

DRAINAGE REPORT

For

8201 Daytona Rd.
ALBUQUERQUE, NEW MEXICO

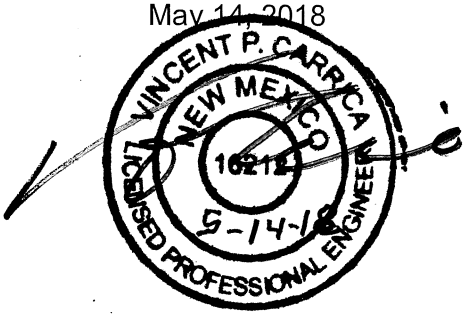
Prepared by

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

Prepared for

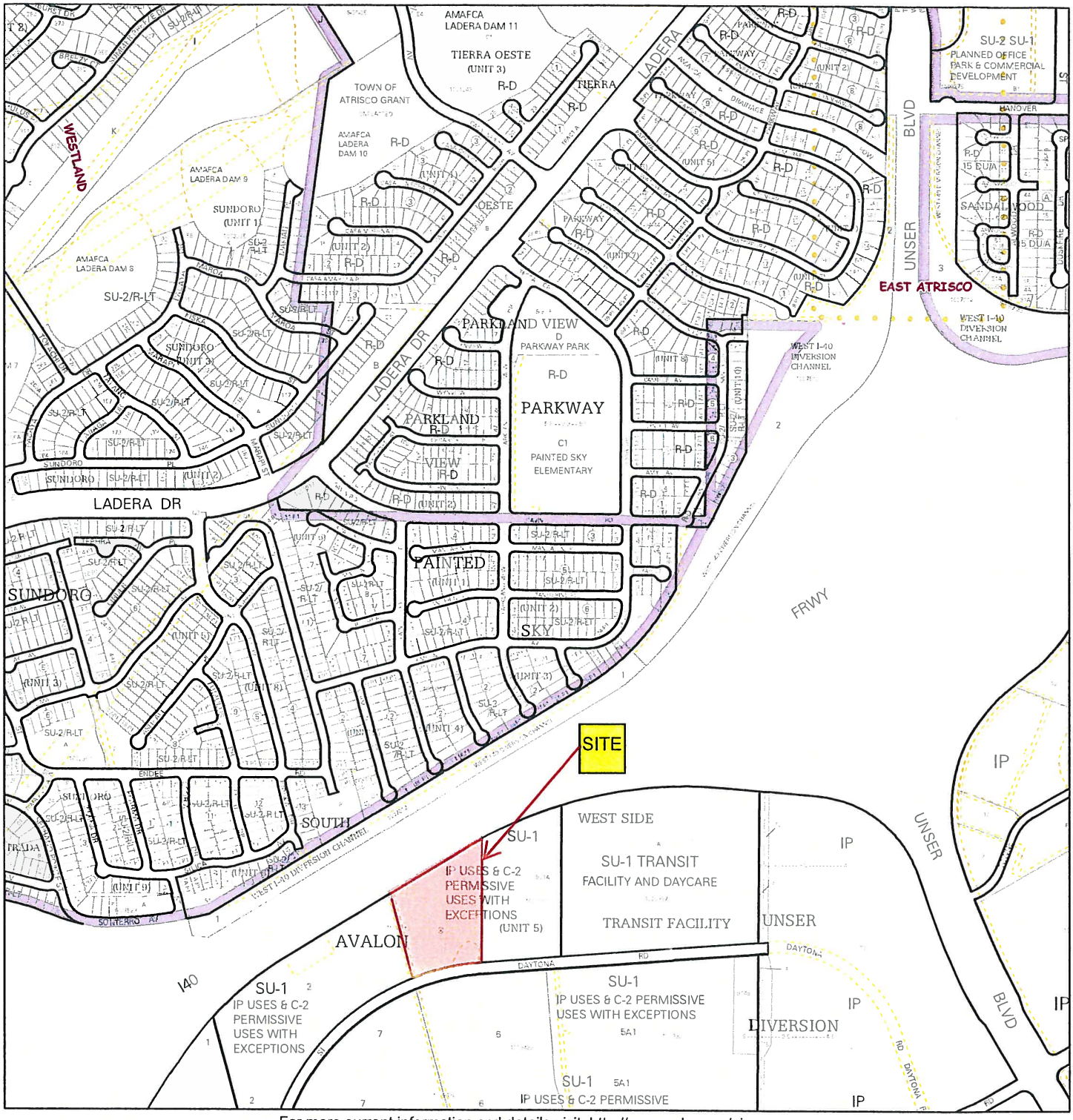
Utility Trailer Sales
Albuquerque, NM

May 14, 2018



VINCENT CARRICA, PE #16212

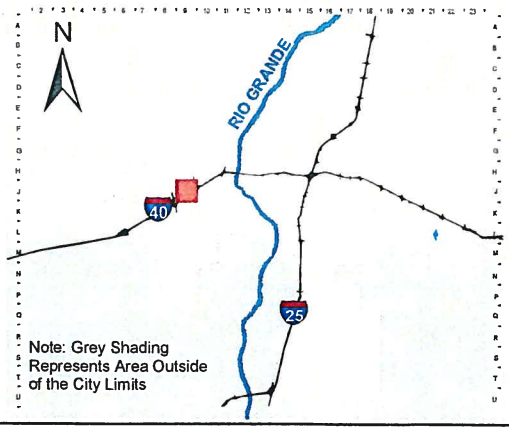
TABLE OF CONTENTS



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

Albuquerque Geographic Information System

Map amended through: 1/28/2016



Zone Atlas Page:

J-09-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 Daytona Rd south of Interstate 40 and west of Unser Blvd in southwest Albuquerque. It is comprised of approximately 5.52 acres zoned SU-1 for IP uses. This report represents a drainage management and grading plan for approval by the City of Albuquerque, for grading and Building Permit submittal.

DRAINAGE BASIN DESIGNATION

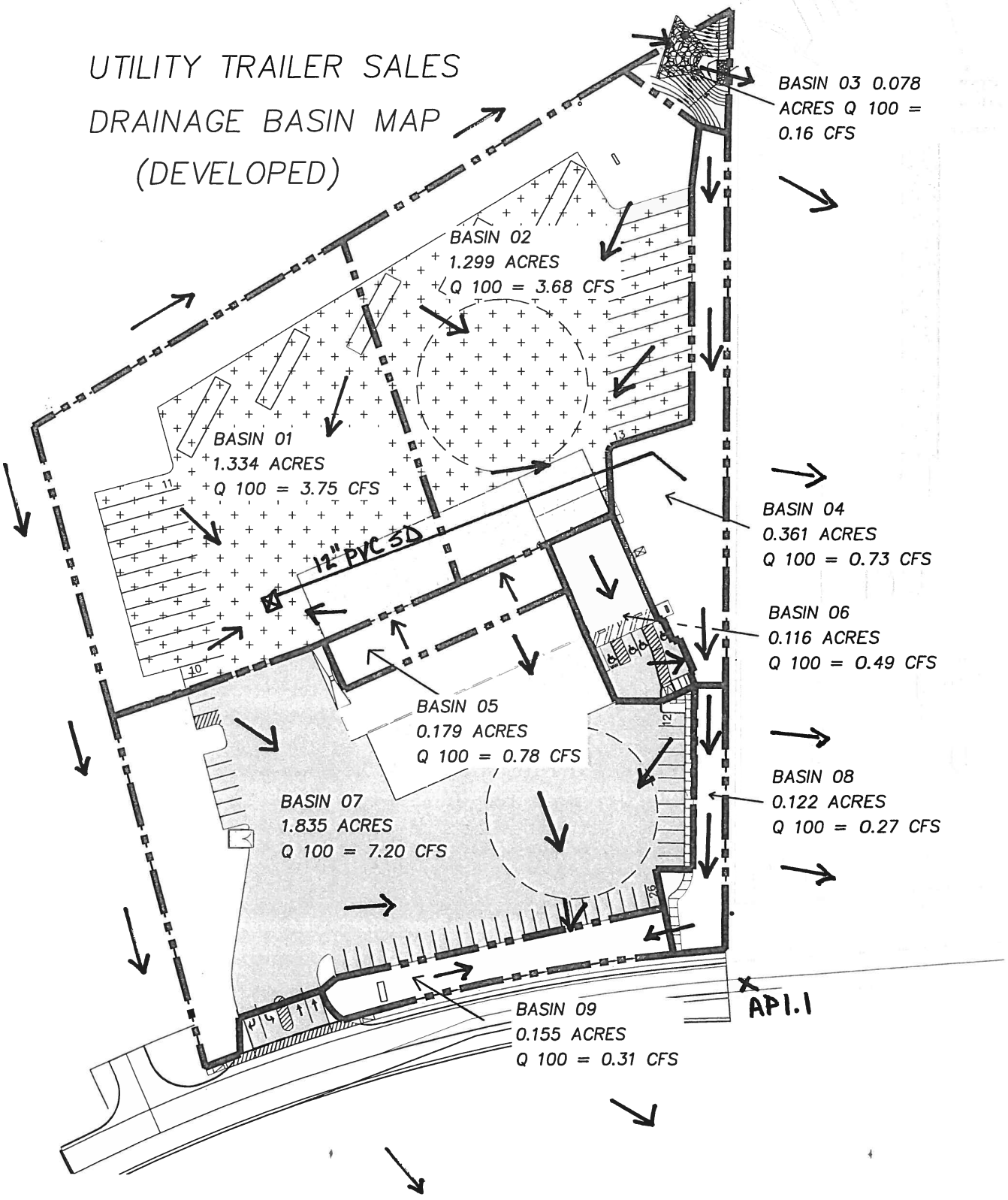
The drainage basins for proposed conditions are as indicated on the BASIN MAP included in this report. The site is broken into nine onsite drainage basins.

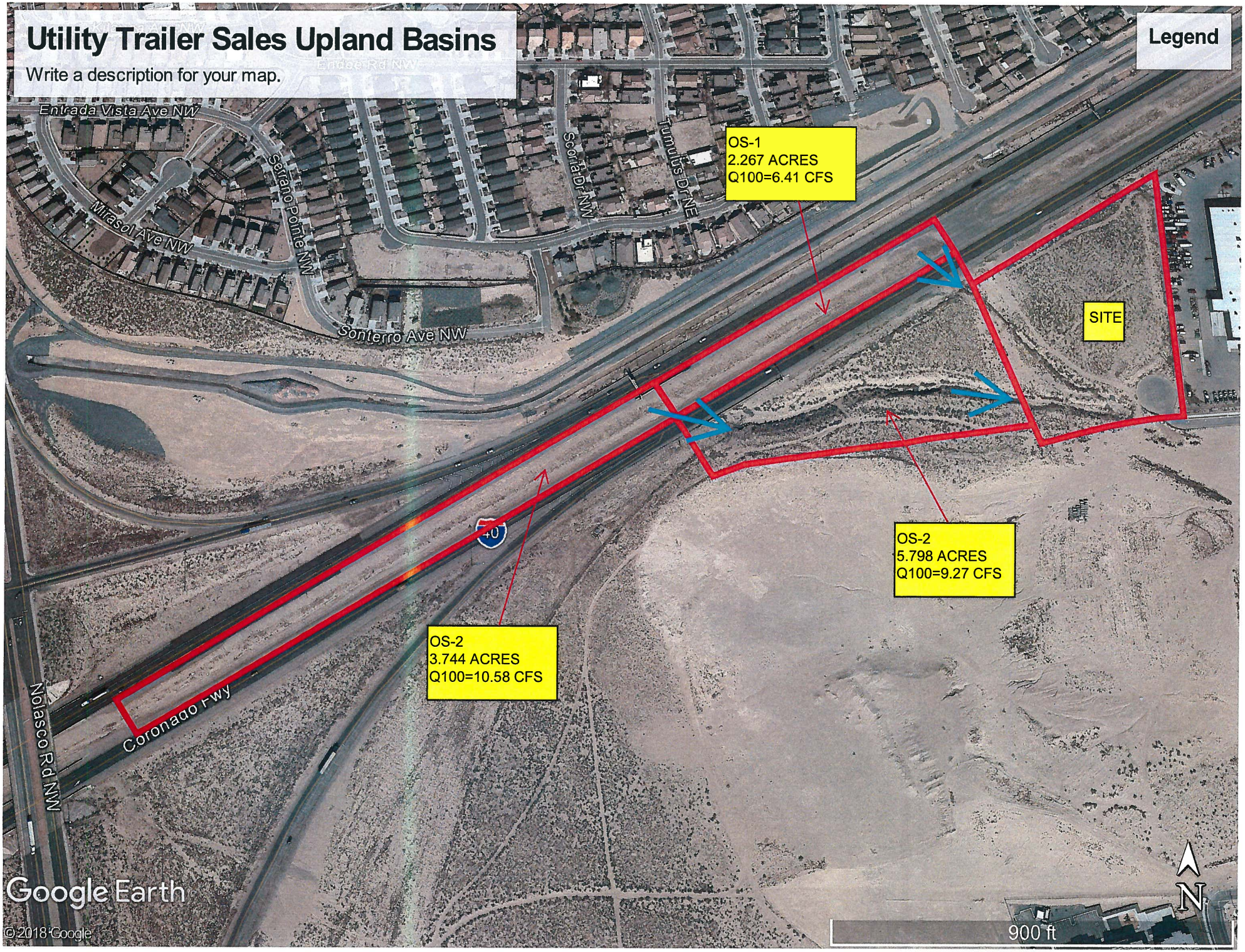
EXISTING DRAINGE CONDITIONS

The site is currently vacant with the exception of a roadway turnaround. It drains predominantly northwest to southeast and is elevated approximately eight feet above the developed property to the east. An existing drainage way and desilting pond exists in the northeast corner of the site that channels runoff from the Interstate to an existing storm drain in the adjacent property. Runoff from north of the upland is captured in the AMAFCA North I-40 Diversion system. That diversion system removes the bulk of the contributing area to the two arroyos that run diagonally through the site from northwest to south east. Runoff from the existing site is conveyed to the Unser Diversion Pond system via street flow and an existing storm drain in Daytona Rd.

FIRM MAP

AMAFCA completed a LOMR to adjust the FEMA mapping for this area (LOMR 17-06-0267P Effective 11/28/2016). The site is no longer located in a designated Flood Hazard Zone Map No. 35001C0328J dated 11/4/2016.


UTILITY TRAILER SALES
DRAINAGE BASIN MAP
(DEVELOPED)
BASIN 03 0.078 ACRES Q 100 = 0.16 CFS
BASIN 02
1.299 ACRES
Q 100 = 3.68 CFS
BASIN 01
1.334 ACRES
Q 100 = 3.75 CFS
12" PVC SD
BASIN 04
0.361 ACRES
Q 100 = 0.73 CFS
BASIN 06
0.116 ACRES
Q 100 = 0.49 CFS
BASIN 05
0.179 ACRES
Q 100 = 0.78 CFS
BASIN 07
1.835 ACRES
Q 100 = 7.20 CFS
BASIN 08
0.122 ACRES
Q 100 = 0.27 CFS
BASIN 09
0.155 ACRES
Q 100 = 0.31 CFS
AP1.1


Utility Trailer Sales Upland Basins
Write a description for your map.
Legend
Entrada Vista Ave NW
Mirasol Ave NW
Serrano Pointe NW
Scoria Dr NW
Tumulus Dr NE
Sonterro Ave NW
OS-1
2.267 ACRES
Q100=6.41 CFS
SITE
OS-2
5.798 ACRES
Q100=9.27 CFS
OS-2
3.744 ACRES
Q100=10.58 CFS
40
Coronado Fwy
Nolasco Rd NW
N
900 ft
Google Earth
©2018 Google

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
- Regulatory Floodway Zone AE, AO, AH, VE, AR

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with dralnag 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

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

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

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

N

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **3/27/2018 at 10:17:25 AM** 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: base map 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.

DESIGN-CRITERIA

The drainage plan presented in this report was prepared in accordance with the City of Albuquerque Drainage Ordinances and Chapter 22 of the Development Process Manual DPM. The hydrological analysis is based on the 100-year frequency, 6-hour duration storm, as Represented in Section 22, Part A, Hydrology, of the Development Process Manual. The plan will also include retention of the first flush in on-site landscaped areas. See attached Weighted E Table for excess precipitation values calculated for this site.

DEVELOPED-DRAINAGE CONDITIONS

The site is proposed to be developed with a single user, Utility Trailer Sales. In coordination with the landowner to the west, a drainage swale will be constructed to intercept undeveloped upland flows to the west prior to them entering the site. Also, no offsite drainage will enter the site from the north, east and south. The site will free discharge to Daytona roadway and existing storm drain and will be conveyed to the Unser Diversion Pond system located east of the site. Flows will be conveyed through the site via surface flows and a small onsite storm drain located north of the proposed building facility. Drainage swales will then channel flows to shallow first flush retention ponds before existing the site.

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

SUMMARY

The proposed grading and drainage plan for the proposed development of the existing undeveloped property includes surface flows and an onsite storm drain to convey runoff to drainage swales along the south and east property lines. The flows will be routed through first flush pond located in landscaped areas prior to the flows exiting the site to the Daytona right of way. Once in the right of way, flows will be routed to the Unser Diversion Pond system via street flow and an existing storm drain channel located in Daytona Rd. The storm drain capacity through the site and downstream of the site is sufficient to carry the ultimate developed runoff of

66.5 cfs outlined in the I-40 South and Unser Diversion Mini DMP (see attached Plate 2 from the plan).

Utility Trailer Sales

Weighted E Method

Zone #1

Developed Basins

												100-Year			10-Year			2-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	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	58551.00	1.344	0.00210	0%	0	27%	0.363	63%	0.846812	10%	0.134	1.002	0.112	3.75	0.461	0.052	1.93	0.150	0.017	0.64
2	56599.00	1.299	0.00203	0%	0	19%	0.247	73%	0.948514	8%	0.104	1.008	0.109	3.68	0.462	0.050	1.90	0.147	0.016	0.63
3	3401.00	0.078	0.00012	0%	0	100%	0.078	0%	0	0%	0.000	0.670	0.004	0.16	0.220	0.001	0.06	0.010	0.000	0.00
4	15746.00	0.361	0.00056	0%	0	100%	0.361	0%	0	0%	0.000	0.670	0.020	0.73	0.220	0.007	0.27	0.010	0.000	0.01
5	7780.00	0.179	0.00028	0%	0	0%	0.000	0%	0	100%	0.179	1.970	0.029	0.78	1.240	0.018	0.52	0.720	0.011	0.30
6	4910.00	0.113	0.00018	0%	0	0%	0.000	0%	0	100%	0.113	1.970	0.019	0.49	1.240	0.012	0.33	0.720	0.007	0.19
7	79924.00	1.835	0.00287	0%	0	19%	0.349	0%	0	81%	1.486	1.723	0.263	7.20	1.046	0.160	4.56	0.585	0.089	2.52
8	5311.00	0.122	0.00019	0%	0	93%	0.113	0%	0	7%	0.009	0.761	0.008	0.27	0.291	0.003	0.11	0.060	0.001	0.02
9	6550.00	0.150	0.00023	0%	0	100%	0.150	0%	0	0%	0.000	0.670	0.008	0.31	0.220	0.003	0.11	0.010	0.000	0.00
Total	238772.00	5.481	0.00856										0.573	17.37		0.305	9.79		0.141	4.31

Equations:

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

Volume = Weighted D * Total Area

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

Utility Trailer Sales

Pipe Capacity Check

D (in)	Slope (%)	Area (ft^2)	R	Q Provided (cfs)	Velocity (ft/s)	Q Required (cfs)
12	2	0.79	0.25	5.05	6.43	4.14
18	28.5	1.77	0.375	56.23	31.82	17.3
18	13.89	1.77	0.375	39.25	22.21	26.3
36	3.23	7.07	0.75	120.19	17.00	66.5
36	4.1	7.07	0.75	135.42	19.16	66.5
36	1.38	7.07	0.75	78.56	11.11	66.5

TIERRA WEST, LLC

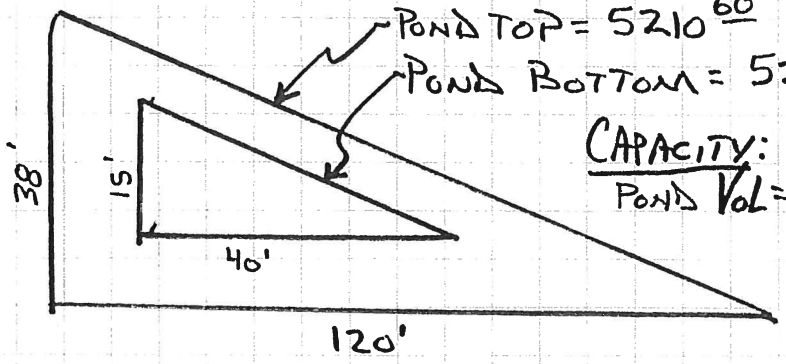
Project UTILITY TRAILER SALES Date 4-30-18

Project No.

Meeting Purpose POND (FIRST FLUSH) CALCS Sheet No 1 of 1

Attendees

POND "A" (EAST of BUILDING)



CAPACITY:

POND VOL = $\left[\frac{15(40)}{2} + \frac{120(38)}{2}\right] 1/2 = 2{,}580 ft^3$

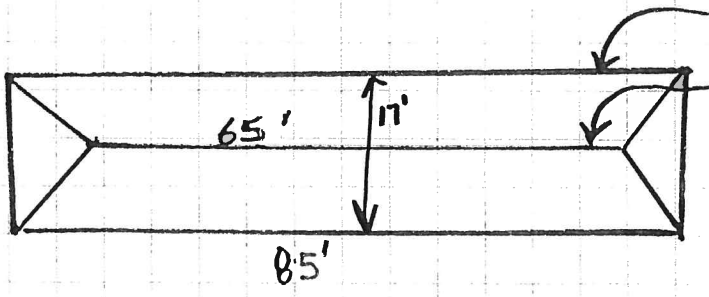
IMPERVIOUS AREA = 19,600sf

REQUIRED VOL = $19{,}600 sf \left(\frac{.34}{12}\right)$

$= 540 ft^3$

CAP ≥ REQ ✓

POND "B" (ADJACENT TO DAYTONA Rd)



CAPACITY:

POND VOL = $\left(\frac{65+85}{2}\right) 17 \left(\frac{1}{2}\right)(3) = 1{,}912 ft^3$

IMPERVIOUS AREA = 67,070 sf

REQUIRED VOL = $67{,}070 \left(\frac{.34}{12}\right)$

$= 1{,}900 ft^3$

CAP ≥ REQ. ✓

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

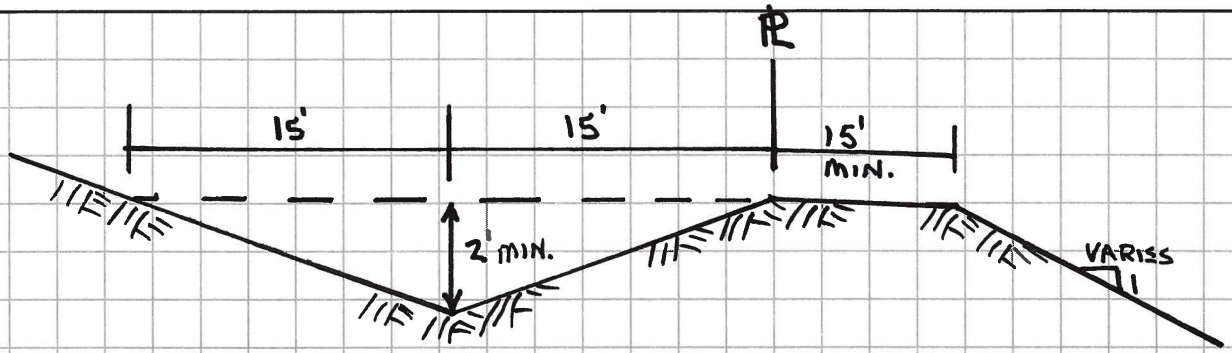
TIERRA WEST, LLC

Project UTILITY TRAILER SALES Date 5-14-18

Project No. UPLAND SWALE DIVERSION

Meeting Purpose CAPACITY CALC. Sheet No 1 of 1

Attendees



$A = 30.26 ft^2$ $k = 1.49$

$wp = 30 ft$ $n = 0.025$

$S = 0.9\%$

$$V = \frac{k}{n}\left(\frac{A}{P}\right)^{2/3} S^{1/2} = 5.62 \text{ ft/s}$$

$Q = VA = 168.6 \text{ cfs} \geq Q_{REQUIRED} = 6.41 \text{ cfs TO } 26.26 \text{ cfs}$ (VARIES)

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

Worksheet for Irregular Section - 3.81%

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.03810	ft/ft
Normal Depth	0.49	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	100.67
0+00	100.00
0+02	100.13
0+20	100.48
0+38	100.13
0+40	100.00
0+40	100.67

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 100.67)	(0+40, 100.67)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	52.41	ft³/s
Elevation Range	100.00 to 100.67 ft	
Flow Area	8.35	ft²
Wetted Perimeter	40.99	ft
Hydraulic Radius	0.20	ft
Top Width	40.00	ft

Worksheet for Irregular Section - 3.81%

Results

Normal Depth		0.49	ft
Critical Depth		0.66	ft
Critical Slope		0.00540	ft/ft
Velocity		6.28	ft/s
Velocity Head		0.61	ft
Specific Energy		1.10	ft
Froude Number		2.42	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.49	ft
Critical Depth	0.66	ft
Channel Slope	0.03810	ft/ft
Critical Slope	0.00540	ft/ft

Worksheet for Irregular Section - Full Width

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.04050	ft/ft
Normal Depth	0.49	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	100.67
0+00	100.00
0+02	100.13
0+20	100.48
0+38	100.13
0+40	100.00
0+40	100.67

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 100.67)	(0+40, 100.67)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	55.22	ft^3/s
Elevation Range	100.00 to 100.67 ft	
Flow Area	8.46	ft^2
Wetted Perimeter	40.99	ft
Hydraulic Radius	0.21	ft
Top Width	40.00	ft

Worksheet for Irregular Section - Full Width

Results

Normal Depth		0.49	ft
Critical Depth		0.67	ft
Critical Slope		0.00534	ft/ft
Velocity		6.53	ft/s
Velocity Head		0.66	ft
Specific Energy		1.15	ft
Froude Number		2.50	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.49	ft
Critical Depth	0.67	ft
Channel Slope	0.04050	ft/ft
Critical Slope	0.00534	ft/ft

Worksheet for Irregular Section - 4.29%

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.04290	ft/ft
Normal Depth	0.49	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	100.67
0+00	100.00
0+02	100.13
0+20	100.48
0+38	100.13
0+40	100.00
0+40	100.67

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 100.67)	(0+40, 100.67)	0.016

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	55.61	ft^3/s
Elevation Range	100.00 to 100.67 ft	
Flow Area	8.35	ft^2
Wetted Perimeter	40.99	ft
Hydraulic Radius	0.20	ft
Top Width	40.00	ft

Worksheet for Irregular Section - 4.29%

Results

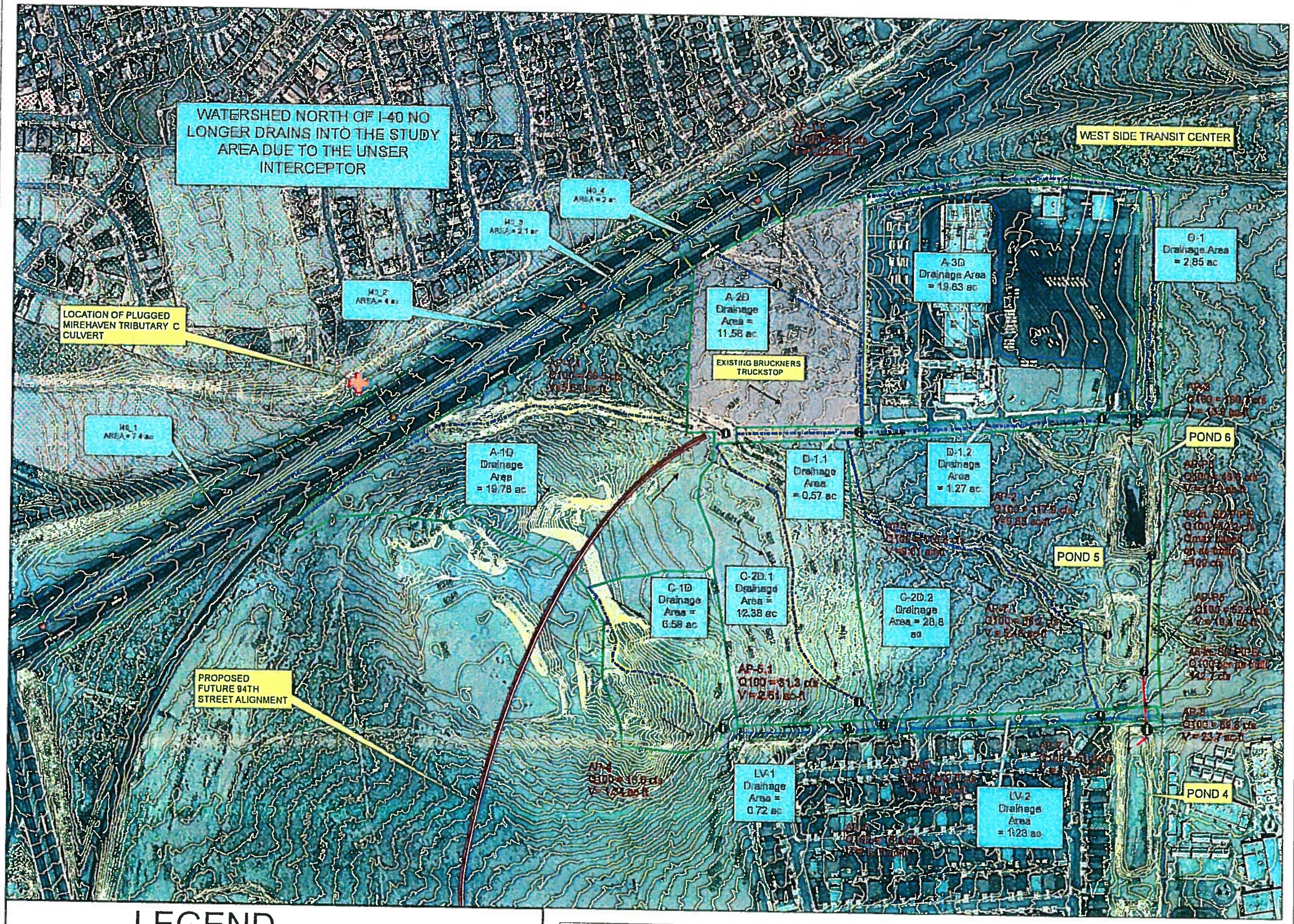
Normal Depth		0.49	ft
Critical Depth		0.67	ft
Critical Slope		0.00533	ft/ft
Velocity		6.66	ft/s
Velocity Head		0.69	ft
Specific Energy		1.18	ft
Froude Number		2.57	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.49	ft
Critical Depth	0.67	ft
Channel Slope	0.04290	ft/ft
Critical Slope	0.00533	ft/ft



LEGEND

- SUBBASIN BOUNDARY
- LONGEST FLOWPATH FOR Tc
- A-2D — SUBBASIN ID
- AP-1 — ANALYSIS POINT
- FLOW DIRECTION
- I40 MEDIAN DROP INLETS

N

0 50 100 200 Feet

Elevation ft	Storage ac ft	Discharge cfs
EX POND 6 RATING CURVE		
5170	0	0
5171	0.14	4
5172	0.83	6.2
5173	1.77	7.9
5174	2.79	9.2
5175	3.87	10.4
5176	5.04	11.5
5177	6.27	79.5
5178	7.46	86.1
5179	9.01	93.2

DATA FROM MASTER DRAINAGE PLAN FOR THE WEST SIDE TRANSIT FACILITY

Elevation ft	Storage ac ft	Discharge cfs
EX POND 4 RATING CURVE		
5147	0	0
5148	0.08	0
5149	0.51	3
5150	1.3	5.7
5151	2.29	7.5
5151.5	3.26	8.7
5152	3.37	11.7
5152.5	3.94	50.6
5153	4.52	92.5
5154	5.76	104.3
5155	7.18	115.9
5156	8.51	124.6

DATA FROM MASTER DRAINAGE PLAN FOR THE WEST SIDE TRANSIT FACILITY

Elevation ft	Storage ac ft	Discharge cfs
EX POND 5 RATING CURVE		
5160	0	0
5161	0.02	4
5162	0.37	6.5
5163	0.76	8.2
5164	1.19	9.7
5164.5	1.42	41.6
5165	1.66	93
5165.5	1.89	106.3
5166	2.12	116.7
5167	2.74	132.6
5168	3.35	145.8
5168.8	3.87	157.2
5169	4.01	160
5170	4.73	172

DATA FROM MASTER DRAINAGE PLANE FOR THE WEST SIDE TRANSIT FACILITY

DEVEX Option 1 POND 5 RATING CURVE WITH 12 IN ORIFICE

Elevation ft a	Storage ac ft a	Discharge cfs b
5160	0	0.0
5161	0.02	3.8
5162	0.37	5.3
5163	0.76	6.5
5164	1.19	7.6
5164.5	1.42	8.0
5165	1.65	8.5
5165.5	1.89	8.9
5166	2.12	9.3
5167	2.74	10.0
5168	3.35	10.7
5168.8	3.87	11.2
5169	4.01	11.3
5170	4.73	12.0

a. DATA FROM MASTER DRAINAGE PLAN FOR THE WEST SIDE TRANSIT FACILITY
b. DISCHARGE BASED ON ORIFICE EQN. SEE APPENDIX B FOR COMPUTATION

DEVEX - Option 1 Summary of Input and Output Parameters

Subbasin	Area (acres)	Weighted Curve Number	Percent of Hydrologic Soil Group A	B	C	D	% Impervious %	Tc (mins)	Q100 (cfs)	V100 (ac-ft)
A-1D	19.8	90	58	42	0	0	90	12	50.10	4.03
A-2D	11.6	90	53	47	0	0	90	12	29.35	2.36
A-3D	19.6	89	28	72	0	0	90	17	43.14	3.59
C-1D	6.6	89	100	0	0	0	90	12	16.64	1.34
C-2D.1	12.4	90	86	14	0	0	90	12	31.29	2.51
C-2D.2	26.8	91	58	42	0	0	90	12	68.17	5.48
D-1.1	0.6	87	37	63	0	0	90	12	1.28	0.116
D-1.2	1.3	87	37	63	0	0	90	12	2.65	0.255
LV-1	0.7	87	32	68	0	0	90	12	1.61	0.15
LV-2	1.2	87	32	68	0	0	90	12	3.07	0.25
O-1	2.9	66	72	27	0	0	0	16	1.00	0.08
I40_1	7.4	89	0	100	0	0	90	16	15.65	1.49
I40_2	4.0	89	0	100	0	0	90	12	9.99	0.80
I40_3	2.1	89	0	100	0	0	90	12	5.24	0.42
I40_4	2.0	83	100	0	0	0	90	12	4.89	0.39

Summary of Pond Routings

Pond	Model Description	Design Volume ac ft (a)	100 Yr 24 Hr Peak Storage Volume ac ft	100 Yr 24 Hr Inflow Volume ac ft	100 Yr 24 Hr Outflow Volume	100 Yr 24 Hr Inflow cfs	100 Yr 24 Hr Outflow cfs	Elevation of Emergency Spillway ft (a)	100 Yr 24 Hr Peak Water Surface Elevation ft	Freeboard from Emergency Spillway ft (b)	Available Storage ac ft	Comments
Pond 4	DEVEX 2 Conditions Modeled with most current data using HEC-HMS	8.51	4.17	23.7	23.7	127.1	67.0	[illegible]	[illegible]	2.4	4.34	Watershed modeled as fully developed commercial/business site at 90% impervious using latest NOAA 14 100-yr 24-hr rainfall depth of 2.52 in. Basin C-2D.2 drains to Pond 5 with existing outfall structure
Pond 5		4.73	1.56	[illegible]	[illegible]	78.1	73.8	[illegible]	[illegible]	4.0	3.17	
Pond 6		9.01	5.62	[illegible]	[illegible]	110.7	43.6	[illegible]	[illegible]	1.4	3.39	
Pond 4	DEVEX Option 1	8.51	[illegible]	21.7	[illegible]	[illegible]	57.0	[illegible]	[illegible]	2.5	4.42	Watershed modeled as fully developed commercial/business site at 90% impervious using latest NOAA 14 100-yr 24-hr rainfall depth of 2.52 in. Basin C-2D.2 drains to Pond 5 with modified outfall restricting discharge using a 12" outlet pipe as principal spillway
Pond 5	DEVEX Option 1	4.73	2.0	[illegible]	[illegible]	69.2	9.1	[illegible]	[illegible]	3.1	2.73	
Pond 6	DEVEX Option 1	9.01	5.62	11.9	[illegible]	110.7	43.6	[illegible]	[illegible]	1.4	3.39	

a. All values reported on this table are taken directly from The Master Drainage Plan For the West Side Transit Facility
100-yr 24-Hr rainfall depth based on latest NOAA Atlas 14 data
b. Freeboard = Elevation of Emergency Spillway - Peak Water Surface Elevation

DEVEX CONDITIONS - HEC-HMS INPUT PARAMETERS

General Subbasin Data — Time of Concentration (Tc) Data — Lag Time Results

EASTERLING CONSULTANTS

I-40 SOUTH AND UNSER DIVERSION MINI DMP
PLATE 2

FINAL DEVELOPED CONDITIONS DRAINAGE BASIN MAP
JUNE, 2014

Current DRC
Project Number:_____

FIGURE 12

Date Submitted: 4/20/18
Date Site Plan Approved:_____
Date Preliminary Plat Approved: N/A
Date Preliminary Plat Expires: N/A
DRB Project No.: 1008585
DRB Application No.:_____

INFRASTRUCTURE LIST

(Rev 2-16-18)

EXHIBIT "A"

TO SUBDIVISION IMPROVEMENTS AGREEMENT

DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

UTILITY TRAILER SALES
PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN

TRACT 3 AVALON SUBDIVISION UNIT 5
EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed for the above development. This Listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantee. Likewise, if the DRC Chair determines that appurtenant or non-essential items can be deleted from the listing, those items may be deleted as well as the related portions of the financial guarantees. All such revisions require approval by the DRC Chair, the User Department and agent/owner. If such approvals are obtained, these revisions to the listing will be incorporated administratively. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

Financially Guaranteed DRC #	Constructed Under DRC #	Size	Type of Improvement	Location	From	To	Construction Certification: Private Inspector	Private P.E.	City Cnst Engineer
		24' F-Edge	Major Local Paving, Curb & Gutter 6' Sidewalk (north side)	Daytona Road	East Property Line	150' West of West Property Line	/	/	/
		8"	SAS Gravity Line	Daytona Road	East Property Line	150' West of West Property Line	/	/	/
		12"	Water PVC Line	Daytona Road	70' West of East Property Line	West Property Line	/	/	/
		36"	RCP Storm Sewer	Daytona Road	160' West of East Property Line	150' West of West Property Line	/	/	/
		26' E-E	Temporary Turnaround	Daytona Road	40' West of West Property Line		/	/	/
		8"	Temporary Asphalt Curb	Daytona Road	East Property Line	West Property Line	/	/	/
							/	/	/
							/	/	/
							/	/	/

The items listed below are on the CCIP and approved for Impact Fee credits. Signatures from the Impact Fee Administrator and the City User Department is required prior to DRB approval of this listing. The Items listed below are subject to the standard SIA requirements.

Financially Guaranteed DRC #	Constructed Under DRC #	Size	Type of Improvement	Location	From	To	Construction Certification: Private Inspector	Private P.E.	City Cnst Engineer
							/	/	/
							/	/	/

Approval of Creditable Items:

Impact Fee Admistrator Signature Date

Approval of Creditable Items:

City User Dept. Signature Date

NOTES

If the site is located in a floodplain, then the financial guarantee will not be released until the LOMR is approved by FEMA.

Street lights per City rquirements.

1 Storm drain to include manholes and inlets

2

3

AGENT / OWNER	DEVELOPMENT REVIEW BOARD MEMBER APPROVALS	
NAME (print)	DRB CHAIR - date	PARKS & RECREATION - date
FIRM	TRANSPORTATION DEVELOPMENT - date	AMAFCA - date
SIGNATURE - date	UTILITY DEVELOPMENT - date	CODE ENFORCEMENT - date
	CITY ENGINEER - date	_____ - date

DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT /OWNER

(Rev. 2-16-18)

TIERRA WEST, LLC

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

May 21, 2018

Mr. Sal Perdomo
Titan Development
6300 Riverside Plaza
Lane N Ste 200
Albuquerque, NM 87120

RE: UTILITY TRAILER SALES
GRADING APPROVAL ON TRACT 2 AVALON SUBDIVISION UNIT 5
PROJECT# 1008583, CASE# 18DRB-70113

Dear Mr Perdomo:

Per discussions pertaining to the development of a Utility Trailer Sales on Tract 3, Avalon Subdivision Unit 5, Titan will allow the grading of a drainage swale along the west property line within Tract 2. The temporary swale will intercept upland flows and convey them to a temporary desilting pond that will be constructed with the Utility Trailer Sales project along with a water quality inlet and a storm drain stub to the storm drain main in Daytona. All temporary grading work and permanent storm sewer work will be completed and maintained by Utility Trailers until such time as Lot 2 is developed and the temporary improvements are removed. A drainage easement setting forth all terms and conditions will be prepared subsequent to this letter and prior to Utility Trailer Sales entry onto Tract 2 or the start of any grading within Tract 2, as shown in Exhibit A – Grading and Drainage Plan. If you are in agreement with this, please sign your concurrence below and return to our office.

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

Sincerely,

Vince Carrica, P.E.

Concurrence: Sal Perdomo

Date: 5/21/18

JN: 2017041
VPC/jg