

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director



Mayor Timothy M. Keller

May 25, 2021

Mark Goodwin, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

RE: Sage Ranch Subdivision
Revised Grading and Drainage Plan
Stamp Date: 04/28/21
Hydrology File: M09D025A

Dear Mr. Goodwin:

Based upon the information provided in your submittal received 05/03/2021, the Revised Grading & Drainage Plan is approved for Grading Permit, Work Order, and for action by the DRB on Preliminary Plat.

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 (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

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

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City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: Sage Ranch Subdivision **Building Permit #:** _____ **Hydrology File #:** _____
DRB#: PR-2019-002063 **EPC#:** _____ **Work Order#:** 769782
Legal Description: Tract A, Lots 1-P1 through 33-P1
City Address: Snow Vista Blvd. Between Sage Road and 86th Street

Applicant: Mark Goodwin & Associates, PA **Contact:** Hiram Crook
Address: PO BOX 90606, Albuquerque, NM 87113
Phone#: 505-828-2200 **Fax#:** _____ **E-mail:** hiram@goodwinengineers.com
Owner: Bokay Construction **Contact:** Bo Johnson
Address: 5160 San Francisco Dr. NE, Albuquerque, NM 87109
Phone#: 505-450-4616 **Fax#:** _____ **E-mail:** bo@bokayconst.com

TYPE OF SUBMITTAL: ☒ PLAT (33 # OF LOTS) _____ RESIDENCE _____ DRB SITE _____ ADMIN SITE

IS THIS A RESUBMITTAL?: _____ Yes ☒ No

DEPARTMENT: _____ TRAFFIC/ TRANSPORTATION ☒ HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

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

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

☐ 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: 04/28/2021 **By:** Hiram Crook, EI

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

AHYMO PROGRAM (AHYMO-S4)

- Version: S4.01a - Rel: 01a

RUN DATE (MON/DAY/YR) = 04/28/2021

START TIME (HR:MIN:SEC) = 16:02:34 USER NO. = M-GoodwinMSiteA90075759

INPUT FILE = F:\1-Projects\2017\A17031 - Sage Ranch\HYDROLOGY\SAGE RANCH_04.28.2021.txt

START 0.0 HRS PUNCH CODE=0 PRINT LINES=-6

*S SAGE RANCH STORAGE: 100-YR, 24-HR DEVELOPED CONDITIONS

LOCATION ALBUQUERQUE

City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.

Land Treatment Initial Abstr.(in) Unif. Infil.(in/hour)

A	0.65	1.67
B	0.50	1.25
C	0.35	0.83
D	0.10	0.04

RAINFALL TYPE=2 RAIN QUARTER=0 RAIN ONE=1.79

RAIN SIX=2.28 RAIN DAY=2.60 DT=.01

24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONNECTIVE AREAS (NM & AZ) - D1
DT = 0.010000 HOURS END TIME = 24.000002 HOURS

0.0000	0.0007	0.0013	0.0020	0.0026	0.0033	0.0039
0.0046	0.0052	0.0059	0.0066	0.0074	0.0081	0.0088
0.0095	0.0102	0.0110	0.0117	0.0125	0.0133	0.0141
0.0149	0.0157	0.0165	0.0173	0.0181	0.0191	0.0200
0.0209	0.0218	0.0227	0.0236	0.0245	0.0255	0.0271
0.0291	0.0312	0.0332	0.0352	0.0372	0.0393	0.0413
0.0434	0.0457	0.0479	0.0502	0.0524	0.0547	0.0570
0.0592	0.0615	0.0639	0.0664	0.0689	0.0713	0.0738
0.0762	0.0787	0.0811	0.0837	0.0862	0.0888	0.0914
0.0939	0.0965	0.0991	0.1016	0.1043	0.1069	0.1096
0.1123	0.1150	0.1177	0.1204	0.1231	0.1258	0.1288
0.1318	0.1348	0.1378	0.1407	0.1437	0.1467	0.1497
0.1529	0.1563	0.1597	0.1631	0.1664	0.1698	0.1732
0.1765	0.1805	0.1857	0.1909	0.1960	0.2012	0.2064
0.2116	0.2167	0.2219	0.2288	0.2358	0.2427	0.2497
0.2566	0.2635	0.2705	0.2774	0.2862	0.2959	0.3056
0.3153	0.3250	0.3347	0.3444	0.3541	0.3655	0.3800
0.3946	0.4092	0.4238	0.4383	0.4529	0.4675	0.4821
0.5072	0.5324	0.5575	0.5827	0.6079	0.6330	0.6582
0.6833	0.7364	0.8034	0.8705	0.9375	1.0045	1.0715
1.1386	1.2056	1.2627	1.2998	1.3370	1.3741	1.4113
1.4484	1.4856	1.5227	1.5599	1.5786	1.5972	1.6159
1.6346	1.6532	1.6719	1.6906	1.7093	1.7233	1.7351



1.7468 1.7586 1.7703 1.7821 1.7939 1.8056 1.8162
1.8243 1.8325 1.8406 1.8488 1.8569 1.8651 1.8732
1.8814 1.8874 1.8933 1.8993 1.9053 1.9112 1.9172
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2.5977 2.5979 2.5981 2.5982 2.5984 2.5986 2.5988
2.5989 2.5991 2.5993 2.5995 2.5997 2.5998 2.6000

*S EXISTING CONDITIONS

COMPUTE NM HYD ID=1 HYD=100 DA=0.005875 SQ. MI
PER A=0 B=0 C=100 D=0
TP=0.133333 HRS RAIN=-1

K = 0.104990HR TP = 0.133333HR K/TP RATIO = 0.787430 SHAPE CONSTANT, N = 4.558258
UNIT PEAK = 17.220 CFS UNIT VOLUME = 0.9992 B = 390.82 P60 = 1.7900
AREA = 0.005875 SQ. MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.010000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.00

RUNOFF VOLUME = 1.03939 INCHES = 0.3257 ACRE-FEET
PEAK DISCHARGE RATE = 11.53 CFS AT 1.530 HOURS BASIN AREA = 0.0059 SQ. MI

*S DEVELOPED CONDITIONS

COMPUTE NM HYD ID=2 HYD=200 DA=0.005875 SQ. MI
PER A=0 B=0 C=23 D=77
TP=0.133333 HRS RAIN=-1

K = 0.072666HR TP = 0.133333HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 17.856 CFS UNIT VOLUME = 0.9993 B = 526.28 P60 = 1.7900
AREA = 0.004524 SQ. MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.010000

K = 0.104990HR TP = 0.133333HR K/TP RATIO = 0.787430 SHAPE CONSTANT, N = 4.558258
UNIT PEAK = 3.9607 CFS UNIT VOLUME = 0.9966 B = 390.82 P60 = 1.7900
AREA = 0.001351 SQ. MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.010000

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 200.00

RUNOFF VOLUME = 2.04467 INCHES = 0.6407 ACRE-FEET
PEAK DISCHARGE RATE = 15.28 CFS AT 1.530 HOURS BASIN AREA = 0.0059 SQ. MI

*
FINISH
NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 16:02:34
(sdp10h4099t&i6D

Channel Report

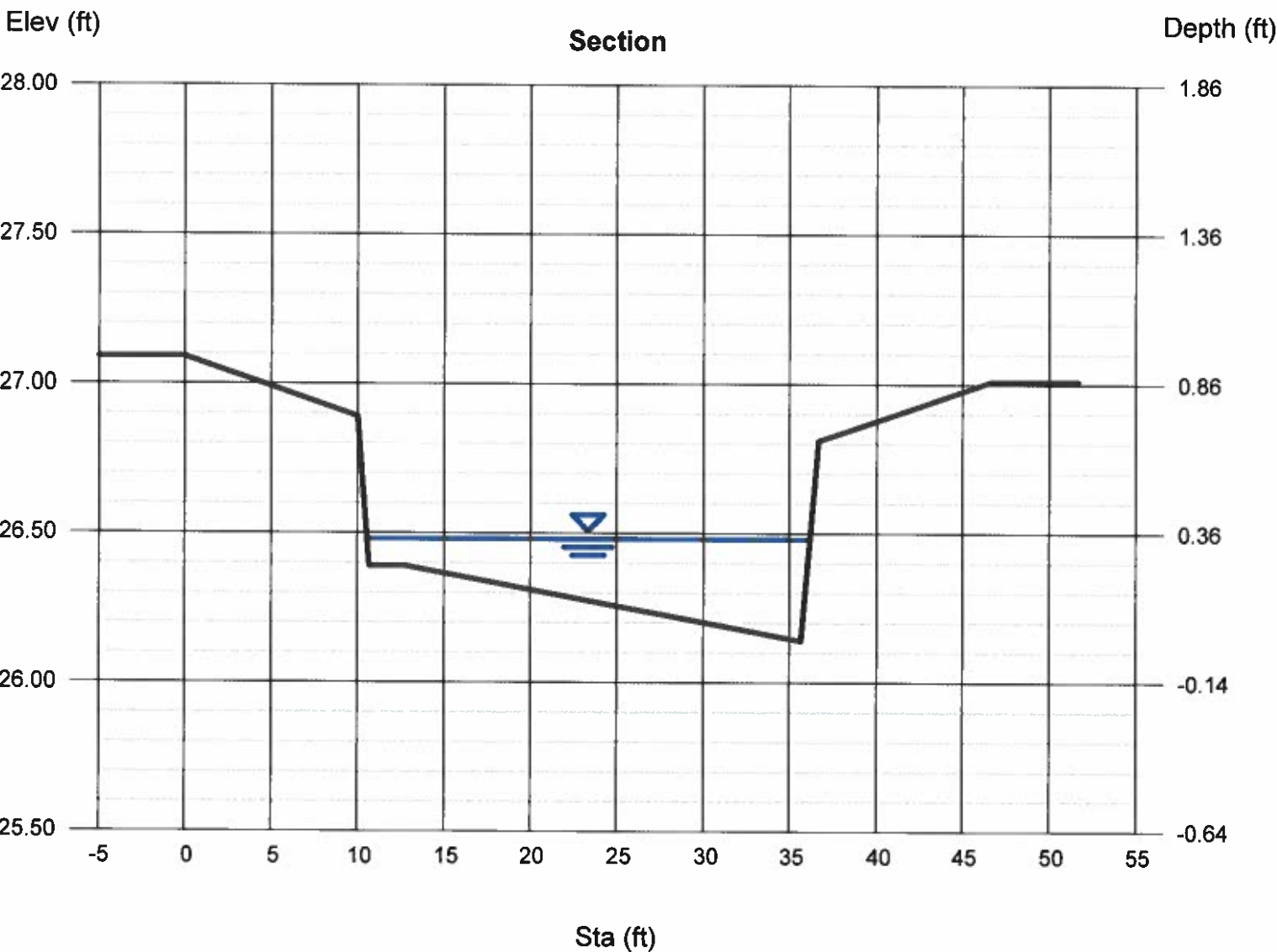
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Sage Ranch Hammerhead 25' wide at 1% cross slope

User-defined		Highlighted	
Invert Elev (ft)	= 26.14	Depth (ft)	= 0.34
Slope (%)	= 1.00	Q (cfs)	= 15.30
N-Value	= 0.017	Area (sqft)	= 5.22
Calculations		Velocity (ft/s)	= 2.93
Compute by:	Known Q	Wetted Perim (ft)	= 25.76
Known Q (cfs)	= 15.30	Crit Depth, Yc (ft)	= 0.36
		Top Width (ft)	= 25.63
		EGL (ft)	= 0.47

(Sta, El, n)-(Sta, El, n)...

(0.00, 27.09)-(10.00, 26.89, 0.017)-(10.67, 26.39, 0.017)-(12.67, 26.39, 0.017)-(35.67, 26.14, 0.017)-(36.67, 26.81, 0.017)-(46.67, 27.01, 0.017)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

10' Channel

Rectangular

Bottom Width (ft) = 10.00

Total Depth (ft) = 0.67

Invert Elev (ft) = 5326.08

Slope (%) = 7.00

N-Value = 0.025

Calculations

Compute by: Known Q

Known Q (cfs) = 15.28

Highlighted

Depth (ft) = 0.26

Q (cfs) = 15.28

Area (sqft) = 2.60

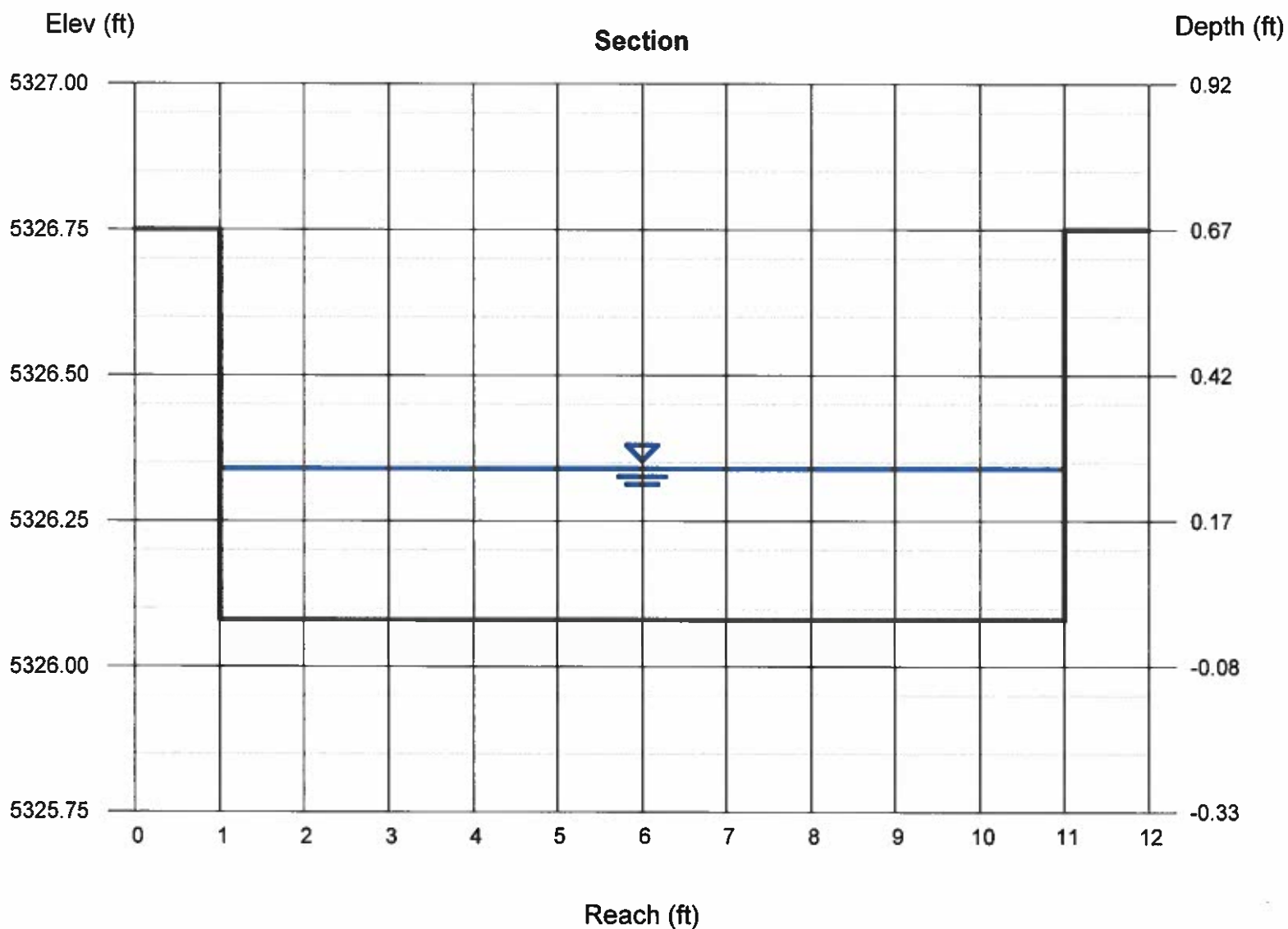
Velocity (ft/s) = 5.88

Wetted Perim (ft) = 10.52

Crit Depth, Yc (ft) = 0.42

Top Width (ft) = 10.00

EGL (ft) = 0.80



HYDROLOGY NOTES

THE PROJECT SITE IS LOCATED ON THE WEST SIDE OF ALBUQUERQUE, AND IS BOUNDED BY SNOW VISTA BLVD TO THE WEST AND SOUTH OF THE SAGE MARKET COMMERCIAL DEVELOPMENT, A DEVELOPED LOT TO THE EAST AND A CONCRETE DRAINAGE CHANNEL TO THE SOUTH. A 33-LOT SINGLE FAMILY RESIDENTIAL SUBDIVISION IS BEING PROPOSED TO BE CONSTRUCTED ON THE 3.76 ACRE PROPERTY. IT WILL HAVE ONE ACCESS ENTRANCE ROAD, ON THE WEST SIDE OF THE PROPERTY. THE SITE IS SHOWN ON ZONE ATLAS PAGE M-9-Z.

THIS SITE IS PART OF THE OVERALL MASTER DRAINAGE PLAN FOR SAGE MARKET PLACE (BY TIERRA WEST STAMPED 9/2005). A PREVIOUS DRAINAGE REPORT WAS WRITTEN FOR THE SAGE RANCH SUBDIVISION (BY TIERRA WEST STAMPED 9/2006). THE SITE IS SUBJECT TO ALL RESTRICTIONS, CONDITIONS, AND REQUIREMENTS AS SET FORTH WITHIN THE PREVIOUSLY STATED DOCUMENTS.

THE SITE IS NOT LOCATED IN A 100YR FLOOD ZONE PER FEMA FIRM MAP 35001C0336H, AUGUST 2012.

EXISTING CONDITIONS:

THE 3.76 ACRE SITE IS CURRENTLY UNDEVELOPED AND THE FLOW PATTERN FOR THIS AREA IS IN A GENERAL WEST TO EAST DIRECTION. THE EXISTING CHANNEL ALONG THE EASTERN PROPERTY BOUNDARY WAS DESIGNED TO INTERCEPT RUNOFF FROM THE LOTS AND FROM THE CONTROLLED RELEASE POND WITHIN THE COMMERCIAL PROPERTY TO THE NORTH AT A RATE OF 17.49 cfs. THE RUNOFF GENERATED FOR THE 26-LOT RESIDENTIAL PROPERTY IN THE REPORT IS 8.92 cfs. THIS EXISTING CHANNEL CONVEYS ALL RUNOFF THROUGH A 20' DRAINAGE EASEMENT TO THE EXISTING SUN SAGE HILLS SUBDIVISION.

PROPOSED DEVELOPED CONDITIONS:

THE 100 YR PEAK DISCHARGE GENERATED BY THE SITE IS 15.24 CFS. THE SITE DOES NOT ACCEPT ANY OFFSITE FLOWS.

ALL DEVELOPED FLOWS FROM THE 32-LOT RESIDENTIAL SITE WILL DRAIN INTO SAGE RANCH COURT SW. ALL STREET FLOWS WILL BE COLLECTED BY A 8" CONCRETE RUNDOWN TO A FIRST FLUSH POND LOCATED IN TRACT A. THE POND WILL RESTRICT THE PEAK DISCHARGE TO 8.79 CFS BY 2-4" PVC PIPES TO AN EXISTING CONCRETE CHANNEL ON THE EASTERN PROPERTY LINE OF THE SITE. THE 4" PIPES WILL DISCHARGE 5.32 CFS AT ELEVATION 25.14 AND THE OTHER PIPE WILL DISCHARGE AT 2.80 CFS AT ELEVATION 25.45. WITHIN THE EXISTING CHANNEL THE COMBINED FLOWS FROM THE COMMERCIAL POND AND THE RESIDENTIAL SITE WILL DRAIN TO JENNY COURT. FROM JENNY COURT THE RUNOFF DISCHARGES TO SAPPHIRE STREET AT CORRIZ DRIVE. ALL RUNOFF IS THEN INTERCEPTED BY A SERIES OF SEVEN TYPE "C" INLETS AND A 40' WIDE TRANSVERSE DROP INLET.

THE HYDROLOGY WAS CALCULATED PER COA DPM USING AHYMO $P_w=2.60"$ FROM NOAA 14. THE RESULTS ARE SUMMARIZED IN THE HYDROLOGY TABLE ON THIS SHEET.

ACCORDING TO THE SAGE MARKET PLACE DRAINAGE REPORT ALL FLOWS FROM BOTH THE COMMERCIAL AND RESIDENTIAL SITE ARE RESTRICTED TO 17.49 cfs. THE DISCHARGE FROM THE POND ON THE COMMERCIAL SITE IS RESTRICTED TO AN ORIFICE PLATE THAT WAS PREVIOUSLY CONSTRUCTED WITH THE POND. THE DISCHARGE FROM THE RESIDENTIAL PROPERTY WILL BE RESTRICTED TO RELEASE AT 8.12 CFS TO JENNY COURT VIA THE EXISTING 12" CONCRETE CHANNEL. THE TOTAL DISCHARGE OF ALL COMBINED FLOWS FOR THE RESIDENTIAL AND COMMERCIAL SITES WILL STILL REMAIN LESS THAN THE ALLOWABLE 17.49 cfs.

BASIN DATA

BASIN ID	% D	% C	AREA	Q(100)	VOLUME
100	77.0	23.0	3.76 AC.	15.28 cfs	.6407 AC-FT

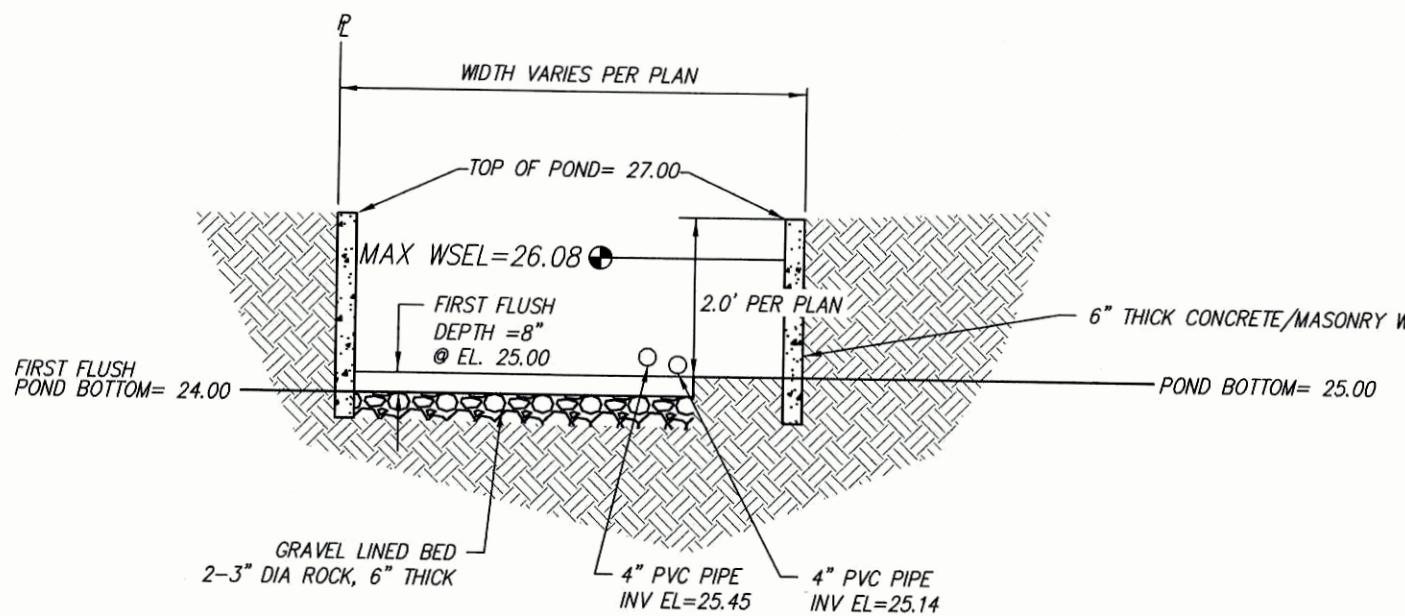
THE INTENT OF THIS PLAN IS TO PROVIDE COMPLETE DETENTION OF THE DEVELOPED, 100 YEAR, 24 HR. STORM.

FIRST FLUSH

THE "FIRST FLUSH" IS BEING ACCOMPLISHED THROUGH THE DETENTION POND ON SITE.

REQUIRED VOLUME = $0.42" \times$ IMPERVIOUS AREA
= $0.42"/12 \times (125888 \text{ SF})$
= 4406 CF
= .10 AC-FT

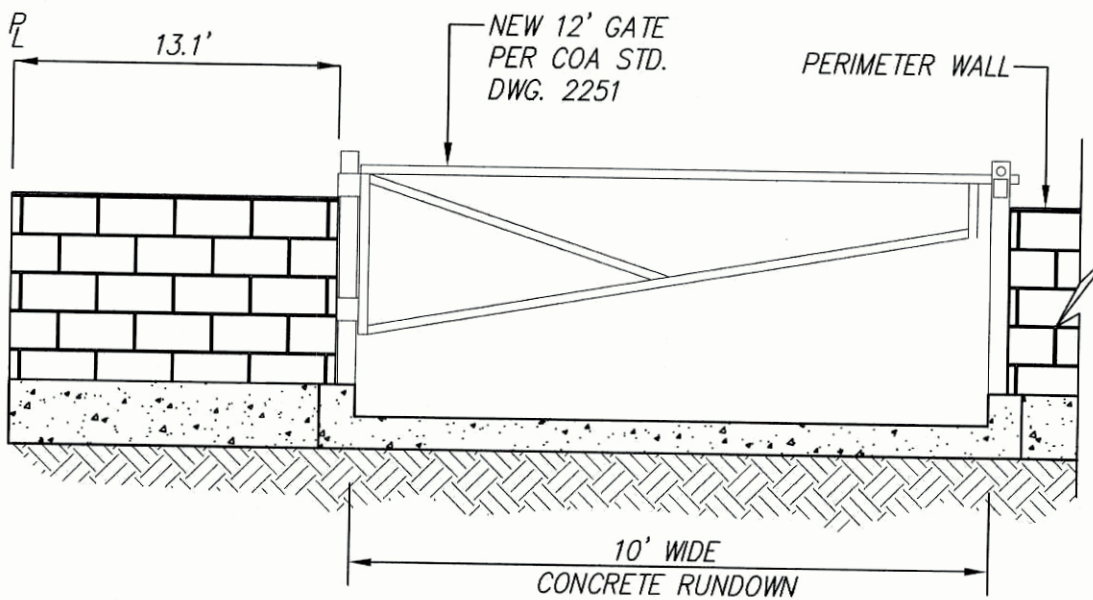
PROVIDED VOLUME = 4520 CF



P1 DEPTH ~2.0'
POND BOTTOM ELEVATION=25.00
POND TOP ELEVATION=27.00
VOLUME PROVIDED = .13 AC-FT

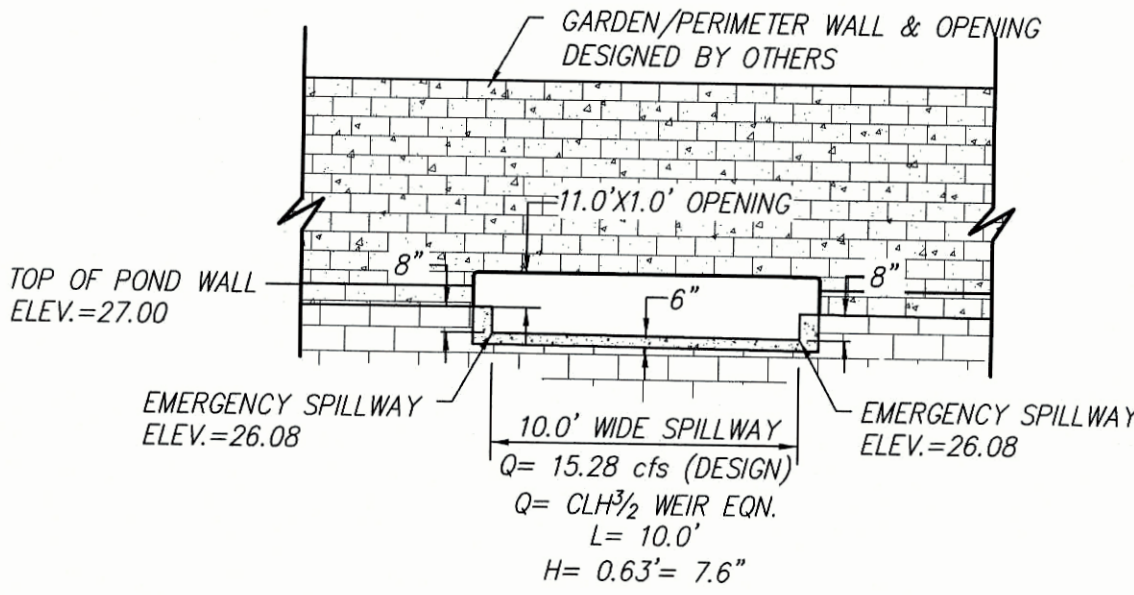
POND DETAIL

N.T.S.



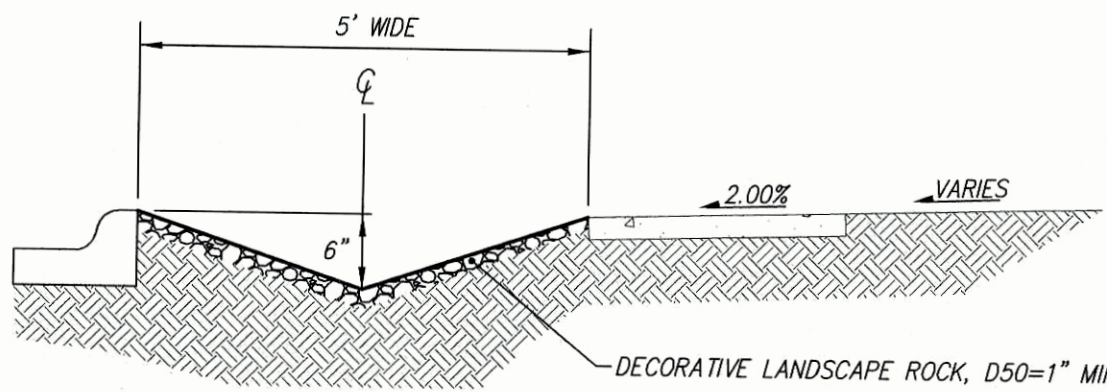
WALL OPENING DETAIL

N.T.S.



EMERGENCY SPILLWAY OPENING DETAIL

N.T.S.



SECTION A-A

DEPRESSED LANDSCAPED DETAIL (TYP.)

EXISTING RETAINING WALL TO REMAIN

10' WIDE CONC. RUNDOWN
SEE WALL OPENING DTL.
Q = 15.24 CFS
INV.(IN)=26.14
INV.(OUT)=26.00

POND VOL. = .18 AC-FT
TOP POND=27.00
BOTTOM POND=25.00

10' WIDE EMERGENCY
SPILLWAY RUNDOWN
SEE WALL OPENING DTL.
Q = 15.24 CFS
INV.(IN)=26.08
INV.(OUT)=25.80

CAUTION:
NOTE THAT ALL EXISTING UTILITIES MAY NOT BE SHOWN. ALL EXISTING SERVICE CONNECTIONS ARE NOT SHOWN. ANY EXISTING UTILITIES THAT ARE SHOWN ARE APPROXIMATE LOCATION ONLY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL THE UTILITY OWNERS AND TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATIONS TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS.

EASEMENT KEYED NOTES

- NEW 17' PUBLIC SANITARY SEWER EASEMENT GRANTED TO A.B.C.W.U.A.



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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

SAGE RANCH SUBDIVISION
GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE

CITY ENGINEER APPROVAL

LAST DESIGN UPDATE

MO./DAY/YR.

MO./DAY/YR.

CITY PROJECT NO.

769782

ZONE MAP NO.

M-9-Z

SHEET

1 OF 1