CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

April 5, 2023

Sheldon Greer, P.E.
Respec
5971 Jefferson St. NE
Albuquerque, NM 8710

RE: Modwash – Snow Vista
Grading & Drainage Plans
Engineer's Stamp Date: 03/16/23
Hydrology File: M09D012A

Dear Mr. Greer:

Based upon the information provided in your submittal received 03/27/2023, the Grading & Drainage Plans are approved for Building Permit and Grading Permit. Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

PRIOR TO CERTIFICATE OF OCCUPANCY:

1. Engineer's Certification, per the DPM Part 6-14 (F): *Engineer's Certification Checklist For Non-Subdivision* is required.
2. Please provide the executed paper Drainage Covenant (latest revision) printed on one-side only with Exhibit A and a check for **$25.00** made out to "**Bernalillo County**" for the stormwater quality ponds per Article 6-15(C) of the DPM to Hydrology for review at Plaza de Sol.
3. Please provide a Private Drainage Easement that is centered on the off-site drainage ditch that goes to the existing 42-inch storm drain at the corner of Snow Vista and Benavides Rd with a check for $**25.00** made out to "**Bernalillo County**" for the recording to Hydrology.

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

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Modwash Snow Vista Building Permit #: _____ Hydrology File #: _____

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

Legal Description: Tract A Plat for Tract A Snow Vista Investorscont, 10.76 AC

City Address: 100905510538420307

Applicant: Hutton Contact: Michael Evans

Address: 736 Cherry St, Chattanooga TN 37402

Phone#: 504.343.1714 Fax#: _____ E-mail: mevans@hutton.build

Other Contact: RESPEC Contact: Sheldon Greer

Address: 7770 Jefferson Street NE, Suite 200, Albuquerque NM 87109

Phone#: 505.264.0472 Fax#: _____ E-mail: sheldon.greer@respec.com

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

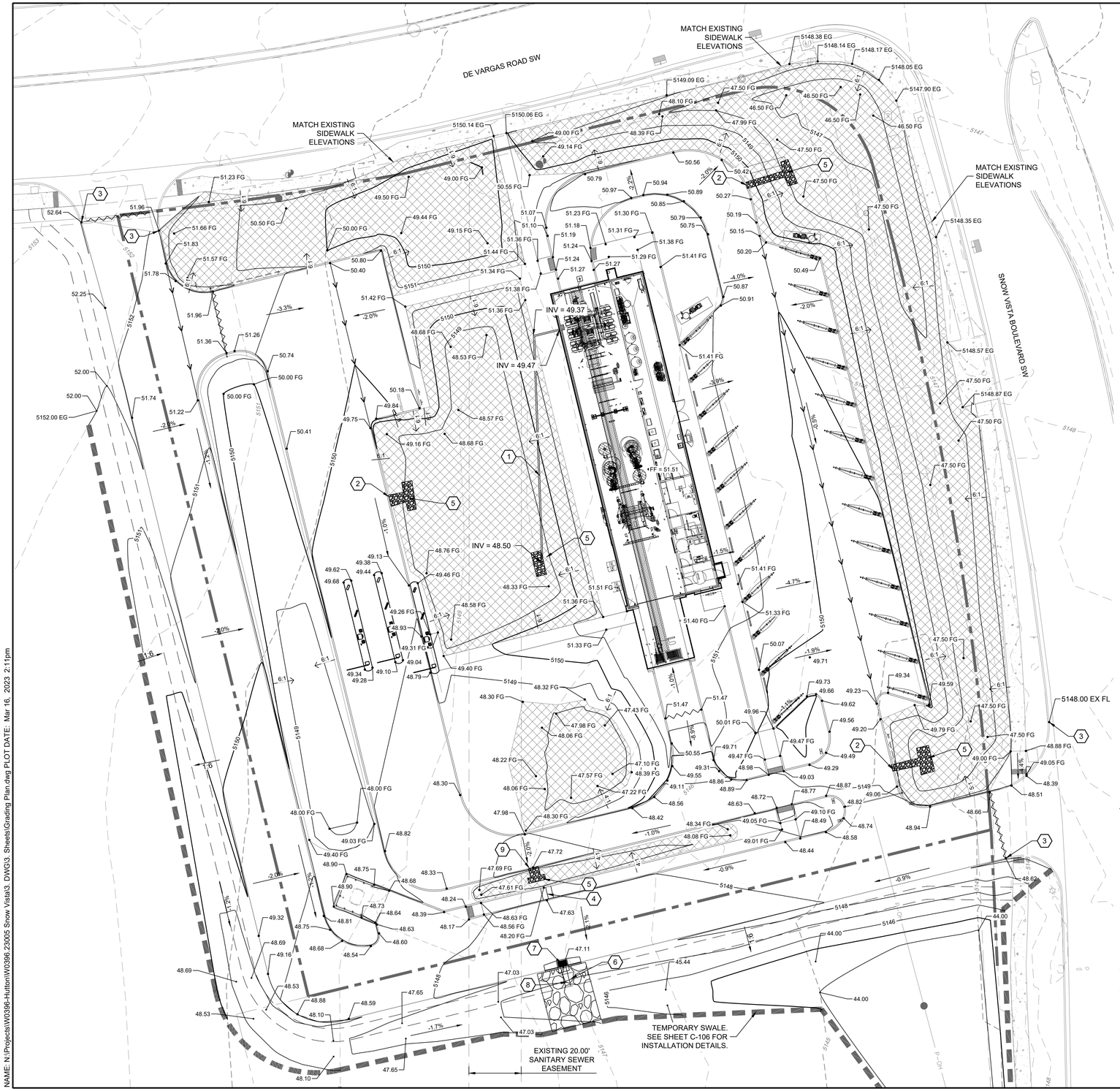
____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL

____ 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: 03/24/23 By: Sheldon Greer

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____



GRADING GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY SIZE'S AND LOCATION AND ELEVATION OF ALL EXISTING DRY AND WET UTILITIES PRIOR TO ANY CONSTRUCTION AND NOTIFY ENGINEER OF ANY ISSUES. UTILITY RELOCATION MAY BE REQUIRED
2. GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS AND PLACEMENTS OF TOPSOIL.
3. PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS, AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS.
4. REFER TO GEOTECHNICAL EVALUATIONS REPORT BY TERRACON (TERRACON PROJECT NO. 66215281) DATED MARCH 2, 2022.
5. COMPOSITE SLOPE IN HANDICAP PARKING SHALL NOT EXCEED 2% IN ANY DIRECTION.
6. CROSS SLOPE ON ADA CROSSWALKS SHALL NOT EXCEED 2%. LONGITUDINAL SLOPE SHALL NOT EXCEED 5%.
7. LONGITUDINAL SLOPE ON CURB RAMP SHALL NOT EXCEED 8.33%. CROSS SLOPE SHALL NOT EXCEED 2%.
8. COMPOSITE SLOPE ON RAMP LANDINGS SHALL NOT EXCEED 2%.
9. CROSS SLOPES ON SIDEWALKS SHALL NOT EXCEED 2%. LONGITUDINAL SLOPES ON ONSITE SIDEWALKS SHALL NOT EXCEED 5%.
10. SLOPE LABELS SHOW APPROXIMATE SLOPES ONLY. WHERE SLOPE LABELS AND SPOT ELEVATION LABELS CONFLICT, SPOT ELEVATION LABELS SHALL GOVERN AND THE SURVEYOR RESPONSIBLE FOR CONSTRUCTION STAKING SHALL CONTACT THE ENGINEER.
11. INSTALL PAVING PER PAVEMENT SECTION RECOMMENDED BY THE SITE GEOTECHNICAL REPORT.
12. FOR TUNNEL BUILDING ENTRANCE AND EXIT SLABS, SEE ARCHITECTURAL PLANS.
13. LONGITUDINAL SLOPES ON SIDEWALKS ADJACENT TO PUBLIC ROADS SHALL NOT EXCEED THE SLOPE OF THE PUBLIC ROAD.
14. WHERE THIS PLAN IS SILENT REGARDING SURFACE TREATMENT, REFER TO THE LANDSCAPING PLAN. DISTURBED AREAS WITHOUT SURFACE IMPROVEMENTS SPECIFIED IN THE LANDSCAPING OR GRADING PLAN SHALL BE RESEEDED WITH A NATIVE SEEDING MIX. IF THE LANDSCAPING AND GRADING PLAN CONFLICT REGARDING SURFACE TREATMENTS, THE GRADING PLAN SHALL GOVERN.

SITE CIVIL LEGEND:

- PROPERTY BOUNDARY
- 5272 PROPOSED MAJOR CONTOUR
- 5272 PROPOSED MINOR CONTOUR
- 5272 EXISTING MAJOR CONTOUR
- 5272 EXISTING MINOR CONTOUR
- LIMITS OF DISTURBANCE
- FLOWLINE
- GRADE BREAK / HIGH POINT
- 4"-6" DIAMETER BROKEN ROCK INSTALLED WITH 6" TYPICAL DEPTH.
- TOP OF POND
- 6" - 12" DIAMETER BROKEN ROCK INSTALLED WITH 12" TYPICAL DEPTH.

SPOT ELEVATION SYMBOLS

- 20.00 FLOWLINE
- 20.00 EG TOP OF EXISTING GROUND
- 20.00 FG TOP OF FINISHED GROUND
- 20.00 EX FL EXISTING FLOWLINE

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 04/05/23
BY: Ronald E. Bohannan
HydroTrans # M09D012A
THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO BE A VIOLATION OF THIS OR ANY ORDINANCE OR STATE LAW. APPROVAL SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTION, OR ERROR OR DEFICIENCY IN PLANS, SPECIFICATIONS, OR CONSTRUCTION. APPROVAL SHALL EXPIRE AND SHALL NOT BE CHANGED, MODIFIED, OR ALTERED WITHOUT AUTHORIZATION.

KEYED NOTES

1. INSTALL 6" DIAMETER PVC STORM PIPE WITH 1' MINIMUM COVER. PIPE INVERT ELEVATIONS PER PLAN.
2. INSTALL 2FT WIDE CURB OPENING PER DETAIL ON SHEET C-500.
3. MATCH ELEVATION AT EXISTING FLOWLINE.
4. INSTALL TWO 6" X 24" PRIVATE SIDEWALK CULVERTS PER COA STD. DWG. 2236 OR ENGINEER APPROVED EQUIVALENT.
5. INSTALL 6" THICK ROCK RUNDOWN PER DETAIL ON SHEET C-500.
6. INSTALL 12" THICK ROCK RUNDOWN PER DETAIL ON SHEET C-500.
7. INSTALL COA TYPE SINGLE A DOUBLE WING INLET PER COA STD. DWG 2201A.
8. INSTALL 24" DIAMETER STORM DRAIN @ 1% SLOPE.
9. INSTALL 4FT WIDE CURB OPENING PER DETAIL ON SHEET C-500.

0 20 40
SCALE: 1" = 20'

NAME: N:\Projects\W0396-Hutton\W0396.23005 Snow Vista\3. DWG\3. Sheets\Grading Plan.dwg PLOT DATE: Mar 16, 2023 2:11pm

DESIGNED
DRAWN
CHECKED
DATE 3.16.2023

REVISION

RESPEC
COMMUNITY DESIGN SOLUTIONS
7770 JEFFERSON STREET NE, SUITE 200
ALBUQUERQUE, NEW MEXICO 87109
WWW.RESPECCO.COM PHONE (505)353-9718

STAMP
SHELDON E. GREER
NEW MEXICO
17154
LICENSED PROFESSIONAL ENGINEER
3/16/2023

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nm811 Know what's below. Call before you dig.

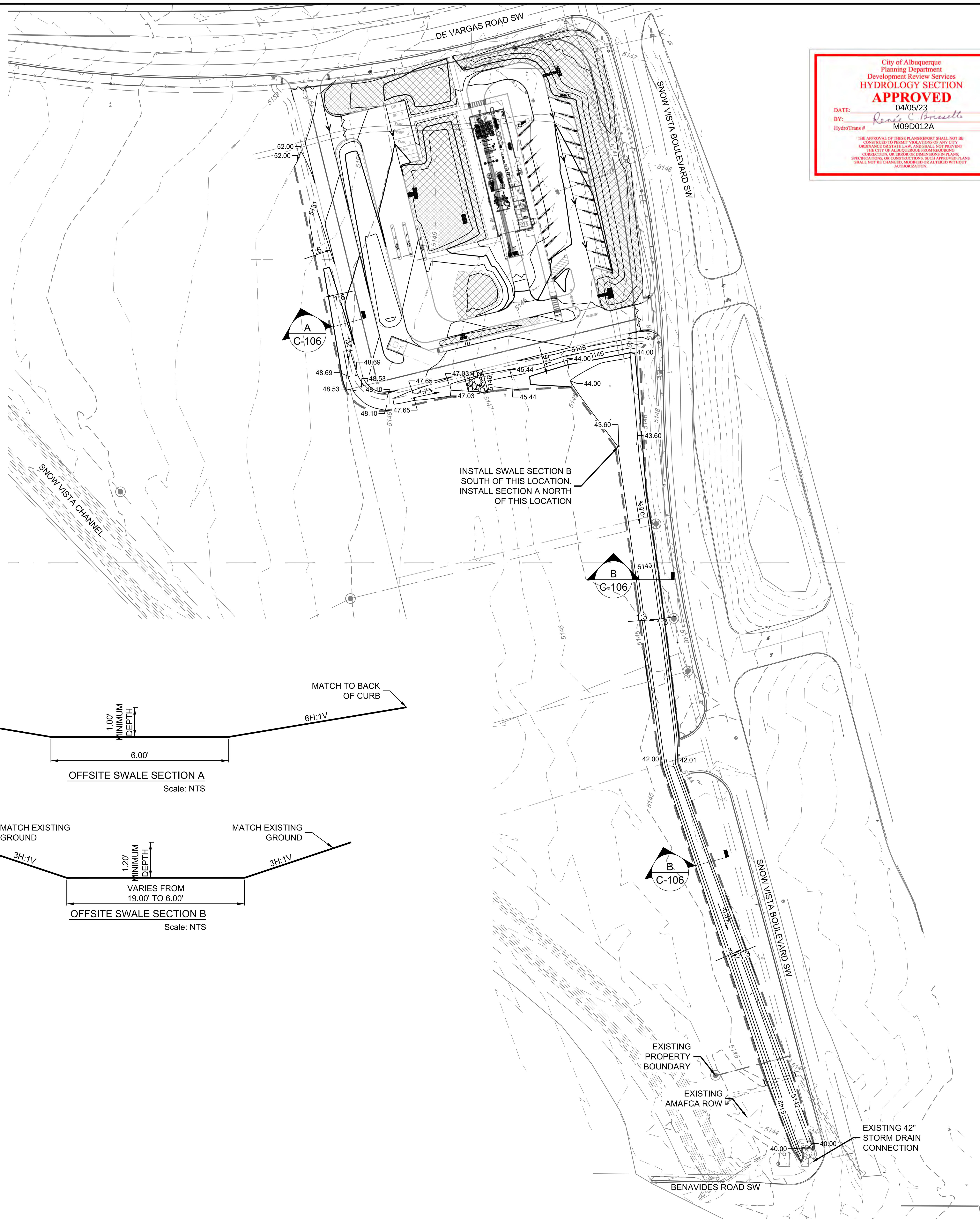
PROJ. #: W0396.23005

PROJECT NAME: MODWASH SNOW VISTA

SHEET TITLE: GRADING PLAN

SUBMITTED FOR: BUILDING PERMIT

SHEET NUMBER: C-105



City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 04/05/23
BY: Renée C. Brissette
HydroTrans # M09D012A

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OFFSITE SWALE SECTION A
Scale: NTS

OFFSITE SWALE SECTION B
Scale: NTS

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- TOP OF POND
- 6" - 12" DIAMETER BROKEN ROCK INSTALLED WITH 12" TYPICAL DEPTH.

NOTE:

THE OFFSITE SWALE IS TEMPORARY. AS OTHER LOTS ARE DEVELOPED, THEY MAY ROUTE THE RUNOFF THROUGH THEIR SITE IN A MANNER CONDUCIVE TO THEIR SITE PLAN AND CIVIL DESIGN. WHERE LIMITS OF DISTURBANCE EXCEED PROPERTY BOUNDARY, WRITTEN PERMISSION FOR GRADING FROM ADJACENT LOT OWNER WILL BE REQUIRED.

0 60 120
SCALE: 1" = 60'

REVISION

DESIGNED
DRAWN
CHECKED
DATE 3.16.2023

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7770 JEFFERSON STREET NE, SUITE 200
ALBUQUERQUE, NEW MEXICO 87109
WWW.RESPEC.COM PHONE: (505)253-9718

STAMP
SHELDON E. GREER
NEW MEXICO
17154
LICENSED PROFESSIONAL ENGINEER
3/16/2023

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nm811 Know what's below. Call before you dig.

PROJ. #: W0396.23005

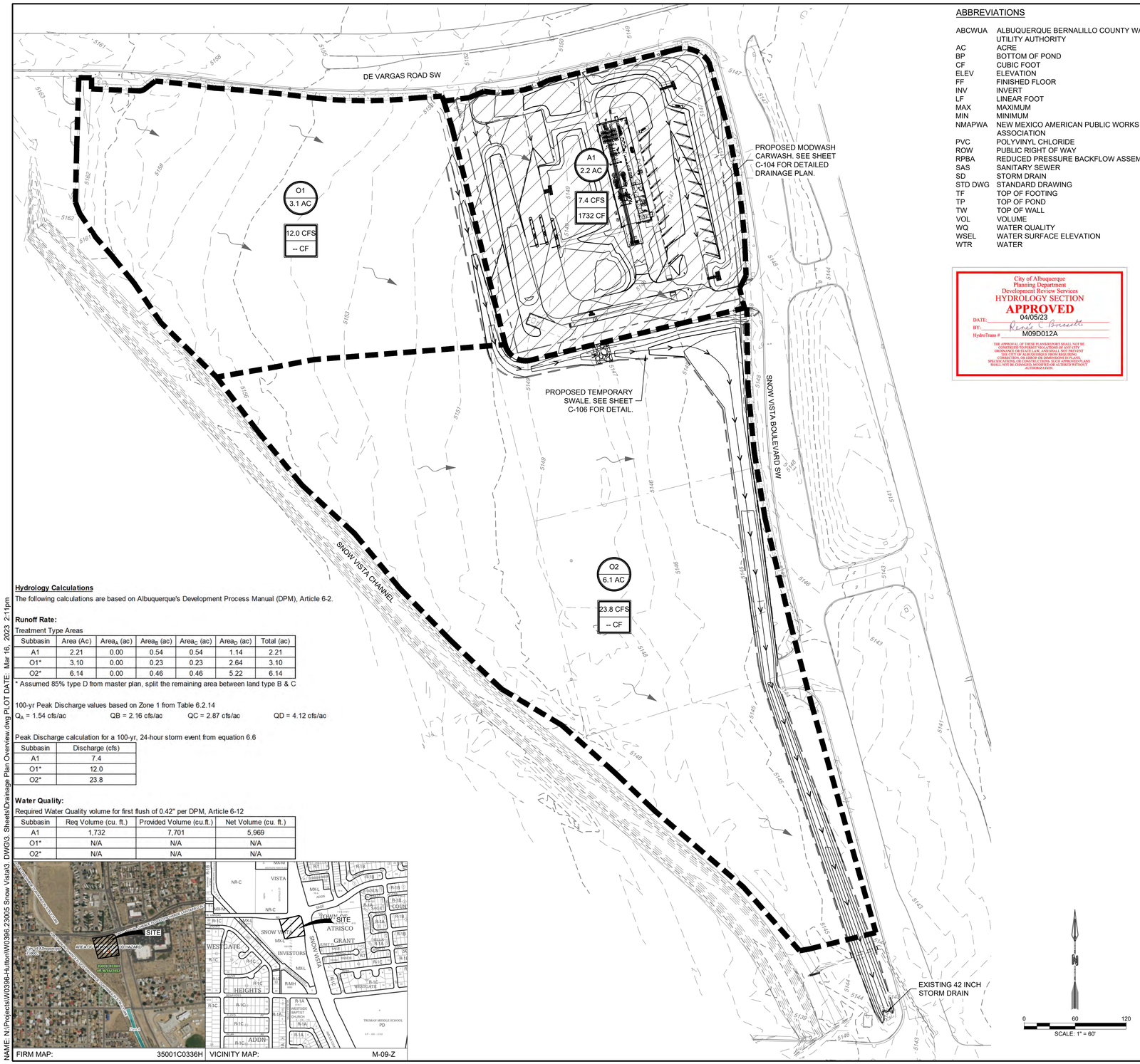
PROJECT NAME: MODWASH SNOW VISTA

SHEET TITLE: TEMPORARY SWALE GRADING PLAN

SUBMITTED FOR: BUILDING PERMIT

SHEET NUMBER: C-106

NAME: N:\Projects\W0396-Hutton\W0396.23005 Snow Vista\3. DWG\3. Sheets\Temporary Swale Grading Plan.dwg PLOT DATE: Mar 16, 2023 2:12pm



Hydrology Calculations

The following calculations are based on Albuquerque's Development Process Manual (DPM), Article 6-2.

Runoff Rate:

Treatment Type Areas

Subbasin	Area (Ac)	$Area_A$ (ac)	$Area_B$ (ac)	$Area_C$ (ac)	$Area_D$ (ac)	Total (ac)
A1	2.21	0.00	0.54	0.54	1.14	2.21
O1*	3.10	0.00	0.23	0.23	2.64	3.10
O2*	6.14	0.00	0.46	0.46	5.22	6.14

* Assumed 85% type D from master plan, split the remaining area between land type B & C

100-yr Peak Discharge values based on Zone 1 from Table 6.2.14

Q_A = 1.54 cfs/ac QB = 2.16 cfs/ac QC = 2.87 cfs/ac QD = 4.12 cfs/ac

Peak Discharge calculation for a 100-yr, 24-hour storm event from equation 6.6

Subbasin	Discharge (cfs)
A1	7.4
O1*	12.0
O2*	23.8

Water Quality:

Required Water Quality volume for first flush of 0.42" per DPM, Article 6-12

Subbasin	Req Volume (cu. ft.)	Provided Volume (cu.ft.)	Net Volume (cu. ft.)
A1	1,732	7,701	5,969
O1*	N/A	N/A	N/A
O2*	N/A	N/A	N/A

FIRM MAP: 35001C0336H VICINITY MAP: M-09-Z

ABBREVIATIONS

ABCWUA	ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY
AC	ACRE
BP	BOTTOM OF POND
CF	CUBIC FOOT
ELEV	ELEVATION
FF	FINISHED FLOOR
INV	INVERT
LF	LINEAR FOOT
MAX	MAXIMUM
MIN	MINIMUM
NMAPWA	NEW MEXICO AMERICAN PUBLIC WORKS ASSOCIATION
PVC	POLYVINYL CHLORIDE
ROW	PUBLIC RIGHT OF WAY
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
SAS	SANITARY SEWER
SD	STORM DRAIN
STD DWG	STANDARD DRAWING
TF	TOP OF FOOTING
TP	TOP OF POND
TW	TOP OF WALL
VOL	VOLUME
WQ	WATER QUALITY
WSEL	WATER SURFACE ELEVATION
WTR	WATER

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 04/05/23
BY: Randy C. Brissette
HydroTrans # M09D012A
THIS APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY FROM REQUIRING THE CORRECTION OF ERRORS, CORRECTION, OR ERROR OR OMISSION IN PLANS, SPECIFICATIONS, OR CONSTRUCTIONS. SUCH APPROVED PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION

LEGEND:

XX / XX AC — BASIN DESIGNATION; BASIN AREA, ACRES
XX CFS / XX CF — 100 YEAR STORM, CFS; REQUIRED WATER QUALITY VOLUME, CF
SUB-BASIN BOUNDARY
EXISTING FLOW ARROW
FLOWLINE

BACKGROUND

THE EXISTING PARCEL, SAGE PLAZA, IS LOCATED ON THE SOUTHWEST CORNER OF SNOW VISTA BLVD, S.W. AND DE VARGAS RD, S.W AND IS APPROXIMATELY 11.4 ACRES. THE PARCEL IS PROPOSED TO BE SUBDIVIDED INTO FIVE LOTS FOR FUTURE DEVELOPMENTS. THE SITE IN DISCUSSION, IS APPROXIMATELY 2.2 ACRES WHICH IS IN THE NORTHEAST CORNER OF THE EXISTING PARCEL. THE SITE IS CALLED PROPOSED LOT 1A SNOW VISTA INVESTORS, IN THE CITY OF ALBUQUERQUE, NEW MEXICO. THE SITE IS CURRENTLY OPEN SPACE AND HAS A DRAINAGE PLAN FOR SAGE PLAZA IN 2020 (HYDROLOGY FILE: H09-D012).THE PROPOSED PROJECT IS A MODWASH CAR WASH.

METHODOLOGY

HYDROLOGY CALCULATIONS FOR THE SITE ARE PERFORMED IN ACCORDANCE WITH THE ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) ARTICLE 6.2. THE REQUIRED WATER QUALITY VOLUME IS CALCULATED BY MULTIPLYING THE IMPERVIOUS AREA BY THE FIRST FLUSH RUNOFF VALUE OF 0.42". ALL HYDROLOGIC AND HYDRAULIC CALCULATIONS CAN BE FOUND ON THIS SHEET FOR ONSITE AND OFFSITE.

EXISTING CONDITIONS

UNDER EXISTING CONDITIONS, THE SITE SLOPES FROM NORTHWEST TO SOUTHEAST TO AN EXISTING 42 INCH STORM DRAIN CONNECTION AT THE SOUTH EAST CORNER OF THE SITE. THE SITE IS CATEGORIZED AS UNDEVELOPED OR OPEN SPACE. THERE ARE PUBLIC SIDEWALKS AND ENTRANCE AISLES INSTALLED ON DE VARGAS RD AND SNOW VISTA BLVD WHICH WILL BE USED TO ACCESS THE PROPOSED MODWASH CAR WASH.

PROPOSED CONDITIONS

THE PROPOSED DRAINAGE CONDITION CONFORMS TO THE DRAINAGE INTENT OF THE EXISTING APPROVED DRAINAGE PLAN FOR THE SITE. THE SITE HAS FREE DISCHARGE PER THE APPROVED DRAINAGE MASTER PLAN. THE DEVELOPMENT MAINTAINS THE EXISTING DRAINAGE PATTERN AND POINT OF DISCHARGE INTO THE SOUTHERN SIDE OF THE SITE. AS PART OF THIS DEVELOPMENT, A TEMPORARY SWALE IS PROPOSED TO CAPTURE RUNOFF FROM THE SITE AND FUTURE LOT DEVELOPMENTS AND WILL CONVEY RUNOFF TO THE EXISTING 42 INCH STORM DRAIN CONNECTION. WHEN THE OTHER LOTS IN THE SUBDIVISION DEVELOP, THEY MAY REMOVE THE TEMPORARY SWALE AND ROUTE THE RUNOFF THROUGH THEIR DEVELOPMENTS IN A MANNER CONDUCIVE TO THEIR SITE PLANS AND CIVIL DESIGNS. A DETAILED DRAINAGE PLAN FOR THE ONSITE IS ON SHEET C-104. HYDROLOGIC CALCULATIONS ARE PROVIDED HEREON.

WATER QUALITY RETENTION PONDS ARE PROVIDED AND SIZED TO TO TREAT THE REQUIRED WATER QUALITY VOLUME FOR SUBBASIN A1.

SWALE HYDRAULIC CALCULATIONS:

Type: Trapezoidal — Define...

Side Slope 1 (Z1):	3.0	H : 1V
Side Slope 2 (Z2):	3.0	H : 1V
Channel Width (B):	6.0	(ft)
Pipe Diameter (D):	0.0	(ft)
Longitudinal Slope:	0.005	(ft/ft)
Override Default		
Manning's Roughness:	0.0250	
Use Lining		
Lining Type:	Woven Paper Net	

Enter Flow: 43.200 (cfs) / Enter Depth: 1.197 (ft)

Parameter	Value	Unit
Flow	43.200	cfs
Depth	1.197	ft
Area of Flow	11.486	sq ft
Wetted Perimeter	13.573	ft
Hydraulic Radius	0.846	ft
Average Velocity	3.761	fps
Top Width (T)	13.185	ft
Froude Number	0.710	
Critical Depth	0.987	ft
Critical Velocity	4.885	fps
Critical Slope	0.01042	ft/ft
Critical Top Width	11.921	ft
Max Shear Stress	0.374	lb/ft^2
Avg Shear Stress	0.264	lb/ft^2

Type: Trapezoidal — Define...

Side Slope 1 (Z1):	6.0	H : 1V
Side Slope 2 (Z2):	6.0	H : 1V
Channel Width (B):	6.0	(ft)
Pipe Diameter (D):	0.0	(ft)
Longitudinal Slope:	0.01	(ft/ft)
Override Default		
Manning's Roughness:	0.0250	
Use Lining		
Lining Type:	Woven Paper Net	

Enter Flow: 19.400 (cfs) / Enter Depth: 0.597 (ft)

Parameter	Value	Unit
Flow	19.400	cfs
Depth	0.597	ft
Area of Flow	5.716	sq ft
Wetted Perimeter	13.259	ft
Hydraulic Radius	0.431	ft
Average Velocity	3.394	fps
Top Width (T)	13.160	ft
Froude Number	0.907	
Critical Depth	0.565	ft
Critical Velocity	3.657	fps
Critical Slope	0.01234	ft/ft
Critical Top Width	12.780	ft
Max Shear Stress	0.372	lb/ft^2
Avg Shear Stress	0.269	lb/ft^2

RESPEC
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7770 JEFFERSON STREET NE, SUITE 200
ALBUQUERQUE, NEW MEXICO 87109
WWW.RESPECCOM PHONE (505)253-9718

DESIGNED
DRAWN
CHECKED
DATE 3.16.2023

REVISION

STAMP

SHELDON E. GREER
NEW MEXICO
17154
LICENSED PROFESSIONAL ENGINEER
3/16/2023

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nm811 Know what's below. Call before you dig.

PROJ. #: W0396.23005

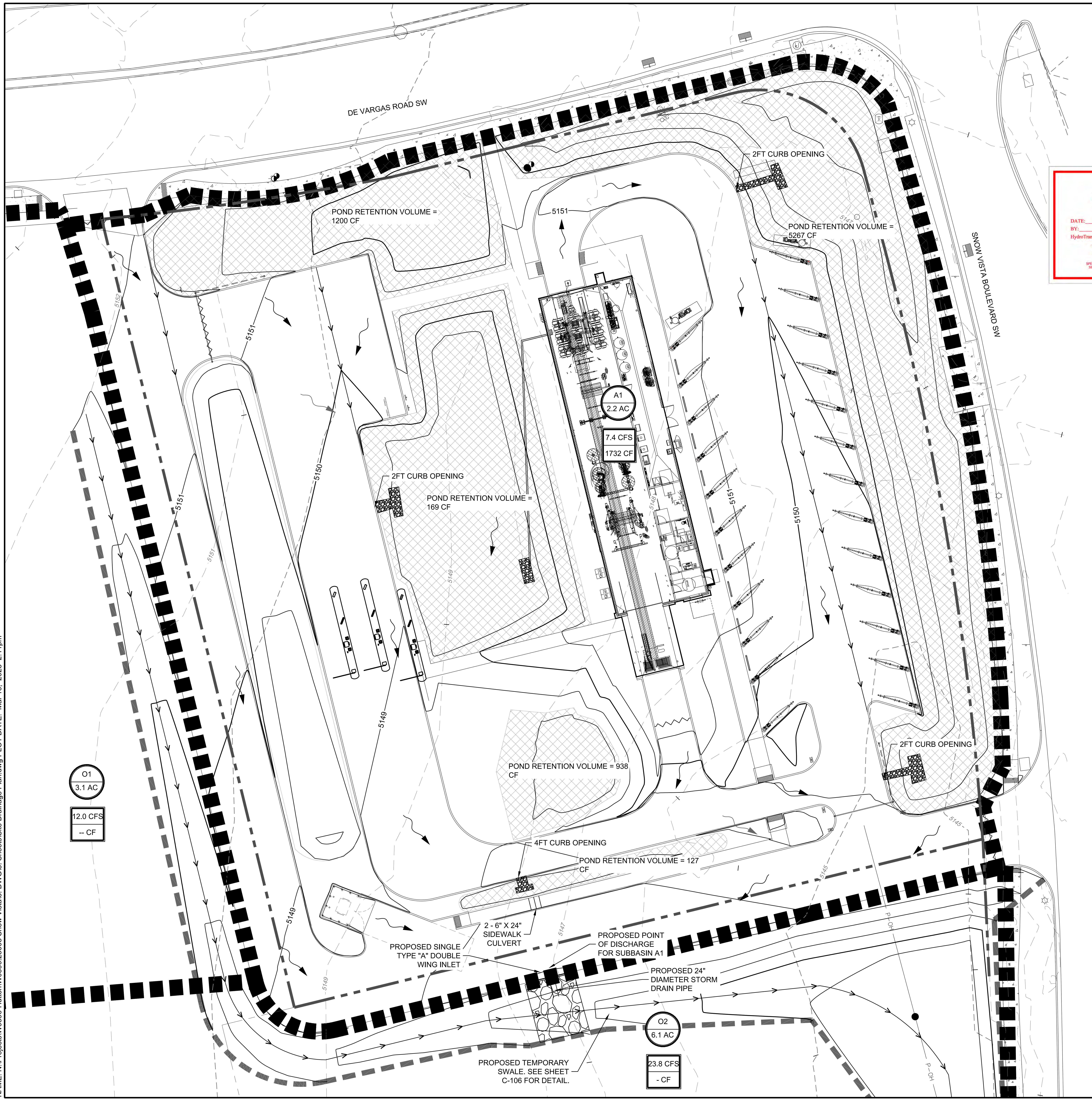
PROJECT NAME: MODWASH SNOW VISTA

SHEET TITLE: DRAINAGE PLAN OVERVIEW

SUBMITTED FOR: BUILDING PERMIT

SHEET NUMBER: C-103

NAME: N:\Projects\W0396-Hutton\W0396.23005 Snow Vista\3. DWG\3. Sheets\Drainage Plan Overview.dwg PLOT DATE: Mar 16, 2023 2:11pm



LEGEND:

- BASIN DESIGNATION (XX)
- BASIN AREA, ACRES (XX AC)
- 100 YEAR STORM, CFS (XX CFS)
- REQUIRED WATER QUALITY VOLUME, CF (XX CF)
- SUB-BASIN BOUNDARY
- EXISTING FLOW ARROW
- DEVELOPED FLOW ARROW
- HIGH POINT
- FLOWLINE
- TOP OF WATER QUALITY POND

City of Albuquerque
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THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTION, OR ERROR OR DIMENSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTIONS. SUCH APPROVED PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

ONSITE DRAINAGE SUMMARY:

STORMWATER RUNOFF IS BEING CONVEYED ACROSS THE SITE VIA DRIVE AISLES AND THROUGH WATER QUALITY PONDS. THE ROOF IS DRAINING THROUGH A STORM PIPE INTO A WATER QUALITY POND. THE PROPOSED POINT OF DISCHARGE IS INTO THE TEMPORARY SWALE ALONG THE SOUTH SIDE OF THE SITE.

CURB OPENING HYDRAULIC CALCULATIONS:

2ft Curb OpeningGrate (Treated As Weir)		4ft Curb Opening Grate (Treated As Weir)	
Weir Flow Calcs		Weir Flow Calcs	
Qw = 2.7L(H)1.5		Qw = 2.7L(H)1.5	
P = Perimeter (ft)	2.0	P = Perimeter (ft)	4.0
H = Head (ft)	0.50	H = Head (ft)	0.50
coefficient of discharge =	2.70	coefficient of discharge =	2.70
clogging factor =	20%	clogging factor =	20%
Qw = Capacity (cfs)	**1.5**	**Qw = Capacity (cfs)**	**3.1**

SINGLE TYPE "A" DOUBLE WING INLET HYDRAULIC CALCULATIONS:

Curb Opening (Treated As Orfice)		Grate (Treated As Weir)	
Orifice Calcs		Weir Flow Calcs	
Qo = .6A√2gh		Qw = 2.7L(H)1.5	
2 curb openings (3" x 3'-6")		1 grate (3'x2')	
A = Open area of weir (sq. ft)	1.8	P = Perimeter (ft)	7.0
g = 32.2 (ft/s2)	32.20	H = Head (ft)	0.50
H = Head (ft)	0.50	coefficient of discharge =	2.70
clogging factor =	15%	clogging factor =	20%
Qw = Capacity (cfs)	**5.1**	**Qw = Capacity (cfs)**	**5.3**
Total (cfs):	**10.4**		

Storm Drain Stub

Type: Circular
Side Slope 1 (Z1): 0.0 H : 1V
Side Slope 2 (Z2): 0.0 H : 1V
Channel Width (B): 0.0 (ft)
Pipe Diameter (D): 2.0 (ft)
Longitudinal Slope: 0.01 (ft/ft)
Override Default
Manning's Roughness: 0.0150
Use Lining
Lining Type: Woven Paper Net
Enter Flow: 7.400 (cfs)
Enter Depth: 0.852 (ft)

Parameter	Value	Unit
Flow	7.400	cfs
Depth	0.852	ft
Area of Flow	1.275	sq ft
Wetted Perimeter	2.844	ft
Hydraulic Radius	0.448	ft
Average Velocity	5.804	fps
Top Width (T)	1.978	ft
Froude Number	1.274	
Critical Depth	0.967	ft
Critical Velocity	4.919	fps
Critical Slope	0.00640	ft/ft
Critical Top Width	1.999	ft
Max Shear Stress	0.531	lb/ft^2
Avg Shear Stress	0.280	lb/ft^2

0 20 40
SCALE: 1" = 20'

REVISION

DESIGNED
DRAWN
CHECKED
DATE 3.16.2023

RESPEC
COMMUNITY DESIGN SOLUTIONS
7770 JEFFERSON STREET NE, SUITE 200
ALBUQUERQUE, NEW MEXICO 87109
WWW.RESPEC.COM PHONE: (505)253-9718

STAMP
SHELDON E. GREER
NEW MEXICO
17154
LICENSED PROFESSIONAL ENGINEER
3/16/2023

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PROJ. #: W0396.23005

PROJECT NAME: MODWASH SNOW VISTA

SHEET TITLE: SITE DRAINAGE PLAN

SUBMITTED FOR: BUILDING PERMIT

SHEET NUMBER: C-104

NAME: N:\Projects\W0396-Hutton\W0396.23005 Snow Vista\3. DWG\3. Sheets\Site Drainage Plan.dwg PLOT DATE: Mar 16, 2023 2:11pm