

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director



Mayor Timothy M. Keller

April 1, 2024

J. Graeme Means, P.E.
High Mesa Consulting Group
6010 B Midway Park Blvd NE
Albuquerque, NM 87109

**RE: Cibola Loop Multigenerational Center
Conceptual Grading & Drainage Plans
Engineer's Stamp Date: 03/25/24
Hydrology File: A13D011**

Dear Mr. Means:

Based upon the information provided in your submittal received 03/25/2024, the Conceptual Grading & Drainage Plans are preliminary approved for Grading Permit and action by the Development Facilitation Team (DFT) on Site Plan for Building Permit.

PRIOR TO BUILDING PERMIT:

1. Please submit a more detailed Grading & Drainage Plan to Hydrology for review and approval. This digital (.pdf) is emailed to PLNDRS@cabq.gov along with the Drainage Transportation Information Sheet.

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, P.E. CFM
Senior Engineer, Hydrology
Planning Department



City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (DTIS)

Project Title: _____ Hydrology File # _____

Legal Description: _____

City Address, UPC, OR Parcel: _____

Applicant/Agent: _____ Contact: _____

Address: _____ Phone: _____

Email: _____

Applicant/Owner: _____ Contact: _____

Address: _____ Phone: _____

Email: _____

(Please note that a DFT SITE is one that needs Site Plan Approval & ADMIN SITE is one that does not need it.)

TYPE OF DEVELOPMENT: PLAT (#of lots) _____ RESIDENCE
DFT SITE ADMIN SITE

RE-SUBMITTAL: YES NO

DEPARTMENT: TRANSPORTATION HYDROLOGY/DRAINAGE

Check all that apply under Both the Type of Submittal and the Type of Approval Sought:

TYPE OF SUBMITTAL:

ENGINEER/ARCHITECT CERTIFICATION
PAD CERTIFICATION
CONCEPTUAL G&D PLAN
GRADING & DRAINAGE PLAN
DRAINAGE REPORT
DRAINAGE MASTER PLAN
CLOMR/LOMR
TRAFFIC CIRCULATION LAYOUT (TCL)
ADMINISTRATIVE
TRAFFIC CIRCULATION LAYOUT FOR DFT
APPROVAL
TRAFFIC IMPACT STUDY (TIS)
STREET LIGHT LAYOUT
OTHER (SPECIFY) _____

TYPE OF APPROVAL SOUGHT:

BUILDING PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY
CONCEPTUAL TCL DFT APPROVAL
PRELIMINARY PLAT APPROVAL
FINAL PLAT APPROVAL
SITE PLAN FOR BLDG PERMIT DFT
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
OTHER (SPECIFY) _____

DATE SUBMITTED: _____

DRAINAGE CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE =	1
B. $P_{100, 6-HR} = P_{90} =$	2.47 IN
C. TOTAL PROJECT AREA (A _T) =	398.234(SF) 9.14 AC

D. LAND TREATMENTS

EXISTING LAND TREATMENT			PROPOSED LAND TREATMENT		
BASIN 1	398.234(SF) 9.14 AC		PHASE 1	398.234(SF) 9.14 AC	
LAND TREATMENT	AREA (SF/AC)	%	LAND TREATMENT	AREA (SF/AC)	%
A	349.155(SF) 8.02 AC	88%	A		
B			B		
C	49.079(SF) 1.13 AC	12%	C	338.092(SF) 7.76 AC	85%
D			D	60.142(SF) 1.38 AC	15%
PROPOSED LAND TREATMENT			PHASE 1 + 2		
LAND TREATMENT	AREA (SF/AC)	%	LAND TREATMENT	AREA (SF/AC)	%
A			A		
B			B		
C	262.092(SF) 6.02 AC	66%	C		
D	136.142(SF) 3.13 AC	34%	D		

II. HYDROLOGY

A. EXISTING CONDITION 100 YEAR STORM

1. BASIN 1	
a. VOLUME 100-YR. 6-HR	
$WTe = (E_A \cdot A_A + E_B \cdot A_B + E_C \cdot A_C + E_D \cdot A_D) \cdot A_T$ $\Rightarrow (0.55 \cdot 0.00) + (0.73 \cdot 0.00) + (0.95 \cdot 1.13) + (2.24 \cdot 0.00) / 9.14 =$	0.60 IN
$V_{100, 6-HR} = (E_{eff} / 12) \cdot A_T$ $\Rightarrow (0.60 / 12) \cdot 9.14 =$	0.4571 AC-FT = 19,910 CF
b. PEAK DISCHARGE 100-YR	
$Q_{100} = Q_A \cdot A_A + Q_B \cdot A_B + Q_C \cdot A_C + Q_D \cdot A_D$ $\Rightarrow (1.54 \cdot 8.02) + (2.16 \cdot 0.00) + (2.87 \cdot 1.13) + (4.12 \cdot 0.00) =$	15.6 CFS

B. PROPOSED CONDITION 100 YEAR STORM - PHASE 1

1. BASIN 1	
a. VOLUME 100-YR. 6-HR	
$WTe = (E_A \cdot A_A + E_B \cdot A_B + E_C \cdot A_C + E_D \cdot A_D) \cdot A_T$ $\Rightarrow (0.55 \cdot 0.00) + (0.73 \cdot 0.00) + (0.95 \cdot 7.76) + (2.24 \cdot 1.38) / 9.14 =$	1.14 IN
$V_{100, 6-HR} = (E_{eff} / 12) \cdot A_T$ $\Rightarrow (1.14 / 12) \cdot 9.14 =$	0.8685 AC-FT = 37,830 CF
b. VOLUME 100-YR. 10-DAY	
$V_{100, 10-DAY} = V_{90} + A_D \cdot (P_{100, 10-DAY} - P_{90}) / 12 \text{ in/ft}$ $\Rightarrow 0.8685 + 1.38 \cdot (3.900 - 2.170) / 12 \text{ in/ft} =$	1.0674 AC-FT = 46,500 CF
c. PEAK DISCHARGE 100-YR	
$Q_{100} = Q_A \cdot A_A + Q_B \cdot A_B + Q_C \cdot A_C + Q_D \cdot A_D$ $\Rightarrow (1.54 \cdot 0.00) + (2.16 \cdot 0.00) + (2.87 \cdot 7.76) + (4.12 \cdot 1.38) =$	28.0 CFS

C. PROPOSED CONDITION 100 YEAR STORM - FULL BUILD OUT

1. BASIN 1	
a. VOLUME 100-YR. 6-HR	
$WTe = (E_A \cdot A_A + E_B \cdot A_B + E_C \cdot A_C + E_D \cdot A_D) \cdot A_T$ $\Rightarrow (0.55 \cdot 0.00) + (0.73 \cdot 0.00) + (0.95 \cdot 5.02) + (2.24 \cdot 3.13) / 9.14 =$	1.39 IN
$V_{100, 6-HR} = (E_{eff} / 12) \cdot A_T$ $\Rightarrow (1.39 / 12) \cdot 9.14 =$	1.0590 AC-FT = 46,130 CF
b. VOLUME 100-YR. 10-DAY	
$V_{100, 10-DAY} = V_{90} + A_D \cdot (P_{100, 10-DAY} - P_{90}) / 12 \text{ in/ft}$ $\Rightarrow 1.059 + 3.13 \cdot (3.900 - 2.170) / 12 \text{ in/ft} =$	1.5101 AC-FT = 65,780 CF
c. PEAK DISCHARGE 100-YR	
$Q_{100} = Q_A \cdot A_A + Q_B \cdot A_B + Q_C \cdot A_C + Q_D \cdot A_D$ $\Rightarrow (1.54 \cdot 0.00) + (2.16 \cdot 0.00) + (2.87 \cdot 6.02) + (4.12 \cdot 3.13) =$	30.1 CFS

D. COMPARISON 100 YEAR STORM - FULL BUILD OUT

1. <u>BASIN 1</u>			
a. <u>VOLUME 100-YR. 6-HR</u>	$\Delta V_{100, 6-HR} = 46130 - 19910 =$	<u>26,220 CF</u>	(INCREASE)
b. <u>PEAK DISCHARGE 100-YR</u>	$\Delta Q_{100} = 30.1 - 15.6 =$	<u>14.5 CFS</u>	(INCREASE)

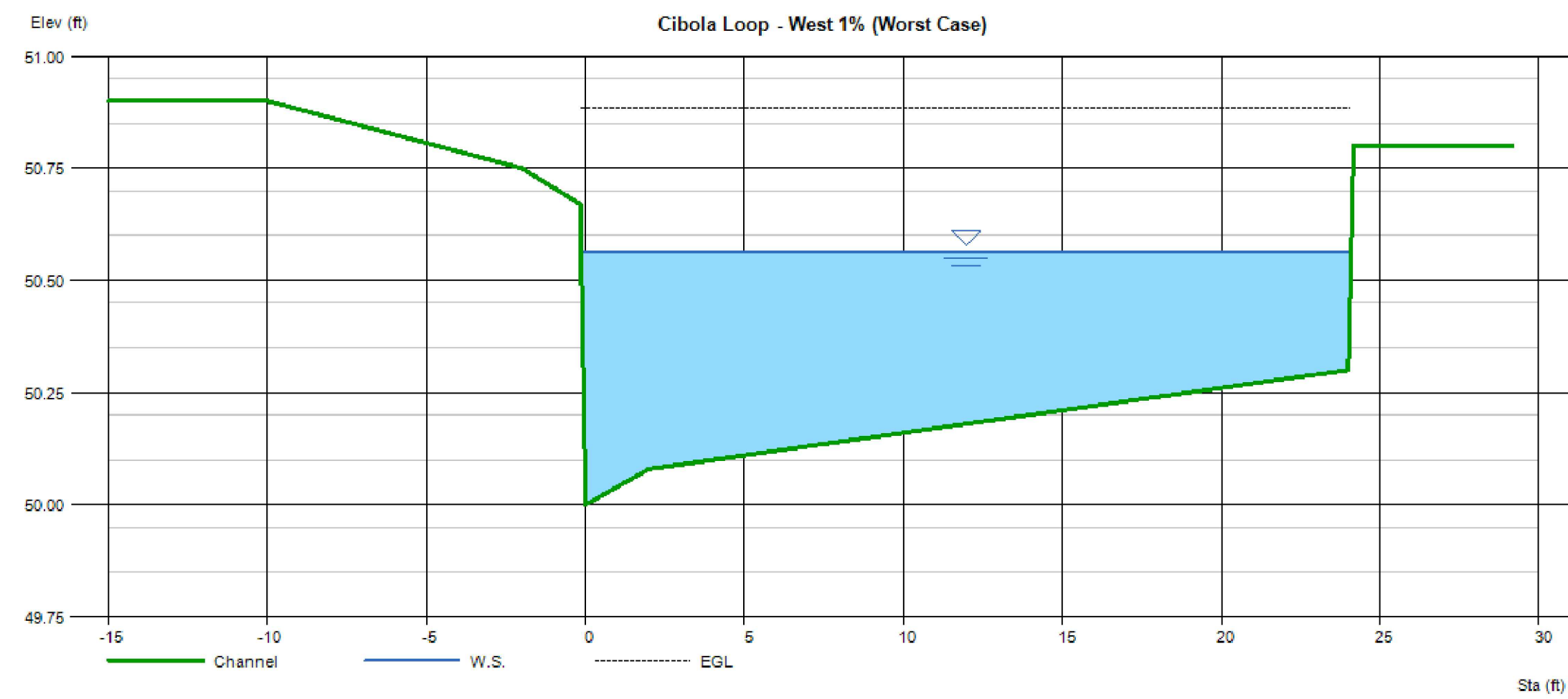
E. RETENTION POND VOLUME CALCULATIONS

Elevation (ft)	Area (SF)	Volume (CF)	Sum (CF)
5.089	8471	9324.5	9324.5
5.090	11,160	10670	19994.5
5.091	14,077	12129.5	32124
5.092	17,223	13703.5	45827.5
5.093	20,598	15392	61219.5
5.094	24,200	17194	78413.5
5.095	28,032		

F. CIBOLA LOOP STREET ANALYSIS

CIBOLA LOOP WEST BASIN = 1.6 AC. CONSERVATIVELY ASSUME 100% TREATMENT D.
 $Q_{100} = 1.6 \cdot 4.12 \text{ CFS/ACRE} = 6.7 \text{ CFS}$
MAX 100-YEAR STREET FLOW IS $11.6 + 3.2 + 20.6 + 6.7 = 42.1 \text{ CFS}$
(CAN BE CONTAINED WITHIN EXISTING TEMPORARY SECTION)

CIBOLA LOOP EAST BASIN = 1.7 AC. CONSERVATIVELY ASSUME 100% TREATMENT D.
 $Q_{100} = 1.7 \cdot 4.12 \text{ CFS/ACRE} = 7.0 \text{ CFS}$
+ 6. MAX 100-YEAR STREET FLOW IS 8.5 CFS FROM NORTH SUB-BASIN + 7.0 = 13.5 CFS
(CAN BE CONTAINED WITHIN EXISTING TEMPORARY SECTION)



BASIN AND STORM DRAIN MAP

SCALE: 1" = 100'

Depth	Q	Area	Veloc	Wp	Yc	TopWidth	Energy
(ft)	(cfs)	(sqft)	(ft/s)	(ft)	(ft)	(ft)	(ft)
0.56	42.31	9.304	4.55	24.66	0.64	24.23	0.88

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS SITE IS LOCATED IN NORTHWEST ALBUQUERQUE, NORTH OF ELLISON DRIVE NW. THIS CONCEPTUAL DRAINAGE AND ROUGH GRADING PLAN HAS BEEN PREPARED TO SUPPORT DFT SITE PLAN AND ROUGH GRADING APPROVALS FOR THE FIRST PHASE OF SITE WORK AND BUILDING CONSTRUCTION FOR THE PROPOSED CITY OF ALBUQUERQUE MULTI-GENERATIONAL CENTER. THERE WILL BE A FORTHCOMING GRADING AND DRAINAGE PLAN SUBMITTAL FOR BUILDING PERMIT APPROVAL.

II. PROJECT DESCRIPTION

THE EXISTING LEGAL DESCRIPTION IS TRACT A-2, CIBOLA LOOP SUBDIVISION, FILED 2/14/2017 (2017C-17, DOC. # 2017013734). THE SITE IS ZONED MX-L. THE SITE IS CURRENTLY UNDEVELOPED. AS INDICATED BY PANEL 108 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, REVISED 09/26/2008, THE SITE NOT ENCUMBERED BY, NOR DOES IT DIRECTLY DISCHARGE TO ANY MAPPED FLOOD HAZARD ZONES.

III. BACKGROUND DOCUMENTS & RESEARCH

THE PREPARATION OF THIS PLAN RELIED UPON REVIEW OF CITY OF HYDROLOGY FILES A13-D011, A13-D012, A13-D011B, A13-D002, A13-D003, AND A-130004 THAT ALL FRONT CIBOLA LOOP NW AS WELL AS THE RECORD INFRASTRUCTURE PLANS FOR CPNS 6069.81, 5752.81, AND 3727.90 AS DESCRIBED BY THE FOLLOWING:

- CONCEPTUAL DRAINAGE PLANS FOR CIBOLA LOOP SUBDIVISION DATED 4/02/2008 AND 9/09/2016 BY MARK GOODWIN & ASSOCIATES (A13-D011). THESE PLANS ESTABLISHED THE OVERALL DRAINAGE CONCEPT AND SUPPORTED SITE PLATING FOR A-1 THROUGH A-4. PURSUANT TO THESE PLANS THE OVERALL SUBDIVISION SITE IS DIVIDED INTO TWO SUB-BASINS (NORTH AND SOUTH) THAT HAVE DISCHARGE RESTRICTIONS OF 0.65 CFS/ACRE WITH THE NORTH BASIN DISCHARGING TO CIBOLA LOOP NORTHWEST AND THE SOUTH BASIN DISCHARGING TO A PUBLIC DETENTION/SURGE POND LOCATED ON TRACT A-1.
- MASTER DRAINAGE REPORT FOR TRES PLACITAS DATED 12/31/1998 BY ISAACSON & ARFMAN (A13-D012). THIS REPORT ADDRESSED AND SUPPORTED THE GRADING AND DRAINAGE, PLATTING, AND STREET AND DRAINAGE INFRASTRUCTURE FOR THE TRES PLACITAS SUBDIVISION ON THE WEST SIDE OF CIBOLA LOOP. A PORTION OF CIBOLA LOOP NW AND THE DOWNSTREAM DRAINAGE INFRASTRUCTURE ON CIBOLA LOOP (WEST) WAS CONSTRUCTED PURSUANT TO THIS PLAN WITH CPN 6069.81.
- CONCEPTUAL DRAINAGE PLAN FOR TRACT B-1, CIBOLA LOOP SUBDIVISION DATED 2/28/2023 BY ISAACSON & ARFMAN (A13-D011B). THIS PLAN FOR TRACT B-1 WAS APPROVED FOR PRELIMINARY/FINAL PLAT AND PRESENTS AND CONFORMS TO AND REINFORCES THE SAME ESTABLISHED CONCEPTS, ALLOWABLE DISCHARGES, AND BASINS FROM A13-D011 AND A13-D012.
- GRADING PLAN AND DRAINAGE REPORT FOR VISTA DEL PARQUE SUBDIVISION DATED 8/07/1997 BY BOHANNAN-HUSTON (A13-D002). THIS REPORT ADDRESSED AND SUPPORTED THE GRADING AND DRAINAGE, PLATTING, AND STREET AND DRAINAGE INFRASTRUCTURE FOR THE VISTA DEL PARQUE SUBDIVISION ON THE NORTH SIDE OF CIBOLA LOOP. A PORTION OF CIBOLA LOOP NW AND THE DOWNSTREAM DRAINAGE INFRASTRUCTURE ON CIBOLA LOOP (EAST) WAS CONSTRUCTED PURSUANT TO THIS PLAN WITH CPN 5752.81.
- GRADING PLAN FOR SEVEN BAR APARTMENTS DATED 2/07/1996 BY BURY+PITMAN (A13/D003) AND GRADING PLAN FOR CORRALES POINTE APARTMENTS, NMPE 7322, DATED 12/17/1985 (A13/D003A). THESE GRADING PLANS WERE FOR THE CONSTRUCTION OF APARTMENT COMPLEXES ON THE NORTHEAST AND WEST SIDES OF CIBOLA LOOP (WEST). AS SHOWN BY BOTH PLANS, THEY DRAIN TO THE WEST AND NOT TO CIBOLA LOOP.
- DESIGN PLANS FOR ELLISON DRIVE PREPARED BY BOHANNAN-HUSTON FOR THE CITY OF ALBUQUERQUE, AS-BUILTS DATED 2/17/1997 (CPN 3727.90). THESE PLANS CONSTRUCTED STORM DRAINAGE IMPROVEMENTS IN ELLISON DRIVE THAT INCLUDE THE OUTFALL FROM, AND A 24" STORM DRAIN EXTENSION UP CIBOLA LOOP (EAST) ALONG WITH 4 STORM INLETS IN CIBOLA LOOP (EAST).

IV. EXISTING CONDITIONS

THE SITE IS CURRENTLY UNDEVELOPED. TRACT A-2 GENERALLY SLOPES FROM NORTHWEST TO THE SOUTH AND SOUTHEAST ONTO TRACTS A-1 AND A-3 AT APPROXIMATELY 3%, BOTH ALSO OWNED BY THE CITY AND PURSUANT TO THE EXISTING CROSS-LOT AND REPROPORTION DRAINAGE EASEMENT CREATED BY PREVIOUS PLATTING. THERE IS A STEEP (25%) SLOPE AT THE NORTHERN EDGE OF THE SITE UP TO CIBOLA LOOP NW. CIBOLA LOOP NW IS A 60 FT RIGHT-OF-WAY THAT HAS STANDARD CURB AND GUTTER, SIDEWALK, AND A HALF-WIDTH OF PERMANENT PAVEMENT ON THE OUTSIDE (OPPOSITE SIDE FROM TRACT A-2) SIDE OF THE STREET. THE NEAR SIDE DOES NOT HAVE FULL WIDTH PAVING, CURB AND GUTTER, OR A SIDEWALK. THE NEAR SIDE DOES HAVE AN EXTRUDED CURB ON THE EDGE OF THE TEMPORARY PAVEMENT ON THE TRACT A-2 SIDE OF THE CENTERLINE. THERE IS A HIGH POINT IN CIBOLA LOOP NW LOCATED ON THE NORTHERMOST POINT NEAR LUNA PARK STREET NW, AND STREET RUNOFF FLOWS EAST AND WEST FROM THIS POINT. AS SHOWN BY THE CALCULATIONS FROM THE 1998 AND 2023 ISAACSON & ARFMAN PLANS AND REPORTS (REFERENCES 2 AND 3), OFFSITE FLOWS IN THE AMOUNTS OF 11.6 CFS, 3.2 CFS, AND 20.6 CFS DRAIN TO CIBOLA LOOP (WEST) FROM THE UNDEVELOPED ARE AT THE NORTHWEST, THE PARK, AND A PORTION OF THE TRES PLACITAS SUBDIVISION AT CUBA ROAD NW. THESE FLOWS, PLUS RUNOFF FROM THE CIBOLA LOOP ROW CONSERVATIVELY CALCULATED TO BE 6.7 CFS BASED UPON THE FULL WIDTH OF 60 FEET BEING LAND TREATMENT D COMBINE TO A PEAK 100-YEAR CUMULATIVE FLOW OF 42.1 CFS THAT DRAINS TO THE SOUTH TO A SAG CONDITION JUST SOUTH OF MILL ROAD NW WHERE THERE ARE TWO TYPE "A" DOUBLE WING INLETS THAT HAVE A COMBINED INLET CAPACITY OF 69 CFS PER REFERENCE 2, (AP-20). AS SHOWN BY THE STREET SECTION HYDRAULICS HEREON, THIS RUNOFF CAN BE CARRIED WITHIN THE EXISTING PARTIAL STREET SECTION AT THE WORST CASE (DOWNSTREAM AND FLATTEST) LOCATION. THE VISTA DEL PARQUE SUBDIVISION NEAR THE HIGH POINT AT THE NORTHERMOST POINT IN CIBOLA LOOP DRAINS TO AN INTERNAL STORM DRAIN SYSTEM AND DOES NOT INTRODUCE STREET FLOW. AS SHOWN BY THE GRADING AND DRAINAGE PLAN AND REPORT, AND BY THE INFRASTRUCTURE PLANS (REFERENCE 4 AND CPN 5752.81) THE SUBDIVISION DRAINS TO AN EXISTING DETENTION POINT THAT HAS CONTROLLED OUTFALL TO A 24" STORM DRAIN IN CIBOLA LOOP (EAST) THAT DRAINS SOUTH TOWARDS ELLISON AND CONNECTS TO THE 24" STUB THAT WAS EXTENDED BY CPN 3727.90, REFERENCE 6 WHERE THERE ARE A SINGLE GRATE AND A DOUBLE GRATE INLET ON EACH SIDE (4 TOTAL STRUCTURES / 6 GRATES) PRIOR TO THE ELLISON INTERSECTION. THE SEVEN BAR AND CORRALES POINTE APARTMENTS ON THE NORTHEAST AND EAST SIDE OF CIBOLA LOOP (EAST) DRAIN TO THE WEST AND DO NOT DRAIN TO CIBOLA LOOP. AS SUCH, THE TOTAL FLOW IN CIBOLA LOOP AT THE WORST-CASE LOCATION (JUST UPSTREAM OF THE INLETS AND AT THE SOUTHEAST CORNER OF TRACT A-3) WILL BE THE ALLOWABLE DISCHARGE FROM THE NORTH SUB-BASIN (8.5 CFS) AND THE CIBOLA LOOP (EAST) ROW CONSERVATIVELY ESTIMATED AS BEING 7.0 CFS ASSUMING LAND TREATMENT D FOR THE 60 FT WIDTH FOR A TOTAL OF 13.5 CFS. AS DEMONSTRATED FOR THE WEST SIDE, THE EXISTING HALF SECTION OF STREET CAN CARRY IN EXCESS OF 40 CFS BELOW CURB HEIGHT.

V. DEVELOPED CONDITIONS

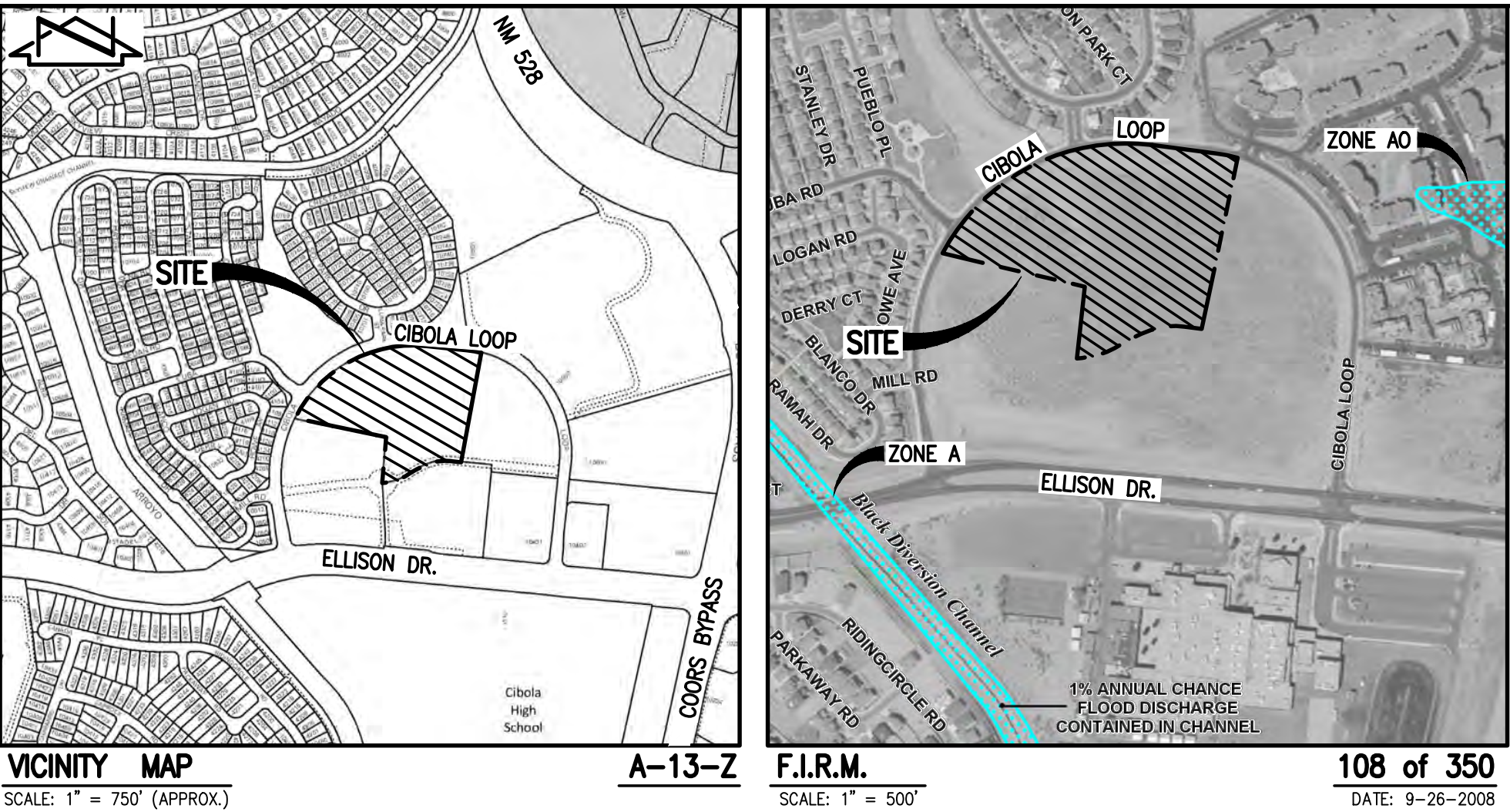
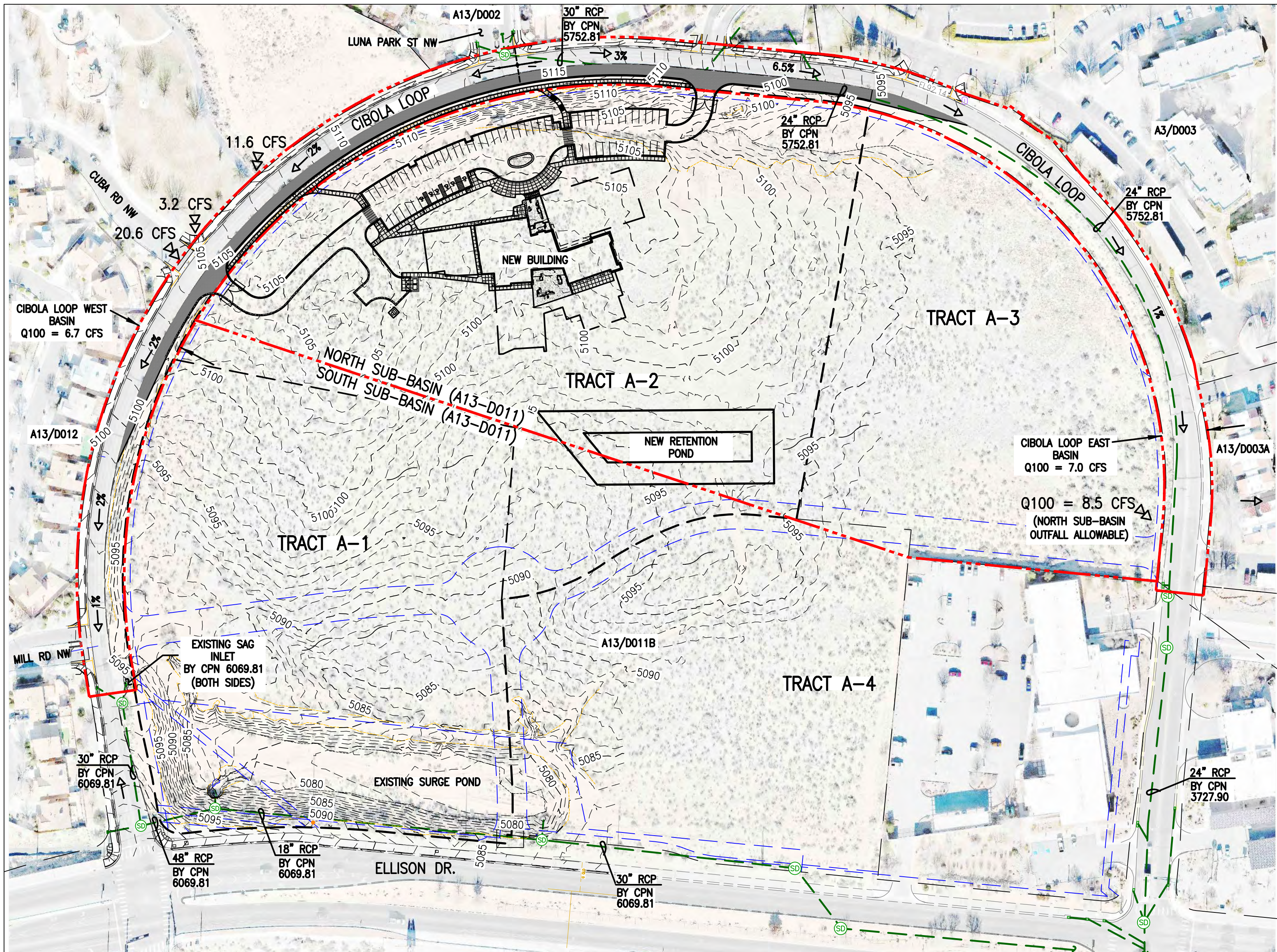
THE PROPOSED CONSTRUCTION WILL BE THE FIRST PHASE OF THE CITY MULTI-GENERATION CENTER WITH ASSOCIATED PAVED PARKING AND CIRCULATION, AND SITE LANDSCAPING IMPROVEMENTS. FUTURE PHASES WILL EXPAND UPON THE BUILDING AND SITE WORK, INCLUDING ADDITIONAL PARKING AREAS. THE PAVED AREAS AND BUILDING ROOF DRAINS WILL DRAIN TO AN INTERNAL STORM DRAIN SYSTEM THAT WILL DRAIN TO A NEW TEMPORARY RETENTION POND THAT IS SIZED TO HOLD IN EXCESS OF THE 100-YEAR, 10-DAY RUNOFF FROM THE FUTURE FULLY DEVELOPED CONDITION. UPON DEVELOPMENT OF TRACT A-3 AND A DOWNSTREAM RECEIVING SYSTEM, THIS POND MAY BE REDUCED IN SIZE AND CONVERTED TO A DETENTION POND THAT LIMITS DISCHARGE TO THE ALLOWABLE RATE OF 0.65 CFS PER ACRE PER REFERENCE 1. IN CONJUNCTION WITH THIS PROJECT, THE OUTSTANDING FULL WIDTH STREET PAVING, CURB AND GUTTER, SIDEWALK, AND A HALF-WIDTH OF PERMANENT PAVEMENT ON THE NEAR SIDE OF CIBOLA LOOP ACROSS THE PROJECT FRONTAGE. AS DEMONSTRATED BY THE EXISTING PRECEDING EXISTING CONDITIONS NARRATIVE, THE EXISTING PARTIAL SECTIONS OF CIBOLA LOOP ON THE WEST AND EAST SIDES FRONTING TRACTS A-1 AND A-3, RESPECTIVELY, HAVE ADEQUATE STREET AND DOWNSTREAM INFRASTRUCTURE CAPACITY TO CARRY THE RUNOFF GENERATED BY THE EXISTING AND ADDED PAVEMENT WIDTHS. AS SUCH, PERMANENT IMPROVEMENTS SUCH AS STREET WIDENING, STORM DRAIN EXTENSIONS, OR ADDITIONAL INLETS ARE NOT NECESSARY NOR PROPOSED BY THIS PROJECT. TRANSITIONS WITH CURB AND GUTTER WILL BE CONSTRUCTED AT THE TWO DOWNSTREAM ENDS (WEST AND EAST) TO TRANSITION FROM THE SITE FRONTAGE FULL IMPROVEMENTS TO THE DOWNSTREAM HALF-SECTION IMPROVEMENTS.

VI. CALCULATIONS

CALCULATIONS ANALYZING THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100 YEAR, 6-HOUR AND 100-YEAR, 10-DAY RAINFALL EVENTS HAVE BEEN PREPARED FOR THE FULLY DEVELOPED CONDITION. THE DPM PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN DPM 6-2(A) HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. 100% OF THE SITE RUNOFF WILL DRAIN TO A TEMPORARY RETENTION POND, SO STORMWATER QUALITY CALCULATIONS WERE NOT PERFORMED. CIBOLA LOOP HYDRAULIC CAPACITY CALCULATIONS WERE PERFORMED USING CIVIL3D HYDROFLOW EXPRESS WITH N=0.017.

VII. SUMMARY AND CONCLUSIONS

- AS A PRIORITY CITY PROJECT, THE PROPOSED CONSTRUCTION WILL BEGIN WITH ROUGH GRADING IN ADVANCE OF BUILDING PERMIT APPROVAL. A SUBSEQUENT SUBMITTAL WILL BE MADE FOR BUILDING PERMIT APPROVAL.
- THIS PLAN IS SUBMITTED TO SUPPORT DFT SITE PLAN AND ROUGH GRADING APPROVALS, AND TO ALSO SUPPORT A FUTURE WORK ORDER THAT WILL WIDEN THE STREET FRONTAGE.
- THIS PROJECT WILL CONSTRUCT A TEMPORARY RETENTION POND SIZED TO HOLD IN EXCESS OF THE FULLY DEVELOPED 100-YEAR, 10-DAY STORM.
- UPON DEVELOPMENT OF TRACT A-3 AND A RECEIVING SYSTEM, THE TEMPORARY RETENTION POND WILL BE ABLE TO BE CONVERTED TO DETENTION TO THE ALLOWABLE RATE OF 0.65 CFS PER ACRE.
- THIS PROJECT GRADING AND DRAINAGE SCHEME CONFIRMS TO ALL PREVIOUSLY APPROVED AND ESTABLISHED GRADING AND DRAINAGE PLANS, REPORTS, AND INFRASTRUCTURE PLANS APPLICABLE TO THE SITE.



PROJECT BENCHMARK #202 (P.B.M.)

A #5 REBAR W/CAP STAMPED "HMC CONTROL NMPS 11184", SET IN DIRT NEAR THE SOUTHWEST CORNER OF THE PROJECT SITE, APPROXIMATELY 136' EAST OF THE STORM DRAIN INLET ON THE EAST SIDE OF WEST CIBOLA LOOP NW AND 233' NORTH OF THE BACK OF CURB ON THE NORTH SIDE OF ELLISON DR NW, AS SHOWN ON SHEET VF-105
MODIFIED GROUND COORDINATES:
NORTHING = 1,530,887.18 FEET
EASTING = 1,516,155.43 FEET
ELEVATION = 5090.57 FEET (NAVD 1988)

TEMPORARY BENCHMARK #203 (T.B.M.)

A #5 REBAR W/CAP STAMPED "HMC CONTROL NMPS 11184", SET IN DIRT NEAR THE SOUTHWEST CORNER OF THE PROJECT SITE, APPROXIMATELY 200' EAST OF THE STORM DRAIN INLET ON THE EAST SIDE OF WEST CIBOLA LOOP NW AND 200' NORTH OF THE BACK OF CURB ON THE NORTH SIDE OF ELLISON DR NW, AS SHOWN ON SHEET VF-105
MODIFIED GROUND COORDINATES:
NORTHING = 1,530,854.64 FEET
EASTING = 1,516,222.95 FEET
ELEVATION = 5089.64 FEET (NAVD 1988)

TEMPORARY BENCHMARK #204 (T.B.M.)

A #5 REBAR W/CAP STAMPED "HMC CONTROL NMPS 11184", SET IN DIRT NEAR THE NORTH END OF THE PROJECT SITE, APPROXIMATELY 349' SOUTH OF THE BACK OF CURB ON THE SOUTH SIDE OF WEST CIBOLA LOOP NW AND 47' WEST OF A DIRT ROAD RUNNING DOWN THE CENTER OF THE PROJECT SITE, AS SHOWN ON SHEET VF-104
MODIFIED GROUND COORDINATES:
NORTHING = 1,531,357.44 FEET
EASTING = 1,516,704.85 FEET
ELEVATION = 5102.33 FEET (NAVD 1988)

TEMPORARY BENCHMARK #206 (T.B.M.)

A #5 REBAR W/CAP STAMPED "HMC CONTROL NMPS 11184", SET IN DIRT NEAR THE SOUTHEAST CORNER OF THE PROJECT SITE, APPROXIMATELY 66' EAST OF A DIRT ROAD RUNNING DOWN THE CENTER OF THE PROJECT SITE AND 170' NORTH OF THE BACK OF CURB ON THE NORTH SIDE OF ELLISON DR NW, AS SHOWN ON SHEET VF-105
MODIFIED GROUND COORDINATES:
NORTHING = 1,530,781.43 FEET
EASTING = 1,516,671.67 FEET
ELEVATION = 5086.13 FEET (NAVD 1988)

LEGAL DESCRIPTION

TRACTS A-1, AND A-2, CIBOLA LOOP SUBDIVISION, ALBUQUERQUE, NEW MEXICO

fbt architects

6501 Americas Parkway NE, Suite 300
Albuquerque, NM 87110

CONSULTANTS

CIVIL

High Mesa
a Bowman company
6501-B Midway Park Blvd NE
Albuquerque, NM 87109
p_505.345.4250

LANDSCAPE

Groundwork Studio
6501 Americas Parkway NE, Suite 350
Albuquerque, NM 87110
p_505.212.9126

STRUCTURAL

Chavez-Grievos Consulting Engineers, Inc.
4700 Lincoln Road NE, Suite 102
Albuquerque, NM 87109
p_505.344.4080

M/E/P/FP

Bridgers & Paxton
4600-C Montgomery Blvd NE
Albuquerque, NM 87109
p_505.883.4111

LIGHTING

Oldner Lighting
4645 Greenville Ave, Studio B
Dallas, TX 75206
p_310.450.1733

INTERIORS

Studio M
6501 Americas Parkway NE, Suite 302
Albuquerque, NM 87110
p_505.243.9287

CITY OF ALBUQUERQUE

PROJECT TITLE:

COA CIBOLA LOOP
MULTIGENERATIONAL CENTER

Cibola Loop NW
Albuquerque, NM 87114

DFT SITE PLAN AND EARLY WORK PACKAGE

MARCH 25, 2024

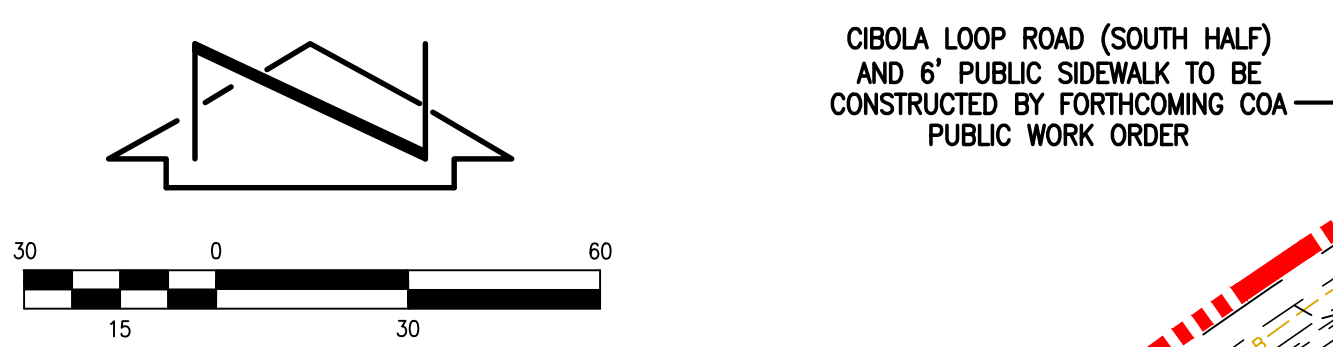
DRAWING TITLE:

CONCEPTUAL GRADING AND DRAINAGE PLAN

Design Review Committee		City Engineer Approval		Last Design Update	
DATE	DATE	DATE	DATE	DATE	DATE
NO.	NO.	NO.	NO.	NO.	NO.
DESIGN	DESIGN	DESIGN	DESIGN	DESIGN	DESIGN
DRAWN BY:	DRAWN BY:	DRAWN BY:	DRAWN BY:	DRAWN BY:	DRAWN BY:
CHECKED BY:	CHECKED BY:	CHECKED BY:	CHECKED BY:	CHECKED BY:	CHECKED BY:
City Project No.		Zone Map No.		DWG.	
Sheet		CG-001			

HIGH MESA
a Bowman company
6010-B Midway Park Blvd NE, Albuquerque, NM 87109
P-505.345.4250
highmesacorp.com | bowman.com

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
PRELIMINARY APPROVED
DATE: 04/01/24
BY: *[Signature]*
PROJECT: A130011
THESE PLANS AND/OR REPORT ARE
CONCEPTUAL ONLY. MORE INFORMATION MAY
BE NEEDED BY THEM AND SUBMITTED TO
HYDROLOGY FOR BUILDING PERMIT APPROVAL.



CIBOLA LOOP ROAD (SOUTH HALF)
AND 6' PUBLIC SIDEWALK TO BE
CONSTRUCTED BY FORTHCOMING COA
PUBLIC WORK ORDER

CIBOLA LOOP ROAD (SOUTH HALF)
AND 6' PUBLIC SIDEWALK TO BE
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PUBLIC WORK ORDER

TRACT A-3

TRACT A-2

TRACT A-1

TRACT A-4

- CONSTRUCTION NOTES:**
- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR APPROVED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS-PUBLIC WORKS CONSTRUCTION-2020 EDITION (JUNE 2020).
 - TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 811, FOR DESIGNATION (LINE-SPOTTING) OF EXISTING PUBLIC UTILITIES.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
 - ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
 - UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE TOPOGRAPHIC AND UTILITY SURVEY CONDUCTED BY THIS FIRM DATED 02/23/2024 AND INCLUDED AS SHEETS VP-106 AND VP-107 OF THIS PLAN SET. THAT UTILITY SURVEY AND SUBSURFACE UTILITY ENGINEERING EFFORT IS NOT ALL-INCLUSIVE AND MAY NOT REPRESENT UTILITIES/INFRASTRUCTURE THAT HAVE BEEN ABANDONED-IN-PLACE, WERE INACCESSIBLE OR OTHERWISE UNDETECTABLE DUE TO UNFORESEEN AND UNCONTROLLABLE SITE AND/OR UTILITY CONDITIONS. FURTHER, THAT UTILITY INVESTIGATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY THEREFOR. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, NEW MEXICO EXCAVATION LAWS (NM611), MUNICIPAL AND LOCAL ORDINANCES, SITE SPECIFIC RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE UTILITY LINES AND FACILITIES.
 - ALL UTILITIES WITHIN THE PROJECT LIMITS THAT ARE RENDERED OBSOLETE AND / OR UNUSED AS A RESULT OF THIS PROJECT SHALL NOT BE ABANDONED IN PLACE, BUT SHALL INSTEAD BE COMPLETELY REMOVED WITHIN THE PROJECT AREA AND CAPPED AT THE PROJECT LIMITS, UNLESS OTHERWISE NOTED.
 - THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
 - THE GRADES INDICATED ON THIS PLAN ARE FINISHED GRADES UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING SUBGRADE AT ELEVATIONS THAT SHALL ACCOMMODATE PROPOSED IMPROVEMENTS AS INDICATED ON THE PLAN INCLUDING, BUT NOT LIMITED TO, SURFACE DRAINAGE STRUCTURES, PAVING AND LANDSCAPING SURFACING.

- KEYED NOTES:**
- NEW TYPE "C" INLET (SINGLE GRATE) PER COA STD DWG 2206 - BY BUILDING PERMIT, NOT PART OF ROUGH GRADING / EARLY WORK PACKAGE
 - NEW TYPE "D" INLET (SINGLE GRATE) PER COA STD DWG 2206 - BY BUILDING PERMIT, NOT PART OF ROUGH GRADING / EARLY WORK PACKAGE
 - CONSTRUCT 4' DIAMETER STORM DRAIN MANHOLE TYPE "E" PER COA STD DWG 2209
 - INSTALL 18" HDPE ADS STORM DRAIN
 - INSTALL 18" HDPE PRE-FORMED END SECTION
 - CONSTRUCT ENERGY DISSIPATOR PER TYPICAL DETAIL, SHEET CG-502
 - NEW 18" HDPE ADS STORM DRAIN - BY BUILDING PERMIT, NOT PART OF ROUGH GRADING / EARLY WORK PACKAGE
 - INSTALL TEMPORARY STORM DRAIN PLUG AS PART OF ROUGH GRADING / EARLY WORK PACKAGE, PLUG TO BE REMOVED AND PIPING EXTENDING WITH BUILDING PERMIT
 - NEW 18" 11.25' BEND - BY BUILDING PERMIT, NOT PART OF ROUGH GRADING / EARLY WORK PACKAGE

TEMPORARY BENCHMARK #204 (T.B.M.)
A #5 REBAR WITH CAP STAMPED "MCG CONTROL NMPS 11184" SET IN DIRT NEAR THE NORTH END OF THE PROJECT SITE, APPROXIMATELY 349' SOUTH OF THE BACK OF CURB ON THE SOUTH SIDE OF WEST CIBOLA LOOP NW AND 47' WEST OF A DIRT ROAD RUNNING DOWN THE CENTER OF THE PROJECT SITE, AS SHOWN ON THIS SHEET.

MODIFIED GROUND COORDINATES:
NORTHING = 1,531,357.44 FEET
EASTING = 1,516,704.85 FEET
ELEVATION = 5102.33 FEET (NAVD 1988)

PROPOSED TEMPORARY RETENTION POND
V=78,413 CF @ 5095
V 10-day PHASE 1 = 46,500CF
V 10-day FULL BUILDOUT = 65,780CF

NOTE:
THIS IS NOT A BOUNDARY SURVEY OR A RIGHT-OF-WAY SURVEY. APPARENT PROPERTY CORNERS, RIGHT-OF-WAY LINES, OR PROPERTY LINES AS SHOWN ARE DERIVED FROM RECORD SURVEY PLATS, RIGHT-OF-WAY MAPS, OR DEEDS REFERENCED HEREON AND ARE NOT GUARANTEED OR TO BE RELIED ON FOR THE ESTABLISHMENT OF PROPERTY LINES. THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON A BOUNDARY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 02/23/2024 (2024.001.2). THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 02/23/2024 (2024.001.2).

fbt architects
6501 Americas Parkway NE, Suite 300
Albuquerque, NM 87110
505.883.5200
www.fbtarch.com

CONSULTANTS

CIVIL
High Mesa
a Bowman company
6010-B Midway Park Blvd NE
Albuquerque, NM 87109
p_505.345.4250

LANDSCAPE
Groundwork Studio
6501 Americas Parkway NE, Suite 350
Albuquerque, NM 87110
p_505.212.9126

STRUCTURAL
Chavez-Grievos Consulting Engineers, Inc.
4700 Lincoln Road NE, Suite 102
Albuquerque, NM 87109
p_505.344.4080

M/E/P/FP
Bridgers & Paxton
4600-C Montgomery Blvd NE
Albuquerque, NM 87109
p_505.883.4111

LIGHTING
Oldner Lighting
4645 Greenville Ave, Studio B
Dallas, TX 75206
p_310.450.1733

INTERIORS
Studio M
6501 Americas Parkway NE, Suite 302
Albuquerque, NM 87110
p_505.243.9287

CITY OF ALBUQUERQUE

**COA CIBOLA LOOP
MULTIGENERATIONAL CENTER**
Cibola Loop NW
Albuquerque, NM 87114

DFT SITE PLAN AND EARLY WORK PACKAGE
MARCH 25, 2024

DRAWING TITLE: SHEET TITLE:
CONCEPTUAL AND ROUGH GRADING PLAN

Design Review Committee	City Engineer Approval	Mo. Day/Yr.	Mo. Day/Yr.
City Project No.	Zone Map No.	DWG.	Sheet
			CG-101

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6010-B Midway Park Blvd NE, Albuquerque, NM 87109
P505.345.4250
highmesacg.com | bowman.com