CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Interim Director

Mayor Timothy M. Keller

August 13, 2019

David Aube, P.E.
Hartman & Majewski Design Group
120 Vassar Dr SE, Suite 100
Albuquerque, NM 87106

RE: La Vida Liena
10501 Lagrima de Oro Road NE
Grading and Drainage Plan
Engineer's Stamp Date: 07/31/19
Hydrology File: F21D028

Dear Mr. Aube:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 08/01/2019, the Grading & Drainage Plan is approved for Building Permit, Grading Permit, and Work Order.

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

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.

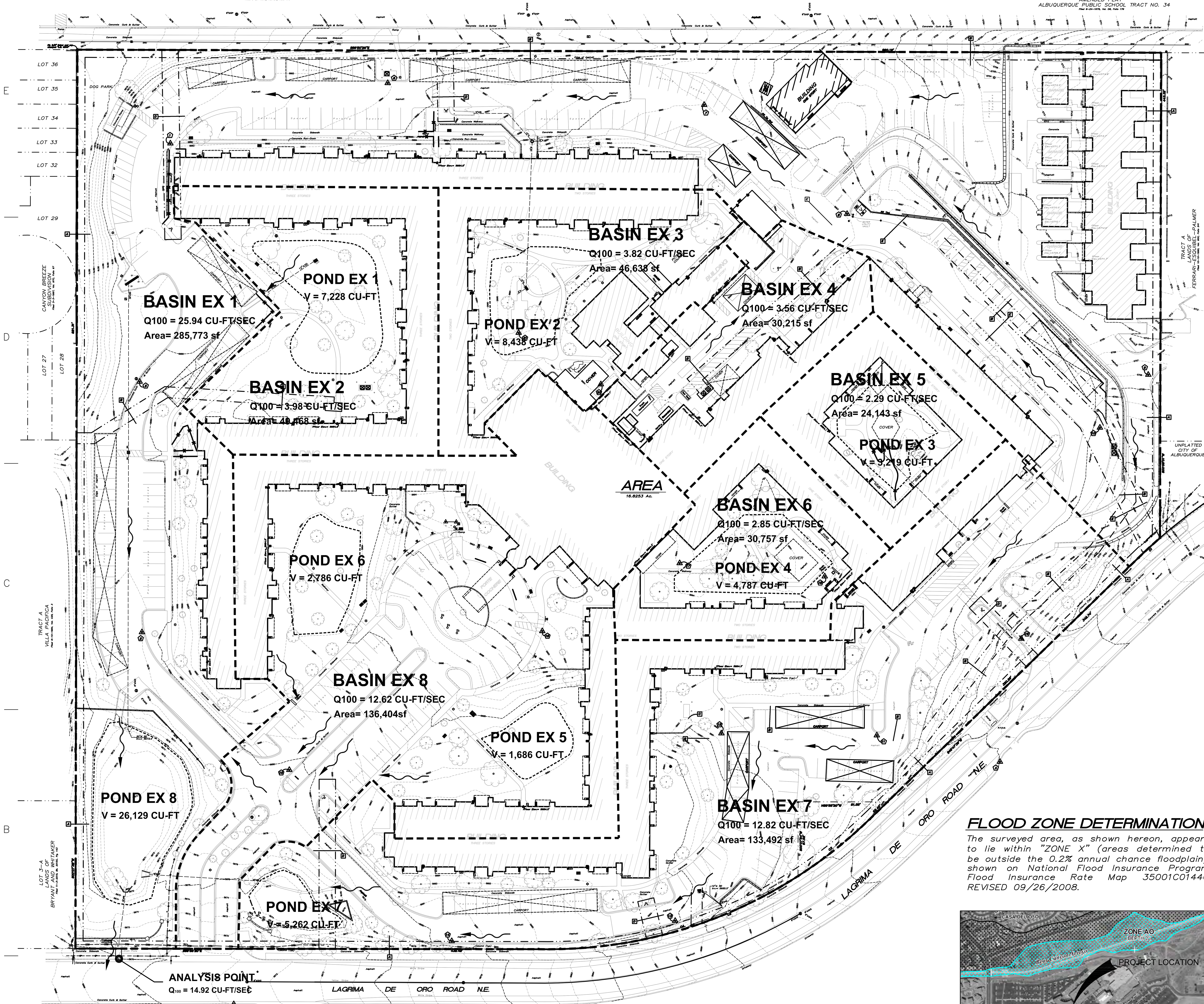
Also as a reminder, please provide Drainage Covenant for the detention ponds per Chapter 17 of the DPM prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required.

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



DRAINAGE PLAN EXISTING CONDITIONS

A1 1" = 50'-0"

GRAPHIC SCALE

50 0 25 50 100 200

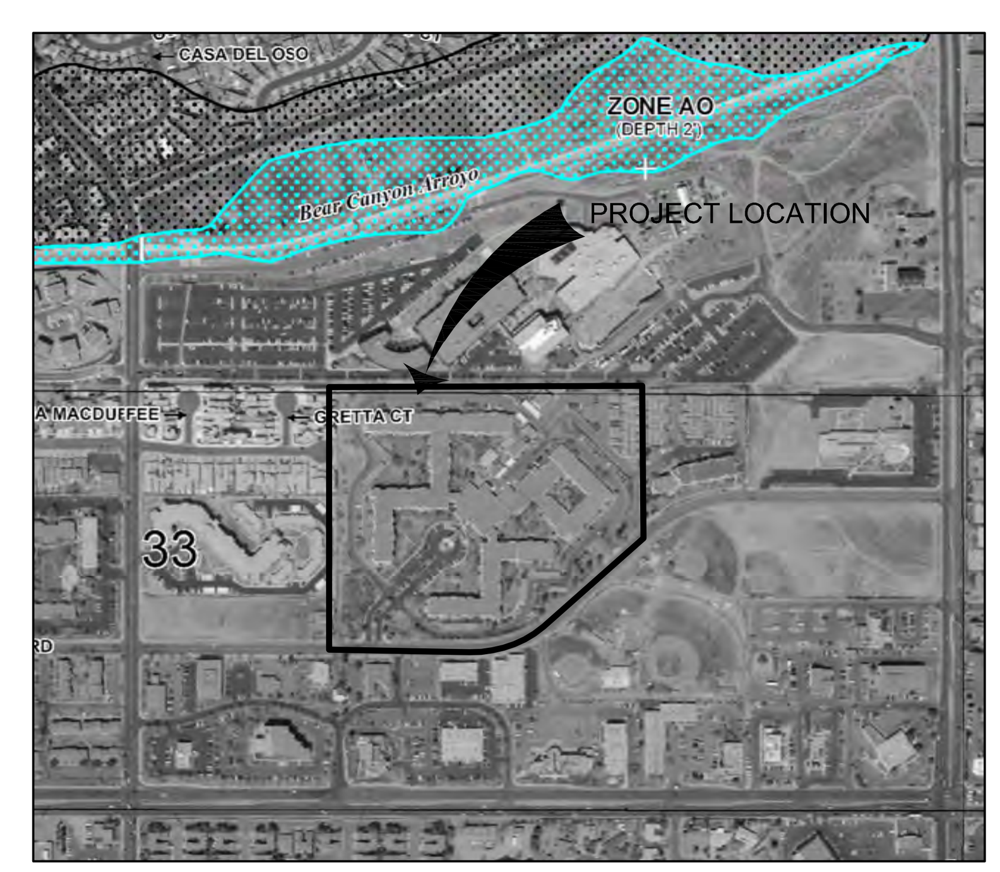
(IN FEET)
1 inch = 50 ft.

KEYED EASEMENTS

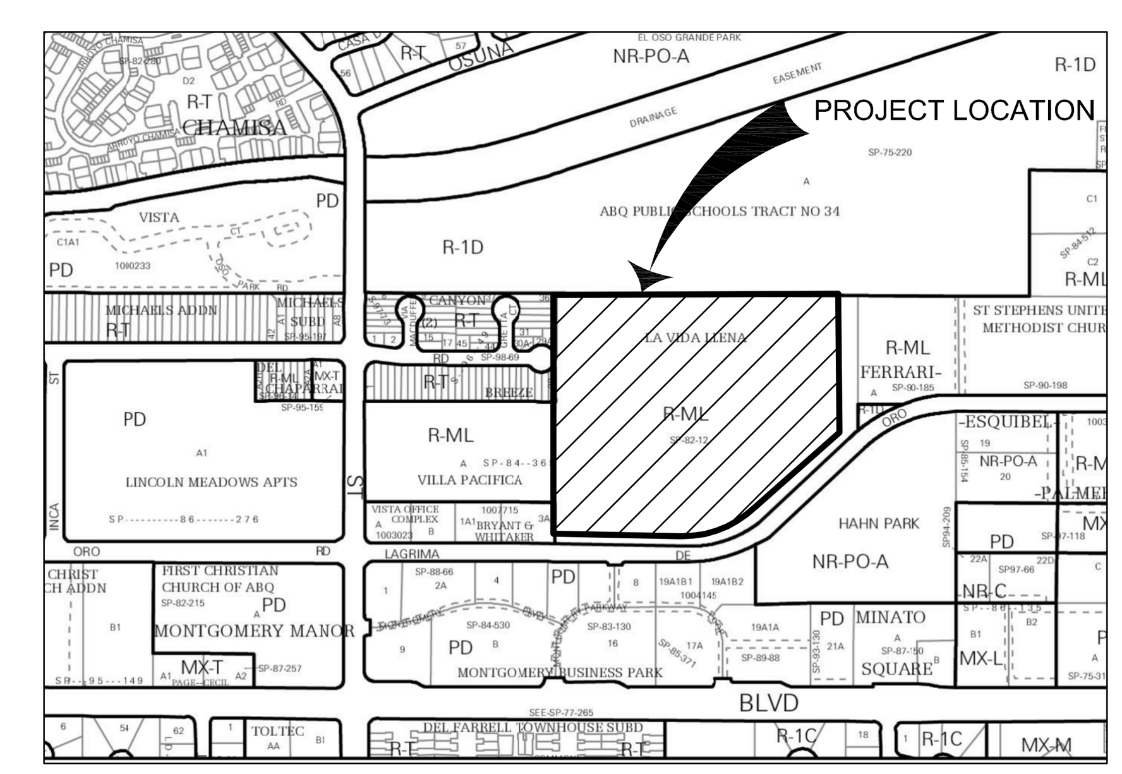
- A — 7' Utility Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.
- B — 10' Utility Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.
- C — 15' Utility Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.
- D — 15' Waterline Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.
- E — 20' Waterline Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.

FLOOD ZONE DETERMINATION

The surveyed area, as shown hereon, appears to lie within "ZONE X" (areas determined to be outside the 0.2% annual chance floodplain), shown on National Flood Insurance Program Flood Insurance Rate Map 35001C0144G REVISED 09/26/2008.



A3 FEMA FLOOD ZONE
NOT TO SCALE



A5 ZONE ATLAS PAGE F-21
NOT TO SCALE

I. PURPOSE AND SCOPE

THE PURPOSE OF THIS DRAINAGE PLAN IS TO PRESENT THE EXISTING AND PROPOSED DRAINAGE CONDITIONS FOR LA VIDA LLENA LIFE PLAN COMMUNITY, LOCATED AT 10701 LAGRIMA DE ORO ROAD NE IN ALBUQUERQUE, NM. THE ZONE ATLAS PAGE FOR THE SITE IS F-21-Z.

II. SITE DESCRIPTION AND HISTORY

THE PROJECT SITE IS LOCATED ON THE NORTH SIDE OF LAGRIMA DE ORO ROAD NE, BETWEEN MORRIS STREET NE AND JUAN TABO BOULEVARD NE.

THE SITE IS CURRENTLY COMPOSED OF 16.8 ACRE LOT WITH SEVERAL MUTLI-RESIDENT BUILDINGS, A COMMONS AREA AS WELL AS A SKILLED NURSING WING. THE SITE ALSO CONTAINS SEVERAL SINGLE RESIDENT TOWNHOUSES (CASITAS) AND A MAINTENANCE BUILDING. A MAJORITY OF THE SITE WAS DEISGNED AND CONSTRUCTED IN 1979 AND 1984.

III. COMPUTATIONAL PROCEDURES

HYDROLOGIC ANALYSIS WAS PERFORMED UTILIZING THE DESIGN CRITERIA BASED ON SECTION 22.2, HYDROLOGY, OF THE DEVELOPMENT PROCESS MANUAL RELEASED JUNE 1997. TABLES WITHIN SECTION 22.2 WERE USED TO AID IN THE STUDY OF THE SITE HYDROLOGY.

IV. PRECIPITATION

THE STORM EVENT USED FOR THE FOLLOWING CALCULATIONS IS THE 100YR-6HR STORM. THE PROJECT SITE IS LOCATED IN ZONE 4 (EAST OF EUBANK BOULEVARD NE).

Drainage Summary

Project: La Vida Llena
Project Numbe: 2811
Date: 04/19/19
By: Dave A

Site Location 10701 Lagrima De Oro Road NE

Precipitaion Zone 4 Per Table A-1 COA DPM Section 22.2

Existing summary

Basin Name	Ex 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6	Ex 7	Ex 8	
Area (sf)	285773	48468	46638	30215	24143	30757	133492	136404	
Area (acres)	6.56	1.11	1.07	0.69	0.55	0.71	3.06	3.13	
%A Land treatment	40	55	55	0	25	35	35	40	
%B Land treatment	0	0	0	5	15	0	0	0	
%C Land treatment	5	0	0	0	0	10	0	0	
%D Land treatment	55	45	45	95	60	55	65	60	
Soil Treatment (acres)									
Area "A"	2.62	0.61	0.59	0.00	0.14	0.25	1.07	1.25	
Area "B"	0.00	0.00	0.00	0.03	0.08	0.00	0.00	0.00	
Area "C"	0.33	0.00	0.00	0.00	0.00	0.07	0.00	0.00	
Area "D"	3.61	0.50	0.48	0.66	0.33	0.39	1.99	1.88	
Excess Runoff (acre-feet)									
100yr. 6hr.	1.0087	0.1510	0.1453	0.1481	0.0899	0.1105	0.5097	0.4968	acre-ft
10yr. 6hr.	0.5893	0.0848	0.0816	0.0941	0.0533	0.0648	0.3056	0.2938	acre-ft
2yr. 6hr.	0.3154	0.0432	0.0415	0.0558	0.0290	0.0347	0.1694	0.1602	acre-ft
100yr. 24hr.	1.2342	0.1822	0.1754	0.1893	0.1107	0.1348	0.6342	0.6143	acre-ft
Peak Discharge (cfs)									
100 yr.	25.94	3.98	3.82	3.56	2.29	2.85	12.82	12.62	cfs
10yr.	15.91	2.32	2.23	2.40	1.43	1.76	8.04	7.80	cfs
2yr.	8.29	1.12	1.07	1.44	0.76	0.93	4.38	4.14	cfs

Pond Routing and Volumes (Existing)

		Pond EX8 Basin EX#1	Pond EX1 Basin EX#2	Pond EX2 Basin EX#3	Basin EX#4	Pond EX3 Basin EX#5	Pond EX4 Basin EX#6	Pond EX7 Basin EX#7	Pond EX5 Basin EX#8 East	Pond EX6 Basin EX#8 West	
Incoming Flow Rate	Qin	45.90	3.98	3.82	3.56	2.29	2.85	13.24	6.31	6.31	cfs
Allowable Discharge Rate	Qout	14.92	0	0.00	3.56	0.32	0.10	8.20	4.50	3.70	cfs
Hyrdology Zone		4	4	4	4	4	4	4	4	4	Figure A-1
Area Total	At	6.57	1.11	1.07	0.69	0.55	0.71	3.06	1.57	1.57	acres
Area Type A	Aa	40	55	55	0	25	35	35	40	40	%
Area Type B	Ab	0	0	0	5	15	0	0	0	0	%
Area Type C	Ac	5	0	0	0	0	10	0	0	0	%
Area Type D Impervious	Ad	55	45	45	95	60	55	65	60	60	%
Excess runoff rates	A	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	inches
	B	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	inches
	C	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	inches
	D	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	inches
Weighted E (Exces Runoff)		1.85	1.63	1.63	2.56	1.95	1.88	2.00	1.90	1.90	in
Time of Concentration		0.2	0.2	0.2	0.2	1.2	2.2	3.2	4.2	3.2	hours
Time to Peak =0.7*Tc + ((1.6-(Ad/At)/12)		0.228	0.236	0.236	0.194	0.923	1.628	2.319	3.023	2.323	hours
Time of Base =2.107*E*At/Qp-(.25*Ad/At)		0.419	0.846	0.845	0.810	0.842	0.843	0.811	0.845	0.845	hours
Duration of Peak		0.138	0.113	0.113	0.238	0.150	0.138	0.163	0.150	0.150	hours
Time for end of peak		0.365	0.348	0.348	0.432	1.073	1.765	2.482	3.173	2.473	hours
Time when storage begins		0.074	0.000	0.000	0.194	0.129	0.057	1.436	2.156	1.362	hours
Time incoming is less that discharge		0.401	0.846	0.845	0.432	0.875	0.875	1.846	2.506	1.800	hours
Volume Required during storm		7.199	1.908	1.830	0.000	0.882	1.314	1.441	0.452	0.767	acre inch
		26133	6927	6642	0	3202	4770	5231	1641	2784	cubic feet

THE HARTMAN + MAJEWSKI DESIGN GROUP
Architects • Engineers • Interior Design
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120 Vassar Drive SE Suite 100
Albuquerque New Mexico 87106
T 505 242 6880 • F 505 242 6881

CONSULTANT

STAMP

DAVID A. AUBE STATE OF NEW MEXICO 14221 REGISTERED PROFESSIONAL ENGINEER
7-31-19

PROJECT NAME

LA VIDA LLENA
10501 LAGRIMA DE ORO NE

HAVERLAND CARTER GROUP
10701 Montgomery Boulevard NE
ALBUQUERQUE NM, 87111

REVISIONS:

No.	DATE	DESCRIPTION

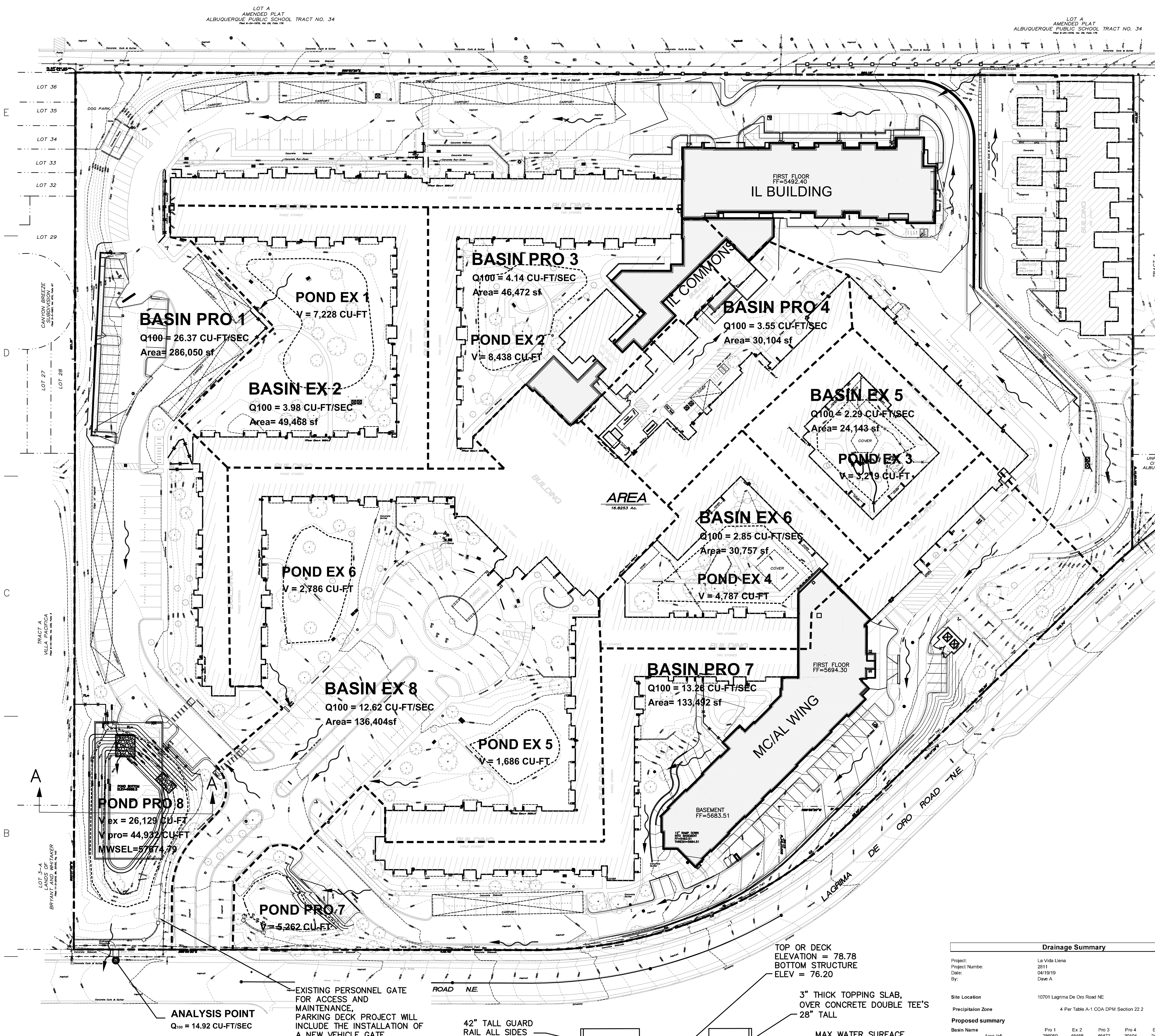
Drawn by	
Checked by	
Date	7-31-2019
Project number	2811
Cad file name	

SHEET TITLE:

DRAINAGE PLAN
EXISTING CONDITIONS

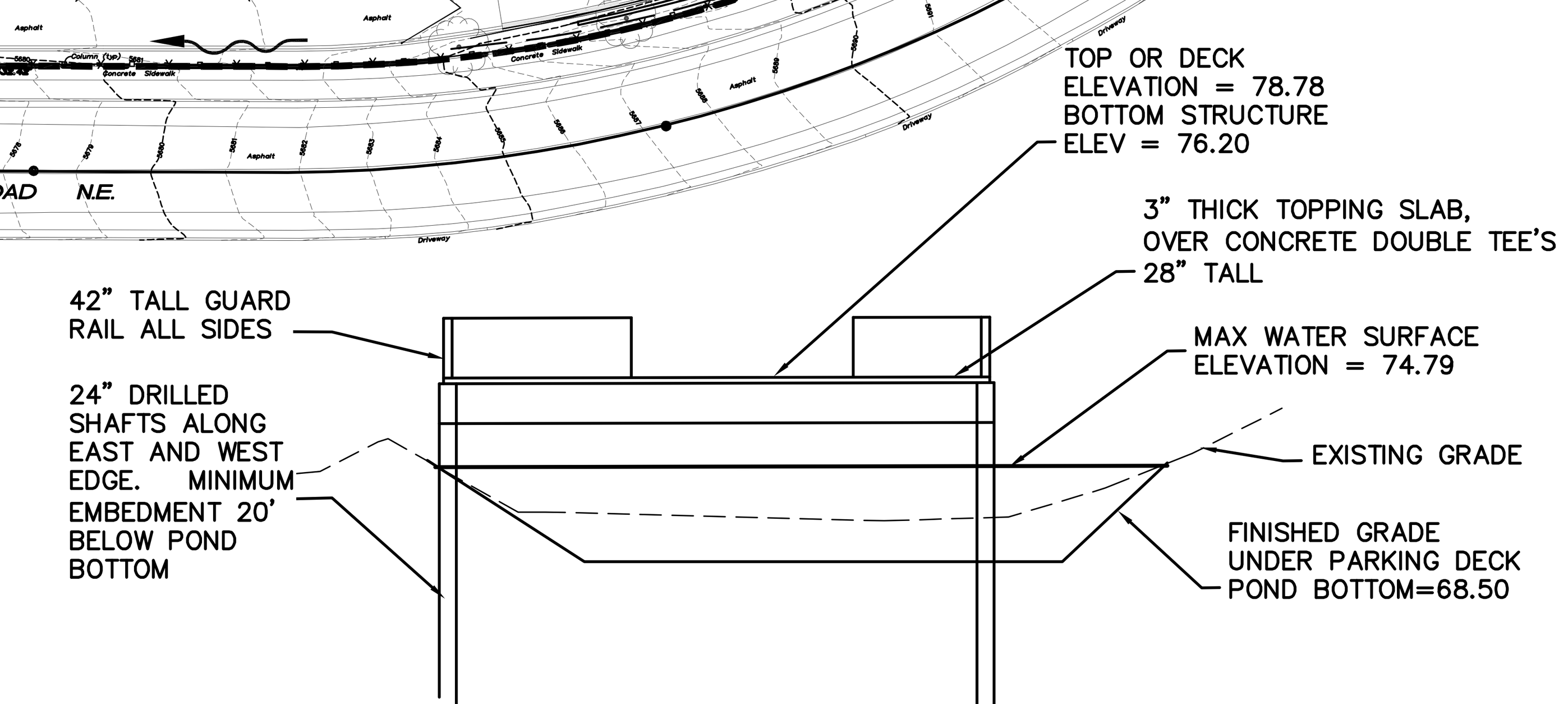
SHEET NUMBER:

CD-1



A1 DRAINAGE PLAN
PROPOSED CONDITIONS
1" = 50'-0"

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.



A2 POND SECTION A-A
NOT TO SCALE

V. EXISTING DRAINAGE CONDITIONS

CURRENTLY THE SITE CONTAINS MANY WELL LANDSCAPED DETENTION/RETENTION AREAS. RUNOFF FROM A MAJORITY OF THE ROOFS IS DIRECTED INTO SHALLOW DEPRESSIONS IN THE LANDSCAPING AREAS WITH CATCH BASINS AND DISCHARGE PIPES THAT RESTRICT THE RUNOFF RATES FROM THE DETENTION AREAS TOWARD THE FINAL OUTLET LOCATION ALONG LAGRIMA DE ORO ROAD NE AT THE SOUTHWEST CORNER OF THE SITE.

BASIN EX1 CONTAINS A LARGE PORTION OF THE WEST AND NORTH SIDES OF THE CAMPUS. TO REDUCE SURFACE FLOWS AN UNDERGROUND STORM WATER CONVEYANCE SYSTEM WAS CONSTRUCTED ALONG THE WESTERN SIDE OF THE SITE. ALL RUNOFF FROM THIS BASIN EVENTUALLY IS DETAINED IN POND #8 LOCATED AT THE SOUTH-WEST CORNER OF THE SITE. A 18" PIPE THEN DISCHARGES EXCESS RUNOFF INTO THE LAGRIMA DE ORO ROAD ROW. THE PEAK RUNOFF FROM THE SITE WAS COMPUTED TO BE 14.92 CFS BASED ON HYDROGRAPH AND PONDING VOLUME. THE OUTLET PIPE WAS ALSO ANALYZED AND CAN CONVEY 18.5 CFS UNDER INLET CONTROL CONDITIONS. THE 14.92 CFS PEAK ALLOWABLE DISCHARGE RATE WILL BE USED AS THE EXISTING ALLOWABLE DISCHARGE FROM THE SITE. A TABLE HAS BEEN PROVIDED ON SHEET CD1 OF ALL PONDS AND ROUTED PEAK OUTLET FLOWS.

BASIN EX2 AND EX3 ARE FIRST ROUTED THROUGH PONDING AREAS WITHIN THE LANDSCAPING AREAS, WITH OVERFLOW ENTERING THE ROADWAY IN BASIN EX1. BASIN EX4 IS THE SERVICE YARD WITH EXCESS RUNOFF ENTERING THE ROADWAY IN BASIN EX1.
BASIN EX5 AND EX6 ARE FIRST ROUTED THROUGH PONDINGS AREA WITHIN THE LANDSCAPED COURYARD AREAS, WITH OVERFLOW ENTERING THE ROADWAY IN BASIN EX7. BASIN EX7 CONTAINS THE SOUTHERN PORTION OF THE SITE WITH A DETENTION BASIN NEAR THE ENTRANCE DRIVE FROM LAGRIMA DE ORO. THIS POND THEN DISCHARGES INTO THE LARGER DETENTION BASIN IN BASIN EX1. A 18" STORM DRAIN PIPE CONNECTS THE TWO DETENTION PONDS.

BASIN EX8 GENERATES A PEAK RUNOFF RATE OF 26.37 CFS. OTHER BASINS THAT ARE ROUTED INTO BASIN EX8 ADD 19.53 CFS TO GENERATE AN INCOMING PEAK FLOWRATE INTO POND EX8 OF 45.90 CFS. THE OUTLET PIPE FROM POND 8 INTO LAGRIMA DE ORO HAS CAPACITY TO CONVEY 18.5 CFS, BUT THE ROUTING HYDROGRAPH ONLY REQUIRES A DISCHARGE RATE OF 14.92 CFS TO CONTAIN THE 100 YEAR 6 HOUR DESIGN STORM. SHOULD THE STORM WATER EXCEED THE AVAILABLE PONDING VOLUME, THE WATER WILL OVERTOP THE BERM BETWEEN THE POND AND THE PUBLIC ROW AND BE DISCHARGED THROUGH A SERIES OF TURNED BLOCKS IN THE MASONRY WALL ALONG LAGRIMA DE ORO ROAD NE.

EXISTING OUTLET PIPE AND STORM DRAINAGE STRUCTURE WITHIN LAGRIMA DE ORO R.O.W HAVE BEEN INSPECTED AND APPEAR TO BE FUNCTIONING AS DESIGNED. FURTHER INSPECTIONS WILL BE COMPLETED DURING CONSTRUCTION.

VI. PROPOSED DRAINAGE CONDITIONS

PROPOSED MODIFICATIONS WILL BE COMPLETED IN THREE PHASES. THE FIRST PHASE IS TWO SMALL SURFACE PARKING AREAS (COMBINED ONLY 12 SPACES) AND AN ELEVATED PARKING DECK OVER AN EXISTING DETENTION POND. PHASE 2 WILL BE THE CONSTRUCTION OF A NEW INDEPENDENT LIVING BUILDING IN THE NORTH EAST PART OF THE SITE. PHASE 3 WILL BE A THE CONSTRUCTION OF A NEW MEMORY CARE AND ASSISTED LIVING BUILDING ALONG THE SOUTHERN PART OF THE SITE ADJACENT TO LAGRIMA DE ORO.

THE PHASE 1 CONSTRUCTION WILL HAVE A MINIMAL IMPACT ON STORM RUNOFF RATES. THE ISSUE FOR PHASE 1 IS THAT THE PARKING DECK IS DEVELOPED OVER AN EXISTING POND. THIS POND WILL NEED TO CONTAIN THE FIRST FLUSH VOLUME AND ANY INCREASE IN PEAK RUNOFF RATES FOR FUTURE PHASES. THE PLAN BEING PROPOSED HERE IS FOR THE FULLY DEVELOPED CONDITIONS. RESHAPING OF POND PRO 8 WILL CREATE AN AVAILABLE VOLUME OF 4040 CF FOR RETENTION OF FIRST FLUSH VOLUMES. PHASE 1 FIRST FLUSH VOLUME IS ONLY 0.34" X 2774SF= 79 CF.

PHASE 2 INCLUDES CONSTRUCTION OF A NEW INDEPENDENT LIVING BUILDING AND ADDITIONS TO THE COMMONS AREAS OF THE CAMPUS. STORM RUNOFF PATTERNS ARE MAINTAINED AND INCREASE FROM BASIN PRO #1 WILL BE CONTAINED WITHIN THE EXISTING RING ROAD AND DIRECTED OVER TO POND PRO 8 AT THE SE CORNER OF THE SITE. THE PEAK RUNOFF RATE FROM BASIN PRO#1 IS INCREASED BY 0.43 CFS DUE TO A SLIGHT CHANGE IN LANDSCAPING AND IMPERVIOUS SURFACES.

BASIN PRO 3 HAS A CHANGE IN IMPERVIOUS SURFACE DUE TO BUILDING ADDITIONS FOR THE COMMONS SPACES OF THE CAMPUS. POND EX2 HAS CAPACITY OF 8,438 CUBIC FEET WITH A PROPOSED EXCESS RUNOFF VOLUME REQUIREMENT OF 6,578 CUBIC FEET. THIS POND AND THE DISCHARGE PIPING WILL REMAIN WITHOUT ANY PROPOSED MODIFICATIONS.

ADDITIONAL RETENTION FOR FIRST FLUSH VOLUMES IS 1771CF (BASIN PRO#1)+ 382 CF (BASIN PRO#3)= 2153 CF. THIS WILL BE CONTAINED WITHIN POND PRO 8.

PHASE 3 WILL LIKELY OVERLAP THE PHASE 2 CONSTRUCTION ACTIVITIES. PHASE 3 INCLUDES CREATION OF ADDITIONAL PARKING ALONG THE WESTERN SIDE OF THE SITE TO PROVIDE OVERFLOW PARKING AND A NEW MEMORY CARE AND ASSISTED LIVING WING ALONG THE SOUTH EAST PORTION OF THE SITE. THIS WILL AFFECT ONLY BASIN PRO#7. THE PEAK RUNOFF RATE WILL BE INCREASED BY 0.46 CFS IN BASIN PRO #7. FIRST FLUSH VOLUMES FOR THIS PHASE WILL BE 1351 CF AND WILL BE CONTAINED IN POND PRO 8. THE TOTAL FIRST FLUSH VOLUME FOR THE ENTIRE DEVELOPMENT IS 3,583 CF. THE PHASE 1 RESHAPING OF POND PRO 8 WILL PROVIDE 4,040 CF OF RETENTION AND WILL COVER THE REQUIRED FIRST FLUSH VOLUME.

BASINS EX2, EX5, EX6 AND EX8 WILL NOT BE AFFECTED BY THE PROPOSED DEVELOPMENT. FOR SIMPLICITY THOSE BASINS RETAIN THE "EX" DESIGNATION. BASIN PRO 4 HAS A SLIGHT DECREASE IN EXCESS RUNOFF DUE TO THE CHANGE IN AREAS OF THE DRAINAGE BASIN. THE AREA THAT WAS REMOVED FROM THIS BASIN, IS NOW ACCOUNTED FOR WITHIN BASIN PRO 1. EXCESS RUNOFF FROM BASIN PRO 7 WILL BE ROUTED THOUGH POND 7 (WHICH WILL REMAIN UNCHANGED) AND INTO POND PRO#8.

TO ACCOUNT FOR THE FIRST FLUSH VOLUME, POND #8 WILL NEED TO BE ENLARGED (SIMPLY BY RESHAPING THE BOTTOM TO PROVIDE ADDITIONAL CAPACITY) BY 4040 CUBIC FEET. THE DIFFERENCE BETWEEN EXISTING AND PROPOSED EXCESS RUNOFF FROM BASIN 1 AND 7 CREATES A NEED TO POND AN ADDITIONAL 0.0596 ACRE-FEET (2,605 CF) WITHIN POND #8. COMBINED THIS REQUIRES THAT POND #8 HAVE AN ADDITIONAL VOLUME OF 5,446 CUBIC FEET. POND PRO 8 WILL BE RESHAPED IN PHASE 1 OF THE PROJECT AND WILL PROVIDE AN AVAILABLE VOLUME OF 44,932 CUBIC FEET. ORIGINAL VOLUME OF THIS POND WAS 26,129 CUBIC FEET. THE INCREASE OF 18,803 CUBIC FEET WILL EASILY CONTAIN THE REQUIRED EXCESS RUNOFF VOLUME AS WELL AS THE FIRST FLUSH.

VII. CONCLUSIONS

THE EXISTING CONTAINS MANY ON-SITE PONDING FACILITIES THAT WILL CONTINUE TO DETAIN AND DELAY THE PEAK RUNOFF FROM THE SITE. THE PROPOSED DEVELOPMENT WILL BE REPLACING PARKING LOTS FOR BUILDINGS AND WILL HAVE A MINIMAL INCREASE IN PEAK RUNOFF ENTERING THE PONDING AREAS. THE LOWEST POND WILL BE ENLARGED BY 18,803 CF TO PROVIDE THE REQUIRED VOLUME TO RETAIN THE FIRST FLUSH VOLUME AS WELL AS THE INCREASE IN EXCESS RUNOFF. DISCHARGE POINTS FROM THE SITE WILL MATCH THE HISTORIC AS THE DISCHARGE IS CONTROLLED BY THE OUTLET CONDITIONS BEFORE DISCHARGING INTO THE PUBLIC ROW. THIS OUTLET CONDITION WILL NOT BE MODIFIED BY THE PROPOSED DEVELOPMENT. CAPACITIES OF DOWNSTREAM SYSTEMS WOULD NOT BE AFFECTED BY THE PROPOSED DEVELOPMENT.

Drainage Summary

Project: La Vida Llena
Project Numbe: 2811
Date: 04/19/19
By: Dave A

Site Location: 10701 Lagrima De Oro Road NE

Precipitaion Zone: 4 Per Table A-1 COA DPM Section 22.2

Proposed summary

Basin Name	Pro 1	Ex 2	Pro 3	Pro 4	Ex 5	Ex 6	Pro 7	Ex 8	
Area (sf)	286050	48468	46472	30104	24143	30757	133492	136404	
Area (acres)	6.57	1.11	1.07	0.69	0.55	0.71	3.06	3.13	
%A Land treatment	38	55	45	0	25	35	30	40	
%B Land treatment	0	0	0	5	15	0	0	0	
%C Land treatment	5	0	0	0	0	10	0	0	
%D Land treatment	57	45	55	95	60	55	70	60	
Soil Treatment (acres)									
Area "A"	2.50	0.61	0.48	0.00	0.14	0.25	0.92	1.25	
Area "B"	0.00	0.00	0.00	0.03	0.08	0.00	0.00	0.00	
Area "C"	0.33	0.00	0.00	0.00	0.00	0.07	0.00	0.00	
Area "D"	3.74	0.50	0.59	0.66	0.33	0.39	2.15	1.88	
Excess Runoff (acre-feet)									
100yr. 6hr.	1.0298	0.1510	0.1611	0.1475	0.0899	0.1105	0.5332	0.4968	acre-ft
10yr. 6hr.	0.6053	0.0848	0.0938	0.0938	0.0533	0.0648	0.3236	0.2938	acre-ft
2yr. 6hr.	0.3266	0.0432	0.0502	0.0556	0.0290	0.0347	0.1821	0.1602	acre-ft
100yr. 24hr.	1.2637	0.1822	0.1978	0.1886	0.1107	0.1348	0.6673	0.6143	acre-ft
Peak Discharge (cfs)									
100 yr.	26.37	3.98	4.14	3.55	2.29	2.85	13.28	12.62	cfs
10yr.	16.28	2.32	2.51	2.39	1.43	1.76	8.46	7.80	cfs
2yr.	8.58	1.12	1.30	1.44	0.76	0.93	4.70	4.14	cfs
New Impervious Surfaces	48290	0	10416	0	0	0	36839	0	
First Flush Ponding Voulme (cf)	1770.6	0.0	381.9	0.0	0.0	0.0	1350.8	0.0	

Pond Routing and Volumes (Proposed)

		Pond PRO 8	Pond EX1	Pond EX 2		Pond EX 3	Pond EX 4	Pond PRO 7	Pond EX 5	Pond EX 6	
		Basin PRO#1	Basin EX#2	Basin EX#3	Basin PRO#4	Basin EX#5	Basin EX#6	Basin PRO#7	Basin EX #8 East	Basin EX #8 West	
Incoming Flow Rate	Qin	46.63	3.98	4.14	3.56	2.29	2.85	13.70	6.31	6.31	cfs
Allowable Discharge Rate	Qout	14.92	0	0.00	3.56	0.32	0.10	8.50	4.50	3.70	cfs
Hyrdology Zone		4	4	4	4	4	4	4	4	4	Figure A-1
Area Total	At	6.57	1.11	1.07	0.69	0.55	0.71	3.06	1.57	1.57	acres
Area Type A	Aa	40	55	45	0	25	35	35	40	40	%
Area Type B	Ab	0	0	0	5	15	0	0	0	0	%
Area Type C	Ac	5	0	0	0	0	10	0	0	0	%
Area Type D Impervious	Ad	55	45	55	95	60	55	65	60	60	%
Excess runoff rates	A	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	**0.80**	inches
	B	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	**1.08**	inches
	C	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	**1.46**	inches
	D	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	**2.64**	inches
Weighted E (Exces Runoff)		1.85	1.63	1.81	2.56	1.95	1.88	2.00	1.90	1.90	in
Time of Concentration		0.2	0.2	0.2	0.2	1.2	2.2	3.2	4.2	3.2	hours
Time to Peak =0.7*Tc + ((1.6-(Ad/At)/12)		0.228	0.236	0.228	0.194	0.923	1.628	2.319	3.023	2.323	hours
Time of Base =2.107*E*At/Qp-(.25*Ad/At)		0.410	0.846	0.846	0.810	0.842	0.843	0.778	0.845	0.845	hours
Duration of Peak		0.138	0.113	0.138	0.238	0.150	0.138	0.163	0.150	0.150	hours
Time for end of peak		0.365	0.348	0.365	0.432	1.073	1.765	2.482	3.173	2.473	hours
Time when storage begins		0.073	0.000	0.000	0.194	0.129	0.057	1.439	2.156	1.362	hours
Time incoming is less that discharge		0.396	0.846	0.846	0.432	0.875	0.875	1.835	2.506	1.800	hours
Volume Required during storm		7.298	1.908	2.037	0.000	0.882	1.314	1.453	0.452	0.767	acre inch
		26491	6927	7393	0	3202	4770	5273	1641	2784	cubic feet

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CONSULTANT

STAMP

PROJECT NAME
LA VIDA LLENA
10501 LAGRIMA DE ORO NE

HAVERLAND CARTER GROUP
10701 Montgomery Boulevard NE
ALBUQUERQUE NM, 87111

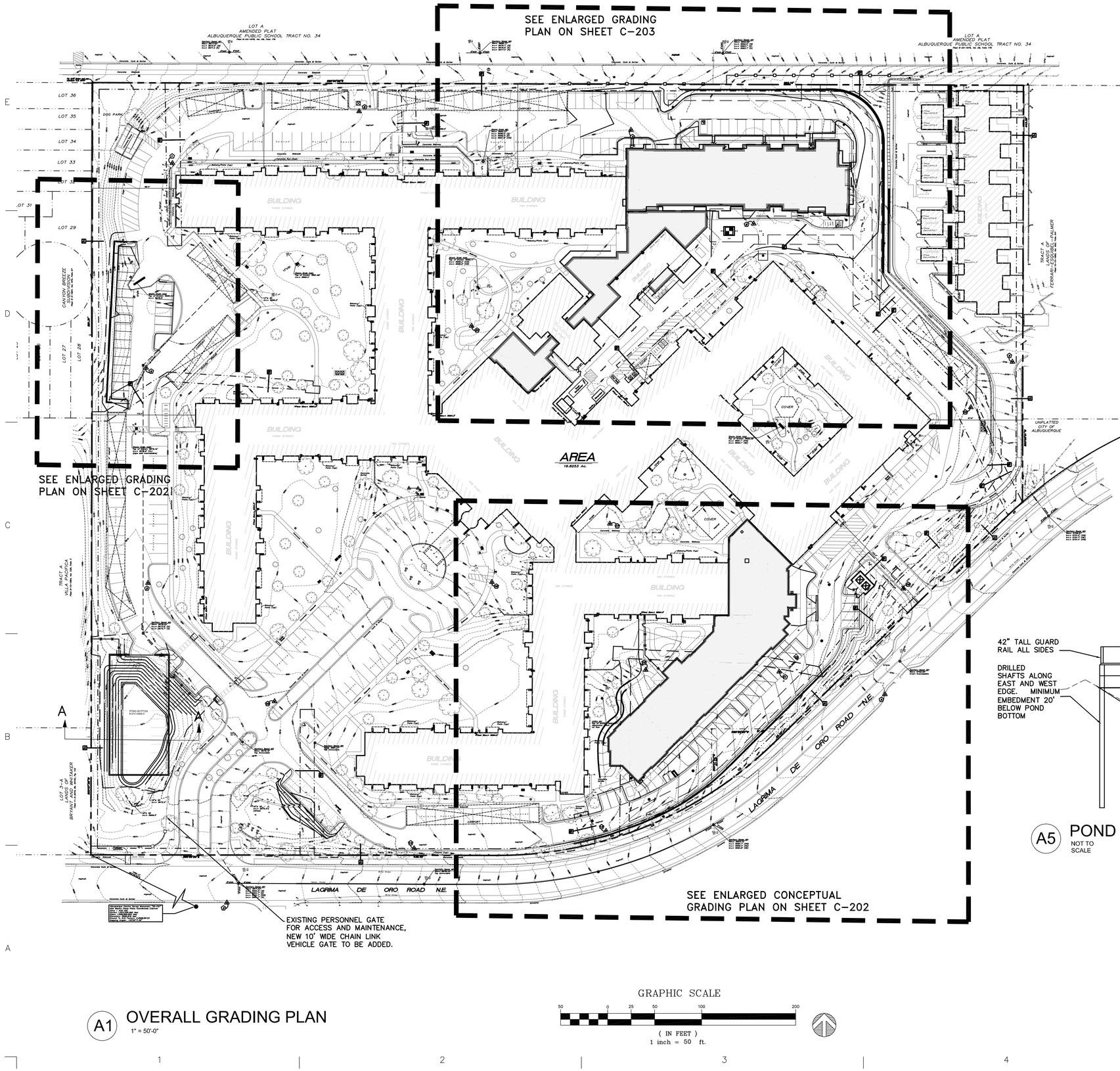
REVISIONS:

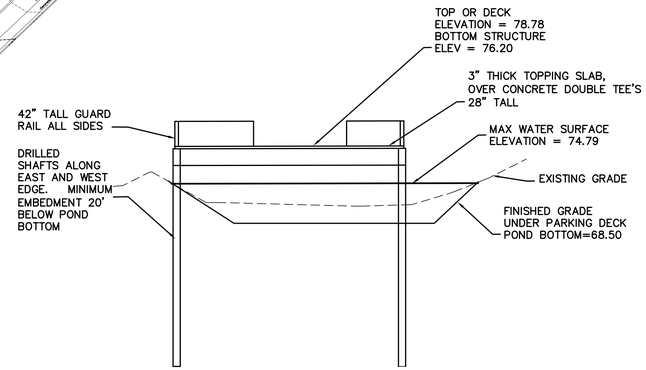
No.	DATE	DESCRIPTION

Drawn by	
Checked by	
Date	7-31-2019
Project number	2811
Cad file name	

SHEET TITLE:
DRAINAGE PLAN
PROPOSED CONDITIONS

SHEET NUMBER:
CD-2





A5 POND SECTION A-A
NOT TO SCALE

KEYED EASEMENTS

A 7' Utility Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.

B 10' Utility Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.

C 15' Utility Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.

D 15' Waterline Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.

E 20' Waterline Easement granted by plat filed August 7, 1982 in Volume C20, Folio 16.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

A1 OVERALL GRADING PLAN
1" = 50'-0"

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Albuquerque New Mexico 87106
T 505 242 6880 • F 505 242 6881

CONSULTANT

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DAVID A. AUBE
STATE OF
14221
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER
7-31-19

PROJECT NAME

LA VIDA LLENA
10501 LAGRIMA DE ORO NE

HAVERLAND CARTER GROUP
10701 Montgomery Boulevard NE
ALBUQUERQUE NM, 87111

REVISIONS:

No.	DATE	DESCRIPTION

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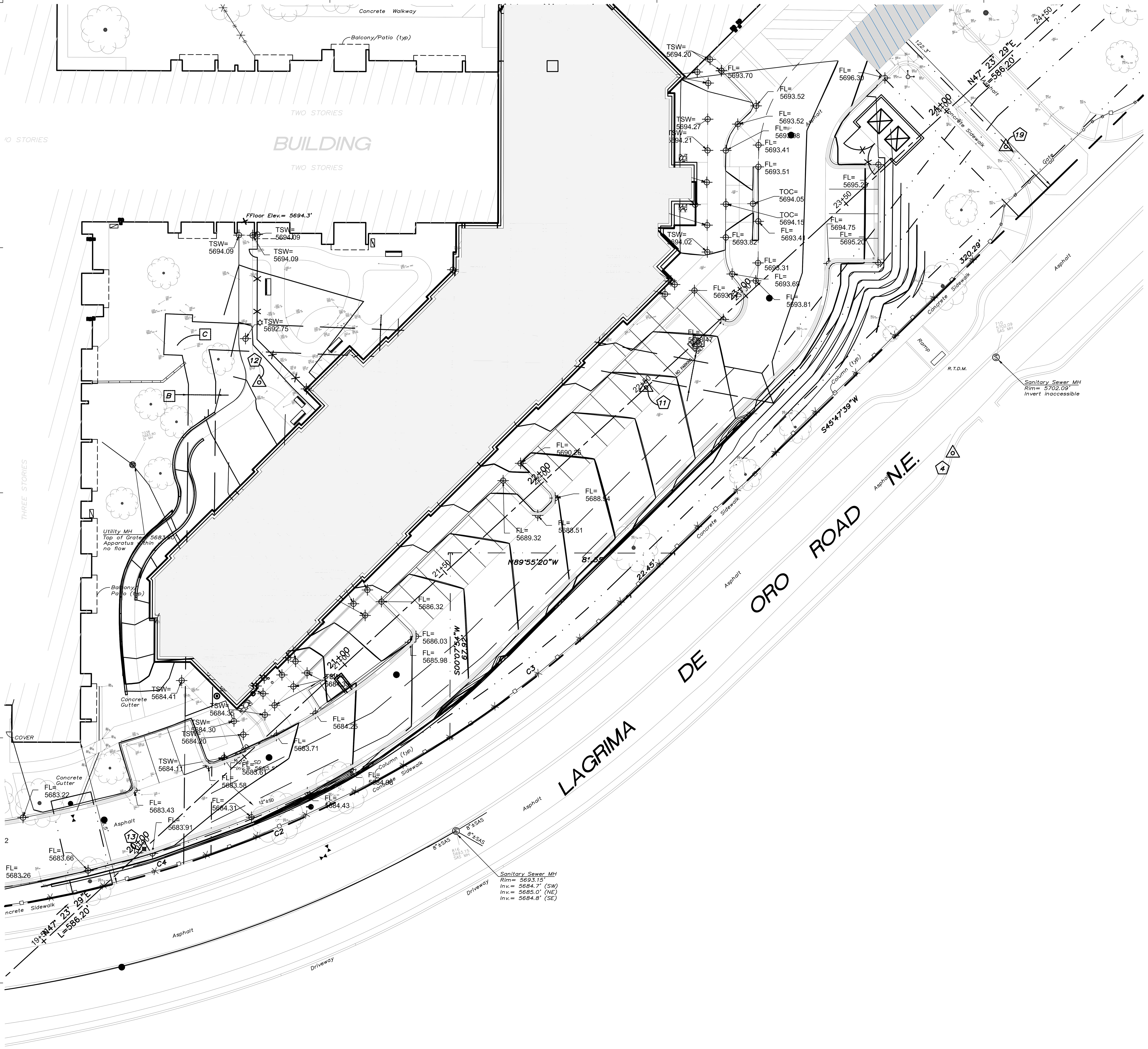
Checked by	
Date	7-31-2019
Project number	2811
Cad file name	

SHEET TITLE:

OVERALL GRADING PLAN

SHEET NUMBER:

C-201

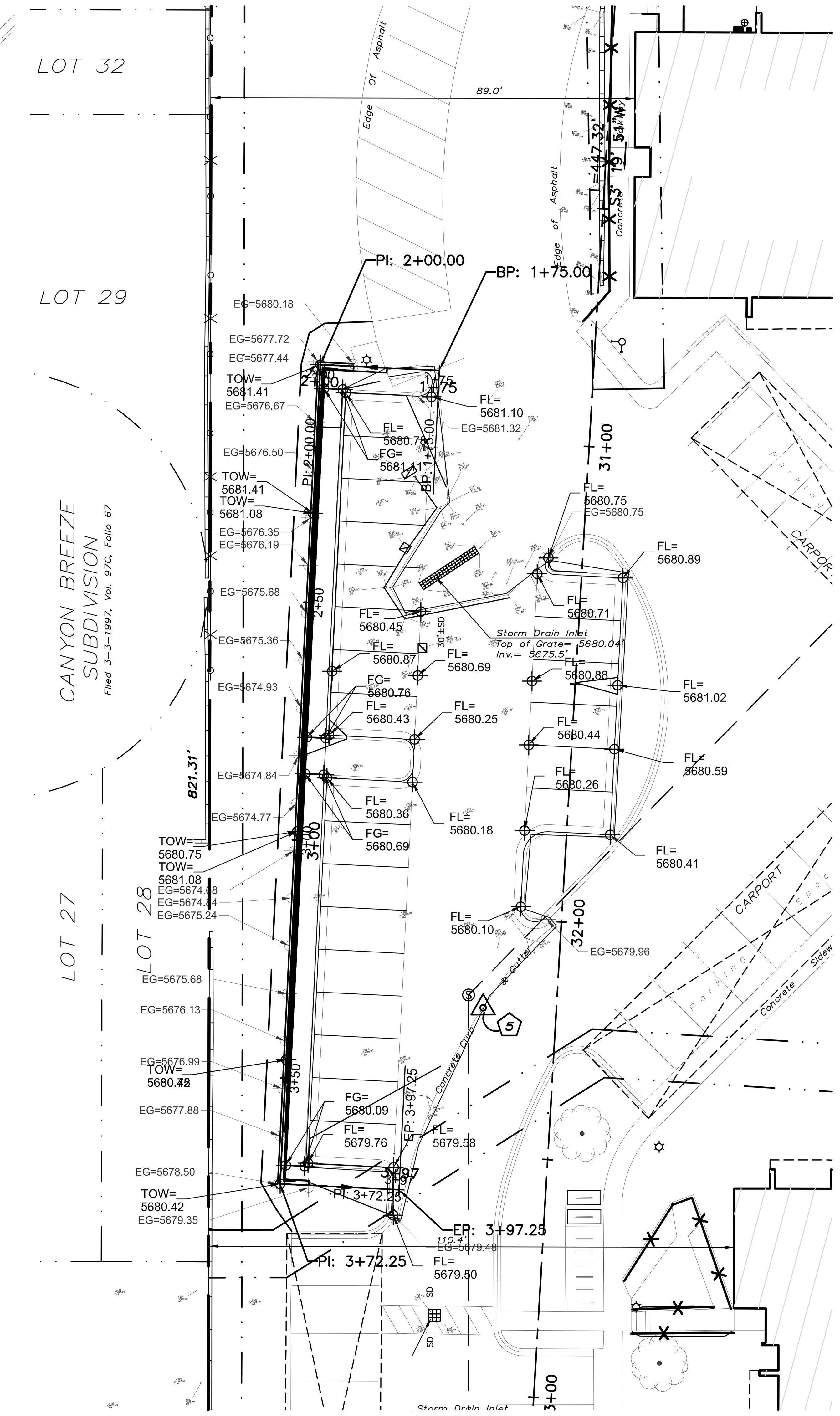


A1 ENLARGED CONCEPTUAL GRADING PLAN

1" = 20'-0"

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.



A4 ENLARGED CONCEPTUAL GRADING PLAN

1" = 20'-0"

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NOT PART OF BUILDING PERMIT REQUEST,
FUTURE PHASE FOR REFERENCE ONLY

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PROJECT NAME

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HAVERLAND CARTER GROUP
10701 Montgomery Boulevard NE
ALBUQUERQUE NM, 87111

REVISIONS:

No.	DATE	DESCRIPTION

Drawn by	
Checked by	
Date	7-31-2019
Project number	2811
Cad file name	

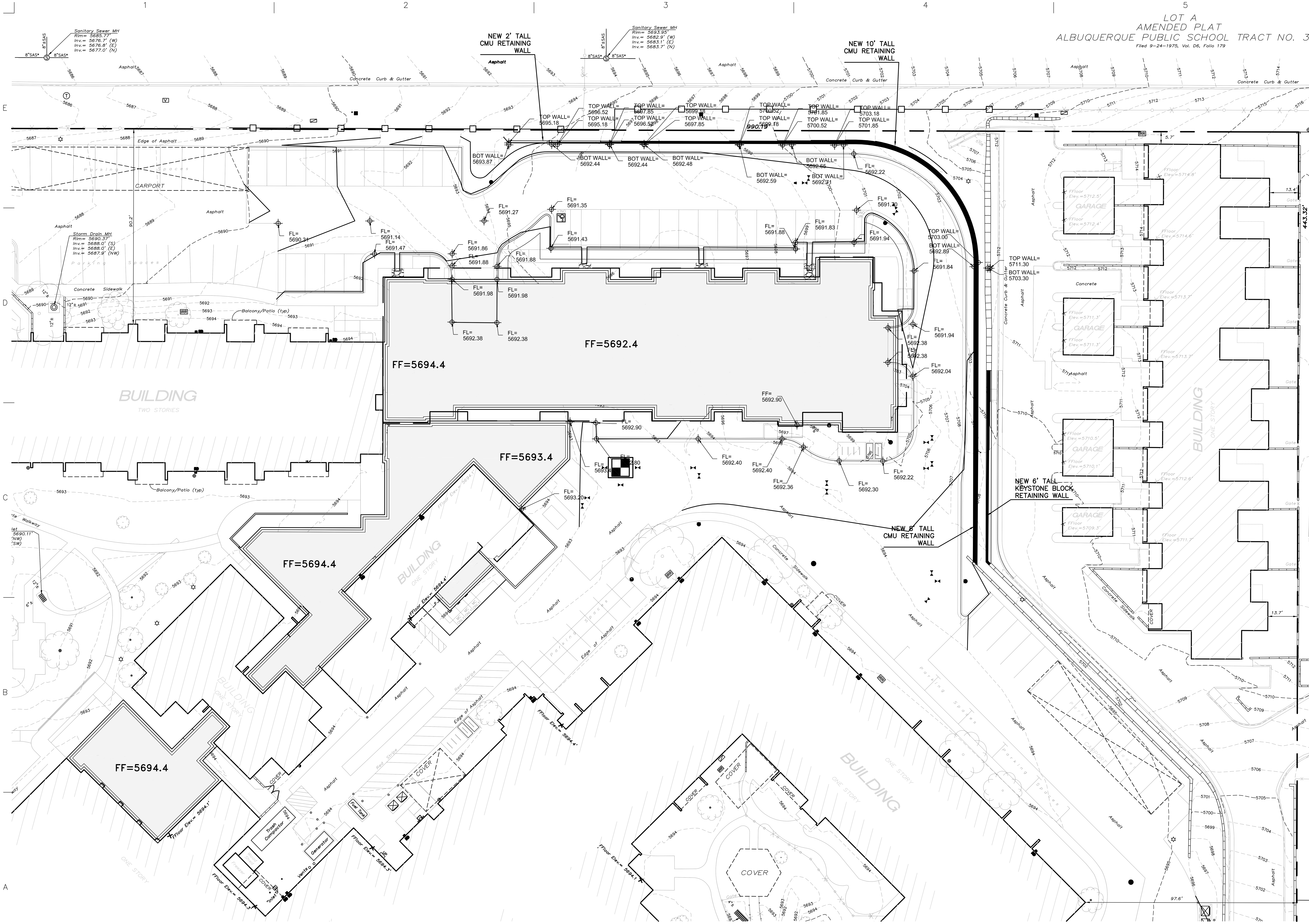
SHEET TITLE:

ENLARGED CONCEPTUAL GRADING PLAN

SHEET NUMBER:

C-202

P:\2811_lvlmasterplanphase1buildout\02 Model\02 Civil\Phase 2 MC-AL\P2-C201-204.dwg, 8/12/2019 2:32:38 PM



A1 ENLARGED GRADING PLAN

1" = 20'-0"

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

dg

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SHEET TITLE:

ENLARGED GRADING PLAN

SHEET NUMBER:

C-203