CITY OF ALBUQUERQUE

Planning Department Brennon Williams, Director



Mayor Timothy M. Keller

July 12, 2021

Mark H. Burak, P.E. 1512 Sagebrush Trail SE Albuquerque, NM 87123

RE: 8950 Alameda Blvd. NE Grading and Drainage Plan Engineer's Stamp Date: 05/05/21 Hydrology File: C20D085

Dear Mr. Burak:

PO Box 1293	Based upon the information provided in your submittal received 06/15/2021, the Grading & Drainage Plan is conditionally approved for Grading Permit (earthwork can get started for the earth pad on the house and scour walls).							
Albuquerque	Once the grading is complete, a pad certification (meaning that the earthwork is complete) will be required prior to release from Hydrology during the Building Permit process. Also, at the time of pad certification approval, Hydrology will concurrently approve the Grading & Drainage Plan for Building Permit.							
NM 87103	The following comments need to be addressed for Hydrology's pad certification and Building Permit approval of the above referenced project:							
www.cabq.gov	1. Since this project is adjacent to, or drains into an Albuquerque Metropolitan Arroyo and Flood Control Authority (AMAFCA) facility, approval by AMAFCA will be need prior to Hydrology approval. Please contact Nicole Friedt P.E, CFM (<u>nfriedt@amafca.org</u> or 505-884-2215).							
	2. Per the IDO § 6-4(Q), the property owner of the property is responsible for building the adjacent half of Alameda Blvd. to include curb & gutter, and sidewalk. The project will have to go to the DRB for approval of the Infrastructure List which will have to financially guaranteed.							
	3. Please provide a recorded Drainage Easement along the 100 year floodplain line within this property as outlined by AMAFCA.							
	4. Please provide Floodplain Permit application prior to Hydrology approval. This Permit can be obtained at the Hydrology Section's webpage.							

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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, <u>jhughes@cabq.gov</u>, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3995 or <u>rbrissette@cabq.gov</u>.

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM Senior Engineer, Hydrology Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

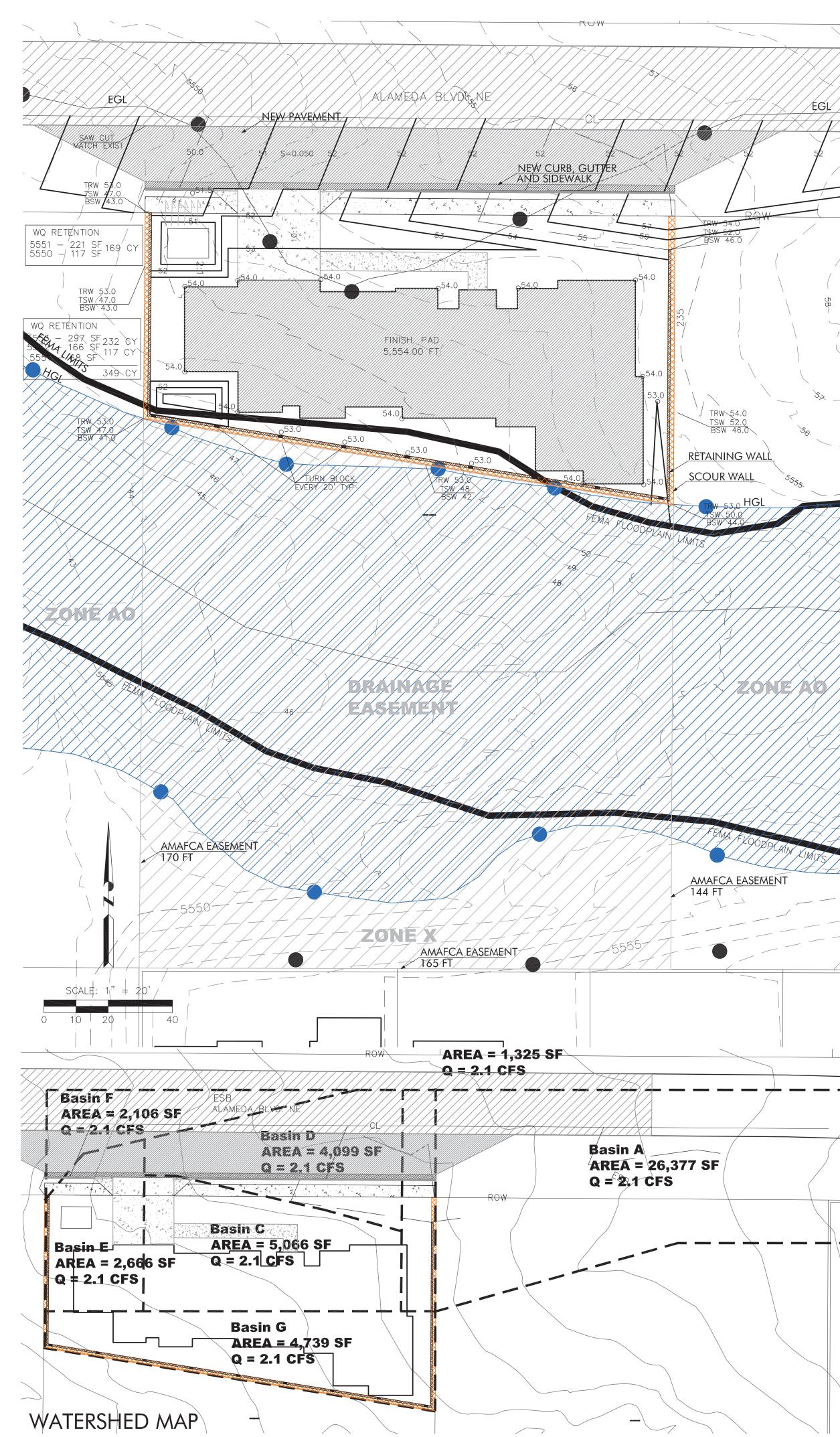


City of Albuquerque

Planning Department Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: _	8950 Alameda	Building Per	rmit #:	Hydrology File #: C06D001
DRB#:		EPC#:	Work Order#:	
Legal Descript	ion: Lot 13, Block 4,	Tract 3, Unit 3	3, North Albuquero	lue Acres
City Address:	8950 Alameda B	Ivd NE		
Applicant:	Mark Burak, PE			Contact:
Address:	1512 Sagebrush Tr SE	, Albuquerqu	e, NM 87123	
Phone#:	(505) 235-2256	Fax#:		E-mail: mburak@comcast.net
Other Contact:				Contact:
Address:				
Phone#:		Fax#:		E-mail:
TYPE OF DEVI	ELOPMENT: PLAT	(# of lots)	RESIDENCE	X DRB SITE ADMIN SITE
IS THIS A RESU	BMITTAL? X Yes	No		
DEPARTMENT	TRANSPORTATION	X HYD	ROLOGY/DRAINAC	Ε
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DATE SUBMIT	TED: 05/19/2021	By:	Mark Burak, PE	
CO.	A STAFF:	ELECTRONIC	SUBMITTAL RECEIVED:_	



Site Location - As shown by the Vicinity Map (Zone Atlas Map C-20), the proposed residential project site is located on a single 0.725-acre parcel on the south side of Alameda Boulevard and east side of Ventura in North Albuquerque Acres. At present, the site is undeveloped. Single homes are adjacent to the north of the property. The La Cueva Arroyo cuts across the southeast corner of the property.

UPC: 102006427335710232 .. Lot 1 014 NORTH ALBQ ACRES TR3 UNIT #3, 9100 Alameda NE

Benchmark - Basis of elevation is ACS Station "5-D21" Elevation 5.653.331 NAVD 1988.

Flood Zone - As shown by Panels 35001-C0133H of the National Flood Insurance Program - Flood Insurance Rate Maps (FIRM) for the City of Albuquerque, New Mexico, dated 08/16/2012 a portion of this site does lie within a designated flood hazard Zone AO (Depth 2 Feet).

Existing Conditions - Currently, the project site slopes at about three percent and drains from east to west across the undeveloped site in a sheet flow manner towards Ventura. The La Cueva Arroyo traverses the southeast corner of the property at a slope of four percent. The channelized portion of the arroyo in this area is about 300 feet wide. The arroyo discharge crosses Ventura south of the property. Ventura is paved with no culverts, curb or gutter. The offsite runoff generated east of the adjacent subdivision impacts the property in an historical discharge rate of 3,000 cfs according to the DMP.

Proposed Grading - The Grading and Drainage Plan shows 1) existing and proposed grades indicated by spot elevations and contours; 2) the limit of existing and proposed improvements.

All runoff on the property is to be discharged into two detention basins that are to be located either along the southern property boundary or in the northwest corner of the property. These detention/retention basins will provide adequate differential storage for the 100-year event. To achieve adequate pad and fill height, a six foot retaining wall is proposed along a portion of the western side of the property. An additional shorter segment will be located along a portion of the eastern property boundary.

Cut and or fill slopes along the east and south boundary areas were set at a maximum of 3:1 so nat no armoring will be required. The retention ponds will be sloped at a 2:1 and will require armoring with two-inch cobble.

As a part of this project, the improvements to the south side of Alameda Boulevard will be constructed. This will include the curb, gutter, and sidewalk along the southern right-of-way and the commensurate 6-inch thick pavement section along the entire front of the property with two 2:1 tapers back to existing pavement.

HEC-RAS – To delineate the HGL for the existing arroyo, an HEC-RAS water surface model was prepared for this reach of the La Cueva Arroyo. The peak discharge at Ventura was found to be 3,000-cfs and was routed through the reach. Flow depths in the reach averaged around 2.5 feet with velocities at 8.5 feet per second. The erosion setback limit (ESB) was calculated at 210 feet from the arroyo centerline.

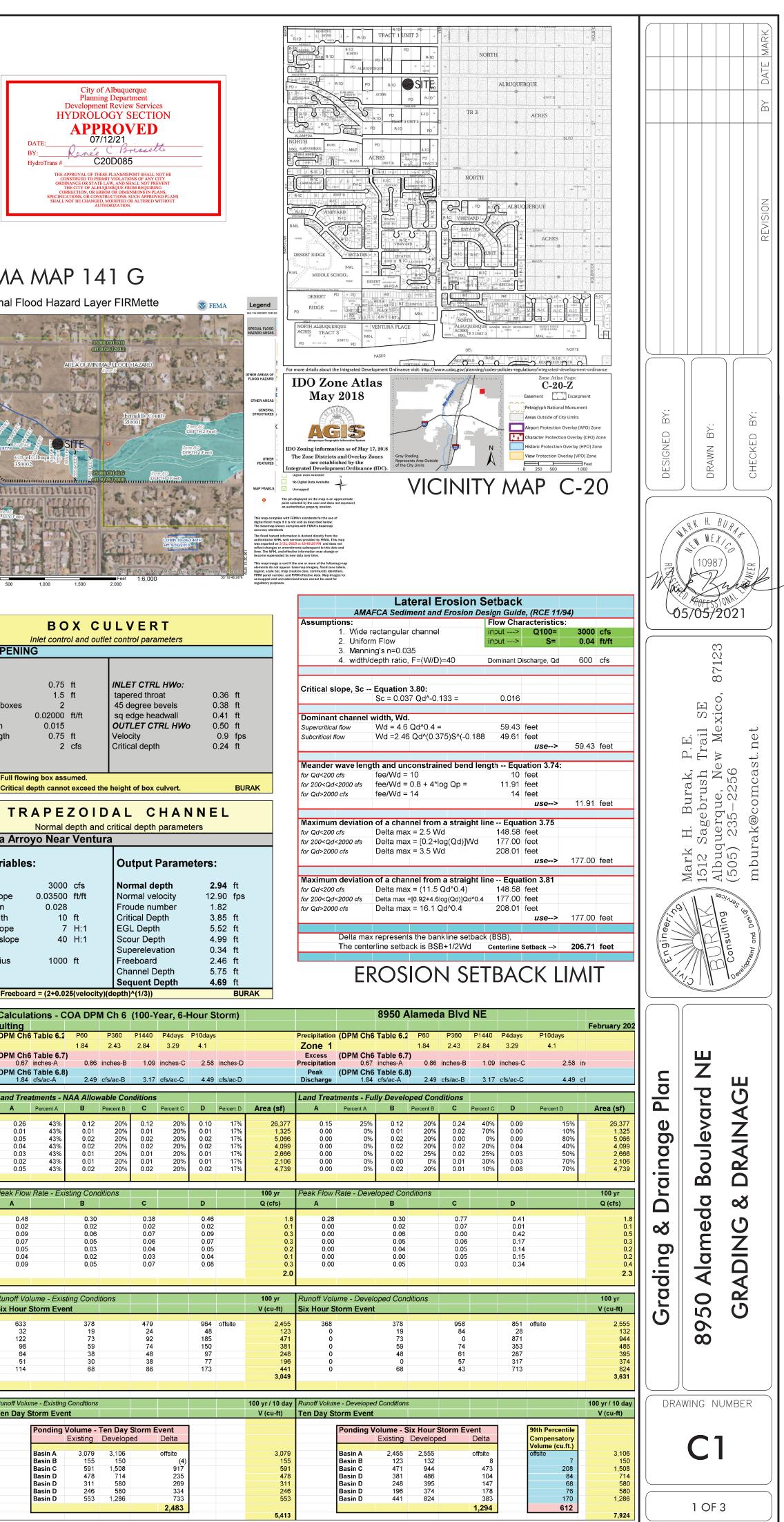
A six foot deep scour wall is proposed along the eastern and southern property boundaries to provide protection from potential scour associated with the arroyo flows.

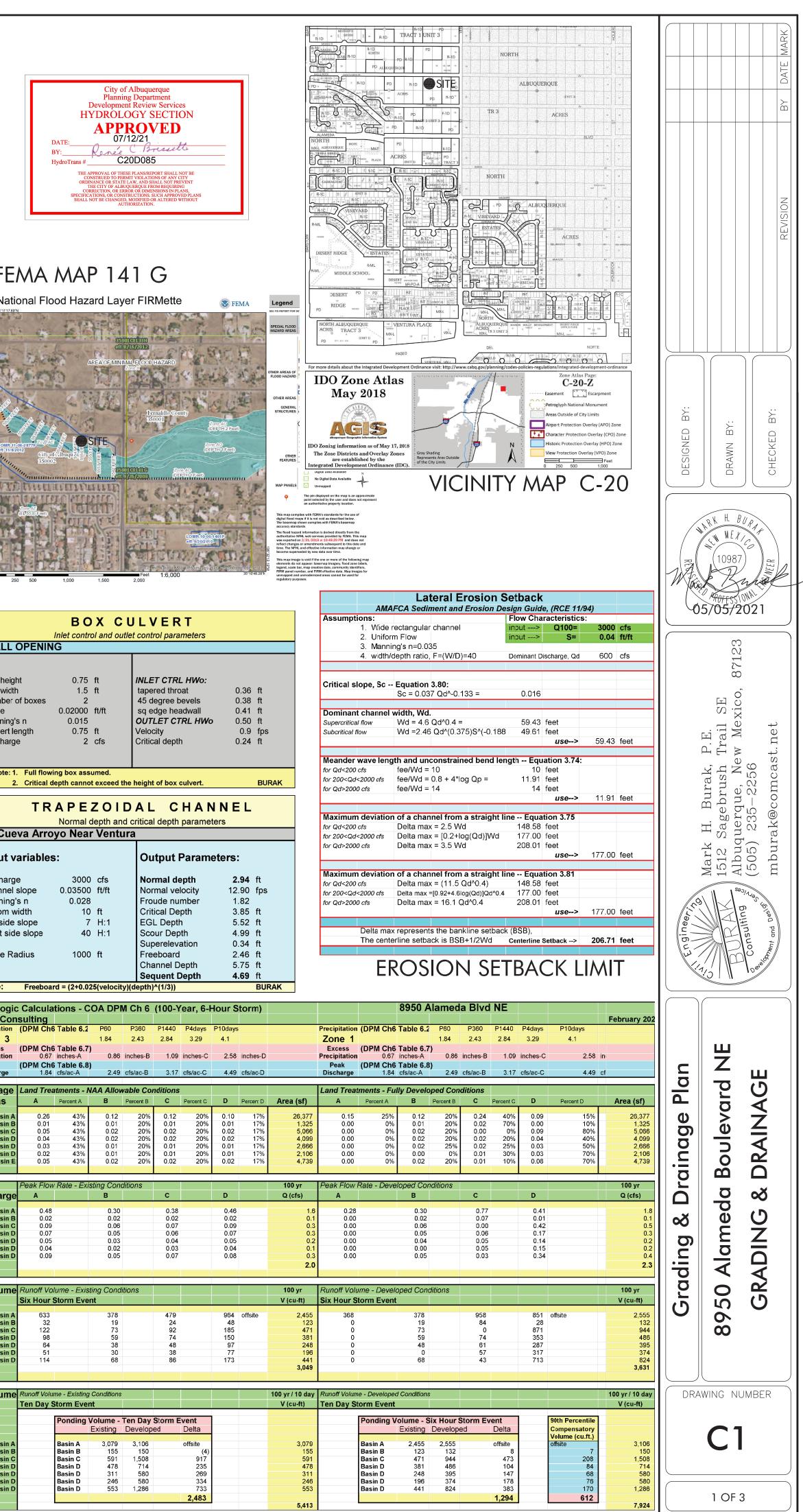
Hydrologic Methods - The drainage basin map shows three separate sub-basins (A-C) within the project area to assess peak flow rates at various points around the project site culminating at the retention basins. The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The process outlined in the DPM, Section 22.2 was used to quantify the peak flow rates and volumes. As shown by these calculations, the fully developed improvements will result in a slight increase in runoff generated by the site. When incorporating the proposed ponding, the downstream impact is similar when comparing to existing and/or historical conditions.

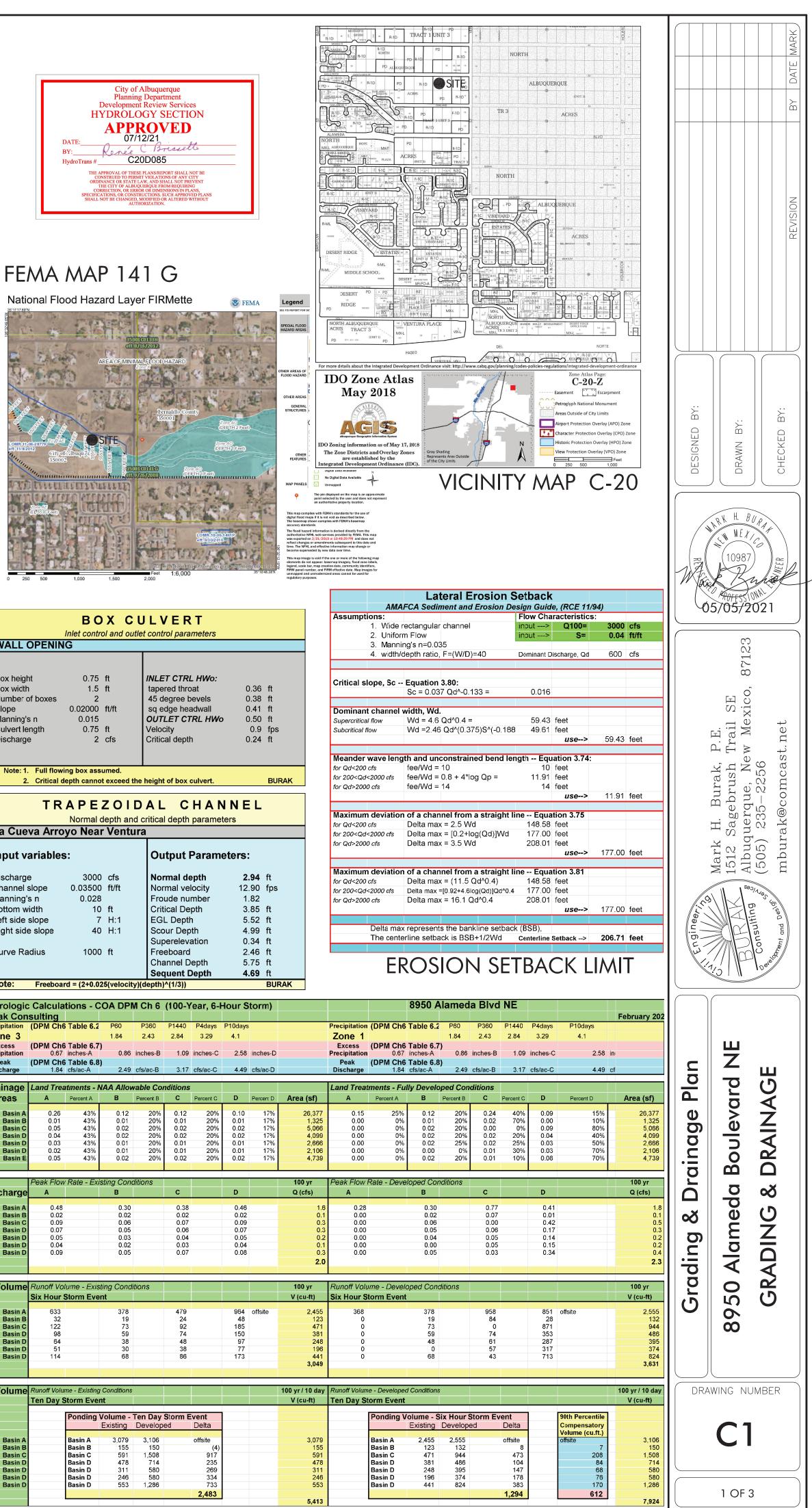
The proposed improvements will increase the existing peak runoff due to the higher percentage of impervious area proposed by the development. By controlling the calculated runoff within the retention areas, scour and erosion is expected to be reduced to a minimum amount. A spreadsheet for Precipitation Zone 3 is included on this plan. This spreadsheet outlines the peak runoff and volume generated for each sub-basin for existing and proposed fully developed conditions. Percentage of each land treatment is shown to illustrate the addition of impervious area related to the proposed construction. By routing the proposed developed discharge rates and volumes through the retention basins, the outfall is to be controlled by incorporating a limited capacity discharge. In this case, the discharge structure consists of a six inch PVC outfall pipe in each retention basin. The northern spillway is to be riprap lined weir section that will discharge onto the Ventura right-of-way. The southern basin overflow will discharge through the turned blocks in the southern wall to discharge into the La Cueva Arroyo.

The proposed detention/retention basins will have a maximum capacity of 1,006 cubic feet and 1,329 cubic feet as shown on the Plan. The cumulative volume generated for the six-hour storm for all onsite sub-basins was estimated as 2,893 cubic feet for the northern pond and 2,080 cubic , feet for the southern pond. The required six-hour detention for each pond was estimated as 985 cf for the north pond and 777 cf for the southern pond. Northern detention area will pond to a depth of 2.0-feet and the southern detention area will pond at a depth of 2.5-feet.

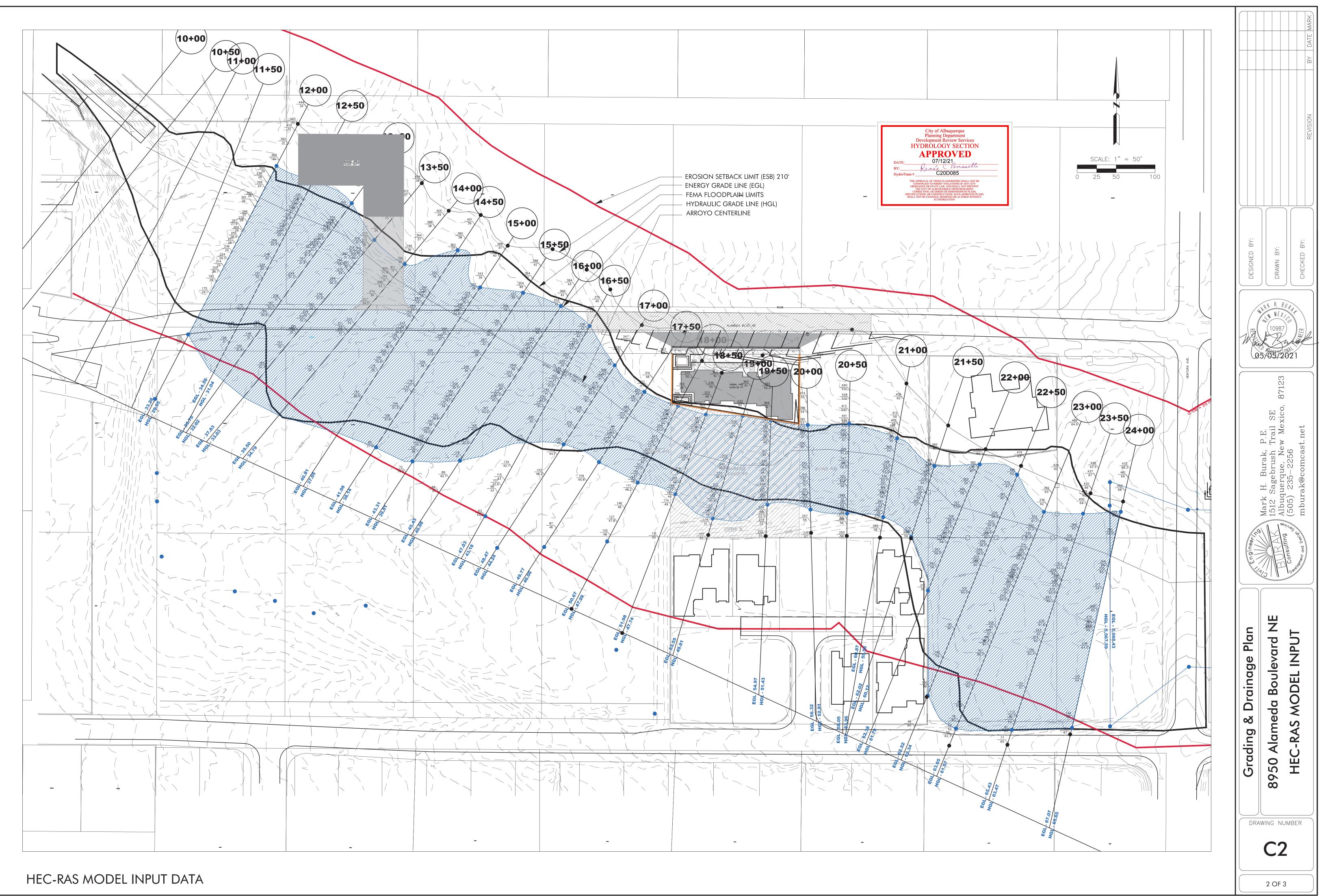
90% Compensatory Volume Management – The first flush has been mitigated based on the = impervious areas listed on the attached spreadsheet. This equates to the total impervious area of the site multiplied by 0.615-inches or about 612 cubic feet for the two ponding areas. This storage has been provided on the plan by the retention basins as shown. The outfall for the northern retention area is to the north over the proposed sidewalk. The southern ponding area will be able to spill through the turned blocks in the wall.

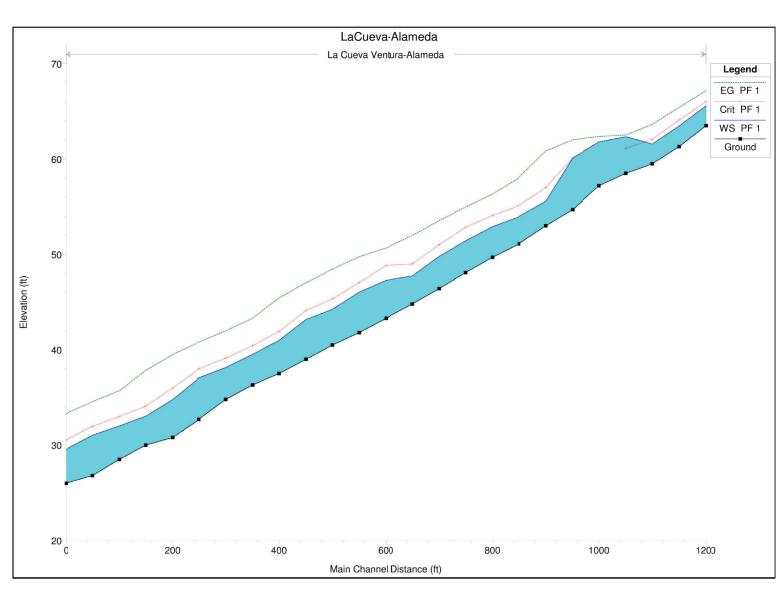






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Areas Basin A Basin C Basin D Basin D Basin D Basin D Basin D Basin C Basin A Basin C Basin D Basin C	A 0.26 0.01 0.05 0.04 0.03 0.02 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.0	Percent A 43% 43% 43% 43% 43% 43% 43% 43% 43% 43%	B 0.12 0.01 0.02 0.01 0.01 0.02 0.01 0.02 0.06 0.05 0.03 0.02 0.05 0.03 0.05 0.03 0.02 0.05 0.05 0.03 0.05 0.05 0.05 0.03 0.05 0.05	Percen 22 21 21 22 21 21 21 21 21 21 21 21 21			
Areas Basin A Basin D Basin D Basin D Basin D Basin D Basin D Basin B Basin C Basin D Basin C Basin C Basin B Basin C Basin C Basin D	A 0.26 0.01 0.05 0.04 0.03 0.02 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.02 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.07 0.05 0.04 0.09 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.05 0.04 0.07 0.0	Percent A 43% 43% 43% 43% 43% 43% 43% 7 Rate - Existing Storm Eve Basin C Basin D Basin D Basin D	B 0.12 0.01 0.02 0.01 0.01 0.02 0.01 0.02 0.02	Percen 22 24 24 24 24 24 24 24 24 24 24 24 24			

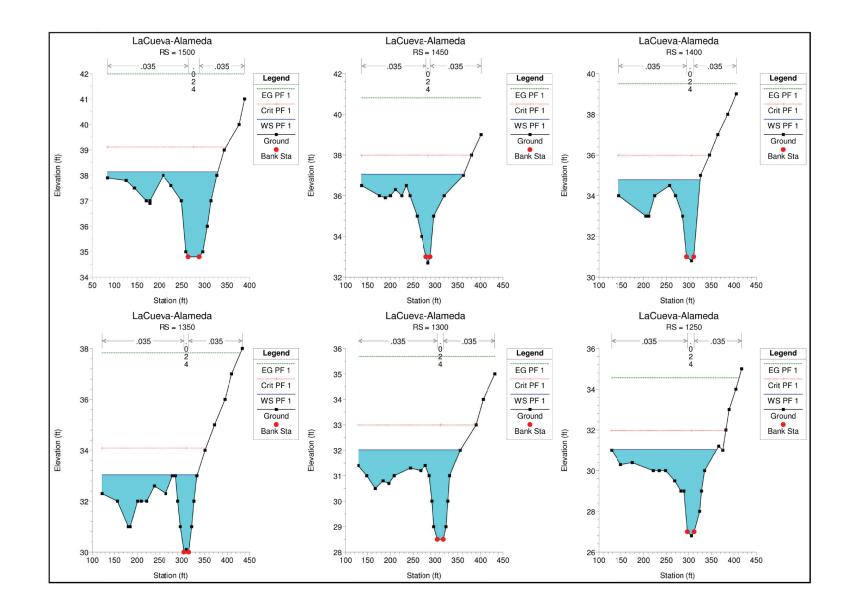


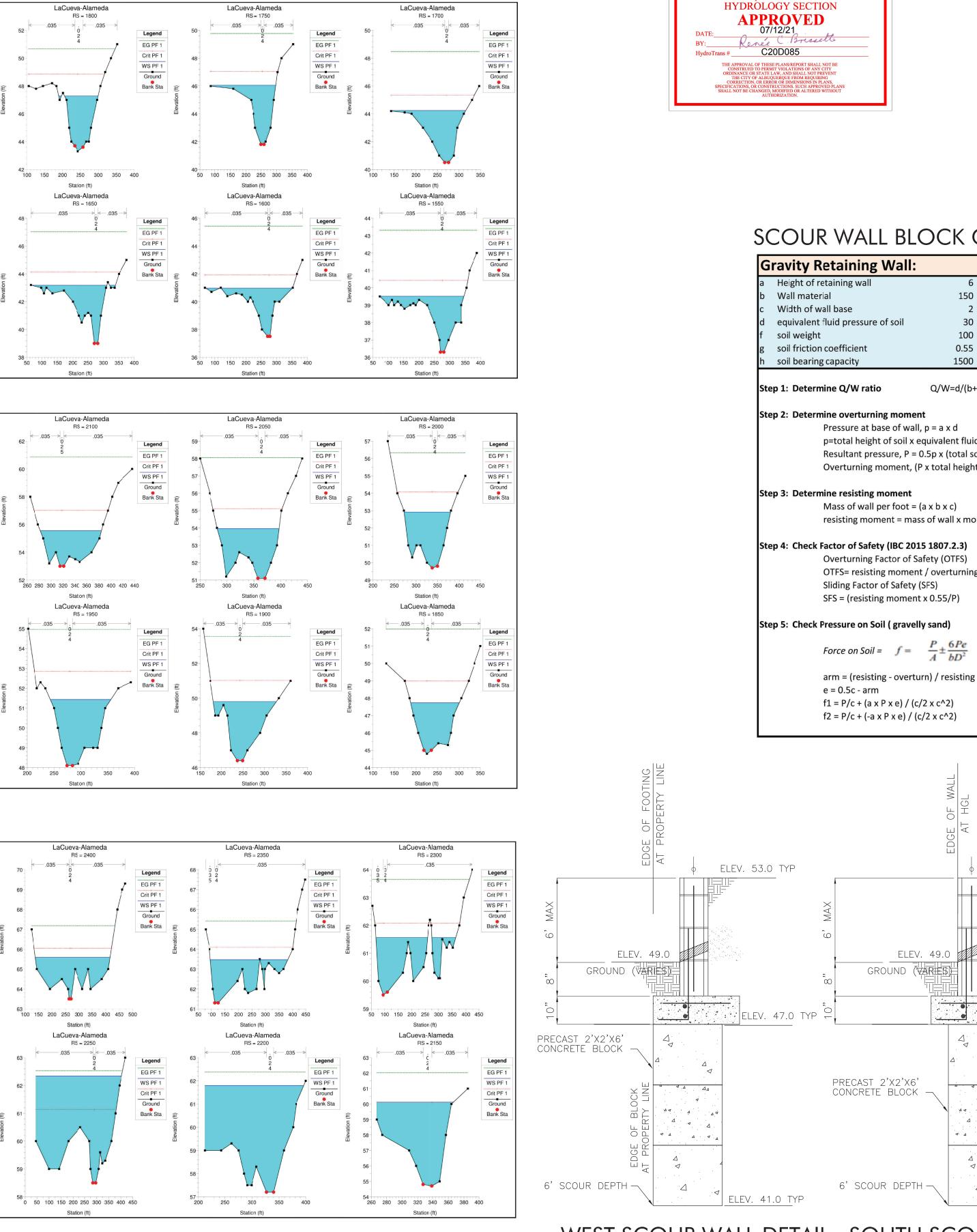


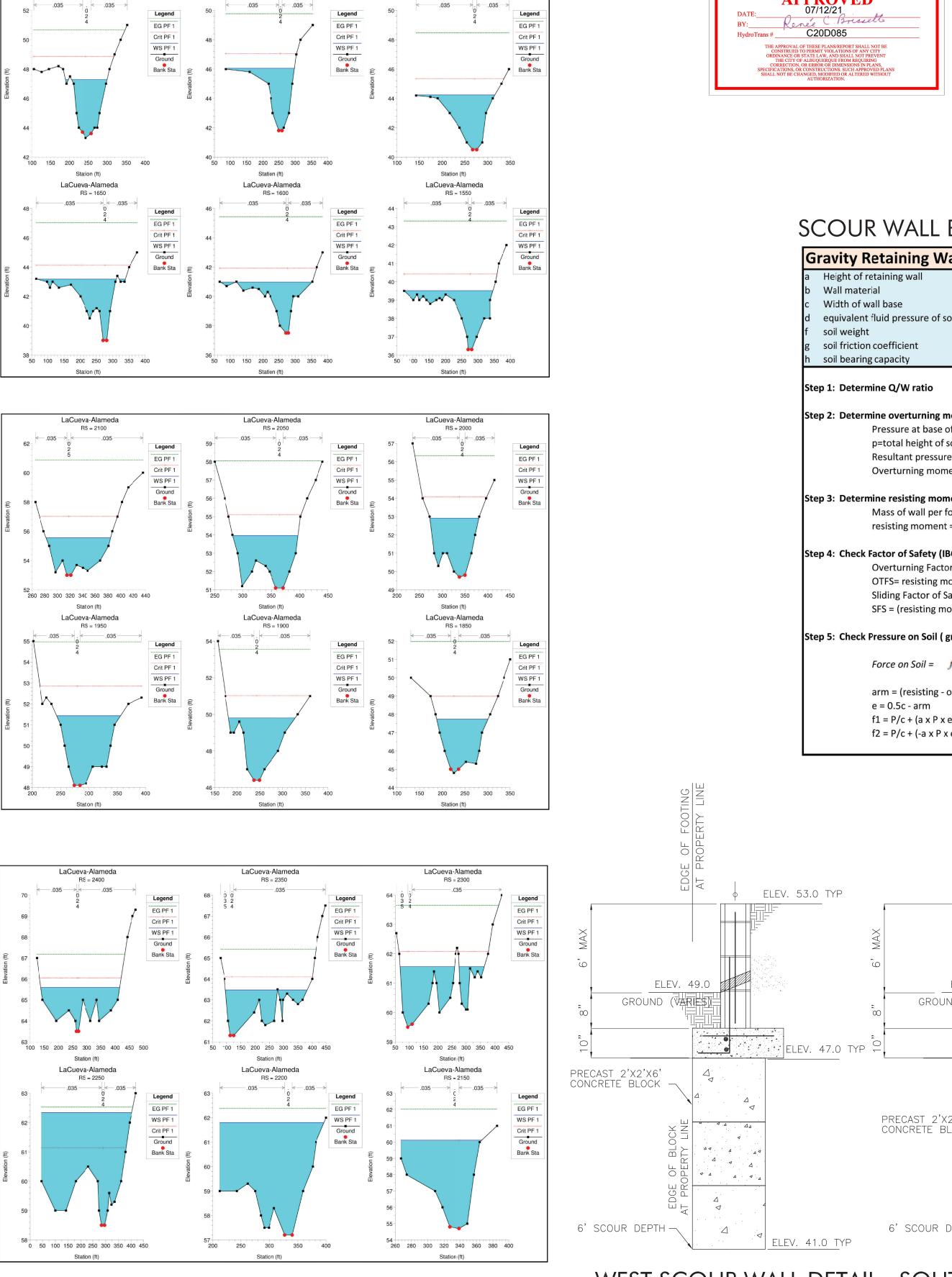
HEC-RAS OUTPUT - LA CUEVA ARROYO

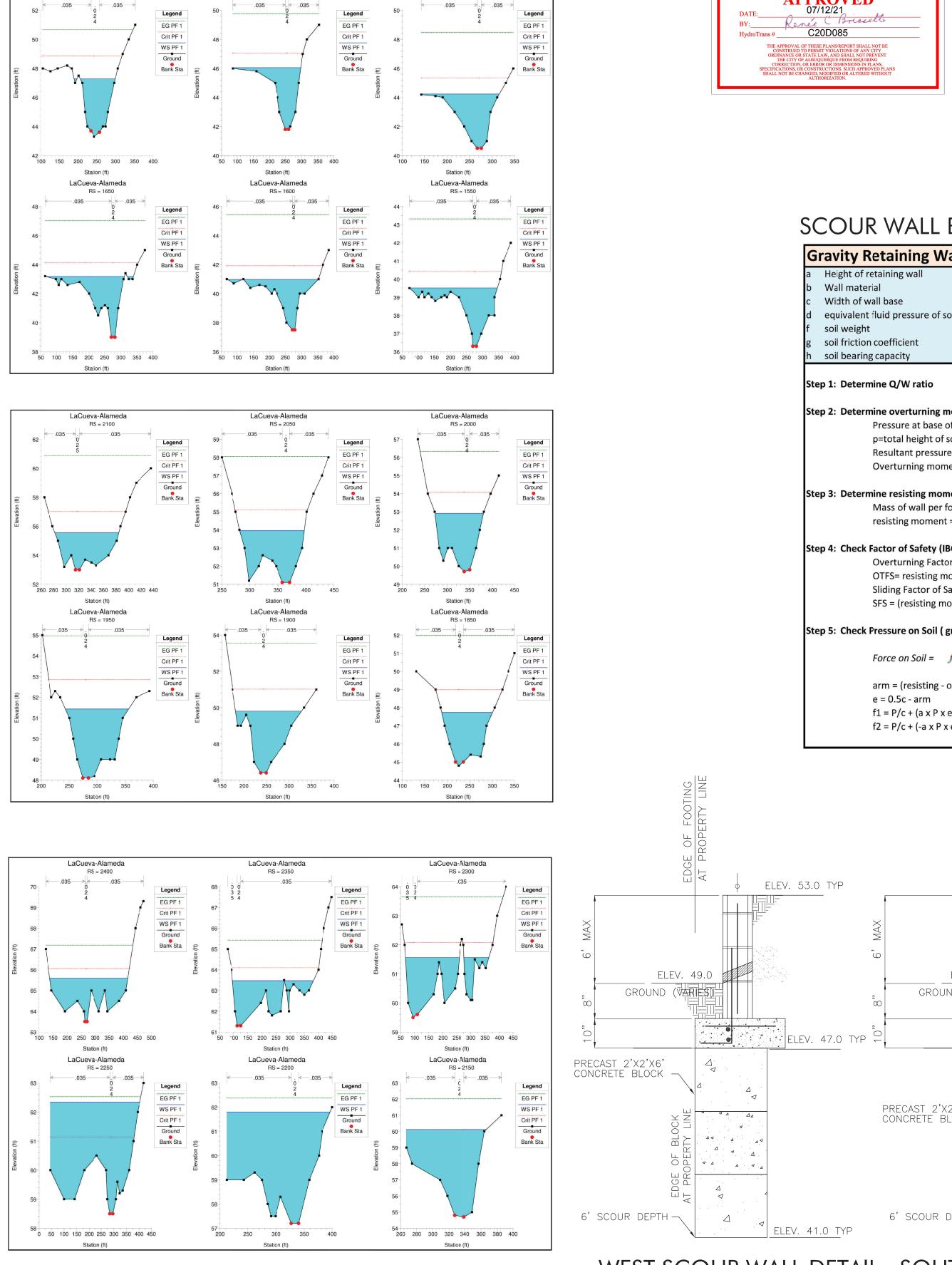
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Ventura-Alameda	2400	PF 1	3000.00	63.50	65.59	66.05	67.18	0.035024	18.92	326.35	277.51	2.3
Ventura-Alameda	2350	PF 1	3000.00	61.30	63.47	64.10	65.42	0.033668	19.05	309.06	285.91	2.2
Ventura-Alameda	2300	PF 1	3000.00	59.50	61.57	62.08	63.65	0.036487	18.87	305.66	278.72	2.34
Ventura-Alameda	2250	PF 1	3000.00	58.50	62.34	61.13	62.52	0.001538	5.95	925.43	357.10	0.54
Ventura-Alameda	2200	PF 1	3000.00	57.20	61.79		62.38	0.003166	9.63	557.01	184.29	0.79
Ventura-Alameda	2150	PF 1	3000.00	54.70	60.12	60.12	62.02	0.007026	15.91	331.94	99.47	1.2
Ventura-Alameda	2100	PF 1	3000.00	53.00	55.56	57.01	60.87	0.069708	29.35	176.83	102.37	3.23
Ventura-Alameda	2050	PF 1	3000.00	51.10	53.96	55.11	58.05	0.036286	23.74	216.72	114.42	2.48
Ventura-Alameda	2000	PF 1	3000.00	49.70	52.91	54.08	56.32	0.026237	21.61	233.66	107.79	2.14
Ventura-Alameda	1950	PF 1	3000.00	48.10	51.43	52.85	54.97	0.027593	22.94	234.34	112.25	2.2
Ventura-Alameda	1900	PF 1	3000.00	46.40	49.81	51.02	53.55	0.028165	23.52	252.14	146.40	2.2
Ventura-Alameda	1850	PF 1	3000.00	44.80	47.74	48.99	51.98	0.032982	22.53	216.16	112.88	2.3
Ventura-Alameda	1800	PF 1	3000.00	43.30	47.29	48.85	50.67	0.014551	18.24	247.02	102.06	1.6
Ventura-Alameda	1750	PF 1	3000.00	41.80	46.06	47.05	49.77	0.020291	23.16	290.60	210.33	1.98
Ventura-Alameda	1700	PF 1	3000.00	40.50	44.24	45.34	48.47	0.031370	26.42	257.77	172.57	2.4
Ventura-Alameda	1650	PF 1	3000.00	39.00	43.18	44.13	47.03	0.022548	24.12	314.44	263.07	2.08
Ventura-Alameda	1600	PF 1	3000.00	37.50	40.98	41.92	45.43	0.044897	30.13	270.40	281.19	2.8
Ventura-Alameda	1550	PF 1	3000.00	36.30	39.51	40.42	43.31	0.033359	24.62	284.46	273.73	2.4
Ventura-Alameda	1500	PF 1	3000.00	34.80	38.14	39.12	41.98	0.021460	20.27	289.64	244.24	1.9
Ventura-Alameda	1450	PF 1	3000.00	32.70	37.05	37.99	40.81	0.024473	25.19	305.81	225.98	2.1
Ventura-Alameda	1400	PF 1	3000.00	30.80	34.79	35.98	39.50	0.023810	23.62	264.34	180.21	2.1
Ventura-Alameda	1350	PF 1	3000.00	30.00	33.03	34.09	37.83	0.050081	28.71	244.35	210.60	2.9
Ventura-Alameda	1300	PF 1	3000.00	28.50	32.02	33.00	35.70	0.027002	23.53	295.14	226.63	2.2
Ventura-Alameda	1250	PF 1	3000.00	26.80	31.04	31.96	34.56	0.018004	21.40	320.97	235.66	1.8
Ventura-Alameda	1200	PF 1	3000.00	26.00	29.55	30.53	33.28	0.037781	27.99	270.22	216.93	2.62

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Ventura-Alameda	2400	PF 1	3000.00	63.50	65.59	66.05	67.18	0.035024	18.92	326.35	277.51	2.31
Ventura-Alameda	2350	PF 1	3000.00	61.30	63.47	64.10	65.42	0.033668	19.05	309.06	285.91	2.28
Ventura-Alameda	2300	PF 1	3000.00	59.50	61.57	62.08	63.65	0.036487	18.87	305.66	278.72	2.34
Ventura-Alameda	2250	PF 1	3000.00	58.50	62.34	61.13	62.52	0.001538	5.95	925.43	357.10	0.54
Ventura-Alameda	2200	PF 1	3000.00	57.20	61.79		62.38	0.003166	9.63	557.01	184.29	0.79
Ventura-Alameda	2150	PF 1	3000.00	54.70	60.12	60.12	62.02	0.007026	15.91	331.94	99.47	1.21
Ventura-Alameda	2100	PF 1	3000.00	53.00	55.56	57.01	60.87	0.069708	29.35	176.83	102.37	3.23
Ventura-Alameda	2050	PF 1	3000.00	51.10	53.96	55.11	58.05	0.036286	23.74	216.72	114.42	2.48
Ventura-Alameda	2000	PF 1	3000.00	49.70	52.93	54.07	56.34	0.025370	21.34	228.86	96.67	2.11
Ventura-Alameda	1950	PF 1	3000.00	48.10	51.35	52.67	54.99	0.027587	22.57	223.57	98.62	2.21
Ventura-Alameda	1900	PF 1	3000.00	46.40	49.75	50.86	53.57	0.028242	23.32	240.31	129.53	2.24
Ventura-Alameda	1850	PF 1	3000.00	44.80	47.70	48.88	51.99	0.033189	22.41	210.43	105.31	2.36
Ventura-Alameda	1800	PF 1	3000.00	43.30	47.34	48.12	50.70	0.013774	17.90	239.55	89.91	1.60
Ventura-Alameda	1750	PF 1	3000.00	41.80	46.05	47.05	49.82	0.020577	23.29	288.85	210.28	1.99
Ventura-Alameda	1700	PF 1	3000.00	40.50	44.23	45.34	48.50	0.031698	26.53	256.76	172.46	2.42
Ventura-Alameda	1650	PF 1	3000.00	39.00	43.17	44.13	47.05	0.022695	24.18	313.29	262.06	2.09
Ventura-Alameda	1600	PF 1	3000.00	37.50	40.98	41.92	45.44	0.045041	30.17	270.02	280.85	2.85
Ventura-Alameda	1550	PF 1	3000.00	36.30	39.51	40.42	43.32	0.033419	24.64	284.24	273.71	2.42
Ventura-Alameda	1500	PF 1	3000.00	34.80	38.14	39.12	41.99	0.021488	20.28	289.47	244.23	1.96
Ventura-Alameda	1450	PF 1	3000.00	32.70	37.05	37.99	40.81	0.024474	25.19	305.81	225.98	2.17
Ventura-Alameda	1400	PF 1	3000.00	30.80	34.79	35.98	39.50	0.023810	23.62	264.34	180.21	2.11
Ventura-Alameda	1350	PF 1	3000.00	30.00	33.03	34.09	37.83	0.050082	28.71	244.35	210.60	2.93
Ventura-Alameda	1300	PF 1	3000.00	28.50	32.02	33.00	35.70	0.027002	23.53	295.14	226.63	2.21
Ventura-Alameda	1250	PF 1	3000.00	26.80	31.04	31.96	34.56	0.018005	21.40	320.97	235.66	1.85
Ventura-Alameda	1200	PF 1	3000.00	26.00	29.55	30.53	33.28	0.037781	27.99	270.22	216.93	2.62









City of Albuquerque Planning Department Development Review Services

