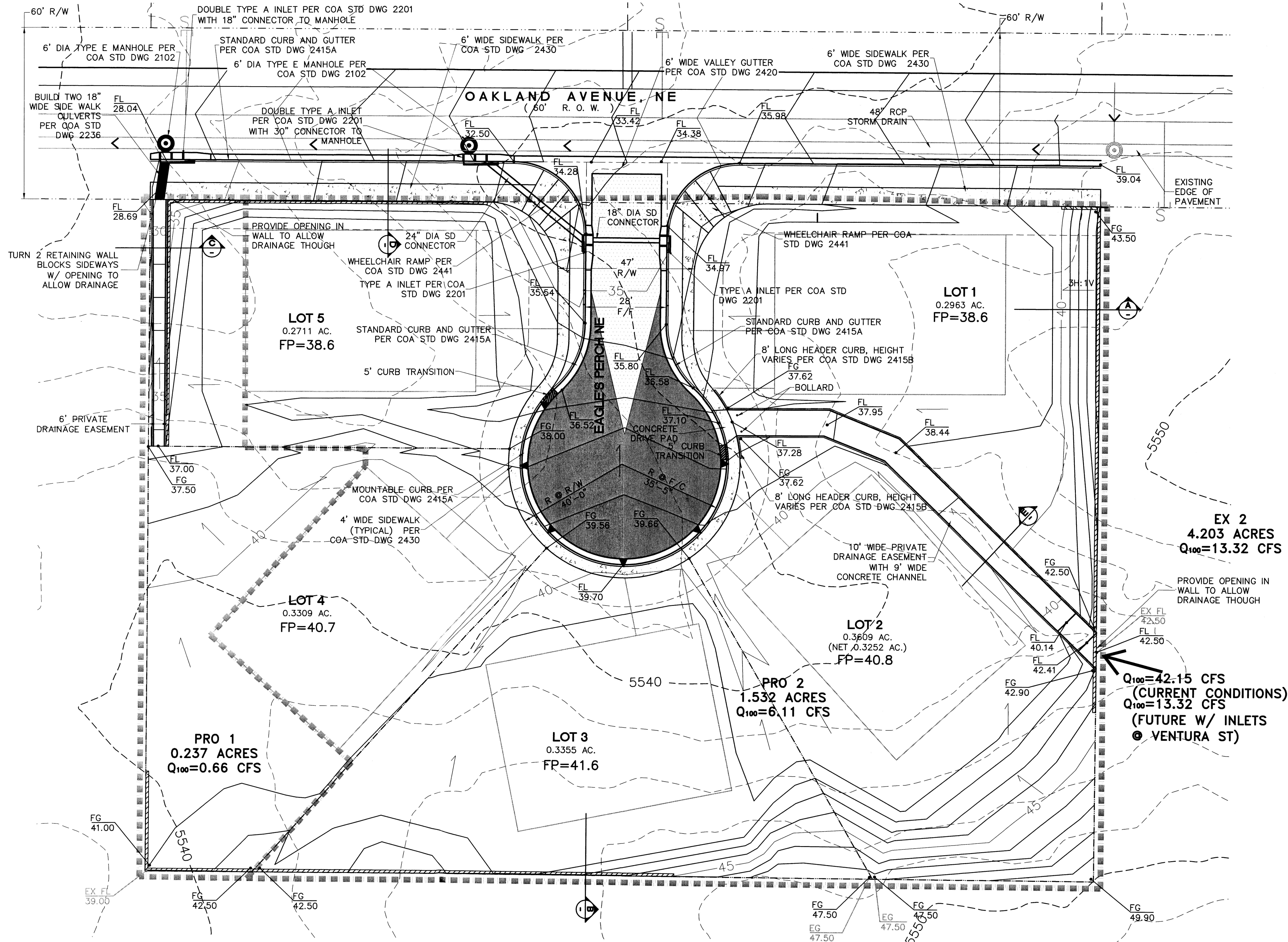
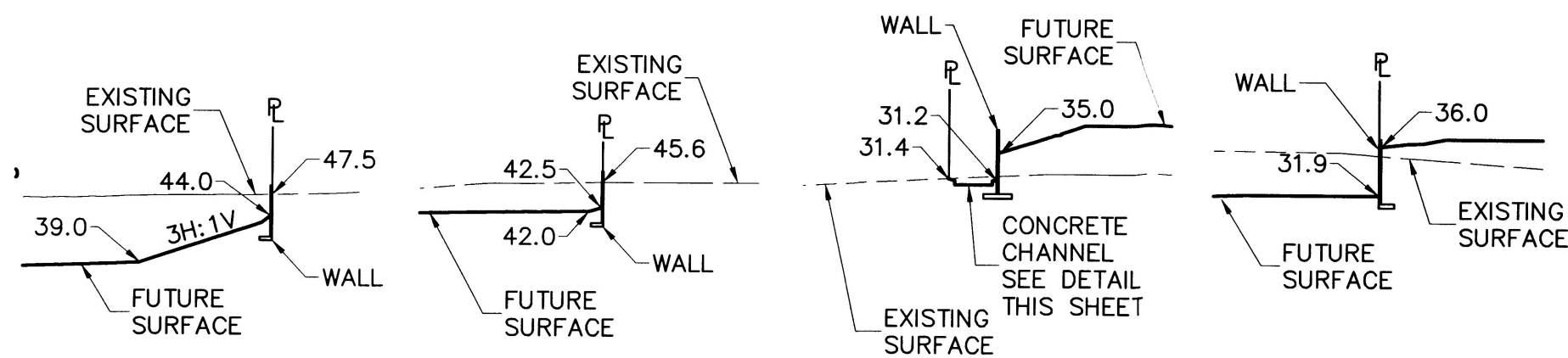
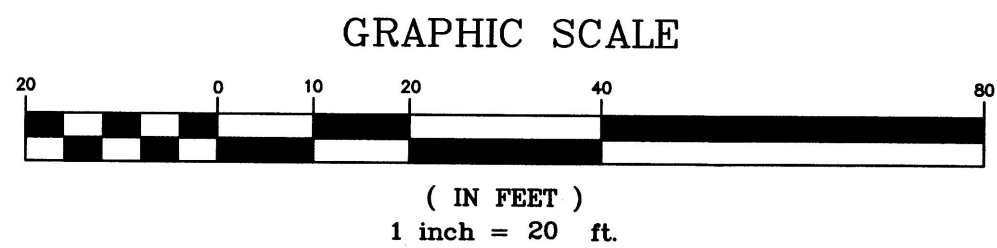


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DATE: 7/27/06



PROPOSED DRAINAGE CONDITIONS

SCALE: 1" = 20'-0"



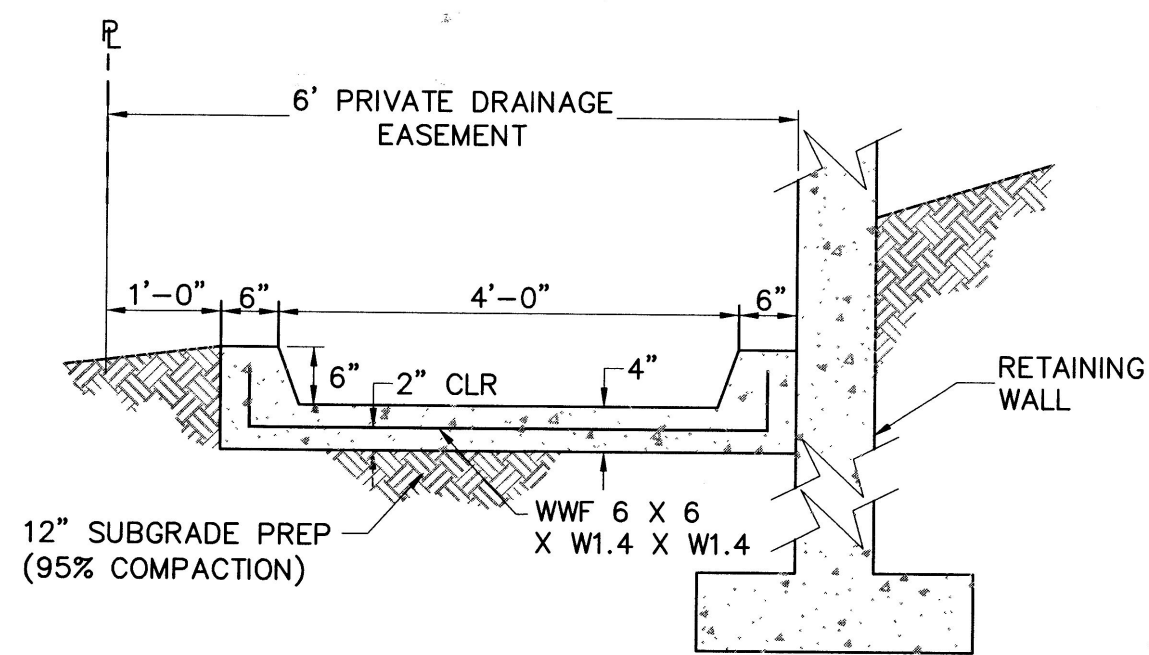
SECTION A

SECTION B

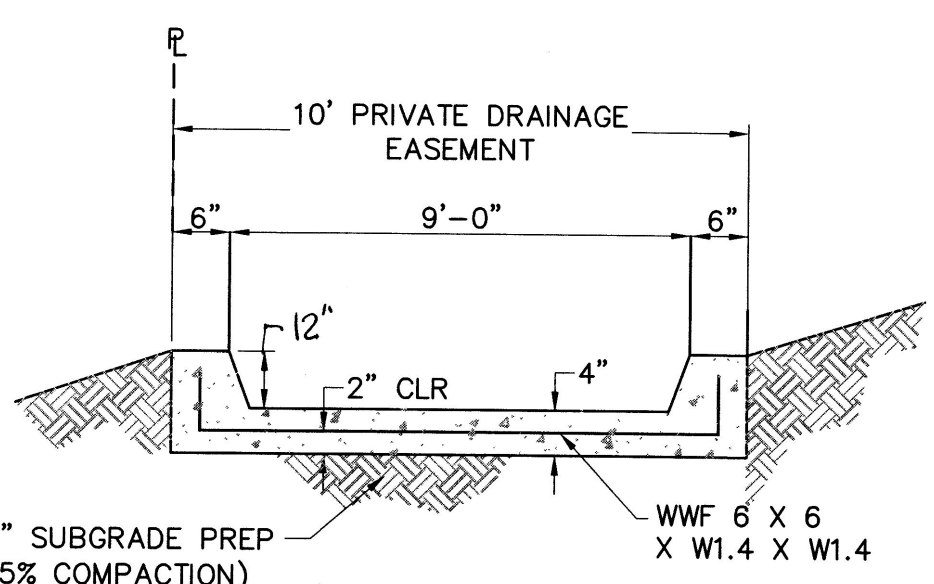
SECTION C

SECTION D

RETAINING WALL SECTIONS
NTS



CONCRETE CHANNEL SECTION C
NTS



CONCRETE CHANNEL SECTION E
NTS

LEGEND

- PROPOSED RETAINING WALL
- MOUNTABLE CURB
- STANDARD CURB
- DRAINAGE BASIN BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEV
- PROPOSED SPOT ELEV

I. PURPOSE AND SCOPE

THE PURPOSE OF THIS DRAINAGE PLAN IS TO PRESENT THE EXISTING DRAINAGE CONDITIONS AND PROPOSED DRAINAGE MANAGEMENT PLAN FOR A NEW FIVE (5) LOT SUBDIVISION. THE PROPOSED DEVELOPMENT IS LOCATED IN ALBUQUERQUE'S EAST SIDE, SOUTH OF OAKLAND AVENUE NE AND WEST OF VENTURA STREET.

II. SITE DESCRIPTION AND HISTORY

THE PROPOSED SUBDIVISION IS LOCATED ON LOTS 11 AND 12, BLOCK 3, TRACT 3, UNIT 3 WITHIN NORTH ALBUQUERQUE ACRES. THE TERRAIN IS UNEVEN AND HILLY. A SMALL ARROYO FLOWS THROUGH THE SITE FROM THE SOUTHEAST TO THE NORTHWEST. THE DECEMBER 2004 DRAINAGE REPORT FOR THE PROPOSED EAGLE ROCK ESTATES SUBDIVISION DETERMINED THAT THE ARROYO BRINGS 42.15 CFS OF RUNOFF ONTO THE SITE DURING A 100-YEAR, 6-HOUR STORM. BASED ON EXISTING CONDITIONS, 5.26 CFS WOULD BE GENERATED ONSITE. THIS RUNOFF DRAINS TO THE SMALL ARROYO DESCRIBED ABOVE.

III. COMPUTATIONAL PROCEDURES

HYDROLOGIC ANALYSIS WAS PERFORMED BASED ON THE DESIGN CRITERIA FOUND IN THE CITY OF ALBUQUERQUE DPM SECTION 22.2 RELEASED IN JUNE 1997.

IV. PRECIPITATION

THE 100-YEAR, 6-HOUR STORM WAS USED AS THE DESIGN STORM FOR ANALYSIS. THIS STORM IS EXPECTED TO PRODUCE A TOTAL OF 2.60 INCHES OF RAINFALL WITHIN ZONE 3 AS IDENTIFIED IN DPM SECTION 22.2. TABLES IN SECTION 22.2 WERE USED TO ESTABLISH EXCESS RUNOFF VOLUMES AND PEAK DISCHARGE RATES FROM THE DESIGN STORM FOR THE VARIOUS EXISTING AND PROPOSED DRAINAGE BASINS.

V. EXISTING DRAINAGE CONDITIONS OVERVIEW

THE EXISTING UNDEVELOPED SITE SLOPES TO THE NORTHWEST WITH AN AVERAGE GRADE OF APPROXIMATELY FIVE (5) PERCENT. THE SOIL IS COMPRISED OF EMBUDO-TIJERAS COMPLEX (GRAVELLY FINE SANDY LOAM). VEGETATION IS SPARSE AND LIMITED TO LOW ANNUAL GROWTH. ALL OF THESE FACTORS CREATE A MEDIUM RUNOFF RATE.

THE ONSITE RUNOFF FOR A 100-YEAR, 6-HOUR STORM WOULD PRODUCE A PEAK DISCHARGE OF 5.26 CUBIC FEET PER SECOND (CFS) AND A TOTAL VOLUME OF 6,882 CUBIC FEET (CF). THE OFFSITE RUNOFF FLOWING INTO THE PROPERTY AFTER A 100-YEAR, 6-HOUR STORM IS 42.15 CFS WITH A VOLUME OF 19,602 CF. THE COMBINED RUNOFF ENTERS THE SOUTH EDGE OF OAKLAND AVENUE TO THE WEST OF THE PROPERTY.

VI. PROPOSED DRAINAGE MANAGEMENT PLAN

EAGLE'S VIEW ESTATES, A 15-LOT SUBDIVISION LOCATED NORTHEAST OF EAGLE'S PERCH ESTATES, INCLUDES CONSTRUCTION OF A 48-INCH CONCRETE STORM DRAIN IN OAKLAND THAT WILL DRAIN WEST TO THE LA CUEVA CHANNEL. EAGLE'S PERCH WILL BE CONSTRUCTED IN CONJUNCTION WITH OR FOLLOWING EAGLE'S VIEW ESTATES AND WILL DRAIN INTO THE 48-INCH STORM DRAIN WITH NEW INLETS AND STORM CONNECTOR PIPES.

A CONCRETE LINED 10-FOOT WIDE PRIVATE DRAINAGE EASEMENT CONSTRUCTED WITH EAGLE'S PERCH ESTATES WILL INTERCEPT AND DIRECT OFFSITE FLOW ONTO THE NEW CUL-DE-SAC. INTERIM OFFSITE RUNOFF WILL HAVE A PEAK FLOW OF 42.15 CFS. THIS WILL REDUCE TO 13.32 CFS AFTER STORM DRAIN IMPROVEMENTS ARE CONSTRUCTED ON VENTURA STREET SOUTH OF OAKLAND. APPROXIMATELY 1.53 ACRES OF THE DEVELOPED SITE WILL DRAIN INTO EAGLE'S PERCH COURT. THE 6.11 CFS GENERATED BY THIS DEVELOPED AREA WILL COMBINE WITH THE OFFSITE 42.15 CFS, AND A TOTAL OF 48.26 CFS WILL DRAIN NORTH TOWARDS OAKLAND. ONE TYPE A INLET WILL BE CONSTRUCTED AT EACH SIDE OF THE ENTRANCE TO EAGLE'S PERCH COURT. THE INLETS ON EAGLE'S PERCH COURT WILL COLLECT APPROXIMATELY 17.72 CFS, RESULTING IN 30.54 CFS OF BYPASS FLOW. THE BYPASS RUNOFF WILL FLOW WEST IN THE SOUTH CURB LINE OF OAKLAND AVENUE AND WILL BE INTERCEPTED BY TWO, DOUBLE TYPE A INLETS. THE FIRST DOUBLE TYPE A WILL INTERCEPT APPROXIMATELY 17.15 CFS, RESULTING IN 13.39 CFS OF BYPASS FLOW. THE SECOND DOUBLE TYPE A WILL INTERCEPT 9.53 CFS.

THE REAR OF LOTS 4 AND 5 WILL DRAIN TO A NEW CONCRETE LINED, 6-FOOT WIDE PRIVATE DRAINAGE EASEMENT. THE DRAINAGE EASEMENT WILL COLLECT 0.66 CFS FROM THE REAR YARDS DURING THE 100-YEAR STORM AND DISCHARGE THROUGH TWO 18-INCH WIDE SIDEWALK CULVERTS. THE TWO SIDEWALK CULVERTS WILL DRAIN DIRECTLY INTO THE BACK OF A DOUBLE TYPE A INLET ON THE SOUTH SIDE OF OAKLAND AVENUE. THE INLET WILL ALSO INTERCEPT 9.53 CFS THAT BYPASSED THE FIRST DOUBLE TYPE A INLET IN OAKLAND, RESULTING IN 3.83 CFS BYPASS FLOW. THE NEW DOUBLE TYPE A INLET WILL BE CONNECTED TO THE PROPOSED 48-INCH STORM DRAIN IN OAKLAND THROUGH AN 18-INCH DIAMETER RCP.

UNTIL THE PROPOSED 24-INCH DIAMETER STORM DRAIN AND RELATED INLETS ARE DEVELOPED IN VENTURA STREET, SOUTH OF OAKLAND, THE 28.83 CFS OF ADDITIONAL OFFSITE RUNOFF (EX 3) WILL DRAIN INTO THE EXISTING SMALL ARROYO AND ENTER EAGLE'S PERCH COURT VIA THE 10-FOOT DRAINAGE EASEMENT. THE TOTAL RUNOFF GENERATED ON THE SITE IS 6.77 CFS. TOGETHER WITH THE OFFSITE RUNOFF THAT ENTERS THE SITE, THE TOTAL RUNOFF WILL BE 48.26 CFS. THE DRAINAGE IMPROVEMENTS PROPOSED WITH THIS DRAINAGE PLAN WILL COLLECT 45.09 CFS WITH A BYPASS FLOW OF 3.83 CFS.

AFTER DRAINAGE IMPROVEMENTS ON VENTURA ARE CONSTRUCTED TO INTERCEPT 28.83 CFS FROM EX 3, THE PROPOSED STORM DRAIN IMPROVEMENTS SHOWN ON THIS PLAN WILL COLLECT ALL ON-SITE DEVELOPED FLOWS (PRO 1 & PRO 2) PLUS OFFSITE EX 2 RUNOFF, TOTALING 20.09 CFS.

VII. CONCLUSION

DEVELOPED RUNOFF FROM THE PROPOSED 5-LOT SUBDIVISION WILL DRAIN FROM THE SITE AT TWO LOCATIONS. MOST OF THE ONSITE RUNOFF WILL COMBINE WITH OFFSITE RUNOFF IN EAGLE'S PERCH COURT. THE COMBINED FLOW WILL BE INTERCEPTED BY TWO TYPE A INLETS AT THE ENTRANCE TO EAGLE'S PERCH COURT. RUNOFF THAT BYPASSES THE INLETS WILL FLOW WEST ALONG THE SOUTH CURB LINE OF OAKLAND AVENUE. TWO DOUBLE A INLETS WILL COLLECT THE BYPASSED RUNOFF. THE WEST MOST DOUBLE A INLET WILL ALSO COLLECT THE REMAINING ONSITE RUNOFF FROM THE 6-FOOT WIDE DRAINAGE EASEMENT AT THE WEST EDGE OF THE SITE. ALL FOUR INLETS WILL DRAIN TO THE PROPOSED 48" STORM DRAIN IN OAKLAND AVENUE.

NO PONDED WATER IS PLANNED WITH THIS PROJECT.

THE group
2940 Menaul Boulevard, NE - Suite 200
Albuquerque, New Mexico 87107
Phone: (505) 888-1800 FAX: (505) 888-1800

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE:
**EAGLE'S PERCH ESTATES
PROPOSED DRAINAGE CONDITIONS**

Design Review Committee City Engineer Approval Mo./Day/Yr. Mo./Day/Yr.

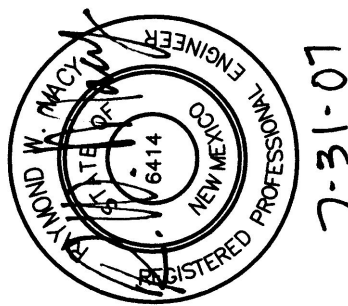
City Project No. Zone Map C-20-Z Sheet CD-2 Of

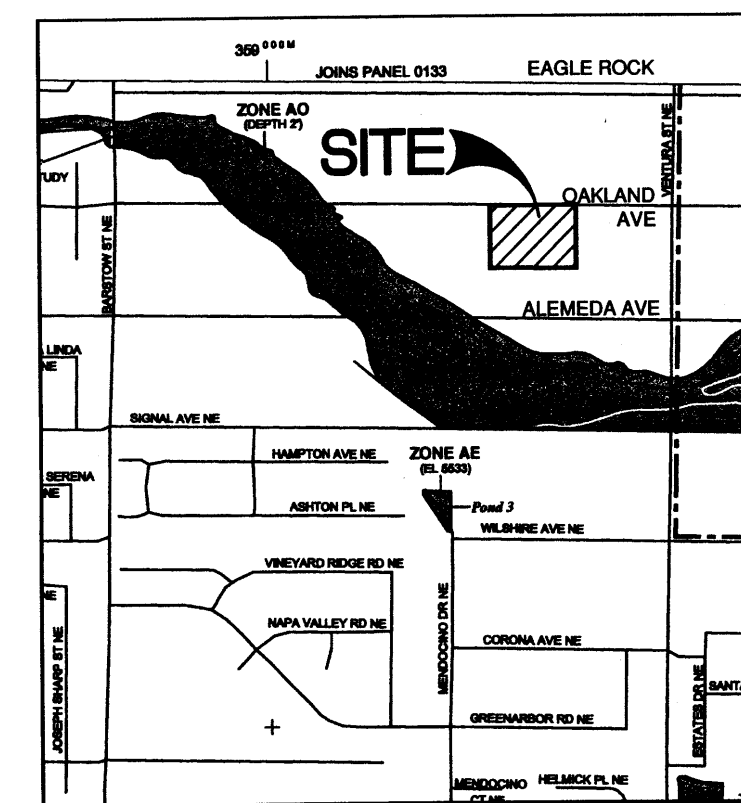
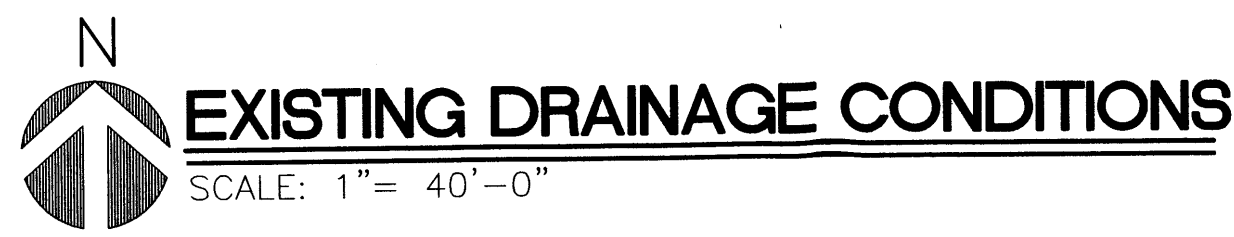
DESIGNED BY: SML DATE 07/31/07
DRAWN BY: SML DATE 07/31/07
CHECKED BY: RWM, P.E. DATE 07/31/07

REVISIONS
NO. DATE BY
1 07/31/07 SML
2 07/31/07 SML

AS-BUILT INFORMATION			
CONTRACTOR	DATE	INSPECTOR'S SIGNATURE	DATE
WORK STAKED BY	DATE	FIELD VERIFICATION BY	DATE
COMMISSIONED BY	DATE	COMMISSIONED BY	DATE
MICRO-FILM INFORMATION			
RECORDED BY	DATE	RECORDED BY	DATE
RECORDED BY	DATE	RECORDED BY	DATE

BENCH MARK		SURVEY INFORMATION	
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STATION MARK IS A STANDARD ACS BRASS TABLET, STAMPED	DATE	NO.	BY
ACS MONUMENT "1-B20" NAD 1927 CENTRAL ZONE	DATE		
X = 410,237.56	DATE		
Y = 1,524,095.46	DATE		
Z = 5474.51 (NACD 1929)	DATE		
G-G = .99864740	DATE		
DELTA ALPHA = -0°10'23"	DATE		





PROJECT: EAGLE'S PERCH ESTATES
DATE: 07/31/07
BY: SHAWNDR A LOPEZ
SITE LOCATION: NORTH ALBUQUERQUE ACRES, ALBUQUERQUE, NM
PRECIPITATION ZONE: 3

1. RUNOFF VOLUME (AC FT)

$$\text{WEIGHTED E (100YR)} = \frac{0.21 (0.92) + 0.02 (1.29) + 0.01 (2.36)}{0.240} = 1.01 \text{ INCHES}$$

$$\text{VOLUME (100YR-24HR)} = \frac{1.01 (0.24) + 0.01 (3.1-2.6)}{12} = 0.02 \text{ AC-FT}$$

2. PEAK DISCHARGE (CFS)

$$Q_p (100YR) = 0.21 (2.60) + 0.02 (3.45) + 0.01 (5.02) = 0.66 \text{ CFS}$$

PRO 2

1. RUNOFF VOLUME (AC FT)

$$\text{WEIGHTED E (100YR)} = \frac{0.51 (0.92) + 0.22 (1.29) + 0.80 (2.36)}{1.53} = 1.72 \text{ INCHES}$$

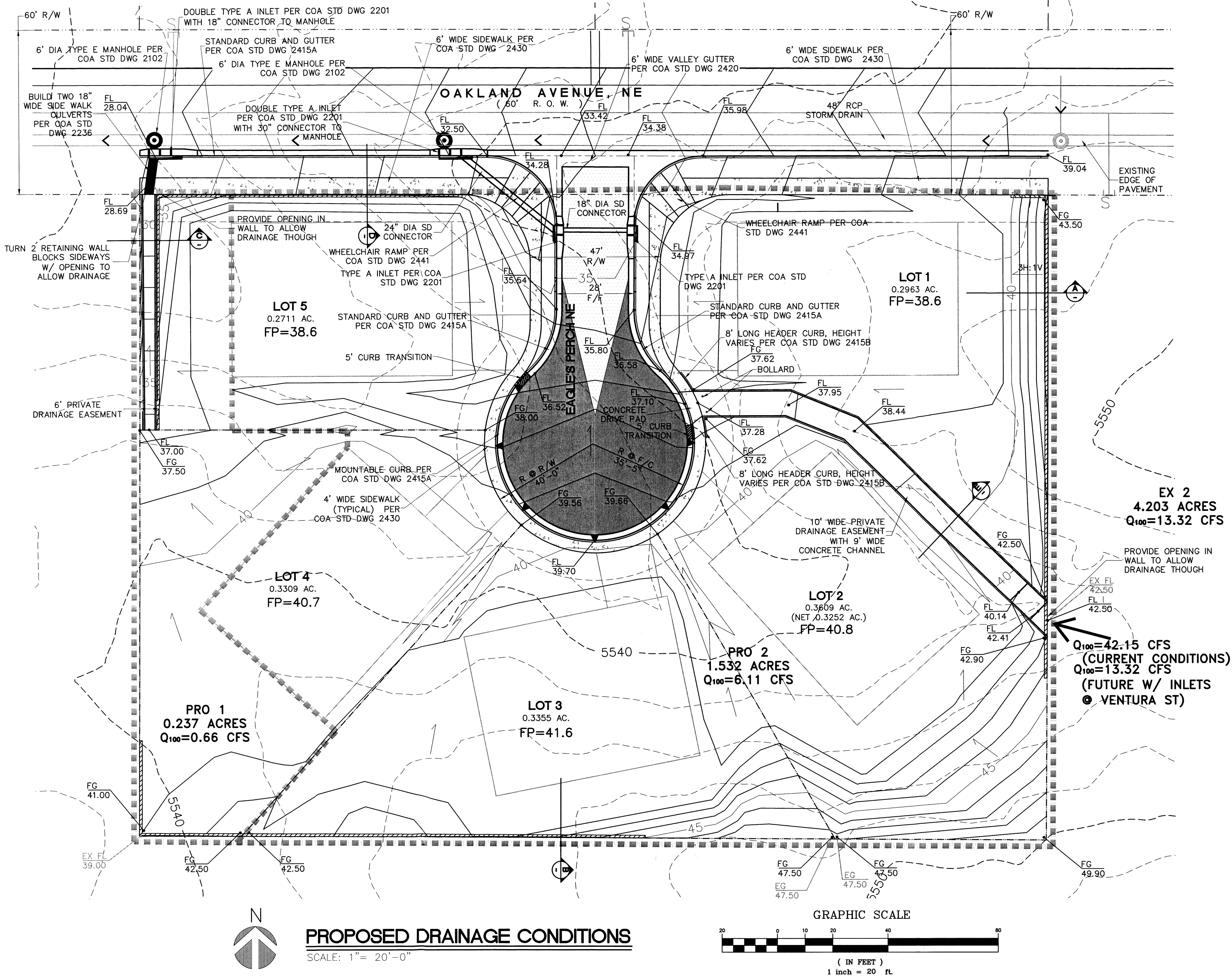
$$\text{VOLUME (100YR-24HR)} = \frac{1.72 (1.56) + 0.80 (3.1-2.6)}{12} = 0.25 \text{ AC-FT}$$

2. PEAK DISCHARGE (CFS)

$$Q_p (100YR) = 0.51 (2.60) + 0.22 (3.45) + 0.80 (5.02) = 6.11 \text{ CFS}$$

	LAND TREATMENT			
	A	B	C	D
100 YR	1.87	2.60	3.45	5.02
10 YR	0.58	1.19	2.00	3.39
2 YR	0.00	0.21	0.78	2.04

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DATE: 7/27/05



I. PURPOSE AND SCOPE

THE PURPOSE OF THIS DRAINAGE PLAN IS TO PRESENT THE EXISTING DRAINAGE CONDITIONS AND PROPOSED DRAINAGE MANAGEMENT PLAN FOR A NEW FIVE (5) LOT SUBDIVISION. THE PROPOSED DEVELOPMENT IS LOCATED IN ALBUQUERQUE'S EAST SIDE, SOUTH OF OAKLAND AVENUE NE AND WEST OF VENTURA STREET.

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HYDROLOGIC ANALYSIS WAS PERFORMED BASED ON THE DESIGN CRITERIA FOUND IN THE CITY OF ALBUQUERQUE DPM SECTION 22.2 RELEASED IN JUNE 1997.

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VII. CONCLUSION

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NO PONDED WATER IS PLANNED WITH THIS PROJECT.

LEGEND

- PROPOSED RETAINING WALL
- MOUNTABLE CURB
- STANDARD CURB
- DRAINAGE BASIN BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEV
- PROPOSED SPOT ELEV

THE group
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Albuquerque, New Mexico 87107
Phone (505) 988-1900 FAX (505) 988-1906

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT

TITLE: **EAGLE'S PERCH ESTATES
PROPOSED DRAINAGE CONDITIONS**

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. **C-20-Z** Zone Map **CD-2** Sheet **CD-2** Of

AS-BUILT INFORMATION			
CONTRACTOR	WORK	DATE	DATE
BARSTOW ST. AND MODESTO AVE., IN THE N.E. QUADRANT	STATION MARK IS A STANDARD ACS BRASS TABLET, STAMPED	DATE	DATE
ACS MONUMENT "1-B207" NAD 1927 CENTRAL ZONE	FIELD VERIFICATION BY:	DATE	DATE
X = 410,237.56	Y = 1,524,095.46	DATE	DATE
Y = 1,524,095.46	Z = 5474.51 (NACD 1929)	DATE	DATE
Z = 5474.51 (NACD 1929)	G-G = .99964740	DATE	DATE
G-G = .99964740	DELTA ALPHA = -0.1023"	DATE	DATE

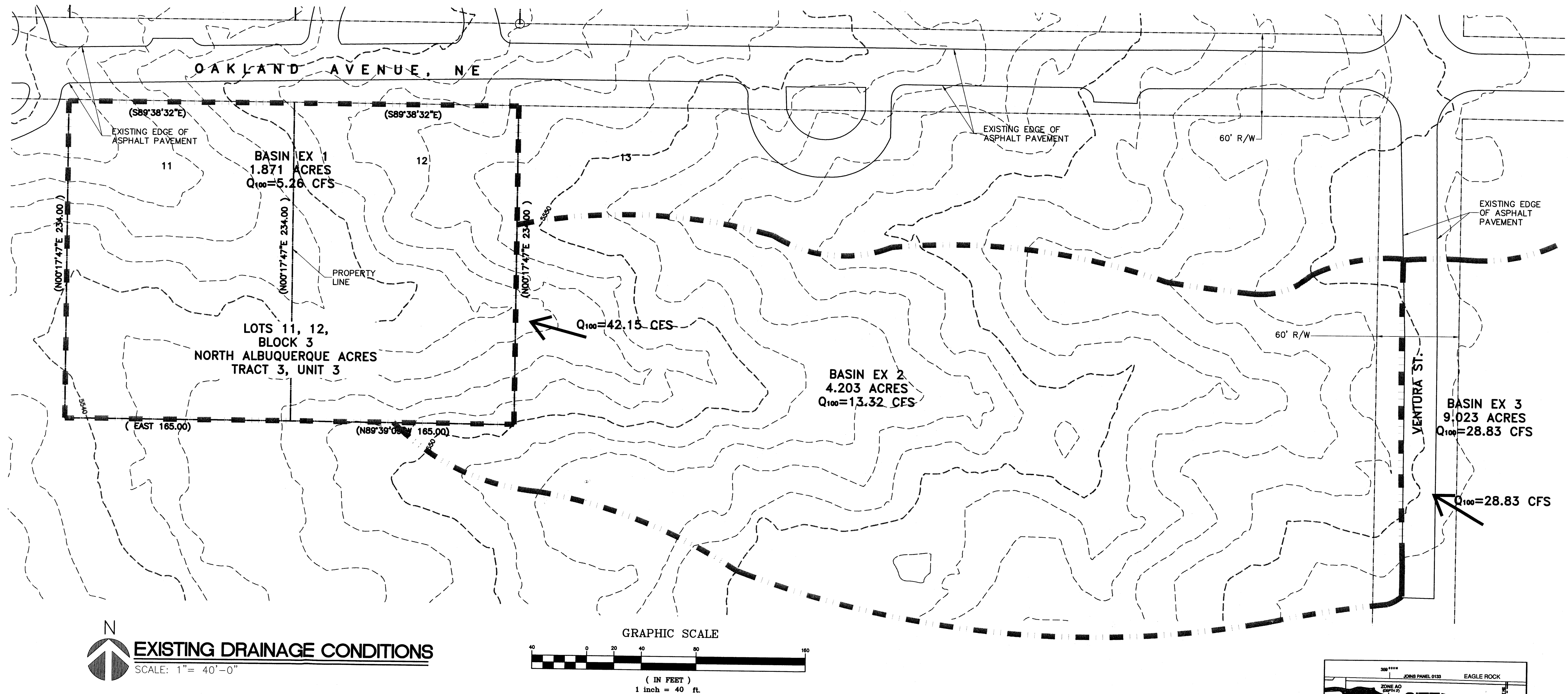
BENCH MARK	
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BARSTOW ST. AND MODESTO AVE., IN THE N.E. QUADRANT	DATE
STATION MARK IS A STANDARD ACS BRASS TABLET, STAMPED	DATE
ACS MONUMENT "1-B207" NAD 1927 CENTRAL ZONE	DATE
X = 410,237.56	DATE
Y = 1,524,095.46	DATE
Z = 5474.51 (NACD 1929)	DATE
G-G = .99964740	DATE
DELTA ALPHA = -0.1023"	DATE

SURVEY INFORMATION	
FIELD NOTES	DATE
NO.	BY

REVISIONS	
NO.	DATE

DESIGNED BY: SML	DATE: 07/31/07
DRAWN BY: SML	DATE: 07/31/07
CHECKED BY: RWM, P.E.	DATE: 07/31/07

DWG FILE: 1-1-2003 08:53:03-182 WYOMING SUBD/CIVIL WORKING DRAWINGS\03-182-DRAINAGE-ANALYSIS.DWG
DATE: 7/27/06



EXISTING CONDITIONS SUMMARY

EX 1

- RUNOFF VOLUME (AC FT)
WEIGHTED E (100YR)= $1.40 (0.92) + 0.47 (1.29) = 1.01$ INCHES
VOLUME (100YR-6HR)= $1.01 (1.87)/12 = 0.157$ AC-FT
- PEAK DISCHARGE (CFS)
 $Q_p (100YR) = 1.40 (2.60) + 0.47 (3.45) = 5.26$ CFS

EX 2

- RUNOFF VOLUME (AC FT)
WEIGHTED E (100YR)= $2.48 (0.92) + 1.13 (1.29) + 0.59 (2.36) = 1.22$ INCHES
VOLUME (100YR-24HR)= $1.22 (4.20) + 0.59 (3.1-2.6) = 1.452$ AC-FT
- PEAK DISCHARGE (CFS)
 $Q_p (100YR) = 2.48 (2.60) + 1.13 (3.45) + 0.59 (5.02) = 13.32$ CFS

EX 3

- RUNOFF VOLUME (AC FT)
WEIGHTED E (100YR)= $5.56 (0.92) + 1.94 (1.29) + 1.53 (2.36) = 1.40$ INCHES
VOLUME (100YR-24HR)= $1.40 (9.02) + 1.53 (3.1-2.6) = 1.16$ AC-FT
- PEAK DISCHARGE (CFS)
 $Q_p (100YR) = 5.56 (2.60) + 1.94 (3.45) + 1.53 (5.02) = 28.8$ CFS

SOIL TREATMENT TABLES

EXCESS PRECIPITATION (E) INCHES FOR 6HR STORM
FROM TABLE A-8 COA DPM CHAPTER 22

	LAND TREATMENT			
	A	B	C	D
100 YR	0.66	0.92	1.29	2.36
10 YR	0.19	0.36	0.62	1.50
2 YR	0.00	0.06	0.20	0.89

PEAK DISCHARGE (CFS)
FROM TABLE A-9 COA DPM CHAPTER 22

	LAND TREATMENT			
	A	B	C	D
100 YR	1.87	2.60	3.45	5.02
10 YR	0.58	1.19	2.00	3.39
2 YR	0.00	0.21	0.78	2.04

PROPOSED CONDITIONS SUMMARY

PRO 1

- RUNOFF VOLUME (AC FT)
WEIGHTED E (100YR)= $0.21 (0.92) + 0.02 (1.29) + 0.01 (2.36) = 0.240$ INCHES
VOLUME (100YR-24HR)= $0.21 (0.24) + 0.01 (3.1-2.6) = 0.02$ AC-FT
- PEAK DISCHARGE (CFS)
 $Q_p (100YR) = 0.21 (2.60) + 0.02 (3.45) + 0.01 (5.02) = 0.66$ CFS

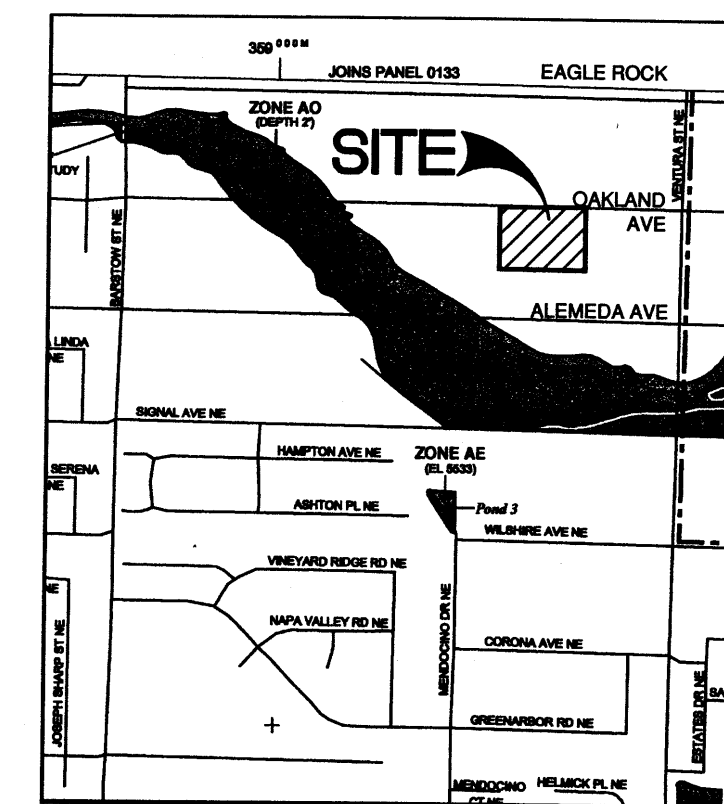
PRO 2

- RUNOFF VOLUME (AC FT)
WEIGHTED E (100YR)= $0.51 (0.92) + 0.22 (1.29) + 0.80 (2.36) = 1.72$ INCHES
VOLUME (100YR-24HR)= $1.72 (1.56) + 0.80 (3.1-2.6) = 0.25$ AC-FT
- PEAK DISCHARGE (CFS)
 $Q_p (100YR) = 0.51 (2.60) + 0.22 (3.45) + 0.80 (5.02) = 6.11$ CFS

DRAINAGE SUMMARY

PROJECT: EAGLE'S PERCH ESTATES
DATE: 07/31/07
BY: SHAWNDR A LOPEZ
SITE LOCATION: NORTH ALBUQUERQUE ACRES, ALBUQUERQUE, NM
PRECIPITATION ZONE: 3

BASIN NAME	EXISTING CONDITIONS SUMMARY			PROPOSED CONDITIONS SUMMARY	
	EX 1	EX 2	EX 3	PRO 1	PRO 2
AREA (SQUARE FEET)	81479.40	183077.43	393080.80	10343.60	66737.12
AREA (ACRES)	1.871	4.203	9.024	0.237	1.532
LAND TREATMENT (%)					
AREA "A"	0.0%	0.0%	0.0%	0.0%	0.0%
AREA "B"	74.9%	59.0%	61.6%	89.0%	33.1%
AREA "C"	25.1%	26.9%	21.4%	6.8%	14.7%
AREA "D"	0.0%	14.1%	17.0%	4.2%	52.2%
LAND TREATMENT (ACRES)					
AREA "A"	0.00	0.00	0.00	0.00	0.00
AREA "B"	1.40	2.48	5.56	0.21	0.51
AREA "C"	0.47	1.13	1.40	0.02	0.22
AREA "D"	0.00	0.59	1.53	0.01	0.80
RUN OFF (ACRE-FeET)					
100YR. 6HR.	0.16	0.43	0.94	0.02	0.22
10YR. 6HR.	0.07	0.21	0.46	0.01	0.13
2YR. 6HR.	0.01	0.07	0.17	0.00	0.07
100YR. 24HR.	0.16	0.45	1.16	0.02	0.25
PEAK DISCHARGE (CFS)					
100YR. 6HR.	5.26	13.32	28.83	0.66	6.11
10YR. 6HR.	2.61	7.22	15.68	0.32	3.76
2YR. 6HR.	0.66	2.61	5.80	0.08	1.91



THE group The Hensley Engineering Group 2340 Menaul Boulevard, NE - Suite 200 Albuquerque, New Mexico 87117 Phone (505) 888-1900 FAX (505) 888-1906		CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT	
TITLE: EAGLE'S PERCH ESTATES EXISTING DRAINAGE CONDITIONS			
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
Last Design Update			
City Project No.	Zone Map	Sheet	Of
	C-20-Z	CD-1	

SURVEY INFORMATION		BENCH MARK		AS-BUILT INFORMATION	
NO.	DATE	BY	STATION IS LOCATED AT THE INTERSECTION OF BARSTON ST. AND MODESTO AVE., IN THE N.E. QUADRANT	CONTRACTOR	WORK STARTED BY
			STATION MARK IS A STANDARD ACS BRASS TABLET, STAMPED	INSPECTOR'S	DATE
			ACS MOUNTMENT "1-B20" NAD 1927 CENTRAL ZONE	FIELD	DATE
			X = 410,237.56	VERIFICATION BY:	DATE
			Y = 1,524,095.46	CORRECTED BY:	DATE
			Z = 5474.51 (NACD 1929)	MICRO-FILM INFORMATION	
			G-G = 99964740	RECORDED BY:	DATE
			DELTA ALPHA = -0°10'23"	RECORDED BY:	DATE

7-31-07

DESIGNED BY: SWL	DATE: 07/31/07
DRAWN BY: SWL	DATE: 07/31/07
CHECKED BY: RWM, P.E.	DATE: 07/31/07