

SONORA POND INFILL SUBDIVISION

I. PURPOSE AND SCOPE
The purpose of this drainage report is to report a drainage management plan and a comprehensive analysis of the drainage control measures to be implemented with the Sonora Pond Infill project and subdivision, a 4 lot single-family subdivision proposed on approximately .9 acres of land located in the existing Sonora Subdivision in the North East Heights of Albuquerque, New Mexico. Both onsite and offsite drainage affected by this development will be addressed by this report.

II. SITE DESCRIPTION AND HISTORY

The proposed subdivision is located on Track A of Block 30, Unit B of North Albuquerque Acres. City of Albuquerque, Bernalillo County, New Mexico. The project site is located within the existing Sonora Subdivision that was constructed in 1995. There was a storm drainage detention pond located at the west end of Suerte Place and Tesoro Place. Downstream storm drainage improvements along San Pedro now allow for this detention pond and Public Drainage Easement to be vacated and infilled. City of Albuquerque Zone Atlas page C-18-Z.

The Site is currently being utilized as a detention pond and therefore is in a 100 year floodplain. The maximum water surface elevation in the pond during the 100 year event is 5262.6.

III. COMPUTATIONAL PROCEDURES

Hydrologic analysis was performed utilizing the design criteria found in the COA-DPM Section 22.2 released in June 1997.

IV. PRECIPITATION

The 100-yr 6-hr duration storm was used as the design storm for this analysis. This site is within Zone 3 as identified in the DPM Section 22.2. Tables within the section was used to establish the 6-hr precipitation, excess precipitation and peak discharge.

In accordance with AMAFCA's design criteria for determination of percent land treatment D, the following equation was used for "single family residential" classification based on the maximum possible density of 5 dwelling units per acre: $7x(((NxN)+(5xN)))$ 1/2 which results in a Land Treatment D = 50%. It was assumed the other 50% would be split between Land Treatment B=25% and Land Treatment C=25%.

V. EXISTING DRAINAGE CONDITIONS OVERVIEW

As stated previously, this detention pond was constructed to restrict the developed flows from the Sonora Subdivision into the existing 30" storm drainage piping in Signal Avenue. A predesign discussion was held with the COA Hydrology department to discuss the possibility of filling in and subdividing Tract A (the detention pond property). The downstream outfall piping is either in place or financially guaranteed and will allow for the increase in flow rate related to removing the pond.

The drainage study for the Sonora Subdivision could not be found in the drainage files at the COA. The flow rates shown are approximate to allow for a percentage increase in discharge rate to be calculated. Exact figures for runoff rates should be obtained from the original report (if one can be found).

VI. DRAINAGE MANAGEMENT PLAN

A. Overview

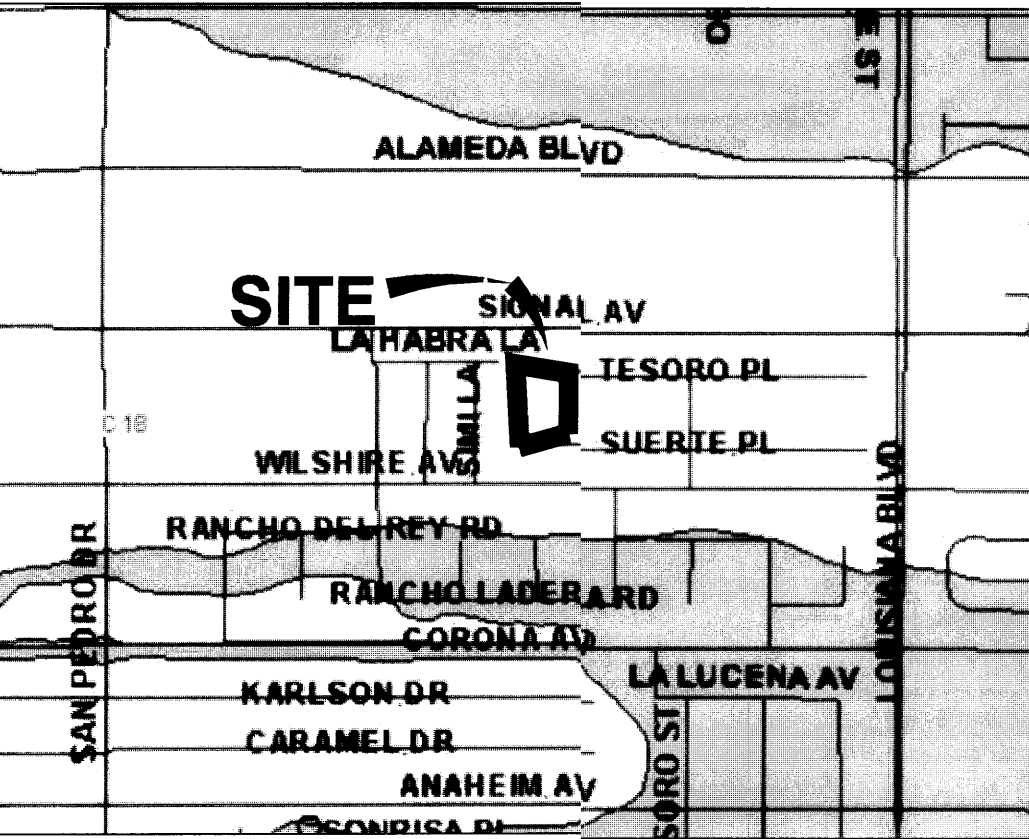
The detention pond currently accepts runoff from Wilshire Avenue through a series of catch basins located on each side of Wilshire near the proposed subdivisions west property line. This runoff is piped into the pond through a 30" RCP pipe that was designed to convey the runoff to Signal. A manhole and temporary 30" pipe were installed to direct the runoff into the pond. Tesoro Place and Suerte Place each have a sump condition catch basin at the west end of each cul-de-sac. There is an 18" RCP pipe leading from this catch basin to the 30" RCP line described above. The 18" RCP connecting to the 30" line has been plugged until the downstream piping is completed. There is also an 18" RCP line from each catch basin that discharges into the detention pond. The last piece of the detention pond is a temporary 24" RCP outlet pipe installed to restrict the discharge rate into the storm drainage piping system in Signal.

As part of this pond infill project the temporary plug will be removed to allow the final design storm drainage outlet piping to control. This will require removing the plugs in the 30" RCP that will allow runoff from Wilshire to be piped north to Signal without being routed through the detention pond. Each of the catch basins will be modified to create a plug in the pipe that drains toward the pond and to open the 18" RCP pipes that connect to the 30" draining to Signal. The 24" RCP temporary restricted pipe from the pond will also be plugged.

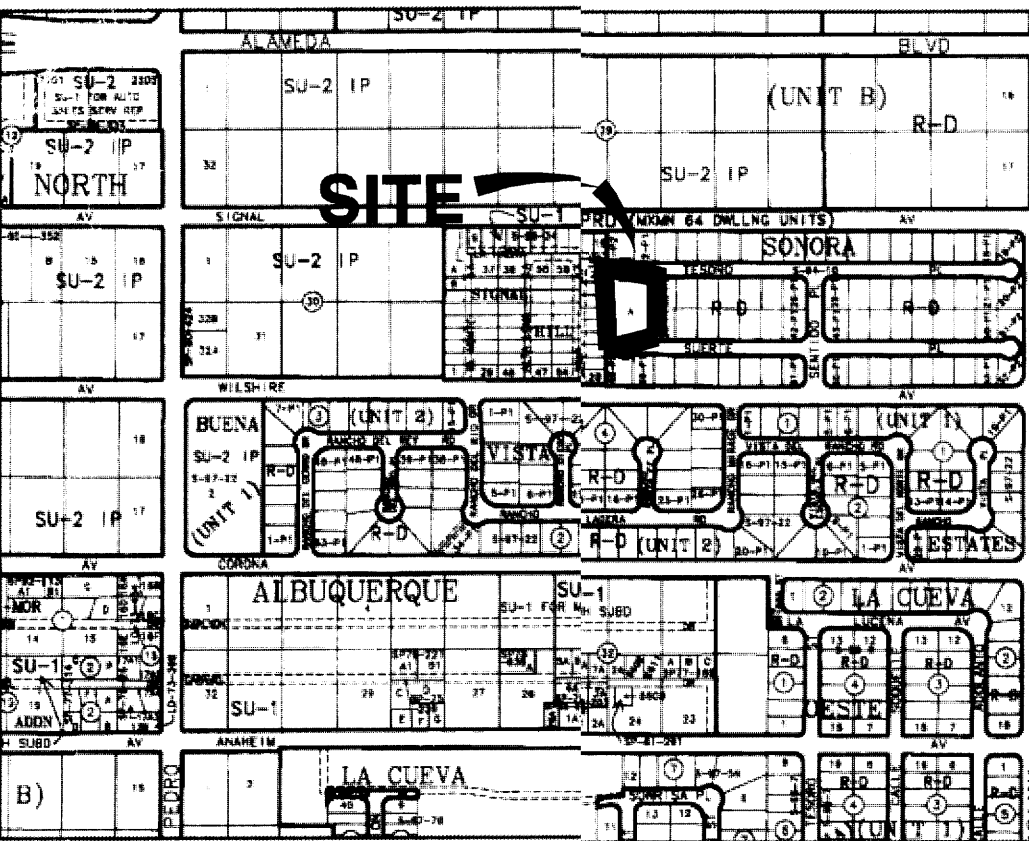
Onsite runoff will all drain toward the existing catch basins in the cul-de-sacs and will be conveyed to Signal. The increase in runoff from the original design (assuming that the original design had an undeveloped pond, which is unlikely) for the subject site is 0.8 cfs. It was approximated that each cul-de-sac has an incoming flow of 22 cfs and therefore the increase is about 7%. Again it should be noted that it is unlikely that the original design would have created a permanent pond and installed all the necessary piping and temporary connections to allow for future infill.

VII. CONCLUSION

The detention pond was designed to be removed after the downstream capacity was increased. This infill project should have been within the design parameters for the storm drainage piping and capacity calculations. There should be no adverse effects to downstream users from this project.



FLOOD ZONE MAP
SCALE: NOT TO SCALE



VICINITY MAP
SCALE: NOT TO SCALE
C-18-Z

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SONORA POND INFILL SUBDIVISION
EXISTING BASIN PLAN

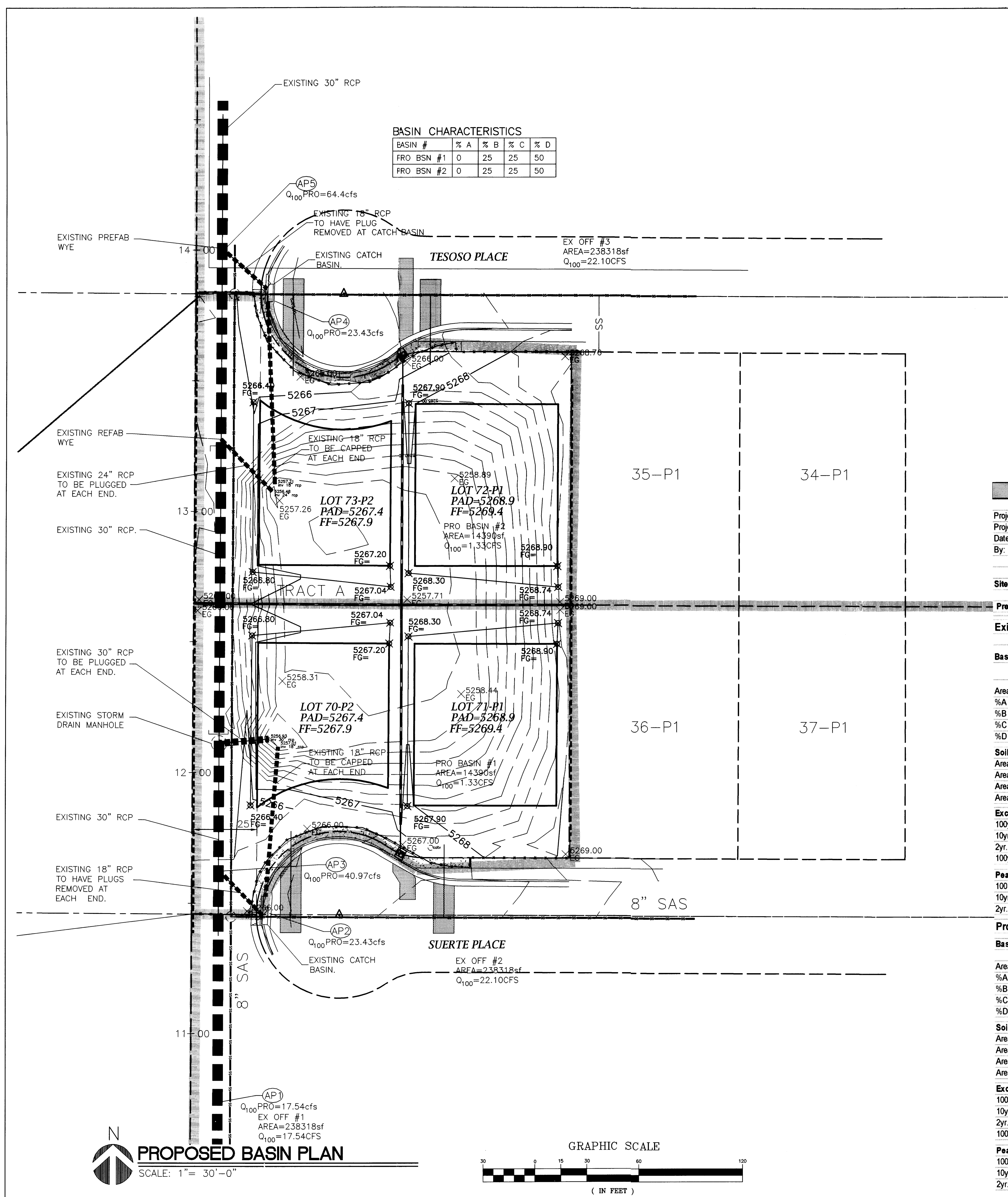
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map	C-18-Z	

Sheet 1 of 2
MAR 3 2006
HYDROLOGY SECTION

AS-BUILT INFORMATION		BENCH MARK		SURVEY INFORMATION	
CONTRACTOR	WORKED BY	THE STATION MARK IS A STANDARD ACS ALUMINUM	DATE	FIELD NOTES	DATE
INSPECTOR'S	ACCEPTANCE BY:	CAP STAMPED "9-C18 1985" LOCATED IN THE	DATE	NO.	BY
VERIFICATION BY:	DATE	SOUTHWEST QUADRANT OF THE INTERSECTION OF	DATE		
DRAWINGS	DATE	WILSHIRE AVENUE AND SAN PEDRO AVENUE NE.	DATE		
CORRECTED BY:	DATE	ELEV. = 5229.79	DATE		
MICRO-FILM INFORMATION					
RECORDED BY:	DATE				
RECORDED BY:	DATE				

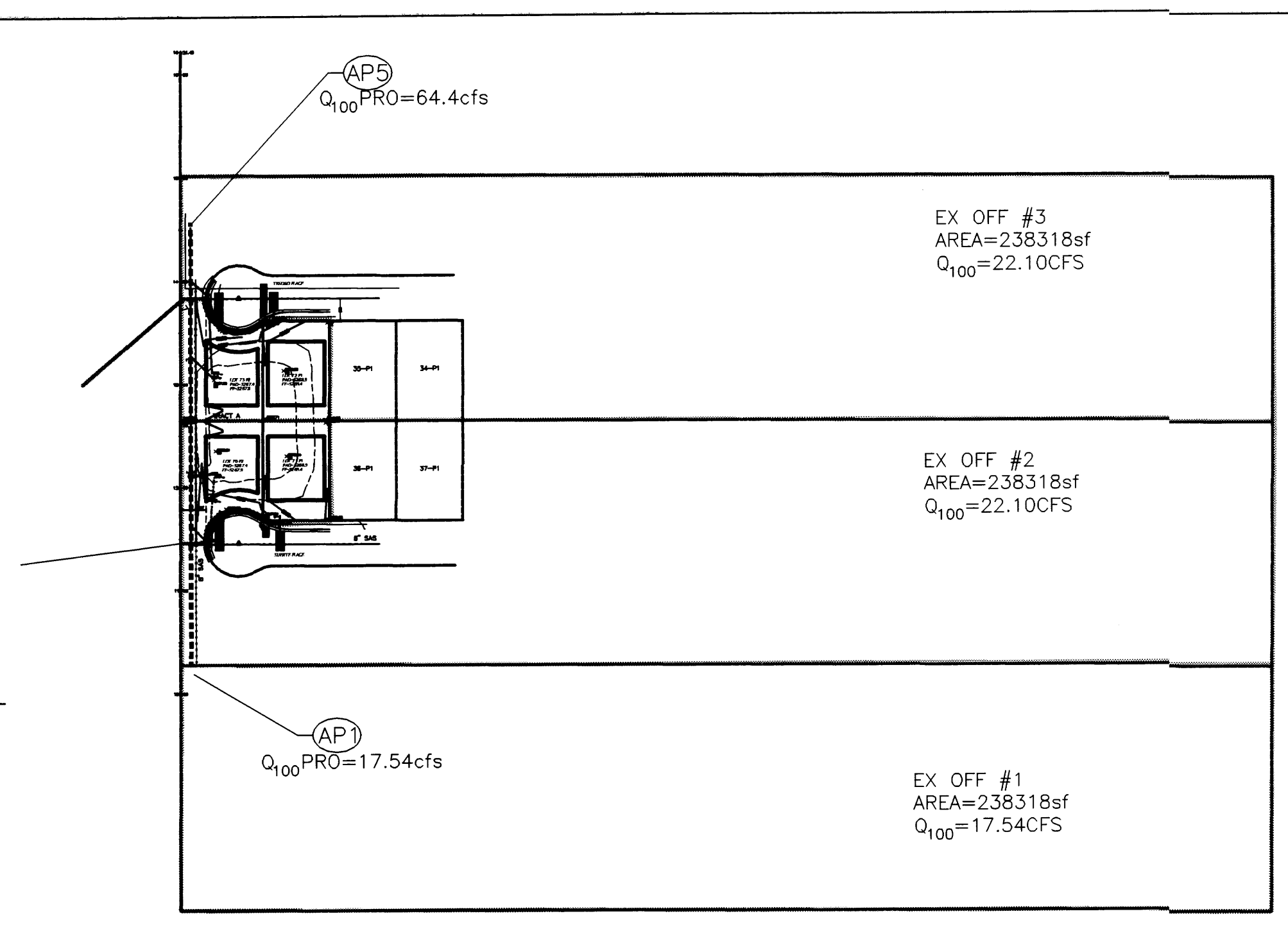
3-30-06

REMARKS	BY
DESIGN	
DESIGNED BY: DAVID A. AUBEL, P.E.	DATE 3-30-06
DRAWN BY: DAA	DATE 3-30-06
CHECKED BY: DAA	DATE 3-30-06



BASIN CHARACTERISTICS

BASIN #	% A	% B	% C	% D
PRO BSN #1	0	25	25	50
PRO BSN #2	0	25	25	50



OFFSITE BASIN PLAN
SCALE: 1"= 120'-0"

Drainage Summary					
Project:	Sonora Subdivision				
Project Number:	2314				
Date:	03/25/06				
By:	Dave A				
Site Location					
Precipitation Zone	3 Per Table A-1 COA DPM Section 22.2				
Existing summary					
Basin Name	Ex 1	Off Ex #1	Off Ex #2	Off Ex #3	
Area (sf)	28780	253708	239318	239318	
Area (acres)	0.66	5.82	5.49	5.49	
%A Land treatment					
%B Land treatment	75	70	25	25	
%C Land treatment	25	20	25	25	
%D Land treatment	0	10	50	50	
Soil Treatment (acres)					
Area "A"	0.00	0.00	0.00	0.00	
Area "B"	0.50	4.08	1.37	1.37	
Area "C"	0.17	1.16	1.37	1.37	
Area "D"	0.00	0.58	2.75	2.75	
Excess Runoff (acre-feet)					
100yr. 6hr.	0.0557	0.5523	0.7932	0.7932	
10yr. 6hr.	0.0234	0.2553	0.4555	0.4555	
2yr. 6hr.	0.0052	0.0830	0.2335	0.2335	
100yr. 24hr.	0.0557	0.5766	0.9077	0.9077	
Peak Discharge (cfs)					
100 yr.	1.86	17.54	22.10	22.10	
10yr.	0.92	9.16	13.69	13.69	
2yr.	0.23	2.95	6.96	6.96	
Proposed summary					
Basin Name	Pro 1	Pro 2	Off Ex #1	Off Ex #2	Off Ex #3
Area (sf)	14390	14390	253708	239318	239318
Area (acres)	0.33	0.33	5.82	5.49	5.49
%A Land treatment					
%B Land treatment	25	25	70	25	25
%C Land treatment	25	25	20	25	25
%D Land treatment	50	50	10	50	50
Soil Treatment (acres)					
Area "A"	0.00	0.00	0.00	0.00	0.00
Area "B"	0.08	0.08	4.08	1.37	1.37
Area "C"	0.08	0.08	1.16	1.37	1.37
Area "D"	0.17	0.17	0.58	2.75	2.75
Excess Runoff (acre-feet)					
100yr. 6hr.	0.0477	0.0477	0.5523	0.7932	0.7932
10yr. 6hr.	0.0274	0.0274	0.2553	0.4555	0.4555
2yr. 6hr.	0.0140	0.0140	0.0830	0.2335	0.2335
100yr. 24hr.	0.0546	0.0546	0.5766	0.9077	0.9077
Peak Discharge (cfs)					
100 yr.	1.33	1.33	17.54	22.10	22.10
10yr.	0.82	0.82	9.16	13.69	13.69
2yr.	0.42	0.42	2.95	6.96	6.96

AS-BUILT INFORMATION		BENCH MARK		SURVEY INFORMATION	
CONTRACTOR	DATE	THE STATION MARK IS A STANDARD ACS ALUMINUM	DATE	FIELD NOTES	DATE
WORK BY	DATE	CAP STAMPED "9-C18 1985" LOCATED IN THE	DATE	NO.	DATE
INSPECTOR'S	DATE	SOUTHWEST QUADRANT OF THE INTERSECTION OF	DATE		DATE
ACCEPTANCE BY:	DATE	WILSHIRE AVENUE AND SAN PEDRO AVENUE NE.	DATE		DATE
VERIFICATION BY:	DATE	ELEV.= 5229.79	DATE		DATE
DRAWINGS	DATE		DATE		DATE
CORRECTED BY:	DATE		DATE		DATE
MICRO-FILM INFORMATION	DATE		DATE		DATE
RECORDED BY:	DATE		DATE		DATE
RECORDED BY:	DATE		DATE		DATE

REVISIONS		BY	
NO.	DATE	REMARKS	DATE
1	3-30-06	DESIGN	DA
2	3-30-06	DESIGN	DA
3	3-30-06	DESIGN	DA

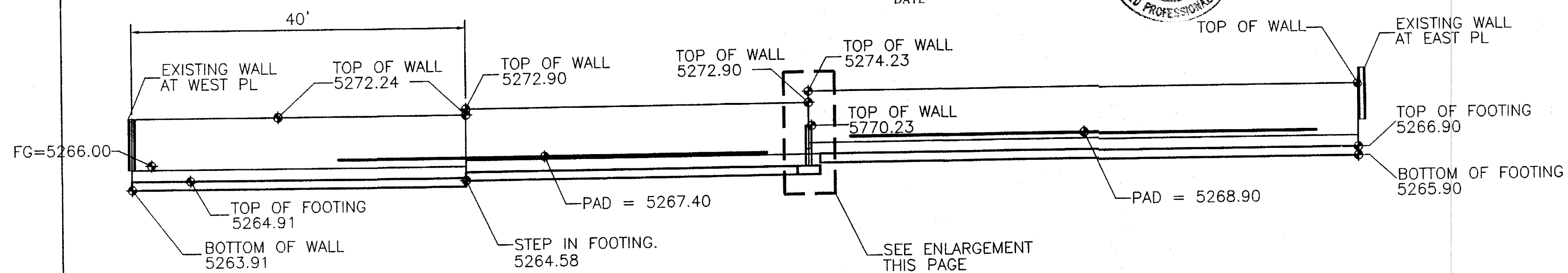
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: SONORA POND INFILL SUBDIVISION
PROPOSED BASIN PLAN

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

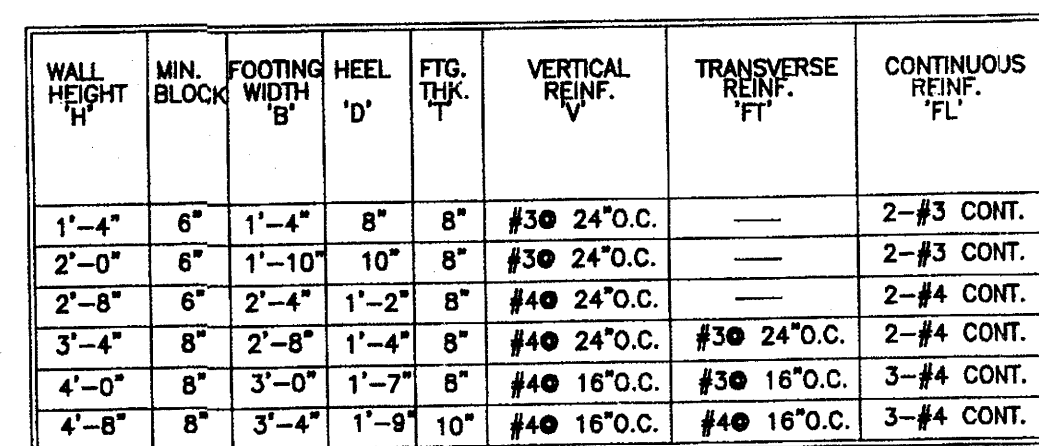
City Project No. Zone Map C-18-Z Sheet 2 Of 2

HYDROLOGY SECTION



SCALE: 1" = 10'-0"

1. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE PREPARATION INCLUDING EXCAVATION
COMPACTION AND BACKFILL.
2. REINFORCING BARS SHALL HAVE STANDARD DEFORMATIONS AND A YIELD STRENGTH
OF 40,000 PSI
3. CONCRETE STRENGTH (f'_c) 2500 PSI @ 30 DAYS
4. ALTERNATE VERTICAL REINFORCING BARS MAY BE TERMINATED AT MID-HEIGHT OF
RETAINER AS MEASURED FROM LOWER FINISH GRADE.

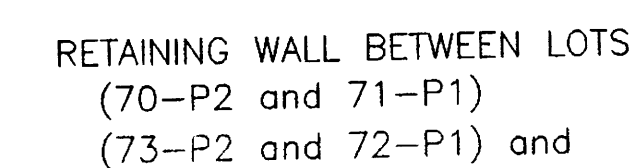


I, SHAHAB BIAZAR, NMPE 13479, OF THE FIRM ADVANCED ENGINEERING AND CONSULTING, LLC HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 04/04/2006. THE RECORD INFORMATION EDITED onto the ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR GRADING CERTIFICATION.

THE RECORD INFORMATION REPRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

SHAHAB BIAZAR, NMPE 13479

03/01/2007
DATE



SCALE: 1" = 10'-0"

4-4.06

BY	REMARKS	NO.	DATE
R E V I S I O N S			
D E S I G N			
DESIGNED BY: DAVID A. AUBE, P.E.			
DRAWN BY: DAA			
CHECKED BY: DAA			
DATE	3-30-06		
DATE	3-30-06		
DATE	3-30-06		

dg **THE DESIGN GROUP**
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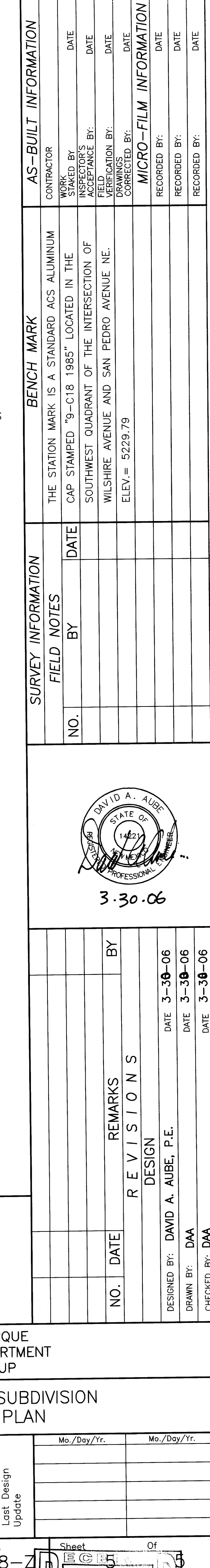
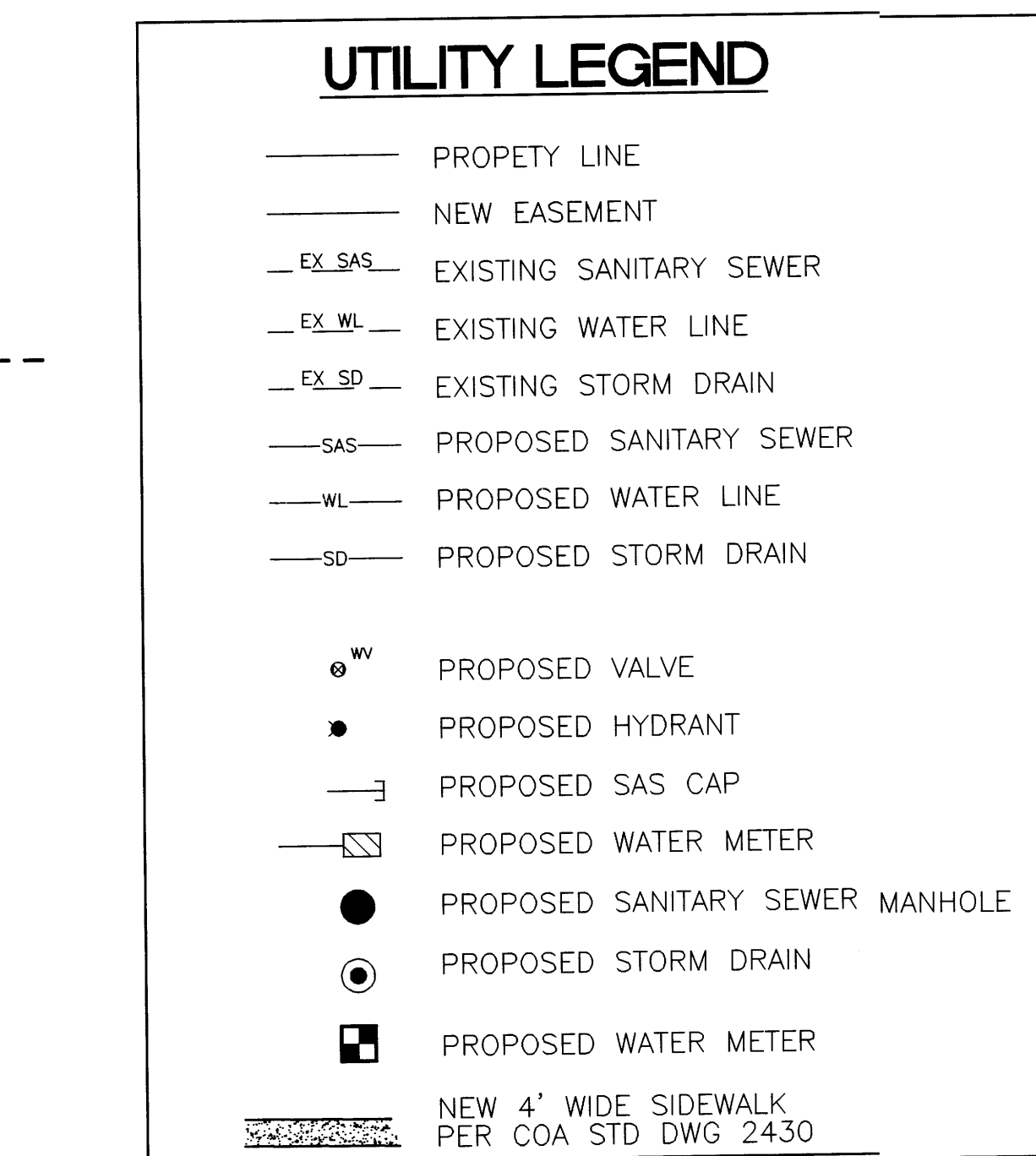
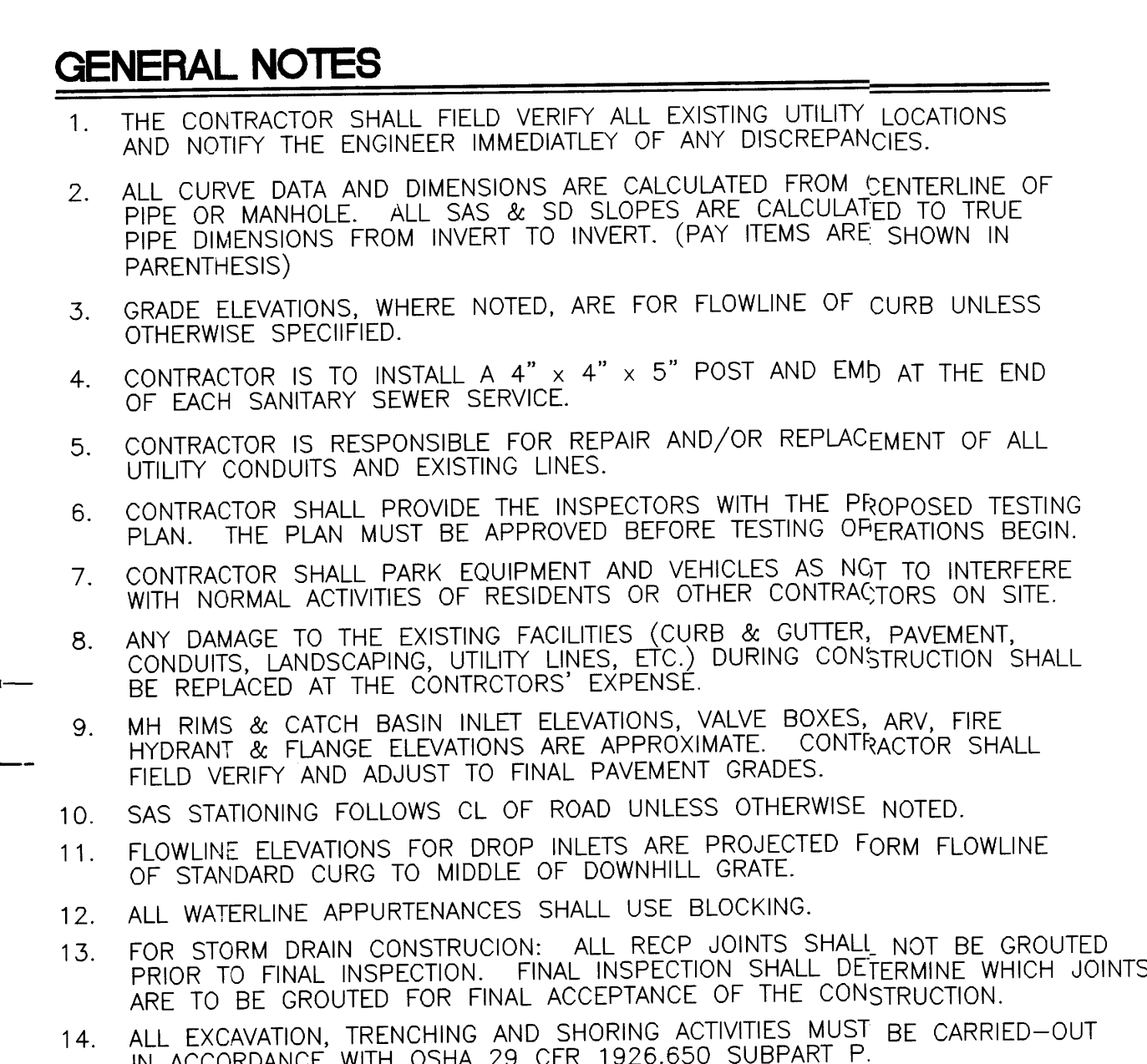
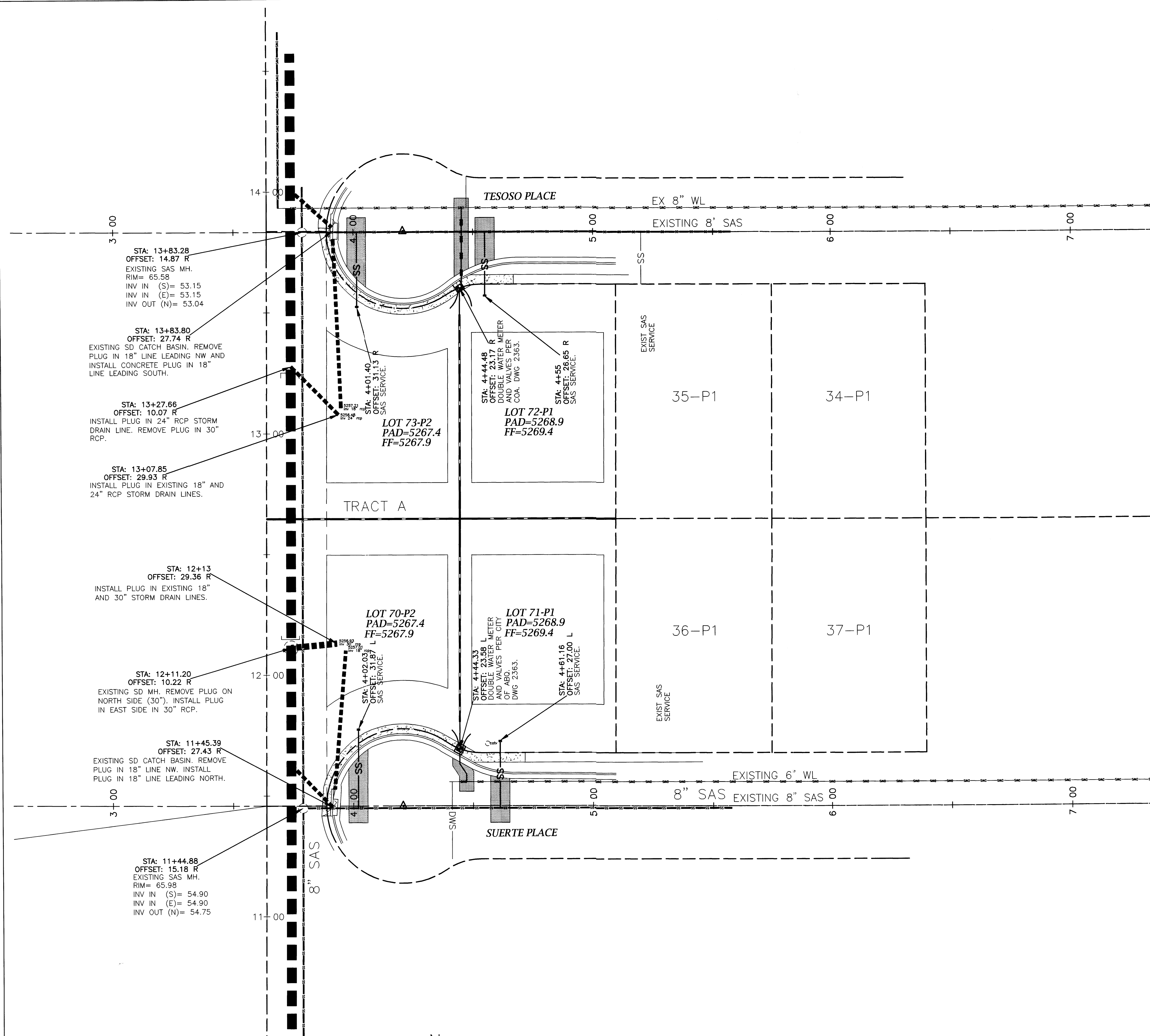
TITLE: SONORA POND INFILL SUBDIVISION
MASTER GRADING PLAN

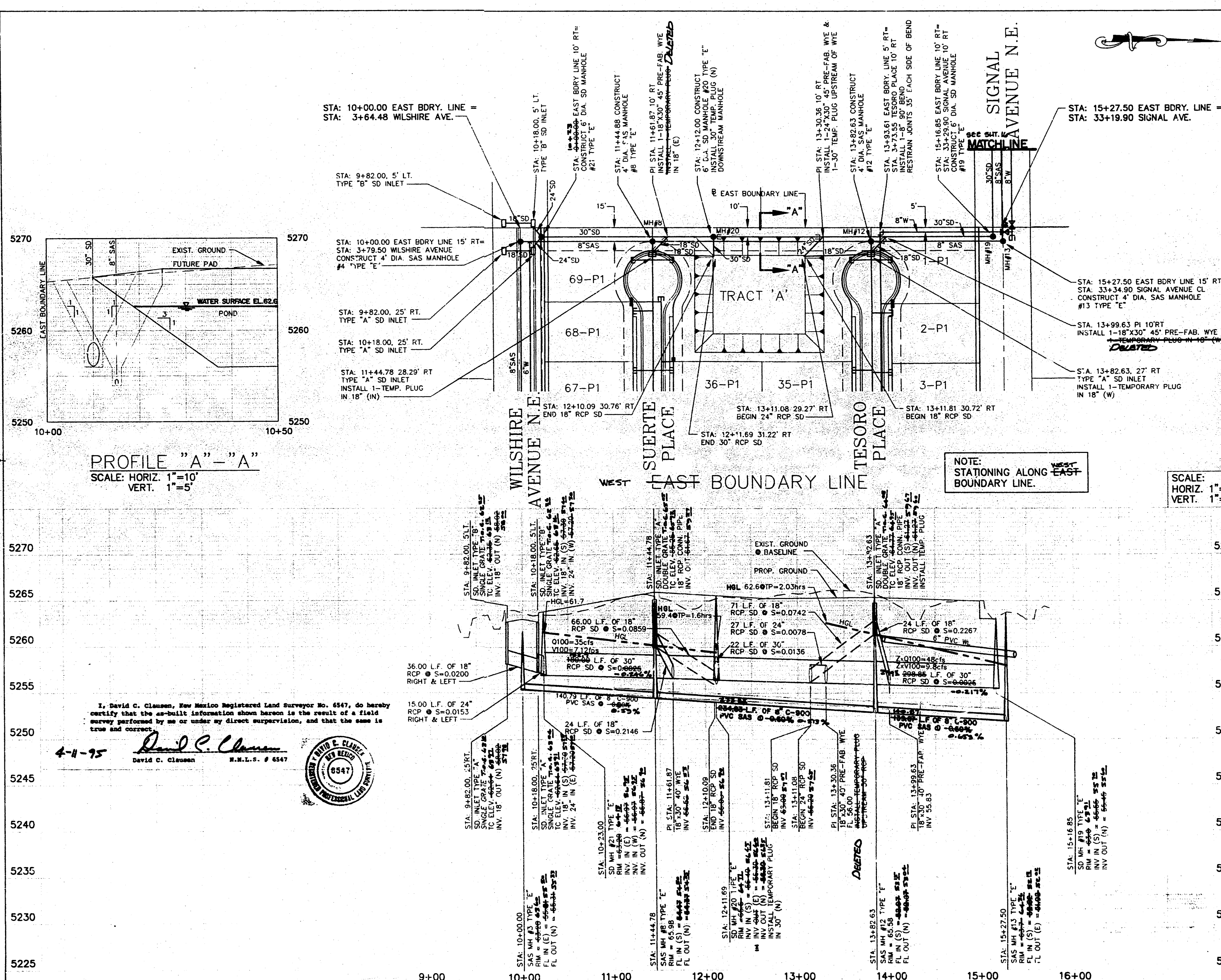
Design Review Committee	City Engineer Approval
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City Project No.

Zone Map
C-18-Z

Sheet 3 of 5





- UTILITY NOTES**
- 1.) STATIONING ALONG C. OF STREET UNLESS OTHERWISE NOTED.
 - 2.) SANITARY SEWER LINE LENGTHS COMPUTED FROM MH C. TO MH C.
 - 3.) SLOPES ARE COMPUTED INVERT TO INVERT. MH RIM ELEVATIONS GIVEN ARE APPROXIMATE. CONTRACTOR SHALL ADJUST ALL RIMS TO FINAL GRADE.
 - 4.) CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH UTILITY COMPANIES.
 - 5.) CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AND UTILITY CONNECTIONS PRIOR TO BEGINNING CONSTRUCTION. SHOULD A CONFLICT EXIST OR DESIGN REVISIONS BE REQUIRED, FOR ANY REASON, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND ALLOW SUFFICIENT TIME FOR DESIGN REVISIONS SO AS TO NOT DELAY THE CONSTRUCTION SCHEDULE.
 - 6.) PRE-FABRICATED RCP SD REQUIRE SHOP DRAWING REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

- LEGEND**
- W — EXISTING WATERLINE
 - SD — EXISTING STORM DRAIN
 - SAS — EXISTING SANITARY SEWER
 - — — EXISTING MANHOLE
 - — — EXISTING FIRE HYDRANT
 - — — EXISTING GATE VALVE
 - W — PROPOSED WATERLINE
 - SD — PROPOSED STORM DRAIN
 - SAS — PROPOSED SANITARY SEWER
 - — — PROPOSED MANHOLE
 - — — PROPOSED FIRE HYDRANT
 - — — PROPOSED GATE VALVE
 - — — PROPOSED CAP OR PLUG
 - — — PROPOSED SINGLE METER, WATER SERVICE LINE
 - — — PROPOSED DOUBLE METER, WATER SERVICE LINES
 - — — PROPOSED SANITARY SEWER SERVICE LINE
 - — — PROPOSED CROSS, TEE, OR ELBOW
 - — — PNM UTILITY CONDUIT

AVID ENGINEERING, INC.
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6100 Sequoyia St., Suite 102
Albuquerque, NM 87109 • (505) 885-5307

26 1978 1980 1995

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP					
TITLE: SONORA SUBDIVISION UTILITY PLAN & PROFILE WEST - EAST BOUNDARY LINE					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. Chair	AP	7-27-94	Water	GP	7-27-94
Transportation	AP	7-27-94	Waste Water	GP	7-27-94
Hydrology	AP	7-27-94			
DRAWING NO.	4978.90	MAP NO.	C-18-Z	SHEET	17 OF 20

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	SPARLING	STATION MARK	9-C18 1985	FIELD NOTES	DATE	NO.	DATE
STAMPED BY	SPARLING	QUADRANT OF THE INTERSECTION	WILSHIRE AVENUE AND SAN PEDRO AVENUE N.E.	BY	SPARLING		
DATE		ELEVATION	5229.79	REMARKS	BY	DATE	DATE
DATE				DESIGN	DATE	6/94	
DATE				DRAWN BY	DATE	6/94	
DATE				CHECKED BY	DATE	7/94	