

July 31, 1997

Martin J. Chávez, Mayor

Rick Beltramo, P.E.
AVID Engineering, Inc.
5801 Osuna Rd. NE, Suite 200
Albuquerque, New Mexico 87109

**RE: Grading and Drainage Certification for Signal Hill Subdivision (C18/D4A)
Certification Date 7/14/97.**

Dear Mr. Beltramo:

Based on the information provided in the submittal of July 22, 1997, the above referenced plan is adequate to satisfy the requirement for Subdivision Certification for release of Financial Guarantees per the Infrastructure List signed on August 13, 1996, and revised on October 8, 1996.

If you should have any questions, or if I may be of further assistance to you, please call me.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Terri Martin (Work Order No. 556181)
Bo Johnson, Curb Inc./Bokay Construction
File

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103



DRAINAGE INFORMATION SHEET

PROJECT TITLE: ~~SONORA WEST SUBDIVISION~~ ^{SIGNAL HILL}
(for nearly Sonora West)ZONE ATLAS/DRAINAGE FILE# C-18/D-10 ⁴⁴

LEGAL DESCRIPTION:

LOTS 6,7,8,25,26&27 TRACT A, UNIT B, BLOCK 30, NORTH ALBUQUERQUE ACRES

ENGINEERING FIRM: AVID ENGINEERING, INC.,

CONTACT: Rick Beltramo

ADDRESS: 6100 Seagull St. NE, Suite 102, 87109

PHONE: 881-5357

OWNER: CURB INC./BOKAY CONST.

CONTACT: BO JOHNSON

ADDRESS: 6301 INDIAN SCHOOL

PHONE: 263-3177

ARCHITECT: NA

CONTACT: NA

ADDRESS:

PHONE:

SURVEYOR: AVID ENGINEERING, INC.

CONTACT: RUAN BACIGALUPA

ADDRESS: Same as Above

PHONE: 881-5357

CONTRACTOR: NONE

CONTACT:

ADDRESS:

PHONE:

PRE-DESIGN MEETING:

☒ YES

DRB NO. 96-278

☐ NO

EPC NO. Z-96-53/SD-83-2-33

☒ COPY OF CONFERENCE

PROJECT NO. n/a

RECAP SHEET PROVIDED

TYPE OF SUBMITTAL:

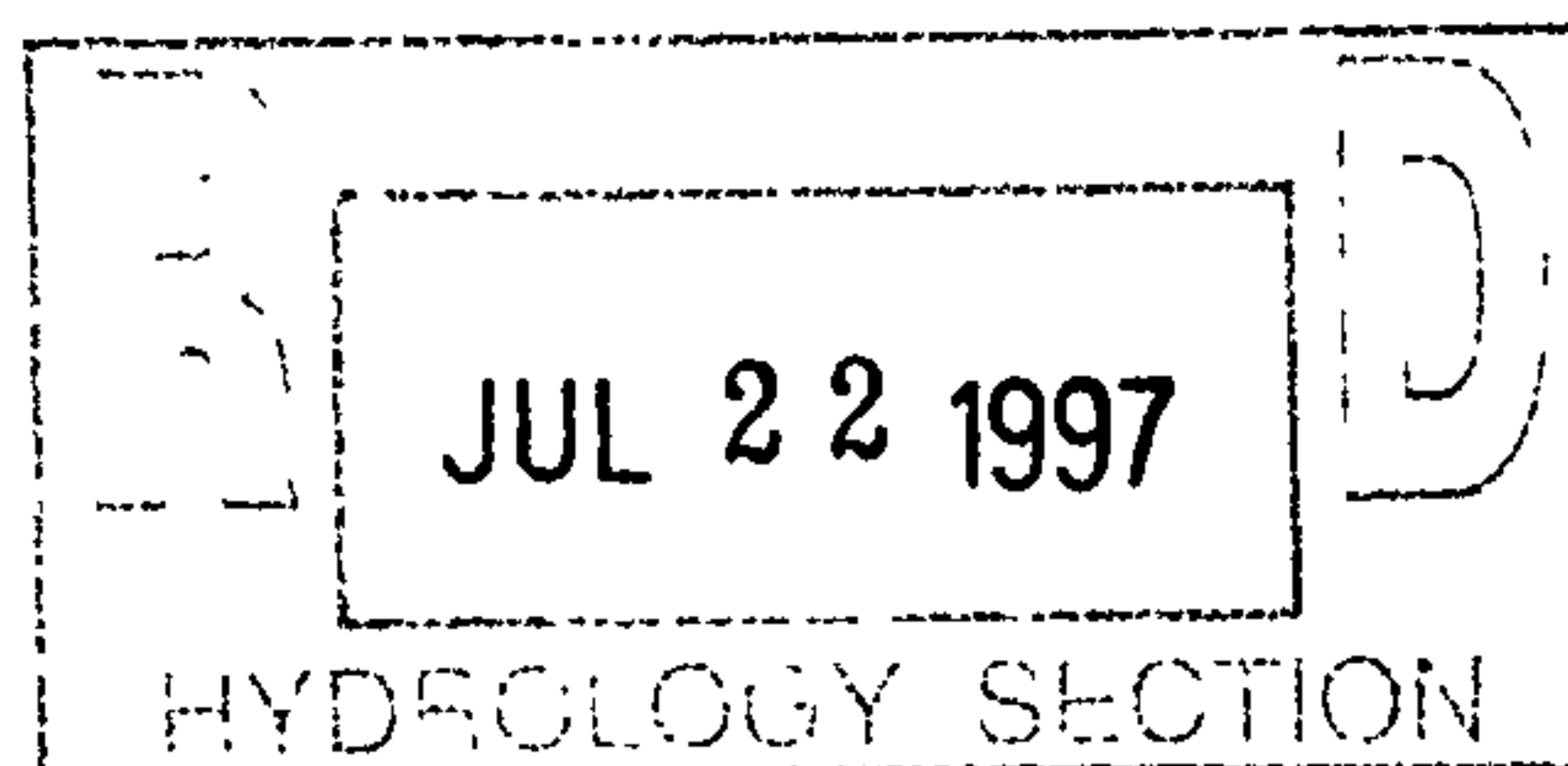
CHECK TYPE OF APPROVAL SOUGHT:

☒ DRAINAGE REPORT☐ SECTOR PLAN APPROVAL☐ DRAINAGE PLAN☐ SKETCH PLAT APPROVAL☐ CONCEPTUAL GRADING
& DRAINAGE PLAN☐ PRELIMINARY PLAT APPROVAL☐ GRADING PLAN☐ SITE DEVELOPMENT PLAN APPROVAL☐ EROSION CONTROL PLAN☐ FINAL PLAT APPROVAL☐ ENGINEER'S CERTIFICATION☐ BUILDING PERMIT APPROVAL☐ FOUNDATION PERMIT APPROVAL☐ CERTIFICATE OF OCCUPANCY
APPROVAL☐ ROUGH GRADING PERMIT APPROVAL

DATE SUBMITTED:

☐ GRADING/PAVING PERMIT APPROVAL

BY: RICK BELTRAMO

☒ OTHER GRADE & DRAIN (SPECIFY)
CERTIFICATION



City of Albuquerque

P. O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103
PUBLIC WORKS DEPARTMENT

June 3, 1997

CERTIFICATE OF WORK ORDER COMPLETION

Curb Inc.
6301 Indian School Rd. NE
Albuquerque, NM 87110

RE: Signal Hill Subdivision PROJECT NO. 556181 MAP NO. (C-18)

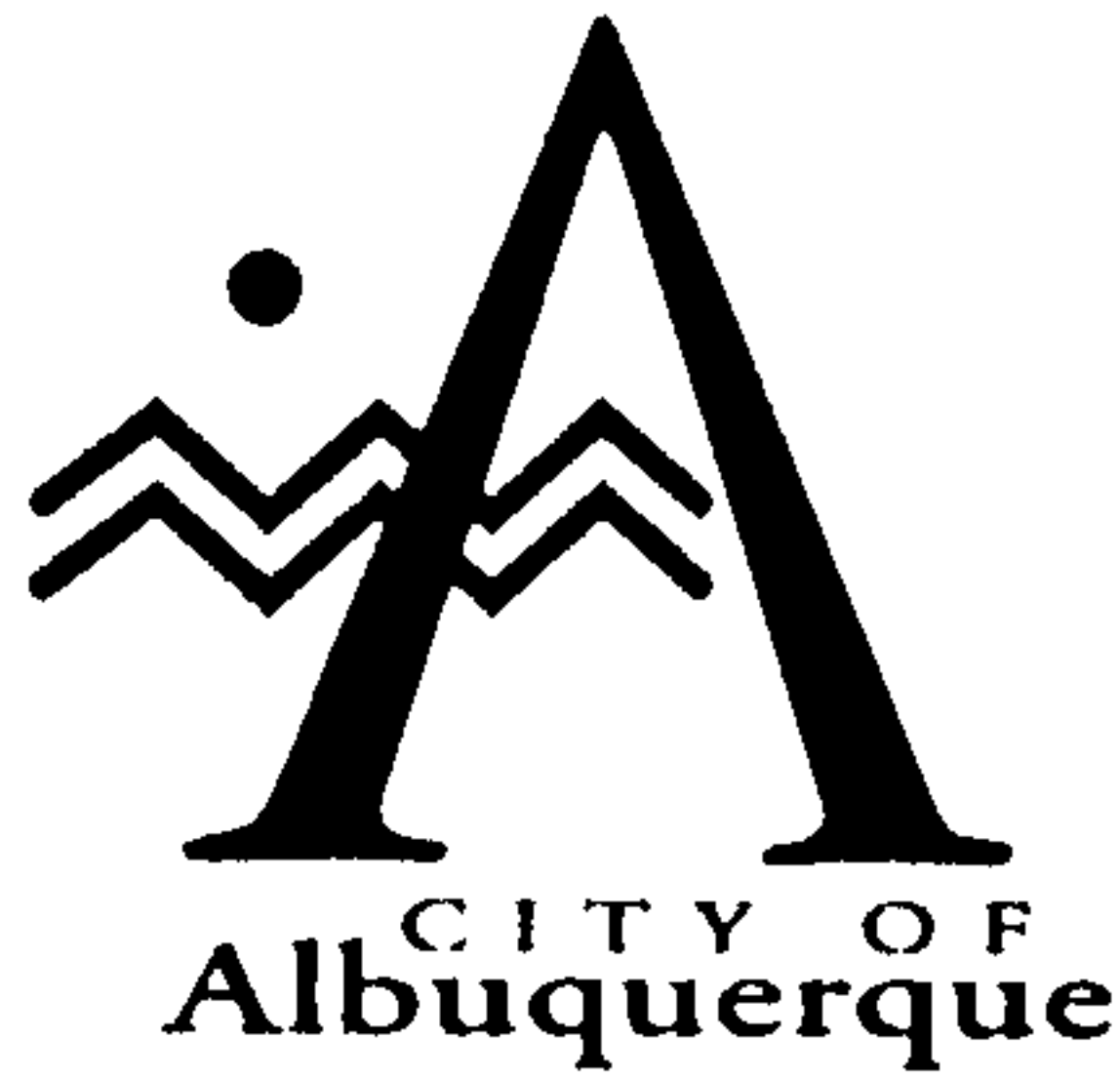
Dear Sir:

This is to certify that the City of Albuquerque accepts Project No. 546881 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- Installed water and sanitary sewer lines including services as called for on the approved construction-plans for the referenced subdivision.
- Installed 24" storm drain pipe, constructed catch basins and temporary a detention pond in the public easement within tract "A" from Habra Lane to Signal Avenue.
- Street related work included 20' permanent and 4' temporary paving, curb and gutter and 4' sidewalk on Signal Avenue from east boundary to west boundary.
- Also built 4' sidewalk on the north side only on Wilshire Ave. and La Habra Lane.

The contractors correction period began the date of this letter and is effective for a period of one (1) year.



February 27, 1997

Martin J. Chávez, Mayor

Rick Beltramo, P.E.
AVID Engineering, Inc.
5801 Osuna Rd. NE, Suite 200
Albuquerque, New Mexico 87109

**RE: REVISED GRADING AND DRAINAGE PLAN FOR SIGNAL HILL SUBDIVISION (C18/D10)
SUBMITTED FOR AMENDED PRELIMINARY PLAT APPROVAL AND AMENDED SITE
DEVELOPMENT PLAN APPROVAL, ENGINEER'S STAMP DATE 2/18/97.**

Dear Mr. Beltramo:

Based on the information provided on February 18, 1997, the above referenced Plan is acceptable for Amended Site Development Plan and Amended Preliminary Plat approval.

The Grading and Drainage Certification of this plan, which was approved at DRB, must be submitted to, and approved by my office prior to release of financial guarantees, per the Infrastructure List.

If you should have any questions, or if I may be of further assistance to you, please do not hesitate to call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Bo Johnson, Curb Inc./Bokay Construction
(File)

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103



DRAINAGE INFORMATION SHEET

PROJECT TITLE: (SIGNAL HILL) (SONORA WEST SUBDIVISION) ZONE ATLAS/DRAINAGE FILE# C-18/D-10

LEGAL DESCRIPTION:

LOTS 6,7,8,25,26&27 TRACT A, UNIT B, BLOCK 30, NORTH ALBUQUERQUE ACRES

ENGINEERING FIRM: AVID ENGINEERING, INC.,

ADDRESS: 6100 Seagull St. NE, Suite 102, 87109

OWNER: CURB INC./BOKAY CONST.

ADDRESS: 6301 INDIAN SCHOOL

ARCHITECT: NA

ADDRESS:

SURVEYOR: AVID ENGINEERING, INC.

ADDRESS: Same as Above

CONTRACTOR: NONE

ADDRESS:

CONTACT: Rick Beltramo

PHONE: 881-5357

CONTACT: BO JOHNSON

PHONE: 263-3177

CONTACT: NA

PHONE:

CONTACT: RUAN BACIGALUPA

PHONE: 881-5357

CONTACT:

PHONE:

PRE-DESIGN MEETING:

XX YES NOXX COPY OF CONFERENCE

RECAP SHEET PROVIDED

DRB NO. 96-278

EPC NO. Z-96-53/SD-83-2-33

PROJECT NO. n/a

TYPE OF SUBMITTAL:

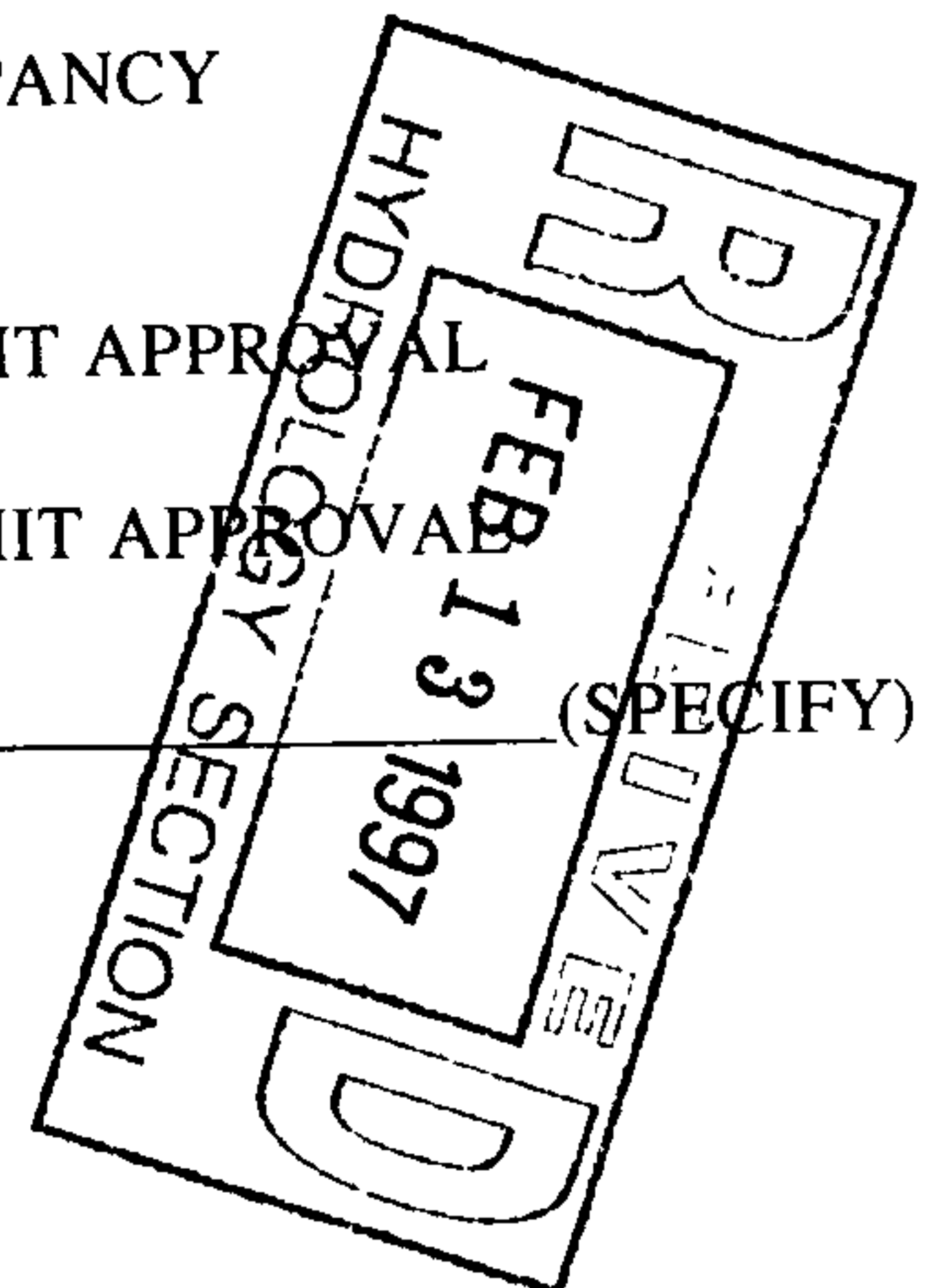
 DRAINAGE REPORT DRAINAGE PLAN CONCEPTUAL GRADING
& DRAINAGE PLANXX GRADING PLAN EROSION CONTROL PLAN ENGINEER'S CERTIFICATION

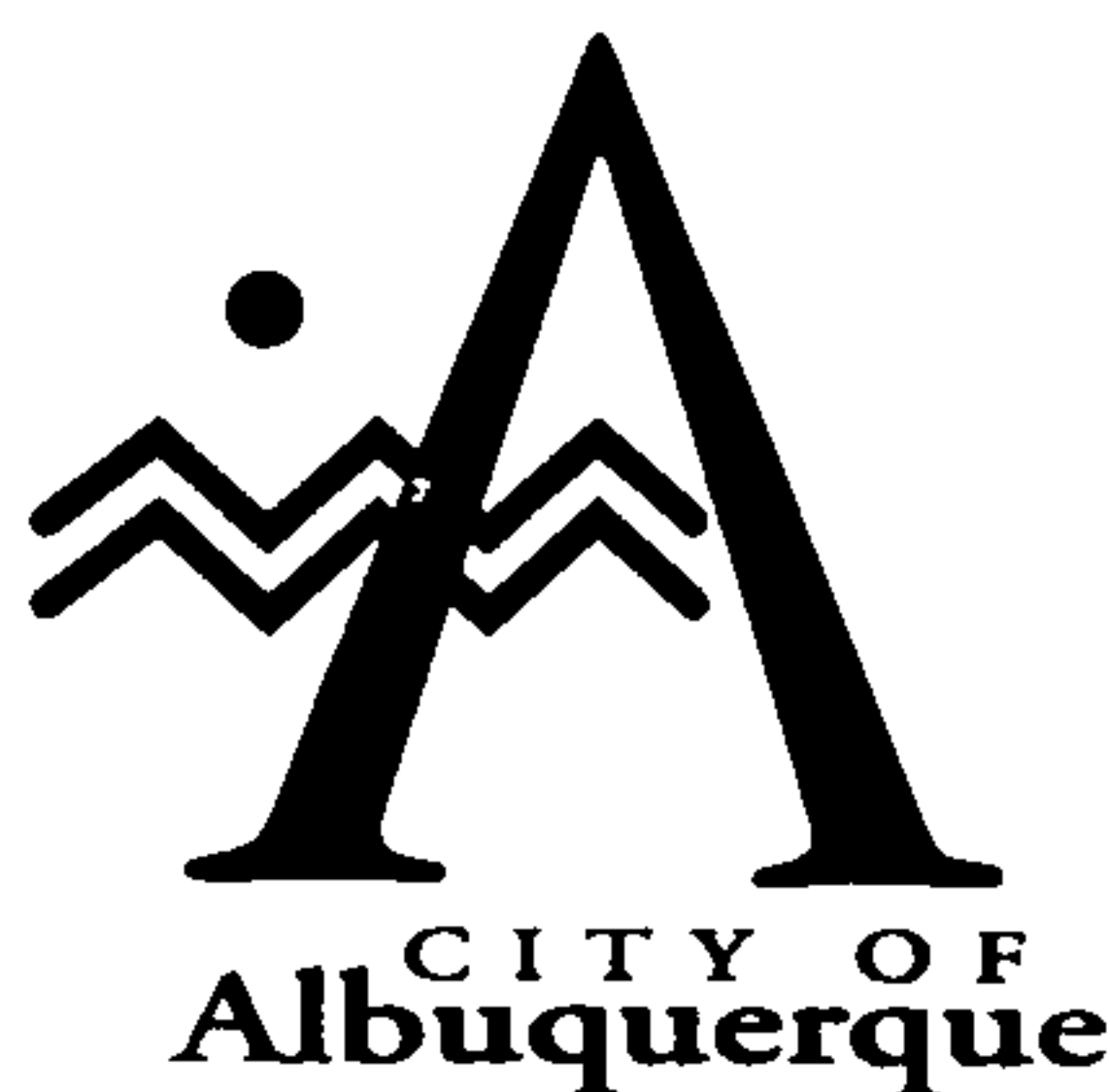
CHECK TYPE OF APPROVAL SOUGHT:

 SECTOR PLAN APPROVAL SKETCH PLAT APPROVALXX PRELIMINARY PLAT APPROVALXX SITE DEVELOPMENT PLAN APPROVAL FINAL PLAT APPROVAL BUILDING PERMIT APPROVAL FOUNDATION PERMIT APPROVAL CERTIFICATE OF OCCUPANCY
APPROVAL ROUGH GRADING PERMIT APPROVAL GRADING/PAVING PERMIT APPROVAL OTHER _____ (SPECIFY)

DATE SUBMITTED: 2/12/97

BY: RICK BELTRAMO





Martin J. Chávez, Mayor

October 15, 1996

Rick Beltramo, P.E.
AVID Engineering, Inc.
5801 Osuna Rd. NE, Suite 200
Albuquerque, New Mexico 87109

RE: DRAINAGE REPORT FOR SIGNAL HILL SUBDIVISION (C18/D10) SUBMITTED FOR SITE DEVELOPMENT PLAN, FINAL PLAT AND GRADING PERMIT APPROVAL, ENGINEER'S STAMP DATE 9/27/96.

Dear Mr. Beltramo:

Based on the information provided in the submittal of September 27, 1996, the above referenced report and plan are approved for Site Development, Final Plat and Grading Permit approval.

As you are aware, a Topsoil Disturbance permit is required prior to grading on the site. The Grading and Drainage Certification of the plan approved at DRB must be approved prior to release of financial guarantees, per the Infrastructure List.

If you should have any questions, or if I may be of further assistance to you, please do not hesitate to call me at 768-2666.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Bo Johnson, Curb Inc./Bokay Construction
File

Good for You, Albuquerque!



September 30, 1996

Susan M. Calogne, P.E.
City/County Floodplain Administrator
Hydrology Department
City of Albuquerque
City/County Building
[Hand Delivered]

RE: SIGNAL HILL SUBDIVISION - DRAINAGE REPORT
DRB No. 96-278, DRN RPT No. C18/D10

Dear Susan:

Submitted are the responses to your comments dated September 6, 1996. Below are detailed responses to each comment received. The revised report was previously submitted to you on September 27, 1996.

Comment	Response
----------------	-----------------

1	The allowable discharge rate determined by the "Historic" conditions AHYMO hydrologic analysis is based on the hydraulic capacity of the San Pedro storm drain. The hydraulic capacity was determined to be 160cfs at the Eagle Rock Ave./ San Pedro Blvd. intersection (reference Sonora Subdivision Drainage Report). The AHYMO run was used to determine how the allowable discharge is to be distributed throughout the contributing basins. 1.4 cfs/acre was determined as an average value to be applied.
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The basins developed for the "Historic" conditions run compare closely to the "Interim" conditions and the "Ultimate" conditions analysis.

2	Land treatments used for the undeveloped areas are based on values developed for the Sonora Subdivision Drainage Report. These values were maintained because the Sonora Study established values for flow generated by offsite conditions. Changing these values would cause the existing Sonora Pond to be undersized. Redesigning the Sonora pond is not an option at this time. It is recommended that for consistency, these values be maintained.
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In light of the City's annexing of the Window B area, these values are probably conservative. Building at 1du/acre is highly unlikely due to the annexation. It is more likely that lots will be assembled into subdivisions, with improved storm drain systems, consistent with the ultimate conditions determined by this report.

- 3 The area diverted is above the maximum design water surface of the dam. It is feasible for the basins shown to be diverted to the dam. However, areas which cannot be diverted must restrict developed flow rates so as not to exceed the established capacity of the Corona storm drain. This could be achieved using detention ponds. The masterplan concepts presented are an attempt to utilize "free-discharge" systems. However, should conditions warrant, detention ponds should be considered as an alternative. By allowing detention ponds some flexibility is provided.

The basin limits were extended east to provide some additional elevation for diversion into the dam. This, as well as other factors, has resulted in increasing flows to the Corona Storm drain. ✓

- 4 A basin has been added, extending the contributing basins south to Corona Ave. The increased area has resulted in greater flow rates which in-turn increased the size of the storm drain to a 54" diameter.

- 5 These basins are proposed to be collected by a public storm drain located adjacent to I-25.

- 6 The city criteria requires that the 10 year-6 hour storm event intercept all flows at intersections. The plan presented attempts to intercept all flows during the 100 year event but, some water crosses San Pedro during the 100 year event. The Ultimate Conditions Basin Map shows how much runoff is allowed to cross San Pedro. The Interim and Ultimate conditions are designed so as not to exceed the capacity of the San Pedro storm drain. Other, future storm drains will intercept the remainder. ✓

The allowable discharge rate, under developed conditions varies. In some areas, the Corona system, more intense development is allowed in the industrial areas (areas west of San Pedro). In other areas, the development is allowed to discharge runoff equal to 5 DU's/acre based on residential type development. These densities translate to 3.6cfs/acre for industrial properties and 3.22 cfs/acre for residential properties.

- 7 Proposed storm drains were sized utilizing the AHYMO routing procedures. The flow rates were determined then routed using the pipe route routine with a slope equal to existing street grades found on FEMA topographic maps. The pipe sizes were increased until a non-pressure flow condition was achieved. ✓

Susan M. Calogne, P.E.

September 30, 1996


Page 3

It is assumed that the final design will utilize pressure flow design, possibly resulting in a reduction in final pipe size.

- 8 A detention pond is proposed, the drainage report has been revised to show accordingly. ✓
- 9 This project is required to build Wilshire Ave., form Sonora Subdivision, west to the western edge of Signal Hill. At this time, Wilshire improvements do not exist. Accordingly, the erosion control berm encompass the proposed Wilshire Ave. construction.

Should you have any questions or need additional information, please call anytime.

Sincerely,

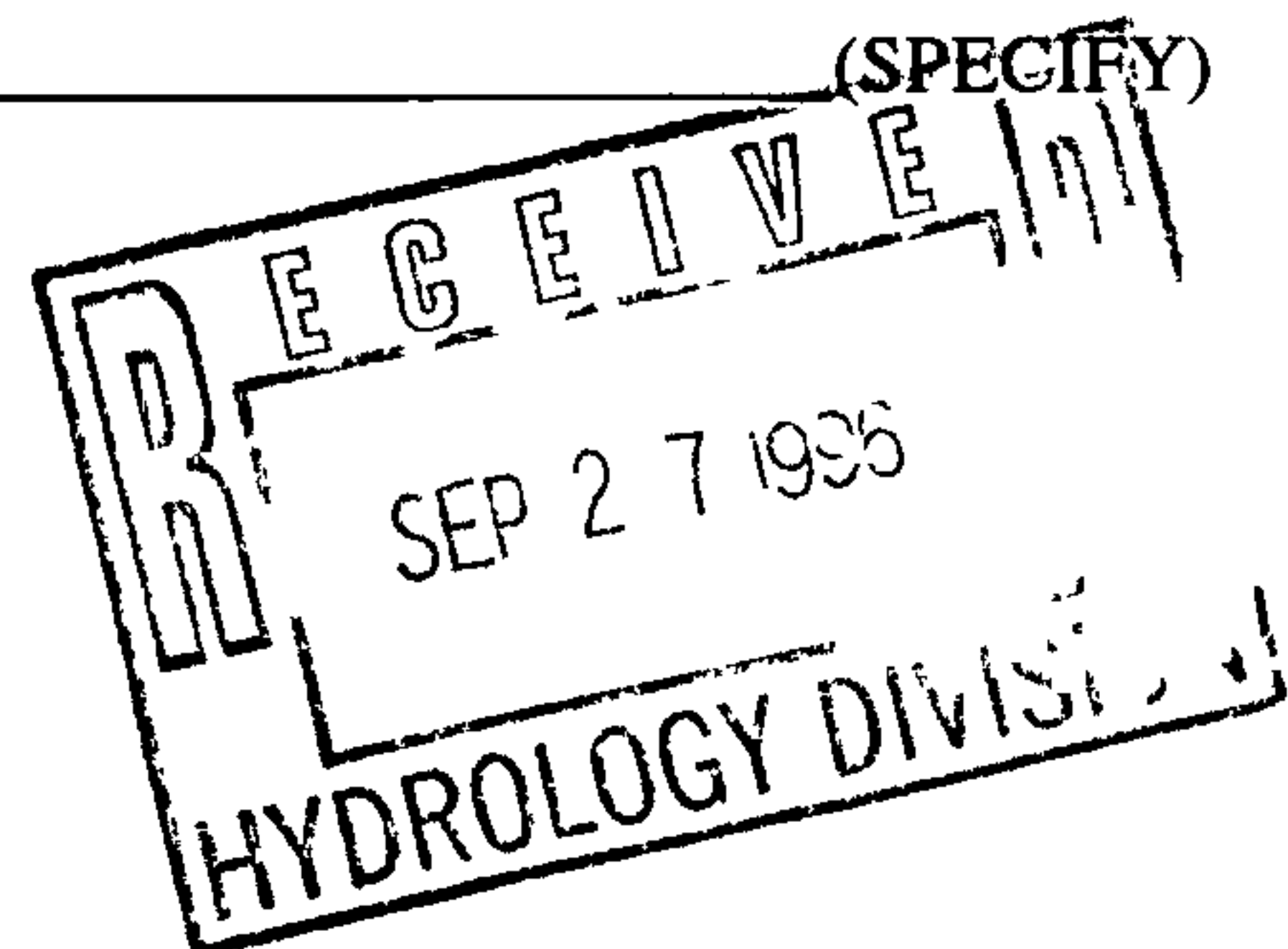


Rick Beltramo, P.E.
Project Manager

cc: Bo Johnson, Curb Inc.
James Domenick, AVID Engineering, Inc.

DRAINAGE INFORMATION SHEET**PROJECT TITLE: SIGNAL HILL SUBDIVISION**
(FORMERLY SONORA WEST)**ZONE ATLAS/DRAINAGE FILE# C-18/D-10****LEGAL DESCRIPTION:****LOTS 6,7,8,25,26&27 TRACT A, UNIT B, BLOCK 30, NORTH ALBUQUERQUE ACRES****ENGINEERING FIRM: AVID ENGINEERING, INC.,****ADDRESS: 6100 Seagull St. NE, Suite 102, 87109****OWNER: CURB INC./BOKAY CONST.****ADDRESS: 6301 INDIAN SCHOOL****ARCHITECT: NA****ADDRESS:****SURVEYOR: AVID ENGINEERING, INC.****ADDRESS: Same as Above****CONTRACTOR: NONE****ADDRESS:****CONTACT: Rick Beltramo****PHONE: 881-5357****CONTACT: BO JOHNSON****PHONE: 263-3177****CONTACT: NA****PHONE:****CONTACT: RUAN BACIGALUPA****PHONE: 881-5357****CONTACT:****PHONE:****PRE-DESIGN MEETING:**XX YES NOXX COPY OF CONFERENCE

RECAP SHEET PROVIDED

DRB NO. 96-278**EPC NO. Z-96-53/SD-83-2-33****PROJECT NO. n/a****TYPE OF SUBMITTAL:**XX DRAINAGE REPORT DRAINAGE PLAN CONCEPTUAL GRADING
& DRAINAGE PLAN GRADING PLAN EROSION CONTROL PLAN ENGINEER'S CERTIFICATION**CHECK TYPE OF APPROVAL SOUGHT:** SECTOR PLAN APPROVAL SKETCH PLAT APPROVAL PRELIMINARY PLAT APPROVALXX SITE DEVELOPMENT PLAN APPROVALXX FINAL PLAT APPROVAL BUILDING PERMIT APPROVAL FOUNDATION PERMIT APPROVAL CERTIFICATE OF OCCUPANCY
APPROVALXX ROUGH GRADING PERMIT APPROVAL GRADING/PAVING PERMIT APPROVAL OTHER _____ (SPECIFY)**DATE SUBMITTED: 9/27/96****BY: RICK BELTRAMO**



Martin J. Chávez, Mayor

September 6, 1996

Rick Beltramo, P.E.
AVID Engineering, Inc.
5801 Osuna Rd., NE, Suite 200
Albuquerque, New Mexico 87109

RE: DRAINAGE REPORT FOR SONORA WEST SUBDIVISION (C18/D10) SUBMITTED FOR
PRELIMINARY PLAT APPROVAL AND SITE DEVELOPMENT PLAN APPROVAL, ENGINEER'S
STAMP DATE 8/9/96.

Dear Mr. Beltramo:

Prior to approval of the above referenced drainage report and approval for Preliminary Plat and Site Development Plan for Sonora West Subdivision, the following issues must be addressed:

1. The report states that the AHYMO for Historic Conditions establishes the allowable discharge rates from the existing basins. It is my understanding that the existing capacity in the San Pedro storm drain system determines the allowable discharge rate for the entire area. Therefore, the basins shown on Exhibit 3 would be pro-rated to discharge at a certain allowable rate. How do the basins on Exhibit 3 compare with those used for the Interim and Ultimate Conditions?
2. Does the AHYMO for Interim Conditions use land treatments reflecting the existing development? Land treatments for fully developed North Albuquerque Acres lots should be used for the undeveloped areas. Typical land treatments for 1 DU/acre in NAA are considered to be 43% A, 20% B, 20% C, and 17% D.
3. In Exhibit 5, it appears that most of Window B is shown being diverted to the Lower North Domingo Baca Dam. This assumption must be realistic considering the existing topography. Considering the grades, can all of this area be diverted into the dam?
4. The basins for the Corona storm drain system should include an additional area east of Louisiana, north of Corona, below Basin C2. Please show the existing Lower North Domingo Baca Dam on Exhibit 5. Also show where the adjacent basins drain. This may be done with flow arrows and labeling to assure that all basins are accounted for.
5. How will runoff from Basins C6 and C7, west of San Pedro, be intercepted?

Good for You, Albuquerque!



September 6, 1996

6. Under the Ultimate Condition, all of the water must be picked up in the San Pedro storm drain system to prevent flows from crossing this major arterial (similar to the assumption used for Louisiana). The Ultimate Condition scenario should be used to determine the allowable discharge per acre into the San Pedro system after the future systems are constructed. This will be used to determine if the detention ponds may be removed in the future.
7. How were the future storm drain sizes shown on Exhibit 5 determined?
8. The report states that Sonora West needs no detention ponds due to the existing Sonora Ponds. The plan, however, shows a temporary detention pond in the northwest corner and the analysis does not show that free discharge is justified. If a temporary detention pond is needed, then pond capacity calculations will be required.
9. Please provide inlet and storm drain capacity calculations for all proposed improvements.
10. It appears that grading is proposed within the Wilshire Avenue right-of-way. The ultimate street section must be designed with this project, however it is unclear what is to be constructed at this time. The proposed erosion control berm should not block City right-of-way.

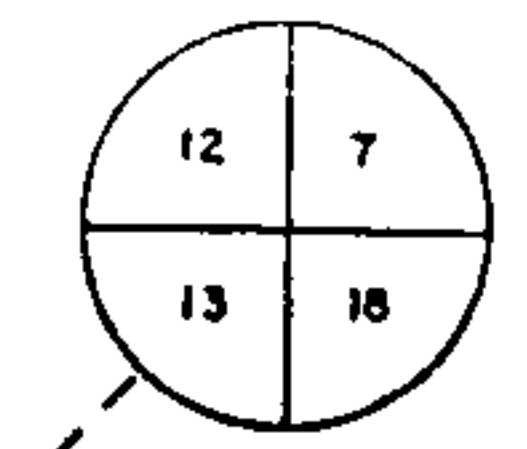
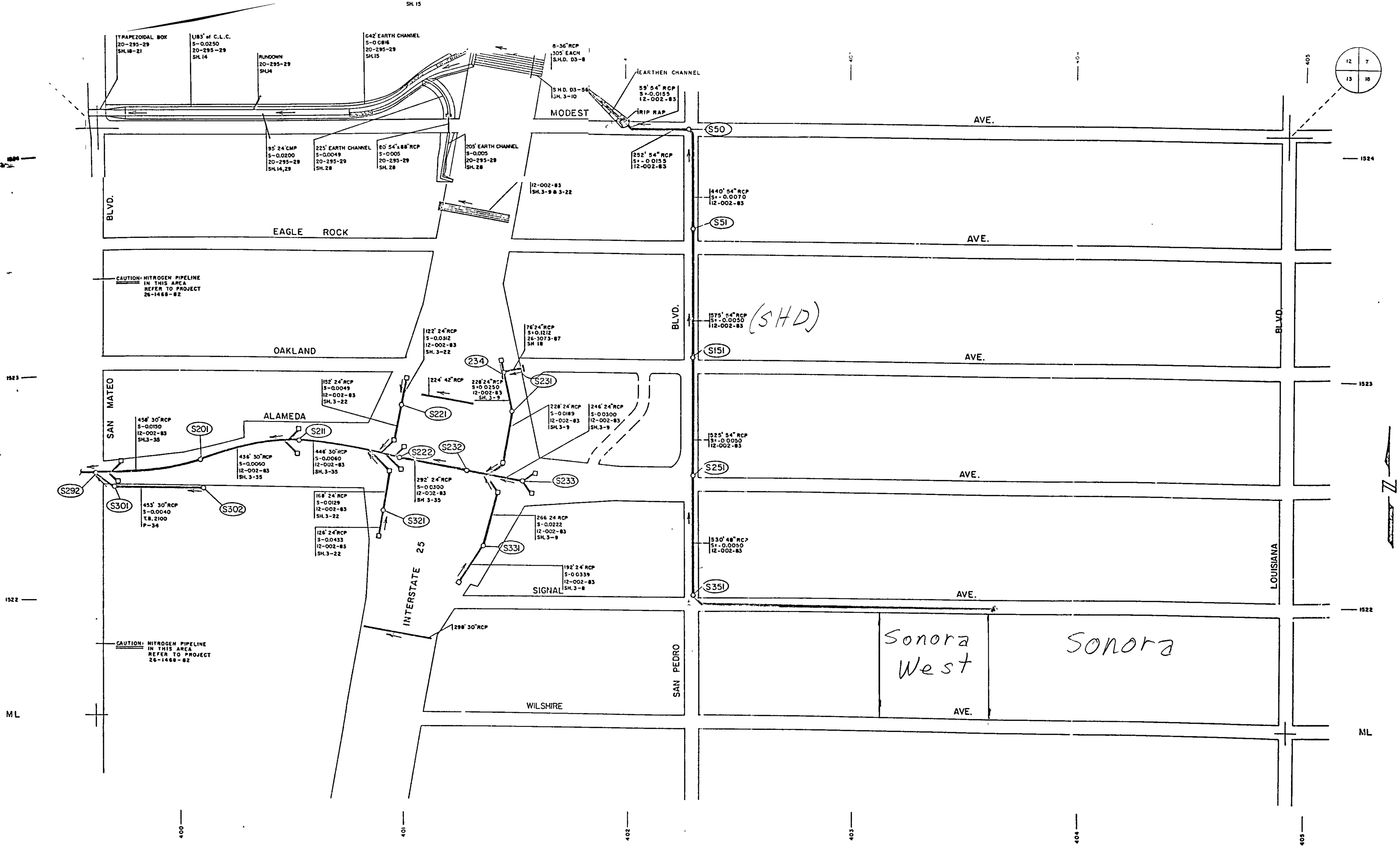
Please call me at 768-2666 to set up a time to meet with me to discuss these comments.

Sincerely,



Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Bo Johnson, Curb Inc./Bokay Construction
File

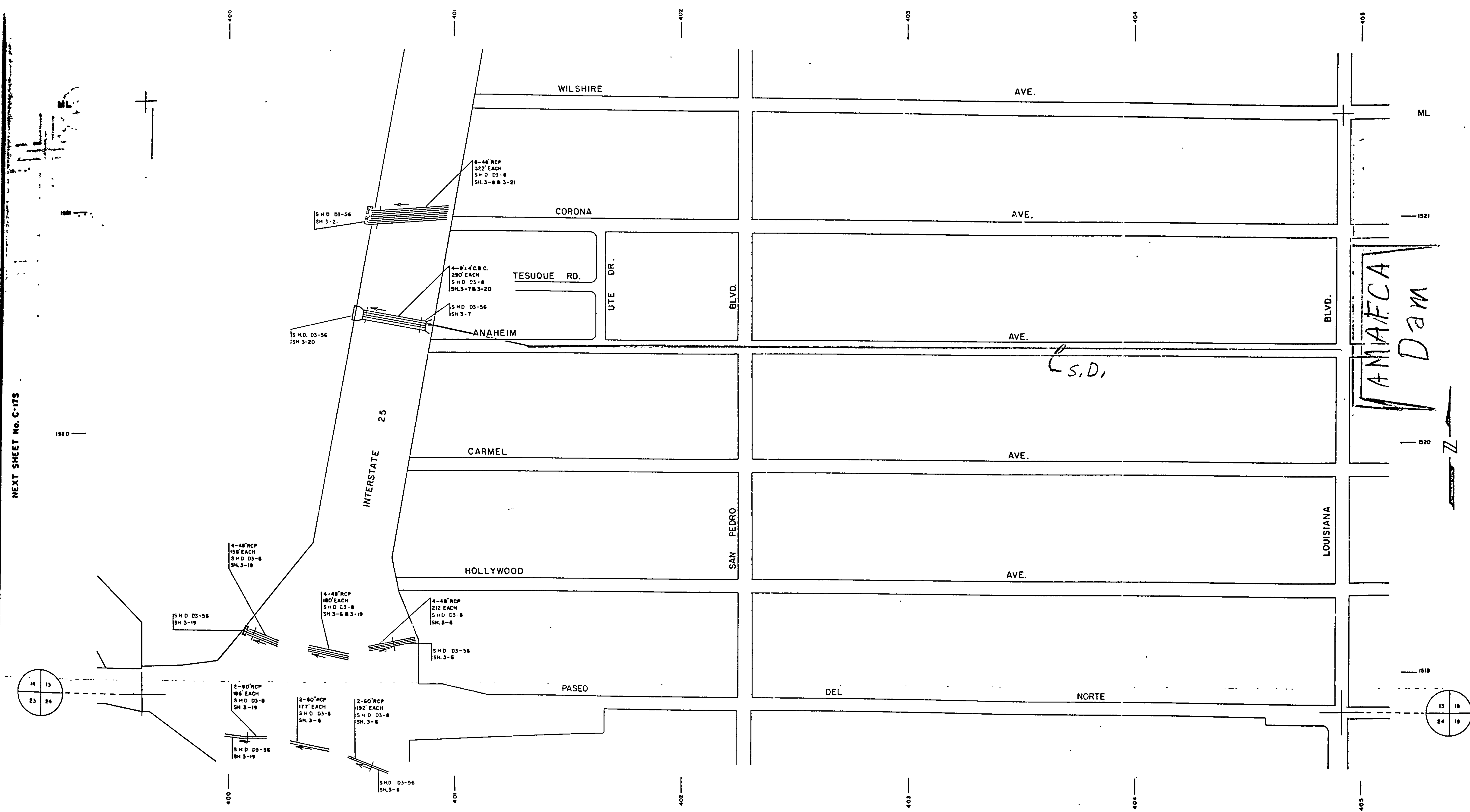


N
NEXT SHEET No. C-19N



LEGEND		NOTES		REVISIONS		MAP GRID
	STORM SEWER LINE	1. MANHOLE IDENTIFICATION REQUIRES BOTH THE MAP GRID & MANHOLE NO. 2. MANHOLE NUMBERS CARRIED FROM ADJACENT MAPS HAVE THE MAP GRID SHOWN.		DATE	REMARKS	C-18N
	MANHOLE					
	MANHOLE NUMBER					
	STORM INLET					
	STORM INLET WITH GRATES					

NEXT SHEET No. C-17S



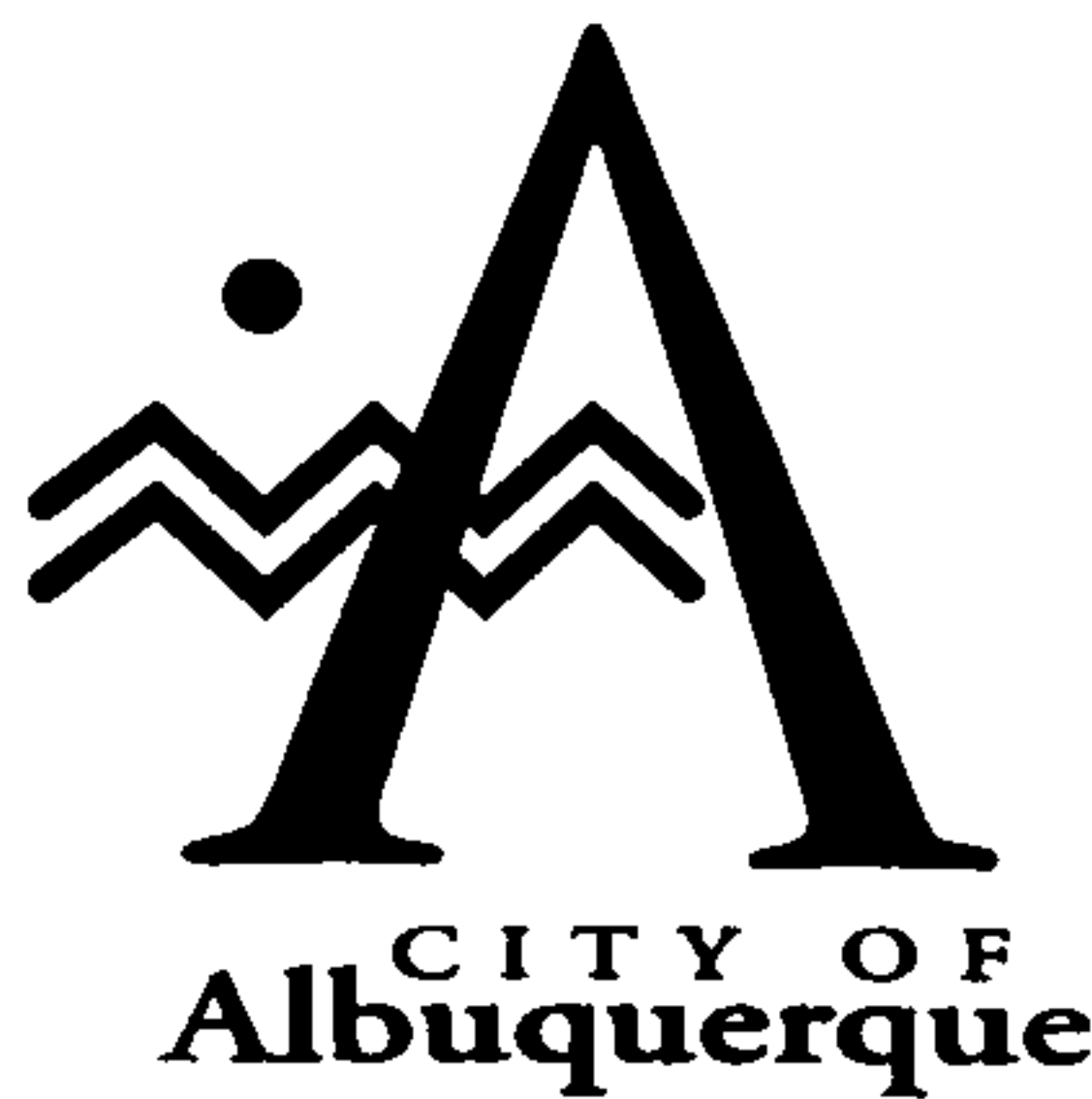
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DRAINAGE FACILITIES MAP

LEGEND		NOTES		REVISIONS		MAP GRID
	STORM SEWER LINE	1. MANHOLE IDENTIFICATION REQUIRES BOTH THE MAP GRID & MANHOLE NO. 2. MANHOLE NUMBERS CARRIED FROM ADJACENT MAPS HAVE THE MAP GRID SOWN.		DATE	REMARKS	C-18S
	MANHOLE			4/27/88	S.H.D. D3-8, S.H. 3-56	
	MANHOLE NUMBER					
	STORM INLET					
	NUMBER, TYPE, GRATES					

NEXT SHEET No. D-18N



P.O. Box 1293 Albuquerque, NM 87103

July 23, 1996

Martin J. Chávez, Mayor

Rick Beltramo, PE
AVID Engineering, Inc.
6100 Seagull NE, Suite 102
Albuquerque, NM 87109

RE: DRAINAGE REPORT FOR SONORA WEST SUBDIVISION (C-18/D10)
RECEIVED JULY 8, 1996 FOR SITE DEV. PLAN & PRELIMINARY PLAT
ENGINEER'S STAMP DATED 7/2/96

Dear Mr. Beltramo:

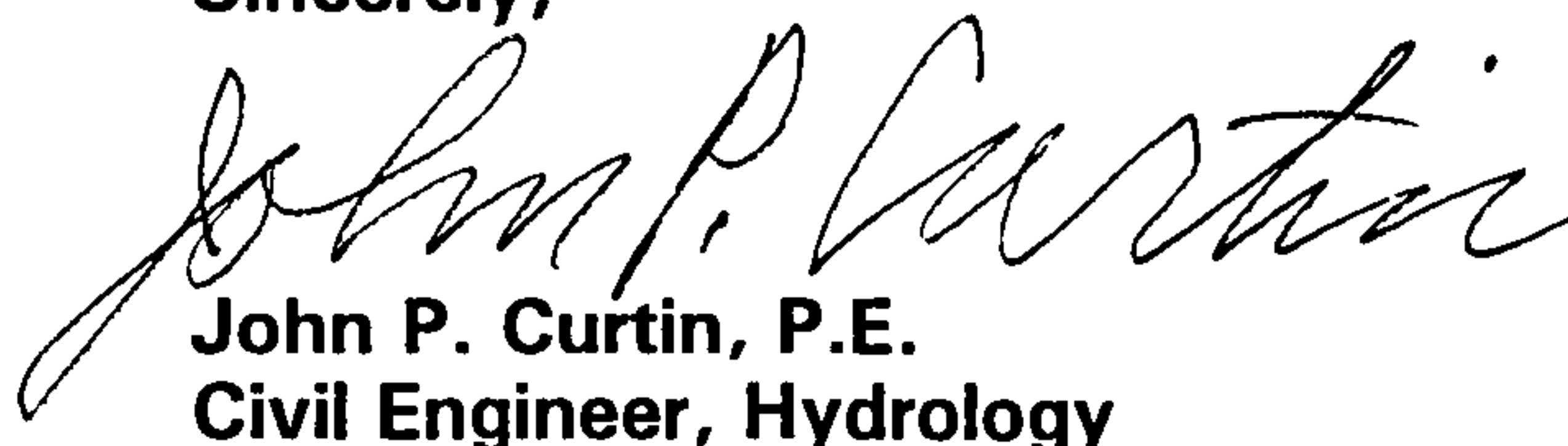
Based on the information included in the submittal referenced above, City Hydrology has the following comments that must be addressed:

Demonstrate that it is practical & economical to divert the off-site basin to the La Cueva Arroyo at Louisiana instead of routing the runoff through the San Pedro storm drain. Reference any existing or proposed study that will influence development of this area. Can *public* runoff be routed down a *private* street on-site or must the *public* runoff be conveyed in a *public* storm drain?

Conveyance factors used to determine time of concentration do not agree with Table B-1 (copy attached). Clarify whether one or two ponds are required. How was the pond outflow determined? Provide street grades for Signal. Determine the capacity of the on-site streets.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,



John P. Curtin, P.E.
Civil Engineer, Hydrology

c: Andrew Garcia
Fred Aguirre, DRB 96-278
Bo Johnson, Curb Inc/Bokay Const, 6301 Indian School NE 87110

Good for You, Albuquerque!



DRAINAGE INFORMATION SHEET

PROJECT TITLE: SONORA WEST SUBDIVISION ZONE ATLAS/DRAINAGE FILE# C-18/ ~~114~~ ~~104~~ 4A

LEGAL DESCRIPTION:

LOTS 6,7,8,25,26&27 TRACT A, UNIT B, BLOCK 30, NORTH ALBUQUERQUE ACRES

ENGINEERING FIRM: AVID ENGINEERING, INC.,	CONTACT: Rick Beltramo
ADDRESS: 6100 Seagull St. NE, Suite 102, 87109	PHONE: 881-5357
OWNER: CURB INC./BOKAY CONST.	CONTACT: BO JOHNSON
ADDRESS: 6301 INDIAN SCHOOL	PHONE: 263-3177
ARCHITECT: NA	CONTACT: NA
ADDRESS:	PHONE:
SURVEYOR: AVID ENGINEERING, INC.	CONTACT: RUAN BACIGALUPA
ADDRESS: Same as Above	PHONE: 881-5357
CONTRACTOR: NONE	CONTACT:
ADDRESS:	PHONE:

PRE-DESIGN MEETING:

☒ YES

☒ NO

☐ COPY OF CONFERENCE

DRB NO. 96-278

EPC NO. Z-96-53/SD-83-2-33

PROJECT NO. n/a

RECAP SHEET PROVIDED

TYPE OF SUBMITTAL:

CHECK TYPE OF APPROVAL SOUGHT:

☒ DRAINAGE REPORT

☐ SECTOR PLAN APPROVAL

☐ DRAINAGE PLAN

☐ SKETCH PLAT APPROVAL

☐ CONCEPTUAL GRADING
& DRAINAGE PLAN

☒ PRELIMINARY PLAT APPROVAL

☐ GRADING PLAN

☒ SITE DEVELOPMENT PLAN APPROVAL

☐ EROSION CONTROL PLAN

☐ FINAL PLAT APPROVAL

☐ ENGINEER'S CERTIFICATION

☐ BUILDING PERMIT APPROVAL

☐ FOUNDATION PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY
APPROVAL

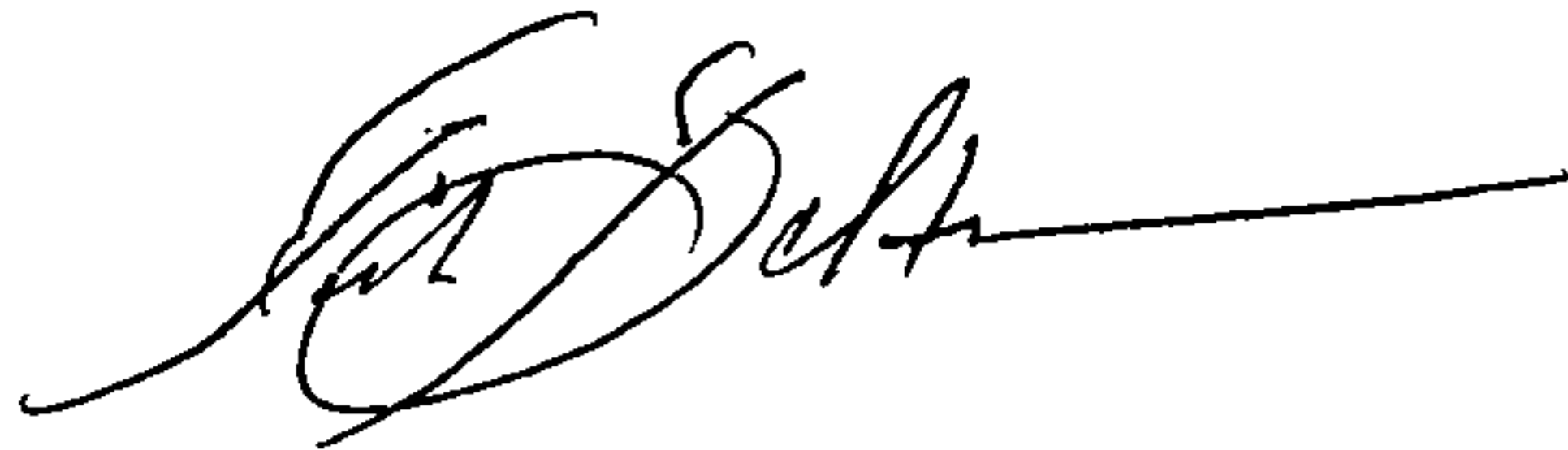
☐ ROUGH GRADING PERMIT APPROVAL

DATE SUBMITTED: ~~JULY 2, 1996~~ *July 3, 1996*

☐ GRADING/PAVING PERMIT APPROVAL

BY: RICK BELTRAMO

☐ OTHER _____ (SPECIFY)



JUL - 8 1996

**DRAINAGE REPORT
FOR
SIGNAL HILL SUBDIVISION**

submitted by

AVID ENGINEERING, INC

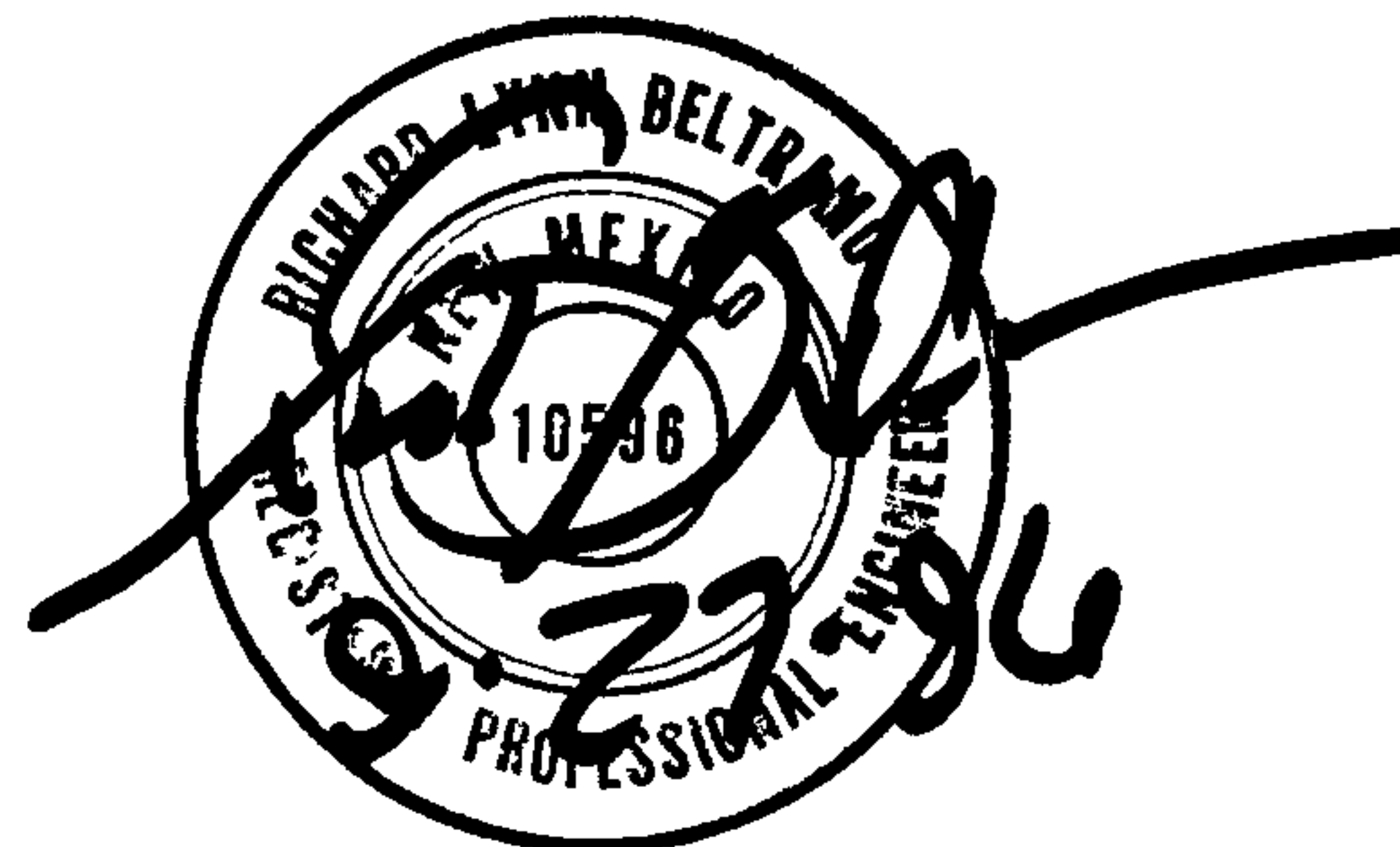
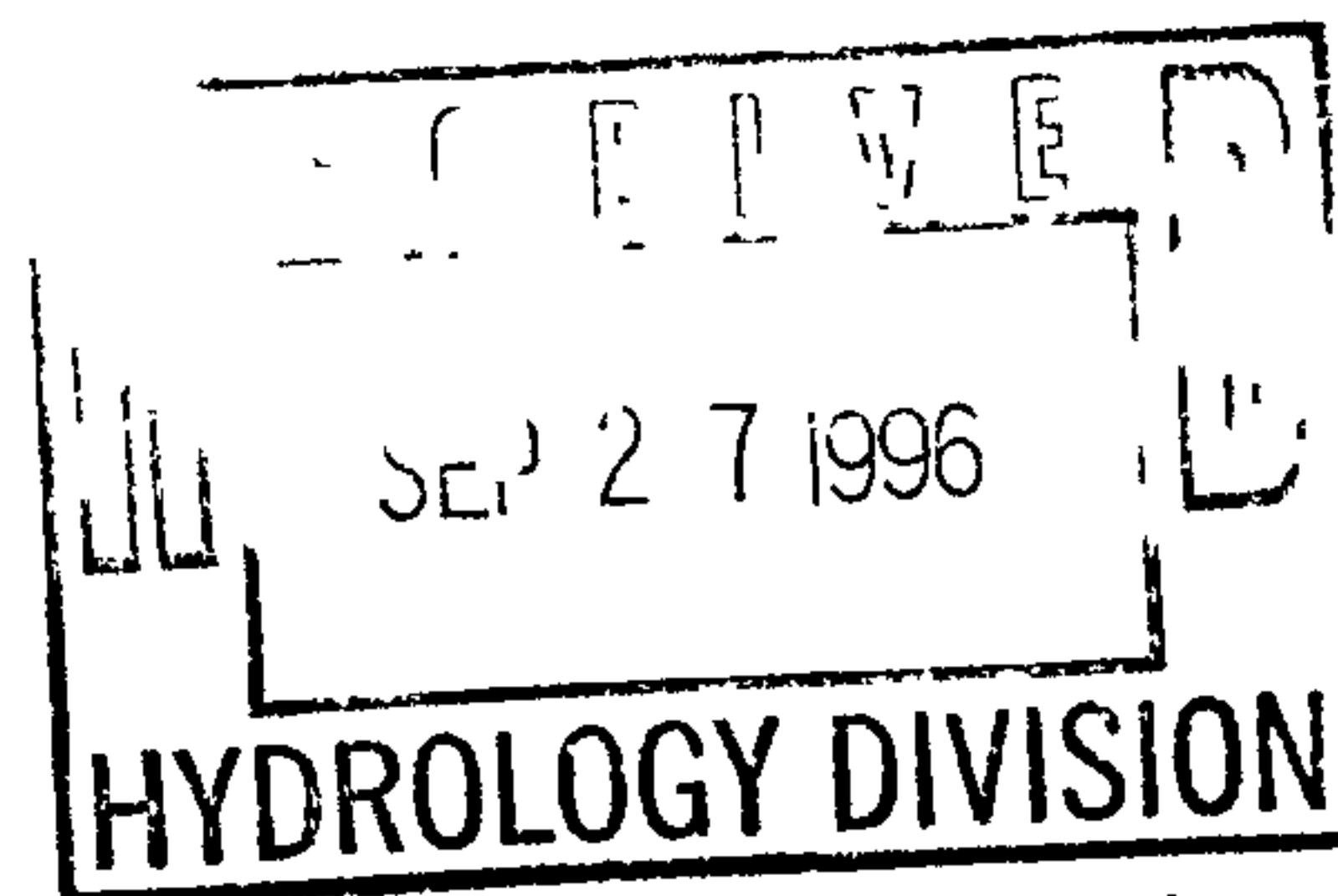
prepared for

CURB INC.

&

BOKAY CONSTRUCTION MANAGEMENT

September 27, 1996



DRAINAGE INFORMATION SHEET

PROJECT TITLE: **SIGNAL HILL SUBDIVISION**
(FORMERLY SONORA WEST)

ZONE ATLAS/DRAINAGE FILE# **C-18/D-10**

LEGAL DESCRIPTION:

LOTS 6,7,8,25,26&27 TRACT A, UNIT B, BLOCK 30, NORTH ALBUQUERQUE ACRES

ENGINEERING FIRM: **AVID ENGINEERING, INC.,**

ADDRESS: **6100 Seagull St. NE, Suite 102, 87109**

OWNER: **CURB INC./BOKAY CONST.**

ADDRESS: **6301 INDIAN SCHOOL**

ARCHITECT: **NA**

ADDRESS:

SURVEYOR: **AVID ENGINEERING, INC.**

ADDRESS: **Same as Above**

CONTRACTOR: **NONE**

ADDRESS:

CONTACT: **Rick Beltramo**

PHONE: **881-5357**

CONTACT: **BO JOHNSON**

PHONE: **263-3177**

CONTACT: **NA**

PHONE:

CONTACT: **RUAN BACIGALUPA**

PHONE: **881-5357**

CONTACT:

PHONE:

PRE-DESIGN MEETING:

XX YES

_____ NO

XX COPY OF CONFERENCE

RECAP SHEET PROVIDED

DRB NO. **96-278**

EPC NO. **Z-96-53/SD-83-2-33**

PROJECT NO. **n/a**

TYPE OF SUBMITTAL:

XX DRAINAGE REPORT

_____ DRAINAGE PLAN

_____ CONCEPTUAL GRADING
& DRAINAGE PLAN

_____ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

_____ SECTOR PLAN APPROVAL

_____ SKETCH PLAT APPROVAL

_____ PRELIMINARY PLAT APPROVAL

XX SITE DEVELOPMENT PLAN APPROVAL

XX FINAL PLAT APPROVAL

_____ BUILDING PERMIT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY
APPROVAL

XX ROUGH GRADING PERMIT APPROVAL

DATE SUBMITTED: 9/27/96

_____ GRADING/PAVING PERMIT APPROVAL

BY: **RICK BELTRAMO**

_____ OTHER _____(SPECIFY)

**SIGNAL HILL SUBDIVISION
DRAINAGE REPORT**

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PURPOSE

Proposed is the Sonora West Subdivision, a single family residential development located in northeast Albuquerque. More specifically, the project is located south of Signal Avenue, north of Wilshire Avenue, and west of and adjacent to, Sonora Subdivision. Currently the site consists of 6 - 0.83 acre lots, located within North Albuquerque Acres (Zone Atlas Map C-18, see Exhibit 1).

The purpose of this report is to present a storm drain and terrain management plan for the proposed subdivision. Infrastructure improvements and grading of the subdivision supports the planned development in accordance with City of Albuquerque ordinances and design criteria.

PROJECT DESCRIPTION

The site slopes from east to west at approximately 3% with minor swales and arroyos. No development exists on the site. Signal is graded but not paved. Wilshire Ave. is improved from Louisiana Blvd., west to the most eastern Sonora West property line. Wilshire is not graded or improved across the Sonora West frontage. Louisiana Blvd. is graded and paved. The existing Sonora Subdivision is located east of and adjacent to Sonora West.

The project is zoned SU-1 for PRD. Planned is a 64 lot, single family, common wall residential Townhouse development. The site is located within the "Zone C" area as noted on the Flood Insurance Rate Map, October 14, 1983, Panel 3500020010 (see exhibit 4). This zone is described as "Areas of minimal flooding."

PRE-DESIGN CONFERENCE

A Pre-design Conference was conducted with the following findings:

- o Reconsideration of the design assumptions used for the Sonora Subdivision is required to revisit assumptions related to a) down stream capacity of the San Pedro Storm drain and b) the future storm drain improvements in Louisiana Blvd. which would divert offsite flows from areas east of Louisiana away from the subject area.
- o The drainage report must also now consider that Window "B" has been annexed into the City of Albuquerque Corporate limits. Window "B" is now in process to be rezoned to more intense development than current zoning, thereby increasing potential storm water runoff (see Pre-Design Memorandum included, exhibit 7).

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HYDROLOGIC ANALYSIS

Analysis is based on the AHYMO method in accordance with Section 22.2 of the City of Albuquerque Development Procedures Manual (DPM). Included in the calculations are copies of the AHYMO computer analysis and summary tables. Analysis is based on a 100-year 6-hour design storm, Zone 3.

HISTORIC CONDITIONS

This drainage plan addresses 3 phases of development :

- o Historic conditions, which represents site conditions before any development had taken place. This analysis was used to establish allowable discharge rates from existing basins,
- o Interim/developed conditions which recognizes the Sonora Subdivision improvements and the proposed Signal Hill Improvements with all other areas at 1D.U./acre and
- o Ultimate/Future improvements, which also recognize Louisiana Blvd. as being constructed including public storm drains, which intercept and divert all storm water east of Louisiana Blvd. and other key storm drain systems. The ultimate conditions assume that all areas are fully developed.

Under existing conditions the proposed subdivision is undeveloped. A ridge exists, running east and west. Storm runoff is directed to the north and south boundaries of the property by way of natural contours and arroyos. The majority of the project is located on a ridge between the two arroyo systems. Areas north of the divide the outfall to the San Pedro storm drain. Areas south of the divide outfall to the Corona crossing culvert. The historic conditions analysis is provided as a basis to determine available discharge rates from Sonora Subdivision, Signal Hill and other properties.

The available release rate is based on the outfall capacity of the San Pedro storm drain. The Sonora Subdivision drainage report established the capacity to be 160cfs at the intersection of Eagle Rock and San Pedro. An AHYMO model was developed which approximates the area hydrology. The model was then used to project the 160cfs to all the contributing basins. The model accounted for > attenuation in flows and generated a higher discharge of 1.41 cfs/acre, greater than a direct pro-rata method which yielded 0.8cfs/acre. Refer to the AHYMO run titled "Historic" for this analysis and additional calculations found in the appendices.

— SEE EXHIBIT 4
FOR BASINS

INTERIM CONDITIONS

This scenario assumes that Sonora Subdivision and the proposed Signal Hill Subdivision are both in place. All other areas are assumed to be developed at a density of 1 dwelling unit per acre, based on the current zoning and platting. This assumption is conservative since very little development has occurred in this area to date. Also, due to the many arroyos, all lots could not be developed to a density of 1DU/acre. Temporary detention ponds are used in both subdivision to release flow at a controlled rate, equal to the allowable release rate established by the Historic analysis.

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ULTIMATE/FUTURE CONDITIONS

Future conditions establish the allowable discharge to the San Pedro storm drain available to Signal Hill and other areas. Analysis of regional storm drain improvements and determination of future storm drain improvements was necessary in order to establish an allowable discharge flow rate. This drainage report conceptually establishes masterplan improvements for the region encompassing areas east of I-25, north of Corona Ave., west of Wyoming Blvd. and south of Modesto. Areas outside these limits do not significantly impact the San Pedro storm drain. In summary, fully improved conditions assumed for the study area are based on the following assumed objectives:

- 1) all existing I-25 crossing structures will be improved to maximize the flow discharged through each available crossing structure;
- 2) flow rates in excess of the crossing structure capacities will be restricted to allowable flow rates using detention ponds;
- 3) all floodplains will be intercepted by future storm drain systems, either public or private and,
- 4) all flow east of Louisiana Blvd. will be intercepted by storm drains, either public or private and, and conveyed to appropriate outfalls.

This scenario is the basis for the future storm drains presented in this report. Actual improvements to be constructed will be determined by future studies and may differ from this plan but are assumed to accomplish the objectives listed above.

Interstate 25 Crossing Structures

Because of the limited downstream capacities of crossing structures located at interstate 25, all crossing structures will need to be utilized to full capacities. It is assumed by this report that all opportunities for extending storm drains east from the interstate will be utilized at some point in the future. Such locations being considered by this report include (from north to south) La Cueva Arroyo, Modesto/San Pedro storm drain, Wildflower channel crossing at Eagle Rock Ave. and the Corona Ave. crossing.

La Cueva Arroyo

Preliminary indications are that AMAFCA will extend either storm drains or improved channels from the interstate, east to beyond Louisiana Blvd., at the main La Cueva channel only (approximately Glendale Ave.). Future storm drains would be constructed, either by private or public means which would connect to the AMAFCA facility, with the intention of interception all floodplains east of Louisiana Blvd. This system is not analyzed by this drainage report.

Modesto/San Pedro Storm Drain

This is the existing storm drain which provides an outfall for Signal Hill Subdivision. This outfall is assumed to remain, but will have a reduced contributing area due to the expansion of other storm drain facilities. This plan shows extending storm drains east from the intersection of Modesto and San Pedro, where the Modesto storm drain connects to the San Pedro storm drain. This drainage report analyses the San Pedro storm drain to the intersection of Eagle Rock and

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San Pedro Blvd. At this point it is assumed that new storm drains will be built which adequately serve the areas north of Eagle Rock Ave.

Wildflower Crossing Structure

It is assumed that this crossing structure and the downstream, channel west of I-25, will be extended east and will intercept areas which historically drain to the existing San Pedro storm drain. This system is not analyzed by this drainage report.

Corona Crossing Structure

Based on the analysis provided in the "North and South Domingo Baca Arroyos and Paseo Del Norte Corridor Drainage Management Plan", approximately 600 cfs capacity is available to the proceed Corona Storm Drain (see North and South Domingo Baca Arroyos and Paseo Del Norte Drainage Management Plan Figure 6-1, exhibit 8). The city is currently in the process of obtaining the necessary easements and right-of-way to improve the downstream channel. For this report it is assumed that the storm system will be improved to the full capacity of the I-25 crossing structures. It is recommend that the storm drain be extended east to Louisiana Blvd., in order to intercept and remove floodplains and to serve the Louisiana Blvd. roadway.

It is also assumed that the storm drain will be extended north, within Louisiana Blvd., beyond Signal Ave., providing and improved outfall to the Window B area. The San Pedro storm drain considered as an alternate outfall to serve as an outfall to Window B. The San Pedro storm drain had too little capacity to effectively serve Window B.

Louisiana Blvd.

The Sonora Drainage Report previously assumed that at some point in the future, when Louisiana Blvd. is constructed, public storm drains would also be constructed in a manner to serve the public roadway. It was assumed that in the future no surface flow would be allowed to cross Louisiana Blvd. These assumptions translate into all off-site flows generated from the east must be intercepted by a public storm drain and discharged to an acceptable outfall. It was also assumed that these flows would then be conveyed north and south to existing low points which coincide with existing floodplains. These assumptions seem reasonable, since it does not seem reasonable to assume that these flows would be diverted up-hill to areas which do not have existing floodplains. These original assumptions made in the Sonora Subdivision drainage report are assumed to be valid.

Window B

Since the development of the Sonora Subdivision, Window B has been annexed into the city along with other areas. The annexation and subsequent zone change will increase demand to develop Window B. In conjunction with the annexation, higher development densities will result requiring increased runoff and associated storm drain improvements. This report assumes that planned developments within Window B will construct necessary storm drainage improvements to support the increased density and runoff. However, downstream areas will be required which pass through the study area and outfall to the crossing structures at I-25. This study analyzes this ultimate condition and provides an outfall to Window B as well as Louisiana Blvd.

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CONCLUSION

This drainage report builds from the previously approved drainage report developed for Sonora Subdivision. Assumptions were revisited and determined to be valid under current conditions. Regional storm drain issues were analyzed and reasonable assumptions were made regarding future storm drain infrastructure improvements based on development needs and current studies in progress. Based on these assumptions it is appropriate to allow free discharge of the Sonora Subdivision and the Signal Hill subdivision, under ultimate conditions. It is also recommended that interim development conditions be allowed utilizing temporary detention ponds for the region. On this basis, development of the Signal Hill should be approved as proposed.

The purpose of this report is to develop a drainage plan which supports development of Signal Hill subdivision. Regional drainage management concepts are presented within this report which specifically meet this purpose. The regional drainage management concepts developed in this report should be further pursued by conducting additional engineering studies. Many alternatives are available to the options presented in this report. These options should be thoroughly developed and a more detailed and extensive masterplan published for the area.