

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 2, 1990

Kerry Davis  
Bohannon-Huston, Inc.  
7500 Jefferson Street, NE  
Albuquerque, New Mexico 87109

RE: FINAL ENGINEER'S CERTIFICATION FOR THE RAND THEATRE  
@ THE PLAZA AT PASEO DEL NORTE (C-13/D1)  
CERTIFICATION STATEMENT DATED JANUARY 29, 1990

Dear Mr. Davis:

Based on the information provided on your resubmittal of January 30, 1990, the referenced drainage plan is approved for Certification.

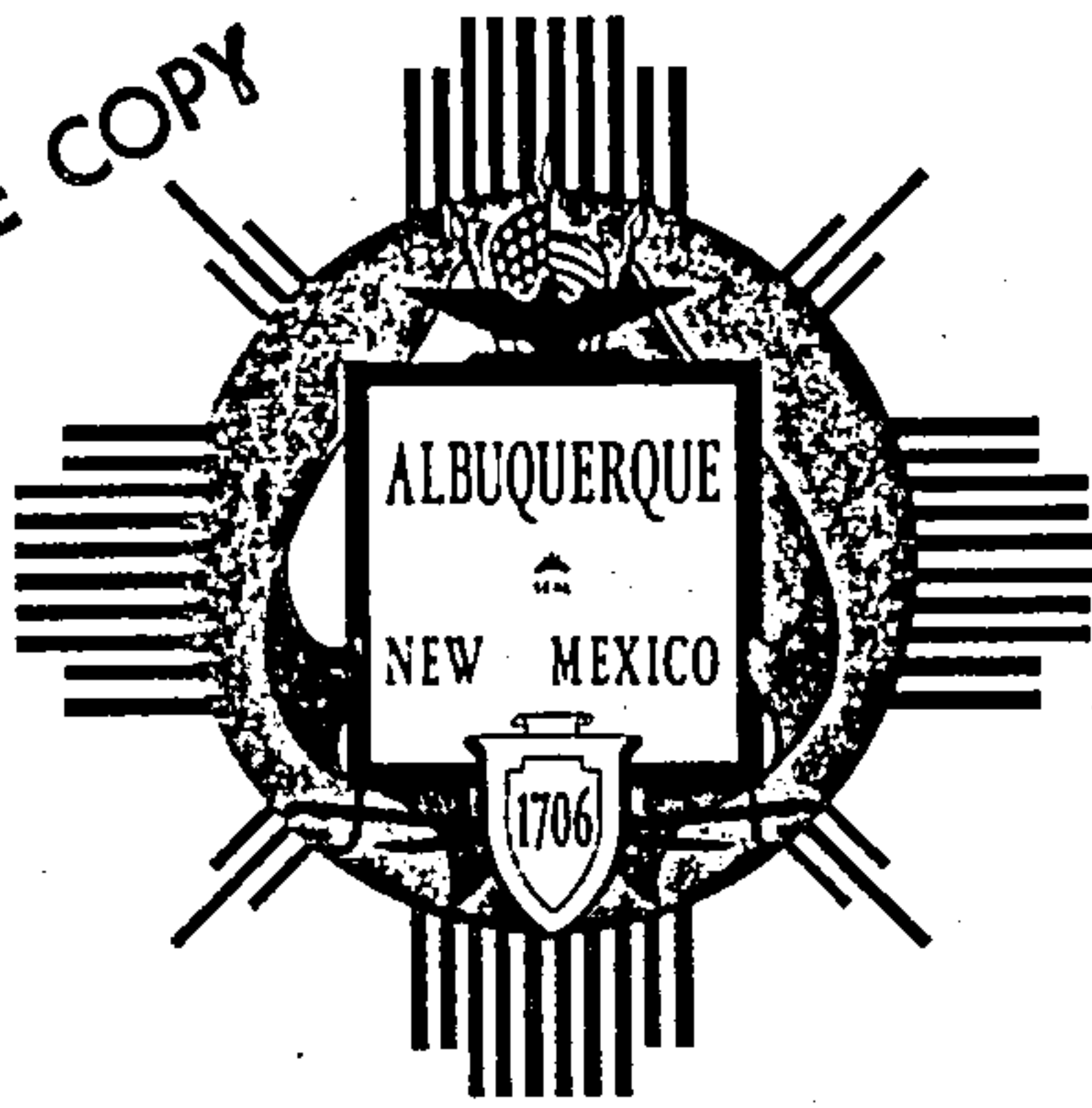
If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

*Bernie J. Montoya*  
Bernie J. Montoya, C.E.  
Engineering Assistant

BJM/bsj  
(WP+393)

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 22, 1990

Kerry Davis  
Bohannon-Huston, Inc.  
7500 Jefferson Street, NE  
Albuquerque, New Mexico 87109

RE: ENGINEER'S CERTIFICATION FOR TARGET BUILDING & BUILDING "O"  
@ THE PLAZA AT PASEO DEL NORTE (C-13/D1)  
CERTIFICATION STATEMENT DATED JANUARY 15, 1990

Dear Mr. Davis:

I am in receipt of your Engineer's Certification for the referenced site. Based on the information provided on your submittal of January 16, 1990, the Engineer's Certification for the Target Building and Building "O" is acceptable.

In reviewing our file for the referenced shopping center, I have found that the November 21, 1989 letter from you to Mr. John Lowe, in reference to the Certification of the Rand Theater, has never been addressed. Please provide me with Certification of the items listed in the letter. This information must be submitted as soon as possible so as not to delay any further building permits or certifications.

If I can be of further assistance, please call me at 768-2650.

Cordially,

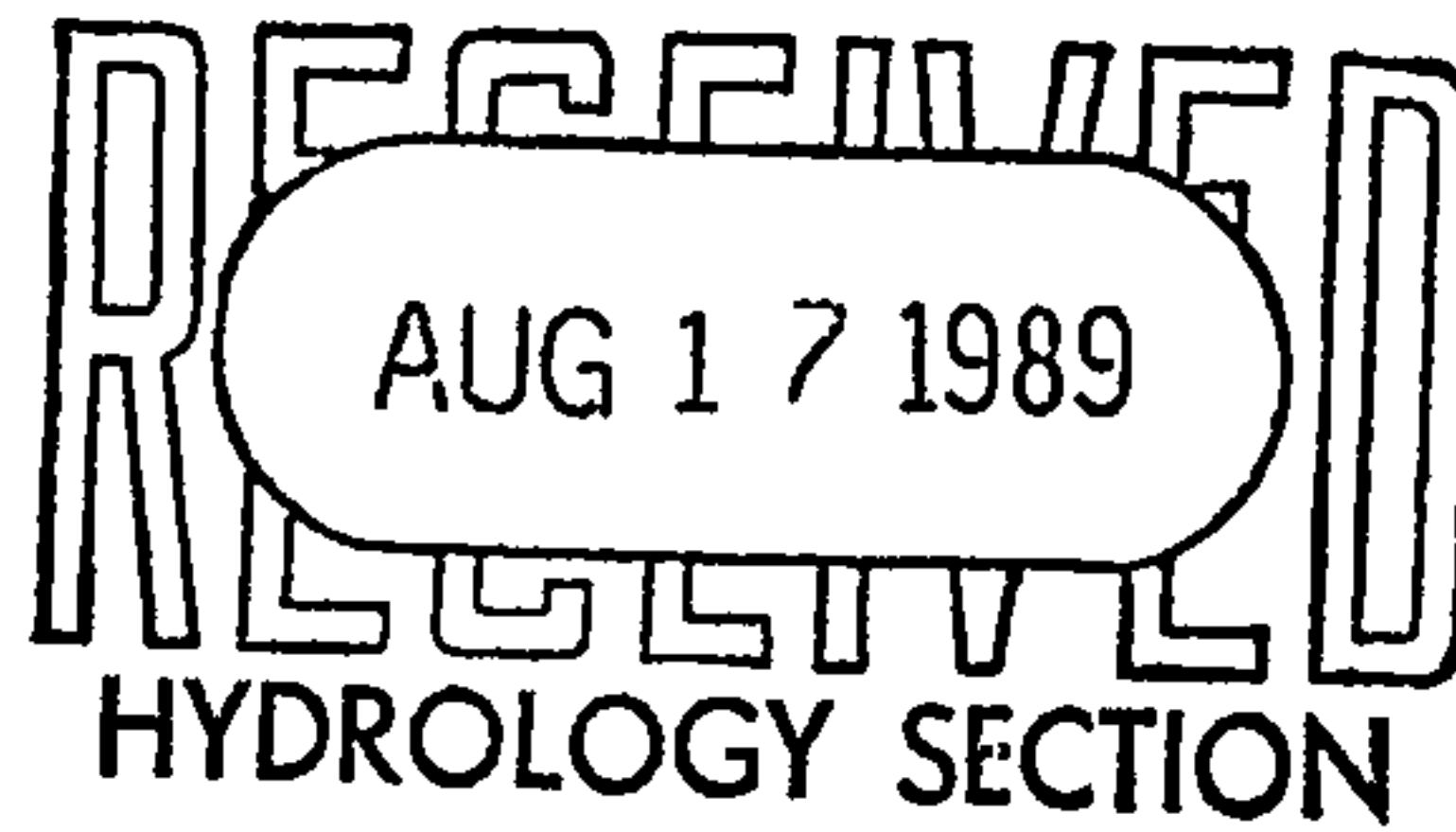
Bernie J. Montoya, C.E.  
Engineering Assistant

xc: John Lowe, SES/Beck & Associates

BJM/bsj  
(WP+393)

AMENDED  
DRAINAGE REPORT  
FOR  
MARKET CENTER WEST

August 1989



I certify that I am a registered professional engineer in the State of New Mexico and that this report was prepared by me or under my supervision.

  
Kerry L. Davis, P.E.

8/16/89  
Date



## MARKET CENTER WEST

## MASTER DRAINAGE PLAN

## PURPOSE

The purpose of this plan is to outline the drainage management plan for a major shopping center site comprising approximately 73 acres, referred to as Market Center West, owned and to be developed by SES/Beck and Associates, Inc. The Drainage Ordinance, Development Process Manual, and the North Coors Drainage Management Plan have been utilized to prepare the plan.

## SITE LOCATION, DESCRIPTION AND EXISTING CONDITIONS

Market Center West is bordered on the north by Irving Boulevard, on the south by Paradise Hills Road, on the west by Eagle Ranch Road, and on the east by Coors Boulevard. Sheet 1 better identifies the project location.

The project site is located on the escarpment separating Albuquerque's West Mesa from the lowlands of the Rio Grande Valley. Existing soils on the site are identified in the Soil Conservation Service report "Soil Survey of Bernalillo County" as those within the Bluepoint-Kokan association, the Bluepoint loamy fine sand, and the Gila loam. Existing slopes on the site vary from very shallow (1-2%) to very steep (approximately 30%). Existing vegetation is sparse and includes native grasses and low bushes.

The Bluepoint soils are classified by the SCS as sandy alluvium and windborne deposits on steep slopes. The soils are highly permeable and earthen dikes and ponds are subject to piping and seepage. The water and wind erosion potential of these soils is severe.

The Gila soils are sandy loams on shallow slopes and have a slight erosion potential. Runoff is slow from these soils as they have a high permeability. Earthen dikes and pond areas are also subject to piping and seepage.

The hydrologic classification of the Bluepoint soils are class "A" and the Gila soils are class "B". For hydrologic computations, both soils were assumed to be within hydrologic soil group "B".

The construction of the Paseo del Norte Interchange at Coors Boulevard had a significant impact upon the existing drainage facilities in the area. Two culverts were installed to convey runoff from the subject property east across Coors to the Corrales Riverside Drain. A 36" culvert with an end section was extended onto the property. A 24" culvert was connected to a new inlet within the Coors right of way to intercept flows generated

and conveyed within that right of way. Additionally, a 36" culvert was installed along with a new median inlet at the southerly boundary of the intersection of Paradise Boulevard and the new southbound to westbound ramp of the interchange. This culvert conveys all runoff generated south of Paradise Boulevard and conveyed within the existing bar ditch along the south side of Paradise Boulevard.

Existing basins offsite to the property that currently utilize the property for conveyance of runoff include the State Farm Office at the southwest corner of Irving and Eagle Ranch, and several developed properties north of Irving and west of Coors. It is anticipated that these properties will continue to discharge controlled runoff into the rights of way of Irving and Coors, where such runoff will be contained within the right of way by new curbing to be constructed on Coors Boulevard concurrently with development of Market Center West and the extension of an existing 18" culvert at Irving Boulevard across Coors Boulevard. This runoff will be conveyed by Coors Boulevard and be intercepted by the existing inlets and culverts at the Coors and Paseo del Norte interchange.

An additional offsite basin includes a small portion of the property at the northwest corner of Eagle Ranch and Paradise Boulevard. That portion of the runoff not intercepted by the Eagle Ranch Storm Sewer currently crosses Eagle Ranch through a small culvert and is then conveyed east by the bar ditch along the north side of Paradise Boulevard. It is anticipated that during reconstruction of the intersection of Eagle Ranch and Paradise that this culvert will be removed and this runoff will cross Eagle Ranch on the surface. It will then be conveyed within the Paradise Boulevard curb section to the pond system to be constructed within Market Center West.

#### HYDROLOGIC ANALYSIS

A modified version of the computerized watershed model "HYMO" was used to compute the flow rates generated by the 100 year storm and to route the flows through street sections, storm sewers, and the channel along Coors Boulevard. The rainfall data used for this analysis was obtained from the hyetograph developed for the Albuquerque Master Drainage Study for 6-hour rainfall volumes in the 100 year frequency storm of 2.2".

All peak flowrates were originally calculated using the rational method with C-factors as listed in the supplement to the DPM. Curve numbers for the SCS Hydrologic method utilized by HYMO were then adjusted to more closely match the peak flowrates for hydrographs produced by the program. Stage/storage/discharge relationships were developed for each pond and outlet using the orifice or the weir equation as applicable. The program was then used to route the hydrographs for each basin through the streets, storm sewers, swales, and ponds that comprise the storm drainage facilities within the development.



Comparisons of all peak discharges and other miscellaneous hydrologic computations are listed in Appendix 1. Appendix 2 contains the output from the HYMO analysis.

Basin boundaries, peak discharges, preliminary street grades and conceptual proposed contours are shown on sheet 2 of the attached plans. Also identified are proposed storm sewers with preliminary diameters indicated, and proposed ponding areas with volumes. The storm sewer sizes and actual pond volumes may be revised as final design plans are developed, however, such revisions will require amendment to this plan.

#### DRAINAGE MANAGEMENT PLAN

The grading and proposed drainage facilities on the site have been designed to convey all runoff to the southeast corner of the site. At this location, a system of interconnected ponding areas have been designed to detain this collected runoff and discharge at a controlled rate into the existing 36" culvert crossing Coors Boulevard. This controlled rate has been established through proration of capacities within the Corrales Riverside Drain by previous reports to be 47 CFS.

The following summary of routed discharges will describe the street systems, storm sewers, and channel section that are proposed to deliver developed runoff to the southeast corner of the site. Sheet 2 of the attached plans will provide graphic representation of this description.

Beginning at the northerly boundary of the site, the proposed 30" and 36" storm drains will convey developed runoff from basin B to the channel at Coors Boulevard. Sub-basins D1, D2, and D3 will discharge into the channel at Coors Boulevard via concrete rundowns detailed on pages 32 through 36 of Appendix 1. The Coors Boulevard channel will convey these flows to the small detention pond. Two proposed 36" RCP storm drains will convey these flows under the entrances to the site. The volume of the small detention pond is 51,148 cubic feet. The waters accumulated in this detention pond will be controlled by an 18" corrugated metal stand pipe and then will flow through the proposed 30" RCP storm drain to an existing 36" culvert. The peak outflow rate has been computed to be approximately 29.3 cfs.

Runoff from sub-basin A2 will be intercepted by a storm drain and conveyed east where a 36" RCP storm drain will carry the flow. Basins A1 and A3 also discharge into the 36" RCP storm drain which conveys these flows to the upper detention pond. Basins H and J discharge directly into the upper detention pond. A concrete dip section with valley gutter is proposed to discharge the flow from basin J to the upper detention pond. Runoff from basin K will be routed across the street section and into the upper detention pond. The runoff from basin L and the offsite basin will exit onto Paradise Boulevard and be conveyed to the upper detention pond. Three drop inlets will intercept 21.9 cfs and a 18" RCP storm drain will route this flow to the



upper detention pond. The remaining flow will be conveyed to the lower detention pond by Paradise Boulevard. The upper detention pond has a volume of 64,101 cubic feet. The waters accumulated in the upper detention pond will be controlled by an 18" corrugated metal stand pipe and will then flow through a proposed 24" RCP storm drain to the lower detention pond. The peak outflow rate from the upper detention pond has been computed to be 58.8 cfs. This discharge will be routed to the lower detention pond, where its discharge will also be controlled.

Basin C will discharge into the cross-site road, where it will follow the street to the lower detention pond. Runoff from basins F and G will flow directly to the lower detention pond. Runoff from basins C, F, and G will flow into the lower detention pond via a concrete rundown shown on pages 35 and 36 of Appendix 1. The volume of the lower detention pond is 206,127 cubic feet. The waters that accumulate in the lower detention pond will be controlled by an 18" corrugated metal stand pipe and will then flow through a proposed 24" RCP storm drain to the existing 36" culvert. The peak outflow rate from the lower detention pond has been computed to be approximately 10.2 cfs.

In order to meet the sediment control criteria required by the North Coors Drainage Management Plan (see pages 24-31 of Appendix 1), the runoff from basin E will flow into a small pond at the southeast corner boundary. The volume of the basin E pond is 7,337 cubic feet. The runoff that accumulates in the basin E pond will be controlled by an 18" corrugated metal standpipe. The outflow from the basin E pond is 6.2 cfs. It will join the flow from the lower detention pond and be directed to the outlet by a 30" RCP storm drain. The peak outflow rate from the lower detention pond and the basin E pond has been computed to be approximately 11.4 cfs.

The total discharge from the site has been computed to be the sum of 11.4 cfs from the lower and basin E ponds plus 29.3 cfs from the small pond for a total of approximately 40.7 cfs. This is, in our opinion, within the accepted accuracy standards of hydrologic analysis close enough to the required 47 cfs previously identified to be approved.

#### PHASING AND EROSION CONTROL

A copy of the Master Utility Plan for the project has been included as sheet 6 of the attached plans. This Master Utility Plan identifies the assumed phasing of the project, along with anticipated completion dates for each phase.

Prior to the development of Phase I will be the mass grading of the entire site. Extensive erosion control measures have been proposed on sheet 4 of the attached plans. These measures include the installation of contour berms to collect sheet flow and direct it into desiltation pond located at the intersection of the berms and the bar ditches adjacent to Coors and Paradise Boulevards. Also included is an extensive seeding plan for long

term wind and water erosion control, and the provision of water for short term erosion protection on an as needed basis. It is anticipated that the major escarpment constructed with the mass grading of the site, which utilizes slopes not exceeding 2:1, will be completely landscaped with sod concurrently with the landscaping of Phase I.

Phase I has been further identified on sheet 4 of the attached plans. Phase I has been identified as the major stores and shops within the north quadrant of the site. It is understood that along with the development of Phase I will be a channel adjacent to and parallel with Coors Boulevard. During the interim period between the development of Phase I and future phases, ponds will be constructed at the outfall areas from future phases. These distillation ponds will collect undeveloped runoff and control the discharge through pipes sized to drain the ponds within 2 hours. All interim ponds on the site are sized for the 10 year flood, with overflow spillways that will be surfaced with asphalt or soil cement. Due to the piping and seepage potential of the on site soils, all bermed portions of the ponding areas are to be surfaced with impermeable materials such as asphalt or soil cement.

#### CONCLUSIONS

1. Based upon the hydrologic analysis contained herein, and previous research and analysis, detention ponding will be required on the site to control the discharge of developed runoff to 47 CFS. This figure represents the capacity of the downstream system, which includes the Corrales Riverside Drain, and is prorated based upon acreage of properties discharging to the Drain. All onsite grading and drainage facilities have been designed to drain to the detention ponds provided at the southeast corner of the development.

2. All offsite basins, with the exception of the Paradise Boulevard right of way and a portion of the property at the northwest corner of Eagle Ranch and Paradise, will not impact the site. The offsite basins to the north of the site will continue to discharge controlled runoff into the rights of way of Eagle Ranch, Irving, and Coors, and the curb sections to be constructed within these streets will contain and convey this runoff to an existing inlet and culvert at the intersection of Coors and Paseo del Norte. Runoff from the offsite basin to the south of Paradise Boulevard will be collected along the south side of Paradise and be conveyed to an existing inlet at the intersection of Paradise and the Coors/Paseo del Norte interchange. The aforementioned flows along the north side of Paradise Boulevard will be conveyed to the upper detention pond, which will be identified as a public pond with easements and covenants to insure its maintenance.

3. The mass grading of the site is anticipated to be completed prior to development of the first phase of the project. Extensive erosion control measures will be required to prevent



wind and water erosion of the mass graded project. These measures include contour berming, temporary desiltation ponds, interim detention ponds, seeding and landscaping. Due to the piping and seepage potential of the existing soils on the site, impermeable materials should be placed on the bermed portions of all pond areas.

4. A preliminary phasing plan has been proposed for the project. It is anticipated that development of each phase will require more detailed grading and drainage plans prior to building or paving permit approvals. The purpose of this plan is to identify the master drainage facilities, ponding requirements, and mass grading of the site. Additionally, the parcelization of the area that reciprocal access and drainage easements will be required for approval of this plat.

ENGINEERING

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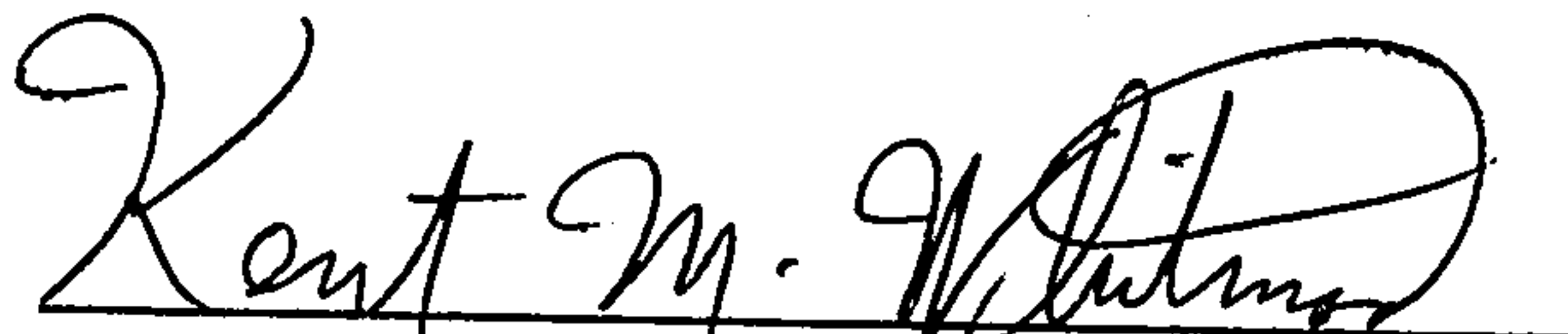
C13-D1

PARADISE/COORS  
REGIONAL CENTER  
DRAINAGE MANAGEMENT PLAN

Prepared For:  
Viehmann Martin & Associates

Prepared By:  
Community Sciences Corporation

February, 1983

  
Kent M. Whitman, P.E.



SURVEYING  
ENGINEERING  
LAND PLANNING



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A) Purpose and Scope

Viehmann Martin and Associates is currently planning development of their 74 acre Regional Center in the Paradise Hills/Eagle Ranch area. The project will consist of both office and retail shopping facilities in a phased program of development spanning 3 to 6 years. The purpose of this report is to present a drainage management plan for the proposed development which is acceptable to the Albuquerque Metropolitan Arroyo Flood Control Authority.

B) Site Location and Topography

The subject development is located at the northwest corner of Coors Road N.W. and Paradise Boulevard, and it is bounded on the north by Irving Boulevard and on the west by the planned Eagle Ranch Road. (see Plate 1) The land slopes erratically in a general pattern of west to east. Total relief across the parcel is in excess of 75 vertical feet, and a rather pronounced escarpment traverses the property in the north-south direction. This escarpment coupled with the large amount of vertical relief will necessitate the use of a multilevel-access approach to grading design.

C) Design Criteria

1) Engineering Parameters

In accordance with Amafca criteria all hydrological analysis is based on the 100 year - 6 hour accumulated rainfall of 2.2 inches for the study area. A modified Soil Conservation Service Hydrograph Model was utilized to develop runoff hydrographs for the subcatchments defined. This model incorporates a  $C_N$  value of 95 for impervious areas, while values for pervious areas are assigned by the user. Those areas with the highest degree of permeability (such as pond bottoms and landscaped turf areas) were assigned a  $C_N$  value of 61. Other unpaved areas (assumed to be landscaped) were valued at  $C_N = 70$ .



## 2) Flood Control Regulations

The drainage plan presented in this report has been designed to comply with AMAFCA Resolution 80-15 which requires that proposed land development projects be designed such that no flooding of private properties will occur during any storm up to the 100 year frequency event. In cases where inadequate or constrained downstream facilities exist, on-site detention of runoff peaks is considered a viable alternative to major upgrading of offsite conveyances.

## D) Computational Procedures

Hydrographs were developed based on our MODSCS computer model. This model develops a rainfall hyetograph by "nesting" the 100 year - 1 hour rainfall within the 100 year - 6 hour value to simulate a statistically conservative rainfall pattern. Each subcatchment is assigned a "percent impervious," and these areas are modeled with a  $C_N = 95$ . The balance of each subcatchment is considered pervious to some degree and is assigned a  $C_N$  value as considered appropriate by the user. Appendix A contains the computer output generated for the subject development.

Times of concentration were approximated by first estimating  $Q$ , then computing velocities in the various conveyances along the appropriate travel route, and finally summing the individual travel times to arrive at a total.

Conveyance swales, pipes, and channels, were sized based on the Manning Equation for Uniform Flow. Detention ponds were routed by standard hydraulic methods, and Appendix B contains the summary routing calculations.

## E) Offsite Drainage

Runoff approaches the site in its present condition primarily from higher lands to the west, but also to a slight degree from the westerly Coors Road bar ditch to the north. The flows approaching from the west will be 100% intercepted by Eagle Ranch Road

E) Offsite Drainage (continued)

and its appurtenant storm sewer system as proposed and detailed in our "Eagle Ranch Masterplan of Drainage" dated February, 1983.

The above referenced drainage masterplan was developed partially as an update to a previous plan entitled "Paradise Hills Drainage Master Plan" by Leverton Denney and Associates, September 1975. That drainage plan recommends that all lands east of the Eagle Ranch Road diversion be required to incorporate retention/detention facilities into their development plans. We see no other viable alternative to this recommendation, are developing our plan on that basis, and have assumed that this requirement will be equally enforced upon those landowners to the immediate north between Irving Boulevard and the Calabacillas Arroyo.

F) Onsite Drainage

Since the lands east of Coors Road have essentially been cut-off from any natural drainage outlet by the construction of the MRGCD Corrales High Canal, farm grading practices, and the natural aggradation of the Rio Grande riverbed, detention ponding will be required with severe restrictions on outflow. An 36" culvert exists beneath Coors Road at the southeastern corner of the site, however the farmland downstream of the culvert has no means of dissipating even its limited 50 cfs capacity. Therefore, the site will be furnished with two detention facilities totalling roughly 430,000 cf in storage capacity. Each pond will be furnished with outlet control devices (see Plates 4 & 5). The northeasterly pond will drain via a CMP storm sewer to the southeasterly pond which in turn will empty at a maximum rate of 3.2 cfs into the existing 36" culvert beneath Coors Road. On the east side of Coors, the outflow will be intercepted by a 24" CMP storm sewer, and routed along the Coors Road and Paradise Boulevard rights-of-way east to the Corrales High Canal (see Plate 3).



Plate 2 illustrates the on site conceptual grading scheme along with all proposed drainage improvements. Area 1 will be directed to a drop inlet immediately west of the Irving Boulevard access ramp. From this point flows will be conveyed via storm sewer to the northeasterly pond where they will join runoff from area 2 and be routed through the pond's outlet control device.

Flows from area 3 will be intercepted in two locations by drop inlets along the easterly boundary of the parking lots. These flows will join routed flows from the northeasterly pond as well as runoff from area 7 at point 7 and be directed via pipe into the southeasterly pond.

Runoff from area 4 accumulates in the westerly roadside swale of Coors Road. This swale will be directed at point 4 into the southeasterly detention pond to be routed through the outlet works with the other site runoff.

Area 5 consists primarily of office type land uses. Runoff from this area will be directed to a drop inlet immediately west of the Paradise Boulevard access ramp whereafter a storm sewer will carry it into the southeasterly pond, joining flows from area 6 just prior to discharge into the pond. The aggregate flows from areas 3-7 will combine with those from area 8 (and the routed flows from the northeasterly pond) to be routed through the main pond's outlet control device. As mentioned previously the maximum 100 year outflow rate will be 3.2 cfs. Total 1 summarizes both the input to and output from the hydrological analysis. Appendix C itemizes several representative supportive calculations.

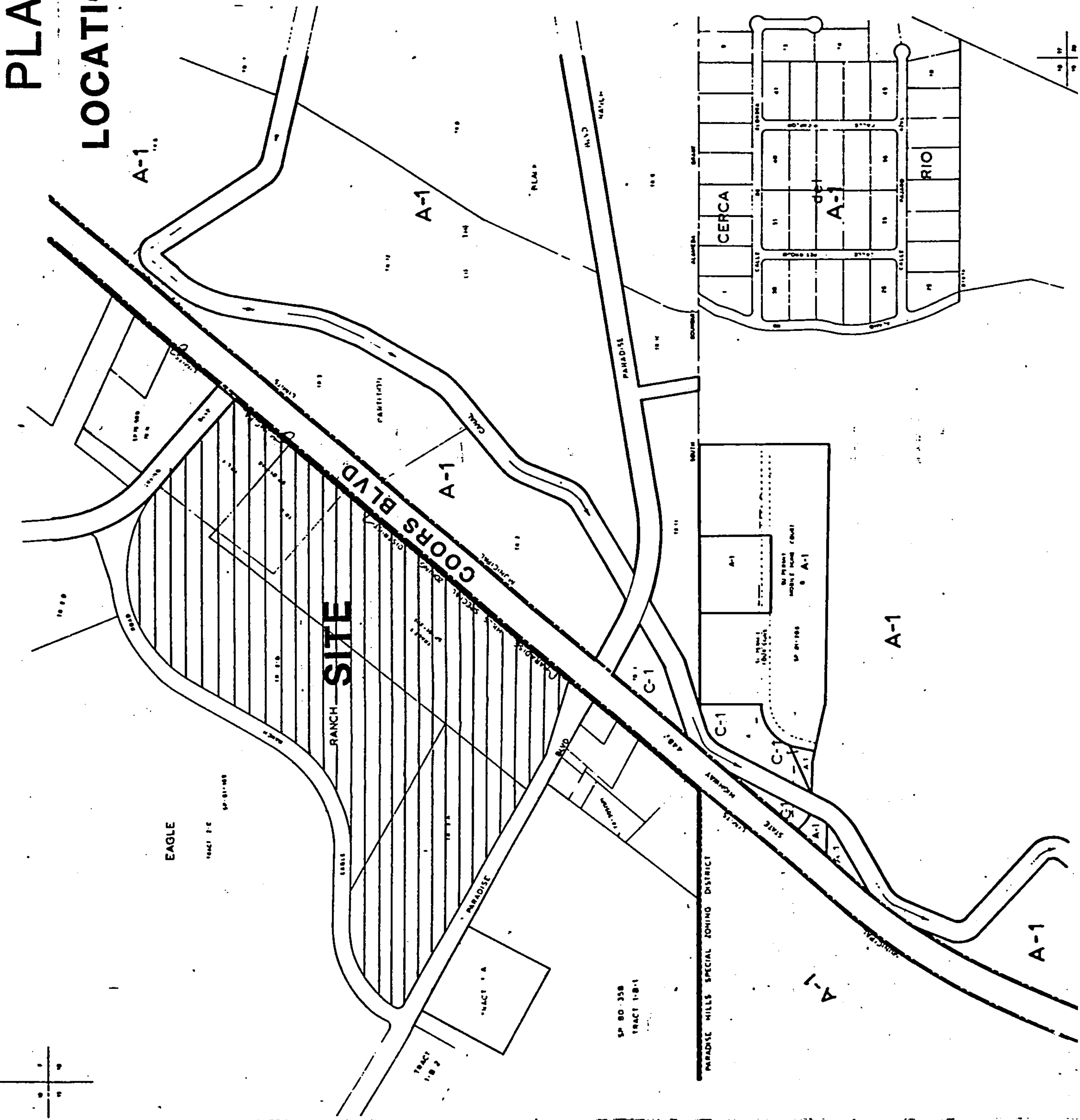
Table 1  
Hydrological Flow Parameters

AREA POINT DESIGNATION	AREA MI. <sup>2</sup>	AREA ACRES	AREA % IMPERVIOUS	AREA CN PERVIOUS	CONTRIBUTING AREAS	AREAS MI. <sup>2</sup>	AREAS ACRES	AREA % IMPERVIOUS	AREAS CN PERVIOUS	Tc MIN.	Q <sub>100</sub> cfs (6 hr.)	Q <sub>10</sub> cfs (6 hr.)	REMARKS
1	.0295	18.9	92	70	1	.0295	18.9	92	70	11	62.0		
2	.0063	4.0	42	70	1-2	.0358	22.9	83	70	15	61.9		Peak inflow North Pond
3	.0233	14.9	99	70	3	.0233	14.9	99	70	8	57.7		
4	.0052	3.3	59	61	4	.0052	3.3	59	61	7	7.9		
5	.0119	7.6	65	70	5	.0119	7.6	65	70	5	21.3		
6	.0277	17.7	92	70	6	.0277	17.7	92	70	8	64.7		
7	.0111	7.1	99	70	7	.0111	7.1	99	70	5	27.5		
8	.0172	11.0	38	61	3-4-5 6-7-8	.0963	61.6	80	68	9	199.6		Peak inflow South Pond
8A	.0092	5.9	60	70	8A	.0092	5.9	60	70	9		8.5	For use - Paradise Boulevard Gutter Flow Calculations



# PLATE 1

## LOCATION MAP



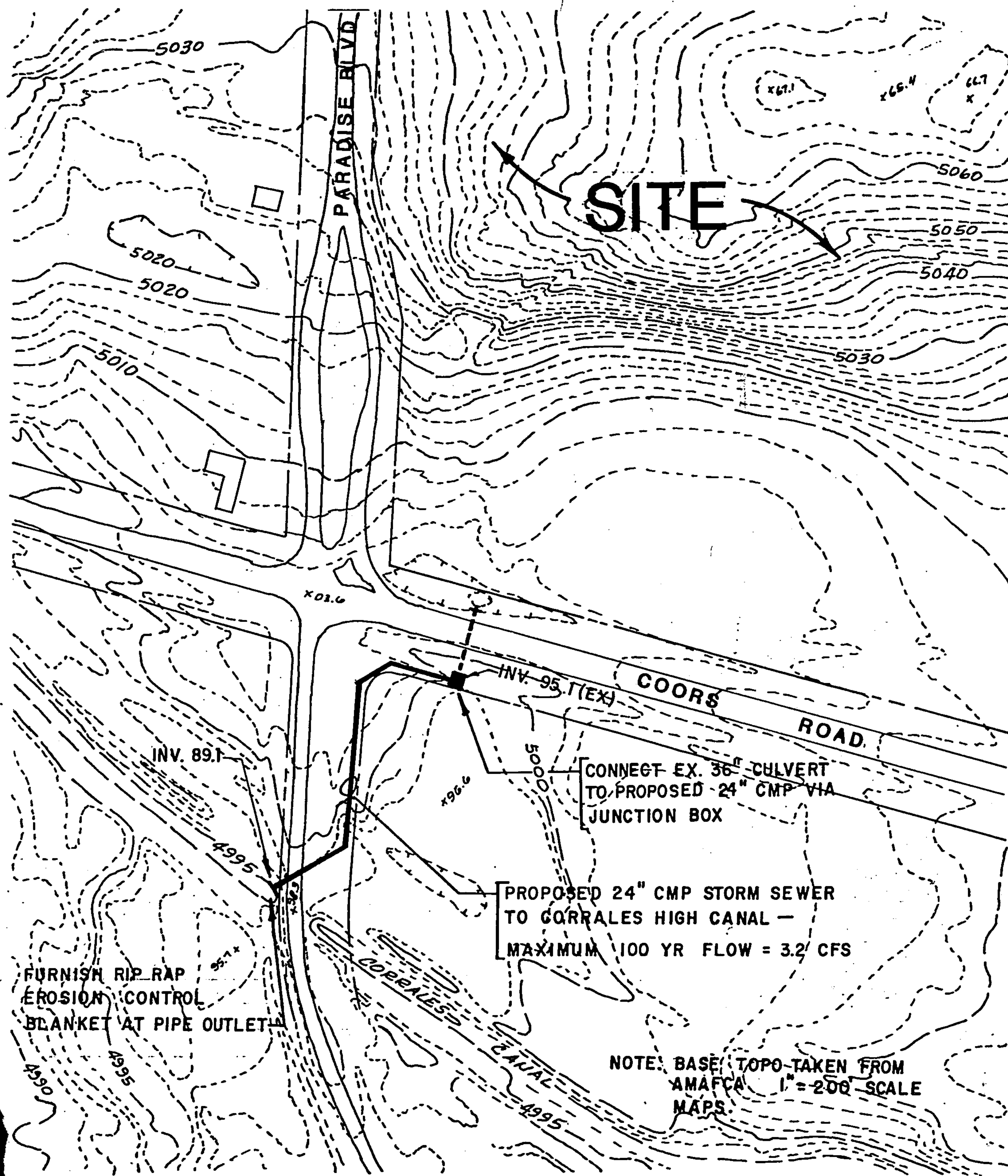
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C-13-Z

# **PLATE 3** **PLAN OF OUTFALL DRAIN** **FOR DETENTION POND**







# **City of Albuquerque**

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

*7nd*  
*C-13/P001D*

May 8, 1995

## **CERTIFICATE OF COMPLETION AND ACCEPTANCE**

A.G. Spanos Construction, Inc.  
3939 Osuna Road N.E.  
Albuquerque, NM 87109

**RE: PROJECT NO. 3575.80 Plaza @ Paseo Del Norte Map No. (C-13)**

Dear Sir:

This is to certify that the City of Albuquerque accepts Project No. 3575.80 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:

— The project included arterial paving and storm drainage for the City of Albuquerque. Paving included two north bound lanes on Eagle Ranch Road from Paradise Boulevard to the northern site boundary including standard curb and gutter, median curb and gutter, and thirty three (33) foot wide pavement along the north side of Paradise Boulevard from Eagle Ranch Road to the east site boundary including standard curb and gutter along the north right-of-way. Both roads are adjacent to and provide access to the Plaza at Paseo Del Norte Apartments. Also constructed were sidewalks, wheelchair ramps, and a 6' walk along the east right-of-way on Eagle Ranch Road. A 12' wide bike path along the north right-of-way on Paradise Boulevard.

- Storm drain improvements included drop inlets on Paradise Boulevard which were connected to an existing storm drain which followed Paradise Boulevard to an outfall at Coors Boulevard.

**MAY 18 1995**

**HYDROLOGY D**





# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 25, 1991

Rick Beltramo  
Bohannon-Huston, Inc.  
7500 Jefferson Street, NE  
Albuquerque, New Mexico 87109

RE: REVISED ENGINEER'S CERTIFICATION FOR PHAR-MOR @ PLAZA @ PASEO  
DEL NORTE, PHASE II (C-13/D1) CERTIFICATION STATEMENT DATED  
JUNE 17, 1991

Dear Mr. Beltramo:

Based on the information provided on your resubmittal of June 20, 1991,  
Certification for the referenced site is acceptable.

If I can be of further assistance, please feel free to call me at  
768-2650.

Cordially,

Bernie J. Montoya, C.E.  
Engineering Assistant

xc: Alan Martinez

BJM/bsj  
(WP+2309)

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.  
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 30, 1991

Rick Beltramo  
Bohannon-Huston, Inc.  
7500 Jefferson Street, NE  
Albuquerque, New Mexico 87109

RE: ENGINEER'S CERTIFICATION FOR PHAR-MOR @ PLAZA @ PASEO  
DEL NORTE, PHASE II (C-13/D1) CERTIFICATION STATEMENT DATED  
MAY 16, 1991

Dear Mr. Beltramo:

Based on the information provided on your submittal of May 17, 1991,  
Engineer's Certification for the referenced site is acceptable.

Please be advised that any future construction on preceding phases will  
require separate submittals indicating how they will inter phase with the  
existing sites. The Certificate of Occupancy will not be released until  
we receive concurrence by letter of acceptance for Work Order No. 3825.91.

If I can be of further assistance, please feel free to call me at  
768-2650.

Cordially,

*Bernie J. Montoya*  
Bernie J. Montoya, C.E.  
Engineering Assistant

xc: Alan Martinez

BJM/bsj  
(WP+2309)

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.  
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 26, 1990

Rick Beltramo, P.E.  
Bohannon-Huston, Inc.  
7500 Jefferson Street, NE  
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR PLAZA AT PASEO DEL NORTE PHASE II  
(C-13/D14), RECEIVED NOVEMBER 7, 1990

Dear Mr. Beltramo:

Based on the information provided, the referenced submittal is approved for Building Permit.

Please be advised that an Engineer's Certification is required to be submitted to this office, prior to the release of Certificate of Occupancy. When you submit the certification, please redate your engineer's stamp. This should have been done for the referenced submittal. The date needs to be revised every time you make a revision or a resubmittal to this office. Could you also check the legend, the designations are missing.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.  
Civil Engineer/Hydrology

GA  
wp+2309

PUBLIC WORKS DEPARTMENT

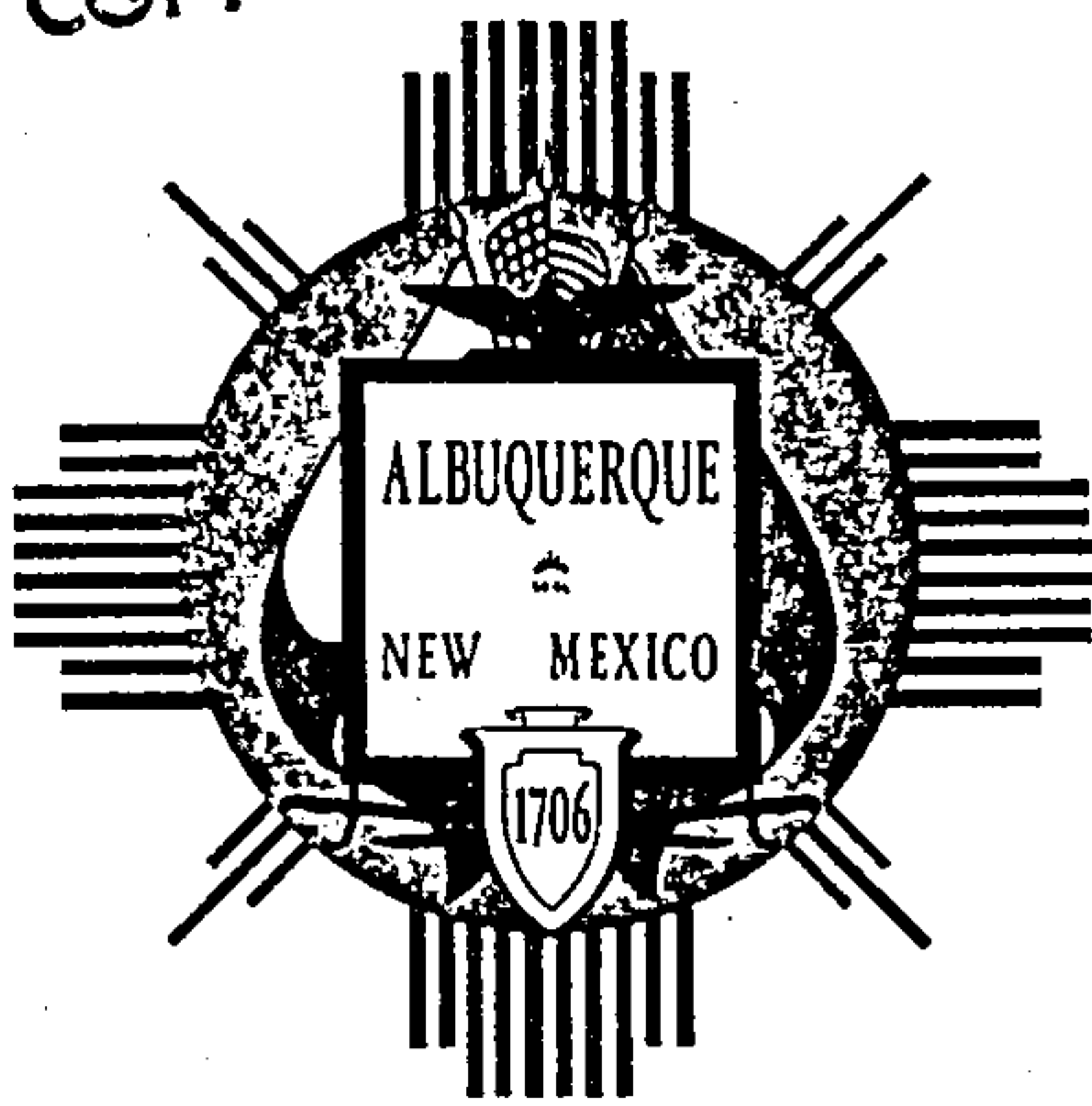
Walter H. Nickerson, Jr., P.E.  
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER





# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 10, 1990

Rick Beltramo  
Bohannon-Huston, Inc.  
7500 Jefferson Street, NE  
Albuquerque, New Mexico 87109

RE: ENGINEER'S CERTIFICATION FOR HOUSE OF FABRICS AND THE ROSS  
BUILDING AT THE PLAZA AT PASEO DEL NORTE PHASE I-B IMPROVEMENTS  
(C-13/D1) ENGINEER'S CERTIFICATION DATED JUNE 28, 1990

Dear Mr. Beltramo

Based on the information provided on your submittal of July 3, 1990,  
Engineer's Certification for the referenced sites are acceptable.

If I can be of further assistance, please feel free to call me t 768-2650.

Cordially,

*for Beene J. Montoya*  
Fred J. Aguirre, P.E.  
Hydrologist

BJM:FJA/bsj  
(WP+393)

2309

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.  
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



# *City of Albuquerque*

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 12, 1990

Kerry L. Davis, P.E.  
Bohannon-Huston Inc.  
Courtyard I  
7500 Jefferson Street, NE  
Albuquerque, NM 87109

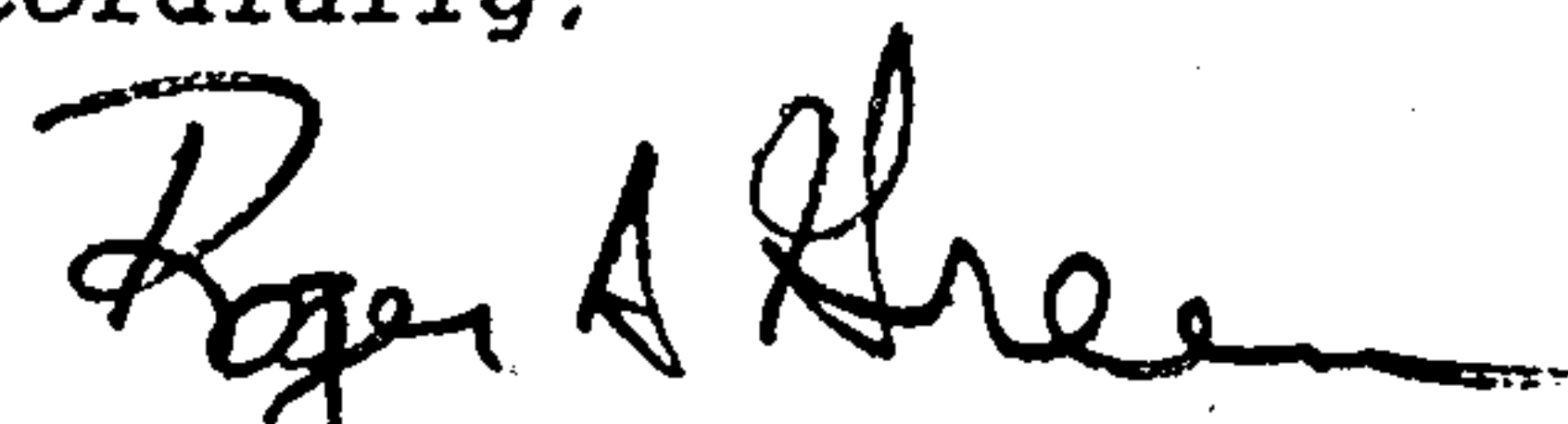
RE: PARADISE BLVD. STREET GRADES, PLAZA AT PASEO DEL NORTE - PHASE II,  
CITY PROJECT NO. 3575.91

Dear Kerry:

The street grades shown for the above referenced on the Site Grading and Drainage Plan dated 4-3-90, are approved for Grading Permit purposes. When the final construction drawing are prepared for this next phase of construction, these are the street grades that must be used.

Contact the Hydrology Section for issuance of a Grading Permit.

Cordially:

  
Roger A. Green, PE  
D.R.C. Chairman  
Project Review Section

xc: Dave Harmon, Transportation  
Gilbert Aldaz, Hydrology

RAG/(WP+2376)

DRAINAGE REPORT  
FOR  
PLAZA AT PASEO  
DEL NORTE, PHASE II

PREPARED FOR:

SES/Beck and Associates, Inc.  
P.O. Box 15968  
Rio Rancho, NM 87174

PREPARED BY:

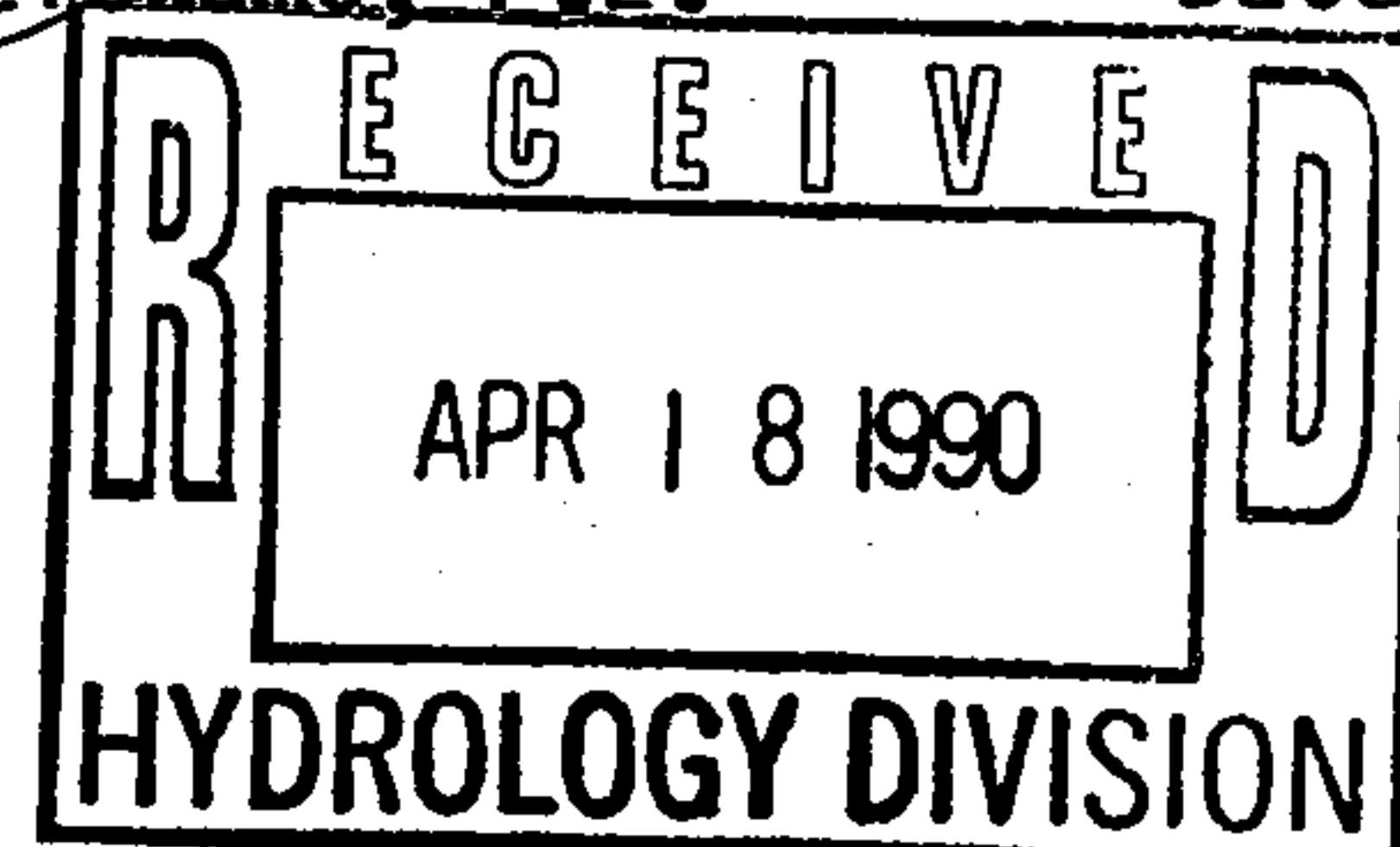
Bohannon-Huston, Inc.  
7500 Jefferson St., NE  
Albuquerque, NM 87109



I certify that I am a registered professional engineer in the State of New Mexico and that this report was prepared by me or under my supervision.

*Rick Beltramo*  
Rick Beltramo, P.E.

*4/18/90*  
Date





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DRAINAGE INFORMATION SHEET

TRANSMITTAL LETTER

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2. Existing Conditions
3. Proposed Conditions
4. Phased Improvements/Erosion Control Plan
5. Hydrology
6. Hydraulics
7. Future Improvements

APPENDIX

EXHIBITS

A - Pre-design Meeting Notes

PLATES

- 1 - Phasing Plan
- 2 - Grading and Drainage Plan
- 3 - Plan and Profiles
- 4 - Plan and Profiles
- 5 - Plan and Profiles
- 6 - Basin Map (Fully Developed)

## **1. SITE DESCRIPTION**

Proposed for the Major 6 site is a new Phar-Mor store. The new store is located on the upper end of the Plaza at Paseo del Norte site, formerly Market Center West, directly west of the existing Target Store. Improvements to support the new Phar-Mor store include a parking lot, access roads to the south and east, a rear service road, waterlines, sanitary sewers, and storm sewers. Phase II project limits are shown on Plate 1.

All storm sewers proposed by this development are to be privately owned and maintained. Construction plans for drainage improvements are divided into two separate projects. Surface improvements including grading, curb and gutter, rundowns, and pavement are shown on the civil construction sheets (C2 and C3) as a part of the architectural package. Storm sewers including sewer lines, manholes, drop inlets, and pond inlet are included in the construction plans entitled "Plaza at Paseo Del Norte, Site Utility Extensions", city project #3825.91.

## **2. EXISTING CONDITIONS**

As part of the previous improvements, the site was mass graded, and erosion control ponds and fences were installed. Disturbed areas that were to remain undeveloped for Phase I, were seeded in order to reduce soil loss.

Permanent downstream ponds and drainage facilities were constructed as a part of Phase I construction and ready to accept developed flows from all sites within the project.

Eagle Ranch Road intercepts all offsite flow. Therefore, no offsite flow reaches the site.

## **3. PROPOSED CONDITIONS**

Flow generated by areas west of the Phar-Mor Store, which included the majority of the parking lot, are intercepted by a storm drain, and are carried to an existing pond located at the south end of the development. Portions of the storm drain are existing and were constructed with the main access road, with other Phase I improvements.

This phase will construct a section of 30" diameter storm drain from the main access road, south, to an existing pond (storm drain line "B"). Another section from the main access road, north, to the proposed parking lot is also to be constructed with Phase II. This section of storm drain (line "A") includes catch basins which intercept the majority of flow for the storm drain.

Areas north of the Phar-Mor store and east of the store drain by surface flow to existing storm drains in the Phase I improvements. These improvements were designed to accept these flows.

#### **4. PHASED IMPROVEMENTS/EROSION CONTROL PLAN**

Under this plan some existing temporary erosion control ponds will need to be modified. Ponds 1, 2, and 3 (see grading plan) will consist of a perimeter erosion control swales and berms. The ponds are retention ponds designed to hold the 10-yr design storm volume.

Since future development is planned to replace the ponds, and outfall capacity is available, retention ponds are acceptable by city standards (reference Hydrology Pre-design Minutes, Exhibit A). Pond 4 is an existing pond which is unaffected by Phase II improvements and will remain as is.

#### **5. HYDROLOGY**

Ultimate design flows were determined as a part of the Master Drainage Report. Analysis was accomplished by using the "HYMO" program, similar to the model used for the Albuquerque Master Drainage Study (AMDS). Design flows for the storm drain line are taken from the Drainage Report and are for fully developed conditions. Flow rates for individual catch basins were determined by pro-rating basins based on area of contribution.

Temporary retention ponds are sized based on the rational formula, and as stated earlier are designed for the 10-yr storm. See the appendix for the hydrologic computations.

#### **6. HYDRAULICS**

Pipe sizes were determined by hydraulic grade line analysis using Manning's equation. Standard Development Procedures Manual (DPM) methods were used and the computations can be found in the appendix.

Portions of the storm sewer are existing and in place in areas under the main entrance road. Most of the existing line is 36" diameter RCP except for the stub to the north. This section is an 18" diameter RCP. A detailed hydraulic analysis for all the proposed and future inlets was prepared. Based on that analysis the 18" RCP can remain in place. An expansion to a 30" RCP is necessary for the first leg of sewer to the north.

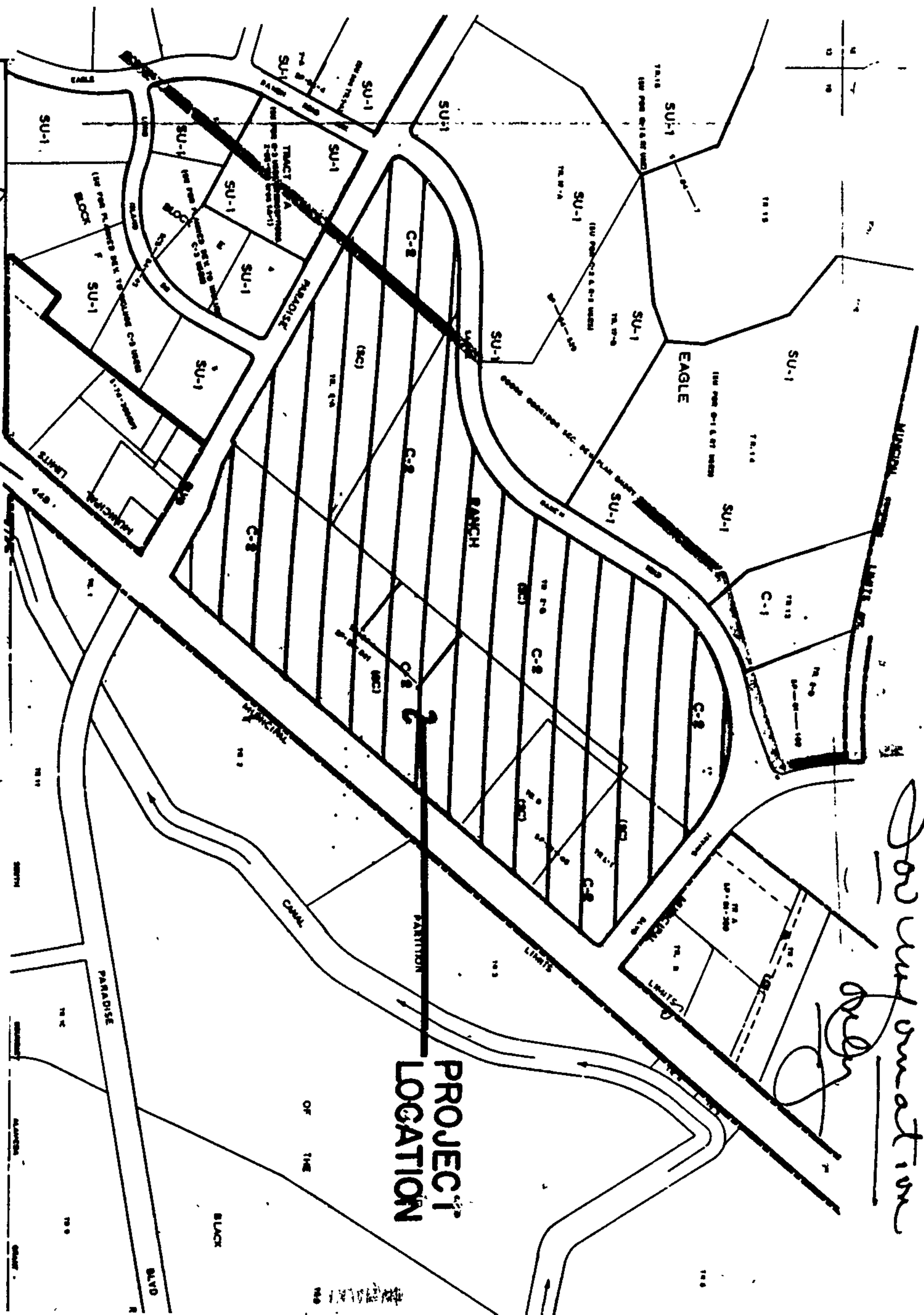
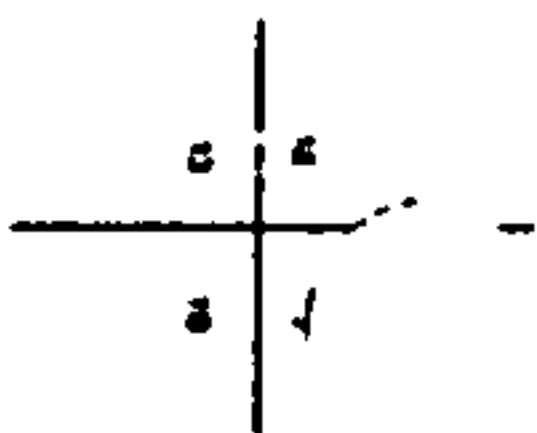
Analysis of the outlet is based on AMAFCA's "Drainage Criteria Manual", dated June, 1981. A dumped rip-rap outlet pond with filter sand bedding was used along with grouted rip-rap side slopes.

Hydraulic computations are found in the appendix. Plan and profile sheets for the entire storm drain, including the hydraulic grade line and energy grade line are provided as plates. Design computations for the outlet design are also provided in the appendix.



## 7. FUTURE IMPROVEMENTS

Future design of the storm drain considers ultimate buildout of all areas discharging to the storm drain. If the future phases develop as planned, no additional hydrologic or mainline hydraulic analysis would be necessary. Only the construction of those catch basins would be needed. Changes in development which increase runoff to any of the catch basins would require re-analysis of the catch basin hydraulics and mainline hydraulics.



*for information only*

**PROJECT LOCATION**

**LOCATION MAP**

**ZONE ATLAS C-13**

*Legal Description:*  
*Plats of Parcel State A, B, C & D*

*Portion of H-9*