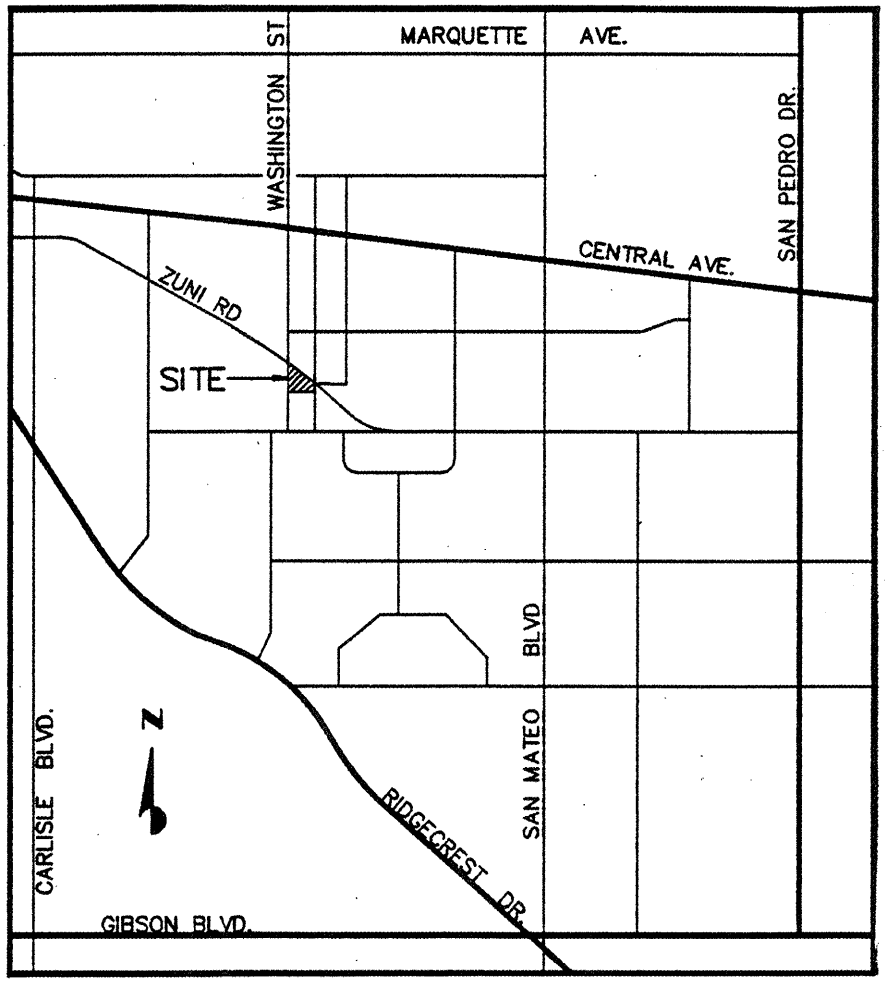


VICINITY MAP
SCALE: 1" = 2000'

TABLE A-9. PEAK DISCHARGE (cfs/acre)				
	Treatment			100-YR [2-YR, 10-YR]
Zone	A	B	C	D
1	1.29 [0.00, 0.24]	2.03 [0.03, 0.76]	2.87 [0.47, 1.49]	4.37 [1.69, 2.89]
2	1.56 [0.00, 0.38]	2.28 [0.08, 0.95]	3.14 [0.60, 1.71]	4.70 [1.86, 3.14]
3	1.87 [0.00, 0.58]	2.60 [0.21, 1.19]	3.45 [0.78, 2.00]	5.02 [2.04, 3.39]
4	2.20 [0.05, 0.87]	2.92 [0.38, 1.45]	3.73 [1.00, 2.26]	5.25 [2.17, 3.57]

TABLE A-8. EXCESS PRECIPITATION, E (INCHES) - 6 HOUR STORM				
	Treatment			100-YR [2-YR, 10-YR]
Zone	A	B	C	D
1	0.44 [0.00, 0.08]	0.67 [0.01, 0.22]	0.99 [0.12, 0.44]	1.97 [0.72, 1.24]
2	0.53 [0.00, 0.13]	0.78 [0.02, 0.28]	1.13 [0.15, 0.52]	2.12 [0.79, 1.34]
3	0.66 [0.00, 0.19]	0.92 [0.06, 0.36]	1.29 [0.20, 0.62]	2.36 [0.89, 1.50]
4	0.80 [0.02, 0.28]	1.08 [0.11, 0.46]	1.46 [0.27, 0.73]	2.64 [1.01, 1.69]

EXISTING DRAINAGE

OVERALL AREA = 39,356 SQ FT, 0.9035 ACRES, W/ 3602 SF, 0.0827 ACRES, IN TREATMENT B AND 35,754 SF, 0.8208 ACRES, IN TREATMENT

PEAK DISCHARGE

$Q_{10} = 0.95(0.0827) + 3.14(0.8208) = 2.66$ CFS

$Q_{100} = 2.28(0.0827) + 4.70(0.8208) = 4.05$ CFS

EXCESS PRECIPITATION, 100 YR 6 HOUR STORM

$E = (0.0827(0.78) + 0.8208(2.12)) / 0.9035 = 2.00$ IN

RUNOFF VOLUME

$V_{360} = \left(\frac{2.00}{12}\right) 0.9035(43560) = 6559$ CUBIC FEET

DEVELOPED DRAINAGE

INITIAL CONSTRUCTION (WITHOUT CAR WASH & CANOPY EXPANSION)

OVERALL AREA = 39356 SF, 0.9035 ACRES W/ 14029 SF, 0.3221 ACRES, IN TREATMENT B AND 25327 SF, 0.5814 ACRES IN TREATMENT D

PEAK DISCHARGE

$Q_{10} = 0.95(0.3221) + 3.14(0.5814) = 2.13$ CFS ← Q_{10}

$Q_{100} = 2.28(0.3221) + 4.70(0.5814) = 3.47$ CFS ← Q_{100}

EXCESS PRECIPITATION, 100 YR 6 HOUR STORM

$E = (0.3221(0.78) + 0.5814(2.12))/0.9035 = 1.64$ IN ← E

RUNOFF VOLUME

$V_{360} = \left(\frac{1.64}{12}\right)(0.9035)\,43560 = 5379$ CUBIC FEET ← V_{360}

100 % BUILDOUT

9219 SF, 0.2116 ACRES, IN TREATMENT B, 30137 SF, 0.6983 ACRES, IN TREATMENT D

PEAK DISCHARGE

$Q_{10} = 0.95(0.2116) + 3.14(0.6919) = 2.37$ CFS ← Q_{10}

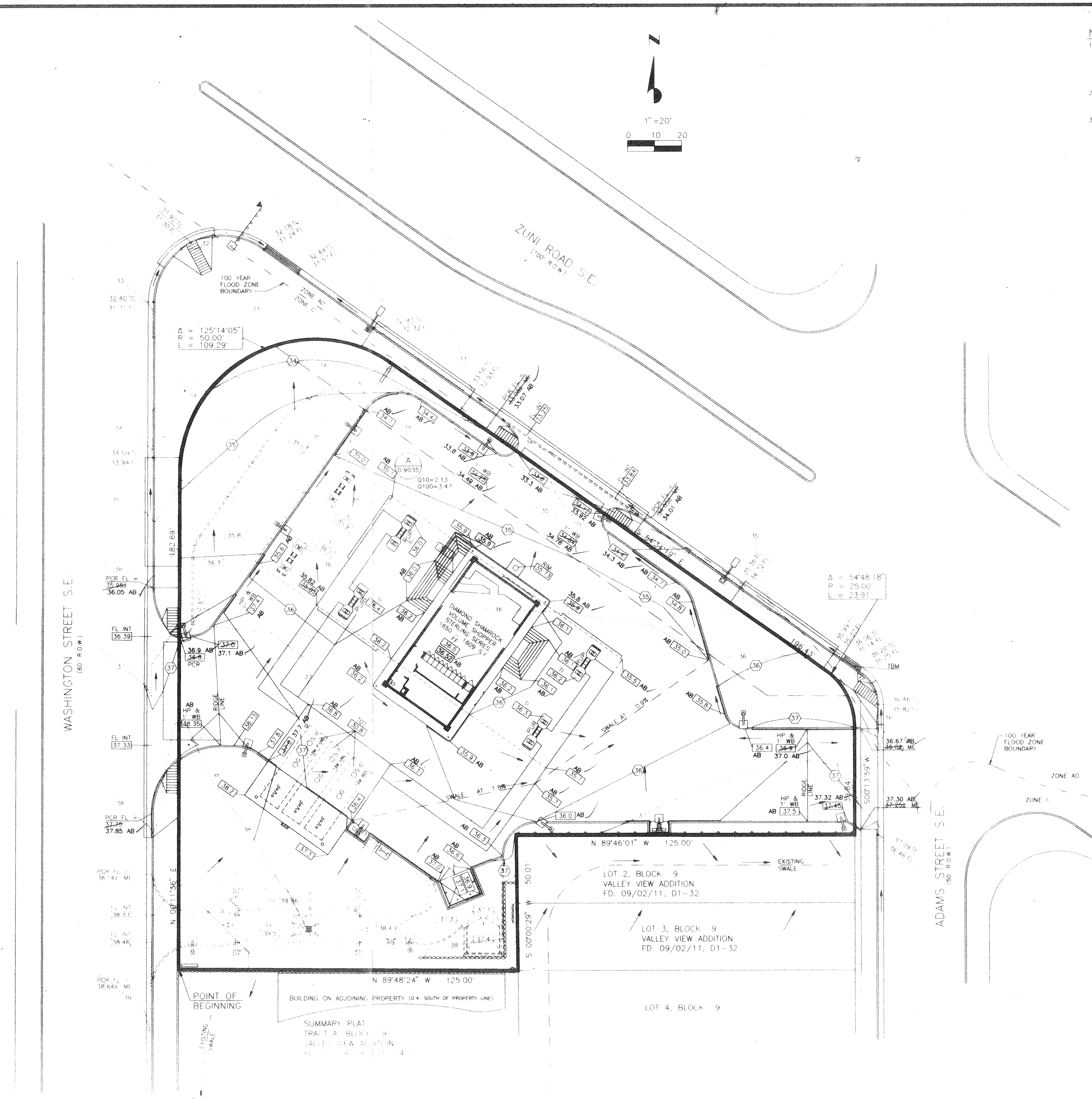
$Q_{100} = 2.28(0.2116) + 4.70(0.6919) = 3.73$ CFS ← Q_{100}

EXCESS PRECIPITATION, 100 YR 6 HOUR STORM

$E = (0.2116(0.78) + 0.6919(2.12))/0.9035 = 1.81$ IN ← E

RUNOFF VOLUME

$V_{360} = \left(\frac{1.81}{12}\right)0.9035(43560) = 5935$ CUBIC FEET ← V_{360}

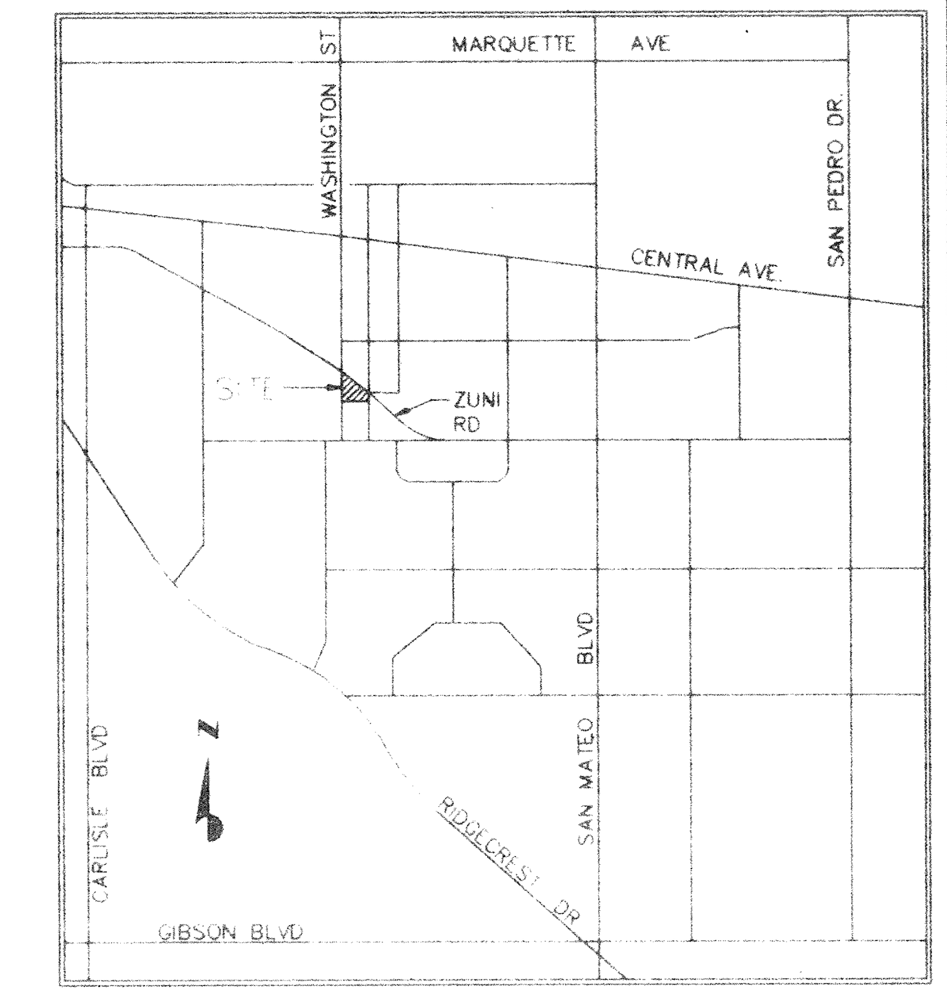


NOTES:

1. BENCH MARK: ALBUQUERQUE STATION 8-K-17, A 3 1/4" ALUMINUM TABLET SET IN A DRILL HOLE FLUSH WITH THE TOP OF CURB AT THE NOSE OF THE MEDIAN AT THE LEAD AVE S.E./COAL AVE S.E. AND WASHINGTON ST S.E. INTERSECTION. STATION IS STAMPED "ACS, 8-K 17, 1984" ELEVATION = 5229.820
2. TEMPORARY BENCH MARK: SET AS A CHISELED BOX ON TOP OF THE CURB AT THE SOUTHEASTERLY CATCH BASIN ELEVATION = 5236.19
3. ALL SPOT ELEVATIONS SHOWN ADJACENT TO CURBS REFER TO FLOWLINE

LEGEND

35	EXISTING CONTOUR
(35)	PROPOSED CONTOUR
35.0	EXISTING SPOT ELEVATION
35.0	FUTURE SPOT ELEVATION
35.0	FINISHED SPOT ELEVATION
FF	FINISHED FLOOR ELEVATION
TOT	TOP OF TANKS
TI	TOP OF ISLAND
TC	TOP OF CURB
HP	HIGH POINT
LP	LOW POINT
ME	MATCH EXISTING
WB	WATER BLOCK
FL INT	FLOWLINE INTERSECTION
PCR	POINT OF CURB RETURN
	BASIN LINE
A	BASIN DESIGNATION
0.9035	AREA IN ACRES
	FLOW ARROW
Q10	10 YEAR RUNOFF IN CFS
Q100	100 YEAR RUNOFF IN CFS
AB	AS BUILT



VICINITY MAP
NTS

THIS IS TO CERTIFY THAT THE DIAMOND SHAMROCK SITE AT 4420 ZUNI ROAD S.E. WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN.

RAFAEL E. ROMERO PE No. 4859 — 2-8-95
NEW MEXICO REGISTERED PROFESSIONAL ENGINEER — DATE

REVISIONS

No	Description	Des By	Drn By	Date
1	PER DRC COMMENTS	LLP	RDG	3/11/94
2	PER CITY COMMENTS	LLP	RDG	5/3/94
3	2nd SIGN LOCATION & SIGN SCHEDULE NOTE 79	LLP	RDG	7/28/94
4	ADD AS BUILT INFORMATION	LLP	RDG	[illegible] 95

DIAMOND SHAMROCK
DALLAS, TEXAS
(214) 35[illegible]-7386

Galloway [illegible]
Design [illegible]
Aurora, [illegible]

AS BUILT

4420 ZUNI ROAD S.E.
ALBUQUERQUE, NEW MEX.

Designed By LLP — Date FEB 1994
Drawn By — Scale
Checked By LLP — Disk File

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 22, 1995

Rafael E. Romero
Galloway, Romero & Associates
14202 E. Evans Ave.
Aurora, CA 80014

RE: ENGINEER CERTIFICATION FOR DIAMOND SHAMROCK CORNER STORE
NO. 1237 (K17-D26) ENGINEER'S CERTIFICATION STATEMENT
DATED 2/8/95.

Dear Mr. Romero:

Based on the information provided on your February 16, 1995 submittal, Engineer Certification for the above referenced site is acceptable.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DIAMOND SHAMROCK CORNER STORE NO. 1237 ZONE ATLAS/DRNG. FILE #: K-17/D26

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: SEE ATTACHED

CITY ADDRESS: 4420 Zuni Rd. S.E.

ENGINEERING FIRM: GALLOWAY, ROMERO & ASSOC. CONTACT: LARRY L. PARKER
ADDRESS: 14202 E. EVANS AVE. AURORA CO 80014 PHONE: (303) 745-7448

OWNER: DIAMOND SHAMROCK CONTACT: JIM REED
ADDRESS: 9702 BROCKBANK DALLAS TX 75220 PHONE: (214) 357-7386

ARCHITECT: GALLOWAY, ROMERO & ASSOC. CONTACT: LARRY L. PARKER
ADDRESS: 14202 E. EVANS AVE. AURORA CO. 80014 PHONE: (303) 745-7448

SURVEYOR: RONALD A. FORSTBAUER SURVEYING CO. CONTACT: RONALD A. FORSTBAUER
ADDRESS: 1100 ALVARADO NE ALBUQUERQUE NM 87110 PHONE: (505) 268-2112

CONTRACTOR: S&J Enterprises, Inc. CONTACT: Mike Kerr
ADDRESS: 3535 Princeton Dr. N.E. Alb. 87107 PHONE: 505/884-6234

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
✓ ENGINEER'S CERTIFICATION
____ OTHER

PRE-DESIGN MEETING:

____ YES
____ NO
____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
✓ CERTIFICATE OF OCCUPANCY APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
____ OTHER _____ (SPECIFY)

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO NO. 4859 LARRY L. ROMERO

DATE SUBMITTED: February 6, 1990

BY: _____

Final Drainage Report
for
Diamond Shamrock
Washington Street S.E. & Zuni Road S.E.
Albuquerque, New Mexico

February 1994
Revised May, 1994

Prepared for:

Diamond Shamrock
9702 Brockbank
Dallas, TX 75220

Prepared by:

Galloway, Romero & Associates
14202 E. Evans Ave.
Aurora, CO 80014
(303) 745-7448
Attn: Larry L. Parker

TABLE OF CONTENTS

APPENDIX A

I. INTRODUCTION

This report is being prepared for Diamond Shamrock, Inc., the owner/developer of the site, to fulfill the final drainage requirements of Albuquerque, New Mexico. The report analyzes offsite and onsite runoff from the minor, 10 year frequency, and major, 100 year frequency storms and routes these flows through the site.

The 0.9035 acre site is part of the South 1/2 of Section 23, Township 10 North, Range 3 East of the New Mexico Principal Meridian, City of Albuquerque, County of Bernalillo, State of New Mexico. The site is bound by developed C-2 zoned property on the south, by Washington Street S.E. on the west, by Zuni road S.E. on the north and by Adams Street S.E. on the east. According to Flood Insurance Rate Map for Bernalillo County, New Mexico Panel Number 350002 0029 with an effective date of October 14, 1983, the majority of the site is situated within Zone C, an area of minimal flooding. A small portion of the site along Zuni Road S.E. does lie within Zone AO, an area of 100 year shallow flooding where depths are between 1 and 3 feet. The boundary zone line is shown on the existing drainage map and the developed drainage plan.

Currently the site consists of a vacant commercial building (a former restaurant), landscaping and asphalt paved areas. The landscaping consists of 9.15% of the overall area with the remaining 90.85% being impervious area. The site slopes downward from south to north at grades ranging from 1 to 4%. Existing curb and swales on the C-2 zoned sites to the south direct offsite runoff away from the site.

II. DESIGN CRITERIA

This report is being prepared using the criteria and methodology as presented in Section 22.2, Hydrology of the "Development Process Manual" for the City of Albuquerque in cooperation with Bernalillo County, New Mexico, dated January 1993. Peak runoff for the minor and major storms (10 and 100 year frequency, respectively), excess precipitation and runoff volume was calculated using values for Precipitation Zone 2 Calculations and applicable tables and graphs are included in the appendix of this report.

III. EXISTING DRAINAGE

As previously stated the site does not receive runoff from offsite basins. The majority of the sites runoff flows northerly and discharges into the Zuni Street right-of-way and then flows northwest to a sump condition inlet at the southeasterly corner of the Washington/Zuni intersection. Runoff that discharges into the Washington Street right-of-way flows northerly and is also captured by the same inlet. Runoff that discharges into Adams Street is captured by an existing inlet at the southwest corner of the Adams/Zuni intersection. Because this runoff virtually all flows to the same general area, the existing drainage has one basin, Basin A.

The 10 and 100 year peak discharge form Basin A is 2.66 and 4.05 cfs., respectively. The excess precipitation and runoff volume for the basin is 2.00 inches and 6559 cubic feet, respectively.

IV. DEVELOPED DRAINAGE

General: Runoff patterns for the developed drainage are virtually identical to the existing drainage patterns. Peak discharge, excess precipitation and runoff volume was calculated for the initial construction and for the future construction of the car wash and canopy expansion. In both cases runoff, excess precipitation and runoff volume was less than the existing drainage. This is attributed to the increase in pervious areas and its direct reduction of runoff.

Specific Details: The 10 and 100 year peak discharge for the initial construction is 2.13 and 3.47 cfs., respectively. The excess precipitation and runoff volume is 1.64 inches and 5379 cubic feet respectively.

If the site were expanded to include both future construction projects, the car wash addition and the canopy expansion, the 10 and 100 year peak discharge would be 2.37 and 3.73 cfs., respectively. The excess precipitation and runoff volume would be 1.81 inches and 5935 cubic feet, respectively.

V. DETENTION

Both developed drainage conditions, initial and future construction, generate less runoff, and less excess precipitation than the existing drainage. Because of this no detention has been provided.

VI. CONCLUSIONS

This report has been prepared using the methodology and information contained within Section 22.2 of the Development Process Manual for the City of Albuquerque in cooperation with Bernalillo County, New Mexico, dated January, 1993. Runoff from the minor/major storms is safely routed through the site and is discharged without causing potential harm to the public.

The initial construction increases the landscaping by 389% and the future construction increases the landscaping by 256%. This direct increase in pervious area is responsible for the reduction in runoff. As a consequence the impact on all downstream facilities has been reduced.

APPENDIX A