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

March 2, 1995

Larry L. Parker, P.E.
Galloway, Romero & Assoc.
14202 E. Evans Ave.
Aurora, CO 80014

RE: ENGINEER'S CERTIFICATION FOR DIAMOND SHAMROCK #1240 (H22/D65)
      RECEIVED FEBRUARY 14, 1995 FOR CERTIFICATE OF OCCUPATION
      ENGINEER'S STAMP DATED 1-18-95

Dear Mr. Parker:

Based on the information included in the submittal referenced above, City
Hydrology accepts the Engineer's Certification and releases the Certificate of
Occupancy for this project at 12501 Menaul Blvd NE.
12521

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

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

c: Andrew Garcia   *2/*
     Doug Kirk, Nuckolls Construction, 12501 Menaul NE 87112

AN EQUAL OPPORTUNITY EMPLOYER

City of Albuquerque

P.O. BOX 1293   ALBUQUERQUE, NEW MEXICO 87103

September 12, 1994

Larry L. Parker, P.E.
Galloway, Romero & Assoc.
14202 E. Evans Ave.
Aurora, CO 80014

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK #1240 (H-22/D65)
     RECEIVED AUGUST 30, 1994 FOR BUILDING PERMIT APPROVAL
     ENGINEER'S STAMP DATED 8-2-94 REVISED 8/17/94

Dear Mr. Parker:

Based on the information included in the submittal referenced above, City
Hydrology approves this project for Building Permit.

Include a copy of the approved Drainage Plan in the set of construction
documents that will be submitted to the "one stop" for the Building Permit.

A separate permit is required for construction of private drainage facilities
within the City Right-of-Way. A copy of this letter must be on hand when
applying for the excavation permit.

Engineer's Certification of grading & drainage per DPM checklist must be
approved before any Certificate of Occupancy will be released.

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:
     Arlene Portillo
     Glen Bates; Kevin Georges & Assoc; 127-A Jefferson NE; 87108

WPHYD/8750/jpc

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

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 0.9079 acre site is located in Section 10, Township 10 North, Range 4 East of the New Mexico Principal Meridian, City of Albuquerque, County of Bernalillo, State of New Mexico. The site is bound by Tramway Boulevard on the East, by Menaul Boulevard on the South and by undeveloped, C-1 neighborhood commercial zoned property on the West and North. According to the Flood Insurance Rate Map for the City of Albuquerque, Community Panel Number 350002 0025 C, with an effective date of October 14, 1983, the site lies within Zone C, an area of minimal flooding.

Currently the site is undeveloped and covered with native grasses and weeds. The site slopes downward from East to West at grades ranging from 2.5 to 8 percent. Small offsite basins along the East and South property lines contribute unconcentrated runoff to 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 4 Calculations and applicable tables and graphs are included in the appendix of this report.

III. EXISTING DRAINAGE

The site is divided into 3 existing basins, A through C. Basin A is a 0.009 acre basin, at the northeasterly corner of the site, that is covered with native grasses and weeds. The 10 and 100 year runoff of 0.01 and 0.02 CFS, respectively, is unconcentrated and flows easterly to the Tramway Boulevard right-of-way.

Basin B is a 0.200 acre basin that is the northerly one-third of the site and is covered with native grasses and weeds. The 10 and 100 year runoff of 0.23 and 0.51 CFS, respectively, is largely unconcentrated and exits the site along the northerly property line.

Basin C is a 0.501 acre basin that consists of the majority of the site and is covered with native grasses and weeds. This basin receives offsite runoff along the sites East and South property lines. The offsite basin, OS-1, contains 0.079 acres and is covered with native grasses and weeds. The 10 and 100 year runoff of 0.09 and 0.20 CFS, respectively, is unconcentrated and sheetflows into Basin C. This runoff combines with Basin C's 10 and 100 year runoff of 0.58 and 1.28 CFS, respectively and flows westerly until it exits the site. The combined 10 and 100 year runoff at the sites westerly property line is 0.67 and 1.48 CFS, respectively.

IV. DEVELOPED DRAINAGE

The site is divided into 5 developed basins, A through E. Basin A is a 0.293 acre basin that consists of landscaping, roof and paved areas. This basin receives offsite runoff from the East and South. The offsite basin, OS-1, contains 0.063 acres and is covered with native grasses and weeds. The 10 and 100 year runoff of 0.07 and 0.16 CFS, respectively, is unconcentrated and sheetflows into Basin A. This runoff combines with Basin A's 10 and 100 year runoff of 0.88 and 1.41. CFS, respectively, and flows to a sump condition City of Albuquerque single "C" inlet. The combined 10 and 100 year runoff at the inlet is 0.95 and 1.57 CFS, respectively. This runoff is then piped westerly where it ultimately discharges into Menaul Boulevard through a sidewalk culvert.

This private storm sewer systems capacity was checked by using a 100 year flow of 1.75 CFS. That runoff will occur at the inlet if the car wash were constructed. That event would reduce the landscaped area and consequently the developed runoff would increase. Those calculations are included in the Appendix of this report.

Basin B is a 0.081 acre basin that consists of landscaping, roof and paved areas. This basin also receives offsite runoff from the South. That basin, OS-2, is a 0.007 acre basin that consists of native grasses and weeds. The 10 and 100 year runoff of 0.01 and 0.02 CFS, respectively, is unconcentrated and sheetflows into Basin B. This runoff combines with Basin B's 10 and 100 year runoff of 0.26 and 0.40 CFS, respectively and flows to the Menaul Boulevard curb cut. The combined 10 and 100 year runoff at the curb cut is 0.27 and 0.42 CFS, respectively.

Basin C is a 0.219 acre basin that consists of roof and paved areas. The 10 and 100 year runoff of 0.78 and 1.15 CFS, respectively, flows to the private access drive. The runoff sheetflows across the access drive and is discharged in to Menaul Boulevard through the most westerly curb cut.

Basin D is a 0.053 acre basin that is entirely landscaped. A minor swale directs the basin's 10 and 100 year flow of 0.08 and 0.15 cfs, respectively towards Menaul Boulevard.

Basin E is a 0.062 acre basin, along the northerly and westerly property lines, that is entirely landscaped. The 10 and 100 year runoff of 0.09 and 0.18 CFS, is unconcentrated and sheetflows off the site along the property lines.

V.   DETENTION

Free discharge to Menaul Boulevard has been granted for this site and consequently detention is not required. This is per a pre-design conference with the City's Hydrology Section on June 21, 1994. A copy of the conference findings are included in the Appendix.

VI.   **CONCLUSIONS**

The majority of the sites runoff discharges into Menaul Boulevard by gutter flow or a private storm sewer system. Should the sump condition inlet plug, water will pond to elevation 14.0 until it overflows the high point and flows to the curb cut. This elevation is 1.0 foot below the convenience stores finished floor elevation.

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.

SITE

North
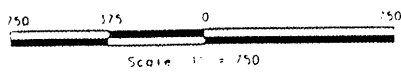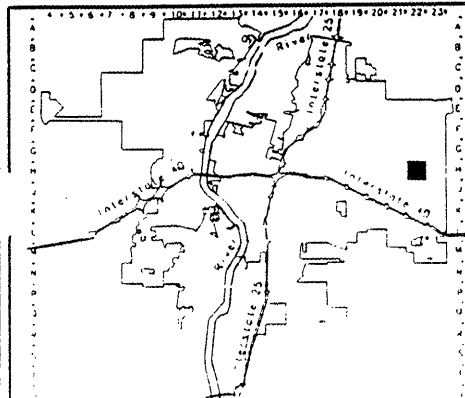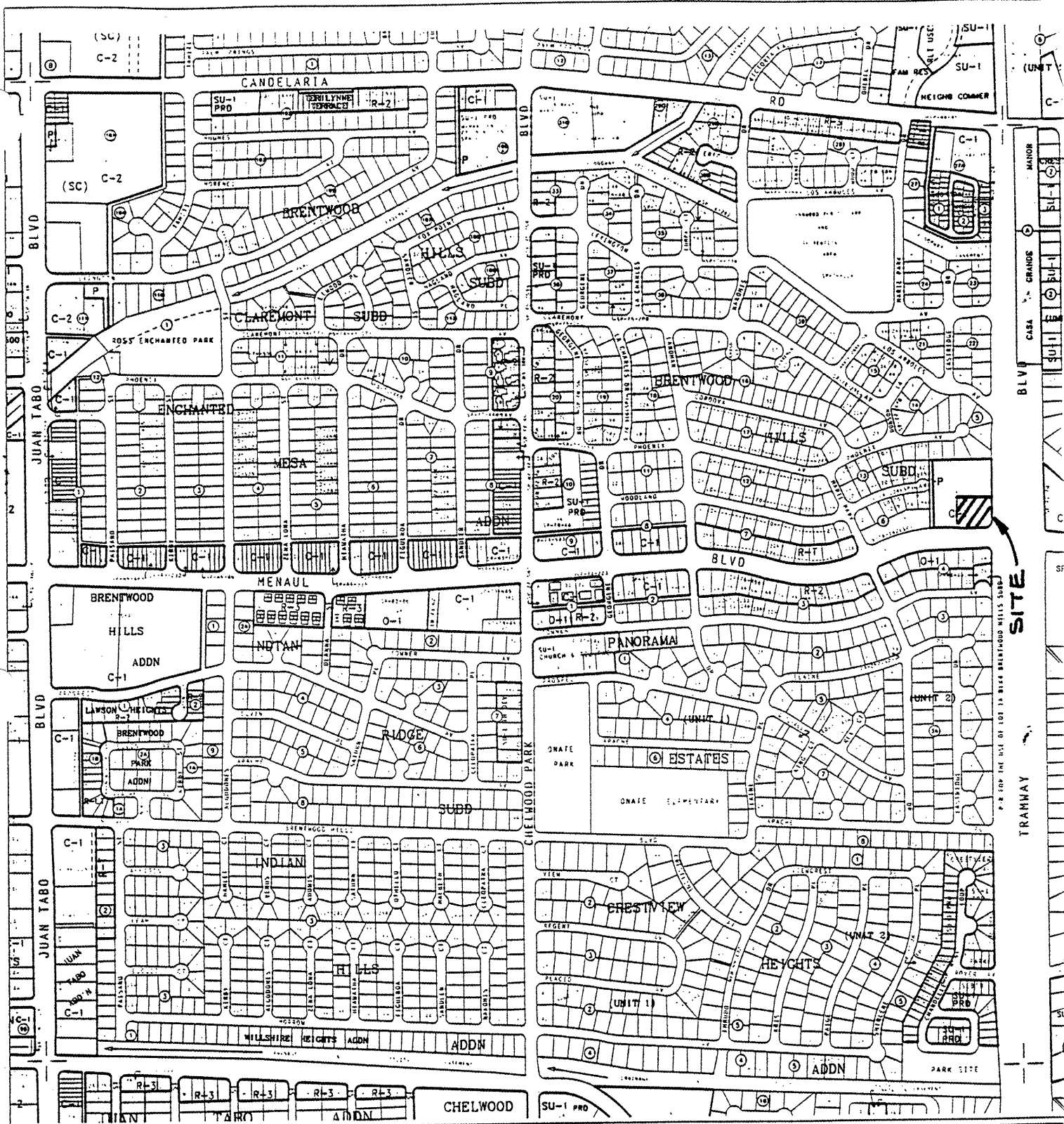
LEGAL DESCRIPTION

T10N

R4E

SEC 10

UNIFORM PROPERTY CODE

1 022 059

Scale 1" = 750

750   375   0   750

H-22-Z

VICINITY MAP   A.1

EXISTING RUNOFF - PEAK DISCHARGE METHOD

BASIN DESIGNATION	OVERALL AREA SF	TREATMENT A	TREATMENT B	Q_{10}	Q_{100}
OS-1	3440	1720	1720	0.09	0.20
A	388	194	194	0.01	0.02
B	10900	5450	5450	0.29	0.64
C	21828	10914	10914	0.58	1.28

T_c FOR ALL RUNOFF = 0.2 HOURS

TABLE A-9. PEAK DISCHARGE (cfs/acre)				
Zone	Treatment			100-YR [2-YR, 10-YR]
	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]

A.4

DEVELOPED RUNOFF – PEAK DISCHARGE METHOD

BASIN DESIGNATION	OVERALL AREA SF	TREATMENT			Q_{10} CFS	Q_{100} CFS
		A SF	B SF	D SF		
OS-1	2746	1373	1373	—	0.07	0.16
OS-2	312	156	156		0.01	0.02
A	12746	—	3433	9313	0.88	1.41
B	3522	—	522	3000	0.26	0.40
C	9551	—	—	9551	0.78	1.15
D	2308	—	2304	—	0.08	0.15
E	2710		2710	—	0.09	0.18

COMBINED FLOWS AT DESIGN POINTS

△1 Σ OS-1 & A, USE T_c = 0.2 HR OR 12 MIN

Q_{10} = 0.95 CFS

Q_{100} = 1.57 CFS

△2 Σ OS-2 & B, USE T_c = 0.2 HR OR 12 MIN

Q_{10} = 0.27 CFS

Q_{100} = 0.42 CFS

INLET & PRIVATE STORM LATERAL SIZING

- CONTRIBUTING BASINS OS-1 & BASIN A, USE BASIN A FUTURE CONDITION (WITH CAR WASH), THIS PRODUCES THE MAXIMUM AMOUNT OF RUNOFF

BASIN A   14050 SF OVERALL, 2694 SF TREATMENT B, 11356 TREATMENT D

$$Q_{10} = \left(\frac{2694}{43560}\right) 1.45 + \left(\frac{11356}{43560}\right) 3.57 = 1.02 \text{ CFS}$$

$$Q_{100} = \left(\frac{2694}{43560}\right) 2.92 + \left(\frac{11356}{43560}\right) 5.25 = 1.55 \text{ CFS}$$

INTO INLET

$$Q_{10} = 1.02 + 0.07 = 1.09 \text{ CFS}$$

$$Q_{100} = 1.55 + 0.16 = 1.71 \text{ CFS} \longleftarrow$$

8" OUTFALL PIPE, ALLOW PONDING TO TOP OF INLET

$$H_W = 12.55 - 10.15 - \left(\frac{4}{12}\right) = 2.07 \text{ FT}$$

ORIFICE EQUATION

$$Q = 0.65 \left(\frac{4}{12}\right)^2 \pi \left(2 \cdot 32.2 \cdot 2.07\right)^{1/2} = 2.62 \text{ CFS} \longleftarrow \text{ OK}$$

AT JUNCTION BOX, 2~6" CI PIPES WILL CONVEY WATER

$$Q/2 = 1.71 \text{ CFS}/2 = 0.86 \text{ CFS, ALLOW PONDING TO}$$
$$\text{₵ OF 8" OUTFALL PIPE AT INLET}$$

$$\text{ELEV} = 10.15 + \left(\frac{4}{12}\right) = 10.48$$

$$HW = 10.48 - 8.50 - \left(\frac{3}{12}\right) = 1.73 \text{ FT}$$

ORIFICE EQUATION

$$Q = 0.65 \left(\frac{3}{12}\right)^2 \pi \left(2 \cdot 32.2 \cdot 1.73\right)^{1/2} = 1.35 \text{ CFS} \longleftarrow \text{ OK}$$

SCALE: 1"=20'

TRAMWAY BOULEVARD N.E.

MENAUL BOULEVARD N.E.

N 89° 04' 30" E 190.00

DIAMOND SHAMROCK
VOLUME SHOPPER
STERLING SERIES
1662
1609.65 s.f.

NOTE: ACCESS & DRAINAGE
EASEMENT FOLLOWS THE BACK

NOTE: THE CONTRACTOR SHALL SECURE A
"TOPSOIL DISTURBANCE PERMIT"
PRIOR TO BEGINNING CONSTRUCTION
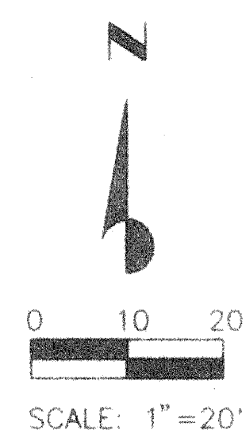
EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.

2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.

3. THE CONTRACTOR SHALL SECURE A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING CONSTRUCTION.

VICINITY MAP
ZONE ATLAS H-22-Z
SCALE 1" = 750'

NOTES:

1. BENCHMARK: CITY OF ALBUQUERQUE "1-H23" A BRASS CAP SET 0.50 FEET BELOW GROUND WITHIN AN 8 INCH DIAMETER STEEL MONUMENT BOX LOCATED AT THE NORTH MEDIAN AT THE INTERSECTION OF TRAMWAY & MENAUL BOULEVARDS N.E. ELEVATION 5852.50

2. ALL SPOT ELEVATIONS SHOWN ADJACENT TO CURBS REFER TO FLOWLINE.

LEGAL DESCRIPTION

A CERTAIN PARCEL OF LAND BEING IDENTIFIED AS A PORTION OF TRACT "A" AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT ENTITLED "REPLAT OF BLOCK 1, LOTS 1, 8 & 9, BLOCK 6, LOTS 9, 10, 11 & 12 BLOCK 13 & LOTS 4 & 5 BLOCK 14 BRENTWOOD HILLS A SUBDIVISION ALBUQUERQUE, NEW MEXICO AND INCLUDING VACATED PORTIONS OF EASTRIDGE DRIVE, PHOENIX AVENUE & WOODLAND AVENUE" FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON APRIL 18, 1971 IN VOLUME 17, FOLIO 205 AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

...

LEGEND

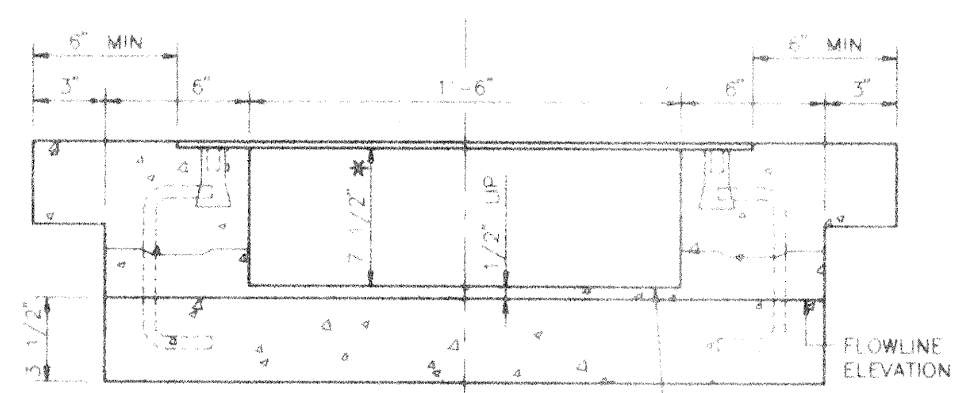|	
14	EXISTING CONTOUR
(14)	PROPOSED CONTOUR
14.0	EXISTING SPOT ELEVATION
14.0	FUTURE SPOT ELEVATION
14.0	FINISHED SPOT ELEVATION
FF	FINISHED FLOOR ELEVATION
TOT	TOP OF TANKS
TI	TOP OF ISLAND
TC	TOP OF CURB
HP	HIGH POINT
LP	LOW POINT
ME	MATCH EXISTING
WB	WATER BLOCK
FL INT	FLOWLINE INTERSECTION
PCR	POINT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

THIS IS TO CERTIFY THAT THE DIAMOND SHAMROCK SITE AT 12501 MENAUL BLVD. NE WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN.

RAFAEL E. ROMERO, PE No. 4859   1-18-95
NEW MEXICO REGISTERED PROFESSIONAL ENGINEER   DATE
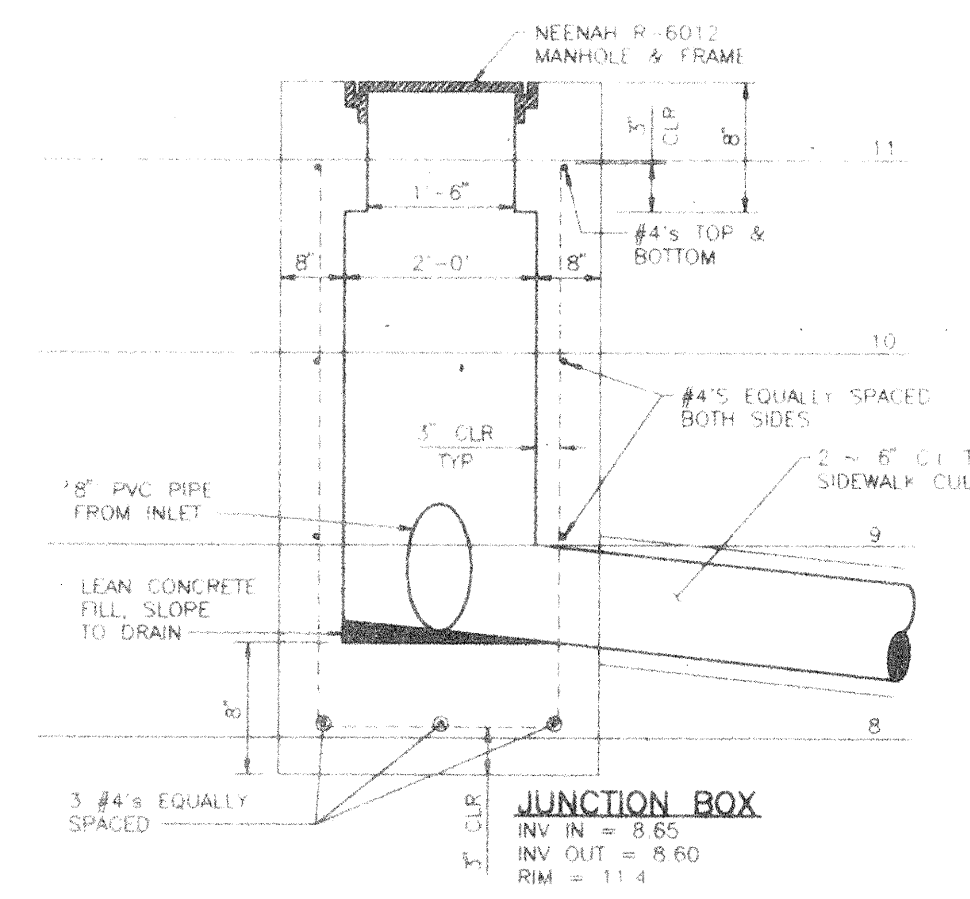
NOTICE TO CONTRACTOR

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.

2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREIN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 1986 WITH CURRENT UPDATES.

3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE (505) 260-1990, FOR LOCATION OF EXISTING UTILITIES.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. BACKFILL COMPACTION SHALL BE ACCORDING TO ARTERIAL STREET USE.

SECTION A-A
NOT TO SCALE

JUNCTION BOX SECTION
SCALES 1"=2' HORIZONTAL
1"=1' VERTICAL

JUNCTION BOX PLAN
SCALE 1"=2'

SIDEWALK CULVERT SECTION AT UPSTREAM END
MODIFIED COA STD DRAWING 2236 ALL OTHER DETAILS
APPLY AS SHOWN

NEENAH R-6012
MANHOLE & FRAME

DO NOT CONSTRUCT
INVERT FOR 2 LF
SOUTH OF PROPERTY LINE

DIAMOND SHAMROCK
9702 BROOKBANK
DALLAS, TEXAS 75220
(214) 357-7386

Galloway, Romero & Associates
Design Engineering Planning
14202 East Evans Avenue
Aurora, Colorado 80014
Tel. (303) 745-7448
Fax (303) 745-7480

AS BUILT
DEVELOPED DRAINAGE PLAN
STORE #1240
TRAMWAY BLVD NE & MENAUL BLVD NE
ALBUQUERQUE, NEW MEXICO

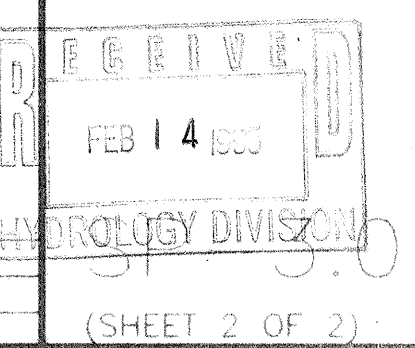| APPROVALS	NAME	DATE	TITLE DIAMOND SHAMROCK CORNER STORE No. 1240 DEVELOPED DRAINAGE PLAN
A.C.E./DESIGN			
INSPECTOR			PERMIT No.
A.C.E./FIELD			MAP No. H-22

Designed By	LLP	Date	AUGUST, 1994
Drawn By	RDG	Scale	1" = 20'-0"
Checked By	LLP	Disk File	0S1240SP

(SHEET 2 OF 2)

REVISIONS

No.	Description	Des By	Drn By	Date
1	PER JIM REED	LLP	RDG	8/5/94
2	PER DRC COMMENTS	LLP	RDG	8/17/94
3	EXTEND SW CULVERT, ADD TRENCH DRAIN	LLP	CJH	9/15/94
4	PER CITY OF ALBUQUERQUE	LLP	CJH	10/31/94
5	ADD AS BUILT INFORMATION	LLP	RDG	1/17/95