Public Works/Hydrology

A13/D9

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A13/D9

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DRAINAGE INFORMATION

PROJECT TITLE: Jiffy Lube-Rio Rancho ZONE ATLAS/DRNG. FILE #: A-13 / 119

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

LEGAL DESCRIPTION: Tract 1-B-1, Lands of 528 Investors

CITY ADDRESS: Westside Blvd. NW, Rio rancho, New Mexico

ENGINEERING FIRM: Chavez-Grieves CONTACT: James E. Millington PE

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: Oilwell Properties, LC CONTACT: Keith Mortensen

ADDRESS: 2129 Osuna NE, Ste 105 87113 PHONE: 345-7066

ARCHITECT: Kevin Georges & Associates CONTACT: Ronald Tucker AIA

ADDRESS: 127 Jefferson St. NE 87108-1216 PHONE: 255-4975

SURVEYOR: Surv-Tec, Inc. CONTACT: Russ P. Hugg PS

ADDRESS: 5643 Paradise Blvd. NW 87114 PHONE: 897-3366

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- X DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- __ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION
- ___ OTHER

PRE-DESIGN MEETING:

- ___ YES
- X 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. PRMT. APPROVAL
- ___ SECTOR PLAN APPROVAL
- __ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- X PAVING PERMIT APPROVAL
- ___ S.A.D. DRAINAGE REPORT
- ___ DRAINAGE REQUIREMENTS
- ___ OTHER _____ (SPECIFY)

JUL 24 1996

DATE SUBMITTED: July 24, 1996

BY: James E. Millington PE

25×10 32×10

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
THE ENGINEERING FIRM OF CHOICE

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344 4080 · FAX (505) 343 8759

July 24, 1996

Mr. Fred Aguirre P.E.
City of Albuquerque, PWD Hydrology
P.O. Box 1293
Albuquerque, NM 87103

RE: GRADING AND DRAINAGE PLAN FOR
JIFFY LUBE-RIO RANCHO
C-G PROJECT NUMBER: G04-148-5196

Dear Mr. Aguirre:

Attached is a grading and drainage plan for the Jiffy Lube in Rio Rancho.

We are submitting t'ıis to the City of Albuquerque because it discharges to the Don Chalmers For detention pond (Which was designed to receive this flow) which discharges to the 24" storm drain in NM 528 being constructed under SAD 223.

We are concurrently submitting to the City of Rio Rancho and AMAFCA.

Very Truly Yours,

CHAVEZ-GRIEVES CONSULTING ENGINEERS INC.

James E. Millington
JEM/lr
Enclosure

0000 0000 0801

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

GRADING AND DRAINAGE PLAN

JIFFY LUBE - RIO RANCHO

JULY, 1996

JAMES E. MILLINGTON
NEW MEXICO
7979
REGISTERED PROFESSIONAL ENGINEER
July 24, 1996

Celebrating 15 Years of Engineering Leadership

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LOCATION

This site is located on the northeast corner of the Highway 528 and Westside Blvd. NW intersection, north of the existing Don Chalmers Ford dealership.

LEGAL DESCRIPTION

Tract 1-B-1, Lands of 528 Investors, filed January 19, 1996, in Vol 96C-28

SURROUNDING DEVELOPMENT

The site is located in a developing business area adjacent to the Highway 528 right-of-way. A automotive dealership is located south of the site, while the land north and east of the site is undeveloped.

FLOOD HAZARD ZONES

As shown by Panel 3500020002 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, the site is not in a designated flood hazard zone.

EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

Tracts 1-B, 1-C, and 1-D discharge directly onto the paved surface of Don Chalmers Ford parking lot (Tract 1-A). A concrete swale directs runoff from the parking lot to an existing detention pond. The existing ponding area is in accordance with a drainage plan for Don Chalmers Ford (Easterling & Associates, April 96), and was sized to accept runoff form Tracts 1-A, 1-B, 1-C, and 1-D. Runoff from the adjacent undeveloped land discharges around the site, and localized ponding occurs on portions of the undeveloped land.

PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN

The proposed improvements consist of a new building with associated sidewalks and landscaping, locate in an infill area. In accordance with a telephone conversation on April 29, 1996 with Jerome P. Fossenier of Rio Rancho City Hydrology, free discharge from Tract 1-A, into the existing detention pond is acceptable. The increases in flow of 2.37 cfs and volume of 0.098 acre-ft, will be discharged into the adjacent parking lot, and ultimately into the existing detention pond. Runoff from the surrounding undeveloped land will continue to discharge around the site, then east to an existing storm drain system.

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HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993.

COMPARISON WITH APPROVED DRAINAGE PLAN

Land treatments assumed in the approved drainage plan for Don Chalmers Ford (Easterling & Associates, April 1996) are as follows:

TYPE	PERCENT AREA
B	7.5
C	7.5
D	85.0

Q_P=3.39CFS
V_{360}=5489CF

Developed treatments used for this report are as follows:

TYPE	PERCENT AREA
B	0
C	8.4
D	91.6

Q_P=3.46CFS
V_{360}=5618CF

Thus there is essentially no difference between these design figures and those used in the design of the Don Chalmers drainage pond.

Increase in Volume = 129 cf

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RUNOFF CALCULATIONS - SIMPLIFIED PROCEDURE

By: CRAIG HAGELGANTZ
Project: JIFFY LUBE - RIO RANCHO

Date: July 9, 1996
Zone Atlas: A-13

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, "Hydrology", peak discharge rate for small watersheds less than forty acres in size.

Precipitation Zone from Figure A-1: 1
Land treatment descriptions are in Table A-4.

1. RUNOFF RATE COMPUTATION

Use Equation a-10: $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$

Values of Q_{pi} are from Table A-9, and are in CFS/acre. Area values are in acres.

BASIN	Q_{PA}	A_A	Q_{PB}	A_B	Q_{PC}	A_C	Q_{PD}	A_D	Q_P
EXISTING BASIN RATE OF RUNOFF (CFS)									
E-1	1.29	0.844	2.03	--	2.87	--	4.37	--	1.09
DEVELOPED BASIN RATE OF RUNOFF (CFS)									
D-1	1.29	0.071	2.03	--	2.87	--	4.37	0.773	3.46

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2. RUNOFF VOLUME COMPUTATION

Use Equation a-5 to compute weighted excess precipitation:

Weighted E = "E" = $(E_A A_A + E_B A_B + E_C A_C + E_D A_D)/(A_A + A_B + A_C + A_D)$

$(A_A + A_B + A_C + A_D) = \sum A_i$

Use Equation a-6 to compute the volume:

V_{360} = "E" x $(A_A + A_B + A_C + A_D)$ x 3630 feet^3/acre·inch

Values of E_i are from Table A-8, and are in inches. Area values are in acres.

BASIN	E_A	A_A	E_B	A_B	E_C	A_C	E_D	A_D	$\sum A_i$	"E"	V_{360}
EXISTING BASIN VOLUME OF RUNOFF (CUBIC FEET)											
E-1	0.44	0.84	0.67	--	0.99	--	1.97	--	0.84	0.44	1348
DEVELOPED BASIN VOLUME OF RUNOFF (CUBIC FEET)											
D-1	0.44	0.07	0.67	--	0.99	--	1.97	0.77	0.84	1.84	5618

25×10 32×10

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PLANS/PLATS ON FILE

FILE DESC: A13/09

PLANS/PLATS 2

25×10 32×10