

CITY OF ALBUQUERQUE



November 19, 2009\

John Arthur Blessen, P.E.
J. Arthur Blessen Engineering
11930 Menaul Ste. 109
Albuquerque, New Mexico 87112

**Re: Alvarado Elementary School- Kindergarten Addition, 1100 Solar Rd NW,
(E-14/D005),
Approval of Permanent Certificate of Occupancy—Approved,
Engineer's Stamp Dated: 09-28-08
Engineer's Certification Date: 11-17-09**

PO Box 1293

Dear Mr. Blessen,

Albuquerque

Based upon the information provided on 11/18/09, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

NM 87103

If you have any questions, you can contact me at 924-3982.

Sincerely,

www.cabq.gov

Timothy E. Sims
Plan Checker-Hydrology, Planning Dept
Development and Building Services

C: CO Clerk—Katrina Sigala
file

CITY OF ALBUQUERQUE



November 17, 2008

J. Arthur Blessen, P.E.
J. Arthur Blessen Engineering
2429 Zena Lena Dr
Albuquerque, NM 87112

**Re: Alvarado Elementary-Kindergarten Addition Site Grading Plan
Engineer's Stamp dated 11-13-08 (E14/D005)**

Dear Mr. Blessen,

Based upon the information provided in your submittal received 11-14-08, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

PO Box 1293

Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

Albuquerque

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

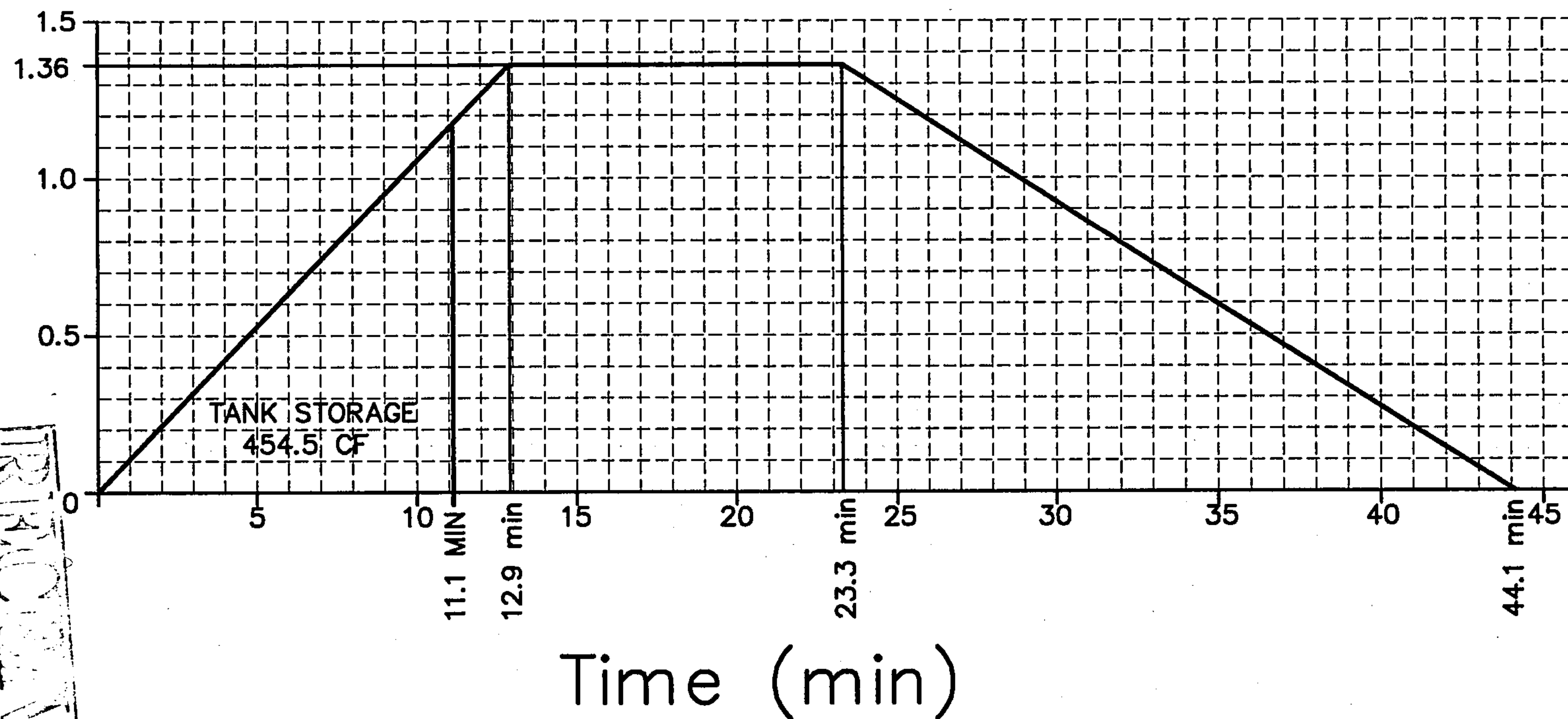
NM 87103

www.cabq.gov

C: file

RECEIVED
 NOV 14 2008
 HYDROLOGY
 SECTION

Q (cfs)



TANK CAPACITY (2) 1700 GAL = 454.5 CF

TANKS FILL AT 11.1 MIN

TANK DISCHARGE 6" DIA PIPE

A PIPE = 0.163 SF

H = 2 FT

$$Q = 0.60 (0.1963) \sqrt{2 (32.2) (2.0)} = 1.34 \text{ CFS}$$



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 3, 2004

Mario Juarez-Infante, P.E.
Wilson & Company
2600 The American Rd. SE, Suite 100
Rio Rancho, NM 87124

Re: Alvarado Elementary School, 1100 Solar Rd NW
Grading and Drainage Plan, Engineer's Stamp dated 6-07-04
Existing Channel/Existing EOP Proposed Curb and Gutter Flowline Plan
and Profile, Engineer's Stamp dated 6-08-04 (E14-D5)

Dear Mr. Juarez-Infante,

Based upon the information provided in your submittal received 6-08-04, the above referenced plan is approved for Paving Permit and Grading Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. If you have any questions regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Charles Caruso) or 768-3645 (Bryan Wolfe).

If you have any questions, you can contact me at 924-3981.

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

C: Charles Caruso, DMD Storm Drainage Design
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 22, 1994

Mike Walla, P.E.
Chavez-Grieves Inc.
5639 Jefferson NE
Albuquerque, N.M. 87109

RE: GRADING & DRAINAGE PLAN FOR ALVARADO ELEMENTARY (E-14/D5)
RECEIVED AUGUST 11, 1994 FOR BUILDING PERMIT APPROVAL
ENGINEER'S STAMP DATED 8/10/94

Dear Mr. Walla:

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

Include a copy of the approved Grading & Drainage Plan, dated 8/10/94, in the set of construction documents that you will submit to the "one stop" for the Building Permit.

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

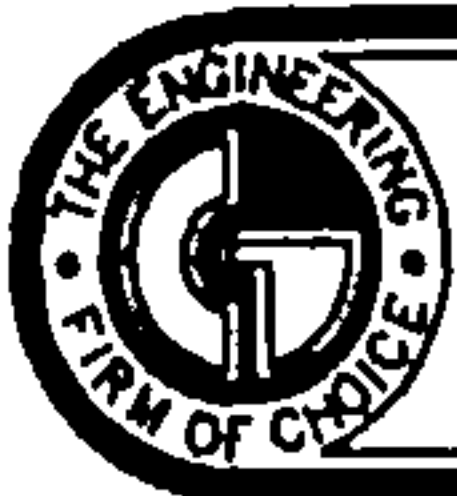
If you have any questions about this project, You may contact me at 767-2727.

Sincerely,

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

c: Andrew Garcia

WPHYD/8660/jpc



CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. 1 OF 1
JOB ALVARADO ELEM. SCHOOL ADDN
SUBJECT WESTWORK
CLIENT WESTWORK
JOB NO. W01-150-5094
BY MTW DATE 6/15/94

GRADING + DRAINAGE CALCULATIONS

PER: CITY OF ALBUQ.
SECTION 22.2, HYDROLOGY OF
DEVELOPMENT PROCESS MANUAL
VOL. 2, DESIGN CRITERIA

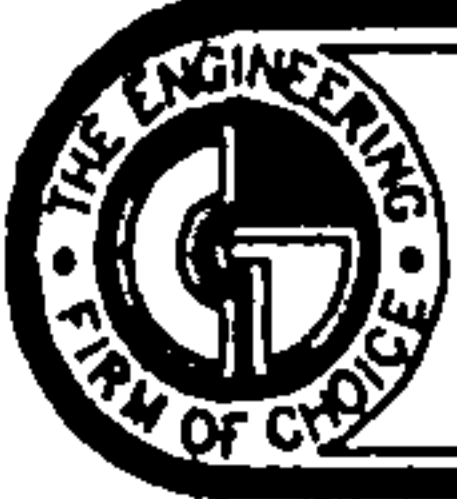
A.1 PRECIPITATION ZONE = (2)

PER FIGURE A-1

A.2 DESIGN STORM, $P_{360} = 2.35$ IN
IS 100 YR 6-HOUR EVENT PER NOAA ATLAS 2

A.3 LAND TREATMENTS (PER TABLE A-4) ACRES

TREATMENT TYPE	BASIN A		BASIN B	
	EXISTING	PROPOSED	EXISTING	PROPOSED
A	Ø	Ø	Ø	Ø
B	Ø	Ø	Ø	Ø
C (PLAYGROUND) DIRT PKG	3.759	2.928	2.282	2.300
D (BUILDINGS, PAVING, ETC.)	0.472	1.303	1.570	1.552
TOTAL	4.231	4.231 AC	3.852 AC	3.852 AC



CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5839 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

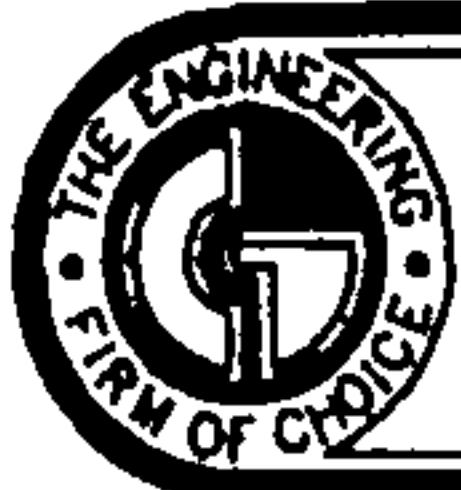
SHEET NO. _____ OF _____
JOB ALVARADO ELEM
SUBJECT _____
CLIENT WESTWORK
JOB NO. WOI-150-5094
BY MJW DATE 6/15/94

A.5 EXCESS PRECIPITATION

	BASIN A	BASIN B
WEIGHTED E (EXISTING)	$\frac{3,759(1.13) + 0,472(2.12)}{4,231 \text{ AC}}$ $= 1,24 \text{ IN}$	$\frac{2,282(1.13) + 1,57(2.12)}{3,852}$ $= 1,53 \text{ IN}$
WEIGHTED E (PROPOSED)	$\frac{2,928(1.13) + 1,303(2.12)}{4,231}$ $= 1,43 \text{ IN}$	$\frac{2,3(1.13) + 1,552(2.12)}{3,852}$ $= 1,53 \text{ IN}$

VOLUME CALCULATION, V_{360}

	BASIN A	BASIN B
V_{360} (EXIST)	$1,24(4,231) = 5,25 \text{ AC-Ft}$ $= 19,045 \text{ CF}$	$1,53(4,231) = 6,47 \text{ AC-Ft}$ $= 23,499 \text{ CF}$
V_{360} (PROP)	$1,43(4,231) = 6,05 \text{ AC-Ft}$ $= 21,963 \text{ CF}$	$1,53(4,231) = 6,47 \text{ AC-Ft}$ $= 23,499 \text{ CF}$



CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5839 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. _____ OF _____
JOB ALVARADO ELEM
SUBJECT HYDROLOGY
CLIENT WESTWARK
JOB NO. WJ01-150-5094
BY M.T.W. DATE 6/15/94

A.6

PEAK DISCHARGE:

	BASIN A	BASIN B
Q_{360} (EXISTING)	$3.759AC(3.14) = 11.80CF$ $0.472(4.70) = 2.22CF$ TOTAL = <u>14.02CF</u>	$2.282(3.14) = 7.16$ $1.57(4.70) = 7.38$ TOTAL = <u>14.54CF</u>
Q_{360} (PROPOSED)	$2.928(3.14) = 9.19$ $1.303(4.70) = 6.12$ TOTAL = <u>15.32CF</u>	$2.3(3.14) = 7.29$ $1.552(4.7) = 7.22$ TOTAL = <u>14.52</u>

PIPE CAPACITY:

$$S = \frac{.5^{FT}}{50} = 1\%, \quad n = 0.013 \quad A = 0.785 FT^2$$
$$P = 3.14 \quad R = A/P = \frac{.785}{3.14} = 0.25$$
$$12" \phi: A = .785 FT^2 \quad Q = \frac{1.486}{n} A R^{2/3} S^{1/2} \quad R_{12} = \frac{1.767}{4.71} = 0.375$$
$$18" \phi: A = 1.767 FT^2$$
$$12" \phi = \frac{1.486}{0.013} (.785 FT^2)^{2/3} (.02)^{1/2} = 5.03 CFS$$
$$18" \phi \Rightarrow Q = \frac{1.486}{0.013} (1.767)^{2/3} (.02)^{1/2} = 14.85 CFS$$

$$Q_{MAX} = .940 = 15.98 CFS \quad (SEE PG 4)$$

USE: 18" ϕ PVC

CHECK EXISTING: 18" ϕ CMP: $n = 0.024, S = 2\%$

$$Q_{MANNING} (SEE PG 5) = 8.53 CFS$$

OR

$$Q_{MAX} = 9.18 CFS$$

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: ALVARADO ELEMENTARY

Comment: DROP INLET PIPE DESIGN (NEW)

Solve For Full Flow Capacity

Given Input Data:

Diameter.....	1.50 ft
Slope.....	0.0200 ft/ft
Manning's n.....	0.013
Discharge.....	14.86 cfs

Computed Results:

Full Flow Capacity.....	14.86 cfs
Full Flow Depth.....	1.50 ft
Velocity.....	8.41 fps
Flow Area.....	1.77 sf
Critical Depth.....	1.40 ft
Critical Slope.....	0.0173 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	14.86 cfs
QMAX @.94D.....	15.98 cfs
Froude Number.....	FULL

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: ALVARADO ELEMENTARY

Comment: DROP INLET PIPE DESIGN (EXISTING)

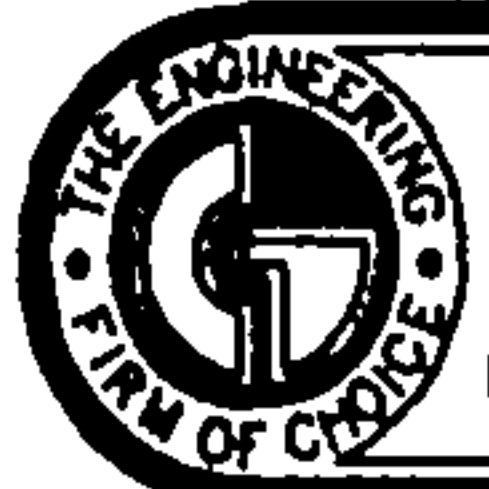
Solve For Full Flow Capacity

Given Input Data:

Diameter.....	1.50 ft
Slope.....	0.0225 ft/ft
Manning's n.....	0.024
Discharge.....	8.53 cfs

Computed Results:

Full Flow Capacity.....	8.53 cfs
Full Flow Depth.....	1.50 ft
Velocity.....	4.83 fps
Flow Area.....	1.77 sf
Critical Depth.....	1.13 ft
Critical Slope.....	0.0247 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	8.53 cfs
QMAX @.94D.....	9.18 cfs
Froude Number.....	FULL



CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5839 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. _____ OF _____
JOB ALVARADO G&D
SUBJECT AREA CALC
CLIENT _____
JOB NO. _____
BY MTW DATE 6/15/94

BASIN A

PROPOSED

TREATMENT D

NEW BLDG

4285 SF

EXIST BLDGS/PAVING

220 x 45 = 5720

160 x 26 = 4160

110 x 40 = 4400

70 x 90 = 6300

24865 SF
= 0.571 AC

NEW PAVING

12 x 45 = 540

25 x 12 = 300

220 x 5 = 1100

390 x 66 = 25740

10 x 160 = 1600

80 x 20 = 1600

170 x 6 = 1020

31900 SF
= 0.732 AC

TOTAL = 1.303 AC

TREATMENT C

PROPOSED

390 x 100 = 39000

310 x $\frac{130}{2}$ = 20150

$\frac{250+110}{2}$ x 125 = 22500

160 x $\frac{50+90}{2}$ = 11200

200 x $\frac{55+85}{2}$ = 14000

200 x 30 = 6000

310 x 28 = 8680

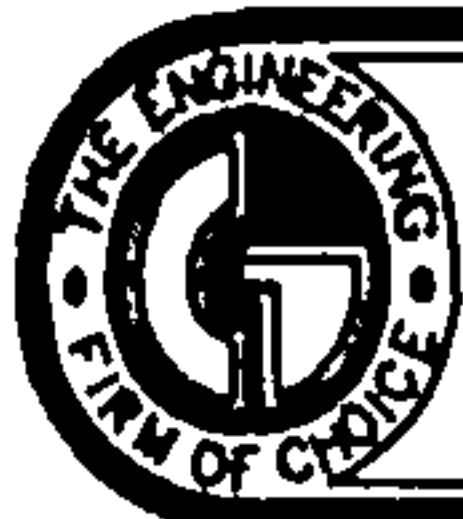
240 x 25 = 6000

127,530 SF
= 2.928 AC

EXISTING:

D = 20580 SF = 0.472 AC

C = 163,715 SF = 3.759 AC



CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. _____ OF _____
JOB ALVARADO ELEM
SUBJECT AREA CALCS
CLIENT _____
JOB NO. _____
BY MTW DATE 6/15/94

BASIN B

PROPOSED

PLAYGROUND

$$310 \times 200 = 62000$$

SAND BOX

$$155 \times 60 = 9300$$

$$100 \times 55 = 5500$$

COURTYARD

$$80 \times 48 = 3840 + 4370 + 4000 + 6175$$

LANDSCAPE

$$130 \times 15 = 1950$$

$$20 \times 20 = 400$$

$$120 \times 22 = 2640$$

TREATMENT C

$$A = 100,175 \text{ SF} \\ = 2.30 \text{ AC}$$

BUILDINGS/PAVING:

$$295 \times 225 = 2350 = 49480$$

$$100 \times 125 = 12500$$

$$60 \times 20 = 1200$$

$$110 \times 12 = 1320$$

$$60 \times 10 = 600$$

$$160 \times 12 = 1920$$

$$30 \times 20 = 600$$

TREATMENT D

$$= 67,620 \text{ SF} \\ = 1.552 \text{ AC}$$

$$\text{TOTAL} = 3.852 \text{ AC}$$

EXISTING

TREATMENT D

$$49480 \text{ SF}$$

$$+ 12500$$

$$+ 6400$$

$$68380 = 1.570 \text{ AC}$$

TREATMENT C

$$= 2.282 \text{ AC}$$

CITY OF ALBUQUERQUE



November 14, 2008

G. Donald Dudley, R.A.
Simms Tower Studio 850
400 Gold Ave. SW
Albuquerque, NM 87102

**Re: Alvarado Elementary Kindergarten Addition, 1100 Solar Road NW,
Traffic Circulation Layout
Architect's Stamp dated 10-27-08 (E14-D005)**

Dear Mr. Dudley,

Based upon the information provided in your submittal received 10-28-08, a Traffic Circulation Layout is not required for the above referenced site.

If you have any questions, you can contact me at 924-3991.

PO Box 1293

Albuquerque

NM 87103

C: File

www.cabq.gov

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 1, 2004

Mario Juarez-Infante, P.E.
Wilson & Company
2600 The American Rd. SE, Suite 100
Rio Rancho, NM 87124

Re: Alvarado Elementary School, 1100 Solar Rd NW, Traffic Circulation Layout
Engineer's Stamp dated 5-27-04 (E14-D5)

Dear Mr. Juarez-Infante,

The TCL submittal received 5-27-04 is approved for Building Permit. The plan is stamped and signed as approved. A copy of this plan will be needed for each of the building permit plans. Please keep the original to be used for certification of the site for final C.O. for Transportation.

If a temporary CO is needed, a copy of the original TCL that was stamped as approved by the City will be needed. This plan must include a statement that identifies the outstanding items that need to be constructed or the items that have not been built in "substantial compliance," as well as the signed and dated stamp of a NM registered architect or engineer. Submit this TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

When the site is completed and a final C.O. is requested, use the original City stamped approved TCL for certification. A NM registered architect or engineer must stamp, sign, and date the certification TCL along with indicating that the development was built in "substantial compliance" with the TCL. Submit this certification TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

Once verification of certification is completed and approved, notification will be made to Building Safety to issue Final C.O. To confirm that a final C.O. has been issued, call Building Safety at 924-3306.

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

cc: file