CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

July 10, 2009

Mario Juarez-Infante, P.E.,
Wilson & Company
4900 Lang Ave. NW
Albuquerque, NM 87109

Re: Approval of Permanent (Final) Certificate of Occupancy (C.O.) for
La Luz Elementary, [F-14 / D045]
225 Griego Rd. NW
Engineer's Stamp Dated 07/02/09

Dear Mr. Juarez-Infante:

The TCL / Letter of Certification submitted on July 10, 2009 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to the Building and Safety Section.

Sincerely,

Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CITY OF ALBUQUERQUE

September 19, 2008

Mario Juarez-Infante, P.E.
Wilson & Company
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: La Luz Elementary School, 225 Griegos Rd NW, Traffic Circulation Layout
Engineer's Stamp dated 9-15-08 (F14-D045)

Dear Mr. Juarez-Infante,

The TCL submittal received 9-08-08 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. **Public infrastructure or work done within City Right-of-Way shown on these plans is for information only and is not part of approval. A separate DRC and/or other appropriate permits are required to construct these items.**

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

C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

June 29, 2009

Mario Juarez-Infante, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

Re: La Luz Elementary School, 225Greigos Rd. NW,
(F-14/D045)
Approval of Permanent Certificate of Occupancy,
Engineer's Stamp Dated: 3-26-09
Engineer's Certification Date: 6-17-09

Dear Mr. Infante,

Based upon the information provided by our visual inspection on 6/29/09, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

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

Sincerely,

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

C: CO Clerk—Katrina Sigala
file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

April 23, 2009

Mario G. Juarez-Infante, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

Re: La Luz Elementary School - Administration Addition - Grading and Drainage Plan
Engineer's Stamp dated 4-10-09 (F14/D045)

Dear Mr. Juarez-Infante,

Based upon the information provided in your submittal received 4-20-09, 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.

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

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

C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

March 27, 2009

Mario G. Juarez-Infante, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

Re: La Luz Elementary School Grading and Drainage Plan, 225 Griegos Rd NW Engineer's Stamp dated 3-26-09 (F14/D045)

Dear Mr. Ashton,

Based upon the information provided in your submittal received 3-26-09, the above referenced plan is approved for Building Permit and SO19 Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

A separate permit (SO 19) is required for construction within City ROW. A copy of this approval letter must be on hand when applying for the excavation/barricading permit.

This is the plan to certify for release of Certificate of Occupancy.

To obtain a temporary or permanent CO, Engineer Certification of the Grading Plan per the DPM is required and the storm drain work in the City ROW must be inspected and accepted. Please contact Duane Schmitz, 235-8016, to schedule an inspection.

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

C: file
Duane Schmitz, Street/Storm Drain Maintenance

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

To: Robert Fierro
Fax: 348-4072

August 18, 2008

Tyler J. Ashton, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

Re: La Luz Elementary School Grading and Drainage Plan
Engineer's Stamp dated 8-18-08 (F14/D045)

Dear Mr. Ashton,

Based upon the information provided in your submittal received 8-18-08, the above referenced plan is approved for Building Permit and SO19 Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

A separate permit (SO 19) is required for construction within City ROW. A copy of this approval letter must be on hand when applying for the excavation/barricading permit.

To obtain a temporary or permanent CO, Engineer Certification of the Grading Plan per the DPM is required and the storm drain work in the City ROW must be inspected and accepted. Please contact Duane Schmitz, 235-8016, to schedule an inspection.

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

C: file
Antoinette Baldonado, Excavation and Barricading
Duane Schmitz, Street/Storm Drain Maintenance

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

La Luz Elementary School

Drainage Report

Prepared by

WILSON &COMPANY
ENGINEERS & ARCHITECTS
4900 Lang Ave. NE
Albuquerque, NM 87109

FINAL SUBMITTAL VERSION

August 18, 2008

I, Tyler J. Ashton, P.E., do hereby certify that this document was prepared by me or under my direction, and is true and correct to the best of my knowledge and belief and that I am a duly registered Professional Engineer under the laws of the State of New Mexico.

Tyler J. Ashton, PE
NMPE No. 16205
Date 8-18-08

Project Location

La Luz Elementary School is located at 225 Griegos Rd NW, Albuquerque NM, Zone Atlas Map F-14. The legal description of the site is Tract 8A map 33. The site is currently located in FIRM map 35001C0119E panel 119 of 825 in Zone X (Areas determined to be outside the 0.2% annual chance floodplain).

Methodology

Section 22.2 of the City of Albuquerque Development Process Manual (DPM) was followed to calculate the design volume. The tables and formulas in Part A were followed using the 100-year 10_{day} and the 100-year 6_{hour} storm event frequencies. The site is located in Zone 2 as designated in Figure A-1 (between Rio Grande and San Mateo St.). Table A-8 was used to determine excess precipitation, E, designated by zone and treatment. The total volumetric runoff was computed as per section A.5. Peak discharges were computed using the Rational Method.

Existing Conditions

The existing topography appears to be flat over the entire school campus. The Web Soil Survey designates the existing earth to be Gila loam, (Gb). Describes it having slopes from 0-1% with a depth of more than 80 inches, well drained with a moderate high water capacity. Currently there is no additional offsite runoff that enters into the site.

A. Hydrology Analysis:

The size of the site is aproximately 6.05 acres of land treatment type B, C, & D from table A-4 of the DPM. Peak discharge rates for watersheds smaller than 40 acres may be computed using section A.6 and table A-9 (Peak Discharge cfs/acre), where Q_p is the peak discharge. Pre-development peak discharge $Q_{p\ 101}$ is computed as shown in the following example:

Given Basin 101:

Area = 0.581 acres
Q_p = 4.70 cfs/acre (Zone 2, Treatment D)

Area = 0.470 acres
Q_p = 3.14 cfs/acre (Zone 2, Treatment C)

Find: $Q_{p\ total}$

Solution: $Q_{P\ total} = Q_{pc} \times A_{c+} Q_{pD} \times A_D$ = 4.70 cfs/acre x0.581 acres +3.14 cfs/acre x 0.470 acres

$Q_{P\ total} = 2.73\ cfs + 1.48\ cfs = 4.21\ cfs$
$Q_{P\ total} = 4.21\ cfs$

Pre-Development Volumetric Runoff

Given: $E_D = 2.12$ *inches* $E_C = 1.13$ *inches* $AC = 1.63$ *acres*

Find: V_{100} (6-hour), V_{100} (10-days)

Solution: V_{100} (6 hour) = $[E_{weighted} \times (A_A + A_B + A_C + A_D)]/12 = 0.147$ acre-ft
V_{100} (10 days)= $V_{360} + A_D \times (P_{10days} - P_{360})/12 = 0.224$ acre-ft

Table 1. Existing Hydrology for La Luz Elementary School

Existing Hydrology

Basin	***Area (acres)***	$Q_{100}(ft^3/s)$	V_{10days}***(acre-ft)***
Basin 101	1.051	4.21	0.224
Basin 102	0.790	3.29	0.190
Basin 103	1.182	3.33	0.123
Basin 104	0.372	1.75	0.115
Basin 105	2.659	11.46	0.681
TOTAL	6.05	24.04	1.333

Proposed Conditions

The purpose of this Grading & Drainage Plan is to obtain the building permit required. The improvements of the site will include extending and repaving a parking lot on the northwest parking lot and adding a building with an envelope of approximently 1100 ft^2. No improvements will occur in Basin 201 & 202. Basin 203, 204, and 205 are modified due to Basin 204 improvements. Basin 204 will no longer drain nor puddle towards the southeast of its basin. Runoff produced in this Basin will be discharged to an inlet on Griegos Road through a 12" SDR-35 storm drain system. The rest of the site will keep its natural flow path.

B. Hydrology Analysis

Post-development flows are determined based on the post-development watershed boundary. Proposed rough grading does not alter the watershed boundry. Therefore the post-development watershed boundry remains at 6.04 acres for the total area. Below is an example of the calculations for table 2 (Proposed Hydrology for la Luz Elementary School)

Given Basin 204:

Area = 0.434 acres
$Q_p = 4.70$ cfs/acre (Zone 2, Treatment D)

Area = 0.00 acres
$Q_p = 3.14$ cfs/acre (Zone 2, Treatment C)

Find: $Q_{p\ total}$

Solution: $Q_{P\ total} = Q_{pc} \times A_{c+} Q_{pD} \times A_D = 4.70$ cfs/acre x 0.434 acres +3.14 cfs/acre x 0.00 acres

$Q_{P\ total} = 2.04\ cfs + 0.00\ cfs = 2.04$ cfs
$Q_{P\ total} = 2.04$ cfs

Post-Development Volumetric Runoff

Given: $E_D = 2.12$ *inches* $E_C = 1.13$ *inches* $AC = 0.434$ *acres*

Find: V_{100} (6-hour), V_{100} (10-days)

Solution: V_{100} (6 hour) = $[E_{weighted} \times (A_A + A_B + A_C + A_D)]/12 = 0.077$ acre-ft
V_{100} (10 days)= $V_{360} + A_D \times (P_{10days} - P_{360})/12 = 0.135$ acre-ft

Table 2. Proposed basins for La Luz Elementary School
Proposed Hydrology

Basin	***Area(acres)***	$Q_{100}(ft^3/s)$	V_{10days}***(acre-ft)***
Basin 201	1.051	4.21	0.224
Basin 202	0.790	3.29	0.190
Basin 203	1.093	3.08	0.114
Basin 204	0.434	2.041	0.135
Basin 205	2.685	11.58	0.689
TOTAL	6.05	24.20	1.352

Conclusions

La Luz Elementary School is located on Zone Atlas Map F-14. The precipitation frequencies used for the hydrology are the 100-year, $6_{hour,}$ and 100-year, 10_{day} events. The proposed conditions will include storm drain system, which will freely discharge to an inlet located on Griegos Road. The school improvements (Basin 204) will have a total Q_p of 2.041 ft^3/s and a volumteric volume of 0.135 acre-ft. The rest of the site will not have an effect on the proposed site.

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}		3.95	inches

Basin 101 - Existing

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	20465.00	ft^2
		0.470	ac
Area of Treatment D	=	25307.00	ft^2
		0.581	ac
Total Area	=	45772.00	ft^2
		1.051	ac

Volumetric Flow

Weighted E	=	1.677	inches
Volume (6hr)	=	0.147	acre-ft
Volume (24hr)	=	0.166	acre-ft
Volume (4days)	=	0.193	acre-ft
Volume (10days)	=	0.224	acre-ft

Peak Rate of Discharge

Q_{100}	=	4.206	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}	=	3.95	inches

Basin 102 - Existing

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	1800.00	ft^2
		0.041	ac
Area of Treatment C	=	8983.00	ft^2
		0.206	ac
Area of Treatment D	=	23645.00	ft^2
		0.543	ac
Total Area	=	34428.00	ft^2
		0.790	ac

Volumetric Flow

Weighted E	=	1.792	inches
Volume (6hr)	=	0.118	acre-ft
Volume (24hr)	=	0.136	acre-ft
Volume (4days)	=	0.161	acre-ft
Volume (10days)	=	0.190	acre-ft

Peak Rate of Discharge

Q_{100}	=	3.293	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}	=	3.95	inches

Basin 103 - Existing

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	31427.00	ft^2
		0.721	ac
Area of Treatment C	=	13468.70	ft^2
		0.309	ac
Area of Treatment D	=	6578.40	ft^2
		0.151	ac
Total Area	=	51474.10	ft^2
		1.182	ac

Volumetric Flow

Weighted E	=	1.043	inches
Volume (6hr)	=	0.103	acre-ft
Volume (24hr)	=	0.108	acre-ft
Volume (4days)	=	0.115	acre-ft
Volume (10days)	=	0.123	acre-ft

Peak Rate of Discharge

Q_{100}	=	3.326	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}	=	3.95	inches

Basin 104 - Existing

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	0.00	ft^2
		0.000	ac
Area of Treatment D	=	16184.00	ft^2
		0.372	ac
Total Area	=	16184.00	ft^2
		0.372	ac

Volumetric Flow

Weighted E	=	2.120	inches
Volume (6hr)	=	0.066	acre-ft
Volume (24hr)	=	0.078	acre-ft
Volume (4days)	=	0.095	acre-ft
Volume (10days)	=	0.115	acre-ft

Peak Rate of Discharge

Q_{100}	=	1.746	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}	=	3.95	inches

Basin 105 - Existing

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	28970.00	ft^2
		0.665	ac
Area of Treatment D	=	86838.61	ft^2
		1.994	ac
Total Area	=	115808.61	ft^2
		2.659	ac

Volumetric Flow

Weighted E	=	1.872	inches
Volume (6hr)	=	0.415	acre-ft
Volume (24hr)	=	0.481	acre-ft
Volume (4days)	=	0.573	acre-ft
Volume (10days)	=	0.681	acre-ft

Peak Rate of Discharge

Q_{100}	=	11.458	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}		3.95	inches

Basin 203 - Proposed

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	29010.75	ft^2
		0.666	ac
Area of Treatment C	=	12433.00	ft^2
		0.285	ac
Area of Treatment D	=	6159.36	ft^2
		0.141	ac
Total Area	=	47603.11	ft^2
		1.093	ac

Volumetric Flow

Weighted E	=	1.045	inches
Volume (6hr)	=	0.095	acre-ft
Volume (24hr)	=	0.100	acre-ft
Volume (4days)	=	0.106	acre-ft
Volume (10days)	=	0.114	acre-ft

Peak Rate of Discharge

Q_{100}	=	3.079	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}		3.95	inches

Basin 204 - Proposed

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	0.00	ft^2
		0.000	ac
Area of Treatment D	=	18914.60	ft^2
		0.434	ac
Total Area	=	18914.60	ft^2
		0.434	ac

Volumetric Flow

Weighted E	=	2.120	inches
Volume (6hr)	=	0.077	acre-ft
Volume (24hr)	=	0.091	acre-ft
Volume (4days)	=	0.111	acre-ft
Volume (10days)	=	0.135	acre-ft

Peak Rate of Discharge

Q_{100}	=	2.041	cfs

Given:
100-year 24-hour storm
Zone 2

Excess Precipitation Treatment A	=	0.53	
Excess Precipitation Treatment B	=	0.78	inches
Excess Precipitation Treatment C	=	1.13	inches
Excess Precipitation Treatment D	=	2.12	inches
Peak Discharge Treatment A	=	1.56	cfs/ac
Peak Discharge Treatment B	=	2.28	cfs/ac
Peak Discharge Treatment C	=	3.14	cfs/ac
Peak Discharge Treatment D	=	4.70	cfs/ac
P_{360}	=	2.35	inches
P_{1440}	=	2.75	inches
P_{4days}	=	3.30	inches
P_{10days}		3.95	inches

Basin 205 - Proposed

Area of Treatment A	=	0.000	ft^2
		0	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	28970.00	ft^2
		0.665	ac
Area of Treatment D	=	87977.00	ft^2
		2.020	ac
Total Area	=	116947.00	ft^2
		2.685	ac

Volumetric Flow

Weighted E	=	1.875	inches
Volume (6hr)	=	0.419	acre-ft
Volume (24hr)	=	0.487	acre-ft
Volume (4days)	=	0.579	acre-ft
Volume (10days)	=	0.689	acre-ft

Peak Rate of Discharge

Q_{100}	=	11.581	cfs

Culvert Calculator Report
Capacity: 12" SDR-35 @ 0.4%

Solve For: Discharge

Culvert Summary					
Allowable HW Elevation	4,968.04	ft	Headwater Depth/Height	1.00	
Computed Headwater Elev	4,968.04	ft	Discharge	2.24	cfs
Inlet Control HW Elev.	4,967.98	ft	Tailwater Elevation	4,966.80	ft
Outlet Control HW Elev.	4,968.04	ft	Control Type	Outlet Control	

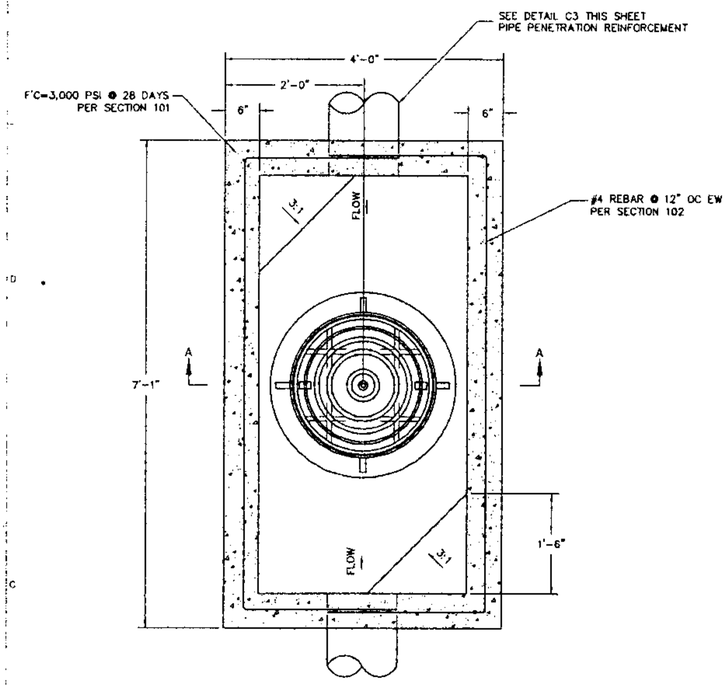
Grades					
Upstream Invert	4,967.04	ft	Downstream Invert	4,966.80	ft
Length	60.00	ft	Constructed Slope	0.004000	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	0.64	ft
Slope Type	Mild		Normal Depth	0.81	ft
Flow Regime	Subcritical		Critical Depth	0.64	ft
Velocity Downstream	4.22	ft/s	Critical Slope	0.007226	ft/ft

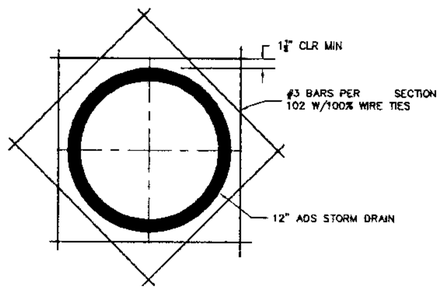
Section					
Section Shape	Circular		Mannings Coefficient	0.013	
Section Material	Concrete		Span	1.00	ft
Section Size	12 inch		Rise	1.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	4,968.04	ft	Upstream Velocity Head	0.18	ft
Ke	0.20		Entrance Loss	0.04	ft

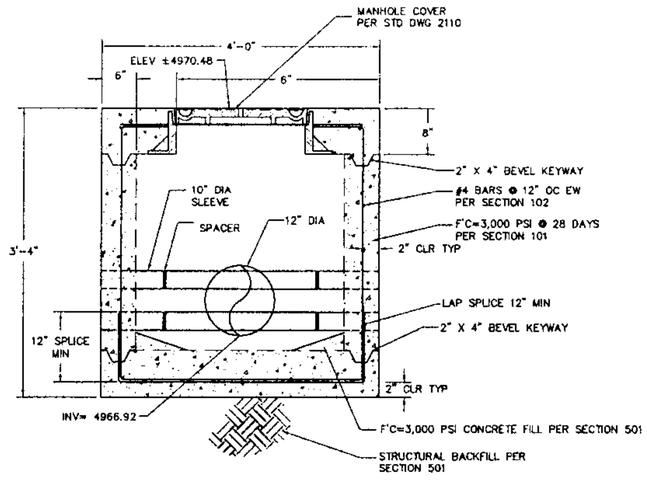
Inlet Control Properties					
Inlet Control HW Elev.	4,967.98	ft	Flow Control	Unsubmerged	
Inlet Type	Beveled ring, 33.7° bevels		Area Full	0.8	ft2
K	0.00180		HDS 5 Chart	3	
M	2.50000		HDS 5 Scale	B	
C	0.02430		Equation Form	1	
Y	0.83000				



C1 JUNCTION BOX PLAN VIEW
SCALE: 1"=1'

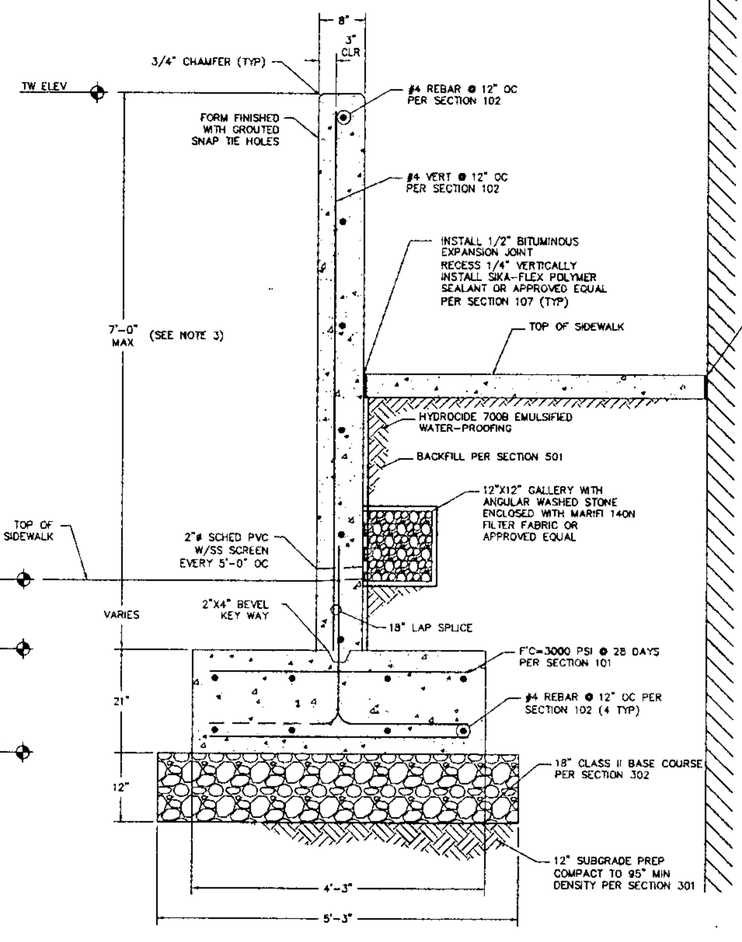


C3 JUNCTION BOX DETAIL 'A'
SCALE: 1"=2'



SECTION A-A

B1 JUNCTION BOX ELEVATION VIEW
SCALE: 1"=1'



NOTES:
1 INSTALL TOOLED VERTICAL JOINTS AT ALL 42" GUARDRAIL POST LOCATIONS.
2 BACKFILL REQUIREMENTS SHALL COMPLY WITH SECTION 501.
3 WHERE THE HEIGHT EXCEEDS 7'-0" BUT LESS THAN 8'-3", FOOTINGS SHALL BE 5'-3" WIDE X 24" HEIGHT. INCREASE WIDTH OF BASE COURSE 6'-3".

A4 RETAINING WALL: 6'-0" TO 7'-0"
SCALE: 1" = 1'

DESIGN PLUS LLC
2415 PRINCETON DR. NE, SUITE G-2
ALBUQUERQUE, NM 87107
505.843.7587 505.843.6773 (f)
www.designplusabq.com

WILSON & COMPANY
4900 LANG AVE. N.E.
SUITE 201
ALBUQUERQUE, NEW MEXICO 87109
(505) 348-4000
(505) 348-4077
www.wilsonco.com

MARIO E. CHAVEZ NEW MEXICO 15340 REGISTERED PROFESSIONAL ENGINEER 02/27/09

APS

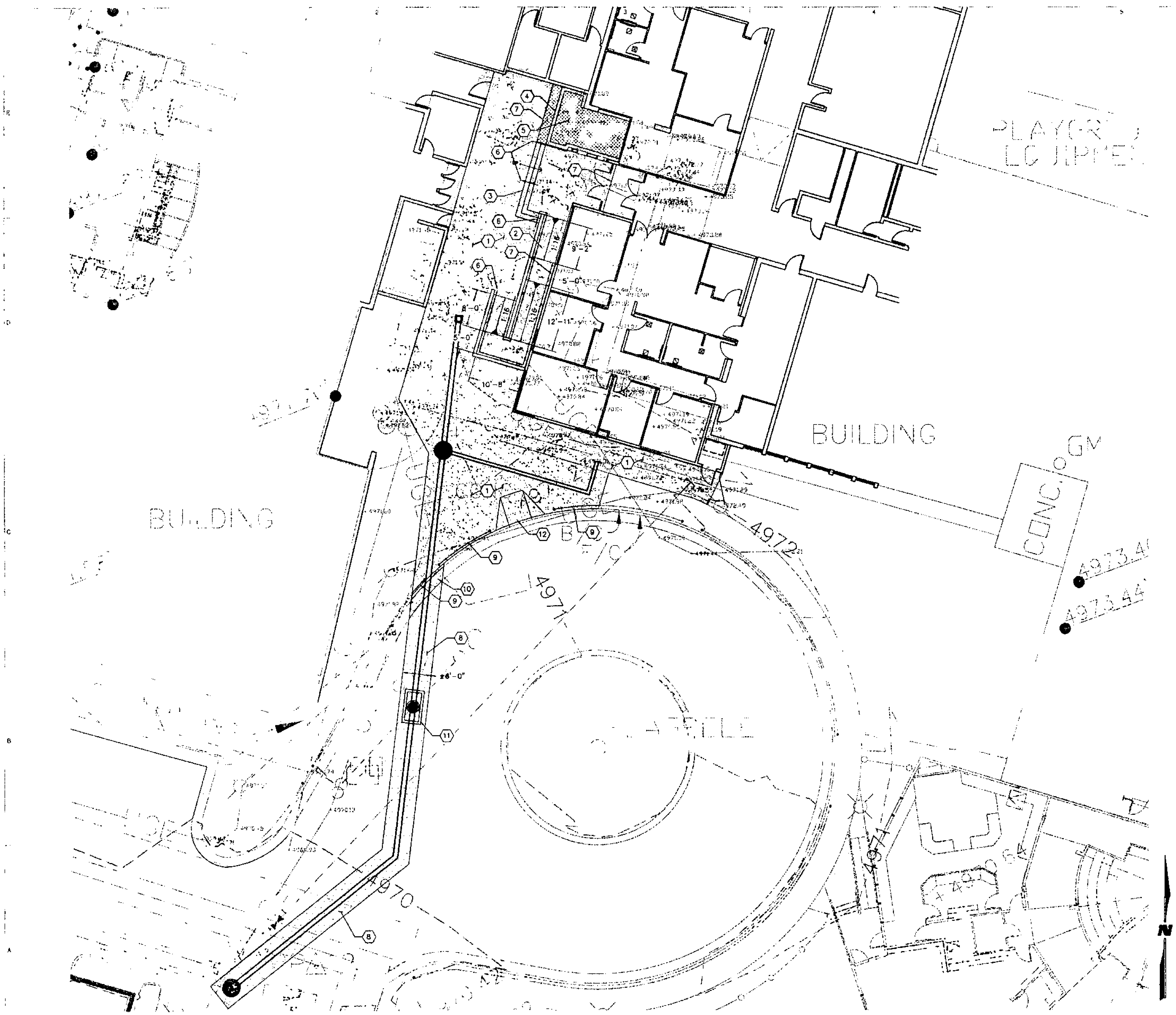
ALBUQUERQUE PUBLIC SCHOOLS
LA LUZ ELEMENTARY SCHOOL
225 GRIEGOS ROAD NW
ALBUQUERQUE, NEW MEXICO 87107

DATE:
REVISIONS
PROJECT NO: 0960000/000
CAD DWG FILE:
DRAWN BY: JEM
CHECKED BY: DNP
COPYRIGHT:
DESIGN PLUS, LLC
SHEET TITLE

DETAILS

C-502
SHEET OF

M:\IDS\09-600-002-00\CADD\SHEETS\07_DTLS\96002_DTL02.dwg 3/20/2009 11:24:32 AM MDT



A1 SITE PLAN
SCALE: 1" = 10'

M:\IDS\09-600-002-00\CADD\SHEETS\03_SITE\96002_SITE.dwg 3/20/2009 11:08:35 AM MDT

GENERAL CIVIL NOTES

1. CONTRACTOR TO SAWCUT NEAREST JOINT AND MATCH EXISTING JOINT PATTERN FOR PROPOSED CONCRETE.

SHEET KEY NOTES

1. INSTALL 4" PCC SIDEWALK. SEE DETAIL B5/C-501.
2. INSTALL ADA RAMP. SEE SHEET C-401 FOR DETAILS.
3. INSTALL STAIRS. SEE SHEET C-402 FOR DETAILS.
4. INSTALL PLANTER WALL. SEE DETAIL D4/C-501.
5. INSTALL LANDSCAPE. SEE LANDSCAPE ARCHITECTURAL PLANS FOR DESIGN.
6. INSTALL HANDRAIL. SEE ARCHITECTURAL PLANS FOR DESIGN.
7. INSTALL TURNDOWN SIDEWALK. SEE DETAIL D2/C-501.
8. INSTALL 3" ASPHALT PAVEMENT. SEE DETAIL D5/C-501.
9. REINSTALL CHAINLINK FENCE. SEE DETAIL A1/C-501.
10. INSTALL CURB AND GUTTER. MATCH EXISTING.
11. INSTALL UTILITY JUNCTION BOX. SEE DETAIL C1/C-502.
12. RECONSTRUCT EXISTING ADA WHEELCHAIR RAMP WITH WATER BLOCK. SEE DETAIL C5/C-503.

LEGEND

- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- WATER METER
- SANITARY CLEANOUT
- POWER POLE
- LIGHT POLE
- CATCH BASIN
- WATER VALVE
- FIRE HYDRANT
- TRAFFIC SIGN
- ROOF DRAIN
- GAS LINE, UNDERGROUND
- ELECTRICAL LINE, OVERHEAD
- ELECTRICAL LINE, UNDERGROUND
- CHAINLINK FENCE
- PROPOSED 4" PCC
- PROPOSED 3" ASPHALT
- PROPOSED LANDSCAPE
- PROPOSED HANDRAIL

DESIGN PLUS LLC
2415 PRINCETON DR. NE, SUITE G-2
ALBUQUERQUE, NM 87107
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WILSON & COMPANY
4900 LANG AVE. N.E.
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(505) 348-4000
(505) 348-4072
WWW.WILSONCO.COM

MARK SUAREZ-INFANTE
NEW MEXICO
15340
03/20/09
LICENSED PROFESSIONAL ENGINEER

APS

ALBUQUERQUE PUBLIC SCHOOLS
LA LUZ ELEMENTARY SCHOOL
225 GRIEGOS ROAD NW
ALBUQUERQUE, NEW MEXICO 87107

DATE:
REVISIONS

PROJECT NO: 0960000200
CAD DWG FILE:
DRAWN BY: JEM
CHECKED BY: DNP
COPYRIGHT: DESIGN PLUS, LLC
SHEET TITLE

SITE PLAN

C-102
SHEET ___ OF ___

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

November 5, 2004

John A. Tellez, P.E.
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: Certification Submittal for Final Building Certificate of Occupancy for
La Luz Elementary School Addn, [F-14 / D45]
225 Griegos Road NW
Engineer's Stamp Dated 11/04/04

Dear Mr. Tellez:

The TCL / Letter of Certification submitted on November 4, 2004 is sufficient for acceptance by this office for final Certificate of Occupancy (C.O.). Notification has been made to the Building and Safety Section.

Sincerely,

Nilo E. Salgado-Fernandez, P.E.
Senior Traffic Engineer
Development and Building Services
Planning Department

c: Engineer
Hydrology file
CO Clerk

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Planning Department
Transportation Development Services Section

August 5, 2003

John A Tellez
Wilson and Company
4900 Lang Ave. NE
Albuquerque, NM
87109

Re: Traffic Circulation Layout (TCL) Submittal for Building Permit Approval for
La Luz Elementary School [F-14/D45]
225 Griegos Road NW, Albuquerque, NM
Engineer's Stamp Dated 7-15-03

Dear Mr. Rogers:

The TCL submittal dated July 15, 2003 is approved, stamped and signed as such. Two copies will be required: one for each of the building permit plans and the original to be kept by you to be used for certification of the site for final C.O. for Transportation.

If a temporary CO is needed then a copy of the original TCL that was stamped as approved by the City which includes a statement that identifies the outstanding items that need to be constructed or the items that have not been built in "substantial compliance" . This statement requires a NM registered architect or engineer stamp to be dated. 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 needs stamp 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,

Richard Dourte, PE
Traffic Engineer
Development and Building Services

cc: Hydrology file
file

RECEIVED
NOV 04 2004
HYDROLOGY SECTION

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

CITY OF ALBUQUERQUE

November 4, 2004

Mr. John Tellez, P.E.
WILSON & COMPANY
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: LA LUZ ELEMENTARY SCHOOL ADDITION
225 Griegos Road NW
Approval of Permanent Certificate of Occupancy (C.O.)
Engineer's Stamp dated 07/15/2003 (F-14/D045)
Certification dated 11/04/2004

Dear John,

Based upon the information provided in your submittal received 11/04/2004, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

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

Sincerely,

Arlene V. Portillo
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

C: Phyllis Villanueva
File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

P#2076958
TLC Plumbing
12/22/03

August 4, 2003

Dan Aguirre, PE
Wilson & Company
2600 American Rd, SE, Ste. 100
Rio Rancho, NM 87124

Re: La Luz Elementary School Grading and Drainage Plan
Engineer Stamp 7-15-03 (F14/D45)

Dear Mr. Aguirre,

Based upon information provided in your submittal dated 7-14-03, the above referenced drawings are approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. A separate permit is required for construction within City R/W. A copy of this approval letter must be on hand when applying for the excavation permit.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. Refer to the attachment that is provided with this letter for details. If you have any questions please feel free to call the Public Works Hydrology section at 768-3654 (Charles Caruso) or 768-3645 (Brian Wolfe).

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

If you have any questions, you can contact me at 924-3986.

SO #19 is required.
-KOM

Sincerely,

Bradley L. Bingham, PE
Sr. Engineer, Planning Dept.
Development and Building Services

C: file
Chuck Caruso, CoA

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

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

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

LA LUZ ELEMENTARY ADDITION
ZONE ATLAS F-14

C/G PROJECT #W01-161-5097

GRADING & DRAINAGE
MASTER PLAN
SUBMITTAL FOR BUILDING PERMIT

January 14, 1998

JAN 15 1998
HYDROLOGY SECTION

DESIGN NARRATIVE
LA LUZ ELEMENTARY ADDITION

GRADING AND DRAINAGE PLAN
December 03, 1997

The existing school complex is built on a series of individual properties owned by the Albuquerque Public School System. It consists of classrooms, both permanent and portable, which encompass a large percentage of the site. These are located just west of the Alameda Drain/Griegos Lateral, managed and maintained by the Middle Rio Grande Conservancy District. The mailing address of this facility is 223 Griegos Road NW and is located just west of Second Street in the North Valley of Albuquerque, New Mexico.

The entire site is approximately 5.66 acres. This phase of construction will involve the addition of a new multi-purpose facility and some concrete paving around this new building, as well as an extension of the asphalt paved surface to create a new bus pick-up and drop-off area. The graveled parking area will remain basically unchanged and the existing asphalt parking and drive-up area will be reduced in surface area to accommodate the new addition. This phase of construction will concentrate new work in the southwest corner of the site.

The existing site is relatively flat and ponds much of the drainage within landscaped areas or graveled parking areas; however, the majority of the storm runoff from the north half of the site drains to an existing catch basin which discharges into the Alameda Drain.

The new construction will include construction of a catch basin and discharge pipe which will direct storm runoff to existing storm drain facilities in Griegos Road which borders the site on the south perimeter. These storm facilities outlet to the Alameda Drain.

The Master Plan for this facility, at this particular time, will involve some minor building additions which will add impervious surface area to the site. The main impact to the site in future development will be the asphalt paving of the existing gravel parking area on the south end of the site. When this work is funded and construction begins, the plan is to direct surface runoff from this parking area to the Alameda Drain. The new paving planned in this phase of construction will eliminate runoff ponding areas located in the paved area just south of the existing facilities.

DRAINAGE COVENANT

This Drainage Covenant between Albuquerque Public Schools ("Owner 1) [his, her, their, or its] heirs, executors, successors, assigns and transferees, whose address is 915 Oak Street SE, Albuquerque, NM 87106 and Albuquerque Public Schools ("Owner 2") [his, her, their, or its] heirs, executors, successors, assigns and transferees, whose address is 915 Oak Street SE, Albuquerque, NM 87106, is made in Albuquerque, Bernalillo County, New Mexico and is entered into as of the date the Owners sign this covenant.

Owner 1 is the Owner of certain real property located at 223 Griegos NW, Tracts 8-A, 8E-Z, 8F-Z, 8-R, 8-T, 8-Q, 8-S, u-P, 8B-1, 8C-1, 8D-1, 8G-1, 8H-1, 8H-2, 8I-1, 8I-2 on MRGCD Map 33 [give general description, for instance, subdivision, lot and block, or street address] in Bernalillo County, New Mexico ("Property 1").

Owner 2 is the Owner of certain real property located at 223 Griegos NW - See Above [give general description, for instance, subdivision, lot and block, or street address] in Bernalillo County, New Mexico ("Property 2").

Owner 1 shall construct the "Drainage Facility" at Owner 1's sole expense. If any portion of the Drainage Facility is constructed within Property 2, the design and the construction workmanship of that portion of the Drainage Facility shall be performed to the satisfaction of Owner 2. The Drainage Facility shall consist of: Surface paving, swales, drop inlet and storm drain line connecting to storm facilities in Griegos Road and the Gallegos Lateral, and is more particularly described in Exhibit "A."

Owner 1 agrees to maintain the Drainage Facility at Owner 1's cost.

Owner 2 shall not modify the Drainage Facility, and agrees to accept storm runoff from Property 1 via the Drainage Facility and not impede it any way.

This agreement shall be binding on the Owners, [his, her, their, or its] heirs, executors, successors, assigns and transferees, and on the Owners' Property and constitute covenants running with the Owners' Property until released by the adjacent Owner.

Owner 1: ALBUQUERQUE PUBLIC SCHOOLS
By: George Bello
George Bello
Its: Deputy Superintendent
Dated: Nov. 14, 1997

STATE OF New Mexico)

)ss

COUNTY OF Bernalillo)

The foregoing instrument was acknowledged before me this 14th day of November, 1997, by [name of person signing:] George Bello, [title or capacity, for instance, "President" or "Owner":] Deputy Superintendent of [name of the entity which owns the Property if other than the individual signing, for instance, the name of the corporation, partnership, or joint venture:] Albuquerque Public Schools.

Notary Public

My commission Expires:
July 30, 1999

Owner 2:
By: George J. Bello
Its:
Dated: Nov. 14, 1997

STATE OF NEW MEXICO)

)ss

COUNTY OF Bernalillo)

The foregoing instrument was acknowledged before me this 14th day of November, 1997, by [name of person signing:] George J. Bello, [title or capacity, for instance, "President" or "Owner":] Deputy Superintendent of [name of the entity which owns the Property if other than the individual signing, for instance, the name of the corporation, partnership, or joint venture:] Albuquerque Public Schools.

Notary Public

My commission Expires:
July 30, 1999

FILENAME: Q:\PMMTF\CIVIL\HYDROLGY\COVENANT.WPD

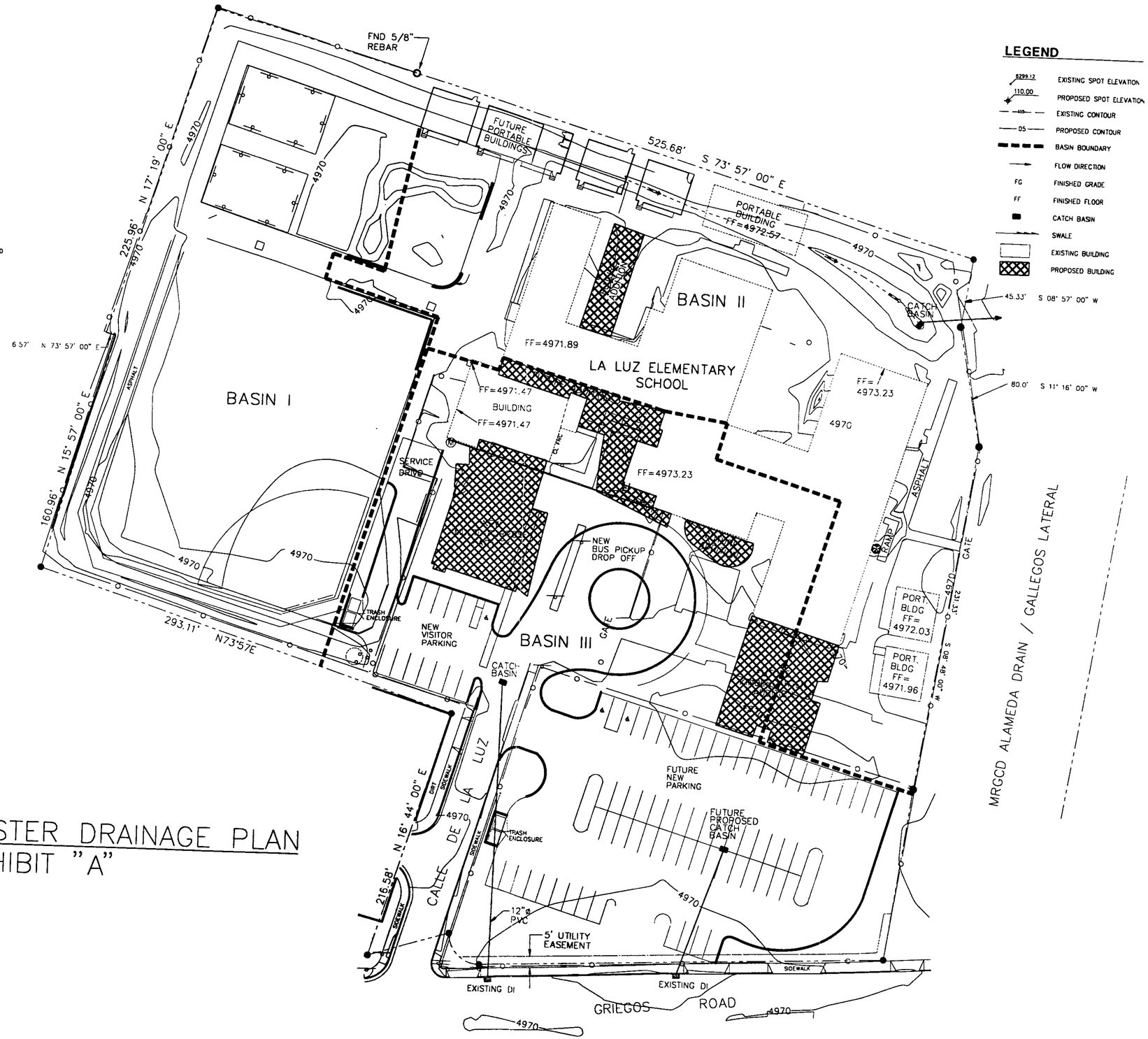
H:\W01\161\DOCUMENT\DRNG-COV.APS

W&C

GRAPHIC SCALE

0 30 60 90 120

(IN FEET)
1 inch = 30 ft.



LEGEND

- 5299.12 — EXISTING SPOT ELEVATION
- 110.00 — PROPOSED SPOT ELEVATION
- 115 — EXISTING CONTOUR
- 05 — PROPOSED CONTOUR
- BASIN BOUNDARY
- FLOW DIRECTION
- FG — FINISHED GRADE
- FF — FINISHED FLOOR
- CATCH BASIN
- SWALE
- EXISTING BUILDING
- PROPOSED BUILDING

MASTER DRAINAGE PLAN
EXHIBIT "A"

Westwork ARCHITECTS, P.A.

Multi-Purpose Facility
La Luz Elementary School
Albuquerque Public Schools

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.
5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8756

Master I-D
MP2
June 2, 1997

Printed November 7, 1997 (1:50pm)

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109 *Phone (505) 344-4080 - Fax (505) 343-8759*

RUNOFF CALCULATIONS - SIMPLIFIED PROCEDURE

By: MIKE J. WALLA Date: 10/7/97

Project: LA LUZ ELEMENTARY ADDITION Zone Atlas: F-14-Z

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: 2

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)									
I	1.56	0	2.28	1.31	3.14	0	4.70	0.21	3.97
II	1.56	0	2.28	0.58	3.14	0.13	4.70	1.06	6.71
III	1.56	0	2.28	0.05	3.14	0.04	4.70	1.18	5.79
DEVELOPED BASIN RATE OF RUNOFF (CFS)									
I	1.56	0	2.28	1.31	3.14	0	4.70	0.21	3.97
II	1.56	0	2.28	0.48	3.14	0.13	4.70	1.16	6.95
III	1.56	0	2.28	0.05	3.14	0.04	4.70	2.28	10.96

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)											
I	0.53	0	0.78	1.31	1.13	0	2.12	0.21	1.52	0.97	5325
II	0.53	0	0.78	0.58	1.13	0.13	2.12	1.06	1.77	1.61	10333
III	0.53	0	0.78	0.19	1.13	1.00	2.12	1.18	2.37	1.59	13721
DEVELOPED BASIN VOLUME OF RUNOFF (CUBIC FEET)											
I	0.53	0	0.78	1.31	1.13	0	2.12	0.21	1.52	0.97	5325
II	0.53	0	0.78	0.48	1.13	0.13	2.12	1.16	1.77	1.68	10819
III	0.53	0	0.78	0.05	1.13	0.04	2.12	2.28	2.37	2.08	17852

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: LA LUZ ELEMENTARY

Comment:

Solve For Full Flow Capacity

Given Input Data:

	Diameter.....	1.00 ft
	Slope.....	0.0150 ft/ft
	Manning's n.....	0.010
	Discharge.....	5.67 cfs

Computed Results:

Full	Flow Capacity.....	5.67 cfs
Full	Flow Depth.....	1.00 ft
	Velocity.....	7.22 fps
	Flow Area.....	0.79 sf
	Critical Depth.....	0.95 ft
	Critical Slope.....	0.0130 ft/ft
	Percent Full.....	100.00 %
	Full Capacity.....	5.67 cfs
	QMAX @.94D.....	6.10 cfs
	Froude Number.....	FULL

Open Channel Flow Module, Version 3.12 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708