CITY OF ALBUQUERQUE

April 25, 2007

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe NE
Albuquerque, NM 87108

Re: Cochiti Elementary School Playground, 3100 San Isidro NW
Engineer's Stamp dated 4-10-07, (H13/D31)

Dear Mr. McGee,

Based upon the information provided in your submittal received on April 10, 2007, the above referenced plan is approved for both Grading and Paving Permits. If you have any questions or need additional information, feel free to contact me at 924-3990.

Sincerely,

Jeremy Hoover, P.E.
Senior Engineer
Hydrology Section
Development and Building Services

cc: file (H13/D31)

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET #13/D31
(Rev. 12/05)

PROJECT TITLE: Cochiti Elementary School Playground ZONE MAP/DRG. FILE # G13
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Cochiti Elementary School, Livingston Place Addition, Albuquerque, New Mexico
CITY ADDRESS: 3100 San Isidro St. NW

ENGINEERING FIRM: ISSACSON & ARFMAN, PA CONTACT: Scott McGee
ADDRESS: 128 MONROE NE PHONE: 268-8828
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: APS CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Studio Southwest CONTACT: Rich Braun
ADDRESS: 2101 Mountain Rd NW PHONE: _____
CITY, STATE: Albuquerque, NM 87104 ZIP CODE: _____

SURVEYOR: Jeff Mortensen & Assoc CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
__X__ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
__X__ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER/ARCHITECT CERT (TCL)
_____ ENGINEER/ARCHITECT CERT (DRB S.P.)
_____ ENGINEER/ARCHITECT CERT (AA)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL SOUGHT:
_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
__X__ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY)

RECEIVED
APR 10 2007
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
__X__ YES - Brad Bingham
_____ NO
_____ COPY PROVIDED

SUBMITTED BY: ISAACSON AND ARFMAN DATE: Wednesday, March 14, 2007

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

373

ISAACSON & ARFMAN, P.A.

CONSULTING ENGINEERING ASSOCIATES

128 MONROE STREET NE
ALBUQUERQUE, NM 87108
PH: 505.268.8828
FAX: 505.268.2632

A Letter of Transmittal From: Bryan Bobrick

To	COA Hydrology
Address	
City	
Attention	Jeremy Hoover
Date	10 Apr, 07 **Job No.** 1581
RE	Cochiti Elementary School Playground (H13 / D31)

WE ARE SENDING YOU: ● Attached ○ Under Separate Cover

1. Revised Grading and Drainage Plan
2.
3.
4.
5.
6.
7.
8.
9.
10.

COMMENTS:

Previously approved per your letter dated March 26, 2007

Minor revisions to title block, and keyed notes #5, #6.

For your review

RECEIVED
APR 10 2007
HYDROLOGY SECTION

City of Albuquerque

March 28, 2000

Gordon T. Mossberg, P.E.
Resource Technology, Inc.
1720-B Randolph Rd. SE
Albuquerque, NM 87106

RE: GRADING & DRAINAGE PLAN FOR COCHITI ELEMENTARY SCHOOL (H-13/D031) ENGINEERS STAMP DATED 3/27/00 SUBMITTED FOR BUILDING PERMIT APPROVAL

Dear Mr. Mossberg,

Based upon the information provided in your March 27, 2000, submittal, the project referred to above is approved for Building Permit for the Multi Purpose Facility (mini gymnasium) and adjacent paving. Per our meeting and conversation on March 23, new construction after this will trigger pond modification and emergency spillway construction.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

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

If you have any questions, please call me at 924-3988.

Sincerely,

Stuart Reeder, P.E.

Stuart Reeder, P.E.
Hydrology Division

xc: Whitney Reierson
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Cochiti Elementary School ZONE ATLAS/DRNG. FILE #: H-13

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

LEGAL DESCRIPTION: Unplatted Parcel Known as Cochiti Elementary School

CITY ADDRESS: 3100 San Isidro Street NW

ENGINEERING FIRM: Resource Technology, Inc. CONTACT: Gordon Mossberg

ADDRESS: 1720 B. Randolph Rd. SE, Alb., NM 87106 PHONE: 243-7300

OWNER: Alb. Public Schools CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: Siegel Design CONTACT: Jonathan Siegel

ADDRESS: 2726 Candelaria Rd. NW, Alb., NM 87107 PHONE: 344-6746

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

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

Resubmittal
according to letter
from Stuart Reeder, PE

DATE SUBMITTED: 3-27-2000

BY: Gordon Mossberg Resource Technology, Inc.

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 PLAN APPROVAL

____ FOUNDATION PERMIT APPROVAL

✓ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ SUBDIVISION CERTIFICATION

____ OTHER _____ (SPECIFY)

RECEIVED
MAR 27 2000
HYDROLOGY SECTION

CITY OF ALBUQUERQUE

March 26, 2007

Scott M. McGee, P.E.
Isaacson & Arfman, P.A.
128 Monroe NE
Albuquerque, NM 87108

Re: Cochiti Elementary School Playground, 3100 San Isidro NW
Engineer's Stamp dated 3-14-07, (H13/D31)

Dear Mr. McGee,

Based upon the information provided in your submittal received on March 14, 2007, the above referenced plan is approved for both Grading and Paving Permits. If you have any questions or need additional information, feel free to contact me at 924-3990.

Sincerely,

Jeremy Hoover, P.E.
Senior Engineer
Hydrology Section
Development and Building Services

cc: file (H13/D31)

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

MARCH 14, 2007

SUPPLEMENTAL INFORMATION

FOR

COCHITI ELEMENTARY SCHOOL

BY

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 Fax. 505-268-2632

HISTORIC FLOWS TO POND:

On-Site Historic Land Condition

Area a	=	0	SF
Area b	=	0	SF
Area c	=	43314	SF
Area d	=	0	SF
Total Area	=	43314	SF

DEVELOPED FLOWS TO POND:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	0	SF
Area c	=	0	SF
Area d	=	31987	SF
Total Area	=	31987	SF

EXCESS PRECIP:

Precip. Zone 2

Ea = 0.53
Eb = 0.78
Ec = 1.13
Ed = 2.12

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	1.13	in.	Developed E	=	2.12	in.

On-Site Volume of Runoff: V360 = E*A / 12

Historic V360	=	4079	CF	Developed V360	=	5651	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 2

Qpa = 1.56
Qbb = 2.28
Qpc = 3.14
Qpd = 4.70

Historic Qp	=	3.1	CFS	Developed Qp	=	3.5	CFS

These calculations represent the portion of the overall play area draining to the existing retention pond. The areas for historic and developed differ due to the addition of two self-ponding play areas. Based on the above calculations, the increased discharge to the retention pond of 0.4 cfs will generate approximately 1600 cf of additional volume. This would increase the pond depth by approximately 0.1'.

12" Drainage Culvert
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\academic\fmw\1581.fm2
Worksheet	12" CULVERT
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.009	
Channel Slope	0.009000	ft/ft
Depth	1.00	ft
Diameter	12.00	in

Results		
Discharge	4.88	cfs
Flow Area	0.79	ft²
Wetted Perimeter	3.14	ft
Top Width	0.00	ft
Critical Depth	0.91	ft
Percent Full	100.00	
Critical Slope	0.007857	ft/ft
Velocity	6.22	ft/s
Velocity Head	0.60	ft
Specific Energy	FULL	ft
Froude Number	FULL	
Maximum Discharge	5.25	cfs
Full Flow Capacity	4.88	cfs
Full Flow Slope	0.009000	ft/ft

(3.5 cfs reqd) OK ✓

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: Cochiti Elementary School Playground ZONE MAP/DRG. FILE #~~G13 D31~~ H13/D31 3/14/07
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Cochiti Elementary School, Livingston Place Addition, Albuquerque, New Mexico
CITY ADDRESS: 3100 San Isidro St. NW

ENGINEERING FIRM: ISSACSON & ARFMAN, PA CONTACT: Scott McGee
ADDRESS: 128 MONROE NE PHONE: 268-8828
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: APS CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

ARCHITECT: Studio Southwest CONTACT: Rich Braun
ADDRESS: 2101 Mountain Rd NW PHONE: _____
CITY, STATE: Albuquerque, NM 87104 ZIP CODE: _____

SURVEYOR: Jeff Mortensen & Assoc CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
- X DRAINAGE REPORT
- X DRAINAGE PLAN 1st SUBMITTAL
- _____ DRAINAGE PLAN RESUBMITTAL
- _____ CONCEPTUAL G & D PLAN
- X GRADING PLAN
- _____ EROSION CONTROL PLAN
- _____ ENGINEER'S CERT (HYDROLOGY)
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT
- _____ ENGINEER/ARCHITECT CERT (TCL)
- _____ ENGINEER/ARCHITECT CERT (DRB S.P.)
- _____ ENGINEER/ARCHITECT CERT (AA)
- _____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL SOUGHT:
- _____ SIA/FINANCIAL GUARANTEE RELEASE
- _____ PRELIMINARY PLAT APPROVAL
- _____ S. DEV. PLAN FOR SUB'D APPROVAL
- _____ S. DEV. FOR BLDG. PERMIT APPROVAL
- _____ SECTOR PLAN APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ FOUNDATION PERMIT APPROVAL
- _____ BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY (PERM)
- _____ CERTIFICATE OF OCCUPANCY (TEMP)
- _____ GRADING PERMIT APPROVAL
- X PAVING PERMIT APPROVAL
- _____ WORK ORDER APPROVAL
- _____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- X YES - Brad Bingham
- _____ NO
- _____ COPY PROVIDED

RECEIVED
MAR 14 2007
HYDROLOGY SECTION

SUBMITTED BY: ISAACSON AND ARFMAN DATE: Wednesday, March 14, 2007

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 30, 2001

Gordon Mossberg, P.E.
Resource Technology, Inc.
1720-B Randolph Rd SE
Albuquerque, New Mexico 87106

RE: COCHITI ELEMENTARY SCHOOL- MULTIPURPOSE FACILITY (MINI GYM)
(San Isidro Rd NW) (H-13/D31)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS PLANS DATED 3/27/2000
ENGINEERS CERTIFICATION DATED 5/30/2001

Dear Mr. Mossberg:

Based upon the information provided in your Engineers Certification submittal dated 5/25/2001, the above referenced site is approved for Permanent Certificate of Occupancy for the Multi Purpose Facility (Mini gym).

Please keep in mind that on future submittals, the Engineers Certification MUST be made on the original grading and drainage plan approved for building permit. (Plan approved has Gordon Mossberg stamp and seal with revised date of 3/26/2000).

Also, the Public Works Department, Hydrology Division has adpoted a "standard" engineers drainage certification which should be utilized when certifying the grading and drainage plans for Certificate of Occupancy and Release of Financial Guaranty approvals (see attachment). This certification should be placed on the grading and drainage plan which was approved for building permit.

Any submittals which do not follow the above criteria will add time and concerns to the process. If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin

Teresa A. Martin
Hydrology Plan Checker
Public Works Department

C: Vickie Chavez, COA
drainage file
attachment

CERTIFICATE OF SUBSTANTIAL COMPLIANCE

I, Gordon T. Mossberg of the firm of Resource Technology, Inc a Registered Professional Engineer in the State of New Mexico, and Project Engineer for the construction of the following facilities: Site Grading & Drainage Cochiti Elementary School Gym

Project No.: 99-030 Sheets C-4, C-5

Including:

✓ Storm Drainage

_____ Sanitary Sewer

_____ Water

_____ Curb and Gutter

✓ Paving

as constructed by _____ of _____

_____ under contract to Albuquerque Public Schools of Albuquerque, N.M.

The Developer; do hereby certify that the facilities noted above have been inspected by me or under my direct supervision and have been constructed in substantial compliance with the City of Albuquerque Public Works Contract No. _____ contract documents and the construction drawings noted above to the best of my knowledge and belief.

Respectfully Submitted,

Gordon T. Mossberg

Signature

GORDON T. MOSSBERG NEW MEXICO 10571 REGISTERED PROFESSIONAL ENGINEER

5/10/01

Attachments:

_____ Potability Tests

_____ Test Reports

✓ As-Built Drawings

_____ Inspection Reports

_____ Final Estimates

_____ Manhole Data Sheets

_____ Valve Data Sheets

Work Order Date: _____

Final Inspection Date: _____

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

June 6, 2001

Daniel S. Aguirre, P.E.
Wilson & Company
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: Cochiti Elementary Grading & Drainage Plan, Engineer's stamp dated 5-22-01 (H13/D31)

Dear Mr. Aguirre,

I have reviewed the information provided in your submittal dated May 22, 2001 (referenced above) and offer the following comments:

1. In order to ensure that the existing 6" public water line located 10 feet north of the south property line is not disturbed during grading, please show it on the plan. Also show the 20-ft. easement for this water line.
2. On the aerial photo in the current AGIS database, the baseball field appears as lawn. If that is the case, Basin 104/204 is Treatment Type B, not C as you have calculated. This would probably not noticeably decrease the runoff to the pond, but may be useful knowledge in future projects when calculating larger areas.
3. Utility Development will not allow a City of Albuquerque water meter in a drive lane. If the water meter that is shown in the bus drive lane is a City meter, please relocate it and provide an easement if necessary.
4. Is the 12" storm drain going to be RCP? Please label material type.
5. A 6" stand-up curb is called out north of the refuse enclosure. The note says See Detail Sheet 3-4. Is there a detail for this curb on Sheet 3-4?
6. The existing topo and proposed basin boundaries do not show up on the plan. Perhaps a blueline instead of a xerographic process would provide a more readable copy for the final submittal.

If you have any questions, please call me at 924-3988.

Sincerely,

Nancy Musinski, P.E.
Hydrology/Utility Development
City of Albuquerque Public Works

cc: file

DRAINAGE INFORMATION SHEET

H-13/D31

PROJECT TITLE: Cochiti Elementary School ZONE ATLAS/DRNG. FILE#: ~~G-13/H-13~~

DRB#: N/A EPC#: N/A WORK ORDER #: N/A

LEGAL DESCRIPTION: Lots 47 to 68 inc. a part of vacant San Isidro Street NW adj. lots 47 & 66 to 68 L

CITY ADDRESS: 3100 San Isidro Rd., NW

ENGINEERING FIRM:	Wilson & Company	CONTACT:	John A. Tellez
ADDRESS:	4900 Lang Ave., NE Albuquerque, NM 87109	PHONE:	(505) 348-4128
OWNER:	Albuquerque Public Schools	CONTACT:	Bob Becker
ADDRESS:	915 Oak St. NE	PHONE:	(505) 242-5865
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:		CONTACT:	
ADDRESS:		PHONE:	
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
- X OTHER: T.C.L.

PRE-DESIGN MEETING:

- X 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
- X OTHER: Grading & Drainage

Date Submitted: 5/23/01

By: John A. Tellez

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MAY 22 2001
HYDROLOGY SECTION

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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 11, 2001

Daniel S. Aguirre, P.E.
Wilson & Company
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: Cochiti Elementary Grading & Drainage Plan, Engineer's stamp dated 6-8-01 (H13/D31)

Dear Mr. Aguirre,

Based on the information provided in your submittal dated June 8, 2001, the above referenced plan is approved for Grading Permit and Paving Permit. Please attach a copy of this approved plan to the construction sets to obtain the necessary permits.

When the construction is complete, please send me a Certified As-built copy of the plans for the Hydrology file.

If you have any questions, please call me at 924-3988.

Sincerely,

Nancy Musinski, P.E.
Hydrology/Utility Development
City of Albuquerque Public Works

cc: file

DRAINAGE INFORMATION SHEET

H-13/D31

PROJECT TITLE: Cochiti Elementary School ZONE ATLAS/DRNG. FILE#: ~~G-13/H-13~~

DRB#: N/A EPC#: N/A WORK ORDER #: N/A

LEGAL DESCRIPTION: Lots 47 to 68 inc. a part of vacant San Isidro Street NW adj. lots 47 & 66 to 68 L

CITY ADDRESS: 3100 San Isidro Rd., NW

ENGINEERING FIRM:	Wilson & Company	CONTACT:	John A. Tellez
ADDRESS:	4900 Lang Ave., NE Albuquerque, NM 87109	PHONE:	(505) 348-4128
OWNER:	Albuquerque Public Schools	CONTACT:	Bob Becker
ADDRESS:	915 Oak St. NE	PHONE:	(505) 242-5865
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:		CONTACT:	
ADDRESS:		PHONE:	
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:

- X YES
- ____ NO
- ____ COPY PROVIDED

RECEIVED
JUN 0 8 2001
PWD/DESIGN REVIEW

BJA
2:58pm

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
- X OTHER: Grading & Drainage

Date Submitted: 6/08/01

By: John A. Tellez

RECEIVED
JUN 0 8 2001
HYDROLOGY SECTION

T:\Projects\X1218008\M\Docs\dis.doc

WILSON
&COMPANY
P.O. Box 94000
Albuquerque, NM 87199-4000

Memo

Albuquerque
Colorado Springs
Colton
Denver
Houston
Lenexa, KS
Kansas City, MO
Phoenix
Salina, KS
Wichita

From: John A. Tellez

To: Nancy Musinski

Copies To: File

Date: June 8, 2001

File No.: X1218008

Task: 83

Subject: **Cochiti Elem. School Grading & Drainage resubmittal**

Please find attached the Grading & Drainage resubmittal (original submittal dated 5/22/01) for Cochiti Elementary School. I have addressed your comments as follows:

1. The 6" public water line has been placed in the G&D plan along with the 20ft. easement.

2. Basin 104/204 was changed to "Type B" treatment as you suggested. The pond size did not change but, lowered the volumetric runoff and peak discharge. This allowed a free board of 2" instead of 1". This free board allowance was approved by Carlos Montoya.

3. The water meter we discussed was field verified to be a water valve. Hopefully, this should not be a problem to just lower it to grade.

4. The 12" storm drain will be an "ADS N-12" pipe. It has been noted on the G&D plan.

5. The detail for the 6" curb, called out north of the refuse enclosure, has been put in the detail sheet. It was inadvertently left out.

6. Copies will be made accordingly to ensure a more readable copy.

If you have any further questions, please feel free to contact me at 348-4128.

Thank you.

RECEIVED
JUN 0 8 2001
HYDROLOGY SECTION

RECEIVED
JUN 0 8 2001
PWD/DESIGN REVIEW

CITY OF ALBUQUERQUE

December 15, 2005

Pierce Runnels, P.E.
BPLW/ASCG
6501 America's Parkway NE – Suite 400
Albuquerque, NM 87110

Re: Cochiti Elementary Kindergarden Addition, 3100 San Isidro St. NW
Grading & Drainage Plan-Engineer's Stamp dated 12-14-05 (H13-D31)

Dear Mr. Runnels,

Based upon the information provided in your submittal dated 12-14-05, 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 release of the Certificate of Occupancy an Engineer's Certification of the grading plan per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3990.

Sincerely,

Phillip J. Lovato, E.I., C.F.M.
Engineering Associate, Hydrology,
Development and Building Services,
Planning Department

cc: file

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

DRAINAGE INFORMATION SHEET

H13/D31

PROJECT TITLE COCHITI ELEMENTARY KINDERGARTERN ADDITION ZONE ATLAS/DRWG. FILE # ~~H-13 & G-13~~

DRB#: _____ EPC #_____ WORK ORDER #

LEGAL DESCRIPTION: Lot 47-68 Block 000 Subdivision Livingston Place Addition

CITY ADDRESS: 3100 SAN ISIDRO ST NW 87107

ENGINEERING FIRM: BPLW/ASCG CONTACT: Jon Pena

ADDRESS: 6501 Americas Parkway Suite 400 PHONE: 505-830-8753

OWNER: Albuquerque Public Schools CONTACT: Bob Becker

ADDRESS: 915 Oak Street Alb, NW 87106 PHONE: 505-848-8835

ARCHITECT: BPLW/ASCG CONTACT: Maria Shelton
ADDRESS: 6501 Americas Parkway Stuie 400 PHONE: 505-830-8765

SURVEYOR: Wilson & Company CONTACT: Scott Croshaw

ADDRESS: 4900 Lang Ave NE Alb, PHONE: 505-348-4000

CONTRACTOR: --- TBD CONTACT:

ADDRESS: --- PHONE:

TYPE OF SUBMITTAL:

__ 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. PERMIT APPROVAL
_ SECTOR PLAN APPROVAL
_ FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
__ CERTIFICATE OF OCCUPANCY APPROVAL
_GRADING PERMIT APPROVALS
__ PAVING PERMIT APPROVAL
_ S.A.B. DRAINAGE REPORT
__DRAINAGE REQUIREMENTS

DATE SUBMITTED: December 13, 2005
BY: Jon Pena, EI

RECEIVED
DEC 14 2005
HYDROLOGY SECTION

ASCG
INCORPORATED
ENGINEERS • ARCHITECTS • SURVEYORS • PLANNERS

December 13, 2005

Bradley L. Bingham, PE
Section Head, Hydrology
City of Albuquerque Public Works
PO Box 1293
Albuquerque, New Mexico 87103

RE: COCHITI ELEMENTARY, ALBUQUERQUE, NM
(G13 & H13),
BPLW PROJECT NUMBER: A04030

Dear Brad:

Attached for review, comment and/or approval are the following:

- One (1) Drainage Information Sheet
- One (1) copy of the Grading Plan
- One (1) copy of the Drainage Plan
- One (1) copy of Supporting Drainage Calculations

The proposed kindergarten addition is located on the existing Cochiti Elementary site at 3100 San Isidro Street. The site currently contains 3 portable kindergarten classrooms. The three portable classrooms will be replaced with a permanent 5500 square foot classroom. The current legal description for the site is "LOT 47-68 BLOCK 000 SUDIVISION LIVINGSTON PLACE ADDITION". The site plan and accompanying site details have been included in the permit set to the City.

The plan being submitted is the Cochiti Elementary on LOT 47-68 BLOCK 000, SUBDIVISION LIVINGSTON PLACE ADDITION

I've highlighted the applicable drainage calculations to assist you in your review. If you have any questions, please contact me at (505) 830-8753.

Sincerely,

BPLW/ASCG

Jon Pena, E.I.
Site Development Designer

O:\A04030\ADMIN\C\COCHITI_dmLtr.doc

Drainage Summary

Project: COCHITI ELEMENTARY
Project Numbe: A04030
Date: 12/03/05
By: JON PENA

Site Location COCHITI ELEM. SAN ISIDRO ST.

Precipitation Zone 2 Per Table A-1 COA DPM Section 22.2

Existing summary

Basin Name		BASIN 1	BASIN 2	TOTAL
Soil Treatment (acres)				
Area "A"		0.00	0.00	0.00
Area "B"		0.13	0.15	0.28
Area "C"		0.00	0.00	0.00
Area "D"		0.67	0.47	1.14
	TOTAL	0.80	0.62	1.42
Excess Runoff (acre-feet)				
100yr. 6hr.		0.13	0.09	0.22
10yr. 6hr.		0.08	0.06	0.13
2yr. 6hr.		0.04	0.03	0.08
100yr. 24hr.		0.15	0.11	0.26
Peak Discharge (cfs)				
100 yr.		3.45	2.55	6.00
10yr.		2.23	1.62	3.85
2yr.		1.26	0.89	2.14

Proposed summary

Basin Name		BASIN 1	BASIN 2	TOTAL
Soil Treatment (acres)				
Area "A"		0.00	0.00	0.00
Area "B"		0.08	0.15	0.23
Area "C"		0.00	0.00	0.00
Area "D"		0.72	0.47	1.19
	TOTAL	0.80	0.62	1.42
Excess Runoff (acre-feet)				
100yr. 6hr.		0.13	0.09	0.23
10yr. 6hr.		0.08	0.06	0.14
2yr. 6hr.		0.05	0.03	0.08
100yr. 24hr.		0.16	0.11	0.26
Peak Discharge (cfs)				
100 yr.		3.57	2.55	6.12
10yr.		2.34	1.62	3.96
2yr.		1.35	0.89	2.23

BPLW

Architects and Engineers

PROJECT COCHITI ELEMENTARY
PROJECT NO. A04030
DATE 12/03/05
BY JON PENA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

* Spread sheet requires three input areas (dark cells):
  - Location
  - >A.1 Precipitation Zone
  - >A.3 Land Treaments
* Values from the tables are automatically placed using "if" statements.
* Table values should be checked for correctness for each use.

SUMMARY

Location	COCHITI ELEM. SAN ISIDRO ST.	BASIN 1	BASIN 2	TOTALS	
Precipitation Zone		2	2		
Land Area		0.80	0.62	1.42	acres
Excess Precipitation Volume					
>>>	**100-year 6-hour (design)**	0.13	0.09	0.22	**acre-ft.**
	10-year 6-hour	0.08	0.06	0.13	acre-ft.
	2-year 6-hour	0.04	0.03	0.08	acre-ft.
	100-year 24-hour	0.15	0.11	0.26	acre-ft.
Peak Discharge Rates (DPM)					
>>>	**Q100 (design)**	3.45	2.55	6.00	**cfs**
	Q10	2.23	1.62	3.85	cfs
	Q2	1.26	0.89	2.14	cfs

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS

	LOCATION	COCHITI ELEM. SAN ISIDRO ST.	BASIN 1	BASIN 2	
>A.1	PRECIPITATION ZONE (from Table A-1)		2	2	
>A.2	DEPTHS				
	(from Table A-2)			TOTALS	
	100-YEAR STORM (P60)		2.01	2.01	2.01 inches
	100-YEAR STORM (P360)		2.35	2.35	2.35 inches
	100-YEAR STORM (P1440)		2.75	2.75	2.75 inches
	10-YEAR (P360) (Calculated: P360*RPF10)		1.87	1.87	1.87 inches
	2-YEAR (P360) (Calculated: P360*RPF2)		1.02	1.02	1.02 inches
>A.3	**LAND TREATMENTS (Ai)**				
	Treatment A		0.00	0.00	0.00 acres
	Treatment B		0.13	0.15	0.28 acres
	Treatment C		0.00	0.00	0.00 acres
	Treatment D		0.67	0.47	1.14 acres
	Total Area		0.80	0.62	1.42 acres
>A.4	**ABSTRACTIONS**		See A.5	See A.5	See A.5

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CON'T)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (Ei)

from Table A-8

				TOTALS	
100-year 6-hour					
Treatment A		0.53	0.53	0.53	inches
Treatment B		0.78	0.78	0.78	inches
Treatment C		1.13	1.13	1.13	inches
Treatment D		2.12	2.12	2.12	inches
	WEIGHTED E (Sum Ei*Ai/A)	1.80	1.80	1.80	inches
	VOLUME V100:6h (E*A)	0.13	0.09	0.22	acre-ft.
		5,524.13	4,041.64	9,565.78	ft^3
10-year 6-hour					
Treatment A		0.13	0.13	0.13	inches
Treatment B		0.28	0.28	0.28	inches
Treatment C		0.52	0.52	0.52	inches
Treatment D		1.34	1.34	1.34	inches
	WEIGHTED E (Sum Ei*Ai/A)	1.17	1.08	1.13	inches
	VOLUME V10:6h (E*A)	0.08	0.06	0.13	acre-ft.
		3,391.15	2,438.63	5,829.78	ft^3
2-year 6-hour					
Treatment A		0.00	0.00	0.00	inches
Treatment B		0.02	0.02	0.02	inches
Treatment C		0.15	0.15	0.15	inches
Treatment D		0.79	0.79	0.79	inches
	WEIGHTED E (Sum Ei*Ai/A)	0.66	0.60	0.64	inches
	VOLUME V2:6h (E*A)	0.04	0.03	0.08	acre-ft.
		1,930.80	1,358.71	3,289.51	ft^3
100-year 24-hour					
	VOLUME V100:24h (V100-6h+Ad*P1440-P360)/12)	0.15	0.11	0.26	acre-ft.
		6,498.97	4,724.08	11,221.06	ft^3

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CON'T)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (Qi)

from Table A-9

				TOTALS	
100-year					
Treatment A		1.56	1.56	1.56	cfs/acre
Treatment B		2.28	2.28	2.28	cfs/acre
Treatment C		3.14	3.14	3.14	cfs/acre
Treatment D		4.70	4.70	4.70	cfs/acre
	Q100 (Sum Qi*Ai)	3.45	2.55	6.00	cfs
10-year					
Treatment A		0.38	0.38	0.38	cfs/acre
Treatment B		0.95	0.95	0.95	cfs/acre
Treatment C		1.71	1.71	1.71	cfs/acre
Treatment D		3.14	3.14	3.14	cfs/acre
	Q10 (Sum Qi*Ai)	2.23	1.63	3.86	cfs
2-year					
Treatment A		0.00	0.00	0.00	cfs/acre
Treatment B		0.08	0.08	0.08	cfs/acre
Treatment C		0.60	0.60	0.60	cfs/acre
Treatment D		1.86	1.86	1.86	cfs/acre
	Q2 (Sum Qi*Ai)	1.26	0.89	2.14	cfs

BPLW

Architects and Engineers

PROJECT COCHITI ELEMENTARY
PROJECT NO. A04030
DATE 12/03/05
BY JON PENA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

* Spread sheet requires three input areas (dark cells):
  - Location
  - >A.1 Precipitation Zone
  - >A.3 Land Treaments
* Values from the tables are automatically placed using "if" statements.
* Table values should be checked for correctness for each use.

SUMMARY

Location	COCHITI ELEM. SAN ISIDRO	BASIN 1	BASIN 2	TOTALS	
Precipitation Zone		2	2	2	
Land Area		0.80	0.62	1.42	acres
Excess Precipitation Volume					
>>>	**100-year 6-hour (design)**	0.13	0.09	0.23	**acre-ft.**
	10-year 6-hour	0.08	0.06	0.14	acre-ft.
	2-year 6-hour	0.05	0.03	0.08	acre-ft.
	100-year 24-hour	0.16	0.11	0.26	acre-ft.
Peak Discharge Rates (DPM)					
>>>	**Q100 (design)**	3.57	2.55	6.12	**cfs**
	Q10	2.34	1.62	3.96	cfs
	Q2	1.35	0.89	2.23	cfs

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS

	LOCATION	COCHITI ELEM. SAN ISIDRO	BASIN 1	BASIN 2	
>A.1	PRECIPITATION ZONE (from Table A-1)	2	2	2	
				TOTALS	
>A.2	DEPTHS				
	(from Table A-2)				
	100-YEAR STORM (P60)	2.01	2.01	2.01	inches
	100-YEAR STORM (P360)	2.35	2.35	2.35	inches
	100-YEAR STORM (P1440)	2.75	2.75	2.75	inches
	10-YEAR (P360) (Calculated: P360*RPF10)	1.57	1.57	1.57	inches
	2-YEAR (P360) (Calculated: P360*RPF2)	1.02	1.02	1.02	inches
>A.3	**LAND TREATMENTS (Ai)**			TOTALS	
	Treatment A	0.00	0.00	0.00	acres
	Treatment B	0.08	0.15	0.23	acres
	Treatment C	0.00	0.00	0.00	acres
	Treatment D	0.72	0.47	1.19	acres
	Total Area	0.80	0.62	1.42	acres
>A.4	**ABSTRACTIONS**		**See A.5**	**See A.5**	**See A.5**

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CON'T)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (Ei)

from Table A-8			TOTALS	
100-year 6-hour				
Treatment A	0.53	0.53	0.53	inches
Treatment B	0.78	0.78	0.78	inches
Treatment C	1.13	1.13	1.13	inches
Treatment D	2.12	2.12	2.12	inches
WEIGHTED E (Sum Ei*Ai/A)	1.00	1.00	1.00	inches
VOLUME V100:6h (E*A)	0.13	0.09	0.23	acre-ft.
	5,787.34	4,041.64	9,828.98	ft^3
10-year 6-hour				
Treatment A	0.13	0.13	0.13	inches
Treatment B	0.28	0.28	0.28	inches
Treatment C	0.52	0.52	0.52	inches
Treatment D	1.34	1.34	1.34	inches
WEIGHTED E (Sum Ei*Ai/A)	1.23	1.08	1.17	inches
VOLUME V10:6h (E*A)	0.08	0.06	0.14	acre-ft.
	3,583.54	2,438.63	6,032.17	ft^3
2-year 6-hour				
Treatment A	0.00	0.00	0.00	inches
Treatment B	0.02	0.02	0.02	inches
Treatment C	0.15	0.15	0.15	inches
Treatment D	0.79	0.79	0.79	inches
WEIGHTED E (Sum Ei*Ai/A)	0.71	0.60	0.67	inches
VOLUME V2:6h (E*A)	0.05	0.03	0.08	acre-ft.
	2,070.55	1,358.71	3,429.26	ft^3
100-year 24-hour				
VOLUME V100:24h (V100-6h+Ad*P1440-P360)/12)	0.16	0.11	0.28	acre-ft.
	6,812.78	4,724.09	11,536.87	ft^3

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CONT)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (Qi)
from Table A-9

			TOTALS	
100-year				
Treatment A	1.56	1.56	1.56	cfs/acre
Treatment B	2.28	2.28	2.28	cfs/acre
Treatment C	3.14	3.14	3.14	cfs/acre
Treatment D	4.70	4.70	4.70	cfs/acre
Q100 (Sum Qi*Ai)	3.87	2.55	6.12	cfs
10-year				
Treatment A	0.38	0.38	0.38	cfs/acre
Treatment B	0.95	0.95	0.95	cfs/acre
Treatment C	1.71	1.71	1.71	cfs/acre
Treatment D	3.14	3.14	3.14	cfs/acre
Q10 (Sum Qi*Ai)	2.34	1.62	3.96	cfs
2-year				
Treatment A	0.00	0.00	0.00	cfs/acre
Treatment B	0.08	0.08	0.08	cfs/acre
Treatment C	0.60	0.60	0.60	cfs/acre
Treatment D	1.86	1.86	1.86	cfs/acre
Q2 (Sum Qi*Ai)	1.35	0.89	2.23	cfs

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Public Works Department
Transportation Development Services Section

June 18, 2001

John A. Tellez for Daniel S. Aguirre, Registered Professional Engineer,
Wilson and Company
4900 Lang Avenue N.E.
Albuquerque, New Mexico 87109

Re: T.C.L. submittal for bldg. permit approval for Cochiti Elementary School Bus Pick Up/Drop Off, 3100 San Isidro Road N.W. [H13/D031],
No signed and dated Engineer's Stamp.

Dear Mr. Tellez,

The location referenced above is not acceptable and requires modification to the Traffic Circulation Layout (T.C.L.) prior to Building Permit release as stated on the attached TCL checklist, and red-lined T.C.L. markup with comments.

Please resubmit revised T.C.L. after addressing typed and marked up comments.
Submit Plan along with typed comments and all red-lined, mark-up copies.

Sincerely,

Mike Zamora,
Commercial Plan Checker

cc:
Hydrology File
Office File

TRAFFIC CIRCULATION LAYOUT CHECKLIST

SITE ADDRESS: 3100 SAN ISIDRO Rd NW. **AGENT:** WILSON & CO. - John Tellez **DATE:** 6/14/01
LEGAL DESCRIPTION: Albuquerque Public Schools **ZONE ATLAS PAGE:** H-13

The Traffic Control Layout (TCL) is a basic Site Plan that contains information on all new and existing elements involved in the development of the site including: buildings, street widths, street sidewalks and curb & gutter, parking lot features, driveways, landscaped areas, lot lines and easement limits, etc. It will be reviewed prior to submittal of plans for a building permit. The TCL must be processed prior to submittal of plans for building permit. In most all cases the TCL must be certified by the designer-of-record prior to the issuance of a Certificate of Occupancy.

On all subsequent submittals, the design firm needs to complete and return the new *TRAFFIC CIRCULATION LAYOUT CHECKLIST* (Amendment To Come) provided, along with us of the DPM (Development Process Manual) to confirm required City standards. Also refer to previous TCL/Building Permit submittals (along with comments and markups) for past projects to avoid repeating errors and to help reduce the time required for plan review on subsequent TCL submittals. The first checklist has been completed by Transportation.

LEGEND-

- ☑ *Item addressed on initial submittal*
- ☐ *Item not yet addressed by designer or plan checker*
- ■ *Not Applicable*

GENERAL INFORMATION REQUIRED:

- ☐ 1. TCL will be stamped, signed and dated by architect or engineer.
- ☑ 2. Street address of site - could be part of title block or Drainage Application sheet in Hydrology file.
- ☑ 3. Provide name of subdivision; lot number and/or tract number on TCL, if it's not on the Drainage Information Sheet.
- ☐ 4. Place note on TCL and Site Plan for Construction:

  As required by Transportation Development Section, a copy of the approved TCL AS-BUILT will be submitted by the designer or acceptable representative party which includes a letter of certification stating the site has been constructed in accordance with the approved TCL. Verification of TCL acceptability, to include random field checks, will be made before a Final Certificate of Occupancy (C.O.) is issued. Please call this office to obtain temporary CO. Confirmation from Hydrology, supporting this requirement, will be needed prior to approval of TCL by Transportation.
- ☐ 5. The plan review by Zoning could initiate a new review if original parking lot layout, approved by Transportation, needs to be altered.
- ■ 6. Any Infrastructure work on city property, as part of this development, must be complete before issuance of CO. If work is not completed, Financial Guarantee must be on file with Design Review Office.
- ■ 7. Encroachment agreements are needed when structures, fences, walls or items of equal conflict are within City property.
- ☐ 8. Drawing line work on Drainage and Landscape Plans must exactly match Site Plan.

SPECIFIC INFORMATION REQUIRED:

- ☐ 1. State Highway Department approval is required at locations where access is being taken from Highway Dept. roadways.
- ☐ 2. Call out all overhead doors on site or call out, including size, on TCL.
- ☐ 3. Overhead doors desired on site. Expectation by plan reviewer is that large wheel base (refuse/UPS) vehicle will be smallest vehicle to use doors. Refer to DPM for restrictions.
- ☐ 4. State the design vehicle to be used at rear of site.
- ☑ 5. Provide new and existing elements on TCL, properly labeled, and dimensioned. Show clear differentiation between existing construction and new improvements on TCL.
- ☐ 6. Indicate which buildings the permit will certify for parking improvements. If applicable, clearly differentiate future construction line type from new construction line type.
- ☐ 7. Any minor changes to TCL as required by Transportation and are acceptable by Hydrology, call out on Site Plan as such: "INSPECTION OF CONSTRUCTION FOR CO, FOR TRANSPORTATION, WILL BE DONE FROM THIS SHEET."
- ☑ 8. Indicate transition from one surface type to the other on TCL, for example, ramps (include handicap (HC) ramps), concrete/ asphalt, landscape area/ concrete, concrete / dirt, concrete /gravel, etc. Label each area or stipple--or equal--to show varying surfaces.
- ☐ 9. Show, label and dimension position of all existing obstructions in sidewalks in City right-of-way.
- ☐ 10. Label to paint, on asphalt, stalls for small car parking as "COMPACT" or equal.
- ☑ 11. Minimum 5 foot width concrete sidewalk raised 6" above parking surface will be needed, when located at front of parking vehicles (min.20' long stall) adjacent to any building. Place sidewalk at other locations where landscape shrubbery is required, by Zoning, at front of stalls.
- ☐ 12. At HC parking area, HC ramp must be constructed as part of sidewalk and not part of parking area.
- ☐ 13. Restriping of parking stalls shall be called out, to be per City Standard.
- ☑ 14. For future reference and for this project, provide half width of all streets 40' wide and over on TCL. Also, show all streets which will be used for Heavy Commercial traffic accessing site. On major streets, include median and openings, if existing and if not, show traffic lanes on developer's side of street, up to and including middle turn lane.
- ☐ 15. Alley limits must be 20-foot width
- ☐ 16. City standard paved roadway must be constructed in alley, along the entire lot frontage from point of access into alley from street at either end of alley.
- ☐ 17. Construct alley entrance per City Std. Detail Dwg. 2428. Width of entrance will be a minimum of 24 feet when the development is the first lot on the block, and access to proposed parking is taken thorough the alley.

Rev.5/07/01

DRAINAGE INFORMATION SHEET

H-13/D31

PROJECT TITLE: Cochiti Elementary School ZONE ATLAS/DRNG. FILE#: ~~G-13/H-13~~

DRB#: N/A EPC#: N/A WORK ORDER #: N/A

LEGAL DESCRIPTION: Lots 47 to 68 inc. a part of vacant San Isidro Street NW adj. lots 47 & 66 to 68 L

CITY ADDRESS: 3100 San Isidro Rd., NW

ENGINEERING FIRM:	Wilson & Company	CONTACT:	John A. Tellez
ADDRESS:	4900 Lang Ave., NE Albuquerque, NM 87109	PHONE:	(505) 348-4128
OWNER:	Albuquerque Public Schools	CONTACT:	Bob Becker
ADDRESS:	915 Oak St. NE	PHONE:	(505) 242-5865
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:		CONTACT:	
ADDRESS:		PHONE:	
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
- X OTHER : T.C.L.

PRE-DESIGN MEETING:

- X 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
- X OTHER: Grading & Drainage

Date Submitted: 5/23/01

By: John A. Tellez

RECEIVED
MAY 22 2001
HYDROLOGY SECTION

T:\Projects\X1218008\M\Docs\dis.doc

CITY OF ALBUQUERQUE

November 22, 2006

Mr. Pierce Runnels, PE
ASCG
6501 Americas Parkway NE, Suite 400
Albuquerque, NM 87110

Re: COCHITI ELEMENTARY SCHOOL KINDERGARDEN ADDITION
3100 San Isidro Street NW
Approval of Permanent Certificate of Occupancy (C.O.)
Engineer's Stamp dated 12/14/2005 (H-13/D31)
Certification dated 11/22/2006

P.O. Box 1293

Dear Mr. Runnels:

Based upon the information provided in your submittal received 11/22/2006, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

Albuquerque

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

New Mexico 87103

Sincerely,

Arlene V. Portillo

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

www.cabq.gov

C: CO Clerk
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: COCHITI ELEMENTARY KINDERGARTEN ADDITION ZONE MAP/DRG. FILE # H-13-D31
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: LOT 47-68 BLOCK 000 SUBDIVISION LIVINGSTON PLACE ADDITION
CITY ADDRESS: 3100 SAN ISIDRO ST NW ALBUQUERQUE 87107

ENGINEERING FIRM: ASCG INCORPORATED — CONTACT: JON PENA, PE
ADDRESS: 6501 AMERICAS PARKWAY NE — PHONE: 830-8753
CITY, STATE: ALBUQUERQUE, NM — ZIP CODE: 87110

OWNER: ALBUQUERQUE PUBLIC SCHOOLS — CONTACT: BOB BECKER
ADDRESS: 915 OAK STREET — PHONE: 848-8835
CITY, STATE: ALBUQUERQUE, NM — ZIP CODE: 87106

ARCHITECT: ASCG INCORPORATED — CONTACT: MARIA SHELTON
ADDRESS: 6501 AMERICAS PARKWAY NE — PHONE: 247-0294
CITY, STATE: ALBUQUERQUE, NM — ZIP CODE: 87110

SURVEYOR: WILSON & COMPANY — CONTACT: SCOTT CROSHAW
ADDRESS: 4900 LANG AVE NE — PHONE: 348-4000
CITY, STATE: ALBUQUERQUE, NM — ZIP CODE: 87120

CONTRACTOR: CHEYENNE BUILDING CONTRACTORS
CONTACT: STEVE HENDERSON — ADDRESS: P.O. BOX 82160
PHONE: 265-6330
CITY, STATE: ALBUQUERQUE, NM — ZIP CODE: 87198-2610

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
__X__ GRADING PLAN
_____ EROSION CONTROL PLAN
__X__ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER/ARCHITECT CERT (TCL)
_____ ENGINEER/ARCHITECT CERT (DRB S.P.)
_____ ENGINEER/ARCHITECT CERT (AA)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL SOUGHT:
_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
__X__ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY) ROUGH GRADING APPROVAL

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

RECEIVED
NOV 22 2006
HYDROLOGY SECTION

SUBMITTED BY: JON PENA, PE — DATE: 11/22/06

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

ASCG
INCORPORATED
ENGINEERS • ARCHITECTS • SURVEYORS • PLANNERS

November 22, 2006

Arlene Portillo, PE
Hydrology Section
City of Albuquerque Public Works
PO Box 1293
Albuquerque, New Mexico 87103

RE: COCHITI ELEMENTARY, ALBUQUERQUE, NM (G13 -H13),
ASCG PROJECT NUMBER: A04030

Dear Arlene:

Attached for review, comment and/or approval are the following:

- One (1) Drainage Information Sheet
- One (1) copy of the Certified Grading Plan
- One (1) copy of the Certified Drainage Plan
- One (1) copy of the Grading and Drainage Approval Letter

The proposed kindergarten addition is located on the existing Cochiti Elementary site at 3100 San Isidro Street. The site used to contain 3 portable kindergarten classrooms. The three portable classrooms have been replaced with a permanent 5500 square foot classroom. The current legal description for the site is "LOT 47-68 BLOCK 000 SUDIVISION LIVINGSTON PLACE ADDITION." As shown by the as-built drawing attached, the project has been constructed in accordance with the design intent indicated on the original drainage and grading plans submitted on 12-14-05. This submission is for review and approval of Certificate of Occupancy.

If you have any questions, please contact me at (505) 830-8753.

Sincerely,

ASCG Incorporated
of New Mexico

By: Jon Pena, PE
Staff Engineer

O:\A04030\ADMIN\C\COCHITI_drnLtr2.doc

6501 AMERICAS PARKWAY NE, SUITE 400 • ALBUQUERQUE, NEW MEXICO 87110-5372
(505) 247-0294 • FAX (505) 242-4845

CITY OF ALBUQUERQUE

December 15, 2005

Pierce Runnels, P.E.
BPLW/ASCG
6501 America's Parkway NE – Suite 400
Albuquerque, NM 87110

Re: Cochiti Elementary Kindergarden Addition, 3100 San Isidro St. NW
Grading & Drainage Plan-Engineer's Stamp dated 12-14-05 (H13-D31)

Dear Mr. Runnels,

Based upon the information provided in your submittal dated 12-14-05, 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 release of the Certificate of Occupancy an Engineer's Certification of the grading plan per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3990.

Sincerely,

Phillip J. Lovato, E.I., C.F.M.
Engineering Associate, Hydrology,
Development and Building Services,
Planning Department

cc: file

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

RECEIVED
NOV 22 2006
HYDROLOGY SECTION

ft 13-D31

MASTER DRAINAGE PLAN
AND INTERIM IMPROVEMENTS

COCHITI ELEMENTARY SCHOOL

Prepared for

SIEGEL DESIGN
2726 Candelaria Road NW
Albuquerque, New Mexico 87107

Prepared by

Resource Technology, Inc.
1720-B Randolph Road SE • Albuquerque, NM 87106
(505) 243-7300 • (505) 243-7400 fax • rti@nmia.com

February 2000

Revised March 2000

MASTER DRAINAGE REPORT

INTRODUCTION

The site is located in the north valley of Albuquerque, New Mexico approximately 1.5 miles east of the Rio Grande. The address is 3100 San Isidro Street NW, approximately 2000 feet northwest of Menual Boulevard and 12th Street. The site is bounded on the west by San Isidro Street and on the north, east and south by single family residences. The legal description of the site is not available or is given as Unplatted Parcel Known as Cochiti Elementary School. The school site is presently developed with an Albuquerque Public School facility built in approximately 1961. See Figure 1.

The project is uniquely situated because it is an in-fill project in an area that is almost fully developed. The only remaining undeveloped area is a single approximately one half acre lot located in the far northeast corner of the off-site area draining past the school site, down San Isidro Street.

EXISTING DRAINAGE CONDITIONS

Off-Site Drainage

The drainage area surrounding Cochiti Elementary School is located at the lower elevations of a shallow drainage basin where all local runoff formerly accumulated. As the areas to the north and south were developed, drainage was diverted from the developed lots to the streets fronting those areas and away from the natural depression. The only area draining to the shallow basin at present is the east side of the school site. See Figure 2.

The Alameda Drain Channel is located 600 feet north of the site and turns south to run about 800 feet west of the subject property. The residential street north of the school (Los Arboles Ave) drains to drop inlets connected to a 36-inch diameter storm drain that flows into the Alameda Drain west of the San Isidro Street crossing.

The residential areas to the northwest and west of the school drain by surface flow to San Isidro Street in front of the school. La Poblana Road to the east and west of San Isidro Street also drains to the storm sewer inlets at the intersection of these two streets. See Figure 2. The area to the east of the school is a small recently built subdivision with ponding areas on each lot along the rollover curbs of the cul-de-sac.

For computation of estimated street flows in San Isidro Street two areas were measured and surface treatments were determined using the City of Albuquerque Development Process Manual (COA-DPM). The procedure for 40 Acre and Smaller Basins was used to determine volumes and peak flows. Two lots east of San Isidro Street on Los Arboles Avenue and the areas of Los Arboles Avenue and Speronelli Road west of San Isidro Street (Basin A) (Figure 1) were found

to have a surface area treatment of 29 % D (impervious), 41 % C (soil) and 30 % B (lawn). The area of 12.5 acres contributes 41.7 cfs during the 100-year storm and a volume of 1.85 acre feet during the 100-year 10-day storm.

The area of McDonald Road (Basin B) (Figure 1) has a surface area treatment of 33 % B, 35 % C and 32 % D. The area of 7.4 acres contributes 24.9 cfs during the 100-year storm and a volume of 1.1 acre feet during the 100-year 10-day storm. The total surface flow on San Isidro Street past the school site is 66.6 cfs during the 100-year storm and a volume of 3.0 acre feet during the 100-year 10-day storm. Flow from the contributing school area is 8.7 cfs under existing conditions, consequently the total 100-year street flow is 75.3 cfs.

The flow capacity of the existing storm drain in San Isidro Street at the intersection with La Poblana is 7.6 cfs. The flow capacity of the 60-feet wide right of way of San Isidro Street is 117.0 cfs (see Figure 3) for a total of 124.6 cfs for both the street surface and storm sewer. However flow capacity within the curbs is inadequate and inundation would occur across the entire right of way.

On-Site Drainage

The majority of the school site is bare ground with some lawn area at the front of the school and an irrigated grass playing field in the back. Paved playground and parking areas are asphalt or concrete. A small amount of graveled parking area is located on the north side of the main building. This appears to be a non-contributing area of runoff; all the water appears to pond on-site and does not drain. Two large sand box areas in the north playground have perimeter concrete curbs and also appear to be non-contributing areas. The flat roofed buildings drain on all sides by spilling over the edges onto either bare or paved surfaces. Some roof gutters have been placed over building entrances and these discharge at their open ends on both sides of the entrance.

In general, the current drainage situation at the school is as follows. The west quarter of the school area drains as surface runoff to San Isidro Street NW, where it flows approximately 100 feet south along the street to a series of drop inlets at the intersection of San Isidro and La Poblana Road. These inlets feed into a 24-inch diameter storm drain that flows south along San Isidro Street to a 36-inch diameter storm drain at Indian School Road, which flows west to the nearby Alameda Drain.

The remaining three-quarters of the school grounds except for small non-contributing areas, drain to the east end of the site where the former natural depression existed. In 1996 a multi-purpose grass playing field was constructed on the east side of the school property. The area was graded with a shallow on-site pond at the southeast corner of the site adjacent to the grass playing field. The south center part of the field is lower than the ends and contributes to the overflow capacity of the pond.

The east area of the school site (Figure 4) was found to have a surface area treatment of 0% A, 16 % B, 57 % C and 27 % D. The area of 5.7 acres contributes a peak flow of 19.2 cfs with a

volume of .83 acre feet during the 100-year 10-day storm. Individual sub-area flows are summarized in Table 1.

TABLE 1. SUMMARY OF FLOWS AND VOLUMES

BASIN :	Area (acres)	CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL Land Treatment (%)				100-YR 10-day	Q-Peak 100-YR
		A	B	C	D	(ac-ft)	(cfs)
OFFSITE BASIN A	12.5	0	30	41	29	1.85	41.7
OFFSITE BASIN B	7.4	0	33	35	32	1.14	24.9
EXISTING FLOW FROM SCHOOL TO STREET	2.2	0	19	18	62	0.49	8.7
EXISTING FLOW TO ON-SITE POND	5.7	0	16	57	27	0.832	19.2
MASTER PLAN SCHOOL SITE FLOW TO STREET	2.84	0	9	16	74	0.73	12.1
MASTER PLAN FLOW TO ON-SITE POND	4.9	0	15	42	43	.81	17.2
MASTER PLAN NORTH SCHOOL DRIVEWAY TO FRONT DRIVEWAY	.74	0	0	39	61	.17	3.0
EAST SIDE SCHOOL SITE SWALE TO ON-SITE POND	1.26	0	0	100	0	.12	3.9
MASTER PLAN INNER COURTYARD DRAIN TO ON-SITE POND	1.18	0	0	17	83	.32	5.2
MASTER PLAN SOUTH DRIVEWAY SWALE TO ON-SITE POND	.81	0	0	26	74	.21	3.5

The existing pond built as part of the grass playing field project has a volume of .32 acre feet with a depth of 1.9 feet to the elevation of the south side of the grass playing field. A volume of .55 acre feet would cover an additional area including one third of the grass playing field with a total pond depth of 2.4 feet. The 100-year 10-day storm would require a depth of 2.7 feet and cover an area of half the grass playing field plus the southeast basketball court and half the area of the dirt playground north of the grass playing field, at an elevation of 4962.8 feet, as listed in Table 2 and shown on Figure 4.

TABLE 2. AS-BUILT POND VOLUME

					CUMULATIVE	CUMULATIVE
Depth Ft.	ELEVATION	AREA Sq.Ft.	Thickness	VOLUME	CUBIC FEET	ACRE-FEET
0	4960.1	75				
0.2	4960.3	650	0.2	63	63	0.001
0.4	4960.5	2125	0.2	263	326	0.007
0.9	4961	7950	0.5	2364	2691	0.062
1.9	4962	14500	1	11062	13753	0.316
2.4	4962.5	27075	0.5	10231	23984	0.551
2.7	4962.8	64175	0.3	13293	37278	0.856
2.9	4963	109550	0.2	17171	54449	1.250

The existing FEMA Map No. 35001C0331 D 0022, September 20,1996, shows an AH flood zone at elevation 4962 ft. covering approximately one third of the subject site at the back of the school yard. See Figure 2.

In addition, several nuisance drainage situations exist on the site. These include:

1. The non-draining area on the north side of the main building; the water ponds in shallow pools in the non-gravel areas.

2. Shallow "bird-bath" puddles in the inner courtyard.

3. The non-draining area around and under the existing portable classrooms on the south side of the school site.

4. The inner courtyard between the Library and the main building is mostly paved but with no drainage system so that pedestrian traffic during rainy periods is inconvenient and, in some instances, hazardous.

5. All of the unpaved areas turn to mud when it rains. The use of gravel surfacing has helped in areas where vehicles have access and in the lunch area between the grass playing field and the paved hardtop playground.

Discussions with the school maintenance staff indicate no flooding of any of the building interiors.

MASTER PLAN DRAINAGE IMPROVEMENTS

Because the site has relatively low gradients, storm water drainage is not efficient. Discussions were conducted with Albuquerque Public Schools to evaluate options. At a pre-design conference with the City of Albuquerque, it was agreed that with due regard to street and storm drain capacity in San Isidro and Indian School Streets, as much of the site as possible would be drained to the street (westwards) and the flow to the on-site pond would be reduced. However street drainage is presently inadequate; as previously described, the 100-year flow in the street will rise above the top of the curb elevation.

A Master Plan site layout and drainage plan (Figure 5) are proposed and are compatible with the solution described above. The east half of the proposed driveway on the south side of the school and the proposed classroom building would drain along the paved driveway to the on-site pond. However, if the 100-year volume and pond elevation of 4962.0 are exceeded, then the south driveway serves as an emergency spillway for excess flows to San Isidro Street.

The current plan is to drain the front of the main building, the north and west side driveways, proposed multipurpose building and proposed basketball court westward to San Isidro Street.

The inner courtyard and non-building areas on the east side of the site will drain to the on-site pond.

Under the Master Plan the existing on-site pond capacity would be expanded to accept the runoff that currently may pond in the playground and grass playing field. Lowering the approximate current pond bottom elevation by 0.1 foot to 4960 feet and excavating the pond sides at a 5H to 1V slope from the edge of the playing field and from five feet inside the south and east property lines, the 100-year 10-day storm could be contained with only a very small piece of the existing grass playing field being inundated. The 100-year 10-day storm ponding elevation would be 4962.0 feet with a depth of 2 feet, as shown in Table 3 and Figure 5.

TABLE 3. EXPANDED ON-SITE POND VOLUME CALCULATION

DEPTH	ELEVATION	AREA	THICKNESS	VOLUME	CUMULATIVE	CUMULATIVE
Ft	Ft	Sq Ft	Ft	CUBIC FEET	CUBIC FEET	ACRE-FEET
0	4960	14,706				
0.5	4960.5	16,306	0.5	7,750	7,750	0.18
1	4961	17,956	0.5	8,562	16,312	0.37
1.5	4961.5	19,656	0.5	9,400	25,712	0.59
2	4962	29,400	0.5	12,183	37,894	0.87

MASTER PLAN IMPACTS ON DRAINAGE

Drainage to Street:

1. The quantity and rate of runoff going to the street will be slightly increased (2.0 cfs) above the existing amount.

2. The north side driveway will be graded to drain to San Isidro Street to the west by lowering pavement elevations on the west end and raising elevations on the east end.

3. With the completion of Master Plan drainage, paving and buildings, the addition of 2.0 cfs from the school site to San Isidro Street because of the north driveway extension, will slightly increase the depth of flow in the right of way during the 100-year storm.

Drainage to On-site Pond:

1. With removal of the small building in the inner courtyard and conversion to a landscaped area, stormwater will flow into a central drain inlet with subsurface removal either in pipes or through a covered trench drain (e.g. ACO Drain) to minimize pedestrian impacts. These pipes or drains would discharge eastward and outfall into the on-site pond. The impervious areas of the inner courtyard, library, building D and pavement in

these areas are .56 acres. The flow and volume are estimated at 2.6 cfs during the 100-year storm and .17 acre feet during the 100-year 10-day storm.

2. The existing east side surface swale would drain the northeast corner of the site. This is the current situation and no changes other than maintenance are required.

3. The east half of the proposed south driveway and new classroom building southeast of the main school building will be drained by an asphalt paved driveway to the on-site pond. The west half will drain to the street.

4. The construction of the south side driveway will provide an emergency spillway for the pond. This driveway will have a crest at elevation 4962.0 approximately mid way along the driveway (see Figure 5). For flows less than the 100-year magnitude, drainage into the pond is maintained, but if the design 100-year pond volume and elevation (4962.0) is exceeded, the overflow will drain west down the south driveway to San Isidro Street.

5. The south and east top of berm elevations around the pond will be raised where necessary to a minimum elevation of 4964.0 in order to protect adjacent off-site development.

Phase I Interim Drainage Plan

Given the present drainage circumstances at this school site, it is appropriate to design the multi-purpose building (Mini-gym) area (Figure 5) to drain westwards to the street along the proposed north driveway in a paved swale in the center of the driveway. The very flat gravel areas on the north and south sides of the site that are functionally non-contributing but could, in effect, contribute during extreme runoff events were included in the runoff computations. Therefore, the final drainage scheme for the school will not need to be implemented immediately, and the mini-gym project can continue on schedule.

The Grading and Drainage Plan for the new Mini-gym area is presented in Figures 6 and 7. This interim plan slightly reduces flow rates and volumes to the existing on-site pond and increases flows to San Isidro Street by 2.0 cfs. This represents an increase of total flow on San Isidro Street from 75.3cfs to 77.3 cfs at the down stream side of the school site.

SUPPLEMENTARY MATERIALS

Other materials submitted with this report include:

Sample Calculations

MATTHEW AVE

ALAMEDA DRAIN

LOS ARBOLES AVE

BASIN A

SAN ISIDRO STREET

SPERONELLI ROAD

36 " STORM SEWER TO ALAMEDA DRAIN

LOS ARBOLES AVE

BASIN B

MCDONALD ROAD

COCHITI ELEMENTARY SCHOOL SITE

ALAMEDA DRAIN

LA POBLANA ROAD

24 " STORM SEWER TO INDIAN SCHOOL ROAD

FIGURE 1

ZONE X

CAMINO

PRADO

MATEO

CAMINO GUSTO

CAMINO APLAUSO

ECUESTRE

Griegos Lateral

AVENIDA CHARADA

LLANO COURT

CAMINO GALLO

CAMINO ROSARIO

CAMINO

GARDEN PARK ROAD

GARDEN

ZONE AH
(EL 4964)

PARK CIRCLE

14TH ST

MATTHEW AVENUE

Griegos Drain

INDIAN FARM

Alameda Drain

LOS ARBOLES AVENUE

LOS ARBOLES AVENUE

SPERONELLI ROAD

COCHITI ELEMENTARY SCHOOL SITE

ZONE AH
(EL 4962)

MCDONALD ROAD

STREET

CORDOVA AVENUE

PHOENIX AVENUE

LA POBLANA ROAD

WOODLAND AVENUE

WOODLAND LANE ST

MENAUL BOULEVARD

SIOUX STREET

TOWNER AVENUE

SAN ISIDRO STREET

INDIAN SCHOOL ROAD

MEADOWVIEW COURT

Alameda Drain

Campbell

CITY OF ALBUQUERQUE
350001

FIRM PANEL 0332

FIGURE 2

COCHITI ELEMENTARY SCHOOL RESOURCE TECHNOLOGY, INC. 03/24/2000

99-030 SAN ISIDRO STREET FLOW CAPACITY

FULL WIDTH TO EDGE OF 60 Ft. RIGHT OF WAY
FRONT OF SCHOOL

60 Ft ROW							
COCHITI ELEMENTARY SCHOOL							
SAN ISIDRO STREET NW							
Street	Face to face curbs		ft	29			
	Curb Height		ft	0.666			
ROW	Sidewalk and Lawn Width			15.5			
	Length		ft	320			
	Crown slope-street		ft/ft	0.02			
	Height 1			4959.90	Front of school at McDonald Rd.		
	Height 2			4959.00	San Isidro St & Poblana Rd.		
	Drop		ft	0.9			
	Slope		ft/ft	0.002812			
Manning #	weighted average			0.02267			
Cross Slope of walk and Row			ft/ft	0.04			
Street Flow Area			sq ft	15.11			
Area to ROW edges		above curb	sq ft	27.59			
Total X-Sectional Area			sq ft	42.70			
	Pw			61.33			
	Rh			0.6962			
Manning	Surface	#	Width				
	concrete	0.014	9				
	asphalt	0.016	29				
	grass	0.035	22				
ROW			60	ft			
Flow			Q =	116.930	cfs		
manningROW.xls							

Figure 3

PROJECT: Cochiti Elementary Estimated Street Flows RTI 99-030
BASIN : A Flow from LOS ARBOLES AVE and SPERONELLI RD Draining to SAN ISIDRO
CONDITION: EXISTING not including Cochiti school site

Part A -- Procedure for 40 Acre and Smaller Basins*

streets

Input

zone (x)		area (acres)	land treatment (%)	
1		12.53	A	
2	x		B	30.00
3			C	41.19
4			D	28.81
				100.00

Output

			(ac-ft)			(cfs)
Volume	2-YR	6-hr	0.308	**Q-Peak**	2-YR	10.108
		24-hr	0.429		10-YR	23.722
		4-day	0.474		100-YR	41.726
		10-day	0.504			
	10-YR	6-hr	0.714			
		24-hr	0.834			
		4-day	0.880			
		10-day	0.910			
	100-YR	6-hr	1.368			
		24-hr	1.488			
		4-day	1.653			
		10-day	1.849			

* City of Albuquerque Development Process Manual, Volume 1, 1997 Revision, pages 22-7 to 22-16.

AREA CALCULATIONS

Ft Wide	Ft Long	Area Sq Ft	Area Acres
620	880	545600	12.53

Treatment D percent by COA DPM N = units / acre Percent D = 7 sqrt((N*N)+(5*N))

Residences	N	Percent D
29	2.32	28.8

B & C treatment areas by visual approximation from air photos

PROJECT: Cochiti Elementary Estimated Street Flows . 99-030
BASIN : B Flow From MCDONALD ROAD West of SAN ISIDRO
CONDITION: EXISTING not including Cochiti school site

Part A -- Procedure for 40 Acre and Smaller Basins*

streets

Input

zone (x)		area (acres)	land treatment (%)	
1		7.4380	A	
2	X		B	33.17
3			C	35.00
4			D	31.83
				100.00

Output

			(ac-ft)			(cfs)
Volume	2-YR	6-hr	0.193	**Q-Peak**	2-YR	6.163
		24-hr	0.271		10-YR	14.229
		4-day	0.301		100-YR	24.926
		10-day	0.321			
	10-YR	6-hr	0.435			
		24-hr	0.514			
		4-day	0.543			
		10-day	0.563			
	100-YR	6-hr	0.824			
		24-hr	0.903			
		4-day	1.011			
		10-day	1.139			

* City of Albuquerque Development Process Manual, Volume 1, 1997 Revision, pages 22-7 to 22-16.

AREA CALCULATIONS

Ft Wide	Ft Long	Area Sq Ft	Area Acres
400	810	324000	7.438

Treatment D percent by COA DPM N = units / acre Percent D = 7 sqrt((N*N)+(5*N))

Residences	N	Percent D
20	2.689	31.829

B & C treatment areas by visual approximation from air photos

City of Albuquerque

February 29, 2000

Gordon P. Mossberg, P.E.
Resource Technology, Inc
1720 B. Randolph Rd. SE
Albuquerque, NM 87106

RE: GRADING & DRAINAGE PLAN FOR COCHITI ELEMENTARY SCHOOL (H-13/D031) SUBMITTED FOR BUILDING PERMIT APPROVAL

Dear Mr. Mossberg,

I have reviewed your submittal, referred to above, and offer the following comments.

Please consider the use of a detention pond even if it is impossible to drain the pond completely. A detention pond will allow you to use a 24 hour storm with its lesser volume. This in turn will allow you to raise the pond bottom to provide some slope to what is obviously a flat terrain.

Kindly look at the option of designing the pond with a bottom sloped from east to west, with a restricted outlet and an overflow at the southwest corner. Obviously this will entail providing a channel from the pond west to San Isidro. Having an outlet will protect the neighborhood from inadvertent flooding, relieve the school from the nuisance of standing water and keep your design in compliance with COA Hydrology design standards.

If you have any questions, please call me at 924-3988.

Sincerely,

Stuart Reeder, P.E.

Stuart Reeder, P.E.
Hydrology Division

xc: Whitney Reierson
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: COCHITI ELEMENTARY SCHOOL ZONE ATLAS/DRNG. FILE #: H-13/D031

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

LEGAL DESCRIPTION: UNPLATTED PARCEL KNOWN AS COCHITI ELEMENTARY SCHOOL

CITY ADDRESS: 3100 SAN ISIDRO STREET N.W.

ENGINEERING FIRM: RESOURCE TECHNOLOGY, INC. CONTACT: GORDON MOSSBERG

ADDRESS: 1720 B. RANDOLPH ROAD SE PHONE: 243-7300

OWNER: ALBUQUERQUE PUBLIC SCHOOLS CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: SIEGEL DESIGN CONTACT: JONATHAN SIEGEL

ADDRESS: 2726 CANDELARIA ROAD NW PHONE: 344 6746

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

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 PLAN APPROVAL

____ FOUNDATION PERMIT APPROVAL

__✓__ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ SUBDIVISION CERTIFICATION

____ OTHER _____ (SPECIFY)

RECEIVED
FEB 22 2000
HYDROLOGY SECTION

DATE SUBMITTED: FEBRUARY 22, 2000

BY: Gordon Mossberg

MASTER DRAINAGE PLAN
AND INTERIM IMPROVEMENTS

COCHITI ELEMENTARY SCHOOL

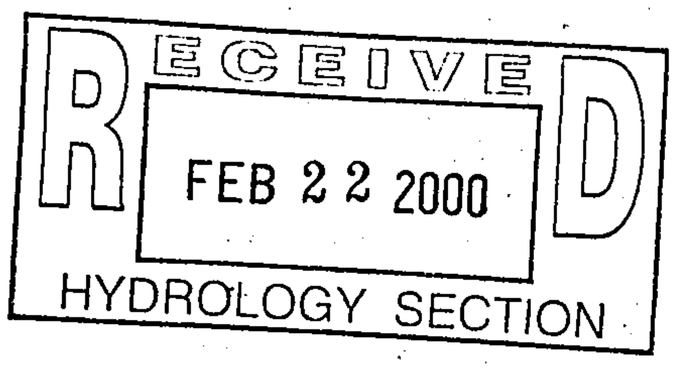
Prepared for

SIEGEL DESIGN
2726 Candelaria Road NW
Albuquerque, New Mexico 87107

Prepared by

Resource Technology, Inc.
1720-B Randolph Road SE • Albuquerque, NM 87106
(505) 243-7300 • (505) 243-7400 fax • rti@nmia.com

February 2000



MASTER DRAINAGE REPORT

INTRODUCTION

The site is located in the north valley of Albuquerque, New Mexico approximately 1.5 miles east of the Rio Grande. The address is 3100 San Isidro Street NW, approximately 2000 feet northwest of Menual Boulevard and 12th Street. The site is bounded on the west by San Isidro Street and on the north, east and south by single family residences. The legal description of the site is not available or is given as Unplatted Parcel Known as Cochiti Elementary School. The school site is presently developed with an Albuquerque Public School facility built in approximately 1961.

EXISTING DRAINAGE CONDITIONS

Off-Site Drainage

The drainage area surrounding Cochiti Elementary School is located at the lower elevations of a shallow drainage basin where all local runoff formerly accumulated. As the areas to the north and south were developed, drainage was diverted from the developed lots to the streets fronting those areas and away from the natural depression. The only area draining to the shallow basin at present is the east side of the school site.

The Alameda Drain Channel is located 600 feet north of the site and turns south to run about 800 feet west of the subject property. The residential street north of the school (Los Arboles Ave) drains to drop inlets connected to a 36-inch diameter storm drain that flows into the Alameda Drain west of the San Isidro Street crossing.

The residential areas to the northwest and west of the school drain by surface flow to San Isidro Street in front of the school. La Poblana Road to the east and west of San Isidro Street also drains to the storm sewer inlets at the intersection of these two streets. See Figure 5. The area to the east of the school is a small recently built subdivision with ponding areas on each lot along the rollover curbs of the cul-de-sac.

For computation of estimated street flows in San Isidro Street two areas were measured and surface treatments were determined using the City of Albuquerque Development Process Manual (COA-DPM). The proceedure for 40 Acre and Smaller Basins was used to determine volumes and peak flows. Two lots east of San Isidro Street on Los Arboles Avenue and the areas of Los Arboles Avenue and Speronelli Road west of San Isidro Street (Basin A) (Figure 5) were found to have a surface area treatment of 29 % D (impervious), 41 % C (soil) and 30 % B (lawn). The area of 12.5 acres to contributes 41.7 cfs during the 100-year storm and a volume of 1.85 acre feet during the 100-year 10-day storm.

The area of McDonald Road (Basin B) (Figure 5) has a surface area treatment of 32 % D, 35 % C and 33 % B. The area of 7.4 acres contributes 24.9 cfs during the 100-year storm and a volume of 1.1 acre feet during the 100-year 10-day storm. The total surface flow on San Isidro Street past the school site is 66.6 cfs during the 100-year storm and a volume of 2.4 acre feet during the 100-year 10-day storm excluding the flow from the school.

The flow capacity of the existing storm drain in San Isidro Street at the intersection with La Poblana is 7.6 cfs. The flow capacity of the 60-ft wide surface of San Isidro Street is 61.0 cfs for a total of 68.6 cfs including the street surface and storm sewer.

On-Site Drainage

The majority of the school site is bare ground with some lawn area at the front of the school and an irrigated grass athletic field in the back. Paved playground and parking areas are asphalt or concrete. A small amount of graveled parking area is located on the north side of the main building. This appears to be a non-contributing area of runoff; all the water appears to pond on-site and does not drain. Two large sand box areas in the north playground have perimeter concrete curbs and also appear to be non-contributing areas. The flat roofed buildings drain on all sides by spilling over the edges onto either bare or paved surfaces. Some roof gutters have been placed over building entrances and these discharge at their open ends.

In general, the current drainage situation at the school is as follows. The west quarter of the school area drains as surface runoff to San Isidro Street NW, where it flows approximately 100 feet south along the street to a series of drop inlets at the intersection of San Isidro and La Poblana Road. These inlets feed into a 24-inch diameter storm drain that flows south along San Isidro Street to a 36-inch diameter storm drain at Indian School Road, which flows west to the nearby Alameda Drain.

The remaining three-quarters of the school grounds drain to the east end of the site where the former natural depression existed. In 1996 a multi-purpose grass playing field was constructed on the east side of the school property. The area was graded with a shallow ponding area at the southeast corner of the site adjacent to the grass athletic field. The south center part of the field is lower than the ends and contributes to the overflow capacity of the pond.

The east area of the school site (Figure 1) was found to have a surface area treatment of 0% A, 27.4 % B, 56.5 % C and 27.4 % D. The area of 5.6 acres contributes a peak flow of 19.2 cfs with a volume of .83 acre feet during the 100-year 10-day storm. Individual sub-area flows are summarized in Table 1.

TABLE 1. SUMMARY OF FLOWS AND VOLUMES

BASIN :	Area (acres)	CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL Land Treatment (%)				100-YR 10-day	Q-Peak 100-YR
		A	B	C	D	(ac-ft)	(cfs)
OFFSITE BASIN A	12.5	0	30	41	29	1.85	41.7
OFFSITE BASIN B	7.4	0	33	35	32	1.14	24.9
EXISTING FLOW TO STREET	2.2	0	19	18	62	0.49	8.7
EXISTING FLOW TO POND	5.7	0	16	57	27	0.832	19.2
MASTER PLAN FLOW TO STREET	2.04	0	8	16	75	0.52	8.7
MASTER PLAN FLOW TO POND	5.7	0	17	42	41	1.01	20.6
NORTH DRIVEWAY TO FRONT DRIVEWAY FLOW	.74	0	0	39	61	.17	3.0
EAST SIDE SWALE TO POND FLOW	1.26	0	0	100	0	.12	3.9
COURTYARD DRAIN TO POND FLOW	1.18	0	0	17	83	.32	5.2
SOUTH DRIVEWAY SWALE TO POND FLOW	1.62	0	0	28	72	.41	6.9

The existing pond built as part of the grass athletic field has a volume of .32 acre feet with a depth of 1.9 feet to the elevation of the south side of the grass athletic field. A volume of .55 acre feet would cover an additional area including one third of the grass athletic field with a total pond depth of 2.4 feet. The 100-year 10-day storm would require a depth of 2.7 feet and cover an area of half the grass athletic field plus the southeast basketball court and half the area of the dirt playground north of the grass athletic field, at an elevation of 4962.8 feet, as listed in Table 2 and shown on Figure 1.

TABLE 2. AS-BUILT POND VOLUME

					CUMULATIVE	CUMULATIVE
Depth Ft.	ELEVATION	AREA Sq.Ft.	Thickness	VOLUME	CUBIC FEET	ACRE-FEET
0	4960.1	75				
0.2	4960.3	650	0.2	63	63	0.001
0.4	4960.5	2125	0.2	263	326	0.007
0.9	4961	7950	0.5	2364	2691	0.062
1.9	4962	14500	1	11062	13753	0.316
2.4	4962.5	27075	0.5	10231	23984	0.551
2.7	4962.8	64175	0.3	13293	37278	0.856
2.9	4963	109550	0.2	17171	54449	1.250

Research in the City of Albuquerque drainage files indicates that the existing site drainage plan was not approved by the City. Additional improvements to drain the pond were specified by the city but no letter of approval was found in the files.

The existing FEMA Map No. 35001C0331 D 0022, September 20,1996, shows an AH flood zone at elevation 4962 ft. covering approximately one third of the subject site at the back of the school yard. See Figure No. 6.

In addition, several nuisance drainage situations exist on the site. These include:

1. The non-draining area on the north side of the main building; the water ponds in shallow pools in the non-gravel areas.

2. Shallow "bird-bath" puddles in the central courtyard.

3. The non-draining area around and under the existing portable classrooms.

4. The interior courtyard and the area between the Library and the main building are mostly paved but with no drainage system so that pedestrian traffic during rainy periods is inconvenient and, in some instances, hazardous.

5. All of the unpaved areas turn to mud when it rains. The use of gravel surfacing has helped in areas where vehicles have access and in the lunch area.

Discussions with the school maintenance staff indicate no flooding of any of the building interiors.

PROPOSED DRAINAGE IMPROVEMENTS

Because the site has relatively low gradients, storm water drainage is not efficient. Discussions were conducted with Albuquerque Public Schools to evaluate options. At a pre-design conference, it was agreed that with due regard to street and storm drain capacity in San Isidro and Indian School Streets, as much of the site as possible would be drained to the street (westwards) and the flow to the on-site retention pond would be reduced. However street drainage is presently inadequate, as previously described.

The current solution is to drain the front of the main building, the north and west side driveways, multipurpose building and proposed basketball courts westward to San Isidro Street and to drain the central courtyard and non-building areas on the east side of the site to the detention pond. The dividing line for drainage basins on the south side of the main building can be moved west with some minor regrading there. A swale can be constructed on the south side of the site draining to the southeast ponding area.

A Master Plan site layout and drainage plan (Figure 2) are proposed and are compatible with the solution described above. The south side school bus drive and the proposed kindergarten building would drain by a paved swale to the detention basin.

Under the Master Plan the existing pond capacity would be expanded to accept the runoff that currently may pond in the playground and grass athletic field. Maintaining the approximate current pond bottom elevation of 4960 and excavating the pond sides at a 5H to 1V slope from the curb of the athletic field and a line five feet north of the south property line, the 100-year 10-day storm could be contained using approximately one eighth of the grass athletic field area. The ponding elevation would be 4962.0 feet and a depth of 2 feet, as shown in Table 3 and Figure 2.

TABLE 3. EXPANDED POND VOLUME CALCULATION

DEPTH Ft	ELEVATION Ft	AREA Sq Ft	THICKNESS Ft	VOLUME CUBIC FEET	CUMULATIVE CUBIC FEET	CUMULATIVE ACRE-FEET
0	4960	14,706				
0.5	4960.5	16,306	0.5	7,750	7,750	0.18
1	4961	17,956	0.5	8,562	16,312	0.37
1.5	4961.5	19,656	0.5	9,400	25,712	0.59
2	4962	21,406	0.5	10,262	35,974	0.83
2.5	4962.5	31,200	0.5	13,075	49,049	1.13
3	4963	49,000	0.5	19,883	68,932	1.58

MASTER PLAN IMPACTS ON DRAINAGE

Drainage to Street:

1. The quantity and rate of runoff going to the street will not be increased above the existing amount.

2. The north side drive will be graded to drain to the west by lowering pavement elevations on the west end and raising elevations on the east end. Regrading on the south side of the main building will move the dividing lines between the drainage basins to maintain the existing flow to the street.

3. Roof drainage schemes for the existing buildings will be revised as necessary to maintain the existing flow rates and volumes to San Isidro Street.

Drainage to Retention Pond:

1. With removal of the small building in the interior courtyard and conversion to a landscaped area, stormwater will flow into a central drain inlet with subsurface removal either in pipes or through a covered trench drain (e.g. ACO Drain) to minimize pedestrian impacts. These pipes or drains would discharge eastward and outfall into the existing pond. The impervious areas of the courtyard, library, building D and pavement in these areas is .56 acres. The flow and volume is estimated at 2.6 cfs during the 100-year storm and .17 acre feet during the 100-year 10-day storm.

2. The existing east side surface swale would drain the northeast corner of the site. This is the current situation and no changes other than maintenance are required.

3. The area of the proposed school bus and fire access will be drained by an asphalt-lined surface swale to the existing pond.

Optional Treatment

Drainage from the area of the inner courtyard west of the present library will be improved according to the Master Plan with the development of the additions to the main building and the removal of the teachers lounge building. Subsurface drainage pipes or surface swales can be used here.

The maintenance and cleanout of drainage pipes may be eliminated with the use of an alternate system of surface draining swales. Muddy conditions due to the clayey soils may require lining the swales. Safety and ADA concerns will affect slope designs. The most desirable, long lived and expensive swale lining material is concrete. A less expensive lining material is asphalt, but its service life (approximately 5 to 10 years, depending upon frequency of flows) is much shorter than concrete.

Phase I Interim Drainage Plan

Given the present drainage circumstances at this school site, it is appropriate to design the multi-purpose building (mini-gym) site (Figure 3) to drain westwards to the street along the proposed north driveway in a paved swale in the center of the driveway. As previously described, this additional flow to the street will be offset by reduction of flow on the south side of the site so that the drainage impacts to San Isidro Street are not changed. The very flat gravel areas on the north and south sides of the site which are functionally non-contributing but could, in effect, contribute during extreme runoff events were included in the runoff computations. Therefore, the final drainage scheme for the school will not have to be implemented immediately, and the mini-gym project can continue on schedule.

The prepared Grading and Drainage Plan for the new Mini-gym is presented in Figures 3 and 4. This plan slightly reduces flow rates and volumes to the existing pond and increases flows to San Isidro Street by 3.0 cfs until the south driveway swale to the pond is constructed. This represents an increase flow on San Isidro Street from 75.3cfs to 78.3 cfs at the down stream side of the school site. With the construction of the south driveway swale the impacts of the Mini-gym to flow in San Isidro Street will be eliminated.

F. SUPPLEMENTARY MATERIALS

Other materials submitted with this report include:

Sample Calculations

02/18/2000

PROJECT: Cochiti Elementary Estimated Street Flows RTI 99-030
BASIN : A Flow from LOS ARBOLES AVE and SPERONELLI RD Draining to SAN ISIDRO
CONDITION: EXISTING not including Cochiti school site

Part A -- Procedure for 40 Acre and Smaller Basins*

streets

Input

zone (x)		area (acres)	land treatment (%)	
1		12.53	A	
2	X		B	30.00
3			C	41.19
4			D	28.81
				100.00

Output

			(ac-ft)			(cfs)
Volume	2-YR	6-hr	0.308	**Q-Peak**	2-YR	10.108
		24-hr	0.429		10-YR	23.722
		4-day	0.474		100-YR	41.726
		10-day	0.504			
	10-YR	6-hr	0.714			
		24-hr	0.834			
		4-day	0.880			
		10-day	0.910			
	100-YR	6-hr	1.368			
		24-hr	1.488			
		4-day	1.653			
		10-day	1.849			

* City of Albuquerque Development Process Manual, Volume 1, 1997 Revision, pages 22-7 to 22-16.

AREA CALCULATIONS

Ft Wide	Ft Long	Area Sq Ft	Area Acres
620	880	545600	12.53

Treatment D percent by COA DPM N = units / acre Percent D = 7 sqrt((N*N)+(5*N))

Residences	N	Percent D
29	2.32	28.8

B & C treatment areas by visual approximation from air photos

c:/aprojects/99-030/DPM40localSTREET2.xls

PROJECT: Cochiti Elementary — Estimated Street Flows 99-030
BASIN : B — Flow From MCDONALD ROAD West of SAN ISIDRO
CONDITION: EXISTING — not including Cochiti school site

Part A -- Procedure for 40 Acre and Smaller Basins*

streets

Input

zone (x)		area (acres)	land treatment (%)	
1		7.4380	A	
2	X		B	33.17
3			C	35.00
4			D	31.83
				100.00

Output

			(ac-ft)			(cfs)
Volume	2-YR	6-hr	0.193	**Q-Peak**	2-YR	6.163
		24-hr	0.271		10-YR	14.229
		4-day	0.301		100-YR	24.926
		10-day	0.321			
	10-YR	6-hr	0.435			
		24-hr	0.514			
		4-day	0.543			
		10-day	0.563			
	100-YR	6-hr	0.824			
		24-hr	0.903			
		4-day	1.011			
		10-day	1.139			

* City of Albuquerque Development Process Manual, Volume 1, 1997 Revision, pages 22-7 to 22-16.

AREA CALCULATIONS

Ft Wide	Ft Long	Area Sq Ft	Area Acres
400	810	324000	7.438

Treatment D percent by COA DPM — N = units / acre — Percent D = 7 sqrt((N*N)+(5*N))

Residences	N	Percent D
20	2.689	31.829

B & C treatment areas by visual approximation from air photos

c:/aprojects/99-030/DPM40localSTREET3.xls

COCHITI ELEMENTARY SCHOOL RESOURCE TECHNOLOGY, INC. 02/18/2000

99-030

SAN ISIDRO STREET FLOW CAPACITY

FULL WIDTH TO EDGE OF 60 Ft. RIGHT OF WAY
FRONT OF SCHOOL

60 Ft ROW					
COCHITI ELEMENTARY SCHOOL					
SAN ISIDRO STREET NW					
Street	Face to face curbs		29		
	Curb H		0.666		
ROW	Sidewalk and Lawn		15.5		
	Length		320		
	Crown slope street		0.02		
	Height 1		4959.90	Front of school at McDonald Rd.	
	Height 2		4959.00	San Isidro St & Poblana Rd.	
	Drop		0.9		
	Slope		0.002812		
Manning #	weighted average		0.02267		
	Slope walk and Row		0.02		
Area to ROW edges	above curb		13.80		
X-Sectional Area	with walks		28.90		
	Pw		61.33		
	Rh		0.4713		
Manning	Surface	#	Width		
	concrete	0.014	9		
	asphalt	0.016	29		
	grass	0.035	22		
ROW			60 Ft		
Flow		Q =	61.025		
manningROW.xls					

RESOURCE TECHNOLOGY, INC.
FLOW CALCULATION
SAN ISIDRO STREET STORM DRAIN

02/18/2000

COCHITI ELEMENTARY SCHOOL					
SAN ISIDRO STREET NW		Poblana Rd to Towner Rd			
24"	Storm Drain				
PIPE	DIAMETER		24	Inches	
	AREA		3.142	sq ft	
	Length		755	ft	
	Slope		0.0015	Ft/Ft	
Manning #			0.015	coef.	
PERIMETER wetted	Pw		6.28	ft	
RADIUS hydraulic	Rh		0.5	ft	
Flow		Q =	7.614	CFS	
PIPE-SD.xls					

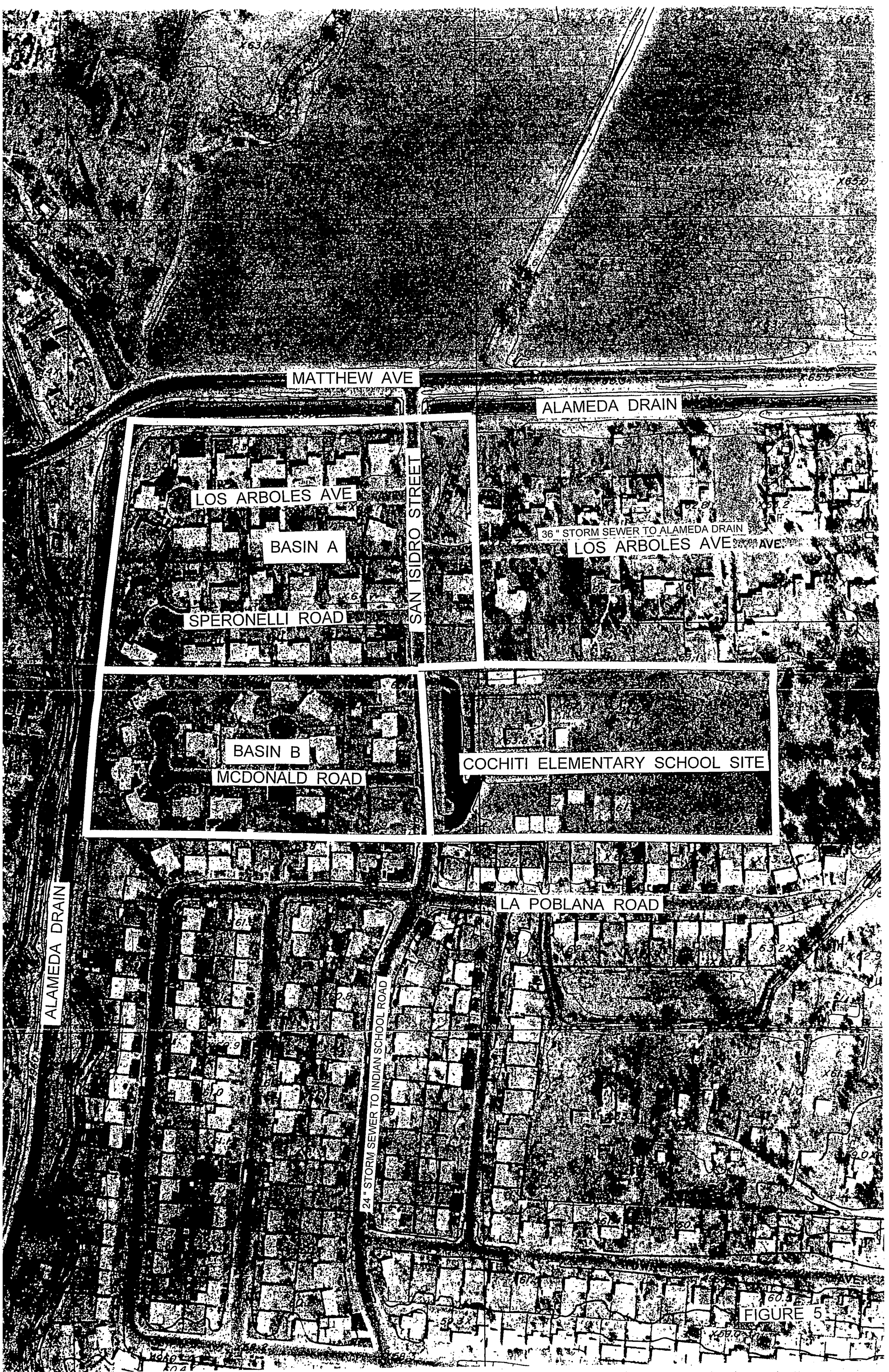

MATTHEW AVE
ALAMEDA DRAIN
LOS ARBOLES AVE
BASIN A
SAN ISIDRO STREET
SPERONELLI ROAD
36 " STORM SEWER TO ALAMEDA DRAIN
LOS ARBOLES AVE
BASIN B
MCDONALD ROAD
COCHITI ELEMENTARY SCHOOL SITE
LA POBLANA ROAD
ALAMEDA DRAIN
24 " STORM SEWER TO INDIAN SCHOOL ROAD

FIGURE 5

ZONE X

CAMINO AMPARO

PRADO MATEO

CHARADA AVENIDA

CAMINO GUSTO

CAMINO APLAUSO

ECUESTRE

Griegos Lateral

INDIAN FARM

Griegos Drain

LLANO COURT

CAMINO GALLO

CAMINO

GARDEN PARK ROAD

GARDEN

ZONE AH
(EL 4964)

PARK CIRCLE

CAMINO ROSARIO

14TH ST

MATTHEW AVENUE

Alameda Drain

LOS ARBOLES AVENUE

LOS ARBOLES AVENUE

SPERONELLI ROAD

COCHITI ELEMENTARY
SCHOOL SITE

MCDONALD ROAD

ZONE AH
(EL 4962)

STREET

CORDOVA AVENUE

PHOENIX AVENUE

LA POBLANA ROAD

WOODLAND AVENUE

WOODLAND LANE

MENAUL

SIOUX

SIERRA

MENAUL BOULEVARD

TOWNER AVENUE

SAN ISIDRO STREET

INDIAN SCHOOL ROAD

Campbell

CITY OF ALBUQUERQUE
350001

FIRM PANEL 0132

FIGURE 6

CITY OF
Albuquerque

May 8, 1996

Martin J. Chávez, Mayor

Jeff Mortensen
Jeff Mortensen & Associates
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

RE: DRAINAGE PLAN FOR COCHITI ELEMENTARY SCHOOL (H13-D31)
RECEIVED MARCH 20, 1996.

Dear Mr. Mortensen:

I have received the above referenced plan and forward the following comments:

1. The Drainage Ordinance indicates that a retention pond is not allowed. The only acceptable method would be a flat grading scheme. We suggest that the field be elevated and run-off be conveyed to the whole site. Your grading plan is concentrating the run-off at one location.

2. Another option would be to use the pond grading as indicated and use a small pipe to convey flows to the storm drain downstream.

If you have any questions, feel free to contact me at 768-2654.

Sincerely,

Carlos A. Montoya
PWD/Hydrology Division

CAM/dl

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: COCHITI ELEM ZONE ATLAS/DRNG. FILE #: H13 / D31

DRB #: _____ EPC #: _____ WORK ORDER #: 5349.90

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: JEFF MORTENSEN & ASSOC. CONTACT: JEFF MORTENSEN

ADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250

OWNER: APS / DFR CONTACT: BOB BECKEL

ADDRESS: ~~9621 4TH NW~~ PHONE: 242-5865

ARCHITECT: DESIGN WORKSHOP CONTACT: JIM ALSUP

ADDRESS: 9621 4TH NW PHONE: 890-1815

SURVEYOR: JEFF MORTENSEN & ASSOC CONTACT: JEFF MORTENSEN

ADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250

CONTRACTOR: CITY PARKS CONTACT: ROB MCNARY

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT
X DRAINAGE PLAN
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PRE-DESIGN MEETING:

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___ PAVING PERMIT APPROVAL
___ S.A.D. DRAINAGE REPORT
___ DRAINAGE REQUIREMENTS
X OTHER DRC (SPECIFY)

DATE SUBMITTED: 05-14-96

BY: JEFFREY G. MORTENSEN

RECEIVED
MAY 15 1996
HYDROLOGY DIVISION