CITY OF ALBUQUERQUE

January 11, 2011

Jeffery G. Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

Re: Chelwood Elementary School Handicap Parking Spaces
Grading Plan
Engineer's Stamp dated 1-07-11 (J22/D005)

Dear Mr. Mortensen,

Based upon the information provided in your submittal dated 1-07-11, the above referenced plan is approved for Grading Permit and Paving Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Hydrology is requesting that proposed landscape area be depressed to retain/infiltrate the rain that falls in this area.

Upon completion of the project, please provide an Engineer Certification for our files.

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

July 12, 2011

Jeff Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE.
Albuquerque, NM 87109

Re: Chelwood Elementary School Handicap Parking Spaces
Engineer's Stamp dated: 3-13-11 (J-22/D005)
Certification dated: 7-5-2011

Dear Mr. Mortensen,

Thank you for providing the Hydrology department with the Engineers Certification of Grading dated 7/5/11.

Sincerely,

Rudy E. Rael,CE
Engineer Assistant, Hydrology Section
Development and Building Services

C: File

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

2010.180.7

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: CHELWOOD HANDICAP PARKING
ZONE ATLAS/DRNG. FILE #: J-22/D005
DRB #: _____ EPC #: _____
WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A, CHELWOOD ELEMENTARY SCHOOL
CITY ADDRESS: 12701 CONSTITUTION NE

ENGINEERING FIRM:	HIGH MESA CONSULTING GROUP	CONTACT:	JEFF MORTENSEN, NMPE 8547
ADDRESS:	6010-B MIDWAY PARK BLVD. NE	PHONE:	(505) 345-4250
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87109
OWNER:	ALBUQUERQUE PUBLIC SCHOOLS	CONTACT:	TYLER MASON
ADDRESS:	915 OAK STREET SE	PHONE:	(505) 848-8822
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87106
ARCHITECT:	N/A	CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	HIGH MESA CONSULTING GROUP	CONTACT:	CHARLES CALA JR, NMPS 11184
ADDRESS:	6010-B MIDWAY PARK BLVD. NE	PHONE:	(505) 345-4250
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87109
CONTRACTOR:	ALTOR CONSTRUCTION	CONTACT:	MARIE ALVIDREZ
ADDRESS:	5215 EDITH BOULEVARD NE	PHONE:	(505) 341-1551
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87107-4121

TYPE OF SUBMITTAL:
- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERTIFICATION (TCL)
- ___ ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ___ SIA/FINANCIAL GUARANTEE RELEASE
- ___ 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 (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- X OTHER (SPECIFY): CONDITION OF APPROVAL

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

JUL 6 2011
HYDROLOGY SECTION

DATE SUBMITTED: 07-06-2011 BY: BRIAN E. EVEMEYER

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based upon 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

October 20, 2004

John Tellez, P.E.
Wilson & Company
2600 The American Rd. SE, Suite 100
Rio Rancho, NM 87124

Re: Chelwood Elementary School Drop Off Lane, 12701 Constitution Ave NE, Grading and Drainage Plan
Engineer's Stamp dated 10-18-04 (J22-D5)

Dear Mr. Tellez,

Based upon the information provided in your submittal received 10-18-04, the above referenced plan is approved for Paving Permit and Grading Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Upon completion of the project, please provide an Engineer Certification for our files.

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

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

Sincerely,

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

C: Charles Caruso, DMD Storm Drainage Design
File

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

CITY OF ALBUQUERQUE

March 10, 2009

Lawerance D. Read, P.E.
Larry Read & Associates, Inc.
2430 Midtown Place, NE Ste. C
Albuquerque, NM 87107

Re: Chelwood Elementary School, 12701 Constitution Ave. NE,
(J-22/D005)
Approval of Permanent Certificate of Occupancy,
Engineer's Stamp Dated: 10-22-07
Engineer's Certification Date: 3-07-09

Dear Mr. Read,

Based upon the information provided by our visual inspection on 3/09/09, 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

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: CHELWOOD ELEMENTARY SCHOOL
DRB #: _____ EPC#: _____

ZONE MAP/DRG. FILE #:J22-D005
WORK ORDER#: _____

LEGAL DESCRIPTION: TRACT A, CHELWOOD ELEMENTARY SCHOOL
CITY ADDRESS:12701 CONSTITUTION AVE. NE

ENGINEERING FIRM: LARRY READ & ASSOCIATES, INC
ADDRESS: 2430 MIDTOWN PLACE, NE SUITE C
CITY, STATE: ALBUQUERQUE, NEW MEXICO

CONTACT: LARRY READ
PHONE: 237-8421
ZIP CODE: 87107

OWNER: ALBUQUERQUE PUBLIC SCHOOLS
ADDRESS: _____
CITY, STATE: _

CONTACT: _____
PHONE: _____
ZIP CODE: ___

ARCHITECT: RMKM
ADDRESS: _____
CITY, STATE: _

CONTACT: ____
PHONE:
ZIP CODE: ____

SURVEYOR: _____
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CONTRACTOR: _____
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
- ☐ 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 (PERM.)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☒ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

RECEIVED
MAR 09 2009
HYDROLOGY SECTION

RECEIVED
MAR 06 2009
HYDROLOGY SECTION

DATE SUBMITTED:March 9, 2009

BY:LARRY D. READ PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope ot the proposed development defines 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 20, 2003

Bruce Stidworthy, P.E.
Bohannan Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

Re: Chelwood School Kindergarten Addition, Corner of Chelwood Park Blvd. and Constitution Ave., Certificate of Occupancy

Engineer's Stamp dated 2-28-03 (J22/D5)

Certification dated 11-19-03

Dear Mr. Stidworthy,

Based upon the information provided in your submittal received 11-20-03, , 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 924-3981.

Sincerely,

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

C: Phyllis Villanueva
file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE: Chelwood School Kindergarten Addition #1 ZONE MAP/DRG. FILE # J22/D5
DRB #: EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Tract B as shown and designated on Plat of Panorama Heights Addition
CITY ADDRESS: N.E> Corner of Chelwood Park Blvd. & Constitution Ave.

ENGINEERING FIRM: Bohannan Huston, Inc. CONTACT: Bruce Stidworthy
ADDRESS: 7500 Jefferson NE – Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

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

ARCHITECT: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

SURVEYOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

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

CHECK TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- _X_ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ 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
- _X_ CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

RECEIVED
NOV 20 2003
HYDROLOGY SECTION

DATE SUBMITTED: 11-20-03 BY: Bruce Stidworthy

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope of the proposed development defines 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

October 25, 2007

Lawrence D. Read, P.E.
Larry Reed & Associates, Inc
2430-C Midtown Place NE
Albuquerque, NM 87107

Re: Chelwood Park Elementary – New Classroom Building
Engineer's Stamp dated 10-22-07 (J22-D5)

Dear Mr. Read,

Based on the information contained in your submittal received on October 22, 2007, the above referenced plan is approved for Building Permit, Grading Permit, and SO-19 Permit.

Please attach a copy of this letter and the approved plan to the construction sets prior to sign-off by Hydrology. A copy of this approval letter must be on hand when applying for the excavation permit. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

Be advised that no Certificate of Occupancy, temporary or permanent, will be released prior to inspection and approval of the storm drain connection by the Storm Drain Maintenance department. Contact Duane Schmitz at 235-8016 to schedule an inspection.

This project will also require a National Pollutant Discharge Elimination System (NPDES) permit. Inquiries regarding this permit should be directed to Sertil Kandar at 768-3645. In addition to submitting an NOI to the EPA and preparing a SWPPP, please send a copy of the SWPPP on a CD in .pdf format to Kathy Verhage with the Department of Municipal Development Storm Drainage Division at the following address.

Department of Municipal Development
Storm Drainage Division
P.O. Box 1293, One Civic Plaza, Rm. 301
Attn: Kathy Verhage
Albuquerque, NM 87103

If you have any questions or need additional information, feel free to contact me at 924-3990.

Sincerely,

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

cc: file (J22-D5)

Antoinette Baldonado, Construction Services
Duane Schmitz, DMD Street / Storm Maintenance
Kathy Verhage, DMD Storm Drainage Division

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

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

March 27, 2009

Don Howard May, Registered Architect
Rohde May Keller Architecture
400 Gold Ave. SW
Sims Towers, Ste. 1100
Albuquerque, NM 87102

Re: Certification Submittal for Final Building Certificate of Occupancy for
APS Chelwood Elementary School, [J-22 / D005]
12701 Constitution Blvd NE
Architect's Stamp Dated 03/26/09

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Dear Mr. May:

The TCL / Letter of Certification submitted on March 26, 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

ROHDE MAY KELLER McNAMARA
ARCHITECTURE
a professional corporation

26 March 2009

City of Albuquerque
Traffic and Hydrology

attn: Mr. Nilo Salgado (hand delivered)

re: APS Chelwood Elementary School
12701 Constitution Blvd., NE
(J-22/D005)

Mr. Salgado:

We are corresponding with regard to the recently completed site improvements and classroom building addition referenced above (APS Project No. 0236.1002.40105), and more specifically, the provision of additional accessible handicap parking stalls and ramp in the north parking lot as required.

Per your request, and for the purpose of obtaining the final Certification of Occupancy, as the Architect-of-Record I am providing you with this letter certifying that these improvements have been completed by T.A. Cole & Sons (General Contractor) in accordance with the documents prepared by my firm and my Consulting Civil Engineer, Larry Read and Associates, and that the finished construction is in compliance with the jurisdictional requirements. Please see the attached reference drawings and photos, and please don't hesitate to contact us if you have any questions.

Thank you in advance for your immediate attention, we look forward to the release of the final Certificate of Occupancy.

Sincerely,

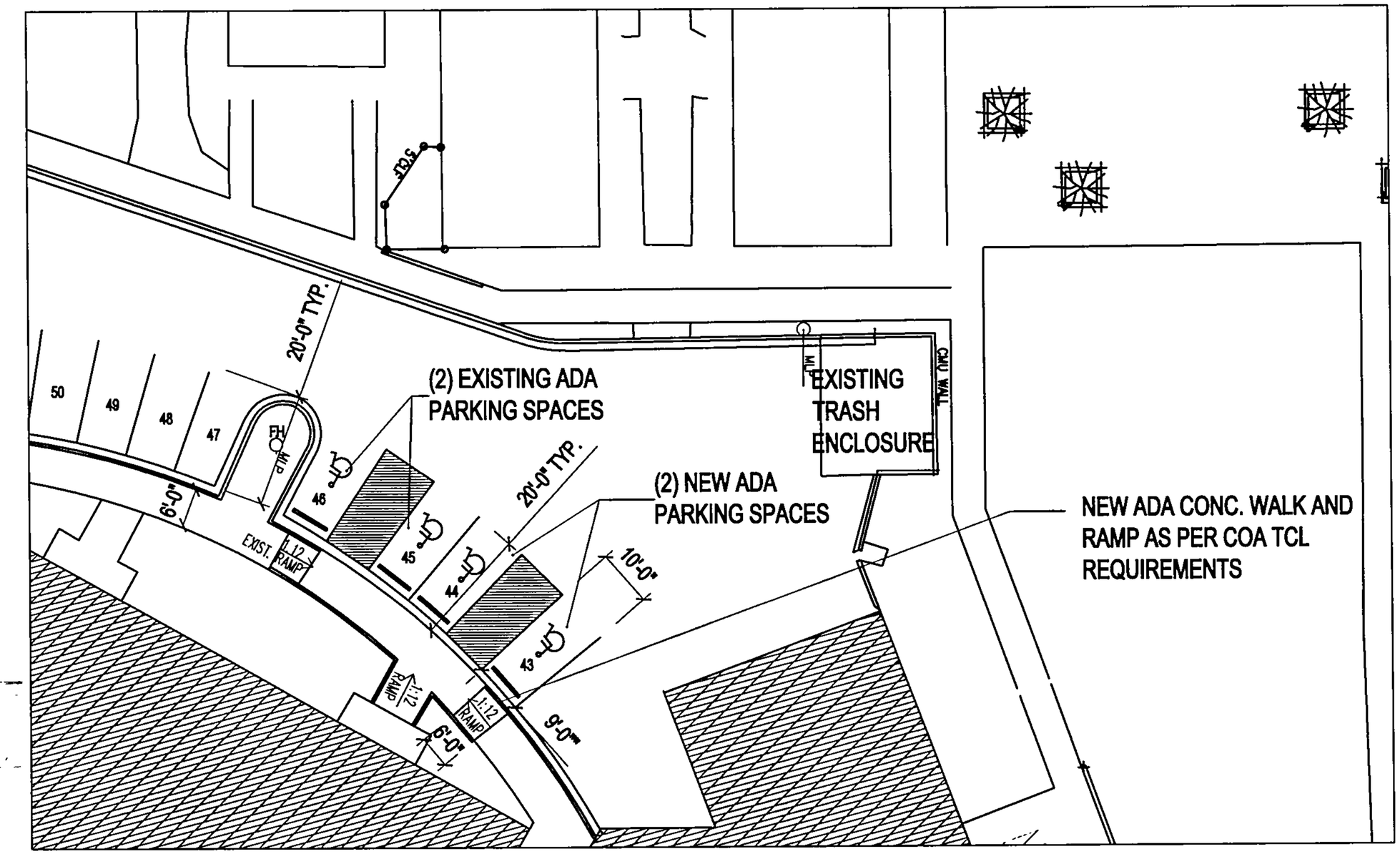
Don H. May, AIA, ~~NCARB~~
Principal, Architect

STATE OF NEW MEXICO
DON HOWARD
MAY
NO. 2733
REGISTERED ARCHITECT
26 MAR 2009

copy T.A.Cole & Sons
T. Mason, APS
L. Read, LRA
file, RMKMA

RECEIVED
MAR 26 2009
HYDROLOGY
SECTION

SIMMS TOWER . STUDIO 1100 . 400 Gold Avenue SW . Albuquerque . NM . 87102-3265
p: 505.243.5454 f: 505.243.5858 www.rmkmarch.com



MAR 26 2009

NOTE :

THIS TCL REVISION TO THE TWO NEW ADA PARKING SPACES AS SHOWN IS IN ORDER TO COMPLY WITH COA TRAFFIC AND HYDROLOGY REQUIREMENTS FOR PERMANENT CERTIFICATE OF OCCUPANCY.

PROJECT
CHELWOOD ELEMENTARY SCHOOL
CLASSROOM BUILDING ADDITION
AND CAMPUS IMPROVEMENTS
12701 CONSTITUTION BLVD. NE
ALBUQUERQUE, NM

RMKMc PROJECT NO
0608

SHEET TITLE
TCL REVISION TO REQUIRED
ADA PARKING SPACES AND RAMP

DRAWING FILE NO.
TCL-1 REVISION 3.26.2009

SHEET NUMBER
TCL 1-A

SCALE
1" = 30'-0"

DATE
3.26.2009

DRAWN BY
DAE

ROHDE MAY KELLER McNAMARA
ARCHITECTURE
PROFESSIONAL CORPORATION
400 GOLD AVE. S.W. STUDIO 1100 SIMMS TOWER Albuquerque New Mexico 87102 USA tele 505 243 5454

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

March 6, 2009

Don Howard, Registered Architect,
Rohde May Keller McNamara Architecture
Professional Corporation
400 Gold Avenue, SW,
Ste. 1100 Simms Tower
Albuquerque, NM 87102

Re: Approval of Temporary Certificate of Occupancy (C.O.) for
Chelwood Elementary School Classroom Addition, [J-22 / D005]
12701 Constitution Avenue NE
Architect's Stamp Dated 03/05/09

Dear Mr. Howard:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the information provided on your submittal dated March 6, 2009, the above referenced project is approved for a 120-day Temporary C.O.

A Temporary C.O. has been issued allowing the H.C. ramp design (need to provide an alternative for ADA access from stall to sidewalk connection) issues to be completed within this time period. When these remaining issues have been fully completed, are in substantial compliance, and a final Certification for Transportation has been resubmitted to the City's Hydrology office for approval, a Permanent C.O. will be issued.

The Certification package for Final C.O. must include an ***exact*** copy of the approved TCL, or signed off D.R.B. Site Plan, which is in each of the two City Permit Plan Sets—the contractor's City field set and the City's plan set in the basement of the Plaza Del Sol building. Package also must include a letter of certification on designer's letterhead-stamped with his seal, signed, and dated. Submit package along with fully completed Drainage Information Sheet to front counter personnel for log in and evaluation by Transportation.

If you have any questions, please call me at 924-3630.

Sincerely,

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

c: Engineer
Hydrology file
CO Clerk

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: CHELWOOD ELEMENTARY SCHOOL ZONE MAP: J-22 / 2005

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

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

EXT. 168

ARCHITECT: ROMERO, WAY KELLER MCNAMARA ARCHITECTURE CONTACT: DAVID EDWARDS

ADDRESS: 400 GOLD AVE. SW, STUDIO 1100, SUNWEST TOWER PHONE: 243-5454

CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87102

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
__X__ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ 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)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: FRIDAY, MARCH 6, 2009

RECEIVED
MAR 06 2009
HYDROLOGY SECTION

RECEIVED
MAR 05 2009
HYDROLOGY SECTION
BY: DAVID EDWARDS

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 defines 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

August 15, 2008

Don May, R.A.
Rohde May Keller McNamara Architects
400 Gold Ave SW Studio 1100, Sims Tower
Albuquerque NM 87102

Re: Chelwood Elementary School Classroom Addition, 12701 Constitution Avenue NE
Traffic Circulation Layout
Engineer's Stamp dated 8-07-08 (J-22/D005)

Dear Mr. May,

The TCL submittal received 8-07-08 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.
Senior Engineer, Planning Dept.
Development and Building Services

C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

October 25, 2007

Don May, R.A.
Rohde May Keller McNamara Architects
400 Gold Ave SW Studio 1100, Sims Tower
Albuquerque NM 87102

Re: Chelwood Elementary School Classroom Addition, 12701 Constitution Avenue NE
Traffic Circulation Layout
Engineer's Stamp dated 10-25-07 (J-22/D005)

Dear Mr. May,

The TCL submittal received 10-25-07 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.
Senior Engineer, Planning Dept.
Development and Building Services

C: File

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

CITY OF ALBUQUERQUE

October 10, 2008

Ramon Sarason, R.A.
Rohde May Keller McNamara Architects
400 Gold Ave SW Studio 1100, Sims Tower
Albuquerque NM 87102

Re: Chelwood Elementary School Classroom Addition,
12701 Constitution Avenue NE,
Certificate of Occupancy – Transportation Development
Certification dated 10-09-08

Dear Mr. Sarason,

Based upon the information provided in your submittal received 10-09-08, the above referenced certification is approved for release of 90-day temporary Certificate of Occupancy by Transportation Development.

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

Sincerely,

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

C: CO Clerk
File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

ROHDE MAY KELLER McNAMARA
ARCHITECTURE

9 October 2008

Kristal Metro
City of Albuquerque
Senior Engineer
600 2nd St. NW
Albuquerque, NM 87103

Re: Temporary Certificate of Occupancy for APS Chelwood Elementary Schools New Classroom Building

Dear Kristal,

This letter is in response to your request for a letter outlining the parking situation at the above referenced school. As indicated on the attached Phase 2 Demo Overlay Grading Plan (sheet C-7A) two existing classroom buildings and a portion of the existing parking lot will be demolished in order to make room for the construction of the new parking lot and turn-around. Parking Calculations currently for the school call for (1) space for each employee thus 45 employees = 45 parking spaces. In the unused portion of the campus to the west of the north curb on Eastridge Drive NE a temporary parking lot will provide the location for (31) employee parking spaces. These (31) spaces along with the undisturbed (15) spaces will provide a total of (46) spaces including (4) handicap accessible spaces while construction on the permanent lot proceeds. Also during construction some overflow parking can be accommodated curb side along Eastridge Drive. Once Phase II construction is complete the total permanent parking capacity will be (57) spaces.
If there are any questions regarding this issue please do not hesitate to contact me or project manager, David Edwards at 243-5454.

Sincerely,

Ramón J. Sarason, A.I.A., LEED
Associate-In-Charge
RMKM Architecture

SIMMS TOWER
STUDIO 1100
400 Gold Avenue SW
Albuquerque
New Mexico 87102 USA
tel (505)243-5454
fax (505)243-5858
email rmkmarch.com

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 9, 2003

Bruce Stidworthy, P.E.
Bohannan Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

Re: Chelwood School Phase 1, Corner of Chelwood Park Blvd. and Constitution Ave., Certificate of Occupancy

Phase 1 Grading and Drainage Plan Engineer's Stamp dated 5-28-02

Phase 1 Miscellaneous Details Engineer's Stamp dated 6-21-02 (J22/D5)

Certification dated 12-08-03

Dear Mr. Stidworthy,

Based upon the information provided in your submittal received 12-09-03, 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 924-3981.

Sincerely,

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

C: Phyllis Villanueva
file

Bohannan Huston Inc.

Courtyard I
7500 Jefferson NE
Albuquerque, NM
87109-4335
www.bhinc.com

voice: 505.823.1000
fax: 505.798.7988
toll free: 800.877.5332

December 8, 2003

Brad Bingham, P.E., Senior Engineer
Planning Dept/Hydrology Development Section
City of Albuquerque
P O Box 1293
Albuquerque, NM 87103

(Phase 1)

Re: Chelwood Elementary School Classroom Addition Drainage Certification (J22/D5)

Dear Mr. Bingham:

The purpose of this letter is to address the comments received from Carlos Montoya in a letter addressed to me dated November 14, 2003. After I received that letter, I had a meeting with Carlos to review his comments. For your reference, I have attached a copy of an e-mail that I sent to the architect and copied to you and Carlos, after my meeting with Carlos. I have also attached a copy of Carlos' letter.

The responses to the comments provided below are based on the above referenced meeting with Carlos, as well as a field meeting with the contractor, and a follow-up inspection of the site.

1. The correct plans, matching the previously approved plans, are included with this submittal.
2. The only fill material placed in the pond was a very small quantity (approximately 2CY). The fill material was placed for aesthetic reasons – in order to cover the remaining portion of the previous pond outlet structure. This quantity of fill material is insignificant compared to the overall pond volume and will not have a measurable effect on the hydrologic function of the pond.
3. During my meeting with Carlos, he explained that there was one specific area – near the rip-rap rundown into the pond – that he had observed rip-rap depth less than 8 inches. The contractor has installed additional rip-rap in this area.
4. The portion of 24" storm drain with the site is HDPE; the portion with the Right-of-Way is RCP.
5. The rip-rap was installed per plan except that it was not wire-tied. The wire-tie was not necessary for hydraulic reasons; it was suggested in order to minimize the potential for the rip-rap rock to be thrown by the students. Carlos acknowledged that this is not a drainage issue.
6. Additional rip-rap has been installed at the tow of the rundown slope, in order to further stabilize the slope and flatten it somewhat. It is now close to a 3:1 slope, and it has extra rip-rap. The design intent of providing a stable rundown has been achieved.
7. This rip-rap was also installed per plan except that it was not wire-tied. Again, the wire-tie is not required for hydraulic reasons. The installation meets the design intent.
8. This is the same comment as #6.

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9. A "stand-up" asphalt curb was not constructed. An approximately 3" to 4" tall asphalt speed hump was installed. This hump serves the same purpose of diverting runoff into the drop inlet as the asphalt curb. Should the water overflow the speed hump, it will run overland to the same location; namely, the pond. Again, the design intent was achieved.
10. The contractor's material supplier did not have D50=4" rip-rap in stock. They had either 3" or 6" available; therefore, 3" was selected and used for the project. The 3" material was placed to the specified depth and will function adequately.

With this submittal, we are requesting permanent certificate of occupancy approval for this project. Should you have any questions, please contact me.

Sincerely,

Bruce J. Stidworthy, P.E.
Project Manger
Community Development and Planning

BJS/am

J-22/D5

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

Classroom (Phase I)

PROJECT TITLE: Chelwood School ~~Kindergarten Addition #1~~ ZONE MAP/DRG. FILE # J22/D5
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Tract B as shown and designated on Plat of Panorama Heights Addition
CITY ADDRESS: N.E> Corner of Chelwood Park Blvd. & Constitution Ave.

ENGINEERING FIRM: Bohannan Huston, Inc. CONTACT: Bruce Stidworthy
ADDRESS: 7500 Jefferson NE – Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

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

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

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

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

CHECK TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- _X_ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ 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
- _X_ CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

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

RECEIVED
DEC 09 2003
HYDROLOGY SECTION

DATE SUBMITTED: 12-9-03 BY: Bruce Stidworthy

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope of the proposed development defines 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

Bruce Stidworthy

From: Allison Abraham [caa@smpcarch.com]
Sent: Thursday, November 20, 2003 1:37 PM
To: Richard Beall
Cc: Karen Alarid; Bruce Stidworthy
Subject: Fw: Chelwood Elementary School

Richard -- when can you meet at Chelwood with Bruce and me? Monday morning and Wednesday afternoon are my best times.

Allison
----- Original Message -----
From: Bruce Stidworthy
To: Allison Abraham ; Karen Alarid
Cc: Carlos Montoya, CoA Hydrology ; Brad Bingham, CoA Hydrology
Sent: Thursday, November 20, 2003 12:58 PM
Subject: Chelwood Elementary School

Allison: I met with Carlos Montoya from City Hydrology this morning. City Hydrology has approved the Kindergarten for permanent C.O. I then checked with the folks who issue the CO's, and they said that the Kindergarten has been completely approved for temp. CO (I know there is an issue with the Fire Marshall that must be resolved prior to permanent CO - there may be others as well).

The City does have remaining concerns relative to the Classroom/Cafeteria project. Carlos made a site inspection himself and he will require that the following issues must be corrected before hydrology will grant CO approval:

1. Additional Rip Rap must be placed at the rundown into the east side of the pond. The drawings call for the rip-rap to be 8" thick, however there are places where the rock is only one layer thick, and you can see the rip-rap through it.

2. The grading and berm along the east edge of the pond, south of the rundown is not graded correctly. As a result, the drainage is directed to the south, instead of to the north and into the pond. Some re-work will be necessary.

I think I should meet at the site with Richard Beall one more time to get this worked out. Please let me know when you'd like to do that. Thanks, Bruce.

Bruce Stidworthy, P.E.
Bohannan Huston Inc.
7500 Jefferson NE
Albuquerque NM 87109
505 823 1000

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

November 14, 2003

Bruce Stidworthy, P.E.
Bohannan Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

Re: Chelwood School Phase 1, Corner of Chelwood Park Blvd. and Constitution Ave., Certificate of Occupancy

Engineer's Stamp dated 2-28-03 (J22/D5)

Certification dated 11-07-03

Dear Mr. Stidworthy,

Based upon the information provided in your submittal received 11-10-03, the above referenced certification cannot be approved until the following comments are addressed:

1. The plans included in your submittal do not match the plans previously approved. Please include the Phase 1 Grading and Drainage Plan (sheet C201) stamped by Bruce Stidworthy on May 28, 2002 and the Phase 1 Miscellaneous Details (sheet C302) stamped by Glenn Broughton on June 21, 2002.
2. Fill material was placed in the detention pond. What is its purpose and how will it affect the volume of the pond?
3. The detail sheet indicated that all rip-rap should be 8" thick. However, a site inspection indicates the depth is less than this.
4. Is the 24" storm drain pipe running from the pond to the street HDPE or RCP?
5. The outlet cross section shows wire-enclosed rip-rap. The wire tied rip-rap was omitted.
6. The detention pond rundown was steeper than 3:1.
7. Sheet C201 indicates that the rip-rap rundown under grading keyed note "N" should be wire tied.
8. The grading keyed note "O," located east of the detention pond, is incorrectly sloped.

9. Grading keyed note "B" indicates a 6" asphalt concrete curb. This curb was not constructed.

10. Please confirm that a D50 of 4". was used for the rip-rap.

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

Sincerely,

Carlos A. Montoya, PE
City Floodplain Administrator

C: file

Bohannan ▲ Huston INC.

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335
www.bhinc.com
voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

CLIENT/COURIER TRANSMITTAL

To: Brad Bingham
City of Albuquerque
600 Second Street NW, 2ndh Floor
Albuquerque, NM 87103

Requested by: Kelly Warren

Date: December 9, 2003

Time Due:
- ☒ **This A.M.**
- ☐ **This P.M.**
- ☐ **Rush** _____
- ☐ **By Tomorrow**

Phone: 924-3986

Job No.: 020138

Job Name: ~~Chelwood School Kindergarten~~ Classroom Add.

DELIVERY VIA
- ☒ **Courier**
- ☐ **Federal Express**
- ☐ **Mail**
- ☐ **UPS**
- ☐ **Other**

PICK UP
Item: _____

ITEM NO.	QUANTITY	DESCRIPTION
1	1	Drainage Info Sheet
1	1	Grading & Drainage Plan

Work on this ASAP
BUS

COMMENTS / INSTRUCTIONS

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DEC 09 2003
HYDROLOGY SECTION

REC'D BY: _____ ***DATE:*** _____ ***TIME:*** _____

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 14, 2003

Bruce Stidworthy, P.E.
Bohannan Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

Re: Chelwood School Phase 1, Corner of Chelwood Park Blvd. and Constitution Ave., Certificate of Occupancy

Engineer's Stamp dated 2-28-03 (J22/D5)

Certification dated 11-07-03

Dear Mr. Stidworthy,

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2. Fill material was placed in the detention pond. What is its purpose and how will it affect the volume of the pond?
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9. Grading keyed note "B" indicates a 6" asphalt concrete curb. This curb was not constructed.
10. Please confirm that a D50 of 4". was used for the rip-rap.

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

Sincerely,

Carlos A. Montoya, PE
City Floodplain Administrator

C: file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

Phase 1

PROJECT TITLE: Chelwood School [redacted] ZONE MAP/DRG. FILE # J22/D5
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Tract B as shown and designated on Plat of Panorama Heights Addition
CITY ADDRESS: N.E> Corner of Chelwood Park Blvd. & Constitution Ave.

ENGINEERING FIRM: Bohannan Huston, Inc. — CONTACT: Bruce Stidworthy
ADDRESS: 7500 Jefferson NE – Courtyard I — PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM — ZIP CODE: 87109

OWNER: _____ — CONTACT: _____ 263-5772
ADDRESS: _____ — PHONE: _____
CITY, STATE: _____ — ZIP CODE: _____

ARCHITECT: _____ — CONTACT: _____
ADDRESS: _____ — PHONE: _____
CITY, STATE: _____ — ZIP CODE: _____

SURVEYOR: _____ — CONTACT: _____
ADDRESS: _____ — PHONE: _____
CITY, STATE: _____ — ZIP CODE: _____

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

CHECK TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- _X_ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ 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
- _X_ CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

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NOV 10 2003
HYDROLOGY SECTION

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

DATE SUBMITTED: 11-7-03 — BY: Bruce Stidworthy

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope of the proposed development defines 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 28, 1994

Mike Walla, P.E.
Chavez-Grieves Engineering
5639 Jefferson NE
Albuquerque, NM 87109

RE: ENGINEER'S CERTIFICATION FOR CHELWOOD ELEMENTARY SCHOOL (J22-D5)
RECEIVED JULY, 25, 1994 FOR CERTIFICATE OF OCCUPANCY APPROVAL
ENGINEER'S STAMP DATED 7/22/94.

Dear Mr. Walla:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification of grading & drainage and approves a Permanent Certificate of Occupancy for the Kindergarten Addition at 12701 Constitution NE.

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

Sincerely,

John P. Curtin

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

WPHYD/7956/jpc

c: Andrew Garcia

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 2, 1993

Mike Walla
Chavez-Grieves Engineering
5639 Jefferson NE
Albuquerque, NM 87109

RE: REVISED DRAINAGE PLAN FOR CHELWOOD ELEMENTARY KINDERGARDEN ADDITION (J22-D5) ENGINEER'S STAMP DATED 8/24/93.

Dear Mr. Walla:

Based on the information provided on your August 27, 1993 resubmittal, the above referenced site is approved for Building Permit.

Please attach a copy of the approved plan (Sheet CC2 & CC2A) to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the D.P.M. checklist will be required. Along with the Certification submittal, you will need to provide a compaction report for the proposed 1' foot high earthen berm.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya

Bernie J. Montoya, CE
Engineer Associate

BJM/dl/WPHYD/7956

xc: Alan Martinez
File

4/25/93

HYDROLOGY COMPUTATION WORKSHEET

City of Albuquerque DPM Section 22.2
(January, 1993)
PRECIPITATION ZONE "4"

Site Information:

Project Name: *Chelwood Elementary School Site*
Project Location: *Chelwood / Indian School Road*
Analysis Condition: *Pre and Post-Construction - Drainage Basin 2 - 2.94 Acres*
Analysis Date: *4/24/93*

Summary Table of Land Treatments	
Treatment	Area (Ac.)
A	*0.0000*
B	*0.0000*
C	*2.9400*
D	*0.0000*

0.00% Impervious Area

Total Area = 2.9400 Acres

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	10.97
D	5.25	0.00

Total Qp = 10.97 cfs

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	10.89
D	0.94	0.00

Total Qp = 10.89 cfs

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	4.29
D	2.64	0.00

Total E x A = 4.29

Weighted E = 1.460 inches

Volume (360) = 0.36 Acre-Ft.

Chelwood Elementary School Grading / Drainage Information

	S.F.	Acres	
Area Drainage Basin 1A	130,432	2.9943	
Area Drainage Basin 1B	210,512	4.8327	
Area Drainage Basin 2	128,065	2.9400	
Total Area Drainage Bas	**469,009**	**10.7670**	

DRAINAGE AREA 1A

EXISTING STRUCTURES

Building Area	17,677	0.4058	
Sidewalk Area	5,990	0.1375	
Student Dropoff Area	5,200	0.1194	
Main Parking Area	30,140	0.6919	
	59,007	**1.3546**	**SUBTOTAL EXISTING STRUCTURES**

PROPOSED NEW STRUCTURES

Building Area	5,081	0.1166	
Sidewalk Area	14,117	0.3241	
	19,198	**0.4407**	**SUBTOTAL PROPOSED NEW STRUCTURES**

SUMMARY

PERCENT IMPERVIOUS BEFORE NEW CONSTRUCTION **45.24%**

PERCENT IMPERVIOUS AFTER NEW CONSTRUCTION **59.96%**

DRAINAGE AREA 1B

EXISTING STRUCTURES

Building Area	26,810	0.6155	
Concrete / Asphalt Play	9,350	0.2146	
Sidewalk Area	12,004	0.2756	
	48,164	**1.1057**	**SUBTOTAL EXISTING STRUCTURES**

PROPOSED NEW STRUCTURES

	0	**0.0000**	**SUBTOTAL PROPOSED NEW STRUCTURES**

4/25/93

HYDROLOGY COMPUTATION WORKSHEET

City of Albuquerque DPM Section 22.2
(January, 1993)

PRECIPITATION ZONE "4"

Site Information:

Project Name: *Chelwood Elementary School Site*
Project Location: *Chelwood / Indian School Road*
Analysis Condition *Pre-Construction - Drainage Basin 1A - 2.9943 Acres*
Analysis Date: *4/24/93*

Summary Table of Land Treatments	
Treatment	Area (Ac.)
A	*0.0000*
B	*0.0000*
C	*1.6397*
D	*1.3546*

45.24% Impervious Area

Total Area = 2.9943 Acres

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	6.12
D	5.25	7.11

Total Qp = 13.23 cfs

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	6.07
D	0.94	7.14

Total Qp = 13.21 cfs

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	2.39
D	2.64	3.58

Total E x A = 5.97

Weighted E = 1.994 inches

Volume (360) = 0.50 Acre-Ft.

4/25/93

HYDROLOGY COMPUTATION WORKSHEET

City of Albuquerque DPM Section 22.2
(January, 1993)
PRECIPITATION ZONE "4"

Site Information:

Project Name: *Chelwood Elementary School Site*
Project Location: *Chelwood / Indian School Road*
Analysis Condition *Post-Construction - Drainage Basin 1A - 2.9943 Acres*
Analysis Date: *4/24/93*

Summary Table of Land Treatments	
Treatment	Area (Ac.)
A	*0.0000*
B	*0.0000*
C	*1.1989*
D	*1.7954*

59.96% Impervious Area

Total Area = 2.9943 Acres

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	4.47
D	5.25	9.43

Total Qp = 13.90 cfs

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	4.44
D	0.94	9.47

Total Qp = 13.91 cfs

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	1.75
D	2.64	4.74

Total E x A = 6.49

Weighted E = 2.168 inches

Volume (360) = 0.54 Acre-Ft.

4/25/93

HYDROLOGY COMPUTATION WORKSHEET

City of Albuquerque DPM Section 22.2
(January, 1993)
PRECIPITATION ZONE "4"

Site Information:

Project Name: *Chelwood Elementary School Site*
Project Location: *Chelwood / Indian School Road*
Analysis Condition *Pre and Post-Construction - Drainage Basin 1B - 4.8327 Acres*
Analysis Date: *4/24/93*

Summary Table of Land Treatments	
Treatment	Area (Ac.)
A	*0.0000*
B	*0.0000*
C	*3.7270*
D	*1.1057*

22.88% Impervious Area

Total Area = 4.8327 Acres

Peak Discharge Rate:

Treatment	Peak Discharge Rate (cfs/Acre)	Q x A
A	2.20	0.00
B	2.92	0.00
C	3.73	13.90
D	5.25	5.80

Total Qp = 19.71 cfs

Utilizing the Rational Method: Peak Intensity = 5.61 IN/HR. at Tc=0.2 Hr.

Treatment	Rational Method Coefficient, C	Q x A
A	0.39	0.00
B	0.52	0.00
C	0.66	13.80
D	0.94	5.83

Total Qp = 19.63 cfs

Volumetric Runoff:

Treatment	Excess Precipitation, E (Inches)	E x A
A	0.8	0.00
B	1.08	0.00
C	1.46	5.44
D	2.64	2.92

Total E x A = 8.36

Weighted E = 1.730 inches

Volume (360) = 0.70 Acre-Ft.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 9, 2003

Bruce Stidworthy
Bohannan-Huston, Inc.
7500 Jefferson NE
Courtyard One
Albuquerque New Mexico 87109

RE: Grading and Drainage Plan for Chelwood School Kindergarten Addition #1 (J22-D5) Dated February 28, 2003

Dear Mr. Stidworthy:

The above referenced drainage plan is approved for building permit. Upon completion of the project please certify the drainage plan per the DPM.

Please contact the contractor because runoff and sediment is being allowed to enter Chelwood Boulevard. Sediment is being deposited on the public street. Please ask the contractor to address this issue. Also, my June 25, 2002 letter addressed how the connection from the detention pond to the storm drain needs to be submitted to DRC for review and approval.
If you have any questions please call me at 924-3982.

This site requires a National Pollution 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 Wolf).

Sincerely,

Carlos A. Montoya
City Floodplain Administrator

C: Charles Caruso, Hydrology Public Works

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 8, 2003

Bruce Stidworthy
Bohannan-Huston, Inc.
7500 Jefferson NE
Courtyard One
Albuquerque New Mexico 87109

RE: Grading and Drainage Plan for Chelwood School Kindergarten Addition #1 (J22-D5) Dated February 28, 2003

Dear Mr. Stidworthy:

The above referenced drainage plan is approved for building permit. Upon completion of the project please certify the drainage plan per the DPM.

Please contact the contractor because runoff and sediment is being allowed to enter Chelwood Boulevard. Sediment is being deposited on the public street. Please ask the contractor to address this issue. Also, my June 25, 2002 letter addressed how the connection from the detention pond to the storm drain needs to be submitted to DRC for review and approval.
If you have any questions please call me at 924-3982.

Sincerely,

Carlos A. Montoya
City Floodplain Administrator

ALBUQUERQUE
NEW MEXICO
1706

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 25, 2002

Glenn Broughton, PE
Bohannan Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

RE: Chelwood Elementary School (J22-D5)

Dear Mr. Broughton:

The below referenced grading plans, drainage plans, and drainage report are approved for Building Permit for Phase 1 and Drainage Master Plan.

- Master Drainage Plan stamped by Glenn Broughton on May 30, 2002, received May 31, 2002
- Ultimate Development Drainage Basin Map stamped by Glenn Broughton on March 16, 2002, received May 31, 2002
- Portable Park – Grading, Drainage and Utility Plan stamped by Bruce Stidworthy on March 14, 2002, received May 31, 2002
- Phase 1 – Grading and Drainage Plan stamped by Bruce Stidworthy on May 28, 2002, received May 31, 2002
- Phase 1 – Miscellaneous Details stamped by Glenn Broughton on June 21, 2002, received June 21, 2002

Prior to Certificate of Occupancy release, the work order needs to be processed through DRC. The construction needs to be accepted by the City of Albuquerque. Please notify the contractor of this situation.

If you have any questions please call me at 924-3982

Sincerely,

Carlos A. Montoya, PE
City Floodplain Administrator

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE: Chelwood Elementary School Master Drainage Report ZONE MAP/DRG. FILE #: J22-D5
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____
CITY ADDRESS: _____

ENGINEERING FIRM: Bohannan Huston, Inc. CONTACT: Glenn Broughton
ADDRESS: 7500 Jefferson NE – Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

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

ARCHITECT: SMPC Architects CONTACT: Allison Abraham
ADDRESS: 115 Amherst Drive SE PHONE: (505) 255-8668
CITY, STATE: Albuquerque, NM ZIP CODE: 87106

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

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

CHECK TYPE OF SUBMITTAL:
- X DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ 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
- X BUILDING PERMIT APPROVAL Phase I
- ____ CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- X OTHER (SPECIFY) **Drainage Master Plan Approval**

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

RECEIVED
JUN 21 2002
HYDROLOGY SECTION

DATE SUBMITTED: June 12, 2002 BY: Glenn Broughton

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope of the proposed development defines 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 10, 2002

Glenn Broughton
Bohannan Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

RE: Chelwood Elementary School Master Drainage Report (J22-D5) Dated May 30, 2002

Dear Mr. Broughton:

I have reviewed the referenced drainage report received May 31, 2002 and forward the following comments:

1. Plan C302, the riprap rundown detail and plan view have different widths for the same rundown, respectively 4 ft. and 15 ft. Please correct this on consistency.
2. Plan C302, section 'A-A" of the detention pond has a varied length of 9 ft. to 15 ft. from the top of the embankment to the bottom. However, it appears on plan C201 that the length does not vary. The plan view of the emergency spillway dimensions are not to scale on plan C302.
3. Plan C302 engineer stamp is not signed and dated.
4. The use of riprap should be discussed with APS. It appears that the use of riprap could develop into a problem with the school children. We strongly request that riprap be wire-tired or grouted.
5. The drainage report does not state whether the drainage pond improvements will be built in phase 1. Please correct this.
6. Prior to Certificate of Occupancy release, the work order needs to be processed through DRC. The construction needs to be accepted by the City of Albuquerque. Please notify the contractor of this situation.

If you have any questions please call me at 924-3982

Sincerely,

Carlos A. Montoya
City Floodplain Administrator

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE: Chelwood Elementary School Master Drainage Report ZONE MAP/DRG. FILE # J22-D5
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____
CITY ADDRESS: _____

ENGINEERING FIRM: Bohannan Huston, Inc. CONTACT: Glenn Broughton
ADDRESS: 7500 Jefferson NE – Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

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

ARCHITECT: SMPC Architects CONTACT: Allison Abraham
ADDRESS: 115 Amherst Drive SE PHONE: (505) 255-8668
CITY, STATE: Albuquerque, NM ZIP CODE: 87106

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

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

CHECK TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEERS CERTIFICATION (TCL)
- ____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ 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
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM.)
- ____ CERTIFICATE OF OCCUPANCY (TEMP.)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- X OTHER (SPECIFY) **Drainage Master Plan Approval**

RECEIVED
MAY 31 2002
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

DATE SUBMITTED: _____ BY: _____

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature , location and scope of the proposed development defines 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

Bohannan ▲ Huston

CLIENT/COURIER TRANSMITTAL

BOHANNAN HUSTON
Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109
voice 505.823.1000
fax 505.798.7988

To: Carlos Montoya
City Floodplain Administrator
City of Albuquerque – Hydrology
600 2nd Street NW - 2nd Floor

phone: 924-3982

Requested By: Glenn Broughton / am

Date: **May 30, 2002**

Time Due: ☐ This A.M. ☐ This P.M.
☐ Rush ____ ☒ Tomorrow A.M.

Job No.: 02 0166 001

Job Name: Chelwood Elementary School

DELIVERY VIA

☒ Courier ☐ Federal Express
☐ Mail ☐ UPS
☐ Other _____

PICK UP

Item: _____

_____

ITEM NO.	QUANTITY	DESCRIPTION
1	1	Revised "Master Drainage Plan for Chelwood Elementary School" dated May 30, 2002.
2	1	Copy of Wilson & Co. "Drainage Report for Chelwood Elementary School Playground Improvement Project" dated May 2000.

COMMENTS / INSTRUCTIONS

Carlos:

The Master Drainage Plan has been revised in accordance with your comments. A work order will be processed for the connection to the existing storm drain in Chelwood Park Boulevard. This submittal will be forthcoming.

Thank you,
Glenn

REC'D BY:_____ ***DATE:***_____ ***TIME:***_____

MASTER DRAINAGE PLAN
FOR
CHELWOOD ELEMENTARY SCHOOL

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823.1000

fax 505.821.0892

MAY 30, 2002

PREPARED FOR:

ALBUQUERQUE PUBLIC SCHOOLS
725 UNIVERSITY BOULEVARD SE
ALBUQUERQUE, NM 87125

PREPARED BY:

BOHANNAN HUSTON, INC.
COURTYARD I
7500 JEFFERSON STREET NE
ALBUQUERQUE, NM 87109

www.bhinc.com

MASTER DRAINAGE PLAN
FOR
CHELWOOD ELEMENTARY SCHOOL

MAY 30, 2002

Prepared for:

ALBUQUERQUE PUBLIC SCHOOLS
725 UNIVERSITY BOULEVARD SE
ALBUQUERQUE, NM 87125

Prepared by:

BOHANNAN HUSTON, INC.
COURTYARD I
7500 JEFFERSON STREET NE
ALBUQUERQUE, NM 87109

PREPARED BY:

Glenn Broughton 5-30-02

Glenn Broughton, P.E. Date

TABLE OF CONTENTS

APPENDICES

EXHIBITS

I. PURPOSE AND BACKGROUND

The purpose of this report is to present the existing and future drainage conditions of Chelwood Elementary School. Improvements to Chelwood Elementary School campus are planned to occur in two phases. The interim, or Phase I, improvements include construction of new buildings and a portable park, and parking lot improvements. Phase I improvements will be staged to provide adequate facilities during construction. A portable park will be set up for classrooms adjacent to the playground on the north side of the site. Once this is complete, construction within the main campus can commence. See Exhibits 3 and 4 for Portable Park and Phase I Grading and Drainage Plans.

The ultimate development plans for the campus include an additional building and parking lot improvements. The drainage basin map (see Exhibit 2) shows the ultimate developed condition. This plan is conceptual, and some reconfiguration may occur, but no significant changes to the plan are anticipated.

The Master Drainage Plan is submitted in support of building permit approval for the portable park and Phase I improvements, as well as master plan approval for the ultimate developed condition.

II. METHODOLOGIES

Site conditions were analyzed for a 100-year, 6-hour storm event in accordance with the City of Albuquerque Drainage Ordinance and the Development Process Manual (DPM) Volume 2, Design Criteria, Section 22.2, Hydrology, for the City of Albuquerque, January 1993.

Part A of the DPM, Section 22.2, Hydrology, January 1993, provides a simplified procedure for projects with sub-basins smaller than 40 acres. The site as described in the "Site Location and Characteristics" section below has sub-basins significantly less than 40 acres. No upland drainage basins enter the site.

Information regarding existing on-site storm drains was obtained from the Grading and Drainage Plan and Drainage Report for Chelwood Elementary School prepared by Wilson & Co., May 2000.

This plan and report were prepared to support development of the playground and playing field area.

III. SITE LOCATION AND CHARACTERISTICS

Chelwood Elementary School is located on the northeast corner of Constitution Avenue and Chelwood Park Boulevard. The site is bounded on the north by Eastridge Drive, and on the east by commercial development; Constitution Avenue is to the south, and Chelwood Park Boulevard is along the west side of Chelwood Elementary School. Legal description for the site is Tract K of Panorama Heights. The City of Albuquerque Zone Atlas page is J-22. The site is located within Rainfall Zone 4 as defined in the DPM Section 22.2. The combined acreage of the site described above is approximately 16.4 acres. The property is currently almost completely developed and slopes from east to west and north to south. Average slope across the developed portion of the site is approximately 4.5%.

According to the latest FEMA floodplain maps, there are no existing floodplains within the site boundaries. The closest FEMA floodplain is the Embudito Arroyo north of the site.

IV. EXISTING DRAINAGE CONDITIONS AND HYDROLOGIC / HYDRAULIC ANALYSIS

Please refer to Exhibit 1, Drainage Basin Map – Existing Conditions, and Appendix A, Drainage Report prepared by Wilson & Co.

The total flow generated by the site is 72.3cfs. Flows from the site are discharged to two locations. Basins 201 through 207 discharge to a detention/retention pond on the northwest corner of the campus. Runoff from these basins is conveyed to the detention basin by a storm drain and overland flow. The basin ponds to a depth of approximately 3 feet before overflowing into an outlet control structure. Flow is metered to Chelwood Park Boulevard through an 8" orifice. The onsite storm drain consists of 18" and 24" pipe. Basin 208 sheet-flows between existing buildings and discharges directly onto Constitution Avenue and Chelwood Park Boulevard. The basin data table and the basin map show the hydrologic calculations for the basins and are shown in Appendix A. A discussion of the basins follows. Drainage basins and flow calculations for existing conditions are based on the drainage report prepared by Wilson & Co. (Please note that all flows given in the text below are for the 100-year, 6-hour storm).

Basins 201 Through 207

Basins 201 through 207 roughly include the east half of the campus, playground, play field and undeveloped area, and the northwest quarter of the campus (see Appendix A and Exhibit 1). These basins have a total area of 10.6 acres and generate a Q_{100} of 42.9cfs.

Basin 201. Basin 201 includes a portion of the play field and undeveloped area. The surface flows in the basin enter an 18" storm drain through a Type 'C' inlet, located along the western edge of the drainage basin. All of the area that drains to this inlet is unpaved play field and undeveloped area. This basin has an area of 0.48 Acres and generates a Q_{100} of 1.78cfs.

Basin 202. Basin 202 includes a portion of the play field and undeveloped area. The surface flows in the basin enter an 18" storm drain through a Type 'C' inlet, located along the western edge of the drainage basin. All of the area that drains to this inlet is unpaved play field and undeveloped area. This basin has an area of 3.34 Acres and generates a Q_{100} of 12.45cfs.

Basin 203. Basin 203 includes a portion of the playground, play field and undeveloped area. The play field consists of asphalt paved walkways raised planters and raised playground areas. The raised areas detain all of the precipitation that falls in those areas. The surface flows in this basin sheet flows to the west into drainage basin 207 that will be discussed later in this section. This basin has an area of 1.55 Acres and generates a Q_{100} of 6.29cfs.

Basin 204. Basin 204 includes a portion of the playground and undeveloped area. Approximately half of this drainage basin consists of the playground area. The surface flows in this basin drain flow to a Single 'D' inlet and the 18" storm drain referenced above. This basin has an area of 0.95 Acres and generates a Q_{100} of 4.13cfs.

Basin 205. Basin 205 includes a portion of the playground and undeveloped area. This basin is primarily in the undeveloped area with a small portion of the playground contributing to the drainage area. The surface flows in this basin drain flow to a Single 'D' inlet and the 18" storm drain referenced above. The storm drain increases to a 24" pipe downstream of this inlet. This basin has an area of 1.78 Acres and generates a Q_{100} of 6.68cfs.

Basin 206. Basin 206 is all within the playground area. This basin has asphalt paving over the entire area except several small raised planters. The surface flows in this basin drain flow to a Single 'D' inlet in sump condition and the 24" storm drain referenced above. The 24" storm drain flows west from this inlet to a detention/ retention pond along the western boundary of the property. This basin has an area of 0.42 Acres and generates a Q_{100} of 2.19cfs.

Basin 207. Basin 207 is all within an area that is presently undeveloped. The surface flows in this basin drain sheet flow to the west into the detention pond with some flows entering Chelwood Park Boulevard directly. This basin has an area of 2.08 acres and generates a Q_{100} of 9.34cfs.

Basin 208. Basin 208 is a separate drainage basin within this site. It is located in the southwestern portion of the campus. This area consists of classroom buildings, parking area and landscaping. Drainage from this basin flows southwest in asphalt lined swales and sheet flows to the corner of Chelwood Park Boulevard and Constitution Avenue. Two inlets are located behind the sidewalk. They appear to be Single 'D' inlets in a shallow sump. This basin has an area of 5.77 Acres and generates a Q_{100} of 29.4cfs.

Retention / Detention Pond. The pond mentioned earlier has a concrete outlet control structure. The pond must reach of depth of approximately 3 feet before overflowing into the outlet structure. An 8" orifice plate is used to meter the flow out of the pond. Storm water discharges from the pond into a asphalt swale and to Chelwood Park Boulevard. Chelwood Master Drainage Report prepared by Wilson & Co. noted that the available capacity of the pond is 0.85 Ac-ft and the outlet structure will permit a controlled maximum discharge of 20cfs. A field review of the site showed that there was no emergency overflow provided for this pond.

Impact to Public Facilities. Drainage from Basin 208 enters the storm drain in Chelwood Park Boulevard via existing inlets behind the sidewalk at the northeast corner of Chelwood Park Boulevard and Constitution Avenue and existing inlets in Chelwood Park Boulevard. The inlets behind the sidewalk do not have adequate capacity for the 100-year storm, however in large storm events storm water will bypass these inlets and be captured downstream. Drainage for this basin does not have any obvious detrimental impacts to public facilities.

Storm water discharge from the pond passes through the outlet structure discussed above and then surface-flows into Chelwood Park Boulevard. Inlets downstream convey this drainage to the storm drain in Chelwood Park Boulevard. While this is not an ideal condition it does not significantly impact any existing public facilities. The pond embankment could be a potential hazard if the outlet structure were to become plugged. If the pond embankment were to be breached a surge of water and sediment would enter

Chelwood Park Boulevard. It is recommended that and emergency spillway be added with future phases of the campus improvements.

V. INTERIM AND ULTIMATE DEVELOPMENT DRAINAGE CONDITIONS AND HYDROLOGIC ANALYSIS

Please refer to Exhibit 2, Ultimate Development Drainage Basin Map, and Appendices B and C.

For purposes of this analysis, the site has been divided into four drainage basins: A, B, C and D. The drainage basins for the interim and ultimate development conditions are nearly identical, the only difference being that the land treatments will change with future improvements to the site. Basins A, B and C drain to the detention pond located in the northwest corner of the site. Drainage Basin D drains southwest to Chelwood Park Boulevard and Constitution Avenue. A discussion of the basins follows. (Please note that all flows given in the text below are for the 100-year, 6-hour storm).

Basin A. Basin A encompasses the southeast quadrant of the campus and includes the playfield and a portion of the undeveloped area of the campus. Approximately 1.65 acres of new sod has recently been placed on the playfield. This change in the land treatment will reduce the peak discharge for this basin. No changes in the land treatment for this basin are anticipated between the interim and ultimate development conditions. This basin has an area of 5.54 acres and generates a Q_{100} of 19.32cfs.

Basin B. Basin B encompasses the northeast quadrant of the campus and includes the playground and a portion of the undeveloped area of the campus. No changes in the land treatment for this basin are anticipated between the interim and ultimate development conditions. This basin has an area of 4.49 acres and generates a Q_{100} of 17.93cfs.

Basin C. Basin C includes the north portion of the main campus. The interim (Phase 1) improvements include three new buildings, new and relocated modular buildings, and new paved parking lot. In the ultimate development, additional parking lot improvements are planned. This basin has an area of 3.48 acres and generates a Q_{100} of 14.07cfs in the interim developed conditions and Q_{100} = 15.69cfs for the ultimate developed condition.

Basin D. Basin D includes the south portion of the main campus. Basin D drains southwest to two existing inlets behind the sidewalk and inlets in Chelwood Park Boulevard. The interim (Phase 1) improvements remain unchanged from the current existing conditions. In the ultimate development, an additional building is proposed, and reconfiguration of the existing parking lot is planned. This basin has an area of 4.30 acres and generates a Q_{100} of 18.57cfs in the interim developed conditions and Q_{100} = 19.13cfs for the ultimate developed condition. Basin D freely discharges into Constitution Avenue and Chelwood Park Boulevard and ultimately into the Chelwood Park storm drain.

Detention Pond. The Wilson Drainage report referenced stated that the detention pond controlled discharge would be limited to 20cfs and drainage basin 208 freely discharges 29.4cfs, for a total of 49.4cfs.

As described in the existing conditions section of this report, the existing pond has a concrete outlet structure and 8" orifice outlet. This causes the pond to act as a retention / detention pond. An analysis of the existing outlet was performed, and the results show that an outlet flow of 3.6cfs is controlled by the orifice plate. Removal of the orifice plate will increase the discharge to 4.8cfs. This increase is not sufficient to meet the allowable discharge requirements.

Analysis of the interim conditions showed that basin D would freely discharge 18.6cfs onto Chelwood Park Boulevard and Constitution Avenue, which will allow a discharge of 30.8cfs (49.4cfs-18.6cfs) from the detention pond. In the ultimate developed condition,

Basin D will discharge 19.1cfs, which would reduce the allowable discharge to a discharge of 30.3cfs (49.4cfs-19.1cfs) from the detention pond.

Modification of the existing outlet structure is proposed. The existing outlet structure will be abandoned and replaced with a Double 'D' inlet and a 24" RCP outlet pipe. The inlet will be set 0.5 feet above the pond invert to allow sediment to settle prior to discharge onto Chelwood Park Boulevard. A new manhole will be constructed in Chelwood Park Boulevard to connect the proposed 24" detention pond outlet pipe to the existing 30" storm drain (see exhibits 4 and 5).

still going w/ "D" inlets

An analysis was performed on the proposed outlet structure. The results showed that the outlet pipe controlled the discharge flow rate. This outlet pipe was analyzed as an orifice. In order to reduce pond discharge below the allowable flow rate, a 21"-diameter orifice plate will be installed. A total available head of 5.1 feet (to the center of the orifice plate) was calculated using a maximum high water elevation of 5714. The inlet invert elevation was established by matching the soffit of the existing 30" RCP storm drain in Chelwood Park Boulevard. Maximum discharge was calculated to be 27.0cfs. Based on a maximum allowable discharge of 27.0cfs, the detention pond volume requirements were calculated. For the interim development, the required volume is 0.46 acre-feet, and 0.54 acre-feet is required for the ultimate developed condition. The existing pond volume was calculated to be 0.54 acre-feet. This was based on a recent topographic survey of the site.

Volume of the existing detention pond is adequate to meet the needs of the interim and ultimate improvements. Future parking lot improvements will encroach into the existing pond. Reconfiguration of the detention pond can be completed to accommodate parking lot improvements for the ultimate developed condition.

Discharge / Detention Volume Summary				
	$Q_{allowable}$ (cfs)	Q_{actual} (cfs)	$V_{required}$ * Acre-ft	$V_{provided}$ Acre-ft
Existing	20.0	3.6	1.33	0.54
Interim Development (Phase I)	30.8	27.0	0.46	0.54
Ultimate Development	30.3	27.0	0.54	0.54 **

Maximum water surface elevation 5714.0.

* In accordance with Part A of the DPM Section 22.2 and Wilson & Co. drainage basin calculations.

** Detention Pond Volume will need to be reconfigured with the ultimate development of the campus.

Other recommended modifications include providing an emergency spillway in the event that the inlet becomes plugged. Elevation of the spillway will be set at 5714.0, which is the high water elevation required to achieve the design detention basin discharge. Width of the weir will need to be approximately 10' to convey the peak flow rate of 52.9cfs (combined peak flow for basins A, B, and C). Erosion protection will be provided by placing riprap over a non-woven filter fabric should the proposed inlet become plugged (see Exhibits 4 and 5 for details of the spillway).

V. CONCLUSION

The subject site is draining to two primary discharge points: Basins A, B, and C drain to the existing detention basin adjacent to Chelwood Park Boulevard; Basin D discharges onto Chelwood Park Boulevard and Constitution Avenue.

The overall site drainage conditions at Chelwood Elementary School generally appear to be good. There are two areas where erosion of slopes is evident: along the east side of the playground and play field there is a cut slope that has some erosion; and the east slope of the

detention pond has some erosion. This is shown in Pictures 2 and 10. This erosion could be controlled with slope protection at the detention pond and a drainage swale along the top of the slope east of the play field area (see Exhibits 4 and 5).

Phase I Improvements

- New detention pond outlet structure; Double 'D' inlet, 24" RCP outlet pipe, 22" orifice plate, and manhole to connect to the existing 30" storm drain.
- Construct emergency spillway.
- Slope protection/erosion control at the east playground cut slope and detention pond.

Ultimate Development Improvements

- Reconfigure and increase volume of detention pond.

APPENDICES

APPENDIX A - DRAINAGE REPORT PREPARED BY WILSON & CO.

APPENDIX B - PROPOSED HYDROLOGIC CALCULATIONS

APPENDIX C - POND VOLUME AND DISCHARGE CALCULATIONS

APPENDIX A

DRAINAGE REPORT PREPARED BY WILSON & CO.

DRAINAGE REPORT

Site Location: Chelwood Middle School is located at the corner of Constitution Ave. and Chelwood Park Blvd. The proposed development includes sandboxes, asphalt paving, addition of basketball courts, a sod playing field and miscellaneous concrete work.

Methodology: Section 22.2 of the City of Albuquerque DPM was used in the hydrology analysis of the site. A principal design storm of 100-yr, 10-day event was used.

Existing Drainage Condition: The site consists of two basins; Basin 101 - South and Basin 102 - North. Basin 101 encompasses 8.0 acres on the southern portion of the site and Basin 102 encompasses 8.4 acres on the northern portion of the site. Basin 101 is developed with buildings, a parking lot on the southwestern end and an undeveloped playground on the East Side. Basin 102 is developed with playground equipment on the western half and undeveloped on the eastern half.

Currently, all flows from Basin 101 are conveyed westward adjacent to the buildings and through the parking lots. Runoff is freely discharged (35.89 cfs) onto Chelwood Park Blvd and Constitution Ave. The flows on basin 102 are also conveyed westward. Approximately 33.82 cfs is freely discharged though the drive pad located on the westside of the site and onto Chelwood Park Blvd. Table 1 provides a breakdown of existing volumetric runoff and peak discharge.

Table 1 - Exiting Conditions							
		Treatment					
Basin	Area (ac)	A	B	C	D	V_{1440}(ac-ft)	Q_{100}(cfs)
101	7.993	0.00%	0.00%	50.00%	50.00%	1.365	35.888
102	8.383	0.00%	0.00%	80.00%	20.00%	1.185	33.815
Total	16.376					2.55	69.703

Table 1: Breakdown of existing land type for each the basin including its respective volumetric runoff and discharge value.

Proposed Conditions: The proposed conditions will separate the site in to eight basins. Basin 201 is located on the southeast corner of the site. The flows are conveyed westward discharging into an inlet. Flows are conveyed via a 24" SD mainline and discharged into a proposed detention pond, located on the northwest side of the school.

Basin 202 and Basin 203 are located north of Basin 201. Flows sheet flow westward, collected and conveyed by a median curb and gutter to the SD mainline and discharged into the proposed pond.

Basin 204 encompasses the northeast portion of the property. Flows sheet flow westward, first over natural ground then over the proposed playground, into the SD mainline and ultimately discharging into the proposed pond.

Basin 205 encompasses the northeast portion of the property. Flows sheet flow westward over natural ground to the edge of the proposed playground, into the SD mainline and ultimately discharging into the proposed pond.

Basin 206, the western portion of the playground, is located west of Basin 204 and Basin 205. Flows sheet flow northwestward into the SD mainline and ultimately discharging into the proposed pond.

Basin 207 encompasses the western portion of the property. Flows sheet flow westward over the basin, discharging directly into the detention pond or onto Chelwood Park Dr.

The allowable capacity of the detention pond is 0.85 acre-ft, which is more than adequate for the required capacity of 0.50 acre-ft. The detention pond will have a headwall that will permit a controlled maximum discharge of 20 cfs on to Chelwood Park Dr.

Basin 208 is located on the southwest corner of the site. The proposed development will not effect this basin. Basin 208 discharges directly to the street and is not detained by the pond.

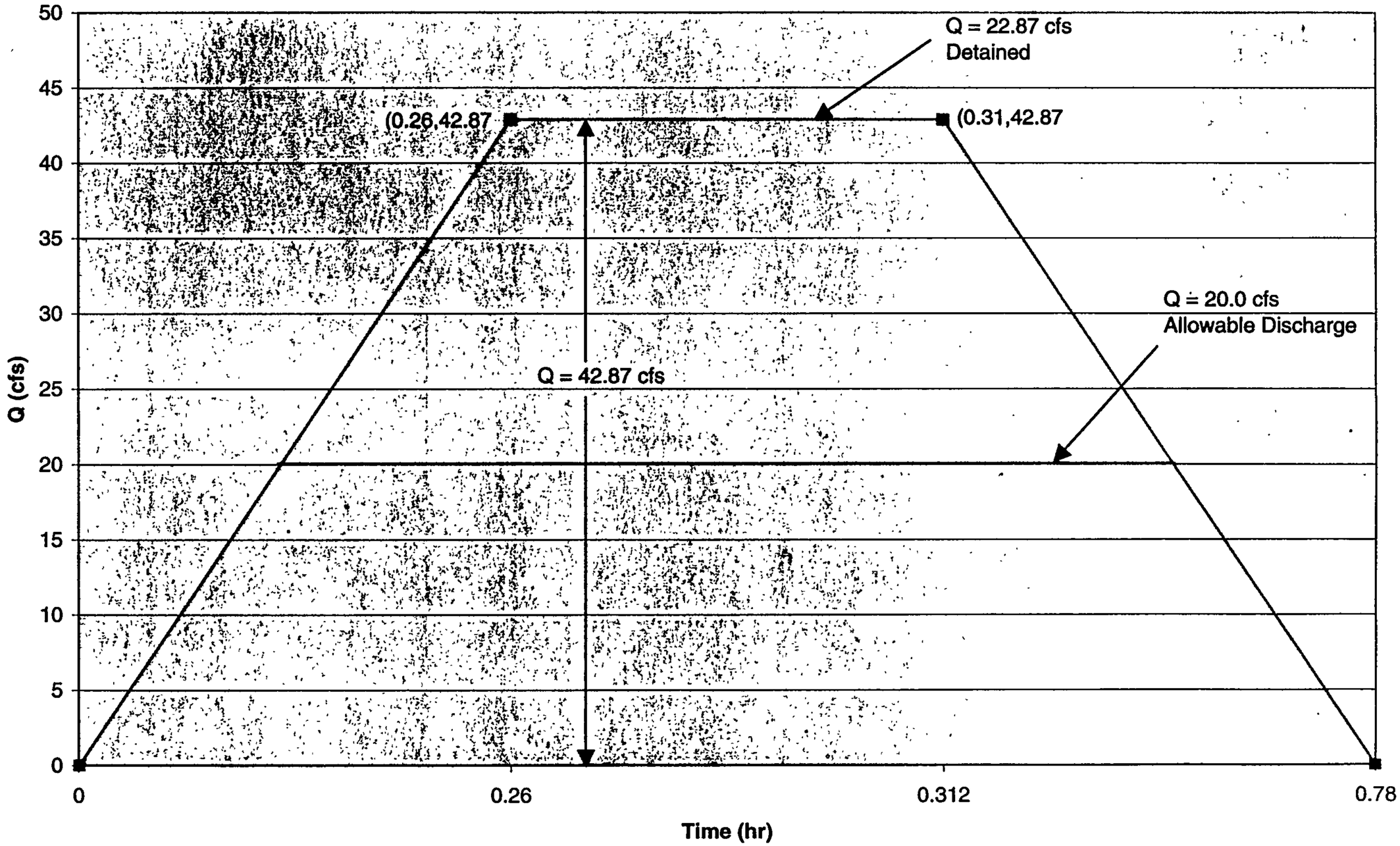
Table 2 provides a breakdown of existing volumetric runoff and peak discharge.

Table 2 -Proposed Conditions							
		Treatment					
Basin	Area (ac)	A	B	C	D	V_{1440}(ac-ft)	Q_{100}(cfs)
201	0.477	0.00%	0.00%	100.00%	0.00%	0.058	1.779
202	3.339	0.00%	0.00%	100.00%	0.00%	0.406	12.453
203	1.552	0.00%	0.00%	78.60%	21.40%	0.222	6.294
204	0.954	0.00%	0.00%	66.66%	33.33%	0.153	4.134
205	1.781	0.00%	0.00%	98.00%	2.00%	0.219	6.676
206	0.418	0.00%	0.00%	0.00%	100.00%	0.092	2.194
207	2.082	0.00%	0.00%	50.00%	50.00%	0.355	9.338
208	5.773	0.00%	0.00%	10.00%	90.00%	1.213	29.431
Total	16.376					2.718	72.299

Table 2: Breakdown of proposed land types for each basin including their respective volumetric runoff and discharge values.

Conclusions: The proposed development will not have a significant impact on the total volumetric runoff (increase of 0.17 ac-ft) and the total flow rate (increase of 2.6 cfs) when compared to the existing conditions. However, there is an improvement on the allowable discharged onto Chelwood Park Blvd. and Constitution Ave. The allowable discharge onto Constitution Ave. will decrease because the runoff from Basin 101 (specifically Basin 201 and a portion of Basin 202) will be diverted to Basin 102, thus allowing less runoff onto Constitution Ave. The other positive aspect of this proposed development is the controlled discharge onto Chelwood Park Blvd. of 20 cfs due to the headwall within the pond, rather then the uncontrolled 33 cfs. The pond will detain the flows from all basins except for basin 208 which will continue to have free discharge to the adjacent streets.

Hydrograph



A-3 of 3

APPENDIX B

PROPOSED HYDROLOGIC CALCULATIONS

Chelwood Elementary School
Existing Detention Pond Outlet Orifice

Max water into end of pipe
Using Orifice Equation, Coefficien 0.62
(head measeured center of pipe to water surface)

	Pipe Size				
Head	8	10	12	18	24
0.25	0.87				
0.5	1.23	1.92	2.76		
0.75	1.50	2.35	3.38	7.61	
1	1.74	2.71	3.91	8.79	15.63
1.25	1.94	3.03	4.37	9.83	17.48
1.5	2.13	3.32	4.79	10.77	19.14
1.75	2.30	3.59	5.17	11.63	20.68
2	2.46	3.84	5.53	12.43	22.11
2.25	2.61	4.07	5.86	13.19	23.45
2.5	2.75	4.29	6.18	13.90	24.71
2.75	2.88	4.50	6.48	14.58	25.92
3	3.01	4.70	6.77	15.23	27.07
3.25	3.13	4.89	7.04	15.85	28.18
3.5	3.25	5.08	7.31	16.45	29.24
3.75	3.36	5.26	7.57	17.03	30.27
4	3.47	5.43	7.82	17.58	31.26
4.25	3.58	5.59	8.06	18.13	32.22
4.5	3.68	5.76	8.29	18.65	33.16
4.75	3.79	5.91	8.52	19.16	34.07

NOTE: THIS IS AN ANALYSIS OF THE EXISTING 8" ORIFICE PLATE.

Chelwood Elementary School
Existing Detention Pond Outlet Pipe

==========

Drainage Structure Analyzer

Culvert Hydraulic Analysis

Date: Tuesday, March 12, 2002 04:59:53 PM

==========

Input Data

Shape	Circular	
Material	CMP-12G	
Roughness	0.022000	
Entrance Edge	Headwall	
Number of Barrels	1	
Length	60.00	ft
Slope	2.500%	
Tailwater	0.00	ft
Inlet Control Equation	Entrance Loss	
Size (W x T):	12.00 x 0.1090	
Headwater	3.50	ft

Output Results

Flow Rate	**4.8**	**cfs**
Control	Outlet	
Capacity	3.3	cfs
Outlet Velocity	6.27	ft/s
Depth At Outlet	0.95	ft
Headwater	3.50	ft
Critical Depth	0.90	ft
Normal Depth	1.00	ft
Size (W x T):	12.00 x 0.1090	

NOTE: THIS IS AN ANALYSIS OF THE EXISTING 12" DETENTION POND OUTLET PIPE. A CULVERT ANALYSIS WAS PERFORMED TO ESTIMATE THE CULVERT CAPACITY.

CHELWOOD ELEMENTARY SCHOOL
DETENTION POND EXISTING OUTLET CALCULATIONS

48" x 48" concrete inlet structure	Detention Pond Depth = 4'	
Allowable Discharge = 30.3 cfs	Outlet Structure Height = 3'	
Open Area (for orifice calc in sq. ft.):	16.15625	
Length of Weir (feet):	17.875	

Head (ft)	Head (in)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.05	0.6	0.54	17.39	0.54
0.1	1.2	1.51	24.60	1.51
0.15	1.8	2.78	30.13	2.78
0.2	2.4	4.28	34.79	4.28
0.25	3	5.99	38.90	5.99
0.3	3.6	7.87	42.61	7.87
0.35	4.2	9.92	46.02	9.92
0.4	4.8	12.12	49.20	12.12
0.45	5.4	14.46	52.18	14.46
0.5	6	16.94	55.01	16.94
0.55	6.6	19.54	57.69	19.54
0.6	7.2	22.26	60.26	22.26
0.65	7.8	25.10	62.72	25.10
0.7	8.4	28.06	65.09	28.06
0.75	9	31.12	67.37	31.12
0.8	9.6	34.28	69.58	34.28
0.85	10.2	37.54	71.72	37.54
0.9	10.8	40.90	73.80	40.90
0.95	11.4	44.36	75.82	44.36
1	12	47.91	77.79	47.91

Calculation of open area:

Total Grate Area	2304	16
Cross Bar Area	22.5	0.15625
	2326.5	16.15625

Calculation of Length of Weir:

Total Perimeter of Grate	192	16
Cross Bars	22.5	1.875
	214.5	17.875

NOTE: THIS IS AN ANALYSIS OF THE EXISTING CONCRETE OUTLET / OVERFLOW STRUCTURE. 0.75' OF HEAD MUST BE DEVELOPED TO ACHIEVE THE ALLOWABLE DISCHARGE

B.3 of 7

CHELWOOD ELEMENTARY BASIN CALCULATIONS

Interim Development Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone: 4

BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{1440}$ (CF)
A	241322	**5.54**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**3.73**	***20.66***	***1.46***	***29361***	***29361***
B	195584	**4.49**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**3.73**	***16.75***	***1.46***	***23796***	***23796***
C	151589	**3.48**	**0.0%**	**0.0%**	**78.6%**	**21.4%**	**4.06**	***14.11***	***1.71***	***21633***	***23904***
D	187308	**4.30**	**0.0%**	**0.0%**	**66.7%**	**33.3%**	**4.24**	***18.22***	***1.85***	***28928***	***33298***
	Total =	**17.81**					**Total =**	**69.74**		**Total =**	**110359**

CHELWOOD ELEMENTARY BASIN CALCULATIONS

Ultimate Development Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone: 4

BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{1440}$ (CF)
A	241322	**5.54**	**0.0%**	**30.0%**	**70.0%**	**0.0%**	**3.49**	***19.32***	***1.35***	***27068***	***27068***
B	195584	**4.49**	**0.0%**	**22.0%**	**49.0%**	**29.0%**	**3.99**	***17.93***	***1.72***	***28011***	***31981***
C	151589	**3.48**	**0.0%**	**9.0%**	**35.0%**	**56.0%**	**4.51**	***15.69***	***2.09***	***26359***	***32301***
D	187308	**4.30**	**0.0%**	**7.0%**	**42.0%**	**51.0%**	**4.45**	***19.13***	***2.04***	***31767***	***38454***
	Total =	**17.81**					**Total =**	**72.06**		**Total =**	**129805**

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CHELWOOD ELEMENTARY DETENTION POND OUTLET ORIFICE

Max water into end of pipe

Using Orifice Equation 0.62

(head measeured center of pipe to water surface)

		Pipe Size			
Head	8	12	18	21	24
3.1					
3.35	3.18	7.15			
3.6	3.30	7.41	16.68		
3.85	3.41	7.67	17.25	23.48	
4.1	3.52	7.91	17.80	24.23	31.65
4.35	3.62	8.15	18.34	24.96	32.60
4.6	3.72	8.38	18.86	25.67	33.52
4.85	3.82	8.61	19.36	26.36	34.42
5.1	3.92	8.82	19.86	27.03	35.30
5.35	4.02	9.04	20.34	27.68	36.15
5.6	4.11	9.25	20.81	28.32	36.99
5.85	4.20	9.45	21.27	28.95	37.81
6.1	4.29	9.65	21.72	29.56	38.61
6.35	4.38	9.85	22.16	30.16	39.39
6.6	4.46	10.04	22.59	30.74	40.16
6.85	4.55	10.23	23.01	31.32	40.91
7.1	4.63	10.41	23.43	31.89	41.65
7.35	4.71	10.59	23.84	32.44	42.38
7.6	4.79	10.77	24.24	32.99	43.09

CHELWOOD ELEMENTARY INLET CALCULATIONS

Double D inlet, in sump condition with short edges adjoined:

Open Area (for orifice calc in sq. ft.):	7.7977431	
Length of Weir (feet):	13.645833	

Head (ft)	Head (in)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.1	1.2	1.16	11.87	1.16
0.35	4.2	7.57	22.21	7.57
0.4	4.8	9.25	23.75	9.25
0.45	5.4	11.04	25.19	11.04
0.5	6	12.93	26.55	12.93
0.55	6.6	14.92	27.84	14.92
0.6	7.2	17.00	29.08	17.00
0.65	7.8	19.16	30.27	19.16
0.7	8.4	21.42	31.41	21.42
0.75	9	23.75	32.52	23.75
0.8	9.6	26.17	33.58	26.17
0.85	10.2	28.66	34.62	28.66
0.9	10.8	31.22	35.62	31.22
0.95	11.4	33.86	36.60	33.86
1	12	36.57	37.55	36.57
1.05	12.6	39.35	38.47	38.47
1.1	13.2	42.19	39.38	39.38
1.15	13.8	45.10	40.26	40.26
1.2	14.4	48.07	41.13	41.13
1.25	15	51.11	41.98	41.98
1.3	15.6	54.21	42.81	42.81
1.35	16.2	57.36	43.62	43.62
1.4	16.8	60.58	44.42	44.42
1.45	17.4	63.85	45.21	45.21

Calculation of open area:

Total Grate Area	2000	13.888889
Cross Bar Area	-732	-5.083333
Supports (ends)	-115.625	-0.802951
(middle)	-100	-0.694444
Areas Counted Twice	70.5	0.4895833
	1122.875	7.7977431

Calculation of Length of Weir:

Total Perimeter of Grate	210	17.5
Short Cross Bars	-14	-1.166667
Bearing Bars	-13	-1.083333
End Supports	-9.25	-0.770833
Middle Supports	-10	-0.833333
	183	13.645833

NOTE: THIS IS AN ANALYSIS OF A DOUBLE 'D' INLET IN A SUMP CONDITION.
0.9' OF HEAD IS REQUIRED TO ACHIEVE THE ALLOWABLE DISCHARGE.

B-6 of 7

Chelwood Elementary School
Detention Pond Spillway

WEIR COEFFICENT=2.6400

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	.00	1.50	3	14.50	.00			
2	4.50	.00	4	19.00	1.50			

WSEL FT.	DEPTH INC FT.	FLOW AREA SQ.FT.	FLOW RATE (CFS)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
.10	.10	1.03	.85	.83	10.60
.20	.20	2.12	2.46	1.16	11.20
.30	.30	3.27	4.63	1.42	11.80
.40	.40	4.48	7.29	1.63	12.40
.50	.50	5.75	10.41	1.81	13.00
.60	.60	7.08	13.99	1.98	13.60
.70	.70	8.47	18.00	2.13	14.20
.80	.80	9.92	22.45	2.26	14.80
.90	.90	11.43	27.34	2.39	15.40
1.00	1.00	13.00	32.66	2.51	16.00
1.10	1.10	14.63	38.42	2.63	16.60
1.20	1.20	16.32	44.61	2.73	17.20
1.30	1.30	18.07	51.25	2.84	17.80
1.40	**1.40**	**19.88**	**58.33**	**2.93**	**18.40**
1.50	1.50	21.75	65.86	3.03	19.00

NOTE: THIS WEIR ANALYSIS DEMONSTRATES THAT 1.40' OF HEAD IS REQUIRED TO PASS THE TOTAL PEAK FLOW FOR A 100 YEAR, 6-HOUR STORM EVENT. THIS ASSUMES THE OUTLET STRUCTURE BECOMES COMPLETELY CLOGGED.

APPENDIX C

POND VOLUME AND DISCHARGE CALCULATIONS

Chelwood Elementary School

Detention Pond Volume Calculations - Existing Conditions

ASSUMPTIONS:
1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event
3. Volume Calulation Based on Oulet Structure Actual Allowable Discharge

Peak Flow per Acre - DPM Section 22.2 Table A-9

Zone	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.7
3	1.87	2.6	3.45	5.02
4	2.2	2.92	3.73	5.25

Basin Name : Chelwood Elementary School
Choose Zone (1 - 4) 4
Basin Area = (acres) 10.61

Existing Conditions			
Treatment	Percentage	Area	Q (cfs)
A	0.0%	0.00	0.00
B	0.0%	0.00	0.00
C	79.8%	8.47	31.58
D	20.2%	2.14	11.25
	Peak Q Developed=		**42.83**

*Values based on Wilson & Co. Drainage Report for Basins 201 through 207

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? n
If No, what is the maximum allowable discharge ? 3.6

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.00
%B x E = 0.00
%C x E = 1.17
%D x E = 0.53
Avg E(in) = 1.70

Determine Tb (hours)

Tb = 0.836

Determine Tc (Note: Tc is assumed to be 0.2 hours, this should be checked using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.2565
Peak Duration = 0.0505

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

Time to Control Q (hrs) = 0.022
Time to end of Control Q (hrs)= 0.79145
Duration of Control Q (hrs)= 0.770

Required Detention Volume (CF) = 57935.58

Chelwood Elementary School

Detention Pond Volume Calculations - Interim Developed Conditions

ASSUMPTIONS:
1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event

Peak Flow per Acre - DPM Section 22.2 Table A-9

Zone	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.7
3	1.87	2.6	3.45	5.02
4	2.2	2.92	3.73	5.25

Basin Name : Chelwood Elementary School
Choose Zone (1 - 4) 4
Basin Area = (acres) 13.51 BHI
Basin Area = (acres) 10.61 Wilson & Co.

* Exist Conditions				Proposed Conditions			
Treatment	Percentage	Area	Q (cfs)	Treatment	Percentage	Area	Q (cfs)
A	0.0%	0.00	0.00	A	0.0%	0.00	0.00
B	0.0%	0.00	0.00	B	22.7%	3.07	8.95
C	79.8%	8.47	31.58	C	60.7%	8.20	30.59
D	20.2%	2.14	11.25	D	16.6%	2.24	11.77
		Q Peak - exist.=	**42.83**			Peak Q Developed=	**51.32**

*Values based on Wilson & Co. Drainage Report for Basins 201 through 207

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? n
If No, what is the maximum allowable discharge ? 42

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.00
%B x E = 0.25
%C x E = 0.89
%D x E = 0.44
Avg E(in) = 1.57

Determine Tb (hours)

Tb = 0.829

Determine Tc (Note: Tc is assumed to be 0.2 hours, this should be checked using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.2595
Peak Duration = 0.0415

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

Time to Control Q (hrs) = 0.137
Time to end of Control Q (hrs)= 0.551277
Duration of Control Q (hrs)= 0.415

Required Detention Volume (CF) = 19970.1

Chelwood Elementary School

Detention Pond Volume Calculations - Ultimate Developed Conditions

NOTE: Blue shaded cells require user input, all other cells should not be edited.
ASSUMPTIONS:
1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event

Peak Flow per Acre - DPM Section 22.2 Table A-9

Zone	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.7
3	1.87	2.6	3.45	5.02
4	2.2	2.92	3.73	5.25

Basin Name : Chelwood Elementary School
Choose Zone (1 - 4) 4
Basin Area = (acres) 13.51 BHI
Basin Area = (acres) 10.61 Wilson & Co.

* Exist Conditions				Proposed Conditions			
Treatment	Percentage	Area	Q (cfs)	Treatment	Percentage	Area	Q (cfs)
A	0.0%	0.00	0.00	A	0.0%	0.00	0.00
B	0.0%	0.00	0.00	B	21.9%	2.96	8.64
C	79.8%	8.47	31.58	C	54.0%	7.30	27.21
D	20.2%	2.14	11.25	D	24.1%	3.26	17.09
		Q Peak - exist.=	**42.83**			Peak Q Developed=	**52.94**

*Values based on Wilson & Co. Drainage Report for Basins 201 through 207

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? n
If No, what is the maximum allowable discharge ? 27

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.00
%B x E = 0.24
%C x E = 0.79
%D x E = 0.64
Avg E(in) = 1.66

Determine Tb (hours)

Tb = 0.833

Determine Tc (Note: Tc is assumed to be 0.2 hours, this should be checked using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.25325
Peak Duration = 0.06025

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

Time to Control Q (hrs) = 0.129
Time to end of Control Q (hrs)= 0.568008
Duration of Control Q (hrs)= 0.439

Required Detention Volume (CF) = 23308.7

EXHIBITS

EXHIBIT 1 - DRAINAGE BASIN MAP – EXISTING CONDITIONS, PREPARED BY WILSON & CO.

EXHIBIT 2 - PROPOSED CONDITIONS: ULTIMATE DEVELOPMENT DRAINAGE BASIN MAP

EXHIBIT 3 - PORTABLE PARK GRADING & DRAINAGE PLAN

EXHIBIT 4 - PHASE I GRADING & DRAINAGE PLAN

EXHIBIT 5 - GRADING DETAILS

EXHIBIT 6 - PHOTOS

EXHIBIT 1

DRAINAGE BASIN MAP – EXISTING CONDITIONS,

PREPARED BY WILSON & CO.

EXHIBIT 2

PROPOSED CONDITIONS:

ULTIMATE DEVELOPMENT DRAINAGE BASIN MAP

EXHIBIT 3

PORTABLE PARK GRADING & DRAINAGE PLAN

EXHIBIT 4

PHASE I GRADING & DRAINAGE PLAN

EXHIBIT 5

GRADING DETAILS

EXHIBIT 6

PHOTOS

Photo 1 – Retention/Detention Pond Outlet Structure

Photo 2 – 24" Storm Drain Outfall to Pond

Photo 3 – Playground Looking Southwest

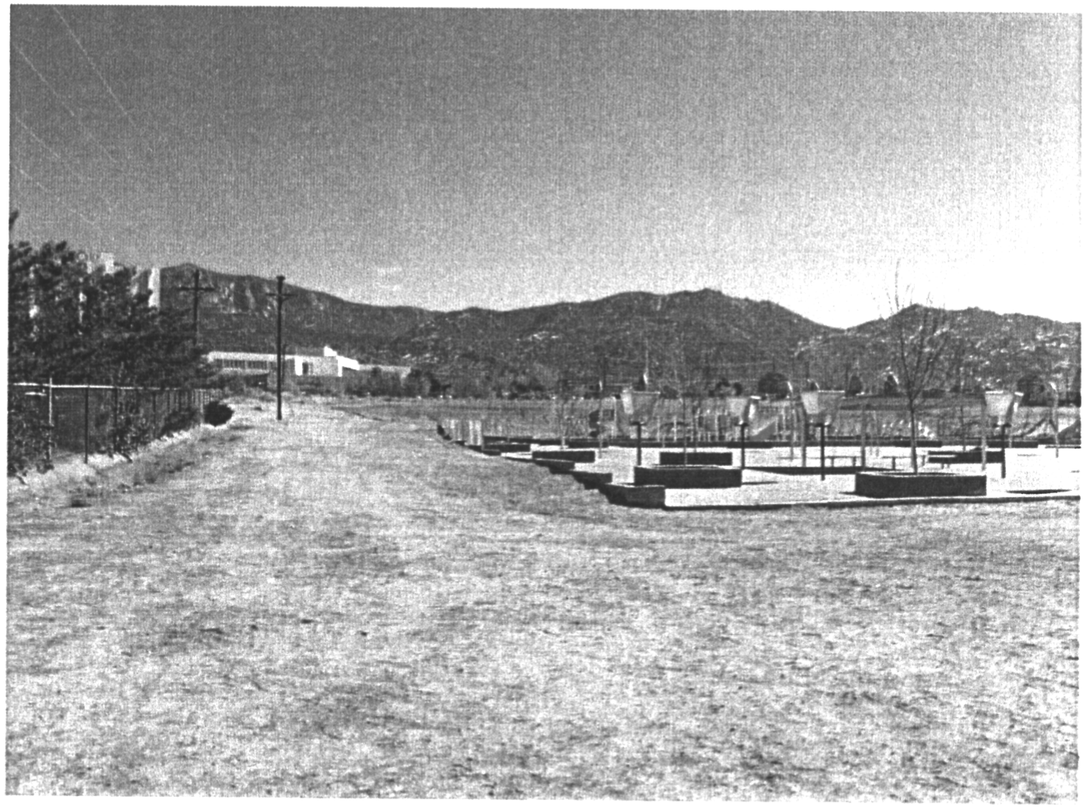


Photo 4 – Playground Looking East

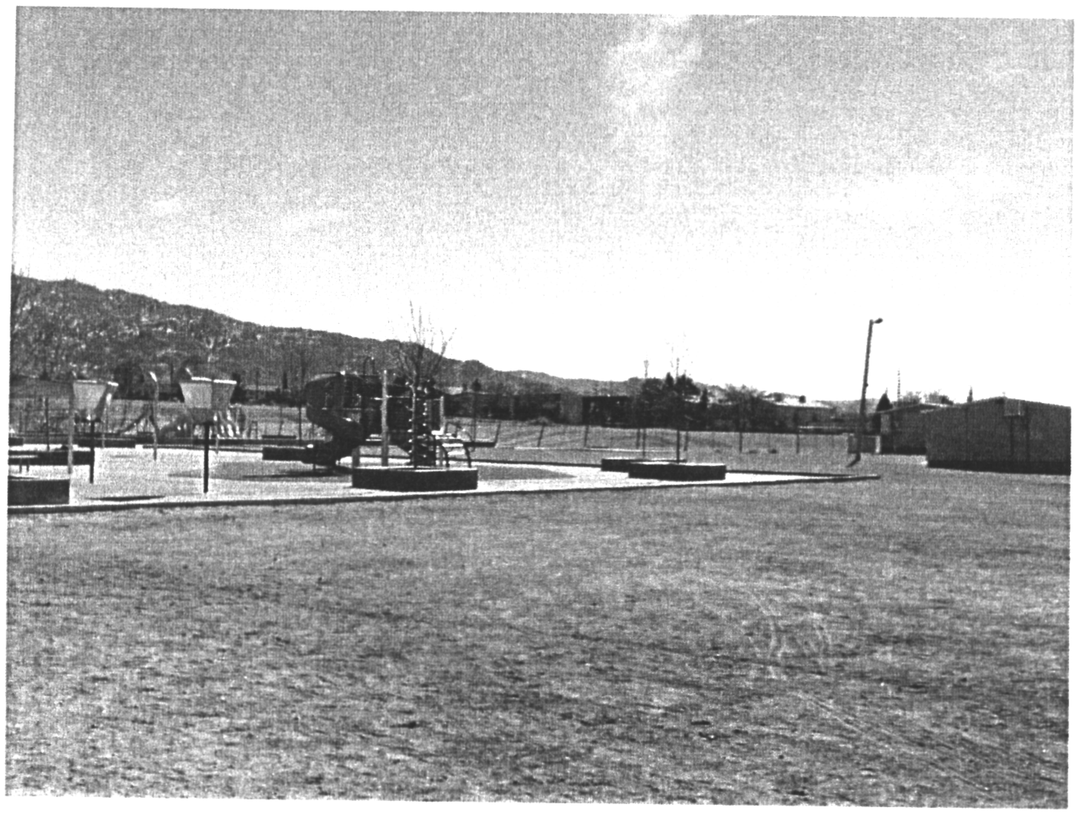


Photo 5 – Playground Looking Southeast

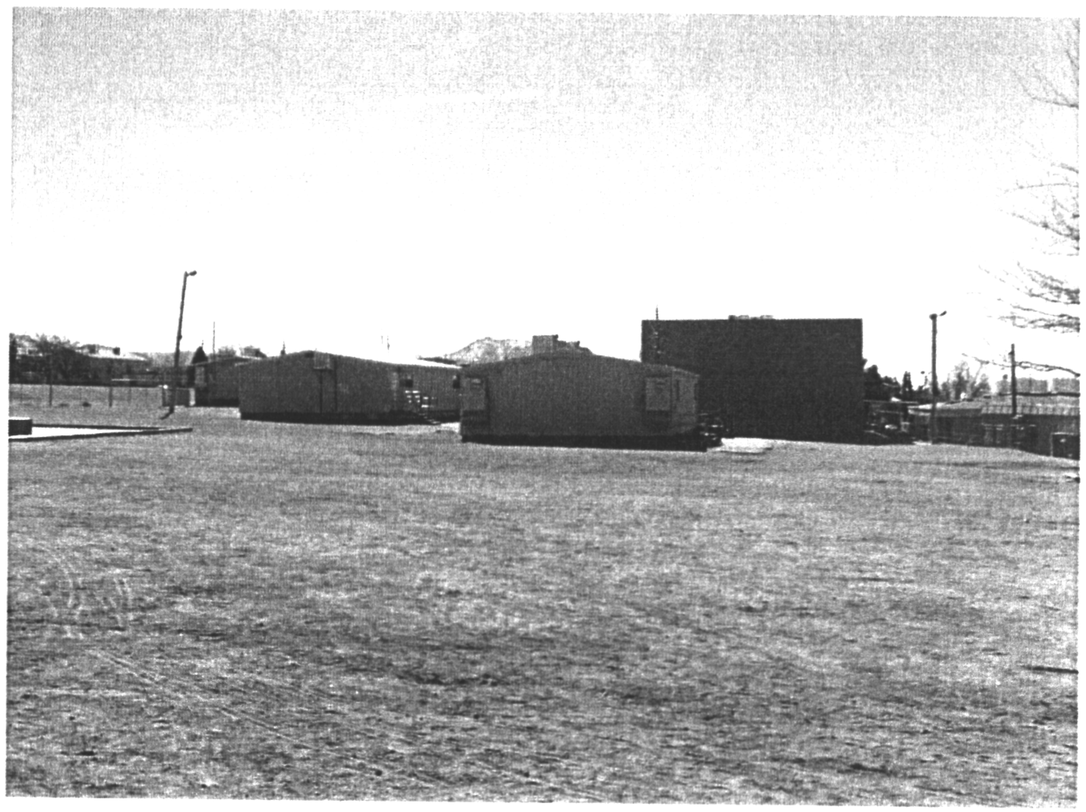


Photo 6 – Modular Building and Gym Looking South

Photo 7 – Playground Looking East

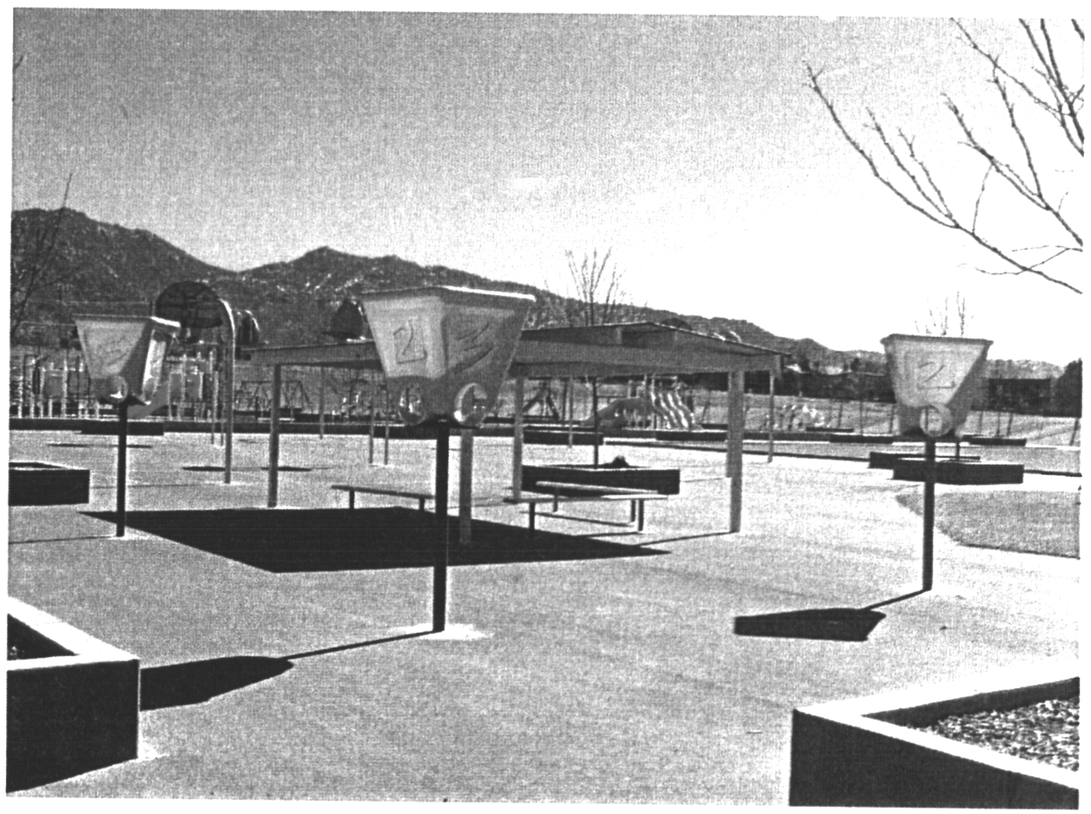


Photo 8 – Playground Looking Southeast

Photo 9 – Playground Looking South

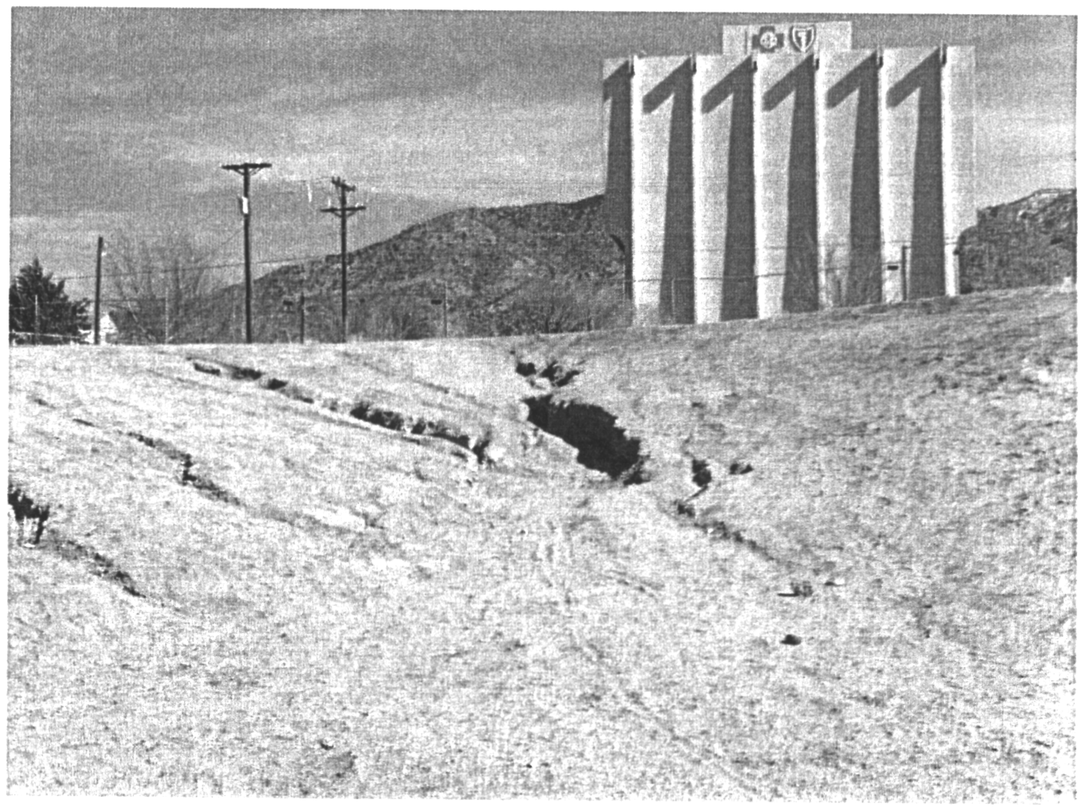


Photo 10 – Erosion Along Cut Slope Along East Side of Playground

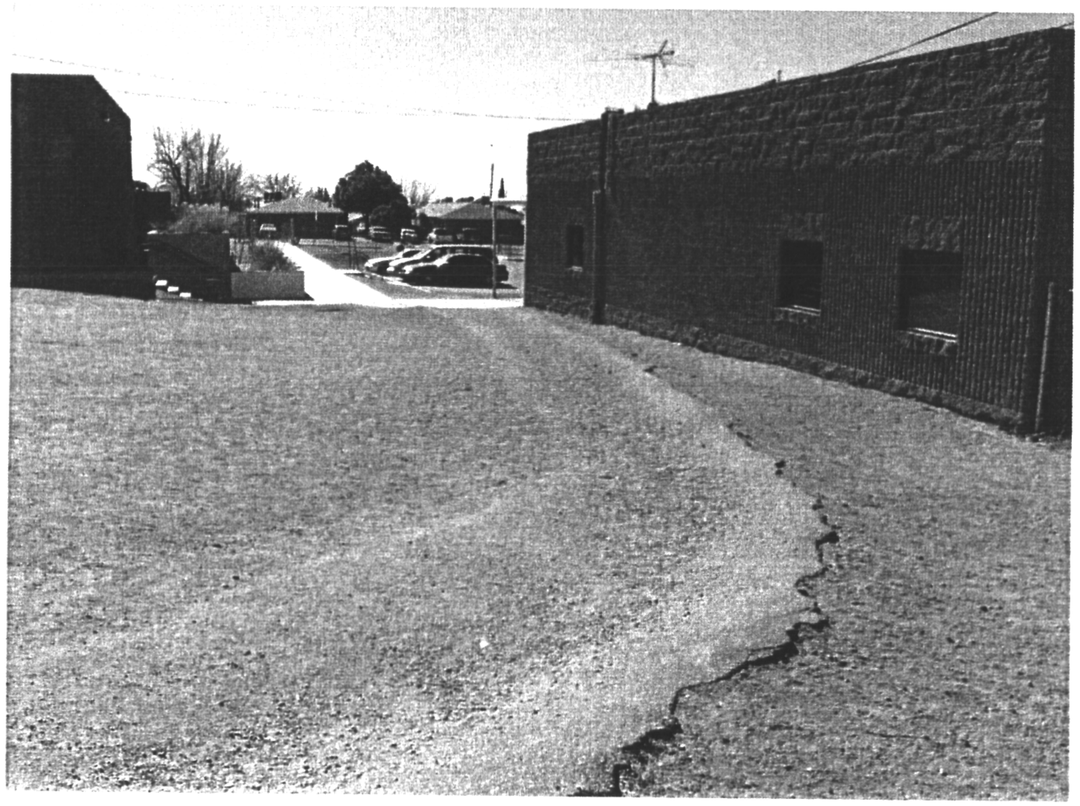


Photo 11 – Asphalt Swale

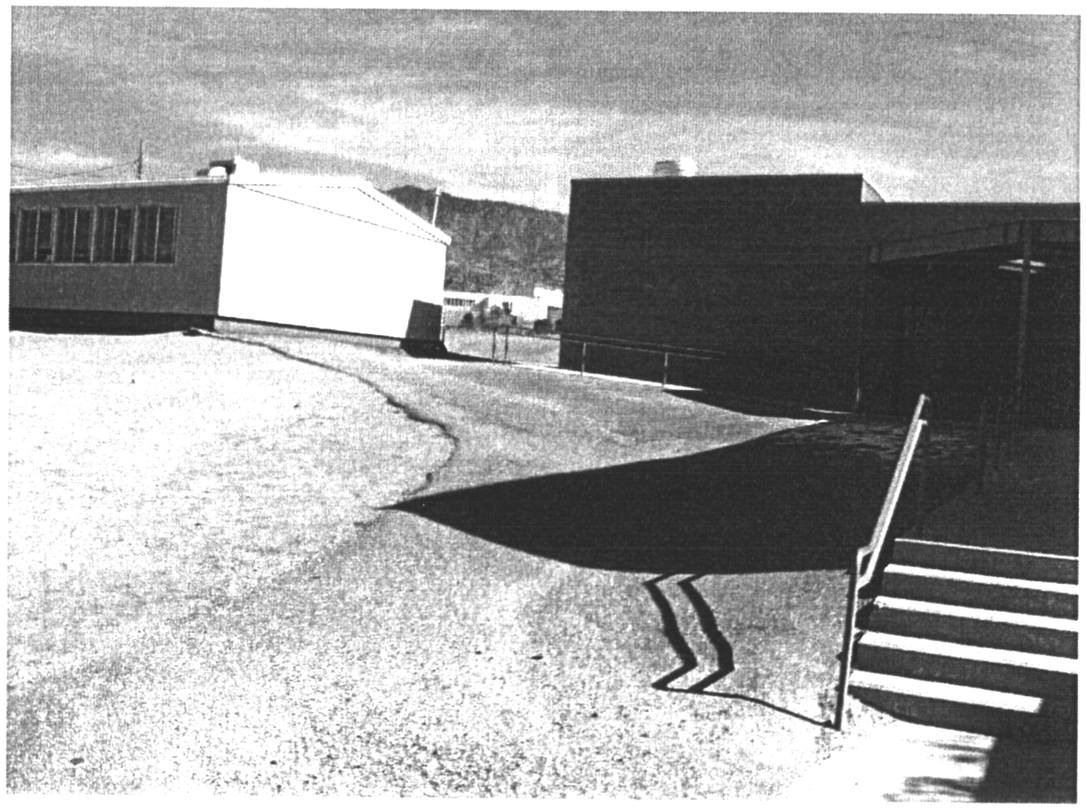
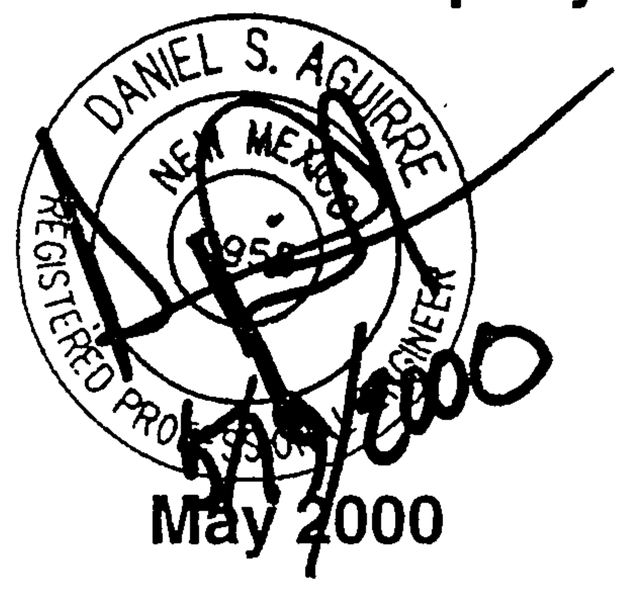


Photo 12 – Asphalt Swale

Drainage Report
For
Chelwood Elementary School
Playground Improvement Project

Prepared for Albuquerque Public Schools

Prepared By
Wilson & Company



May 2000

WILSON
& COMPANY

DRAINAGE REPORT

Site Location: Chelwood Middle School is located at the corner of Constitution Ave. and Chelwood Park Blvd. The proposed development includes sandboxes, asphalt paving, addition of basketball courts, a sod playing field and miscellaneous concrete work.

Methodology: Section 22.2 of the City of Albuquerque DPM was used in the hydrology analysis of the site. A principal design storm of 100-yr, 10-day event was used.

Existing Drainage Condition: The site consists of two basins; Basin 101 - South and Basin 102 - North. Basin 101 encompasses 8.0 acres on the southern portion of the site and Basin 102 encompasses 8.4 acres on the northern portion of the site. Basin 101 is developed with buildings, a parking lot on the southwestern end and an undeveloped playground on the East Side. Basin 102 is developed with playground equipment on the western half and undeveloped property on the eastern half.

Currently, all flows from Basin 101 are conveyed westward adjacent to the buildings and through the parking lots. Runoff is freely discharged (35.89 cfs) onto Chelwood Park Blvd and Constitution Ave. The flows from Basin 102 are also conveyed westward. Approximately 33.82 cfs is freely discharged though the drive pad located on the westside of the site and onto Chelwood Park Blvd. Table 1 provides a breakdown of existing volumetric runoff and peak discharge.

Table 1 - Exiting Conditions

		Treatment					
Basin	Area (ac)	A	B	C	D	V_{1440}(ac-ft)	Q_{100}(cfs)
101	7.993	0.00%	0.00%	50.00%	50.00%	1.365	35.888
102	8.383	0.00%	0.00%	80.00%	20.00%	1.185	33.815
Total	16.376					2.55	69.703

Table 1: Breakdown of existing land type for each the basin including its respective volumetric runoff and discharge value.

Proposed Conditions: The proposed conditions will separate the site into eight basins (see Plate 1). Basin 201 is located on the southeast corner of the site. The flows are conveyed westward discharging into an inlet. Flows are conveyed via a 24" SD mainline and discharged into a proposed detention pond, located on the northwest side of the school.

Basin 202 and Basin 203 are located north of Basin 201. Flows sheet flow westward, collected and conveyed by a median curb and gutter to the SD mainline and discharged into the proposed pond.

Basin 204 encompasses the northeast portion of the property. Flows sheet flow westward, first over natural ground then over the proposed playground, into the SD mainline and ultimately discharging into the proposed pond.

Basin 205 encompasses the northeast portion of the property. Flows sheet flow westward over natural ground to the edge of the proposed playground, into the SD mainline and ultimately discharging into the proposed pond.

Basin 206, the western portion of the playground, is located west of Basin 204 and Basin 205. Flows sheet flow northwestward into the SD mainline and ultimately discharging into the proposed pond.

Basin 207 encompasses the western portion of the property. Flows sheet flow westward over the basin, discharging directly into the detention pond or onto Chelwood Park Dr.

The proposed capacity of the detention pond is 0.85 acre-ft, which exceeds the required capacity of 0.50 acre-ft . The detention pond will have a controlled outlet based on the orifice equation to limit the discharge to a maximum of 20 cfs onto Chelwood Park Dr. The hydrograph for the site and pond sizing is shown at the end of this report.

Basin 208 is located on the southwest corner of the site. The proposed development will not effect this basin. Basin 208 discharges directly to the street and is not detained by the pond.

Table 2 provides a breakdown of proposed volumetric runoff and peak discharge.

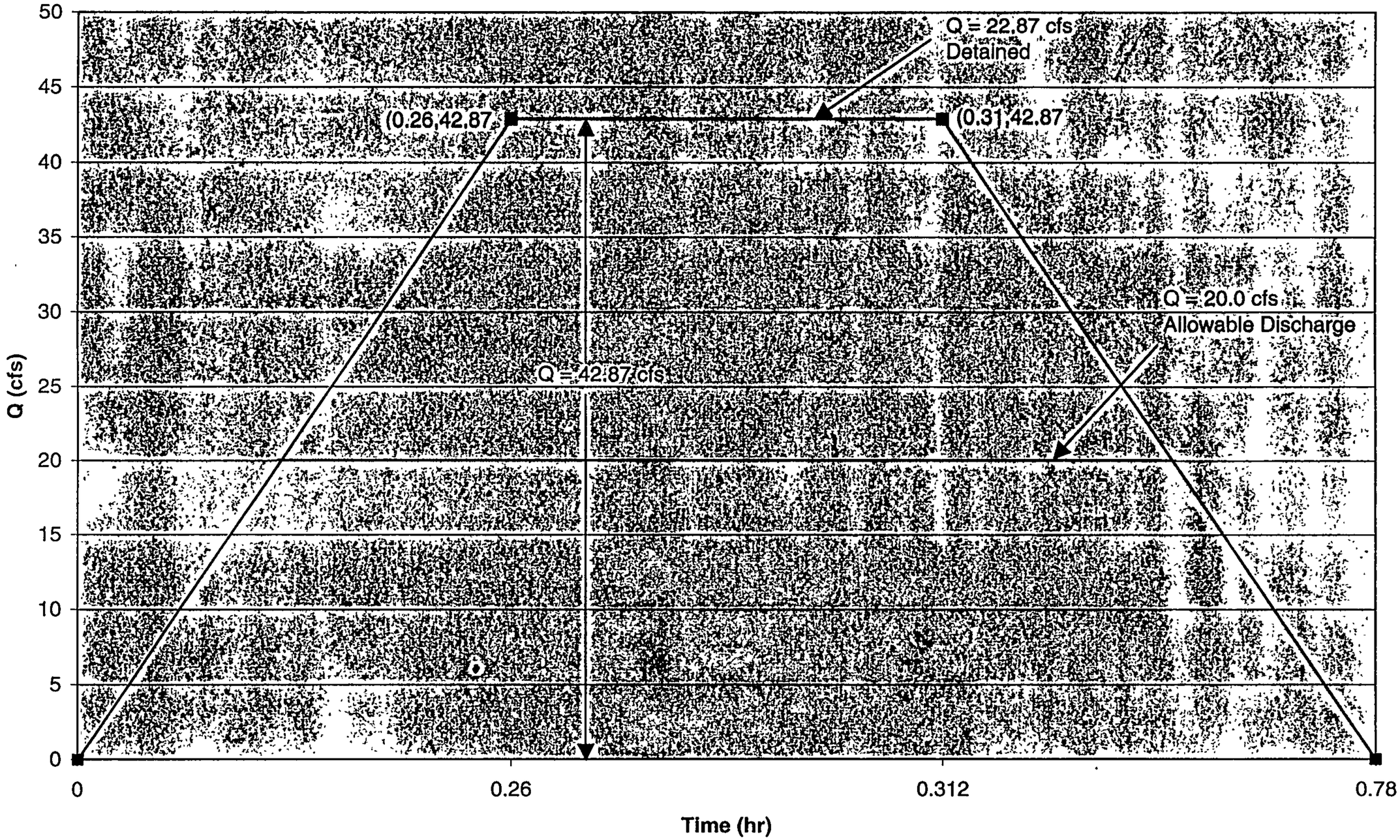
Table 2 -Proposed Conditions

		Treatment					
Basin	Area (ac)	A	B	C	D	V_{1440}(ac-ft)	Q_{100}(cfs)
201	0.477	0.00%	0.00%	100.00 %	0.00%	0.058	1.779
202	3.339	0.00%	0.00%	100.00 %	0.00%	0.406	12.453
203	1.552	0.00%	0.00%	78.60%	21.40%	0.222	6.294
204	0.954	0.00%	0.00%	66.66%	33.33%	0.153	4.134
205	1.781	0.00%	0.00%	98.00%	2.00%	0.219	6.676
206	0.418	0.00%	0.00%	0.00%	100.00 %	0.092	2.194
207	2.082	0.00%	0.00%	50.00%	50.00%	0.355	9.338
208	5.773	0.00%	0.00%	10.00%	90.00%	1.213	29.431
Total	**16.376**					**2.718**	**72.299**

Table 2: Breakdown of proposed land types for each basin including their respective volumetric runoff and discharge values.

Conclusions: The proposed development will not have a significant impact on the total volumetric runoff (increase of 0.17 ac-ft) and the total flow rate (increase of 2.6 cfs) when compared to the existing conditions. However, there is an improvement to the proposed discharged onto Chelwood Park Blvd. and Constitution Ave. The proposed discharge onto Constitution Ave. will decrease because the runoff from Basin 101 (specifically Basin 201 and a portion of Basin 202) will be diverted to Basin 102, thus allowing less runoff onto Constitution Ave. The other positive aspect of these proposed site improvements is the reduction of the discharge onto Chelwood Park Blvd. to a maximum of 20 cfs due to the controlled outlet, rather than the uncontrolled 33 cfs. The pond will detain the flows from all basins except for basin 208 which will continue to have free discharge to the adjacent streets.

Hydrograph


Q = 22.87 cfs
Detained
(0.26,42.87)
(0.31,42.87)
Q = 20.0 cfs
Allowable Discharge
Q = 42.87 cfs
Q (cfs)
50
45
40
35
30
25
20
15
10
5
0
0
0.26
0.312
0.78
Time (hr)

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: Chelwood Elementary School ZONE MAP: _____
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____
CITY ADDRESS: _____

ENGINEERING FIRM: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

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

ARCHITECT: Rohde May Keller McNamara Architecture CONTACT: David Edwards
ADDRESS: 400 Gold Ave. SW, Studio 1120 Simms Tower PHONE: 243-5454 (615-6886
CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87102-3286

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

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

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ 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)
__X__ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY)

10-10-08
90 DAY TRANS
120 DAY HYDROLOGY
90 DAY
LARRY READ P.C. IS IN THE HOSPITAL W/ PNEUMONIA.

RECEIVED
OCT 10 '08
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: October 10, 2008 BY: David Edwards

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 defines 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.