CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

November 10, 2010

Jonathan Stern, Registered Architect.
Modulus Architects
2325 San Pedro NE, Ste. 2-B
Albuquerque, NM 87110

Re: Certification Submittal for a Permanent Building Certificate of Occupancy (C.O.) for Lot 4-Shops@Volcano Point, [K-09 / D033B]
101 98th St. NW
Engineer's Stamp Dated 11/10/10

Dear Mr. Stern:

Based upon the information provided in your submittal received 11-10-10, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy. This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

If you have any questions, please contact me at (505)924-3630.

Sincerely,

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

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 12/2005)

PROJECT TITLE: LOT 4 - SHOPS AT VOLCANO POINT ZONE MAP: K-09/D033B.
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: LOT 4 VOLCANO POINT SHOPPING CENTER
CITY ADDRESS: 101 98TH ST NW

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

OWNER: PETERSON - 98TH/CENTRAL LLC CONTACT: DOUG PETERSON
ADDRESS: 2325 SAN PEDRO NE ST 2A PHONE: 884-3578
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87110

ARCHITECT: GEORGE RAINHART ARCHITECT & ASSOC. CONTACT: GEORGE RAINHART
ADDRESS: 2325 SAN PEDRO NE, SUITE 2B PHONE: 450-2444
CITY, STATE: ALBUQUERQUE, NM 87110 ZIP CODE: 87110

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)
- _____ CERTIFICATE OF OCCUPANCY (TEMP)
- _____ GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ WORK ORDER APPROVAL
- _____ OTHER (SPECIFY)

RECEIVED
NOV 10 2010
HYDROLOGY SECTION

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

DATE SUBMITTED: 11/10/10 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 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

Planning Department
Transportation Development Services Section

October 11, 2010

George Rainhart, Registered Architect.
George Rainhart, Architect & Associates P.C.
2325 San Pedro NE, Ste. 2-B
Albuquerque, NM 87110

Re: Certification Submittal for a 120-day Temporary Building Certificate of Occupancy (C.O.) for Lot 4-Shops@Volcano Point, K-09 / D033B]
101 98th St. NW
Engineer's Stamp Dated 10/04/10

Dear Mr. Rainhart:

Based upon the information provided in your submittal received 10-11-10, Transportation Development has downgraded your request from a Permanent to a **120-day Temporary Certificate of Occupancy**. This letter serves as a "green tag" from Transportation Development for a 120-day Temporary Certificate of Occupancy to be issued by the Building and Safety Division.

The following items will need to be addressed prior to issuance of a Permanent Certificate of Occupancy: The completion of Lot 3, especially the unpaved drive aisle . Once these issues have been addressed you'll need to re-submit the total package for Permanent C.O.

If you have any questions, please contact me at (505)924-3630.

Sincerely,

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

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

VIEW LOOKING
SOUTH TO LOT 4

November 9, 2010

City of Albuquerque
Attn: Nilo Salgado-Fernandez, P.E.
Senior Traffic Engineer, Development and Building Services
600 2nd Street
Albuquerque, NM 87102

Re: Request for a Permanent Certificate of Occupancy for Lot 4 – Shops at Volcano Point, K-09/D033B, 101 98TH ST NW
Engineer Stamp Dated 10/4/10

Mr. Salgado:

The Lot 4 Shops at 98th and Central (101 98th St NW) was issued a 120 day temporary C.O. per your letter dated 10/11/10. The condition to be met for permanent c.o. approval refers to "The completion of Lot 3, especially the unpaved drive aisle." The drive aisle paving is now complete at Lot 3 and the owner of Lot 4 is requesting issuance of a permanent Certificate of Occupancy by your department so they can move forward with new tenant improvements in their new building.

Sincerely,

Modulus Architects, Inc.

Jonathan Stern 440-5123 OR 338-1499 EXT. 110
Agent for George Rainhart and Peterson Properties

RECEIVED
NOV 10 2010
HYDROLOGY SECTION

MODULUS ARCHITECTS
2325 San Pedro NE, Suite 2b
Albuquerque, New Mexico 87110
p 505.338.1499 f 505.338.1498
toll free: 1-866-224-2161

TRAFFIC CERTIFICATION

I, JONATHAN STERN, NMRA 3419, OF THE FIRM MODULUS ARCHITECTS INC. , HEREBY CERTIFY THAT THIS PROJECT IS IN SUBSTANTIAL DESIGN COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 8/26/08, SEALED 8/27/08. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY JONATHAN STERN OF THE FIRM MODULUS ARCHITECTS. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 11/10/10 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR A PERMANENT CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE TRAFFIC ASPECTS OF THIS PROJECT. THOSE RELYING ON THE RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

Signature of Architect
Agent for Architect of Record

STATE OF NEW MEXICO
JONATHAN STERN
NO. 3419
11.10.10
REGISTERED ARCHITECT

11.10.10
Date

RECEIVED
NOV 10 2010
HYDROLOGY SECTION

MODULUS ARCHITECTS
2325 San Pedro NE, Suite 2b
Albuquerque, New Mexico 87110
p 505.338.1499 f 505.338.1498
toll free: 1-866-224-2161

Salgado-Fernandez, Nilo E.

From: Jon Stern [jstern@modulusarchitects.com]
Sent: Tuesday, November 09, 2010 2:18 PM
To: Salgado-Fernandez, Nilo E.
Subject: RE: 98th & Central Shops Lot 4 (K-09/D033B)

Nilo,

The shops at 98th and Central (101 98th St NW) were issued a 120 day temp c.o. per your letter dated 10/11/10. The condition to be met for permanent c.o. approval refers to "The completion of Lot 3, especially the unpaved drive aisle." The drive aisle for the adjacent lot 3 has been paved now, but the building on Lot 3 (different owner from Lot 4) is not complete. Does this mean a permanent c.o. for lot 4 still can't be obtained even if the drive aisle is paved? I think the shops owner on Lot 4 has been leasing spaces and wants the new tenants to be able to build t.i.'s.
Please let me know how we should proceed.

Thanks,
Jon Stern

Jonathan Stern AIA
MODULUS Architects, Inc

2325 San Pedro NE, Suite 2B
Albuquerque, NM 87110
p 505.338.1499 ext 110
f 505.338.1498
1.866.224.2161

From: Salgado-Fernandez, Nilo E. [mailto:NSalgado@cabq.gov]
Sent: Monday, October 11, 2010 9:54 AM
To: Jon Stern
Subject: RE: 98th & Central Shops Lot 4

Yes, this is an acceptable solution. I will provide a 120-day temporary CO for Lot 4(maybe extended until Lot 3 is completed).
Nilo Salgado-Fernandez
Senior Traffic Engineer

From: Jon Stern [mailto:jstern@modulusarchitects.com]
Sent: Monday, October 11, 2010 9:47 AM
To: Salgado-Fernandez, Nilo E.
Cc: Doug Peterson; Scot McLelland; George R
Subject: 98th & Central Shops Lot 4

Good morning Nilo,

Per our request for Traffic approval for C.O. for the building shell on Lot 4, please note that though the DRB approved site plan includes Lot 3 (fast food), the owner of Lot 4 has no control over Lot 3 because he doesn't own it. Lot 3 is currently under construction so it will be completed before long, but in the meantime, the owner of Lot 4 will arrange to barricade between the two lots so potential users of Lot 4 will not use the driveway accessed through Lot 3 until Lot 3 construction is complete, at which time the barricade will be removed. Please let me know if this is acceptable.

Jon Stern

Jonathan Stern AIA
MODULUS Architects, Inc

2325 San Pedro NE, Suite 2B
Albuquerque, NM 87110
p 505.338.1499 ext 110
f 505.338.1498
1.866.224.2161

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services Section

October 11, 2010

George Rainhart, Registered Architect.
George Rainhart, Architect & Associates P.C.
2325 San Pedro NE, Ste. 2-B
Albuquerque, NM 87110

Re: Certification Submittal for a 120-day Temporary Building Certificate of Occupancy (C.O.) for Lot 4-Shops@Volcano Point, [K-09 / D033B]
101 98th St. NW
Engineer's Stamp Dated 10/04/10

Dear Mr. Rainhart:

Based upon the information provided in your submittal received 10-11-10, Transportation Development has downgraded your request from a Permanent to a **120-day Temporary Certificate of Occupancy**. This letter serves as a "green tag" from Transportation Development for a 120-day Temporary Certificate of Occupancy to be issued by the Building and Safety Division.

The following items will need to be addressed prior to issuance of a Permanent Certificate of Occupancy: The completion of Lot 3, especially the unpaved drive aisle . Once these issues have been addressed you'll need to re-submit the total package for Permanent C.O.

If you have any questions, please contact me at (505)924-3630.

Sincerely,

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

c: Engineer
Hydrology file
CO Clerk

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Salgado-Fernandez, Nilo E.

From: Salgado-Fernandez, Nilo E.
Sent: Monday, October 11, 2010 9:54 AM
To: 'Jon Stern'
Subject: RE: 98th & Central Shops Lot 4

Yes, this is an acceptable solution. I will provide a 120-day temporary CO for Lot 4(maybe extended until Lot 3 is completed).
Nilo Salgado-Fernandez
Senior Traffic Engineer

From: Jon Stern [mailto:jstern@modulusarchitects.com]
Sent: Monday, October 11, 2010 9:47 AM
To: Salgado-Fernandez, Nilo E.
Cc: Doug Peterson; Scot McLelland; George R
Subject: 98th & Central Shops Lot 4

Good morning Nilo,

Per our request for Traffic approval for C.O. for the building shell on Lot 4, please note that though the DRB approved site plan includes Lot 3 (fast food), the owner of Lot 4 has no control over Lot 3 because he doesn't own it. Lot 3 is currently under construction so it will be completed before long, but in the meantime, the owner of Lot 4 will arrange to barricade between the two lots so potential users of Lot 4 will not use the driveway accessed through Lot 3 until Lot 3 construction is complete, at which time the barricade will be removed. Please let me know if this is acceptable.

Jon Stern

Jonathan Stern AIA
MODULUS Architects, Inc

2325 San Pedro NE, Suite 2B
Albuquerque, NM 87110
p 505.338.1499 ext 110
f 505.338.1498
1.866.224.2161

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 12/2005)

PROJECT TITLE: SHOPS @ VOLCANO POINT ZONE MAP: K-09/D033B
DRB#: 08DRB-70238 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: LOT 4 VOLCANO POINT SHOPPING CENTER
CITY ADDRESS: 101 98th ST NW 87121

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

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

ARCHITECT: GEORGE RAINHART CONTACT: STEPHEN OR JON
ADDRESS: 2325 SAN PEDRO NE STE 2B PHONE: 338-1499 EXT 106 OR 110
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87110

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) (SHELL)
- ____ CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

RECEIVED
OCT 06 2010
HYDROLOGY SECTION

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

DATE SUBMITTED: 10/6/10 BY: [illegible]

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.

Need FIELD
INSP,
"Red Flag"

Verbal no
per conversation
w/ Stephen
1:20pm 10/08/10
Will wait until
Drive aisle is paved
then will provide 120d
temp.

TRAFFIC CERTIFICATION

I, GEORGE RAINHART, NMRA 580, OF THE FIRM GEORGE RAINHART ARCHITECT & ASSOCIATES P.C. , HEREBY CERTIFY THAT THIS PROJECT HAS IS IN DESIGN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 8/26/08, SEALED 8/27/08. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY GEORGE RAINHART. OF THE FIRM GEORGE RAINHART ARCHITECT & ASSOCIATES P.C. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 9/27/10 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR A PERMANENT CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE TRAFFIC ASPECTS OF THIS PROJECT. THOSE RELYING ON THE RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

Signature of Architect

ARCHITECT'S STAMP

STATE OF NEW MEXICO
GEORGE R. RAINHART
NO. 580
10 4 10
REGISTERED ARCHITECT

Oct 4 2010
Date

RECEIVED
OCT 06 2010
HYDROLOGY SECTION

GEORGE RAINHART, ARCHITECT & ASSOCIATES P.C.
2325 SAN PEDRO NE SUITE 2-B ■ ALBUQUERQUE, NEW MEXICO 87110
PHONE: 505-884-9110 ■ FAX: 505-837-9877 ■ Email: graa@gra-arch.com

CITY OF ALBUQUERQUE

October 8, 2010

Ronald Ray Bohannan, P.E.
Tierra West, LLC.
5571 Midway Park Place N.E.
Albuquerque, NM 87109

Re: Lot 4 Volcano Point Shopping Center, 101 98th St. NW,
Request for Permanent Certificate of Occupancy - Approved
Engineer's Stamp dated 2-06-09, (K-09/D033B)
Certification dated 10-07-10

Dear Mr. Bohannan,

Based upon the information provided in the Certification received 10-07-10, the above referenced Certification is approved for a release of a 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 Section
Development and Building Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

C: CO Clerk—Katrina Sigala
Bradley L. Bingham
File

DRAINAGE AND TRANSPORTATION SHEET
(REV. 1/28/2003rd)

PROJECT TITLE: Lot 4 Volcano Point Shopping Center
ZONE MAP/DRG. FILE # K9/D33B
DRB : 1003794 EPC #:
WORK ORDER #: 790385

LEGAL DESCRIPTION Lots 3 & 4,, Volcano Point Shopping Center
CITY ADDRESS: 101 99th St.

ENGINEERING FIRM:	Tierra West, LLC	CONTACT:	Jonathan Niski, P.E.
ADDRESS:	5571 Midway Park Place	PHONE:	(505) 858-3100
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87109
OWNER:	Peterson Properties, LLC	CONTACT:	Doug Peterson
ADDRESS:	2325 San Pedro NE, Suite 2A	PHONE:	(505) 884-3578
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87110
ARCHITECT:	Modulus Architects, Inc.	CONTACT:	Jon Stern
ADDRESS:	2325 San Pedro NE, Suite 2B	PHONE:	505-338-1499
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87110
SURVEYOR:	Walker Surveying	CONTACT:	Steve Walker
ADDRESS:	424 Shirk SW	PHONE:	505-877-8783
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87105
CONTRACTOR:	Wilger Enterprises, Inc.	CONTACT:	Scott McLelland
ADDRESS:	425 Edmon Road NE	PHONE:	505-345-2854
CITY, STATE:	Albuquerque, NM	ZIP CODE:	87107

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
- X 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 / FINANACIAL 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
- ____ SO-19

RECEIVED
OCT 07 2010
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ____ YES
- X NO
- ____ COPY PROVIDED

DATE SUBMITTED: 10/7/2010 BY: Jonathan Niski, P.E.

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 sumbittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans**: 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

February 19, 2009

Ronald R. Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place
Albuquerque, NM 87109

Re: Lot 4, Volcano Point Shopping Center
Grading and Drainage Report/Plan
Engineer's Stamp dated 02-06-09 (K-9/D033)

Dear Mr. Bohannan,

Based upon the information provided in your submittal received 02-06-09, the above referenced plan is approved for Grading and Paving Permit and Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. **Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.**

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. In addition to submitting an NOI to the EPA and preparing a Storm Pollution Prevention Plan (SWPPP), please send a copy of the SWPPP on a CD in .pdf format to 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 regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Kathy Verhage).

If you have any questions, you can contact me at 924-3630.

Sincerely,

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

C: File
Kathy Verhage

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Lot 4 Volcano Point Shopping Center
ZONE MAP/DRG. FILE #: K9/D33
DRB #: 1003794 EPC #:
WORK ORDER #: ***790386***

LEGAL DESCRIPTION: Lots 1 thru 4, Volcano Point Shopping Center
CITY ADDRESS:

ENGINEERING FIRM: Tierra West, LLC
ADDRESS: 5571 Midway Park Place
CITY, STATE: Albuquerque, NM
CONTACT: Ron Bohannan
PHONE: (505) 858-3100
ZIP CODE: 87109

OWNER: Peterson Properties, LLC
ADDRESS: 2325 San Pedro NE, Suite 2A
CITY, STATE: Albuquerque, NM
CONTACT: Doug Peterson
PHONE: (505) 884-3578
ZIP CODE: 87110

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

SURVEYOR: Surv-tek
ADDRESS: 9384 Valley View NW Suite 100
CITY, STATE: Albuquerque, NM
CONTACT: Russ Hugg
PHONE: (505) 897-3366
ZIP CODE: 87114

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

CHECK TYPE OF SUBMITTAL:

X 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 / FINANACIAL 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.)
X GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ WORK ORDER APPROVAL
___ SO-19

RECEIVED
FEB 06 2009
HYDROLOGY SECTION

$50.00

WAS A PRE-DESIGN CONFERENCE ATTENDED:

___ YES
X NO
___ COPY PROVIDED

DATE SUBMITTED: 2/6/2009
BY: Sarah Abeyta

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 sumbittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans:** 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.

TW

Tierra West, LLC.

(505) 858-3100

5571 Midway Park Place NE, Albuquerque, NM 87109

LETTER OF TRANSMITTAL

DATE: 2/6/2009	JOB NO: 28065
ATTENTION: Brad Bingham	
RE: Volcano Point Shopping Center - Lot 4	
PHONE: (505) 924-3986	

TO City of Albuquerque
Public Works Hydrology Department
Plaza Del Sol, 4th Floor
600 N. Second Street NW
Albuquerque, NM 87102

WE ARE SENDING YOU ☐ Attached ☐ Under Separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☒ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐

COPIES	DATED	NO.	DESCRIPTION
1			Drainage Report (dated 02-06-09)

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ **FOR SIGNATURE(S)**

☐ For your use ☐ Approved as noted ☐ _____

☒ As requested ☐ Returned for corrections

☐ For review and comments ☐ _____

☐ FOR BIDS DUE _____ 20 ____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO _____

RECEIVED BY _____ Date _____ SIGNED Cynthia Abeyta for Sarah Abeyta

FAX (505) 858-1118 If enclosures are not as noted, kindly notify us at once Email: twllc@tierrawestllc.com

DRAINAGE REPORT
FOR

Lot 4
Volcano Point Shopping Center
K9/D33

Prepared by:

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109

Prepared for:
Peterson Properties
2325 San Pedro, NE Suite 2-A
Albuquerque, NM 87110

February 2009

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.

RONALD RAY BOHANNAN
NEW MEXICO
7868
REGISTERED PROFESSIONAL ENGINEER
2/6/09

Ronald R. Bohannan
PE NO. 7868

Job No 28065

RECEIVED
FEB 06 2009
HYDROLOGY
SECTION

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APPENDIX A
Section of Final Design Report for the Amole Del Norte Storm Diversion Facilities, Tierra Bayita Drainage Facilities, Phase III March 1998

MAP POCKET
Grading and Drainage Plan

Section I

Report

Purpose

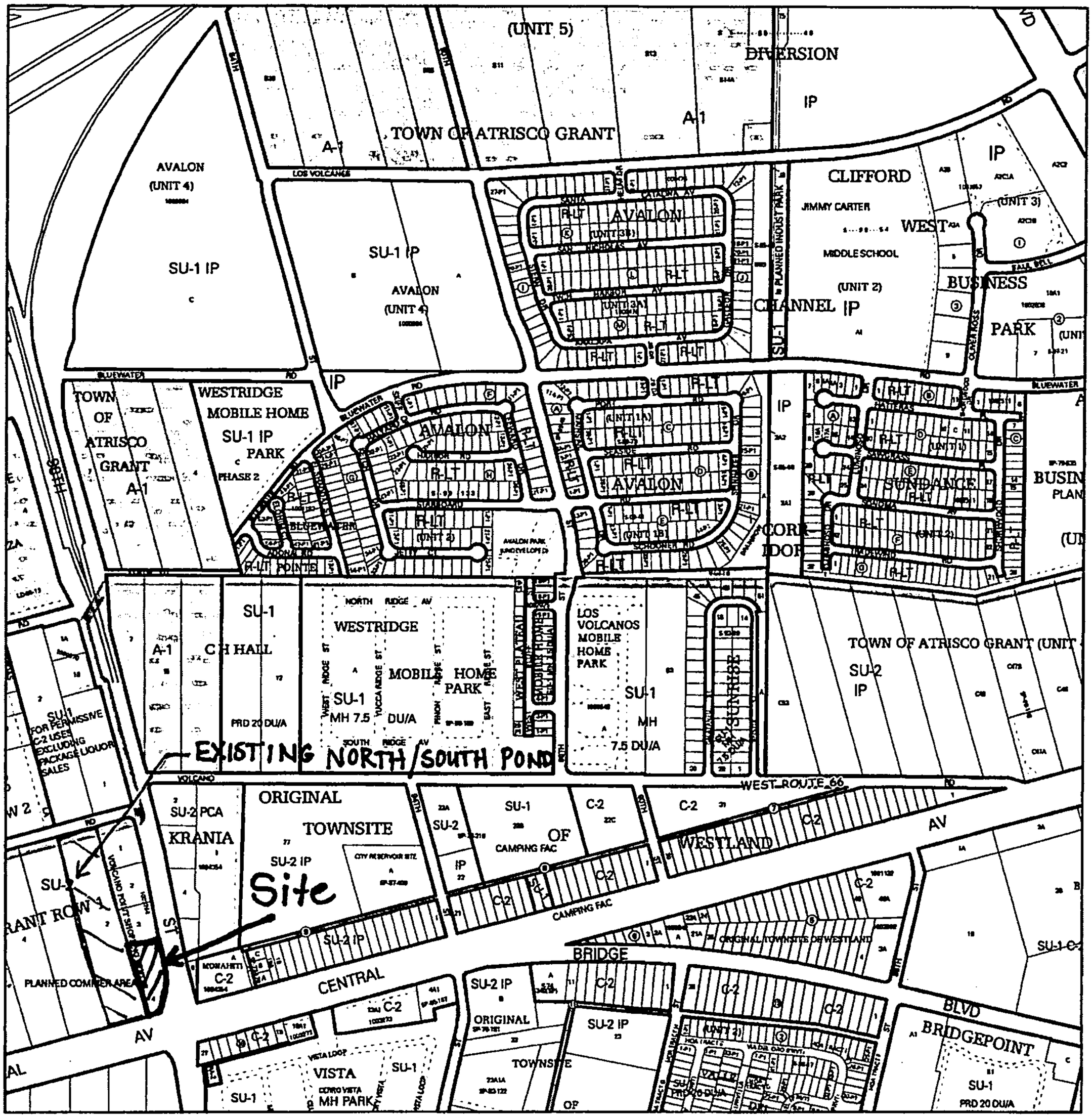
This is an addendum to the Drainage Report previously approved for Volcano Point Shopping Center. At this time we are requesting Grading and Drainage approval for Building Permit for Lot 4. The overall development is approximately +/- 4.15 acres; Lot 4 makes up approximately 1.2 acres of the development. In order for this request to be approved, Tierra West was required by the City of Albuquerque to further analyze the existing North/South drainage pond to the west of the site.

Location

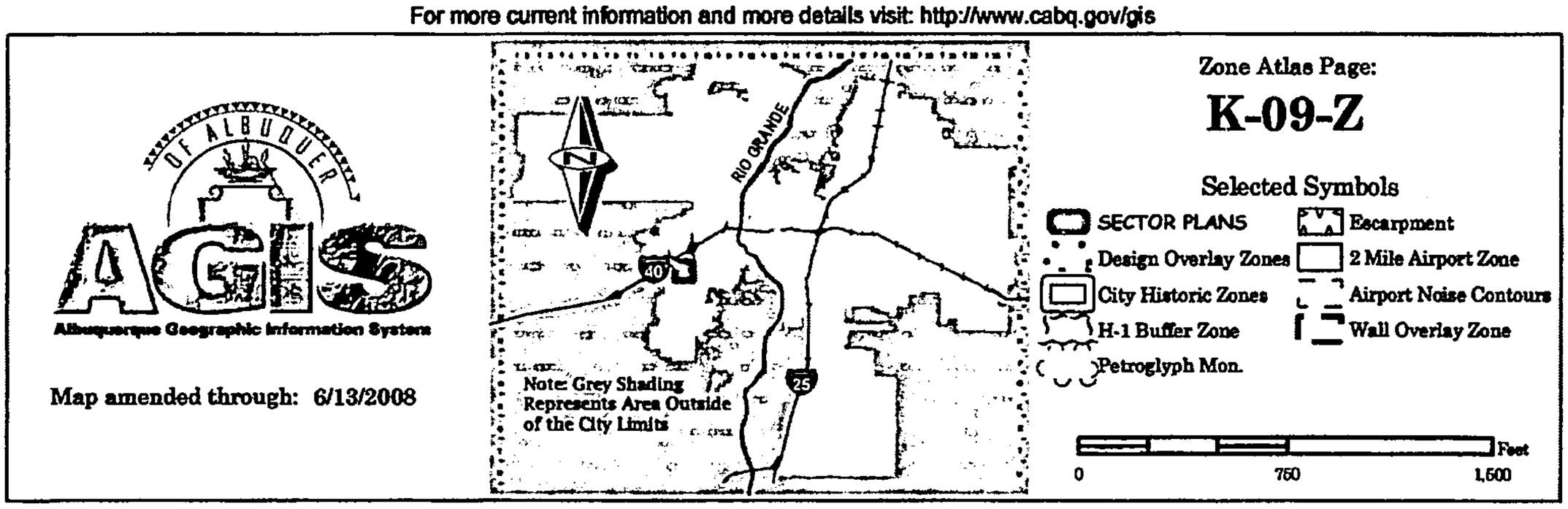
The site is located on the west side of Albuquerque, more specifically within the existing Volcano Point Shopping Center at the northwest corner of 98th Street and Central Avenue. The site is bounded on the west by a large drainage pond which is owned and maintained by the City of Albuquerque. A plan showing the North South Pond location in relation to Lot 4 is included in Appendix A. The site is shown on the enclosed Vicinity Map, K-9-Z.

Existing Drainage Conditions

Valero Gas Station is currently being constructed on Lot 1; Lot 2 is an AutoZone and Lots 3 and 4 are currently vacant. The overall shopping center was previously analyzed at the time the AutoZone on Lot 2 was built. The storm drain system for the shopping center was constructed at the time all of the off-site improvements to 98th Street were built, but it was required by the City that each lot submit a grading plan that was site specific for building permit approval. The drainage from the shopping center is conveyed via drop inlets and on-site storm drain to an existing 36" RCP adjacent to the south property line. Lot 4 drains naturally west to east to an inlet installed for the shopping center. As mentioned previously there is an existing detention



For more current information and more details visit: http://www.cabq.gov/gis



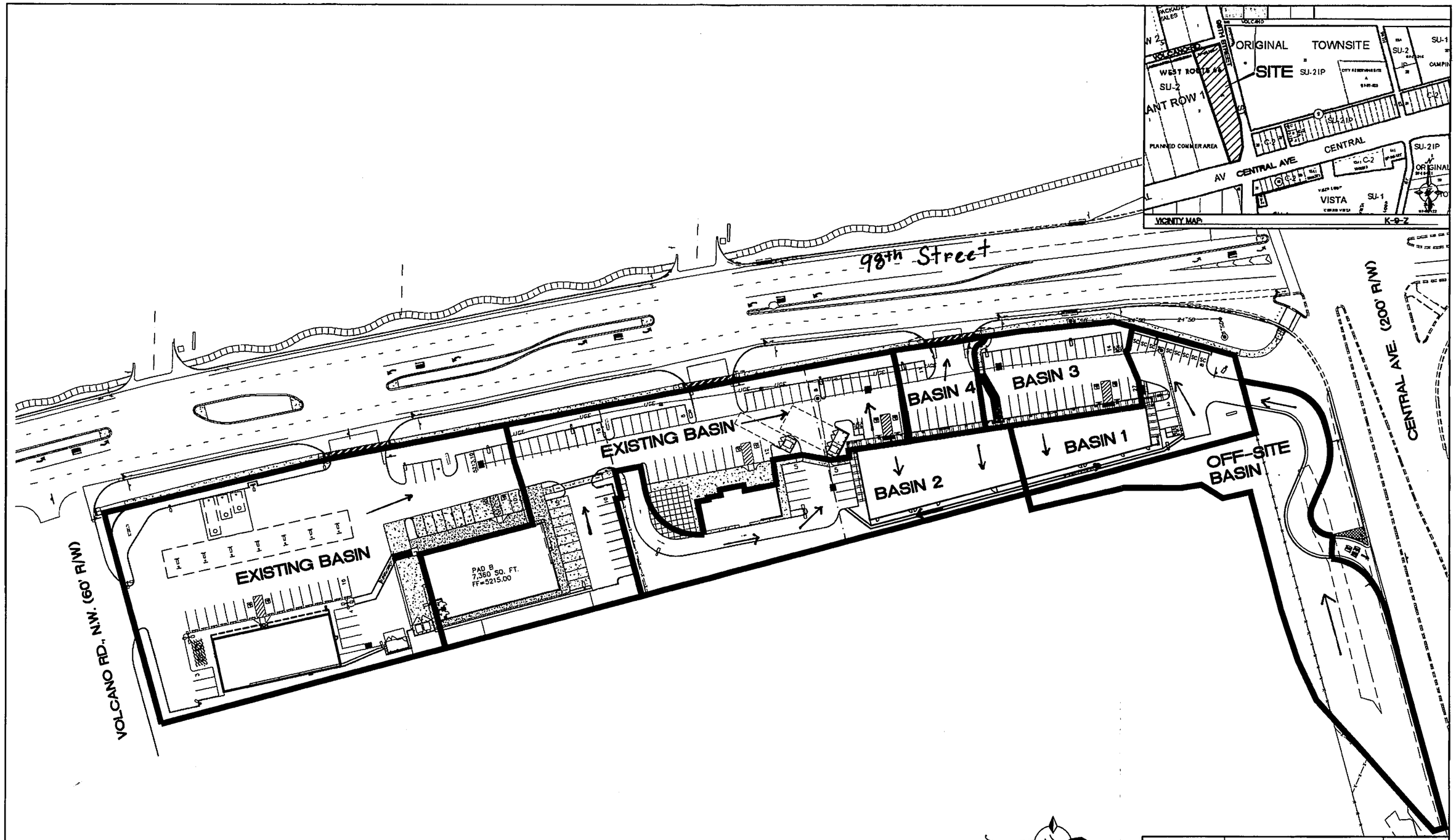
pond located directly west of the property. The emergency spillway for the pond is located along the western property boundary of Lot 4. Due to the location of the spillway we were required to further analyze the existing pond. The scope of the analysis was to determine the impact of the emergency spillway on the property under current conditions as they exist today and for the ultimate conditions generated by the future development of the ponds contributing upland basins.

Proposed Drainage Management Plan

The entire site will be graded and all of the surface improvements will be built out in their entirety. The enclosed Grading Plan (in the map pocket) shows the grades for the entire project.

The drainage conditions for this site were previously analyzed in the drainage report entitled "Commercial Development NW Corner 98th Street & Central Avenue" dated February 12, 2007. Lot 4 was located within several basins in the original report. The basin map from the approved report is included in Appendix A. Most of the basins continue to drain as the approved report detailed except for a portion of Lot 4 which now drains to 98th Street. The revised basin map is shown on the following page. We were asked by the City of Albuquerque to elevate the finished floor elevation as much as possible in order to avoid flooding in the event the South pond to the west overflows. In order to do so, there is a small basin which drains to 98th Street to the existing Type 'A' Inlet just south of the existing entrance to the site. The additional runoff to the existing inlet is approximately 0.58 cfs. The remaining portion of Lot 4 continues to drain to the on-site storm drain.

With the development of Lot 4, the Central Frontage Road access will be constructed. The Frontage Road will drain into the site and along with runoff from Basin 1 and will be captured by the existing on-site storm drain. The off-site runoff entering the site is 1.33 cfs. The



GRAPHIC SCALE

40 20 0 20 40

SCALE: 1"=40'

ENGINEER'S SEAL	VOLCANO POINT SHOPPING CENTER	DRAWN BY pm
		DATE 8-26-08
	BASIN MAP	BASINS 2
	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505)858-3100	SHEET # 1
RONALD R. BOHANNAN P.E. #7868		JOB # 28065

storm drain manhole within basin 1 will be modified to a Type 'D' inlet in order to capture the additional drainage from the road.

Additional North/South Pond Analysis

As stated previously, the City required that we further analyze the existing pond to the west of the site. The scope of the analysis was to determine the effect of the spillway on the retail site under conditions as they exist today and under the ultimate conditions of the pond caused by the development of the upland basins in the future.

Based on the Basin Map and AHYMO data included in the report entitled, "Final Design Report Amole Del Norte Storm Diversion Facilities Tierra Bayita Drainage Facilities Phase III", and the as-built drawings for Phase III C and Phase III E, we were able to determine that the south pond was designed to accept a peak developed discharge of 765 cfs from the contributing upland basins and the north pond. This results in a peak discharge from the south pond of 97 cfs into the Central Boulevard storm drain system and a maximum water surface elevation of 5211.13. The as-builts for Phase III E show a segment of 30" storm drain which crosses 98th Street, which needed to be upsized to 36" prior to ultimate developed conditions.

The final report and as-builts for Phase III C and Phase III E also allowed Tierra West LLC (TWLLC) to determine that in the interim the 36" outfall pipe from the south pond was fitted with an 2.5'x0.35' orifice plate to restrict the discharge of the undeveloped flows to 13.0 cfs resulting in a maximum water surface elevation in the south pond of 5211.98. The south pond continues to operate under the interim condition due to the fact that the contributing upland basins remain undeveloped, the orifice plate is still in place and the 30" storm drain pipe along Central Boulevard crossing 98th Street has not been upsized to 36". These conditions were verified by field visits conducted by TWLLC.

Conclusion

As mentioned previously, the retail site located to the east of the south pond is located directly downstream of the emergency outfall for the south pond. Due to this, it is prudent to lower the water surface elevation in the interim condition. This can be done by removing the orifice plate from the south ponds 36" outfall increasing the interim discharge and therefore lower the interim water surface elevation. The manholes located on the west side of 98th Street would need to be bolted in the interim, so that in the event of a storm larger than the 100-year the increased discharge from the pond would not cause the popping of the manhole lids.

Prior to the ultimate developed condition for the south pond the 30" storm drain pipe crossing 98th Street must be upsized to 36". Once the 30" segment is upsized the need for bolting the manholes will no longer exist in the interim or ultimate conditions for the pond.

It is TWLLC's conclusion that the water surface elevation for both the interim and ultimate condition for the south pond can be lowered by removing the existing orifice plate from the pond outfall. The existing 30" storm drain pipe crossing 98th Street can convey the interim discharge from the pond. The need for upsized of the 30" storm drain pipe is caused by the development of the properties upstream of the south pond. Therefore, upsizing of the pipe should be based on the increased flows to the south pond determined during the development of those properties. The need to upsize the pipe would be alleviated should the properties upstream detain developed flows and discharge them at historic rates. Included in this report are the updated storage discharge calculations for the ultimate condition for the south pond. The AHYMO input file was copied from the "Final Design Report Amole Del Norte Storm Diversion Facilities Tierra Bayita Drainage Facilities Phase III" and the stage storage inputs were modified based on existing conditions. Under the ultimate conditions for the South Pond the developed peak dis-

charge from the pond would be 95.5 cfs resulting in a maximum water surface elevation of 5209.88. Revised AHYMO Input and Output files are included at end of report.

Calculations

The weighted E method from the "City of Albuquerque Development Process Manual Volume 11 – Design Criteria, 1997 Revision" was used to calculate the runoff and volume for the Site.

Section II

Runoff Calculations

Weighted E Method

Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (ac-ft)	100-Year Volume (ac-ft)	100-Year Flow cfs	10-Year Weighted E (ac-ft)	10-Year Volume (ac-ft)	10-Year Flow cfs
1	15737	0.36	15%	0.054189	0%	0.00	0%	0.00	85%	0.31	1.741	0.052	1.41	1.066	0.032	0.90
2	27176	0.62	0%	0	10%	0.06	0%	0.00	90%	0.56	1.840	0.096	2.58	1.138	0.059	1.67
3	11780	0.27	0%	0	15%	0.04	0%	0.00	85%	0.23	1.775	0.040	1.09	1.087	0.024	0.70
4	6097	0.14	0%	0	10%	0.01	0%	0.00	90%	0.13	1.840	0.021	. 0.58	1.138	0.013	0.37
TOTAL												0.210	5.66		0.129	3.64

Off-Site Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (ac-ft)	100-Year Volume (ac-ft)	100-Year Flow cfs	10-Year Weighted E (ac-ft)	10-Year Volume (ac-ft)	10-Year Flow cfs
1	33015	0.76	85%	0.644226	0%	0.00	0%	0.00	15%	0.11	0.670	0.042	1.33	0.254	0.016	0.48
TOTAL												0.042	1.33		0.016	0.48

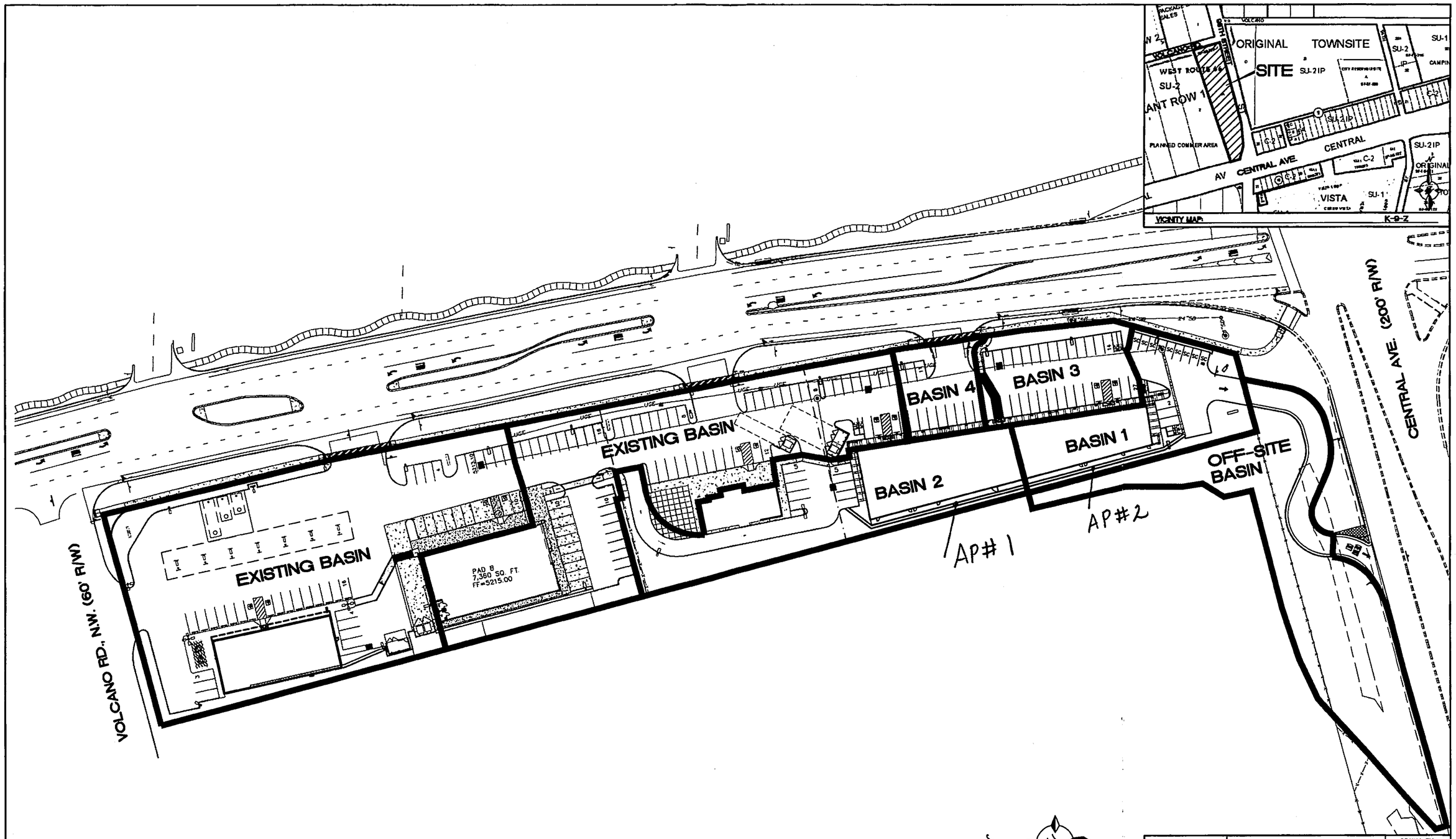
Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Excess Precipitation, E (inches)		
Zone 1	100-Year	10 - Year
E_a	0.44	0.08
E_b	0.67	0.22
E_c	0.99	0.44
E_d	1.97	1.24

Peak Discharge (cfs/acre)		
Zone 1	100-Year	10 - Year
Q_a	1.29	0.24
Q_b	2.03	0.76
Q_c	2.87	1.49
Q_d	4.37	2.89



GRAPHIC SCALE

40 20 0 20 40

SCALE: 1"=40'

ENGINEER'S SEAL	VOLCANO POINT SHOPPING CENTER	DRAWN BY pm
		DATE 8-26-08
	ANAYSIS POINT MAP	BASINS 2
	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505)858-3100	SHEET # 1
RONALD R. BOHANNAN P.E. #7868		JOB # 28085

Channel Capacity AP#1 + 2

	Top Width	Bottom Width	Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
	(ft)	(ft)	(ft)	(ft^2)	(ft)		(%)	(cfs)	(cfs)	(ft/s)
Channel	2	2	0.33	0.66	2.66	0.2481	0.5	2.11	1.73	2.62

Manning's Equation:

Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area
R = D/4
S = Slope
n = 0.013

Revised AHYMO Input and Output Files

```
*TIERRA WEST LLC, PROJECT # 26085
*BY: JASON M CASUG
*DATE: NOVEMBER 17, 2008
*SOUTH POND STAGE STORAGE DISCHARE WITHOUT ORIFICE PLATE
*ORIGINAL INPUT FILE RECREATED FROM "FINL DRAINAGE REPORT AMOLE
*DEL NORTE STORM DIVERSION FACILITIES, TIERRA BAYITA DRAINAGE FACILITIES PHASE III
*100-YEAR, 24-HOUR STORM ANALYSIS
*
START                TIME=0.0 HR
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.95 IN RAIN SIX=2.2 IN
                     RAIN DAY=2.7 IN DT=0.05 HR
*
*s  DIVIDE HYD IS USED TO STIMULATE A BULKING FACTOR
COMPUTE NM HYD       ID=5  HYD=108.4  DA=0.1426 SQ MI
                     PER A=0  B=2  C=28  D=70
                     TP=0.1333 HRS  RAIN=-1
*
PRINT HYD            ID=5  CODE=1
*DIVIDE HYD NO 108.4
DIVIDE HYD           ID=5  PER=-105  ID=5  HYD=108.4
                                     ID=16 HYD=000
PRINT HYD            ID=5  CODE=1
*
*
COMPUTE NM HYD       ID=1  HYD=101  DA=0.026  SQ MI
                     PER  A=0  B=100  C=0  D=0
                     TP=.133  HRS  RAIN=-1
*
DIVIDE HYD           ID=1  PER=-110  ID I=1   HYD=101
                                     ID II=16 HYD=000
*
*ROUTE BULKED 101 THROUGH BASIN 108.3 - ASSUME A CONCRETE TRAPAZOIDAL
*            CHANNEL TO SIMULATE DEVELOPED CONDITIONS
*            USE:  10FT BOTTOM 2/2H:1v SIDE SLOPES AT EXISTING SLOPE
COMPUTE RATING CURVE CID=1  VS NO=1  NO SEG = 1
                     MIN ELEV=0  MAX ELEV=6  CH SLP=-0.0375
                     FP SLP=0.375  N=.013  DIST=34
                     DIST  ELEV
                      0     6
                     12     0
                     22     0
                     34     6
COMPUTE TRAVEL TIME ID=2   REACH=1  NO VS=1  L=4000  SLOPE= 0.0375
ROUTE                ID=2  HYD= 101.80  INFLOW HYD ID=1  DT=0.0
PRINT HYD            ID=2  CODE=1
*
COMPUTE NM HYD       ID=1  HYD= 108.3  DA= .1478  SQ MI
                     PER A=0  B=2  C=41  D=57
                     TP=.175  HRS  RAIN=-1
*
PRINT HYD            ID=1  CODE=1
*
*    DIVIDE HYD NO. 108.3
DIVIDE HYD           ID=1  PER=-105  ID=1  HYD=108.3
                                     ID=16 HYD=000
PRINT HYD            ID=1  CODE=1

*ADD ROUTED 101 AND 108.3
ADD HYD              ID=3  HYD=108.39  ID=1  ID=2
PRINT HYD            ID=3  CODE=1
*
*ROUTE COMBINED 101 AND 108.3 TO NORTH POND INFLOW
*            ASSUME A CONCRETE TRAPAZODIAL
*            CHANNEL TO SMULATE DEVELOPED CONDITIONS
*            USE: 10FT BOTTOM W/2H:1V SIDE SLOPES AT EXISTING SLOPE
*
*
*
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1
                     MIN ELEV= 0  MAX ELEV= 6  CH SLP= 0.02
                     FP SLP=0.02  N=0.013  DIST=34
                     DIST  ELEV
                      0     6
                     12     0
                     22     0
                     34     6
*
```

```
COMPUTE TRAVEL TIME ID=2  REACH-1  NO VS=1
                    L=2150  SLP=0.015
ROUTE               ID=2  HYD=108.38  INFLOW ID=3  DT=0.0
PRINT HYD           ID=2  CODE=1
*
COMPUTE NM HYD      ID=7  HYD=108.2  DA=0.1710 SQ MI
                    PER A=0  B=5  C=35  D=63
                    TP=0.158 HRS  RAIN=-1
PRINT HYD           ID=7  CODE=1
*
*     DIVIDE HYD NO.    108.2
DIVIDE HYD          ID=7  PER=-105  ID I=7  HYD I=108.2
                                    ID II=16  HYD II=000
PRINT HYD           ID=7  CODE=1
*
*S COMBINE HYD'S 108.28 AND 108.2
*
ADD HYD             ID=7  HYD=108.29  ID=7  ID=2
PRINT HYD           ID=7  CODE=1
*
*
COMPUTE NM HYD      ID=2  HYD=102  DA=0.281 SQ MI
                    PER A=40  B=19  C=10  D=31
                    TP=0.20 HRS  RAIN=-1
PRINT HYD           ID=2  CODE=1
*
DIVIDE HYD          ID=2  PER=-105  ID I=2  HYD I=102
                                    ID II=16  HYD II=000
PRINT HYD           ID=2  CODE=1
*
*ROUTE BASIN 102 THROUGH BASIN 108.1
*      ASSUME A CONCRETE TRAPAZOIDAL
*      CHANNEL TO SIMULATE DEVELOPED CONDITIONS
*      USE:  10FT BOTTOME W/2H:1V SIDE SLOPES AT EXISTING SLOPE
*
COMPUTE RATING CURVE CID=1  VS NO=1  NO SEG=1
                    MIN ELEV=0  MAX ELEV=6  CH SLP=0.03
                    FP SLP=0.03  N=0.013  DIST=34
                    DIST  ELEV
                     0      6
                    12      0
                    22      0
                    34      6
*
*
COMPUTE TRAVEL TIME ID=3  REACH=1  NO VS=1
                    L=3100  SLP=0.03
*
ROUTE               ID=3  HYD=102.080  INFLOW ID=2  DT=0.0
*
PRINT HYD           ID=3  CODE=1
*
COMPUTE NM HYD      ID=4  HYD=108.1  DA=0.1713 SQ MI
                    PER A=0  B=3  C=30  D=67
                    TP=0.133 HRS  RAIN=-1
*
PRINT HYD           ID=4  CODE=1
*
DIVIDE HYD          ID=4  PER=-105  ID I=4  HYD I=108.1
                                    ID II=16  HYD II=000
*
PRINT HYD           ID=4  CODE=1
*
*
*ADD ROUTED 102 TO 108.1 FLOW
*
ADD HYD             ID=2  HYD=108.17  ID=4  ID=3
*
PRINT HYD           ID=2  CODE=1
*
*
*ROUTE FLOW SOUTH ON 102ND THRU 72" PIPE TO NORTH POND
*
COMPUTE RATING CURVE RC=1  VS NO=1  CODE=-1
                    SLP=0.013  DIA=72 IN  N=0.013
*
COMPUTE TRAVEL TIME ID=8  REACH=1  NO VS=1  L=1200
                    SLP=0.013
*
```

```
ROUTE                ID=8  HYD=108.18  INFLOW HYD ID=2  DT=0.00
*
PRINT HYD            ID=8  CODE=1
*
*
* COMBINE FLOW FROM 108.18 & 108.29
ADD HYD              ID=9  HYD=108.9  ID=7  ID=8
PRINT HYD            ID=9  CODE=1
*
********THE FOLLOWING POND IS WHAT WAS APPROVED BY THE STATE ENGINEER &
*       COA - DURING CONSTRUCTION ACCESS RAMPS WERE ADDED REDUCING THE
*       VOLUME - REVISED STORAGE VOLUMES
*ROUTE FLOW THROUGH NORTH POND
*ROUTE RESERVOR      ID=10 HYD=502  INFLOW ID=9  CODE=5
*                    OUTFLOW  STORAGE  ELEV
*                    0        0        5204.21
*                    3        0.287    5205
*                    13       1.582    5206
*                    25       3.486    5207
*                    42       7.543    5209
*                    52      11.939    5211
*                    64      16.689    5213
*                    72      21.805    5215
*                    80      27.301    5217
*                    88      33.189    5219
*                    90      39.483    5221
*                    91      46.197    5223
*                    968     49.715    5224
*                    2615    53.343    5225
*                    4809    57.082    5226
*
*ROUTE FLOW THROUGH NORTH POND - REVISED FOR ACCESS RAMP
ROUTE RESERVOIR      ID=10  HYD=502  INFLOW ID=9  CODE=5
                     OUTFLOW  STORAGE  ELEV
                     0        0.000    5204.21
                     3        0.287    5205
                     13       1.582    5206
                     25       3.402    5207
                     42       7.394    5209
                     52      11.731    5211
                     64      16.428    5213
                     72      21.498    5215
                     80      26.955    5217
                     88      32.809    5219
                     90      39.075    5221
                     91      45.767    5223
                     968     49.276    5224
                     2615    52.896    5225
                     4809    56.628    5226
*
*
COMPUTE NM HYD       ID=1  HYD=109   DA=0.0720 SQ MI
                     PER A=0  B=2  C=16  D=82
                     TP=0.140  HRS  RAIN=-1
*
PRINT HYD            ID=1  CODE=1
*
DIVIDE HYD           ID=1  PER=-105  ID I=1  HYD I=109
                                     ID II=16  HYD II=000
PRINT HYD            ID=1 CODE=1
*
*ROUTE SOUTH ALONG 98TH IN PIPE-FROM AVALON TO VOLCANO
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1  SLP=0.02
                     DIA=66 IN  N=0.013
COMPUTE TRAVEL TIME ID=6  REACH NO=1  NO VS=1  LEN=1150  SLP=0.02
*
ROUTE                ID=6  HYD=109.19  INFLOW ID=1  DT=0.0
*
PRINT HYD            ID=6  CODE=1
*
COMPUTE NM HYD       ID=1  HYD=109.10  DA=0.0495 SQ MI
                     PER A=0  B=0  C=15  D=85
                     TP=0.1333  RAIN=-1
PRINT HYD            ID=1  CODE=1
*
DIVIDE HYD           ID=1  PER=-105  IDI=1  HYD I=109.1
                                     IDII=16  HYD II=000
PRINT HYD            ID=1  CODE=1
*
```

28065 with 36 inch outfall

```
*ADD TO FLOW FROM 109 (HYD109.19)
ADD HYD              ID=6  HYD=109.49  ID=6  ID=1
PRINT HYD            ID=6  CODE=1
*
*ADD HYD 109.39 TO BASIN 108.4
ADD HYD              ID=6  HYD=109.49  ID=6  ID=5
PRINT HYD            ID=6  CODE=1
*
*ADD ABOVE TO NORTH POND OUTFLOW
ADD HYD              ID=6  HYD=109.59  ID=6  ID=10
PRINT HYD            ID=6  CODE=1
*
*ROUTE THROUGH SOUTH POND
ROUTE RESERVOIR      ID=10  HYD=501  IN ID=6  CODE5
                     OUTFLOW   STORAGE   ELEV
                      0        0         5201
                      7.00     0.934     5202
                     24.87     3.359     5203
                     43.07     6.080     5204
                     55.61     8.946     5205
                     65.80    11.813     5206
                     74.61    14.880     5207
                     82.48    17.946     5208
                     89.67    21.219     5209
                     96.32    24.492     5210
                    102.54    27.979     5211
                    108.40    31.465     5212
PUNCH HYD            ID=10
*
FINISH
```

Stage Storage Discharge Table Updated per existing conditions, w/ orifice plate removed

```
AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02d
     RUN DATE (MON/DAY/YR) = 01/08/2009
     START TIME (HR:MIN:SEC) = 07:59:20     USER NO.= AHYMO-S-9702d3TierraW-AH
     INPUT FILE = Z:\2008\28065\Reports\Drainage\AHYMO\28065W~1.TXT

*TIERRA WEST LLC, PROJECT # 26085
*BY: JASON M CASUG
*DATE: NOVEMBER 17, 2008
*SOUTH POND STAGE STORAGE DISCHARE WITHOUT ORIFICE PLATE
*ORIGINAL INPUT FILE RECREATED FROM "FINL DRAINAGE REPORT AMOLE
*DEL NORTE STORM DIVERSION FACILITIES, TIERRA BAYITA DRAINAGE FACILITIES PHASE I
*100-YEAR, 24-HOUR STORM ANALYSIS
*
START                TIME=0.0 HR
*
RAINFALL             TYPE=2 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.95 IN RAIN SIX=2.2 IN
                     RAIN DAY=2.7 IN DT=0.05 HR

               COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =     .050000 HOURS       END TIME =     24.000000 HOURS
                  .0000    .0014    .0028    .0042    .0057    .0073    .0089
                  .0106    .0124    .0142    .0161    .0182    .0203    .0225
                  .0248    .0273    .0300    .0328    .0359    .0392    .0428
                  .0510    .0601    .0864    .1486    .2555    .4209    .6590
                  .9846   1.2415   1.3575   1.4544   1.5392   1.6151   1.6838
                 1.7465   1.8040   1.8570   1.9058   1.9510   1.9928   2.0008
                 2.0081   2.0148   2.0211   2.0270   2.0326   2.0378   2.0427
                 2.0474   2.0519   2.0562   2.0604   2.0643   2.0682   2.0718
                 2.0754   2.0788   2.0822   2.0854   2.0885   2.0916   2.0945
                 2.0974   2.1002   2.1030   2.1057   2.1083   2.1108   2.1133
                 2.1158   2.1182   2.1205   2.1228   2.1251   2.1273   2.1295
                 2.1316   2.1337   2.1358   2.1378   2.1398   2.1417   2.1437
                 2.1456   2.1474   2.1493   2.1511   2.1529   2.1547   2.1564
                 2.1581   2.1598   2.1615   2.1631   2.1648   2.1664   2.1680
                 2.1695   2.1711   2.1726   2.1741   2.1756   2.1771   2.1786
                 2.1800   2.1814   2.1828   2.1842   2.1856   2.1870   2.1884
                 2.1897   2.1910   2.1924   2.1937   2.1950   2.1962   2.1975
                 2.1988   2.2000   2.2021   2.2042   2.2063   2.2084   2.2105
                 2.2126   2.2147   2.2167   2.2188   2.2209   2.2229   2.2250
                 2.2270   2.2290   2.2310   2.2330   2.2351   2.2371   2.2390
                 2.2410   2.2430   2.2450   2.2470   2.2489   2.2509   2.2528
                 2.2548   2.2567   2.2586   2.2605   2.2625   2.2644   2.2663
                 2.2682   2.2701   2.2720   2.2738   2.2757   2.2776   2.2795
                 2.2813   2.2832   2.2850   2.2869   2.2887   2.2905   2.2923
                 2.2942   2.2960   2.2978   2.2996   2.3014   2.3032   2.3050
                 2.3068   2.3085   2.3103   2.3121   2.3138   2.3156   2.3174
                 2.3191   2.3208   2.3226   2.3243   2.3260   2.3278   2.3295
                 2.3312   2.3329   2.3346   2.3363   2.3380   2.3397   2.3414
                 2.3431   2.3448   2.3464   2.3481   2.3498   2.3514   2.3531
                 2.3547   2.3564   2.3580   2.3596   2.3613   2.3629   2.3645
                 2.3662   2.3678   2.3694   2.3710   2.3726   2.3742   2.3758
                 2.3774   2.3790   2.3806   2.3821   2.3837   2.3853   2.3869
                 2.3884   2.3900   2.3915   2.3931   2.3946   2.3962   2.3977
                 2.3993   2.4008   2.4023   2.4038   2.4054   2.4069   2.4084
                 2.4099   2.4114   2.4129   2.4144   2.4159   2.4174   2.4189
                 2.4204   2.4219   2.4234   2.4248   2.4263   2.4278   2.4293
                 2.4307   2.4322   2.4336   2.4351   2.4365   2.4380   2.4394
                 2.4409   2.4423   2.4437   2.4452   2.4466   2.4480   2.4494
                 2.4509   2.4523   2.4537   2.4551   2.4565   2.4579   2.4593
                 2.4607   2.4621   2.4635   2.4649   2.4662   2.4676   2.4690
                 2.4704   2.4718   2.4731   2.4745   2.4759   2.4772   2.4786
                 2.4799   2.4813   2.4826   2.4840   2.4853   2.4867   2.4880
                 2.4893   2.4907   2.4920   2.4933   2.4946   2.4960   2.4973
                 2.4986   2.4999   2.5012   2.5025   2.5038   2.5051   2.5064
                 2.5077   2.5090   2.5103   2.5116   2.5129   2.5142   2.5155
                 2.5168   2.5180   2.5193   2.5206   2.5219   2.5231   2.5244
                 2.5257   2.5269   2.5282   2.5294   2.5307   2.5319   2.5332
                 2.5344   2.5357   2.5369   2.5382   2.5394   2.5406   2.5419
                 2.5431   2.5443   2.5455   2.5468   2.5480   2.5492   2.5504
                 2.5516   2.5528   2.5541   2.5553   2.5565   2.5577   2.5589
                 2.5601   2.5613   2.5625   2.5636   2.5648   2.5660   2.5672
                 2.5684   2.5696   2.5708   2.5719   2.5731   2.5743   2.5754
                 2.5766   2.5778   2.5790   2.5801   2.5813   2.5824   2.5836
                 2.5847   2.5859   2.5870   2.5882   2.5893   2.5905   2.5916
                 2.5928   2.5939   2.5950   2.5962   2.5973   2.5984   2.5996
                 2.6007   2.6018   2.6029   2.6041   2.6052   2.6063   2.6074
                 2.6085   2.6097   2.6108   2.6119   2.6130   2.6141   2.6152
                 2.6163   2.6174   2.6185   2.6196   2.6207   2.6218   2.6229
                 2.6239   2.6250   2.6261   2.6272   2.6283   2.6294   2.6304
                 2.6315   2.6326   2.6337   2.6347   2.6358   2.6369   2.6379
                 2.6390   2.6401   2.6411   2.6422   2.6432   2.6443   2.6454
                 2.6464   2.6475   2.6485   2.6496   2.6506   2.6516   2.6527
                 2.6537   2.6548   2.6558   2.6569   2.6579   2.6589   2.6600
                 2.6610   2.6620   2.6630   2.6641   2.6651   2.6661   2.6671
                 2.6682   2.6692   2.6702   2.6712   2.6722   2.6732   2.6742
                 2.6752   2.6763   2.6773   2.6783   2.6793   2.6803   2.6813
                 2.6823   2.6833   2.6843   2.6853   2.6862   2.6872   2.6882
                 2.6892   2.6902   2.6912   2.6922   2.6932   2.6941   2.6951
                 2.6961   2.6971   2.6981   2.6990   2.7000
```

```
*
*s  DIVIDE HYD IS USED TO STIMULATE A BULKING FACTOR
COMPUTE NM HYD       ID=5  HYD=108.4  DA=0.1426 SQ MI
                     PER A=0  B=2  C=28  D=70
                     TP=0.1333 HRS  RAIN=-1

     K =   .073763HR    TP =   .133300HR    K/TP RATIO =   .553360     SHAPE CONSTANT, N =  6.969466
     UNIT PEAK =   389.25    CFS   UNIT VOLUME =    .9990       B =   519.81      P60 = 1.9500
     AREA =      .099820 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .106958HR    TP =   .133300HR    K/TP RATIO =   .802389     SHAPE CONSTANT, N =  4.463305
     UNIT PEAK =   123.54    CFS   UNIT VOLUME =    1.002       B =   384.95      P60 = 1.9500
     AREA =      .042780 SQ MI    IA =    .36000 INCHES    INF =    .85800 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
PRINT HYD            ID=5  CODE=1

                                   PARTIAL HYDROGRAPH   108.40

         RUNOFF VOLUME =     2.03361 INCHES     =      15.4662 ACRE-FEET
         PEAK DISCHARGE RATE =     363.67 CFS  AT   1.500 HOURS   BASIN AREA =   .1426 SQ. MI.


    *DIVIDE HYD NO 108.4
    DIVIDE HYD           ID=5  PER=-105  ID=5  HYD=108.4
                                         ID=16 HYD=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
    PRINT HYD            ID=5  CODE=1

                                   PARTIAL HYDROGRAPH   108.40

         RUNOFF VOLUME =     2.13528 INCHES     =      16.2394 ACRE-FEET
         PEAK DISCHARGE RATE =     381.85 CFS  AT   1.500 HOURS   BASIN AREA =   .1426 SQ. MI.


    *
    *
    COMPUTE NM HYD       ID=1  HYD=101  DA=0.026  SQ MI
                         PER  A=0  B=100  C=0  D=0
                         TP=.133  HRS  RAIN=-1

         K =   .131068HR    TP =   .133000HR    K/TP RATIO =   .985475     SHAPE CONSTANT, N =  3.583086
         UNIT PEAK =   63.796    CFS   UNIT VOLUME =    1.001       B =   326.34      P60 = 1.9500
         AREA =      .026000 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    *
    DIVIDE HYD           ID=1  PER=-110  ID I=1   HYD=101
                                         ID II=16 HYD=000
*** WARNING *** - PERCENTAGE OF     -110.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
    *
    *ROUTE BULKED 101 THROUGH BASIN 108.3 - ASSUME A CONCRETE TRAPAZOIDAL
    *           CHANNEL TO SIMULATE DEVELOPED CONDITIONS
    *           USE:  10FT BOTTOM 2/2H:1v SIDE SLOPES AT EXISTING SLOPE
    COMPUTE RATING CURVE CID=1  VS NO=1  NO SEG = 1
                         MIN ELEV=0  MAX ELEV=6  CH SLP=-0.0375
                         FP SLP=0.375  N=.013  DIST=34
                         DIST  ELEV
                          0     6
                         12     0
                         22     0
                         34     6
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	10.00
.32	3.36	103.95	11.26
.63	7.11	336.16	12.53
.95	11.27	674.95	13.79
1.26	15.82	1115.75	15.05
1.58	20.78	1658.34	16.32
1.89	26.13	2304.37	17.58
2.21	31.88	3056.45	18.84
2.53	38.03	3917.71	20.11
2.84	44.58	4891.57	21.37
3.16	51.52	5981.63	22.63
3.47	58.87	7191.59	23.89
3.79	66.61	8525.20	25.16
4.11	74.76	9986.22	26.42
4.42	83.30	11578.44	27.68
4.74	92.24	13305.61	28.95

```
                                    5.05      101.58    15171.49        30.21
                                    5.37      111.32    17179.79        31.47
                                    5.68      121.46    19334.22        32.74
                                    6.00      132.00    21638.44        34.00
COMPUTE TRAVEL TIME ID=2   REACH=1  NO VS=1  L=4000  SLOPE= 0.0375

                         TRAVEL TIME TABLE
                                     REACH=  1.0

                         WATER       AVERAGE     FLOW        TRAVEL
                         DEPTH       AREA        RATE        TIME
                         FEET        SQ.FT.      CFS         HRS
                            .316       3.357      103.95       .0359
                            .632       7.114      336.16       .0235
                            .947      11.269      674.95       .0186
                           1.263      15.823     1115.75       .0158
                           1.579      20.776     1658.34       .0139
                           1.895      26.127     2304.37       .0126
                           2.211      31.878     3056.45       .0116
                           2.526      38.028     3917.71       .0108
                           2.842      44.576     4891.57       .0101
                           3.158      51.524     5981.63       .0096
                           3.474      58.870     7191.59       .0091
                           3.789      66.615     8525.20       .0087
                           4.105      74.759     9986.22       .0083
                           4.421      83.302    11578.44       .0080
                           4.737      92.244    13305.61       .0077
                           5.053     101.584    15171.49       .0074
                           5.368     111.324    17179.79       .0072
                           5.684     121.463    19334.22       .0070
                           6.000     132.000    21638.44       .0068
ROUTE                ID=2  HYD= 101.80  INFLOW HYD ID=1  DT=0.0
PRINT HYD            ID=2  CODE=1

                                  PARTIAL HYDROGRAPH   101.80

    RUNOFF VOLUME =       .77528 INCHES      =       1.0750 ACRE-FEET
    PEAK DISCHARGE RATE =      36.46 CFS  AT   1.550 HOURS   BASIN AREA =   .0260 SQ. MI.


*
COMPUTE NM HYD       ID=1  HYD= 108.3  DA= .1478  SQ MI
                     PER A=0  B=2  C=41  D=57
                     TP=.175  HRS  RAIN=-1

     K =   .096933HR    TP =   .175000HR    K/TP RATIO =   .553902     SHAPE CONSTANT, N =  6.960743
     UNIT PEAK =   250.04    CFS   UNIT VOLUME =    .9997       B =   519.39      P60 = 1.9500
     AREA =      .084246 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .139737HR    TP =   .175000HR    K/TP RATIO =   .798497     SHAPE CONSTANT, N =  4.487627
     UNIT PEAK =   140.35    CFS   UNIT VOLUME =    1.000       B =   386.46      P60 = 1.9500
     AREA =      .063554 SQ MI    IA =    .35698 INCHES    INF =    .84953 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
PRINT HYD            ID=1  CODE=1

                                  PARTIAL HYDROGRAPH   108.30

    RUNOFF VOLUME =     1.84830 INCHES      =      14.5694 ACRE-FEET
    PEAK DISCHARGE RATE =     312.33 CFS  AT   1.550 HOURS   BASIN AREA =   .1478 SQ. MI.


    *
    *    DIVIDE HYD NO. 108.3
    DIVIDE HYD           ID=1  PER=-105  ID=1  HYD=108.3
                                         ID=16 HYD=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
    PRINT HYD            ID=1  CODE=1

                                  PARTIAL HYDROGRAPH   108.30

    RUNOFF VOLUME =     1.94071 INCHES      =      15.2979 ACRE-FEET
    PEAK DISCHARGE RATE =     327.95 CFS  AT   1.550 HOURS   BASIN AREA =   .1478 SQ. MI.


    *ADD ROUTED 101 AND 108.3
    ADD HYD              ID=3  HYD=108.39  ID=1  ID=2
    PRINT HYD            ID=3  CODE=1

                                  PARTIAL HYDROGRAPH   108.39
```

```
    RUNOFF VOLUME =      1.76636 INCHES      =      16.3729 ACRE-FEET
    PEAK DISCHARGE RATE =      364.41 CFS  AT   1.550 HOURS   BASIN AREA =   .1738 SQ. MI.


*
*ROUTE COMBINED 101 AND 108.3 TO NORTH POND INFLOW
*           ASSUME A CONCRETE TRAPAZODIAL
*           CHANNEL TO SMULATE DEVELOPED CONDITIONS
*           USE: 10FT BOTTOM W/2H:1V SIDE SLOPES AT EXISTING SLOPE
*
*
*
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1
                    MIN ELEV= 0  MAX ELEV= 6  CH SLP= 0.02
                    FP SLP=0.02  N=0.013  DIST=34
                    DIST  ELEV
                     0     6
                    12     0
                    22     0
                    34     6
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	10.00
.32	3.36	24.01	11.26
.63	7.11	77.63	12.53
.95	11.27	155.87	13.79
1.26	15.82	257.67	15.05
1.58	20.78	382.98	16.32
1.89	26.13	532.17	17.58
2.21	31.88	705.86	18.84
2.53	38.03	904.76	20.11
2.84	44.58	1129.66	21.37
3.16	51.52	1381.40	22.63
3.47	58.87	1660.83	23.89
3.79	66.61	1968.81	25.16
4.11	74.76	2306.22	26.42
4.42	83.30	2673.93	27.68
4.74	92.24	3072.80	28.95
5.05	101.58	3503.71	30.21
5.37	111.32	3967.50	31.47
5.68	121.46	4465.05	32.74
6.00	132.00	4997.18	34.00

```
*
COMPUTE TRAVEL TIME ID=2  REACH-1  NO VS=1
                    L=2150  SLP=0.015
```

TRAVEL TIME TABLE

REACH= -1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	3.357	24.01	.0835
.632	7.114	77.63	.0547
.947	11.269	155.87	.0432
1.263	15.823	257.67	.0367
1.579	20.776	382.98	.0324
1.895	26.127	532.17	.0293
2.211	31.878	705.86	.0270
2.526	38.028	904.76	.0251
2.842	44.576	1129.66	.0236
3.158	51.524	1381.40	.0223
3.474	58.870	1660.83	.0212
3.789	66.615	1968.81	.0202
4.105	74.759	2306.22	.0194
4.421	83.302	2673.93	.0186
4.737	92.244	3072.80	.0179
5.053	101.584	3503.71	.0173
5.368	111.324	3967.50	.0168
5.684	121.463	4465.05	.0162
6.000	132.000	4997.18	.0158

```
ROUTE               ID=2  HYD=108.38  INFLOW ID=3  DT=0.0
PRINT HYD           ID=2  CODE=1
```

PARTIAL HYDROGRAPH 108.38

```
    RUNOFF VOLUME =      1.76637 INCHES      =      16.3729 ACRE-FEET
    PEAK DISCHARGE RATE =      357.91 CFS  AT   1.550 HOURS   BASIN AREA =   .1738 SQ. MI.


*
COMPUTE NM HYD      ID=7  HYD=108.2  DA=0.1710 SQ MI
                    PER A=0  B=5  C=35  D=63
                    TP=0.158 HRS  RAIN=-1
```

```
*****WARNING*****  SUM OF TREATMENT TYPES DOES NOT EQUAL 100 PERCENT OR TOTAL AREA

K =   .087899HR    TP =   .158000HR    K/TP RATIO =   .556324     SHAPE CONSTANT, N =  6.922152
UNIT PEAK =   342.61    CFS   UNIT VOLUME =    .9992       B =   517.56      P60 = 1.9500
AREA =      .104592 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

K =   .127558HR    TP =   .158000HR    K/TP RATIO =   .807329     SHAPE CONSTANT, N =  4.432534
UNIT PEAK =   161.00    CFS   UNIT VOLUME =    1.000       B =   383.05      P60 = 1.9500
AREA =      .066408 SQ MI    IA =    .36875 INCHES    INF =    .88250 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=7  CODE=1

                                PARTIAL HYDROGRAPH   108.20

    RUNOFF VOLUME =     1.89651 INCHES     =      17.2960 ACRE-FEET
    PEAK DISCHARGE RATE =     376.60 CFS  AT   1.500 HOURS   BASIN AREA =   .1710 SQ. MI.

*
*     DIVIDE HYD NO.    108.2
DIVIDE HYD          ID=7  PER=-105  ID I=7  HYD I=108.2
                                    ID II=16  HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD           ID=7  CODE=1

                                PARTIAL HYDROGRAPH   108.20

    RUNOFF VOLUME =     1.99133 INCHES     =      18.1608 ACRE-FEET
    PEAK DISCHARGE RATE =     395.43 CFS  AT   1.500 HOURS   BASIN AREA =   .1710 SQ. MI.

*
*S COMBINE HYD'S 108.28 AND 108.2
*
ADD HYD             ID=7  HYD=108.29  ID=7  ID=2
PRINT HYD           ID=7  CODE=1

                                PARTIAL HYDROGRAPH   108.29

    RUNOFF VOLUME =     1.87793 INCHES     =      34.5337 ACRE-FEET
    PEAK DISCHARGE RATE =     752.47 CFS  AT   1.550 HOURS   BASIN AREA =   .3448 SQ. MI.

*
*
COMPUTE NM HYD      ID=2  HYD=102  DA=0.281 SQ MI
                    PER A=40  B=19  C=10  D=31
                    TP=0.20 HRS  RAIN=-1

K =   .113561HR    TP =   .200000HR    K/TP RATIO =   .567804     SHAPE CONSTANT, N =  6.744929
UNIT PEAK =   221.71    CFS   UNIT VOLUME =    .9997       B =   509.04      P60 = 1.9500
AREA =      .087110 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

K =   .189271HR    TP =   .200000HR    K/TP RATIO =   .946357     SHAPE CONSTANT, N =  3.735450
UNIT PEAK =   326.83    CFS   UNIT VOLUME =    1.000       B =   337.13      P60 = 1.9500
AREA =      .193890 SQ MI    IA =    .56522 INCHES    INF =   1.43261 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=2  CODE=1

                                PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =     1.17382 INCHES     =      17.5915 ACRE-FEET
    PEAK DISCHARGE RATE =     370.96 CFS  AT   1.550 HOURS   BASIN AREA =   .2810 SQ. MI.

*
DIVIDE HYD          ID=2  PER=-105  ID I=2  HYD I=102
                                    ID II=16  HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD           ID=2  CODE=1

                                PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =     1.23250 INCHES     =      18.4710 ACRE-FEET
    PEAK DISCHARGE RATE =     389.50 CFS  AT   1.550 HOURS   BASIN AREA =   .2810 SQ. MI.
```

```
*
*ROUTE BASIN 102 THROUGH BASIN 108.1
*      ASSUME A CONCRETE TRAPAZOIDAL
*      CHANNEL TO SIMULATE DEVELOPED CONDITIONS
*      USE:  10FT BOTTOME W/2H:1V SIDE SLOPES AT EXISTING SLOPE
*
COMPUTE RATING CURVE CID=1  VS NO=1  NO SEG=1
                     MIN ELEV=0  MAX ELEV=6  CH SLP=0.03
                     FP SLP=0.03  N=0.013  DIST=34
                     DIST  ELEV
                      0      6
                     12      0
                     22      0
                     34      6
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	10.00
.32	3.36	29.40	11.26
.63	7.11	95.08	12.53
.95	11.27	190.91	13.79
1.26	15.82	315.58	15.05
1.58	20.78	469.05	16.32
1.89	26.13	651.78	17.58
2.21	31.88	864.50	18.84
2.53	38.03	1108.10	20.11
2.84	44.58	1383.55	21.37
3.16	51.52	1691.86	22.63
3.47	58.87	2034.09	23.89
3.79	66.61	2411.29	25.16
4.11	74.76	2824.53	26.42
4.42	83.30	3274.88	27.68
4.74	92.24	3763.40	28.95
5.05	101.58	4291.15	30.21
5.37	111.32	4859.18	31.47
5.68	121.46	5468.54	32.74
6.00	132.00	6120.27	34.00

```
*
*
COMPUTE TRAVEL TIME ID=3  REACH=1  NO VS=1
                    L=3100  SLP=0.03
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	3.357	29.40	.0983
.632	7.114	95.08	.0644
.947	11.269	190.91	.0508
1.263	15.823	315.58	.0432
1.579	20.776	469.05	.0381
1.895	26.127	651.78	.0345
2.211	31.878	864.50	.0318
2.526	38.028	1108.10	.0296
2.842	44.576	1383.55	.0277
3.158	51.524	1691.86	.0262
3.474	58.870	2034.09	.0249
3.789	66.615	2411.29	.0238
4.105	74.759	2824.53	.0228
4.421	83.302	3274.88	.0219
4.737	92.244	3763.40	.0211
5.053	101.584	4291.15	.0204
5.368	111.324	4859.18	.0197
5.684	121.463	5468.54	.0191
6.000	132.000	6120.27	.0186

```
*
ROUTE              ID=3  HYD=102.080  INFLOW ID=2  DT=0.0
*
PRINT HYD          ID=3  CODE=1
```

PARTIAL HYDROGRAPH 102.08

RUNOFF VOLUME = 1.23251 INCHES = 18.4710 ACRE-FEET
PEAK DISCHARGE RATE = 391.90 CFS AT 1.600 HOURS BASIN AREA = .2810 SQ. MI.

```
*
COMPUTE NM HYD     ID=4  HYD=108.1  DA=0.1713 SQ MI
                   PER A=0  B=3  C=30  D=67
                   TP=0.133 HRS  RAIN=-1
```

K = .073995HR TP = .133000HR K/TP RATIO = .556355 SHAPE CONSTANT, N = 6.921654

```
UNIT PEAK =   446.60    CFS   UNIT VOLUME =    .9991       B =   517.53      P60 = 1.9500
AREA =      .114771 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

K =   .106685HR    TP =   .133000HR    K/TP RATIO =   .802144     SHAPE CONSTANT, N =  4.464820
UNIT PEAK =   163.66    CFS   UNIT VOLUME =    1.002       B =   385.05      P60 = 1.9500
AREA =      .056529 SQ MI    IA =    .36364 INCHES    INF =    .86818 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
PRINT HYD           ID=4  CODE=1

                                PARTIAL HYDROGRAPH   108.10

    RUNOFF VOLUME =     1.98693 INCHES     =      18.1524 ACRE-FEET
    PEAK DISCHARGE RATE =     431.18 CFS  AT   1.500 HOURS   BASIN AREA =   .1713 SQ. MI.

*
DIVIDE HYD          ID=4  PER=-105  ID I=4  HYD I=108.1
                                    ID II=16  HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
    *
    PRINT HYD           ID=4  CODE=1

                                PARTIAL HYDROGRAPH   108.10

        RUNOFF VOLUME =     2.08627 INCHES     =      19.0601 ACRE-FEET
        PEAK DISCHARGE RATE =     452.74 CFS  AT   1.500 HOURS   BASIN AREA =   .1713 SQ. MI.

    *
    *
    *ADD ROUTED 102 TO 108.1 FLOW
    *
    ADD HYD             ID=2  HYD=108.17  ID=4  ID=3
    *
    PRINT HYD           ID=2  CODE=1

                                PARTIAL HYDROGRAPH   108.17

        RUNOFF VOLUME =     1.55585 INCHES     =      37.5311 ACRE-FEET
        PEAK DISCHARGE RATE =     753.68 CFS  AT   1.550 HOURS   BASIN AREA =   .4523 SQ. MI.

    *
    *
    *ROUTE FLOW SOUTH ON 102ND THRU 72" PIPE TO NORTH POND
    *
    COMPUTE RATING CURVE RC=1  VS NO=1  CODE=-1
                        SLP=0.013  DIA=72 IN  N=0.013

                                RATING CURVE PIPE SECTION  1.0
                                   WATER       FLOW        FLOW        MAX
                                  SURFACE      AREA        RATE        WIDTH
                                   ELEV        SQ FT       CFS         FT
                                    .00         .00         .00         .00
                                    .31         .56        2.53        2.67
                                    .63        1.56       11.00        3.67
                                    .94        2.82       25.56        4.36
                                   1.25        4.27       45.97        4.87
                                   1.56        5.86       71.78        5.27
                                   1.88        7.55      102.42        5.56
                                   2.19        9.33      137.22        5.78
                                   2.50       11.16      175.44        5.92
                                   2.81       13.02      216.27        5.99
                                   3.13       14.90      258.83        6.00
                                   3.44       16.76      302.17        6.00
                                   3.75       18.60      345.26        6.00
                                   4.06       20.39      386.97        6.00
                                   4.38       22.10      426.03        6.00
                                   4.69       23.71      460.99        6.00
                                   5.00       25.19      490.07        6.00
                                   5.32       26.49      510.88        6.00
                                   5.63       27.55      519.43        6.00
                                   6.00       28.27      519.43        6.00
*
COMPUTE TRAVEL TIME ID=8  REACH=1  NO VS=1  L=1200
                    SLP=0.013

                        TRAVEL TIME TABLE
                                    REACH=  1.0

                        WATER       AVERAGE     FLOW        TRAVEL
```

DEPTH FEET	AREA SQ.FT.	RATE CFS	TIME HRS
.313	.562	2.53	.0740
.625	1.564	11.00	.0474
.938	2.824	25.56	.0368
1.251	4.271	45.97	.0310
1.563	5.859	71.78	.0272
1.876	7.554	102.42	.0246
2.189	9.329	137.22	.0227
2.501	11.159	175.44	.0212
2.814	13.022	216.27	.0201
3.127	14.897	258.83	.0192
3.439	16.764	302.17	.0185
3.752	18.601	345.26	.0180
4.065	20.388	386.97	.0176
4.377	22.101	426.03	.0173
4.690	23.712	460.99	.0171
5.003	25.189	490.07	.0171
5.315	26.489	510.88	.0173
5.628	27.547	519.43	.0177
6.000	28.274	519.43	.0181

```
*
ROUTE                ID=8  HYD=108.18  INFLOW HYD ID=2  DT=0.00
TRAVEL TIME TABLE EXCEEDED
*
PRINT HYD            ID=8  CODE=1

                                PARTIAL HYDROGRAPH   108.18

    RUNOFF VOLUME =     1.55585 INCHES     =      37.5311 ACRE-FEET
    PEAK DISCHARGE RATE =     743.28 CFS  AT   1.550 HOURS   BASIN AREA =   .4523 SQ. MI.


*
*
* COMBINE FLOW FROM 108.18 & 108.29
ADD HYD              ID=9  HYD=108.9  ID=7  ID=8
PRINT HYD            ID=9  CODE=1

                                PARTIAL HYDROGRAPH   108.90

    RUNOFF VOLUME =     1.69518 INCHES     =      72.0648 ACRE-FEET
    PEAK DISCHARGE RATE =    1495.75 CFS  AT   1.550 HOURS   BASIN AREA =   .7971 SQ. MI.


*
********THE FOLLOWING POND IS WHAT WAS APPROVED BY THE STATE ENGINEER &
*       COA - DURING CONSTRUCTION ACCESS RAMPS WERE ADDED REDUCING THE
*       VOLUME - REVISED STORAGE VOLUMES
*ROUTE FLOW THROUGH NORTH POND
*ROUTE RESERVOR      ID=10 HYD=502  INFLOW ID=9  CODE=5
*                    OUTFLOW  STORAGE  ELEV
*                    0        0        5204.21
*                    3        0.287    5205
*                    13       1.582    5206
*                    25       3.486    5207
*                    42       7.543    5209
*                    52      11.939    5211
*                    64      16.689    5213
*                    72      21.805    5215
*                    80      27.301    5217
*                    88      33.189    5219
*                    90      39.483    5221
*                    91      46.197    5223
*                    968     49.715    5224
*                    2615    53.343    5225
*                    4809    57.082    5226
*
*ROUTE FLOW THROUGH NORTH POND - REVISED FOR ACCESS RAMP
ROUTE RESERVOIR      ID=10  HYD=502  INFLOW ID=9  CODE=5
                     OUTFLOW  STORAGE  ELEV
                     0        0.000    5204.21
                     3        0.287    5205
                     13       1.582    5206
                     25       3.402    5207
                     42       7.394    5209
                     52      11.731    5211
                     64      16.428    5213
                     72      21.498    5215
                     80      26.955    5217
                     88      32.809    5219
                     90      39.075    5221
                     91      45.767    5223
                     968     49.276    5224
                     2615    52.896    5225
                     4809    56.628    5226
```

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5204.21	.000	.00
.25	.00	5204.21	.000	.00
.50	.00	5204.21	.000	.00
.75	.00	5204.21	.000	.00
1.00	.00	5204.21	.000	.00
1.25	22.58	5204.36	.053	.56
1.50	1325.33	5210.27	10.144	48.34
1.75	870.74	5219.54	34.488	88.54
2.00	429.13	5222.82	45.180	90.91
2.25	164.76	5223.13	46.229	206.54
2.50	77.32	5223.00	45.755	91.00
2.75	42.43	5222.79	45.074	90.90
3.00	24.34	5222.43	43.866	90.72
3.25	14.48	5221.99	42.386	90.49
3.50	9.71	5221.50	40.764	90.25
3.75	7.05	5221.00	39.073	90.00
4.00	5.58	5220.45	37.348	89.45
4.25	4.80	5219.89	35.612	88.89
4.50	4.48	5219.34	33.876	88.34
4.75	4.41	5218.78	32.151	87.10
5.00	4.56	5218.20	30.468	84.80
5.25	4.85	5217.64	28.836	82.57
5.50	5.19	5217.10	27.256	80.41
5.75	5.69	5216.55	25.730	78.20
6.00	6.18	5216.01	24.259	76.05
6.25	8.89	5215.50	22.859	74.00
6.50	10.40	5215.02	21.553	72.08
6.75	10.65	5214.53	20.303	70.11
7.00	10.62	5214.05	19.094	68.21
7.25	10.51	5213.59	17.922	66.36
7.50	10.33	5213.14	16.785	64.56
7.75	10.21	5212.68	15.686	62.10
8.00	10.01	5212.24	14.640	59.43
8.25	9.89	5211.81	13.644	56.89
8.50	9.74	5211.41	12.696	54.47
8.75	9.60	5211.03	11.795	52.16
9.00	9.44	5210.63	10.935	50.16
9.25	9.30	5210.25	10.112	48.27
9.50	9.20	5209.89	9.325	46.45
9.75	9.06	5209.54	8.571	44.71
10.00	8.94	5209.21	7.851	43.05
10.25	8.82	5208.88	7.163	41.02
10.50	8.69	5208.56	6.525	38.30
10.75	8.59	5208.27	5.939	35.80
11.00	8.50	5208.00	5.399	33.51
11.25	8.38	5207.75	4.903	31.39
11.50	8.26	5207.52	4.447	29.45
11.75	8.14	5207.31	4.027	27.66
12.00	8.05	5207.12	3.640	26.01
12.25	7.97	5206.94	3.285	24.23
12.50	7.87	5206.76	2.970	22.15
12.75	7.78	5206.61	2.694	20.33
13.00	7.71	5206.48	2.451	18.73
13.25	7.61	5206.36	2.237	17.32
13.50	7.54	5206.26	2.049	16.08
13.75	7.45	5206.17	1.883	14.98

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.00	7.33	5206.08	1.736	14.02
14.25	7.30	5206.01	1.607	13.16
14.50	7.20	5205.93	1.493	12.32
14.75	7.13	5205.86	1.395	11.56
15.00	7.05	5205.79	1.310	10.90
15.25	6.96	5205.73	1.236	10.33
15.50	6.90	5205.68	1.171	9.82
15.75	6.89	5205.64	1.115	9.39
16.00	6.81	5205.60	1.066	9.01
16.25	6.72	5205.57	1.023	8.68
16.50	6.64	5205.54	.985	8.39
16.75	6.59	5205.51	.951	8.13
17.00	6.51	5205.49	.921	7.89
17.25	6.43	5205.47	.894	7.69
17.50	6.43	5205.45	.871	7.51
17.75	6.29	5205.43	.849	7.34
18.00	6.32	5205.42	.829	7.19
18.25	6.21	5205.40	.811	7.05
18.50	6.18	5205.39	.795	6.93
18.75	6.11	5205.38	.780	6.81
19.00	6.09	5205.37	.767	6.70
19.25	6.02	5205.36	.754	6.61
19.50	5.99	5205.35	.742	6.52
19.75	5.96	5205.34	.732	6.43
20.00	5.87	5205.34	.722	6.36
20.25	5.84	5205.33	.712	6.28

```
20.50      5.75   5205.32      .702      6.21
20.75      5.72   5205.31      .694      6.14
21.00      5.68   5205.31      .685      6.08
21.25      5.62   5205.30      .677      6.01
21.50      5.61   5205.30      .670      5.96
21.75      5.53   5205.29      .662      5.90
22.00      5.52   5205.28      .655      5.85
22.25      5.45   5205.28      .649      5.79
22.50      5.45   5205.27      .642      5.74
22.75      5.35   5205.27      .635      5.69
23.00      5.38   5205.26      .629      5.64
23.25      5.32   5205.26      .624      5.60
23.50      5.23   5205.25      .617      5.55
23.75      5.24   5205.25      .611      5.50
24.00      5.20   5205.25      .606      5.46
24.25      2.52   5205.23      .581      5.27
24.50       .75   5205.17      .508      4.70
24.75       .27   5205.11      .426      4.08
25.00       .11   5205.05      .352      3.50
25.25       .05   5205.00      .287      3.00
25.50       .02   5204.85      .231      2.42
25.75       .01   5204.72      .187      1.95
26.00       .00   5204.62      .151      1.57
26.25       .00   5204.54      .121      1.27
26.50       .00   5204.48      .098      1.02
26.75       .00   5204.43      .079       .82
27.00       .00   5204.38      .063       .66
27.25       .00   5204.35      .051       .53
27.50       .00   5204.32      .041       .43
27.75       .00   5204.30      .033       .35

TIME      INFLOW    ELEV      VOLUME    OUTFLOW
(HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

28.00       .00   5204.28      .027       .28
28.25       .00   5204.27      .022       .23
28.50       .00   5204.26      .017       .18
28.75       .00   5204.25      .014       .15
29.00       .00   5204.24      .011       .12
29.25       .00   5204.23      .009       .09
29.50       .00   5204.23      .007       .08
29.75       .00   5204.23      .006       .06
 PEAK DISCHARGE =      308.199 CFS - PEAK OCCURS AT HOUR    2.10
 MAXIMUM WATER SURFACE ELEVATION =     5223.248
 MAXIMUM STORAGE =       46.6360 AC-FT      INCREMENTAL TIME=     .050000HRS

*
*
COMPUTE NM HYD       ID=1  HYD=109   DA=0.0720 SQ MI
                     PER A=0  B=2  C=16  D=82
                     TP=0.140  HRS  RAIN=-1

     K =   .076439HR    TP =   .140000HR    K/TP RATIO =   .545991     SHAPE CONSTANT, N =  7.089916
     UNIT PEAK =   221.61    CFS   UNIT VOLUME =    .9983       B =   525.50      P60 = 1.9500
     AREA =      .059040 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


     K =   .114807HR    TP =   .140000HR    K/TP RATIO =   .820048     SHAPE CONSTANT, N =  4.356214
     UNIT PEAK =   35.016    CFS   UNIT VOLUME =    1.001       B =   378.26      P60 = 1.9500
     AREA =      .012960 SQ MI    IA =    .36667 INCHES    INF =    .87667 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

*
PRINT HYD            ID=1  CODE=1

                                   PARTIAL HYDROGRAPH   109.00

     RUNOFF VOLUME =     2.20466 INCHES     =       8.4659 ACRE-FEET
     PEAK DISCHARGE RATE =     188.50 CFS  AT   1.500 HOURS   BASIN AREA =   .0720 SQ. MI.


*
DIVIDE HYD           ID=1  PER=-105  ID I=1  HYD I=109
                                     ID II=16  HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD            ID=1 CODE=1

                                   PARTIAL HYDROGRAPH   109.00

     RUNOFF VOLUME =     2.31489 INCHES     =       8.8891 ACRE-FEET
     PEAK DISCHARGE RATE =     197.93 CFS  AT   1.500 HOURS   BASIN AREA =   .0720 SQ. MI.


*
*ROUTE SOUTH ALONG 98TH IN PIPE-FROM AVALON TO VOLCANO
COMPUTE RATING CURVE CID=1  VS NO=1  CODE=-1  SLP=0.02
```

DIA=66 IN N=0.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.29	.47	2.49	2.44
.57	1.31	10.81	3.36
.86	2.37	25.14	3.99
1.15	3.59	45.21	4.47
1.43	4.92	70.60	4.83
1.72	6.35	100.73	5.10
2.01	7.84	134.95	5.30
2.29	9.38	172.54	5.42
2.58	10.94	212.70	5.49
2.87	12.52	254.56	5.50
3.15	14.09	297.19	5.50
3.44	15.63	339.56	5.50
3.73	17.13	380.58	5.50
4.01	18.57	419.00	5.50
4.30	19.92	453.38	5.50
4.59	21.17	481.98	5.50
4.87	22.26	502.45	5.50
5.16	23.15	510.86	5.50
5.50	23.76	510.86	5.50

COMPUTE TRAVEL TIME ID=6 REACH NO=1 NO VS=1 LEN=1150 SLP=0.02

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.287	.472	2.49	.0606
.573	1.314	10.81	.0388
.860	2.373	25.14	.0301
1.146	3.589	45.21	.0254
1.433	4.923	70.60	.0223
1.720	6.348	100.73	.0201
2.006	7.839	134.95	.0186
2.293	9.377	172.54	.0174
2.579	10.942	212.70	.0164
2.866	12.518	254.56	.0157
3.153	14.086	297.19	.0151
3.439	15.630	339.56	.0147
3.726	17.132	380.58	.0144
4.013	18.571	419.00	.0142
4.299	19.925	453.38	.0140
4.586	21.166	481.98	.0140
4.872	22.258	502.45	.0142
5.159	23.147	510.86	.0145
5.500	23.758	510.86	.0149

```
*
ROUTE              ID=6  HYD=109.19  INFLOW ID=1  DT=0.0
*
PRINT HYD          ID=6  CODE=1
```

PARTIAL HYDROGRAPH 109.19

RUNOFF VOLUME = 2.31490 INCHES = 8.8892 ACRE-FEET
PEAK DISCHARGE RATE = 194.20 CFS AT 1.500 HOURS BASIN AREA = .0720 SQ. MI.

```
*
COMPUTE NM HYD     ID=1  HYD=109.10  DA=0.0495 SQ MI
                   PER A=0  B=0  C=15  D=85
                   TP=0.1333  RAIN=-1
```

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 166.11 CFS UNIT VOLUME = .9990 B = 526.28 P60 = 1.9500
AREA = .042075 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .106769HR TP = .133300HR K/TP RATIO = .800969 SHAPE CONSTANT, N = 4.472154
UNIT PEAK = 21.473 CFS UNIT VOLUME = 1.001 B = 385.50 P60 = 1.9500
AREA = .007425 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

```
PRINT HYD          ID=1  CODE=1
```

PARTIAL HYDROGRAPH 109.10

RUNOFF VOLUME = 2.25532 INCHES = 5.9540 ACRE-FEET
PEAK DISCHARGE RATE = 134.34 CFS AT 1.500 HOURS BASIN AREA = .0495 SQ. MI.

```
*
DIVIDE HYD          ID=1  PER=-105  IDI=1  HYD I=109.1
                                    IDII=16  HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD           ID=1  CODE=1

                                PARTIAL HYDROGRAPH   109.10

    RUNOFF VOLUME =     2.36808 INCHES     =       6.2517 ACRE-FEET
    PEAK DISCHARGE RATE =     141.06 CFS  AT   1.500 HOURS   BASIN AREA =   .0495 SQ. MI.


*
*ADD TO FLOW FROM 109 (HYD109.19)
ADD HYD             ID=6  HYD=109.49  ID=6  ID=1
PRINT HYD           ID=6  CODE=1

                                PARTIAL HYDROGRAPH   109.49

    RUNOFF VOLUME =     2.33656 INCHES     =      15.1408 ACRE-FEET
    PEAK DISCHARGE RATE =     335.26 CFS  AT   1.500 HOURS   BASIN AREA =   .1215 SQ. MI.


*
*ADD HYD 109.39 TO BASIN 108.4
ADD HYD             ID=6  HYD=109.49  ID=6  ID=5
PRINT HYD           ID=6  CODE=1

                                PARTIAL HYDROGRAPH   109.49

    RUNOFF VOLUME =     2.22788 INCHES     =      31.3803 ACRE-FEET
    PEAK DISCHARGE RATE =     717.11 CFS  AT   1.500 HOURS   BASIN AREA =   .2641 SQ. MI.


*
*ADD ABOVE TO NORTH POND OUTFLOW
ADD HYD             ID=6  HYD=109.59  ID=6  ID=10
PRINT HYD           ID=6  CODE=1

                                PARTIAL HYDROGRAPH   109.59

    RUNOFF VOLUME =     1.82766 INCHES     =     103.4401 ACRE-FEET
    PEAK DISCHARGE RATE =     765.45 CFS  AT   1.500 HOURS   BASIN AREA =  1.0612 SQ. MI.


*
*ROUTE THROUGH SOUTH POND
ROUTE RESERVOIR     ID=10  HYD=501  IN ID=6  CODE5
                    OUTFLOW   STORAGE   ELEV
                     0        0        5201
                     7.00     0.934    5202
                    24.87     3.359    5203
                    43.07     6.080    5204
                    55.61     8.946    5205
                    65.80    11.813    5206
                    74.61    14.880    5207
                    82.48    17.946    5208
                    89.67    21.219    5209
                    96.32    24.492    5210
                   102.54    27.979    5211
                   108.40    31.465    5212
STORAGE-DISCHARGE TABLE EXCEEDED.

      *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

         .00        .00   5201.00       .000       .00
         .25        .00   5201.00       .000       .00
         .50        .00   5201.00       .000       .00
         .75        .00   5201.00       .000       .00
        1.00        .00   5201.00       .000       .00
        1.25      33.40   5201.09       .082       .62
        1.50     765.45   5204.42      7.292     48.37
        1.75     376.10   5207.79     17.313     80.85
        2.00     260.12   5209.23     21.960     91.18
        2.25     253.65   5202.14      1.278      9.54
        2.50     111.23   5202.04      1.027      7.69
        2.75     101.27   5202.10      1.181      8.82
        3.00      96.55   5202.13      1.248      9.32
        3.25      94.21   5202.16      1.313      9.79
```

3.50	92.98	5202.18	1.375	10.25
3.75	92.28	5202.21	1.437	10.70
4.00	91.53	5202.23	1.497	11.15
4.25	90.92	5202.26	1.557	11.59
4.50	90.41	5202.28	1.616	12.02
4.75	89.25	5202.31	1.674	12.45
5.00	87.11	5202.33	1.731	12.87
5.25	85.11	5202.35	1.785	13.27
5.50	83.14	5202.37	1.838	13.66
5.75	81.22	5202.39	1.889	14.04
6.00	79.33	5202.41	1.939	14.40
6.25	79.15	5202.43	1.987	14.76
6.50	77.58	5202.45	2.035	15.11
6.75	75.61	5202.47	2.081	15.45
7.00	73.65	5202.49	2.125	15.77
7.25	71.74	5202.51	2.167	16.09
7.50	69.83	5202.53	2.208	16.39
7.75	67.33	5202.54	2.247	16.68
8.00	64.56	5202.56	2.284	16.95
8.25	61.95	5202.57	2.318	17.20
8.50	59.47	5202.58	2.351	17.44
8.75	57.08	5202.60	2.381	17.67
9.00	54.98	5202.61	2.410	17.88
9.25	53.02	5202.62	2.437	18.07
9.50	51.16	5202.63	2.462	18.26
9.75	49.35	5202.64	2.486	18.44
10.00	47.61	5202.65	2.509	18.60
10.25	45.53	5202.66	2.530	18.76
10.50	42.74	5202.67	2.548	18.90
10.75	40.19	5202.67	2.565	19.02
11.00	37.86	5202.68	2.580	19.13
11.25	35.68	5202.68	2.593	19.23
11.50	33.68	5202.69	2.605	19.31
11.75	31.81	5202.69	2.615	19.39
12.00	30.13	5202.70	2.624	19.45
12.25	28.32	5202.70	2.631	19.50
12.50	26.17	5202.70	2.637	19.55
12.75	24.30	5202.70	2.641	19.58
13.00	22.68	5202.71	2.644	19.60
13.25	21.20	5202.71	2.646	19.61
13.50	19.93	5202.71	2.646	19.62
13.75	18.80	5202.71	2.646	19.62

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.00	17.78	5202.71	2.645	19.61
14.25	16.91	5202.71	2.643	19.60
14.50	16.00	5202.70	2.641	19.58
14.75	15.19	5202.70	2.638	19.56
15.00	14.52	5202.70	2.635	19.53
15.25	13.88	5202.70	2.631	19.50
15.50	13.37	5202.70	2.626	19.47
15.75	12.93	5202.70	2.621	19.44
16.00	12.51	5202.69	2.616	19.40
16.25	12.12	5202.69	2.611	19.36
16.50	11.79	5202.69	2.606	19.32
16.75	11.49	5202.69	2.600	19.28
17.00	11.25	5202.68	2.594	19.23
17.25	10.98	5202.68	2.588	19.19
17.50	10.79	5202.68	2.582	19.14
17.75	10.54	5202.68	2.575	19.10
18.00	10.44	5202.67	2.569	19.05
18.25	10.22	5202.67	2.563	19.00
18.50	10.08	5202.67	2.556	18.95
18.75	9.95	5202.67	2.549	18.90
19.00	9.82	5202.66	2.543	18.85
19.25	9.70	5202.66	2.536	18.80
19.50	9.60	5202.66	2.529	18.75
19.75	9.51	5202.65	2.522	18.70
20.00	9.36	5202.65	2.515	18.65
20.25	9.28	5202.65	2.508	18.60
20.50	9.17	5202.65	2.501	18.55
20.75	9.08	5202.64	2.494	18.50
21.00	8.98	5202.64	2.487	18.44
21.25	8.89	5202.64	2.480	18.39
21.50	8.83	5202.63	2.473	18.34
21.75	8.74	5202.63	2.466	18.29
22.00	8.66	5202.63	2.459	18.23
22.25	8.60	5202.63	2.451	18.18
22.50	8.55	5202.62	2.444	18.13
22.75	8.42	5202.62	2.437	18.08
23.00	8.40	5202.62	2.430	18.02
23.25	8.32	5202.61	2.423	17.97
23.50	8.24	5202.61	2.415	17.92
23.75	8.17	5202.61	2.408	17.86
24.00	8.12	5202.60	2.401	17.81
24.25	5.87	5202.60	2.393	17.75
24.50	4.86	5202.60	2.384	17.68
24.75	4.13	5202.59	2.374	17.61
25.00	3.52	5202.59	2.363	17.53

25.25	3.00	5202.58	2.353	17.45
25.50	2.42	5202.58	2.342	17.37
25.75	1.95	5202.58	2.330	17.29
26.00	1.57	5202.57	2.319	17.20
26.25	1.27	5202.57	2.307	17.12
26.50	1.02	5202.56	2.295	17.03
26.75	.82	5202.56	2.283	16.94
27.00	.66	5202.55	2.271	16.85
27.25	.53	5202.55	2.259	16.76
27.50	.43	5202.54	2.247	16.67
27.75	.35	5202.54	2.235	16.58

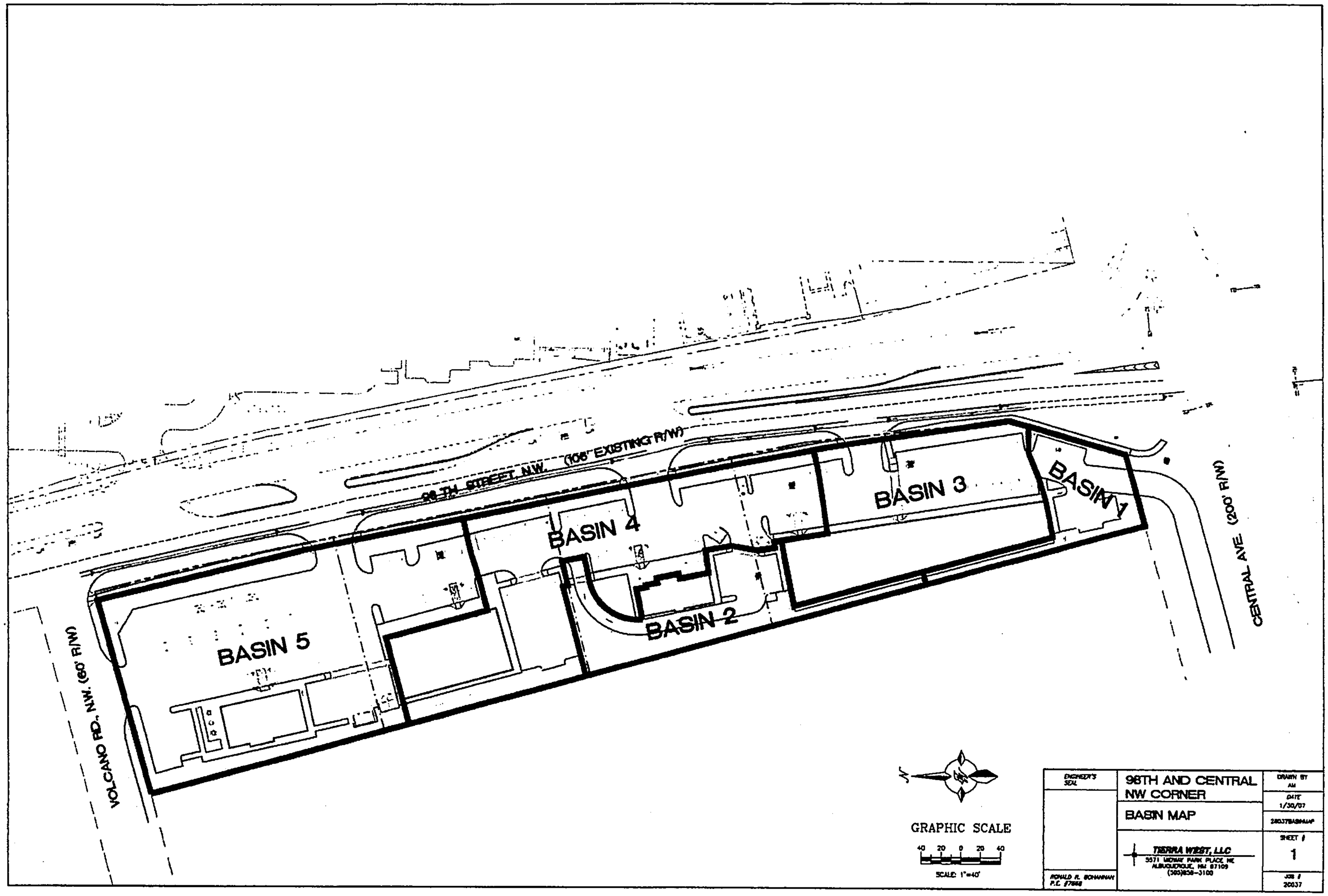
TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
28.00	.28	5202.53	2.222	16.49
28.25	.23	5202.53	2.210	16.40
28.50	.18	5202.52	2.198	16.32
28.75	.15	5202.52	2.186	16.23
29.00	.12	5202.51	2.174	16.14
29.25	.09	5202.51	2.162	16.05
29.50	.08	5202.50	2.150	15.96
29.75	.06	5202.50	2.138	15.87

```
PEAK DISCHARGE =        95.516 CFS - PEAK OCCURS AT HOUR    2.10
MAXIMUM WATER SURFACE ELEVATION =      5209.879
 MAXIMUM STORAGE =        24.0965 AC-FT      INCREMENTAL TIME=     .050000HRS

PUNCH HYD            ID=10
*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 07:59:20
```

APPENDIX A

APPENDIX B

BASIN MAP FROM PREVIOUSLY APPROVED REPORT
ENTITLED
"COMMERCIAL DEVELOPMENT NW CORNER
98TH STREET & CENTRAL AVENUE


98TH STREET, N.W. (106' EXISTING R/W)
VOLCANO RD., N.W. (60' R/W)
CENTRAL AVE. (200' R/W)
BASIN 1
BASIN 2
BASIN 3
BASIN 4
BASIN 5
GRAPHIC SCALE
40 20 0 20 40
SCALE: 1"=40'
ENGINEER'S SEAL
RONALD R. BOHANNAN
P.E. 17868
98TH AND CENTRAL
NW CORNER
BASIN MAP
TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505)858-3100
DRAWN BY
AM
DATE
1/30/07
SHEET #
1
JOB #
20037

APPENDIX C

AHYMO Data From
Final Design Report for the Amole Del Norte
Storm Diversion Facilities, Tierra Bayita Drainage
Facilities, Phase III March 1998

```
AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
     RUN DATE (MON/DAY/YR) = 03/02/1998
     START TIME (HR:MIN:SEC) = 14:28:49     USER NO.= GREINRNM.STE
     INPUT FILE = p:\ahymo\ab100.dat

START                    0.0 HRS
* AHYMO MODEL FOR AMOLE PHASE III C
* MODEL CREATED BY GREINER AUG 1993 - BASED ON FILE AB100MKR FROM
*     FROM FEMA RESTUDY (AREAS A (#2) AND B (#3)) BY RTI
*
* TIERRA BAYITA ARROYO
* ULTIMATE DEVELOPMENT CONDITIONS 100-YR. 24-HR. STORM
*
*
*   FILE NAME - AB100.DAT
*
* THIS FILE COMPUTES THE HYDROLOGY FOR
*
*      AREA A (#2) - TIERRA BAYITA ARROYO, MIREHAVEN ARROYO
*
*     ASSUMPTIONS -
*       1. USE THE AHYMO991 VERSION OF HYMO AS DEVELOPED BY AMAFCA
*       2. MODEL THE 24-HOUR RAINFALL PER FEMA CRITERIA
*       3. USE THE draft REVISION OF SECTION 22.2, DPM by the DEVELOPMENT
*          PROCESS MANUAL DRAINAGE DESIGN CRITERIA COMMITTEE, AUGUST 1991
*       4. USE THE NM HYDROGRAPH COMPUTATIONAL METHOD IN AHYMO391
*       5. COMPUTATIONAL INTERVAL = 3 MINUTES = .05 hrs
*       6. PERCENTAGE OF EXISTING LAND USE WITHIN TREATMENT TYPES A,B,C AND D
*          WAS ESTIMATED FOR ULTIMATE DEVELOPMENT BASED ON LAND PLANNING
*          DOCUMENTS
*
* % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % %
*
*
RAINFALL                 TYPE=2  RAIN QUARTER=0.0   RAIN ONE=1.95
                         RAIN SIX=2.2     RAIN DAY=2.7     DT=0.05

                   COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40
HR.
                   DT =     .050000 HOURS        END TIME =    24.000000 HOURS
                      .0000    .0014    .0028    .0042    .0057    .0073    .0089
                      .0106    .0124    .0142    .0161    .0182    .0203    .0225
                      .0248    .0273    .0300    .0328    .0359    .0392    .0428
                      .0510    .0601    .0864    .1486    .2555    .4209    .6590
                      .9846   1.2415   1.3575   1.4544   1.5392   1.6151   1.6838
                     1.7465   1.8040   1.8570   1.9058   1.9510   1.9928   2.0008
                     2.0081   2.0148   2.0211   2.0270   2.0326   2.0378   2.0427
                     2.0474   2.0519   2.0562   2.0604   2.0643   2.0682   2.0718
                     2.0754   2.0788   2.0822   2.0854   2.0885   2.0916   2.0945
                     2.0974   2.1002   2.1030   2.1057   2.1083   2.1108   2.1133
                     2.1158   2.1182   2.1205   2.1228   2.1251   2.1273   2.1295
                     2.1316   2.1337   2.1358   2.1378   2.1398   2.1417   2.1437
                     2.1456   2.1474   2.1493   2.1511   2.1529   2.1547   2.1564
                     2.1581   2.1598   2.1615   2.1631   2.1648   2.1664   2.1680
                     2.1695   2.1711   2.1726   2.1741   2.1756   2.1771   2.1786
                     2.1800   2.1814   2.1828   2.1842   2.1856   2.1870   2.1884
                     2.1897   2.1910   2.1924   2.1937   2.1950   2.1962   2.1975
                     2.1988   2.2000   2.2021   2.2042   2.2063   2.2084   2.2105
                     2.2126   2.2147   2.2167   2.2188   2.2209   2.2229   2.2250
                     2.2270   2.2290   2.2310   2.2330   2.2351   2.2371   2.2390
                     2.2410   2.2430   2.2450   2.2470   2.2489   2.2509   2.2528
                     2.2548   2.2567   2.2586   2.2605   2.2625   2.2644   2.2663
                     2.2682   2.2701   2.2720   2.2738   2.2757   2.2776   2.2795
                     2.2813   2.2832   2.2850   2.2869   2.2887   2.2905   2.2923
                     2.2942   2.2960   2.2978   2.2996   2.3014   2.3032   2.3050
                     2.3068   2.3085   2.3103   2.3121   2.3138   2.3156   2.3174
                     2.3191   2.3208   2.3226   2.3243   2.3260   2.3278   2.3295
```

2.3312	2.3329	2.3346	2.3363	2.3380	2.3397	2.3414
2.3431	2.3448	2.3464	2.3481	2.3498	2.3514	2.3531
2.3547	2.3564	2.3580	2.3596	2.3613	2.3629	2.3645
2.3662	2.3678	2.3694	2.3710	2.3726	2.3742	2.3758
2.3774	2.3790	2.3806	2.3821	2.3837	2.3853	2.3869
2.3884	2.3900	2.3915	2.3931	2.3946	2.3962	2.3977
2.3993	2.4008	2.4023	2.4038	2.4054	2.4069	2.4084
2.4099	2.4114	2.4129	2.4144	2.4159	2.4174	2.4189
2.4204	2.4219	2.4234	2.4248	2.4263	2.4278	2.4293
2.4307	2.4322	2.4336	2.4351	2.4365	2.4380	2.4394
2.4409	2.4423	2.4437	2.4452	2.4466	2.4480	2.4494
2.4509	2.4523	2.4537	2.4551	2.4565	2.4579	2.4593
2.4607	2.4621	2.4635	2.4649	2.4662	2.4676	2.4690
2.4704	2.4718	2.4731	2.4745	2.4759	2.4772	2.4786
2.4799	2.4813	2.4826	2.4840	2.4853	2.4867	2.4880
2.4893	2.4907	2.4920	2.4933	2.4946	2.4960	2.4973
2.4986	2.4999	2.5012	2.5025	2.5038	2.5051	2.5064
2.5077	2.5090	2.5103	2.5116	2.5129	2.5142	2.5155
2.5168	2.5180	2.5193	2.5206	2.5219	2.5231	2.5244
2.5257	2.5269	2.5282	2.5294	2.5307	2.5319	2.5332
2.5344	2.5357	2.5369	2.5382	2.5394	2.5406	2.5419
2.5431	2.5443	2.5455	2.5468	2.5480	2.5492	2.5504
2.5516	2.5528	2.5541	2.5553	2.5565	2.5577	2.5589
2.5601	2.5613	2.5625	2.5636	2.5648	2.5660	2.5672
2.5684	2.5696	2.5708	2.5719	2.5731	2.5743	2.5754
2.5766	2.5778	2.5790	2.5801	2.5813	2.5824	2.5836
2.5847	2.5859	2.5870	2.5882	2.5893	2.5905	2.5916
2.5928	2.5939	2.5950	2.5962	2.5973	2.5984	2.5996
2.6007	2.6018	2.6029	2.6041	2.6052	2.6063	2.6074
2.6085	2.6097	2.6108	2.6119	2.6130	2.6141	2.6152
2.6163	2.6174	2.6185	2.6196	2.6207	2.6218	2.6229
2.6239	2.6250	2.6261	2.6272	2.6283	2.6294	2.6304
2.6315	2.6326	2.6337	2.6347	2.6358	2.6369	2.6379
2.6390	2.6401	2.6411	2.6422	2.6432	2.6443	2.6454
2.6464	2.6475	2.6485	2.6496	2.6506	2.6516	2.6527
2.6537	2.6548	2.6558	2.6569	2.6579	2.6589	2.6600
2.6610	2.6620	2.6630	2.6641	2.6651	2.6661	2.6671
2.6682	2.6692	2.6702	2.6712	2.6722	2.6732	2.6742
2.6752	2.6763	2.6773	2.6783	2.6793	2.6803	2.6813
2.6823	2.6833	2.6843	2.6853	2.6862	2.6872	2.6882
2.6892	2.6902	2.6912	2.6922	2.6932	2.6941	2.6951
2.6961	2.6971	2.6981	2.6990	2.7000		

```
*
*s  DIVIDE HYD IS USED TO SIMULATE A BULKING FACTOR
COMPUTE NM HYD          ID=5   HYD=108.4    DA= .1426  SQ MI
                        PER A=0  B=2  C=28  D=70
                        TP= .1333  HRS  RAIN=-1

        K =    .073763HR    TP =    .133300HR    K/TP RATIO =    .553360     SHAPE CONSTANT, N =
6.969466
        UNIT PEAK =    389.25    CFS   UNIT VOLUME =    .9990       B =   519.81      P60 =
1.9500
        AREA =       .099820 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

        K =    .106958HR    TP =    .133300HR    K/TP RATIO =    .802389     SHAPE CONSTANT, N =
4.463305
        UNIT PEAK =    123.54    CFS   UNIT VOLUME =    1.002       B =   384.95      P60 =
1.9500
        AREA =       .042780 SQ MI    IA =    .36000 INCHES    INF =    .85800 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    PRINT HYD           ID=5  CODE=1

                                PARTIAL HYDROGRAPH   108.40
```

```
RUNOFF VOLUME =      2.03361 INCHES      =      15.4662 ACRE-FEET
PEAK DISCHARGE RATE =     363.67 CFS  AT   1.500 HOURS   BASIN AREA =   .1426 SQ. MI.


*DIVIDE HYD NO  108.4
DIVIDE HYD            ID=5   PER=-105  ID I=5 HYD=108.4
                                       ID II=16  HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD             ID=5  CODE=1

                                   PARTIAL HYDROGRAPH   108.40

RUNOFF VOLUME =      2.13528 INCHES      =      16.2394 ACRE-FEET
PEAK DISCHARGE RATE =     381.85 CFS  AT   1.500 HOURS   BASIN AREA =   .1426 SQ. MI.


*
*
COMPUTE NM HYD        ID=1    HYD= 101       DA=0.026    SQ MI
                      PER A=0    B=100  C=0     D=0
                      TP=.133    HRS        RAIN=-1

K =   .131068HR    TP =   .133000HR    K/TP RATIO =   .985475     SHAPE CONSTANT, N =
3.583086
UNIT PEAK =   63.796    CFS   UNIT VOLUME =    1.001       B =   326.34      P60 =
1.9500
AREA =       .026000 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000
*
DIVIDE HYD            ID=1    PER=-110    ID=1  HYD=101
                                          ID=16  HYD=000
*** WARNING *** - PERCENTAGE OF     -110.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
*
*ROUTE BULKED 101 THROUGH BASIN 108.3 - ASSUME A CONCRETE TRAPAZOIDAL
*            CHANNEL TO SIMULATE DEVELOPED CONDITIONS
*            USE:  10FT BOTTOM  W/2H:1V SIDE SLOPES AT EXISTING SLOPE
COMPUTE RATING CURVE CID=1   VS NO=1   NO SEG = 1
                     MIN ELEV=0  MAX ELEV= 6  CH SLP= 0.0375
                     FP SLP=0.375    N=.013  DIST=34
                     DIST  ELEV
                      0     6
                      12    0
                      22    0
                      34    6
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.32	3.36	103.95	11.26
.63	7.11	336.16	12.53
.95	11.27	674.95	13.79
1.26	15.82	1115.75	15.05
1.58	20.78	1658.34	16.32
1.89	26.13	2304.37	17.58
2.21	31.88	3056.45	18.84
2.53	38.03	3917.71	20.11
2.84	44.58	4891.57	21.37
3.16	51.52	5981.63	22.63
3.47	58.87	7191.59	23.89
3.79	66.61	8525.20	25.16
4.11	74.76	9986.22	26.42
4.42	83.30	11578.44	27.68
4.74	92.24	13305.61	28.95

5.05	101.58	15171.49	30.21
5.37	111.32	17179.79	31.47
5.68	121.46	19334.22	32.74
6.00	132.00	21638.44	34.00

COMPUTE TRAVEL TIME ID=2 REACH=1 NO VS=1 L=4000 SLOPE= 0.0375

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	3.357	103.95	.0359
.632	7.114	336.16	.0235
.947	11.269	674.95	.0186
1.263	15.823	1115.75	.0158
1.579	20.776	1658.34	.0139
1.895	26.127	2304.37	.0126
2.211	31.878	3056.45	.0116
2.526	38.028	3917.71	.0108
2.842	44.576	4891.57	.0101
3.158	51.524	5981.63	.0096
3.474	58.870	7191.59	.0091
3.789	66.615	8525.20	.0087
4.105	74.759	9986.22	.0083
4.421	83.302	11578.44	.0080
4.737	92.244	13305.61	.0077
5.053	101.584	15171.49	.0074
5.368	111.324	17179.79	.0072
5.684	121.463	19334.22	.0070
6.000	132.000	21638.44	.0068

ROUTE ID=2 HYD= 101.80 INFLOW HYD ID=1 DT=0.0
PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 101.80

RUNOFF VOLUME = .77528 INCHES = 1.0750 ACRE-FEET
PEAK DISCHARGE RATE = 36.46 CFS AT 1.550 HOURS BASIN AREA = .0260 SQ. MI.

*
COMPUTE NM HYD ID=1 HYD= 108.3 DA= .1478 SQ MI
PER A=0 B=2 C=41 D=57
TP=.175 HRS RAIN=-1

K = .096933HR TP = .175000HR K/TP RATIO = .553902 SHAPE CONSTANT, N = 6.960743
UNIT PEAK = 250.04 CFS UNIT VOLUME = .9997 B = 519.39 P60 = 1.9500
AREA = .084246 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .139737HR TP = .175000HR K/TP RATIO = .798497 SHAPE CONSTANT, N = 4.487627
UNIT PEAK = 140.35 CFS UNIT VOLUME = 1.000 B = 386.46 P60 = 1.9500
AREA = .063554 SQ MI IA = .35698 INCHES INF = .84953 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

*
PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 108.30

RUNOFF VOLUME = 1.84830 INCHES = 14.5694 ACRE-FEET

```
PEAK DISCHARGE RATE =     312.33 CFS  AT   1.550 HOURS   BASIN AREA =   .1478 SQ. MI.

*
*      DIVIDE HYD NO.        108.3
DIVIDE HYD            ID=1     PER=-105      ID  I=1   HYD  I=108.3
                                           ID II=16   HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD             ID=1  CODE=1

                                    PARTIAL HYDROGRAPH   108.30

RUNOFF VOLUME =     1.94071 INCHES     =      15.2979 ACRE-FEET
PEAK DISCHARGE RATE =     327.95 CFS  AT   1.550 HOURS   BASIN AREA =   .1478 SQ. MI.

*
*ADD ROUTED 101 AND 108.3
ADD HYD               ID=3   HYD=108.39  ID=1  ID=2
PRINT HYD             ID=3  CODE=1

                                    PARTIAL HYDROGRAPH   108.39

RUNOFF VOLUME =     1.76636 INCHES     =      16.3729 ACRE-FEET
PEAK DISCHARGE RATE =     364.41 CFS  AT   1.550 HOURS   BASIN AREA =   .1738 SQ. MI.

*
*ROUTE COMBINED 101 AND 108.3 TO NORTH POND INFLOW
*            ASSUME A CONCRETE TRAPAZOIDAL
*            CHANNEL TO SIMULATE DEVELOPED CONDITIONS
*            USE:  10FT BOTTOM  W/2H:1V SIDE SLOPES AT EXISTING SLOPE
COMPUTE RATING CURVE CID=1   VS NO=1   NO SEG = 1
                     MIN ELEV=0  MAX ELEV= 6  CH SLP= 0.02
                     FP SLP=0.02    N=.013  DIST=34
                     DIST  ELEV
                      0     6
                      12    0
                      22    0
                      34    6
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.32	3.36	24.01	11.26
.63	7.11	77.63	12.53
.95	11.27	155.87	13.79
1.26	15.82	257.67	15.05
1.58	20.78	382.98	16.32
1.89	26.13	532.17	17.58
2.21	31.88	705.86	18.84
2.53	38.03	904.76	20.11
2.84	44.58	1129.66	21.37
3.16	51.52	1381.40	22.63
3.47	58.87	1660.83	23.89
3.79	66.61	1968.81	25.16
4.11	74.76	2306.22	26.42
4.42	83.30	2673.93	27.68
4.74	92.24	3072.80	28.95
5.05	101.58	3503.70	30.21
5.37	111.32	3967.50	31.47
5.68	121.46	4465.05	32.74

```
                                        6.00        132.00      4997.18        34.00
COMPUTE TRAVEL TIME  ID=2      REACH=1  NO VS=1
                     L=2150       SLP=.015
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	3.357	24.01	.0835
.632	7.114	77.63	.0547
.947	11.269	155.87	.0432
1.263	15.823	257.67	.0367
1.579	20.776	382.98	.0324
1.895	26.127	532.17	.0293
2.211	31.878	705.86	.0270
2.526	38.028	904.76	.0251
2.842	44.576	1129.66	.0236
3.158	51.524	1381.40	.0223
3.474	58.870	1660.83	.0212
3.789	66.615	1968.81	.0202
4.105	74.759	2306.22	.0194
4.421	83.302	2673.93	.0186
4.737	92.244	3072.80	.0179
5.053	101.584	3503.70	.0173
5.368	111.324	3967.50	.0168
5.684	121.463	4465.05	.0162
6.000	132.000	4997.18	.0158

```
ROUTE                ID=2      HYD= 108.38    INFLOW ID=3    DT=0.0
PRINT HYD            ID=2    CODE=1

                                PARTIAL HYDROGRAPH   108.38

    RUNOFF VOLUME =      1.76637 INCHES      =      16.3729 ACRE-FEET
    PEAK DISCHARGE RATE =     357.91 CFS  AT   1.550 HOURS   BASIN AREA =    .1738 SQ. MI.

*
COMPUTE NM HYD       ID=7    HYD=108.2      DA= .1710    SQ MI
                     PER A=0     B=5     C=35     D=63
                     TP=.158     HRS          RAIN=-1
    *****WARNING*****  SUM OF TREATMENT TYPES DOES NOT EQUAL 100 PERCENT OR TOTAL AREA

    K =    .087899HR    TP =    .158000HR    K/TP RATIO =    .556324     SHAPE CONSTANT, N =
6.922152
    UNIT PEAK =    342.61    CFS   UNIT VOLUME =    .9992       B =   517.56      P60 =
1.9500
    AREA =       .104592 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    K =    .127558HR    TP =    .158000HR    K/TP RATIO =    .807329     SHAPE CONSTANT, N =
4.432534
    UNIT PEAK =    161.00    CFS   UNIT VOLUME =    1.000       B =   383.05      P60 =
1.9500
    AREA =       .066408 SQ MI    IA =    .36875 INCHES    INF =    .88250 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000
PRINT HYD            ID=7    CODE=1

                                PARTIAL HYDROGRAPH   108.20

    RUNOFF VOLUME =      1.89651 INCHES      =      17.2960 ACRE-FEET
    PEAK DISCHARGE RATE =     376.60 CFS  AT   1.500 HOURS   BASIN AREA =    .1710 SQ. MI.
```

```
*
*       DIVIDE HYD NO.        108.2
DIVIDE HYD            ID=7     PER=-105       ID  I=7   HYD  I=108.2
                                            ID II=16   HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD             ID=7  CODE=1

                                     PARTIAL HYDROGRAPH   108.20

    RUNOFF VOLUME =     1.99133 INCHES     =      18.1608 ACRE-FEET
    PEAK DISCHARGE RATE =     395.43 CFS  AT   1.500 HOURS   BASIN AREA =   .1710 SQ. MI.


*
*S COMBINE HYD'S 108.38 AND 108.2
ADD HYD               ID=7  HYD=108.29  ID=7  ID=2
PRINT HYD             ID=7  CODE=1

                                     PARTIAL HYDROGRAPH   108.29

    RUNOFF VOLUME =     1.87793 INCHES     =      34.5337 ACRE-FEET
    PEAK DISCHARGE RATE =     752.47 CFS  AT   1.550 HOURS   BASIN AREA =   .3448 SQ. MI.


*
*
COMPUTE NM HYD        ID=2    HYD= 102    DA=0.281    SQ MI
                      PER A=40   B=19   C=10     D=31
                      TP=.20   RAIN=-1

    K =    .113561HR    TP =    .200000HR    K/TP RATIO =    .567804     SHAPE CONSTANT, N =
6.744929
    UNIT PEAK =   221.71    CFS   UNIT VOLUME =    .9997       B =   509.04      P60 =
1.9500
    AREA =       .087110 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

    K =    .189271HR    TP =    .200000HR    K/TP RATIO =    .946357     SHAPE CONSTANT, N =
3.735450
    UNIT PEAK =   326.83    CFS   UNIT VOLUME =    1.000       B =   337.13      P60 =
1.9500
    AREA =       .193890 SQ MI    IA =    .56522 INCHES    INF =   1.43261 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000
PRINT HYD             ID=2    CODE=1

                                     PARTIAL HYDROGRAPH   102.00

    RUNOFF VOLUME =     1.17382 INCHES     =      17.5915 ACRE-FEET
    PEAK DISCHARGE RATE =     370.96 CFS  AT   1.550 HOURS   BASIN AREA =   .2810 SQ. MI.


*
DIVIDE HYD            ID=2     PER=-105  ID  I=2   HYD  I=102
                                            ID II=16   HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD             ID=2  CODE=1

                                     PARTIAL HYDROGRAPH   102.00
```

```
RUNOFF VOLUME =      1.23250 INCHES      =       18.4710 ACRE-FEET
PEAK DISCHARGE RATE =     389.50 CFS  AT   1.550 HOURS   BASIN AREA =    .2810 SQ. MI.


*
*ROUTE BASIN 102 THROUGH BASIN 108.1
*            ASSUME A CONCRETE TRAPAZOIDAL
*            CHANNEL TO SIMULATE DEVELOPED CONDITIONS
*            USE:  10FT BOTTOM  W/2H:1V SIDE SLOPES AT EXISTING SLOPE
COMPUTE RATING CURVE CID=1   VS NO=1   NO SEG = 1
                     MIN ELEV=0  MAX ELEV= 6  CH SLP= 0.03
                     FP SLP=0.03    N=.013  DIST=34
                     DIST  ELEV
                      0     6
                      12    0
                      22    0
                      34    6
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.32	3.36	29.40	11.26
.63	7.11	95.08	12.53
.95	11.27	190.91	13.79
1.26	15.82	315.58	15.05
1.58	20.78	469.05	16.32
1.89	26.13	651.78	17.58
2.21	31.88	864.50	18.84
2.53	38.03	1108.10	20.11
2.84	44.58	1383.55	21.37
3.16	51.52	1691.86	22.63
3.47	58.87	2034.09	23.89
3.79	66.61	2411.29	25.16
4.11	74.76	2824.53	26.42
4.42	83.30	3274.88	27.68
4.74	92.24	3763.40	28.95
5.05	101.58	4291.14	30.21
5.37	111.32	4859.18	31.47
5.68	121.46	5468.54	32.74
6.00	132.00	6120.27	34.00

```
COMPUTE TRAVEL TIME  ID=3      REACH=1  NO VS=1
                     L=3100       SLP=.03
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	3.357	29.40	.0983
.632	7.114	95.08	.0644
.947	11.269	190.91	.0508
1.263	15.823	315.58	.0432
1.579	20.776	469.05	.0381
1.895	26.127	651.78	.0345
2.211	31.878	864.50	.0318
2.526	38.028	1108.10	.0296
2.842	44.576	1383.55	.0277
3.158	51.524	1691.86	.0262
3.474	58.870	2034.09	.0249
3.789	66.615	2411.29	.0238
4.105	74.759	2824.53	.0228
4.421	83.302	3274.88	.0219
4.737	92.244	3763.40	.0211
5.053	101.584	4291.14	.0204
5.368	111.324	4859.18	.0197

```
                                    5.684      121.463      5468.54        .0191
                                    6.000      132.000      6120.27        .0186
ROUTE                  ID=3      HYD= 102.80    INFLOW ID=2    DT=0.0
PRINT HYD              ID=3    CODE=1

                                        PARTIAL HYDROGRAPH   102.80


    RUNOFF VOLUME =      1.23251 INCHES      =      18.4710 ACRE-FEET
    PEAK DISCHARGE RATE =     391.90 CFS  AT   1.600 HOURS   BASIN AREA =   .2810 SQ. MI.


*
COMPUTE NM HYD         ID=4    HYD= 108.1     DA= .1713    SQ MI
                       PER A=0    B=3    C=30    D=67
                       TP=.133    HRS        RAIN=-1

    K =    .073995HR    TP =    .133000HR    K/TP RATIO =    .556355     SHAPE CONSTANT, N =
6.921654
    UNIT PEAK =    446.60    CFS   UNIT VOLUME =    .9991       B =    517.53      P60 =
1.9500
    AREA =       .114771 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000


    K =    .106685HR    TP =    .133000HR    K/TP RATIO =    .802144     SHAPE CONSTANT, N =
4.464820
    UNIT PEAK =    163.66    CFS   UNIT VOLUME =    1.002       B =    385.05      P60 =
1.9500
    AREA =       .056529 SQ MI    IA =    .36364 INCHES    INF =    .86818 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD              ID=4    CODE=1

                                        PARTIAL HYDROGRAPH   108.10


    RUNOFF VOLUME =      1.98693 INCHES      =      18.1524 ACRE-FEET
    PEAK DISCHARGE RATE =     431.18 CFS  AT   1.500 HOURS   BASIN AREA =   .1713 SQ. MI.


*
DIVIDE HYD             ID=4     PER=-105      ID  I=4   HYD  I=108.1
                                            ID II=16   HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD              ID=4  CODE=1

                                        PARTIAL HYDROGRAPH   108.10


    RUNOFF VOLUME =      2.08627 INCHES      =      19.0601 ACRE-FEET
    PEAK DISCHARGE RATE =     452.74 CFS  AT   1.500 HOURS   BASIN AREA =   .1713 SQ. MI.


*
*ADD ROUTED 102 TO 108.1 FLOW
ADD HYD                ID=2  HYD=108.17  ID=4  ID=3
PRINT HYD              ID=2  CODE=1

                                        PARTIAL HYDROGRAPH   108.17


    RUNOFF VOLUME =      1.55585 INCHES      =      37.5311 ACRE-FEET
    PEAK DISCHARGE RATE =     753.68 CFS  AT   1.550 HOURS   BASIN AREA =   .4523 SQ. MI.
```

```
*
*
*ROUTE FLOW SOUTH ON 102ND THRU 72" PIPE TO NORTH POND
COMPUTE RATING CURVE RC=1   VS NO=1   CODE=-1
                     SLP=0.013     DIA= 72 IN  N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.31	.56	2.53	2.67
.63	1.56	11.00	3.67
.94	2.82	25.56	4.36
1.25	4.27	45.97	4.87
1.56	5.86	71.78	5.27
1.88	7.55	102.42	5.56
2.19	9.33	137.22	5.78
2.50	11.16	175.44	5.92
2.81	13.02	216.27	5.99
3.13	14.90	258.83	6.00
3.44	16.76	302.17	6.00
3.75	18.60	345.26	6.00
4.06	20.39	386.97	6.00
4.38	22.10	426.03	6.00
4.69	23.71	460.99	6.00
5.00	25.19	490.07	6.00
5.32	26.49	510.88	6.00
5.63	27.55	519.43	6.00
6.00	28.27	519.43	6.00

```
COMPUTE TRAVEL TIME  ID=8 REACH=1  NO VS=1    L=1200     SLP=.013
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.313	.562	2.53	.0740
.625	1.564	11.00	.0474
.938	2.824	25.56	.0368
1.251	4.271	45.97	.0310
1.563	5.859	71.78	.0272
1.876	7.554	102.42	.0246
2.189	9.329	137.22	.0227
2.501	11.159	175.44	.0212
2.814	13.022	216.27	.0201
3.127	14.897	258.83	.0192
3.439	16.764	302.17	.0185
3.752	18.601	345.26	.0180
4.065	20.388	386.97	.0176
4.377	22.101	426.03	.0173
4.690	23.712	460.99	.0171
5.003	25.189	490.07	.0171
5.315	26.489	510.88	.0173
5.628	27.547	519.43	.0177
6.000	28.274	519.43	.0181

```
    ROUTE                  ID=8      HYD= 108.18    INFLOW HYD ID=2    DT=0.0
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD              ID=8    CODE=1
```

PARTIAL HYDROGRAPH 108.18

```
RUNOFF VOLUME =     1.55585 INCHES     =      37.5311 ACRE-FEET
PEAK DISCHARGE RATE =     743.28 CFS  AT   1.550 HOURS   BASIN AREA =    .4523 SQ. MI.
```

```
*
* COMBINE FLOW FROM 108.18 & 108.29
ADD HYD                ID=9  HYD=108.9  ID=7  ID=8
PRINT HYD              ID=9  CODE=1

                                   PARTIAL HYDROGRAPH   108.90

    RUNOFF VOLUME =      1.69518 INCHES      =      72.0648 ACRE-FEET
    PEAK DISCHARGE RATE =    1495.75 CFS  AT   1.550 HOURS   BASIN AREA =   .7971 SQ. MI.


*
*
******THE FOLLOWING POND IS WHAT WAS APPROVED BY THE STATE ENGINEER &
*       COA - DURING CONSTRUCTION ACCESS RAMPS WERE ADDED REDUCING THE
*       VOLUME -- REVISED STORAGE VOLUMES
*ROUTE FLOW THROUGH NORTH POND
*ROUTE RESERVOIR       ID=10  HYD=502  INFLOW ID=9  CODE=5
*                      OUTFLOW  STORAGE  ELEV
*                         0       0      5204.21
*                         3     0.287    5205
*                        13     1.582    5206
*                        25     3.486    5207
*                        42     7.543    5209
*                        52    11.939    5211
*                        64    16.689    5213
*                        72    21.805    5215
*                        80    27.301    5217
*                        88    33.189    5219
*                        90    39.483    5221
*                        91    46.197    5223
*                       968    49.715    5224
*                      2615    53.343    5225
*                      4809    57.082    5226
*
*ROUTE FLOW THROUGH NORTH POND - REVISED FOR ACCESS RAMP
ROUTE RESERVOIR        ID=10  HYD=502  INFLOW ID=9  CODE=5
                       OUTFLOW  STORAGE  ELEV
                          0       0      5204.21
                          3     0.287    5205
                         13     1.565    5206
                         25     3.402    5207
                         42     7.394    5209
                         52    11.731    5211
                         64    16.428    5213
                         72    21.498    5215
                         80    26.955    5217
                         88    32.809    5219
                         90    39.075    5221
                         91    45.767    5223
                        968    49.276    5224
                       2615    52.896    5225
                       4809    56.628    5226

* * * * * * * * * * * * * * * * *
```

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5204.21	.000	.00
.25	.00	5204.21	.000	.00
.50	.00	5204.21	.000	.00
.75	.00	5204.21	.000	.00
1.00	.00	5204.21	.000	.00
1.25	22.58	5204.36	.053	.56
1.50	1325.33	5210.27	10.143	48.34
1.75	870.74	5219.54	34.488	88.54

2.00	429.13	5222.82	45.180	90.91
2.25	164.76	5223.13	46.229	206.54
2.50	77.32	5223.00	45.755	91.00
2.75	42.43	5222.79	45.074	90.90
3.00	24.34	5222.43	43.866	90.72
3.25	14.48	5221.99	42.386	90.49
3.50	9.71	5221.50	40.764	90.25
3.75	7.05	5221.00	39.073	90.00
4.00	5.58	5220.45	37.348	89.45
4.25	4.80	5219.89	35.612	88.89
4.50	4.48	5219.34	33.876	88.34
4.75	4.41	5218.78	32.151	87.10
5.00	4.56	5218.20	30.468	84.80
5.25	4.85	5217.64	28.836	82.57
5.50	5.19	5217.10	27.256	80.41
5.75	5.69	5216.55	25.730	78.20
6.00	6.18	5216.01	24.259	76.05
6.25	8.89	5215.50	22.859	74.00
6.50	10.40	5215.02	21.553	72.08
6.75	10.65	5214.53	20.303	70.11
7.00	10.62	5214.05	19.094	68.21
7.25	10.51	5213.59	17.922	66.36
7.50	10.33	5213.14	16.785	64.56
7.75	10.21	5212.68	15.686	62.10
8.00	10.01	5212.24	14.640	59.43
8.25	9.89	5211.81	13.644	56.89
8.50	9.74	5211.41	12.696	54.47
8.75	9.60	5211.03	11.795	52.16
9.00	9.44	5210.63	10.935	50.16
9.25	9.30	5210.25	10.112	48.27
9.50	9.20	5209.89	9.325	46.45
9.75	9.06	5209.54	8.571	44.71
10.00	8.94	5209.21	7.851	43.05
10.25	8.82	5208.88	7.163	41.02
10.50	8.69	5208.56	6.525	38.30
10.75	8.59	5208.27	5.939	35.80
11.00	8.50	5208.00	5.399	33.51
11.25	8.38	5207.75	4.903	31.39
11.50	8.26	5207.52	4.447	29.45
11.75	8.14	5207.31	4.027	27.66
12.00	8.05	5207.12	3.640	26.01
12.25	7.97	5206.94	3.285	24.23
12.50	7.87	5206.76	2.970	22.18
12.75	7.78	5206.61	2.693	20.37
13.00	7.71	5206.48	2.449	18.77
13.25	7.61	5206.36	2.234	17.37
13.50	7.54	5206.26	2.045	16.13
13.75	7.45	5206.17	1.877	15.04

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.00	7.33	5206.09	1.730	14.08
14.25	7.30	5206.02	1.599	13.22
14.50	7.20	5205.94	1.485	12.37
14.75	7.13	5205.86	1.385	11.59
15.00	7.05	5205.79	1.299	10.92
15.25	6.96	5205.73	1.225	10.34
15.50	6.90	5205.68	1.160	9.83
15.75	6.89	5205.64	1.104	9.39
16.00	6.81	5205.60	1.055	9.01
16.25	6.72	5205.57	1.012	8.67
16.50	6.64	5205.54	.974	8.37
16.75	6.59	5205.51	.941	8.11
17.00	6.51	5205.49	.911	7.88
17.25	6.43	5205.47	.884	7.67
17.50	6.43	5205.45	.861	7.49
17.75	6.29	5205.43	.840	7.33
18.00	6.32	5205.42	.820	7.17

18.25	6.21	5205.40	.803	7.04
18.50	6.18	5205.39	.787	6.91
18.75	6.11	5205.38	.772	6.80
19.00	6.09	5205.37	.759	6.69
19.25	6.02	5205.36	.747	6.60
19.50	5.99	5205.35	.735	6.51
19.75	5.96	5205.34	.724	6.42
20.00	5.87	5205.33	.715	6.35
20.25	5.84	5205.33	.705	6.27
20.50	5.75	5205.32	.696	6.20
20.75	5.72	5205.31	.687	6.13
21.00	5.68	5205.31	.679	6.07
21.25	5.62	5205.30	.671	6.01
21.50	5.61	5205.29	.664	5.95
21.75	5.53	5205.29	.657	5.89
22.00	5.52	5205.28	.650	5.84
22.25	5.45	5205.28	.643	5.79
22.50	5.45	5205.27	.636	5.73
22.75	5.35	5205.27	.630	5.68
23.00	5.38	5205.26	.624	5.64
23.25	5.32	5205.26	.618	5.59
23.50	5.23	5205.25	.612	5.54
23.75	5.24	5205.25	.606	5.50
24.00	5.20	5205.25	.601	5.46
24.25	2.52	5205.23	.576	5.26
24.50	.75	5205.17	.503	4.69
24.75	.27	5205.11	.422	4.06
25.00	.11	5205.05	.348	3.48
25.25	.05	5204.99	.283	2.96
25.50	.02	5204.84	.229	2.39
25.75	.01	5204.72	.185	1.93
26.00	.00	5204.62	.149	1.56
26.25	.00	5204.54	.120	1.25
26.50	.00	5204.48	.097	1.01
26.75	.00	5204.42	.078	.81
27.00	.00	5204.38	.063	.66
27.25	.00	5204.35	.051	.53
27.50	.00	5204.32	.041	.43
27.75	.00	5204.30	.033	.34

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
28.00	.00	5204.28	.026	.28
28.25	.00	5204.27	.021	.22
28.50	.00	5204.26	.017	.18
28.75	.00	5204.25	.014	.14
29.00	.00	5204.24	.011	.12
29.25	.00	5204.23	.009	.09
29.50	.00	5204.23	.007	.08
29.75	.00	5204.23	.006	.06

PEAK DISCHARGE = 308.175 CFS - PEAK OCCURS AT HOUR 2.10
MAXIMUM WATER SURFACE ELEVATION = 5223.248
MAXIMUM STORAGE = 46.6359 AC-FT INCREMENTAL TIME= .050000HRS

*
*

COMPUTE NM HYD ID=1 HYD=109 DA= .0720 SQ MI
PER A=0 B=2 C=16 D=82
TP=.140 HRS RAIN=-1

K = .076439HR TP = .140000HR K/TP RATIO = .545991 SHAPE CONSTANT, N = 7.089916
UNIT PEAK = 221.61 CFS UNIT VOLUME = .9983 B = 525.50 P60 = 1.9500
AREA = .059040 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .114807HR TP = .140000HR K/TP RATIO = .820048 SHAPE CONSTANT, N = 4.356214
UNIT PEAK = 35.016 CFS UNIT VOLUME = 1.001 B = 378.26 P60 = 1.9500
AREA = .012960 SQ MI IA = .36667 INCHES INF = .87667 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

```
*
PRINT HYD              ID=1    CODE=1

                                   PARTIAL HYDROGRAPH   109.00

    RUNOFF VOLUME =      2.20466 INCHES      =       8.4659 ACRE-FEET
    PEAK DISCHARGE RATE =     188.50 CFS  AT   1.500 HOURS   BASIN AREA =    .0720 SQ. MI.

*
DIVIDE HYD             ID=1     PER=-105       ID  I=1   HYD  I=109
                                                ID II=16   HYD II=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
PRINT HYD              ID=1  CODE=1

                                   PARTIAL HYDROGRAPH   109.00

    RUNOFF VOLUME =      2.31489 INCHES      =       8.8891 ACRE-FEET
    PEAK DISCHARGE RATE =     197.93 CFS  AT   1.500 HOURS   BASIN AREA =    .0720 SQ. MI.

*
*ROUTE SOUTH ALONG 98TH IN PIPE - FROM AVALON TO VOLCANO
COMPUTE RATING CURVE CID=1  VSNO=1  CODE=-1  SLP=0.02
                     DIA= 66  N=.013
```

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.29	.47	2.49	2.44
.57	1.31	10.81	3.36
.86	2.37	25.14	3.99
1.15	3.59	45.21	4.47
1.43	4.92	70.60	4.83
1.72	6.35	100.73	5.10
2.01	7.84	134.95	5.30
2.29	9.38	172.54	5.42
2.58	10.94	212.70	5.49
2.87	12.52	254.56	5.50
3.15	14.09	297.19	5.50
3.44	15.63	339.56	5.50
3.73	17.13	380.58	5.50
4.01	18.57	419.00	5.50
4.30	19.92	453.38	5.50
4.59	21.17	481.98	5.50
4.87	22.26	502.45	5.50
5.16	23.15	510.86	5.50
5.50	23.76	510.86	5.50

```
COMPUTE TRAVEL TIME  ID=6  REACH NO=1  NOVS=1  LEN=1150  SLP=0.02
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS

```
                    .287        .472        2.49        .0606
                    .573       1.314       10.81        .0388
                    .860       2.373       25.14        .0301
                   1.146       3.589       45.21        .0254
                   1.433       4.923       70.60        .0223
                   1.720       6.348      100.73        .0201
                   2.006       7.839      134.95        .0186
                   2.293       9.377      172.54        .0174
                   2.579      10.942      212.70        .0164
                   2.866      12.518      254.56        .0157
                   3.153      14.086      297.19        .0151
                   3.439      15.630      339.56        .0147
                   3.726      17.132      380.58        .0144
                   4.013      18.571      419.00        .0142
                   4.299      19.925      453.38        .0140
                   4.586      21.166      481.98        .0140
                   4.872      22.258      502.45        .0142
                   5.159      23.147      510.86        .0145
                   5.500      23.758      510.86        .0149
ROUTE                    ID=6  HYD=109.19  INFLOW ID=1  DT=0.0
PRINT HYD                ID=6  CODE=1

                                PARTIAL HYDROGRAPH   109.19

        RUNOFF VOLUME =     2.31490 INCHES      =       8.8892 ACRE-FEET
        PEAK DISCHARGE RATE =     194.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0720 SQ. MI.


    *
    COMPUTE NM HYD       ID=1  HYD=109.1  DA= 0.0495  SQ MI
                         PER A= 0  B=0  C=15  D=85
                         TP= 0.1333  RAIN=-1

        K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =
7.106420
        UNIT PEAK =    166.11    CFS   UNIT VOLUME =    .9990       B =   526.28      P60 =
1.9500
        AREA =       .042075 SQ MI    IA =     .10000 INCHES    INF =     .04000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - ,DT =    .050000

        K =    .106769HR    TP =    .133300HR    K/TP RATIO =    .800969     SHAPE CONSTANT, N =
4.472154
        UNIT PEAK =    21.473    CFS   UNIT VOLUME =    1.001       B =   385.50      P60 =
1.9500
        AREA =       .007425 SQ MI    IA =     .35000 INCHES    INF =     .83000 INCHES PER HOUR
        RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

    PRINT HYD            ID=1  CODE=1

                                PARTIAL HYDROGRAPH   109.10

        RUNOFF VOLUME =     2.25532 INCHES      =       5.9540 ACRE-FEET
        PEAK DISCHARGE RATE =     134.34 CFS  AT   1.500 HOURS   BASIN AREA =   .0495 SQ. MI.


    *
    DIVIDE HYD           ID=1  PER=-105  IDI=1  HYD=109.1
                                         IDII=16  HYD=000
*** WARNING *** - PERCENTAGE OF     -105.0 FOUND - A HYDROGRAPH BULKING FACTOR IS ASSUMED
    PRINT HYD            ID=1  CODE=1

                                PARTIAL HYDROGRAPH   109.10
```

```
    RUNOFF VOLUME =      2.36808 INCHES      =        6.2517 ACRE-FEET
    PEAK DISCHARGE RATE =      141.06 CFS  AT   1.500 HOURS   BASIN AREA =   .0495 SQ. MI.


*
*ADD TO FLOW FROM 109 (HYD109.19)
ADD HYD                ID=6  HYD=109.39  ID=6  ID=1
PRINT HYD              ID=6  CODE=1

                                   PARTIAL HYDROGRAPH   109.39

    RUNOFF VOLUME =      2.33656 INCHES      =       15.1408 ACRE-FEET
    PEAK DISCHARGE RATE =      335.26 CFS  AT   1.500 HOURS   BASIN AREA =   .1215 SQ. MI.


*
* ADD HYD 109.39 TO BASIN 108.4
ADD HYD                ID=6  HYD=109.49  ID=6  ID=5
PRINT HYD              ID=6  CODE=1

                                   PARTIAL HYDROGRAPH   109.49

    RUNOFF VOLUME =      2.22788 INCHES      =       31.3803 ACRE-FEET
    PEAK DISCHARGE RATE =      717.11 CFS  AT   1.500 HOURS   BASIN AREA =   .2641 SQ. MI.


*
*ADD ABOVE TO NORTH POND OUTFLOW
ADD HYD                ID=6  HYD=109.59  ID=6  ID=10
PRINT HYD              ID=6  CODE=1
```

North Pond.

```
                                   PARTIAL HYDROGRAPH   109.59

    RUNOFF VOLUME =      1.82766 INCHES      =      103.4401 ACRE-FEET
    PEAK DISCHARGE RATE =      765.45 CFS  AT   1.500 HOURS   BASIN AREA =  1.0612 SQ. MI.
```

Pond Route CFS South Pond.

```
*
*ROUTE THROUGH SOUTH POND
ROUTE RESERVOIR        ID=10 HYD=501  IN ID=6  CODE=5
                       OUTFLOW  STORAGE   ELEV
                          0        0      5201
                          5      0.934    5202
                          6      3.359    5203
                         27      6.080    5204
                         43     11.813    5206
                         55     17.946    5208
                         64     24.492    5210
                         72     31.465    5212
                       1137     35.115    5213
                       3122     38.877    5214
                       7217     44.733    5215.5

* * * * * * * * * * * * * * * * *

  TIME      INFLOW     ELEV      VOLUME    OUTFLOW
  (HRS)     (CFS)     (FEET)    (AC-FT)    (CFS)

   .00        .00    5201.00      .000       .00
   .25        .00    5201.00      .000       .00
   .50        .00    5201.00      .000       .00
   .75        .00    5201.00      .000       .00
```

1.00	.00	5201.00	.000	.00
1.25	33.40	5201.09	.083	.44
1.50	765.45	5204.48	7.466	30.87
1.75	376.10	5208.00	17.961	55.02
2.00	260.12	5209.60	23.181	62.20
2.25	253.65	5211.30	29.018	69.19
2.50	111.23	5211.87	31.007	71.47
2.75	101.27	5212.03	31.560	99.77
3.00	96.55	5212.02	31.551	97.16
3.25	94.21	5212.02	31.542	94.50
3.50	92.98	5212.02	31.538	93.16
3.75	92.28	5212.02	31.535	92.37
4.00	91.53	5212.02	31.532	91.63
4.25	90.92	5212.02	31.530	91.00
4.50	90.41	5212.02	31.528	90.48
4.75	89.25	5212.02	31.525	89.60
5.00	87.11	5212.01	31.518	87.46
5.25	85.11	5212.01	31.511	85.42
5.50	83.14	5212.01	31.504	83.44
5.75	81.22	5212.01	31.498	81.53
6.00	79.33	5212.01	31.491	79.62
6.25	79.15	5212.01	31.490	79.22
6.50	77.58	5212.01	31.485	77.87
6.75	75.61	5212.00	31.479	75.96
7.00	73.65	5212.00	31.472	74.00
7.25	71.74	5212.00	31.465	72.07
7.50	69.83	5211.99	31.440	71.97
7.75	67.33	5211.97	31.373	71.89
8.00	64.56	5211.94	31.251	71.75
8.25	61.95	5211.89	31.077	71.56
8.50	59.47	5211.83	30.855	71.30
8.75	57.08	5211.75	30.589	70.99
9.00	54.98	5211.66	30.283	70.64
9.25	53.02	5211.56	29.943	70.25
9.50	51.16	5211.46	29.572	69.83
9.75	49.35	5211.34	29.172	69.37
10.00	47.61	5211.22	28.746	68.88
10.25	45.53	5211.09	28.293	68.36
10.50	42.74	5210.95	27.798	67.79
10.75	40.19	5210.79	27.260	67.18
11.00	37.86	5210.63	26.685	66.52
11.25	35.68	5210.45	26.077	65.82
11.50	33.68	5210.27	25.441	65.09
11.75	31.81	5210.08	24.780	64.33
12.00	30.13	5209.88	24.100	63.46
12.25	28.32	5209.67	23.404	62.50
12.50	26.19	5209.45	22.685	61.52
12.75	24.34	5209.22	21.947	60.50
13.00	22.73	5208.99	21.193	59.46
13.25	21.26	5208.76	20.430	58.41
13.50	19.99	5208.52	19.660	57.36
13.75	18.86	5208.29	18.887	56.29

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.00	17.84	5208.05	18.113	55.23
14.25	16.97	5207.80	17.346	53.83
14.50	16.05	5207.56	16.590	52.35
14.75	15.23	5207.32	15.847	50.89
15.00	14.54	5207.08	15.117	49.47
15.25	13.89	5206.84	14.404	48.07
15.50	13.37	5206.62	13.706	46.70
15.75	12.93	5206.40	13.027	45.37
16.00	12.51	5206.18	12.365	44.08
16.25	12.11	5205.97	11.721	42.74
16.50	11.78	5205.75	11.103	41.02
16.75	11.48	5205.55	10.513	39.37
17.00	11.23	5205.35	9.950	37.80

17.25	10.96	5205.16	9.414	36.31
17.50	10.78	5204.99	8.904	34.88
17.75	10.53	5204.82	8.418	33.52
18.00	10.42	5204.65	7.955	32.23
18.25	10.21	5204.50	7.515	31.00
18.50	10.06	5204.35	7.097	29.84
18.75	9.93	5204.22	6.698	28.73
19.00	9.81	5204.08	6.320	27.67
19.25	9.69	5203.96	5.962	26.09
19.50	9.59	5203.84	5.647	23.66
19.75	9.50	5203.74	5.377	21.58
20.00	9.35	5203.66	5.145	19.78
20.25	9.27	5203.58	4.945	18.24
20.50	9.16	5203.52	4.772	16.91
20.75	9.07	5203.46	4.623	15.76
21.00	8.97	5203.42	4.495	14.76
21.25	8.88	5203.38	4.383	13.91
21.50	8.82	5203.34	4.287	13.16
21.75	8.73	5203.31	4.203	12.51
22.00	8.65	5203.28	4.130	11.95
22.25	8.59	5203.26	4.067	11.46
22.50	8.54	5203.24	4.011	11.03
22.75	8.42	5203.22	3.962	10.66
23.00	8.39	5203.21	3.920	10.33
23.25	8.32	5203.19	3.882	10.04
23.50	8.23	5203.18	3.848	9.77
23.75	8.16	5203.17	3.818	9.54
24.00	8.11	5203.16	3.792	9.34
24.25	5.86	5203.14	3.748	9.00
24.50	4.85	5203.12	3.677	8.46
24.75	4.11	5203.09	3.601	7.87
25.00	3.50	5203.06	3.523	7.27
25.25	2.97	5203.03	3.446	6.67
25.50	2.39	5203.00	3.369	6.08
25.75	1.93	5202.97	3.290	5.97
26.00	1.56	5202.94	3.203	5.94
26.25	1.25	5202.90	3.109	5.90
26.50	1.01	5202.86	3.011	5.86
26.75	.81	5202.81	2.910	5.81
27.00	.66	5202.77	2.805	5.77
27.25	.53	5202.73	2.698	5.73
27.50	.43	5202.68	2.590	5.68
27.75	.34	5202.64	2.481	5.64

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
28.00	.28	5202.59	2.372	5.59
28.25	.22	5202.55	2.262	5.55
28.50	.18	5202.50	2.152	5.50
28.75	.14	5202.46	2.042	5.46
29.00	.12	5202.41	1.932	5.41
29.25	.09	5202.37	1.823	5.37
29.50	.08	5202.32	1.714	5.32
29.75	.06	5202.28	1.606	5.28

```
PEAK DISCHARGE =        100.431 CFS - PEAK OCCURS AT HOUR    2.80
MAXIMUM WATER SURFACE ELEVATION =      5212.027
MAXIMUM STORAGE =        31.5624 AC-FT       INCREMENTAL TIME=     .050000HRS

*
PUNCH HYD              ID=10
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:28:56
```

APPENDIX D

AS-BUILTS
AMOLE DEL NORTE STORM DRAINAGE FACILITIES
PHASE III C AND III E

AMOLE DEL NORTE
STORM DIVERSION FACILITIES
TIERRA BAYITA DRAINAGE FACILITIES

FOR

CITY OF ALBUQUERQUE - PUBLIC WORKS DEPARTMENT

PHASE IIIC

ALBUQUERQUE ★ NEW MEXICO 1706

AMOLE DEL NORTE
TIERRA BAYITA
DRAINAGE FACILITIES
PHASE III
LOMR
FEB. 2003

CITY OF ALBUQUERQUE, NEW MEXICO

JUNE 1995

GENERAL NOTES

1. ALL WORK DETAILED ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT "CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", 1986 INCLUDING UPDATE NO. 5 AND ADDITIONS IN THE SUPPLEMENTAL SPECIFICATIONS IN THE CONTRACT DOCUMENTS.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. ALL EXISTING UTILITIES SHOWN HERE WERE OBTAINED AS ACCURATELY AS POSSIBLE FROM RECORD DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT, MAINTAIN IN SERVICE, AND VERIFY EXACT LOCATIONS OF ALL AFFECTED UTILITIES DURING CONSTRUCTION OF THIS PROJECT.
4. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WHEN WORKING NEAR THEIR SYSTEMS. TWO DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE-CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.
5. THE CONTRACTOR SHALL CONFINE HIS WORK TO WITHIN THE CONSTRUCTION LIMITS AND/OR RIGHTS-OF-WAY TO PRESERVE EXISTING VEGETATION AND PRIVATE PROPERTY. OVERNIGHT PARKING OF CONTRACTOR'S EQUIPMENT SHALL NOT OBSTRUCT ACCESS ROADS OR DESIGNATED TRAFFIC LANES.
6. ACCESS TO ADJACENT BUSINESS AND RESIDENCES SHALL BE KEPT OPEN AT ALL TIMES. TEMPORARY ACCESS CLOSURES, IF REQUIRED, SHALL BE SCHEDULED AT LEAST TWENTY-FOUR (24) HOURS IN ADVANCE WITH PROPERTY OWNER AND APPROVED BY THE PROJECT MANAGER.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMUM AMOUNT OF DELAY.
8. CONTRACTOR IS RESPONSIBLE FOR SUPPORTING ANY EXISTING UTILITIES EXPOSED DURING REQUIRED EXCAVATIONS.
9. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEY DEPARTMENT. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATION OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
10. WHEN MATCHING NEW PAVING TO EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVING ON A RIGHT ANGLE OR AS DIRECTED BY THE PROJECT MANAGER TO REMOVE ANY BROKEN, RAVELED, OR CRACKED PAVING. THE COST OF THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
11. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED IN KIND BY CONTRACTOR. REPLACEMENT SHALL BE OF THE SAME QUALITY MATERIAL AND IN THE SAME LOCATION AS EXISTING OR AS INDICATED BY THIS PLAN SET.
12. CURB AND GUTTER SHOWN AS EXISTING AND NOT TO BE REMOVED UNDER THIS CONTRACT, WHICH IS DAMAGED OR DISPLACED BY THE CONTRACTOR OR HIS SUBCONTRACTORS, SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
13. ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
14. TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE CITY ENGINEER.
15. WATER SHUT-OFF PLANS ARE FOR CITY USE ONLY. CONTRACTOR IS REQUIRED TO NOTIFY WATER SYSTEMS THREE (3) WORKING DAYS PRIOR TO ANY REQUIRED OPERATIONS (857-8200). WATER DISTRIBUTION SYSTEM SHUT-OFFS AND TURN-ONS SHALL BE AS PER SECTION 19.3 OF THE GENERAL CONDITIONS.
16. REMOVALS SHALL BE DISPOSED OF OFF-SITE AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE MATERIAL IN AN ENVIRONMENTALLY ACCEPTABLE MANNER AT A LOCATION ACCEPTABLE TO THE PROJECT MANAGER. THERE WILL BE NO DIRECT COMPENSATION FOR THIS WORK.
18. CONTRACTOR SHALL PROVIDE A TEMPORARY STORM DRAINAGE SYSTEM (SUBJECT TO APPROVAL BY THE CITY HYDROLOGY DIVISION AND THE CITY CONSTRUCTION PROJECT MANAGER) FOR ALL WORK ON THIS PROJECT. THE TEMPORARY SYSTEM SHALL BE CAPABLE OF SAFELY CONVEYING EXISTING RUNOFF ACROSS THE PROJECT AND DISCHARGING INTO THE EXISTING DRAINAGE SYSTEM.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A TOP SOIL DISTURBANCE PERMIT PRIOR TO ISSUANCE OF A NOTICE TO PROCEED, AS PER REGULATION NO. 8 OF THE ALBUQUERQUE - BERNALILLO COUNTY AIR QUALITY CONTROL BOARD FOR AIRBORNE PARTICULATE MATTER - ORDINANCE 6-18 R01974, AS AMENDED. STRICT ADHERENCE TO THE ORDINANCE WILL BE REQUIRED. RE-SEEDING REQUIREMENTS FOR NATIVE GRASSES IN SANDY SOILS SHALL BE FOLLOWED AS PER CITY OF ALBUQUERQUE PUBLIC WORKS DEPT. SECTION 1012 - NATIVE GRASS SEEDING.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO LANDSCAPING AND IRRIGATION SYSTEMS WITHIN WORK AREA NOT COVERED IN THE PLANS.
21. ALL STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE UNLESS OTHERWISE NOTED.
22. THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SCHEDULE TO THE CITY CONSTRUCTION COORDINATION DIVISION. TWO (2) DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (768-2551) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF SPECIFICATIONS.

TTLG110.DWG

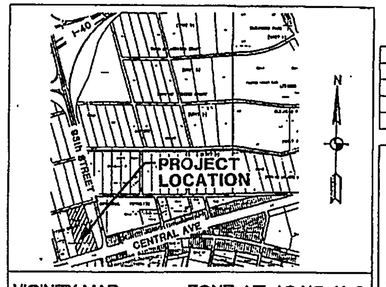
INDEX TO DRAWINGS

NO.	DESCRIPTION
1	TITLE SHEET
2	SHEET LAYOUT & LEGEND
3	DRAINAGE BASIN MAP -EXISTING
4	DRAINAGE BASIN MAP - ULTIMATE
5	NORTH AND SOUTH POND - EXISTING HYDROLOGY INFORMATION
6	NORTH POND - ULTIMATE DEVELOPMENT HYDROLOGY INFORMATION
7	SOUTH POND - ULTIMATE DEVELOPMENT HYDROLOGY INFORMATION
8	POND SYSTEM PLAN
9	98TH ST. STA. 3-85 TO STA. 13+66 STORM DRAIN
10	MISCELLANEOUS PROFILES & SECTIONS I
11	MISCELLANEOUS PROFILES & SECTIONS II
12	SOUTH POND OUTLET DETAILS
13	TRAFFIC CONTROL & MISCELLANEOUS DETAILS
14 & 15	TRAFFIC CONTROL PLANS

NOT INCLUDED IN THIS SUBMITTAL

RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.

MRH 12-15-99



VICINITY MAP ZONE ATLAS NO. K-9

MAP
of the
AMOLE DEL NORTE PHASE IIIC DETENTION DAMS

CITY OF ALBUQUERQUE, APPLICANT, LOCATED IN BERNALILLO COUNTY, STATE OF NEW MEXICO.

SCALE OF MAP, 1 IN. = 50 FEET.
THE UNDERSIGNED, CITY OF ALBUQUERQUE, CLAIMANT, WHOSE POST OFFICE ADDRESS IS: P.O. BOX 1293, CITY OF ALBUQUERQUE, COUNTY OF BERNALILLO, STATE OF NEW MEXICO, HAS CAUSED TO BE LOCATED BY A QUALIFIED REGISTERED PROFESSIONAL ENGINEER THE AMOLE DEL NORTE PHASE IIIC DETENTION DAMS AS HEREINAFTER DESCRIBED AND INDICATED, HEREBY MAKES THESE SEVERAL STATEMENTS RELATIVE THERETO AND OFFERS THESE MAPS AND STATEMENTS FOR ACCEPTANCE AND FILING IN COMPLIANCE WITH THE LAWS OF THE STATE OF NEW MEXICO.

THE HEADWALL OF THE OUTLET PIPE IS LOCATED IN TOWNSHIP 10N, RANGE 2E, N.M.P.M., AT A POINT WHOSE MODIFIED STATE PLANE COORDINATE NM CENTRAL ZONE IS STATE PLANE GEODETIC COORDINATES ARE N = 1,482,131.628 S = 352,468.031

AMOLE DEL NORTE PHASE IIIC DETENTION DAMS HAVE THE FOLLOWING PROPERTIES:

	NORTH POND	SOUTH POND
MAXIMUM HEIGHT ABOVE FOUNDATION	9 FT	7.5 FT
MAXIMUM LENGTH	460 FT	632 FT
MAXIMUM WIDTH AT BASE	137 FT	55 FT
CREST WIDTH	18 FT	10 FT
SLOPE OF UPSTREAM FACE	3H:1V	3H:1V
SLOPE OF DOWNSTREAM FACE	3H:1V	3H:1V
ELEVATION OF SPILLWAY CREST	5223	5212
ELEVATION OF BOTTOM OF OUTLET CONDUIT AT UPSTREAM FACE OF DAM	5204.21	5201.00
WIDTH OF SPILLWAY	18 FT	10 FT
DISCHARGE CAPACITY OF SPILLWAY AT TOP OF DAM	4715 CFS	7096 CFS
OUTLET CONDUIT	30" RCP	36" RCP
		EXISTING WITH ORIFICE PLATE/ ULTIMATE WITHOUT ORIFICE PLATE
OUTLET CONDUIT CAPACITY	70 CFS	13 CFS/ 98 CFS
EVACUATION TIME	19.3 HRS	64.4 HRS/ 19.8 HRS
DRAINAGE AREA	510.1 AC.	679.2 AC.
HAZARD CLASSIFICATION	C	C

BOTH DAMS ARE FLOOD CONTROL DAMS. AN ELEVATION-CAPACITY-DISCHARGE TABLE IS SHOWN ON SHEET 5. DEAD STORAGE BELOW RESERVOIR FLOW-LINE EQUALS ZERO ACRE-FEET
THE TOTAL ESTIMATED COST OF AMOLE DEL NORTE PHASE IIIC DETENTION DAMS IS $_____

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
I, STEVE ROBERG, PE, ON BEHALF OF THE CITY OF ALBUQUERQUE, BEING FIRST DULY SWORN, UPON MY OATH, STATE THAT I HAVE READ AND EXAMINED THE ACCOMPANYING MAPS AND STATEMENTS (MAPS AND STATEMENTS CONSISTING OF 15 SHEETS) AND KNOW THE CONTENTS THEREOF AND REPRESENTATIONS THEREON, AND STATE THAT THE SAME ARE TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Steve Roberg
CLAIMANT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 30th DAY OF May 1995

Elvira G. Lucero
NOTARY PUBLIC

MY COMMISSION EXPIRES 10-15-97 (SEAL)

OFFICIAL SEAL
ELVIRA G. LUCERO
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 10-15-97

STATE OF NEW MEXICO,
COUNTY OF BERNALILLO
I, MARK HOLSTAD, P.E., BEING FIRST DULY SWORN, UPON MY OATH STATE THAT I AM THE REGISTERED PROFESSIONAL ENGINEER QUALIFIED IN CIVIL/HYDRAULIC ENGINEERING AND THAT THE ACCOMPANYING PLANS AND SPECIFICATIONS OF THE AMOLE DEL NORTE PHASE IIIC DETENTION DAMS (CONSISTING OF 15 SHEETS) WERE PREPARED BY ME OR UNDER MY DIRECTION AND ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED PROFESSIONAL ENGINEER

LICENSE NO. 7288 (SEAL)

MARK S. HOLSTAD NEW MEXICO No. 7288 REGISTERED PROFESSIONAL ENGINEER
5-24-95

SUBSCRIBED AND SWORN TO BEFORE ME THIS 24th DAY OF May 1995

Constance R. Saxton
NOTARY PUBLIC

MY COMMISSION EXPIRES 11-15-97 (SEAL)

OFFICIAL SEAL
CONSTANCE R. SAXTON
NOTARY PUBLIC-STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State
My Commission Expires 11-15-97

STATE OF NEW MEXICO
COUNTY OF SANTA FE
I HEREBY CERTIFY THAT THE ACCOMPANYING PLANS AND SPECIFICATIONS HAVE BEEN DULY EXAMINED BY ME AND APPROVED AS TO FORM AND CONTENT, AND WERE DULY ACCEPTED FOR FILING ON THE 16th DAY OF June 1995

for Gerald T. Lopez, PE, Assistant State Engineer
STATE ENGINEER

REV	SHEETS	CITY ENGR	DATE	USER DEPT.	DATE	USER DEPT.	DATE

APPROVAL OF REVISIONS

MARK S. HOLSTAD NEW MEXICO No. 7288 REGISTERED PROFESSIONAL ENGINEER
5-24-95

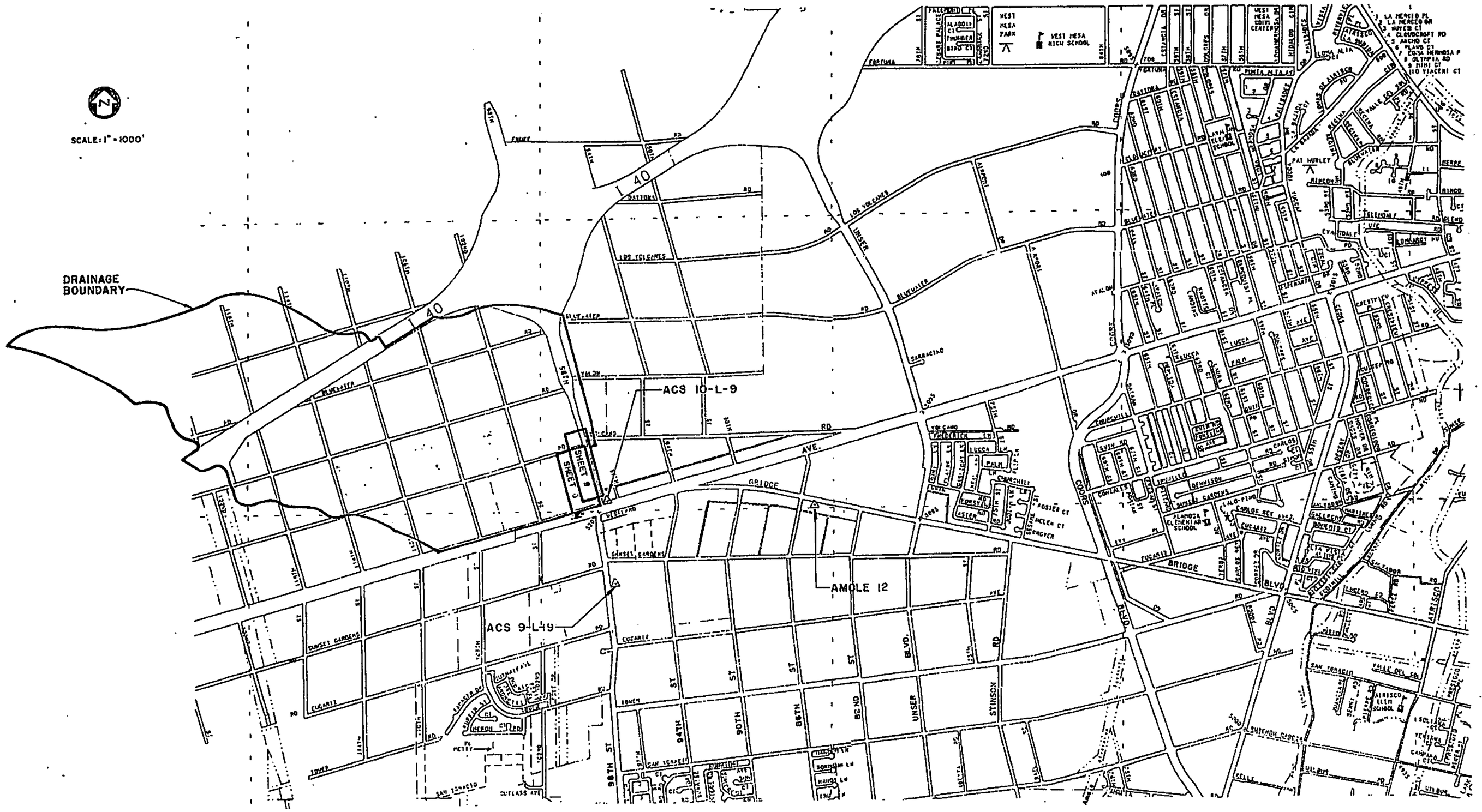
Greiner, Inc.
5971 JEFFERSON BLVD. NE
SUITE 101
ALBUQUERQUE, NM 87109
(505) 345-3999

APPROVED FOR CONSTRUCTION
5/24/95

DRAWING NO.
CITY PROJECT # 4076.92

SHEET 1 OF 15

FEB 06 2009
HYDROLOGY


SCALE: 1" = 1000'
DRAINAGE BOUNDARY
ACS 10-L-9
ACS 9-L49
AMOLE 12
SHEET 8
SHEET 9
BRIDGE
BLVD.
AVE.
98TH ST
94TH ST
90TH ST
86TH ST
UNSER
COORS
LOS VOLCANES
NATIONAL
DATIONAL
ATALAYA
ALBUQUERQUE
WEST MESA PARK
WEST MESA HIGH SCHOOL
PATRICIA ELEMENTARY SCHOOL
PAT MURLEY
SUNSET GARDENS
EUCARITE
DUTLASS AVE
SAN TORCUATO
SAN ISIDRO
SAN FRANCISCO
SAN TERESITA
SAN ANTONIO
SAN PEDRO
SAN PEDRO
SAN ANTONIO
SAN FRANCISCO
SAN TERESITA
SAN ISIDRO
SAN TORCUATO
SUNSET GARDENS
EUCARITE
BRIDGE
BRIDGE
ALTAR SOD
ALTAR SOD
ALTAR SOD

NOT FOR CONSTRUCTION
FOR INFORMATION ONLY

MAP IS A COMPOSITE OF FEMA FLOODWAY MAPS, ALBUQUERQUE, NEW MEXICO, BERNALILLO COUNTY PANELS 26, 27, & 32.

LEGEND

109 BASIN IDENTIFICATION

BASIN BOUNDARY

RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.

12-1-97

Greiner, Inc.

AS BUILT INFORMATION
CONTRACTOR CHAVA TRUCKING
WORK STAKED BY CGA DATE
SURVEYORS AS-BUILT BY CGA DATE
FIELD CHECK BY CGA DATE
VERIFICATION BY CGA DATE
DRAWINGS BY BESE DATE 8/97
CORRECTED BY BESE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
ACS 104-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,492,186.303 E = 362,782.378
ELEV = 5,204.455

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
MARK S. HOLLIS NEW MEXICO 7977 REGISTERED PROFESSIONAL ENGINEER
4-25-95

NO.	DATE	REMARKS	BY

REVISIONS

DESIGN
DESIGNED BY SKJ DATE 3/94
DRAWN BY JAK, MLB DATE 5/94
CHECKED BY MSH DATE 5/94

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

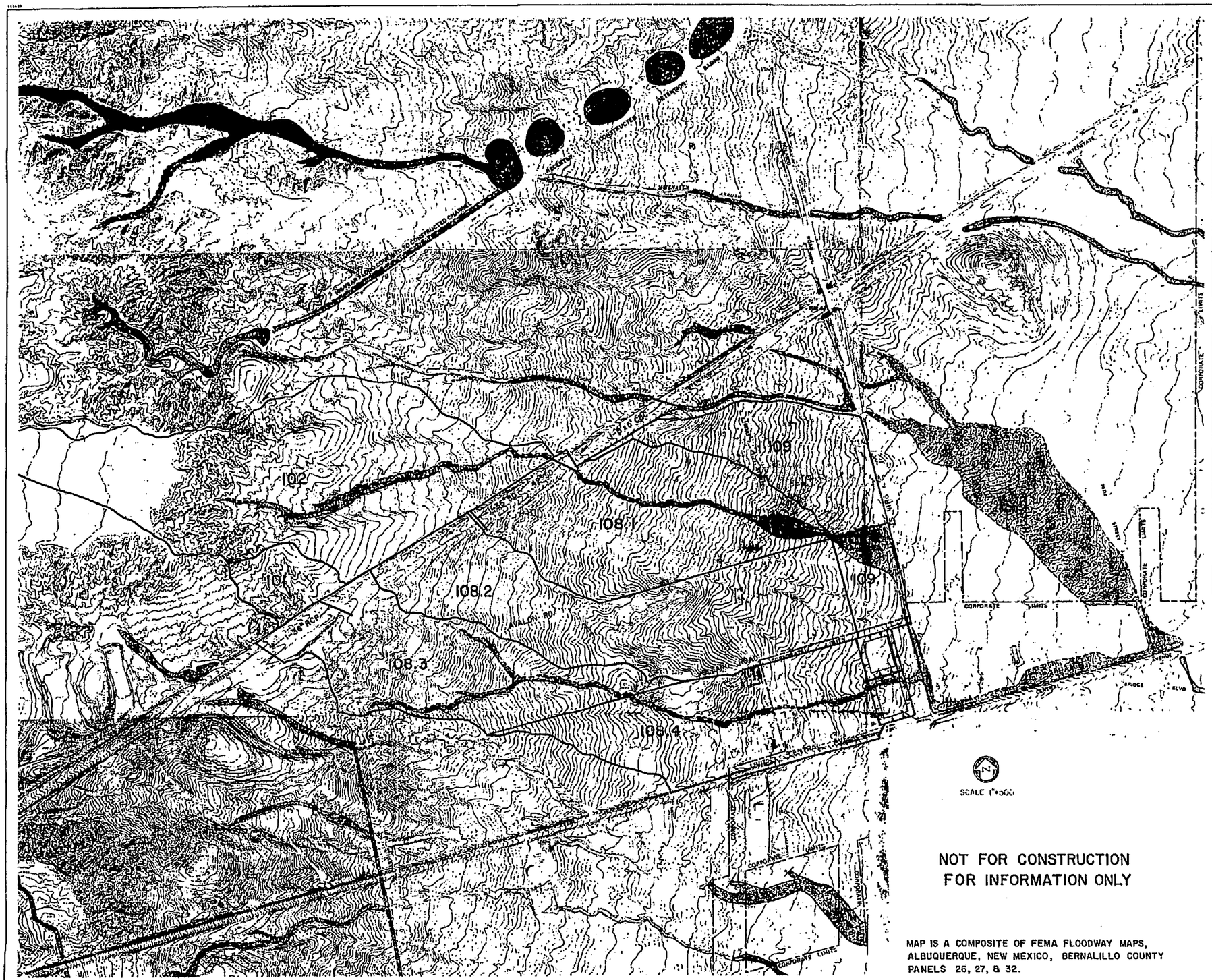
TITLE: ANOLE DEL NORTE STORM DIVERSION FACILITIES—PHASE IIIC
TIERRA BANITA DRAINAGE FACILITIES

DRAINAGE BASIN MAP – EXISTING

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					

PROJECT NO.	MAP NO.	SHEET	OF
4076.92	K-9	3	15

FEB 06 2009



NOT FOR CONSTRUCTION
FOR INFORMATION ONLY

MAP IS A COMPOSITE OF FEMA FLOODWAY MAPS, ALBUQUERQUE, NEW MEXICO, BERNALILLO COUNTY PANELS 26, 27, & 32.

LEGEND

109 BASIN IDENTIFICATION

BASIN BOUNDARY

RECORD DRAWINGS
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12-15-97

Greiner, Inc.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

BENCH MARKS

ACS 1041-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,483,065.303 E = 353,792.375
ELEV = 5204.425

AS BUILT INFORMATION

FIELD DATA BY CHAVA TRUCKING DATE
FIELD VERIFICATION BY CDA DATE
DRAWING CORRECTION BY CDA DATE 8/97
MICRO-FILM INFORMATION RECORDED BY DATE
NO.

ENGINEER'S SEAL

4-25-95

NO.	DATE	REMARKS	BY

REVISIONS

DESIGN

DESIGNED BY SKJ DATE 3/94
DRAWN BY JAK, MLS DATE 5/94
CHECKED BY MSH DATE 5/94

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

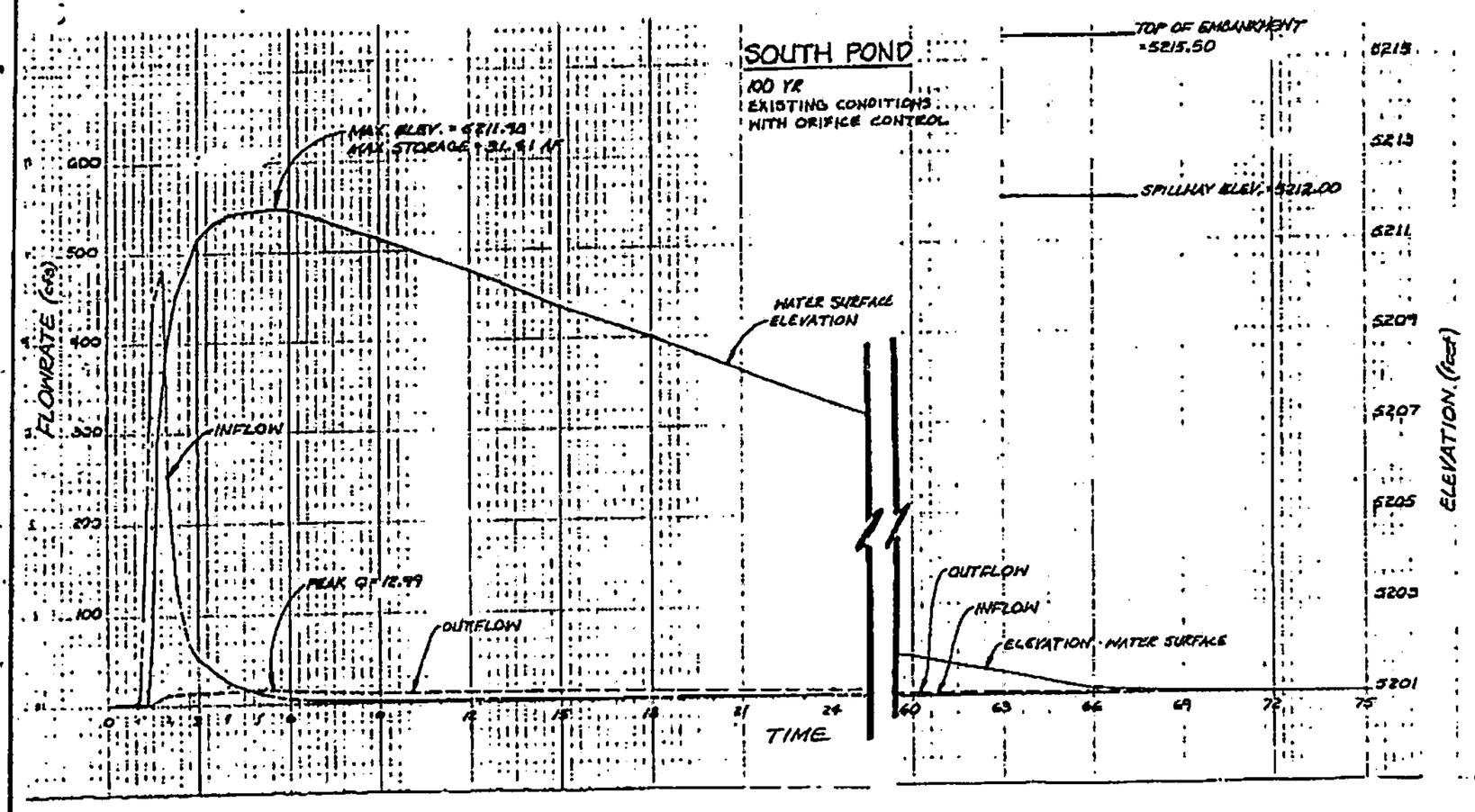
TITLE AMOLE DEL NORTE STORM DIVERSION FACILITIES—PHASE IIIC
TIERRA BAYITA DRAINAGE FACILITIES

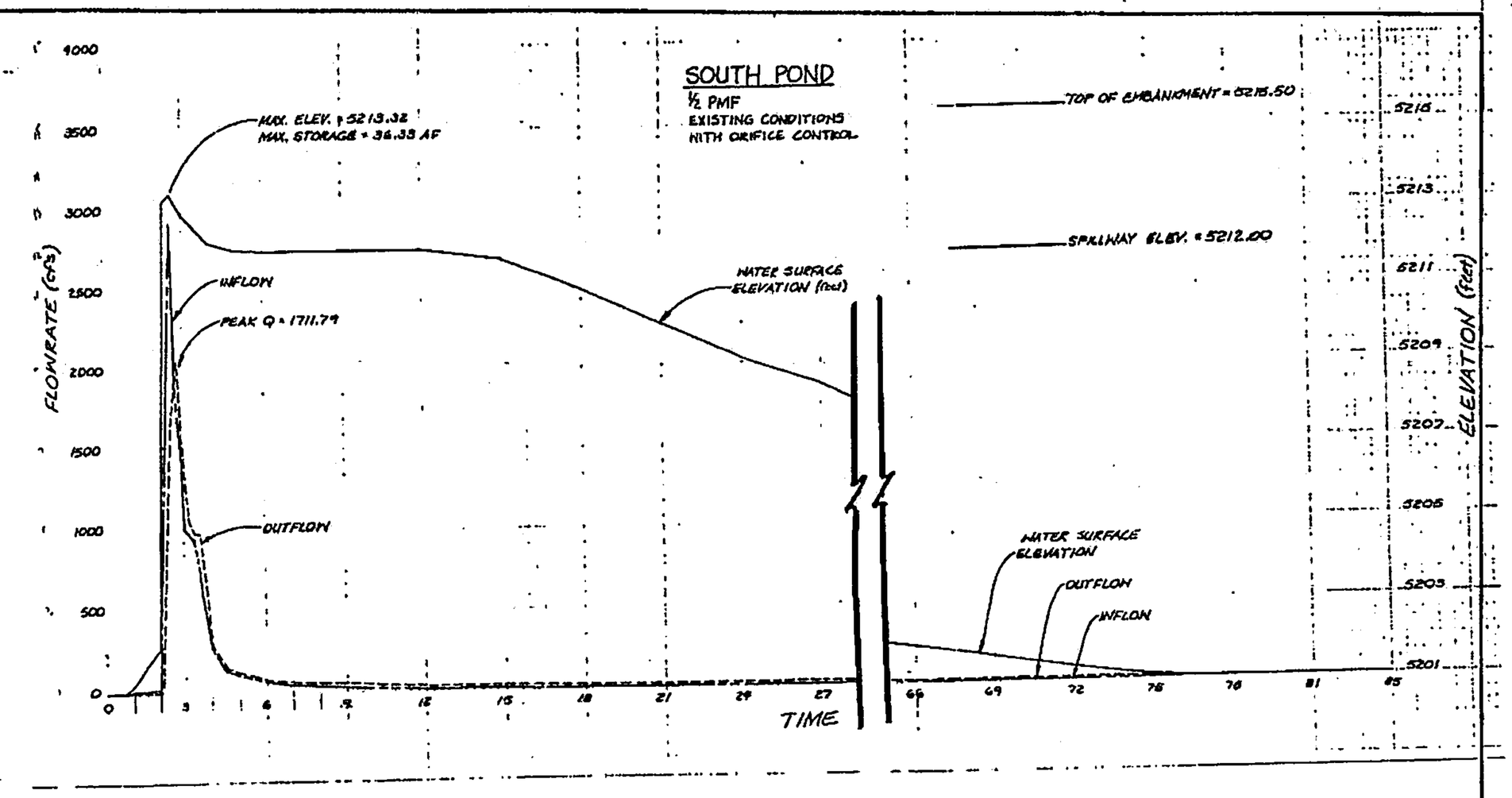
DRAINAGE BASIN MAP—ULTIMATE

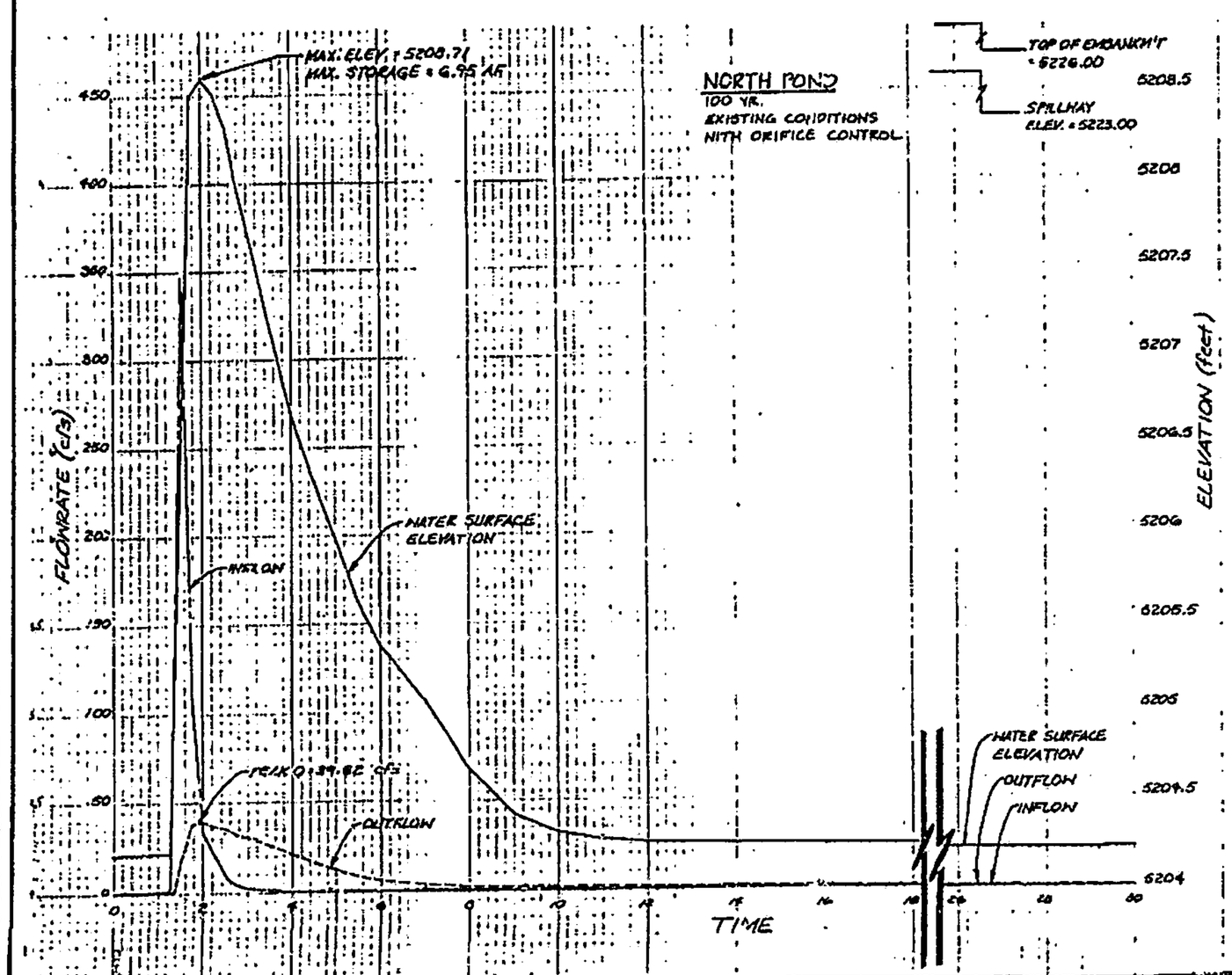
APPROVALS	ENGINEER	DATE	APPROVALS	PE SEAL	DATE
DIV CHAIRMAN			MUN		
TRANSPORTATION			CONSTRUCTION		
HYDROLOGY					

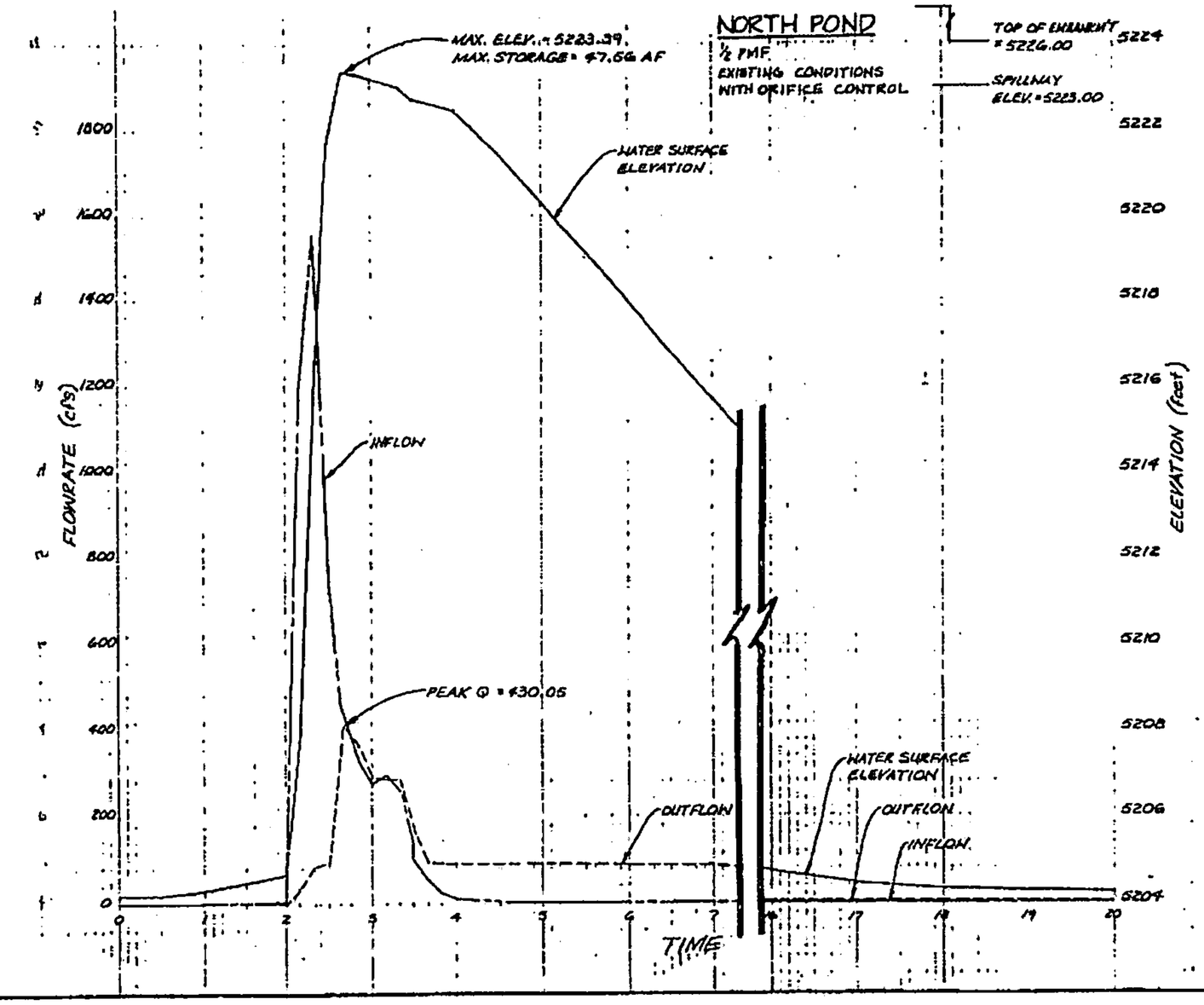
PROJECT NO. 4076.92 | MAP NO. K-9 | SHEET 4 OF 15

FEB 06 2009









MARK S. HOLSTAD
NEW MEXICO
No. 7248
4-25-95

RECORD DRAWINGS
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12-15-97

Greiner, Inc.

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

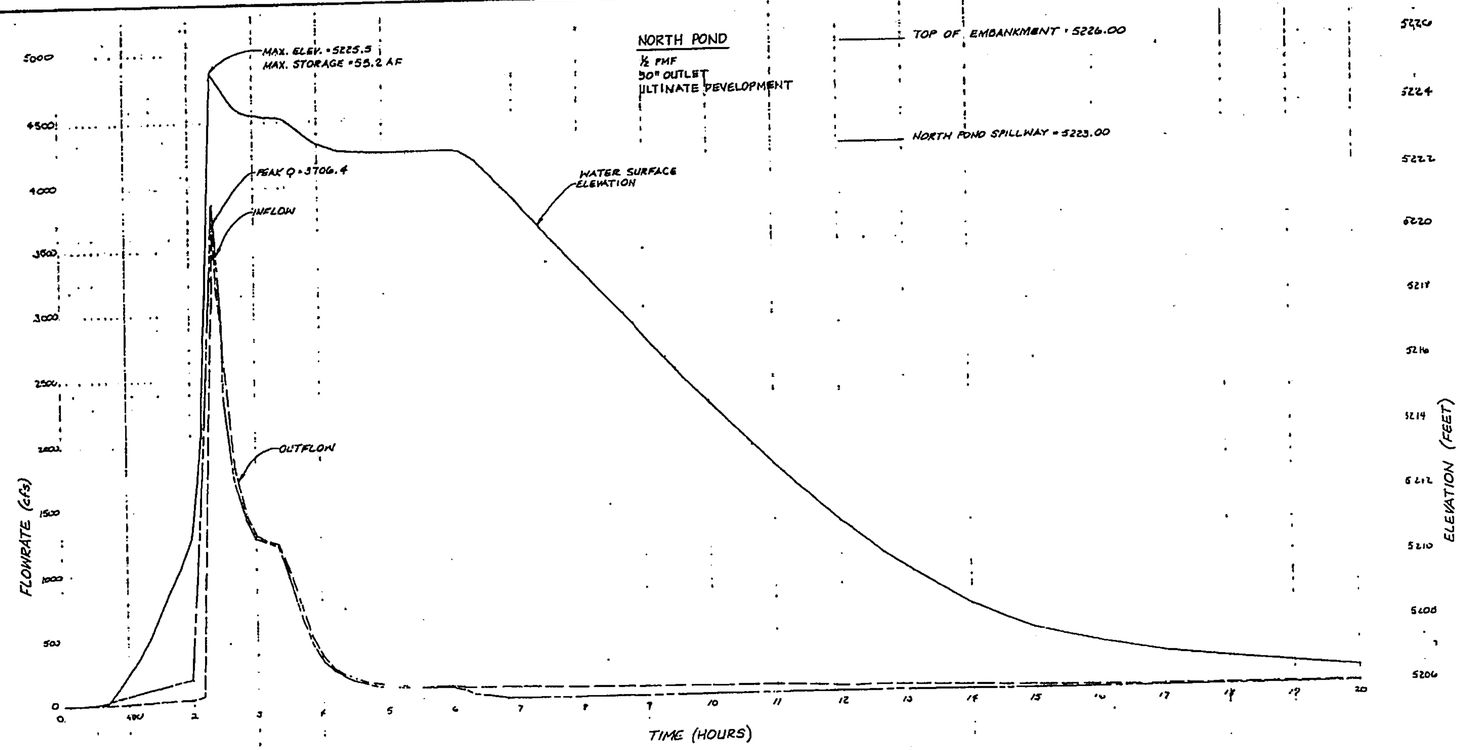
TITLE AMOLE DEL NORTE STORM DIVERSION FACILITIES–PHASE IIIC
TIERRA BAYITA DRAINAGE FACILITIES

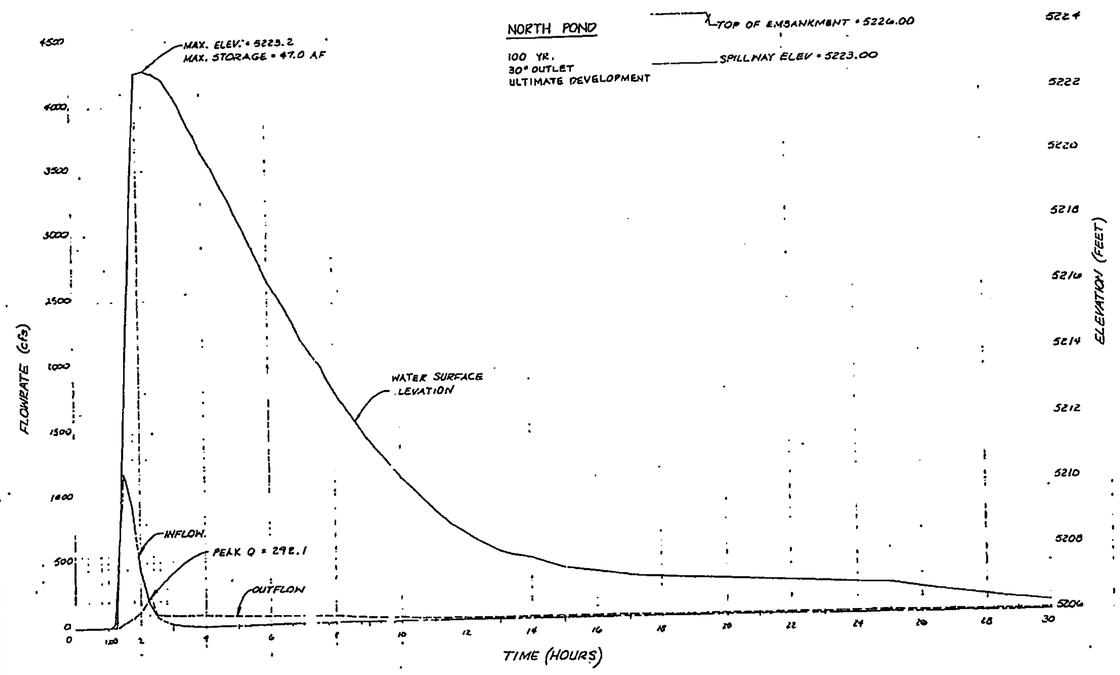
NORTH & SOUTH POND – EXISTING HYDROLOGY INFORMATION

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C Chairman	J.G. Lovato	5-12-95	Water	N/A	
Transportation	N/A	4-10-95	Wastewater	N/A	
Hydrology	S. Boberg	4-24-95			

DRAWING NO. 4076.92 | MAP NO. K-9 | SHEET 5 OF 15

FEB 06 2009





RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.

12-15-97

Greiner, Inc.

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES–PHASE IIIC
TIERRA BAYTA DRAINAGE FACILITIES

NORTH POND – ULTIMATE DEVELOPEMENT HYDROLOGY INFORMATION

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C Chairman	B.G. Lindsley	5-12-95	Water	N/A	
Transportation	N/A	4-24-95	Wastewater	N/A	
Hydrology	S. Boleng	4-24-95			

DRAWING NO. 4076.92 | MAP NO. K-9 | SHEET 6 OF 15

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY: S.K.J. DATE: 3/94
DRAWN BY: J.L.K. DATE: 3/94
CHECKED BY: M.S.H. DATE: 5/94 PROJECT

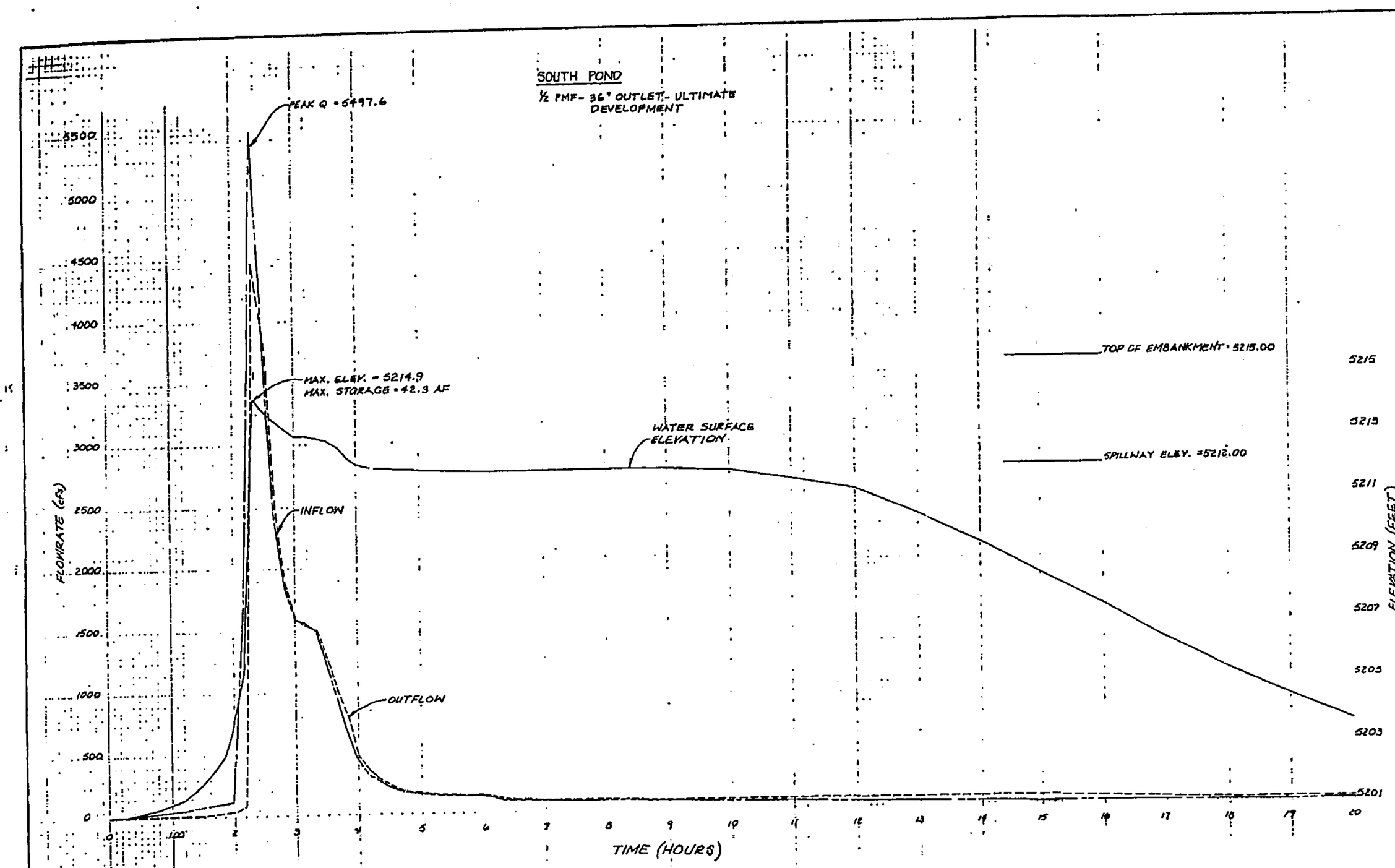
ENGINEER'S SEAL
MARK S. HOLSINGER
NEW MEXICO
No. 7288
4-25-95

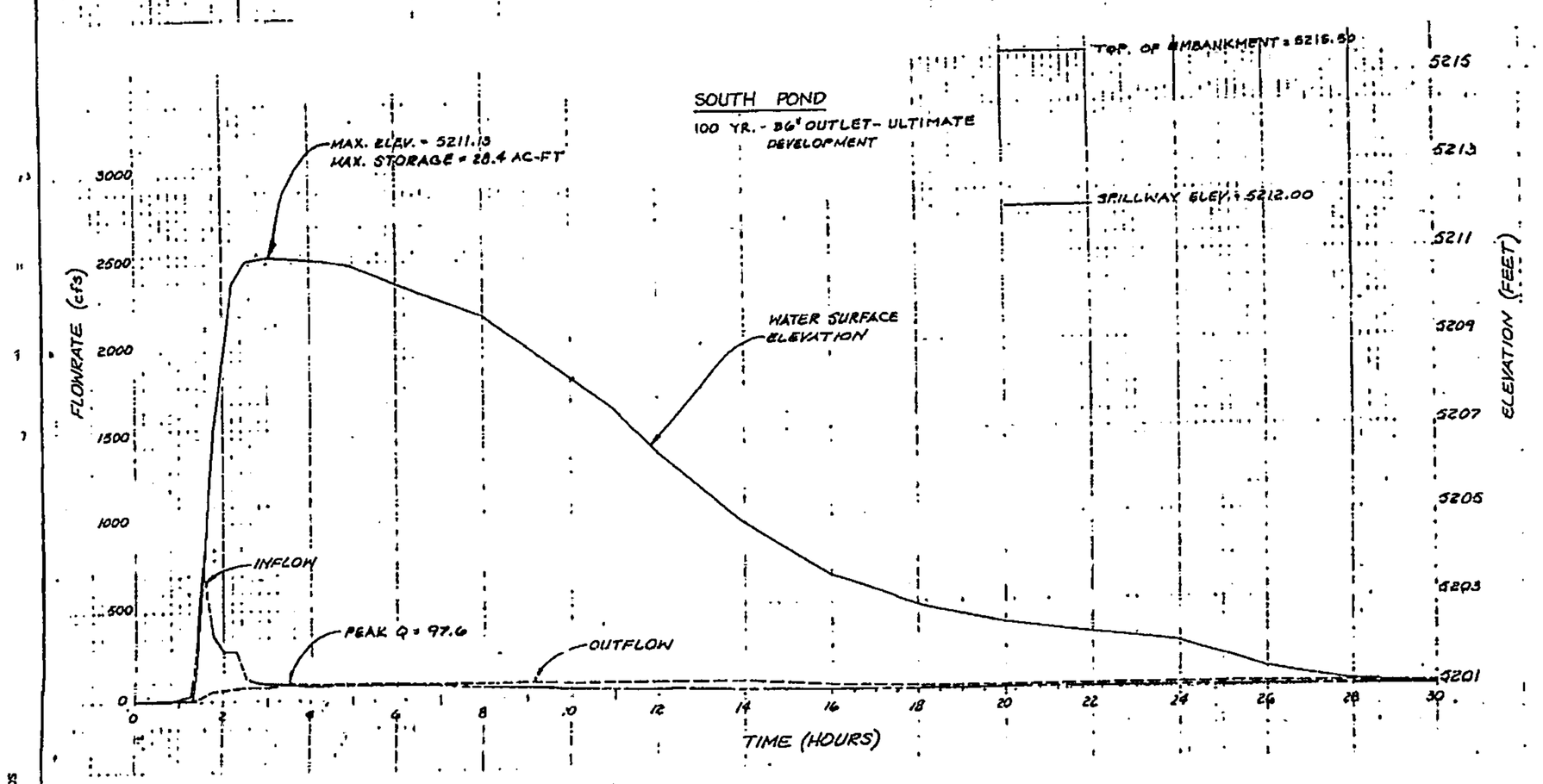
AS BUILT INFORMATION
CONTRACTOR CHAVA TRUCKING DATE
STAKED BY CGA DATE
FIELD VERIFIED BY CGA DATE
REDLINE REVISION BY CGA DATE 8/97
CORRECTED BY LJESS
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 1-1-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERN VTURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE
N = 1,482,063.203 E = 352,782.378
ELEV = 5204.429

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

FEB 06 2009





RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.

12-15-97

Greiner, Inc.

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

TITLE ANOLE DEL NORTE STORM DIVERSION FACILITIES—PHASE IIIC
TIERRA BAYITA DRAINAGE FACILITIES

SOUTH POND – ULTIMATE DEVELOPEMENT HYDROLOGY INFORMATION

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C Chairman		5-12-95	Water		
Transportation		4-26-95	Wastewater		
Hydrology	S. Boleng	4-24-95			

DRAWING NO. 4076.92 | MAP NO. K-9 | 7 | 15

AS BUILT INFORMATION
CONTRACTOR CHAVA TRUCKING DATE
SURVEY BY CGA DATE
PREPARED BY CGA DATE
FIELD VERIFIED BY CGA DATE
CONTRACTOR BY UASG DATE 8/97
CORRECTED BY UASG
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 10-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 86th STREET AND CENTRAL AVENUE.
N = 1,482,085.303 E = 352,742.378
ELEV = 5254.425

SURVEY INFORMATION
FIELD NOTES

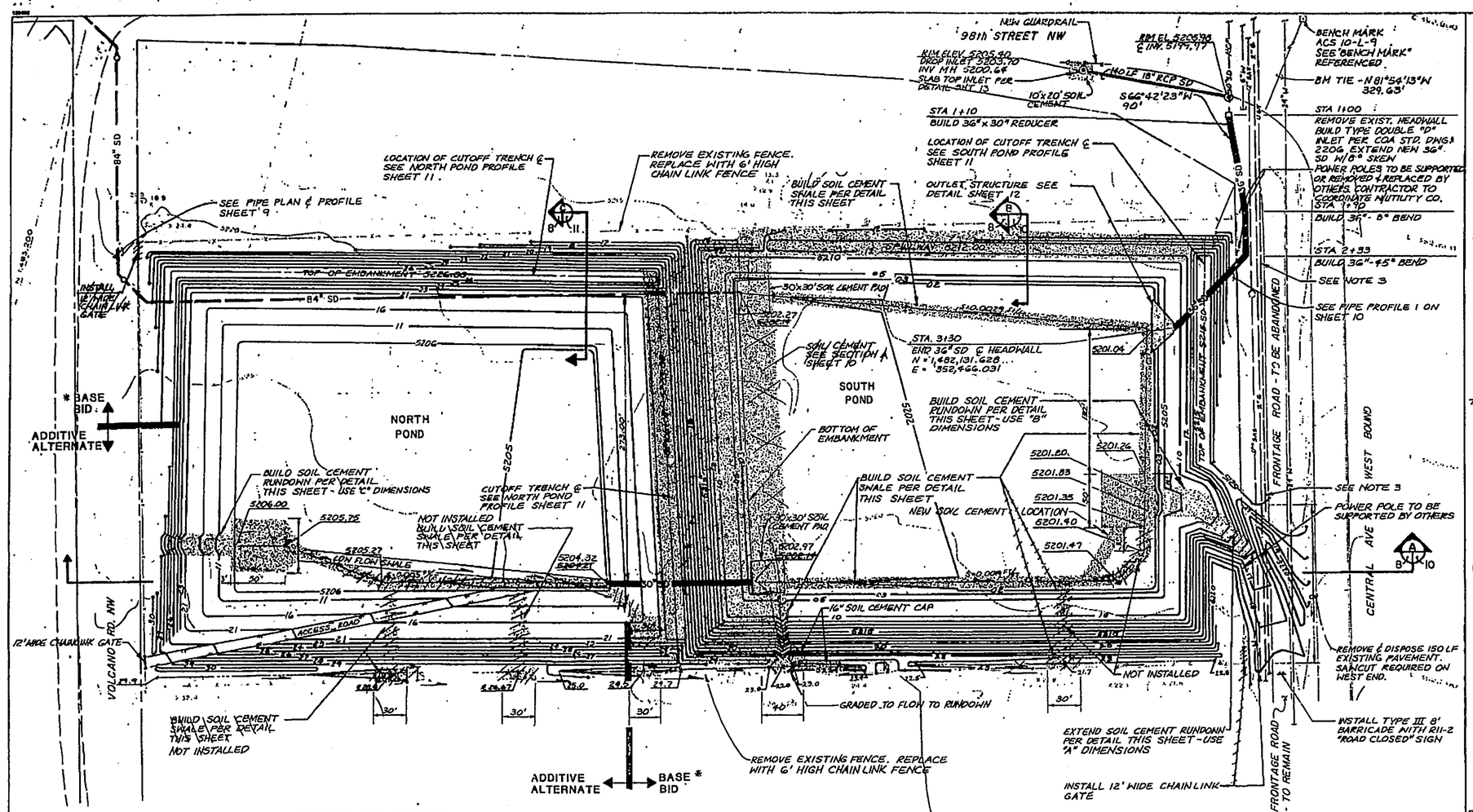
NO.	BY	DATE

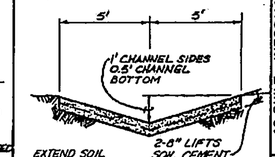
ENGINEER'S SEAL
4-25-95
PROJECT NO.

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY: S.K.J. DATE: 10/95
DRAWN BY: J.A.K. DATE:
CHECKED BY: DATE:

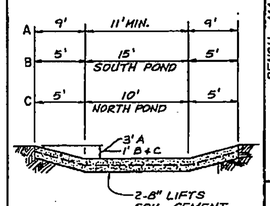
FEB 06 2009





SOIL CEMENT SWALE

NTS



SOIL CEMENT RUNDOWN

NTS

NOTE:

1. STATIONING IS ALONG ℄ OF PIPES
2. EARTHWORK PROCEDURES ARE DESCRIBED IN SECTIONS 501 AND 601 OF THE SPECIFICATIONS
3. CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXCAVATING IN AREA OF EXISTING FIBER OPTICS CABLE.

HAZARD CLASS: C-HIGH
SIZE: SMALL

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT SHALL LOCATE A NEW PERMANENT MONUMENT AT NORTHEAST CORNER OF PROJECT. CONTRACTOR TO COORDINATE WITH CITY.

ELEVATION/STORAGE/DISCHARGE TABLE					
North Pond			South Pond		
Elevation (ft.)	Storage (Ac. ft.)	Outflow (cfs)	Elevation (ft.)	Storage (Ac. ft.)	Outflow (cfs)
5204.21	0	0	5201	0	0
5205	0.287	3	5202	0.934	5
5206	1.532	13	5203	3.359	6
5207	3.486	25	5204	6.080	27
5209	7.543	42	5206	11.813	43
5211	11.939	52	5208	17.946	55
5213	16.589	64	5210	24.492	64
5215	21.805	72	5212*	31.465	72
5217	27.301	80	5213	35.115	1137
5219	33.189	88	5214	38.877	3122
5221	39.483	90	**5215.50	44.733	7217
5223*	46.197	91			
5224	49.715	968			
5225	53.343	2615			
5226**	57.082	4809			

* SPILLWAY ELEVATION

** TOP OF DAM ELEVATION

*BASE BID

THE BASE BID INCLUDES ALL ITEMS SHOWN ON THIS SHEET EXCEPT NORTH POND EXCAVATION TO ELEV. 5206. IF THE BASE BID ONLY IS CONSTRUCTED, AREAS WITHIN NORTH POND BELOW ELEV. 5223 SHALL BE FILLED PER SECTION 601 OF THE SPECIFICATIONS AND GRADED TO ALLOW DRAINAGE OVER THE CENTRAL EMBANKMENT AT ELEV. 5223. SEE SECTIONS A & C FOR CLARIFICATION.

RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.

MAH 12-15-97

Greiner

NO.	DATE	REMARKS	BY

REVISIONS

DESIGN

DESIGNED BY SKT DATE 4-94
DRAWN BY JAK DATE 4-94
CHECKED BY MSH/PD DATE 2-95

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE
1860	GREINER	8-7/90
1863	GREINER	7-13/90
1868	GREINER	12/90
1863	GREINER	12/90
1863	GREINER	1/91
1910	GREINER	8-10/91

BENCH MARKS

ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,482,065.003 E = 353,792.378
ELEV = 5204.425

AS BUILT INFORMATION

CONTRACTOR CHAVA TRUCKING DATE
WORK STAKED BY COA DATE
INSPECTED BY COA DATE
ACCEPTANCE BY COA DATE
VERIFICATION BY COA
CORRECTED BY UESG DATE 6/97
MICRO-FILM INFORMATION
RECORDED BY DATE
NO

ENGINEER'S SEAL

MARK S. HOLSING NEW MEXICO No. 7268 REGISTERED PROFESSIONAL ENGINEER
4-25-95

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

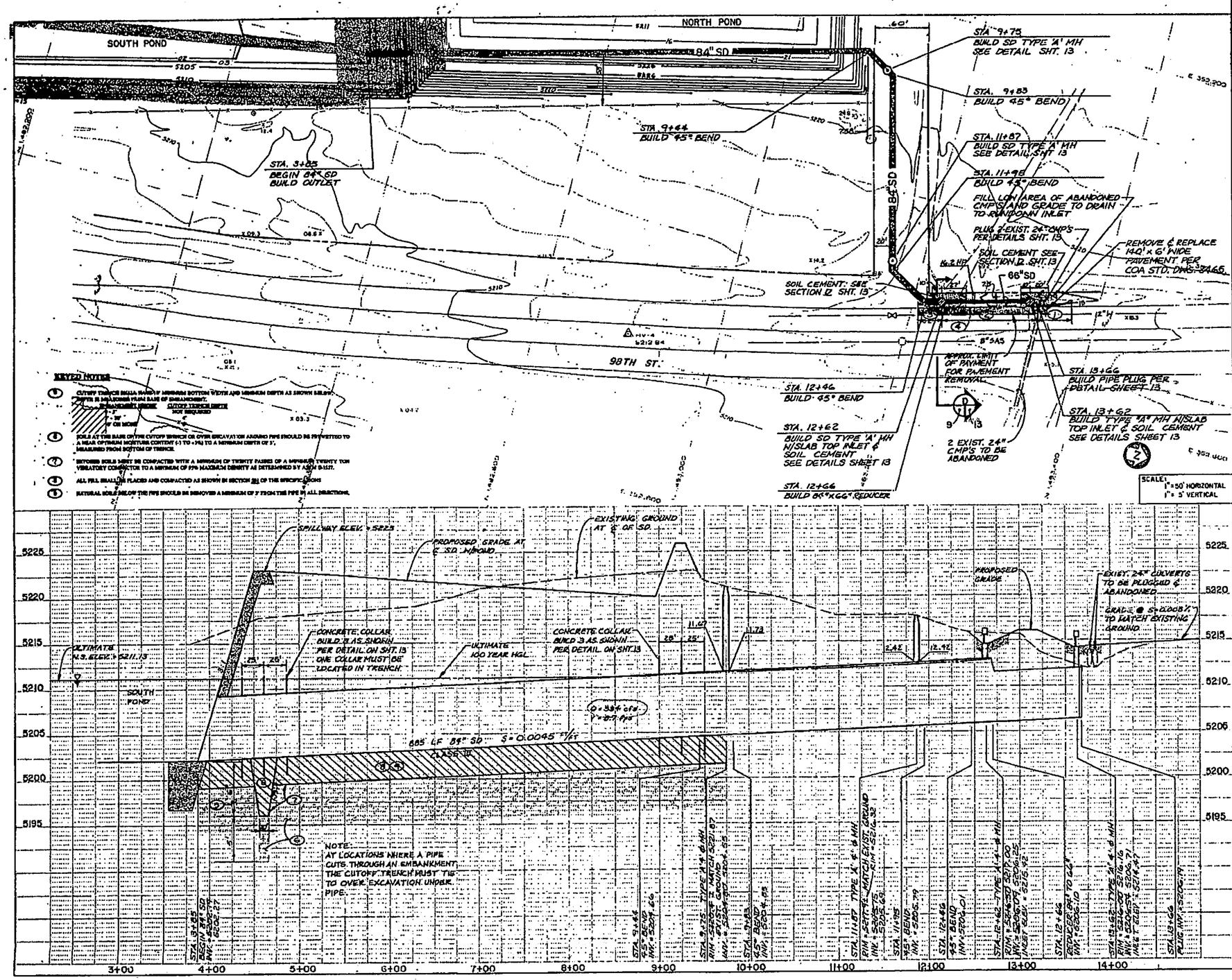
TITLE: "ANOLE DEL NORTE STORM DIVERSION FACILITIES - PHASE II"C
TIERRA DAYITA DRAINAGE FACILITIES

POND SYSTEM PLAN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	[signature]	5-12-95	WATER	[signature]	5/11/95
TRANSPORTATION	[signature]	4-24-95	WASTE WATER	"	"
HYDROLOGY	[signature]	4-24-95			

PROJECT NO. 4076.92 | MAP NO. K-9 | SHEET 8 OF 15

FEB 06 2009



KEYED NOTES

1. STA. 13+69.21 TO STA. 14+05.71 37.5' TYPE 'C' END ANCHORAGE PER COA STD. DWG. 2635
2. STA. 12+62 TO 13+69.21. GUARDRAIL PER COA STD. DWG. 2610.
3. STA. 12+37 TO 12+62 25' END ANCHORAGE PER COA STD. DWG. 2615.
4. SEE GUARDRAIL/INLET PLACEMENT DETAIL ON SHEET 13.

AS BUILT INFORMATION
CONTRACTOR CHAVA TRUCKING
PLANS REVIEWED BY COA
INSPECTOR
ACCEPTANCE BY COA
DATE
WATERLINE BY COA
SEWER BY COA
CONNECTION W/ EXISTING
DATE 6/97
MICRO-FILM INFORMATION
RECORDED BY
DATE
NO.

BENCH MARKS
ACS 1-2-A ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTH RESIDENTIAL TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1492067.350 E = 352798.179
ELEV = 5204.423

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
1860	GREINER	6/7/95
1863	GREINER	7/6/95
1866	GREINER	12/6/97
1863	GREINER	12/8/95
1862	GREINER	1/31
1810	GREINER	6-10-96

ENGINEER'S SEAL
4-25-95

RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.
12-15-97

NO.	DATE	REMARKS	BY

REVISIONS
DESIGN
DESIGNED BY SKCT DATE 4-94
DRAWN BY SKK DATE 4-94
CHECKED BY MSH/RD DATE 2-95

Greiner Engineering

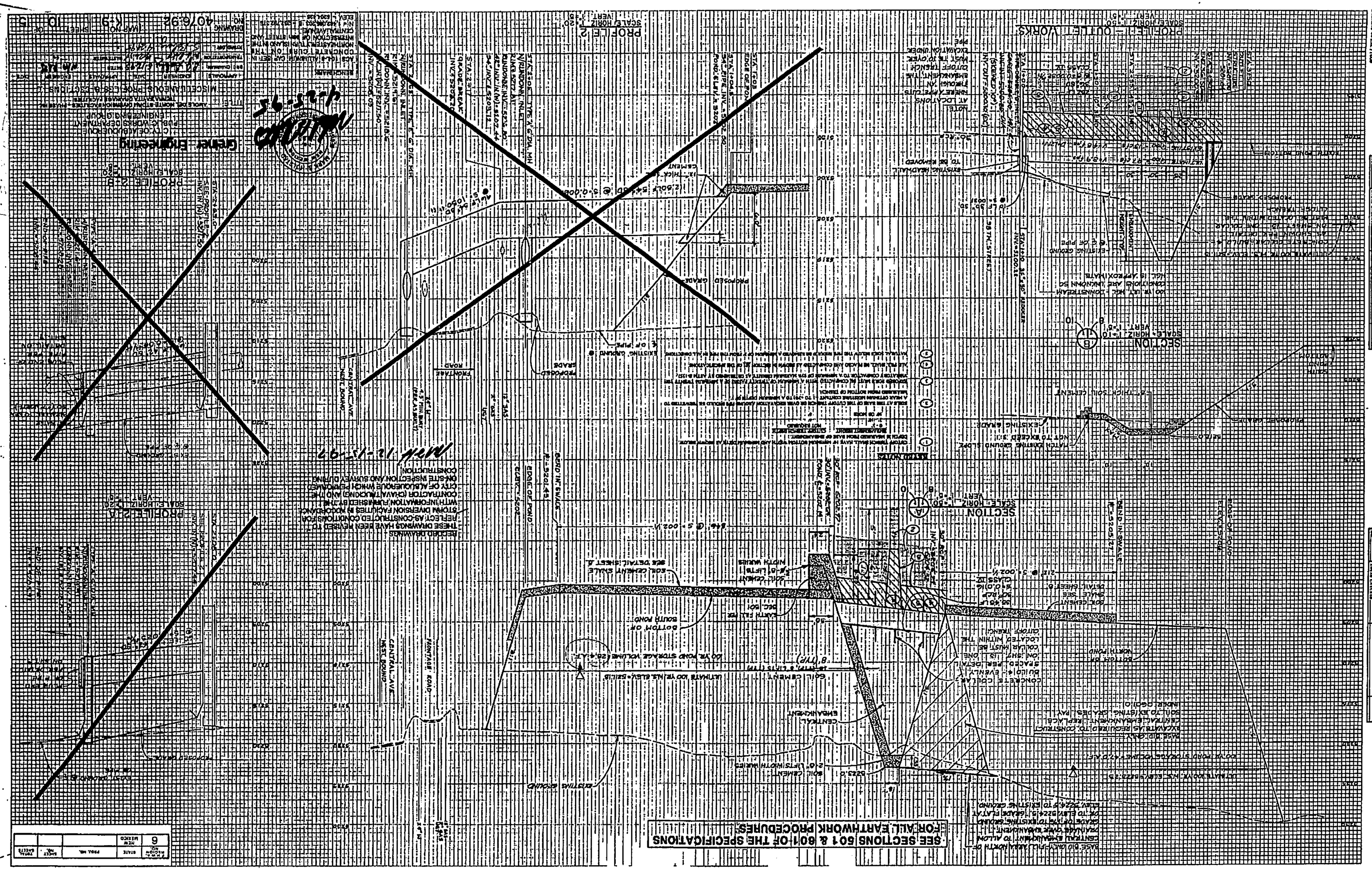
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES - PHASE IIIC
TIERRA BAYITA DRAINAGE FACILITIES
98TH ST. STA. 3+65 TO STA. 13+66
STORM DRAIN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
BRC CHAIRMAN		5-12-95	WATER		5/19/95
TRANSPORTATION		4-24-95	WASTEWATER		
HYDROLOGY		4-24-95			

DRAWING NO. 4076.92 MAP NO. K-9. SHEET 9 OF 15

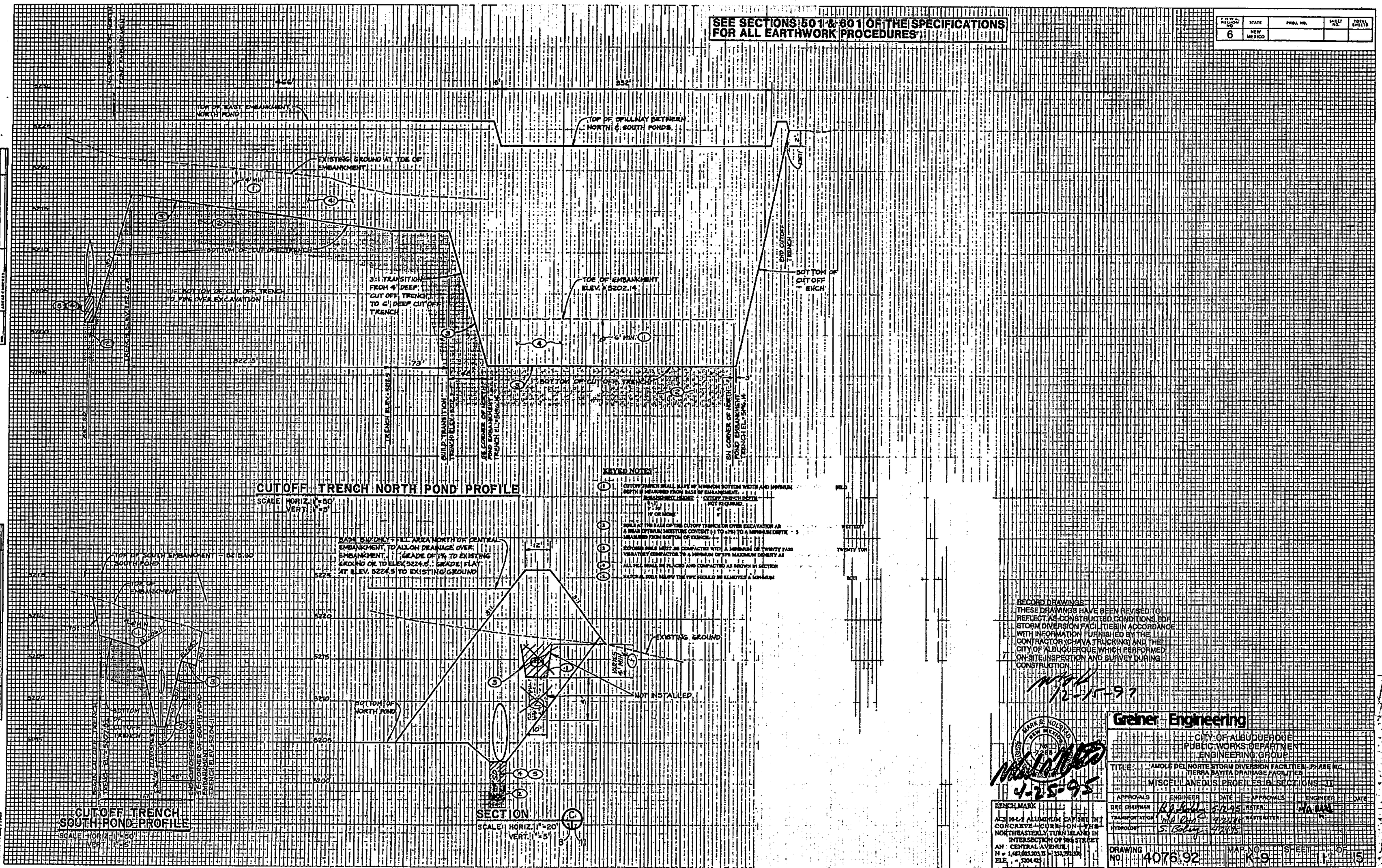
FEB 06 2009


SEE SECTIONS 501 & 601 OF THE SPECIFICATIONS FOR ALL EARTHWORK PROCEDURES.
PROFILE 2-A
PROFILE 2-B
SECTION
PROFILE 2
PROFILE-OUTLET WORKS
FINAL SURVEY
ORIGINAL
RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN WOODCHANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVATAUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.
MAR 12-15-97
City of Albuquerque
Public Works Department
Engineering Group
Civil Engineering
MISCELLANEOUS PROJECTS DIVISION
TRANSMISSION DRAINAGE FACILITIES
LOS CEDROS NORTH STORM DRAINAGE FACILITIES
PROJECT NO. 40/6-92 DRAWING NO. K-9 SHEET 10 OF 15

FEB 06 2009

F.H.W.A. REGION NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO			

SEE SECTIONS 501 & 601 OF THE SPECIFICATIONS FOR ALL EARTHWORK PROCEDURES



RECORD DRAWINGS
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12-15-97

MARK S. HOLSTEIN NEW MEXICO No. 7886 REGISTERED PROFESSIONAL ENGINEER

4-25-95

Greiner Engineering

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: ARROYO DEL NORTE STORM DIVERSION FACILITIES - PHASE IIC
TIERRA PANTA DRAINAGE FACILITIES
MISCELLANEOUS PROFILES & SECTIONS - II

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DES. CHAIRMAN	R. Schultz	4/25/95	PARKS		
TRANSPORTATION	Mike Rhyne	4/25/95	WATER/WW		
HYDROLOGY	S. Galer	4/25/95			

BENCH MARK
AC 1984-2 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN INTERSECTION OF 98th STREET AN CENTRAL AVENUE
N = 1,482,083.205 E = 333,792.576
ELE. = 5204.42

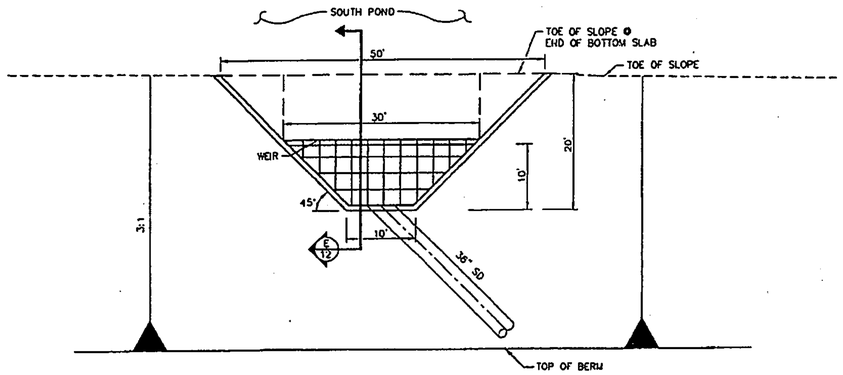
DRAWING NO. 4076.92 MAP NO. K-9 SHEET 1 OF 5

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREA CHECKED, DATE, BOOK, NO.

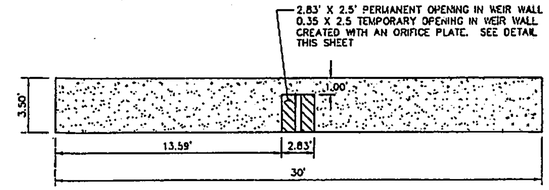
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREA CHECKED, DATE, BOOK, NO.

DRAWING 44-232 31 600

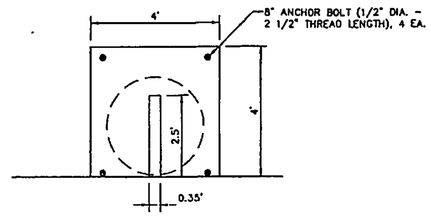
PROJECT NO. _____ SHEET NO. _____



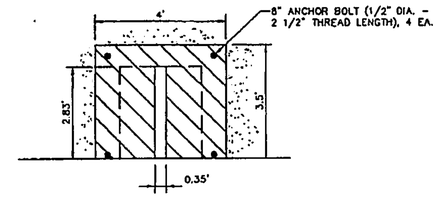
SOUTH POND OUTLET PLAN VIEW
SCALE: 1"=10'



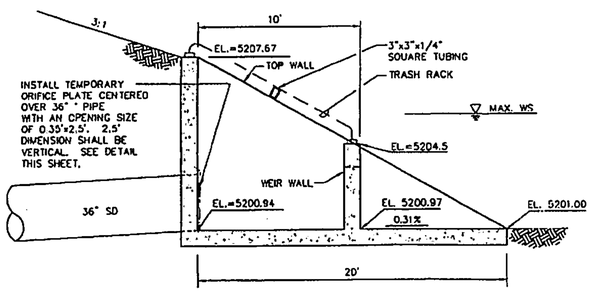
WEIR WALL OPENING
NOT TO SCALE



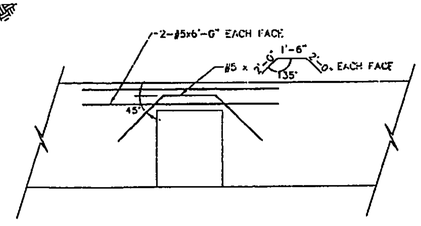
ORIFICE PLATE DETAIL SOUTH POND OUTLET
SCALE: 1"=2'-0"



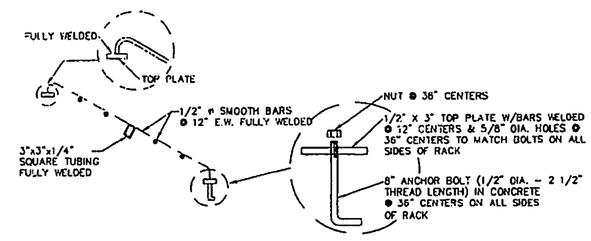
ORIFICE PLATE DETAIL WIER WALL OPENING
SCALE: 1"=2'-0"



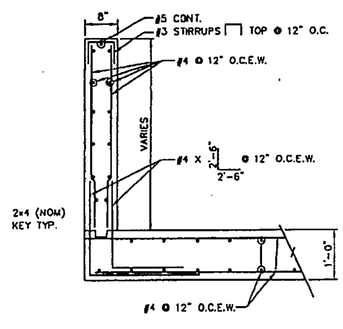
SOUTH POND OUTLET (E/12)
NOT TO SCALE



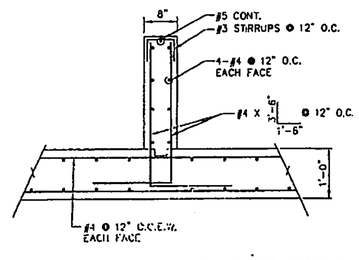
ADDITIONAL REINFORCING AT WEIR WALL OPENING



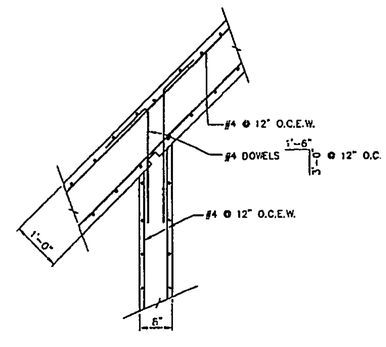
TRASH RACK
NOT TO SCALE



SECTION THROUGH RETAINING WALL



SECTION THROUGH WEIR WALL



CONNECTION OF WEIR WALL TO RETAINING WALL

NOTES:

1. PAINT TRASH RACK AND ORIFICE PLATES DARK BROWN.
2. EXPOSED STRUCTURAL CONCRETE SHALL BE TINTED PER SPEC. SECTION 18D.
3. ORIFICE PLATE SHALL BE 1/2" STEEL AND BOLTED TO WALL.

RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.
12-15-97

AS BUILT INFORMATION
CONTRACTOR CHAVA TRUCKING DATE
WORK STAKED BY COA
INSPECTOR'S ACCEPTANCE BY COA DATE
FINAL INSPECTION BY COA DATE
CERTIFICATION CORRECTED BY UMSG DATE 8/97
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,482,065.203 E = 352,792.376
ELEV = 5204.425

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
MARK S. HOLSTAD NEW MEXICO No. 7288 REGISTERED PROFESSIONAL ENGINEER
4-25-95

NO.	DATE	REMARKS REVISIONS	BY
		DESIGN	DATE 9-92
		DESIGNED BY: JDC/MSH	DATE 6-94
		DRAWN BY: MLS	DATE 2-95
		CHECKED BY: MSH/PO	

Greiner, Inc.

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

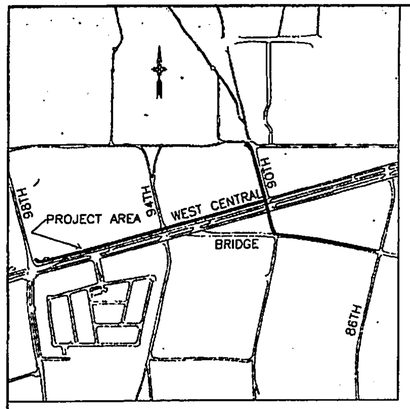
TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES–PHASE IIIC
TIERRA BAYITA DRAINAGE FACILITIES
SOUTH POND OUTLET DETAILS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC Chairman	A. J. Gordon	5-12-95	Water	N/A	
Transportation	M A Pitt	4-26-95	Waste Water	"	
Hydrology	S. Boberg	4-24-95			

DRAWING NO. 4076.92 | MAP NO. K-9 | SHEET 12 OF 15

P:\0400\01\DFDWG

HYDROLOGY



VICINITY MAP (MAP K9, L10)
NOT TO SCALE

AMOLE DEL NORTE
STORM DIVERSION FACILITIES
TIERRA BAYITA DRAINAGE FACILITIES

FOR

CITY OF ALBUQUERQUE – PUBLIC WORKS DEPARTMENT

PHASE IIIE

Amole Del Norte
Tierra Bayita Drainage
Facilities Phase III
LOMR
Feb 2003

ALBUQUERQUE
NEW MEXICO
1706

CITY OF ALBUQUERQUE, NEW MEXICO

JUNE 2000

INDEX TO DRAWINGS

NO.	DESCRIPTION
1	TITLE SHEET
2	SHEET LAYOUT & LEGEND
3	BRIDGE BLVD. STA. 64+68 TO 68+21 STORM DRAIN
4	BRIDGE BLVD. STA. 68+21 TO 79+00 STORM DRAIN
5	90TH STREET STA 79+00 TO 84+92 STORM DRAIN
6	CENTRAL AVE. STA. 10+00 TO 17+00 STORM DRAIN
7	CENTRAL AVE. STA. 17+00 TO 29+00 STORM DRAIN
8	CENTRAL AVE. STA. 29+00 TO 35+50 STORM DRAIN
* 8a	90TH STREET STA. 74+89.84 TO 77+59.47 PAVING IMPROVEMENTS
* 9	90TH STREET STA. 79+00 TO 84+86.71 PAVING IMPROVEMENTS
* 10	CENTRAL AVE. STA. 10+00 TO 17+00 PAVING IMPROVEMENTS
* 11	CENTRAL AVE. STA. 17+00 TO 29+00 PAVING IMPROVEMENTS
* 12	CENTRAL AVE. STA. 29+00 TO 34+47 PAVING IMPROVEMENTS
13	RUNDOWN DETAILS
14	MISCELLANEOUS STORM DRAIN DETAILS
15	MISCELLANEOUS DETAILS AND PAVING SECTIONS
16	MISCELLANEOUS PROFILES
17	MISCELLANEOUS PROFILES
* 18	WATER SHUT OFF PLANS
* 19	SIGNING AND CONSTRUCTION TRAFFIC CONTROL STANDARDS
* 20	TYPICAL TRAFFIC CONTROL AND SIGNING EXAMPLES
* 21	TRAFFIC CONTROL PHASES
* 22	TRAFFIC CONTROL PLAN – CENTRAL AVE. ROAD CLOSURE
22A	94 STREET SD & SAS EXTENSION

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR(CONDORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

MR 2/1
10/26/01

GENERAL NOTES

1. ALL WORK DETAILED ON THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH "CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", 1986, UPDATE SIX, AND ANY REVISIONS AND ADDITIONS IN THE SUPPLEMENTAL SPECIFICATIONS IN THE CONTRACT DOCUMENTS.
2. ALL EXISTING UTILITIES SHOWN HERE WERE OBTAINED AS ACCURATELY AS POSSIBLE FROM RECORD DRAWINGS AND SPOT EXCAVATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT, MAINTAIN IN SERVICE, AND VERIFY EXACT LOCATIONS OF ALL AFFECTED UTILITIES DURING CONSTRUCTION OF THIS PROJECT.
3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WHEN WORKING NEAR THEIR SYSTEMS. TWO DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE-CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMUM AMOUNT OF DELAY.
5. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE ENGINEER. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATION OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED. CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
6. REMOVAL OF EXISTING CURB AND GUTTER OR SIDEWALK SHALL BE TO THE NEAREST JOINT OR SAW CUT.
7. WHEN MATCHING NEW PAVING TO EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVING ON A RIGHT ANGLE OR AS DIRECTED BY THE PROJECT MANAGER TO REMOVE ANY BROKEN, RAVELED, OR CRACKED PAVING. THE COST OF THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
8. CURB AND GUTTER SHOWN AS EXISTING AND NOT TO BE REMOVED UNDER THIS CONTRACT, WHICH IS DAMAGED OR DISPLACED BY THE CONTRACTOR OR HIS SUBCONTRACTORS, SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
9. ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
10. ACCESS TO LOCAL BUSINESS AND RESIDENCES SHALL BE KEPT OPEN AT ALL TIMES. TEMPORARY ACCESS CLOSURES, IF REQUIRED, SHALL BE SCHEDULED AT LEAST TWENTY-FOUR (24) HOURS IN ADVANCE WITH PROPERTY OWNER AND APPROVED BY THE PROJECT MANAGER.
11. TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE CITY ENGINEER.
12. REMOVALS SHALL BE DISPOSED OF OFF-SITE AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE MATERIAL IN AN ENVIRONMENTALLY ACCEPTABLE MANNER AT A LOCATION ACCEPTABLE TO THE PROJECT MANAGER. THERE WILL BE NO DIRECT COMPENSATION FOR THIS WORK.
14. CONTRACTOR SHALL PROVIDE A TEMPORARY STORM DRAINAGE SYSTEM (SUBJECT TO APPROVAL BY THE CITY HYDROLOGY DIVISION AND THE CITY CONSTRUCTION PROJECT MANAGER) FOR ALL WORK ON THIS PROJECT. THE TEMPORARY SYSTEM SHALL BE CAPABLE OF SAFELY CONVEYING EXISTING RUNOFF ACROSS THE PROJECT AND DISCHARGING INTO THE EXISTING DRAINAGE SYSTEM.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO LANDSCAPING AND IRRIGATION SYSTEMS WITHIN WORK AREA NOT COVERED IN THE PLANS.
16. ALL FLOWS INCLUDE A 2% SEDIMENT BULKING FACTOR.
17. ALL STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE, CLASS IV UNLESS OTHERWISE NOTED.
18. AN AT&T REPRESENTATIVE MUST BE PRESENT WHENEVER AN AT&T CABLE IS EXPOSED. THE AT&T FIBER OPTIC CABLE MUST BE COVERED AT NIGHT TO A MIN. OF 2' OR AT&T SHALL BE CONTACTED TO PROVIDE A GUARD.
19. CONTRACTOR IS RESPONSIBLE FOR SUPPORTING ANY EXISTING UTILITIES EXPOSED DURING REQUIRED EXCAVATIONS.
20. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED STRIPING BY THE CONTRACTOR TO EXISTING LOCATION OR AS INDICATED BY THIS PLAN SET. ALL NEW STRIPING SHALL BE PLASTIC REFLECTORIZED STRIPING. ALL NEW TRAFFIC SIGNING SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D.
21. ALL PERMANENT SIGNS SHALL BE SUPER ENGINEERING GRADE OR BETTER.

URS Greiner Woodward Clyde
6565 AMERICAS PKWY. NE
SUITE 610
ALBUQUERQUE NM, 87110
(505) 884-2611

REV.	SHEETS	(CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
A	22A & 14		9/20/00		9/20/00		9/20/00

ENGINEER'S STAMP & SIGNATURE	APPROVALS	ENGINEER	DATE
MARK S. HOLSAO NEW MEXICO No. 7288 REGISTERED PROFESSIONAL ENGINEER 6/28/00	DRC Chairman		7-14-00
	Transportation		7-13-00
	Water/Wastewater		7-13-00
	Hydrology		7-13-00
	CIP		
	Constr. Mngmt.		
	Constr. Coord.		7/14/00

City Project No. 623491

APPROVED FOR CONSTRUCTION
7/14/00
City Engineer Date

Sheet 1 Of 22

FEB 06 2009
HYDROLOGY

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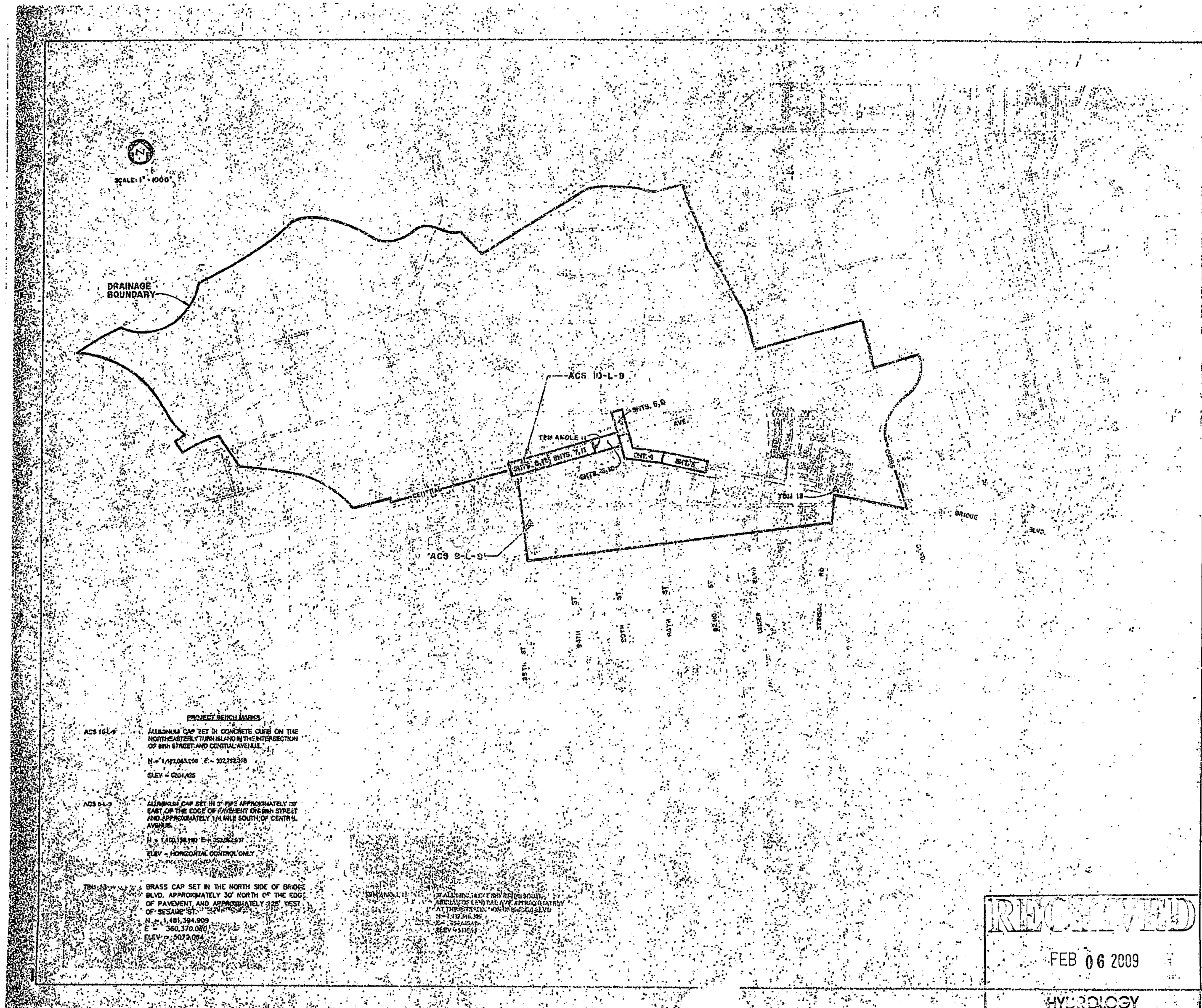


PROJECT BENCH MARKS

ACS 10-L-9 — ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,481,083.109 E = 322,752.378
ELEV = 5014.425

ACS 9-L-9 — ALUMINUM CAP SET IN 3" PIPE APPROXIMATELY 33' EAST OF THE EDGE OF PAVEMENT ON 98th STREET AND APPROXIMATELY 1/4 MILE SOUTH OF CENTRAL AVENUE.
N = 1,480,198.190 E = 322,752.537
ELEV = HORIZONTAL CONTROL ONLY

TBM 13 — BRASS CAP SET IN THE NORTH SIDE OF BRIDGE BLVD. APPROXIMATELY 30' NORTH OF THE EDGE OF PAVEMENT, AND APPROXIMATELY 325' WEST OF SESAME ST.
N = 1,481,394.909
E = 360,370.080
ELEV = 5073.094

TBM ANCHOR 11 — ALUMINUM CAP SET IN THE SOUTH ABUTMENT OF A CULVERT APPROXIMATELY 1" AT THE EAST END OF BRIDGE BLVD.
N = 1,482,546.395
E = 354,[illegible]
ELEV = 5[illegible]

PROJECT LEGEND

DESCRIPTION	EXISTING	NEW
RIGHT-OF-WAY LINE		
CONTOUR	5090	
SPOT ELEVATION	×5095	
CONTROL POINT		
GUARD RAIL		
BUILDING		
SIGN		
POWER POLE		
LIGHT POLE		
TRAFFIC LIGHT	TL	
FIRE HYDRANT		
TELEPHONE RISER		
FENCE		
WALL		
WATER METER		
WATER VALVE		
SANITARY MANHOLE		
STORM DRAIN MANHOLE		
TELEPHONE MANHOLE		
SANITARY SEWER LINE		SAS
WATER LINE	W	W
STORM DRAIN LINE	SD	SD
GAS LINE		
CABLE TV LINE		
OVERHEAD ELECTRIC LINE		
UNDERGROUND TELEPHONE		
CONCRETE CHANNEL		

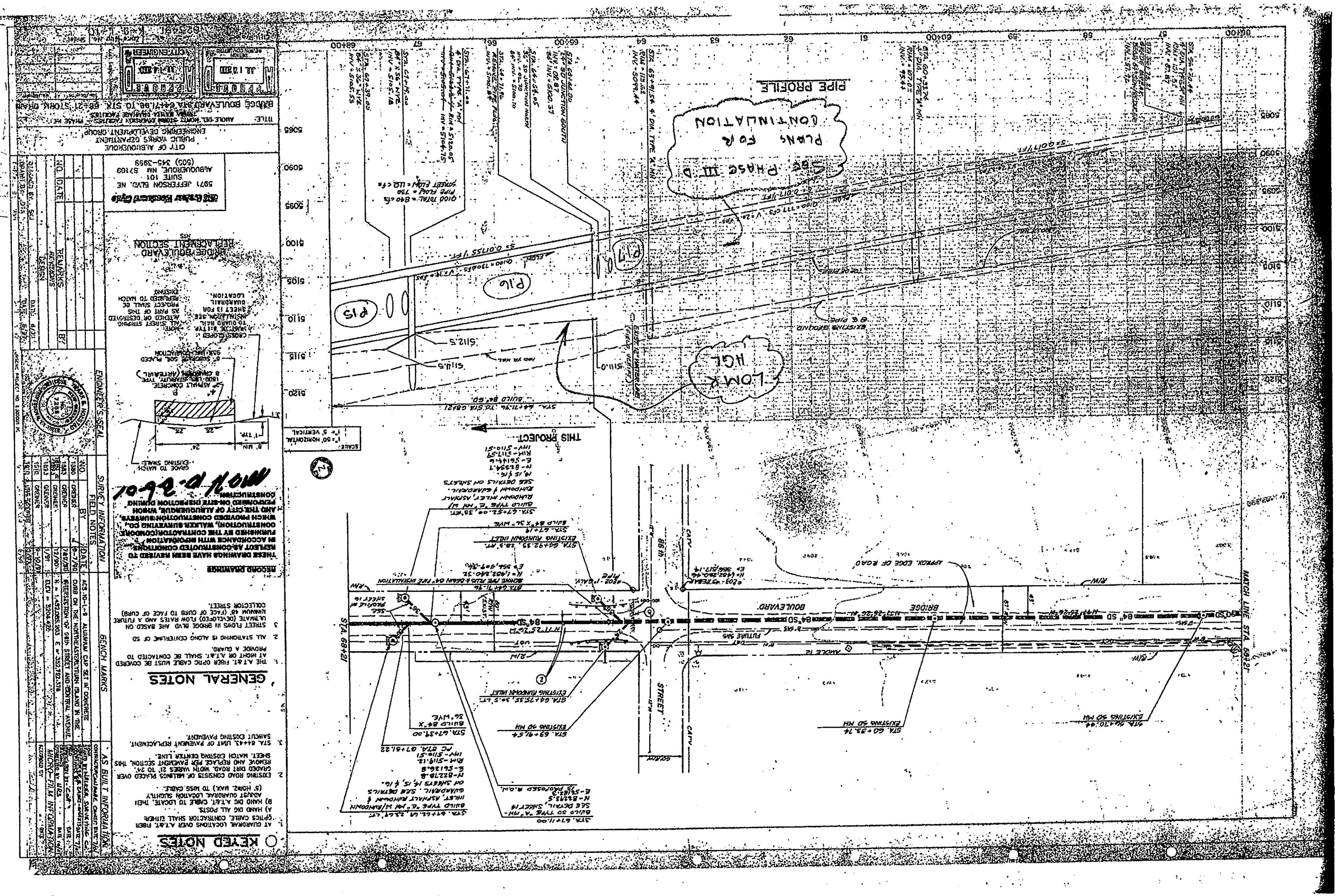
AS BUILT

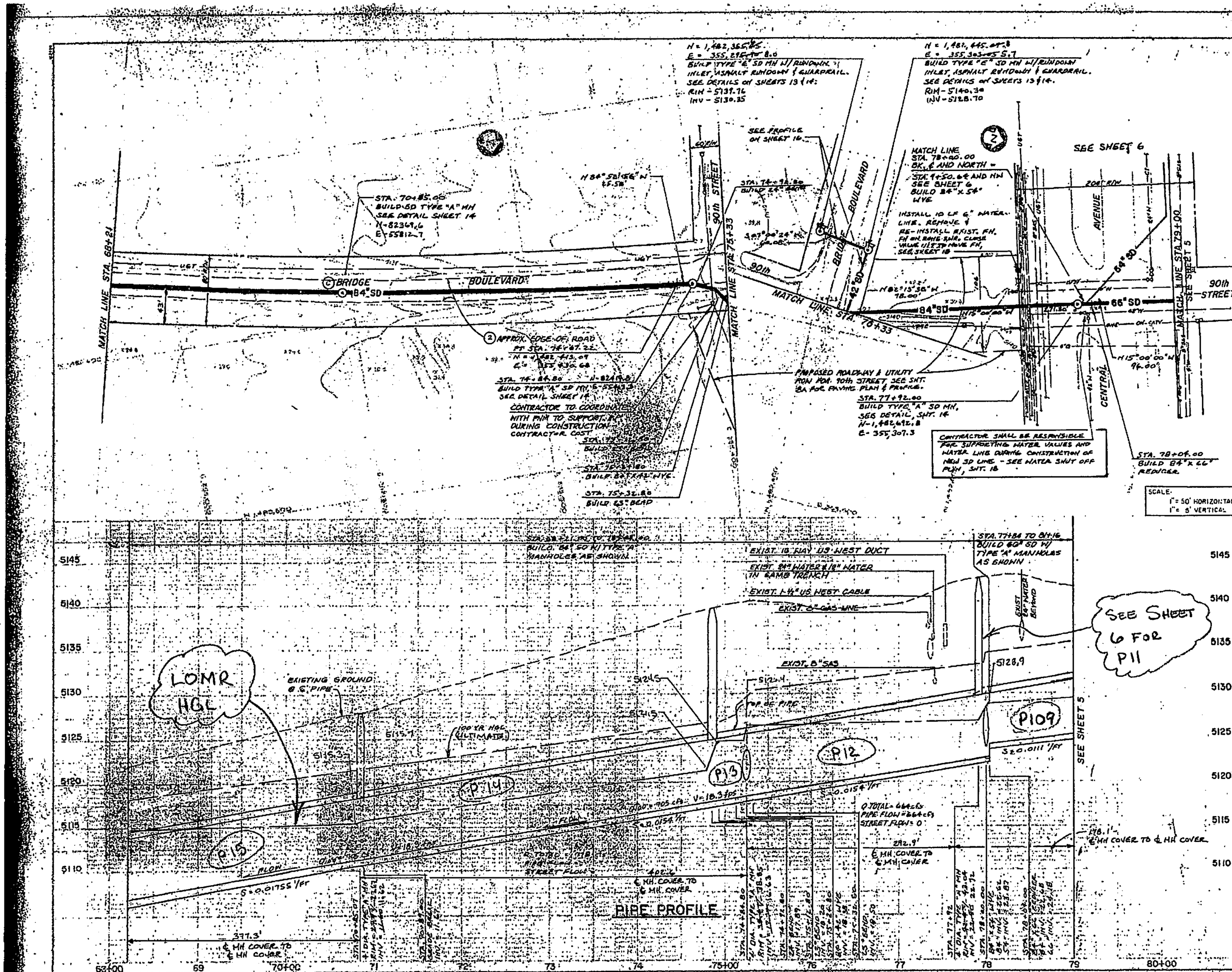
BENCH MARKS

SURVEY INFORMATION

NGS TERRS CHK

1910	GREENER		9/92	
1911	GREENER		9/92	
1912	GREENER		9/92	
1913	GREENER		9/92	


GENERAL NOTES
KEYED NOTES
AS BUILT INFORMATION
SURVEY INFORMATION
FIELD NOTES
BENCH MARKS
ENGINEER'S SEAL
MICRO-FILM INFORMATION
REVISIONS
REMARKS
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP
BRIDGE BOULEVARD S.A. 64+71.96 TO STA. 68+21 STORM DRAIN
MAKE-DEL NORTH STORM DRAINAGE FACILITIES - PHASE IIC
PLANS FOR CONTINUATION
PIPE PROFILE
SEE PHASE III D
LOMX HGL
THIS PROJECT
BRIDGE BOULEVARD
BRIDGE
STREET
MATCH LINE STA. 68+21
MATCH LINE STA. 64+71.96
MATCH P-2601
GRADE TO MATCH EXISTING SWALE
EXISTING 50 MH
EXISTING RUNDOWN INLET
APPROX. EDGE OF ROAD
CATV
GAS
FUTURE 54"
MARCEL 12
84"SD
BRIDGE BOULEVARD
REPLACEMENT SECTION
NTS
SCALE: 1"=50' HORIZONTAL
1"= 5' VERTICAL
FEB 06 2009



KEYED NOTES

1. AT GUARDRAIL LOCATIONS OVER A T&T FIBER OPTICS CABLE, CONTRACTOR SHALL EITHER
   A) HAND DIG ALL POSTS
   B) HAND DIG A T&T CABLE TO LOCATE, THEN ADJUST GUARDRAIL LOCATION SHORTS (5' HORIZ MAX.) TO MISS CABLE
2. EXISTING ROAD CONSISTS OF MULLINGS PLACED OVER GRADED DIRT ROAD. WIDTH VARIES 21' TO 24'. REMOVE AND REPLACE PER PAVEMENT SECTION, SHEET 3. MATCH EXISTING LOCATION.
3. STA 64+43, LIMIT OF PAVEMENT REPLACEMENT. SAWCUT EXISTING PAVEMENT.

GENERAL NOTES

1. THE A T&T FIBER OPTIC CABLE MUST BE COVERED AT RIGHT OR A T&T SHALL BE CONTACTED TO PROVIDE A GUARD.
2. ALL STATIONING IS ALONG CENTERLINE OF SD
3. STREET FLOWS IN BRIDGE BLVD. ARE BASED ON ULTIMATE (DEVELOPED) FLOW RATES AND A FUTURE MINIMUM 46' (FACE OF CURB TO FACE OF CURB) COLLECTOR STREET

CURVE DATA

(C) Δ = 07° 08' 51"
R = 3739.65'
L = 716.00'
T = 358.47'

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR(CONDORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

10-26-01

USA Bruner Westward Cayen
5971 JEFFERSON BLVD NE
SUITE 101
ALBUQUERQUE, NM 87109
(505) 345-3999

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: ANGLE DEL NORTE STORM DIVERSION FACILITIES – PHASE 2E
TIERRA BAYITA DRAINAGE FACILITIES

BRIDGE BOULEVARD STA. 68+21 TO STA. 79+00 STORM DRAIN

APPROVED JUL 14 2000 DEPUTY REVIEW ENGINEER

APPROVED JUL 14 2000 CITY ENGINEER

City Project No. 623491

Zone Map No. K-9

AS BUILT INFORMATION

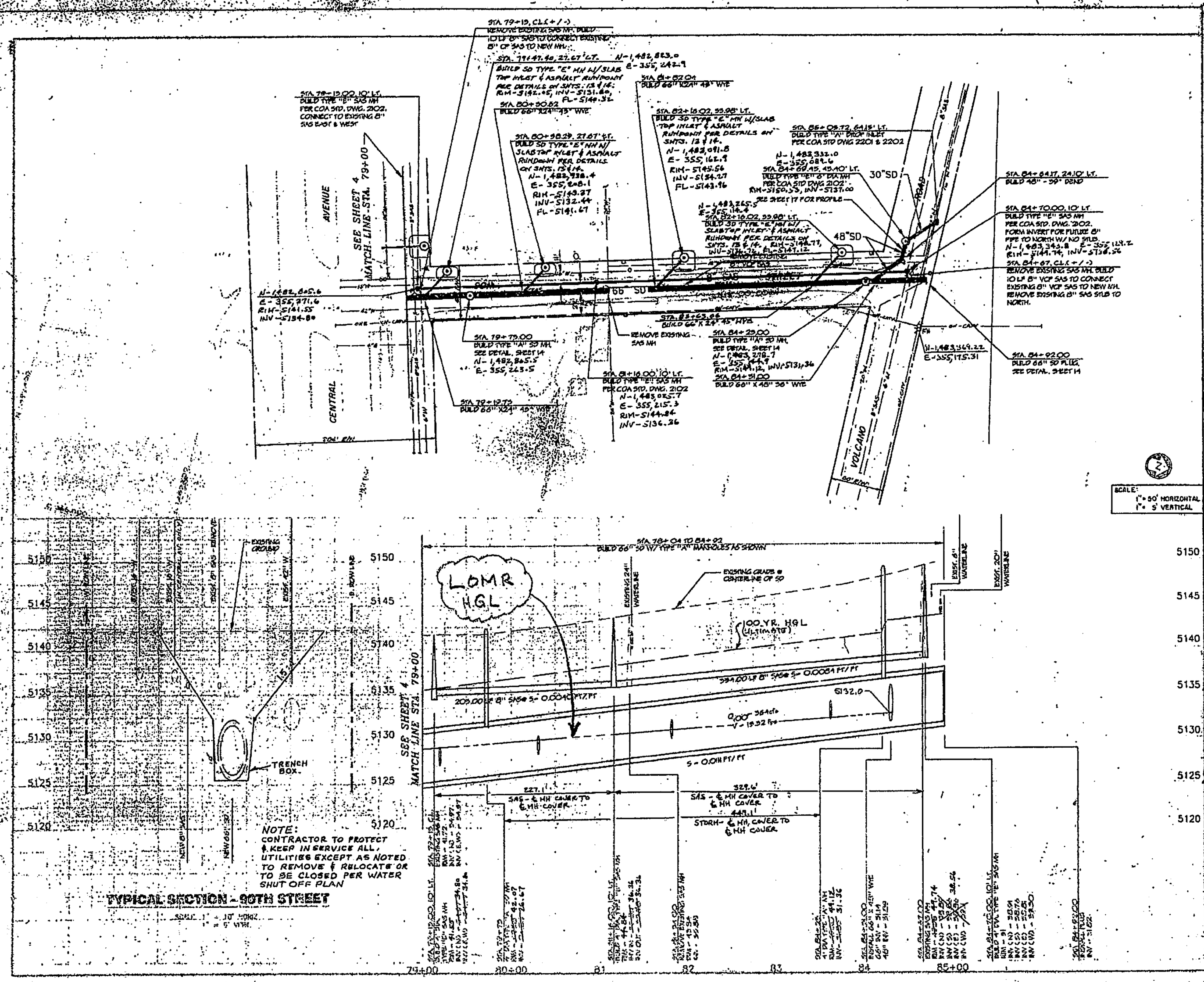
BENCH MARKS

SURVEY INFORMATION

FIELD NOTES

ENGINEER'S SEAL

FEB 06 2009



GENERAL NOTES:

ALL STATIONING IS ALONG CENTERLINE OF STORM DRAIN

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CONDORE CONSTRUCTION), WALKER SURVEYING CO. WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

10-26-01

UTS Cruser Barnhart Gipson
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(505) 345-3999

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: ALVARADO NORTE STORM DIVERSION FACILITIES – PHASE IIB
TIERRA BAYITA DRAINAGE FACILITIES
90th STREET STA. 79+00 TO 84+92 – STORM DRAIN

APPROVED JUL 14 2000 DESIGN REVIEW COMMITTEE

APPROVED JUL 14 2000 CITY ENGINEER

City Project No. 623491 | Zone Map No. K-9 | Sheet 5 | Of 24

SURVEY INFORMATION

NO.	BY	DATE
FIELD NOTES		
1860	GREINER	8-7-90
1885	GREINER	7/29/90
1900	GREINER	12/90
1910	GREINER	11/91
1910	GREINER	9-10-96
1910	GREINER	10/97
1910	URS GREINER	10/98

BENCH MARKS

ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE. CURB ON THE NORTHEAST/TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE
N = 1,482,055.205 E = 352,792.376
ELEV = 5206.425

AS BUILT INFORMATION

CONTRACTOR CONDORE CONST. DATE 7/01
FIELD BY Hayden SURVEYING Co. DATE 8-8-01
CHECKED BY CGA DATE 9/01
VERIFIED BY MKS DATE 10/01
CORRECTED BY MKS DATE 10/01
MICRO-FILM INFORMATION
RECORDED BY DATE

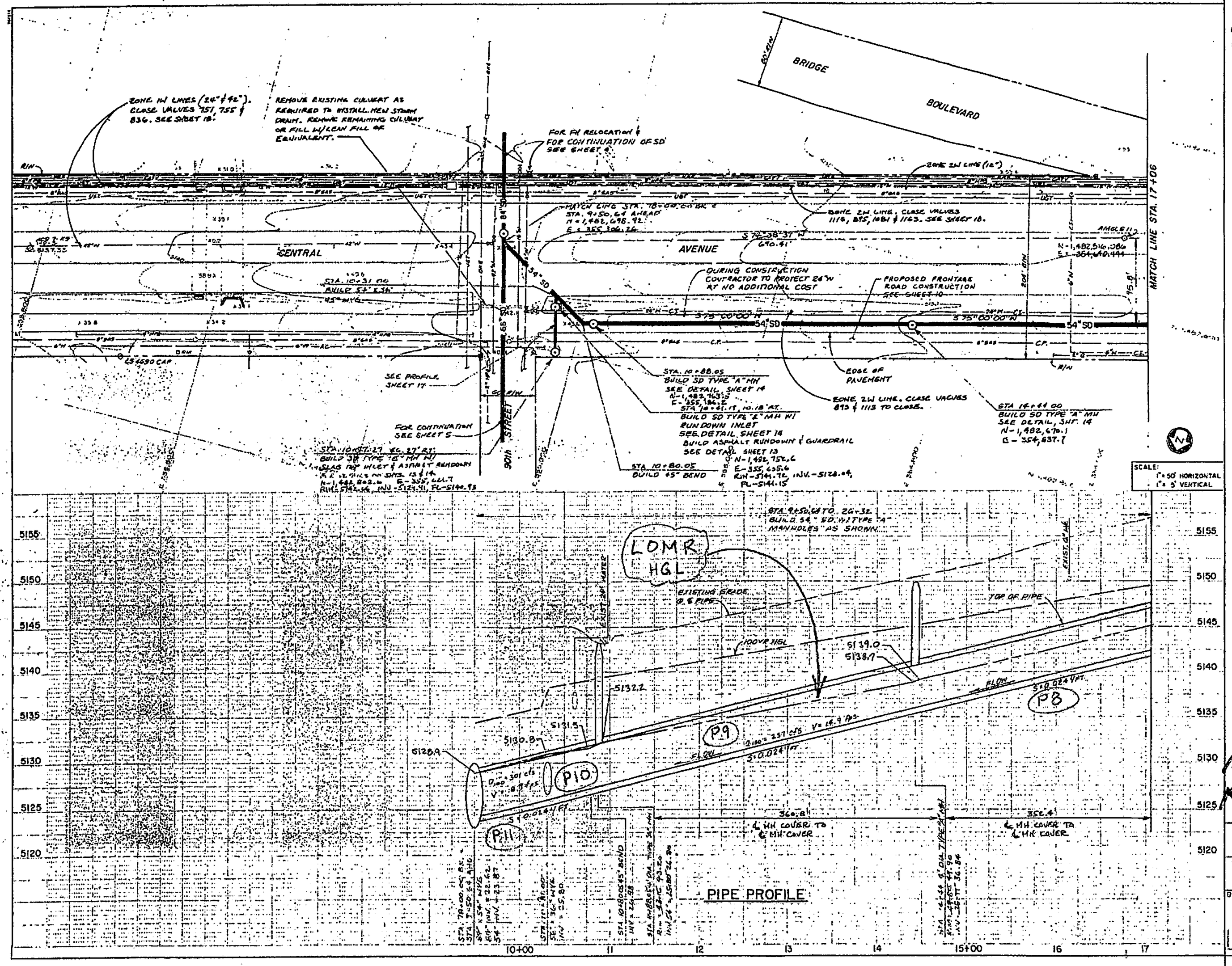
ENGINEER'S SEAL
N.S. HOLMES
NEW MEXICO
ESTIMOND
13123
PROFESSIONAL ENGINEER

CASHWC PROJECT NO. C300010

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY SKE DATE 7/99
DRAWN BY KRM DATE 7/99
CHECKED BY KSP DATE 8/99

FEB 06 2009



NOTES:

1. SEE FRONTAGE RD./CENTRAL AVE TYPICAL SECTION FOR LOCATION OF NEW STORM DRAIN VERSUS EXISTING UTILITIES AND ROADWAY.

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CONDORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

10/26/09

URS Greiner Woodward Clyde
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(505) 345-3999

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES – PHASE IIE
TERRA BAYITA DRAINAGE FACILITIES
CENTRAL AVENUE – STA. 10+00 TO STA. 17+00
STORM DRAIN

Design Review Committee: JUL 14 2000
APPROVED JUL 14 2000 CITY ENGINEER
Last Design Update | No./Day/Yr. | No./Day/Yr.

City Project No. 623491 | Zone Map No. K-9 | Sheet 6 Of 22

AS BUILT INFORMATION

CONTRACTOR: CONDORE CONSTRUCTION DATE: 7/01
WORK BY: WALKER SURVEYING CO. DATE: 7/01
RECORDED AS BUILT BY: WALKER SURVEYING CO. DATE: 10/01
FIELD VERIFICATION BY: CoA DATE: 10/01
DRAWINGS CORRECTED BY: M.A.S. DATE: 10/01
MICRO-FILM INFORMATION
RECORDED BY: DATE:

BENCH MARKS

ACS 10-1-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,481,065.203 E = 353,792.376
ELEV = 5204.425

SURVEY INFORMATION FIELD NOTES

NO.	BY	DATE
1880	GREINER	6-7/90
1883	GREINER	7&8/90
1886, 87	GREINER	12/90
1893	GREINER	1/91
1910	GREINER	9-10/91
1910	URS GREINER	9/97

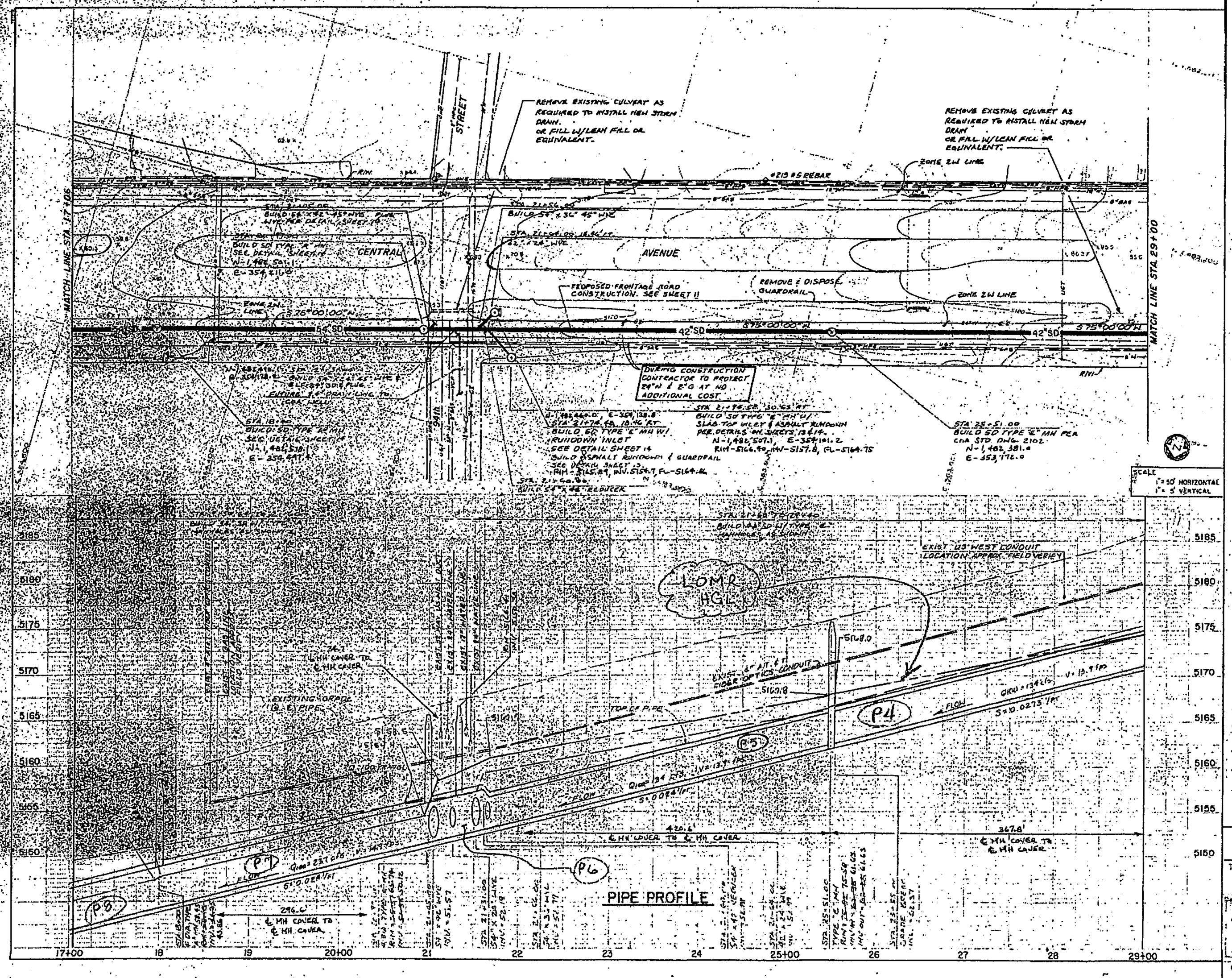
REVISIONS

NO.	DATE	REMARKS	BY

DESIGN: DATE: 8/99
DESIGNED BY: SKJ
DRAWN BY: DTA
CHECKED BY: DATE: 8/99
SUPERVISED BY: DATE: 8/99

ENGINEER'S SEAL: MARK K. HOLSTAD, NEW MEXICO, No. 7288, PROFESSIONAL ENGINEER

FEB 06 2009



NOTES

1. SEE FRONTAGE RD./CENTRAL AVE. TYPICAL SECTION FOR LOCATION OF NEW STORM DRAIN VERSUS EXISTING UTILITIES AND ROADWAY

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR(CONDORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

10-26-99

URS Greiner Woodward Clyde

SURVEY INFORMATION

FIELD NOTES NO.	BY	DATE
1880	GREINER	6-7/90
1883	GREINER	7&9/90
1883	GREINER	12/90
1883	GREINER	1/91
1910	GREINER	9-10/91
1910	URS GREINER	9/97

BENCH MARKS

ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTH/SOUTH ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,492,085.203 E = 352,792.376
ELEV = 5204.425

AS BUILT INFORMATION

CONTRACTOR Condore Const'n CO. DATE 7/01
WORK STAKED BY Walker Surveying Co. DATE 7/01
AS-BUILTS PREPARED BY Walker Surveying DATE 7/01
CONSTRUCTION INSPECTION BY C&M DATE
AS-BUILTS CHECKED BY URS DATE 10/01
MICRO-FILM INFORMATION RECORDED BY DATE

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY: SKJ DATE: 8/99
DRAWN BY: DTA DATE: 8/99

ENGINEER'S SEAL: MARK S. HOLSINGER, No. 7288, New Mexico, Registered Professional Engineer

6/28/00

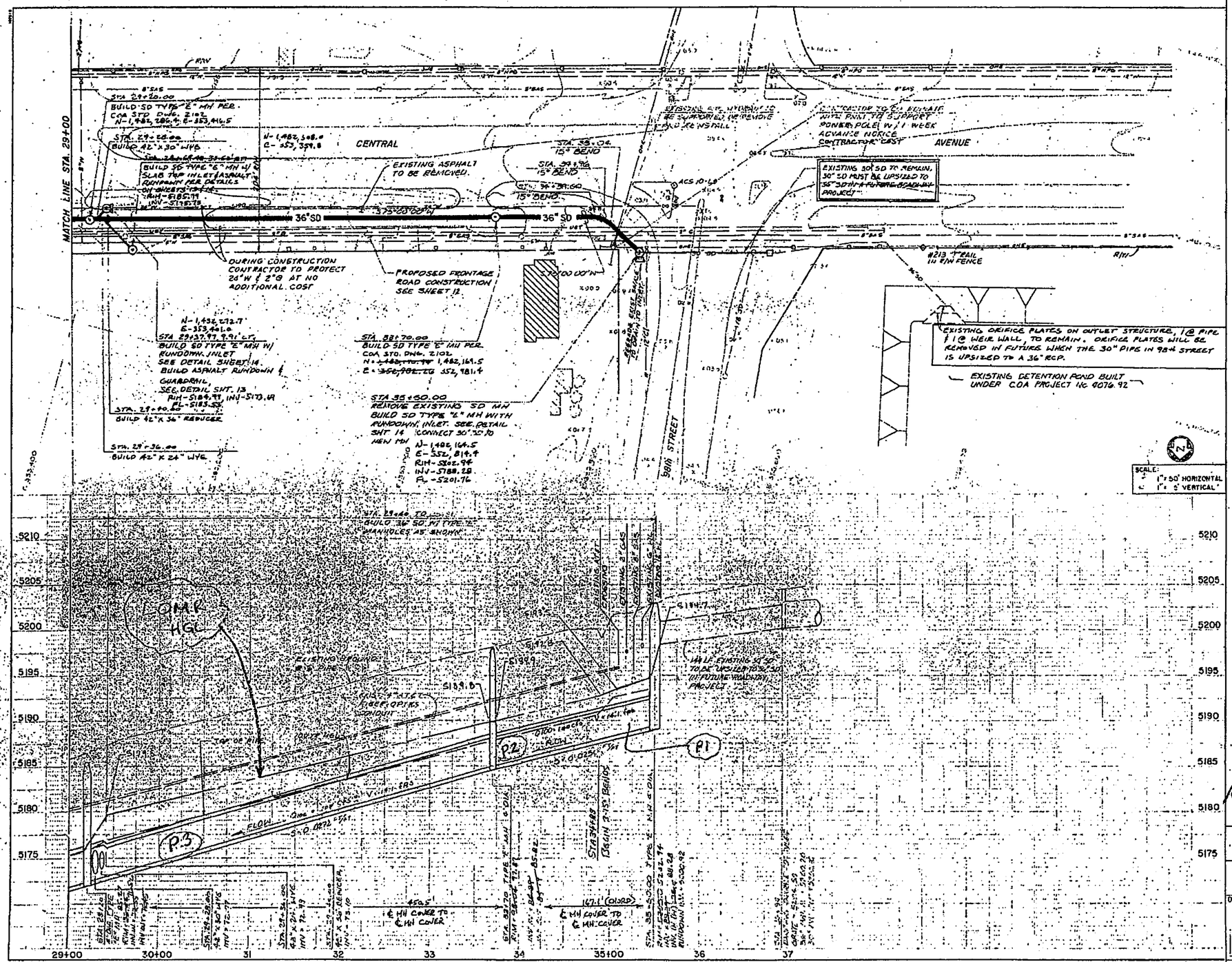
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES – PHASE IIE
TIERRA BAYITA DRAINAGE FACILITIES
CENTRAL AVENUE – STA. 17+00 TO STA. 29+00
STORM DRAIN

Design Review Committee: APPROVED JUL 1 4 2000
City Engineer Approval: APPROVED JUL 1 4 2000 CITY ENGINEER
cfs/(ac)/ft | cfs/(ac)/ft

City Project No. 623491 | Zone Map No. K-9 | Sheet 7 Of 22

FEB 06 2009



NOTES

1. SEE FRONTAGE RD/CENTRAL AVE TYPICAL SECTION FOR LOCATION OF NEW STORM DRAIN VERSUS EXISTING UTILITIES AND ROADWAY.

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR(CONSORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

MJ 10-26-99

URS Greiner Woodward Clyde
5971 JEFFERSON BLVD. NE
SUITE 101
ALBUQUERQUE, NM 87109
(505) 345-3999

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: ANOLE DEL NORTE STORM DIVERSION FACILITIES – PHASE IIIE –
TIERRA BAYITA DRAINAGE FACILITIES
CENTRAL AVENUE-STA. 29+00 TO STA. 37+50
STORM DRAIN

Design Review Committee | City Engineer Approval | Last Design Update | Mo./Day/Yr. | Mo./Day/Yr.

CITY ENGINEER

City Project No. 623491. | Zone Map No. K-9 | Sheet 8 Of 22

AS BUILT INFORMATION

CONTRACTOR: CONSORE CONSTRUCTION DATE 7/01
SURVEY BY: WALKER SURVEYING CO. DATE 7/01
DRAWINGS REVIEWED BY: COA DATE
FIELD VERIFICATION BY: URS DATE 10/01
DRAWINGS CORRECTED BY: MICRO-FILM INFORMATION DATE
RECORDED BY

BENCH MARKS

ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE. N = 1,482,089.203 E = 352,792.376 ELEV = 5204.425

SURVEY INFORMATION

NO.	BY	DATE	FIELD NOTES
1880	GREINER	6-7/90	
1883	GREINER	7/29/90	
1886 & 1887	GREINER	12/90	
1893	GREINER	1/91	
1910	GREINER	8-10/91	
1910	URS GREINER	9/97	

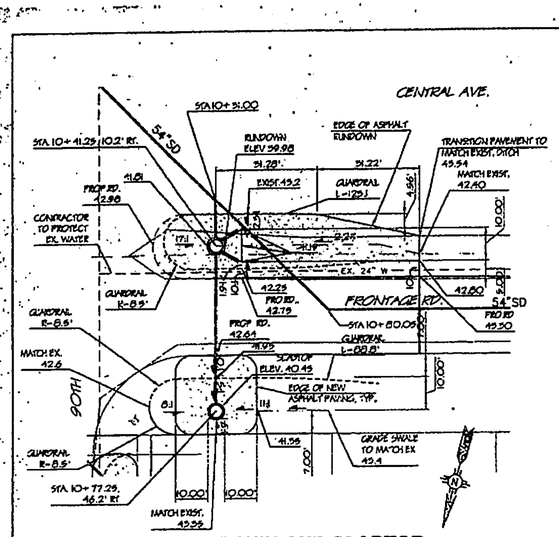
ENGINEER'S SEAL

MARK S. ROLAND
NEW MEXICO
No. 7258
REGISTERED PROFESSIONAL ENGINEER

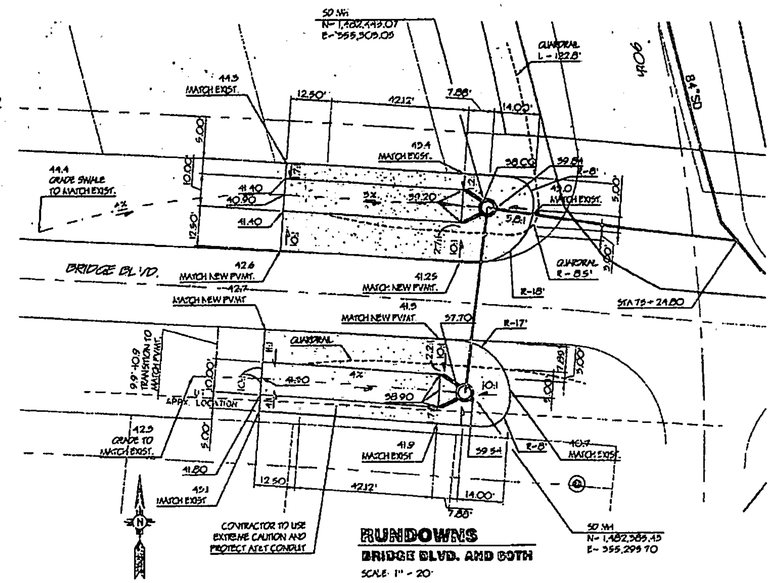
NO.	DATE	REMARKS / REVISIONS	BY

DESIGN

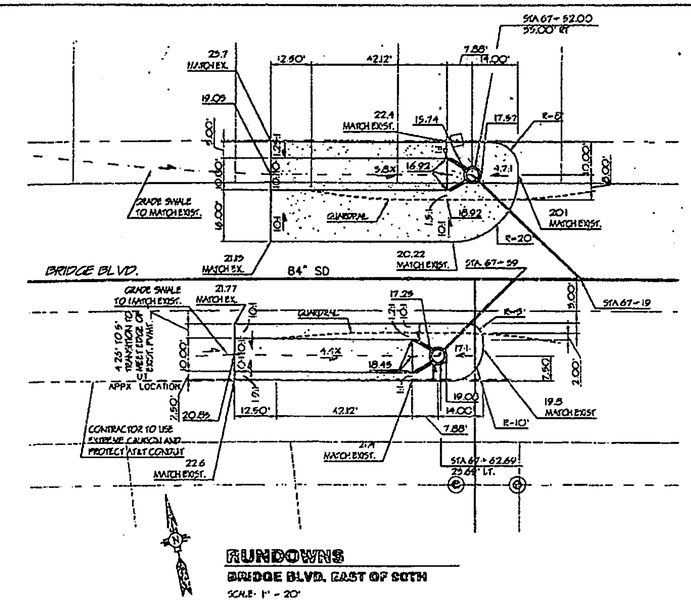
DESIGNED BY: SKJ DATE: 8/99
DRAWN BY: DTA DATE: 8/99



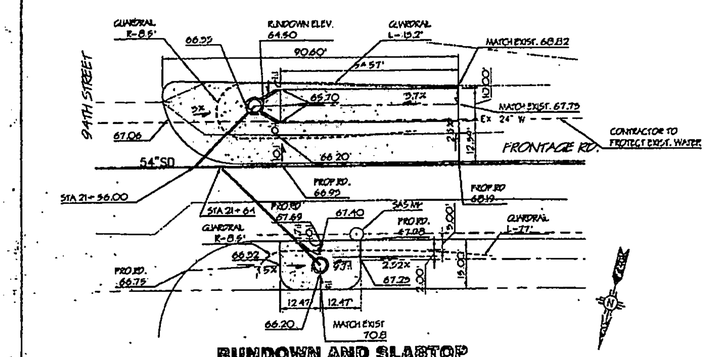
RUNDOWN AND SLABTOP
FRONTAGE RD. WEST OF 90TH
SCALE: 1" = 20'



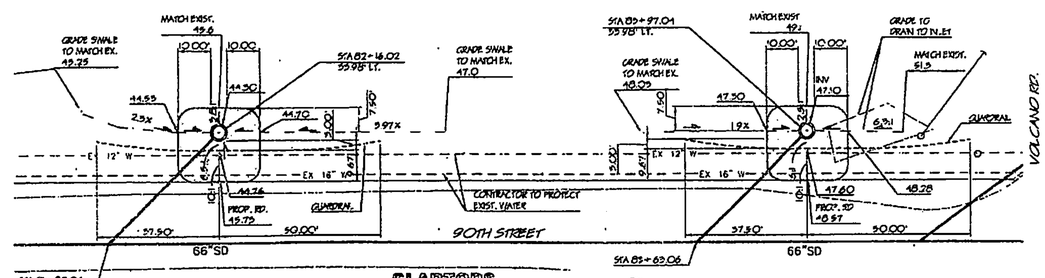
RUNDOWNS
BRIDGE BLVD. AND 90TH
SCALE: 1" = 20'



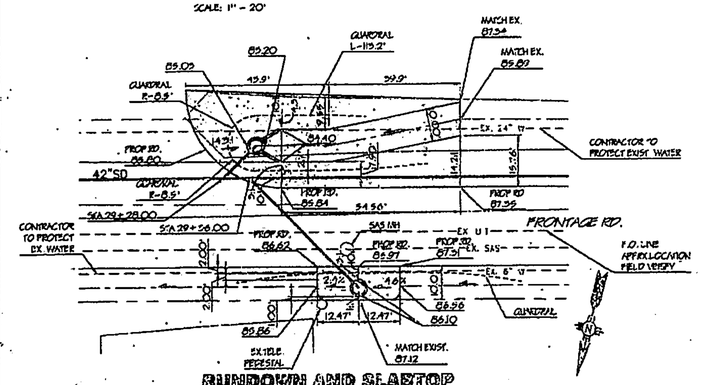
RUNDOWNS
BRIDGE BLVD. EAST OF 90TH
SCALE: 1" = 20'



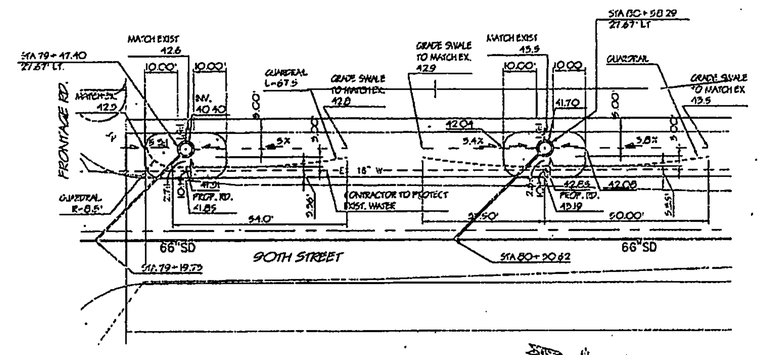
RUNDOWN AND SLABTOP
FRONTAGE RD. WEST OF 94TH
SCALE: 1" = 20'



SLABTOPS
90TH SOUTH OF VOLCANO
SCALE: 1" = 20'



RUNDOWN AND SLABTOP
FRONTAGE RD. WEST OF DRIVEWAY, STA 29+00
SCALE: 1" = 20'



SLABTOPS
90TH NORTH OF CENTRAL
SCALE: 1" = 20'

GENERAL NOTES

1. SEE SHEETS 16 AND 17 FOR STORM DRAIN LATERAL PROFILES
2. SEE DETAIL SHEET 18 FOR TYPICAL CURBREAL INFORMATION USE TYPICAL LENGTH AND RADIUS UNLESS OTHERWISE NOTED.
3. ALL PAVING FOR ASPHALT RUNDOWNS SHALL BE PER BRIDGE BOULEVARD PAVING SECTION ON SHEET 5

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CONDORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

MARK 10-26-00

URS Greiner Woodward Clyde
6565 AMERICAS PKWY. NE
SUITE 610
ALBUQUERQUE NM, 87110
(505) 884-2611

NO.	DATE	REMARKS REVISIONS DESIGN	BY

DESIGNED BY: JAK DATE: 05/2000
DRAWN BY: JAK DATE: 05/2000
CHECKED BY: MSH/TG DATE: 05/2000

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES – PHASE IVC
TIERRA BAYITA DRAINAGE FACILITIES

RUNDOWN DETAILS

Design Review Committee: JUL 14 2000 — DESIGN REVIEW COMMITTEE
City Engineer Approval: JUL 14 2000 — CITY ENGINEER
Last Design Update: Mo./Day/Yr. | Mo./Day/Yr.

City Project No. 623491 | Zone Map No. K-9 | Sheet 13 Of 22

ENGINEER'S SEAL: RUDOLPH T. WEBER, JR. — NEW MEXICO — 7208 — REGISTERED PROFESSIONAL ENGINEER — 6/28/00

AS BUILT INFORMATION
CONTRACTOR: CONDORE CONST. DATE 7/01
SURVEYED BY: WALKER SURVEYING CO. DATE 7/01
DRAWINGS BY: B.A.K. DATE 10/01
CHECKED BY: C.A.M.
VERIFICATION BY: URS DATE 10/01
CORRECTED BY: URS
MICRO-FILM INFORMATION
RECORDED BY DATE

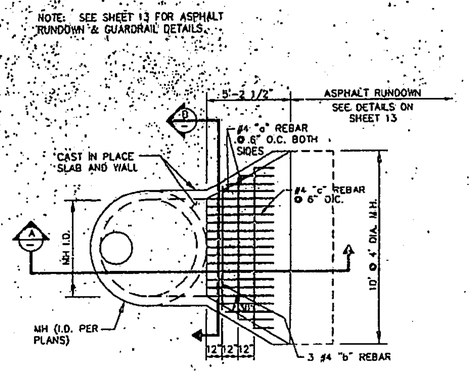
BENCH MARKS

ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,482,085.203 E = 352,792.376
ELEV = 5204.425

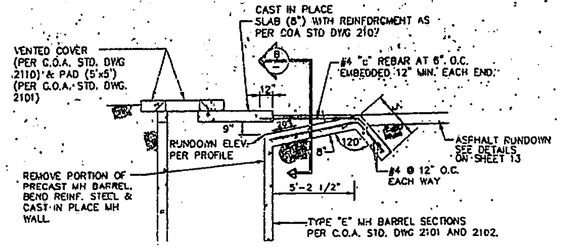
SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
1886	GREINER	6-7/90
1863	GREINER	7&9/90
1863	GREINER	12/90
1893	GREINER	1/91
1910	GREINER	9-10/93
1910	URS GREINER	9/11/97
1910	URS GREINER WC	8/99

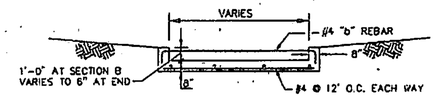
FEB 06 2003
HYDROLOGY SECTION



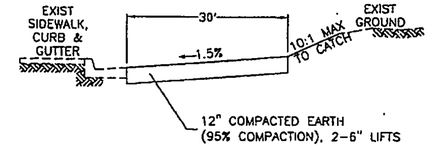
RUNDOWN INLET
SCALE: 1/4"=1'-0"



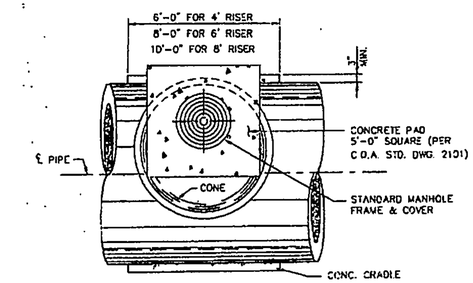
SECTION A
NOT TO SCALE



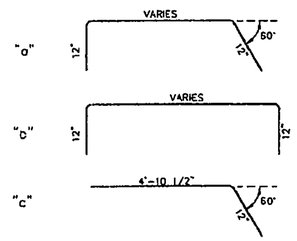
SECTION B
NOT TO SCALE



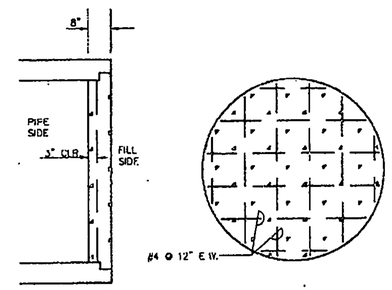
94th STREET TYPICAL SECTION
STA 3+79.78 TO 4+60.00
NTS



TYPE "A" MANHOLE
NOT TO SCALE **PLAN**



RUNDOWN INLET REBAR DETAIL
NOT TO SCALE

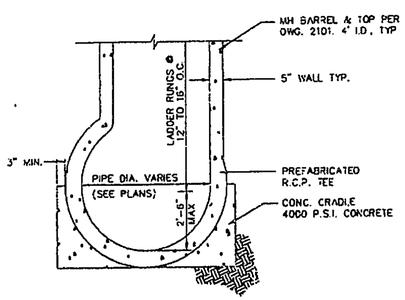


PIPE PLUG DETAIL
SCALE: 1/2" = 1'

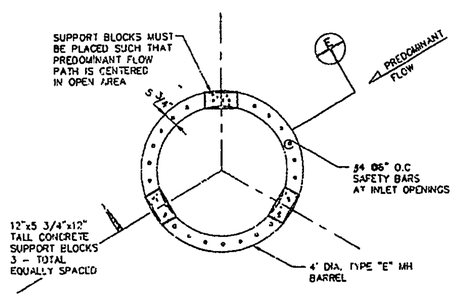
RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR(CONDORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

10-26-01

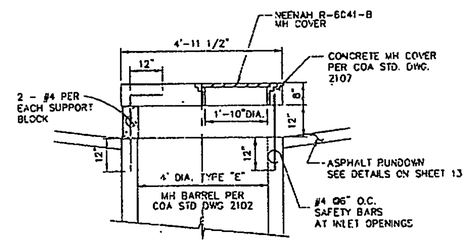


TYPE "A" MANHOLE
NOT TO SCALE **PROFILE**

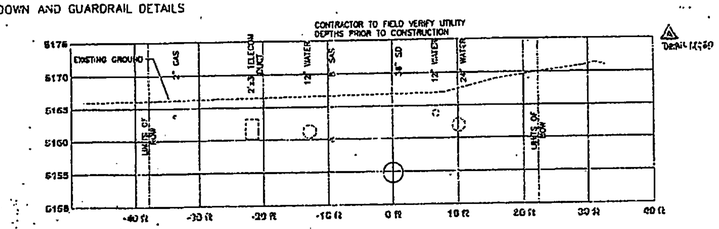


SLAB TOP INLET DETAIL
SCALE: 1" = 2'

SEE SHEET 13 FOR ASPHALT RUNDOWN AND GUARDRAIL DETAILS



SECTION F/13
SCALE: 1"=2'



TYPICAL 94th STREET UTILITIES SECTION
SCALE 1"=10'

AS BUILT INFORMATION
CONTRACTOR Condore Construction DATE 7/01
ENGR. Walker Surveying Co. REPRESENTATIVE DATE 7/01
INSPECTOR DATE
WATER LINE CHECKED BY C.O.A. DATE 10/01
DRAWING CORRECTED BY U.S.S. MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 10-1-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,482,085.203 E = 352,792.376
ELEV = 5204.425

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
1880	GRONER	6-7/90
1863	GRONER	7&9/90
1863	GRONER	12/90
1893	GRONER	1/91
1910	GRONER	9-10/91
1910	URS GRONER	9/11/97
1910	URS GRONER WC	8/98

ENGINEER'S SEAL
S. HOLSTEN RAMOS REGISTERED PROFESSIONAL ENGINEER No. 7255 NEW MEXICO
6/28/00
URS GRONER PROJECT NO. E23A001.03

NO.	DATE	REMARKS	BY
A	6-2-00	DRAINAGE REV - 94 ST. SECTIONS	C&R

REVISIONS
DESIGN
DESIGNED BY: URSGWC DATE: 05/2000
DRAWN BY: URSGWC DATE: 05/2000
CHECKED BY: NSR/TG DATE: 05/2000

URS Greiner Woodward Clyde
6565 AMERICAS PKWY. NE
SUITE 610
ALBUQUERQUE NM, 87110
(505) 884-2611

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

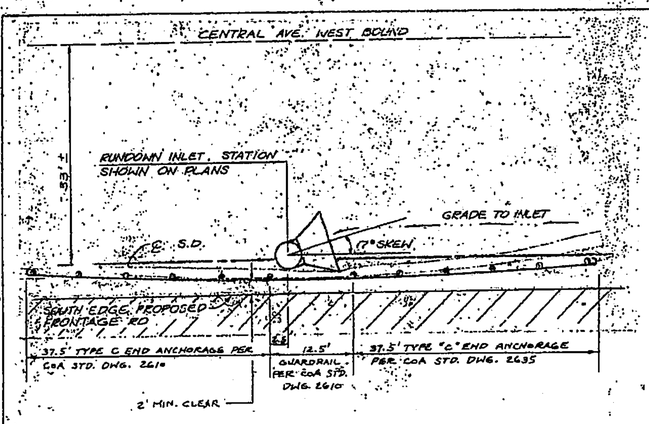
TITLE: ARROYO DEL NORTE STORM DIVERSION FACILITIES - PHASE IIE
TIERRA BAYITA DRAINAGE FACILITIES
MISCELLANEOUS STORM DRAIN DETAILS

Design Review Committee: JUL 1 4 2000 DESIGN REVIEW COMMITTEE
City Engineer Approval: JUL 1 4 2000 CITY ENGINEER
Last Design Update | Mo./Day/Yr. | Mo./Day/Yr.

City Project No. 623491 | Zone Map No. K-9 | Sheet 14 Of 22

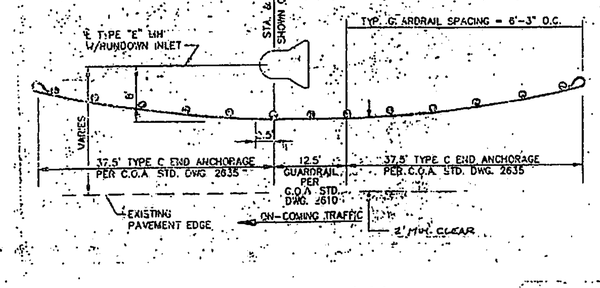
FEB 06 2003
HYDROLOGY SECTION

G000118 P:\CADD\ALL-DETL2.DWG 04-00



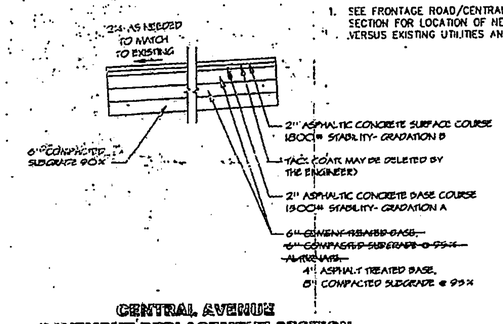
TYPICAL RUNDOWN INLET INSTALLATION - CENTRAL AVENUE

SCALE: 1" = 10'



TYPICAL RUNDOWN INLET INSTALLATION - BRIDGE BOULEVARD & 90th STREET

SCALE: 1" = 10'

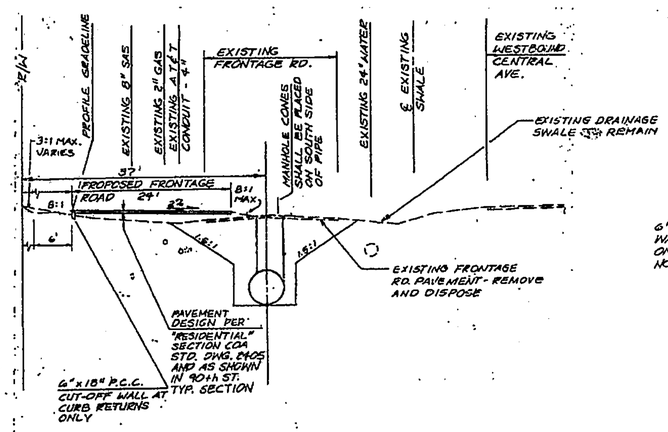


CENTRAL AVENUE PAVEMENT REPLACEMENT SECTION

N.T.S.

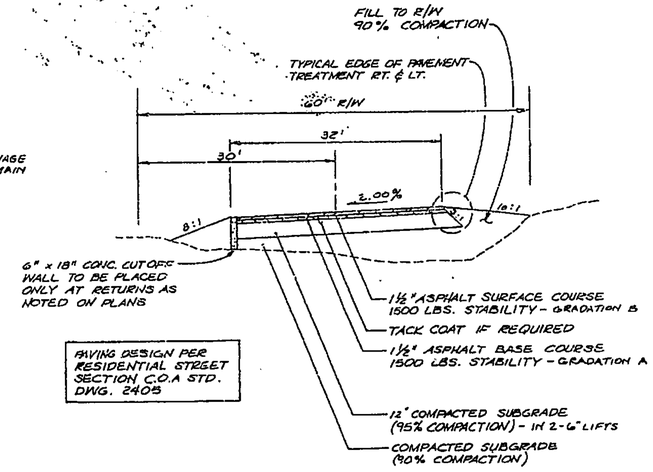
GENERAL NOTES

1. SEE FRONTAGE ROAD/CENTRAL AVE. TYPICAL SECTION FOR LOCATION OF NEW STORM DRAIN VERSUS EXISTING UTILITIES AND ROADWAY.



HZ. & VERT. SCALE: 1" = 10'

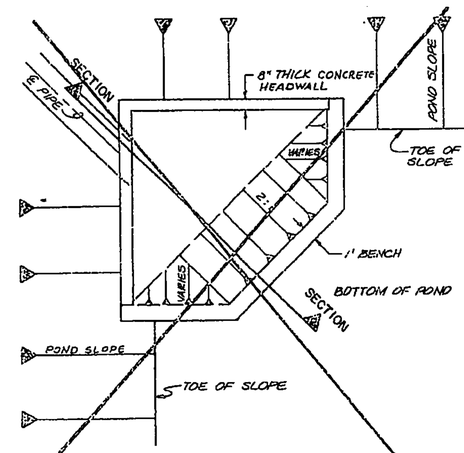
FRONTAGE ROAD TYPICAL SECTION



PAVING DESIGN PER RESIDENTIAL STREET SECTION C.O.A STD. DWG. 2405

90th STREET TYPICAL SECTION NORTH OF CENTRAL AVE.

NTS



VOLCANO POND & CENTRAL POND INFLOW FACILITY

NTS

RECORD DRAWINGS

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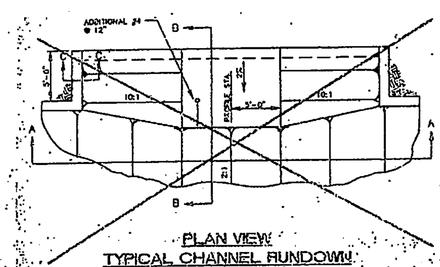
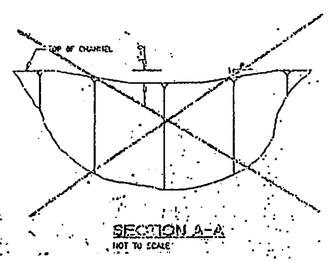
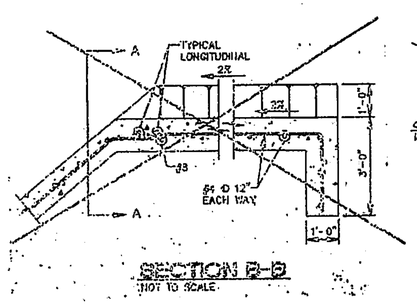
10-26-01



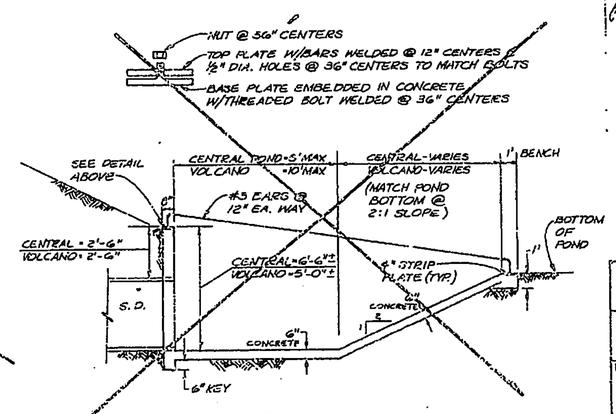
PLAN VIEW
TYPICAL CHANNEL RUNDOWN
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION
NTS

AS BUILT INFORMATION
CONTRACTOR Condore Inc. DATE 7/01
SURVEYED BY Walker Surveying Co. INSPECTOR'S INITIALS B.C. DATE 7/01
FIELD BOOK 2-2455 PAGE 46 DATE
DRAWN BY JKS DATE 10/01
CHECKED BY CM
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
1885	GREINER	3-7/90
1383	GREINER	7/30/90
1383	GREINER	12/90
1893	GREINER	1/91
1910	GREINER	5-10/93
1910	LRS GREINER	8/97
1910	LRS GREINER	8/99

ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEAST/TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,492,055.203 E = 352,792.376
ELEV = 5104.435

ENGINEER'S SEAL
S. M. HOLSTAD NEW MEXICO No. 7288 PROFESSIONAL ENGINEER

NO.	DATE	REMARKS REVISIONS DESIGN	BY

DESIGNED BY JBH DATE 8/99
DRAWN BY DTA DATE 8/99
CHECKED BY JKS DATE 8/99
LRSCONC PROJECT NO. E30009.20

LRS Carter Lavender Co.
5971 JEFFERSON BLVD. NE
SUITE 101
ALBUQUERQUE, NM 87109
(505) 345-3999

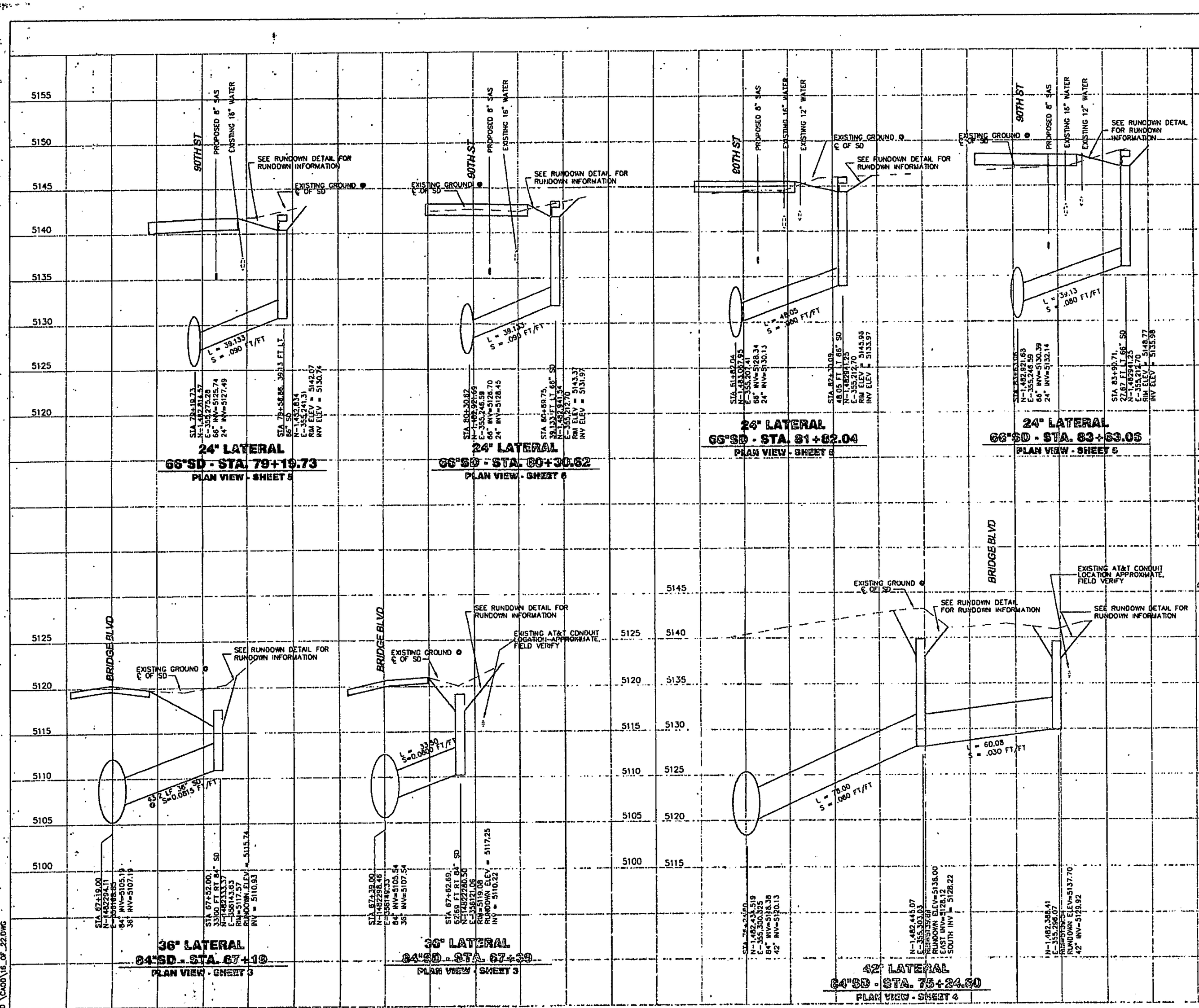
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: ARROYO DEL NORTE STORM DIVERSION FACILITIES – PHASE IIIE
TIERRA BAYITA DRAINAGE FACILITIES

MISCELLANEOUS DETAILS & PAVING SECTIONS

Design Review Committee | City Engineer Approval | Year Design Update | Ma/Day/Yr | Ma/Day/Yr

City Project No. 623491 | Zone Map No. K-9 | Sheet 15 of 22



1. RUNDOWN DETAILS ARE SHOWN ON SHEET 13.

RECORD DRAWINGS

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RH 10-26-01

6/28/00

GRAPHIC SCALE IN FEET

HORIZONTAL: 20 0 20 40

VERTICAL: 5 0 5 10

URS Greiner Woodward Clyde
6565 AMERICAS PKWY. NE
SUITE 610
ALBUQUERQUE NM, 87110
(505) 884-2611

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: AMOLE DEL NORTE STORM DIVERSION FACILITIES – PHASE IIIE
TIERRA BAYTA DRAINAGE FACILITIES
MISCELLANEOUS PROFILES

Design Review Committee: JUL 14 2000 DESIGN REVIEW COMMITTEE
City Engineer Approval: JUL 14 2000 CITY ENGINEER
Last Design Update | Mo./Day/Yr. | Mo./Day/Yr.

City Project No. 623491 | Zone Map No. K-9 | Sheet 16 Of 22

AS BUILT INFORMATION
CONTRACTOR Condore Const DATE 7/01
SURVEY PROVIDED BY Walker Surveying Co. DATE 7/01
AS-BUILTS PREPARED BY R.B. Zaiss DATE 7/01
FIELD VERIFICATION BY Cad DATE
DRAFTING PERFORMED BY KRS DATE 10/01
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,482,085.203 E = 352,792.376
ELEV = 5204.425

SURVEY INFORMATION
FIELD NOTES

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1883 & 1884	GRUNER	12/90
1883	GREINER	1/91
1910	GREINER	9-10/93
1910	URS GREINER	9/11/97
1910	URS GREINER	8/99

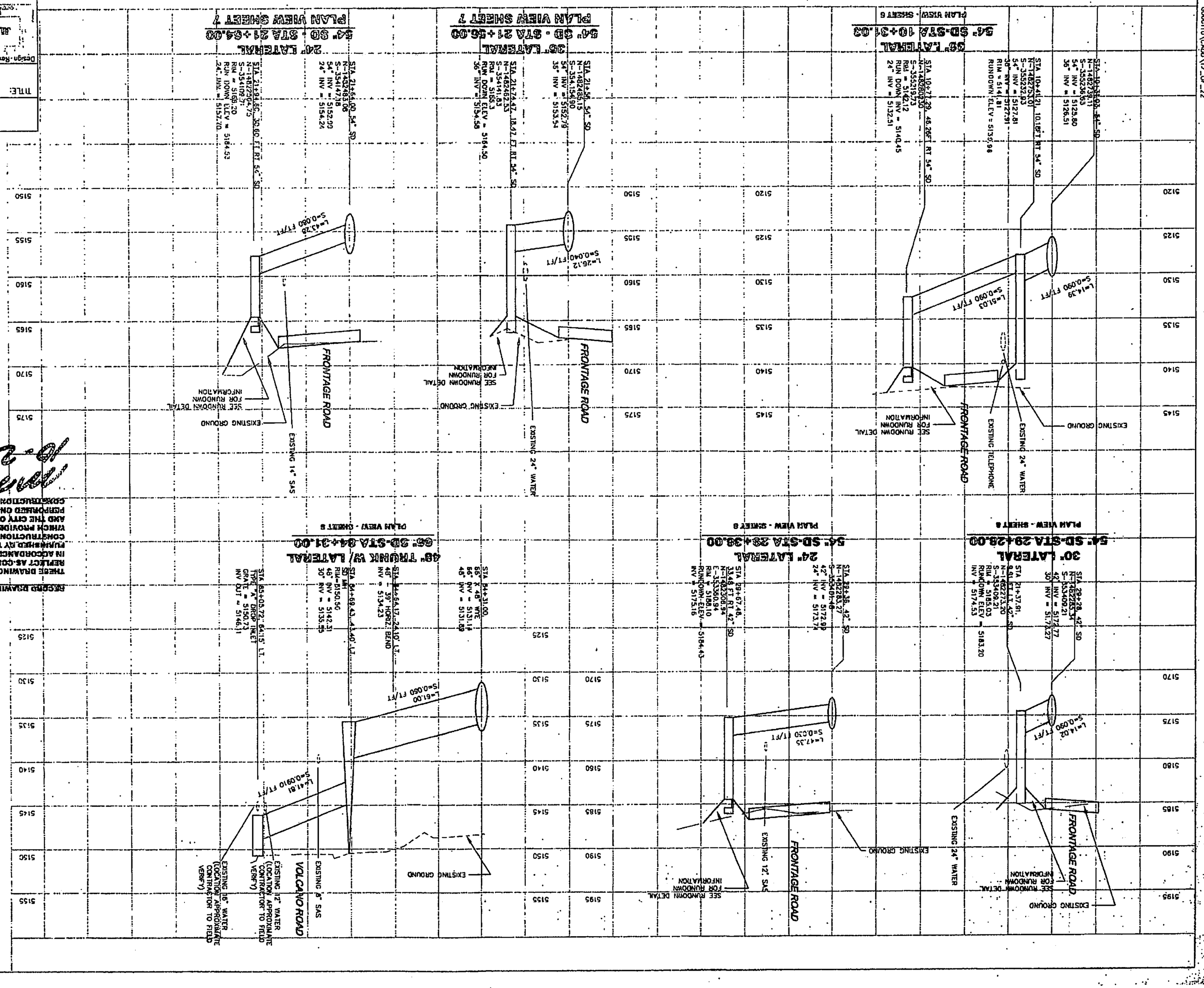
ENGINEER'S SEAL
STATE OF NEW MEXICO No. 7268 PROFESSIONAL ENGINEER
URS GREINER PROJECT NO. E60000.56

NO.	DATE	REMARKS REVISIONS	BY
		DESIGN	

DESIGNED BY: CSR DATE: 5/2000
DRAWN BY: CSR DATE: 5/2000
CHECKED BY: DATE:

FEB 06 2001
HYDROLOGY SECTION

G000110 \CADD\16_OF_22.DWG



RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CONCORE CONSTRUCTION), WALKER SURVEYING CO., WHICH PROVIDED CONSTRUCTION SURVEYS, AND THE CITY OF ALBUQUERQUE, WHICH PERFORMED ON-SITE INSPECTION DURING CONSTRUCTION.

10-22-01

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: AMOLE DEL NORTE STORM DRAINAGE FACILITIES - PHASE IIE
INTERM BASIN DRAINAGE FACILITIES
MISCELLANEOUS PROFILES

Design Review Completed — City Engineer Approval — City Engineer
JL 1/4/00 — PENDING — JL 1/4/00
Last Design Update — Mo./Day/Yr. — Mo./Day/Yr. — Mo./Day/Yr.

City Project No. 623491 | Zone Map No. K-9 | Sheet 17 Of 22

URS Greiner Woodward Clyde
6565 AMERICAS PKWY. NE
SUITE 610
ALBUQUERQUE NM, 87110
(505) 884-2611

NO.	DATE	REMARKS	BY
		REVISIONS	

DESIGNED BY: CSR — DATE: 5/2000
DRAWN BY: CSR — DATE: 5/2000
CHECKED BY: — DATE:

GRAPHIC SCALE IN FEET
HORIZONTAL: 40 20 0 20
VERTICAL: 10 5 0 5

ENGINEER'S SEAL
URS GREINER WOODWARD CLYDE
6/15/00

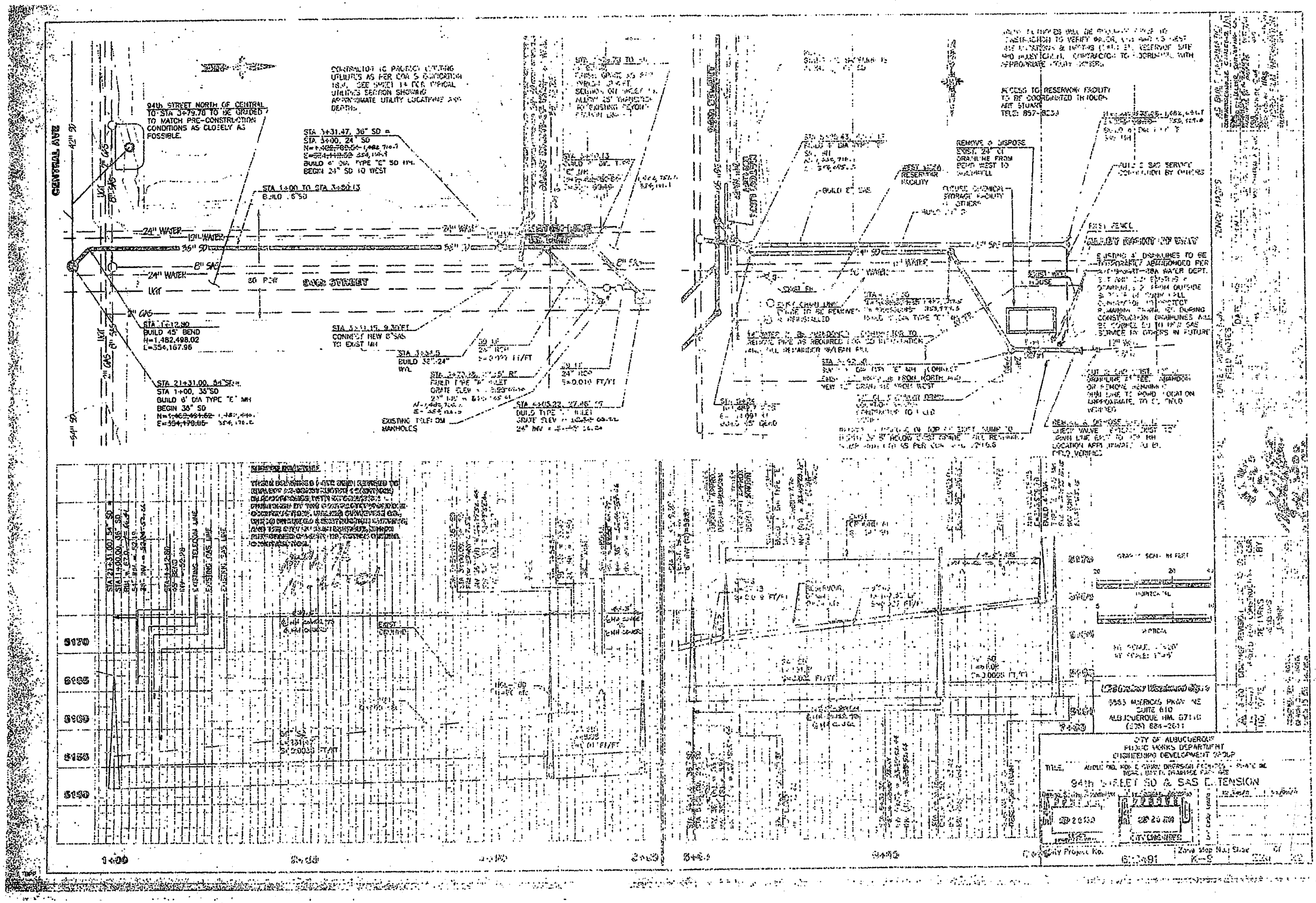
SURVEY INFORMATION

NO.	BY	DATE	FIELD NOTES
1830	GREINER	6-7/90	ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE
1983	GREINER	7&8/90	CURB ON THE NORTHEASTERLY TURN ISLAND IN THE
PBR & 1983	CHUNER	12/90	INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
1983	GREINER	1/91	N = 1482985.903 E = 352792.376
1910	GREINER	9-10/91	ELEV = 5204.425
1910	URS GREINER	5/11/97	
1910	URS GREINER WC	8/99	

BENCH MARKS

AS BUILT INFORMATION
CONTRACTOR CONCORE CONST. DATE 7/01
SURVEY BY WALKER SURVEYING CO. ACCEPTANCE BY CITY DATE 7/01
REDLINE BY CoA DATE
COMPUTER BY URS DATE 10/01
MICRO-FILM INFORMATION
RECORDED BY DATE

FEB 06 2003
SECTION


CENTRAL AVE
94th STREET NORTH OF CENTRAL TO STA 3+79.70 TO BE GRADED TO MATCH PRE-CONSTRUCTION CONDITIONS AS CLOSELY AS POSSIBLE.
STA 3+31.47, 36" SD
STA 3+00, 24" SD
BUILD 6' DIA. TYPE "E" SD MH.
BEGIN 24" SD TO WEST
STA 1+00 TO STA 3+80.13
BUILD 18"SD
24" WATER
12" WATER
36" SD
8" SAS
80 ROW
BACK STREET
2" GAS
STA 1+12.80
BUILD 45° BEND
N=1,482,498.02
E=354,167.96
STA 3+13.15, 9.30 FT
CONNECT NEW 8" SAS TO EXIST MH
STA 3+34.5
BUILD 36"-24" BVL
24" RCP
S=0.010 FT/FT
STA 21+31.00, 54" SD
STA 1+00, 36" SD
BUILD 6' DIA TYPE "E" MH
BEGIN 36" SD
EXISTING TELEPHONE MANHOLES
STA 4+05.22, 27.46' LT
BUILD TYPE "A" INLET
GRATE ELEV
24" INV
ACCESS TO RESERVOIR FACILITY TO BE COORDINATED THROUGH ART STUART
TELEP. 857-8039
REMOVE & DISPOSE EXIST. 24" CI DRAINLINE FROM POINT WEST TO MANHOLE
BUILD 8" SAS
FUTURE RESERVOIR FACILITY
FUTURE CHEMICAL STORAGE FACILITY
BUILD SAS SERVICE CONNECTION BY OTHERS
FENCE
EXISTING 3" DRAINLINES TO BE TEMPORARILY ABANDONED PER
CONTRACTOR TO REMOVE PIPE AS REQUIRED FOR CONSTRUCTION
REMOVE & DISPOSE
CHECK VALVE
5170
5165
5160
5155
5150
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
28+00
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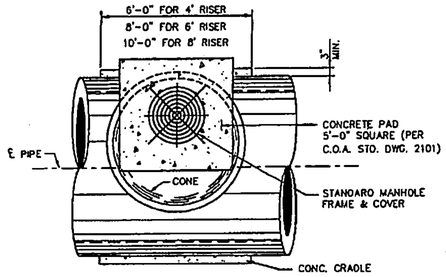
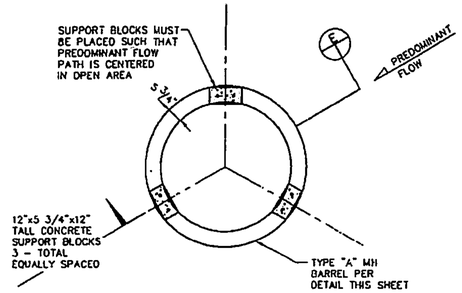
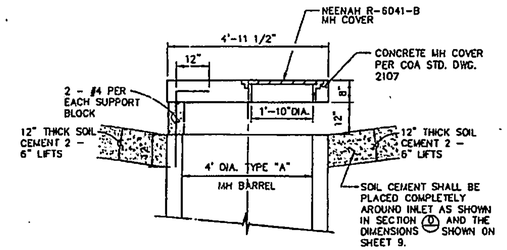
39+00
40+00



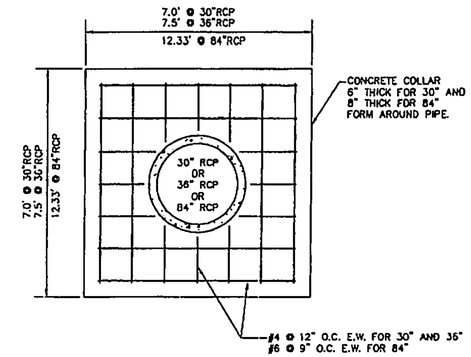
TYPE "A" MANHOLE PLAN
NOT TO SCALE



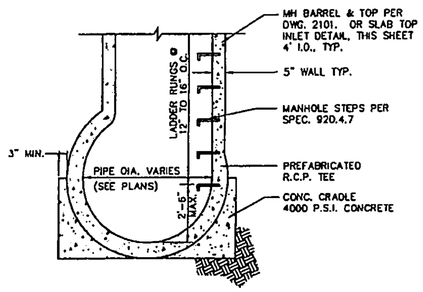
SLAB TOP INLET DETAIL
SCALE: 1" = 2'



SECTION
SCALE: 1"=2' E/13

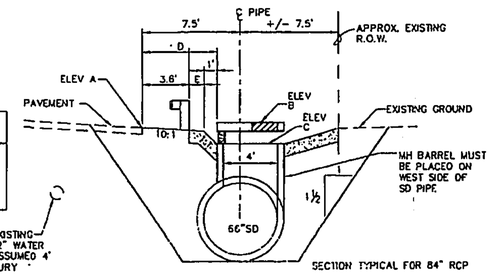


CONCRETE COLLAR DETAIL
NOT TO SCALE

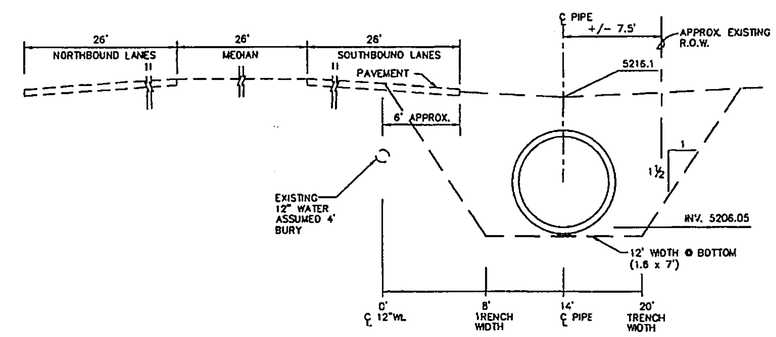


TYPE "A" MANHOLE PROFILE
NOT TO SCALE

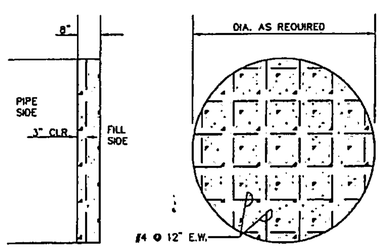
	STA. 12+62 @ 84"SD	STA 13+62 @ 66"SD
A	5216.1	5215.8
B	5216.3	5216.0
C	5214.63	5214.33
D	6.52'	5.77'
E	1.92'	1.17'



GUARDRAIL/INLET PLACEMENT D/9 13
SCALE: HZ. 1"=5'
VT. 1"=5'

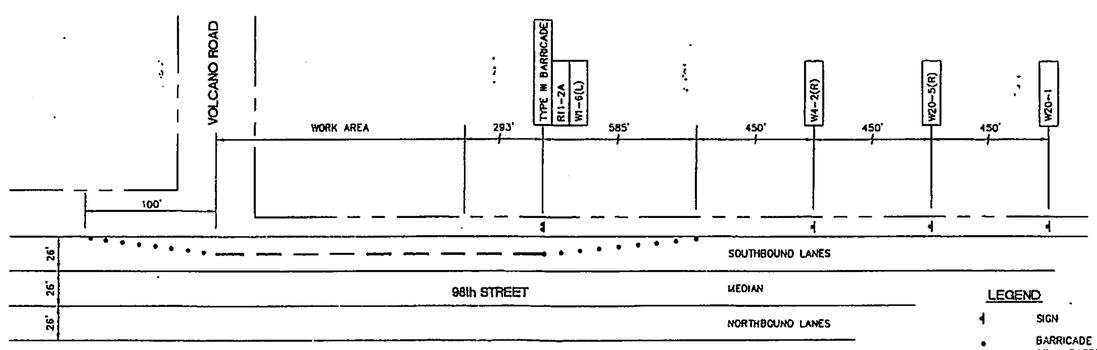


SECTION
SCALE: 1"=5' D/9 13



PIPE PLUG DETAIL
SCALE: 1/2" = 1'

NOTE: CONSTRUCTION REQUIRING LANE CLOSURE ON 98TH STREET SHALL BE DONE ON A 24 HOUR BASIS.



98th STREET AT VOLCANO ROAD RIGHT LANE CLOSURE
SCALE: 1" = 50'

LEGEND
- SIGN
- BARRICADE - TYPE I, TYPE II, OR A BARREL
- BARRICADE - TYPE III
- PRECAST CONC. WALL BARRIER PER NMSHTO SERIAL CWB-75

RECORD DRAWINGS
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT AS-CONSTRUCTED CONDITIONS FOR STORM DIVERSION FACILITIES IN ACCORDANCE WITH INFORMATION FURNISHED BY THE CONTRACTOR (CHAVA TRUCKING) AND THE CITY OF ALBUQUERQUE WHICH PERFORMED ON-SITE INSPECTION AND SURVEY DURING CONSTRUCTION.

MRH 12-15-97

AS BUILT INFORMATION
CONTRACTOR CHAVA TRUCKING DATE
WORK STAKED BY COA DATE
INSPECTOR'S ACCEPTANCE BY COA DATE
MYLAR REVIEWED BY COA DATE 8/97
CORRECTED BY UPESG
MICRO-FILM INFORMATION
RECORDED BY DATE

BENCH MARKS
ACS 10-L-9 ALUMINUM CAP SET IN CONCRETE CURB ON THE NORTHEASTERLY TURN ISLAND IN THE INTERSECTION OF 98th STREET AND CENTRAL AVENUE.
N = 1,482,085.203 E = 352,792.376
ELEV = 5204.425

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
MARK S. HOLSTAD NEW MEXICO No. 7288 REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY: M.S.H. DATE: 10/00
DRAWN BY: J.L.R./P.J.R./P.D.S. DATE: 3/94
CHECKED BY: M.S.H./P.O. DATE: 2/95

Greiner, Inc.

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

TITLE AMOLE DEL NORTE STORM DIVERSION FACILITIES-PHASE IIC
TIERRA BAYITA DRAINAGE FACILITIES

TRAFFIC CONTROL & MISCELLANEOUS DETAILS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C Chairman	B.J. Stockton	5-12-95	Water	[illegible]	
Transportation	[illegible]	4-24-95	Wastewater	"	
Hydrology	S. Boberg	4-24-95			

DRAWING NO. 4076.92 MAP NO. K-9 SHEET 13 OF 15

FEB 06 2003 HYDROLOGY

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