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L11/D15

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

June 24, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: REVISED DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
RECEIVED JUNE 15, 1993; ENGINEER'S STAMP DATED 6-10-93
FOR PRELIMINARY, FINAL PLAT & WORK ORDER APPROVAL

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Preliminary & Final Plat and Work Order.

Development of either Tract A or B will require a site specific Grading & Drainage Plan for that tract. Tract B must use a sidewalk culvert or other approved structure to discharge runoff to Bridge Street.

If I can be of further assistance, you may call me at 768-2727.

Sincerely,

John P. Curtin

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

xc: Fred Aguirre
Alan Martinez

WPHYD+7640;jpc

25×10 32×10

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DIAMOND SHAMROCK ROMERO-R 'E TRACTS A AND B ZONE ATLAS/DRNG. FILE #: L-11 / D-15

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

LEGAL DESCRIPTION: UNPLATTED

CITY ADDRESS: BRIDGE AT COORS SW

ENGINEERING FIRM: BRASHER ENGINEERING CONTACT: D. LORENZ

ADDRESS: 11930 MENAUL NE #113 PHONE: 296 0422

OWNER: MATTY ROMERO CONTACT: M. ROMERO

ADDRESS: 2440 ALAMO SE PHONE: 247-7750

ARCHITECT: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: SOUTHWEST SURVEYING CONTACT: F. WILSON

ADDRESS: LOMAS NE PHONE: 247-4444

CONTRACTOR: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- [X] DRAINAGE REPORT
- [ ] DRAINAGE PLAN
- [ ] CONCEPTUAL GRADING & DRAINAGE PLAN
- [ ] GRADING PLAN
- [ ] EROSION CONTROL PLAN
- [ ] ENGINEER'S CERTIFICATION
- [ ] OTHER

PRE-DESIGN MEETING:

- [X] YES
- [ ] NO
- [X] COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- [ ] SKETCH PLAT APPROVAL
- [X] PRELIMINARY PLAT APPROVAL
- [ ] S. DEV. PLAN FOR SUB'D. APPROVAL
- [ ] S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- [ ] SECTOR PLAN APPROVAL
- [X] FINAL PLAT APPROVAL
- [ ] FOUNDATION PERMIT APPROVAL
- [ ] BUILDING PERMIT APPROVAL
- [ ] CERTIFICATE OF OCCUPANCY APPROVAL
- [ ] GRADING PERMIT APPROVAL
- [ ] PAVING PERMIT APPROVAL
- [ ] S.A.D. DRAINAGE REPORT
- [ ] DRAINAGE REQUIREMENTS
- [X] OTHER WORK ORDER (SPECIFY)

DATE SUBMITTED: JUNE 15, 1993

BY: D. A. LORENZ

25×10 32×10

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BRASHER ENGINEERING INC.

June 11, 1993

John Curtin, PE
PWD/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87102

SUBJECT: LANDS OF ROMERO PAGE (L11/D15)
BEI Job 90522

Dear John:

Submitted herewith for review and approval is one copy of the Drainage Management Plan for the subject project. The plan has been revised reflect a 2 tract subdivision rather than the 3 tract subdivision originally proposed. As a result, the concrete channel that was proposed to drain Tract 'A' is no longer required. Tracts 'A' and 'B' each have frontage on Bridge Blvd, which is the project outfall. As required by Transportation, we are constructing standard curb and gutter along Coors and Bridge. This creates a cleaner site, since offsite flow will not enter the site from Coors.

We have received Richard Heggen's comment letter dated May 10, 1993. It is my impression that Mr. Heggen has not reviewed our most recent submittal which addresses several of his concerns. For the record I have the following response to his letter:

1. The Amole Channel has greatly reduced the off-site flow impacting the site. As shown by the re-mapping study being prepared by Resource Technologies, this site no longer lies with a flood hazard zone. As a result, the choking effect at the intersection has been improved. A preliminary copy of the revised floodplain map is provided with the report.

2. Since we are now providing standard curb and gutter, and recommending finish floor elevations 2 feet above adjacent top of curb, I do not feel that freeboard should be an issue. Reviewing the site topography, it seems very unlikely that runoff will exit Bridge Blvd and flow into the site.

3. I do not feel that a detailed study of the intersection is within the scope of this project. It is our objective to demonstrate that 1) off-site runoff will not enter the

11930 MENAUL NE, SUITE 113 ALBUQUERQUE, NEW MEXICO 87112 (505) 296-0422 (505) 296-0466 FAX

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site, and 2) that developed runoff from this site does not impact downstream property or improvements. I do agree that the magnitude of excess runoff in the intersection is undesirable, however, this project should not be responsible for solving an existing regional problem.

4. As stated in the report, the capacity of the detention pond and collection system was conducted by Scanlon & Associates in 1987. That study concluded that adequate capacity exists for use by this site.

We are concurrently pursuing Preliminary Plat, Final Plat, and Work Order approval. Please review this submittal at your earliest opportunity. If you have any questions, please call.

BRASHER ENGINEERING, INC.

Dennis A. Lorenz, PE

/dl
encl

25×10 32×10

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DANIEL W. COOK, CHAIRMAN
PAT D. HIGDON, VICE-CHAIRMAN
RONALD BROWN, SECRETARY-TREASURER
GENEVA MEEKER, ASST. SECRETARY-TREASURER
MICHAEL MURPHY, DIRECTOR

LARRY A. BLAIR
EXECUTIVE ENGINEER

.buquerque
Metropolitan
Arroyo
Flood
Control
Authority
2600 PROSPECT N.E. - ALBUQUERQUE, N.M. 87107
TELEPHONE (505) 884-2215

May 13, 1993

Gilbert Aldaz, P.E. & P.S.
City-County Floodplain Administrator
City of Albuquerque PWD
One Civic Plaza
Albuquerque, NM 87102

RE: "Drainage Management Plan for Tracts A, B and C Romero-Page Et.Al." by Brasher Engineering (L-11)

Dear Gilbert:

AMAFCA recently contracted with Dr. Richard Heggen to review the above-referenced project on behalf of AMAFCA. Enclosed is a letter which contains the results of this review. AMAFCA has considered the findings in Dr. Heggen's letter and believes that they appropriately represent AMAFCA's comments on this project.

Sincerely,
AMAFCA

Clifford E. Anderson, P.E. & L.S.
Drainage Engineer

CEA:ij

enclosure

copy: Dennis Lorenz, Brasher Engineering
Richard Heggen, 620 Ridgecrest SE, 87108

25×10 32×10

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Richard J. Heggen
Water Resources Engineering

b) A profile for Bridge above and below Coors. The floodway map leads me to anticipate [redacted]

c) Indication of existing and proposed (if any) storm sewers. The existing transverse inlet on Bridge ties into a 42" pipe. What's the capacity of the pipe? The submission mentions drop inlets in the intersection. What do they do? Could they be added to, if needed?

d) At a minimum, [redacted], if that seems to be the mechanism.

4) The concepts and initial computations regarding internal drainage issues seem fine.

5) Is there any issue with the 10.6 acre-ft. detention pond receiving 12.5 acre-ft (upstream undeveloped) plus 0.36 or 0.67 acre-ft (onsite undeveloped and developed) plus whatever upstream development may later add less whatever is ponded in Basin B? I presume that the Arenal Canal catches the overflow. This is only minorly dependent on this project, but it merits a check by someone who understands the larger scheme. Scanlon Report?

In conclusion, Brasher has done an adequate job on what was submitted. It's clear and checkable. I would like, however, some additional detail (not design) on what this might mean for the Bridge-Coors intersection. Of all the tracts in the system, it is the Diamond Shamrock site that may worsen the intersection problem the most. I'm not sure that there will be a problem, but I'd like it thought through.

Thank you for the opportunity to work with AMAFCA. Please let me know if additional review is needed.

Yours truly,

RJH

Richard Heggen
cc: Wilson & Co.

25×10 32×10

0000 0000 1175

Richard J. Heggen
PE, PH, PhD
Water Resources
Engineering
620 Ridgecrest SE
Albuquerque, NM 87108

Monday, May 10, 1993

Cliff Anderson, PE
AMAFCA
2600 Prospect NE
Albuquerque, NM 87107

Dear Cliff:

Following is my review of *Zone L-11 Drainage Management Plan for Tracts A, B and C, Romero-Page Et Al* by Brasher Engineering. Which submittal?

1) Level of Submission. This is a Drainage Management Plan, a conceptual document establishing criteria and a general approach to problem resolution. It properly refers to subsequent Grading and Drainage Plans which will detail the designs. My concern is that there may be a big gap between concept and dirt work when the project chokes off a large piece of the floodway. I would prefer at this early point to have more hydraulic analysis. My subsequent comments are so directed.

2) Off-Site Runoff. I have no particular knowledge regarding future development, but I'd not anticipate that it be just treatment C (the source, I presume, for the Rational 0.61) forever. The project tracts go from all C to B and D and the peak Q increases 43 percent. If the rest of the upper basin does the same, there's that much more flow to get through the intersection.

3) Site Elevations. Having FF elevations 2 ft above the curb seems to be an adequate plan at this point. What about the rest of the property? I'd think they'd fill more of the Diamond Shamrock lot in, but to what level? This needs to be answered now to foresee the intersection flow paths (see below).

3) Street Intersections. This is a weary issue for the City. There isn't a strong analytic methodology to predict what will happen. I don't expect Brasher to come up with one. HEC-2 won't do it. I have my doubts about FESWMS, as waves may be significant. Brasher's street depth analysis is for uniform supercritical flow down Bridge. Depths will be greater in Coors.

To provide allow some qualitative prediction I'd like:

a) A topo of the intersection with 1-ft contours. If flow is choked by the project, it will back further up Coors. Is there possibility for an end run?

(505) 277-5737, 277-2722, FAX (505) 277-1988 e-mail rheggen@bootes.unm.edu

25×10 32×10

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

May 12, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
RECEIVED MAY 10, 1993; ENGINEER'S STAMP DATED 5-6-93
FOR PRELIMINARY, FINAL PLAT & WORK ORDER APPROVAL

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Water & S.A.S. Work Order.

Fred Aguirre has informed me that the Plat was changed at DRB. There will be two tracts instead of three and curb & gutter will be required on Coors and Bridge. Therefore submit a revised Drainage Report and Infrastructure List to reflect these changes.

If you have any questions about this project, you may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre

WPHYD+7640;jpc

25×10 32×10

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: Diamond Shamrock ROMERO PAGE TR A,B,C ZONE ATLAS/DRNG. FILE #: L11/B15

DRB #: DRB 91-153 EPC #: — WORK ORDER #: 4662.90

LEGAL DESCRIPTION: UNPLATTED

CITY ADDRESS: COORS AT BRIDGE SW

ENGINEERING FIRM: BRASHER ENGINEERING CONTACT: D. LORENZ

ADDRESS: 11930 MENAUL NE # 113 PHONE: 296-0422

OWNER: MATTY ROMERO CONTACT: M. ROMERO

ADDRESS: 2440 ALAMO SE PHONE: 242-7750

ARCHITECT: NA CONTACT:

ADDRESS: PHONE:

SURVEYOR: SW SURVEYING CONTACT: F. WILSON

ADDRESS: 333 LOMAS NE PHONE: 247-4444

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION
- ___ OTHER

PRE-DESIGN MEETING:

- X YES
- ___ NO
- ___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAT APPROVAL
- X PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- X FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ S.A.D. DRAINAGE REPORT
- ___ DRAINAGE REQUIREMENTS
- X OTHER WORK ORDER (SPECIFY)

DATE SUBMITTED: 5-7-93

BY: D. LORENZ

RECEIVED MAY 10 1993 HYDROLOGY DIVISION

25×10 32×10

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BRASHER ENGINEERING INC.

May 6, 1993

John Curtin, PE
PWD/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87102

SUBJECT: LANDS OF ROMERO PAGE (L11/D15)
BEI Job 90522

Dear John:

Submitted herewith for review and approval is one copy of the Drainage Management Plan Exhibit for the subject project. The plan has been revised to address the comments listed in your April 28, 1993 letter. Specifically, the plan makes the following revisions:

1. I have included on the Plan the necessary detail required to construct the private drainage channel. The required SO #19 information is also provided on the Plan. The Infrastructure Listing will include the channel.

2. As we discussed over the phone, the undeveloped tracts will not be graded to divert flows to Bridge until development occurs.

We are concurrently pursuing Preliminary Plat, Final Plat, and Work Order approval. Please review this submittal at your earliest opportunity. If you have any questions, please call.

BRASHER ENGINEERING, INC.

Dennis A. Lorenz, PE

/dl
encl

APPROVED
MAY 10 1993
HYDROLOGY DIVISION

11930 MENAUL NE, SUITE 113 ALBUQUERQUE, NEW MEXICO 87112 (505) 296-0422 (505) 296-0466 FAX

25×10 32×10

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FIGURE 6

CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING

5-10-93 (DATE)

PROJECT NO: 4662.90
ZONE ATLAS: L-11

PROJECT NAME: LANDS OF ROMERO-PAGE (DIAMOND SHAMROCK) (CROSS BLVD & BRIDGE BLVD)

TYPE OF PROJECT: AHBA ✓ CIP ___ PWC ___ SAD ___ ALL PRIVATE ___

Contact Person: DENNIS LUNA Phone: 296-0942
Firm: BRASHEAR ONAL

Scheduled with the D.R.C. on 5-14-93 at 9:00 AM in Conf. Room 302 on the 3rd Floor of the old City Hall Building.

The Project Is Scheduled For:

/ / Design Report Review
/ / Pre-Design Meeting
/X/ Preliminary Plan Review
/X/ Final Plan Review (Approved Infra. List)
/ / Signoff of Plans (Mylars Required)
/ / _____

The Project Relates To:

/X/ Water /X/ San. Sewer / / Paving / / Storm Drainage / / _____

The Attached Package Includes:

/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only

Indicated below are the Departments/Divisions that have received project documents and are invited to attend. It will be the Project Managers responsiblity to notify consulting engineering firms of date and time of scheduled meetings on all CIP projects.

On Private Plans: First & Receive Prel. Plans--First & Receive Final Plans

/D/ Billy Goolsby	Project Review Section	All
/D/ Richard Dourte	Transportation Development	All
/D/ Stuart Reeder	Utility Design	All
/MV/ Hydro Repres.	Hydrology	All
/D/ Const. Repres.	Construction	All FINAL
/ / Bill Coleman	Traffic Operations	All
/ / Rick Roybal	Construction Coordinator	ALL FINAL
/ / Dick Sales	Street Maintenance	All
/ / Sergio Miranda	Water -Shutoff Plan: Yes/No	All WATER
/ / Diane Scena	Parks & Recreation	ALL LANDSCAPING
/ / Sheryl Germack	Transit Department	CIP/Memos
/ / Joe Luehring	Utility Coordinator	PWC & CIP
/ / Jim Fink	Line Maintenance	CIP/SAS
/ / Joe Dellalonga	City Architect	ARCHITECTURAL
/ / Lee Lunsford	SAD Engineer	SAD
/ / Brett Locke	Transportation Develop.	CIP/TRANS.
/ / Roger Green	Utility Design	CIP/WATER & SAS
/ / Mike Minturn	General Services Dept.	BUILDINGS
/ / Anita Boulton	PWD/Legal Assistant	SPECIFICATIONS
/ / Richard Sertich	Planning Department	CIP/Memos
/ / CIP Manager	CIP	CIP/Memos
/ / _____	_____	_____

RG/tm (WP+123400) Rev. 11/05/91

25×10 32×10

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

April 28, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
ENGINEER'S STAMP DATED 4-19-93; RECEIVED APRIL 20, 1993
FOR PRELIMINARY & FINAL PLAT AND WORK ORDER APPROVAL

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Preliminary Plat approval.

The following comments must be addressed before this project can be approved for Final Plat & Work Order:

1. Add private drainage easement section to Infrastructure List. Provide sufficient inverts to construct channel. An S.O.19 permit will be required to connect the channel to Bridge Blvd. A sidewalk culvert or rundown will be required to discharge runoff from the northeast corner of Tract 'C'.

2. Submit sufficient rough grading to discharge runoff to Bridge Blvd instead of neighboring properties.

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

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Bob Fogelsong, County PWD

WPHYD+7640;jpc

25×10 32×10

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

DESIGN REVIEW COMMITTEE MEETING 04-14-93 1:30 P.M.

PROJECT: L. O. Romero - Page, Tr. A B & C Project No. 4662.90

CONSULTANT: Brasher Engineering

PRESENT: Billy Goolsby, DRC Chairman
Richard Dourte, Transportation Development
Peter Chang, Construction Management
Stuart Reeder, Utility Development

COMMENTS:

1. Verbal comments and mark-ups were provided by Richard Dourte, Transportation Development.
2. Peter Chang provided verbal comments and mark-ups for Construction Management.
3. The Chairman provided marked-up plans with very minor comments.
4. Stuart Reeder provided mark-ups.

The Consultant will make appropriate corrections and submit the mylars, prints and the mark-ups to the Master Scheduler to schedule a final review/signature session.

BG:vgl(WP+125498)

cc: Dennis Lorenz, Consultant, w/Attachment

25×10 32×10

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

April 28, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
ENGINEER'S STAMP DATED 4-19-93; RECEIVED APRIL 20, 1993
FOR PRELIMINARY & FINAL PLAT AND WORK ORDER APPROVAL

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Preliminary Plat approval.

The following comments must be addressed before this project can be approved for Final Plat & Work Order:

1. Add private drainage easement section to Infrastructure List. Provide sufficient inverts to construct channel. An S.O.19 permit will be required to connect the channel to Bridge Blvd. A sidewalk culvert or rundown will be required to discharge runoff from the northeast corner of Tract 'C'.

2. Submit sufficient rough grading to discharge runoff to Bridge Blvd instead of neighboring properties.

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

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Bob Fogelsong, County PWD

WPHYD+7640;jpc

25×10 32×10

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: ROMERO-PAGE TR A,B,C ZONE ATLAS/DRNG. FILE #: L11/D15

DRB #: DRB 91-153 93-129 EPC #: — WORK ORDER #: —4662.90 Water & SAS

LEGAL DESCRIPTION: UNPLATTED

CITY ADDRESS: COORS AT BRIDGE SW

ENGINEERING FIRM: BRASHER ENGINEERING CONTACT: D. LORENZ

ADDRESS: 11930 MENAUL NE #113 PHONE: 296-0422

OWNER: MATTY ROMERO CONTACT: M. ROMERO

ADDRESS: 2440 ALAMO SE PHONE: 242-7750

ARCHITECT: NA CONTACT:

ADDRESS: PHONE:

SURVEYOR: SW SURVEYING CONTACT: F. WILSON

ADDRESS: 333 LOMAS NE PHONE: 247-4444

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION
- ___ OTHER

PRE-DESIGN MEETING:

- X YES
- ___ NO
- X COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAT APPROVAL
- X PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- X FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ S.A.D. DRAINAGE REPORT
- ___ DRAINAGE REQUIREMENTS
- X OTHER WORK ORDER (SPECIFY)

APR 20

DATE SUBMITTED: 1-19-93

BY: D. LORENZ

25×10 32×10

0000 0000 1184

BRASHER ENGINEERING INC.

John Curtin, PE
PWD/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87102

SUBJECT: LANDS OF ROMERO PAGE (L11/D15)
BEI Job 90522

Dear John:

Submitted herewith for review and approval is one copy of the Drainage Management Plan for the subject project. The plan has been revised to address the comments listed in your March 26, 1993 letter. Specifically, the plan makes the following revisions:

1. A preliminary copy of the floodway map update prepared by Resource Technologies which includes the subject site is provided for your review. The map shows that the site is not located within a 100 year floodplain.

2. The plan references a study conducted by Scanlon & Associates that analyzed the capacity of the Bridge Blvd Dam. That study concluded that capacity does exist for the subject site to utilize the dam.

3. The energy calculation is corrected on page 6.

We are concurrently pursuing Preliminary Plat and Work Order approval. Please review this submittal at your earliest opportunity. If you have any questions, please call.

BRASHER ENGINEERING, INC.

Dennis A. Lorenz, PE

/dl
encl

11930 MENAUL NE, SUITE 113 ALBUQUERQUE, NEW MEXICO 87112 (505) 296-0422 (505) 296-0466 FAX

25×10 32×10

0000 0000 1185

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

March 26, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
RECEIVED MARCH 17, 1993 FOR PRELIMINARY & FINAL PLAT APPROVAL
STAMPED & DATED 3-12-93

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology does NOT approve this for Preliminary & Final Plat approval.

The following comments must be addressed before this project can be approved:

1. Resource Technology is preparing a study of the floodplain along Bridge Blvd. Contact them to determine if the Amole Channel removes the floodplain as you claim on page 5.

2. Contact County Public Works to determine the capacity of the storm drain system in Bridge Blvd and the drainage basin it was designed for.

3. Check your energy calculations on page 6. I believe that the total energy is 1.93' @ 5.7% slope which would be only 1.26' above top of curb. Does this create a problem or aggravate an existing one? If so this should be noted in your discussion.

In the future, if you want City Hydrology to distribute your submittal to other agencies you should indicate this on the information sheet.

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

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Bob Fogelsong, County PWD

WPHYD+7640:jpc

PUBLIC WORKS DEPARTMENT
Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works
ENGINEERING GROUP
Telephone (505) 768-2500

25×10 32×10

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: DIAMOND SHAMROCK ROMERO-PAGE TR A,B,C ZONE ATLAS/DRNG. FILE #: L11 /D15

DRB #: DRB 91-153 EPC #: — WORK ORDER #: —

LEGAL DESCRIPTION: UNPLATTED

CITY ADDRESS: COORS AT BRIDGE SW

ENGINEERING FIRM: BRASHER ENGINEERING CONTACT: D. LORENZ

ADDRESS: 11930 MENAUL NE #113 PHONE: 296-0422

OWNER: MATTY ROMERO CONTACT: M. ROMERO

ADDRESS: 2440 ALAMO SE PHONE: 242-7750

ARCHITECT: NA CONTACT:

ADDRESS: PHONE:

SURVEYOR: SW SURVEYING CONTACT: F. WILSON

ADDRESS: 333 LOMAS NE PHONE: 247-4444

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

RECEIVED MAR 17 1993 HYDROLOGY

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION
- ___ OTHER

PRE-DESIGN MEETING:

- X YES
- ___ NO
- X COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAT APPROVAL
- X PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- X FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ S.A.D. DRAINAGE REPORT
- ___ DRAINAGE REQUIREMENTS
- ___ OTHER _____ (SPECIFY)

ATTN: GILBERT ALDAZ

DATE SUBMITTED: 3-16-93

BY: D. LORENZ

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DRAINAGE MANAGEMENT PLAN

FOR

TRACTS A & B

ROMERO-PAGE ET AL

Prepared for:

ROMERO-PAGE ET AL
ALBUQUERQUE, NEW MEXICO

Prepared BY:

BRASHER ENGINEERING, INC.
11930 Menaul NE Suite 113
Albuquerque, New Mexico 87112

Revised
June 1993

6-11-93

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: L11 DATE: 1/14/93
EPC NO.: DRB NO.: ZONE: C1
SUBJECT: ~~[illegible]~~ DIAMOND SHAMROCK
STREET ADDRESS:
LEGAL DESCRIPTION: S.E. CORNER OF COORS + BRIDGE - LANDS OF ROMERO - PAGE ETAL

APPROVAL REQUESTED:
- X PRELIMINARY PLAT
- ___ SITE DEVELOPMENT PLAN
- ___ GRADING/PAVING PERMIT
- X FINAL PLAT
- X BUILDING PERMIT
- ___ OTHER

ATTENDANCE:	WHO	REPRESENTING
	DENNIS LORENZ	
	FRED J. AGUIRRE	

FINDINGS:

- A DRAINAGE PLAN WILL BE REQUIRED FOR PLAT APPROVAL. THE MAJOR ISSUES TO BE ADDRESSED WITH THIS PLAN IS OFF-SITE FLOWS (I.E. FLOWS EAST OF THE NEWLY CONSTRUCTED ~~DETENTION BASIN~~ DETENTION BASIN) AND DOWNSTREAM CAPACITY.
- FOR BUILDING PERMIT, A SITE SPECIFIC DRAINAGE PLAN WILL BE REQUIRED FOR THE DIAMOND SHAMROCK. IT IS COMPLIANCE WITH THE DRAINAGE PLAN FOR SUBDIVISION.
- THE DRAINAGE PLAN FOR SUBDIVISION WILL NEED TO ADDRESS THE ~~[illegible]~~ AFFECT. THE RECENTLY CONSTRUCTED DETENTION BASIN ~~ALONG~~ ABOUT COORS (NEW COORS) HAS ON THE DOWNSTREAM FLOOD PLAIN.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	[signature]	SIGNED:	[signature]
TITLE:		TITLE:	
DATE:	1/14/93	DATE:	1-14-93

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

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EXISTING DRAINAGE CONDITIONS	1
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PRELIMINARY FLOODPLAIN RE-MAPPING	POCKET
PROJECT CORRESPONENCE	APPENDIX

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SCOPE:

Pursuant to the Bernalillo County Drainage Ordinance No. 96-6 and the Drainage Ordinance for the City of Albuquerque, the purpose of this Drainage Management Plan is to outline the criteria for controlling excess runoff from the project site and contributing off-site drainage basins in a manner which is acceptable to the City of Albuquerque, Bernalillo County and AMAFCA. The scope of this Plan is to provide general drainage management criteria and identify infrastructure improvements required to support the proposed subdivision. The site is to be subdivided into 2 parcels. It is anticipated that each parcel will develop consistent with commercial zoning. Since this Drainage Management Plan provides only general drainage criteria, site specific Grading and Drainage Plans will be required for each tract at the time of development.

SITE LOCATION AND DESCRIPTION:

The 4.4 acre site is located at the southeast corner of Old Coors Blvd. and Bridge Blvd. SW. The site is bounded by Coors Blvd. on the west, Bridge Blvd. on the north, an existing mobile home park on the east, and a commercial site on the south. Presently the site is unimproved. Site topography slopes from west to east at varying gradients. Grades become extreme near the east property line where the site encounters the escarpment. Site vegetation is typical of the west mesa, although some trash and construction debris have been placed on the eastern portion of the property. The western portion of the site adjacent to Coors Blvd is void of vegetation due to repeated use by vendors and parked vehicles.

On-site soils consist mainly of Bluepoint and Madurez-Wink soils. As classified by SCS, Bluepoint is a group 'A' soil and Madurez-Wink a group 'B' soil. Both soil units exhibit slow runoff characteristics with severe wind and water erosion.

EXISTING DRAINAGE CONDITIONS:

Under existing conditions the site drains to the east over the escarpment. Grades on the site are inconsistent, therefor, no well defined drainage swales or patterns are visible. Fill material and construction debris have been placed along the eastern portion of the site which have resulted in varying degrees of erosion along the east property line. Existing flows drain in an uncontrolled manner to the east and outfall into an existing detention facility located adjacent to the Arenal Canal. The detention pond which has a capacity of 10.6 acre feet, accepts drainage flows from the escarpment, the Coors\Bridge intersection, and a transverse inlet located just east of the project site.

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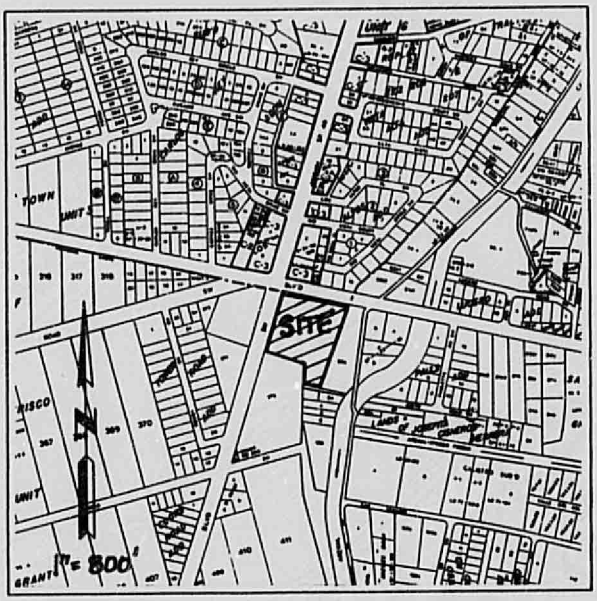

VICINITY MAP
Figure 1

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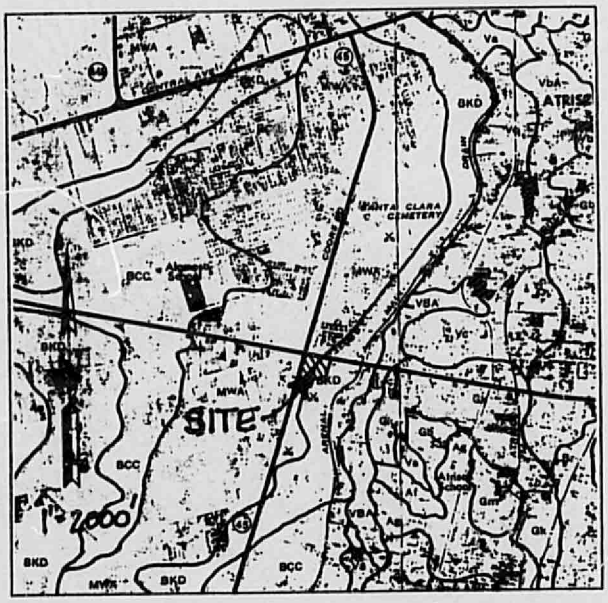

SOILS MAP
Figure 2

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FLOODWAY MAP
Figure 3

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Off-site flows from the west impact the Coors\Bridge intersection as follows (see Figure 4):

- Basin 'A' consists of the area east of the Coors By-Pass, south of Bridge and north of Tower Rd. This basin drains to the Coors\Bridge intersection where flows are collected by a storm sewer system which conveys flows to the detention pond.

- Basin 'B' is located north of Bridge, east of the Coors By-Pass, south of Sunset, and west of Coors. This basin drains eastward towards the Coors/Bridge intersection. Grades flatten toward the eastern portion of the basin where natural and man-made depressions are located which pond runoff.

- Basin 'C' is located north of Bridge along Coors. It consists of portions of businesses which front Coors and portions of residential areas west of Coors. This basin drains into Coors and is conveyed by roadside swales to the Coors/Bridge intersection. As in Basin 'B' this basin experiences ponding along Coors, the result being very slow drainage to the intersection.

All flows west of the Coors By-Pass are collected by the Amole Channel and no longer impact the site.

As shown by Floodway Map Panel 350002 0033, this site lies within a designated 100 year Flood hazard Zone. Construction of the Amole Channel has greatly reduced the off-site flow impacting the site, therefor, the site is longer located within a 100 year floodplain. At the writing of this report, FEMA has not yet revised its mapping to reflect current conditions. A re-mapping study is currently being conducted by Resource Technologies. A preliminary copy of the revised floodplain map is provided in the back pocket of this report which shows that the subject site is not located within a 100 year floodplain.

DEVELOPED DRAINAGE CONDITIONS:

The scope of this Plan is to identify drainage management criteria in order to facilitate subdivision plat approval. Therefor, general onsite drainage criteria is presented to identify infrastructure that may be required to support the subdivision. The Plan illustrates: flow directions, drainage outfall points, required onsite infrastructure, and developed peak flowrates.

As shown by the Plan, the project site is to subdivided into two parcels. Tract 'B' is to be developed as a Diamond Shamrock Cornerstore. Tract 'A' is to be developed later in a manner consistent with commercial zoning. All onsite flows outfall at

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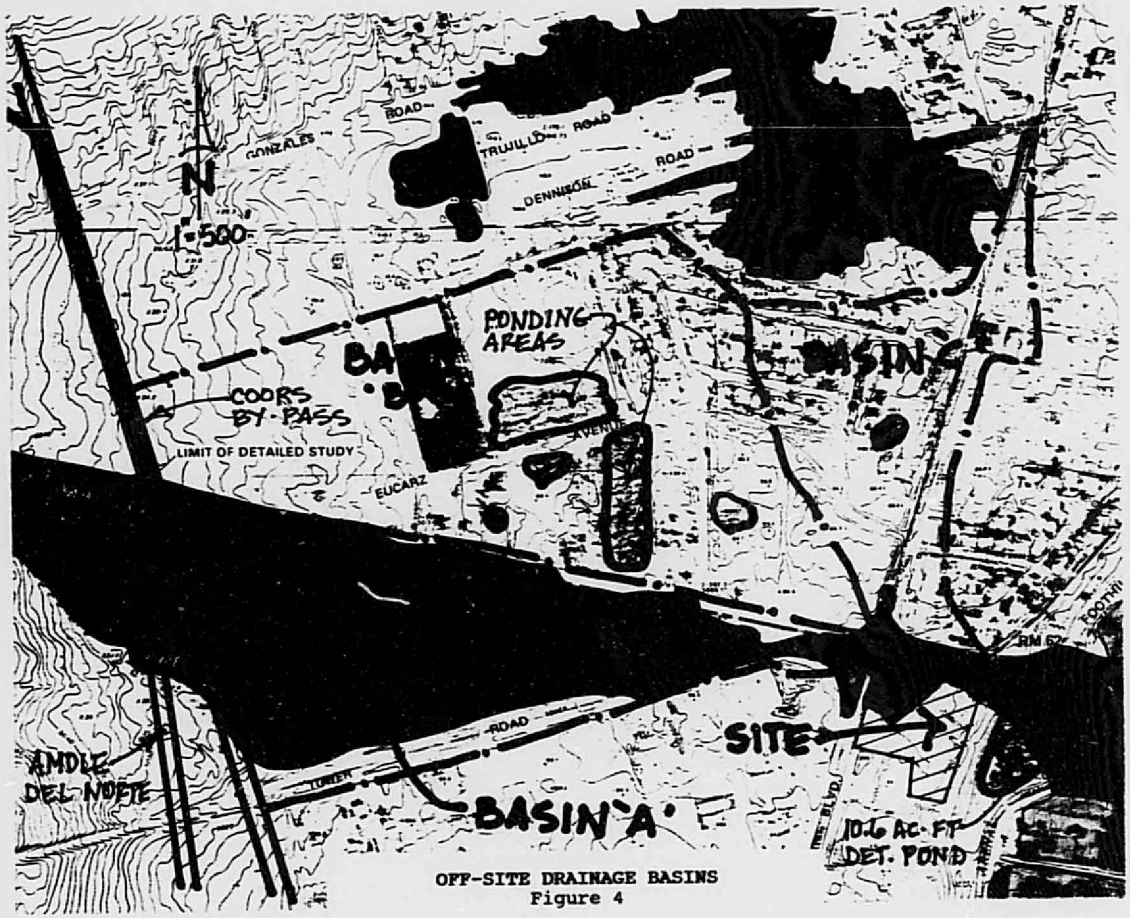

OFF-SITE DRAINAGE BASINS
Figure 4

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Bridge Blvd and will be collected by the existing transverse inlet located immediately east of the site. A 42" storm drain conveys flows to the 10.6 ac-ft detention pond located east of the site, adjacent to the Arenal Canal.

Off-site flows converge at the Coors/Bridge intersection and flow east down Bridge. Some flow is collected by drop inlets located at the intersection. The remaining flow is collected by the transverse inlet. Street depth analysis done on Bridge along the site frontage determined that the 100 year depths vary from approximately 0.66' to 0.75'. Since street slopes, and therefor flow velocities are rather high, there is potential for hydraulic jump conditions should obstructions exist in the roadway. For this reason it is recommended that building finish floor elevations be established at least 2 feet above adjacent top of curb elevations.

Downstream capacity was analyzed by plotting developed and existing off-site hydrographs versus developed onsite hydrographs. The resulting hydrographs illustrate that the existing site does not contribute to the overall peak. The developed site adds approximately 7 cfs to the peak, but for only about 8 minutes. The additional developed volume added to the detention pond is approximately 0.34 ac-ft. The existing 100 year flowrate is estimated at 12.6 cfs versus a developed flowrate of 18.2 cfs.

When reviewing the project hydrographs one must keep in mind that the project hydrology , particularly off-site, is somewhat conservative in that it does not consider the ponding that occurs in natural depressions, nor are the basins routed.

Capacity of the detention pond was studied by Scanlon & Assoc., Inc. (**Report on Drainage Modifications at the Bridge Boulevard Detention Dam**) in 1987 for the County of Bernalillo Public Works Department. That study concluded that capacity existed for the off-site basin as well as the subject site. Portions of the study are included in the Appendix for review.

Since the scope of this Plan is to provide general drainage management criteria, the developers of each tract will be required to submit detailed site specific grading and Drainage Plans prior to building permit approval. The plans shall contain enough detail to provide elevations for site grading, finish floor elevations, interfacing between adjacent property and existing improvements, onsite drainage improvements, connection to off-site improvements, and final hydrologic and hydraulic calculations as required by current City/County drainage policy.

EROSION CONTROL

Temporary erosion control plans will be required to prevent the transport of sediment downstream and mitigate the effects of

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water erosion. The site specific grading and Drainage Plans required for each tract will provide a temporary erosion control plan to be implemented during construction.

REFERENCES:

The following documents and reports were utilized in the preparation of this Drainage Management Plan:

DRAINAGE MANAGEMENT STUDY, NORTH COORS CONNECTION, F.A.U.P. M-400(2), Prepared for Federal Highway Administration, New Mexico State highway Department, City of Albuquerque, new Mexico, Bernalillo County, New Mexico, By Denney-Gross & Assoc., Inc., June 1983

IMPROVED CONDITIONS REPORT, ISLETA WATERSHED STUDY, Prepared for the City of Albuquerque, By CH2M Hill, October 1986

REPORT ON DRAINAGE MODIFICATIONS AT THE BRIDGE BOULEVARD DETENTION DAM, Scanlon & Assoc., Inc., December 1987

CALCULATIONS:

The calculations shown herein define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated August 1991.

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CALCULATIONS

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①

HYMO DATA SHEET

Job ROMERO- PAGE

Date 3-12-93

By DL

EXISTING ON-SITE

Precipitation zone 1 P360= 2.20" P10day= 3.67"

Basin	Basin Area (ac)	Land Treatment A (acres)	B	C	D	EW (in)	Q100 (cfs)	V100 (af)	V10day (af)
SITE	4.4	–	–	4.4	–	0.99	12.6	0.36	NA
TR A	3.6	–	–	3.6	–	0.99	10.4	0.29	–
TR B	0.8	–	–	0.8	–	0.99	2.3	0.07	–

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(2)

HYMO DATA SHEET

Job ROMERO - PAGE

Date 3-12-93

By DL

DEVELOPED ON-SITE

Precipitation zone 1 P360= 2.20" P10day= 3.67"

Basin	Basin Area (ac)	Land Treatment A (acres)	B	C	D	Ew (in)	Q100 (cfs)	V100 (af)	V10day (af)
SITE	4.4	–	0.44	–	3.96	1.84	18.2	0.67	NA
TR A	3.6	–	0.36	×2.03 –	×4.37 3.24	1.84	14.9 [redacted]	0.55	–
TR B	0.8	–	0.08	–	0.72	1.84	[redacted]	0.12	–

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PROJECT NAME ROMERO - PAGE JOB NO. 90522

SUBJECT

BY PL CHECKED BY DATE 3-12-93 PAGE 3 OF

OFFSITE HYDROLOGY - RATIONAL

BASIN	AREA AC.	Tc min	i_{100} "/hr.	'C'	E_W			Q_{100} CFS	V_{100} AF	
A	43	50	2.14	0.61	1.08			56.1	3.9	
B	70	67	1.75	0.61	1.08			74.7	6.3	*
C	26	52	2.08	0.61	1.08			33.0	2.3	*
Σ	139	67	1.75	0.61	1.08			148.4	12.5	

* DOES NOT CONSIDER DEPRESSION PONDING

$P_{60} = 1.87''$ $P_{360} = 2.20''$ PRECIP ZONE 1

$I = 0.726\left(\log(0.41)t_c\right)\left(60/t_c\right)P_{60}$

BRASHER ENGINEERING, INC.

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PROJECT NAME ROMERO - PAGE JOB NO. 90522

SUBJECT

BY DL CHECKED BY DATE 3-12-93 PAGE 4 OF

HYDROGRAPH COMPUTATION *

BASIN	AREA AC	A.D AC.	t_p	t_B		Q_{100}			
A	43	8.6	42	109		56.1			
B	70	14	54	134		74.7			
C	26	5.2	43	62		33.0			
Σ	119	27.8	54	119		[redacted]			
DEV SITE	4.4	3.96	12	68		18.2			
EXIST SITE	4.4	0	16	42		12.6			

* PER DPM VOL 2, SECTION 22.2, PART A.8

$V = K\sqrt{S}$ ⇒ $K = 1$, $S_A = 1\%$, $S_B = 0.8\%$, $S_C = 0.5\%$

$T_c = \Sigma L/V$ ⇒ $V_A = 1.0$, $V_B = 0.9$, $V_C = 0.71$

$L_A = 3000'$, $L_B = 3600'$, $L_C = 2200'$

BRASHER ENGINEERING, INC.

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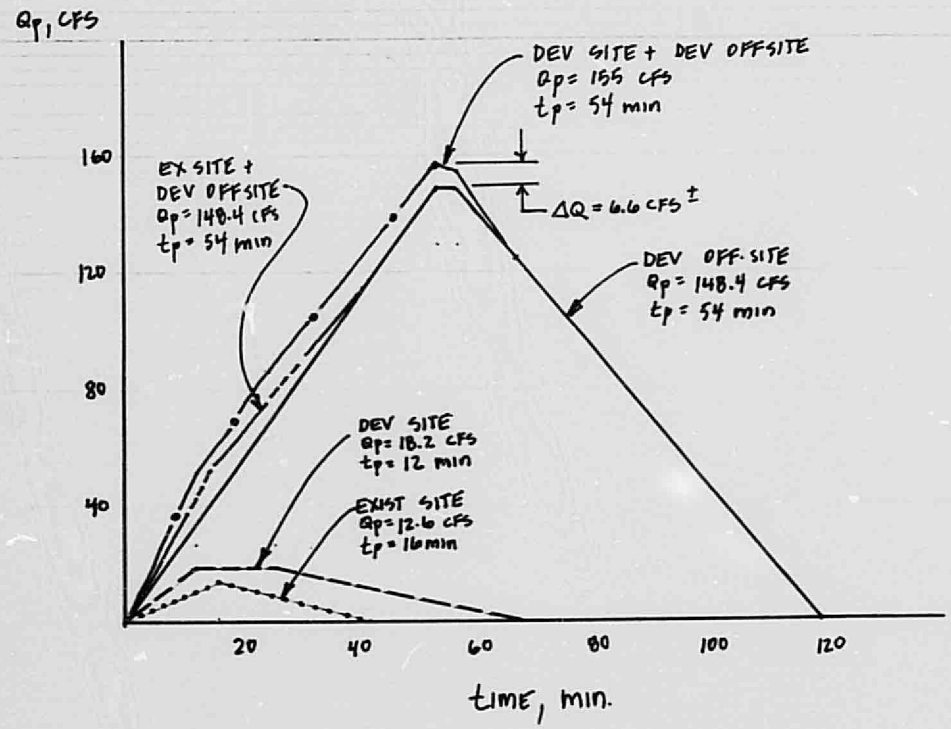
PROJECT HYDROGRAPHS



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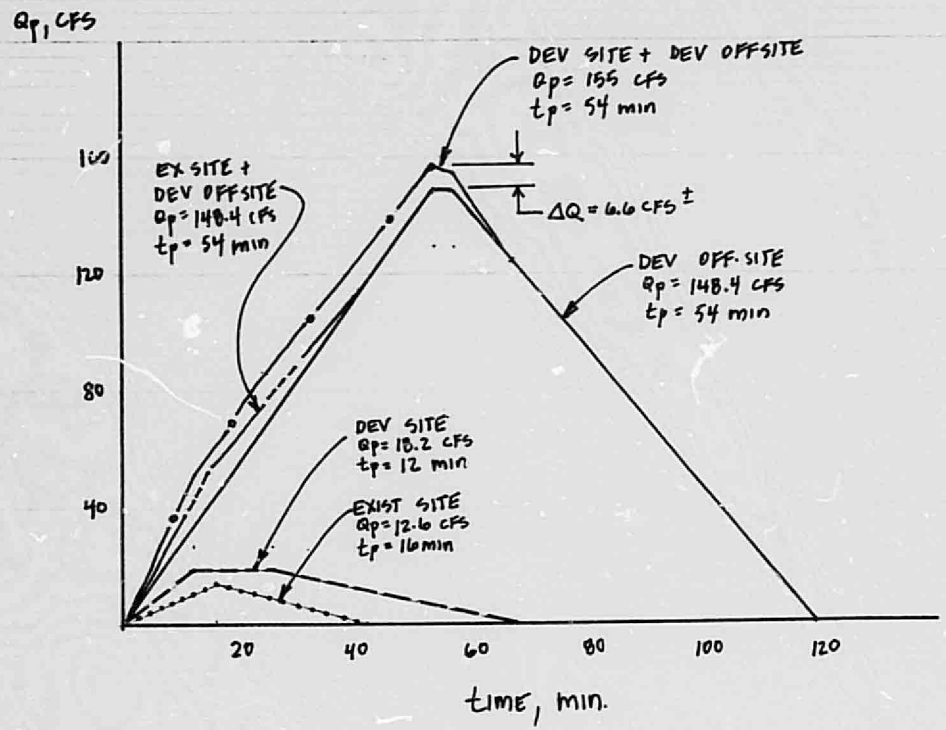
PROJECT HYDROGRAPHS



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PROJECT NAME ROMERO - PAGE JOB NO. 90522

SUBJECT

BY DL CHECKED BY DATE 3-12-93 PAGE 6 OF

△ REVISED 4-16-93

STREET DEPTH ANALYSIS

- CHECK d_{100} & E ON BRIDGE

SLOPES VARY FROM 3% ± TO 5.7% ±

OFF-SITE Q_{100} AT SITE FRONTAGE = [redacted] FS

PER PLATE 22.3 D-2

d_{100} = 0.75' @ S = 3% V = 7 FPS E = 1.51' = $\frac{V^2}{2g}$

0.75' + 0.76' = 1.51'

d_{100} = 0.66' @ S = 5.7% V = 9 FPS E = 1.27' = $\frac{V^2}{2g}$

0.66 + 1.27 = 1.93'

⇒ WORST CASE: PROVIDE PROTECTION

△ TO ~~0.75 + 1.51 = 2.5~~ 0.66' + 1.27' = 1.93' ABOVE FLOWLINE ELEV. OR ~~1.8'~~ 1.25' ABOVE TOP OF CURB.

⇒ RECOMMEND BUILDING FF @ 2' ABOVE TOP OF ADJACENT CURB.

BRASHER ENGINEERING, INC.

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APPENDIX

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Report on

DRAINAGE BASIN MODIFICATIONS AT THE BRIDGE BOULEVARD STORM DRAINAGE DETENTION DAM

Submitted to:
Bernalillo County
Public Works Department
and
New Mexico State Engineer's Office

Prepared by:
Clifford E. Anderson, PE & LS
Scanlon & Associates, Inc.
8008 Pennsylvania Circle NE
Albuquerque, NM 87110

Scanlon Project No. 85140.2

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December 1, 1987 851402-01.RPT

Mr. John Ramsey
Public Works Department
County of Bernalillo
2400 Broadway SE
Albuquerque, NM 87102

Dear Mr. Ramsey:

Enclosed with this letter is a report on proposed modifications to the upstream drainage basin of the Bridge Boulevard Storm Drainage Detention Dam. The drainage basin would be modified by: (a.) the removal of portions of the Vista-Alta Subdivision from the drainage area, and (b.) the addition of outflow from the City of Albuquerque's Yerba Drive Pond. No change in the structural configuration or design storm criteria for the Bridge Boulevard Dam is anticipated by this revision.

Sincerely,

SCANLON & ASSOCIATES, INC.

Clifford E. Anderson
PE & LS No. 6472

cc: Mr. Jim Fink, City of Albuquerque
Mr. Don Lopez, NM State Engineer's Office
Mr. John Winton, NM State Highway Department
Mr. Subhas Shah, Middle Rio Grande Conservancy District

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STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S E REYNOLDS
STATE ENGINEER

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87501

February 1, 1988

Ms. Julia Allred .
Scanlon & Associates Inc.
8008 Pennsylvania Circle NE
Albuquerque, New Mexico 87110-7897

File No. 3957

Dear Ms. Allred:

Reference is made to your December 24, 1987, transmittal of a copy of "Report on Drainage Basin Modifications at the Bridge Boulevard Storm Drainage Detention Dam" for review. Members of my staff have reviewed the subject report and find its conclusions acceptable.

Before any work can begin, Bernalillo County must submit to the New Mexico State Engineer, plans and specifications (where applicable) on the change or changes in drainage area or structural modifications to the dam for review and approval.

It is adviseable that the city of Albuquerque also submit plans and specifications on the modification to Yerba Drive Pond. Depending on the size of the dam and pond a permit for construction from the State Engineer Office may be required.

Please let me know if further discussion would be helpful.

Sincerely,

S. E. Reynolds
State Engineer

By

Donald T. Lopez, P.E., Chief
Design & Construction Section

DTL:hl

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Introduction

The Bridge Boulevard Storm Drainage Detention Dam was constructed in 1985 by the New Mexico State Highway Department Project No. SP-GRM-4014(201). The design of the project was funded by Bernalillo County. The County operates and maintains the facility. The dam provides for a storm drainage outlet for 132 acres of upstream drainage. An additional 114 acres of upstream area would have drained to the Bridge Boulevard Dam, except that the City of Albuquerque's Yerba Drive Retention Pond collected all the water and stored it until the water evaporated or infiltrated into the ground.

Also in 1985, the City of Albuquerque constructed drainage improvements within the Vista-Alta Addition, a subdivision created in 1981 (Ref: Vol C1, page 166, filed 5/25/81). The Vista-Alta Addition was included in the upstream drainage basin for the Bridge Boulevard Dam. With construction of the Vista-Alta drainage improvements, a major portion of the subdivision would no longer drain to the Bridge Boulevard Dam. The upstream drainage area is therefore reduced to 120 acres.

The City of Albuquerque would like to convert the Yerba Drive Retention Pond into a detention facility by allowing a controlled release of stormwater. There are health and nuisance problems associated with retention facilities which would be substantially reduced by providing an outlet. An outlet from the Yerba Drive Pond would flow to the Bridge Boulevard Dam. The City of Albuquerque has requested that Bernalillo County investigate the effects of the reduced size drainage basin at the Bridge Boulevard Dam and determine if an allowable discharge from the Yerba Drive Pond can be established. Bernalillo County has retained Scanlon and Associates to perform this analysis.

Existing Conditions and Design Criteria

From review of topographic mapping of the area and field observation, the upstream drainage basin for the Bridge Boulevard Dam is determined to be 120 acres. This basin is identified as Areas A-1a and A-2 on the enclosed Figure 1 and 2. The 114 acres identified as Area A-3 on Figure 1 would normally flow to the dam except that it is interrupted by the Alamosa School Retention Pond and the Yerba Drive Retention Pond. Overflow from the shallow Alamosa School Retention Pond flows to the Yerba Drive Retention Pond. Therefore, these two ponds should be treated as a single facility.

All the upstream areas are substantially subdivided but only partially developed. For analysis of the pond and the dam, a fully developed upstream basin should be considered. Consistent with previous analysis for the Bridge Boulevard Detention Dam, the following criteria was utilized:

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Areas A-1a and A-2	-	50% Residential @ 1/8 Acre Density
	-	50% Commercial @ 85% Impervious
Area A-3	-	55% Residential @ 1/8 Acre Density
	-	45 % Commercial @ 85% Impervious

The critical design condition for Design of the Bridge Boulevard Dam was a 100-year, 24-hour storm. Analysis of the Dam utilized U.S.D.A. Soil Conservation Service (S.C.S.) procedures and the S.C.S. DAMS2 Structure Site Analysis Computer Program. It is appropriate that any re-evaluation of the Bridge Boulevard Dam utilize these same procedures. The analysis for the original design and for the revised basin (A-1a and A-2) are summarized as follows:

	Basis for Design of Bridge Blvd Dam	Design Condition for Revised Basin A-1a and A-2
Area	132 acres	120 acres
SCS Curve Number (CN) for Upstream Basin	87	87
Peak inflow 100-yr, 24-hr storm	239 cfs	218 cfs
Total Volume inflow from 100-yr, 24-hr storm	16.1 Ac-Ft	14.8 Ac-Ft

Analysis of the Yerba Drive Pond from subbasin A-3 is summarized as:

	Design Condition For Basin A-3
Area	114 acres
SCS Curve Number (CN) for Upstream Basin	84
Peak inflow 100-yr, 24-hr storm	182 cfs
Total Volume inflow from 100-yr, 24-hr storm	12.1 Ac-Ft

Appendix A of this report contains hydrology computations for the above conditions.

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Determination of Allowable Discharge from Yerba Drive Pond

In order to evaluate the effects of a discharge from the Yerba Drive Pond to the Bridge Boulevard Dam, subwatershed and series routing features of the S.C.S. DAMS2 computer program were utilized. This involved the following steps:

1. The Yerba Drive Pond was analyzed as a dam using inflow from subbasin A-3 and a projected outlet structure configuration.

2. The flow from the Yerba Pond outlet was routed in a pipe to the Bridge Boulevard Dam.

3. Flow from subbasins A-1a and A-2 were added to the Yerba Pond flow.

4. The Bridge Boulevard Dam was reanalyzed.

Based on this analysis, we are able to establish design criteria for the Yerba Drive Pond as follows:

a. Maximum allowable discharge: 3.4 cfs for 100-year, 24-hour storm

b. Total allowable discharge between hour 0 and hour 12.0 from a 100-year, 24-hour storm (peak at hour 6.0) shall not exceed 1.69 acre-feet.

A guideline configuration for the Yerba Drive Pond to meet the above criteria is as follows:

1. Pond volume to crest of emergency spillway = 8.3 Ac-Ft

2. 7.5 in diameter orifice outlet at head of 5.5 feet

A similar computation to the DAMS2 analysis was made using the U.S.D.A. HYMO: Problem-Oriented Computer Language for Hydrologic Modeling. The City of Albuquerque's engineering staff is more familiar with this methodology. Also, the use of HYMO may be appropriate for further design of the Yerba Drive Pond. The HYMO numbers vary slightly from the DAMS2 numbers but the overall results and conclusions are identical.

If the above criteria is utilized for the Yerba Drive Pond, then the Bridge Boulevard Dam will not need any modifications. The addition of flow from the Pond will be offset by the portion of the Vista-Alta Addition carried by another drainage system. The maximum discharge rate from the Bridge Boulevard Dam will remain at 7.0 cfs for a 100-year, 24-hour storm. The total

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volume of the flow through the Dam from a 100 year, 24-hour storm will increase from 16.1 acre-feet to 26.9 acre-feet. Therefore, the duration of flow from the Bridge Boulevard Dam will be extended. The design basis of the Dam to accommodate a Probable Maximum Flood (P.M.F.) is not changed by the Yerba Drive Pond modifications.

Implementation

The revised drainage basin criteria and Yerba Drive Pond criteria can be incorporated by modifying three sheets of the Bridge Boulevard Dam filing drawings. The following steps will need to be completed to finalize the revision:

1. The Owner and the Engineer must recertify the revised drawings.

2. These drawings must be filed and approved by the New Mexico State Engineer's Office.

Reduced size copies of the revised drawings (in draft form) are enclosed in Appendix B. Following State Engineer's approval of the Bridge Boulevard Dam revisions, the City of Albuquerque can then proceed with the design of modifications to the Yerba Drive Pond. This structure may also require approval by the New Mexico State Engineer's Office before construction can proceed.

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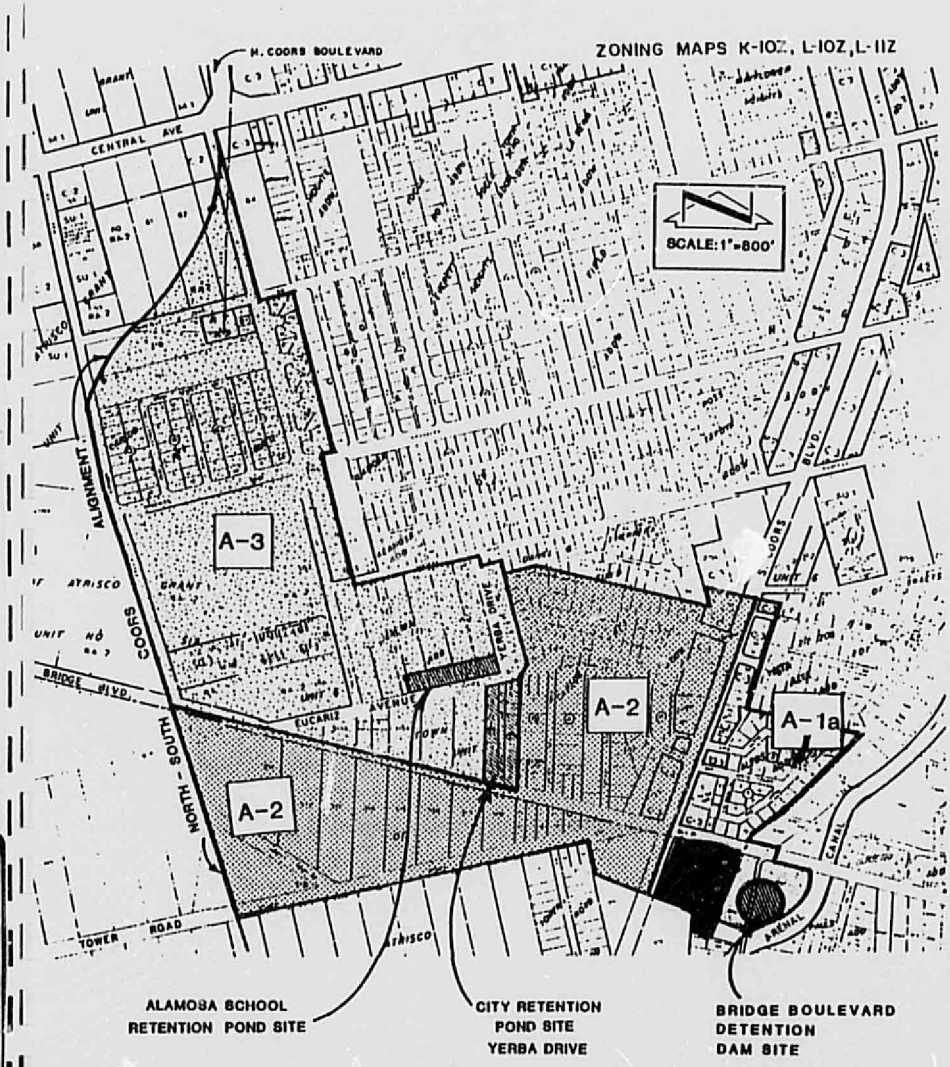

FIGURE 1

1987 REVISED

DRAINAGE AREA "A" - BRIDGE BOULEVARD

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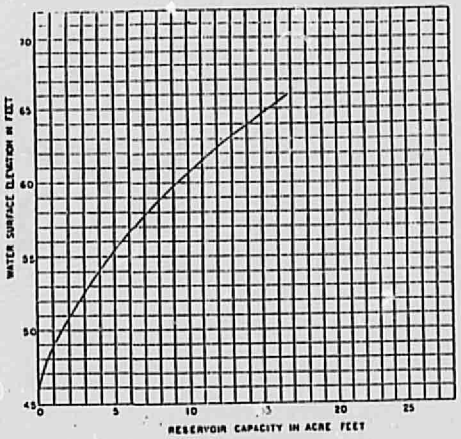
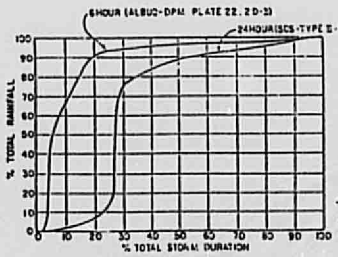
FEMA Region No.	STATE		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO	SP-GRM 4014(201)	6-3	



RESERVOIR CAPACITY CURVE



100 YEAR RAINFALL

DURATION	RAINFALL
6 Hour =	2.3 in.
24 Hour =	2.7 in.

100 YEAR-(6hr & 24hr)
RAINFALL DISTRIBUTION

BRIDGE BOULEVARD DETENTION BASIN
ELEVATION - STORAGE

ELEVATION FT.	SURFACE AREA - ACRES	VOLUME AC. - FT.
4947.5	0.3819	0.5159
4948.5	0.4250	0.9616
4950.0	0.4952	1.6317
4952.0	0.5933	2.7167
4954.0	0.7032	4.0407
4956.0	0.8175	5.5270
4958.0	0.9331	7.2662
4960.0	1.0649	9.2667
4962.0	1.2179	11.5579
4964.0	1.5008	14.1672

TOP OF DAM EFFECTIVE ELEVATION 4965.0

EMERGENCY SPILLWAY CREST
EFFECTIVE ELEVATION 4961.65

PRINCIPAL SPILLWAY
HIGH STAGE CREST ELEVATION 4961.53

SEDIMENT POOL ELEVATION 4947.50

SEDIMENT POOL CAPACITY 0.536 ac. ft

FLOOD WATER STORAGE (1) 10.590 ac. ft

FLOOD WATER STORAGE (2) 11.430 ac. ft

(1) FROM SEDIMENT POOL TO EMERGENCY SPILLWAY CREST 4947.50 TO 4961.65

(2) FROM SEDIMENT POOL TO TOP OF DAM 4947.50 TO 4965.00

2 Revised 12-1-87

1 REPLACEMENT SHEET 6/28/85

REVISED 6/28/85

SP-GRM-4014 (201)

HYDROLOGY OF DAM

BRIDGE BOULEVARD IMPROVEMENTS

DATE	JOB NO.	SCALE	DRAWN	SHEET
JUNE '85	84107	NONE	DJB	6-3
			CHECKED SEB	OF 10

SCANLON & ASSOCIATES
CONSULTING ENGINEERS

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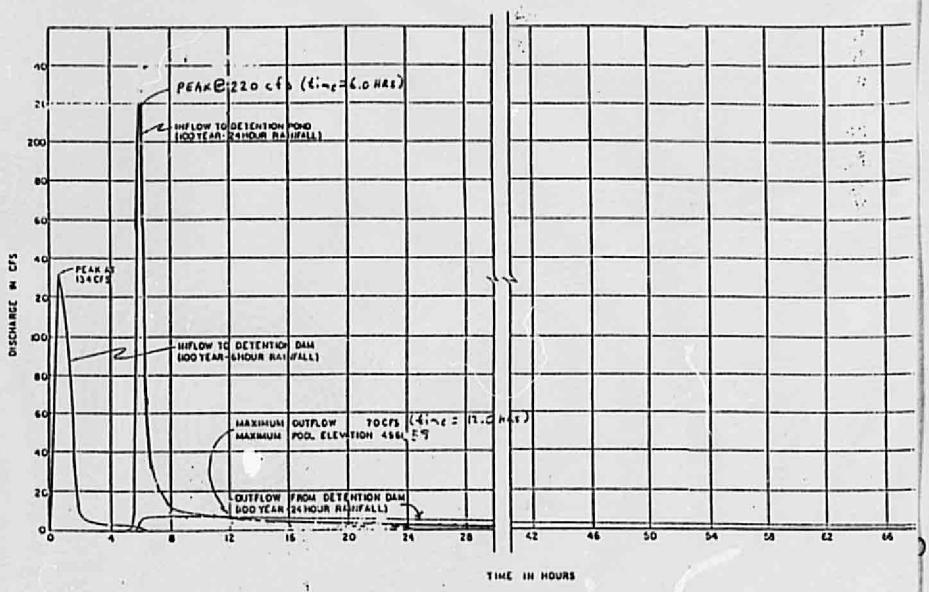
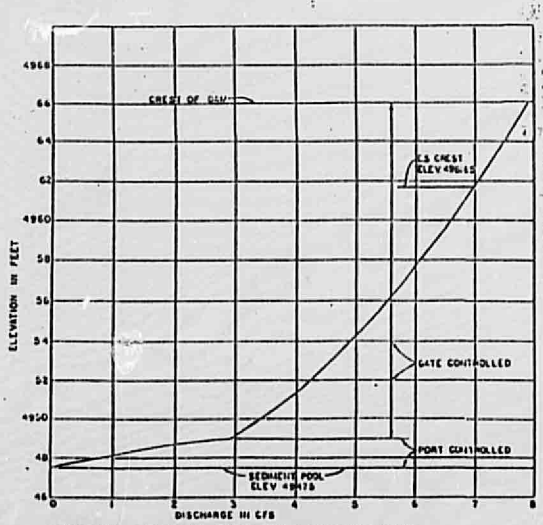
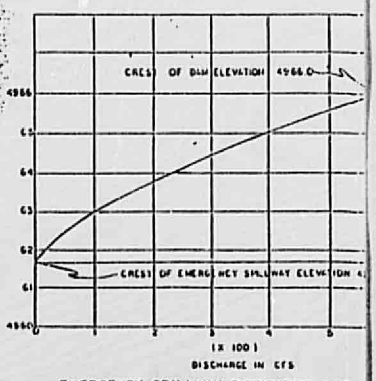


100 YEAR HYDROGRAPH



PRINCIPAL SPILLWAY DISCHARGE RATING CURVE



EMERGENCY SPILLWAY DISCHARGE RATI

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

March 26, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
RECEIVED MARCH 17, 1993 FOR PRELIMINARY & FINAL PLAT APPROVAL
STAMPED & DATED 3-12-93

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology does NOT approve this for Preliminary & Final Plat approval.

The following comments must be addressed before this project can be approved:

1. Resource Technology is preparing a study of the floodplain along Bridge Blvd. Contact them to determine if the Amole Channel removes the floodplain as you claim on page 5.

2. Contact County Public Works to determine the capacity of the storm drain system in Bridge Blvd and the drainage basin it was designed for.

3. Check your energy calculations on page 6. I believe that the total energy is 1.93' @ 5.7% slope which would be only 1.26' above top of curb. Does this create a problem or aggravate an existing one? If so this should be noted in your discussion.

In the future, if you want City Hydrology to distribute your submittal to other agencies you should indicate this on the information sheet.

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

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Bob Fogelsong, County PWD

WPHYD+7640:jpc

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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 28, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
ENGINEER'S STAMP DATED 4-19-93; RECEIVED APRIL 20, 1993
FOR PRELIMINARY & FINAL PLAT AND WORK ORDER APPROVAL

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Preliminary Plat approval.

The following comments must be addressed before this project can be approved for Final Plat & Work Order:

1. Add private drainage easement section to Infrastructure List. Provide sufficient inverts to construct channel. An S.O.19 permit will be required to connect the channel to Bridge Blvd. A sidewalk culvert or rundown will be required to discharge runoff from the northeast corner of Tract 'C'.

2. Submit sufficient rough grading to discharge runoff to Bridge Blvd instead of neighboring properties.

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

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, DRB
Bob Fogelsong, County PWD

WPHYD+7640;jpc

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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 12, 1993

Dennis Lorenz, P.E.
Brasher Engineering, Inc.
11930 Menaul NE Ste 113
Albuquerque, N.M. 87112

RE: DRAINAGE REPORT FOR DIAMOND SHAMROCK (L-11/D15)
RECEIVED MAY 10, 1993; ENGINEER'S STAMP DATED 5-6-93
FOR PRELIMINARY, FINAL PLAT & WORK ORDER APPROVAL

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Water & S.A.S. Work Order.

Fred Aguirre has informed me that the Plat was changed at DRB. There will be two tracts instead of three and curb & gutter will be required on Coors and Bridge. Therefore submit a revised Drainage Report and Infrastructure List to reflect these changes.

If you have any questions about this project, you may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre

WPHYD+7640;jpc

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DANIEL W. COOK, CHAIRMAN
PAT D. HIGDON, VICE-CHAIRMAN
RONALD BROWN, SECRETARY-TREASURER
ENEIVA MEEKER, ASST. SECRETARY-TREASURER
MICHAEL MURPHY, DIRECTOR

LARRY A. BLAIR
EXECUTIVE ENGINEER

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N.E. - ALBUQUERQUE, N.M. 87107
TELEPHONE (505) 884-2215

May 13, 1993

Gilbert Aldaz, P.E. & P.S.
City-County Floodplain Administrator
City of Albuquerque PWD
One Civic Plaza
Albuquerque, NM 87102

RE: "Drainage Management Plan for Tracts A, B and C Romero-Page Et.Al." by Brasher Engineering (L-11)

Dear Gilbert:

AMAFCA recently contracted with Dr. Richard Heggen to review the above-referenced project on behalf of AMAFCA. Enclosed is a letter which contains the results of this review. AMAFCA has considered the findings in Dr. Heggen's letter and believes that they appropriately represent AMAFCA's comments on this project.

Sincerely,
AMAFCA

Clifford E. Anderson, P.E. & L.S.
Drainage Engineer

CEA:ij

enclosure

copy: Dennis Lorenz, Brasher Engineering
Richard Heggen, 620 Ridgecrest SE, 87108

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Richard J. Heggen
PE, PH, PhD
Water Resources
Engineering
620 Ridgecrest SE
Albuquerque, NM 87108

Monday, May 10, 1993

Cliff Anderson, PE
AMAFCA
2600 Prospect NE
Albuquerque, NM 87107

Dear Cliff:

Following is my review of *Zone L-11 Drainage Management Plan for Tracts A, B and C, Romero-Page Et Al* by Brasher Engineering.

1) Level of Submission. This is a Drainage Management Plan, a conceptual document establishing criteria and a general approach to problem resolution. It properly refers to subsequent Grading and Drainage Plans which will detail the designs. My concern is that there may be a big gap between concept and dirt work when the project chokes off a large piece of the floodway. I would prefer at this early point to have more hydraulic analysis. My subsequent comments are so directed.

2) Off-Site Runoff. I have no particular knowledge regarding future development, but I'd not anticipate that it be just treatment C (the source, I presume, for the Rational 0.61) forever. The project tracts go from all C to B and D and the peak Q increases 43 percent. If the rest of the upper basin does the same, there's that much more flow to get through the intersection.

3) Site Elevations. Having FF elevations 2 ft above the curb seems to be an adequate plan at this point. What about the rest of the property? I'd think they'd fill more of the Diamond Shamrock lot in, but to what level? This needs to be answered now to foresee the intersection flow paths (see below).

3) Street Intersections. This is a weary issue for the City. There isn't a strong analytic methodology to predict what will happen. I don't expect Brasher to come up with one. HEC-2 won't do it. I have my doubts about FESWMS, as waves may be significant. Brasher's street depth analysis is for uniform supercritical flow down Bridge. Depths will be greater in Coors.

To provide allow some qualitative prediction I'd like:

a) A topo of the intersection with 1-ft contours. If flow is choked by the project, it will back further up Coors. Is there possibility for an end run?

(505) 277-5737, 277-2722, FAX (505) 277-1988 e-mail rheggen@bootes.unm.edu

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Richard J. Heggen
Water Resources Engineering

b) A profile for Bridge above and below Coors. The floodway map leads me to anticipate a hydraulic jump in the intersection.

c) Indication of existing and proposed (if any) storm sewers. The existing transverse inlet on Bridge ties into a 42" pipe. What's the capacity of the pipe? The submission mentions drop inlets in the intersection. What do they do? Could they be added to, if needed?

d) At a minimum, a weir analysis of flow leaving the intersection, if that seems to be the mechanism.

4) The concepts and initial computations regarding internal drainage issues seem fine.

5) Is there any issue with the 10.6 acre-ft. detention pond receiving 12.5 acre-ft (upstream undeveloped) plus 0.36 or 0.67 acre-ft (onsite undeveloped and developed) plus whatever upstream development may later add less whatever is ponded in Basin B? I presume that the Arenal Canal catches the overflow. This is only minorly dependent on this project, but it merits a check by someone who understands the larger scheme.

In conclusion, Brasher has done an adequate job on what was submitted. It's clear and checkable. I would like, however, some additional detail (not design) on what this might mean for the Bridge-Coors intersection. Of all the tracts in the system, it is the Diamond Shamrock site that may worsen the intersection problem the most. I'm not sure that there will be a problem, but I'd like it thought through.

Thank you for the opportunity to work with AMAFCA. Please let me know if additional review is needed.

Yours truly,

RJH

Richard Heggen
cc: Wilson & Co.

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PLANS/PLATS ON FILE

FILE DESC: LI/DG

PLANS/PLATS 2

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