HYDROLOGY

E17/D27

BLACK ADDITION

E17-D57

2 PLANS

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: E16 - F17 DATE: 1-17-85

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: Shopping center @ San Mateo & Osuna Rd

LEGAL DESCRIP.: TR 3A Black Addition

APPROVAL REQUESTED

_____ PRELIMINARY PLAT _____ FINAL PLAT

_____ SITE DEVELOPMENT PLAN X BUILDING PERMIT

_____ ROUGH GRADING

	WHO:	REPRESENTING:
ATTENDANCE:	Herman Hood	
	Carlos A Montoya	

_____ Conceptual Drainage Plan/Report required for Preliminary Plat and/or Site Development Plan sign-off.

X Approved Drainage Plan/Report required for Final Plat and/or Building Permit sign-off.

_____ Subdivision Improvements Agreement or Financial Security required.

FINDINGS: ① Drainage plan per DPM ② Coordinate with Clay Olsen on outfall to Bear Arroyo. ③ No pending requirements

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:	Carlos A Montoya	SIGNED:	[illegible]
TITLE:	Hydrology	TITLE:	
DATE:	1-17-85	DATE:	1-17-85

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

INFORMATION SHEET

PROJECT TITLE BLACK ADDITION TYPE OF SUBMITTAL CONCEPTUAL GRADING PLAN

ZONE ATLAS PAGE NO. E-17/D57 CITY ADDRESS 6001 San Mateo N.E.

LEGAL DESCRIPTION Tract 3A, Black Addition

ENGINEERING FIRM Hall Engineering CONTACT Richard Hall or Herman Hood

ADDRESS 337 Eubank NE PHONE 292-1115

OWNER Steve Johnson Development CONTACT Steve Johnson

ADDRESS 7519 Quemado Ct. N.E. PHONE 821-6086

ARCHITECT Raymond D. Powell CONTACT Raymond D. Powell

ADDRESS 2424 Quaker Ave. Lubbock, TX PHONE (608) 799-6649

SURVEYOR Hall Engineering CONTACT Richard Hall

ADDRESS 337 Eubank N.E. PHONE 292-1115

CONTRACTOR N/A CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

X YES

NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL

SKETCH PLAT APPROVAL
PRELIMINARY PLAT APPROVAL
SITE DEVELOPMENT PLAN APPROVAL
FINAL PLAT APPROVAL
BUILDING PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY APPROVAL
ROUGH GRADING PERMIT APPROVAL
GRADING/PAVING PERMIT APPROVAL
X OTHER Conceptual Grading and Dra (SPECIFY)
Approval for EPC

DATE SUBMITTED: 2/11/85

BY: Herman Hood

RECEIVED
FEB 11 1985
HYDROLOGY SECTION

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

March 5, 1985

Richard Hall
Hall Engineering Company, Inc.
337 Eubank Blvd., NE Suite 103
Albuquerque, New Mexico 87123

RE: CONCEPTUAL DRAINAGE PLAN FOR BLACK ADDITION (E-17/D57)
RECEIVED FEBRUARY 11, 1985

Dear Rick:

Downstream capacity has not been addressed. Therefore, I cannot concur with the proposed drainage scheme.

Discharge to and stabilization of the Bear Arroyo bank will require an approved "Drainage Facilities Within City Right-of-Way/Easement" document prior to final sign-off.

Hydraulic computations for the proposed storm drain should be provided to show that it is adequate to handle the flow without subjecting the building to flooding.

Should you have any questions or comments, please call me at 766-7644.

Cordially,

Billy J. Goolsby

Billy J. Goolsby, P.E.
Design Hydrology Section

BJG/bsj

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Shopping Center BLACK ADDITION ZONE ATLAS/DRNG. FILE #: E17-057

LEGAL DESCRIPTION: Lot 3A BLACK ADDITION

CITY ADDRESS: ——

ENGINEERING FIRM: HALL CONTACT: ____

ADDRESS: ____ PHONE: ____

OWNER: Johnson CONTACT: ____

ADDRESS: ____ PHONE: ____

ARCHITECT: Powell CONTACT: ____

ADDRESS: ____ PHONE: ____

SURVEYOR: Hall CONTACT: ____

ADDRESS: ____ PHONE: ____

CONTRACTOR: —— CONTACT: ____

ADDRESS: ____ PHONE: ____

RECEIVED
MAR 21 1985
HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ____

EPC NO. 79/3

PROJ. NO. ____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

X SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ____ (SPECIFY)

DATE SUBMITTED: Mar 21, 85

BY: Richard Hall

HALL ENGINEERING COMPANY INC.
337 EUBANK N.E., SUITE 103
ALBUQUERQUE, NEW MEXICO 87123
Phones: (505) 292-1115 & 292-1116

March 20, 1985

RECEIVED
MAR 21 1985
HYDROLOGY SECTION

Mr. Billy Goolsby, P.E.
Design Hydrology Section
City of Albuquerque
P.O. 1293
Albuquerque, NM 87103

RE: CONCEPTUAL DRAINAGE PLAN FOR BLACK ADDITION (E-17/D57)

Dear Billy:

I am sure you are aware that the runoff through Bear Canyon Arroyo has been reduced significantly from 3600 cfs to 1297 cfs at our site location between San Mateo and I-25 when the dam upstream was completed. The Silverado Apartments have enclosed the channel completely east of San Mateo with an opening of 4' x 30' to pass the 1297 cfs. Downstream of our site is I-25, which was designed to carry 3600 cfs under it by 13 - 4' x 10' box culverts. Now we are adding 20 cfs for a total Q of 1317 cfs or an increase of 1% and will not raise the level of water in the channel at all. For this reason free discharge is recommended for this site as has already been approved for the two sites adjacent to Bear Canyon Arroyo between our site and I-25.

I am including the calculations for the pipe under the building. Thank you for your attention in this matter.

Sincerely,

Richard Hall

Richard V. Hall, P.E.

RVH:jh

enc

REFERENCE
RICE REPORT
OF B.C. Arroyo
1975

P.S. OUR SITE IS LESS THAN 1 MILE FROM THE NORTH DIVERSION CHANNEL THUS WE WILL BEAT ALL PEAK FLOW FROM BEAR CANYON DRAINAGE BASIN BY A SIGNIFICANT AMOUNT

Hydraulic Computation of Drain pipe
For Tract 3A Black Addition:

(1)

$L = 190 + 120 = 310$ ft

$n = 0.013$ Reinforced Concrete pipe

$\nu = 1.217 (10^{-5})$ at 60°F

$S_o = 0.016$

$Q = 12$ cfs

RECEIVED
MAR 21 1985
HYDROLOGY SECTION

$D = 2'$ (Assumed) $A = \frac{\pi D^2}{4}$

$A = \pi = 3.142$ ft^2

$R = D/4 = 0.5$ ft

$$S_f = \left[\frac{Q n}{1.486 A R^{2/3}}\right]^2$$

$$S_f = \left[\frac{(12)(0.013)}{1.486(3.142)(0.5)^{2/3}}\right]^2$$

$S_f = 0.0028$ ft/ft (Friction loss)

* $h_f = (0.0028)(310) = 0.8680$ ft.lb/lb

$$V = \frac{1.486}{n} R^{2/3} S^{1/2}$$

$$V = \frac{1.486}{n} (0.5)^{2/3} (0.0028)^{1/2}$$

$V = 3.81$ ft/s

* $\frac{V^2}{2g} = \frac{(3.81)^2}{2(32.2)} = 0.2254$ ft

* Manhole loss $= 0.05\left(\frac{V^2}{2g}\right)$
$= 0.05(0.2254)$
$h_{m.o.} = 0.0113$ ft

* Bend loss $= K_b\left(\frac{V^2}{2g}\right)$

$K_b = 0.20\sqrt{\frac{\Delta}{90°}}$

$K_b = 0.20\sqrt{\frac{135}{90}}$

$K_b = 0.2449$

$h_b = 0.2449(0.2254)$

$h_b = 0.0552$ ft

Total head loss $= 0.8680 + 0.0254 + 0.0113 + 0.0552$
$= 1.160$ ft

Calculation of pipe Diameter:

$$D^5 = \frac{8LQ^2}{h_f g \pi^2} f = C_1 f$$

$$D^5 = \frac{(8)(310)(12)^2}{(1.1640)(32.2)(\pi^2)} f$$

$$D^5 = 965.0 f$$

RECEIVED
MAR 21 1985
HYDROLOGY SECTION

$$R = \frac{4Q}{\pi D}\frac{1}{D} = \frac{(4)(12)}{\pi(1.217\times10^{-5})}\frac{1}{D} = \frac{1,255,500}{D}$$

$\epsilon = 0.004$ concrete pipe

if $f = 0.05$

$D^5 = (965.0)(0.05)$ $\quad D = 2.1712$ ft
$R = 578,250$
$\frac{\epsilon}{D} = 0.0018$

From Moody Diagram $f = 0.0227$

$D^5 = (965.0)(0.0227)$ $\quad D = 1.854$ ft
$R = 677,180$
$\frac{\epsilon}{D} = .0022$

From Moody Diagram $f = 0.0243$

$D^5 = (965.0)(0.0243)$ $\quad D = 1.8794$ ft
$R = 668,000$
$\frac{\epsilon}{D} = 0.0021$

From Moody Diagram $f = 0.025$

Therefore $D = 1.8794(12) = \underline{\underline{22.5}}$ in $\quad$ 24" pipe

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

April 24, 1985

Richard Hall
Hall Engineering
337 Eubank Boulevard, NE Suite 103
Albuquerque, New Mexico 87123

RE: CONCEPTUAL DRAINGE PLAN FOR BLACK ADDITION
(E-17/D57) RECEIVED MARCH 21, 1985

Dear Mr. Hall:

I have reviewed the referenced plan for Site Development Plan approval and submit these comments:

1. How will the runoff from the site, which is not contained in the storm drain be discharged to the Bear Canyon Arroyo?

2. Must address bank stability of the Bear Canyon Arroyo to avoid possible collapse of the bank from flows in the arroyo.

3. The storm drain tailwater must start with the 10 year flood in the Bear Canyon Arroyo.

4. Partial flows in the storm drain must be more clearly identified and analysed.

If you have any questions or comments regarding this project, please call me at 766-7644.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

PROJECT TITLE BLACK ADDITION TYPE OF SUBMITTAL CONCEPTUAL GRADING PLAN

ZONE ATLAS PAGE NO. E-17 / D57 CITY ADDRESS 6001 San Mateo N.E.

LEGAL DESCRIPTION Tract 3A, Black Addition

ENGINEERING FIRM Hall Engineering CONTACT Richard Hall or Herman Hood

ADDRESS 337 Eubank NE PHONE 292-1115

OWNER Steve Johnson Development CONTACT Steve Johnson

ADDRESS 7519 Quemado Ct. N.E. PHONE 821-6085

ARCHITECT Raymond D. Powell CONTACT Raymond D. Powell

ADDRESS 2424 Quaker Ave. Lubbock, TX PHONE (608) 799-6649

SURVEYOR Hall Engineering CONTACT Richard Hall

ADDRESS 337 Eubank N.E. PHONE 292-1115

CONTRACTOR N/A CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

X YES

NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL

SKETCH PLAT APPROVAL
PRELIMINARY PLAT APPROVAL
SITE DEVELOPMENT PLAN APPROVAL
FINAL PLAT APPROVAL
BUILDING PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY APPROVAL
ROUGH GRADING PERMIT APPROVAL
GRADING/PAVING PERMIT APPROVAL
X OTHER Conceptual Grading and Drainage Approval for EPC (SPECIFY)

DATE SUBMITTED: 5/10/85

BY: PARVIZ EFTEKHARI

RECEIVED
MAY 10 1985
HYDROLOGY SECTION

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

June 12, 1985

Mr. Richard Hall
Hall Engineering
337 Eubank NE, Suite 103
Albuquerque, NM 87123

REF: CONCEPTUAL DRAINAGE PLAN FOR BLACK ADDITION (E17-D57) RECEIVED MAY 10, 1985

Dear Mr. Hall:

I have reviewed the referenced plan dated May 10, 1985 for Site Development approval and submit these comments:

1. Adequate distance must be provided for the storm drain to the west property line. Please review the DPM formula for drainage easement widths for storm drains.

2. Please address the design of the rip-rap of the Bear Canyon Arroyo.

3. Require financial guarantees for the storm drain and Bear Canyon Arroyo improvements.

4. Please use our submittal sheet which we have at our office. A standard form would facilitate our review and prevent confusion.

If you should have any further questions, please call me at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya
City/County Flood Plain Admin.

CAM:mrk

INFORMATION SHEET

E-17-057

PROJECT TITLE BLACK ADDITION TYPE OF SUBMITTAL CONCEPTUAL GRADING PLAN

ZONE ATLAS PAGE NO. E-17 CITY ADDRESS 6001 San Mateo N.E.

LEGAL DESCRIPTION Tract 3A, Black Addition

ENGINEERING FIRM Hall Engineering CONTACT Richard Hall or Herman Hood

ADDRESS 337 Eubank NE PHONE 292-1115

OWNER Steve Johnson Development CONTACT Steve Johnson

ADDRESS 7519 Quemado Ct. N.E. PHONE 821-6086

ARCHITECT Raymond D. Powell CONTACT Raymond D. Powell

ADDRESS 2424 Quaker Ave. Lubbock, TX PHONE (608) 799-6649

SURVEYOR Hall Engineering CONTACT Richard Hall

ADDRESS 337 Eubank N.E. PHONE 292-1115

CONTRACTOR N/A CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

RECEIVED JUN 14 1985 HYDROLOGY SECTION

TYPE OF SUBMITTAL:

✓ DRAINAGE REPORT

✓ DRAINAGE PLAN

✓ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

✓ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: 6/14/85

BY: PARVIS EFTEKHARI

DRAINAGE INFORMATION SHEET

PROJECT TITLE: FIESTA DEL NORTE SHOPPING CENTER ZONE ATLAS/DRNG. FILE #: E17-D57

LEGAL DESCRIPTION: TRACT 3A, BLACK ADDITION

CITY ADDRESS: 6001 SAN MATEO BLVD. NE

ENGINEERING FIRM: HALL ENGINEERING CO. CONTACT: RICHARD HALL

ADDRESS: 337 EUBANK NE, SUITE 103 PHONE: 292-1115, 292-1116

OWNER: STEVE JOHNSON CONTACT: STEVE JOHNSON

ADDRESS: 3001 LOUISIANA PHONE: 884-3930

ARCHITECT: RAYMOND O. POWELL CONTACT: RAYMOND O. POWELL

ADDRESS: 2424 QUAKER AVE. LUBBOK, TX 79410 PHONE: (806) 799-6649

SURVEYOR: N/A CONTACT:

ADDRESS: PHONE:

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED JUN 19 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

✓ DRAINAGE REPORT

✓ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

✓ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: June 19, 1985

BY: PARVIZ EFTEKHARI

HALL ENGINEERING COMPANY INC.
337 EUBANK N.E., SUITE 103
ALBUQUERQUE, NEW MEXICO 87123
Phones: (505) 292-1115 & 292-1116

Mr. Carlos A. Montoya
City/County Flood Plain Admin.
Design Hydrology Section
123 Central NW, Albuquerque, NM 87102

June 19, 1985

Dear Mr. Montoya :

As per your letter dated June 12, 1985, we provide you some more information regarding to Black Addition Subdivision.

1. According to DPM section 22.6 dedicated area for underground facilities may be not narrower than 20 feet and based on DPM formula dedicated width is 14 ft for proposed storm drain However, we have provided 60 ft private drainage Easement on the north-west corner of the property which will cover any requirement in DPM.

2. The design of rip-rap has been addressed on the plan

3. Financial guarantees for the storm drain and Bear Canyon Arroyo has been provided, and will be required for building permit.

Thank you for your time and consideration on this matter. We will be glad to hear from you.

Sincerely

Parviz Eftekhari
Project Manager

RECEIVED
JUN 19 1985
HYDROLOGY SECTION

PROJECT NO.

MAP NO. E-17

QUANTITIES AND COST ESTIMATE

DATE PREPARED:

APPROVAL:

DATE REQUESTED:

WORK ORDER:

DATE ISSUED:

1. APPLICANT INFORMATION:

a. Developer/Owner: Steve Johnson

Address 3001 LOUISIANA N.E.

b. Consulting Engineer: Hall Engineering

Address 337 Eubank N.E. Suite 103

c. Person to contact regarding this form:

Richard Hall

RECEIVED JUN 19 1985 HYDROLOGY SECTION

2. GENERAL SCOPE OF PROJECT:

Installation of storm Drain Pipe and Bear Canyon Arroyo improvements.

3. NAME OF SUBDIVISION AND DESCRIPTION OF PROPERTY:

Tract 3-A Black Addition 6001 San Mateo N.E.

4. DEVELOPER TO PAY: 100% POLICY: AHBH

5. CITY TO PAY= _____ POLICY _____

6. CITY TO PAY= _____ ACCOUNT NO. _____

7. SPECIFIC LOCATION: 6001 San Mateo N.E.

8. RCP 24" and channel outlet

9. Item No.	10. Short Description	11. Contract Unit Pr.	12. Est. Quantity	13. Est. Amount	14. As-Built Quantity	15. As-Built Amount
K-5	24" RCP	$27.00/LF	390 FT	$10530.00		
K-33	CB-D-S	1800.00 EA	1	1800.00		
K-34	CB-D-D	2760.00 EA	1	2760.00		
K-50	REIN STR CONC	348.00 CY	1	348.00		
K-68	GR RPRP	110.00 CY	37	4070.00		
Subtotal				19508.00		
Contingencies		10%		1950.80		
Engineering		6%		1170.48		
Testing Fees		2%		390.16		
Total				23019.44		

FOR ESTIMATE

14. RECOMMENDED:

Asst. City Engineer/Design Date

CONCURRENCE:

Requesting Office Date

APPROVED:

City Engineer Date

15. OFFICE OF THE CITY TREASURER
RECEIPT OF ESCROW FUNDS

Receipt from the above applicant of the sum of $_____ is hereby acknowledged to be held in escrow until the completion of work described above.

Debit City Account _____ Credit 233200-7000820 $ _____

Journal Voucher No. _____ Date _____
Accountant Treasurer

FOR CONSTRUCTION

16. Construction Documentation Completed _____
MDD/Engineering Date

17. Outside funds have been received by CIP/Fiscal. _____
Funds are available. _____

APPROVED

CIP/Fiscal Supervisor Date

18. APPROVED:

City Engineer Date

19. WORK ORDER RECEIVED:

Contractor Date

PROPOSED STARTING DATE:

_____

FOR ACCEPTANCE

20. RECOMMENDED:

Asst. City Engineer/Design Date

APPROVED:

City Engineer Date

ACCEPTANCE COMPLETED:

CIP/Fiscal Supervisor Date

Rev. 9/84

COST APPORTIONMENT

	CITY-TO-PAY		DEVELOPER-TO-PAY		
	Policy No.	Policy No.	Policy No.	Policy No.	Policy No.
Const.	$	$	$	$	$
CONT.					
ENG.					
TESTING					
SUB-TOTALS		$	$	$	$
TOTAL CITY COST:		$	TOTAL DEVELOPER TO PAY:		

Notes:

1. Outstanding Pro-rata: _____.
2. For staking, construction, and inspection use Drawing No. _____.
3. This work shall be done in accordance with the specifications of Block [illegible] Block Contract No. 31.
4. If payment of the full amount (B-2-B) [illegible] ten (10) working days before the expiration [illegible] this document must be revised prior to entering into construction contract.
5. Recorded Plat _____ Recording No. _____.
6. Easement Required _____ Recording No. _____.
7. NMSHD Permit Required _____ Permit No. _____.
8. Permits Required:

Excavation Ordinance Permits

Sanitary Sewer
Storm Drainage Facilities
Water Lines
Street Grading
Curb & Gutter
Valley Gutter
Drivepads
Sidewalk
Handicapped Ramps

Sidewalk Ordinance Permits
(Construction)

Curb & Gutter
Valley Gutter
Sidewalk
Handicapped Ramps

NOTE: The dollar amounts for above fees were calculated on the basis that all permit items will be constructed under a Work Authorization. If items are to be done separately, then new fees must be calculated.

9. _____

Prepared By: Submitted By:

Richard Hall
Consultant

Design Engineer

Estimate Sheet
Page 7 of 8

Rev. 3/83

E17.D57

6/25/85

RECEIVED
JUN 26 1985
DH0193
HYDROLOGY SECTION

TO: CARLOS MONTOYA
FROM: GREG OLSON
SUBJECT: Fiesta Del Norte Shopping Center
6001 San Mateo NE

The attached SO-19 has been submitted on subject site by Richard Hall. I'm routing it to you because I have several concerns over the proposed design. I'm uncomfortable approving it without ~~the~~ resolution of the following:

1. The proposed 24" RCP intersects the existing channel at an angle of more than 90° from upstream ℄. This seems hydraulicly undesirable and could also result in increased maintenance costs to both the City and the developer. (I suggest a P.I. at the property line, deflecting the 24" RCP downstream to intersect the channel at 90° or less.)
2. The 60' private drainage easement shows grading that will direct any overflow from the proposed "D" inlet further N. releasing it uncontrolled into the arroyo. This provides severe potential for damage to the arroyo

side slope and rip-rap stabalization.

3. The proposed rip-rap section appears to end at the toe of slope in the existing arroyo. Unless the existing earthen channel is VERY stable, I would expect the toe of the new rip-rap to begin to fail whenever flows are introduced.

Please review the 50-19 against the approved drainage plan and relative to my concerns. Advise me on how to proceed with resolution of these problems.

Thanks

Attachment

cc: Richard Hall, Hall Engring

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

July 2, 1985

Mr. Richard Hall
Hall Engineering
337 Eubank NE, Suite 103
Albuquerque, NM 87123

RE: CONCEPTUAL DRAINAGE PLAN FOR BLACK ADDITION (E17/D57) RECEIVED JUNE 14, 1985

Dear Mr. Hall:

I have reviewed the referenced plan dated June 19, 1985 for Site Development approval and submit these comments.

The letter sent to me with a copy to yourself date June 25, 1985 should be addressed. The letter from Greg Olson applies to the "Drainage Facilities Within City Right-of-Way document but comments impact the sites drainage plan. Also, indicate any phasing of the drainage plan is applicable.

If you should have any questions, please contact this office at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya
City/County Flood Plain Admin.

CAM/cl

cc: Greg Olson

E17/D57

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

file

July 8, 1985

RECEIVED
JUL 09 1985
HYDROLOGY SECTION

Mr. Richard Hall
Hall Engineerng
2625 Pennsylvania Avenue NE, Suite 350
Albuquerque, NM 87110

REF: PRIVATE DRAINAGE FACILITY IN PUBLIC R/W DOCUMENT, 6001 SAN MATEO NE

Dear Richard:

In response to my scratch memo to Carlos on this subject, I learned that a conceptual drainage plan has not yet been approved for this site. Hence, the subject document is really a premature submittal to this office.

As noted in my memo to Carlos (copy attached) I have several concerns with the proposed design. Please coordinate with Carlos to resolve these issues prior to resubmittal.

Sincerely,

Greg Olson

Gregory R. Olson
Assistant City Engr./Design

GRO:mrk
Attachments (2)
2340E

cc: Carlos Montoya, Hydrology
Sergio Miranda, Design

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Fiesta Del Norte Shopping Center ZONE ATLAS/DRNG. FILE #: F17-D57

LEGAL DESCRIPTION: Tract 3A, Block Addition

CITY ADDRESS: 6001 San Mateo Blvd NE

ENGINEERING FIRM: Hall Engineering CONTACT: Richard Hall

ADDRESS: 337 Edbank Blvd. NE Suit 105 PHONE: 292-1115 292-1116

OWNER: Steve Johnson CONTACT: Steve Johnson

ADDRESS: 3001 Louisiana NE PHONE: 884-3930

ARCHITECT: Raymond O. Powell CONTACT: Raymond O. Powell

ADDRESS: 2424 Quaker Ave. Lubbok, TX. 79410

SURVEYOR: CONTACT:

ADDRESS: N/A PHONE:

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED JUL 29 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

✓ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

✓ Drainage Facilities within City R.O.W

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

✓ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

✓ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: 7/29/85

BY: PARVIZ BRTEKHARI

DRAINAGE INFORMATION SHEET

Black Addition

PROJECT TITLE: Fiesta Del Norte ZONE ATLAS/DRNG. FILE #: E17 D57

LEGAL DESCRIPTION: TRACT 3A BLACK ADDITION

CITY ADDRESS: 6001 San Mateo NE

ENGINEERING FIRM: Hall Engineering Co CONTACT: Pervis

ADDRESS: 337 Eubank NE #103 PHONE: 292 1115

OWNER: San Mateo Development CONTACT: Steve Johnson

ADDRESS: 3001 Louisiana NE PHONE: 884-3930

ARCHITECT: Powell & Ass. CONTACT: Raymond Powell

ADDRESS: 2424 Avalon Lubbock TX 79410 PHONE: 806 (792) 2704

SURVEYOR: Hall Surveying Co. CONTACT: Cliff Scannel

ADDRESS: 2625 Pima NE #350 PHONE: 884 6200

CONTRACTOR: Bill Averitt & Co CONTACT: Don Heil

ADDRESS: PO3 13595 Alb. NM 87192 PHONE: 265 4168

RECEIVED AUG 08 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 85-215

EPC NO. Z 79-47-1

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

X EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

X FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: Aug 8th, 1985

BY: Richard Hall

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

August 21, 1985

Mr Richard Hall
Hall Engineering Co.
337 Eubank NE, #103
Albuquerque, NM 87123

RE: DRAINAGE PLAN FOR FIESTA DEL NORTE (E17-D57) RECEIVED AUGUST 8, 1985

Dear Mr. Hall:

The above referenced plan dated June 19, 1985 is approved for foundation only permit.

When you submit for Building Permit sign-off by Hydrology, the following items must be addressed or corrected.

1. Please show the roof drains for the buildings.
2. The proposed contour of 5204 west of Building A does not seem to fit into the grading concept.
3. Please address how runoff and sediment will be contained on site during the construction phase.
4. The construction of a 1 foot high berm along the west property line does not appear to be a permanent solution to controlling discharge from the site.
5. Please indicate your temporary bench mark on site.

If you have any questions, please contact this office at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya
City/County Flood Plain Admin.

CAM:mrk

PROJECT TITLE: FIESTA DEL NORTE SHOPPING CENTER ZONE ATLAS/DRNG. FILE #: E-17

LEGAL DESCRIPTION: TRACT 3A, BLACK ADDITION

CITY ADDRESS: 6001 SAN MATEO BLVD. N.E.

ENGINEERING FIRM: HALL ENGINEERING CONTACT: PARVIZ EFTEKHARI

ADDRESS: 337 EUBANK NE SUITE 103 PHONE: 292-1115

OWNER: Steve Johnson CONTACT: Steve Johnson

ADDRESS: 3001 Louisiana N.E. PHONE: 884-3930

ARCHITECT: Raymond O. Powell CONTACT: Raymond O. Powell

ADDRESS: 2424 Quaker Ave. PHONE: 806-799-6649

SURVEYOR: Hall Engineering CONTACT: Richard Hall

ADDRESS: 337 Eubank NE Suite 103 PHONE: 292-1115

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED AUG 28 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

✓ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: 8/26/85

BY: PARVIZ EFTEKHARI

HALL ENGINEERING COMPANY INC.
337 EUBANK N.E., SUITE 103
ALBUQUERQUE, NEW MEXICO 87123
Phones: (505) 292-1115 & 292-1116

August 26, 1985

Mr. Carlos A. Montoya
City/County Flood Plain Administrator
Design Hydrology Section
123 Central N.W.
Albuquerque, NM 87102

RECEIVED
AUG 28 1985
HYDROLOGY SECTION

Re: Drainage Plan for Fiesta Del Norte (E17-D57)

Dear Mr. Montoya:

In response to your letter of August 21st, 1985, we would like to provide you with additional information. Item number 3 and 4 in your letter are addressed respectively, as follows:

1. Construction of pad and slab of building A through E is prior to any construction, which actually will intercept any runoff to the west and north side of property.

2. Construction of a 1' high berm along the west property line is just a temporary solution to controlling discharge from the site, there is going to be a 8" high curb along the west property line which is a permanent solution to control discharge from the site (see plan).

Your early approval of this submittal is requested.

Sincerely,

Parviz Eftekhari
Project Engineer

PE/jh

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

October 1, 1985

Richard Hall
Hall Engineering Co.
337 Eubank NE, #103
Albuquerque, NM 87123

REF: DRAINAGE PLAN FOR FIESTA DEL NORTE (E17-D57) RECEIVED AUGUST 28, 1985

Dear Mr. Hall:

The above referenced plan dated August 14, 1985 is approved for building permit.

Please be advise that no phasing was indicated on the plan and therefore the total site will be inspected for the final CO. Also, after a conversation with Mr. Parviz Eftekhari it was determined that the total length of the west property line would have a concrete curb.

Please attach a copy of this approved plan along with the appropriately approved "Drainage Facilities Within City Right-of-Way" document to both sets of construction plans prior to sign-off by Hydrology.

If you have any questions or comments regarding this project, please call me at 766-7644.

Cordially,

Carlos A. Montoya

Carlos A. Montoya
City/County Flood Plain Admin.

CAM/cl

DRAINAGE INFORMATION SHEET

PROJECT TITLE: FIESTA DEL NORTE SHOPPING CENTER ZONE ATLAS/DRNG. FILE #: E17-D57

LEGAL DESCRIPTION: TRACT 3-A-1, 3-A-2

CITY ADDRESS: 6001 San Mateo Blvd. NE

ENGINEERING FIRM: Hall Engineering Co CONTACT: Richard Hall

ADDRESS: 337 Eubank NE PHONE: 292-1115

OWNER: Steve Johnson CONTACT: Steve Johnson

ADDRESS: 3001 Louisiana PHONE: 884-3930

ARCHITECT: Raymond O. Powell CONTACT: Raymond O. Powell

ADDRESS: 2424 Quaker Ave Lubbock, TX. 79410 PHONE:

SURVEYOR: N/A CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: N/A PHONE:

RECEIVED NOV 21 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

✓ DRAINAGE REPORT UPDATE PER DRB requirement

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

EPC Z-79-47-1

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

X FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

✓ OTHER property has been replated to 3-A-1 and 3-A-2 (SPECIFY)

DATE SUBMITTED: Nov. 21, 1985

BY: Parviz Eftekhari

12/16/85

Talked w/ Parvis, will need copy of Preliminary Plat to see Easement wording for common drainage across lots.

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

January 6, 1986

Richard Hall, P.E.
Hall Engineering Company, Inc.
337 Eubank Blvd., NE Suite 103
Albuquerque, New Mexico 87123

RE: REVISED DRAINAGE PLAN FOR FIESTA DEL NORTE SHOPPING CENTER
SUBMITTED NOVEMBER 2 1985 FOR FINAL PLAT APPROVAL
(E-17/D57)

Dear Richard:

The referenced submittal, dated November 21, 1985, is approved for purpose of Final Plat, as requested by DRB. Final Plat must include statement regarding the common drainage easement required for surface drainage across both Tracts "3-A-2" and "3-A-1". If possible, please submit a copy of plat for review before request for sign-off on Final Plat.

If you have any questions, call me at 766-7644.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Design Hydrology

RAG/bsj

RECEIVED
JUN 14 1985
HYDROLOGY SECTION

DRAINAGE REPORT
FOR
FIESTA DEL NORTE
SHOPPING CENTER
May 1985

DRAINAGE REPORT

1. Purpose and Scope: This drainage report has been prepared to present an analysis of storm water runoff flowing into and generated by the proposed San Mateo Shopping Center. This report has been written in compliance with requirements of the City of Albuquerque's Development Process Manual (DPM) Chapter 22, entitled "Drainage and Flood Control". The hydraulic characteristics of the site were analyzed using methods and procedures in the DPM. The report contains recommendations for handling on-site and off-site flows.

2. Site location and description: The site is located as shown in figure 1, and is in the northwest quadrant of the inter-section of San Mateo Boulevard and Osuna Road N.E. The parcel of lands legal description is as follows:

   Track 3A, Black Addition
   Zoned C-3

   This site is also bounded on the north by Tracks 1 and 3B of the Black Addition, adjacent to Tracks 1, 65.38 ft of the property fronts the Bear Canyon Arroyo Easement. On the west side by Tracks A & B of of the Brentwood Park Subdivision.

   The site relatively has a gentle slope of about 2% northwest toward the Bear Canyon Arroyo. However, San Mateo Boulevard is approximately eight feet above and slope 3:1 to the site. Osuna Road is built slightly lower and also slopes down to the site. The grades along the property line adjacent to San Mateo Boulevard and Osuna Road are such that it restricts any offsite water flow from the road.

   There are two different types of soil found in this area. The northeast half contains TgB, Tesajo gravely fine sandy loam, and the remaining half having EmB, Embudo gravely fine sandy loam. Both types belonging to hydrological soil group "B". In accordance to Bernalillo County

and parts of Sandoval and Valencia Counties, New Mexico Soil Survey. Refer to Figure 4.

This property contains 5.849 acres more or less.

3. Methods of Analysis: The peak flow rate for the site was determined by the Rational Methods, the time of concentration was obtained by Segment Analysis. Plate 22.2, B-2 was used to determine the flow velocity over asphalt paving. Although, there is an existing restaurant and greenhouse on the property, the imperviousness is not considered. The site will be cleared and leveled for new construction.

The Undeveloped Time of Concentration:

$$T_c = \frac{775 \text{ ft}}{0.85 \text{ ft/sec}} \times \frac{1 \text{ min}}{60 \text{ sec}} = 15.2 \text{ min}$$

The developed T_c includes flow time from the southeast corner of the property to a catch basin, (Type Double "D", DWG K-6-2), in front of the proposed shopping center.

The total flow distance:		475 ft
Approximate Slope	:	2 %
Velocity (Plate B-1)	:	1.9 ft/sec
Time of travel	:	475/(1.9)/60 = 4.2 min

From the catch basin, the flow is piped under the shopping center and released into the Bear Canyon Arroyo adjacent to the property. The total time of travel through the drain pipe is:

Total length of 24" drain pipe:		390 ft
Area of pipe	:	3.14 ft^2
Total Q into pipe	:	12.0 cfs

Velocity (Assume pipe flows full): Q/A, 12.0/ 3.14= 3.82 ft/sec

T_c = (390/3.82)/60 = 1.70 min. Use 10 minutes for calculating purposes.

Rainfall intensity was determined by applying equation on Plates 22.2, D-1 and D-2.

Developed:

6 hour rainfall (R_6) 100 year frequency 2.2 inches.

$I = (R_6)\ 6.84\ T_c$

$I = 2.2 \times 6.84 \cdot 10 \text{ exp } 0.51$

$= 4.65$ inches

Undeveloped:

6 hour rainfall (R_6) 100 year frequency 2.2 inches

$I = 2.2 \times 6.84 \times 15.2 \text{ exp } -0.51$

$= 3.76$ inches

The value of the run-off coefficient was determined as follows:

Total area considered:		5.8491 acres
Proposed building	:	2.3416 acres
Asphalt Paving	:	3.4045 acres
Landscaping	:	.1030 acres

Drainage Area "A" 0.643 acres

Proposed Conditions:

Type of Surface	"C"	A(ac)	C x A
Building	1.00	0.389	0.389
Asphalt Paving	0.90	0.200	0.180
Landscaping	0.40	0.054	0.022
		0.643	0.591

Weighted "C" Factor 0.92

Drainage Area "B" 2.918 acres

Type of Surface	"C"	A(ac)	C x A
Building	1.00	0.230	0.230
Asphalt Paving	0.90	2.574	2.317
Landscaping	0.40	0.114	0.046
		2.918	2.593

Drainage Area "C" 2.288 acres

Type of Surface	"C"	A(ac)	C x A
Building	1.00	1.723	1.723
Asphalt Paving	0.90	0.631	0.568
Landscaping	0.40	0.038	0.015
		2.392	2.306

Weighted "C" Factor 0.96

Peak discharge (Rational Method)

Proposed:

Drainage Area "A"

Q = 0.92 x 4.65 x 0.643

= 2.75 cfs

Drainage Area "B"

Q = 0.89 x 4.65 x 2.918

= 12.00 cfs

Drainage Area "C"

Q = 0.96 x 4.65 x 2.288

= 10.21

Total = 25.04 cfs

Existing Condition:

Q = 0.34 x 4.65 x 5.849/

Q = 9.25 cfs

4. Drainage Concept: Drainage Area "A" will be discharged into Osuna Road N.E. Drainage Area "B" and "C" will be discharged into the Bear Canyon Arroyo. There is no off-site flow into the property.

5. Flood Hazard Information: The subject site does not lie within any flood hazard zones according to the Albuquerque Flood Insurnace Maps. (Fig. 1)

HYDRAULIC CALCULATION FOR PROPOSED STORM DRAIN

10 year water surface at Bear Canyon Arroyo is chossen as a control

pipe diameter $D = 24''$ RCP $L = 390$ FT

$Q = 12$ cfs

$\epsilon = 0.004$ for concrete

$\nu = 1.217(10^{-5})$ Kienematic Viscosity for water @ 60°F

$V = Q/A = \frac{12.00}{3.14} = 3.82$ ft/se

$R = \frac{VD}{\nu} = \frac{(3.82)(2)(10^5)}{1.217} = 6.3\ (10^5)$

$\epsilon/D = 0.0020$

By using Moody diagram, friction coefficient is

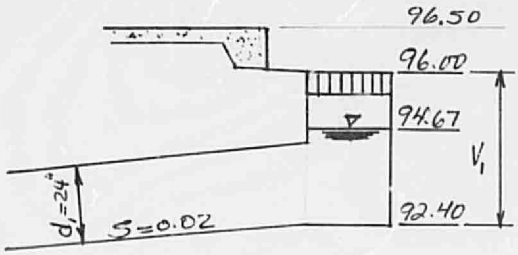
$f = 0.0268$

Water elevation at catch basin No. 1

$V = 1.33 + 1.2\frac{V_1^2}{2g} + d_1$

$V_1 = 3.60'$ plate 22.3 D-9

$V_1^2/2g = 0.2266$



Minor Losses:

a. Entrance Loss $= \frac{1}{2}\left(\frac{V^2}{2g}\right)$

b. Friction Loss $= \frac{fL}{D}\left(\frac{V^2}{2g}\right)$

The arbitrary datum is selected as elevation of 10 year water surface at 5186.40 (Fig. 3).

Applying the energy equation between the points of inlet and outlets gives:

$$8.27 = \frac{V^2}{2g} + 0 + 0 + (0.0268)\left(\frac{390}{2}\right)\left(\frac{V^2}{2g}\right) + \frac{1}{2}\left(\frac{V^2}{2g}\right)(2)$$

$$8.27 = 7.23\,\frac{V^2}{2g} \Rightarrow \frac{V^2}{2g} = 1.1445 \quad FT$$

From inlet to "A" gives

$$8.27 = \frac{V^2}{2g} + \frac{P}{\gamma} + z + \frac{1}{2}\left(\frac{V^2}{2g}\right)$$

$$\left.\frac{P}{\gamma} + z\right|_A = 8.27 - (1.5)(1.1445) = 6.5533 \quad FT$$

$$\left.\frac{P}{\gamma} + z\right|_B = 6.5533 - (0.0268)\left(\frac{220}{2}\right)(1.1445) = 3.1793$$

$$\left.\frac{P}{\gamma} + z\right|_C = 3.1793 - (0.0268)\left(\frac{170}{2}\right)(1.1445) - \frac{1}{2}(1.1445) = 0$$

Energy grade line and hydraulic grade line are shown in fig. 2

V Depth for Catch Basin No. 2.

$$V_2 = 1.33 + H_1 + 1.2\frac{V_2^2}{2g} + d_2 - G$$

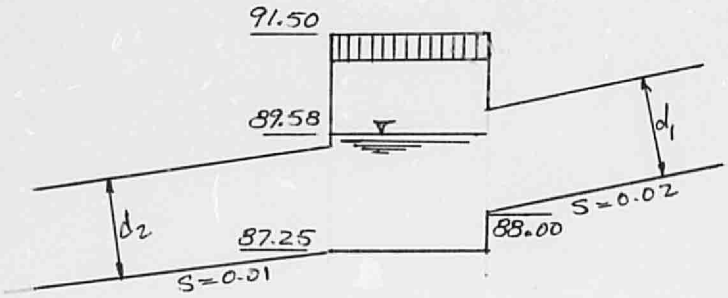
$H_1 = 94.67 - 89.58 = 5.09$ FT

$d_2 = 2$ FT

$G = 96.00 - 91.50 = 4.50$ FT

$$V_2 = 1.33 + 5.09 + (1.2)(0.2266) + 2 - 4.50$$

$V_2 = 4.25$ FT



EROSION CONTROL PLAN

1. Protection of San Mateo Boulevard right-of-way should not be a problem. The slopes of 6% away from San Mateo will prohibit any erosion of the soil from entering during the rough grading phase. However, during the construction phase a new drive pad and bus line will be built with all construction within the city right-of-way. Should the contractor spill any dirt into the paved street he will be responsible to clean it up immediately. I see no reason for any type of berm or other control in this area.

2. Protection of Osuna Street right-of-way for the most part will not be a problem. 90% of the project will slope away from Osuna so no erosion can enter the city right-of-way. The lower southwest corner will slope at 0.7 ft/ft toward Osuna. This will result in a velocity of less than 0.5 ft/sec, limiting any erosion to such a minor amount that no berming or action other than the note to the contractor to clean up any dirt or mess in the right-of-way as soon as it happens.

3. The Bear Canyon Arroyo is the tricky one. The Arroyo is unlined and unstable as evidence of side slope erosion is evident on the natural state. During the rough grading, I suggest no erosion control as I can see no damage to the arroyo or problem of preventing flow in the arroyo. However, after rough grading the arroyo bank should be protected with rip-rap and brought to final grade before any construction proceeds. Since almost all the runoff is directed to the arroyo this protection should be done in the first week of construction. Once the side of the arroyo is stable, erosion will be held to a minimum on the construction site.

4. The property to the west should be protected during all phases of the construction. I propose placing a 18" high berm along the west property line to be maintained until placement of the curb is ready.

This is how I would handle the project. If you can think of any other suggestions, please comment as soon as possible since conceptual approval is required for site development plan approval at E.P.C.

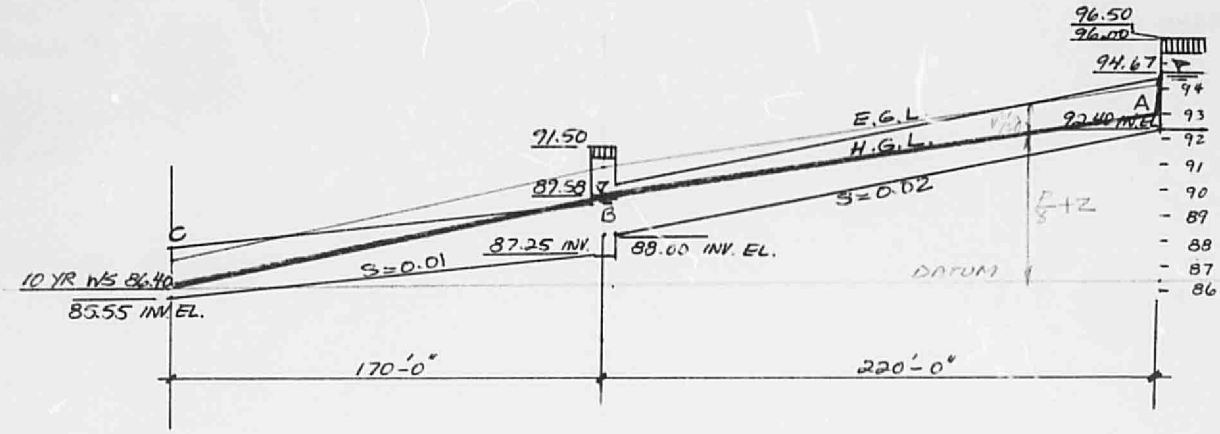
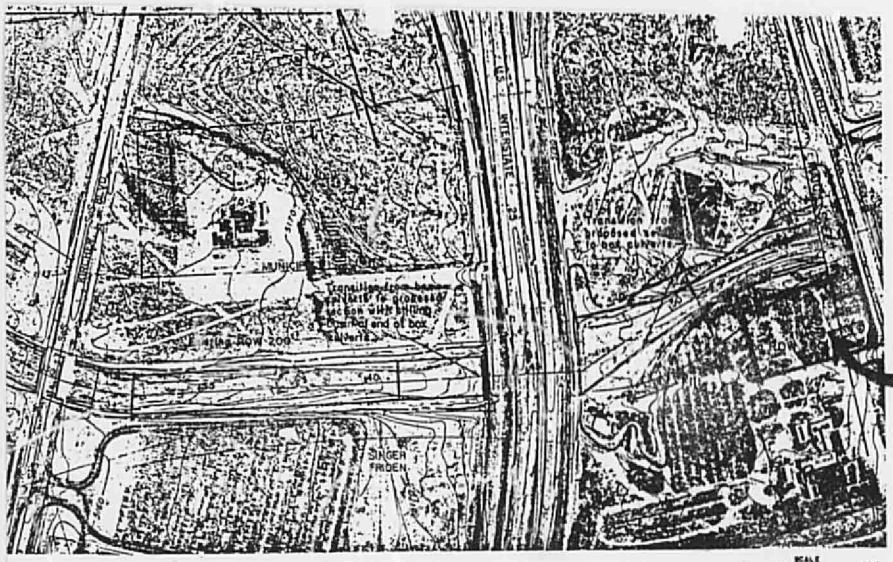
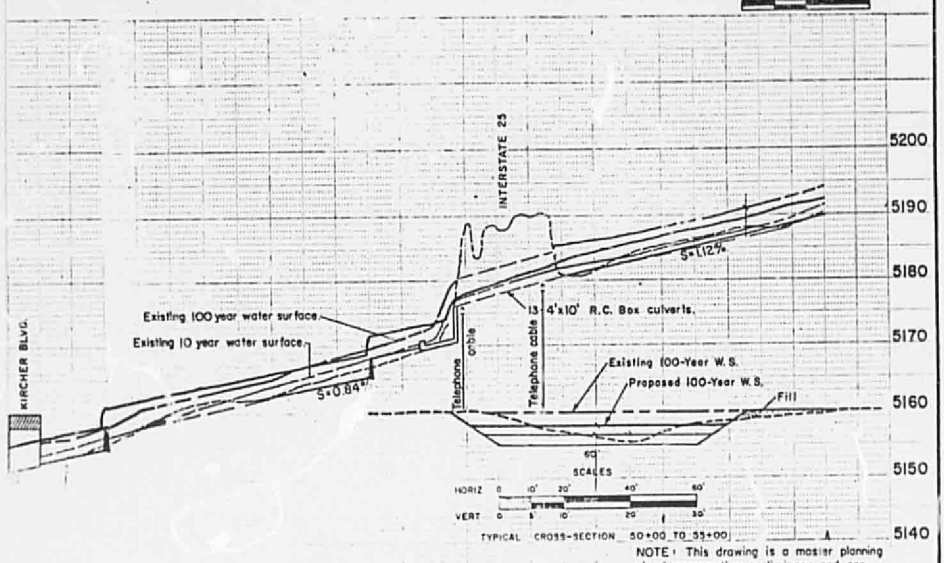

96.50
96.00
94.67
A
92.40 INV. EL.
E.G.L.
H.G.L.
S=0.02
91.50
87.58
B
87.25 INV.
88.00 INV. EL.
C
10 YR W/S 86.40
85.55 INV. EL.
S=0.01
DATUM
170'-0"
220'-0"
94
93
92
91
90
89
88
87
86

Fig. 2





NOTE: This drawing is a master planning sheet representing preliminary and conceptual engineering. It shall not be used for construction purposes.

Q=1297

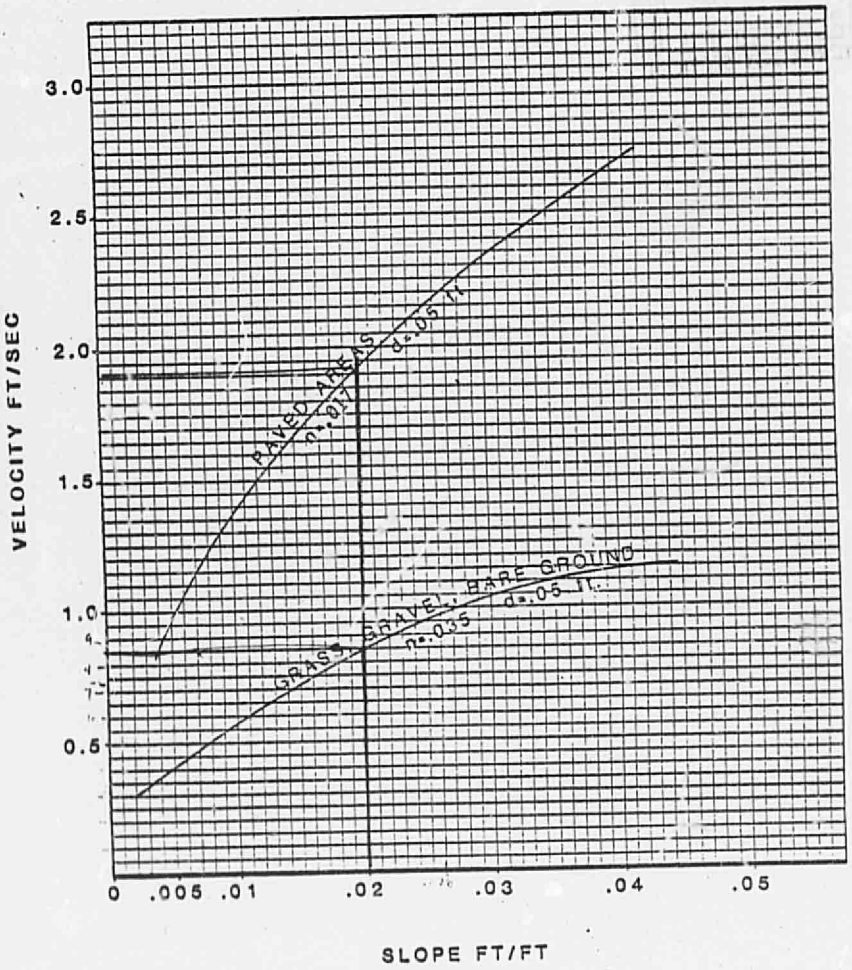
35 40 45 50 55

OLITAN AUTHORITY	DRAINAGE MANAGEMENT PLAN **NORTHEAST HEIGHTS**	PROFILE REACH BEAR CANYON ARROYO STA. 0+00 TO STA. 55+00	E-17 SHEET NUMBER 1 OF 9

Fig 3.

OVERLAND FLOW SEGMENTS

VELOCITY DETERMINATIONS FOR T_c CALCULATIONS



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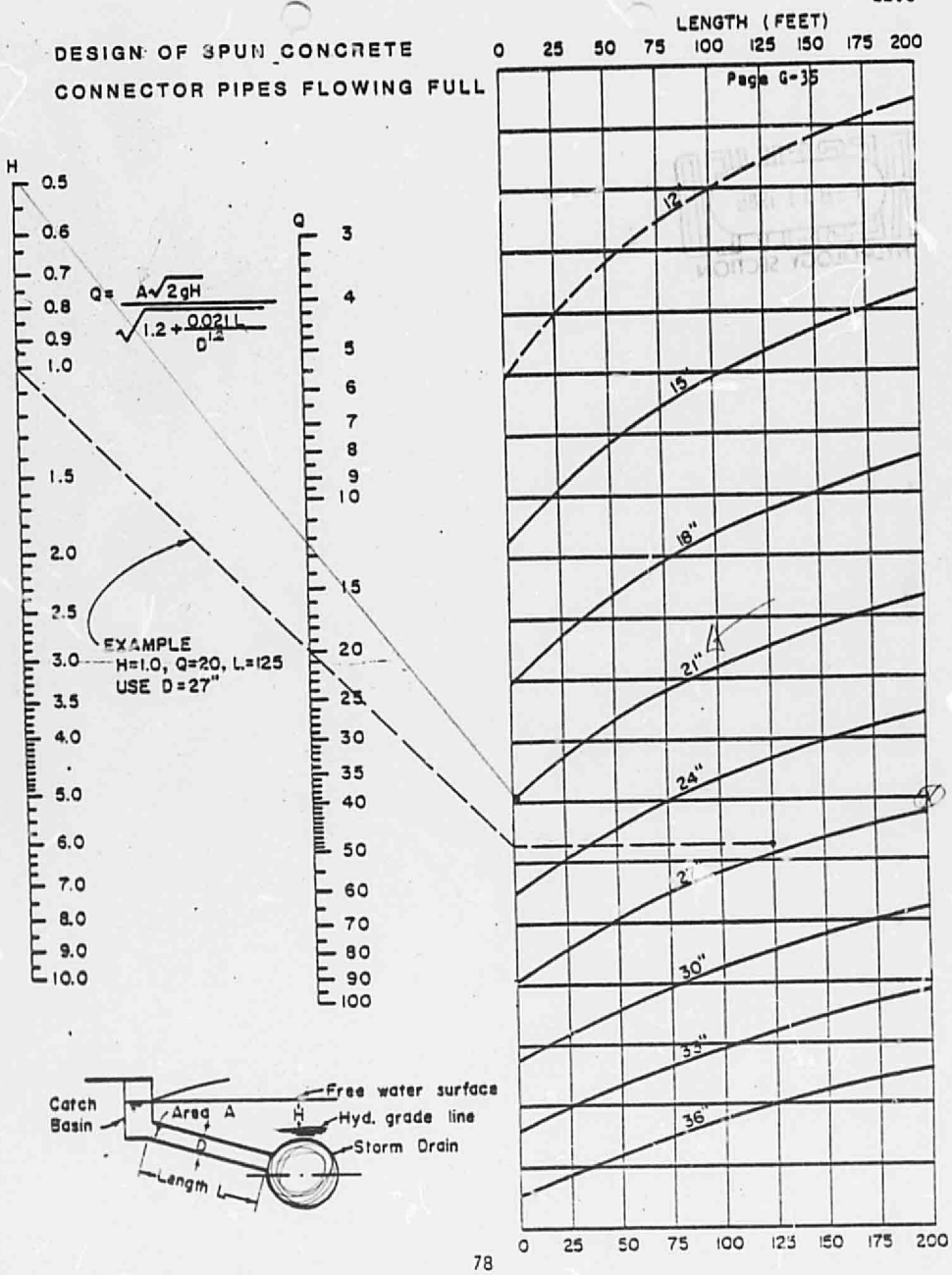
FEB 11 1985
HYDROLOGY SECTION

DESIGN OF SPUN CONCRETE CONNECTOR PIPES FLOWING FULL



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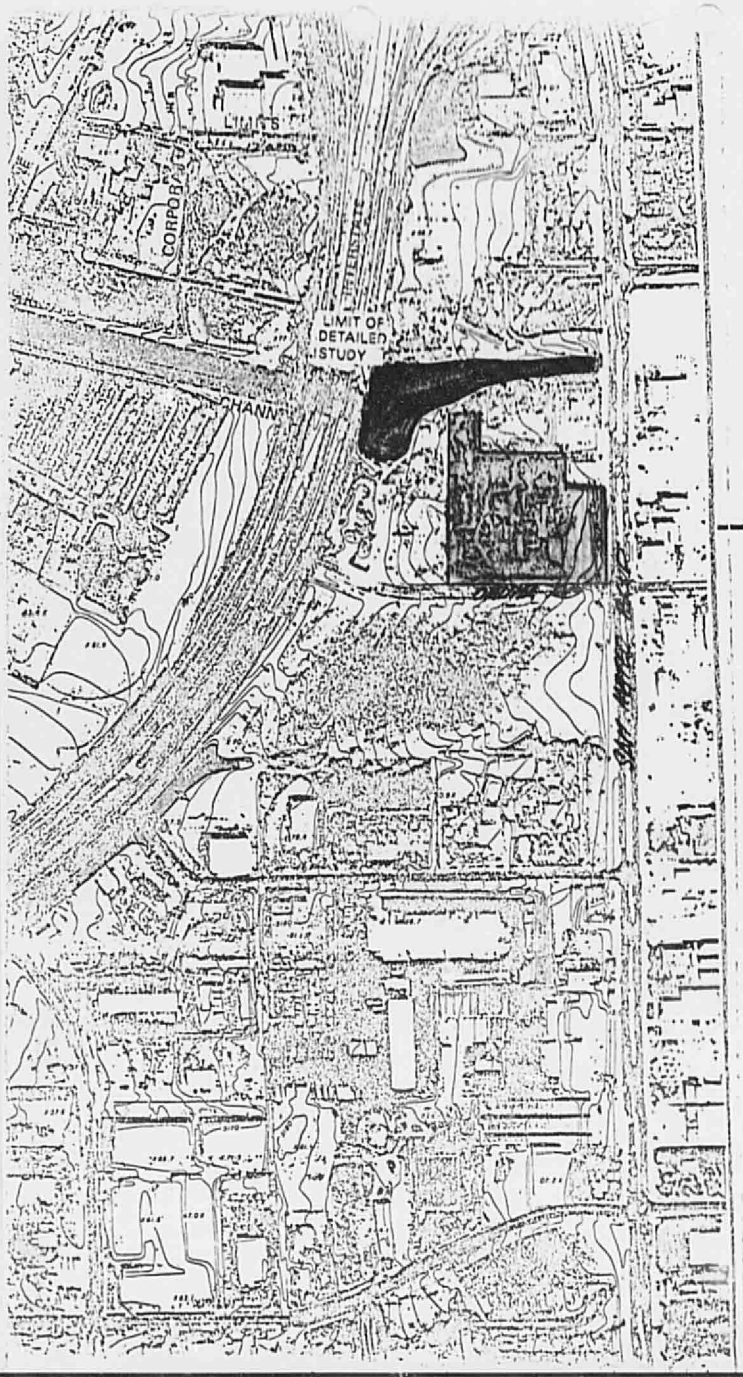
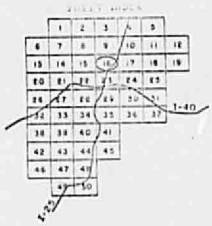
FEB 11 1985
HYDROLOGY SECTION





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HYDROLOGY SECTION

NATIONAL FLOOD INSURANCE PROGRAM

FLOODWAY

FLOOD BOUNDARY AND
FLOODWAY MAP

CITY OF
ALBUQUERQUE,
NEW MEXICO
BERNALILLO COUNTY

PANEL 16 OF 50

COMMUNITY-PANEL NUMBER
350002 0016

EFFECTIVE DATE:
OCTOBER 14, 1983

Federal Emergency Management Agency

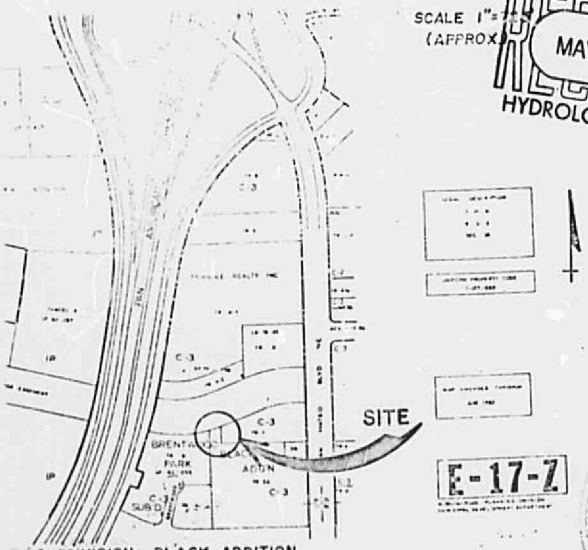
THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

SCALE 1"= (APPROX)

RECEIVED MAY 20 1986 HYDROLOGY SECTION



E-17-Z

SUBDIVISION: BLACK ADDITION
TRACT NO : 3A
BLOCK : N/A
ZONE: C-3

Revised 6/18/85

OWNER: STEVE JOHNSON
OSUNA RD. NE.

SITE LOCATION MAP

6/11/85

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 85-1

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should [illegible] exist, the contractor shall notify the engineer so that the [illegible] be resolved with a minimum amount of delay.

5. Backfill compaction shall be according to N/A street use.

E17-D57

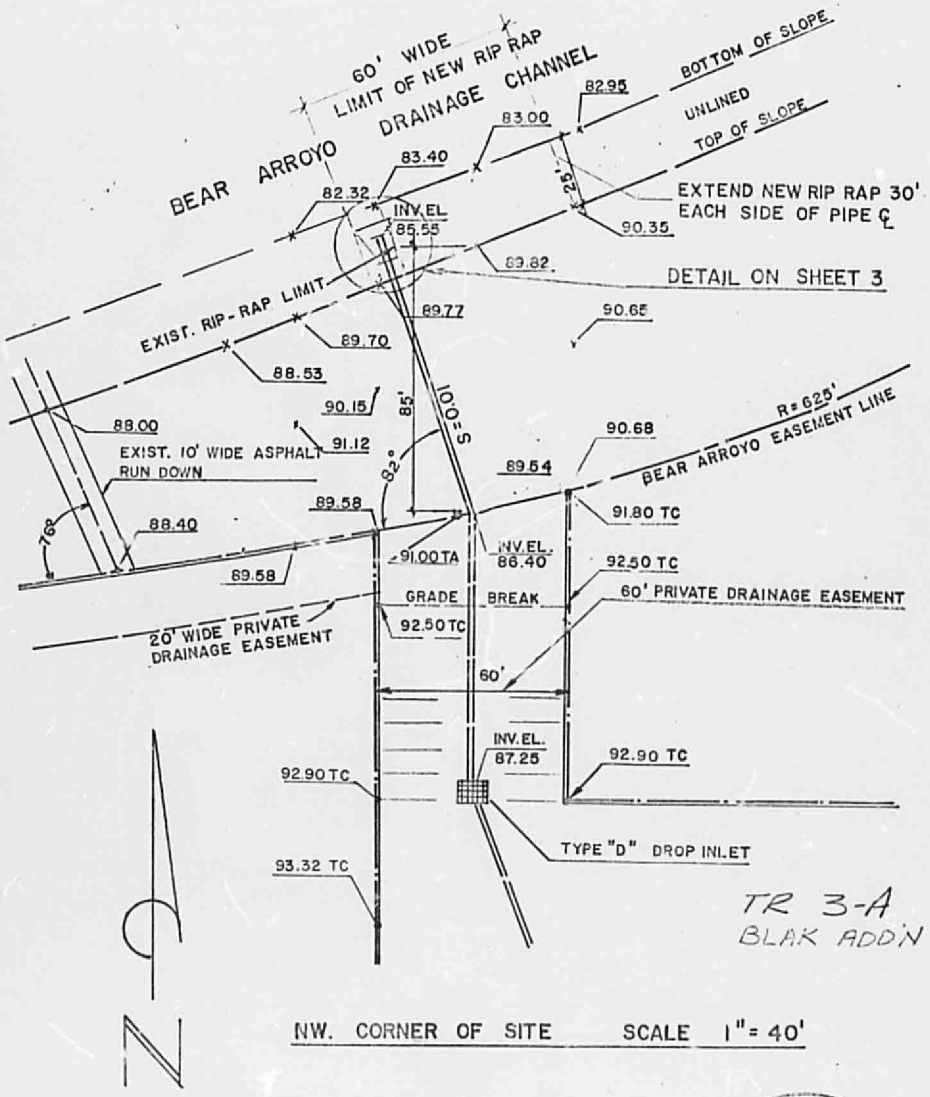
BENCH MARK
THE STATION IS A STANDARD N.M.S.H.C. BRASS TABLET, "NM-367-I", SET IN TOP OF A CONCRETE POST FLUSH WITH THE GROUND, LOCATED IN THE MEDIAN ON SAN MATEO BLVD. NE, JUST NORTH OF OSUNA ROAD.

E-82 DON HEIL BUILDER

APPROVALS	NAME	DATE	HALL ENGINEERING COMPANY INC.
A.C.E./DESIGN		6/13/85	FIESTA DEL NORTE SHOPPING CENTER
INSPECTOR			6001 SAN MATEO BLVD. NE.
CITY ENGR			DWG. NO. 2/137 SHEET 1 OF 3 — MAP NO. E-17

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



NW. CORNER OF SITE SCALE 1" = 40'

NOTE: ACCORDING TO DEVELOPMENT PROCESS MANUAL (DPM) SECTION 22.3, THE MINIMUM SLOPE FOR MAIN LINE CONDUIT WILL BE 0.10 %.

RICHARD V. HALL REGISTERED PROFESSIONAL ENGINEER

Revised 6/18/85

6/18/85

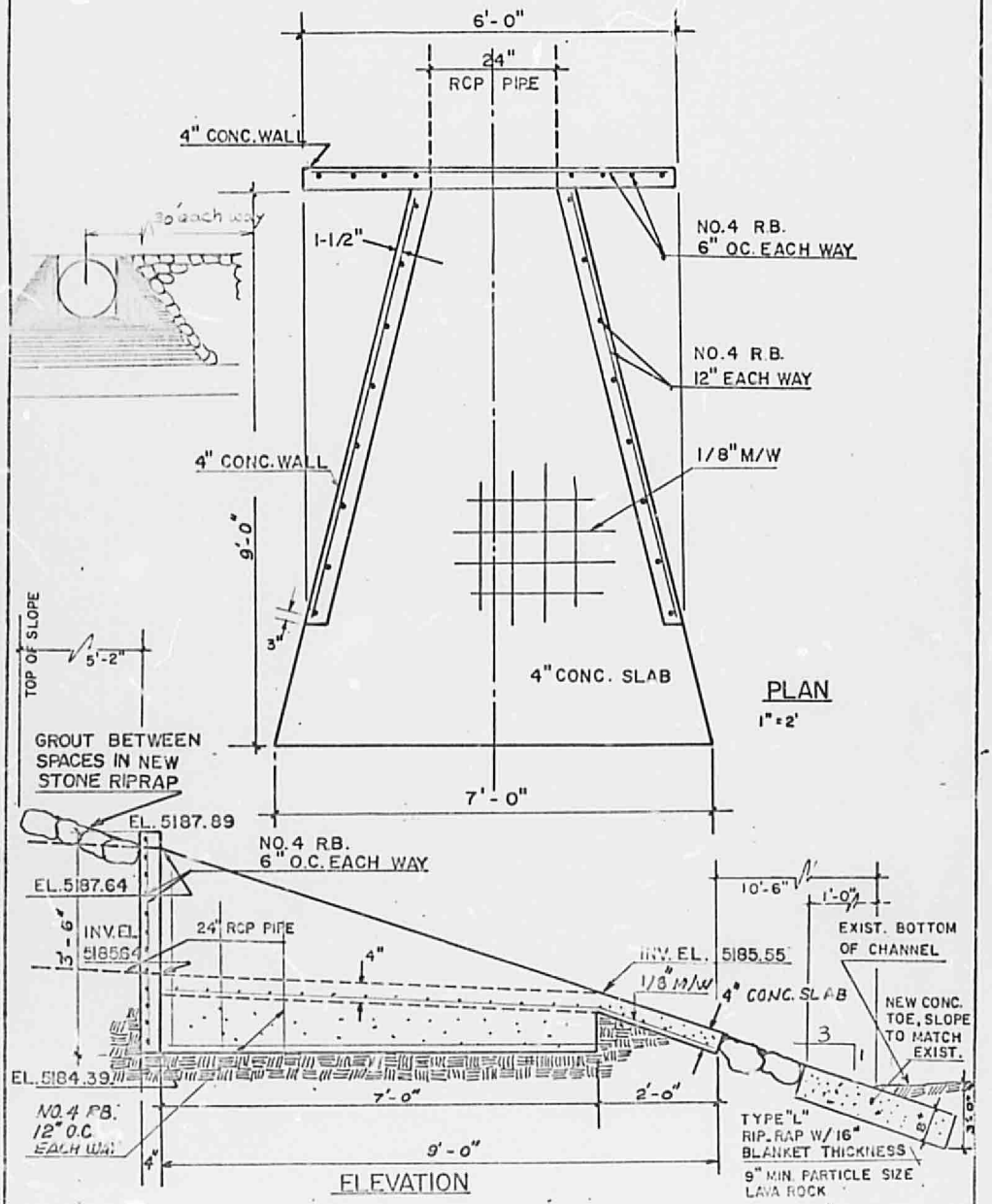
DON HEIL BUILDER

E-82

APPROVALS	NAME	DATE	TITLE: FIESTA DEL NORTE SHOPPING CENTER 6001 SAN MATEO BLVD. NE	
A.C.E./DESIGN		07/20/81		
INSPECTOR			PERMIT NO. 27137 SHEET 2 OF 3	MAP NO. E-17
A.C.E./FIELD				

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PIPE OUTLET STRUCTURE SCALE: 1" = 2'

Revised 6/18/85

E-82

DON HEIL BUILDER

APPROVALS	NAME	DATE	TITLE: HALL ENGINEERING CO. INC. FIESTA DEL NORTE SHOPPING CENTER 6001 SAN MATEO BLVD. NE	
A.C.E./DESIGN		07/23/85		
INSPECTOR	J. A.		PERMIT NO. 27137 SHEET 3 OF 3	MAP NO. E-17
A.C.E./FIELD		5/2/86		