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

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: H 17 DATE: 12-19-84

PLANNING DIVISION NOS. EPC: ______ DRB: ______

SUBJECT: Office Bldg Cutler NE between Adams & Jefferson

LEGAL DESCRIP.: Lot 1-A-1 Block A Tomateo Chavez Addition

APPROVAL REQUESTED

______	PRELIMINARY PLAT	______	FINAL PLAT
______	SITE DEVELOPMENT PLAN	X	BUILDING PERMIT
______	ROUGH GRADING		

	WHO:	REPRESENTING:
ATTENDANCE:	Tucker Green	
	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 AMAFCA on out fall ③ ~~Must drain~~ Thaw N.4 in flood zone ④ written coordination with AMAFCA on outfall

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:	Tucker H Green
TITLE:	civil engr I	TITLE:	Civil Engineer
DATE:	12-19-84	DATE:	12/19/84

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

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

February 26, 1985

Mr. Tucker Green
Engineering Associates, Inc.
532 Adams St., NE
Albuquerque, NM 87108

SUBJECT: Grading Plan for La Fama Clothing

Dear Sir:

The proposed work in AMAFCA R.O.W. as shown on Dwg. 1 of 10 Rev. 2/11/85 is approved as meeting AMAFCA requirements. Please advise Mr. Larry Blair of this office one week in advance of any work in AMAFCA right of way.

Sincerely,

Dan Sabo

Dan Sabo
Drainage Engineer

ic
cc: Larry Blair (w/attachments)
Fred Aguirre

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

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

March 12, 1985

Tucker Green
Engineering Associates
532 Adams, NE
Albuquerque, New Mexico 87102

RE: DRAINAGE PLAN FOR LA FAMA CLOTHING
(H-17/D29) RECEIVED FEBRUARY 21, 1985

Dear Mr. Green:

The referenced plan dated February 21, 1985, is approved.

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

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

Cordially,

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

CAM/bsj

DRAINAGE INFORMATION SHEET

PROJECT TITLE: La Fama Clothing ZONE ATLAS/DRNG. FILE #: H-17/D29 now

LEGAL DESCRIPTION: Lot 1-A-1 Block A Timoteo Chavez Addition

CITY ADDRESS: None yet

ENGINEERING FIRM: Engineering Associates CONTACT: Tucker Green

ADDRESS: 532 Adams NE Albq. 87102 PHONE: 265 6545

OWNER: India Imports CONTACT: Ravi Goradia

ADDRESS: 132 Cornado Cntr, Albq. PHONE: 883-8445

ARCHITECT: Rick Bennett CONTACT: Rick Bennett

ADDRESS: 3803 Riverview Pl, Albq. PHONE: 831-3950

SURVEYOR: Alpha Surveying Group CONTACT: Gary Gritako

ADDRESS: P.O.BOX 26193, Albq PHONE: 265-5538

CONTRACTOR: None yet CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:
_X_ YES
___ NO
_X_ COPY OF CONFERENCE RECAP SHEET PROVIDED

1/31/85
DRB NO. 85-12
EPC NO.
PROJ. NO.

RECEIVED
FEB 21 1985
HYDROLOGY SECTION

TYPE OF SUBMITTAL:
___ DRAINAGE REPORT
_X_ DRAINAGE PLAN
___ CONCEPTUAL GRADING & DRAINAGE PLAN
___ GRADING PLAN
___ EROSION CONTROL PLAN
___ ENGINEER'S CERTIFICATION

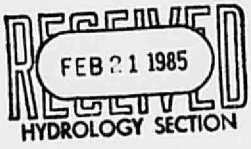
CHECK TYPE OF APPROVAL SOUGHT:
___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
_X_ BUILDING PERMIT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
___ OTHER (SPECIFY)

DATE SUBMITTED: 2-20-85

BY: AUGUST F. MOSIMANN

STATE OF NEW MEXICO 8048 REGISTERED PROFESSIONAL ENGINEER AUGUST F. MOSIMANN

February 21, 1985



Hydrology Dept.
City of Albuquerque

Dear Sirs:

This drainage report and the accompanying plan were submitted to AMAFCA (Albuquerque Metropolitan Arroyo Flood Control Authority) on 2/21/85 for approval to use their right-of-way. Their approval is required per the pre-design conference. It will probably take a week to ten days for them to review the project.

If you review this project before AMAFCA approval arrives in your office, and the plan is otherwise acceptable, could you please approve on condition of their approval? This would expedite matters for the owner.

Thank you very much.

Cordially yours,

Tucker Green
for
Engineering Associates

DRAINAGE REPORT AND GRADING PLAN
FOR
LA FAMA CLOTHING

PROJECT DESCRIPTION

The zone map is H-17.

The legal description is Lot 1-A-1, Block A, Timoteo Chavez Addition.

The site is not in a 100-year flood hazard area.

The site has an area of 0.2810 acre and is the middle of three lots on the north side of Cutler Avenue between Adams St. and Jefferson St. N.E., slightly northeast of where Washington Ave. crosses I-25. Lot 1-A-2, adjoining on the west, has the same owner. Although the right of way for AMAFCA's Embudo Diversion Channel adjoins the rear of these lots, each has a 10 foot drainage and utility easement across the back. All three lots slope northwest at about 2% and runoff from all three currently flows along a swale in AMAFCA right of way to an existing concrete-lined inlet to the Embudo Channel at Adams St. This swale seems the logical path for runoff under developed conditions as well. For the purposes of this report it is assumed that all three lots will soon be developed to a completely impervious condition. The total runoff area considered, including a small portion of AMAFCA right of way, amounts to 1.64 acres.

An approximately 5500 sq. ft. office building is proposed for the rear of Lot 1-A-1 with paved parking and minor landscaping for the front. Runoff from the the site under developed conditions may be considered in two parts, as shown in the appendix and on the plans: (1) flow from the parking lot and the west portion of the roof plus a minor amount of offsite flow, and (2) flow from the east portion of the roof plus a larger amount of offsite flow. Runoff from most of the lot to the east does not flow directly onto the site, however, but flows along AMAFCA's embankment at the rear. Partly because of the easement shown, this flow is considered along with other site flows.

It is proposed to route the entire runoff from all three lots along the swale on AMAFCA right of way. Under completely developed conditions this amounts to approximately 7.5 cfs. (See below) Of course AMAFCA must review and approve the use of its facilities. Previous conversation with Dan Sabo of AMAFCA (12/19/84) indicates AMAFCA will approve, provided certain design considerations are met.

RUNOFF CALCULATIONS - GENERAL

A table of contributing areas with 100-yr runoff rates and volumes is given below. 10-yr rates and volumes are 65.7% of the 100-yr values (DPM Pl 22.2 D-1). A sketch defining the areas is included on the plans and in the appendix. The areas are combined to represent existing and proposed runoff conditions. Area 7 is AMAFCA right of way and will remain undeveloped.

The table is based on a native soil Group Cu (cut & fill) having hydrologic class "A" (Map 31, SCS Soil Survey of Bernalillo County). For undeveloped conditions the runoff C is 0.16 (DPM Pl. 22.2 C-1), while C = 1.00 for the completely impervious conditions anticipated at full development. From DPM Pl. 22.2 D-1 the 100-yr, 6-hr precipitation amount is 2.3 inches. For the entire combined area, the hydraulic length is roughly 450 feet and the change in elevation is about 10.5 feet. The time of concentration as determined by the (rearranged) DPM formula Tc = 0.0078 * runoff length ^ 1.155 / elev. change ^ 0.385 is 3.66 minutes; 10 minutes is used as a minimum in accordance with DPM. Tc for the each of the contributing areas is less than 10 minutes and again the minimum value is used. With the 10 minute time of concentration, rainfall intensity is calculated to be 2.15 x 2.3 = 4.95 in/hr, the runoff rate is given by Q= C*I*Acres, and the runoff volume is given by V = C * rain amount * sq ft, all in accordance with DPM chapter 22.

SUB-AREA	AREA SQ FT	AREA ACRES	EXISTING C	EXISTING Qp100 CFS	EXISTING V 100 CU FT	PROPOSED C	PROPOSED Qp100 CFS	PROPOSED V 100 CU FT
1	8460	0.1942	0.16	0.153	260	1.00	0.961	1622
2	3780	0.0868	0.16	0.066	116	1.00	0.430	725
3	3190	0.0732	0.16	0.058	99	1.00	0.362	612
4	10310	0.2367	0.16	0.187	316	1.00	1.172	1976
5	24300	0.5579	0.16	0.442	745	1.00	2.762	4658
6	15242	0.3499	0.16	0.277	467	1.00	1.732	2921
7	6000	0.1377	0.12	0.109	184	0.16	0.109	184
	71282	1.6364		1.292	2217		7.528	12698

EXISTING SITE STUDY

Onsite flow from areas 1 and 2:
Qp 100 = 0.153 + 0.066 = 0.219 cfs
V 100 = 260 + 116 = 376 cu ft

Offsite flows to the site itself from areas 3 and 4:
Qp 100 = 0.058 + 0.187 = 0.245 cfs
V 100 = 99 + 316 = 415 cu ft

Offsite flow to the same swale from areas 5 and 7:
Qp 100 = .442 + 0.109 = 0.551 cfs

V 100 = 745 + 184 = 929 cu ft

These add to
Qp 100 = 1.015 cfs
V 100 = 1720 cu ft

The total flow at the outlet, including area 6 (lot 1-A-2):
Qp 100 = 1.292 cfs
V 100 = 2217 cu ft

PROPOSED CONDITIONS

Under proposed conditions, flow areas are combined as indicated below to provide flow paths around the new building. Proposed conditions means all three lots completely developed and flowing to the swale, but AMAFCA property remains undeveloped.

Flow along the east side of the building, from areas 2 and 4
Qp 100 = 0.430 + 1.172 = 1.602 cfs
V 100 = 725 + 1976 = 2701 cu ft

At the east end swale add flow from area 5
Qp 100 = 1.602 + 2.762 = 4.364 cfs
V 100 = 2701 + 4658 = 7359 cu ft

Flow along the west side of the building, from areas 1 and 3
Qp 100 = .961 + .362 = 1.323 cfs
V 100 = 1622 + 612 = 2234 cu ft

At west end of the building add flow from east swale + 1/2 area 7
Qp 100 = 1.323 + 4.364 + (0.109/2) = 5.742 cfs
V 100 = 2234 + 7359 + 184/2 = 9685 cu ft

At the downstream end (outlet), including area 6 and rest of area 7
Qp 100 = 7.528 cfs
V 100 = 12698 cu ft

RUNOFF CONTROL

The site will be graded as shown on the plans. Five foot wide asphalt drainways will be provided along both the east and west sides of the building to convey the flows indicated above, and will be extended a few feet past the north end of the building. These will discharge onto 10 ft wide riprap aprons located partly in the 10 ft easement and partly in AMAFCA right of way. Actual cross-sections of the asphalt drainways are shown on the plans; simplified sections used to demonstrate capacity are included in the appendix.

The riprap aprons will reduce the already low flow velocities, spread the flow, and prevent erosion. The aprons are to be constructed according to criteria supplied by AMAFCA from Simons and Li: Design

Guidelines and Criteria for Channels and Hydraulic Structures on Sandy Soils. (See appendix.) As shown on the plans, the aprons consist of a 12" layer of light riprap covered by 1 inch of soil and underlain by 4 inches of Type II Base (gravel) and 4 inches of Type I Base (concrete sand). They will extend across the swale on AMAFCA right of way far enough to provide 1 foot (measured vertically) of protection on the far side.

After runoff leaves the site it will flow in the swale on AMAFCA right of way to an existing concrete inlet to Embudo Diversion Channel. The swale is broad and shallow, and follows the line of a berm for an access road. The soil is a moderately coarse sand with minor amounts of fines. The berm and the road end at the concreted channel inlet at Adams St. Under proposed conditions, the swale will be graded lightly to realign the flowline slightly and to make the flowline (S=0.0197) and property line (S=0.0128) slopes equal to their respective average slopes.

In addition, the flow line at the east end of the site will be lowered 0.3 feet to provide 100-yr capacity required by offsite flows. In all cases the proposed sideslope from the flowline to the bottom of the berm is 4H:1V or flatter and the berm slope is 2.5H:1V or flatter. Even during the 100-yr design storm the flow depth will not reach the steeper part of the berm. Existing and proposed cross-sections are included in the appendix, as are capacity and velocity calculations for sections at the upstream (east) and downstream ends of the site and at the concreted inlet. The flow is deepest and fastest at that inlet, 7+ inches at 2.63 feet/sec with a Froude number of 0.54 for 100-year conditions.

APPENDIX.

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

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: H 17 DATE: 12-19-84

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: Office Bldg. Cuthbert NE between Adams & Jefferson

LEGAL DESCRIP.: Lot 1-A-1 Block A Timoteo Chavez Addition

APPROVAL REQUESTED

_____ PRELIMINARY PLAT
_____ SITE DEVELOPMENT PLAN
_____ FINAL PLAT
X BUILDING PERMIT
_____ ROUGH GRADING

	WHO:	REPRESENTING:
ATTENDANCE:	Tucker Green	
	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.

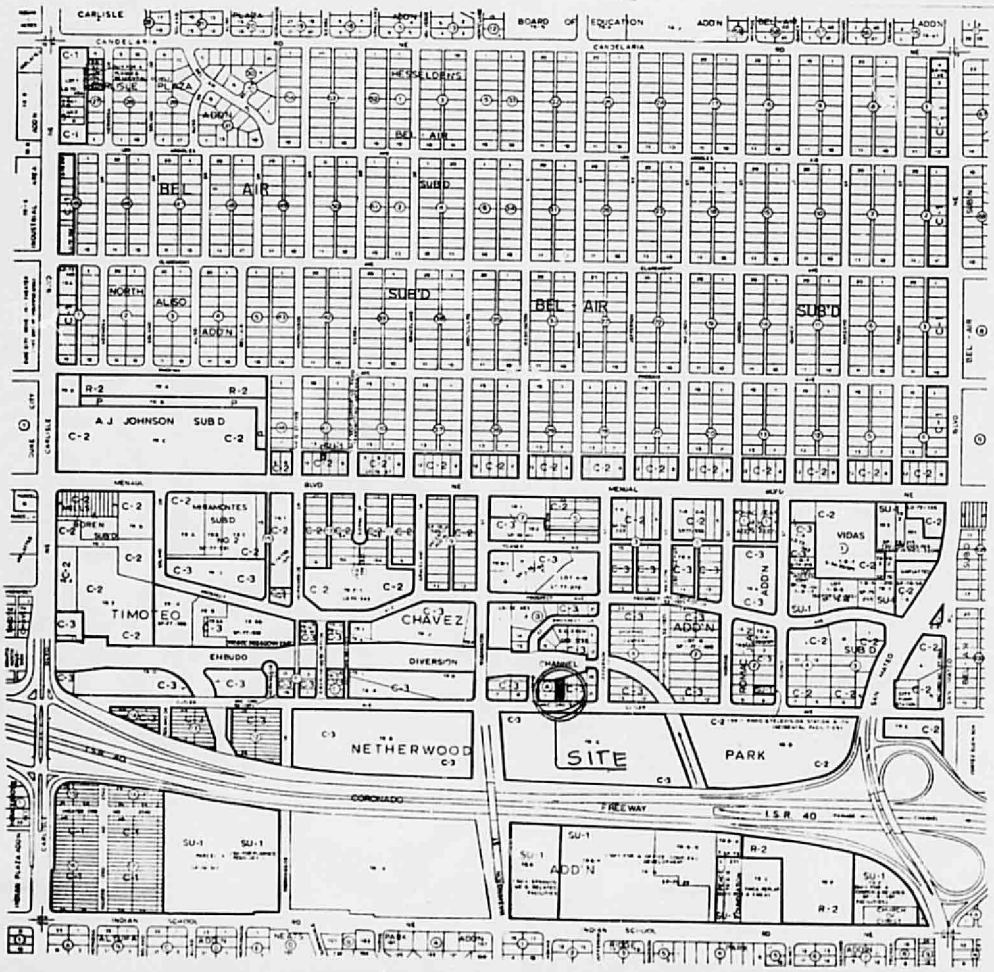
_____ Subdivision Improvements Agreement or Financial Security required.

FINDINGS: ① Drainage Plan per DPM ② Coordinate with AMAFCA on out fall ③ ~~Subdivision~~ Tract Does Not in flood zone ④ written coordination with AMAFCA on outfall

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:	Tucker H Green
TITLE:	Const Engr	TITLE:	CIVIL ENGINEER
DATE:	12-19-84	DATE:	12/19/84

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

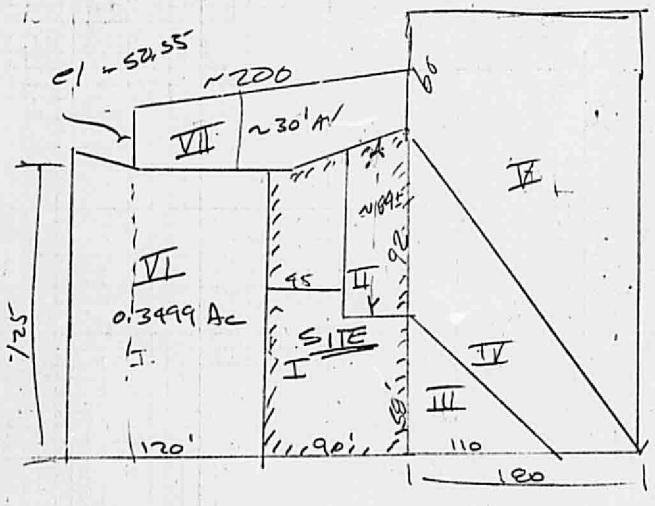

CARLISLE
CANDELARIA
BOARD OF EDUCATION
ADDN
HERSELLORNS
BEL AIR
SUB'D
NORTH ALBQ
A J JOHNSON SUB D
MESAMONTES SUB'D
TIMOTEO
CHAVEZ
ENBUDO
DIVERSION
CHANNEL
NETHERWOOD
SITE
PARK
VIDAS
CORONADO
FREEWAY
I S R 40
R-2
C-1
C-2
C-3
SU-1

H-17-Z

BY _____ DATE _____ SUBJECT TIC-TAC

CHKD. BY _____ DATE _____ CLIENT BENNETT/CURRIER SHEET NO _____ OF _____ JOB NO. _____

engineering associates, inc. • 1840 Lomas Blvd., NE • Albuquerque, NM 87106 • (505) 242-7522



A_{TOT}

$\Delta h_{map} = 10.55$

$L = 430$

$S = 2.3\%$

$T_c = 3.66 \text{ use } 10$

.210

I AREA = .2810 Ac − 89(45) = .0460 ID = 0.1942 Ac

II 37800 ID = 0.2868 Ac

III 58 × 110/2 = 3190 ID = 0.0732

IV 158 × 180/2 − 31990 = 10310 ID = .2367 Ac

V 180 × 210/2 − 10310 − 3190 = 24300 ID = 0.5579 Ac

VI = .3499 Ac = 15242 ID

VII 200 × 30 = 6000 = 0.1377 Ac

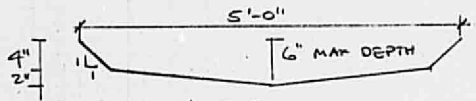
TOTAL = 1.6361 Ac

CHKD. BY_____ DATE_____ SUBJECT_____ CLIENT_____ SHEET NO. _____ JOB NO. (CEDAR VIEW)

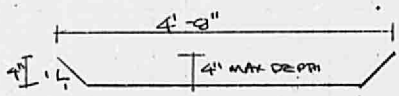
engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87108 • (505) 242-7522

CAPACITY OF W. PAVED SWALE (ONSITE)

Q required, 100 yr = 1.323 cfs



ACTUAL



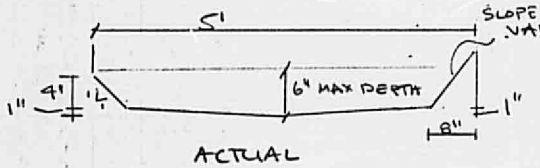
ASSUMED

MANNING EQN HP 41-C $Q = A \cdot U = \frac{1.49}{n} A^{5/3} S^{1/2} / P_w^{2/3}$ $n = 0.017$ DPM $S = 0.0079$

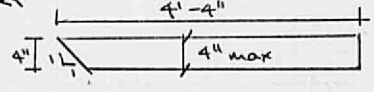
DEPTH	Q CFS		U FPS
0.25' = 3"	2.583	> 1.323 OK	2.43
0.167 = 2"	1.320	≈ 1.323	1.90

CAPACITY OF EAST PAVED SWALE

Q required, 100-yr = 1.602 cfs



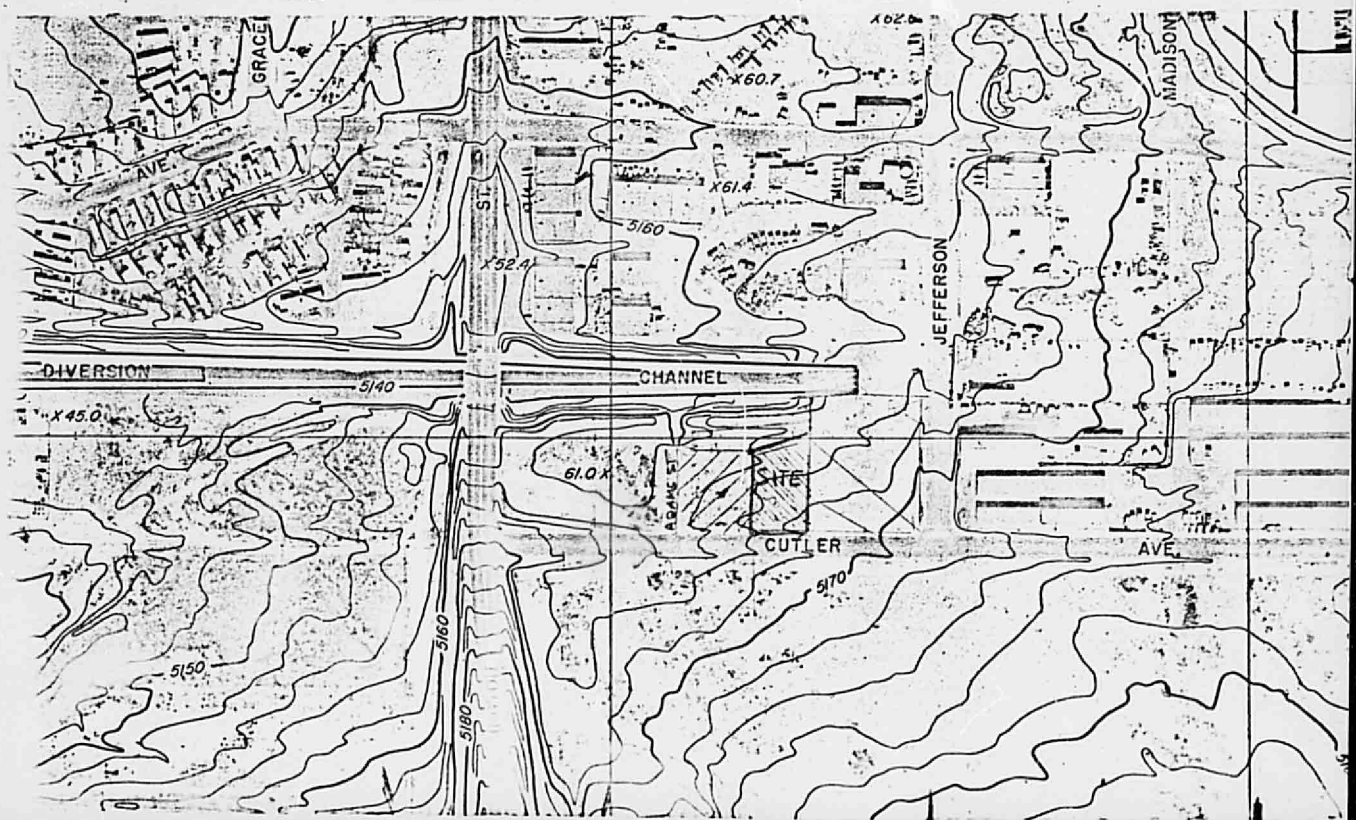
ACTUAL

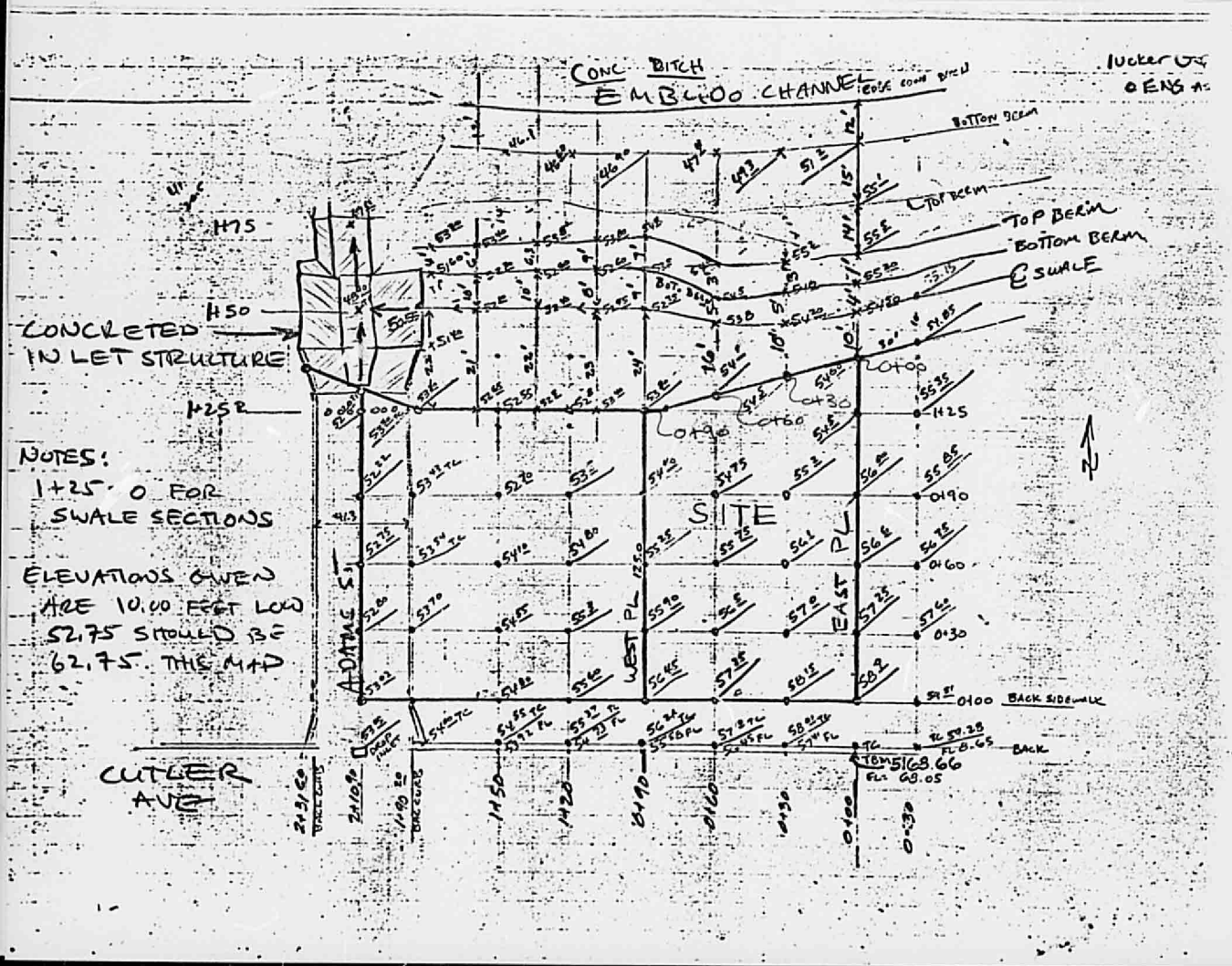


ASSUMED

$n = 0.017$ PER DPM $S = 0.0056$

DEPTH	Q CFS		U FPS
.25' = 3"	2.495	> 1.610 OK	2.42
.167 = 2"	1.29	< 1.61	1.89

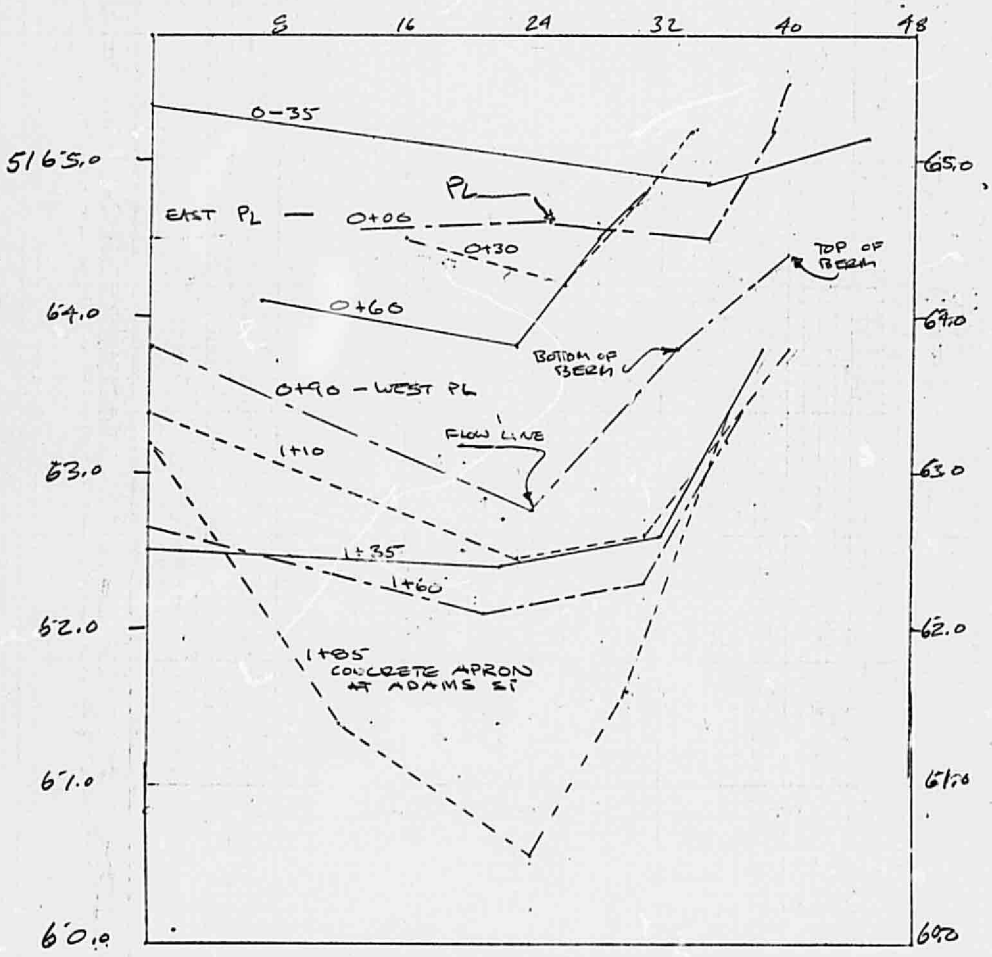

GRACE
AVE.
ST.
X60.7
X61.4
5160
X52.4
JEFFERSON
MADISON
DIVERSION
CHANNEL
5140
X45.0
61.0 X
ADAMS ST.
SITE
CUTLER
AVE.
5170
5150
5160
5180


CONC DITCH
EMBLOO CHANNEL
TOP BERM
BOTTOM BERM
TOP BERM
BOTTOM BERM
℄ SWALE
CONCRETED
IN LET STRUCTURE
NOTES:
1+25 - 0 FOR
SWALE SECTIONS
ELEVATIONS GIVEN
ARE 10.00 FEET LOW
52.75 SHOULD BE
62.75. THIS MAP
SITE
ADAMS ST
WEST PL
EAST PL
CUTLER
AVE
BACK SIDEWALK
BACK
TBM 5168.66
EL= 69.05

BY_____ DATE_____ SUBJECT SWALE ON SMALL LOT SHEET NO 11 OF_____
CHKD. BY_____ DATE_____ CLIENT BENNETT / CUTLER OFFICE JOB NO._____

engineering associates, inc. • 1840 Lomas Blvd., NE • Albuquerque, NM 87106 • (505) 242-7522

SWALE PROFILES - EAST EDGE OF LOT TO CONCRETE INLET
EXISTING CONDITIONS



OFFSET DIST. FROM NW CORNER LOT 1-A-1 (SITE)

DATE
CHKD. BY DATE
SUBJECT
CLIENT BENNETT / CUTLER
SHEET NO
JOB NO.

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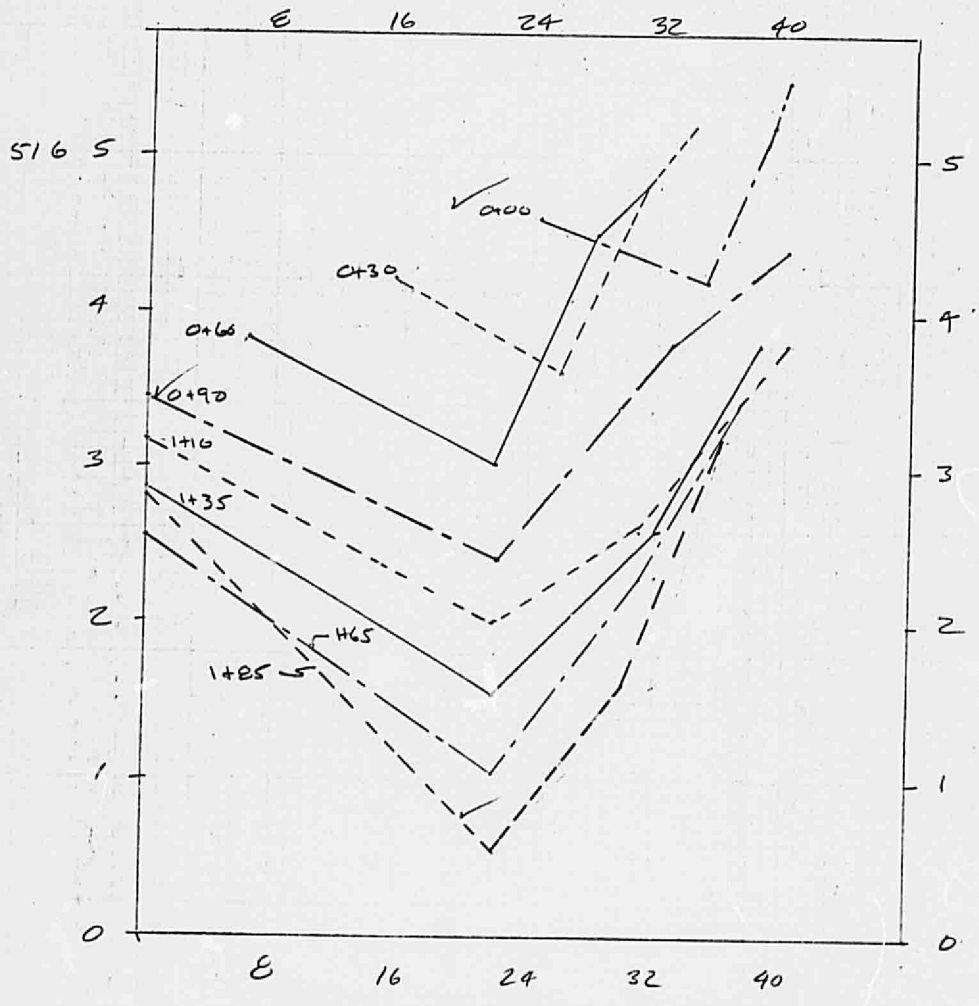
PROPOSED SWALE PROFILES ~~SEE SHT 10~~



OFFSET DIST FROM NW CORNER
LOT 1-A-1 (SITE)

BY _____ DATE _____ SUBJECT REDINER / CUTLER SHEET NO _____ OF _____
CHKD. BY _____ DATE _____ CLIENT _____ JOB NO. _____

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AMAFCA SCALE: DEPTH CAPACITY VELOCITY & FROUDE

1 E. END LOT 1-A-1 (OTOO) $N = 0.035$ $S = 0.0197$

Required capacity $Q_{100} = 4.354$
$Q_{10} = 2.861$

$M_1 = \frac{10.5}{4} = 26.25$ $M_2 = \frac{5}{1.2} = 4.167$

y	.381	.326
Q	4.385 > 4.354	2.873
V	1.98	1.78
F	0.56	0.55

2 W end lot 1-A-1 OT90 Required cap = 5.742 cfs | 100 yr / 3.773 | 10 yr
$N = 0.035$ $S = 0.0194$

$M_1 = \frac{22}{1.05} = 20.95$

$M_2 \approx 11/1.4 = 7.86$

y	.432	.3
Q	5.771 > 5.742	3.812 > 3.773
V	2.115	1.936
F	0.58	0.56

3 WEST END LOT 1-A-2 = concrete-lined ditch
$N = 0.035$ $S = 0.0197$ Req. Cap = 7.53 100 & 4.95 10

$M_1 = 16/(2.2-0.55) = 7.11$

$M_2 = 8/1.4 = 7.11$

y	.631	.54
Q	7.59 7.53	4.98 7 4.95
V	2.75	2.48
F	.61	.59

TYPE VL RIPRAP

% BY WEIGHT SMALLER THAN GIVEN SIZE	MINIMUM DIMENSION INCHES
100	9*
35 - 55	6
10	2

* AT LEAST 30% BY WEIGHT SHALL BE THIS SIZE

GRADATION FOR GRANULAR BEDDING

SIEVE SIZE	% BY WEIGHT PASSING SQUARE MESH SIEVES TYPE I (SAND)	TYPE II (GRAVEL)
2"		90 - 100
3/4"		20 - 90
3/8"	100	
#4	95 - 100	0 - 20
#16	45 - 80	
#50	10 - 30	
#100	2 - 10	
#200	0 - 2	0 -3

SITE SOIL APPEARS TO BE FAIRLY COARSE-GRAINED SANDY SOIL WITH MINOR AMOUNTS OF FINES, AND PROBABLY MEETS COARSE-GRAINED REQUIREMENT OF 50% OR MORE RETAINED ON #40 SIEVE. IN LIEU OF ANALYSIS, HOWEVER, ASSUME FINE-GRAINED FOR BEDDING REQUIREMENTS.

MINIMUM BEDDING THICKNESS, FINE-GRAINED SOILS
TYPE I....4 INCHES TYPE II....4 INCHES