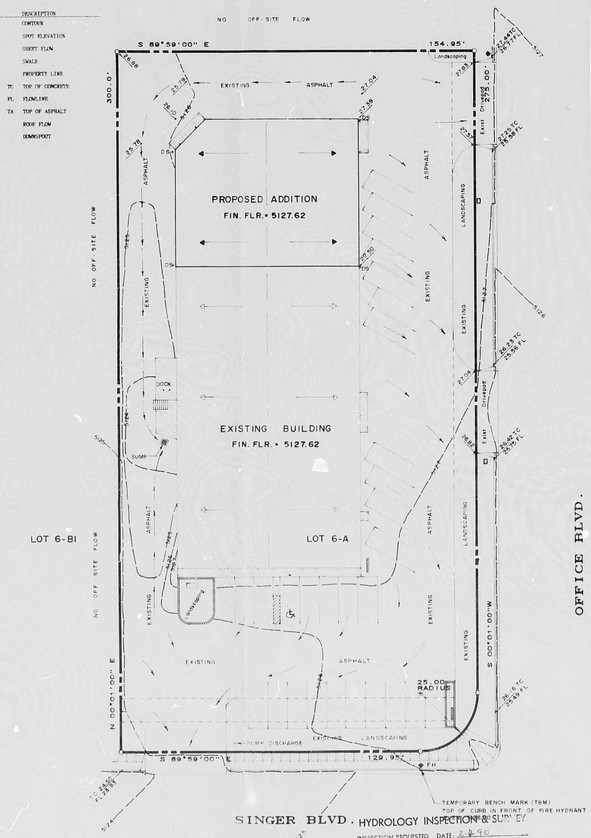
PUBLIC WORKS/HYDROLOGY

F17/D54

FLOODWAY MAP — NORTH — PANEL NO. 16 of 50

LEGEND:

EXISTING	NEW	DESCRIPTION
5126		CONTOUR
		SPOT ELEVATION
		SHEET FLOW
		SWALE
		PROPERTY LINE
	TC	TOP OF CONCRETE
	FL	FLOWLINE
	TA	TOP OF ASPHALT
		ROOF FLOW
	DS	DOWNSPOUT

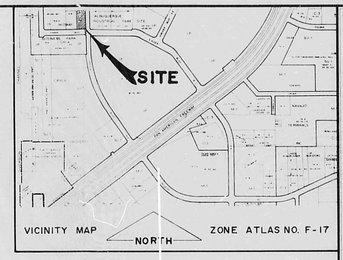


HYDROLOGY INSPECTION & SURVEY

INSPECTION REQUESTED DATE: 2-8-90
APPROVED DATE: 2-13-90 REJECTED DATE:
S.O.S. APPROVAL DATE: N/A
SURVEY DATE:
HYDROLOGY BOOK NO / PAGE NO.
SURVEYED BY
COMMENTS: ADDITION TO MEETS CRITERIA FOR FDR

GRADING AND DRAINAGE PLAN

SCALE: 1" = 20'



VICINITY MAP — NORTH — ZONE ATLAS NO. F-17

PRE-DESIGN CONFERENCE FINDINGS:

1. DRAINAGE PLAN PER D.P.M. GUIDELINES REQUIRED PRIOR TO BUILDING PERMIT RELEASE.
2. FREE DISCHARGE PERMITTED PER THE MASTER DRAINAGE PLAN.
3. IF AREA IN QUESTION IS PERVIOUS THEN UPDATE CALCULATION MUST BE INCLUDED WITH THE DRAINAGE PLAN.

DRAINAGE COMMENTS:

1. THE EXISTING SITE IS TOTALLY PAVED EXCEPT FOR THE AREA UPON WHICH THE PROPOSED ADDITION WILL BE BUILT.
2. THE AREA WEST OF THE BUILDING DRAINS TO A SUMP FROM WHICH THE WATER IS PUMPED TO SINGER BLVD. FOR DETAILS, SEE DRAINAGE AND GRADING PLAN FOR SIERRA VISTA DATED NOVEMBER 22, 1983, REVISED JANUARY 12, 1984.

EROSION CONTROL PLAN.

THE ENTIRE SITE IS ALMOST EXCEPT FOR THE BUILDING LOCATION. THE CONTRACTOR SHALL ENSURE THAT ANY EXCAVATED MATERIAL REMOVED FROM THE BUILDING SITE IS HANDLED IN SUCH A WAY THAT NO MATERIAL MAY BE CARRIED INTO THE STREETS.

DRAINAGE CALCULATIONS

SOIL INFORMATION:
REFER TO "SOIL SURVEY OF BERNALILLO COUNTY AND PARTS OF SANDOVAL AND VALENCIA COUNTIES, NEW MEXICO", ISSUED JUN. (1977), PLATE 21 OF THE REFERENCED SITE INDICATES THE SOIL TO BE FaB, UNWEATHERED FINE SANDY LOAM, 0 TO 5 PERCENT SLOPES, HYDROLOGIC SOIL GROUP "B".

RAINFALL (10-YEAR, 6-HOUR):
REFER TO D.P.M., PLATE 22.2 D-1
$P_{6,10} = 2.25$ INCHES.

TIME OF CONCENTRATION:
USE 10 MINUTES, MINIMUM TIME OF CONCENTRATION, DUE TO RELATIVELY SMALL SITE AND GOOD PAVEMENT SLOPE.

RAINFALL INTENSITY:
(REFER TO PLATE 22.2 D-2) $I = 2.3 / (6 \times 0.62 \times 1)^{0.78}$
$I = 2.25 / 3.6 = (10)^{-0.78} = 4.79$ INCHES PER HOUR.

CURVE NUMBERS:
(REFER TO PLATE 22.2 D-3, FOR TYPE "B" SOIL)
BUILDING, AND PAVEMENT, (PARKING LOT, TRUCK, ETC.) CN = 98
LANDSCAPING, (OPEN SPACE, GOOD COND.) CN = 61
UNPAVED LOT, (STREETS AND ROADS - GRAVEL) CN = 82

RUNOFF VOLUMES (CALCULATED):
(REFER TO D.P.M., PLATE 22.2 D-4, FOR THE ABOVE CURVE NUMBERS AND RAINFALL DEPTH VALUES)
BUILDING, AND PAVEMENT $Q_p = 2.10$ IN.
LANDSCAPE $Q_p = 0.25$ IN.
UNPAVED LOT $Q_p = 0.80$ IN.

AREA (SQ.FT.) OF VARIOUS SURFACE TYPES:

	EXISTING	DEVELOPED
BUILDING	10,000	14,000
PAVEMENT	27,470	27,470
LANDSCAPING	4,561	4,561
UNPAVED	4,900	
TOTAL	46,931	46,931

RUNOFF COEFFICIENTS:
(REFER TO "NOTES ON DESIGN CRITERIA", CITY OF ALBUQUERQUE, JANUARY 14, 1986)

TYPE OF SURFACE	"C" VALUE
UNDEVELOPED (UNPAVED)	0.40
LAWNS AND LANDSCAPING	0.25
ROOFS	0.90
STREETS, DRIVES, WALKS	0.95

WEIGHTED "C" VALUE:
$C_w = [(0.90 \times 14,000) + (0.95 \times 27,470) + (0.25 \times 4,561) + (0.40 \times 4,900)] / 46,931 = 0.80$ (EXISTING)
$C_w = [(0.90 \times 14,000) + (0.95 \times 27,470) + (0.25 \times 4,561)] / 46,931 = 0.87$ (DEVELOPED)

PEAK RUNOFF:
(FOR HISTORICAL DURATION, $Q_{100} = CIA$, $Q_{10} = 0.667\ (Q_{100})$)
EXISTING CONDITIONS:
$Q_{100} = 0.80 \times 4.79 \times 1.26 = 4.84$ CFS $Q_{10} = 0.667 \times 4.84 = 3.22$ CFS
DEVELOPED CONDITIONS:
$Q_{100} = 0.87 \times 4.79 \times 1.26 = 5.25$ CFS $Q_{10} = 0.667 \times 5.25 = 3.50$ CFS

6-HOUR VOLUME:
V_{100} = AREA IN SQUARE FEET $\times (Q_{100} / 12)$ $V_{10} = 0.667\ (V_{100})$
EXISTING CONDITIONS:
$V_{100} = 46,931 \times 2.10 / 12 = 8,211$ CF
$V_{10} = 0.667 \times 8,211 = 5,476$ CF
DEVELOPED CONDITIONS:
$V_{100} = [46,931 \times 2.10 + 4,561 \times 0.25] / 12 = 8,446$ CF
$V_{10} = 0.667 \times 8,446 = 5,632$ CF

BENCH MARK:
THE STATION IS A STANDARD NGS BRASS CAP, SET IN CONCRETE MONUMENT STAMPED "2C 1 1988" LOCATED 0.5 MILES SOUTH OF DONNA ROAD, EAST OF NORTH DIVERSION CHANNEL. ELEVATION 5110.0(6 FEET.

LEGAL DESCRIPTION:
LOT 6-A, SINGER BUSINESS PARK, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

DURA BILT
PRODUCTS, INC.
4808 JEFFERSON N.E.
ALBUQUERQUE N.M. 87109
(505) 883-9100
DESIGN/BUILDERS
LICENSE NO. 3044

JOB NO.: 88-129
DATE:
CONTRACT DATE:
DRAWN BY:
REVISIONS:
PLOT DATE:

SVSHT2

SIERRA VISTA
ADDITION AND REMODEL
ALBUQUERQUE, NEW MEXICO

SEP 0 6 1989
HYDROLOGY SECTION

LEONARD LOVELADY
NEW MEXICO
6410
REGISTERED PROFESSIONAL ENGINEER

SEPT. 5, 1989

DRAINAGE PLAN

SHEET NO. 2

JOB NO.: 89-129 CF 6

R# 25 DATE 3-19-92 OP KRR

CITY OF ALBUQUERQUE

This microimage is certified to be a complete and accurate copy of the original as it appears in the files of the Public Works Department and was created in the normal course of business.

The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS1A5-1977)

DIRECTOR

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
07/03/92

PLAN SHOT TWICE ONCE ON LIGHT ONCE ON DARK

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

PLANS/PLATS ON FILE

FILE DESC: E17/D54

PLANS/PLATS 1

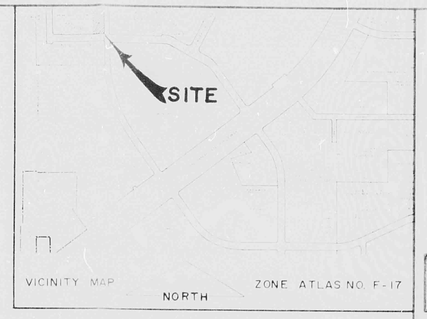
E 30 D 24 C 20 B 16 A 12 CITY OF ALBUQUERQUE C D F

FLOODWAY MAP PANEL NO. 16 of 50

NORTH

GRADING AND DRAINAGE PLAN

SCALE: 1" = 20'



VICINITY MAP ZONE ATLAS NO. F-17

NORTH

DRAINAGE CALCULATIONS

DURA BILT
PRODUCTS, INC.
4500 JEFFERSON N.E.
ALBUQUERQUE N.M. 87109
(505) 883-9100
DESIGN/BUILDERS
LICENSE NO. 7044

DATE
CONTRACT DATE
DRAWN BY
REVISIONS
PLOT DATE

SIERRA VISTA
ADDITION AND REMODEL
ALBUQUERQUE, NEW MEXICO

SEPT 5, 1989

DRAINAGE PLAN

2

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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

R# 35 DATE 3/19/92 OP

CITY OF ALBUQUERQUE

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DIRECTOR

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
07/02/92

D24 C20 B16 A12 CITY OF ALBUQUERQUE C D

HYDROLOGY

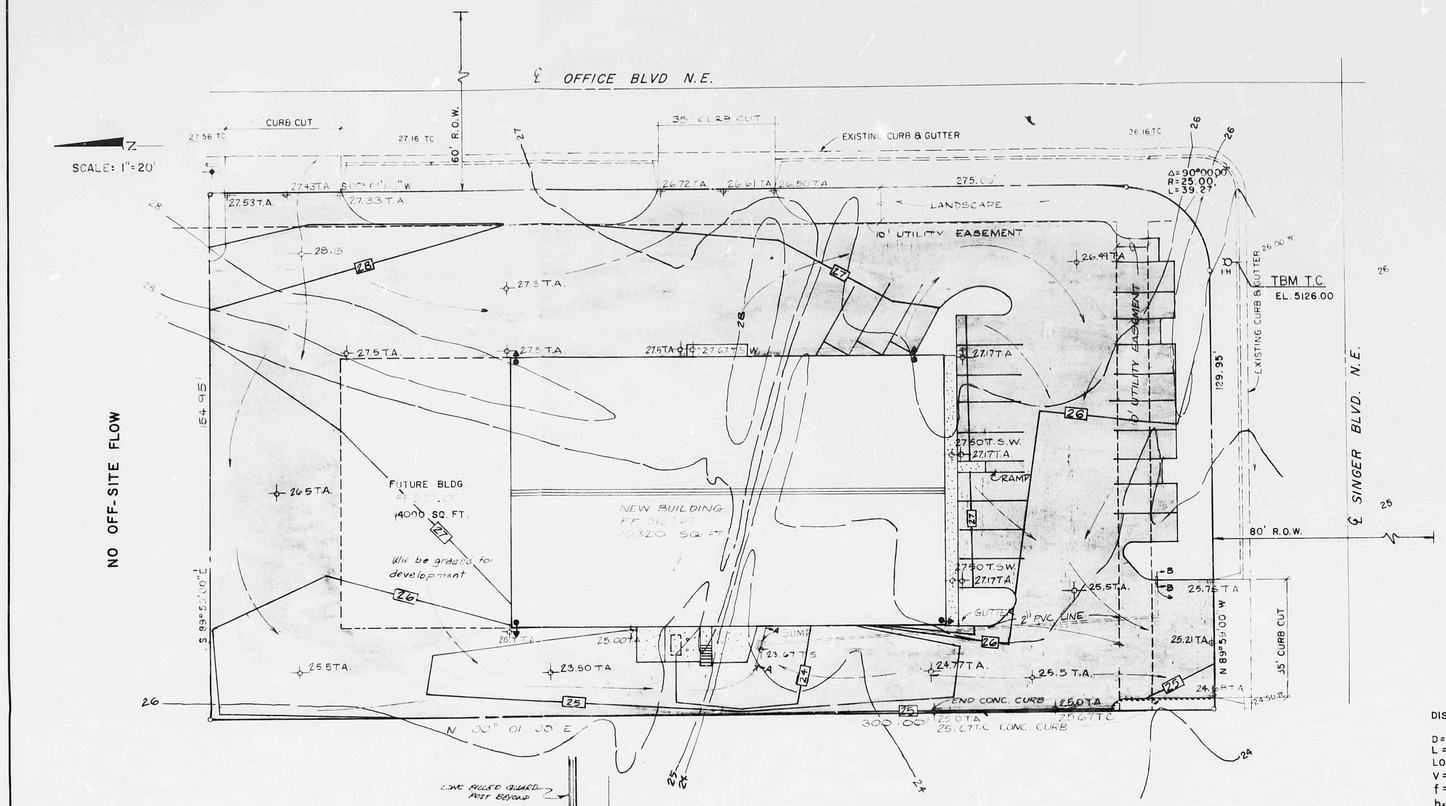
F17/D54

ONE PLAN

I PLAN FOR

SIERRA VISTA WAREHOUSE

F17-D54



DISCHARGE FROM 2" PVC PIPE

D = 2/12'
L = 130'
LOSS DUE TO TWO 90° EL. = 14'
V = 7.86 FT/SE (BY TRIAL)
f = 0.022 FROM MOODY DIA.

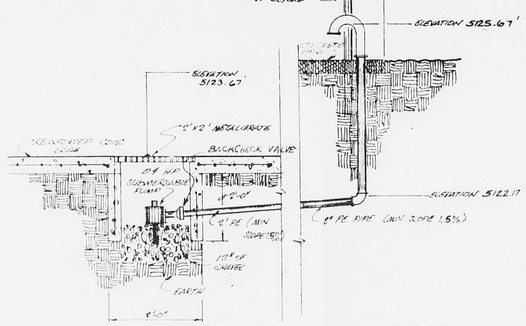
$h_f = 0.022 \frac{130}{0.1667} \times \frac{(7.86)^2}{64.4} = 16.50$ FT

Z = 4'

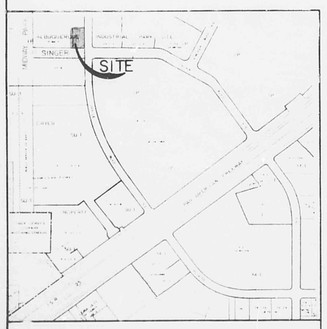
TOTAL HEAD = 14 + 16.50 + 4 = 34.50'

$Q = \frac{(0.40)(.88)}{(0.75)(34.5)} = 0.14$ cfs

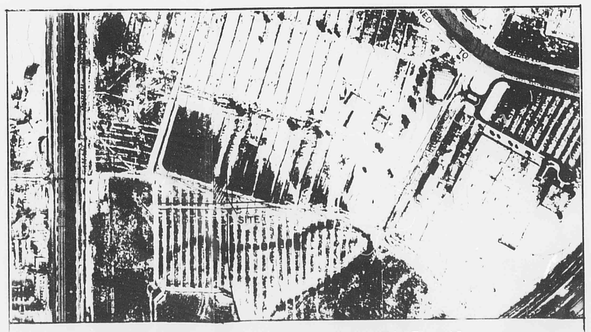
AREA CONTRIBUTING FLOW TO OFFICE BLVD. = 0.1581 ac.
TOTAL FLOW TO SINGER BLVD. = (0.88)(4.76)(0.7992) = 3.3476 CFS
ALLOWABLE FLOW TO SINGER BLVD. = 1/3.60 x 13.7 = 3.8056 CFS



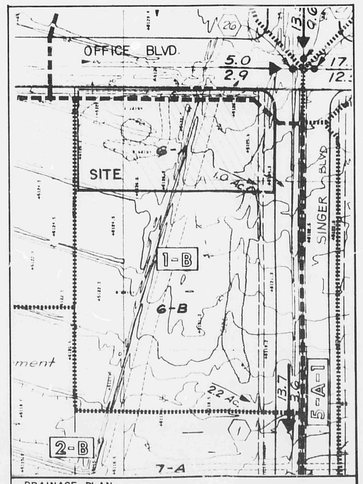
SECTION A-A SECTION B-B



VICINITY MAP F-17-Z



FLOODWAY MAP PANEL 16



DRAINAGE PLAN
MASTER PLAN FOR MIDWAY BUSINESS PARK

LEGEND

24	EXISTING CONTOUR
24	PROPOSED CONTOUR
24.50	EXISTING SPOT ELEVATION
26.30 TA	PROPOSED SPOT ELEVATION
TC	TOP OF CURB
TA	TOP OF ASPHALT
FL	FLOW LINE
	DIRECTION OF ROOF DRAIN
	FLOW DIRECTION

DRAINAGE AND GRADING PLAN
FOR
SIERRA VISTA

DATA

AREA OF SITE	46,350.87 SQ.FT. (1.0641 ac.)
SLOPE	2.8 % E TO W
SOIL GROUP	B (SCS SHEET 21)
FLOOD INSURANCE RATE MAP	PANEL 16
TIME OF CONCENTRATION	10 MINUTES
RAINFALL (PLATE 22.2 D-1 D.P.M.)	2.25 IN.
INTENSITY (PL. 22.2 D-2 D.P.M.)	4.76 IN/HR

EXISTING CONDITION:
SITE IS COVERED WITH NATURAL VEGETATION

IMPERVIOUS COVERAGE	0%
C-FACTOR (PL. 22.2 C-1)	0.34

$Q_{100} = CIA = (0.34)(4.76)(1.0641) =$ 1.72 cfs

$Q_{10} = 0.657\ Q_{100} =$ 1.13 cfs

EXISTING RUNOFF DISCHARGES TO A NATURAL DITCH AT THE MIDLE OF THE SITE AND TRAVELS TO THE INTERSECTION of SINGER BLVD. AND MIDWAY PARK BLVD. THENCE SOUTH, 400' TO A 60' WIDE COMPACTED GRAVEL DRAINAGE EASEMENT AND WEST TO THE A.M.A.F.C.A. NORTH DIVERSION CHANNEL THROUGH A RUNDOWN.

PROPOSED SITE RUNOFF
C-FACTOR

TYPE OF SURFACE	"C"	AREA (SQ.FT)	C x A
BUILDING AND CONCRETE	1.00	15,070	15,070
ASPHALT	0.90	26,720	24,048
LANDSCAPE	0.34	4,561	1,551

WEIGHTED "C" FACTOR $= \frac{40,669}{46,351} = 0.88$

$Q_{100} = (0.88)(4.76)(1.0641) =$ 4.46 CFS
$Q_{10} = 0.657\ Q_{100} =$ 2.93 CFS

OFF-SITE FLOW:
THE SITE SLOPES UNEVENLY TO THE WEST AND RECEIVES NO OFF-SITE FLOW.

DISPOSAL:
FREE DISCHARGE TO SINGER BLVD.
INCREASE IN PEAK RUNOFF RATE AT INTERSECTION OF SINGER BLVD. AND MIDWAY PARK BLVD. IS 2.74 CFS

RUNOFF FROM THE SITE TRAVELS SOUTH TO SINGER BLVD., WEST ON SINGER BLVD. TO MIDWAY PARK BLVD., WEST THROUGH THE DRAINAGE EASEMENT AND SOUTH INTO THE A.M.A.F.C.A. NORTH DIVERSION CHANNEL.

LEGAL DESCRIPTION:
LOT 6-A MIDWAY BUSINESS PARK
ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

BENCH MARK INFORMATION:
THE STA. IS A STANDARD BLM BRASS CAP, SET IN CONCRETE MONUMENT STAMPED S: 27|26 / 34|35, LOCATED 0.5 MILES SOUTH OF OSUNA ROAD, EAST OF NORTH DIVERSION CHANNEL. ELE. 5110.406'

EROSION CONTROL STATEMENT
1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC R.O.W. OR INTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING BERMS AT THE PROPERTY LINE AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THIS IS THE CONTRACTOR RESPONSIBILTY TO OBTAIN A TOP SOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DEPARTMENT.

Richard Nau 11/21/85

NOVEMBER 21, 1985
REVISED JANUARY 1986
Revised Jan 29th 1986

RECEIVED JAN 29 1986 HYDROLOGY SECTION

F17/D54

HALL ENGINEERING COMPANY INC.
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ALBUQUERQUE, NEW MEXICO 87123
Phones (505) 292 1115 & 292 1116