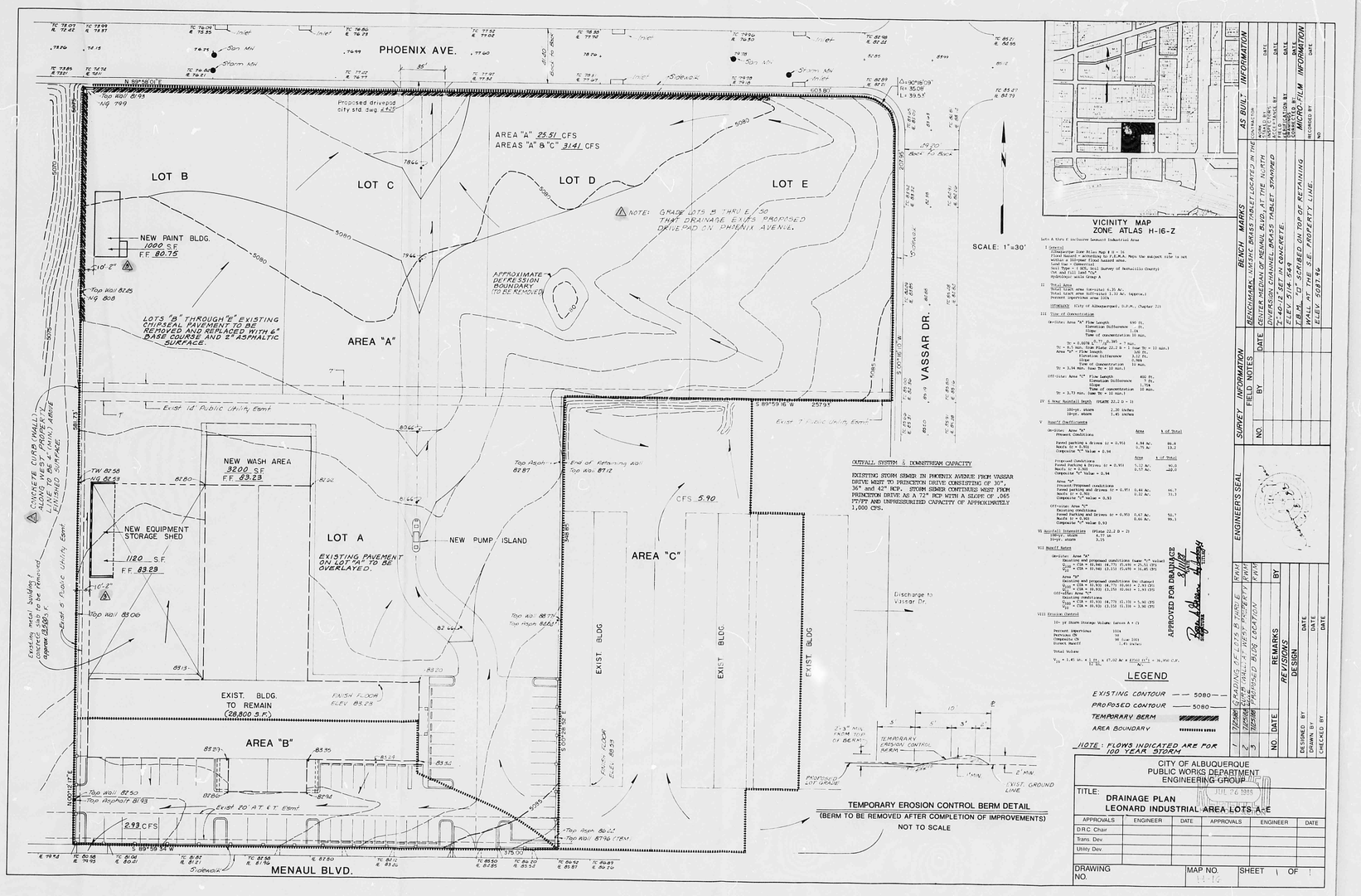


VICINITY MAP
ZONE ATLAS H-16-Z

Lots A thru E inclusive Leonard Industrial Area

I Subarea:
Lots A-E are within Zone Atlas Map # H - 16.
Flood hazard - according to F.I.R.M. Maps the subject site is not within a 100-year flood hazard area.
Soil Type - Bernalillo Fine Sandy
Soil Type - C (SCS, Soil Survey of Bernalillo County)
Cut and fill land "CLF"
Hydrologic unit Group A

II Total Area
Total track area (excluding 4.35 Ac.
Total track area Subdivision (1.32 Ac. (approx.)
Present impervious area 100%

CRITERIA: City of Albuquerque, D.P.M., Chapter 22)

III Time of Concentration

On-site: Area "A" Flow Length 490 ft.
Elevation Difference 5 ft.
Slope 1.18
Time of concentration 30 min.
Tc = 0.0064 $L^{0.77}/H^{0.385}$ = min.
Tc = 0.5 min. Use Plate 22.2 D - 1 (use Tc = 10 min.)
Area "B" Flow Length 400 ft.
Elevation Difference 3.22 ft.
Slope 0.989
Tc = 3.98 min. Use Tc = 10 min.)

Off-site: Area "C" Flow Length 400 ft.
Elevation Difference 7 ft.
Slope 1.75%
Time of concentration 10 min.
Tc = 3.73 min. Use Tc = 10 min.)

IV 5 Year Rainfall Depth (PLATE 22.2 D - 1)
100-yr. storm 2.20 inches
10-yr. storm 1.45 inches

V Runoff Coefficients

On-site: Area "A"

Present Conditions	Area	% of Total
Paved parking & drives (r = 0.95)	0.94 Ac.	86.8
Roofs (r = 0.95)	0.79 Ac.	13.2
Composite "C" Value = 0.98		

Proposed Conditions	Area	% of Total
Paved Parking & Drives (r = 0.95)	0.32 Ac.	40.0
Roofs (r = 0.95)	0.57 Ac.	60.0
Composite "C" Value = 0.94		

Area "B"

Present Proposed conditions		
Paved parking and drives (r = 0.95)	0.44 Ac.	66.7
Roofs (r = 0.95)	0.22 Ac.	33.3
Composite "C" Value = 0.93		

Off-site: Area "C"

Existing Conditions		
Paved parking and drives (r = 0.95)	0.67 Ac.	56.7
Roofs (r = 0.95)	0.66 Ac.	96.1
Composite "C" Value 0.93		

VI Rainfall Intensities (Plate 22.2 D - 2)
100-yr. storm 4.77 in
10-yr. storm 3.15

VII Runoff Rates

On-site: Area "A"
Existing and proposed conditions (same "C" value)
Q_{100} = CIA = (0.94) (4.77) (5.49) = 24.51 cfs
Q_{10} = CIA = (0.94) (3.15) (5.49) = 16.45 cfs

Area "B"
Existing and proposed conditions (no change)
Q_{100} = CIA = (0.93) (4.77) (0.44) = 2.91 cfs
Q_{10} = CIA = (0.93) (3.15) (0.44) = 1.93 cfs

Off-site: Area "C"
Existing conditions
Q_{100} = CIA = (0.93) (4.77) (1.18) = 5.90 cfs
Q_{10} = CIA = (0.93) (3.15) (1.18) = 3.90 cfs

VIII Erosion Control

10-yr Storm Storage Volume (area A + C)

Percent impervious 100%
Pervious CN 98
Composite CN 98 (use 100)
Runoff Depth 1.91 inches

Total Volume:

V_{10} = 3.45 ac. x $\frac{1 \text{ ft.}}{12 \text{ in.}}$ x 27,02 ac x $\frac{43560 \text{ ft}^2}{\text{ac.}}$ = 36,956 C.F.

APPROVED FOR DRAINAGE
Bernie Gleason 5/8/86
ENGINEER

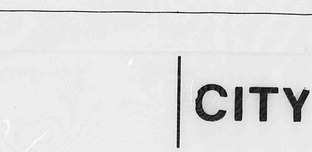
OUTFALL SYSTEM & DOWNSTREAM CAPACITY

EXISTING STORM SEWER IN PHOENIX AVENUE FROM VASSAR DRIVE WEST TO PRINCETON DRIVE CONSISTING OF 30", 36" and 42" RCP. STORM SEWER CONTINUES WEST FROM PRINCETON DRIVE AS A 72" RCP WITH A SLOPE OF .065 FT/FT AND UNPRESSURIZED CAPACITY OF APPROXIMATELY 1,000 CFS.

LEGEND

EXISTING CONTOUR — 5080 —
PROPOSED CONTOUR — 5080 —
TEMPORARY BERM
AREA BOUNDARY

NOTE: FLOWS INDICATED ARE FOR 100 YEAR STORM



TEMPORARY EROSION CONTROL BERM DETAIL
(BERM TO BE REMOVED AFTER COMPLETION OF IMPROVEMENTS)
NOT TO SCALE

NO.	DATE	REMARKS	BY
1	12/2/85	GRADING OF LOTS B THRU E	RFW
2	12/5/85	ADD DRIVE PAD	KWK
3	12/5/85	REVISED BLDG LOCATION	KWK

REVISIONS

DESIGNED BY — DATE
DRAWN BY — DATE
CHECKED BY — DATE

ENGINEER'S SEAL

SURVEY INFORMATION

NO.	DATE	FIELD NOTES	BY

BENCH MARKS

BENCHMARK: LUMSDIC BRASS TABLET LOCATED IN THE CENTER MEDIAN OF MENAUL BLVD. AT THE NORTH EDGE OF CURB. STAMPED TABLET STAMPED "Z-40-12 SET IN CONCRETE.
ELEV 5114.549
F.B.M. "0" SCRIBED ON TOP OF RETAINING WALL AT THE S.E. PROPERTY LINE.
ELEV 5081.46

AS BUILT INFORMATION

CONTRACTOR
FIRM
ADDRESS
PHONE
PREPARED BY
DATE
CERTIFICATION BY
DATE
MICRO-FILM INFORMATION
RECORDED BY
DATE
NO.

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: DRAINAGE PLAN
LEONARD INDUSTRIAL AREA LOTS A-E

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. Chair					
Trans. Dev.					
Utility Dev.					

DRAWING NO. | MAP NO. | SHEET 1 OF 1

FILM 21 DATE 2-24-93 OP 1SP

CITY OF ALBUQUERQUE

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CITY CLERK RECORDER

OFFICIAL SEAL
NORMITA SANCHEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: May 8, 1996

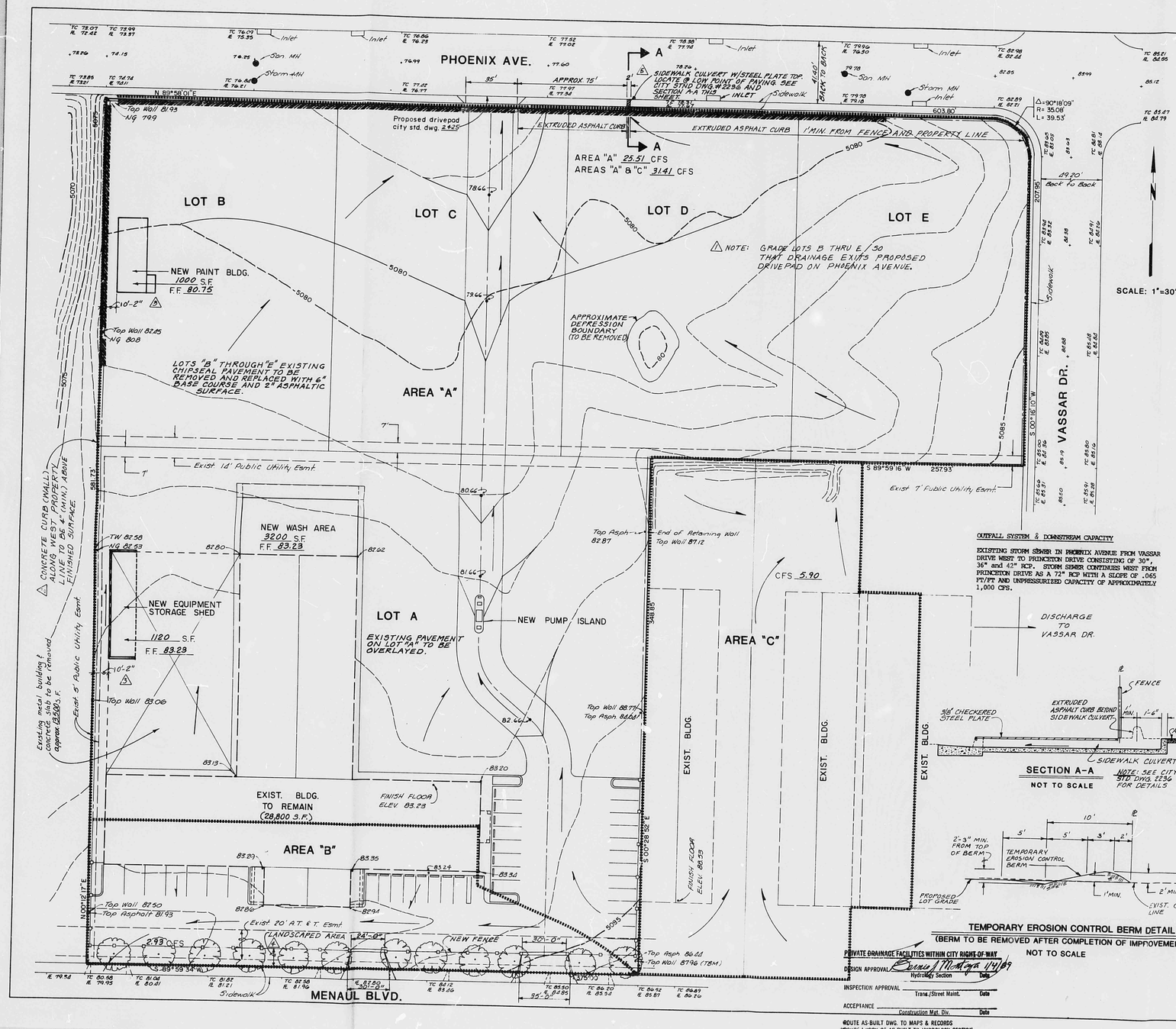
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

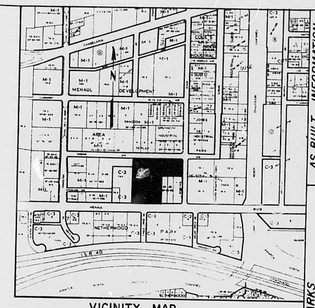
PLANS/PLATS ON FILE

FILE DESC: H-16/D092

PLANS/PLATS 3

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





VICINITY MAP
ZONE ATLAS H-16-Z

SCALE: 1"=30'

Lots A thru E inclusive Leonard Industrial Area

I General
Albuquerque Zone Atlas Map # H - 16
Flood Hazard - according to F.E.M.A. Maps the subject site is not within a 100-year flood hazard area.
Land Use - Commercial
Soil Type - (USDA, Soil Survey of Bernalillo County)
Cut and Fill: Land "Ca"
Hydrologic soils Group A

II Total Area
Total tract area (on-site) 6.25 Ac.
Total tract area (off-site) 1.23 Ac. (approx.)
Percent impervious area 100%

METHODOLOGY (City of Albuquerque), D.P.M., (Chapter 22)

III Time of Concentration

On-Site: Area "A" Flow Length 690 ft.
Elevation Difference 7 ft.
Slope 1.0%
Time of concentration 10 min.

$Tc = 0.0078\ L^{0.77}/S^{0.385} = 7$ min.
$Tc = 8.5$ min. from Plate 22.2 B - 1 (use Tc = 10 min.)

Area "B" - Flow length 320 ft.
Elevation Difference 3.12 ft.
Slope 0.98%
Time of Concentration 10 min.
Tc = 3.94 min. (use Tc = 10 min.)

Off-Site: Area "C" Flow Length 400 ft.
Elevation Difference 7 ft.
Slope 1.75%
Time of concentration 10 min.
Tc = 3.73 min. (use Tc = 10 min.)

IV 6 Hour Rainfall Depth (PLATE 22.2 D - 1)

100-yr. storm	2.20 inches
10-yr. storm	1.45 inches

V Runoff Coefficients

On-Site: Area "A"
Pavement Conditions

	Area	% of Total
Paved parking & drives (c = 0.95)	4.94 Ac.	86.8
Roofs (c = 0.90)	0.75 Ac	13.2

Composite "c" Value = 0.94

Proposed Conditions

	Area	% of Total
Paved Parking & Drives (c = 0.95)	5.12 Ac.	90.0
Roofs (c = 0.90)	0.57 Ac.	10.0

Composite "c" Value = 0.94

Area "B"
Existing/Proposed conditions

Paved parking and drives (c = 0.95)	0.44 Ac.	66.7
Roofs (c = 0.90)	0.22 Ac.	33.3

Composite "c" value = 0.93

Off-site: Area "C"
Existing conditions

Paved Parking and Drives (c = 0.95)	0.67 Ac.	50.7
Roofs (c = 0.90)	0.66 Ac.	99.3

Composite "c" value 0.93

VI Rainfall Intensities (Plate 22.2 D - 2)

100-yr. storm	4.77 in
10-yr. storm	3.15

VII Runoff Rates

On-Site: Area "A"
Existing and proposed conditions (same "c" value)
$Q_{100} = CIA = (0.94)\ (4.77)\ (5.69) = 25.51$ CFS
$Q_{10} = CIA = (0.94)\ (3.15)\ (5.69) = 16.85$ CFS

Area "B"
Existing and proposed conditions (no change)
$Q_{100} = CIA = (0.93)\ (4.77)\ (0.66) = 2.93$ CFS
$Q_{10} = CIA = (0.93)\ (3.15)\ (0.66) = 1.93$ CFS

Off-site: Area "C"
Existing conditions
$Q_{100} = CIA = (0.93)\ (4.77)\ (1.33) = 5.90$ CFS
$Q_{10} = CIA = (0.93)\ (3.15)\ (1.33) = 3.90$ CFS

VIII Erosion Control

10- yr Storm Storage Volume (areas A + C)

Percent Impervious	100%
Composite CN	98
Composite CN	98 (use 100)
Direct Runoff	1.45 inches

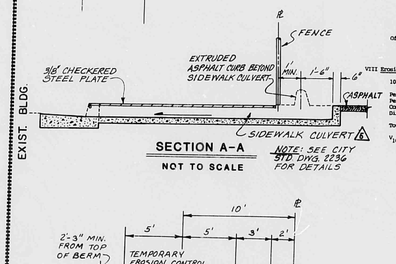
Total Volume

$V_{10} = 1.45$ in. $\times \frac{1}{12}$ ft. $\times$ (7.02 Ac $\times$ $\frac{43560\ ft^2}{Ac}$) = 36,960 ft^3
12 in.

OUTFALL SYSTEM & DOWNSTREAM CAPACITY

EXISTING STORM SEWER IN PHOENIX AVENUE FROM VASSAR DRIVE WEST TO PRINCETON DRIVE CONSISTING OF 30", 36" and 42" RCP. STORM SEWER CONTINUES WEST FROM PRINCETON DRIVE AS A 72" RCP WITH A SLOPE OF .065 FT/FT AND UNPRESSURIZED CAPACITY OF APPROXIMATELY 1,000 CFS.

DISCHARGE TO VASSAR DR.



SECTION A-A
NOT TO SCALE

TEMPORARY EROSION CONTROL BERM DETAIL
(BERM TO BE REMOVED AFTER COMPLETION OF IMPROVEMENTS)
NOT TO SCALE

LEGEND

EXISTING CONTOUR	5080
PROPOSED CONTOUR	5080
TEMPORARY BERM	
AREA BOUNDARY	

NOTE: FLOWS INDICATED ARE FOR 100 YEAR STORM

PRIVATE DRAINAGE FACILITIES WITHIN CITY RIGHTS-OF-WAY

DESIGN APPROVAL Karen J. Montoya 11/4/89
Hydrology Section Date

INSPECTION APPROVAL _____
Trans./Street Maint. Date

ACCEPTANCE _____
Construction Mgt. Div. Date

ROUTE AS-BUILT DWG. TO MAPS & RECORDS
ROUTE 1-COPY OF AS-BUILT TO HYDROLOGY SECTION

RECEIVED DEC 14 1995 HYDROLOGY SECTION

BENCH MARKS

BENCHMARK: ALUMINUM BRASS TABLET LOCATED IN THE CONTRACTOR CENTER MEDIAN OF MENAUL BLVD. AT THE NORTH DIVERSION CHANNEL. BRASS TABLET STAMPED "2-40-12" SET IN CONCRETE.
ELEV 5114.649

T.B.M. "D" SCRIBED ON TOP OF RETAINING WALL AT THE S.E. PROPERTY LINE.
ELEV 5087.96

AS BUILT INFORMATION

WORK PERFORMED BY		DATE
INSPECTORS		
FIELD TOLERANCE BY		DATE
AS-BUILTS BY		DATE
VERIFICATION BY		DATE
CONNECTED BY		DATE
MICRO-FILM INFORMATION		
RECORDED BY		DATE
NO		

SURVEY INFORMATION

NO.	BY	DATE

FIELD NOTES

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	7/12/88	GRADING OF LOTS B THRU E	RWM
2	7/12/88	CURB (WALL) AT WEST PROPERTY	RWM
3	7/12/88	PROPOSED BLDG. LOCATION	RWM
4	7/12/88	PROPOSED BERM	RWM
5	7/12/88	SIDEWALK CULVERT REVISED (SDHI CR.	RWM

REVISIONS

DESIGNED BY _____ DATE
DRAWN BY _____ DATE
CHECKED BY _____ DATE

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: DRAINAGE PLAN
LEONARD INDUSTRIAL AREA LOTS A-E

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. Chair					
Trans. Dev.					
Utility Dev.					

DRAWING NO. | MAP NO. H-16 | SHEET 1 OF 1

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FR# 21 DATE 2-24-93 OF 1 OF 8
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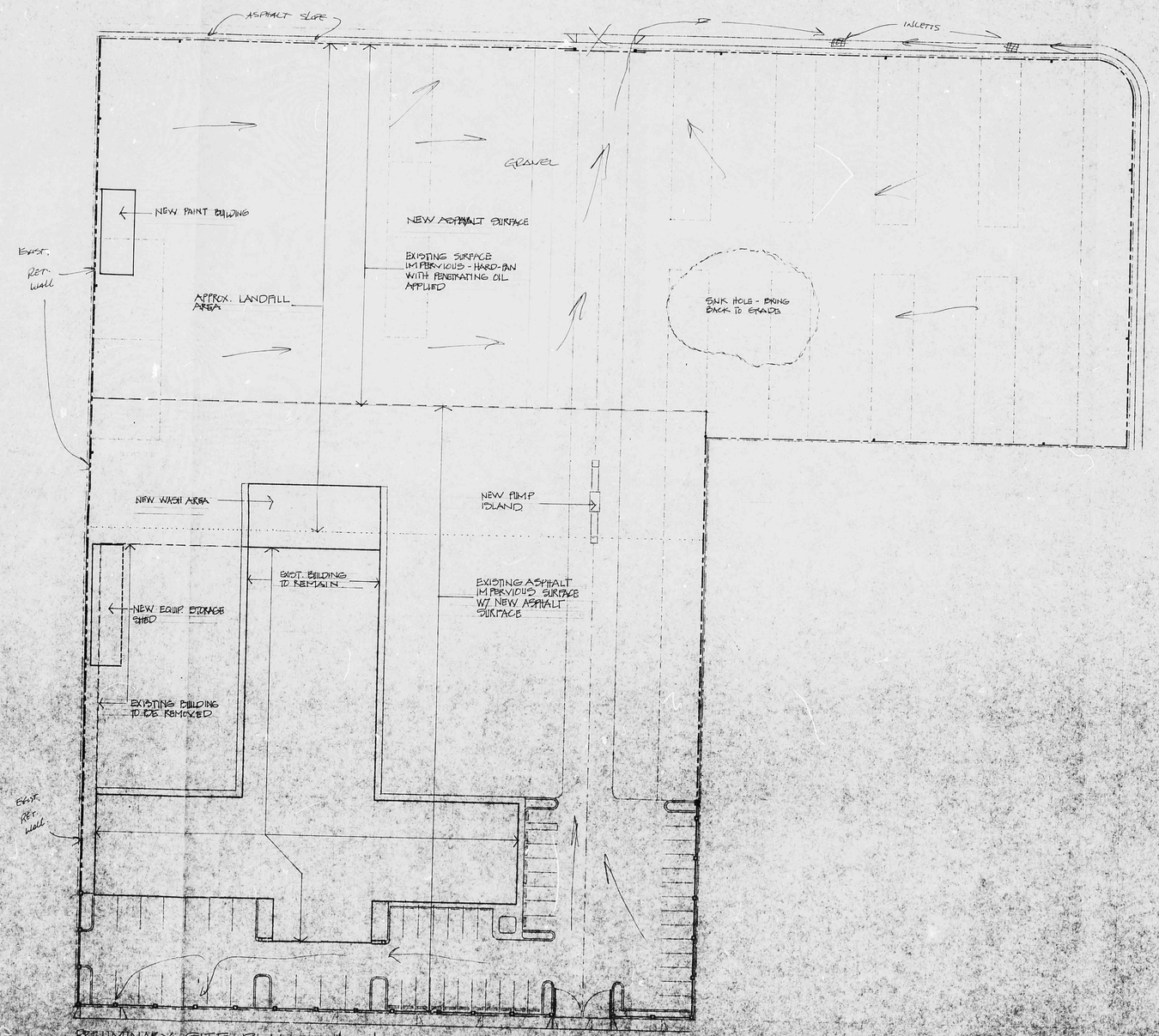
Karen Acuna
CITY CLERK RECORDER
OFFICIAL SEAL NORBERTA SANCHEZ NOTARY PUBLIC STATE OF NEW MEXICO
My Commission Expires: May 8 1995
Norberta Sanchez

D 24 | C 20 | B 16 | A 12 | CITY OF ALBUQUERQUE | C | D



PRELIMINARY SITE PLAN 1" = 30'
VAL. H. GILBERT, ARCHITECT 4/2/88

RECEIVED
APR 29 1988
HYDROLOGY SECTION

THIS PLAN SHOT TWICE ONCE ON LIGHT AND ONCE ON DARK.

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Roll 21 DATE 6-24-93 OP LSP

CITY OF ALBUQUERQUE

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Karen Aiuwe
CITY CLERK RECORDER

OFFICIAL SEAL
NORBERTA SANCHEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires MAY 8 1995
Norberta Sanchez

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D

THIS PLAN SHOT TWICE
ONCE ON LIGHT AND
ONCE ON DARK.

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST
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ORIGINAL DOCUMENT.

REF 21 DATE 2/22/92

CITY OF ALBUQUERQUE

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HYDROLOGY DIVISION
and was filmed in the normal
course of business.
The photographic processes
used meet the Basic Microfilm
Standards of the National
Micrographics Association
(NSMS-1977).

Kara Acuna
CITY CLERK RECORDER

OFFICIAL SEAL
NORBERTA SANCHEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 11/21/92
Norberta Sanchez

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D

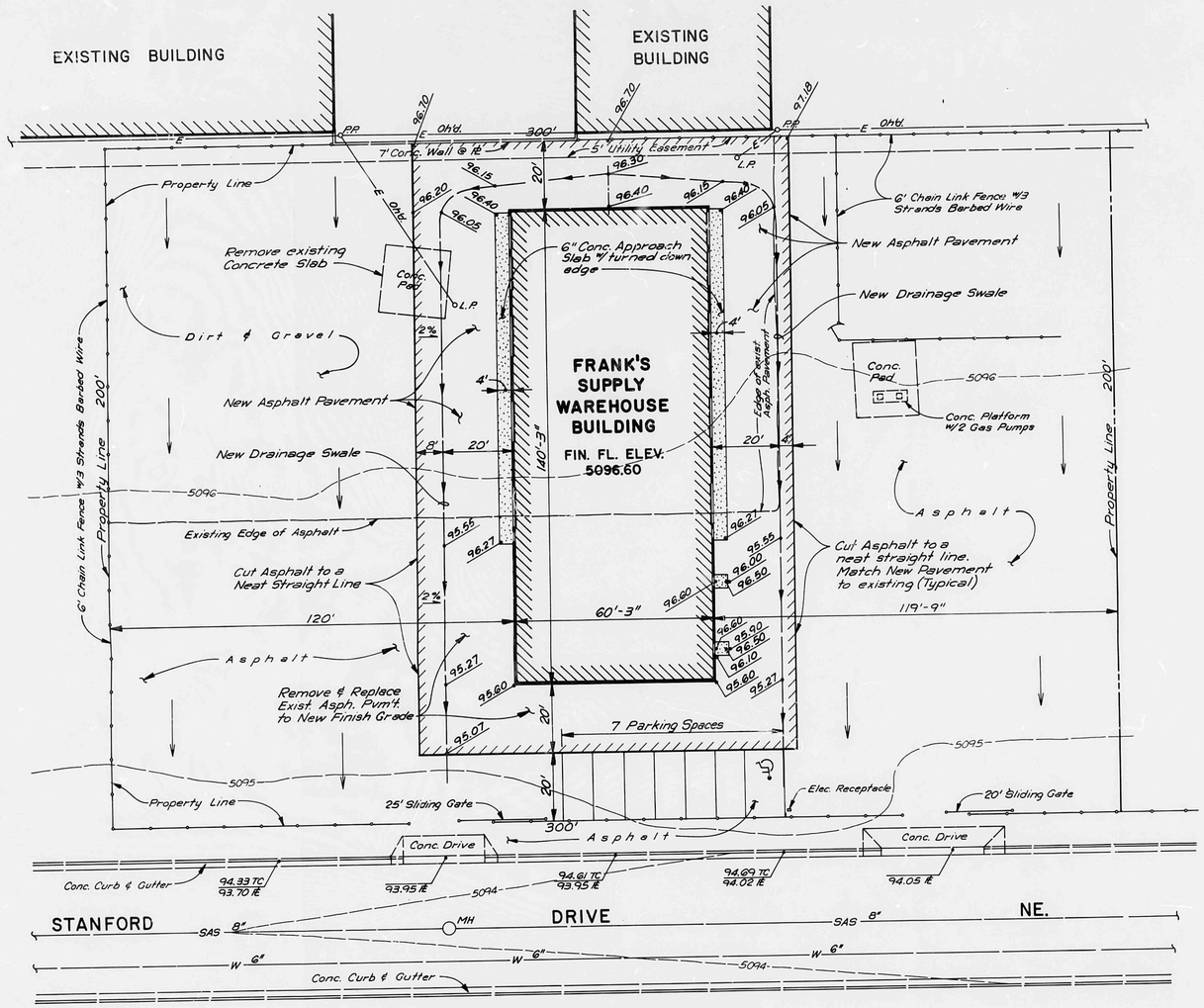
HYDROLOGY

H16/D92
ONE PLAN

H16/D92

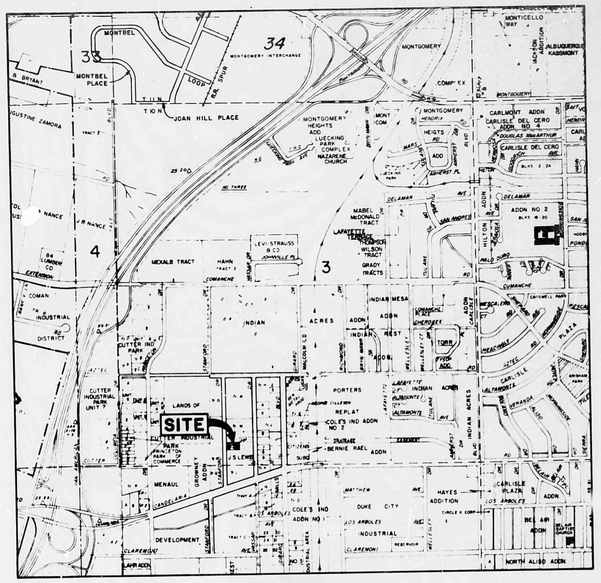
1 Plan

SCALE: 1" = 20'



GRADING & DRAINAGE PLAN

SCALE: 1" = 20'



LOCATION MAP

ZONE ATLAS MAP G-16

DRAINAGE ANALYSIS

1. GENERAL

THE AREA ON WHICH FRANK'S SUPPLY WAREHOUSE BUILDING IS TO BE CONSTRUCTED IS PRESENTLY GRADED WITH A SLOPE OF APPROXIMATELY ONE PERCENT (1%) FROM EAST TO WEST. ASPHALT SURFACING PRESENTLY COVERS APPROXIMATELY 63 PERCENT OF THE SITE. THE SITE IS PRESENTLY UTILIZED AS A MATERIAL STORAGE YARD.

2. OFFSITE DRAINAGE

EXISTING BUILDINGS AND A CONCRETE BLOCK WALL ALONG THE EAST BOUNDARY OF THE PROPERTY DO NOT ALLOW RUNOFF FROM THE EAST TO ENTER THE SITE. DRAINAGE FLOWS PARALLEL TO THE SITE ON BOTH THE NORTH AND SOUTH SIDE OF THE PROPERTY AND THEREFORE, DOES NOT ENTER THE SITE. STANFORD DRIVE IS LOCATED ON THE WEST SIDE OF THE PROPERTY AND LIES DOWNSTREAM OF THE SITE.

3. ONSITE DRAINAGE

A. EXISTING CONDITIONS: UNDER EXISTING CONDITIONS THE SITE DRAINS BY SHEET FLOW FROM EAST TO WEST WITH FLOWS GENERATED FROM THE SITE FLOWING TO STANFORD DRIVE WHICH IS PRESENTLY IMPROVED WITH CURB & GUTTER AND PAVEMENT. RUNOFF FLOWS ARE THEN CARRIED BY STANFORD DRIVE TO THE NORTH AND AWAY FROM THE SITE.

B. DEVELOPED CONDITIONS: UNDER DEVELOPED CONDITIONS THE DRAINAGE WILL REMAIN BASICALLY THE SAME AS UNDER EXISTING CONDITIONS. ONLY MINOR GRADING IS REQUIRED TO PROVIDE FOR CONSTRUCTION OF THE WAREHOUSE BUILDING. GRADING WORK CONSTITUTES BUILDING UP THE FLOOR AREA OF THE BUILDING AND SHAPING THE IMMEDIATE AREA SURROUNDING THE BUILDING TO DIRECT RUNOFF FLOWS AROUND THE BUILDING AND THEN WESTERLY ON EACH SIDE OF THE BUILDING TO STANFORD DRIVE.

4. COMPUTATIONS

DRAINAGE AREAS

OFFSITE - NONE

ONSITE - 60,000 SF = 1.38 ACRES

RATIONAL FORMULA - Q = CIA

RAINFALL INTENSITY - I_{100} = 4.65 IN/HR

RUNOFF COEFFICIENT - "C" - DETERMINED FROM EMERGENCY RULE DATED 1-14-86

EXISTING CONDITIONS

63% ASPHALT SURFACING
37% EARTH SURFACING, THEREFORE "C" = 0.75

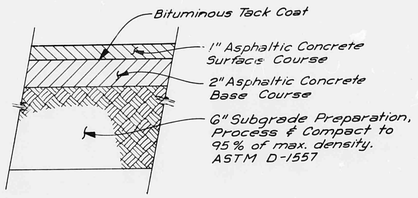
RATE OF RUNOFF - Q = (0.75)(4.65)(1.38) = 4.8 CFS

DEVELOPED CONDITIONS

83% ASPHALT SURFACING
17% EARTH SURFACING, THEREFORE "C" = 0.86

RATE OF RUNOFF - Q = (0.86)(4.65)(1.38) = 5.5 CFS

RECEIVED JUL 07 1987 HYDROLOGY SECTION



PAVEMENT SECTION

NO SCALE

LEGEND

—5094—	Existing Contour Line
•97.62	Finish Grade Spot Elevation
//////////	Edge of New Asphalt Pavement
—— ——	New Drainage Swale

LEGAL DESCRIPTION
NORTHERLY 300 FEET OF THE SOUTHERLY 430 FEET OF THE WESTERLY ½ OF BLOCK "M" COLES INDUSTRIAL SUBDIVISION.

BENCHMARK
ACS STA. "11-H16"
A SQUARE, ☑, CHISELED ON TOP OF CONCRETE CURB AT THE W NW CURB RETURN AT THE INTERSECTION OF CANDELARIA RD. AND STANFORD DR. NE.
ELEVATION = 5095.13

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO JOHN A. ANDREWS No. 5280

July 2, 1987

WILGER ENTERPRISES, INC.

GRADING & DRAINAGE PLAN
FRANK'S SUPPLY BUILDING

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
ALBUQUERQUE NEW MEXICO

FILE No.	DRAWN	CHECKED	DATE	SHEET
87-488	JFV, JCS	GJ, JA	June 1987	1 OF 1