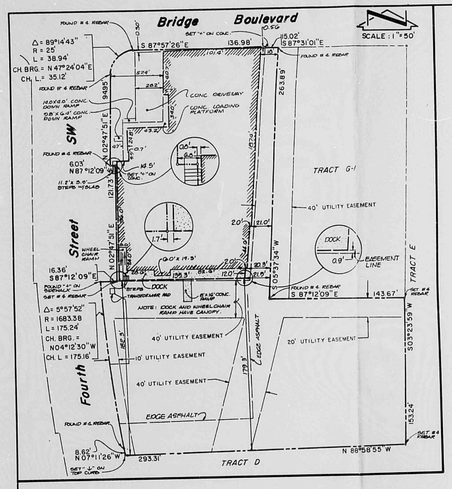
PUBLIC WORKS/HYDROLOGY

L14/DID



DRAINAGE PLAN

The following items concerning the Market Refrigeration Grading and Drainage Plan are contained hereon:

1. Vicinity Map
2. Calculations
3. Calculations

As shown by the Vicinity Map, the site is located south of Bridge Boulevard S.W. on the north side of Fourth Street S.W. At present, the site is partially developed with a building and paving. Much of the surrounding area is also currently developed, thereby making this a modification to an existing site within an infill area. The proposed improvements consist of the addition of asphalt paving.

As shown by Panel 14 of the Federal Emergency Management Agency Flood Boundary and Floodway Map, dated October 1, 1982, this site lies within a designated Flood Hazard Zone. However, an existing public storm drain facility exists in Fourth Street S.W. near the southwest corner of the site. This facility is situated at the outfall point, its runoff will pass long before the peak discharge which causes the flooding to occur. Any detention would merely serve to aggravate the problem rather than alleviate it. Due to the fact that this is a modification to an existing site within an infill area and the proximity of this site to the existing public storm drain facility, the free discharge of runoff from this site is appropriate.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the nature and character of the proposed improvements. As shown by this plan, the runoff developed from the proposed improvements will be directed within the paved areas to a proposed curb inlet culvert located at the southwest corner of the site. At this point, the runoff will be discharged into Fourth Street S.W. via the sidewalk culvert. The runoff will then flow to the nearest stormdrain facility located in Fourth Street S.W. All offsite flows are directed around the site therefore they are not a concern. As shown by the calculations, the capacity of the sidewalk culvert is greater than the 10-year peak rate of discharge. The proposed improvements will result in a net increase in peak runoff by 1.9 cfs.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, and the Mayor's Emergency Rule adopted January 14, 1986.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 30; Id - Glendale Clay Loam
Hydrologic Soil Group: B
Existing Pervious CN = 79 (DPM Plate 22.2 C-2)
Pasture or Range Land: poor condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2
Pasture or Range Land: good condition)

Time of Concentration/Time to Peak

$T_C = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_P = T_C + 10$ min.

Point Rainfall

$P_6 = 2.28$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CIA

where C varies
$I = (P_6/6)(6.6/T_C)^{-0.51} = 4.82$ in/hr
$P_6 = 2.28$ in (DPM Plate 22.2D-1)
$T_C = 10$ min (minimum)
A = area, acres

SCS Method

Volume: V = 3630(DRO) A

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

$A_{total} = 54,210$ sf = 1.24 Ac
Dirt area = 31,530 sf (0.59)
Paved area = 20,680 sf (0.47)
Landscaped area = 2,000 sf (0.04)
C = 0.60 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = 0.60(4.82)1.24 = 3.6$ cfs
$A_{imp} = 20,680$ sf; % impervious = 38 %
Composite CN = 86 (DPM Plate 22.2 C-3)
DRO = 1.11 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 4,950 cf

Developed Condition

$A_{total} = 54,210$ sf = 1.24 Ac
Paved area = 52,210 sf (0.96)
Landscaped area = 2,000 sf (0.04)
C = 0.92 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = 0.92(4.82)1.24 = 5.5$ cfs
$A_{imp} = 52,210$ sf; % impervious = 96 %
Composite CN = 98 (DPM Plate 22.2 C-3)
DRO = 4.29 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$(DRO) A = 8,850 cf

Sidewalk Culvert Capacity

Developed $Q_{100} = 0.667\ Q_{100}$
$= 0.667(5.5) = 3.6$ cfs

$Q = 3.33bH^{3/2}$ (Weir Equation)
Where b = width in feet
H = head in feet

For 2' sidewalk culvert
$Q = 3.33(2)H^{3/2}$
$= 3.33(2)(.67)^{3/2} = 3.6$ cfs = Q_{100}

Comparison

$\Delta Q_{100} = 5.5 - 3.6 = 1.9$ cfs (increase)
$\Delta V_{100} = 8,850 - 4,950 = 3,900$ cf (increase)

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE ALONG THE UTILITY VERTICAL AND HORIZONTAL LOCATION OF ALL POTENTIAL CONFLICTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NO LINES ARE SHOWN, AND MAY BE LOCATED WHERE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE CONTRACTOR IS UNDERTAKEN FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL ASCERTAIN WHETHER ANY LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IS ON NEAR THE AREA OF THE WORK. IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITY LINES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
6. 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.
7. BACKFILL COMPACTION SHALL BE ACCORDING TO STREET USE.
8. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

PROJECT BENCHMARK

STATION 19 A STANDARD CORPS OF ENGINEERS METAL TARGET SET IN A CONCRETE POST ON THE WEST PROPERTY LINE OF BARELAS ST., STAMPED "BEL. HWY. 85 Br. NO. 1. ALBUQUERQUE DISTRICT. 1950." STATION 19 LOCATED 1.1 MI. SW OF DOWNTOWN ALBUQUERQUE 20.5 FT. WEST OF ℄ OF BARELAS ST., 168.0 FT. NORTH OF ℄ ON THE MEDIAN AT THE PARK ENTRANCE.
ELEVATION = 4941.45 FEET (M.S.L.D.)

T.B.M

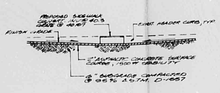
A '+' CHISELED ON TOP OF THE CURB LOCATED ON A LINE PROJECTING FROM THE SW PROPERTY CORNER AS SHOWN ON THE DRAWING.
ELEVATION = 4940.67 FEET (M.S.L.D.)

LEGEND

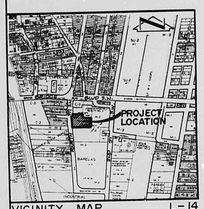
- 4961 — EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- PROPOSED ASPHALT
- PROPOSED FLOW LINE

LEGAL DESCRIPTION

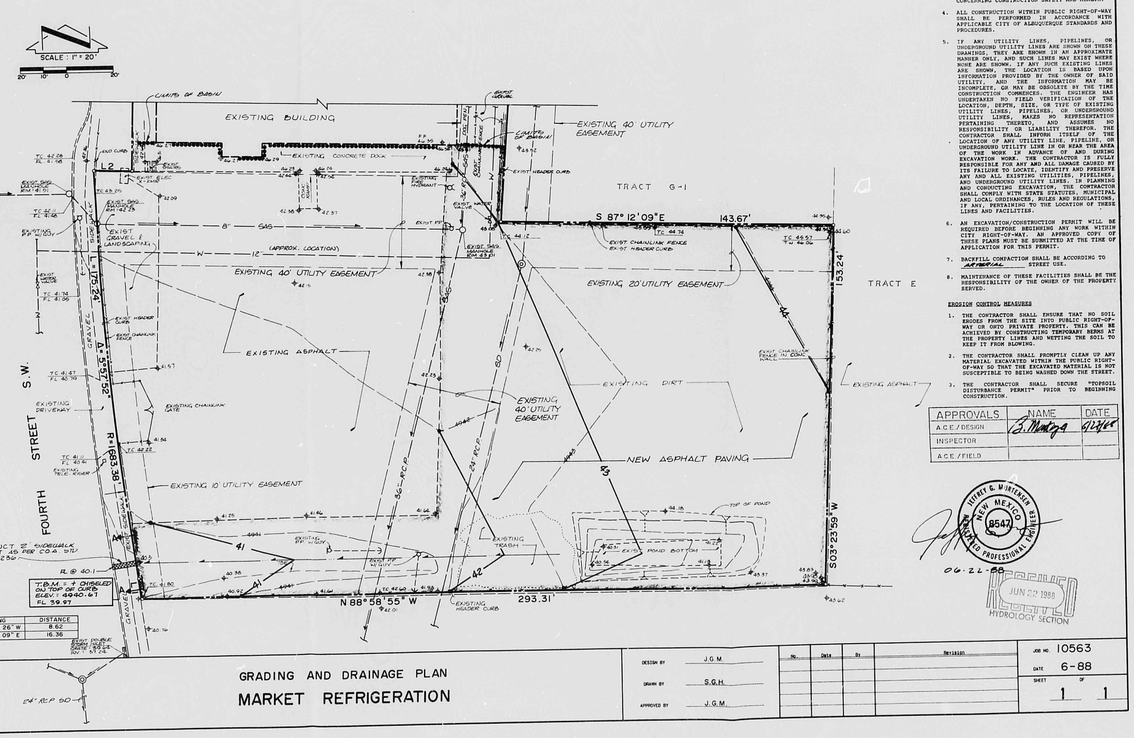
TRACT F-1, BARELAS INDUSTRIAL PARK, UNIT 2, ALBUQUERQUE, N.M.



SECTION A-A
N.T.S.



VICINITY MAP L-14
SCALE : 1" = 800'



LINE	BEARING	DISTANCE
L1	N 77°11'26" W	8.62
L2	S 87°12'09" E	16.36

APPROVALS	NAME	DATE
A.C.E./DESIGN	J. Montoya	6/23/88
INSPECTOR		
A.C.E./FIELD		

MILTON W. STEVENS NEW MEXICO 9547 REGISTERED PROFESSIONAL ENGINEER

06-22-88

JUN 23 1988 HYDROLOGY SECTION

jma JEFF MORTENSEN & ASSOCIATES, INC.
RIDGECREST ENGINEERING
BUDDIAN N.E. - ALBUQUERQUE, NEW MEXICO
TELEPHONE (505) 265-5411

GRADING AND DRAINAGE PLAN
MARKET REFRIGERATION

DESIGN BY	J.G.M.
DRAWN BY	S.G.H.
APPROVED BY	J.G.M.

No.	Date	By	Revision

JOB NO. 10563
DATE 6-88
SHEET 1 OF 1

R# 27 DATE 3-29-02 OP EOP

CITY OF ALBUQUERQUE

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The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS1A6-1977)

DIRECTOR

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 07/03/02

PLAN SHOT TWICE ONCE ON LIGHT ONCE ON DARK

CITY OF ALBUQUERQUE
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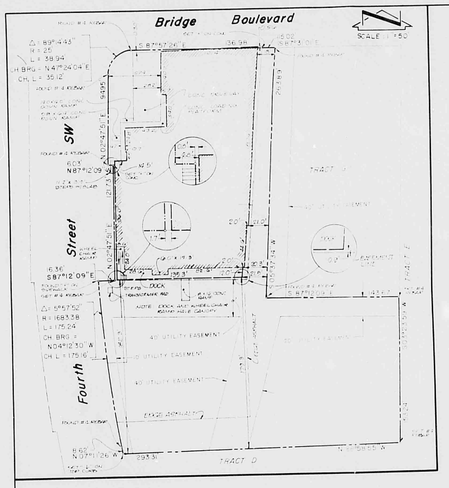
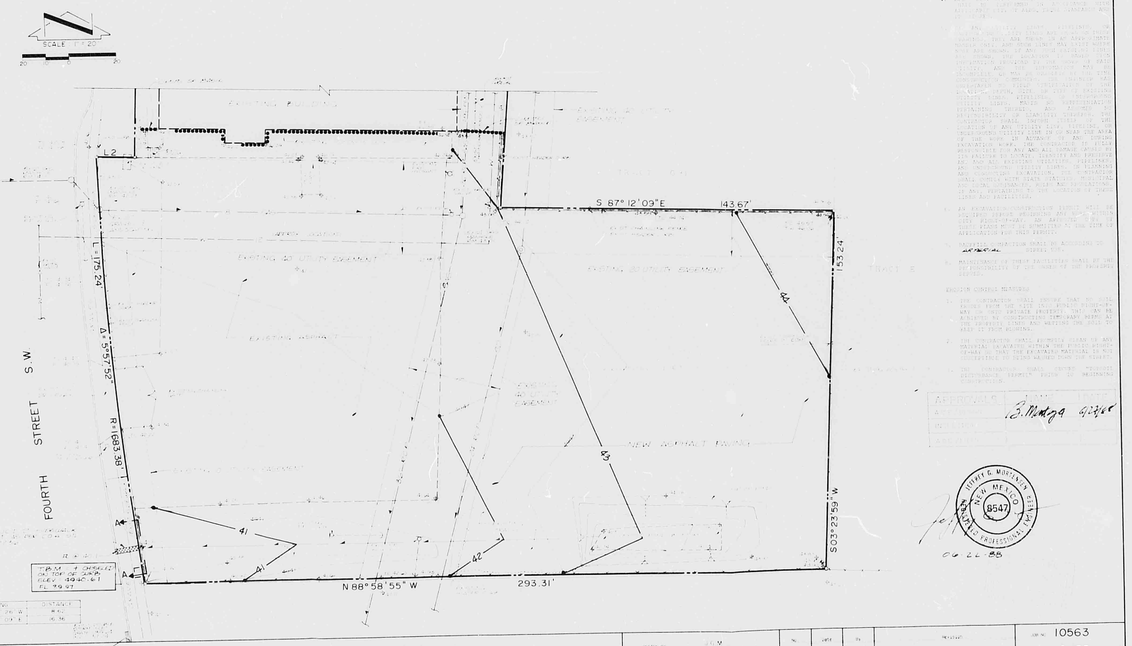
PLANS/PLATS ON FILE

FILE DESC: L14/D1D

PLANS/PLATS 1

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





PROJECT BENCHMARK

STATION IS A STANDARD CITY OF ALBUQUERQUE METAL TARGET MONUMENT LOCATED ON THE WEST PROPERTY LINE OF BARELAS ST. STAMPED "BC MNT" (BC MNT NO. 4) STATION IS A BRASS DISK IN CONCRETE LOCATED 1.1 MI. SW OF DOWNTOWN ALBUQUERQUE 20.5 FT WEST OF ℄ OF BARELAS ST., 160 FT NORTH OF ℄ ON THE MEDIAN AT THE PARK ENTRANCE.
ELEVATION = 4941.45 FEET (MSLD)

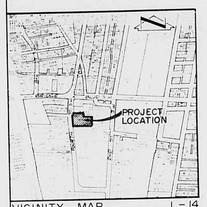
T.B.M

A "+" CHISELED ON TOP OF THE CURB LOCATED ON A LINE PROJECT 13' FROM THE SW PROPERTY CORNER AS SHOWN ON THE DRAWING.
ELEVATION = 4940.67 FEET (MSLD)

LEGEND

LEGAL DESCRIPTION

SECTION A-A



VICINITY MAP L-14

SCALE 1"=800'

JMA

GRADING AND DRAINAGE PLAN
MARKET REFRIGERATION

DESIGN BY J.G.W.
DRAWN BY S.G.H.
APPROVED BY J.G.W.

JOB NO. 10563
DATE 6-88
SHEET 1 OF 1

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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REL 27 DATE 5-21-92 OF 42

CITY OF ALBUQUERQUE

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DIRECTOR

NOTARY PUBLIC

01/02/92

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