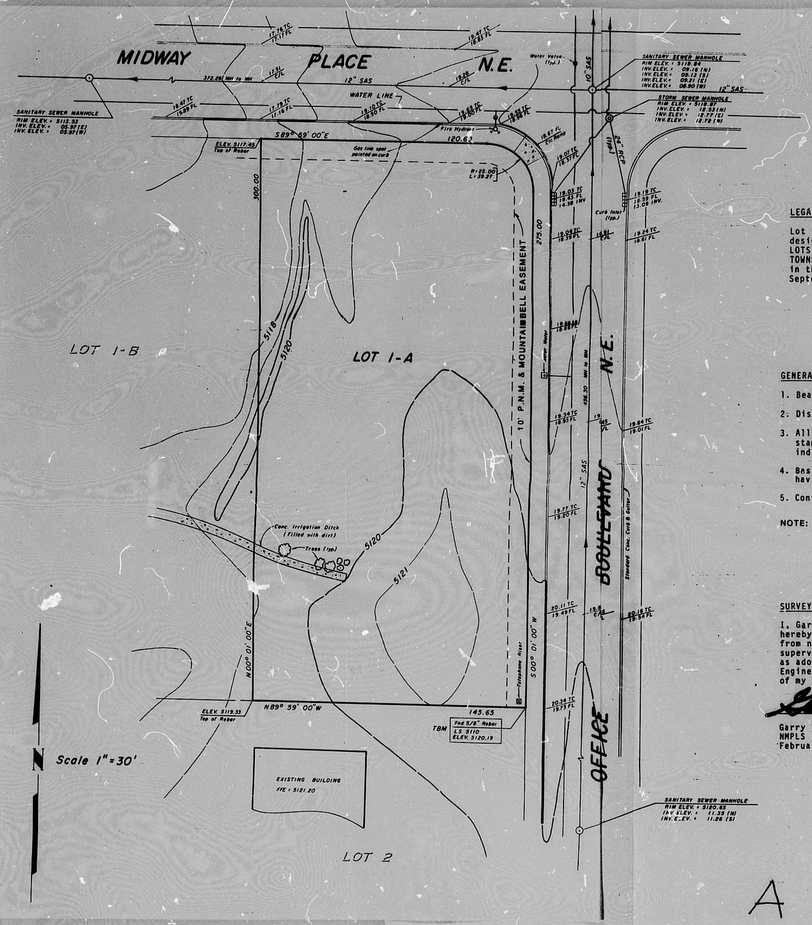
PUBLIC WORKS/HYDROLOGY
E17/D41S




LOT 1-A

# MIDWAY BUSINESS PARK

CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

FEBRUARY, 1987

LEGAL DESCRIPTION

Lot numbered One-A (1-A), Midway Business Park as the same is shown and designated on the plat entitled " A REPLAT OF LOTS 1,3,4 & 5, NOW COMPRISING LOTS 1-A, 1-B, 3-A, 4-A, 5-A, MIDWAY BUSINESS PARK, WITHIN SECTION 26, TOWNSHIP 11 NORTH, RANGE 3 EAST, N.M.P.M., ALBUQUERQUE, NEW MEXICO" filed in the office of the County Clerk of Bernalillo County, New Mexico on September 4,1984 in Volume C25, Folio 15.

GENERAL NOTES

1. Bearings are Plat.
2. Distances are ground.
3. All corners are a 5/8" rebar and survcap stamped "HUGG L.S. 5823" unless otherwise indicated.
4. Basis of elevation is A.C.S. Benchmark "8-E17" having an elevation of 5140.04 feet.
5. Contour interval is 1'.

NOTE: AS THERE IS NO CITY ASBUILT UTILITY PLANS FOR THIS AREA. ALL WATER LINES SHOULD BE FIELD VERIFIED.

SURVEYORS CERTIFICATION

I, Garry P. Hugg, New Mexico Professional Land Surveyor Number 5823, hereby certify that this boundary and topographic survey was prepared from notes of an actual ground survey performed by me or under my supervision ; that it meets the Standards for Land Surveys in New Mexico as adopted by the New Mexico State Board of Registration for Professional Engineers and Land Surveyors; and that it is true and correct to the best of my knowledge and belief.

Garry P. Hugg
NMPLS NO. 5823
February 15,1987

RECEIVED
JUN 29 1988
HYDROLOGY SECTION

880671

A

Hugg surveying inc.
4100 Southern Blvd., S.E., Suite 180-C Rio Rancho, New Mexico 87124 Phone: (505) 892-5022

PLANS/PLATS ON FILE

FILE DESC: E17/D415

# PLANS/PLATS 3

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

R# 25 DATE 3-15-02 OPER. ESP

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.

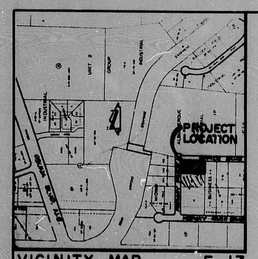
The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS115-1977)

DIRECTOR 11/5/02

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires

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




VICINITY MAP E-17

SCALE : 1" = 800'

## PROJECT BENCHMARK

A SQUARE, Ø, CHISELED ON TOP OF CONCRETE CURB AT THE SSE CURB RETURN LOCATED AT THE INTERSECTION OF OBUNA RD. & JEFFERSON ST. (ALSO KIRCHER BLVD.) N.E.
ELEVATION = 5140.04 FEET (M.S.L.D.)

## T.B.M.

T.B.M = FND. 5/8" REBAR (L.S. 5110) LOCATED AT THE SOUTHEAST PROPERTY CORNER AS SHOWN ON THE DRAWING BELOW.
ELEVATION = 5120.19 FEET (M.S.L.D.)

## LEGAL DESCRIPTION

LOT NO. 1-A, TOGETHER WITH THE EASTERLY 32.15 FEET OF LOT NO. 1-B, MIDWAY BUSINESS PARK.

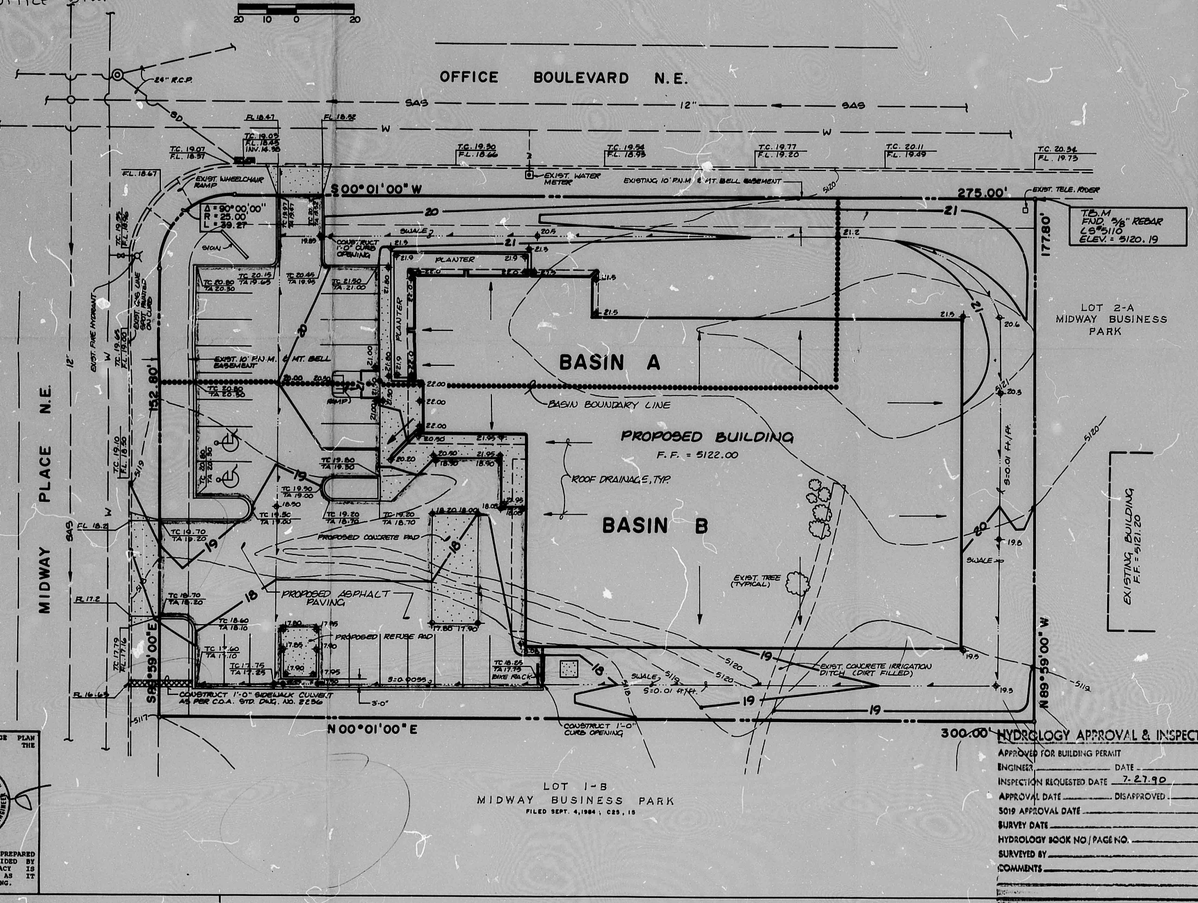
## LEGEND

- 5119 — EXISTING CONTOUR
- 19 — PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED SWALE
- PROPOSED ASPHALT
- PROPOSED CONCRETE

SCALE: 1" = 20'

20 10 0 20

5951 Office Blvd NE




GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

JEFFREY S. MORTENSEN & ASSOCIATES, INC. PROFESSIONAL ENGINEERS 8110 DALLAS N.E. ALBUQUERQUE, NEW MEXICO 87109

TOPOGRAPHIC SURVEY PREPARED BY OTHERS AND PROVIDED BY OWNER. ITS ADEQUACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.

## HYDROLOGY APPROVAL & INSPECTION

APPROVED FOR BUILDING PERMIT
ENGINEER _____ DATE _____
INSPECTION REQUESTED DATE 7-27-90
APPROVAL DATE _____ DISAPPROVED _____
5019 APPROVAL DATE _____
SURVEY DATE _____
HYDROLOGY BOOK NO./PAGE NO. _____
SURVEYED BY _____
COMMENTS _____

## DRAINAGE PLAN

The following items concerning the Lot 1A Midway Business Park Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The site, as shown by the Vicinity Map, is located at the southwest corner of the intersection of Midway Place N.E. and Office Boulevard N.E. At present, the site is undeveloped. As shown by Plate E-17 of the Albuquerque Master Drainage Study, this site does not lie within a designated flood hazard zone. Furthermore, downstream flooding is not apparent. At present, runoff generated by the majority of the site flows from southeast to northwest onto Lot 1-B. This runoff eventually discharges to Midway Place N.E. From this point the runoff flows westerly to an existing concrete rundown which drains to the A.M.A.F.C.A. North Diversion Channel. A small portion of the site drains from west to east onto Office Boulevard N.E. From this point, runoff runs north along the west edge of Office Boulevard into an existing storm inlet at the intersection of Office Boulevard N.E. and Midway Place N.E. From this point the runoff flows north to the A.M.A.F.C.A. North Diversion Channel. Offsite flows do not enter the site along the north and east property lines due to the presence of developed streets. The site to the west is topographically lower and the site to the south has parallel topography. Because of this the sites to the west and south do not contribute offsite flows.

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 limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the construction of a new warehouse building along with adjacent paving and landscaping. In the developed condition, the site will continue to drain to Midway Place N.E. and Office Boulevard N.E. in much the same fashion as existing. Discharge to the street will be via a sidewalk culvert and a drivepad, respectively.

The Calculations which appear hereon analyze both the existing and developed condition 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. As shown by these calculations, the proposed improvements will result in an increase in runoff. The increase in runoff will be approximately 1.[illegible] cfs.

## 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 AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. 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 NONE ARE SHOWN. IF ANY SUCH EXISTING LINES 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 ENGINEER HAS UNDERTAKEN NO 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 INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR 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 UTILITIES, 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 ARTERIAL STREET USE.
8. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

## CALCULATIONS

**Ground Cover Information**

From SCS Bernalillo County Soil Survey,
Plate 21: EmB - Embudo gravelly fine sandy 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
Open spaces: 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**

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

**Rational Method**

Discharge: Q = CIA

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ 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**

Atotal = 53140 sf = 1.22 Ac
Undeveloped area = 53140 sf (1.0 )
C = 0.40 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100}$ = CIA = (0.40)(4.65)(1.22) = 2.3 cfs
Aimp = 0.0 sf; % impervious =0.0 %
Composite CN = 79 (DPM Plate 22.2 C-3)
DRO = 0.65 in (DPM Plate 22.2 C-4)
$V_{100}$ = 3630 (DRO)A = 2880 cf

**Developed Condition**

1. Site
Atotal = 53140 sf = 1.22 Ac
Roof area = 19140 sf (0.36)
Paved area = 13480 sf (0.25)
Landscaped area = 20520 sf (0.39)
C = 0.66 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100}$ = CIA = (0.66)(4.65)(1.22) = 3.7 cfs
Aimp = 32620 % impervious = 61 %
Composite CN = 83 (DPM Plate 22.2 C-3)
DRO = 0.88 in (DPM Plate 22.2 C-4)
$V_{100}$ = 3630 (DRO) A = 3900 cf

2. Basin A
Area = 33 % ($A_{total}$) = 17,696 sf
$Q_{100,A}$ = 33 % ($Q_{100}$)
= 0.33 (3.7) = 1.2 cfs

3. Basin B
Area = 67 % ($A_{total}$) = 35,604 sf
$Q_{100,B}$ = 67 % ($Q_{100}$)
= 0.67 (3.7) = 2.5 cfs

**Culvert Sizing Calculations**

$Q = CLh^{3/2}$ (Weir Equation)
L = width, 2'- 0" width
h = depth, 0'- 8" depth
$Q = 3.33(2)(0.67)^{3/2}$
$= 3.6$ cfs $> Q_{100,B}$

**Comparison**

Site
$\Delta Q_{100} = 3.7 - 2.3 = 1.4$ cfs (increase)
$\Delta V_{100} = 3900 - 2880 = 1,020$ cfs (increase)

## 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 NETTING 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.

RECEIVED JUN 29 1988 HYDROLOGY SECTION

| APPROVALS | NAME | DATE |
|---|---|---|
| A.C.E./DESIGN | | 7-27-90 |
| INSPECTOR | | |
| A.C.E./FIELD | | |

JMA JEFF MORTENSEN & ASSOCIATES, INC. 8110 DALLAS N.E. ALBUQUERQUE, NEW MEXICO 87109 ENGINEERS TELEPHONE (505) 265-5611

GRADING AND DRAINAGE PLAN
INTERWEST APPLIANCE

| | |
|---|---|
| DESIGN BY | G.C.J. |
| DRAWN BY | S.G.H. |
| APPROVED BY | J.G.M. |

| No. | Date | By | Revision |
|---|---|---|---|
| | | | |

JOB NO. 880671
DATE 6-88
SHEET 1 OF 1

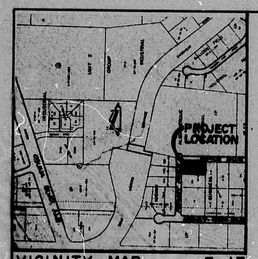
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

R# 25 DATE 3-15-12 ON ESP

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 (MS115-1977)
DIRECTOR 11/15/12

NOTARY PUBLIC
OFFICIAL SEAL Roberta Duran NOTARY PUBLIC STATE OF NEW MEXICO

D24 C20 B16 A12 CITY OF ALBUQUERQUE C D




VICINITY MAP E-17

SCALE: 1" = 800'

## PROJECT BENCHMARK

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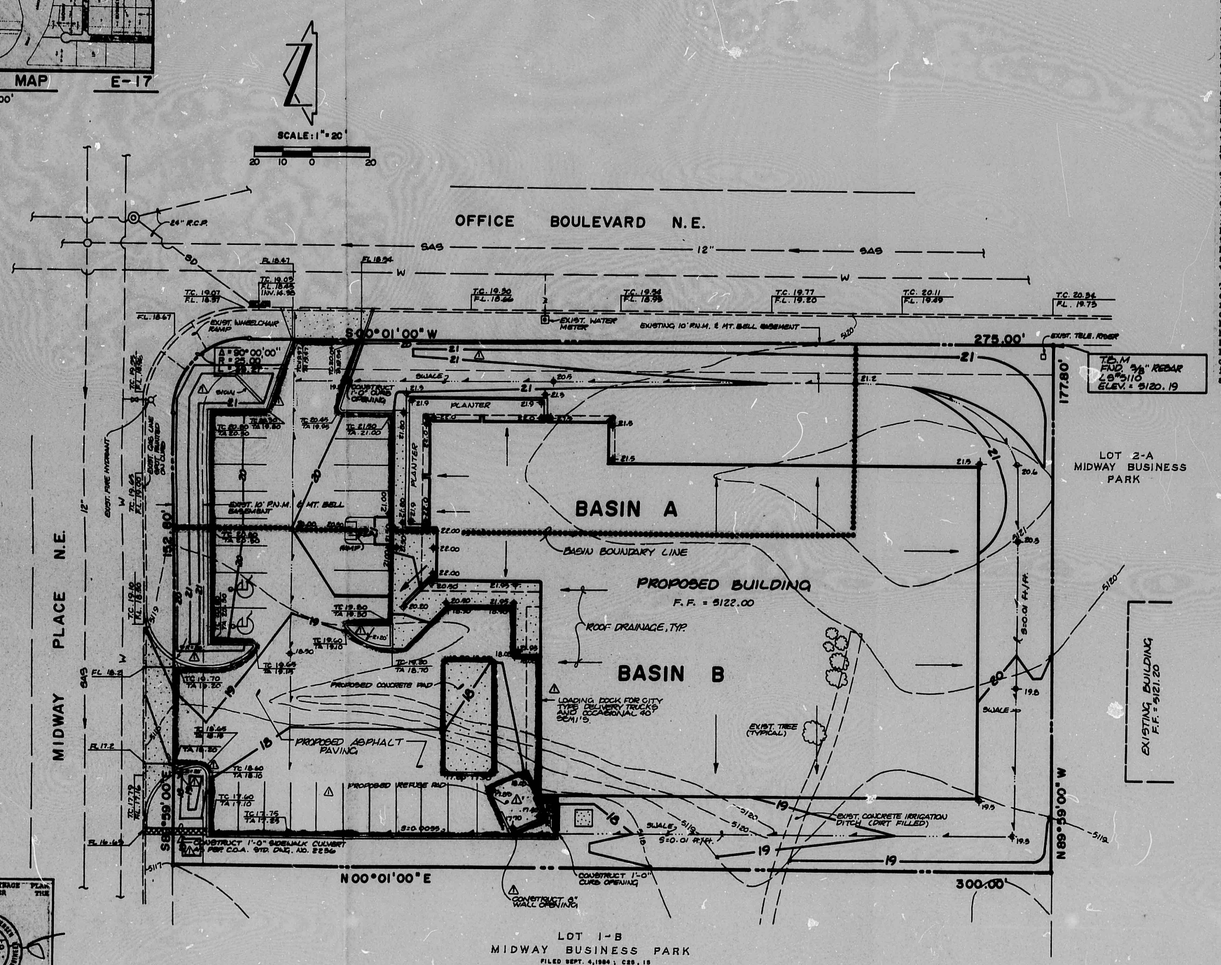


GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

07-19-88

THIS GRADING AND DRAINAGE PLAN PREPARED BY OTHERS AND PROVIDED BY OWNER. ITS ADEQUACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.

jsa

JST & SCHUTZ & ASSOCIATES, INC.
CONSULTING ENGINEERS
2100 CENTRAL AVENUE, SUITE B
ALBUQUERQUE, NEW MEXICO 87106

## DRAINAGE PLAN

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## CALCULATIONS

**Ground Cover Information**

From SCS Bernalillo County Soil Survey,
Plate 21: EmB - Embudo gravelly fine sandy 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
Open spaces: 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**

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

**Rational Method**

Discharge: $Q = CIA$

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ 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**

$A_{total} = 53140$ sf = 1.22 Ac
Undeveloped area = 53140 sf (1.0 )
C = 0.40 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.40)(4.65)(1.22) = 2.3$ cfs
$A_{imp} = 0.0$ sf; % impervious =0.0 %
Composite CN = 79 (DPM Plate 22.2 C-3)
DRO = 0.65 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 2880 cf

**Developed Condition**

1. Site
$A_{total} = 88146$ sf = 1.98 Ac
Roof area = 19140 sf (0.36)
Paved area = 13480 sf (0.25)
Landscaped area = 20520 sf (0.39)
C = 0.66 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.66)(4.65)(1.22) = 3.7$ cfs
$A_{imp} = 32620$ % impervious = 61 %
Composite CN = 83 (DPM Plate 22.2 C-3)
DRO = 0.68 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO) A = 3900 cf

2. Basin A
Area = 33 % ($A_{total}$) = 17,695 sf
$Q_{100,A}$ = 33 % ($Q_{100}$)
= 0.33 (3.7) = 1.2 cfs

3. Basin B
Area = 67 % ($A_{total}$) = 35,604 sf
$Q_{100,B}$ = 67 % ($Q_{100}$)
= 0.67 (3.7) = 2.5 cfs

**Culvert Sizing Calculations**

$Q = CLh^{3/2}$ (Weir Equation)
L = width, 2'- 0" width
h = depth, 0'- 9" depth
$Q = 3.33(2)(0.67)^{3/2}$
$= 3.6$ cfs $> Q_{100,B}$

**Comparison**

Site
$\Delta Q_{100} = 3.7 - 2.3 = 1.4$ cfs (increase)
$\Delta V_{100} = 3900 - 2880 = 1,020$ cfs (increase)

RECEIVED JUL 30 1988 HYDROLOGY DIVISION

## 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.
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3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

| APPROVALS | NAME | DATE |
|---|---|---|
| A.C.E./ DESIGN | | |
| INSPECTOR | | |
| A.C.E./FIELD | | |

GRADING AND DRAINAGE PLAN
INTERWEST APPLIANCE

| | | | |
|---|---|---|---|
| DESIGN BY | G.C.J. | JOB NO. | 880671 |
| DRAWN BY | S.G.H. | DATE | 6-88 |
| APPROVED BY | J.G.M. | SHEET | 1 OF 1 |

| No. | Date | By | Revision |
|---|---|---|---|
| 1 | 9/88 | G.C.J. | INCREASE DRIVEWAY TO 30' WIDTH-TO CURB RETURNS; INCREASE TO 20' RADIUS. - RELOCATE REFUSE PAD & ADJUST PARKING. INCREASE PLANTER TO 30' WIDTH. SHOW SIGNING ADJACENT TO SIDEWALK. MOTION OF DELIVERY TRUCKS. |

PLAN SHOT TWICE ONCE ON LIGHT ONCE ON DARK

CITY OF ALBUQUERQUE
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REL DATE 3-15-02 OPR

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The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (M115-1977)
11/5/02
DIRECTOR

NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 7/18/02

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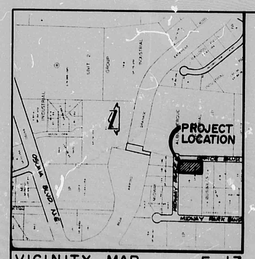



VICINITY MAP E-17

SCALE : 1" = 800'

## PROJECT BENCHMARK

A SQUARE, ☑, CHISELED ON TOP OF CONCRETE CURB AT THE SSE CURB RETURN LOCATED AT THE INTERSECTION OF OSUNA RD. & JEFFERSON ST. (ALSO KIRKNER BLVD.) N.E.
ELEVATION = 5140.04 FEET (M.S.L.D.)

## T.B.M.

T.B.M = FND. 5/8" REBAR (LS. 5110) LOCATED AT THE SOUTHEAST PROPERTY CORNER AS SHOWN ON THE DRAWING BELOW.
ELEVATION = 5120.19 FEET (M.S.L.D.)

## LEGAL DESCRIPTION

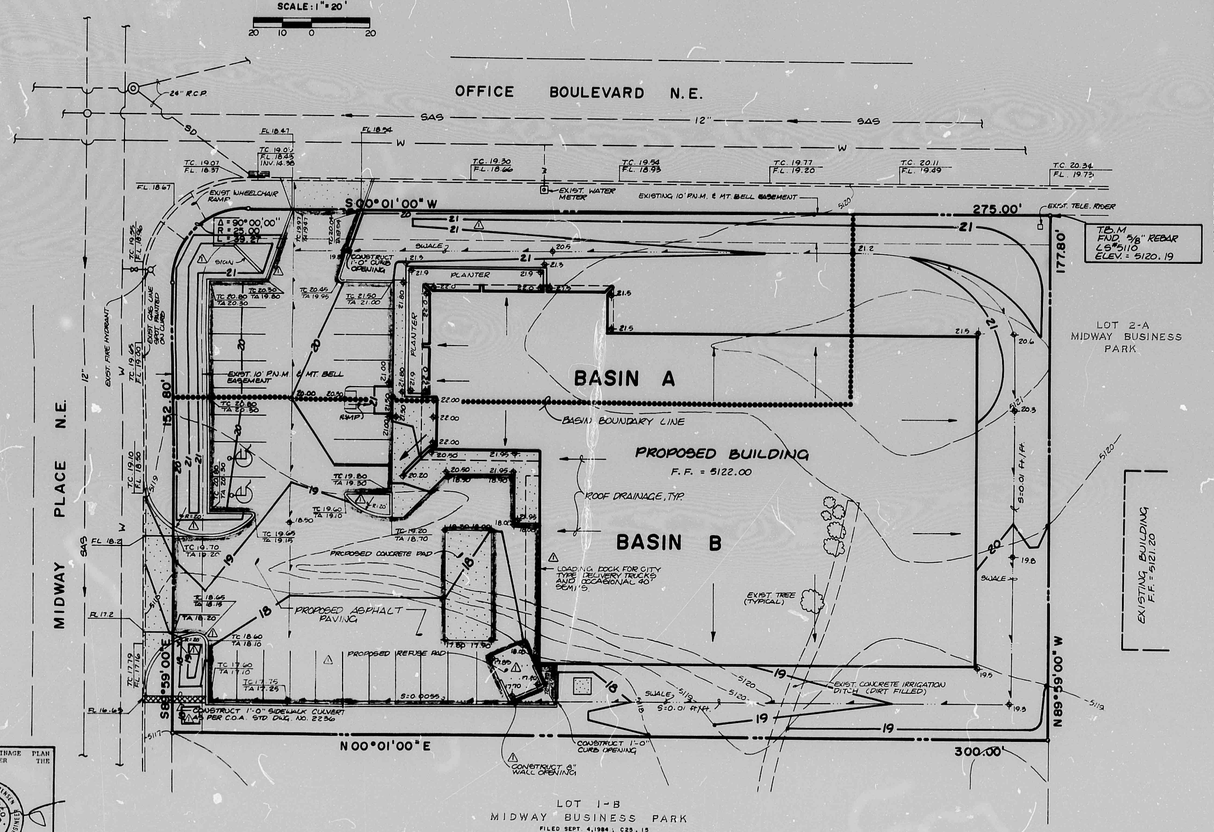
LOT NO. 1-A, TOGETHER WITH THE EASTERLY 32.15 FEET OF LOT NO. 1B, MIDWAY BUSINESS PARK.

## LEGEND

- 5119 — EXISTING CONTOUR
- 19 — PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED SWALE
- PROPOSED ASPHALT
- PROPOSED CONCRETE

SCALE : 1"=20'

20 10 0 20




GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

JEFFREY G. MORTENSEN, NEW MEXICO REGISTERED PROFESSIONAL ENGINEER 6872

09-19-88

TOPOGRAPHY SHOWN HEREON WAS PREPARED BY OTHERS AND PROVIDED BY OWNER. ITS ADEQUACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.

## DRAINAGE PLAN

The following items concerning the Lot 1A Midway Business Park Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculation.

The site, as shown by the Vicinity Map, is located at the southwest corner of the intersection of Midway Place N.E. and Office Boulevard N.E. At present, the site is undeveloped. As shown by Plate E-17 of the Albuquerque Master Drainage Study, this site does not lie within a designated flood hazard zone. Furthermore, downstream flooding is not apparent. At present, runoff generated by the majority of the site flows from southeast to northwest onto Lot 1-B. This runoff eventually discharges to Midway Place N.E. From this point the runoff flows westerly to an existing concrete rundown which drains to the A.M.A.F.C.A. North Diversion Channel. A small portion of the site drains from west to east onto Office Boulevard N.E. From this point, runoff runs north along the west edge of Office Boulevard into an existing storm inlet at the intersection of Office Boulevard N.E. and Midway Place N.E. From this point the runoff flows north to the A.M.A.F.C.A. North Diversion Channel. Offsite flows do not enter the site along the north and east property lines due to the presence of developed streets. The site to the west is topographically lower and the site to the south has parallel topography. Because of this, the sites to the west and south do not contribute offsite flows.

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 limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the construction of a new warehouse building along with adjacent paving and landscaping. In the developed condition, the site will continue to drain to Midway Place N.E. and Office Boulevard N.E. in much the same fashion as existing. Discharge to the street will be via a sidewalk culvert and a drivepad, respectively.

The Calculations which appear hereon analyze both the existing and developed condition 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. As shown by these calculations, the proposed improvements will result in an increase in runoff. The increase in runoff will be approximately 1.4 cfs.

## 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 AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. 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 NONE ARE SHOWN. IF ANY SUCH EXISTING LINES 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 ENGINEER HAS UNDERTAKEN NO 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 INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR 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 UTILITIES, 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 ARTERIAL STREET USE.
8. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

## CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 21: EmB - Embudo gravelly fine sandy 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
Open spaces: 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

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ 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

$A_{total} = 53140$ sf = 1.22 Ac
Undeveloped area = 53140 sf (1.0 )
C = 0.40 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.40)(4.65)(1.22) = 2.3$ cfs
$A_{imp} = 0.0$ sf; % impervious =0.0 %
Composite CN = 79 (DPM Plate 22.2 C-3)
DRO = 0.65 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 2880$ cf

Developed Condition

1. Site
$A_{total} = 53140$ sf = 1.22 Ac
Roof area = 19140 sf (0.36)
Paved area = 13480 sf (0.25)
Landscaped area = 20520 sf (0.39)
C = 0.66 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.66)(4.65)(1.22) = 3.7$ cfs
$A_{imp} = 32620$ % impervious = 61 %
Composite CN = 83 (DPM Plate 22.2 C-3)
DRO = 0.88 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 3900$ cf

2. Basin A
Area = 33 % ($A_{total}$) = 17,696 sf
$Q_{100,A} = 33\ \%\ (Q_{100})$
$= 0.33\ (3.7) = 1.2$ cfs

3. Basin B
Area = 67 % ($A_{total}$) = 35,604 sf
$Q_{100,B} = 67\ \%\ (Q_{100})$
$= 0.67\ (3.7) = 2.5$ cfs

Culvert Sizing Calculations

$Q = Clh^{3/2}$ (Weir Equation)
L = width, 2'- 0" width
h = depth, 0'- 8" depth
$Q = 3.33(2)((0.67)^{3/2}$
$= 3.6$ cfs $> Q_{100,B}$

Comparison

Site
$\Delta Q_{100} = 3.7 - 2.3 = 1.4$ cfs (increase)
$\Delta V_{100} = 3900 - 2880 = 1,020$ cfs (increase)

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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.

| APPROVALS | NAME | DATE |
|---|---|---|
| A.C.E./DESIGN | | |
| INSPECTOR | | |
| A.C.E./FIELD | | |

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

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R# 25 DATE 3-15-92 OP. E.P.P.

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11-15-92
DIRECTOR

NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
Notary Public
State of New Mexico
6/28/92

JMA — JEFF MORTENSEN & ASSOCIATES, INC.
8110 DALLAS, N.E. - ALBUQUERQUE, NM 87110
ENGINEERS - TELEPHONE (505) 265-5611

GRADING AND DRAINAGE PLAN
INTERWEST APPLIANCE

| | |
|---|---|
| DESIGN BY | G.C.J. |
| DRAWN BY | S.G.H. |
| APPROVED BY | J.G.M. |

| No. | Date | By | Revision |
|---|---|---|---|
| 1 | 9/88 | G.C.J. | INCREASE DRIVEPAD TO 30' WITH FLARES RETURNS. INCREASE TO 20' RADII. RELOCATE REFUSE PAD & ACCESS. PARKING. INCREASE SWALES TO 20' RADIUS. SHOW BERMS ADJACENT TO SIDEWALK. ROUTION OF DELIVERY TRUCKS. |

JOB NO. 880671
DATE 6-88
SHEET 1 OF 1

D 24 C 20 B 16 A 12 CITY OF ALBUQERQUE C D