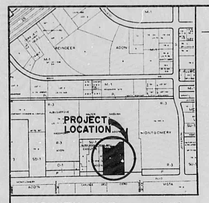
PUBLIC WORKS/HYDROLOGY

F17/D8A




VICINITY MAP F-17
SCALE: 1" = 800'

## PROJECT BENCHMARK

STATION MARK IS AN A.C.S. BRASS CAP, STAMPED "M-54" LOCATED IN THE MEDIAN IN MONTGOMERY BLVD N.E. APPROXIMATELY 135 FT. WEST OF THE ℄ OF WASHINGTON ST. N.E. ELEVATION= 5154.456 FT. (M.S.L.D)

## T.B.M.

AN "X" SCRATCHED ON TOP OF EXISTING CURB LOCATED AT THE SOUTHEAST PROPERTY CORNER SHOWN HEREON. ELEVATION=5150.65 FT.(M.S.L.D)

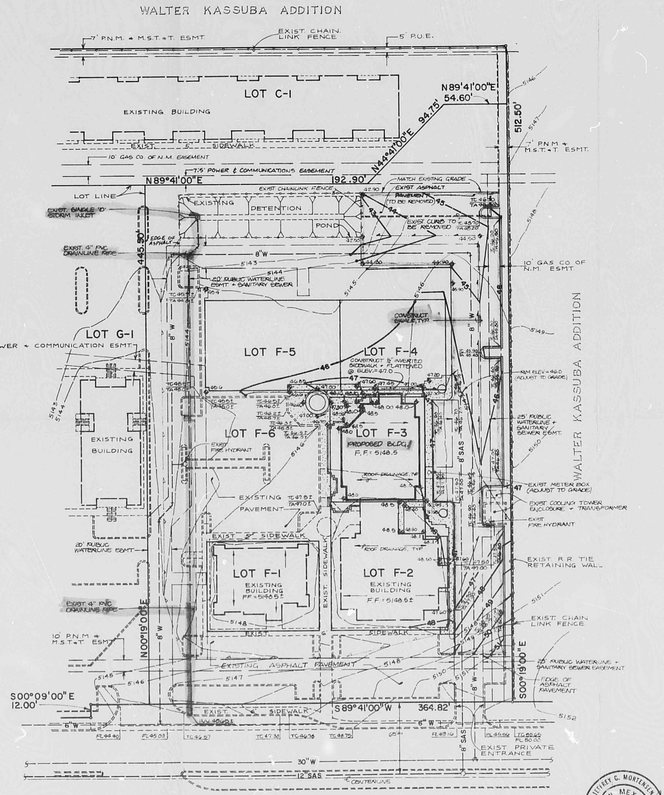
## LEGAL DESCRIPTION

LOTS "F-1" THROUGH "F-6" EXECUTIVE PLAZA ADDITION.

## LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- 5645 EXISTING CONTOUR
- 45 PROPOSED CONTOUR
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- EXISTING CONCRETE
- TC TOP OF CURB
- TA TOP OF ASPHALT

SCALE: 1" = 40'




## DRAINAGE PLAN

The following items concerning the Granada Square Building (Formerly Executive Plaza) Phase II Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the north side of Montgomery Boulevard N.E. between Jefferson Street N.E. and Morningside Drive N.E. At present, the majority of the site is developed. Part of the site is also developed commercially. As shown by Plate F-17 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. However, the site does lie adjacent to a designated Flood Hazard Zone. Because of this, the waterblock has been established at least 2' above the corresponding flow line elevation of Montgomery Boulevard N.E. At present, the site flows from east to west and south to north to an existing retention pond constructed to accep which will discharge at a controlled rate onto Montgomery Boulevard N.E. via the existing retention pond. This office discusses the volume of runoff generated by the 100-year, 6-hour rainfall event which will discharge at a controlled rate onto Montgomery Boulevard N.E. via a series of submersible pumps for full development. The previous approved drainage plan for this site (F17/D8) prepared by this office discusses the existing detention pond in more detail. No offsite flows enter the site along the south property line since the adjacent street routes runoff away from the project site. No offsite flows enter the site along the west and north property lines since the adjacent lots are graded in a manner which will route runoff away from the project site. No offsite flows enter the site along the east property line since the existing retaining wall routes runoff away from the project site.

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 office building along with adjacent paving and landscaping. Flows generated by the proposed improvements will be routed from south to north to the aforementioned detention pond located on the northern portion of Lot F-4. Runoff will be discharged at a controlled rate onto Montgomery Boulevard N.E. via the aforementioned submersible pumps. From that point, the runoff will flow in a westerly direction toward existing storm drain inlets located in Montgomery Boulevard N.E. These inlets connect to a public storm drain facility which drains to the North Diversion Channel located on the east side of Interstate 25.

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. As shown by these calculations, the proposed improvements will increase the discharge by approximately 1.2 cfs. This increase will be regulated by the submersible pumps.

## 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 = 70 (DPM Plate 22.2 C-2
Feature or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

**Time of Concentration/Time to Peak**

$T_C = 0.0078\ L^{0.77} g^{0.385}$ (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 Conditions**

$A_{total}$ = 147,420 sf = 3.38 Ac
Roof area = 11,165 sf (0.08)
Paved area = 40,100 sf (0.27)
Landscaped area = 15,965 sf (0.11)
Dirt area = 80,190 sf (0.54)
C = 0.57 (Weighted average per Emergency Rule, 1/14/85)
$Q_{100}$ = CIA = (0.57)(4.65)(3.38) = 9.0 cfs
$A_{imp}$ = 51,265 sf; % impervious = 35 %
Composite CN = 74 (DPM Plate 22.2 C-3)
DRO = 0.6 in (DPM Plate 22.2 C-4)
$V_{100}$ = 3630 (DRO)A = 6,135 cf

**Developed Condition**

$A_{total}$ = 147,420 sf = 3.38 Ac
Roof area = 17,015 sf (0.11)
Paved area = 67,305 sf (0.46)
Landscaped area = 36,405 sf (0.25)
Dirt area = 26,695 (0.18)
C = 0.67 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100}$ = CIA = (0.67)(4.65)(3.38) = 10.5 cfs
$A_{imp}$ = 84,315 sf; % impervious = 57 %
Composite CN = 81.8 (DPM Plate 22.2 C-3)
DRO = 0.8 in (DPM Plate 22.2 C-4)
$V_{100}$ = 3630 (DRO) A = 9,815 cf

**Pond Volume**

$V_{pond} = 1/2[(A_{42.5} + A_{37.5})(42.5 - 37.5)]$
$= 1/2[(5760 + 780)(5.0)]$
$= 16,350$ cf > $V_{required} = 14,000$ cf ($V_{100}$ for full development)

$V_{1'\text{-}0''\ Freeboard} = 1/2[(A_{42.5} + A_{41.5})(42.5 - 41.5)]$
$= 1/2[(5760 + 4,620)(1.0)]$
$= 2110$ cf

$Q_{release}$ = 1.2 cfs (Estimated Pump Calculations - Taken from Previous Drainage Report Prepared by Tom Mann and Associates, F17/D8)

**Comparison**

$\Delta Q_{100}$ = 10.5 - 9.0 = 1.5 cfs (increase)
$\Delta V_{100}$ = 9,815 - 6,135 = 3,680 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 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 PIPELINE LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SUCH LINES. 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.

## 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.

APPROVED FOR DRAINAGE
12-3-87
DATE
SIGNATURE TITLE

RECEIVED
NOV 19 1987
HYDROLOGY SECTION

GRADING & DRAINAGE PLAN
GRANADA SQUARE - PHASE II

| | |
|---|---|
| DESIGN BY | L.P.U. |
| DRAWN BY | C.M. |
| APPROVED BY | J.G.M. |

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

JOB NO 61506
DATE 11 - 87
SHEET 1 OF 1

RE 25 DATE 3-17-88 OP 20
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.
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DIRECTOR
PLAN SHOT TWICE ONCE OR LIGHT ONCE OR DARK
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OFFICIAL SEAL Roberta Duran NOTARY PUBLIC STATE OF NEW MEXICO MY COMMISSION EXPIRES 07/02/88
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: F17/D8A
# PLANS/PLATS 2
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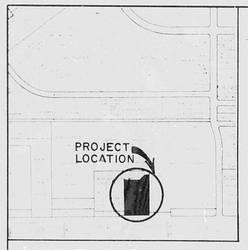



VICINITY MAP F-17
SCALE: 1" = 800'

## PROJECT BENCHMARK

STATION MARK IS AN A.C.S. BRASS CAP, STAMPED "M-5A" LOCATED IN THE MEDIAN IN MONTGOMERY BLVD. N.E. APPROXIMATELY 135 FT. WEST OF THE ℄ OF WASHINGTON ST. N.E.
ELEVATION = 5154.456 FT. (M.S.L.D.)

T. B. M.

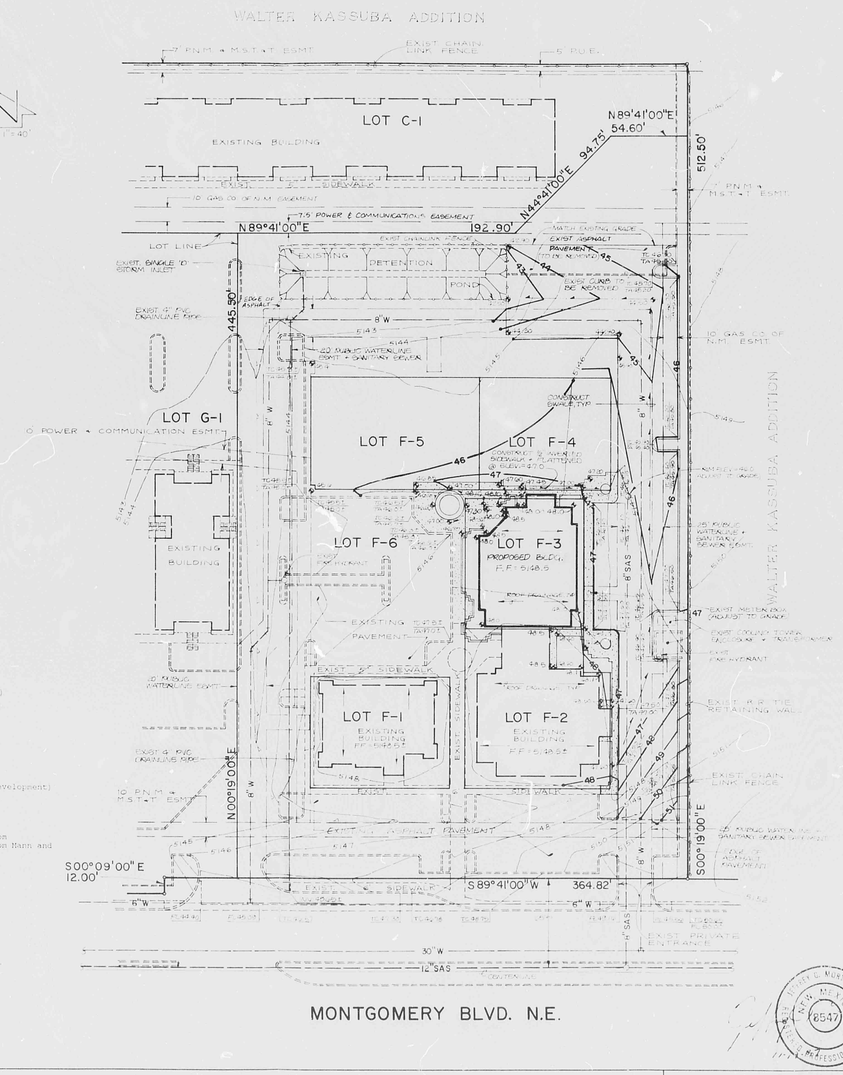
AN "X" SCRATCHED ON TOP OF EXISTING CURB LOCATED AT THE SOUTHEAST PROPERTY CORNER SHOWN HEREON.
ELEVATION = 5150.65 FT. (M.S.L.D.)

## LEGAL DESCRIPTION

LOTS "F-1" THROUGH "F-6" EXECUTIVE PLAZA ADDITION.

## LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- 5140 EXISTING CONTOUR
- 45 PROPOSED CONTOUR
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- EXISTING CONCRETE
- T.C. TOP OF CURB
- T.A. TOP OF ASPHALT




### DRAINAGE PLAN

The following items concerning the Granada Square Building (Formerly Executive Plaza) Phase II Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the north side of Montgomery Boulevard N.E. between Jefferson Street N.E. and Morningside Drive N.E. At present, the majority of the site is developed. Part of the site is also developed commercially. As shown by Plate F-17 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. However, the site does lie adjacent to a designated Flood Hazard Zone. Because of this, the Washington Street has been established at least 2' above the corresponding flow line elevation of Montgomery Boulevard N.E. At present, the site flows from east to west and south to north to an existing retention pond constructed to accept the total volume of runoff generated by the 100-year, 6-hour rainfall event which will discharge at a controlled rate onto Montgomery Boulevard N.E. via a series of submersible pumps for full development. The proposed grading and drainage plan for this site (F17/D8) prepared by this office discusses the existing detention pond in more detail. No offsite flows enter the site along the east property line since the adjacent street routes runoff away from the project site. No offsite flows enter the site along the west and north property lines since the adjacent lots are graded in a manner which will route runoff away from the project site. No offsite flows enter the site along the east property line since the existing retaining wall routes runoff away from the project site.

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 office building along with adjacent paving and landscaping. Flows generated by the proposed improvements will be routed from south to north to the aforementioned detention pond located on the northern portion of Lot F-6. Runoff will be discharged at a controlled rate onto Montgomery Boulevard N.E. via the aforementioned submersible pumps. From that point, the runoff will flow in a westerly direction toward existing storm drain inlets located in Montgomery Boulevard N.E. These inlets connect to a public storm drain facility which ultimately ties to the North Diversion Channel located on the east side of Interstate 25.

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. At some point in the development the proposed improvements will increase the discharge by approximately 1.2 cfs. This increase will be regulated by the submersible pumps.

### 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 = 76 (DPM Plate 22.2 C-2)
Pasture or Range land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

**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
$I = P_6/6.4H$ $T_c = 8.51 = 4.68$ inhr
$P_6 = 2.2$ 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**

$A_{total} = 147,420$ sf = 3.38 Ac
Roof area = 17,115 sf (0.12)
Paved area = 67,300 sf (0.46)
Landscaped area = 36,405 sf (0.25)
Dirt area = 26,700 (0.18)
C = 0.67 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.67)(4.68)(3.38) = 10.5$ cfs
$A_{imp} = 84,215$ sf; % impervious = 57 %
Composite CN = 81.8 (DPM Plate 22.2 C-3)
DRO = 0.6 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO) A = 7,819 cf

**Developed Condition**

$A_{total} = 147,420$ sf = 3.38 Ac
Roof area = 17,115 sf (0.12)
Paved area = 67,300 sf (0.46)
Landscaped area = 36,405 sf (0.25)
Dirt area = 26,700 (0.18)
C = 0.67 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.67)(4.68)(3.38) = 10.5$ cfs
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Composite CN = 81.8 (DPM Plate 22.2 C-3)
DRO = 0.6 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO) A = 7,819 cf

**Pond Volume**

$V_{pond} = 1/2(A_{100\,s} + A_{100\,b})(42.5 - 37.5)$
$= 1/2(5760 + 780)(5.0)$
$= 16,350$ cf > Vrequired = 14,000 cf ($V_{100}$ for full development)

$V_{1'-0"}$ Freeboard $= 1/2(A_{100\,s} + A_{100\,b})(42.5 - 41.5)$
$= 1/2(5760 + 4620)(1.0)$
$= 2310$ cf

$Q_{release} = 1.2$ cfs (Estimated Pump Calculations - Taken from Previous Drainage Report Prepared by Tom Mann and Associates, F17/D8)

**Comparison**

$\Delta Q_{100} = 10.5 - 9.0 = 1.5$ cfs (increase)
$\Delta V_{100} = 9,819 - 6,139 = 3,680$ cf (increase)

### EARTHWORK NOTES

1. THE CONTRACTOR SHALL CALL NEW MEXICO ONE CALL, A COMPANY WIDE LOCATION SERVICE 766-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL CONFLICTING UTILITIES. IF A CONFLICT EXISTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN TIME TO ALLOW THE CONFLICT TO 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 GOVERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND REGULATIONS.
5. IF ANY UTILITY LINES, EXPERIENCE UNDERGROUND UTILITY LINES ARE SHOWN ON THE PLAN, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY NOT BE THE EXACT SIZE AND GRADE. IF ANY NEW BUILDING LINES ARE SHOWN, LOCATION IS BASED ON INFORMATION PROVIDED TO US BY OTHERS. ALTHOUGH THE INFORMATION MAY BE CORRECT, A NOTE TO THE CONTRACTOR BY THE CONSTRUCTION SUPERVISOR THE ENGINEER HAS PERFORMED FIELD VERIFICATION OF THE LOCATION, SIZE, GRADE, OR EXIST OF EXISTING UTILITY LINES, SUPPLIERS, OR IMPROVEMENTS UTILITY LINES, MAPS, OR REPRESENTATION PROVIDING PROPERLY, ANY ASSUMES NO RESPONSIBILITY OR LIABILITY. THEREFORE, THE CONTRACTOR SHALL BEGIN PRIOR TO THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE OR NEAR THE AREA OF THE WORK IN ADVANCE OF ANY UNDERGROUND EXCAVATION WORK. THE CONTRACTOR FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY HIS 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, BUILDING REGULATIONS, ETC. PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

### EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL EROSES 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 MAINTAIN TEMPORARY EROSION CONTROL MEASURES PRIOR TO BEGINNING CONSTRUCTION.

APPROVED FOR DRAINAGE
12-9-87
DATE
Roger A. Brown
SIGNATURE
Hydrologist
TITLE

NEW MEXICO REGISTERED PROFESSIONAL ENGINEER 8547

RECEIVED NOV 19 1987 HYDROLOGY SECTION

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 3-19-02 OP EGP

CITY OF ALBUQUERQUE

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The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS148-1977)

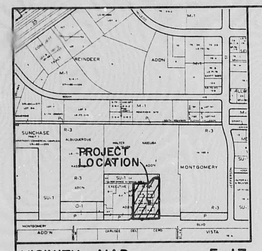
Chris T. Ashby 4/5/02
DIRECTOR

Roberta Duran
NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
07/22/02

GRADING & DRAINAGE PLAN
GRANADA SQUARE - PHASE II

| | | | | | | |
|---|---|---|---|---|---|---|
| DESIGN BY | L.P.D. | NO. | DATE | BY | REVISION | JOB NO 61506 |
| DRAWN BY | C.M. | | | | | DATE 11 - 87 |
| APPROVED BY | J.G.M. | | | | | SHEET 1 OF 1 |

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




VICINITY MAP F-17

SCALE : 1" = 800'

## PROJECT BENCHMARK:

STATION MARK IS AN A.C.S. BRASS CAP, STAMPED "M-5A" LOCATED IN THE MEDIAN IN MONTGOMERY BLVD N.E. APPROX. 1355' WEST OF THE ℄ OF WASHINGTON ST. N.E. ELEVATION = 5154.9506 ft. (M.S.L.D)

## T.B.M.:

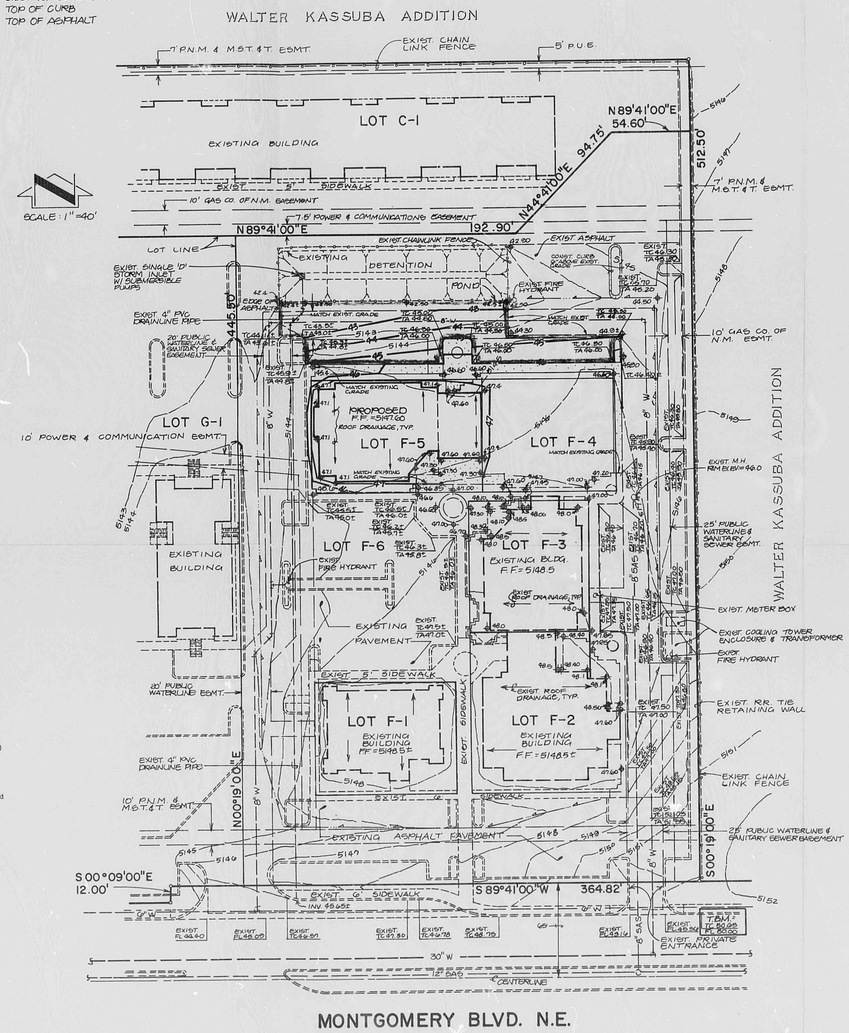
AN "X" SCRATCHED ON TOP OF EXISTING CURB, LOCATED AT THE SOUTHEAST PROPERTY CORNER. SHOWN HEREON. ELEVATION = 5150.65 ft. (M.S.L.D.)

## LEGAL DESCRIPTION:

LOTS "F-1" THROUGH "F-6" EXECUTIVE PLAZA ADDITION

## LEGEND

| | |
|---|---|
| + | EXISTING SPOT ELEVATION |
| + | PROPOSED SPOT ELEVATION |
| 5140 | EXISTING CONTOUR |
| 45 | PROPOSED CONTOUR |
| | PROPOSED ASPHALT |
| | PROPOSED CONCRETE |
| | EXISTING CONCRETE |
| TC | TOP OF CURB |
| TA | TOP OF ASPHALT |




## DRAINAGE PLAN

The following items concerning the Granada Square Building #3 (Formerly Executive Plaza) Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the north side of Montgomery Boulevard N.E. between Jefferson Street N.E. and Morningside Drive N.E. At present, the majority of the site is developed. Part of the site is also developed commercially. As shown by Plate F-17 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. However, the site does lie adjacent to a designated Flood Hazard Zone. Because of this, the waterblock has been established at least 1' above the corresponding flow line elevation of Montgomery Boulevard N.E. At present, the site flows from east to west and south to north to an existing retention pond constructed to accept the total volume of runoff generated by the 100-year, 6-hour rainfall event which will discharge at a controlled rate onto Montgomery Boulevard N.E. via a series of submersible pumps for full development. The previous approved drainage plan for this site (F17/D8) prepared by this office discusses the existing detention pond in more detail. No offsite flows enter the site along the south property line since the adjacent street routes runoff away from the project site. No offsite flows enter the site along the west and north property lines since the adjacent lots are graded in a manner which will route runoff away from the project site. No offsite flows enter the site along the east property line since the existing retaining wall routes runoff away from the project site.

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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. As shown by these calculations, the proposed improvements will increase the discharge by approximately 1.2 cfs. This increase will be regulated by the submersible pumps.

## 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 = 70 (DPM Plate 22.2 C-2
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

### 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

$A_{total} = 147{,}420$ sf = 3.38 Ac
Roof area = 17,015 sf (0.11)
Paved area = 67,300 sf (0.46)
Landscaped area = 36,405 sf (0.25)
Dirt area = 26,700 (0.18)
C = 0.67 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = (0.67)(4.65)(3.38) = 10.5$ cfs
$A_{imp} = 84{,}315$ sf; % Impervious = 57 %
Composite CN = 81.8 (DPM Plate 22.2 C-3)
DRO = 0.8 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 9{,}815$ cf

### Developed Condition

$A_{total} = 147{,}420$ sf = 3.38 Ac
Roof area = 24,150 sf (0.16)
Paved area = 77,800 sf (0.53)
Landscaped area = 38,110 sf (0.26)
Dirt area = 7,360 sf (0.05)
C = 0.73 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = (0.73)(4.65)(3.38) = 11.5$ cfs
$A_{imp} = 101{,}910$ sf; % Impervious = 69 %
Composite CN = 87 (DPM Plate 22.2 C-3)
DRO = 1.1 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 13{,}500$ cf

### Pond Volume

$V_{pond} = 1/2[(A_{22.5} + A_{37.5})(42.5 - 37.5)]$
$= 1/2[(5760 + 780)(5.0)]$
$= 16{,}350$ cf > Vrequired = 14,000 cf ($V_{100}$ for full development)

$V_{1'-0"\ freeboard} = 1/2[(A_{22.5} + A_{41.5})(42.5 - 41.5)]$
$= 1/2[(5760 + 4620)(1.0)]$
$= 2310$ cf

$Q_{release} = 1.2$ cfs (Estimated Pump Calculations - Taken from Previous Drainage Report Prepared by Tom Mann and Associates, F17/D8)

### Comparison

$\Delta Q_{100} = 11.5 - 10.5 = 1.0$ cfs (increase)
$\Delta V_{100} = 13{,}500 - 9{,}815 = 3{,}685$ 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 AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING 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.

## 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.

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

RECEIVED SEP 14 1988 HYDROLOGY SECTION

jma JEFF. MORTENSEN & ASSOCIATES, INC.
811 DALLAS, N.E. □ ALBUQUERQUE, NM 87110
□ ENGINEERS □ TELEPHONE (505) 265-5611 □

GRADING & DRAINAGE PLAN

# GRANADA SQUARE - PHASE III

| | |
|---|---|
| DESIGN BY | L.P.U. |
| DRAWN BY | R.A.R. |
| APPROVED BY | J.G.M. |

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

| | |
|---|---|
| JOB NO. | 61509 |
| DATE | 09/88 |
| SHEET | 1 OF 1 |

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# 55 DATE 3-19-02 OP KBP

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

NOTARY PUBLIC

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

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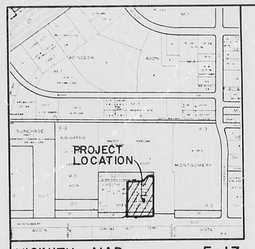


VICINITY MAP F-17

SCALE 1" = 800'

## PROJECT BENCHMARK:

STATION MARK IS AN A.C.S. BRASS CAP, STAMPED "M-15A" LOCATED IN THE MEDIAN IN MONTGOMERY BLVD N.E. APPROX. 135 ft WEST OF THE ℄ OF WASHINGTON ST. N.E.
ELEVATION = 5154.956 ft (MSLD)

## T.B.M.:

AN "X" SCRATCHED ON TOP OF EXISTING CURB LOCATED AT THE SOUTHEAST PROPERTY CORNER SHOWN HEREON
ELEVATION = 5150.65 ft (M.B.L.D.)

## LEGAL DESCRIPTION:

LOTS "F-1" THROUGH "F-6"
EXECUTIVE PLAZA ADDITION

## LEGEND

| | |
|---|---|
| + | EXISTING GRDT ELEVATION |
| + | PROPOSED GRDT ELEVATION |
| 5145 | EXISTING CONTOUR |
| 45 | PROPOSED CONTOUR |
| | PROPOSED ASPHALT |
| | PROPOSED CONCRETE |
| | EXISTING CONCRETE |
| TC | TOP OF CURB |
| TA | TOP OF ASPHALT |

DRAINAGE PLAN

The following items concerning the Granada Square "Building "J" (Formerly Executive Plaza) Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

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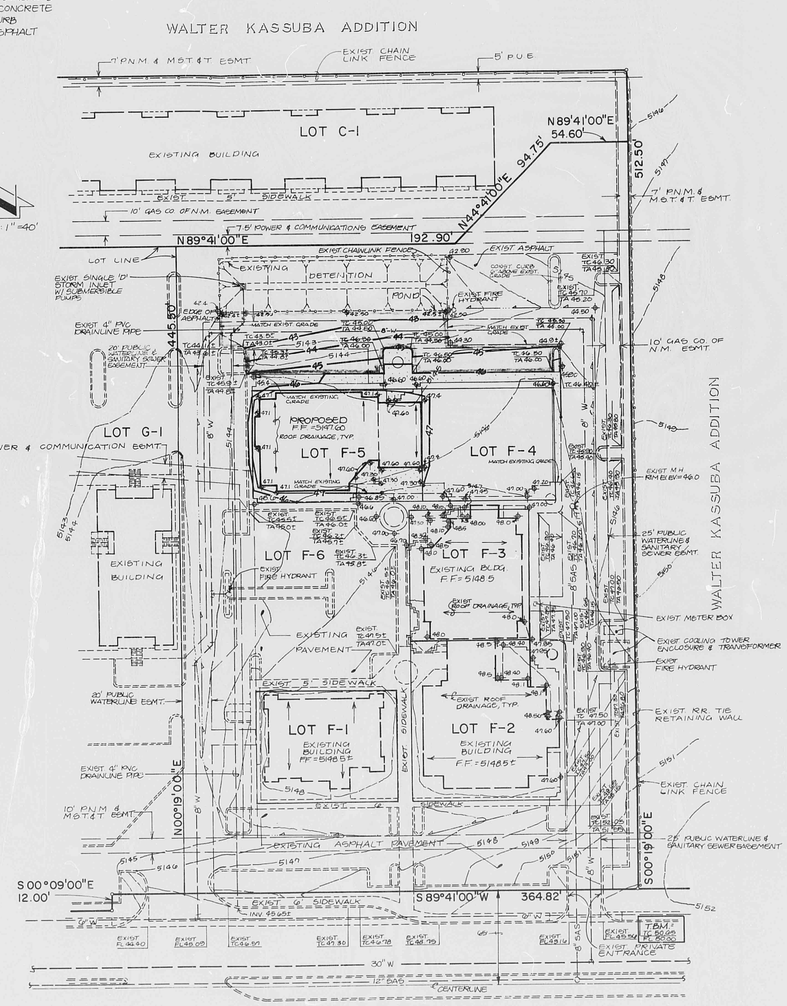


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PLAN SHOT TWICE
ONCE ON: LIGHT
ONCE ON DARK

CITY OF ALBUQUERQUE
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R# 35 DATE 3-19-02 OP RP

CITY OF ALBUQUERQUE

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DIRECTOR

NOTARY PUBLIC

OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
07/02/02

CITY OF ALBUQUERQUE
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER
(8547)

RECEIVED
SEP 14 1988
HYDROLOGY SECTION

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

GRADING & DRAINAGE PLAN
GRANADA SQUARE - PHASE III

| | |
|---|---|
| DESIGN BY | L.P.U. |
| DRAWN BY | R.A.R. |
| APPROVED BY | J.G.M. |

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

| | |
|---|---|
| JOB NO | 61509 |
| DATE | 09/88 |
| SHEET | 1 OF 1 |

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