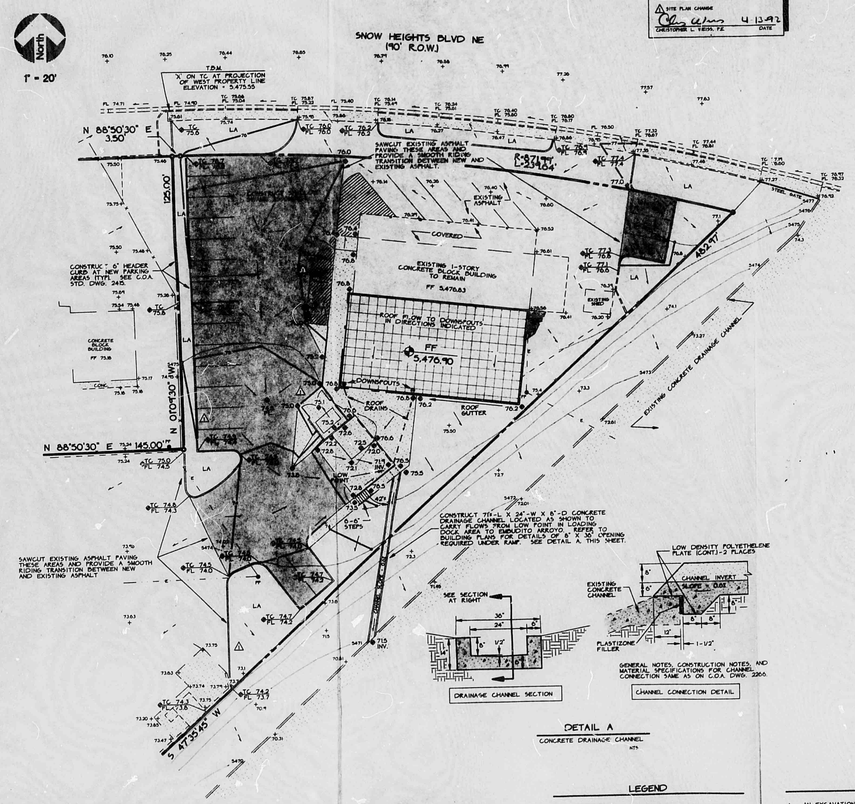
PUBLIC WORKS/HYDROLOGY

H21/D37



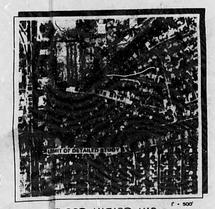
DETAIL A
CONCRETE DRAINAGE CHANNEL

REVISIONS	
1	SITE PLAN CHANGE
CHRISTOPHER L. HERN, P.E.	4-13-92 DATE

LEGEND

	SIDEWALK, CURB AND GUTTER (EXISTING, PROPOSED)
	PROPOSED ASPHALT
	BUILDING (EXISTING, PROPOSED)
	PROPERTY LINE
x 65.7	EXISTING SPOT ELEVATION
30	EXISTING CONTOUR
75.2	PROPOSED SPOT ELEVATION
30	PROPOSED CONTOUR
	SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
LA	LANDSCAPED AREA
TA	TOP OF ASPHALT
TC	TOP OF CURB
FL	FLOW LINE
FF	FINISHED FLOOR
R/W	RIGHT OF WAY
PL	PROPERTY LINE
PP	POWER POLE

VICINITY MAP H-21



FLOOD HAZARD MAP

SCOPE:

The proposed improvements include a 3,100 SF warehouse building attached to an existing retail building onsite, an expanded asphalt parking area and associated walks and landscaped areas. A loading dock will adjoin the new warehouse and provide a low point from which a drainage channel will carry runoff flows to the adjacent Embudito Arroyo.

The present site is a developed commercial site with a concrete block retail sales building, two sheds and an asphalt parking area north of the building. The Embudito Arroyo, a concrete-lined drainage channel, is adjacent to the east.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rates/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT:

All flows from the improved portion of the site will continue to follow their historical paths to the Embudito Arroyo which presently sheet-flows across the east property line to the channel. Developed flows will be directed across the asphalt in the west parking area to a low point at the proposed loading dock area to discharge through a private concrete drainage channel directly to the Embudito Arroyo. All roof flows from the proposed building will also drain to the private concrete drainage structure. A small portion of the site behind the proposed building will continue to sheet-flow across the east property line.

GENERAL NOTES:

LEGAL: Lot 51, Block 125 of the Snow Heights Addition, Albuquerque, New Mexico.

SURVEYOR: Forstbauer Surveying, Albuquerque, New Mexico.

B.M.: "7-H21", an 'x' chiseled on the west bonnet bolt of a fire hydrant located at the junction of Menaul Blvd. and Britt St. NE (northwest quadrant). Elevation = 5,513.594.

T.B.M.: Curb scratch on top of curb on Snow Heights Blvd. NE at the projection of the west property line. Elevation = 5,475.55.

SOILS: The SCS Soil Survey of Bernalillo County indicates that the soil is Embudo-Tijeras Complex (EmB), a gravely fine sandy loam classified in Hydrologic Soil Group 'B'.

FLOOD HAZARD: Per FEMA Floodway maps, the property does not lie within a flood zone.

OFF-SITE DRAINAGE: No offsite flows affect the site.

EROSION CONTROL: The contractor is responsible for containing onsite all sediment generated during construction by means of temporary earth berms or silt fences at low points along the east property line.

CALCULATIONS:

Calculations are based on the Development Process Manual, Sec. 22.2, Volume 2 (January, 1991).

AREA OF SITE:
Area of site being developed = 30,695 SF = 0.70 Ac.

SITE:

Onsite Land Condition:
A_A = 0 SF
A_B = 0 SF
A_C = 8,265 SF
A_D = 22,430 SF
TOTAL = 30,695 SF

Onsite Weighted Excess Precipitation (100-Year, 6-Hour Storm-Precipitation Zone 4):

$$\text{Weighted } E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

$$= \frac{(0.83)(0) + (0.91)(0) + (1.29)(8,265) + (2.67)(22,430)}{30,695}$$

$$= 2.27''$$

Onsite Volume of Runoff:
$V_{360} = (2.27)(30,695) = 5,806$ CF
12

Onsite Peak Discharge Rate:

$$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$$

$$= \frac{(1.82)(0) + (2.68)(0) + (3.48)(8,265) + (3.25)(22,430)}{43,560}$$

$$= 3.4 \text{ CFS}$$ (78% concentrated to low point; 22% sheet flow)

SUMMARY:

Volume from Site:
V = 5,806 CF

Peak Flow from Site:
Q = (3.4)(0.78) = 2.7 CFS to low point
Q = (3.4)(0.22) = 0.7 CFS sheet flow
Q = 3.4 CFS total to Embudito Arroyo

DRAINAGE CHANNEL CAPACITY:

From Manning's Equation for a 24"-wide x 8" deep channel, n = 0.015, s = 0.006 '/' and Q = 2.7 CFS, Depth = 5" < 8" provided. OK.

NOTICE TO CONTRACTOR

1. 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.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 260-1990, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITHIN A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXCAVATION PERMIT FOR SIDEWALK CULVERT/DRAIN.
8. PROOF OF ACCEPTANCE WILL BE REQUIRED PRIOR TO SIGN OFF FOR CERTIFICATE OF OCCUPANCY (C.O.).

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

DESIGN APPROVAL:	HYDROLOGY SECTION	DATE
INSPECTION APPROVAL:	CONSTRUCTION SECTION	DATE
ACCEPTANCE:	CONSTRUCTION SECTION/PERMITS	DATE

APR 13 1992

WEISS-HINES ENGINEERING INC.
100 ALVARADO NE
PHONE 266-7366
ALBUQUERQUE, NEW MEXICO 87108

CHRISTOPHER L. HERN
NEW MEXICO
8966
PROFESSIONAL ENGINEER

REVISIONS	
1	SITE PLAN CHANGE 4-13-92

DRAWN BY: KC
CHECKED: CLH
DATE: AUGUST 1991

FARMER'S MARKET
DRAINAGE / GRADING PLAN

WEISS-HINES ENGINEERING

SHEET 1 OF 1

R# 26 DATE 3-26-02 OP

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 11/15/02

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

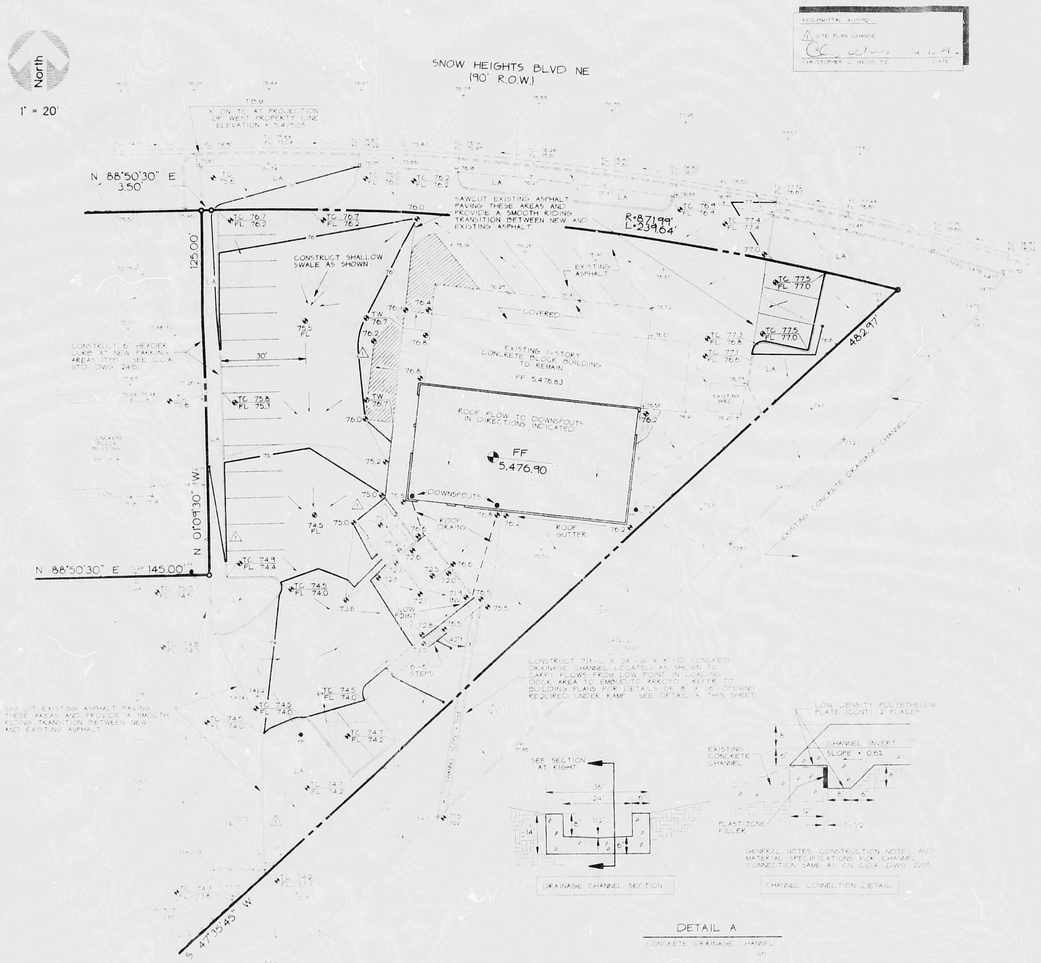
PLAN SPOT TWICE
ONCE ON LIGHT
ONCE ON DARK

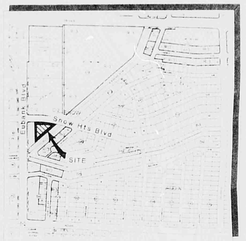
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

PLANS/PLATS ON FILE

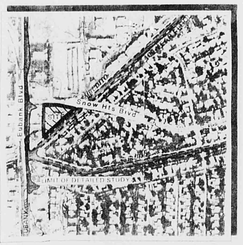
FILE DESC: H21/D37

PLANS/PLATS 2





VICINITY MAP H-21



FLOOD HAZARD MAP

LEGEND

SIDEWALK, CURB AND GUTTER EXISTING PROPOSED
PROPOSED ASPHALT
BUILDING EXISTING PROPOSED
PROPERTY LINE
EXISTING SPOT ELEVATION
EXISTING CONTOUR
PROPOSED SPOT ELEVATION
PROPOSED CONTOUR
DRAINAGE FLOW DIRECTION EXISTING PROPOSED
LA LANDSCAPED AREA
TA TOP OF ACTIVITY
TC TOP OF CURB
FL FLOW LINE
FS FINISHED FLOOR
R/W RIGHT OF WAY
PL PROPERTY LINE
PP POWER POLE

SCOPE:

The proposed improvements include a 3,100 SF warehouse building attached to an existing retail building onsite, an expanded asphalt parking area and associated walks and landscaped areas. A loading dock will adjoin the new warehouse and provide a low point from which a drainage channel will carry runoff flows to the adjacent Embudito Arroyo.

The present site is a developed commercial site with a concrete block retail sales building, two sheds and an asphalt parking area north of the building. The Embudito Arroyo, a concrete lined drainage channel, is adjacent to the east.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT:

All flows from the improved portion of the site will continue to follow their historical paths to the Embudito Arroyo which presently sheet flows across the east property line to the channel. Developed flows will be directed across the asphalt in the west parking area to a low point at the proposed loading dock area to discharge through a private concrete drainage channel directly to the Embudito Arroyo. All roof flows from the proposed building will also drain to the private concrete drainage structure. A small portion of the site behind the proposed building will continue to sheet flow across the east property line.

GENERAL NOTES:

LEGAL: Lot 51, Block 125 of the Snow Heights Addition, Albuquerque, New Mexico.

SURVEYOR: Forstbauer Surveying, Albuquerque, New Mexico.

B.M.: "7 H21", an "x" chiseled on the west bonnet bolt of a fire hydrant located at the junction of Menaul Blvd. and Britt St. NE (northwest quadrant). Elevation = 5,513.694

T.B.M.: Curb scratch on top of curb on Snow Heights Blvd. NE at the projection of the west property line. Elevation 5,475.55.

SOILS: The SCS Soil Survey of Bernalillo County indicates that the soil is Embudo-Tijeras Complex (EmB), a gravelly fine sandy loam classified in Hydrologic Soil Group "B".

FLOOD HAZARD: Per FEMA Floodway maps, the property does not lie within a flood zone.

OFF-SITE DRAINAGE: No offsite flows affect the site.

EROSION CONTROL: The contractor is responsible for containing onsite all sediment generated during construction by means of temporary earth berms or silt fences at low points along the east property line.

CALCULATIONS:

Calculations are based on the Development Process Manual, Sec. 22.2, Volume 2 (January, 1991).

AREA OF SITE:

Area of site being developed = 30,695 SF = 0.70 Ac.

SITE:

Onsite Land Condition:

A_A =	0 SF
A_B =	0 SF
A_C =	8,265 SF
A_D =	22,430 SF
TOTAL =	30,695 SF

Onsite Weighted Excess Precipitation (100-Year, 6-Hour Storm Precipitation Zone 1):

$$E_{Weighted} = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

$$= \frac{(0.63)(0) + (0.91)(0) + (1.29)(8,265) + (2.03)(22,430)}{30,695}$$

$$= 2.27"$$

Onsite Volume of Runoff:

$$V_{360} = \frac{(2.27)(30,695)}{12} = 5,806 \text{ CF}$$

Onsite Peak Discharge Rate:

$$Q_P = Q_A A_A + Q_B A_B + Q_C A_C + Q_D A_D$$

$$= \frac{(1.82)(0) + (2.59)(0) + (3.48)(8,265) + (5.23)(22,430)}{43,560}$$

$$= 3.4 \text{ CFS} \quad (78\% \text{ concentrated to low point; } 22\% \text{ sheet flow})$$

SUMMARY:

Volume from Site:
V = 5,806 CFS

Peak Flow from Site:
Q = (3.4)(.78) = 2.7 CFS to low point
Q = (3.4)(.22) = 0.7 CFS sheet flow
Q = 3.4 CFS total to Embudito Arroyo

DRAINAGE CHANNEL CAPACITY:

From Manning's Equation for a 24" wide x 8" deep channel: n = 0.015, s = 0.006 ' and Q = 2.7 CFS
Depth = 5" < 8" provided. OK

NOTICE TO CONTRACTOR

1. 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.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALBUQUERQUE TRENCH SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UNDERGROUND UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITHIN A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXCAVATION PERMIT FOR SIDEWALK CULVERT/CHAIN.
8. PROOF OF ACCEPTANCE WILL BE REQUIRED PRIOR TO SIGN OFF FOR CERTIFICATE OF OCCUPANCY (C.O.)

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

DESIGN APPROVAL: HYDROLOGY SECTION DATE
INSPECTION APPROVAL: CONSTRUCTION SECTION DATE
ACCEPTANCE: HYDROLOGY SECTION DATE

REVISION	BY	DATE

WEISS-HINES ENGINEERING INC.

FARMER'S MARKET
DRAINAGE / GRADING PLAN

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# 26 DATE 3-26-02 OP

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 11/15/02

NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
07/08/02

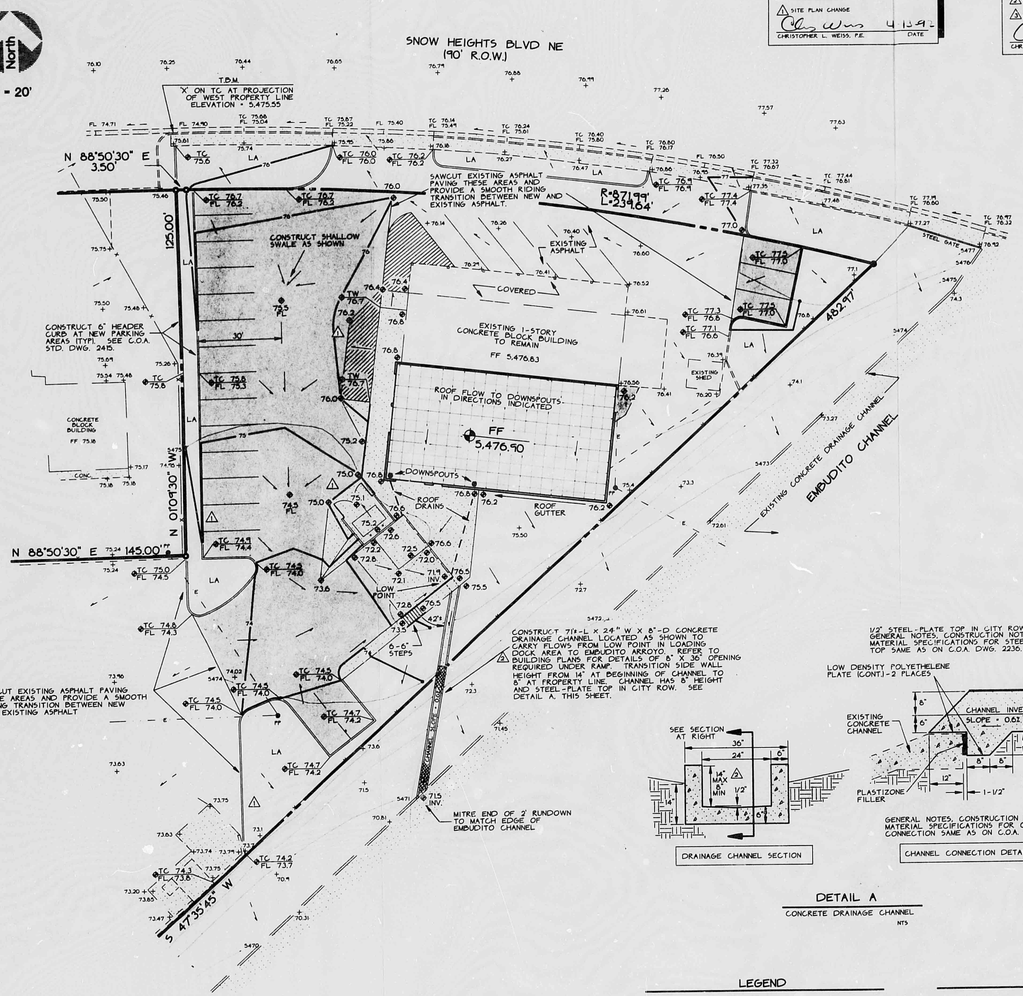
D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D

RESUBMITTAL 4/13/92
1 SITE PLAN CHANGE
CHRISTOPHER L. WEISS, P.E. — DATE 4-13-92

RESUBMITTAL 5/13/92
2 CHANNEL MODIFICATIONS
3 ADDED CALCULATION
CHRISTOPHER L. WEISS, P.E. — DATE 5-12-92



DETAIL A
CONCRETE DRAINAGE CHANNEL
NTS

SCOPE:

The proposed Improvements include a 3,100 SF warehouse building attached to an existing retail building onsite, an expanded asphalt parking area and associated walks and landscaped areas. A loading dock will adjoin the new warehouse and provide a low point from which a drainage channel will carry runoff flows to the adjacent Embudito Arroyo.

The present site is a developed commercial site with a concrete block retail sales building, two sheds and an asphalt parking area north of the building. The Embudito Arroyo, a concrete-lined drainage channel, is adjacent to the east.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT:

All flows from the improved portion of the site will continue to follow their historical paths to the Embudito Arroyo which presently sheet flows across the east property line to the channel. Developed flows will be directed across the asphalt in the west parking area to a low point at the proposed loading dock area to discharge through a private concrete drainage channel directly to the Embudito Arroyo. All roof flows from the proposed building will also drain to the private concrete drainage structure. A small portion of the site behind the proposed building will continue to sheet-flow across the east property line.

GENERAL NOTES:

LEGAL: Lot 51, Block 125 of the Snow Heights Addition, Albuquerque, New Mexico.

SURVEYOR: Forstbauer Surveying, Albuquerque, New Mexico.

B.M.: "7-H21", an 'x' chiseled on the west bonnet bolt of a fire hydrant located at the junction of Menaul Blvd. and Britt St. NE (northwest quadrant). Elevation = 5,513.694.

T.B.M.: Curb scratch on top of curb on Snow Heights Blvd. NE at the projection of the west property line. Elevation = 5,475.55.

SOILS: The SCS Soil Survey of Bernalillo County indicates that the soil is Embudo-Tijeras Complex (EmB), a gravely fine sandy loam classified in Hydrologic Soil Group 'B'.

FLOOD HAZARD: Per FEMA Floodway maps the property does not lie within a flood zone.

OFF-SITE DRAINAGE: No offsite flows affect the site.

EROSION CONTROL: The contractor is responsible for containing onsite all sediment generated during construction by means of temporary earth berms or silt fences at low points along the east property line.

CALCULATIONS:

Calculations are based on the Development Process Manual, Sec. 22.2, Volume 2 (January, 1991).

AREA OF SITE:
Area of site being developed = 30,695 SF = 0.70 Ac.

SITE:

Onsite Land Condition:

A_A =	0 SF
A_B =	0 SF
A_C =	8,265 SF
A_D =	22,430 SF
TOTAL =	30,695 SF

Onsite Weighted Excess Precipitation (100-Year, 6-Hour Storm-Precipitation Zone 4):

$$\text{Weighted } E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

$$= \frac{(0.63)(0) + (0.91)(0) + (1.29)(8,265) + (2.63)(22,430)}{30,695}$$

$$= 2.27'$$

Onsite Volume of Runoff:

$$V_{360} = \frac{(2.27)(30,695)}{12} = 5,806 \text{ CF}$$

Onsite Peak Discharge Rate:

$$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$$

$$= \frac{(1.82)(0) + (2.59)(0) + (3.48)(8,265) + (5.23)(22,430)}{43,560}$$

= 3.4 CFS (78% concentrated to low point; 22% sheet flow)

SUMMARY:

Volume from Site:
V = 5,806 CFS

Peak Flow from Site:
Q = (3.4)(0.78) = 2.7 CFS to low point
Q = (3.4)(0.22) = 0.7 CFS sheet flow
Q = 3.4 CFS total to Embudito Arroyo

DRAINAGE CHANNEL FLOW CAPACITY:

From Manning's Equation for a 24"-wide x 8" deep channel, n = 0.015, s = 0.006 '/' and Q = 2.7 CFS,
Depth = 5" < 8" provided. OK.

3 DRAINAGE CHANNEL ENTRANCE CAPACITY:

Using the broad-crested wier formula, $Q = CLH^{3/2}$:
With L = 2', H = 7.2" and C = 2.61, Q = 2.4 CFS
With L = 2', H = 9.6" and C = 2.60, Q = 3.7 CFS
Flow required = 2.7 CFS. Therefore, the 8" opening provided allows unrestricted flow of runoff with no water backed up into the loading dock area.

LEGEND

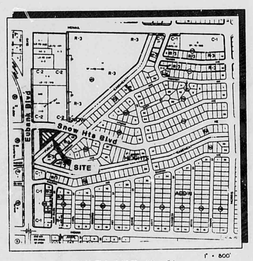
	SIDEWALK, CURB AND GUTTER (EXISTING, PROPOSED)
	PROPOSED ASPHALT
	BUILDING (EXISTING, PROPOSED)
	PROPERTY LINE
x 65.7	EXISTING SPOT ELEVATION
- 70	EXISTING CONTOUR
75.2	PROPOSED SPOT ELEVATION
- 70	PROPOSED CONTOUR
	SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
LA	LANDSCAPED AREA
TA	TOP OF ASPHALT
TC	TOP OF CURB
FL	FLOW LINE
FF	FINISHED FLOOR
R/W	RIGHT OF WAY
PL	PROPERTY LINE
PP	POWER POLE

NOTICE TO CONTRACTOR

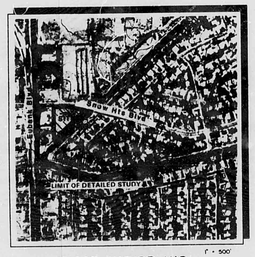
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 260-1990, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITHIN A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXCAVATION PERMIT FOR SIDEWALK CULVERT/DRAIN.
8. PROOF OF ACCEPTANCE WILL BE REQUIRED PRIOR TO SIGN OFF FOR CERTIFICATE OF OCCUPANCY (C.O.).

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

DESIGN APPROVAL: HYDROLOGY SECTION — DATE
INSPECTION APPROVAL: CONSTRUCTION SECTION — DATE
ACCEPTANCE: CONSTRUCTION SECTION/PERMITS — DATE
ACCEPTANCE: Marvin Jungman, DIRECTOR MAINTENANCE — DATE 5-13-92



VICINITY MAP H-21



FLOOD HAZARD MAP

D:\PA\ 04/10/92 12:04

WEISS-HINES ENGINEERING INC.
100 ALVARADO NE
PHONE (505) 266-3444
ALBUQUERQUE, NEW MEXICO 87110

REVISIONS
1 SITE PLAN CHANGE 5/14/92
DESIGNED SC
DRAWN SC
CHECKED CW

CHRISTOPHER L. WEISS — NEW MEXICO — 6653 — PROFESSIONAL ENGINEER

FARMER'S MARKET
DRAINAGE / GRADING PLAN

WEISS-HINES ENGINEERING

RECEIVED MAY 13 1992 HYDROLOGY DIVISION

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# 26 DATE 3-26-92 OP

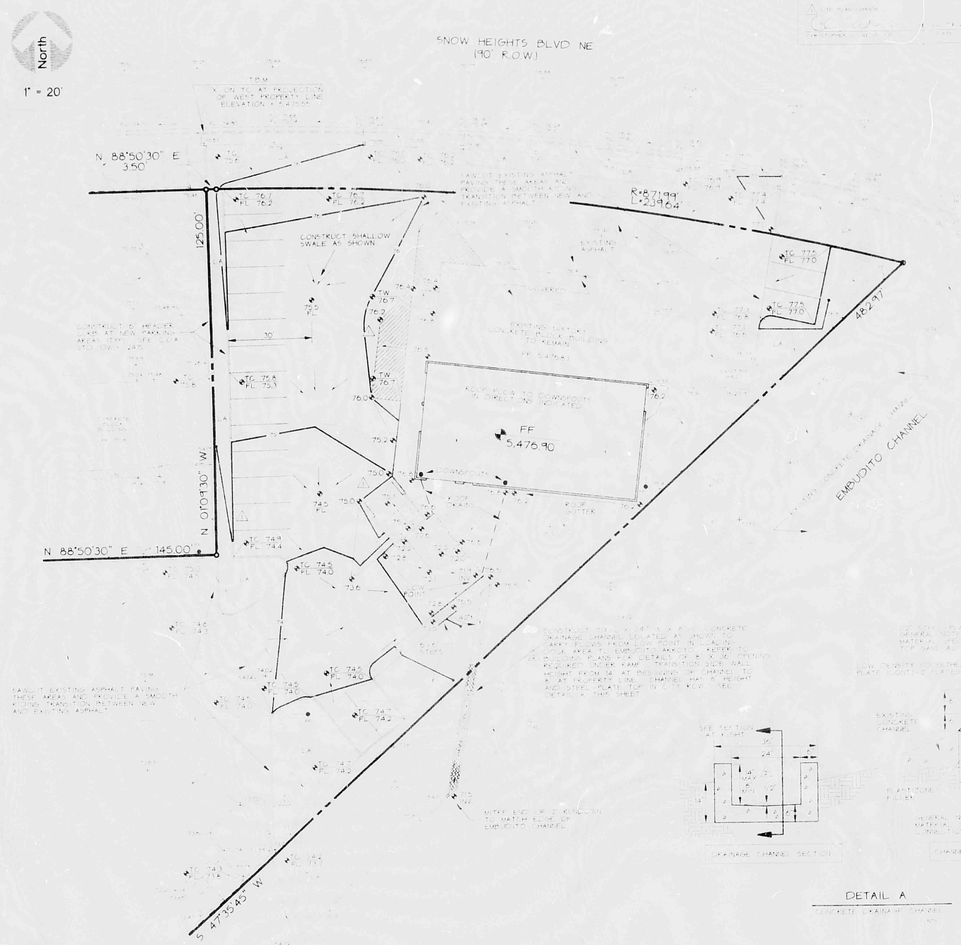
CITY OF ALBUQUERQUE

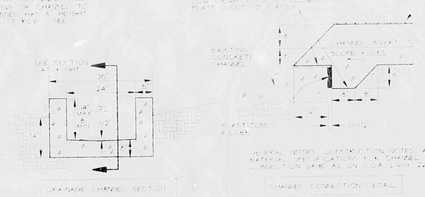
This microimage is certified to be a complete and accurate copy of the original as it appears in the files of the Public Works Department ... was created in the normal course of business.

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

DIRECTOR 11/5/92

NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 7/10/92





DETAIL A

SCOPE:

The proposed improvements include a 3,700 ft² warehouse building attached to an existing retail building on the site, an expanded asphalt parking area and associated walks and landscaped areas. A loading dock will extend from the new warehouse and provide a low point from which a drainage channel will carry runoff, then to the adjacent Embudito Arroyo.

The present site is a developed commercial site with a concrete block retail sales building, two sheds and an asphalt parking area north of the building. The Embudito Arroyo, a concrete lined drainage channel, is adjacent to the site.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rate/volume of runoff, runoff percent or amount those improvements add, methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT:

All flows from the improved portion of the site will continue to follow their historical paths to the Embudito Arroyo, which permanently sheet flows across the east property line to the channel. Developed flows will be directed across the asphalt in the west parking area to a low point at the proposed loading dock area to discharge through a matte concrete drainage channel directly to the Embudito Arroyo. All roof flows from the proposed building will also drain to the private concrete drainage structure. A small portion of the site behind the proposed building will continue to sheet flow across the east property line.

GENERAL NOTES:

LEGAL: Lot 51, Block 125 of the Snow Heights Addition, Albuquerque, New Mexico.

SURVEYOR: Fourmaster Surveying, Albuquerque, New Mexico.

B.M.: 7.1937' as it crosses on the west bound bolt of a fire hydrant located at the junction of Menaul Blvd. and 61st St. NE. Northwest quadrant. Elevation = 5,515.0(a).

T.B.M.: Cut scratch on top of curbing, Snow Heights Blvd. NE at the projection of the west property line. Elevation = 5,476.56

SOILS: The SCS Soil Survey of Bernalillo County indicates that the soil is Embudito Tunnel Complex (Ets), a gravelly, fine sandy loam classified as Hydrologic Soil Group B.

FLOOD HAZARD: The FEMA Flood Map shows this property does not lie within a flood zone.

OFF SITE DRAINAGE: No offsite flows affect the site.

EROSION CONTROL: The contractor is responsible for containing onsite all sediment generated during construction by means of temporary earth berms or silt fences at low points along the east property line.

CALCULATIONS:

Calculations are based on the Development Process Manual, Sec. 22.2, Volume 2, Subsection, (1991).

AREA OF SITE:

Area of site being developed = 30,696 SF = 0.70 A

SITE:

Onsite Land Conditions:

A1 = 0 SF
A2 = 0 SF
A3 = 8,472 SF
A4 = 22,224 SF
TOTAL = 30,696 SF

Onsite Weighted Excess Precipitation (Table 6 Bear Storm Precipitation Zone 4):

Weighted E = (EpA1 + EpA2 + EpA3 + EpA4) / At
= (0.73A1 + 0.97A2 + 1.95A3 + 2.24A4) / At
= (0 + 0 + 16,520 + 49,776) / 30,696
= 2.21"

Onsite Volume of Runoff:

Vol = (E x At) / 12
= (2.21 x 30,696) / 12
= 5,906 CF

Onsite Peak Discharge Rate:

Qp = QpA1 + QpA2 + QpA3 + QpA4
= (0 x 0.10) + (0 x 0.90) + (3.48 x 8.20) + (3.23 x 22.24)
= 0 + 0 + 28.5 + 71.8
= 100.3 CFS

SUMMARY:

Volume from Site:

V = 5,906 CFS

Peak Flow from Site:

Q = (3.48 x 78) = 2.7 CFS to low point
Q = (3.23 x 22) = 0.7 CFS sheet flow
Q = 3.4 CFS total on Embudito Arroyo

DRAINAGE CHANNEL FLOW CAPACITY:

From Manning's Equation for a 24" wide x 16" deep channel, n = 0.015, s = 0.006 ft/ft and Q = 2.7 CFS:
Depth = 5" < 16" provided. OK

DRAINAGE CHANNEL ENTRANCE CAPACITY:

Using the broad crested weir formula Q = CLH^3/2

With L = 2 ft, H = 0.27' and C = 2.61, Q = 2.4 CFS
With L = 2 ft, H = 0.40' and C = 2.61, Q = 3.7 CFS
Flow required = 2.7 CFS. Therefore, the 16" opening provided allows unrestricted flow and will result with the water backed up into the loading dock area.

LEGEND

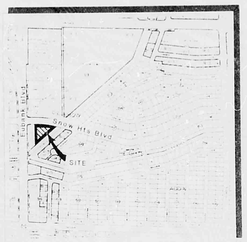
	SIDEWALK, CURB AND GUTTER (EXISTING PROPOSED)
	PROPOSED ASPHALT
	BUILDING (EXISTING PROPOSED)
	PROPERTY LINE
5,476	EXISTING SPOT ELEVATION
5,475	EXISTING CONTOUR
5,476	PROPOSED SPOT ELEVATION
5,475	PROPOSED CONTOUR
	SURFACE FLOW DIRECTION (EXISTING PROPOSED)
LA	LANDSCAPED AREA
TA	TOP OF ASPHALT
TC	TOP OF CURB
FL	FLOW LINE
FF	FINISHED FLOOR
RW	RIGHT OF WAY
PL	PROPERTY LINE
PP	POWER POLE

NOTICE TO CONTRACTOR

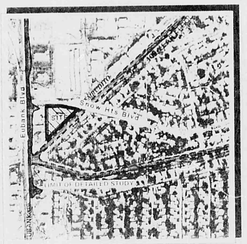
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME APPLICATION FOR THIS PERMIT.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED, OR PROVIDED, THEREON SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (ONE-CALL) FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED WITHOUT A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXCAVATION PERMIT FOR SIDEWALK, CULVERT/DRAIN.
8. PROOF OF ACCEPTANCE WILL BE REQUIRED PRIOR TO SIGN OFF FOR CERTIFICATE OF OCCUPANCY (C.O.).

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

DESIGN APPROVAL	HYDROLOGY SECTION	DATE
INSPECTION APPROVAL	CONSTRUCTION SECTION	DATE
ACCEPTANCE	CONSTRUCTION SECTION/PERMITS	DATE
COVERAGE		5-13-92



VICINITY MAP H-21



FLOOD HAZARD MAP

WEISS-HINES ENGINEERING INC.

REVISIONS

FARMER'S MARKET
DRAINAGE / GRADING PLAN

RECEIVED
MAY 13 1992
PROJECT DWG

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# 2 DATE 3-26-92 DP

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 11-5-92

NOTARY PUBLIC

8/08/92 final

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D