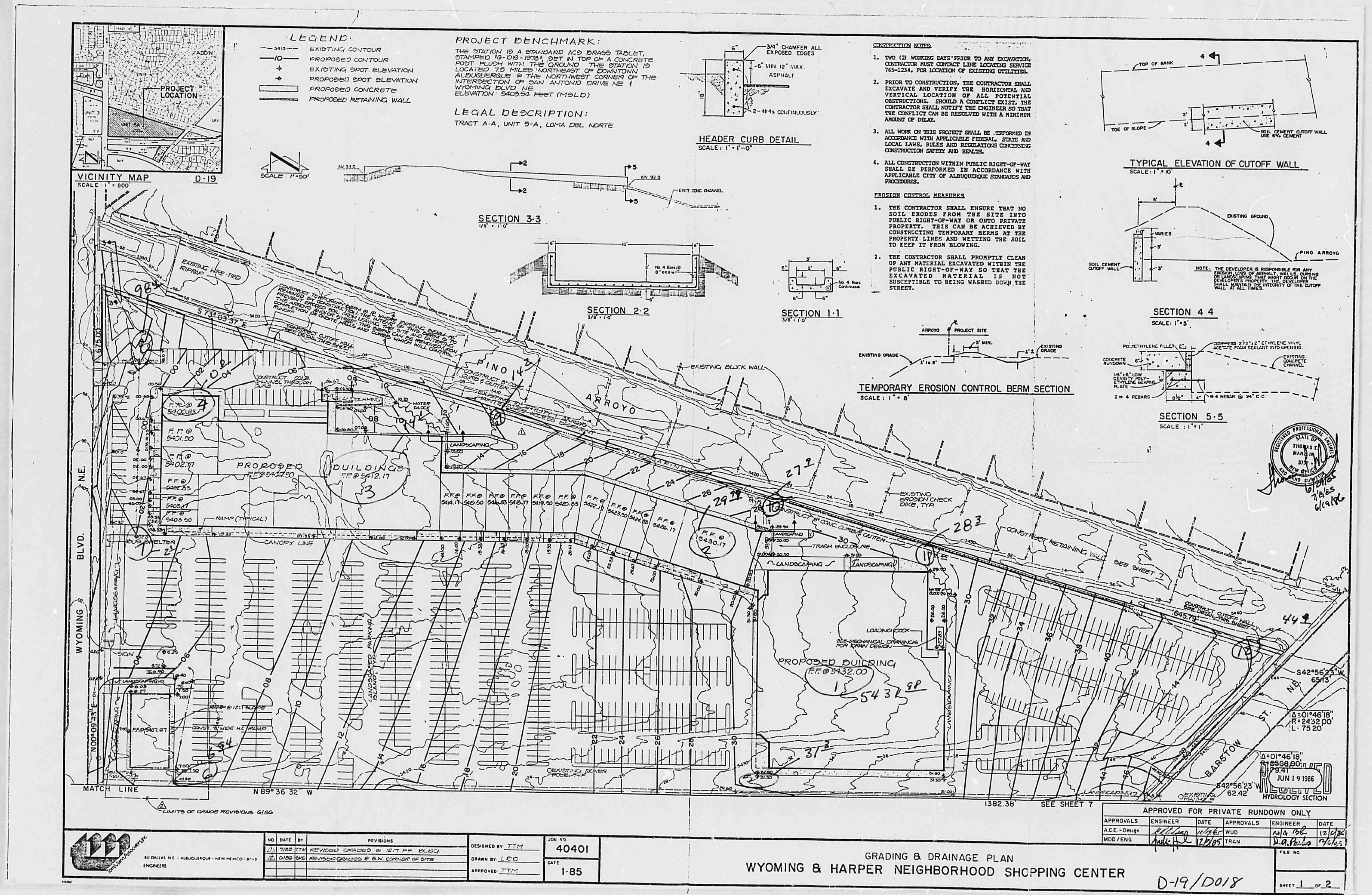
Hydrology File No. D-19/D018 1 of 1

C C

B B

A A



R# 21 DATE 6-24-93 OP E.J.P.

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 - HYDROLOGY DIVISION and was filmed in the normal course of business. The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).

Karen Acree
CITY CLERK RECORDER

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

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

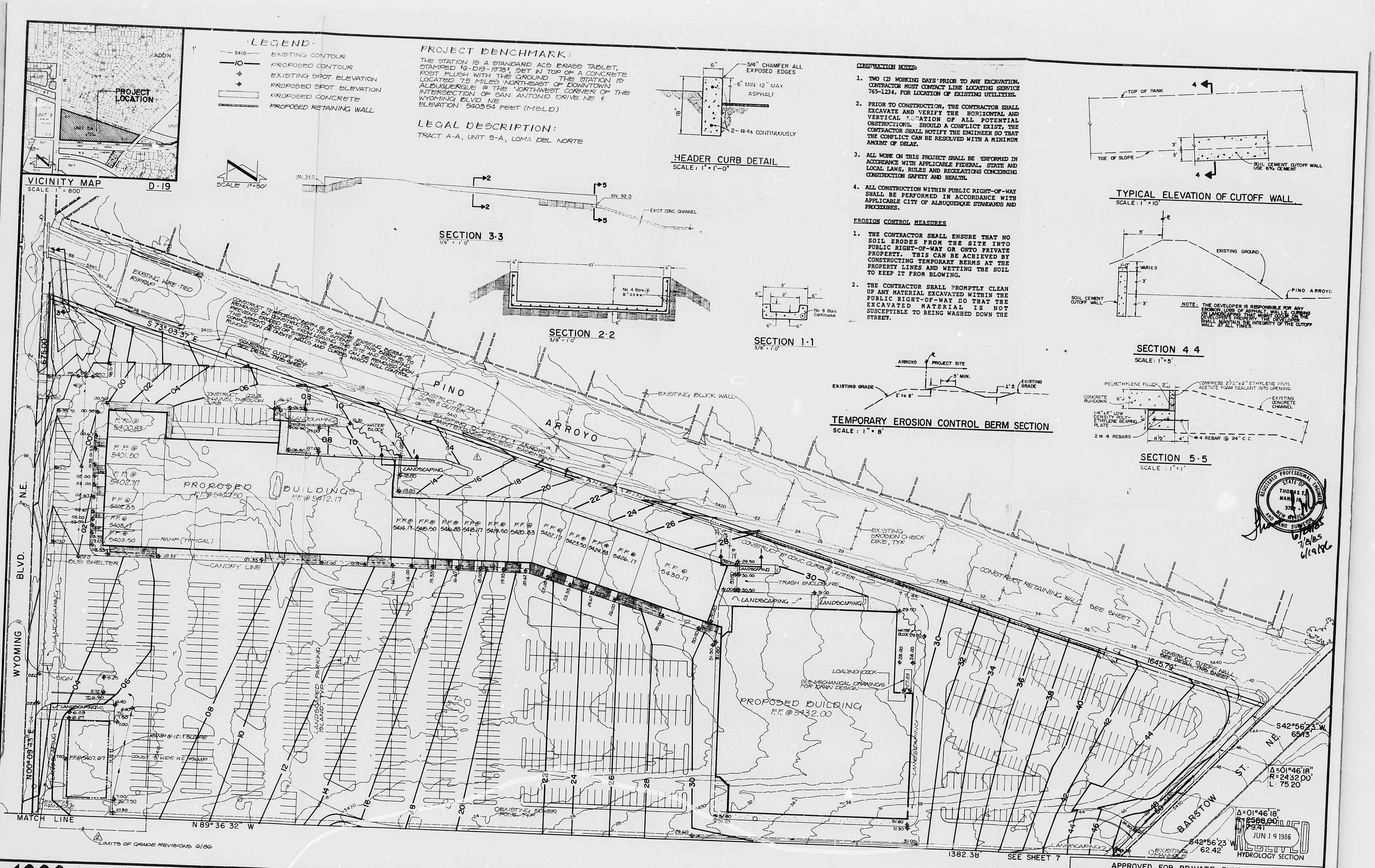
PLANS/PLATS ON FILE

FILE DESC: D-19 / D018

# PLANS/PLATS 3

C 20 B 16 A 12

CITY OF ALBUQUERQUE C



## ·LEGEND·

| | |
|---|---|
| —5410— | EXISTING CONTOUR |
| —10— | PROPOSED CONTOUR |
| ⌖ | EXISTING SPOT ELEVATION |
| ◆ | PROPOSED SPOT ELEVATION |
| ▭ | PROPOSED CONCRETE |
| ▬ | PROPOSED RETAINING WALL |

## PROJECT BENCHMARK:

THE STATION IS A STANDARD ACS BRASS TABLET, STAMPED "6-D19-1978", SET IN TOP OF A CONCRETE POST FLUSH WITH THE GROUND. THE STATION IS LOCATED 7.5 MILES NORTHEAST OF DOWNTOWN ALBUQUERQUE @ THE NORTHWEST CORNER OF THE INTERSECTION OF SAN ANTONIO DRIVE NE & WYOMING BLVD. NE
ELEVATION: 5403.54 FEET (M.S.L.D.)

## LEGAL DESCRIPTION:

TRACT A-A, UNIT 5-A, LOMA DEL NORTE

**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.

**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.

NOTE: THE DEVELOPER IS RESPONSIBLE FOR ANY EROSION LOSS OF ASPHALT, WALLS, CURBING OR LANDSCAPING THAT MIGHT OCCUR ON THE DEVELOPER'S PROPERTY. THE DEVELOPER SHALL MAINTAIN THE INTEGRITY OF THE CUTOFF WALL AT ALL TIMES.

6/19/85
7/8/85
6/19/86

RECEIVED
JUN 19 1986
HYDROLOGY SECTION

APPROVED FOR PRIVATE RUNDOWN ONLY

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| A.C.E.-Design | | 12/19/85 | WUD | N/A | 12/2/85 |
| MDD/ENG | | 12/2/85 | TRAN | D.A. Parker | 12/6/85 |

811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 1 | 7/85 | TTM | REVISED GRADES @ 12.17 FF BLDG. |
| 2 | 6/86 | BKS | REVISED GRADES @ S.W. CORNER OF SITE |

DESIGNED BY: TTM
DRAWN BY: LDD
APPROVED: TTM

JOB NO. 40401
DATE 1-85

GRADING & DRAINAGE PLAN
WYOMING & HARPER NEIGHBORHOOD SHOPPING CENTER

FILE NO.
SHEET 1 OF 2

D19/D018

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE C D

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

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

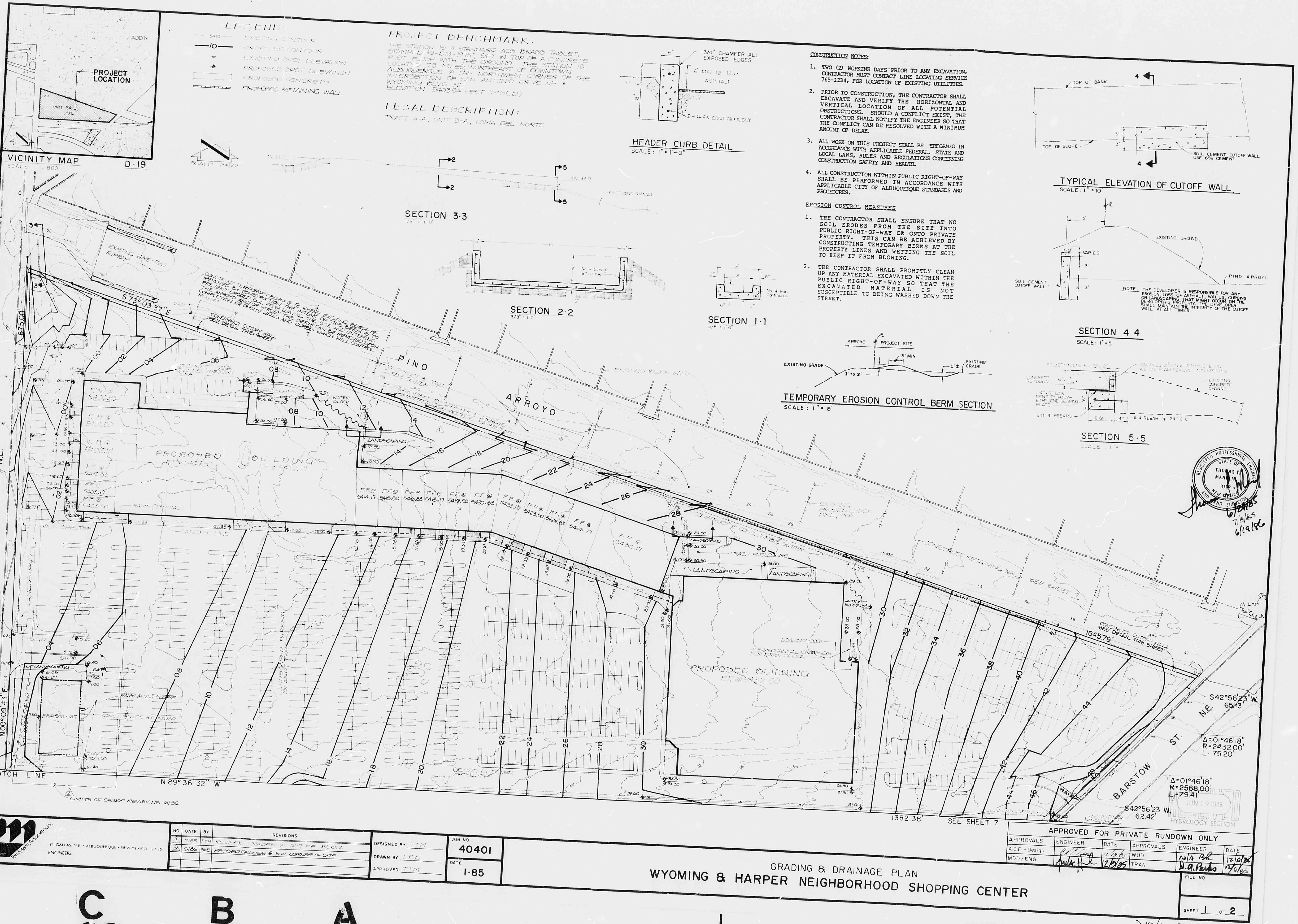
R# 21 DATE 6-24-93 OP E.J.P.

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 - HYDROLOGY DIVISION and was filmed in the normal course of business.
The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).

Karen Reeves
CITY CLERK RECORDER

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



**LEGEND**

| | |
|---|---|
| — 5410 — | EXISTING CONTOUR |
| —10— | PROPOSED CONTOUR |
| ⊕ | EXISTING SPOT ELEVATION |
| ● | PROPOSED SPOT ELEVATION |
| ▭ | PROPOSED CONCRETE |
| ▭ | PROPOSED RETAINING WALL |

**PROJECT BENCHMARK:**

THE STATION IS A STANDARD ACS BRASS TABLET, STAMPED "6-D19-1978", SET IN TOP OF A CONCRETE POST FLUSH WITH THE GROUND. THE STATION IS LOCATED 7.5 MILES NORTHEAST OF DOWNTOWN ALBUQUERQUE @ THE NORTHWEST CORNER OF THE INTERSECTION OF SAN ANTONIO DRIVE NE & WYOMING BLVD NE
ELEVATION 5403.54 FEET (MSLD)

**LEGAL DESCRIPTION:**

TRACT A-A, UNIT 5-A, LOMA DEL NORTE

**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.

**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.

6/9/85
7/8/85
6/19/86

RECEIVED
JUN 19 1986
HYDROLOGY SECTION

Tom Mann Associates, Inc.
811 DALLAS N.E. • ALBUQUERQUE • NEW MEXICO • 87110
ENGINEERS

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 1 | 7/85 | TTM | REVISED GRADES @ 1217 FF BLDG |
| 2 | 6/86 | SKS | REVISED GRADES @ S.W. CORNER OF SITE |

DESIGNED BY TTM
DRAWN BY LED
APPROVED TTM

JOB NO. 40401
DATE 1-85

APPROVED FOR PRIVATE RUNDOWN ONLY

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| A.C.E.-Design | | 12/9/85 | WUD | N/A | 12/2/85 |
| MDD/ENG | | 12/5/85 | TRAN | D.A. Parks | 12/6/85 |

GRADING & DRAINAGE PLAN
WYOMING & HARPER NEIGHBORHOOD SHOPPING CENTER

FILE NO.
SHEET 1 OF 2

D19/D018

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE C D

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

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

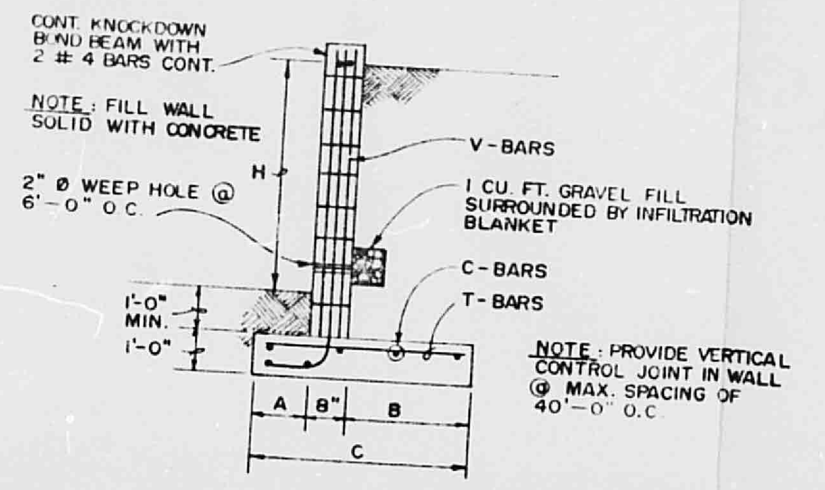
R# 21 DATE 6-24-93 OP EJP

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 - HYDROLOGY DIVISION and was filmed in the normal course of business.
The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).

Karen Reeves
CITY CLERK RECORDER

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


CONT. KNOCKDOWN BOND BEAM WITH 2 # 4 BARS CONT.
NOTE: FILL WALL SOLID WITH CONCRETE
2" Ø WEEP HOLE @ 6'-0" O.C.
H
V-BARS
1 CU. FT. GRAVEL FILL SURROUNDED BY INFILTRATION BLANKET
C-BARS
T-BARS
1'-0" MIN.
1'-0"
A
8"
B
C
NOTE: PROVIDE VERTICAL CONTROL JOINT IN WALL @ MAX. SPACING OF 40'-0" O.C.

| WALL | H DIMENSION | A | B | C | V-BAR | C-BARS | T-BARS |
|---|---|---|---|---|---|---|---|
| A | 5'-0" | 10" | 2'-2" | 3'-8" | #4 AT 16" O.C. | 4-#4 CONT. | #4 AT 28" O.C. |
| B | 4'-0" | 8" | 1'-8" | 3'-0" | #4 AT 24" O.C. | 4-#4 CONT. | #4 AT 32" O.C. |
| C | 3'-0" | 5" | 1'-3" | 2'-4" | #4 AT 32" O.C. | 3-#4 CONT. | #4 AT 40" O.C. |
| D | 0 TO 2'-0" | 4" | 4" | 1'-4" | #4 AT 48" O.C. | 2-#4 CONT. | #4 AT 48" O.C. |

## RETAINING WALL DETAIL

NO SCALE

## VEGETATION FOR EROSION CONTROL

1. SEED RATE:

| Species | Pure Live Seed (lbs/acre)* |
|---|---|
| Annual Rye Grass | 8.0 |
| Giant Dropseed | 2.0 |
| Sand Dropseed | 1.0 |
| Indian Ricegrass | 4.0 |
| Sideoats Grama | 6.0 |
| Total: | 21.0 |

*Rates apply to drilled seed. Double rates listed if seed is broadcast.

2. SEED APPLICATION:

a. Flat areas - cultivate area to produce an acceptable, friable seed bed, then drill seed to a depth of 1/4 to 1/2 inches.

b. Slopes 3:1 or greater - hand broadcast and cultivate into top 1/4 to 1/2 inch of soil.

3. FERTILIZER

16-20-0 @ 200 lbs. per acre applied simultaneously with seed.

4. MULCH

5,000 lbs. hay mulch per acre. Hay mulch shall be crimped into the soil so as not to exceed 2 inches in depth.

5. WATERING SCHEDULE

CONTRACTOR shall maintain a wet seed bed for a period of at least 6 weeks following seeding.

## DRAINAGE PLAN

The following items concerning the Harper and Wyoming Neighborhood Commercial Center Drainage Plan are contained hereon:

1. Vicinity Map  2. Grading Plan  3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located between Wyoming Boulevard N.E. and Barstow N.E., and north of Harper N.E. and the PNM right-of-way. At present, the site is undeveloped.

As shown by Plate D-19 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. Further study reveals that the site is bordered on the north by the Pino Arroyo. The project site is higher than the arroyo, and, therefore, flood waters are contained within the arroyo right-of-way. Barstow N.E. lies to the east of the property. The project site is lower than Barstow N.E., however, there is very little flow in Barstow adjacent to the site. The PNM easement lies south of the site. The easement is higher than the project site. The easement essentially traverses a ridge line, therefore, flows from the south are at a minimum. Wyoming Boulevard N.E. lies to the west of the site. The project site is higher than Wyoming Boulevard N.E. Offsite flows to the site are minimal. Any offsite flows entering the site will be routed through the site to the Pino Arroyo.

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 elevations, 3) the limit and character of existing improvements, and 4) the limit and character of proposed improvements. As shown by this plan, the proposed improvements consist of the construction of buildings and asphalt paving. A retaining wall will be required along the north boundary at the east end of the project. The site will be graded so that all flows converge to the northwest corner of the site. A ponding area will be constructed to detain nuisance waters. All flows will be routed through the pond and will then exit into the Pino Arroyo.

Both sides of the arroyo will be stabalized with soil cement. The depth of flow is approximately 1.5'. A freeboard of 1.5' feet was added to the depth to give a treatment depth of 3' above and below flow line. The soil cement will contain 6% cement utilizing native soils.

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 for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will result in an increase in runoff from the site. This pattern of runoff is consistent with the conceptual drainage plan.

## CALCULATIONS

### Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 21:
EtC - Embudo Tijeras
Hydrologic Soil Group B

### Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6(6.84)T_c^{-0.51} = 5.28$ in/hr
$P_6 = 2.5$ in (DPM Plate 22.2 D-1)
$T_c = 10$ min (minimum)
$A$ = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.5$ in (DPM Plate 22.2 D-1)
$A$ = area, sf

### Existing Condition

$A_{total} = 674{,}352$ sf $= 15.5$ Ac
$A_{imp} = 0$ sf; % impervious = 0
'C' = 0.34 (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.34(5.28)(15.5) = 27.8$ cfs
$V_{100} = CP_6A = 0.34(2.5/12)(674{,}356) = 47{,}767$ cf

### Developed Condition

$A_{total} = 674{,}352$ sf $= 15.5$ Ac
$A_{imp} = 424{,}840$ sf; % impervious = 93%
'C' = 0.89 (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.89(5.28)(15.5) = 72.8$ cfs
$V_{100} = CP_6A = 0.89(2.5/12)(674{,}356) = 125{,}036$ cf

### Comparison

$\Delta Q_{100} = 72.8 - 27.8 = 45.0$ cf (increase)
$\Delta V_{100} = 125{,}036 - 47{,}767 = 77{,}269$ (increase)

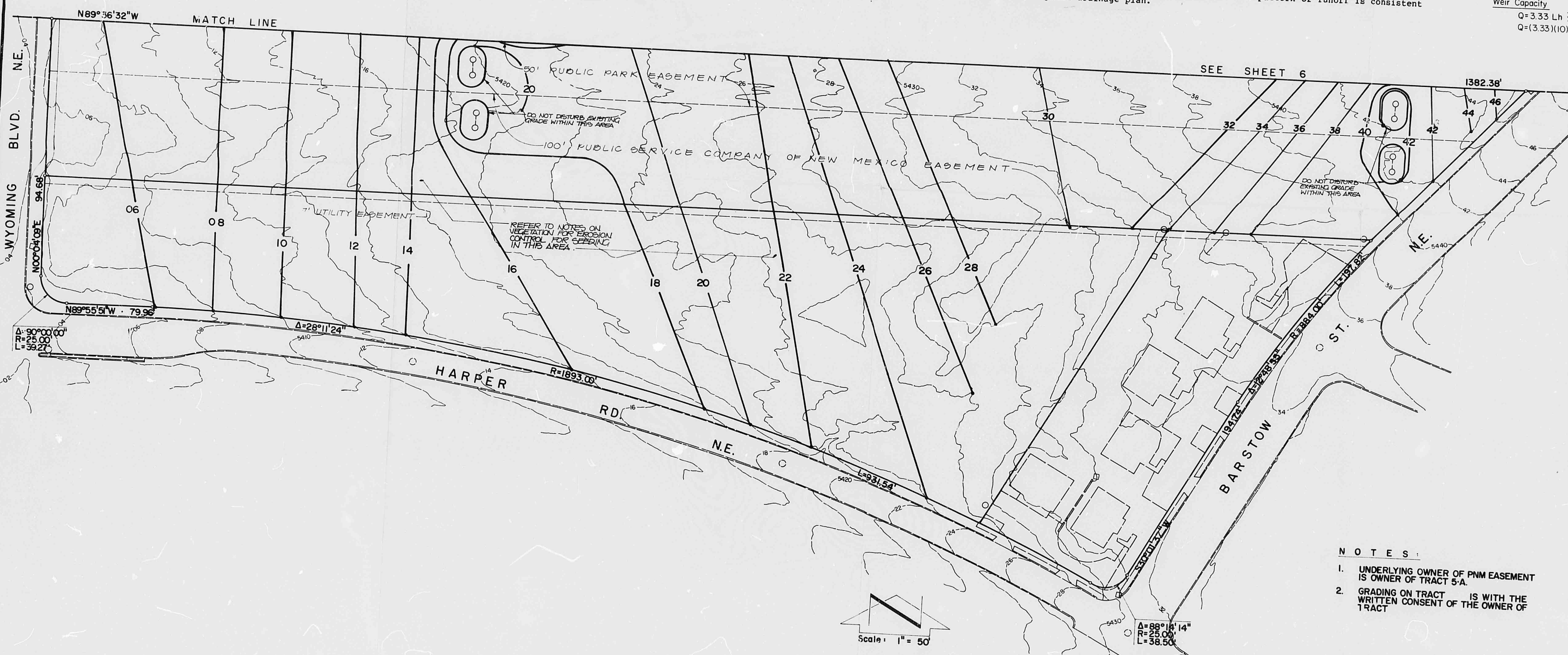
### Weir Capacity

$Q = 3.33\,Lh^{3/2}$
$Q = (3.33)(10)(2)^{3/2} = 94.3$ cfs.

THOMAS MANN JR. 3792
6/24/85
7/8/85

### PINO CALCULATIONS

$Q = 900$ cfs
$Q = 1.49/0.026\,AR^{2/3}s^{1/2}$
$s^{1/2} = (0.030)^{1/2} = 0.17$
$A = 1.3(65+71/2) = 88$ sf
$R^{2/3} = (88/71)^{2/3} = 1.15$
$Q = 1.49/0.026(88)(1.15)(0.17) = 986$ cfs
$d = 1.3$ ft.



N O T E S:

1. UNDERLYING OWNER OF PNM EASEMENT IS OWNER OF TRACT 5-A.
2. GRADING ON TRACT IS WITH THE WRITTEN CONSENT OF THE OWNER OF TRACT

RECEIVED
JUN 19 1986
HYDROLOGY SECTION

NOT A PART OF WORK ORDER. FOR INFORMATION ONLY.

Tom Mann Associates, Inc.
811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110
ENGINEERS
N40867

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
|  |  |  |  |

DESIGNED BY: T.T.M.
DRAWN BY: L.B.D.
APPROVED: T.T.M.
JOB NO. 40401
DATE 01/85

GRADING & DRAINAGE PLAN
WYOMING & HARPER NEIGHBORHOOD SHOPPING CENTER

FILE NO.
SHEET 2 OF 2

D-19/D018

D 24  C 20  B 16  A 12

CITY OF ALBUQUERQUE  C  D

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

R# 21 DATE 6-24-93 OP E.G.P.
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 - HYDROLOGY DIVISION and was filmed in the normal course of business.
The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).
Karen Acevez
CITY CLERK RECORDER
OFFICIAL SEAL
NORBERTA SANCHEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: May 8 1995
Norberta Sanchez

Hydrology File No. D-19/D018 1 of 1

C C

B B

A A

R# 21 DATE 6-24-93 OP E.J.P.

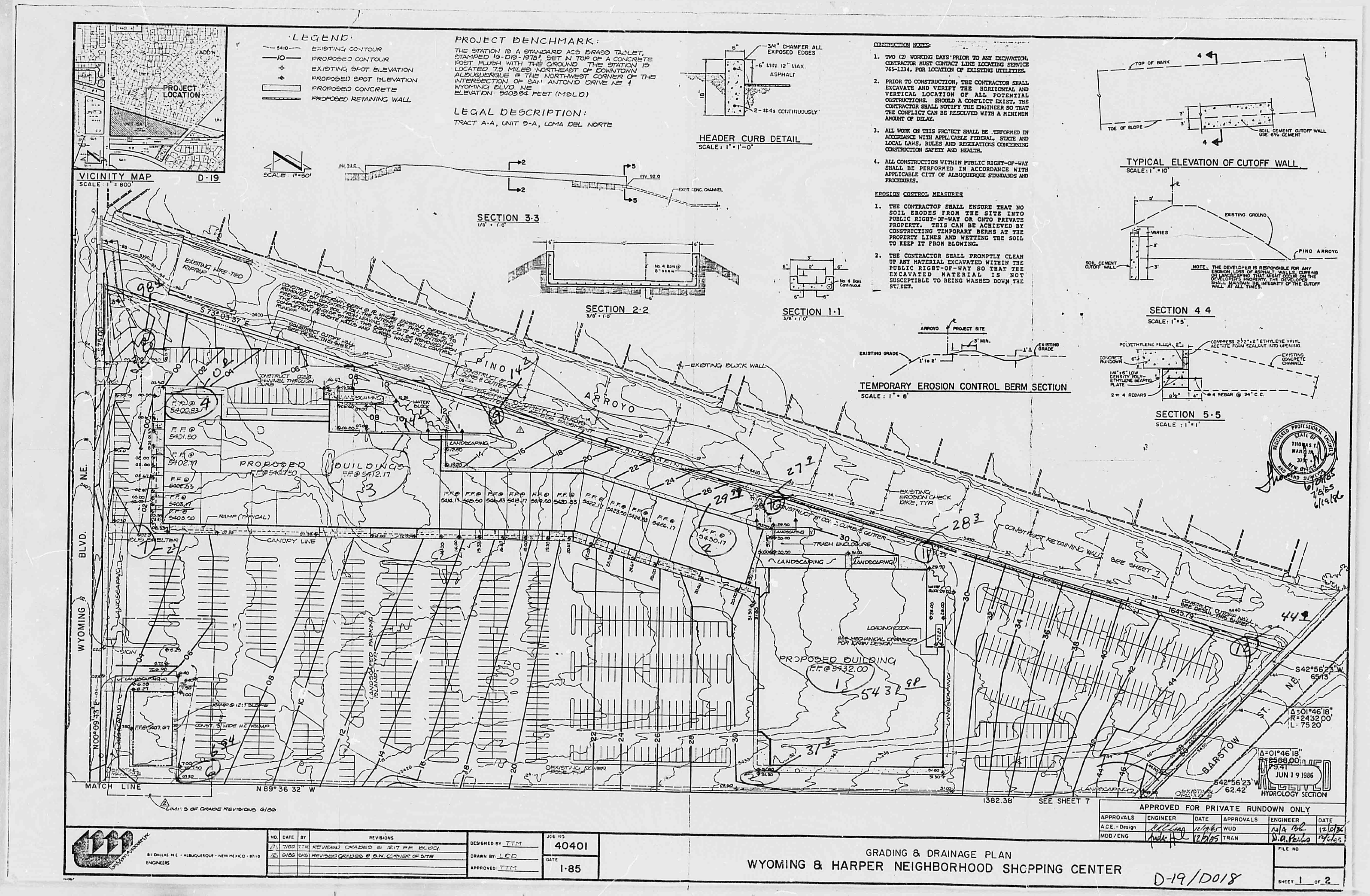
CITY OF ALBUQUERQUE

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 - HYDROLOGY DIVISION and was filmed in the normal course of business.
The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).

Karen Acevez
CITY CLERK RECORDER

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

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



PLANS/PLATS ON FILE

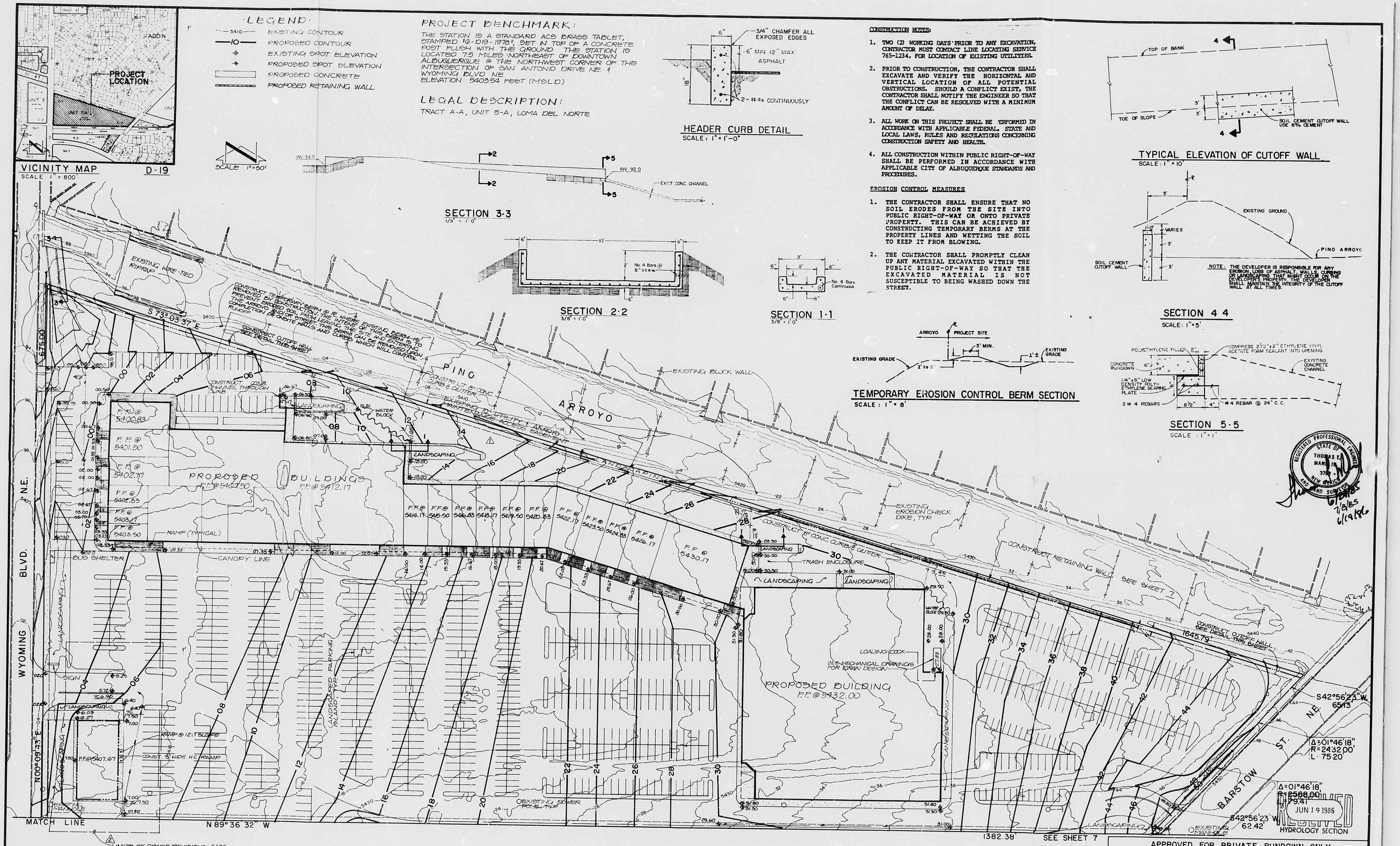
FILE DESC: D-19 / D018

# PLANS/PLATS 3

C 20 B 16 A 12

CITY OF ALBUQUERQUE

C



·LEGEND·

| | |
|---|---|
| — 5410 — | EXISTING CONTOUR |
| —10— | PROPOSED CONTOUR |
| ⌖ | EXISTING SPOT ELEVATION |
| ⌖ | PROPOSED SPOT ELEVATION |
| ▭ | PROPOSED CONCRETE |
| ▬ | PROPOSED RETAINING WALL |

## PROJECT BENCHMARK:

THE STATION IS A STANDARD ACS BRASS TABLET, STAMPED "6-D19-1978", SET IN TOP OF A CONCRETE POST FLUSH WITH THE GROUND. THE STATION IS LOCATED 7.5 MILES NORTHEAST OF DOWNTOWN ALBUQUERQUE @ THE NORTHWEST CORNER OF THE INTERSECTION OF SAN ANTONIO DRIVE NE & WYOMING BLVD. NE.
ELEVATION: 5403.54 FEET (MSLD)

## LEGAL DESCRIPTION:

TRACT A-A, UNIT 5-A, LOMA DEL NORTE

**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.

**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.

NOTE: THE DEVELOPER IS RESPONSIBLE FOR ANY EROSION, LOSS OF ASPHALT WALLS, CURBING OR LANDSCAPING THAT MIGHT OCCUR ON THE DEVELOPER'S PROPERTY. THE DEVELOPER SHALL MAINTAIN THE INTEGRITY OF THE CUTOFF WALL AT ALL TIMES.

THOMAS T. MANN JR.
3780
7/8/85
6/19/86

RECEIVED
JUN 19 1986
HYDROLOGY SECTION

APPROVED FOR PRIVATE RUNDOWN ONLY

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| A.C.E. - Design | | 12/4/85 | WUD | N/A | 12/2/85 |
| MDD/ENG | | 12/5/85 | TRAN | D.A. Parks | 12/6/85 |

Tom Mann & Associates, Inc.
811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 1 | 7/85 | TTM | REVISED GRADES @ 12.17 FF BLDG. |
| 2 | 6/86 | GKS | REVISED GRADES @ S.W. CORNER OF SITE |

DESIGNED BY: TTM
DRAWN BY: LDD
APPROVED: TTM

JOB NO. 40401
DATE 1-85

GRADING & DRAINAGE PLAN
WYOMING & HARPER NEIGHBORHOOD SHOPPING CENTER

FILE NO.
SHEET 1 OF 2

D19/D018

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D

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

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

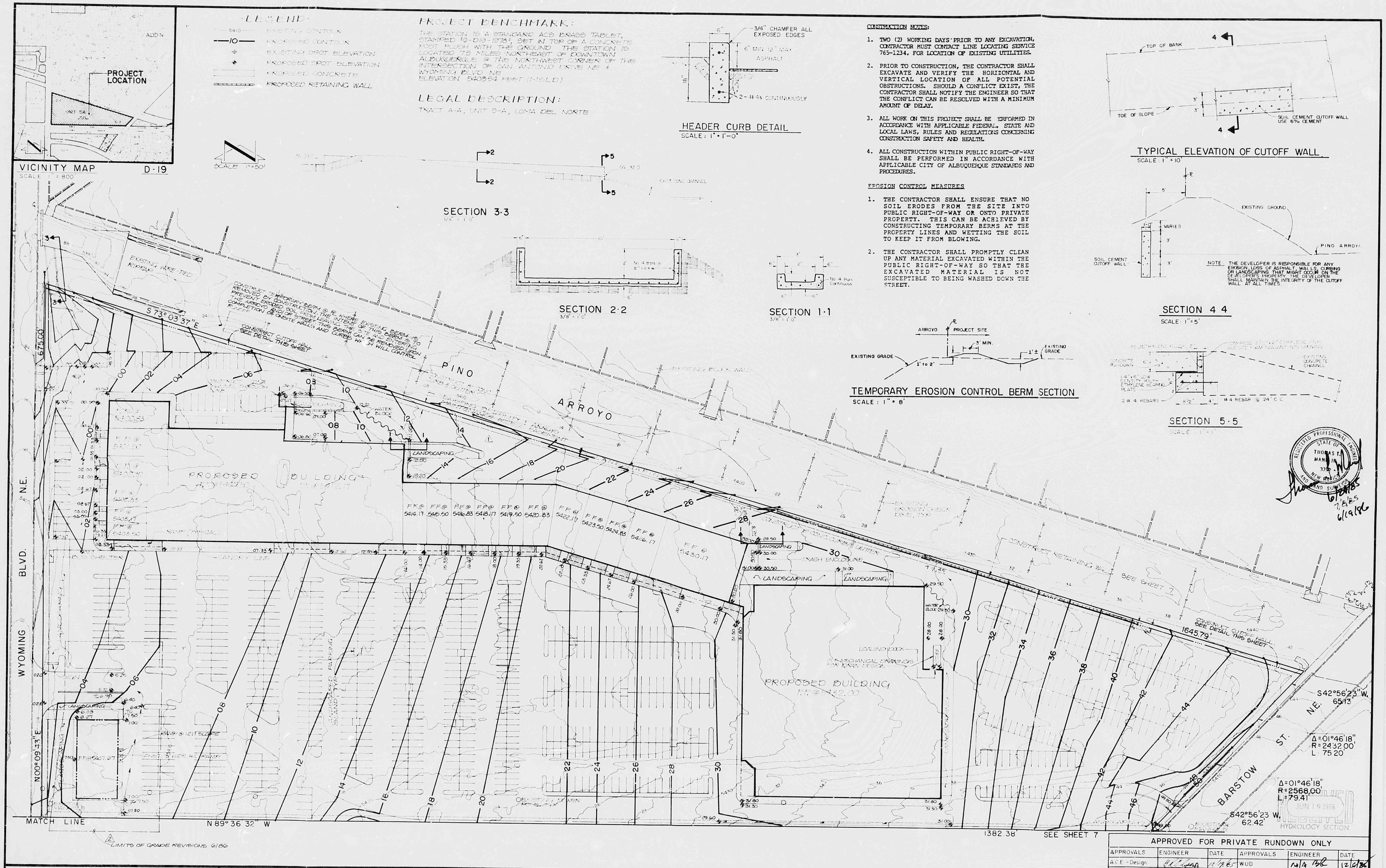
R# 21 DATE 6-24-93 OP E.J.P.

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 -- HYDROLOGY DIVISION and was filmed in the normal course of business. The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).

Karen Reeves
CITY CLERK RECORDER

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



**·LEGEND·**

| | |
|---|---|
| — 5410 — | EXISTING CONTOUR |
| —10— | PROPOSED CONTOUR |
| ⊕ | EXISTING SPOT ELEVATION |
| ● | PROPOSED SPOT ELEVATION |
| ▭ | PROPOSED CONCRETE |
| ▬ | PROPOSED RETAINING WALL |

**PROJECT BENCHMARK:**

THE STATION IS A STANDARD ACS BRASS TABLET, STAMPED "6-D19-1978", SET IN TOP OF A CONCRETE POST FLUSH WITH THE GROUND. THE STATION IS LOCATED 7.5 MILES NORTHEAST OF DOWNTOWN ALBUQUERQUE @ THE NORTHWEST CORNER OF THE INTERSECTION OF SAN ANTONIO DRIVE NE & WYOMING BLVD NE
ELEVATION 5403.54 FEET (MSLD)

**LEGAL DESCRIPTION:**

TRACT A-A, UNIT 5-A, LOMA DEL NORTE

**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.

**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.

NOTE: THE DEVELOPER IS RESPONSIBLE FOR ANY EROSION, LOSS OF ASPHALT, WALLS, CURBING OR LANDSCAPING THAT MIGHT OCCUR ON THE DEVELOPER'S PROPERTY. THE DEVELOPER SHALL MAINTAIN THE INTEGRITY OF THE CUTOFF WALL AT ALL TIMES.

THOMAS T. MANN JR.
3799
6/28/85
7/8/85
6/19/86

JUN 19 1986
RECEIVED
HYDROLOGY SECTION

APPROVED FOR PRIVATE RUNDOWN ONLY

| APPROVALS | ENGINEER | DATE | APPROVALS | ENGINEER | DATE |
|---|---|---|---|---|---|
| A.C.E. - Design | | 12/19/85 | WUD | N/A | 12/6/86 |
| MDD/ENG | | 12/5/85 | TRAN | D.A. Parks | 12/6/85 |

Tom Mann & Associates, Inc.
811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| 1 | 7/85 | TTM | REVISED GRADES @ 1217 FF BLDG. |
| 2 | 6/86 | SKS | REVISED GRADES @ S.W. CORNER OF SITE |

DESIGNED BY TTM
DRAWN BY LDD
APPROVED TTM

JOB NO 40401
DATE 1·85

GRADING & DRAINAGE PLAN
**WYOMING & HARPER NEIGHBORHOOD SHOPPING CENTER**

FILE NO
SHEET 1 OF 2

N40867

D19/D018

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

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

R# 21 DATE 6-24-93 OP LJP

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 - HYDROLOGY DIVISION and was filmed in the normal course of business.
The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).

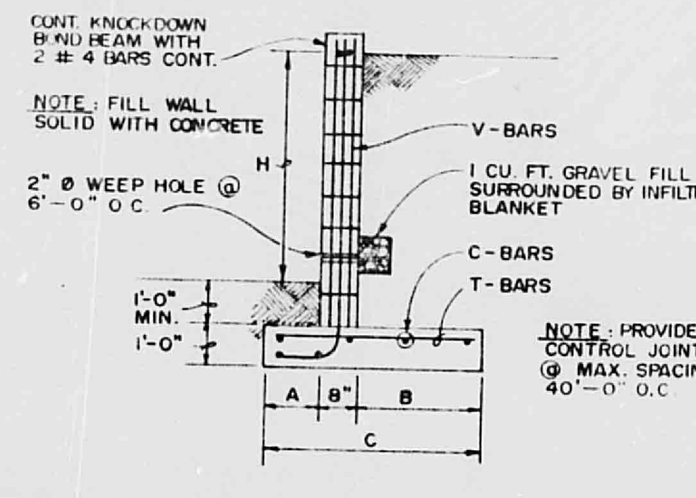
Karen Reeves
CITY CLERK RECORDER

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

D 24   C 20   B 16   A 12

CITY OF ALBUQUERQUE

C   D


CONT. KNOCKDOWN BOND BEAM WITH 2 # 4 BARS CONT.
NOTE: FILL WALL SOLID WITH CONCRETE
V-BARS
H
2" Ø WEEP HOLE @ 6'-0" O.C.
I CU. FT. GRAVEL FILL SURROUNDED BY INFILTRATION BLANKET
C-BARS
T-BARS
1'-0" MIN.
1'-0"
NOTE: PROVIDE VERTICAL CONTROL JOINT IN WALL @ MAX. SPACING OF 40'-0" O.C.
A
8"
B
C

| WALL | H DIMENSION | A | B | C | V-BAR | C-BARS | T-BARS |
|---|---|---|---|---|---|---|---|
| A | 5'-0" | 10" | 2'-2" | 3'-8" | #4 AT 16" O.C. | 4-#4 CONT. | #4 AT 28" O.C. |
| B | 4'-0" | 8" | 1'-8" | 3'-0" | #4 AT 24" O.C. | 4-#4 CONT. | #4 AT 32" O.C. |
| C | 3'-0" | 5" | 1'-3" | 2'-4" | #4 AT 32" O.C. | 3-#4 CONT. | #4 AT 40" O.C. |
| D | 0 TO 2'-0" | 4" | 4" | 1'-4" | #4 AT 48" O.C. | 2-#4 CONT. | #4 AT 48" O.C. |

## RETAINING WALL DETAIL

NO SCALE

## VEGETATION FOR EROSION CONTROL

1. SEED RATE:

| Species | Pure Live Seed (lbs/acre)* |
|---|---|
| Annual Rye Grass | 8.0 |
| Giant Dropseed | 2.0 |
| Sand Dropseed | 1.0 |
| Indian Ricegrass | 4.0 |
| Sideoats Grama | 6.0 |
| Total: | 21.0 |

*Rates apply to drilled seed. Double rates listed if seed is broadcast.

2. SEED APPLICATION:

a. Flat areas - cultivate area to produce an acceptable, friable seed bed, then drill seed to a depth of 1/4 to 1/2 inches.

b. Slopes 3:1 or greater - hand broadcast and cultivate into top 1/4 to 1/2 inch of soil.

3. FERTILIZER

16-20-0 @ 200 lbs. per acre applied simultaneously with seed.

4. MULCH

5,000 lbs. hay mulch per acre. Hay mulch shall be crimped into the soil so as not to exceed 2 inches in depth.

5. WATERING SCHEDULE

CONTRACTOR shall maintain a wet seed bed for a period of at least 6 weeks following seeding.

## DRAINAGE PLAN

The following items concerning the Harper and Wyoming Neighborhood Commercial Center Drainage Plan are contained hereon:

1. Vicinity Map  2. Grading Plan  3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located between Wyoming Boulevard N.E. and Barstow N.E., and north of Harper N.E. and the PNM right-of-way. At present, the site is undeveloped.

As shown by Plate D-19 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. Further study reveals that the site is bordered on the north by the Pino Arroyo. The project site is higher than the arroyo, and, therefore, flood waters are contained within the arroyo right-of-way. Barstow N.E. lies to the east of the property. The project site is lower than Barstow N.E., however, there is very little flow in Barstow adjacent to the site. The PNM easement lies south of the site. The easement is higher than the project site. The easement essentially traverses a ridge line, therefore, flows from the south are at a minimum. Wyoming Boulevard N.E. lies to the west of the site. The project site is higher than Wyoming Boulevard N.E. Offsite flows to the site are minimal. Any offsite flows entering the site will be routed through the site to the Pino Arroyo.

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 elevations, 3) the limit and character of existing improvements, and 4) the limit and character of proposed improvements. As shown by this plan, the proposed improvements consist of the construction of buildings and asphalt paving. A retaining wall will be required along the north boundary at the east end of the project. The site will be graded so that all flows converge to the northwest corner of the site. A ponding area will be constructed to detain nuisance waters. All flows will be routed through the pond and will then exit into the Pino Arroyo.

Both sides of the arroyo will be stabalized with soil cement. The depth of flow is approximately 1.5'. A freeboard of 1.5' feet was added to the depth to give a treatment depth of 3' above and below flow line. The soil cement will contain 6% cement utilizing native soils.

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 for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will result in an increase in runoff from the site. This pattern of runoff is consistent with the conceptual drainage plan.

## CALCULATIONS

### Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 21:
EtC - Embudo Tijeras
Hydrologic Soil Group B

### Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6(6.84)T_c^{-0.51} = 5.28$ in/hr
$P_6 = 2.5$ in (DPM Plate 22.2 D-1)
$T_c = 10$ min (minimum)
$A$ = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.5$ in (DPM Plate 22.2 D-1)
$A$ = area, sf

### Existing Condition

$A_{total} = 674{,}352$ sf $= 15.5$ Ac
$A_{imp} = 0$ sf; % impervious = 0
'C' = 0.34 (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.34(5.28)(15.5) = 27.8$ cfs
$V_{100} = CP_6A = 0.34(2.5/12)(674{,}356) = 47{,}767$ cf

### Developed Condition

$A_{total} = 674{,}352$ sf $= 15.5$ Ac
$A_{imp} = 424{,}840$ sf; % impervious = 93%
'C' = 0.89 (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.89(5.28)(15.5) = 72.8$ cfs
$V_{100} = CP_6A = 0.89(2.5/12)(674{,}356) = 125{,}036$ cf

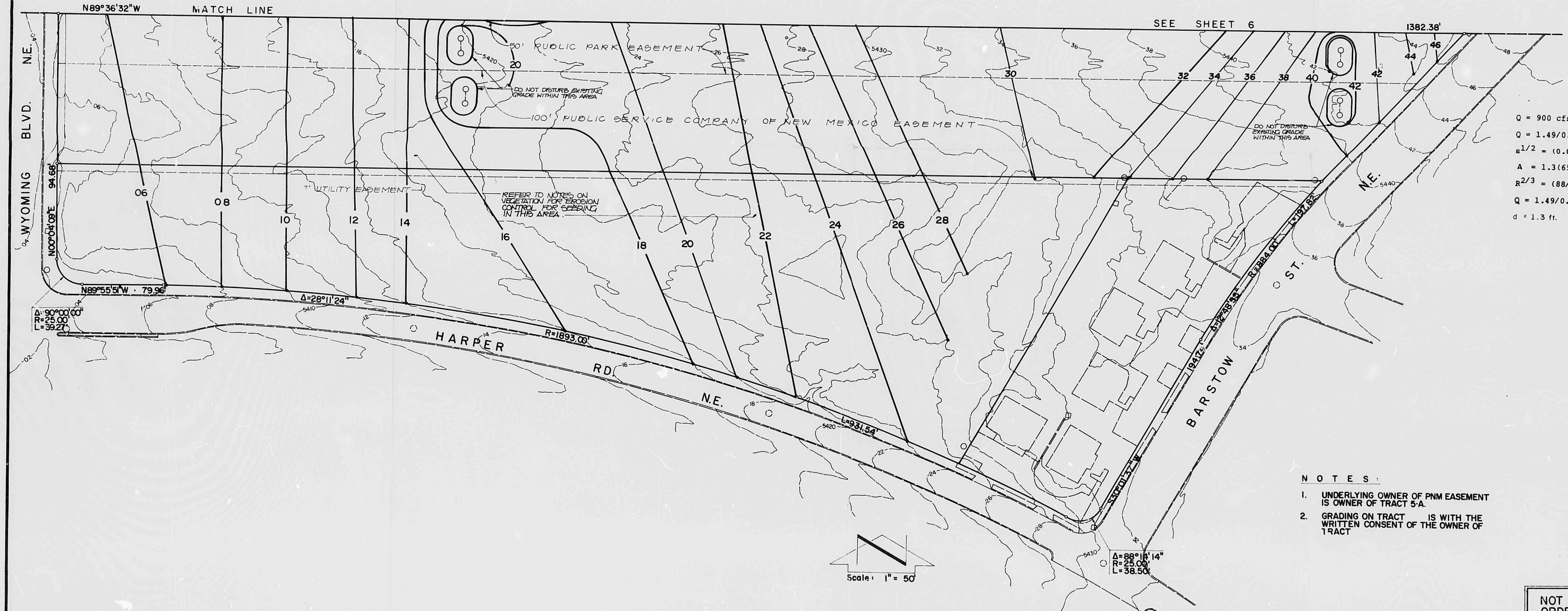
### Comparison

$\Delta Q_{100} = 72.8 - 27.8 = 45.0$ cf (increase)
$\Delta V_{100} = 125{,}036 - 47{,}767 = 77{,}269$ (increase)

### Weir Capacity

$Q = 3.33\,Lh^{3/2}$
$Q = (3.33)(10)(2)^{3/2} = 94.3$ c.f.s.

THOMAS T. MANN JR.
3792
6/24/85
7/8/85



### PINO CALCULATIONS

$Q = 900$ cfs
$Q = 1.49/0.026\;AR^{2/3}s^{1/2}$
$s^{1/2} = (0.030)^{1/2} = 0.17$
$A = 1.3(65+71/2) = 88$ sf
$R^{2/3} = (88/71)^{2/3} = 1.15$
$Q = 1.49/0.026(88)(1.15)(0.17) = 986$ cfs
$d = 1.3$ ft.

N O T E S:

1. UNDERLYING OWNER OF PNM EASEMENT IS OWNER OF TRACT 5-A.
2. GRADING ON TRACT IS WITH THE WRITTEN CONSENT OF THE OWNER OF TRACT

RECEIVED
JUN 19 1986
HYDROLOGY SECTION

NOT A PART OF WORK ORDER. FOR INFORMATION ONLY.

**Tom Mann & Associates, Inc.**
811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

| NO. | DATE | BY | REVISIONS |
|---|---|---|---|
| | | | |

DESIGNED BY: T.T.M.
DRAWN BY: L.B.D.
APPROVED: T.T.M.

JOB NO. 40401
DATE 01/85

GRADING & DRAINAGE PLAN
WYOMING & HARPER NEIGHBORHOOD SHOPPING CENTER

FILE NO.
SHEET 2 OF 2

N40867

D-19 / D018

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

R# 21 DATE 6-24-93 OP E.J.P.
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 - HYDROLOGY DIVISION and was filmed in the normal course of business. The photographic processes used meet the Basic Microfilm Standards of the National Micrographics Association (MS115-1977).
Karen Reeves
CITY CLERK RECORDER
OFFICIAL SEAL
NORBERTA SANCHEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: MAY 8 1995
Norberta Sanchez

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