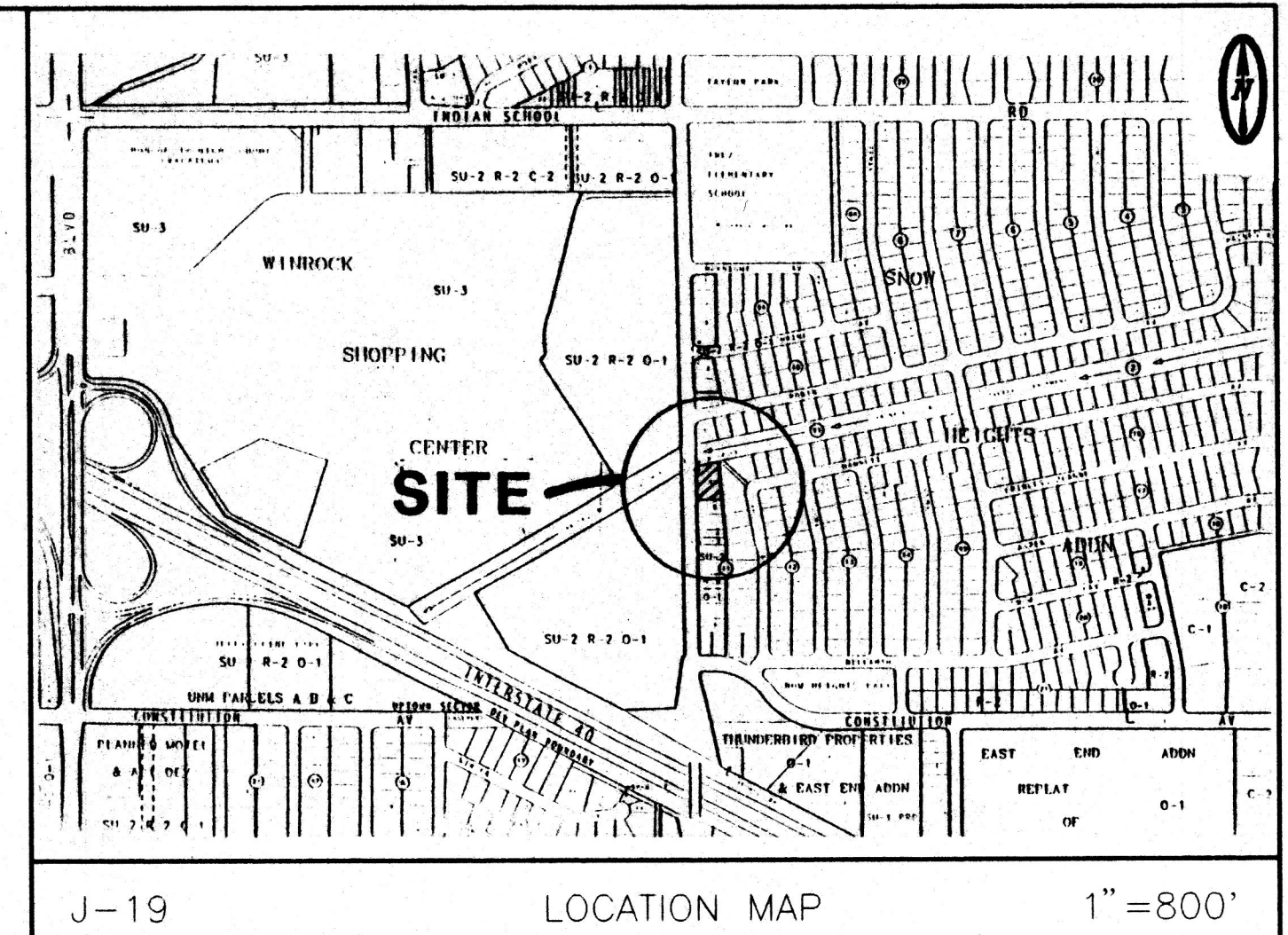


- DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY
NOTICE TO CONTRACTOR
1. An excavation/construction permit will be required before any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
 2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with the "City of Albuquerque Standard Specifications, Public Works Construction", 1986 Edition, with Update No. 5, and amendments through September 8, 1994.
 3. Two working days prior to any excavation, the contractor must contact Line Locating Service, 260-1990, for location of existing utilities.
 4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all constructions. Should a conflict exist, the contractor shall notify the Engineer so that the conflict can be resolved with a minimum amount of delay.
 5. Backfill compaction shall be according to arterial street use.
 6. Maintenance of the facility shall be the responsibility of the owner of the property being served.

APPROVALS	NAME	DATE
HYDROLOGY		
INSPECTOR		
ACE FIELD		



LEGEND

- 6001 — EXISTING CONTOUR ELEVATION
- 02.5 x — EXISTING SPOT ELEVATION
- 01 — PROPOSED CONTOUR ELEVATION
- — — — — PROPERTY LINE
- 01.5 — PROPOSED SPOT ELEVATION
- ← — DIRECTION OF FLOW
- — — — — DRAINAGE SWALE
- — — — — DRAINAGE BASIN DIVIDE
- ▨ — PROPOSED CMU WALL

PROPERTY ADDRESS
PENNSYLVANIA ST NE

LEGAL DESCRIPTION

PROJECT BENCHMARK
TBM: NE PROPERTY CORNER, A #5 REBAR WITH CAP.
ELEVATION 5318.19 FEET

SURVEY
TOPOGRAPHIC AND FIELD MEASUREMENT BY
PRECISION SURVEYS
DATED NOVEMBER, 1995

- DRAINAGE PLAN NOTES**
1. BLI recommends that the Owner obtain a Geotechnical Evaluation of the on-site soils prior to foundation /structural design.
 2. This Plan recommends positive drainage to prohibit ponding of runoff adjacent structures which may cause structural settlement. Future alteration of grades adjacent to the proposed structures is not recommended.
 3. Irrigation within 10 feet of any proposed structure is not recommended. Introduction of irrigation water into subsurface soils adjacent to the structure could cause settlement.
 4. This Plan is prepared to establish on-site drainage and grading criteria only. BLI assumes no responsibility for subsurface analysis, foundation /structural design, or utility design.
 5. Local codes require all footings to be placed in natural undisturbed soil. If the Contractor plans to place footings on engineered fill, a certification by a registered Professional Engineer will be required. If the contractor wishes BLI to prepare the Certification, we must be notified PRIOR to placement of the fill.
 6. BLI recommends that the Owner obtain the services of a Geotechnical Engineer to test and inspect all earthwork aspects of the project.
 7. The property boundary shown on this Plan is given for information only to describe the project limits. Property boundary information shown hereon does not constitute a boundary survey. A boundary survey performed by a licensed New Mexico Registered Professional Surveyor is recommended prior to construction.

BLI BRASHER & LORENZ, INC.
Consulting Engineers
4425 Juan Tabo Blvd. NE, Suite 202
Albuquerque, New Mexico 87111
Ph: 505-296-0422 Fax: 505-296-0466

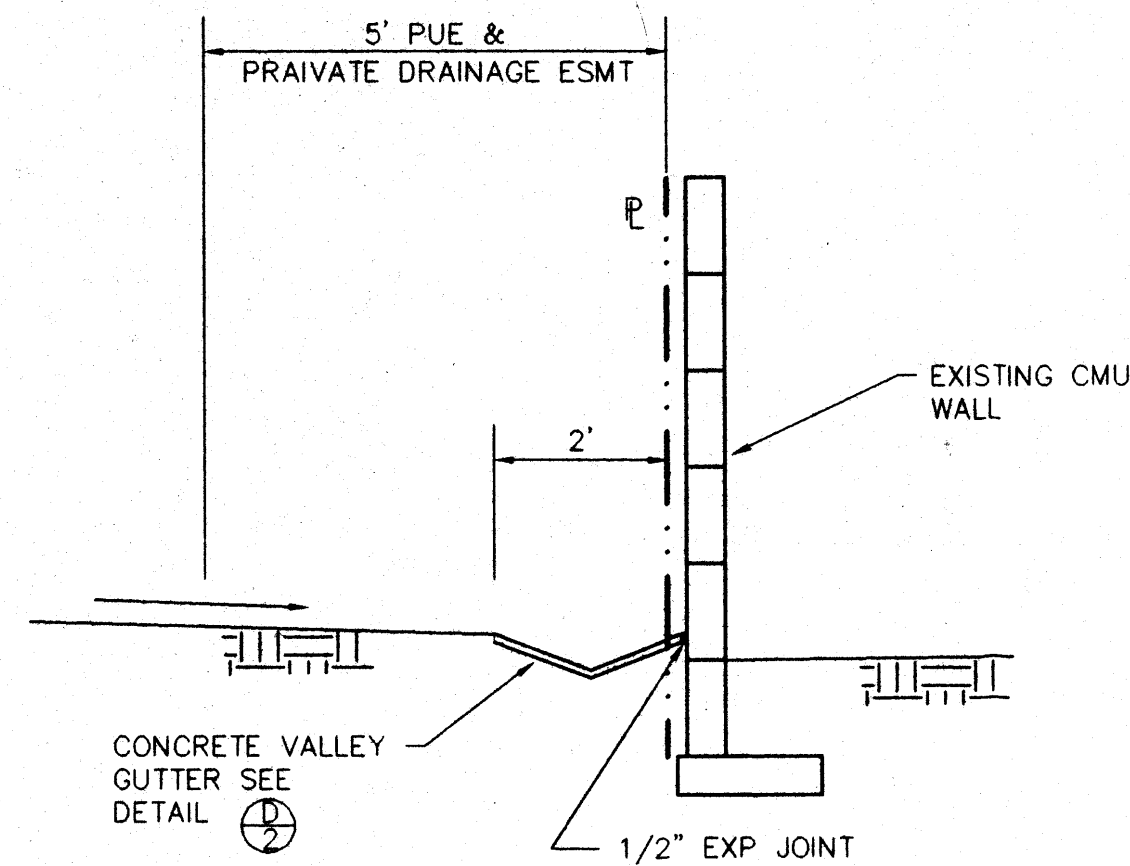
FERNANDEZ TOWNHOUSES
ALBUQUERQUE, NEW MEXICO
PROJECT # 7895

REVISION DATE

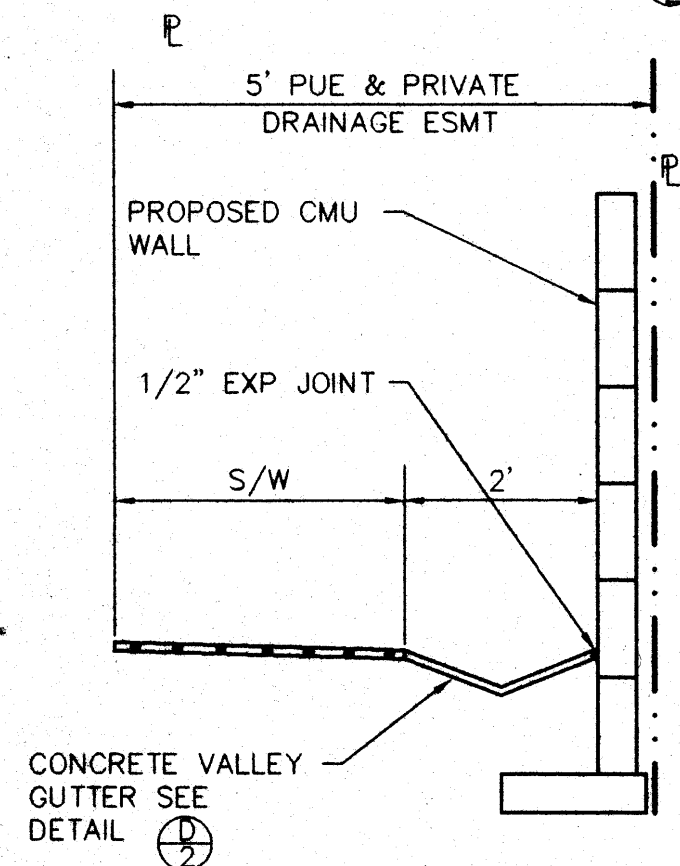
rick bennett
architect

DATE
11-29-95

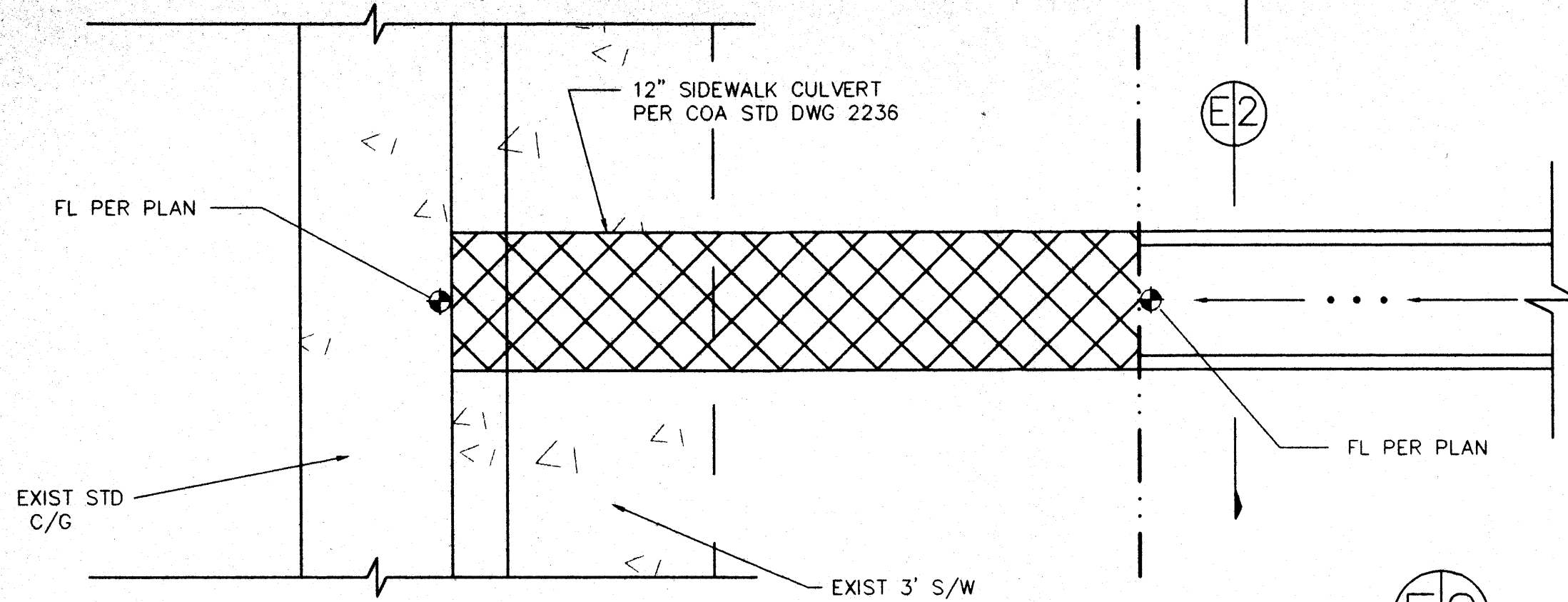
SHEET NUMBER
C-1



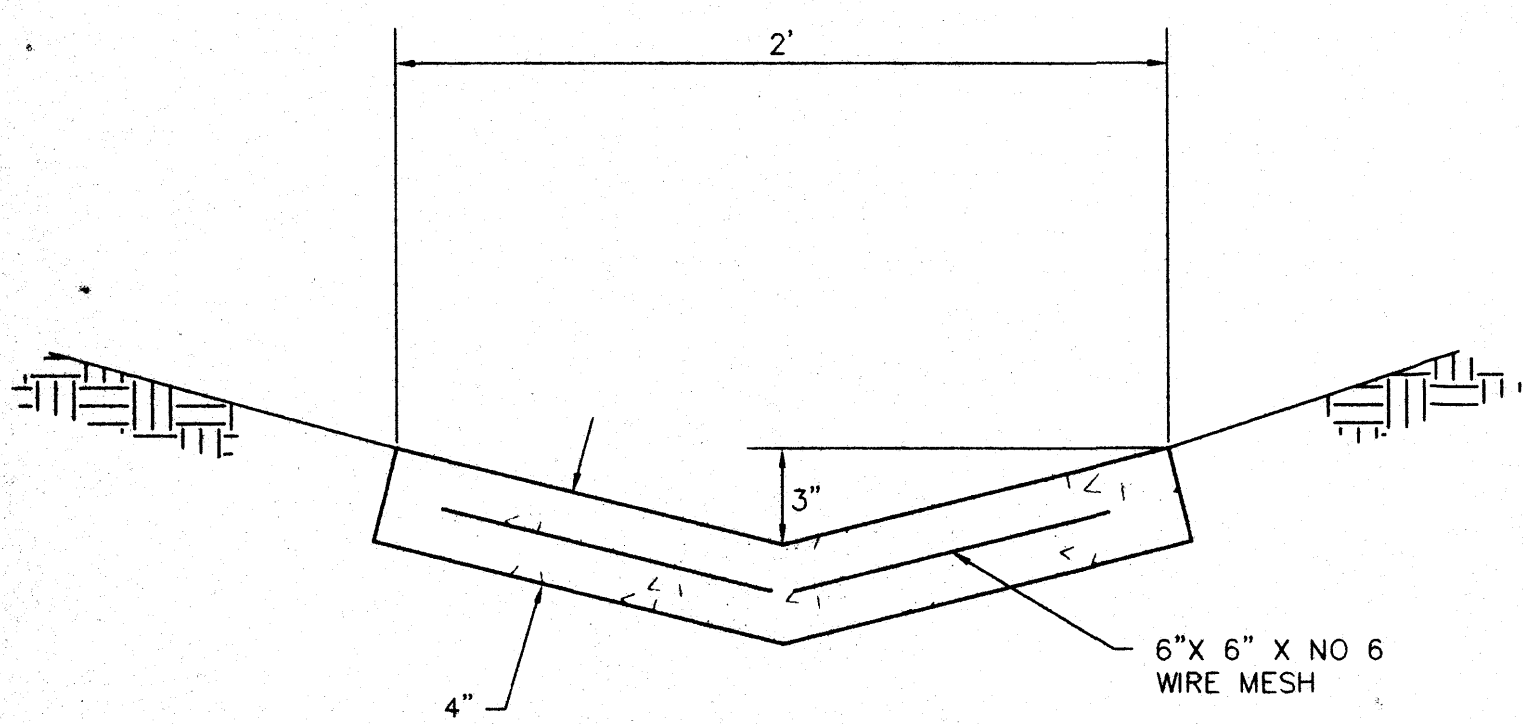
SWALE SECTION A
1" = 2'



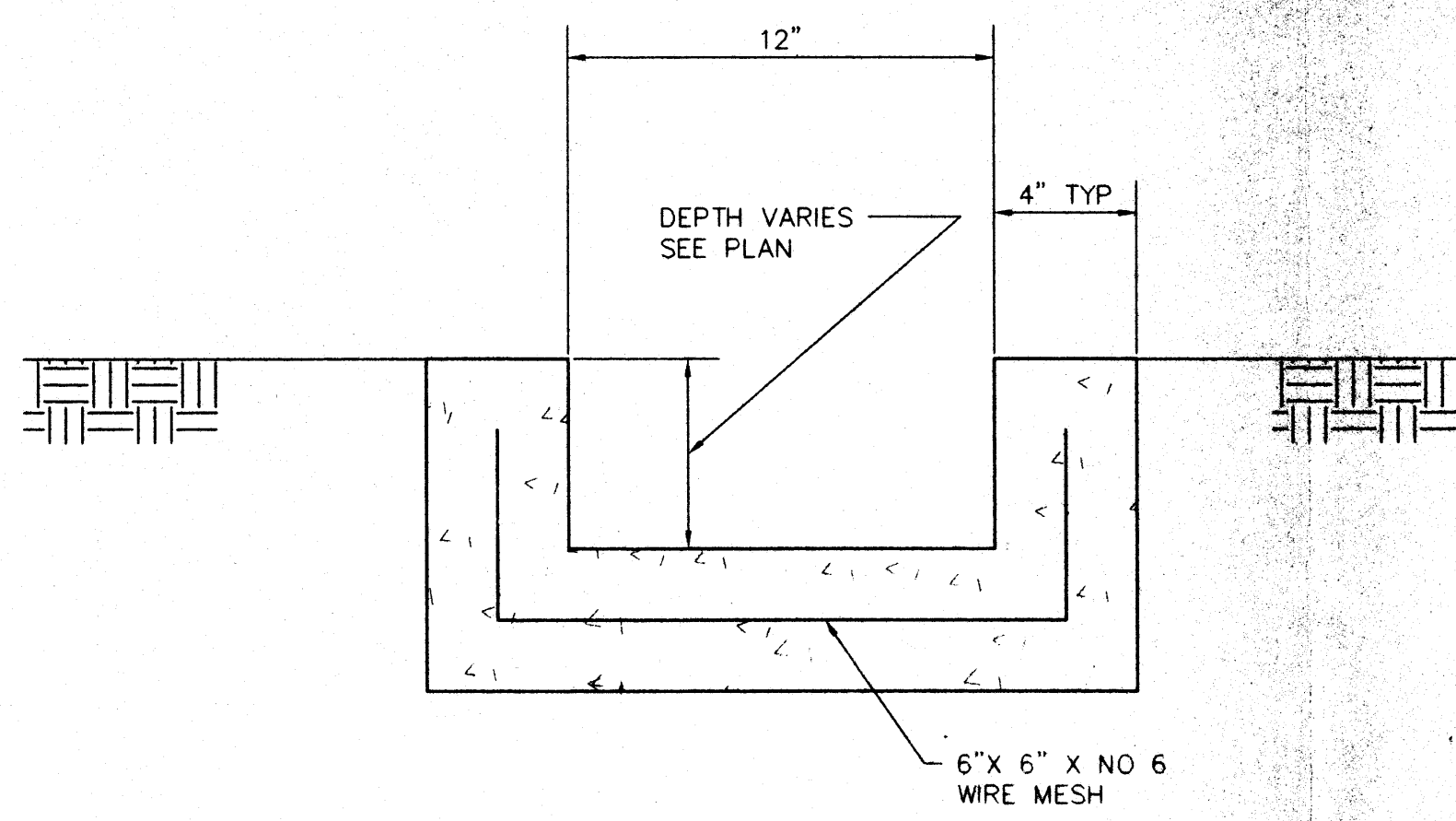
SWALE SECTION B
1" = 2'



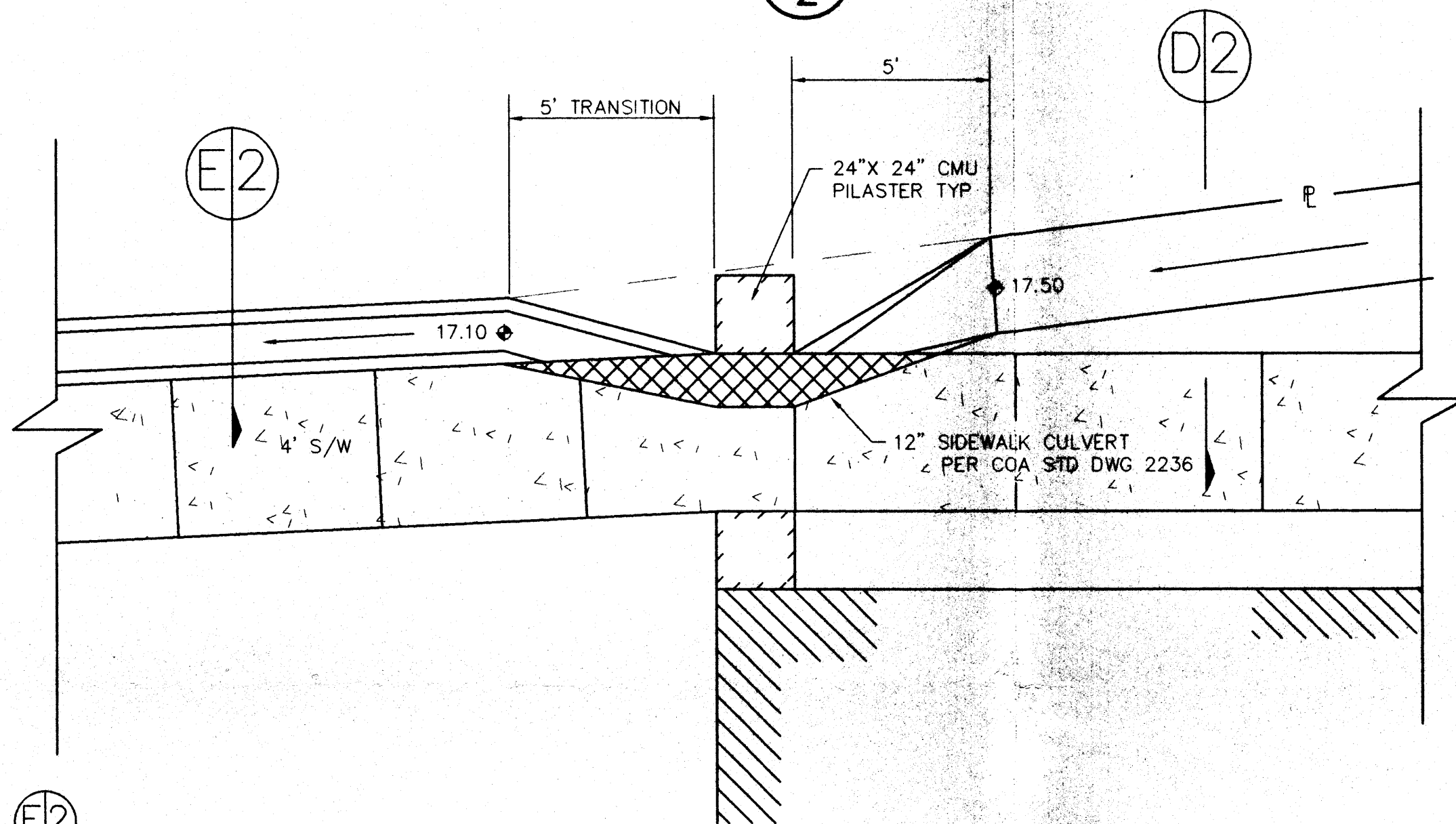
SIDEWALK CULVERT DETAIL C
1" = 1'



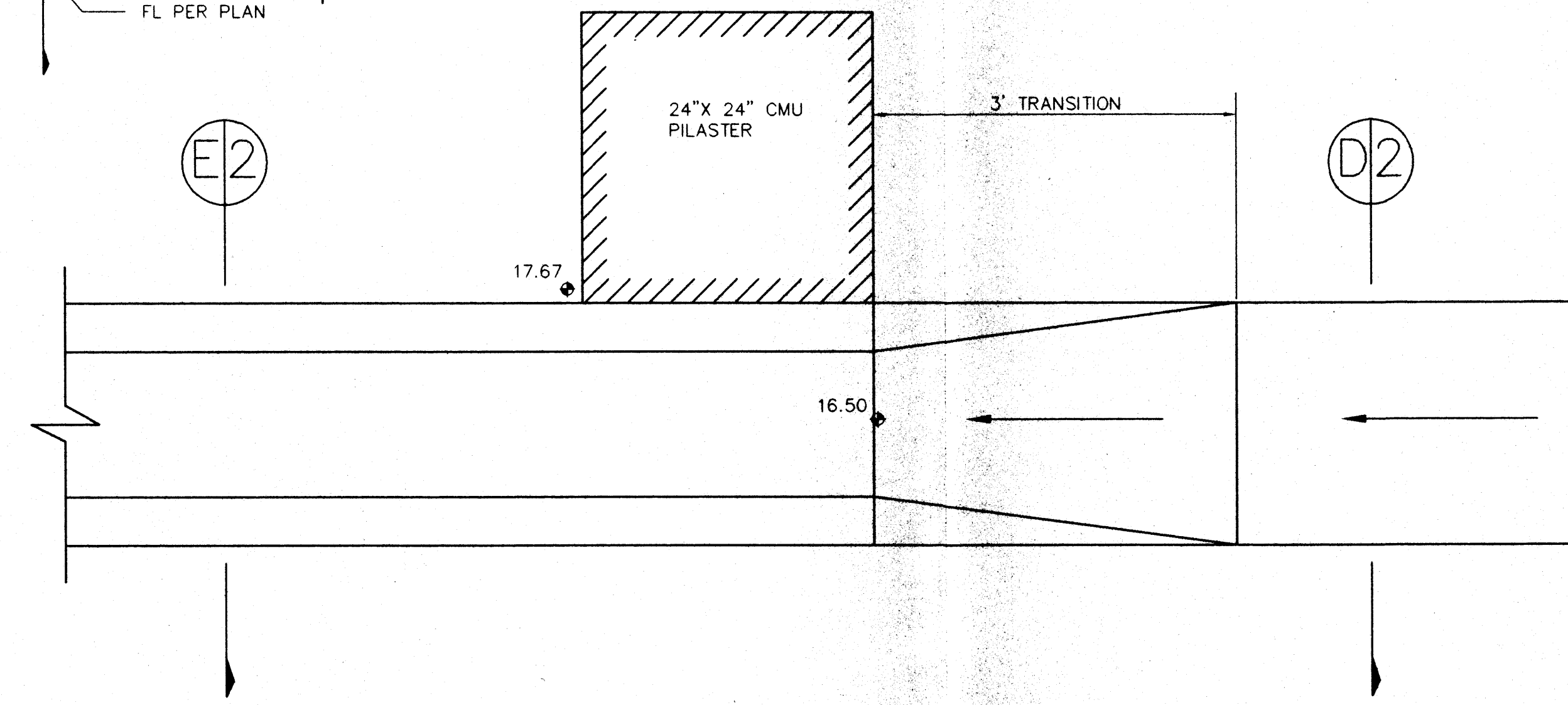
DETAIL D
1" = 0.5'



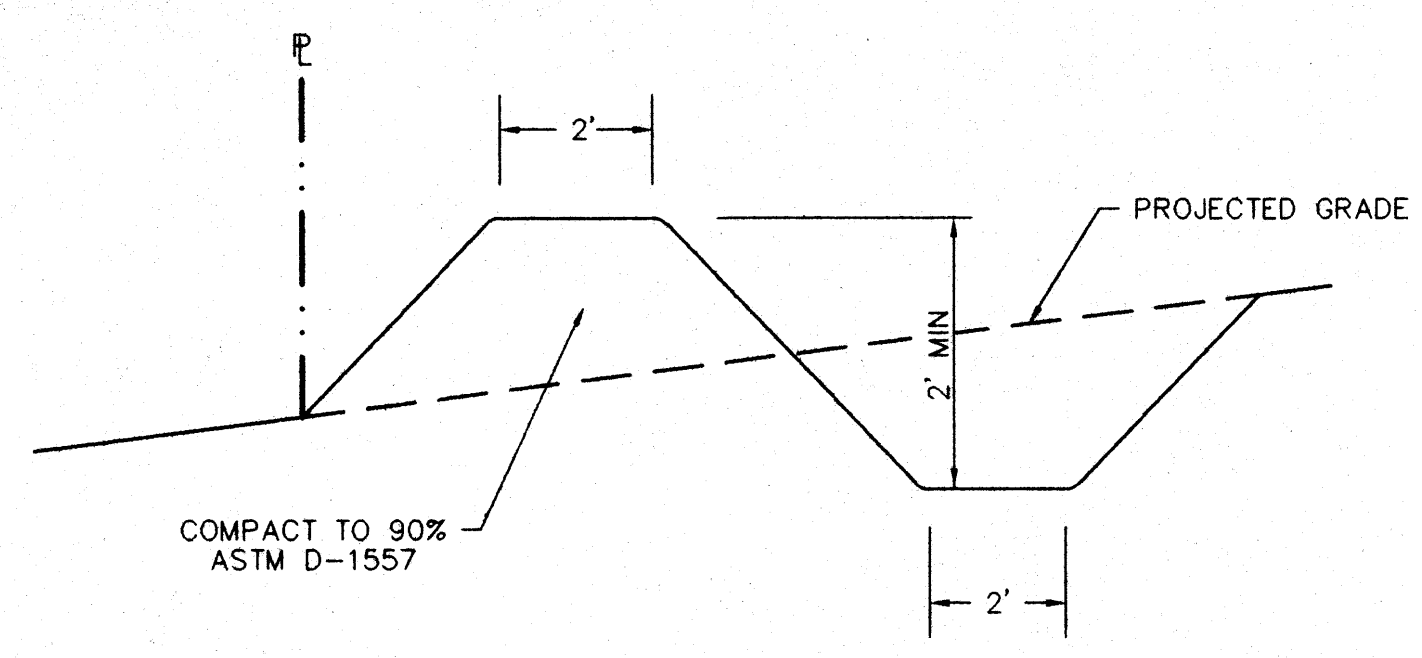
CHANNEL SECTION E
1" = 1'



SIDEWALK CULVERT DETAIL F
1" = 1'



CHANNEL TRANSITION DETAIL G
1" = 1'



EROSION CONTROL BERM DETAIL G
1" = 1'



FLOODWAY MAP
1" = 500'

GRADING AND DRAINAGE PLAN

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as 5 Townhomes, with associated paving, landscaping, utility, grading, and drainage improvements.

EXISTING CONDITIONS

The project site is approximately 0.36 acres in size and is located on Pennsylvania Street NE, just north of Constitution Street NE. The site is bounded by Pennsylvania on the west, the Embudo Channel on the north, and developed property on the east and south. The site is described as Lots 39 & 40, Snow Heights Addition, Unit 11. Presently the site is undeveloped. Site topography slopes from west to east at approximately 1%. The site is sparsely covered with native vegetation.

On-site all runoff flows westward into Pennsylvania Street. Pennsylvania conveys all runoff south to the intersection of Constitution where existing public storm drain and overflow channel conveys the flow to the I-40 channel. No off-site flows enter the property.

Pennsylvania is a paved public street, with curb and gutter and permanent pavement. A 3 foot sidewalk is located along the project frontage.

As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone.

DEVELOPED CONDITIONS

As shown by the Plan, the project consists of the development of the property into 5 townhomes. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and the project hydrology is tabulated for both existing and developed conditions.

All drainage flows will be managed on-site by earthen swales and drain to Pennsylvania Street and the existing public drainage improvements as mentioned above. Downstream capacity is available, thereby permitting free discharge developed runoff from this site. Complete downstream analysis is provided in the Supplemental Calculations.

EROSION CONTROL

Temporary erosion control will be required during construction to limit the discharge of sediment into the public street and storm drainage network. A temporary erosion control berm, per Detail "H", shall be placed along the west project boundary during construction to retain runoff. It shall be the contractor's responsibility to maintain this facility until the site work is completed.

CALCULATIONS:

The calculations shown hereon define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol. 2" Dated January 1993. Supplemental Calculations are provided separately to demonstrate on-site improvement capacities and determine downstream capacity.

HYDROLOGY - HYMO								
Precipitation Zone 3			P360 = 2.60 inches					
BASIN	AREA acres	Aa acres	Ab acres	Ac acres	Ad acres	E inches	Q100 cfs	VOL100 af
EXISTING CONDITION:								
SITE	0.36	0.00	0.00	0.36	0.00	1.29	1.2	0.040
DEVELOPED CONDITION:								
SITE	0.36	0.00	0.03	0.03	0.30	2.15	1.7	0.060
A	0.23	0.00	0.02	0.02	0.19	2.15	1.1	0.040
B	0.03	0.00	0.002	0.002	0.028	2.15	0.1	0.005
C	0.10	0.00	0.01	0.01	0.08	2.15	0.5	0.015

BLI BRASHER & LORENZ, INC.
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Albuquerque, New Mexico 87111
Ph: 505-296-0422 Fax: 505-296-0466

FERNANDEZ TOWNHOUSES
ALBUQUERQUE, NEW MEXICO
PROJECT # 7895

REVISION DATE

1-17-96

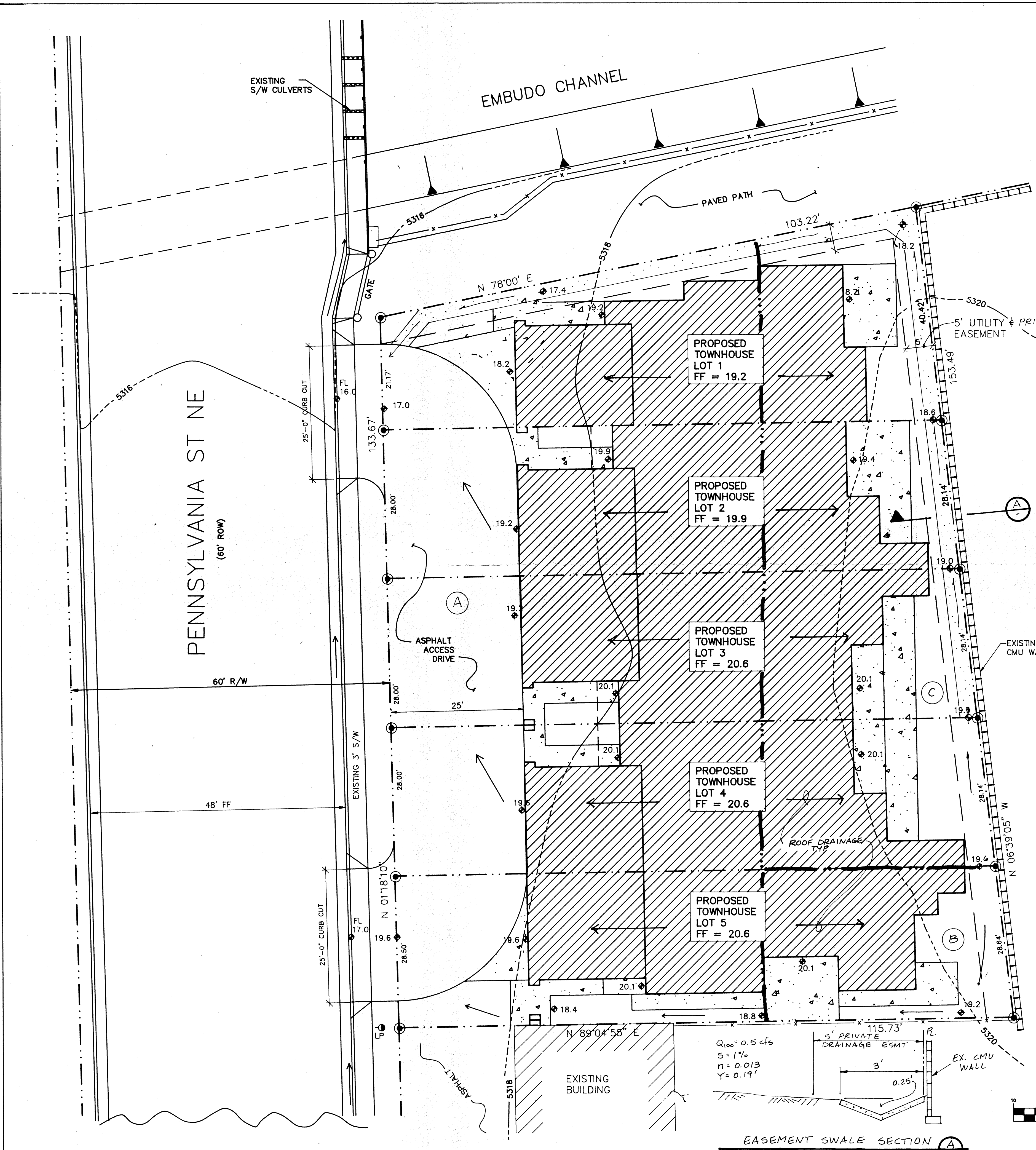
rick bennett
architect
1118 Park Avenue SW
Albuquerque, New Mexico
87102
(505) 242-1859

DATE

11-28-95

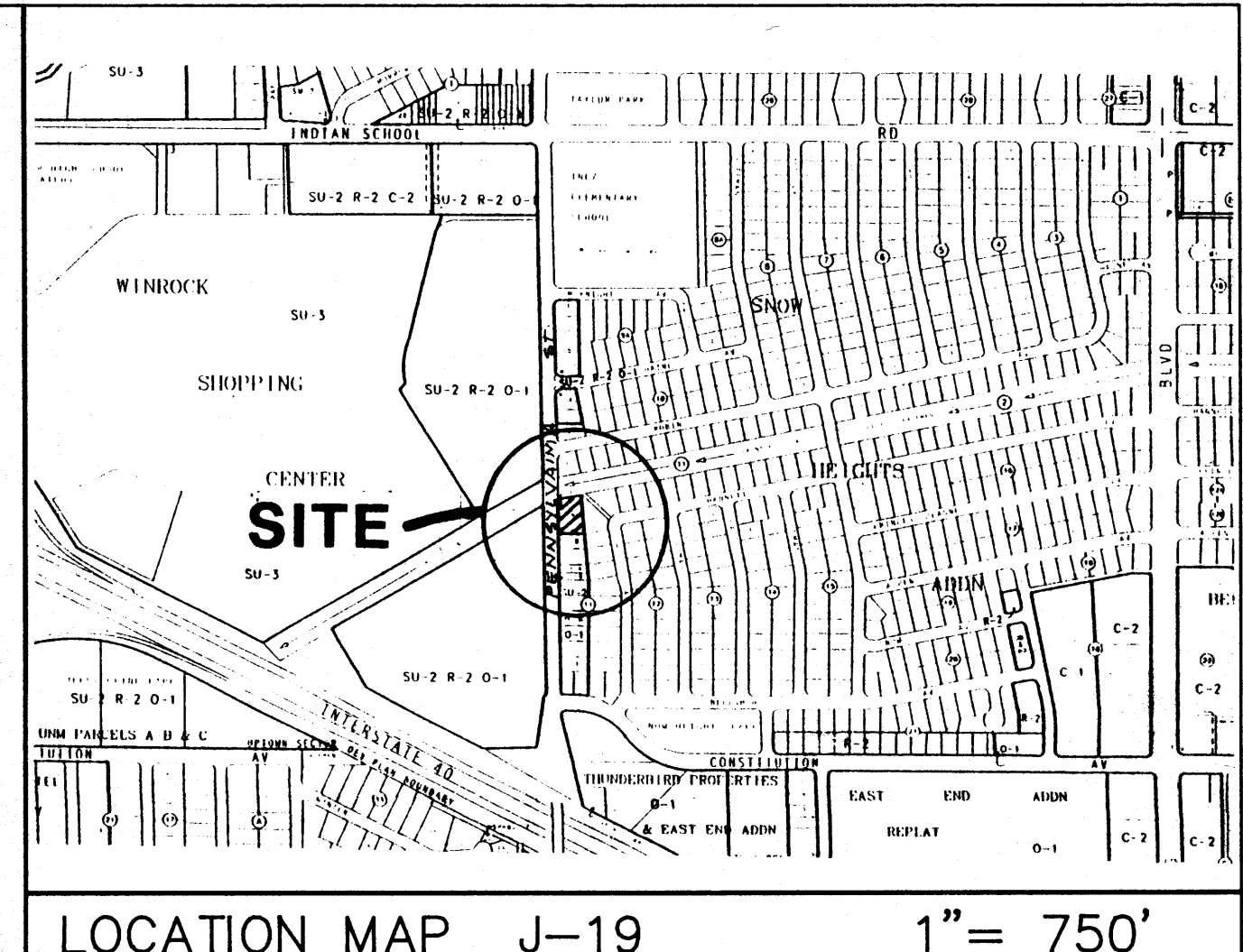
SHEET NUMBER

C-2



LEGEND

- 6001 — EXISTING CONTOUR ELEVATION
- 02.5 x — EXISTING SPOT ELEVATION
- 01 — PROPOSED CONTOUR ELEVATION
- ... — PROPERTY LINE
- 01.5 ♦ — PROPOSED SPOT ELEVATION
- ← — DIRECTION OF FLOW
- — DRAINAGE SWALE
- — DRAINAGE BASIN DIVIDE
- (A) — BASIN ID



CONCEPTUAL GRADING AND DRAINAGE PLAN

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Conceptual Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as 5 Townhomes, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide conceptual grading and drainage information to support the project Site Development Plan.

EXISTING CONDITIONS

The project site is approximately 0.36 acres in size and is located on Pennsylvania Street NE, just north of Constitution Street NE. The site is bounded by Pennsylvania on the west, the Embudo Channel on the north, and developed property on the east and south. The site is described as Lots 39 & 40, Snow Heights Addition, Unit 11. Presently the site is undeveloped. Site topography slopes from west to east at approximately 1%. The site is sparsely covered with native vegetation.

On-site all runoff flows westward into Pennsylvania Street. Pennsylvania conveys all runoff north to the bridge at the Embudo Channel. The bridge drains via sidewalk culverts into the channel. NO OFF-SITE FLOWS ENTER THE PROPERTY.

Pennsylvania is a paved public street, with curb and gutter and permanent pavement. A 3 foot sidewalk is located along the project frontage.

As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone.

DEVELOPED CONDITIONS

As shown by the Plan, the project consists of the development of the property into 5 townhomes. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and the project hydrology is tabulated for both existing and developed conditions.

All drainage flows will be managed on-site by earthen swales and drain to Pennsylvania Street and the Embudo Channel, as mentioned above. Due to the proximity of the Embudo Channel, the site will free discharge all excess runoff to the Channel.

EROSION CONTROL

Temporary erosion control will be required during construction to the discharge of sediment into the public street and storm drainage network. The details for temporary erosion control will be provided on the final Grading and Drainage Plan.

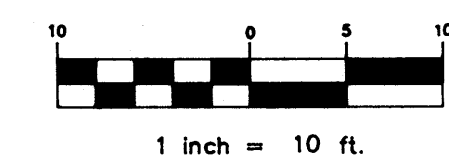
CALCULATIONS:

The calculations shown hereon define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January 1993.

HYDROLOGY - HYMO								
Precipitation Zone	3				P360 = 2.60 inches			
BASIN	AREA	Aa	Ab	Ac	Ad	E	Q100	VOL100
acres	acres	acres	acres	acres	acres	inches	cts	af
EXISTING CONDITION:								
SITE	0.36	0.00	0.00	0.36	0.00	1.29	1.2	0.04
DEVELOPED CONDITION:								
SITE	0.36	0.00	0.03	0.03	0.30	2.15	1.7	0.06
A	0.23	0	0.02	0.02	0.19	2.15	1.1	0.04
B	0.03	0	0.002	0.002	0.03	2.15	0.1	0.005
C	0.10	0	0.008	0.008	0.08	2.15	0.5	0.015



CONCEPTUAL GRADING AND DRAINAGE PLAN



LEGAL DESCRIPTION

LOTS 39 AND 40 IN BLOCK-11 OF BLOCKS 1 TO 21, SNOW HEIGHTS ALBUQUERQUE, NEW MEXICO

ADDRESS
PENNSYLVANIA ST. NE

TOPOGRAPHY

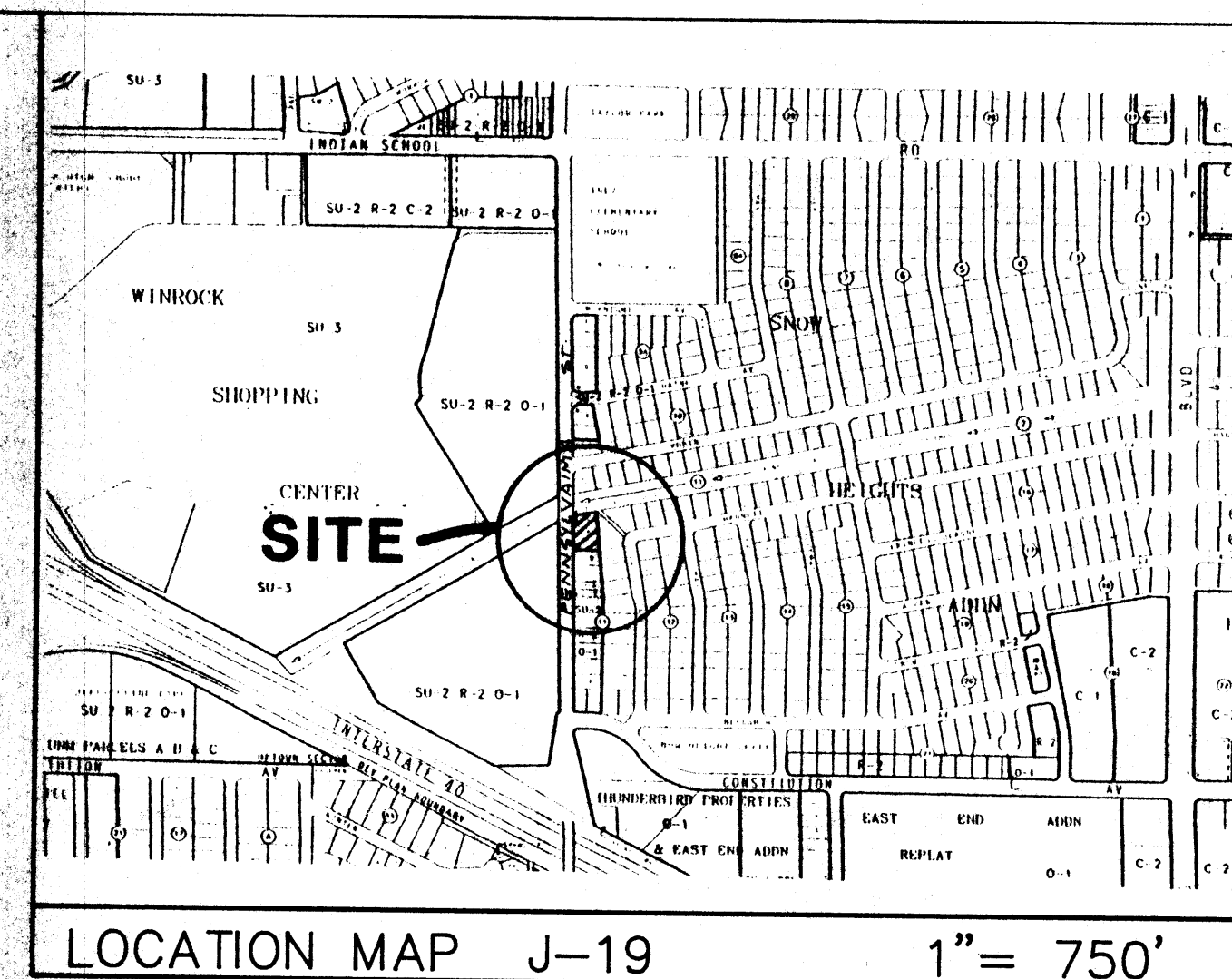
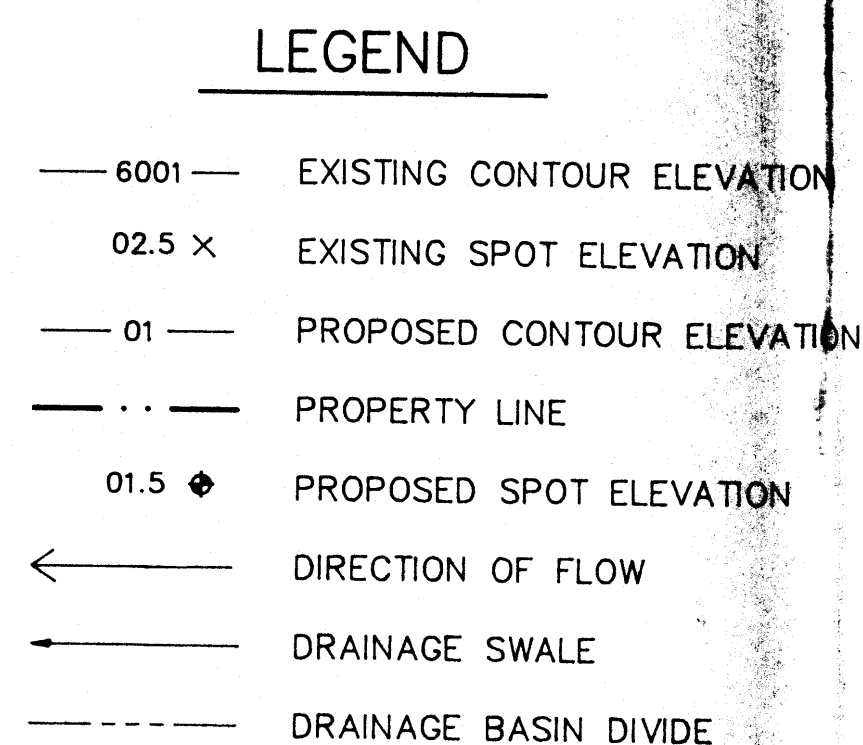
TOPOGRAPHY TAKEN FROM FLOODWAY PANEL 350002-0030 DATED 10-8-1980

FERNANDEZ TOWNHOUSES
ALBUQUERQUE, NEW MEXICO
PROJECT # 7895

REVISION DATE
DATE 9-21-95
SHEET NUMBER C-1

BLI BRASHER & LORENZ, INC.
Consulting Engineers
4425 Juan Tabo Blvd. NE Suite 200
Albuquerque, New Mexico 87111
Ph: 505-298-0422 Fax: 505-298-0466

NOV 30 1995



CONCEPTUAL GRADING AND DRAINAGE PLAN

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Conceptual Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as 5 townhomes, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide conceptual grading and drainage information to support the project site Development Plan.

EXISTING CONDITIONS

The project site is approximately 0.36 acres in size and is located on Pennsylvania Street NE, just north of Constitution Street NE. The site is bounded by Pennsylvania on the east, the Embudo Channel on the north, and developed property on the east and south. The site is described as Lots 38 & 40, Snow Heights Addition, Unit 11. Presently the site is undeveloped. Site topography slopes from west to east at approximately 1%. The site is sparsely covered with native vegetation.

On-site all runoff flows westward into Pennsylvania Street. Pennsylvania conveys all runoff north to the bridge at the Embudo Channel. The bridge drains via sidewalk culverts into the channel.

Pennsylvania is a paved public street, with curb and gutter and permanent pavement. A 3 foot sidewalk is located along the project frontage.

As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone.

DEVELOPED CONDITIONS

As shown by the Plan, the project consists of the development of the property into 5 townhomes. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and the project hydrology is tabulated for both existing and developed conditions.

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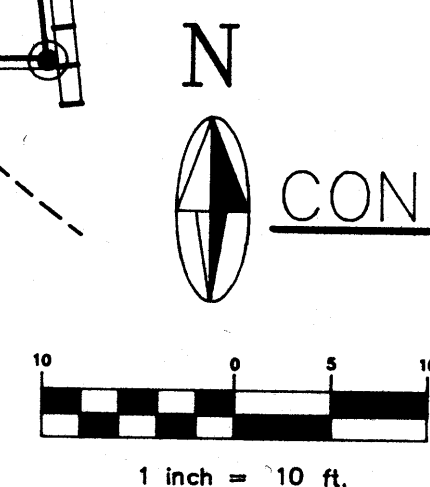
EROSION CONTROL

Temporary erosion control will be required during construction to the discharge of sediment into the public street and storm drainage network. The details for temporary erosion control will be provided on the final Grading and Drainage Plan.

CALCULATIONS:

The calculations shown hereon define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January 1993

HYDROLOGY - HYMO								
Precipitation Zone 3						P360 = 2.00 inches		
BASIN	AREA	Aa	Ab	Ac	Ad	E	Q100	VOL10
	acres	acres	acres	acres	acres	inches	cfs	af
EXISTING CONDITION:								
SITE	0.36	0.00	0.00	0.36	0.00	1.20	1.2	0.04
DEVELOPED CONDITION:								
SITE	0.36	0.00	0.03	0.03	0.30	2.15	1.7	0.06



CONCEPTUAL GRADING AND DRAINAGE PLAN

LEGAL DESCRIPTION

LOTS 39 AND 40 IN BLOCK-11
OF BLOCKS 1 TO 21, SNOW HEIGHTS
ALBUQUERQUE, NEW MEXICO

ADDRESS
PENNSYLVANIA ST. NE
TOPOGRAPHY
TOPOGRAPHY TAKEN FROM
FLOODWAY PANEL 350002-0030
DATED 10-8-1980

FERNADEZ TOWNHOUSES
ALBUQUERQUE, NEW MEXICO
PROJECT # 7895

REVISION DATE

rick bennett
architect

1118 Park Avenue SW
Albuquerque, New Mexico
87102
(505) 242-1859

DATE _____

9-21-95

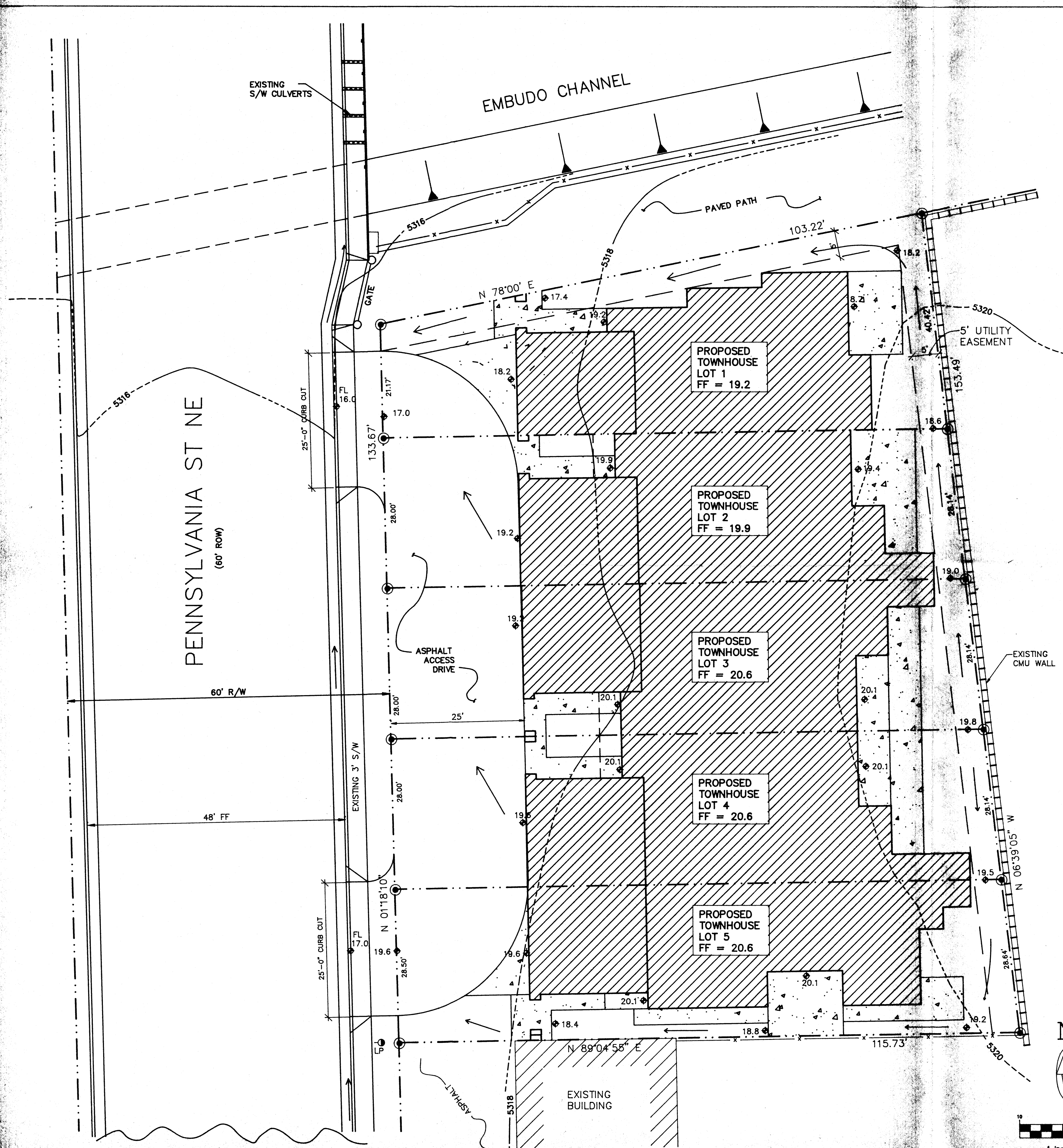
SHEET NUMBER

C-1

Bli BRASHER & LORENZ, INC.
Consulting Engineers

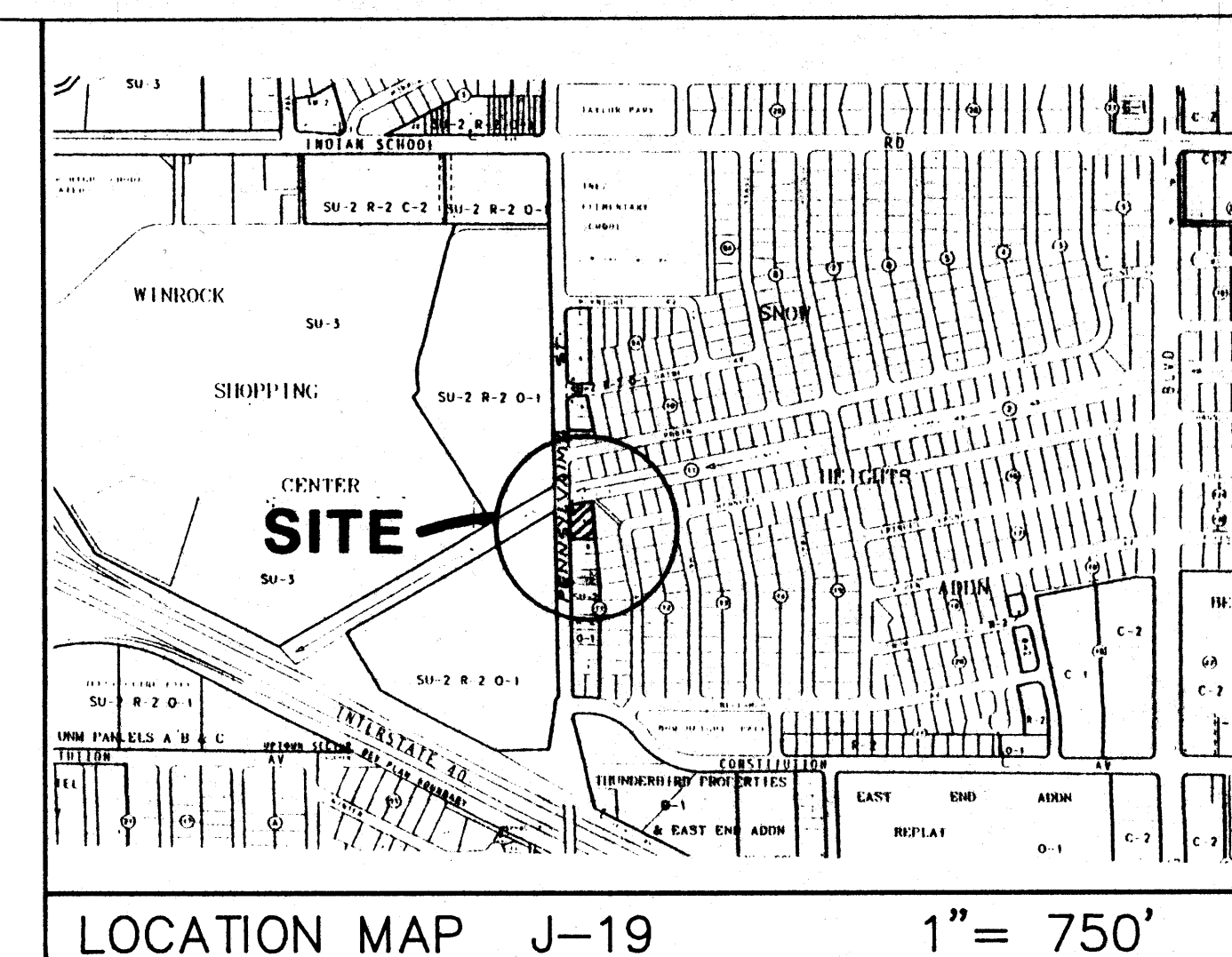
4425 Juan Tabo Blvd. NE Suite 200
Albuquerque, New Mexico 87111

Ph: 505-296-0422 Fax: 505-296-0441



LEGEND

- 6001 — EXISTING CONTOUR ELEVATION
- 02.5 x EXISTING SPOT ELEVATION
- 01 — PROPOSED CONTOUR ELEVATION
- — — — — PROPERTY LINE
- 01.5 + PROPOSED SPOT ELEVATION
- ← DIRECTION OF FLOW
- DRAINAGE SWALE
- - - - - DRAINAGE BASIN DIVIDE



CONCEPTUAL GRADING AND DRAINAGE PLAN

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Conceptual Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as 5 Townhomes, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide conceptual grading and drainage information to support the project Site Development Plan.

EXISTING CONDITIONS

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Pennsylvania is a paved public street, with curb and gutter and permanent pavement. A 3 foot sidewalk is located along the project frontage.

As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone.

DEVELOPED CONDITIONS

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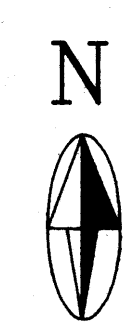
EROSION CONTROL

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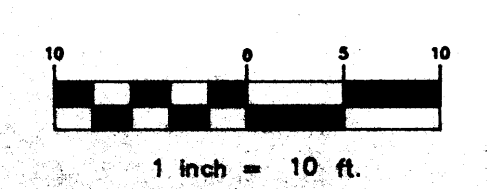
CALCULATIONS:

The calculations shown hereon define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January

HYDROLOGY - HYMO								
Precipitation Zone 3			P360 = 2.60 inches					
BASIN	AREA	Aa	Ab	Ac	Ad	E	Q100	VOL100
acres	acres	acres	acres	acres	acres	inches	cfs	af
EXISTING CONDITION:								
SITE	0.36	0.00	0.00	0.36	0.00	1.29	1.2	0.04
DEVELOPED CONDITION:								
SITE	0.36	0.00	0.03	0.03	0.30	2.15	1.7	0.06



CONCEPTUAL GRADING AND DRAINAGE PLAN



LEGAL DESCRIPTION

LOTS 39 AND 40 IN BLOCK-11 OF BLOCKS 1 TO 21, SNOW HEIGHTS ALBUQUERQUE, NEW MEXICO

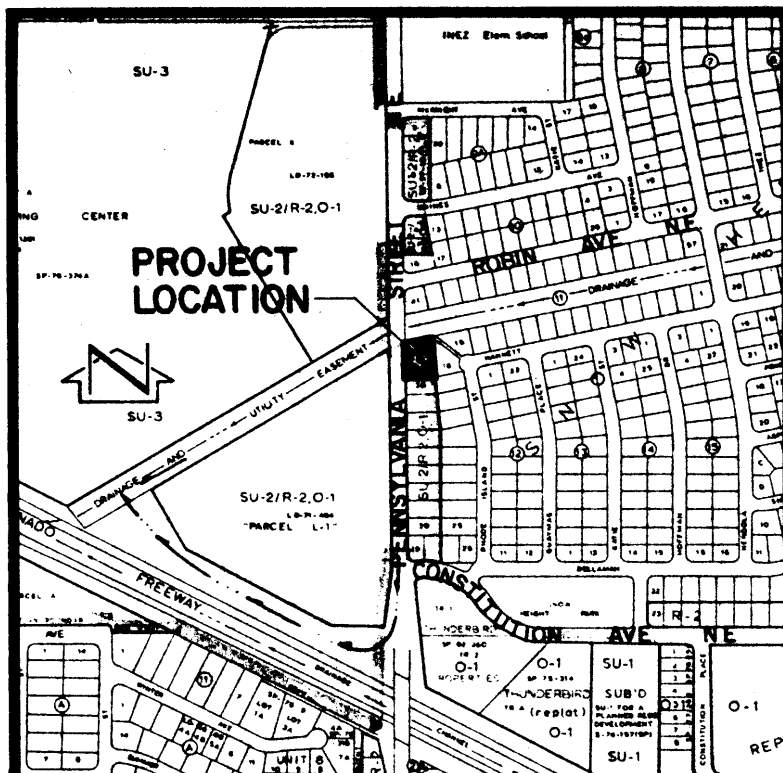
ADDRESS PENNSYLVANIA ST. NE TOPOGRAPHY

TOPOGRAPHY TAKEN FROM FLOODWAY PANEL 350002-0030 DATED 10-8-1980

FERNANDEZ TOWNHOUSES
ALBUQUERQUE, NEW MEXICO
PROJECT # 7895

REVISION DATE
rick bennett architect
1118 Park Avenue SW Albuquerque, New Mexico (505) 242-1859
DATE
9-21-95
SHEET NUMBER
C-1

BLI BRASHER & LORENZ, INC.
Consulting Engineers
4425 Juan Tabo Blvd. NE, Suite 200
Albuquerque, New Mexico 87111
Ph: 505-298-0422 Fax: 505-298-0486



VICINITY MAP
SCALE: 1" = 800'

- LEGEND**
- 5318 — EXISTING CONTOUR
 - 18 — PROPOSED CONTOUR
 - EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - — EXISTING CHAINLINK FENCE
 - — PROPOSED ASPHALT PAVING
 - — PROPOSED CONCRETE
 - — EXISTING WALL
 - — EXISTING SWALE
 - — PROPOSED SWALE

TEMPORARY BENCHMARK
SCRATCH ON TOP OF CONCRETE CURB @ THE PROJECTION OF THE SOUTHWEST PROPERTY CORNER ONTO PENNSYLVANIA ST. N.E. AS SHOWN ON DRAWING. ELEVATION = 5310.91 FEET (MSL.D.)

PROJECT BENCHMARK
A STANDARD A.C.S. BRASS TABLET STAMPED 11-18 IN TOP OF A CONCRETE POST 0.6' NORTH OF THE NORTH EDGE OF A CONCRETE SIDEWALK & FLUSH WITH THE TOP OF SIDEWALK PAVEMENT. THE STATION IS LOCATED 28.2' NORTH OF CENTERLINE CONSTITUTION AVE N.E. 0.1 MILES FROM THE JUNCTION OF PENNSYLVANIA ST. N.E. & CONSTITUTION AVE N.E. ELEVATION = 5320.05 FEET (MSL.D.)

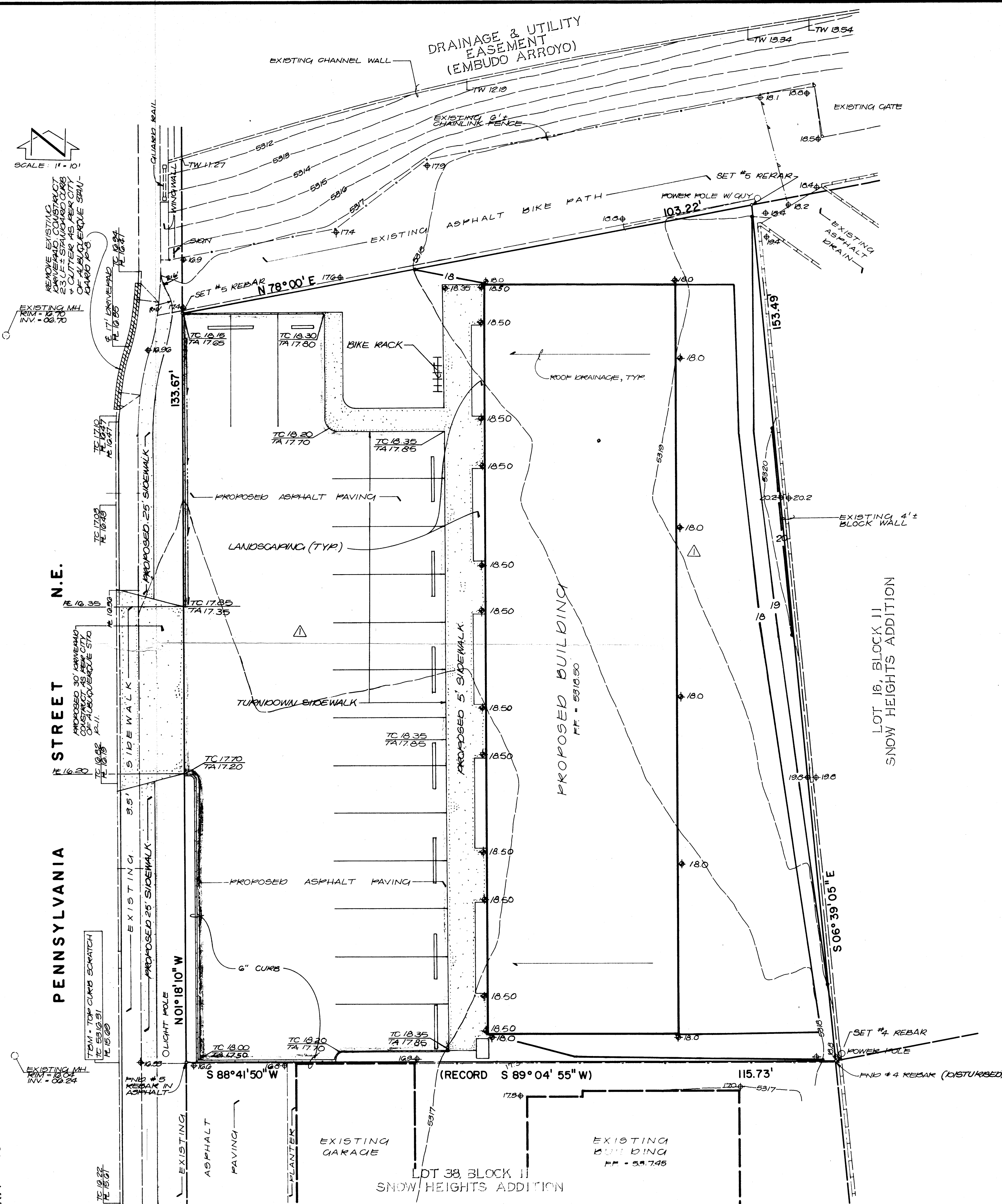
LEGAL DESCRIPTION
LOT 38-A, BLOCK 11, SNOW HEIGHTS ADDITION

EROSION CONTROL MEASURES

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

CONSTRUCTION NOTES:

- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
- 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.
- 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.
- ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.



DRAINAGE PLAN

The following items concerning the 1420 Pennsylvania Street N.E. Townhouse Complex Drainage Plan are contained hereon:

- Vicinity Map
- Grading Plan
- Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the east side of Pennsylvania Street N.E. between Robin Avenue N.E. and Constitution N.E. At present this site is undeveloped. Much of the surrounding area is currently developed, thereby making this an infill site. As shown by Plate J-19 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. Therefore, downstream flooding is not apparent, and therefore does not appear to be a problem. Based upon the fact that apparent downstream capacity is available, the fact that the site is an infill site, that there will be a minor increase in runoff generated by the proposed improvements, and the proximity of this site to the Embudo Arroyo System, the free discharge of runoff from this site is appropriate.

The Grading Plan shows 1) existing and proposed grades indicated by 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 consists of the construction of a new 10-unit townhouse complex, along with adjacent paving and landscaping. Flows generated by this site will be routed from east to west and discharged onto Pennsylvania Street N.E. From that point, the runoff will flow south along the west edge of Pennsylvania Street N.E. to an existing concrete runoff located at the intersection of Pennsylvania Street N.E. and Constitution Avenue N.E. From that point, the runoff will flow west to the Coronado Freeway Drainage Structure, which is part of the Embudo Arroyo System, which is the outfall for this site. This pattern is consistent with the existing site drainage. No offsite flows will enter the site to the east because an existing block wall located along the east property line prevents flows from entering the site. No offsite flows will enter the subject site from the north because of the Embudo Arroyo which drains away from the site. No offsite flows enter the subject site from the adjacent site to the south because it has been developed in a manner such that those flows are conveyed east away from the project site.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The SCS Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by the Calculations, the proposed improvements will result in a relatively minor increase in runoff generated by this site. The increase in runoff from the proposed improvements will be approximately 2.0 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Etc-Embudo-Tijeras Complex
Plate: 31
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

$$T_c = 0.0078 L^{0.77} S^{0.385} \text{ (Kirpich Equation)}$$

$$T_p = T_c = 10 \text{ min.}$$

Point Rainfall

$$P_6 = 2.35 \text{ in. (DPM Plate 22.2 D-1)}$$

Rational Method

$$\text{Discharge: } Q = C i A$$

where C varies
 $i = P_6 (6.84) T_c^{-0.51} = 4.97 \text{ in/hr}$
 $P_6 = 2.35 \text{ in (DPM Plate 22.2D-1)}$
 $T_c = 10 \text{ min (minimum)}$
 $A = \text{area, acres}$

SCS Method

$$\text{Volume: } V = 3630 (\text{DRO}) A$$

Where DRO = Direct runoff in inches
 $A = \text{area, acres}$

Existing Condition

$$A_{\text{total}} = 15,620 \text{ sf} = 0.36 \text{ Ac}$$

$$C = 0.40 \text{ (Weighted average per Emergency Rule, 1/14/86)}$$

$$Q_{100} = C i A = (0.40) (4.97) (0.36) = 0.7 \text{ cfs}$$

$$A_{\text{imp}} = 0 \text{ sf; \% impervious} = 0 \%$$

$$\text{Composite CN} = 70 \text{ (DPM Plate 22.2 C-3)}$$

$$\text{DRO} = 0.1 \text{ in (DPM Plate 22.2 C-4)}$$

$$V_{100} = 3630 (\text{DRO}) A = 130 \text{ cf}$$

Developed Condition

$$A_{\text{total}} = 15,620 \text{ sf} = 0.36 \text{ Ac}$$

$$\text{Roof area} = 4555 \text{ sf} = (0.26)$$

$$\text{Paved area} = 5225 \text{ sf} = (0.28)$$

$$\text{Landscaped area} = 4840 \text{ sf} = (0.08)$$

$$C = 0.72 \text{ (Weighted average per Emergency Rule, 1/14/86)}$$

$$Q_{100} = C i A = (0.72) (4.97) (0.36) = 1.3 \text{ cfs}$$

$$A_{\text{imp}} = 10,780 \text{ sf; \% impervious} = 69 \%$$

$$\text{Composite CN} = 87 \text{ (DPM Plate 22.2 C-3)}$$

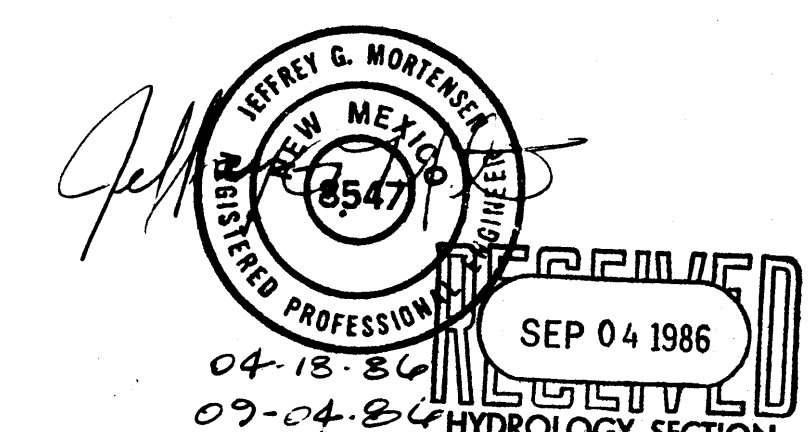
$$\text{DRO} = 1.2 \text{ in (DPM Plate 22.2 C-4)}$$

$$V_{100} = 3630 (\text{DRO}) A = 1,570 \text{ cf}$$

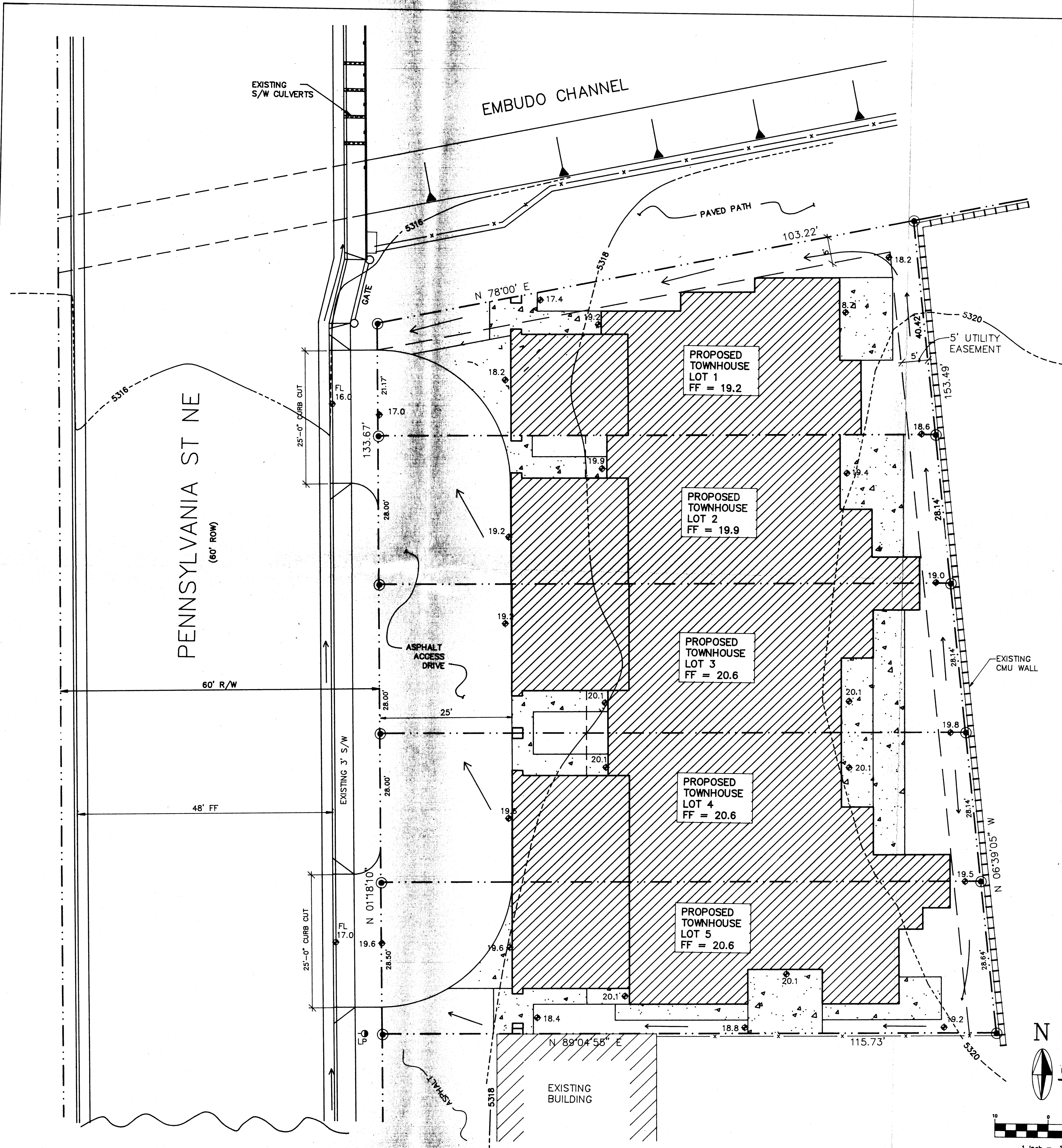
Comparison

$$\Delta Q_{100} = 1.3 - 0.7 = 0.6 \text{ cfs (increase)}$$

$$\Delta V_{100} = 1,570 - 130 = 1,440 \text{ cf (increase)}$$

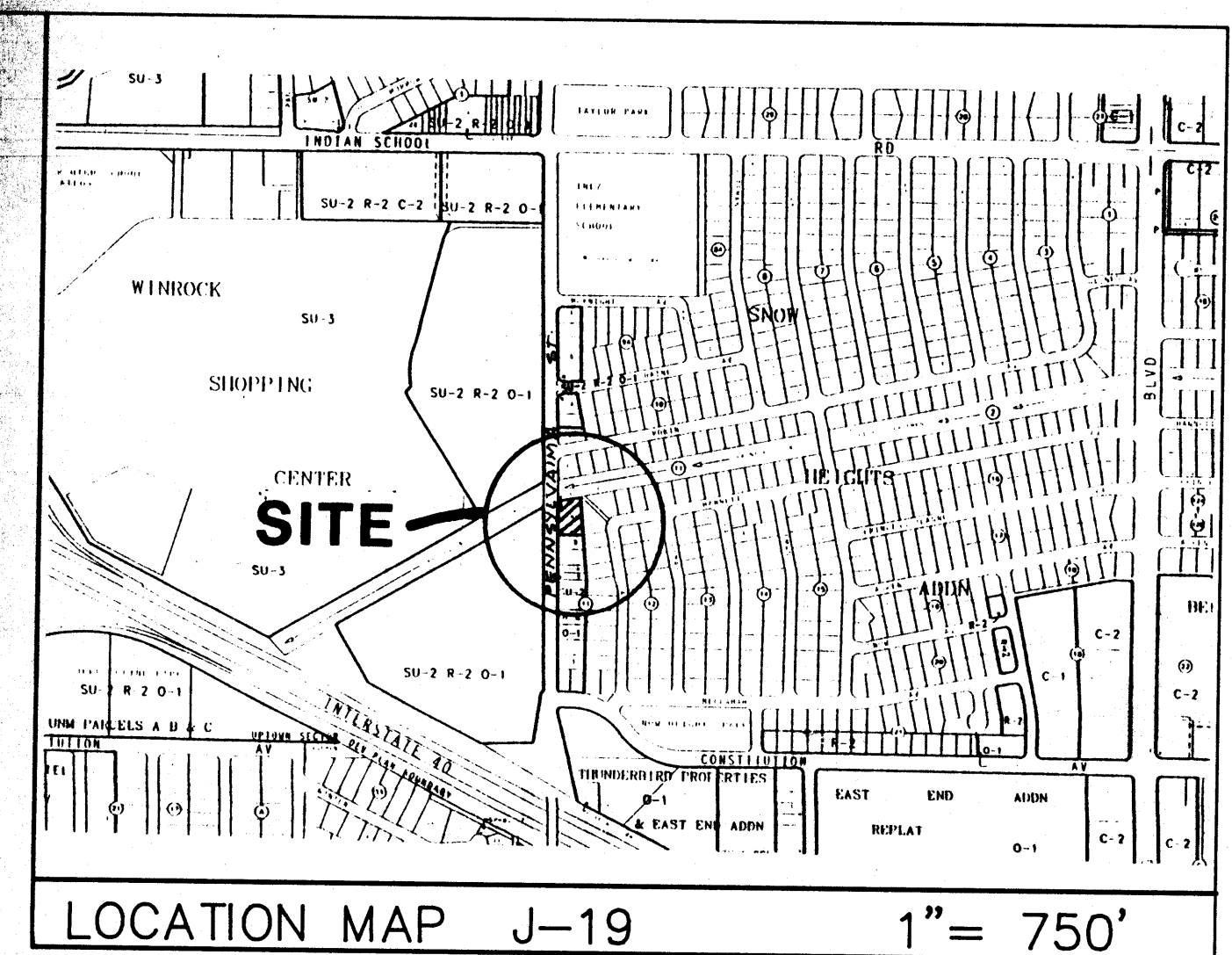


	NO. DATE BY REVISIONS 1. 8/30/86 REVISE OVERALL SITE PLAN & CALCULATIONS			DESIGNED BY: <u>LU</u> DRAWN BY: <u>BE</u> APPROVED: <u>GM</u>	JOB NO. 60453 DATE 03-86	GRADING & DRAINAGE PLAN 1420 PENNSYLVANIA ST N.E.	FILE NO. SHEET 1 OF 1
	811 DALLAS N.E. - ALBUQUERQUE - NEW MEXICO - 87102 ENGINEERS						



LEGEND

- 6001 — EXISTING CONTOUR ELEVATION
- 02.5 x — EXISTING SPOT ELEVATION
- 01 — PROPOSED CONTOUR ELEVATION
- — — — — PROPERTY LINE
- 01.5 ♦ — PROPOSED SPOT ELEVATION
- ← — DIRECTION OF FLOW
- — — — — DRAINAGE SWALE
- - - - - DRAINAGE BASIN DIVIDE



CONCEPTUAL GRADING AND DRAINAGE PLAN

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Conceptual Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as 5 Townhomes, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide conceptual grading and drainage information to support the project Site Development Plan.

EXISTING CONDITIONS

The project site is approximately 0.36 acres in size and is located on Pennsylvania Street NE, just north of Constitution Street NE. The site is bounded by Pennsylvania on the west, the Embudo Channel on the north, and developed property on the east and south. The site is described as Lots 39 & 40, Snow Heights Addition, Unit 11. Presently the site is undeveloped. Site topography slopes from west to east at approximately 1%. The site is sparsely covered with native vegetation.

On-site all runoff flows westward into Pennsylvania Street. Pennsylvania conveys all runoff north to the bridge at the Embudo Channel. The bridge drains via sidewalk culverts into the channel. NO OFF-SITE FLOWS ENTER THE PROPERTY. Pennsylvania is a paved public street, with curb and gutter and permanent pavement. A 3 foot sidewalk is located along the project frontage.

As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone.

DEVELOPED CONDITIONS

As shown by the Plan, the project consists of the development of the property into 5 townhomes. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and the project hydrology is tabulated for both existing and developed conditions.

All drainage flows will be managed on-site by earthen swales and drain to Pennsylvania Street and the Embudo Channel, as mentioned above. Due to the proximity of the Embudo Channel, the site will free discharge all excess runoff to the Channel.

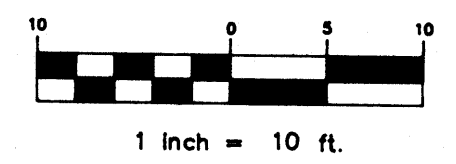
EROSION CONTROL

Temporary erosion control will be required during construction to the discharge of sediment into the public street and storm drainage network. The details for temporary erosion control will be provided on the final Grading and Drainage Plan.

CALCULATIONS:

The calculations shown hereon define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January 1993.

HYDROLOGY - HYMO								
Precipitation Zone	3	P360 = 2.60 inches						
BASIN	AREA	Aa	Ab	Ac	Ad	E	Q100	VOL100
acres	acres	acres	acres	acres	acres	inches	cfs	af
EXISTING CONDITION:								
SITE	0.36	0.00	0.00	0.36	0.00	1.29	1.2	0.04
DEVELOPED CONDITION:								
SITE	0.36	0.00	0.03	0.03	0.30	2.15	1.7	0.06



CONCEPTUAL GRADING AND DRAINAGE PLAN

LEGAL DESCRIPTION

LOTS 39 AND 40 IN BLOCK-11
OF BLOCKS 1 TO 21, SNOW HEIGHTS
ALBUQUERQUE, NEW MEXICO

ADDRESS:
PENNSYLVANIA ST. NE

TOPOGRAPHY

TOPOGRAPHY TAKEN FROM
FLOODWAY PANEL 350002-0030
DATED 10-8-1980.

FERNANDEZ TOWNHOUSES

ALBUQUERQUE, NEW MEXICO

PROJECT # 7895

REVISION DATE
rick bennett architect 1118 Park Avenue SW Albuquerque, New Mexico 87102 (505) 242-1859
DATE 9-21-95
SHEET NUMBER C-1



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