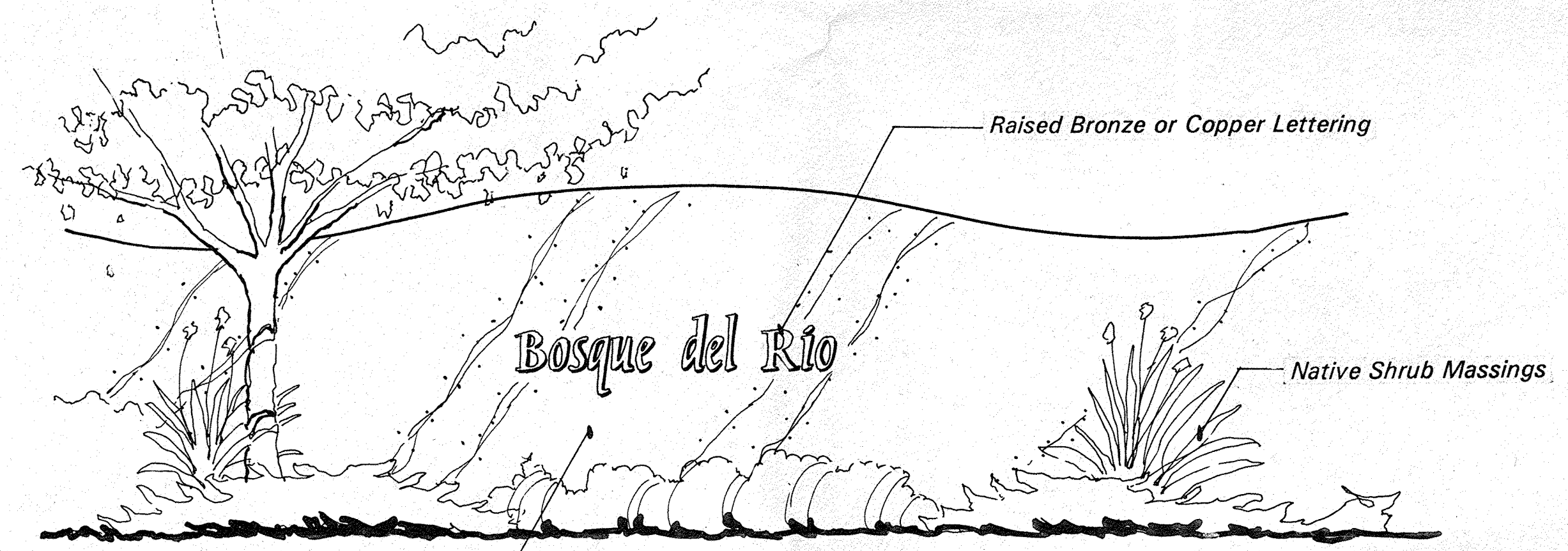
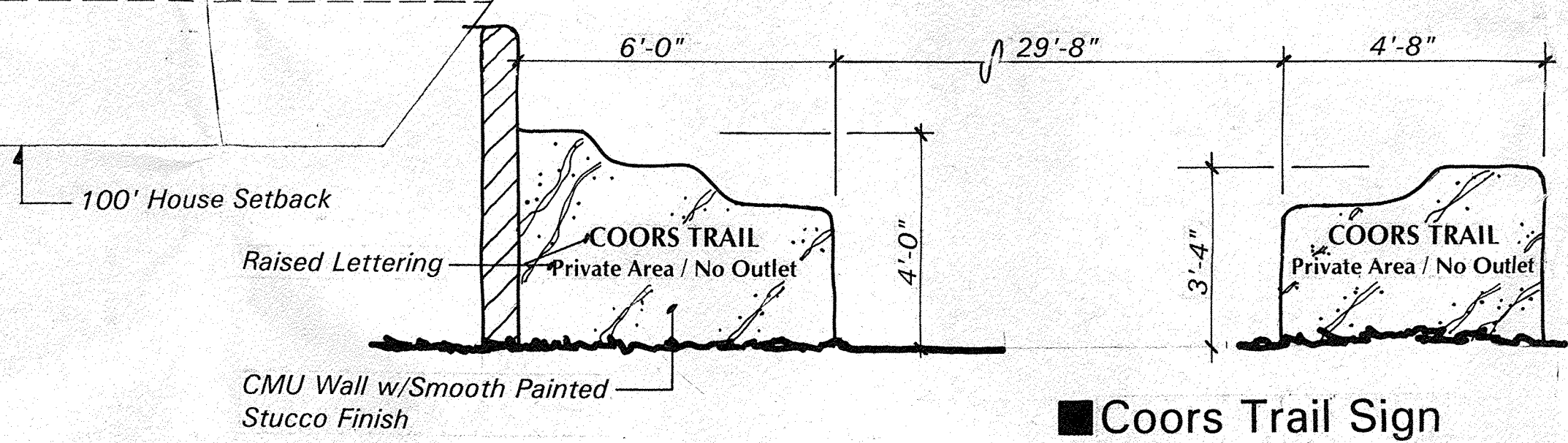


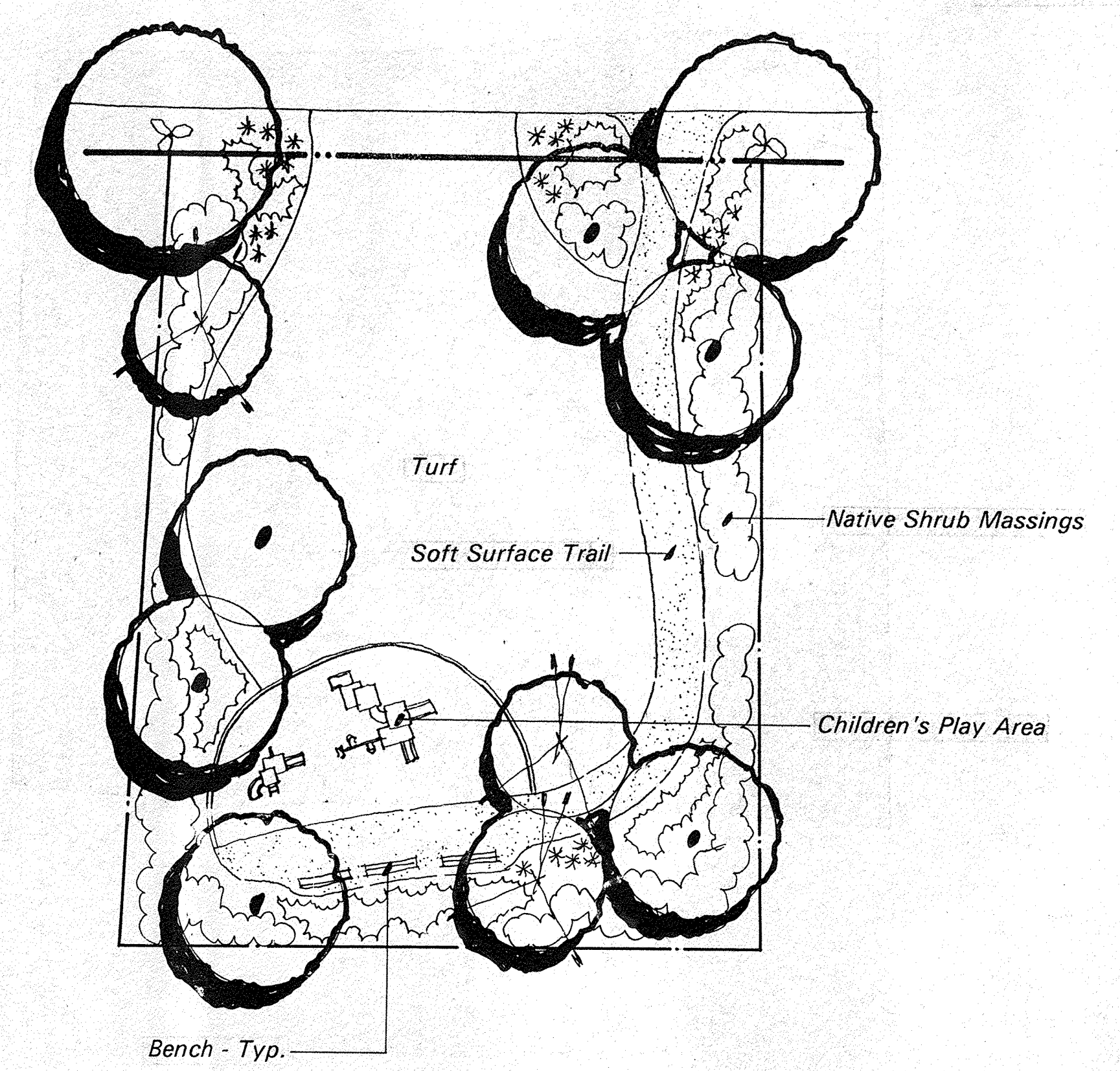
**Landscape Plan**



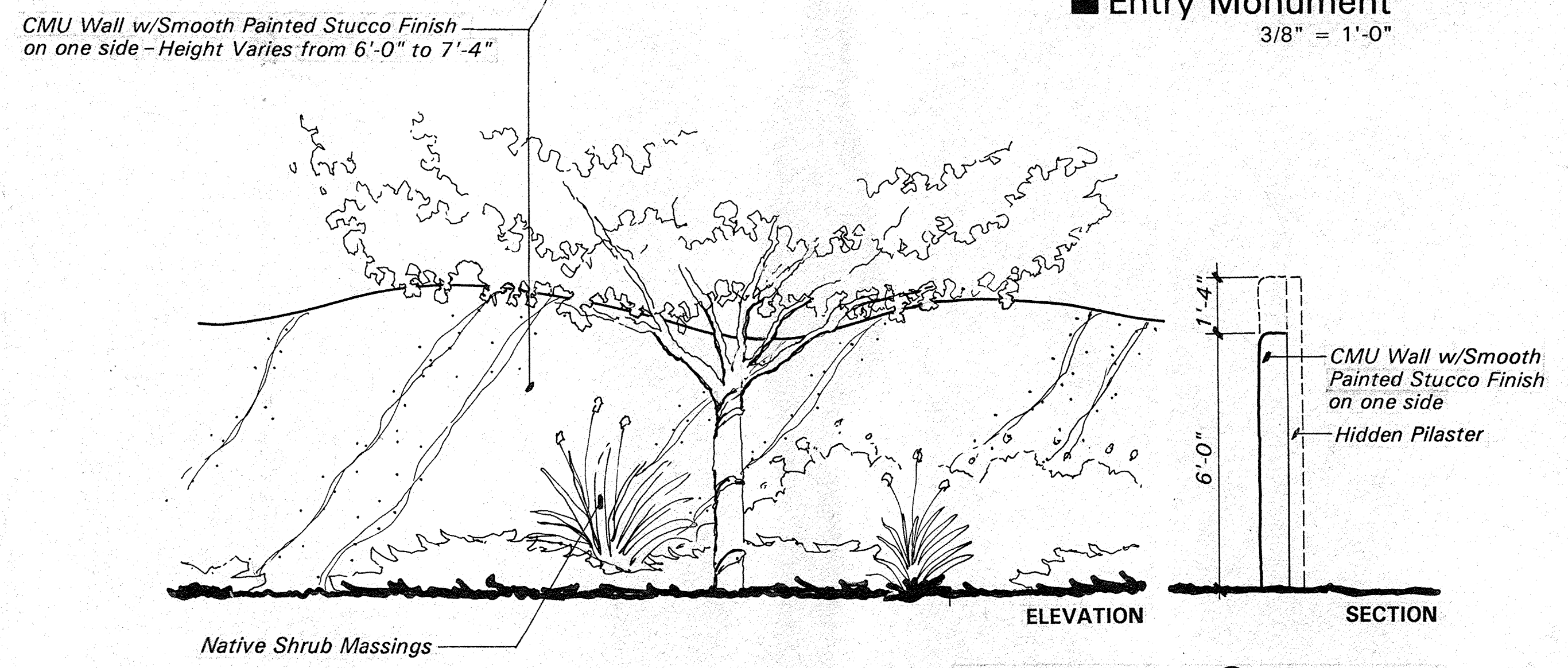
**Entry Monument**  
3/8" = 1'-0"



**Coors Trail Sign**  
3/8" = 1'-0"



**Park Area**  
1" = 20'-0"



**Perimeter Wall @ Coors Trail**  
3/8" = 1'-0"

**Landscape Concept**

The Landscape Concept for Bosque del Rio was developed to enhance and follow the patterns of the surrounding environment. The streetscape along Eagle Ranch Road will feature informal groupings of Cottonwood, Ash, and Pine varieties. The ground plane will be developed with massings of native shrub, groundcover, and perennial materials with accent materials interspersed. The entry monument will be highlighted with seasonal color along with a common thread of evergreen plants.

A small private park area is proposed internal to the subdivision. Elements to be included will be a soft surface trail with a connection to the 12' private trail easement at the south end of the property, a small children's play area with benches, and a medium-sized open play turf area. The landscape treatment will be comprised of large shade trees, flowering accent trees, and natural massings of native shrub material.

**ZONING CODE LANDSCAPE REQUIREMENTS**

Bosque del Rio is being developed as a single family residential community and, therefore, does not fall under the specific landscape requirements of the City of Albuquerque Zoning Code.

**STREET TREE ORDINANCE REQUIREMENTS**

Eagle Ranch Road at this point is considered a Collector Street and does not fall under the requirements of the City of Albuquerque Street Tree Ordinance. However, the Developer is applying a street tree requirement within the subdivision. The intent is to create a visually integrated streetscape by requiring street trees at a specific interval throughout the subdivision. These street trees will be limited to two varieties: Cottonwood (female) and Autumn Purple Ash.

**UTILITY NOTES**

Due to the small scale, and in order to provide optimum legibility of the landscape plan, utility easements are not shown. The location of utility easements are as indicated on Site Plan.

**IRRIGATION SYSTEM - GENERAL DESCRIPTION**

A fully automated sprinkler/drip irrigation system will irrigate turf areas, and tree, shrub, and groundcover planting areas. Pop-up spray sprinklers, and gear-driven rotary sprinklers will irrigate turf areas; single-outlet and multi-outlet drip emitters will irrigate plant materials in the planting beds.

Municipal drinking water will be used for irrigation. The point-of-connection (P.O.C.) will be immediately downstream of the irrigation water meter installed by others.

The irrigation control system utilizes a main control terminal and multiple remote control valves. All irrigation scheduling is done at the main controller. Valves can be operated manually from the field switching terminals. Isolation gate valves will permit the isolation of sections of the system for repair or maintenance. Quick coupling valves will be located throughout the site for incidental watering.

**MAINTENANCE RESPONSIBILITY**

Maintenance of the landscaping and irrigation system shall be the responsibility of the Owner. All planting areas will be maintained in a living, attractive, and weed free condition.

**PLANT PALETTE**

SYMBOL	COMMON NAME
<b>TREES</b>	
	Deciduous (2" Caliper Min.) Cottonwood (female), Autumn Purple Ash, Honeylocust Species, Chinese Pistache
	Evergreen (6" Min. Height) Austrian Pine, Scotch Pine, Pinon Pine
	Accent (1 1/2" Caliper Min.) Desert Willow, New Mexico Olive, Flowering Pear, Flowering Plum
<b>SHRUBS (1 &amp; 5 Gallon)</b>	
	Juniper Species, Potentilla, Chamisa, Artemisia Species, Fourwing Saltbush, Red Flowering Yucca, Apache Plume, Dalea Species, Penstemon Species, Desert Spoon, Cotoneaster Species, Forsythia, Mugho Pine, Cherry Sage, Spiraea, Caryopteris, Yucca Species
<b>GROUNDCOVERS &amp; VINES (1 and 5 Gallon)</b>	
	Trumpet Vine, Carolina Jessamine, Juniper Species, Honeysuckle, Wisteria, Virginia Creeper
<b>GRASSES (Sod and/or Seed)</b>	
	Buffalo Grass, Kentucky Bluegrass
<b>MULCHES</b>	
	3" - 6" Cobble, 3/4" Rock Mulch, Boulders, Bark Mulch

# Bosque del Rio

**Landscape Plan**

Prepared For: Garrett Group, Inc.  
P.O. Box 10285  
Albuquerque, NM 87184-0285

Prepared By: Consensus Planning, Inc.  
718 Central Avenue SW  
Albuquerque, NM 87102

January 19, 1995  
Revised February 8, 1996



# Bosque del Río

## Architectural Design Guidelines

### Architecture

The objective of these guidelines is to establish a uniform and high standard for the design of houses in Bosque del Río. The residences of Albuquerque's north valley have traditionally been varied in style and size ranging from rambling territorial estates to simple one room adobe houses. Primarily, it is an architecture of walls and courtyards embracing the landscape. The casual nature of Southwestern living comes from the blending of different cultures, influences, and styles with an attachment to the land. The guidelines that follow are meant to allow for creativity by providing specific and general descriptions of the nature of the traditional styles of the region and to allow for the blending of different styles in the same community. However, no house should stand so far apart in its design as to disrupt or detract from the visual harmony of the community.

### Architectural Style

The following are brief descriptions of relevant styles and the primary features that are needed to distinguish them from each other.

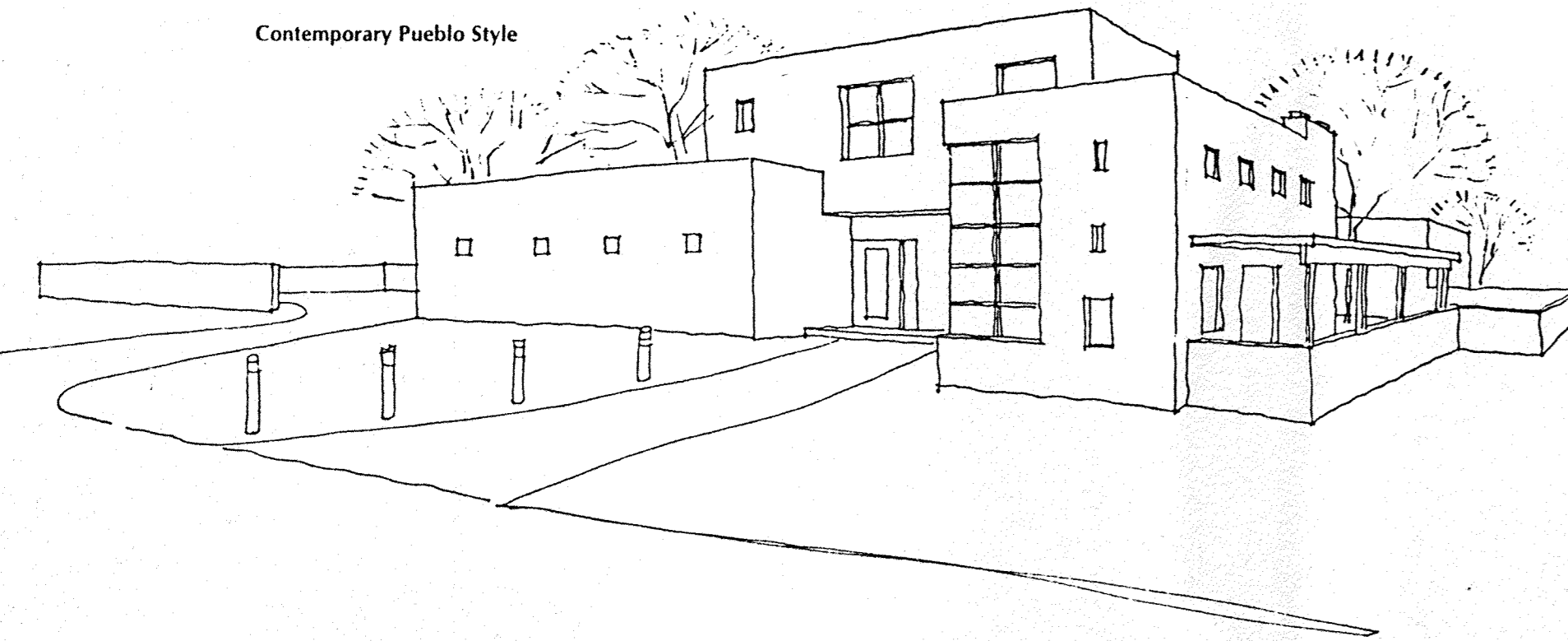
### Pueblo Revival Style



Pueblo style residences are based on a mixture of influences beginning with the Pueblo Indian dwellings, first and foremost, but also early Spanish dwellings and modern concerns. The organization is characterized by clustered forms and spaces of varying sizes and heights. Clustering elements creates an additive appearance of successive additions and a subtle hierarchy of forms and spaces. This style is not typically a single form with many rooms, but many rooms each with its own distinct form. Roofs are characterized by low sloped construction and parapets. The parapets are rounded in profile with canales penetrating to emphasize other openings. Porches and portals are low sloped with rough hewn wood columns, corbels, exposed wood vigas and wood ceilings. The wall construction is historically masonry with a stucco finish. Frame construction is modified to feel like masonry by rounding corners and parapets. The look of masonry also dictates placement and size of openings in walls to create the appearance of support and massiveness. This is reflected in the recessed windows, door openings and buttressed corners. This mixture of additive forms and subtractive openings creates a distinctive character that is inseparable from this style.

1. There are no pitched roof forms in this style.
2. Entry portals are a hallmark of the style.
3. Lintels over openings can be wood and exposed but covered lintels are just as common.
4. Exterior wall finish is stucco with rounded corners from the approved color list.
5. Stone can be used in horizontal benches at the base of walls in the prescribed percentages in coursed ashlar pattern.
6. The clustered form allows for courtyards to be easily integrated into the design by low walls and gates.
7. Parapets are also used to emphasize forms and screen roof equipment.

### Contemporary Pueblo Style



Contemporary interpretations of the Pueblo style incorporating large areas of glass and innovative massing can be designed, with skill, to be in harmony with more traditional residences.

1. There are no pitched roof forms in this style.
2. Not more than (3) color changes to stucco exterior wall finish from the approved list.
3. Courtyard walls extending geometries of residence are a part of this style.
4. Stone can be used in horizontal benches at the base of walls and in chimney forms in the prescribed percentages in a coursed rubble pattern.
5. Percentage of glass areas to wall area not to exceed 30%.
6. No wood lintels over window or door openings.
7. Parapets are used to emphasize forms and screen roof equipment.

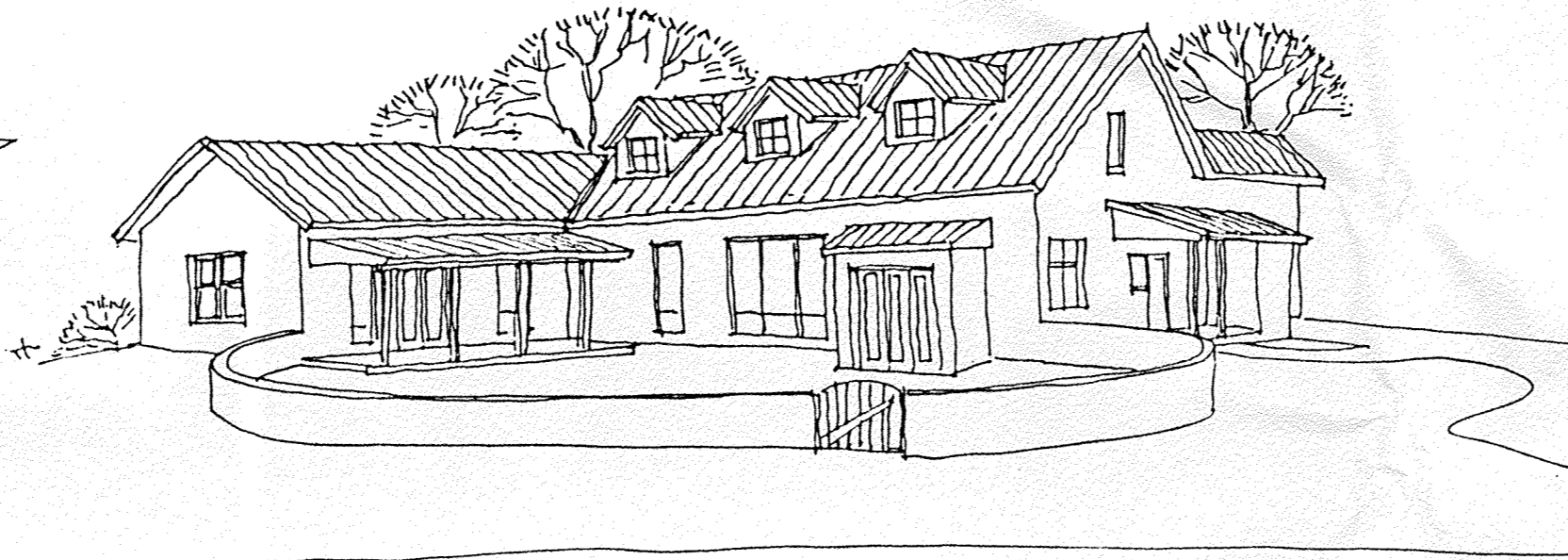
### Territorial Style



The territorial style has its roots in the Pueblo style and early Spanish buildings. Many existing structures were upgraded to the Territorial style by adding classical architectural elements. Territorial houses today are characterized by simple, if not symmetrical, massing, low sloped roofs, brick parapet caps, stucco walls, square corners, and pedimented window and door head trim. Portals and courtyards are used to complete plan geometries and to add classical touches to simple massing. The square corners and finish trim are easily built in frame construction, but adobe was historically used. The history of masonry dictates that the windows and doors be deep set, but not as dramatically as in the Pueblo style. The territorial style, while closely related to the Pueblo style, is straighter, more formal, more finished and lends itself to modern construction techniques.

1. There are no pitched roof forms in this style.
2. Entry portal is common and a hallmark of the style.
3. Trim over openings can be pedimented wood with moldings, but untrimmed openings are just as common.
4. Exterior wall finish is stucco with square corners from the approved color list.
5. Brick can be used in horizontal benches at the base of walls, as parapet caps and in chimney forms in the prescribed percentages.
6. The symmetrical form allows for formal courtyards to be easily integrated into the design by low walls and gates extending rectilinear geometries.
7. Parapets are also used to emphasize forms and screen roof equipment.
8. Portal columns are square or square tapered and are typically painted finished wood with painted wood trim forming the capital and base of the post. No corbels.

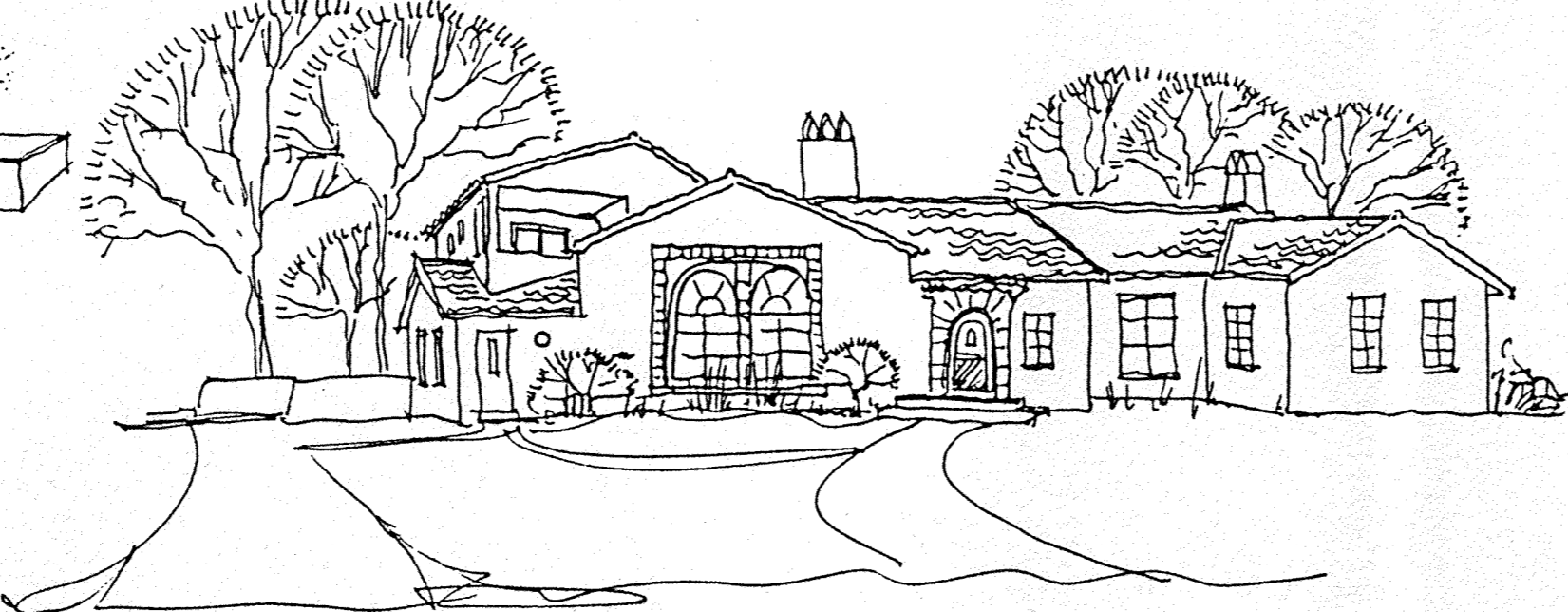
### Northern New Mexico Style



A historic Northern New Mexico style house was typically a simple Pueblo style or Territorial style residence with a pitched roof added, resulting in a usable attic space. To keep the roof simple, economical, and to conserve heat the house is more compact. Lower additions with shed or low sloped roofs branch off of the main form. This results in a dominant single form with lower dependant forms. The roofing material is traditionally corrugated metal sheets with a galvanized finish. Colored standing seam roofs are also possible in red, green, and silver. Portals have shed roofs at a lower pitch than the main roof and are also metal. Second story rooms are typically half in the roof creating cathedral ceilings and characteristic dormer windows.

1. Pitched roof forms are allowed in this style with 1-1/2 story height maximum.
2. Trim over openings can be pedimented wood with moldings, but untrimmed openings are just as common.
3. Entry porch is common and a hallmark of the style.
4. Exterior wall finish is stucco from the approved color list with square or rounded corners.
5. Brick or stone can be used in chimney forms in the prescribed percentages. Stone to be random rubble, coursed rubble or coursed ashlar pattern.
6. No swamp coolers or heating units shall be mounted on pitched roofs.
7. Portal columns are square or square tapered and typically painted finished wood with painted wood trim forming the capital and base of the post. No corbels.
8. Roof eaves and rakes require painted moldings and trim at the termination of roofing.

### Spanish Eclectic Style



Spanish style residences in New Mexico follow similar masonry traditions as the Pueblo style and can be rustic or very finished in character. The Spanish style tradition is characterized by low pitched roofs, usually with little or no overhang, mission tile roof covering and one or several arches at the entry or important rooms. An entry courtyard with an elaborate entry door is common to this style. Typically, there is no entry porch but a gate or entry room may lead to an enclosed garden courtyard with arched or wood framed portals. Tower forms have also been associated with this style in the past, but must be carefully integrated into the massing of the residence. The style can be more symmetrical than the Pueblo style due to the frontal nature of the entry.

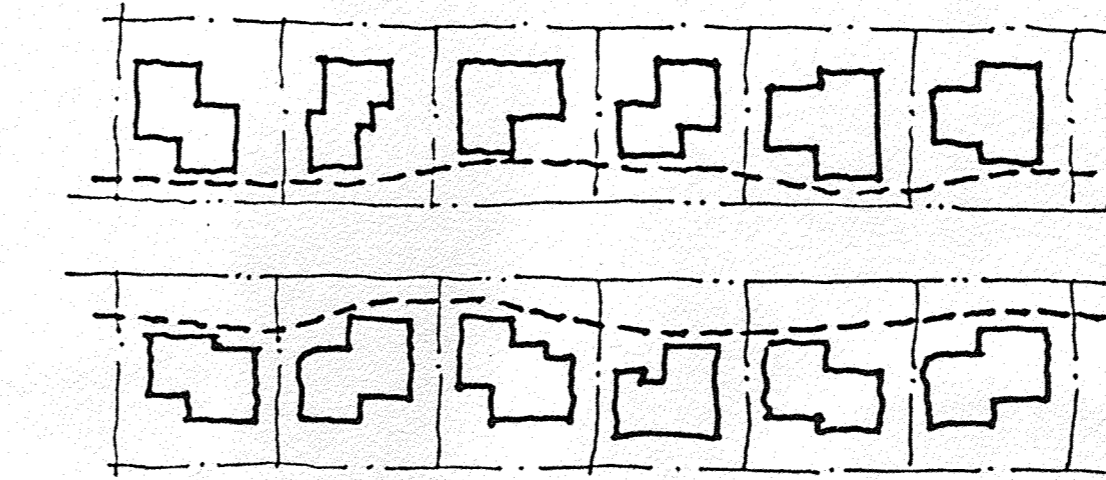
1. There are pitched roof forms on main volumes, porches and colonnades or behind parapets in this style, maximum slope 6 in 12. Low sloped roofs can also be integrated into the massing.
2. Entry portal is not common in this style.
3. Trim over and around openings can be tile or terra cotta moldings, but untrimmed openings are just as common.
4. Smooth stone can be used in horizontal benches at the base of walls, as parapet caps and in chimney caps in the prescribed percentages.
5. The symmetrical form allows for formal courtyards to be easily integrated into the design by low walls and gates extending rectilinear geometries.
6. Parapets are also used to emphasize forms and screen roof equipment.
7. Portal columns are typically round, classical stone or wood, finished with capital and base. Portals can be formed with masonry arches.
8. Exterior wall finish is stucco from the approved color list with square or slightly rounded corners.

For Further Reference  
McAlester, Virginia and Lee. *A Field Guide to American Houses*. New York: Alfred A. Knopf, 1984.

### Setbacks

The arrangement and placement of houses close to or back from the street creates different visual patterns and impressions of the street. The following setbacks are intended to allow flexibility in the placement of a house on a lot yet provide some structure for the ensurance of visual integrity. The setbacks are as follows:

1. Front yard setbacks - no house shall be constructed within twenty feet (20') from the front property line of the Lot.
  - a. No more than two (2) houses in a row shall be at the same front yard setback distance. Setbacks shall stagger a minimum of five feet.
  - b. No more than 75% of the front building wall of a house shall be permitted at the front setback line if the front setback is twenty feet.
2. Side yard setbacks - no house shall be constructed within ten feet (10') from the side property lines of the Lot.
3. Rear yard setback - no house shall be constructed within fifteen feet (15') from the rear property line of the Lot. There shall be a 100' rear yard setback for houses on lots 102-109.
4. Accessory buildings shall be permitted within the rear and side yard setbacks, as approved by the Architectural Control Committee.



### Varied Front Setbacks

### Building Height

Houses or improvements on any Lot shall not exceed two stories for Pueblo Revival, Spanish Eclectic and Territorial styles. Northern New Mexico Style homes are limited to 1-1/2 stories. The maximum height allowed is of twenty-six feet (26'). The height is measured from the original pad elevation to the highest point of the parapet or to the average height between the plate and the ridge of a gable.

1. The maximum area of the second story of a house can be no more than sixty percent (60%) of the area of the first floor including roof decks and porches. The first floor area is calculated exclusive of the required garage area and the area of any permitted accessory structure contained within the Lot.
2. The second story portion of the house shall also be set back minimum of 5' to eliminate the appearance of a two story wall.

### Building Massing

1. All houses in this subdivision will be required to have a minimum of three (3) distinct masses visible on two (2) sides of the design.
2. Offsets in massing are to be 2' minimum horizontally and vertically.
3. Windows are typically wood or aluminum/vinyl set deep in the wall, entry doors are wood in a heavy panel design.
4. Northern New Mexico Style homes will be limited to 1-1/2 stories.

Air conditioning/heating equipment may be installed on flat-roofed structures but must be screened from view by parapets which are an integral part of the house. No air conditioning/heating equipment may be installed on houses with a pitched roof profile. Equipment that is ground mounted must be screened from the front and sides.

### Roof Forms

These forms are appropriate at Bosque del Río:

1. Low sloped roofs, 1/4" per foot to 1" per foot, with parapets (all styles).
2. Gable and hip roofs, no steeper than 8" per foot to 12" per foot, Northern New Mexico Style, 6" per foot to 12" per foot for Spanish Eclectic.
3. Gabled or hip Dormers, Northern New Mexico Style.

These roof forms may not be used at Bosque del Río:

1. Mansard.
2. Domed or arched.
3. Gambrel.
4. Steeply pitched over 9" to 12" per foot.

Any roof mounted equipment must be screened with materials architecturally compatible to the house in terms of material, color, and design. Ground mounted equipment must be screened with materials architecturally compatible to the house in terms of material, color, and design, and/or landscaping. Top of screen walls to be same height or higher than equipment being screened.

### Roof Materials

These roof materials are appropriate for Bosque del Río:

1. Metal roofs, standing seam or corrugated in red, green or silver.
2. Built-up roofing (non reflective).
3. Single ply membrane (low sloped only, non reflective).
4. Clay or Concrete tile, mission barrel or S shapes in solid colors.

These roofing materials will not be allowed at Bosque del Río:

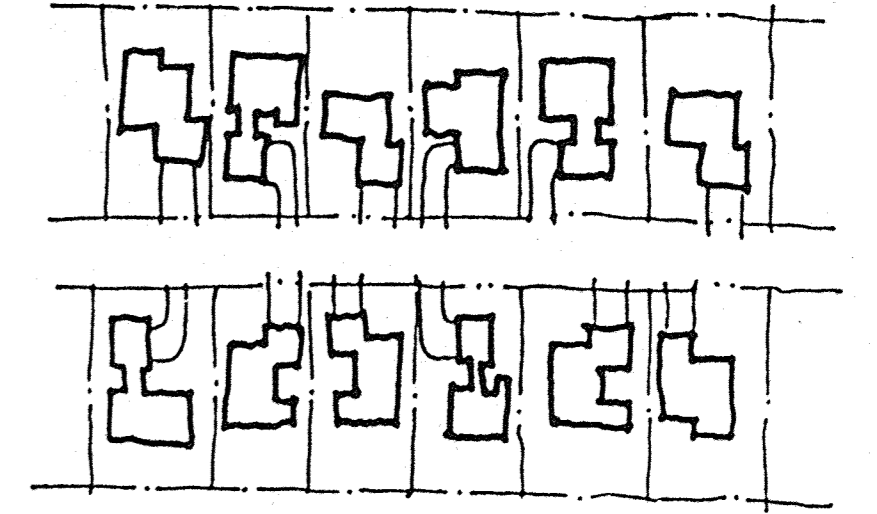
1. Asphalt shingles.
2. Wood shingles and shake shingles.
3. Multi-colored roof tiles.

### Garages

Typical lot sizes within Bosque del Río allow the opportunity to have garage doors angled away from the street. This placement of garage doors is encouraged to break up the monotony of all garage doors being parallel to the street. No more than two houses in a row may have the garage doors parallel to the street. Detached garages, located in the rear yard shall not be considered parallel to the street.

Garage doors shall be a maximum width of two cars. Additional garage doors shall be offset in massing by 2 feet.

Garage doors shall be offset from the surface of the main wall by 12" minimum.



### Varied Garage Placement/Orientation

### Courtyard Walls

Courtyard walls are allowed within the front setback line but may not exceed 36" in height and must be constructed of materials complimentary to the house. All other fencing will be addressed in the C, C & R's, and will be reviewed by the Architectural Control Committee.

### Columns

The following are appropriate column forms at Bosque del Río:

1. Square stucco.
2. Round stucco.
3. Square wood.
4. Square wood, tapered.
5. Round peeled bark wood.
6. Round classical with smooth shafts in Doric or simple contemporary order.

The following shall not be allowed:

1. Corinthian.
2. Ionic.
3. Tuscan.
4. Egyptian.

### Arches

Arches should be simple and massive.

1. Full Roman.
2. Segmented.

No Gothic arches.

### Windows

Windows are integral with all styles of houses at Bosque del Río.

1. Windows should be set deep into the walls to create a feeling of masonry construction and massiveness, 2" offset minimum.
2. Plant-Ons or stucco surrounds may not be used.
3. Windows with colored sashes and heavy profiles are appropriate.
4. Unadorned aluminum frames or mullions may not be used.

### Building Materials

1. Stucco - shall be the primary building material and shall account for a minimum of 85% of the exterior construction.
2. Stone - may be used as an accent feature and shall not comprise more than 15% of the exterior construction. See architectural styles for restrictions.
3. Brick - may be used as an accent feature and shall not comprise more than 15% of the exterior construction. See architectural styles for restrictions.

### Colors

1. Primary - exterior stucco colors shall be limited to, or match, the following: El Rey Stucco standard colors including Buckskin (106), Driftwood (111), Straw (122), Sandalwood (121), Suede (118), Lu Luz (125), Desert Rose (114), Sand (103), Fawn (117), Palomino (119), Adobe (116), Beige (105), and Cottonwood (115), and Sto Industries Colors for the Southwest including Pecos (01001), Abiqu (01002), Santa Fe Mocha (01003), Adobe Brown (01994), Pueblo (01005), Suede (01006), Umbelwood (01010), Paloma (01014), Cimmaron (01015), and Mesa Del Sol (01016). Colors from manufacturers other than El Rey or Sto need to match approved colors to be submitted.
2. Accent - a variety of colors may be used to accent architectural features such as entries, window trim, fascias, and other traditional southwestern architectural features. Colors allowed are typical southwestern colors of white, green, red, blue, and brown ranges.

Note: An Architectural Review Committee will be established in the C, C & R's for the Bosque del Río subdivision.

This committee will be responsible for ensuring that all improvements, construction, etc. within the subdivision conform to these architectural design guidelines, the C, C & R's, or variances as granted by the Committee. Building plans for each Lot shall be submitted to the Committee for review and approval. A letter of approval from the Committee must accompany building plan submissions to the City of Albuquerque Code Administration. City of Albuquerque Code Administration has final approval of all building plans.

# Bosque del Río

## Architectural Design Guidelines

Prepared For:

Garrett Group, Inc.  
P.O. Box 10285  
Albuquerque, NM 87184-0285

Prepared By:

RD Habiger & Associates, Inc.  
201 Coal SW  
Albuquerque, NM 87102

Consensus Planning, Inc.  
718 Central Avenue SW  
Albuquerque, NM 87102

Revised February 8, 1996

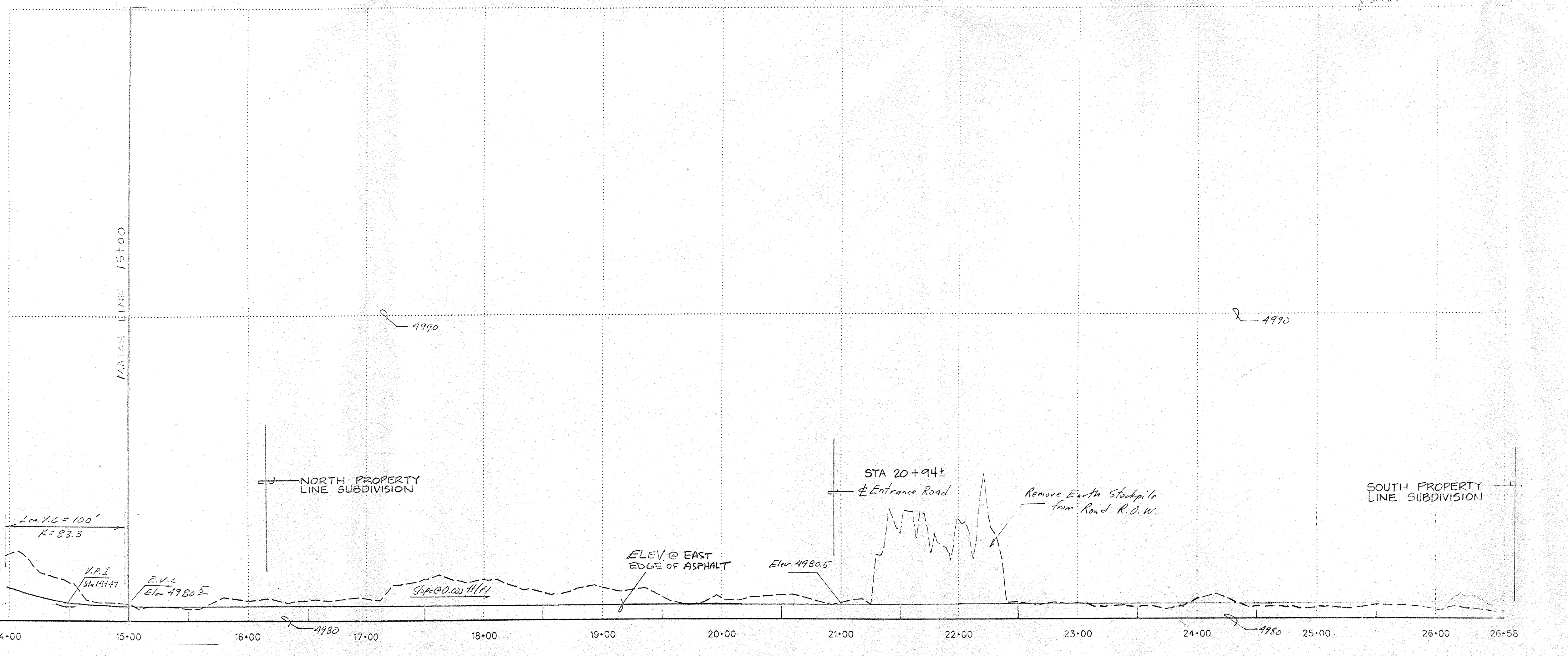
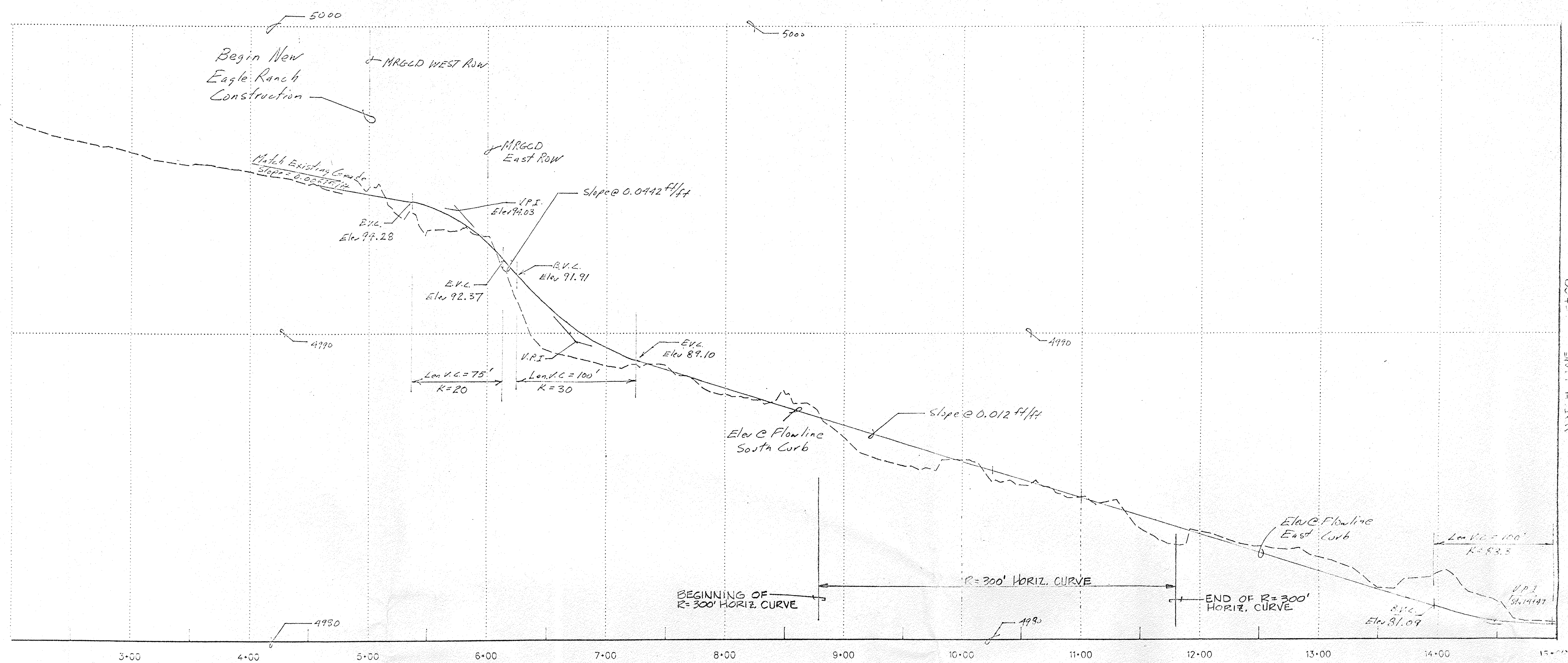












AS BUILT INFORMATION

DATE	
BY	
DATE	
BY	
DATE	
BY	
DATE	
BY	

BENCH MARKS

MARK	ELEVATION

SURVEY INFORMATION

DATE	
BY	
DATE	
BY	
DATE	
BY	

ENGINEER'S SEAL

*[Signature]* 4/1/96

NO.	DATE	BY
1	2/28/96	Ent. Road/Sta. & Horiz. Curve Data
		REV. MS
		DESIGN
		DATE 1/26/95
		DATE
		DATE

DESIGNED BY C. Anderson

HORIZ 1"=50'  
VERT 1"=2'

Smith Engineering Company  
A Full Service Engineering Company  
4401 Hudson Boulevard, N.E. Suite 4000 Albuquerque, New Mexico 87110

CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING GROUP

TITLE: **Bosque del Rio**  
**COORS TRAIL ROAD PROFILE**

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRG CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					

PROJECT NO.	MAP NO. D-13	SHEET R3	OF 3
-------------	--------------	----------	------



LINE	BEARING	DISTANCE	CURVE	ARC	DELTA	RADIUS
L1	S 61°29'49" E	57.42'	C1	244.72'	31°09'32.3"	450.00'
L2	N 42°01'21" E	133.90'	C2	64.58'	18°30'06.6"	200.00'
L3	S 47°56'39" E	120.36'	C3	357.42'	21°03'05.8"	1000.00'
L4	S 79°59'09" E	176.79'	C4	300.46'	17°12'54.3"	1000.00'
L5	N 10°00'05" E	78.48'	C5	169.64'	33°23'55.4"	300.00'
L6	S 79°59'55" E	141.96'	C6	252.98'	57°58'44.3"	250.00'
			C7	139.66'	32°00'29.8"	250.00'
			C8	115.96'	55°22'00.7"	120.00'
			C9	120.94'	34°38'45.3"	200.00'

### LEGEND

- CENTERLINE OF RIGHT-OF-WAY
- PAVING WIDTH
- + CENTER OF RADIUS
- △ POINT OF CURVE OR POINT OF TANGENT

AS BUILT INFORMATION	
CONTRACTOR	DATE
INSPECTOR'S	DATE
FIELD VERIFICATION BY	DATE
CORRECTED BY	DATE
RECORDED BY	DATE

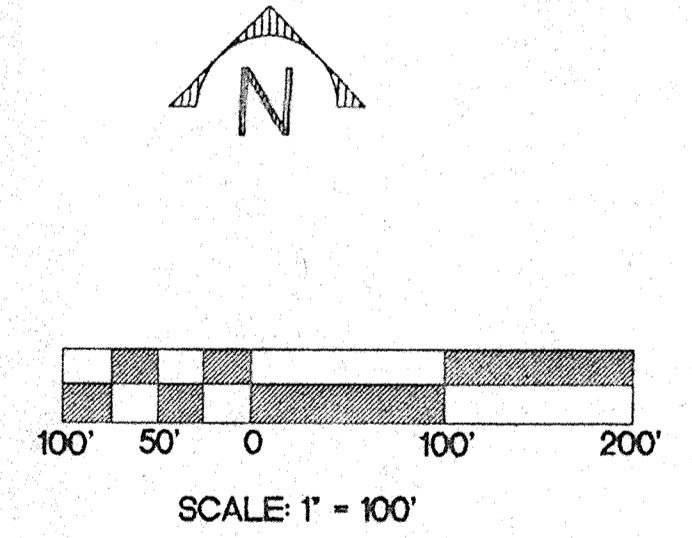
BENCH MARKS	
NO.	DATE

SURVEY INFORMATION	
FIELD NOTES	DATE
BY	
NO.	

ENGINEER'S SEAL

NO.	DATE	REVISIONS	DESIGN	DATE
1	2/8/94	Per. To Start	C. Anderson	1/22/95

DESIGNED BY: C. Anderson  
DRAWN BY: J. Christian  
CHECKED BY:



**Smith Engineering Company**  
A Full Service Engineering Company  
6400 Uptown Boulevard, N.E. Suite 600E Albuquerque, New Mexico 87110

CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING GROUP

TITLE: **Bosque del Rio**  
PAVING PLAN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					

PROJECT NO.	MAP NO.	SHEET <b>P1</b> OF <b>1</b>
-------------	---------	-----------------------------

NOTE:  
Street rights-of-way are based on Intermittent Parking Design (Table 23.2.1.C of the Development Process Manual). All lot numbers on streets designated for Intermittent Parking shall be followed by the suffix "P1" on the subdivision plat. The criteria for use of Intermittent Parking for this subdivision is based on 95% of lot widths greater than or equal to 75 feet, with 20 foot wide by 20 foot deep parking easement (20 foot wide drivepad required).

See Sheet 11 for typical residential street section.

c:\back\projects\mesacourts\lufir-pln.dwg  
C:\MAC\21510.DWG  
12/21/93 15:02:23



# BOSQUE DEL RIO DRAINAGE ANALYSIS

## GENERAL

Smith Engineering Company has been retained by the Garrett Group, Inc. to develop the drainage and grading plan for a 50 acre subdivision in the North Valley. The 50 acre subdivision is a planned community comprising 114 lots. The parcels are located on the northwest side of Albuquerque, New Mexico in the former floodplain of the Rio Grande. All existing offsite flow from the north is diverted east to the Corrales Riverside Drain and does not reach the subdivision. Developed onsite flow will be ponded onsite in retention ponds.

## SITE LOCATION AND DESCRIPTION

The project area is located in Bernalillo County on the northwest side of the city of Albuquerque, New Mexico (see Legal Description and Vicinity Map (this sheet)). The local climate is considered semi-desert and is hot and dry. Albuquerque receives on average less than 8 inches of rain per year. The project area is located on the valley floor in the former floodplain of the Rio Grande. The area is protected by levees that contain the 100 year runoff of the Rio Grande. The majority of the floods that effect the area come from thunderstorms that occur in the months of July, August, and September. The summer thunderstorms originate from the Gulf of Mexico. Less intense winter rainfall comes from frontal activity that originates in the Pacific Ocean.

### A. Existing Conditions - Onsite

The proposed 50 acre subdivision will be located on existing farm fields. The project site is zoned SU-1 for Planned Residential Development. The property is bordered on the north by the Southwestern Indian Polytechnic Institute (SIPI). An old river meander borders the property on the west and more farm fields form the southern boundary. On the east the property boundary is formed by an irrigation lateral (and further east is located the Corrales Riverside Drain). The average slope of the existing grade is about 0.2% from northeast to southwest. The soils consist of Brazito Fine Sandy Loam and Brazito Silty Clay Loam. Three concrete lined irrigation ditches convey irrigation water from the east to the fields. The lined ditches run east to west at the north, center, and south ends of the property. The ground water table is about 5 to 7 feet below the ground surface.

The Flood Insurance Rate Map (FIRM) for the area delineates the western two-thirds of the property as zone AH (shallow flooding with ponding up to elevation 4981 ft) and the eastern one-third as zone B (area protected by levee from the base flood). Due to the construction of the Piedras Marcadas Dam the zone AH will be removed from the area (including the project site). See the map titled, "Flood Hazards for Onsite and Offsite Sub-basins" on this sheet.

### B. Existing Conditions - Offsite

Existing offsite flow from the north (sub-basins A, B, and C) is diverted by an existing drainage ditch along the northern boundary of the project site. The ditch ranges from a top width of 6 feet and a depth of 2 feet (at the west end of the project site) to a top width of 15 feet and a depth of 6 feet (at the east end of the project site). The ditch conveys flow to two 30 inch CMP culverts. The culverts convey flow to the Corrales Riverside Drain. Between the ditch and the northern boundary of the project site lies an earthen berm about one foot high. This also prevents offsite flow from the north from entering the project site. Offsite flow from the west (sub-basin D) will flow around the project site to the south.

The average slope of the northern offsite sub-basins is about 0.2%. The SIPI campus and farm fields form the northern offsite sub-basins. An old river meander forms the western offsite sub-basin. It has a slope of 0.6%.

In the past runoff from the Piedras Marcadas Arroyo flowed onto the project site. Today the Piedras Marcadas Dam contains the 100 year runoff from the west mesa. The operation plan for the dam does not allow the release of dam's waters until once the storm event has passed. Then the dam's floodwater is released to the Corrales Canal (Molzen-Corbin, 1993, p. 10). The Corrales Canal is located about 1000 feet west of the project site. The canal has been redesigned in recent years to convey the 100 year event as shown in the Albuquerque Metropolitan Arroyo Flood Control Authority's (AMAFCA) "North Coors - La Oria Outlet Plans". It forms a drainage divide, preventing local runoff from the west from entering the project site. On the east of the project site is the Corrales Riverside Drain. This drain conveys the 100 year discharge without flooding the adjacent property as shown on the FIRM (zone B).

### C. Developed Conditions - Onsite

The developed project site will include a planned community consisting of 114 lots on 50 acres. The lots will be made up of 13 one acre lots while the remaining 101 lots will be 1/4 acre in size or slightly larger. As mentioned in a previous section, the onsite runoff will be ponded in shallow retention ponds adjacent to each home.

Also discussed previously, the zone AH flood hazard is in the process of being removed by AMAFCA due to the construction of the Piedras Marcadas Dam. Once this area is removed from zone AH it is anticipated that it will be designated zone B. This new classification will not require any flood insurance. Until the floodplain revision occurs the homeowner's may have to buy flood insurance. Other offsite flow from the north will continue to flow to the east to the Corrales Riverside Drain and never enter the proposed subdivision.

## HYDROLOGIC ANALYSIS

### A. Pre-design Conference

Smith Engineering met with the City of Albuquerque's (COA) Hydrology Department to determine the criteria for handling onsite and offsite flow for the 50 acre subdivision. The COA determined that due to the mild slopes of the existing project site, the COA's "Flat Grading Scheme" should be used. This criteria incorporates onsite retention ponds to control runoff. Shallow ponds adjacent to raised pads insure at least one foot of freeboard between the 100 year 10 day pond elevation and the top of pad. Estate style streets with a width of 28 feet will also be raised above the 100 year 10 day pond elevation. These private streets will drain to the adjacent lots. The entrance road to the subdivision will consist of 2 paved lanes. Runoff from the road will be ponded within the right-of-way within the median or adjacent to the roads. A perimeter wall along the south end of the subdivision will insure that onsite flow will not flood adjacent property to the south. The result is that the 50 acre subdivision will have no adverse impact on downstream drainage systems.

### B. Offsite Hydrologic Analysis

The 100 year 24 hour storm event was modeled with AHYMO (version 1/94) for the northern and western offsite sub-basins. The 100 year 24 hour rainfall depth is 2.63 inches. The time to peak was computed using the Soil Conservation Upland Method. The total flow from the north is 55 cfs. It is conveyed through a drainage ditch to two 30 inch CMP culverts. The culverts convey the flow to the Corrales Riverside Drain. The capacity of the drainage ditch is approximately 66 cfs and the capacity of the two 30 inch culverts is about 120 cfs (assuming inlet control). Therefore, the existing drainage ditch and culverts can convey the runoff from the northern offsite basins to the Corrales Riverside Drain. The runoff parameters used in the hydrologic model and the peak discharge and runoff volume for the sub-basins are shown in the tables on this sheet.

### C. Onsite Hydrologic Analysis

The 100 year 10 day storm event was used to model runoff for the developed onsite conditions. The 100 year 10 day rainfall is 3.57 inches. The City of Albuquerque's DPM 22.2 was used to determine the volume of runoff and the peak discharge generated for the typical lots. The 1 and 1/4 acre lots produced 0.12 and 0.06 ac-ft of runoff, respectively.

The existing onsite flow was modeled using AHYMO for the 100 year 24 hour event. The peak discharge and runoff volume are 14 cfs and 1.9 ac-ft, respectively.

Each lot drains to its own retention pond. The depth of ponding for the 100 year 10 day event for the 1 and 1/4 acre lots is 0.78 and 0.77 feet, respectively. The freeboard (difference between the 100 year 10 day water surface elevation and the top of pad elevation) for both types of lots is 1 foot. The runoff from the developed conditions will not generate any significant sediment as each lot is composed of impervious and landscaped areas. A NPDES Storm Water Pollution Prevention Plan will be developed for the subdivision prior to construction.

## REFERENCES

Molzen-Corbin and Associates, May 1993, "Piedras Marcadas - Drainage Management Plan - Revision - Draft", Albuquerque Metropolitan Arroyo Flood Control Authority.

## LEGAL DESCRIPTION

A certain tract of land situate within Section 19, Township 11 North, Range 3 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico, said tract is identified as Tract 82A3 on Amended Map No. 25 and Tract 1A2A, on Amended Map No. 26 of the Survey of the Middle Rio Grande Conservancy District, and being more particularly described by metes and bounds using geodetic grid bearings and ground distances as follows:

Beginning, for a lie, at the Quarter Corner on the line between said Section 19, and Section 24, T. 11N. R. 2E., N.M.P.M. and running thence,

S89°43'38"E, a distance of 1,319.75 feet to a point common to the southeast corner of the Marion Rocco Subdivision, plat filed in the office of the County Clerk of Bernalillo County, New Mexico on October 23, 1986 in plat book C31, page 184; thence,

N00° 20' 35"E, a distance of 391.31 feet along the east line of said Marion Rocco Subdivision to the southwest corner and point of beginning of the tract herein described; thence,

N00° 20' 35"E, a distance of 1,060.58 feet continuing along the said east line of Marion Rocco Subdivision to the northwest corner of the tract herein described, a capped pipe marked "21" being common to the southwest corner of unplatted lands of the Bureau of Indian Affairs; thence,

S79°59'55"E, a distance of 2,466.26 feet along the south line of said lands of the Bureau of Indian Affairs to a point; thence,

S42°44'55"E, a distance of 57.30 feet continuing along the line common to lands of the Bureau of Indian Affairs to a point; thence,

S65°14'55"E, a distance of 34.14 feet to the northeasterly corner of the tract herein described; thence,

S47°49'49"W, a distance of 1,269.26 feet along an irrigation ditch to the southeasterly corner of the tract herein described; thence,

N79°59'09"W, a distance of 1,588.50 feet to the southwest corner and point of beginning of the tract herein described, containing 49,950 Acres (2,176,038 square feet) more or less.

(Source: Andrews, Ashby, and Rebert, Inc., November 1994, ALTA/ACSM Land Title Survey for Lands of Saburo Matsubara and Mary Masako Matsubara Revocable Trust and Takeo Matsubara, Bernalillo County, New Mexico)

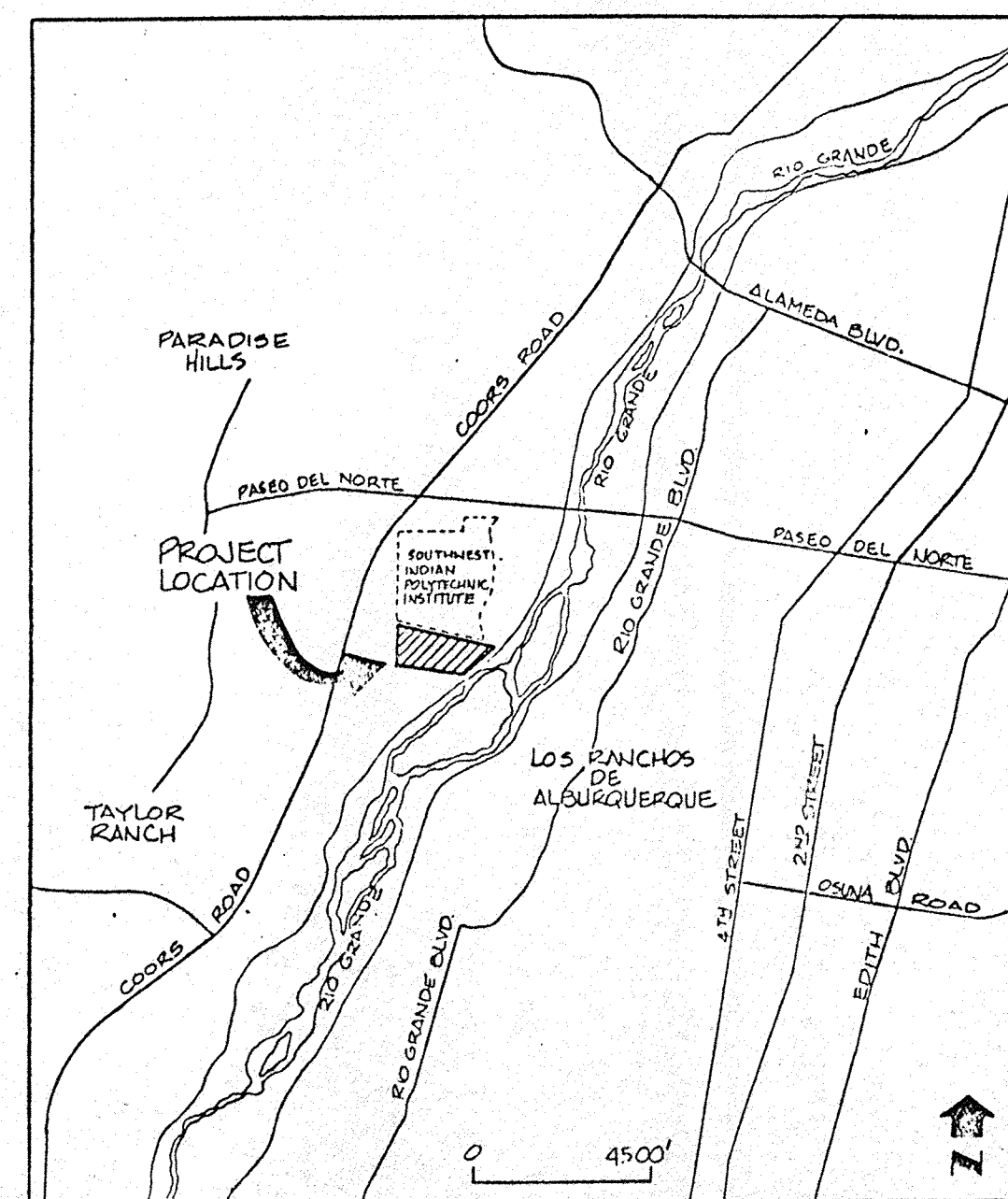
## SUMMARY OF BASIN PARAMETERS

Basin	Area (ac)	Length (ft)	Slope (ft/ft)	K	I <sub>p</sub> (hrs)	Surface Treatment in Percent			
						A	B	C	D
Existing Conditions - Offsite and Onsite - 100 Year 24 Hour									
A	117	3440	0.002	2.05	0.69	80	11	5	4
B	42	3400	0.0024	2.04	0.64	90	4	5	1
C	41	2390	0.0013	1.79	0.69	80	14	5	1
D	43	1900	0.0055	1.65	0.69	70	3	25	2
E	50	2600	0.0013	1.86	0.73	100	0	0	0
Developed Conditions - Onsite Typical Lots - 100 Year 10 Day									
Lot 1	0.30	N/A	N/A	N/A	0.133	10	14	15	61
Lot 2	1.13	N/A	N/A	N/A	0.133	10	52	15	23

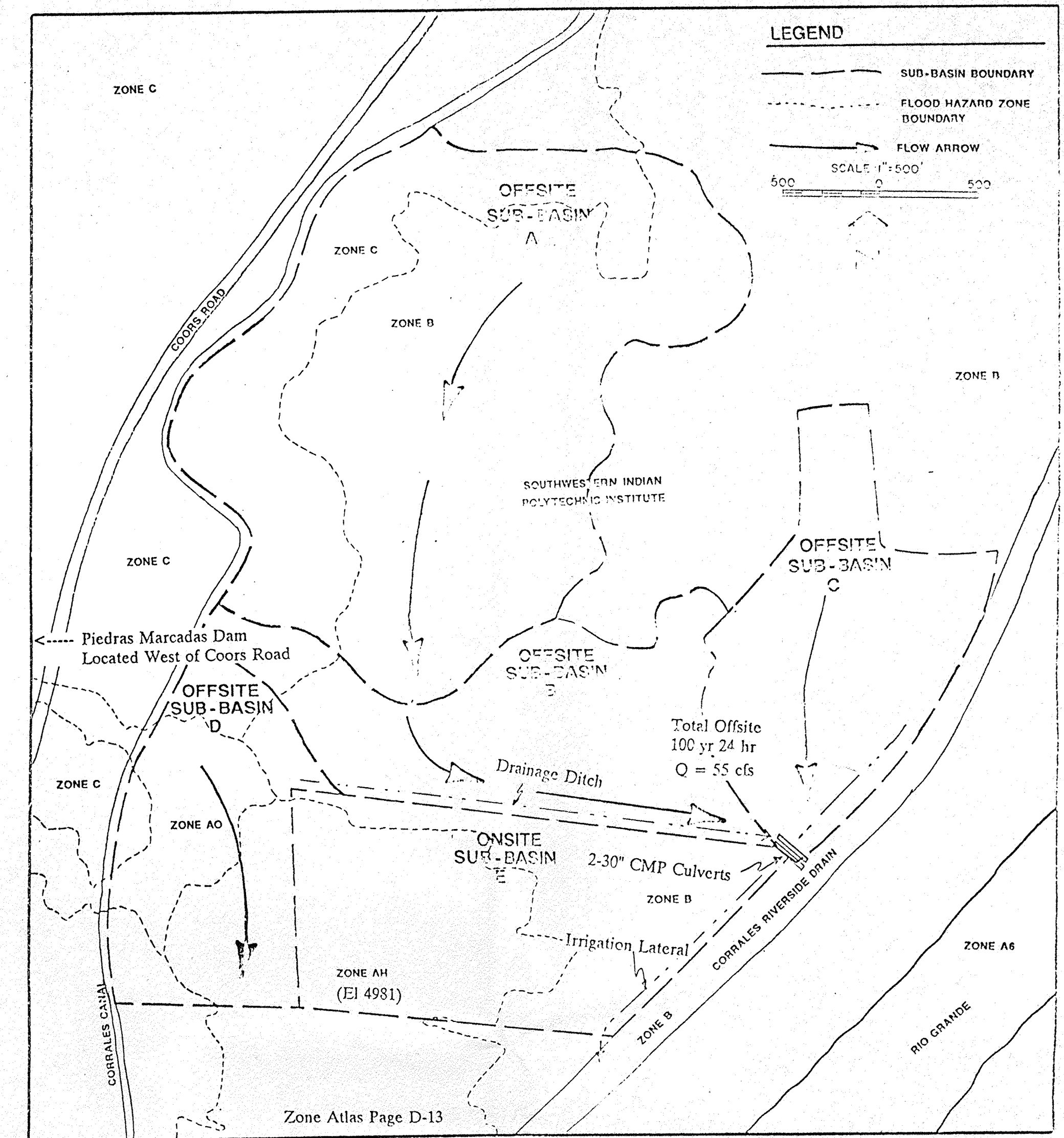
Notes: The 100 yr 24 hr and 100 yr 10 day rainfall depths are 2.63" and 3.57", respectively. The areas of Lots 1 and 2 include right-of-way.

## SUMMARY OF PEAK DISCHARGE AND RUNOFF VOLUME

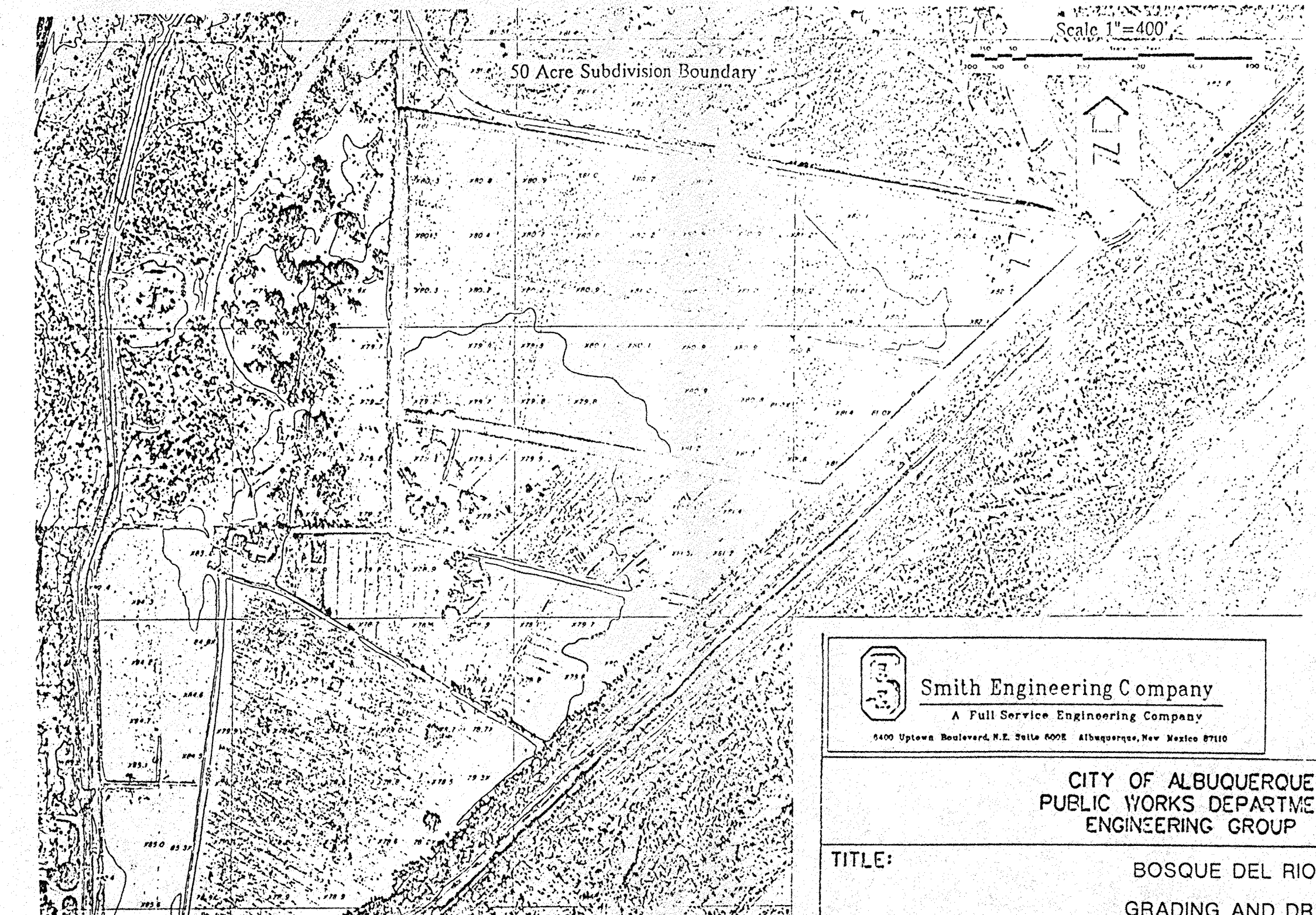
Sub-basin	Peak Discharge (cfs)	Runoff Volume (ac-ft)
Existing Conditions - Offsite and Onsite - 100 Year 24 Hour		
A	47	5.6
B	15	1.8
C	14	1.8
D	18	2.2
E	14	1.9
Developed Conditions - Onsite Typical Lots - 100 Year 10 Day		
Lot 1 (1/4 ACRE)	1.1	0.06
Lot 2 (1 ACRE)	3.0	0.12



Bosque del Rio  
VICINITY MAP



FLOOD HAZARDS FOR ONSITE AND OFFSITE SUB-BASINS  
(SOURCE: FIRM 350002 0203C, OCTOBER 14, 1983)



## Bosque del Rio

ORTHO PHOTO MAP

(Source: Bohannon-Huston, 1981, Albuquerque Master Drainage Study, p. D-13)

Smith Engineering Company  
A Full Service Engineering Company  
5400 Uptown Boulevard, N.E. Suite 400E, Albuquerque, New Mexico 87110

CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING GROUP

TITLE: BOSQUE DEL RIO  
GRADING AND DRAINAGE PLAN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					

PROJECT NO. \_\_\_\_\_ MAP NO. \_\_\_\_\_ SHEET D1 OF 5



















