

CITY OF ALBUQUERQUE

Planning Department
Suzanne Lubar, Director



Mayor Richard J. Berry

June 21, 2016

Robert Fierro
Fierro & Company
6300 Montano Rd NW
Albuquerque NM, 87104

**RE: Plaza Hacienda at Old Town
1919 Old Town Rd NW
Grading and Drainage Exhibit
Engineers Stamp Date 6/2/16 (J13D037)**

Dear Mr. Fierro,

Based upon the information provided in your submittal received 6/2/16, this exhibit is approved for Grading Permit, Paving Permit and Building Permit. For future submittals follow the submittal process in Chapter 22 of the City of Albuquerque's Development Process Manual (DPM).

Please inform the Architect/Owner or the contractor to attach a copy of this approved plan dated 6/2/16 to the construction sets in the permitting process prior to sign-off by Hydrology. If this plan is not with the construction plan sets the permitting process will be held up until the plan is provided.

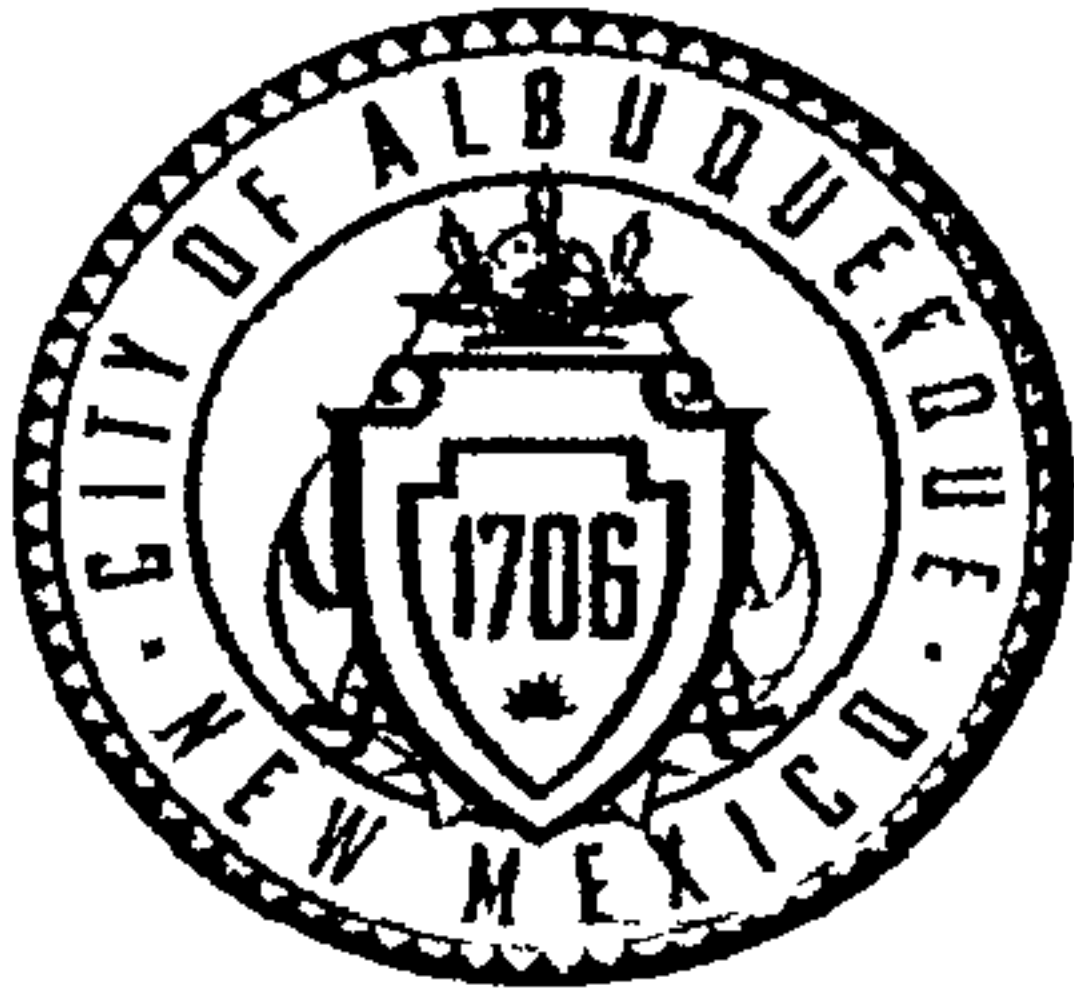
Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, please contact me at 924-3686 or Rudy Rael at 924-3977.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Hydrology
Planning Department

RR/AC
C: File



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Plaza Hacienda at Old Town Building Permit #: _____ City Drainage #: 1130037
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: Block B Casa De Armiijo & Plaza Hacienda
City Address: 1919 Old Town Rd NW, Albuquerque, NM 87104

Engineering Firm: Fierro & Company, LLC Contact: Robert Fierro
Address: 6300 Montano Rd NW, Albuquerque, NM 87120
Phone#: (505) 352-8930 Fax#: _____ E-mail: robertfierro@fierrocompany.com

Owner: Old Town Plaza, LLC Contact: Drew Jones
Address: 1919 Old Town Rd NW Suite 1, Albuquerque, NM 87120
Phone#: 760-207-8734 Fax#: _____ E-mail: djoneslaw@jtbadvisors.com

Architect: RBA -Architecture Planning Design Contact: Darby Miera
Address: 1104 Park Ave. SE, Albuquerque, NM 87102
Phone#: (505) 242-1859 Fax#: _____ E-mail: darby@rba81.com

Other Contact: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ ARCHITECT CERTIFICATION
☒ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☐ DRAINAGE REPORT
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)

☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: June 2, 2016 By: Fierro & Company, LLC

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY
☐ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
☐ FOUNDATION PERMIT APPROVAL
☐ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☐ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR

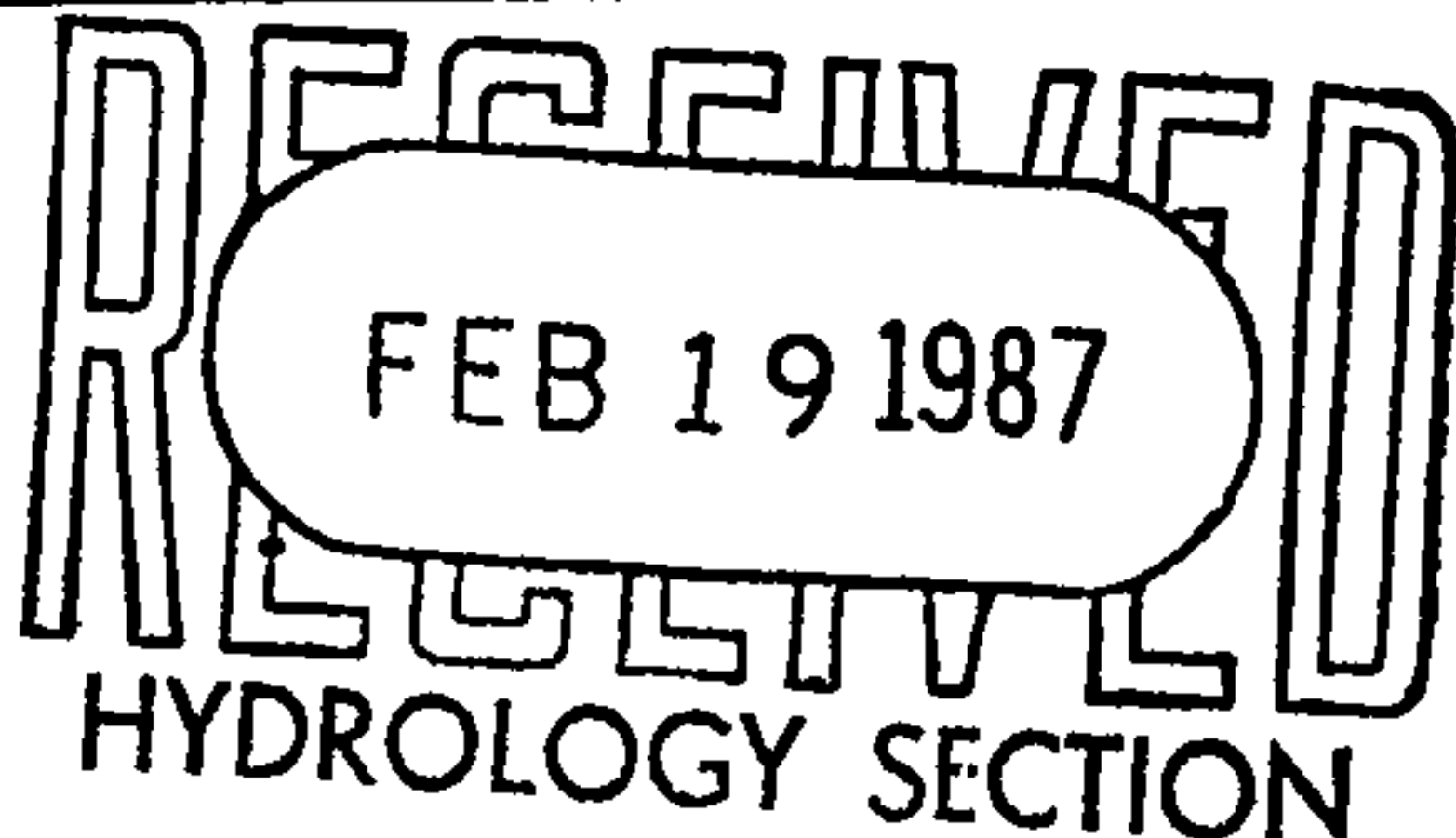
☒ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____

DRAINAGE INFORMATION SHEET

PROJECT TITLE: LA HACIENDA @ OLD TOWN ZONE ATLAS/DRNG. FILE #: J-13 / D37
LEGAL DESCRIPTION: _____
CITY ADDRESS: _____
ENGINEERING FIRM: BOHANNAN-HUSTON CONTACT: JAMES TOPMILLER
ADDRESS: 7500 JEFFERSON NE PHONE: 884-7543
OWNER: SPROWL ENTERPRISES CONTACT: _____
ADDRESS: _____ PHONE: _____
ARCHITECT: BARKER-BOL & ASSOC. CONTACT: LESLIE SHEPPARD
ADDRESS: 209 GOLD SW PHONE: 842-6789
SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

☐ YES☒ NO☐ COPY OF CONFERENCE RECAP
SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

☒ DRAINAGE REPORT☐ DRAINAGE PLAN☐ CONCEPTUAL GRADING & DRAINAGE PLAN☐ GRADING PLAN☐ EROSION CONTROL PLAN☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL☐ PRELIMINARY PLAT APPROVAL☐ SITE DEVELOPMENT PLAN APPROVAL☐ FINAL PLAT APPROVAL☒ BUILDING PERMIT APPROVAL☐ FOUNDATION PERMIT APPROVAL☐ CERTIFICATE OF OCCUPANCY APPROVAL☐ ROUGH GRADING PERMIT APPROVAL☐ GRADING/PAVING PERMIT APPROVAL☐ OTHER _____ (SPECIFY)

DATE SUBMITTED:

FEB. 18, 1987

BY:

JAMES TOPMILLER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: La Hacienda Project ZONE ATLAS/DRNG. FILE #: J-13 / D37

LEGAL DESCRIPTION: Tract B, Lands of Casade Armijo and Plaza Hacienda

CITY ADDRESS: Old Town, behind La Hacienda Restaurant

ENGINEERING FIRM: Bohannon-Huston Inc CONTACT: James Topmiller

ADDRESS: 7500 Jefferson NE PHONE: 823-1000

OWNER: Sproul Enterprises CONTACT: _____

ADDRESS: 309 Arno NE PHONE: _____

ARCHITECT: Barker-Freidman & Assoc. CONTACT: Les Sheppard

ADDRESS: 209 Gold Ave SW PHONE: 842-6789

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

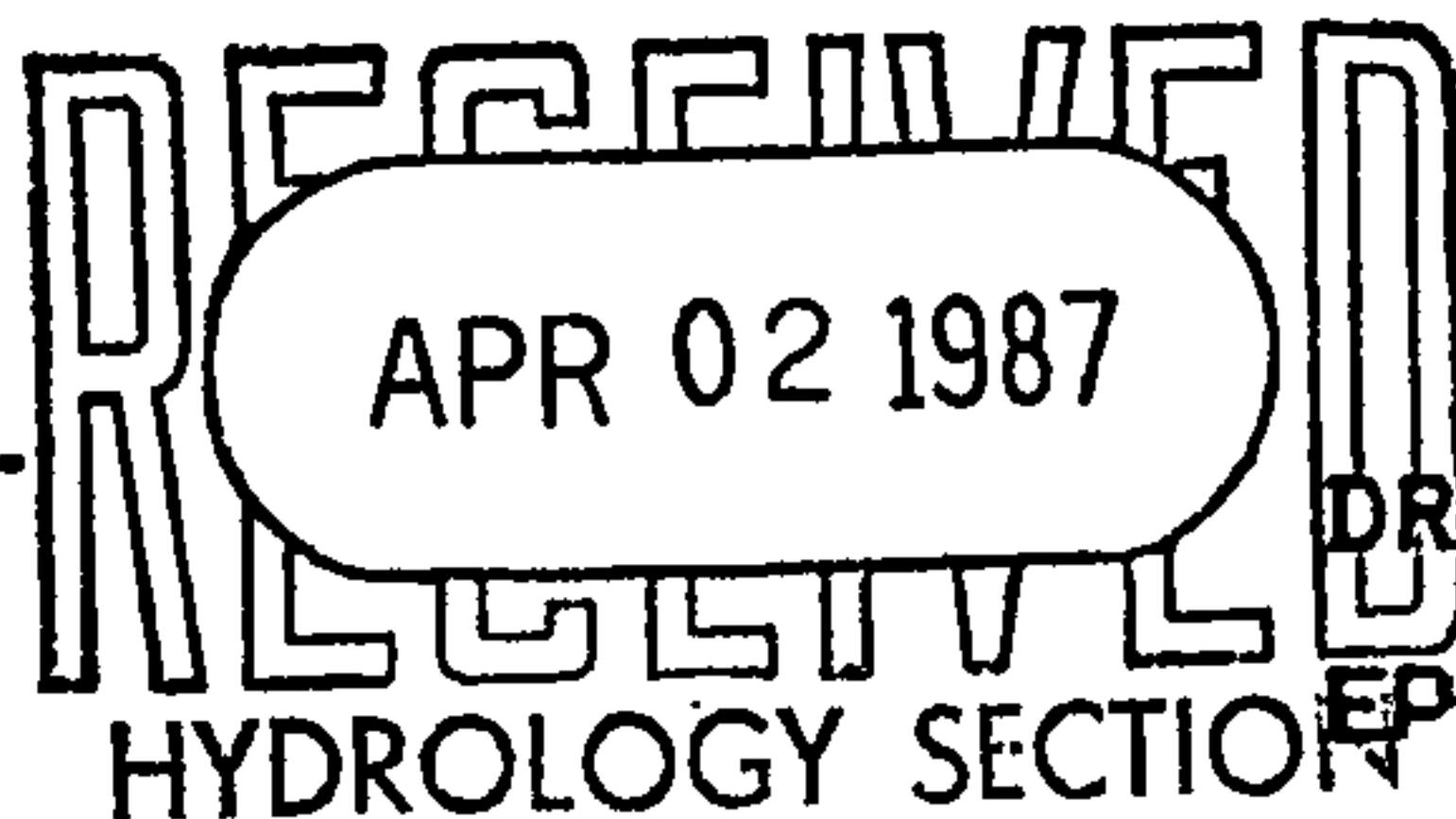
ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

☐ YES

☒ NO

☐ COPY OF CONFERENCE RECAP SHEET PROVIDED



DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☐ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL

☐ PRELIMINARY PLAT APPROVAL

☐ SITE DEVELOPMENT PLAN APPROVAL

☐ FINAL PLAT APPROVAL

☐ BUILDING PERMIT APPROVAL

☐ FOUNDATION PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY APPROVAL

☐ ROUGH GRADING PERMIT APPROVAL

☐ GRADING/PAVING PERMIT APPROVAL

☒ OTHER None - revised plan only (SPECIFY)

DATE SUBMITTED: 4/2/87

BY: Karen L Schaf

DRAINAGE REPORT
FOR
LA HACIENDA
AT OLD TOWN

FEBRUARY, 1987

RECEIVED
FEB 19 1987
HYDROLOGY SECTION

**DRAINAGE REPORT
FOR
LA HACIENDA
AT OLD TOWN**

PREPARED FOR:

**SPROUL ENTERPRISES
309 ARNO STREET, NE
ALBUQUERQUE, NEW MEXICO 87102**

PREPARED BY:

**BOHANNAN-HUSTON, INC.
7500 JEFFERSON, NE
ALBUQUERQUE, NEW MEXICO 87109**

JOB NO. 7 115 1



PURPOSE OF REPORT

This report was prepared to provide site drainage and grading guidelines for the proposed construction of eleven one- and two-story commercial and residential buildings in the Old Town area. The plan has been prepared in accordance with the City of Albuquerque Development Process Manual.

SITE LOCATION AND EXISTING CONDITIONS

The site is located on a small parcel of land, currently including a paved parking lot, behind the La Hacienda Restaurant in the Old Town area of Albuquerque. Several existing shops and buildings are also located on the property. By streets, the property is situated between 19th Street and San Felipe NW, and Old Town Road and Mountain Road. The site is identified on the location map shown on the enclosed drainage/grading plan.

The site is currently approximately 80% impervious with little vegetation or landscaping. There is no definitive existing drainage pattern established and runoff moves primarily by sheet flow in an east and west direction. Assuming a 10 minute time of concentration value, and using the Rational Method, a runoff rate will approximate 7.1 cfs with flows being generally split evenly east and west. However, it is anticipated that a significant amount of this runoff may be retained on the site in incidental ponding areas due to the uneven ground of the site. The enclosed soils investigation report identifies the site as having a fill layer overlaying primarily natural sandy soils with some clays. The Soils Map, shown on the enclosed drainage/grading plan identifies the soils as "Vba" or Vinton sandy loam, typically found in the irrigated Rio Grande Valley. This corresponds to the hydrological soil group "B". The text of the Bernalillo County Soil Survey, from which the above Soils Map is taken, indicates that the soils of the site provide a favorable drainage absorption capacity of surface runoff.

The FEMA Floodway Map, also shown on the enclosed plan, reveal that no floodplain exists on or near the site. Site inspection further shows no evidence of significant ponding or flooding in this location.

PROPOSED SITE CONDITIONS

The site is proposed to be developed and graded as shown on the enclosed drainage/grading plan. New buildings will be integrated into and around the existing buildings on the site. Excluding the buildings and landscaping areas, most of the remainder of the site will be overlaid with brick pavers, concrete walk areas, or pavement.

The plan has divided the site into basin areas and has determined flowrates and/or volumes of runoff in a 6-hour, 100-year storm event. Calculations for these values are provided in the Appendix of this report. The results and the proposed methods of managing runoff are tabulated below.

<u>Basin</u>	<u>Runoff Rate</u>	<u>Runoff Volume</u>	<u>Method of Management</u>
A-1	0.8 CFS	1355 CF	8" and 10" private PVC storm sewer line and drop inlet collect the runoff and eventually discharge southerly to existing 24" SS line in Old Town Road.
B	N/A	506 CF	Retention of runoff in landscaping and ponding area.
C	4.6 CFS	N/A	Surface flow discharge westerly to San Felipe Road.
D	1.35 CFS	N/A	Drop inlets collect flow from this basin and discharge it into the proposed 8" and 10" storm sewer line described in Basin A-1 above.
E-1	N/A	577 CF	Retention of runoff in landscaping and ponding area.
E	0.6 CFS	N/A	Runoff discharges freely to Old Town Road.

RUNOFF RATE AND AREA CALCULATIONS

EXISTING CONDITIONS

Site acreage - 2.2 acres

Use 2.2" of rainfall (Rate 2.2 D-1)

$$Q = CIA$$

$I = 4.65 \text{ in/hr}$ @ $T_c = 10 \text{ min.}$

Roof area = 18000 sf (0.41 acre)

paved surface = 35000 sf (0.80 acre)

undeveloped area = 1.0 acre

$$Q = 4.65 (0.41) 0.90 = 1.71 \text{ cfs}$$

$$+ 4.65 (0.8) 0.95 = 3.53 \text{ cfs}$$

$$+ 4.65 (1.0) 0.40 = 1.86 \text{ cfs}$$

7.1 cfs

total flow
from site
under existing
conditions



BOHANNAN-HUSTON INC.

PROJECT NAME old town project SHEET 1 OF 1

PROJECT NO. _____ BY James T DATE _____

SUBJECT _____ CH'D _____ DATE _____

Basin E-1

- assume 100% impervious (CN = 100)
- then Plate 22.2 C-4 gives direct runoff of 2.2"
- area of basin = 3150 sq. ft.
- volume = $\frac{2.2}{12} (3150) = 577$ cu. ft.

Basin E

- Rational Method,
 $Q = CIA$

$I = 4.65$ in/hr

$A =$ roof (2800 sf) 0.06 ac.
pavement (2950 sf) 0.07 ac.

$C = 0.9$ (roof)
0.95 (pavement)

$Q = 0.9 (0.06) 4.65 = 0.25$ cfs

$= 0.95 (0.07) 4.65 = 0.31$ cfs

0.56 cfs



BOHANNAN-HUSTON INC.

PROJECT NAME

Old Town project

SHEET

4

OF

4

PROJECT NO.

BY

James T

DATE

2.16.87

SUBJECT

CH'D

DATE

RUNOFF VOLUME CALCULATIONS

Proposed Conditions

$T_c < 10$ min.
all calculations, $I = 4.65 \text{ in/hr}$

BASIN A - 1:

- use 2.2" of rainfall this area (per Pl. 22.2 D-1)
- from plan, 7392 sq. ft. of area in basin
- assume 100% impervious (no landscaping)

$$\text{Volume} = \frac{2.2''}{12} (7392 \text{ ft}^2) = 1355 \text{ cubic feet}$$

$$\text{flowrate} = Q = CIA = \frac{4.65 \text{ in/hr}}{\text{assume } C=1} \left(\frac{7392}{43560} \right) = 0.79 \text{ cfs}$$

BASIN B:

- from plan, 5520 sq. ft. of total area
- assume 70% impervious (landscaping)

- pervious $CN = 61$, then from 22.2 C-3,
composite $CN = 87$

- runoff depth from C-4 is 1.1"

$$\text{Volume} = \frac{1.1''}{12} (5520) = 506 \text{ cubic feet}$$

- available area for retention ponding =

$$100' \times 7' \text{ wide} = 700 \text{ sq. ft.}$$

$$\text{required depth of ponding} = \frac{506 \text{ cu. ft.}}{700 \text{ sq. ft.}} = 0.73'$$



BOHANNAN-HUSTON INC.

PROJECT NAME Old Town Site

SHEET 1 OF 4

PROJECT NO. _____

BY James T DATE 2.16.87

SUBJECT _____

CH'D _____ DATE _____

Basin C:

- area = 50,000 sq. ft. = 1.15 acres
- roof area = 23,800 sq. ft. = 0.55 acre @ $C = 0.90$
- paved surface = 16,100 sq. ft. = 0.37 acre @ $C = 0.95$
- landscaping = 10,000 sq. ft. = 0.23 acre @ $C = 0.25$
- using Rational equation
 $Q = CIA$

we have $Q_{\text{roof}} = 0.90 (4.65) 0.55 = 2.3 \text{ cfs}$

$Q_{\text{pave}} = 0.95 (4.65) 0.37 = 1.6 \text{ cfs}$

$Q_{\text{lands}} = 0.25 (4.65) 0.23 = 0.27 \text{ cfs}$

TOTAL = 4.17 cfs

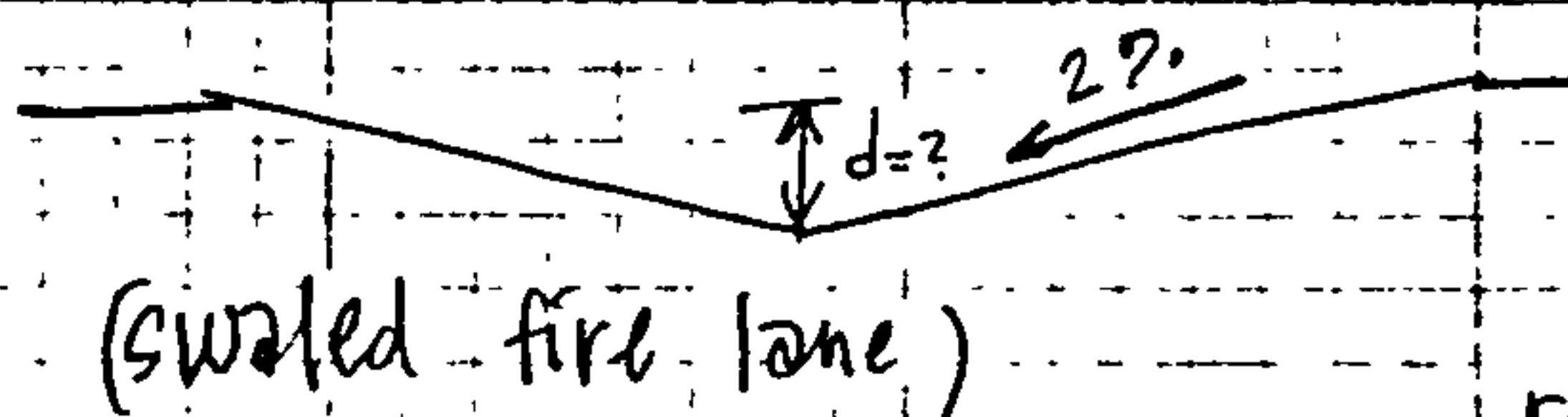
by Manning's

$n = 0.017$

$Q = 4.17 \text{ cfs}$

$S = 1\%$

required depth = 0.21'



Basin D:

- area (total) = 18360 sq. ft.
- landscaped area = 6,500 sq. ft. @ 0.25 (0.15)
- paved area = 1,100 sq. ft. @ 0.95 (0.03)
- roof area = 10,760 sq. ft. @ 0.90 (0.25)



BOHANNAN-HUSTON INC.

PROJECT NAME Old Town Site

SHEET 2 OF 4

PROJECT NO. _____

BY James T DATE 2.16.87

SUBJECT _____

CH'D _____ DATE _____

Basin D (cont.)

$$Q = CFA$$

$$Q_{\text{lands}} = 0.25 (4.65) 0.15 = 0.17 \text{ cfs}$$

$$Q_{\text{paved}} = 0.95 (4.65) 0.03 = 0.13 \text{ cfs}$$

$$Q_{\text{roof}} = 0.90 (4.65) 0.25 = 1.05 \text{ cfs}$$

$$\text{Total} = 1.35 \text{ cfs}$$

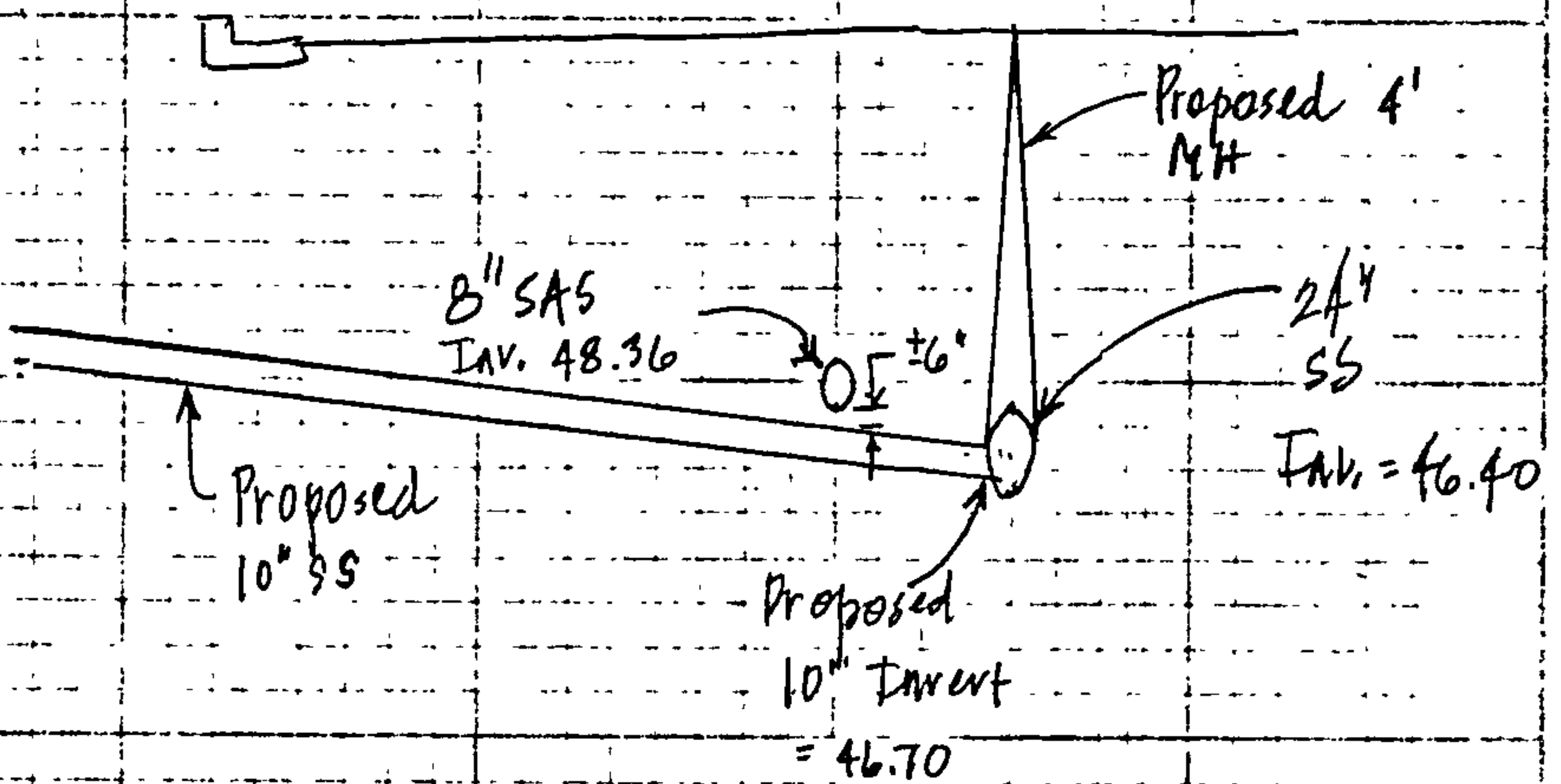
Profile of Utilities in Old Town Road
at storm sewer connection:

49.57

49.49

49.41

Horizontal
1" = 10'



storm sewer can
work!



BOHANNAN-HUSTON INC.

PROJECT NAME Old Town site

PROJECT NO. _____

SUBJECT _____

SHEET

3

OF

4

BY

James T

DATE

2.16.87

CH'D

DATE

DRAINAGE GRATES

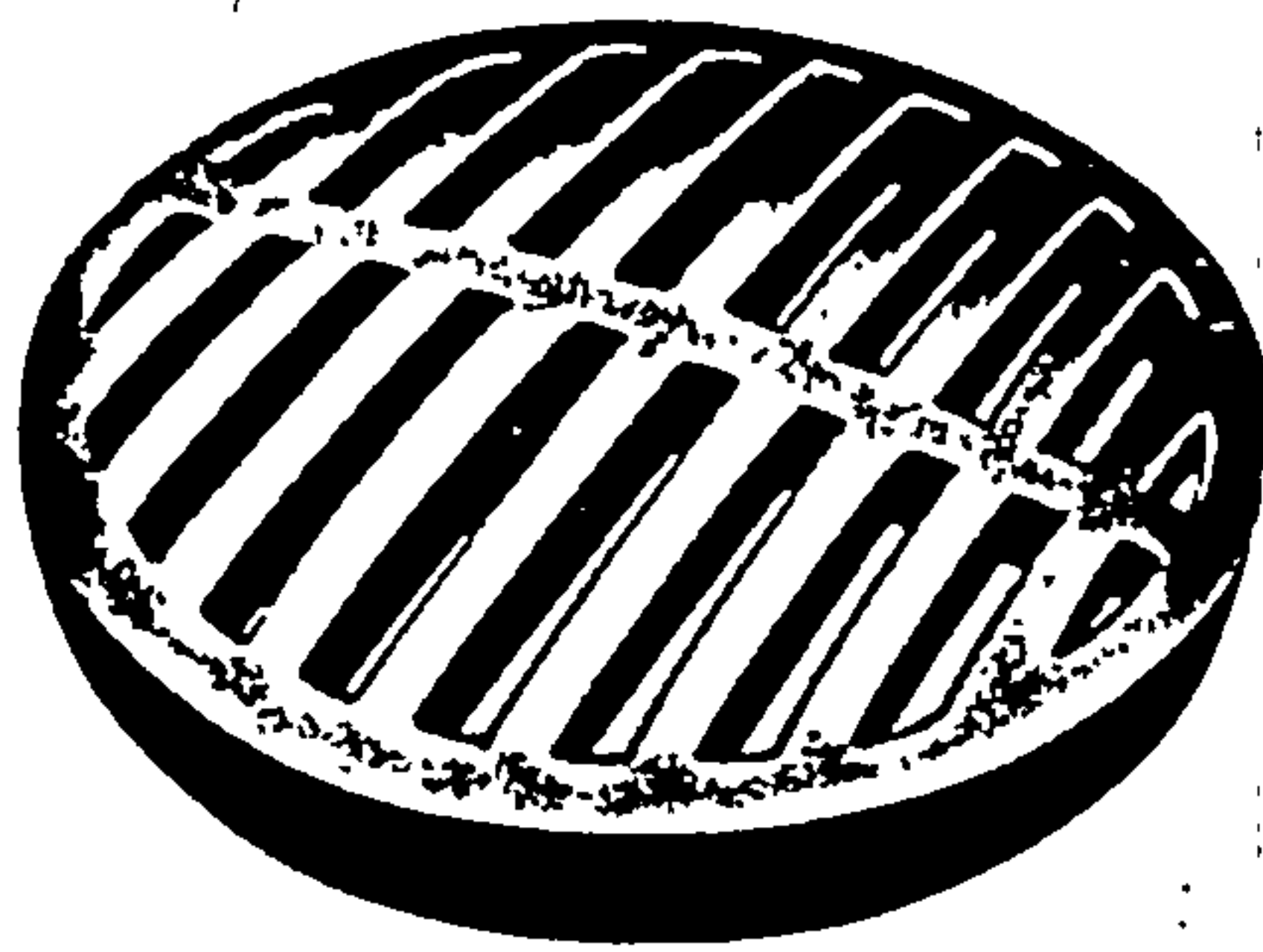
R-4030 Series Heavy Duty Grates

R-4040 Series Light Duty Grates

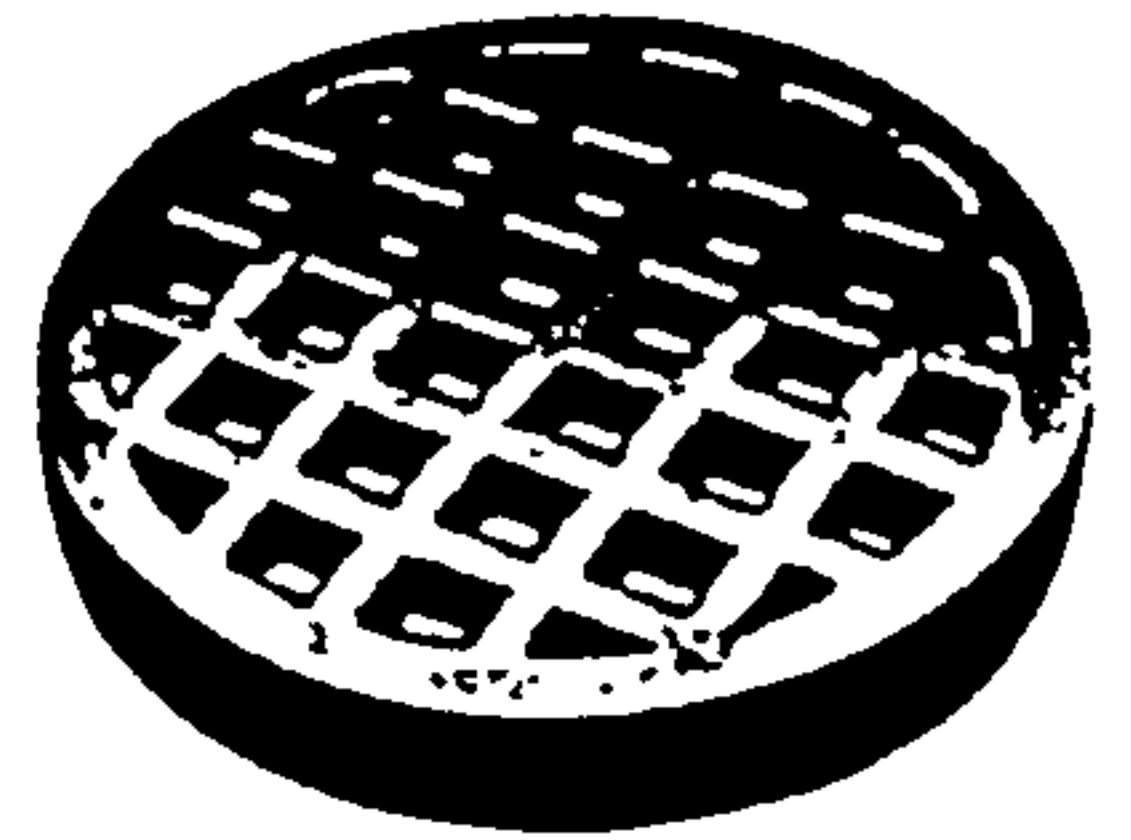
Designed to fit in bell end of standard sewer pipe.

Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the grate sizes in the table to be sure they will fit the pipe you are using.

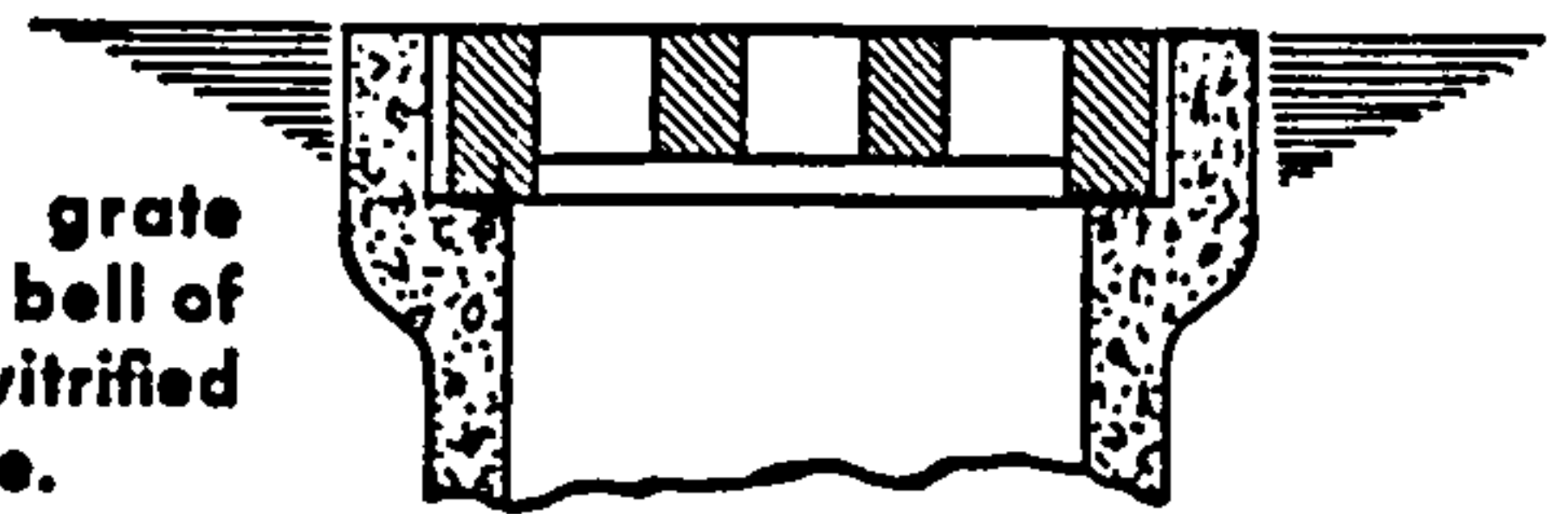
If specified, special lug arrangement is available on R-4040 series which modifies grate to fit corrugated metal pipe in sizes indicated.



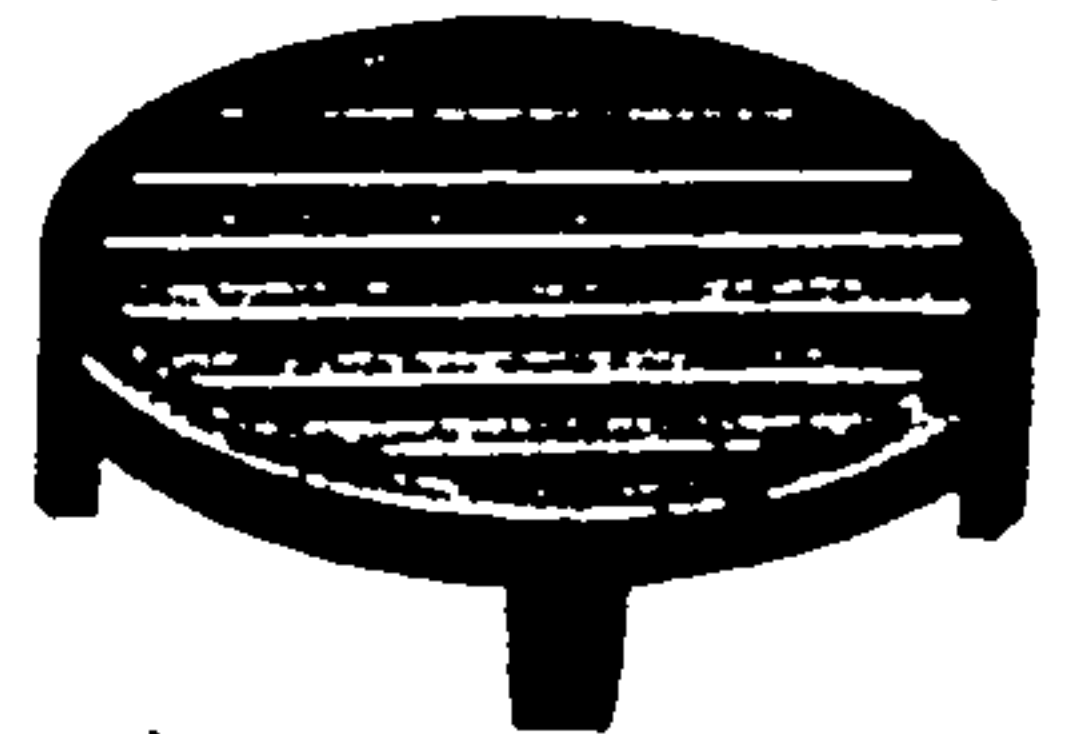
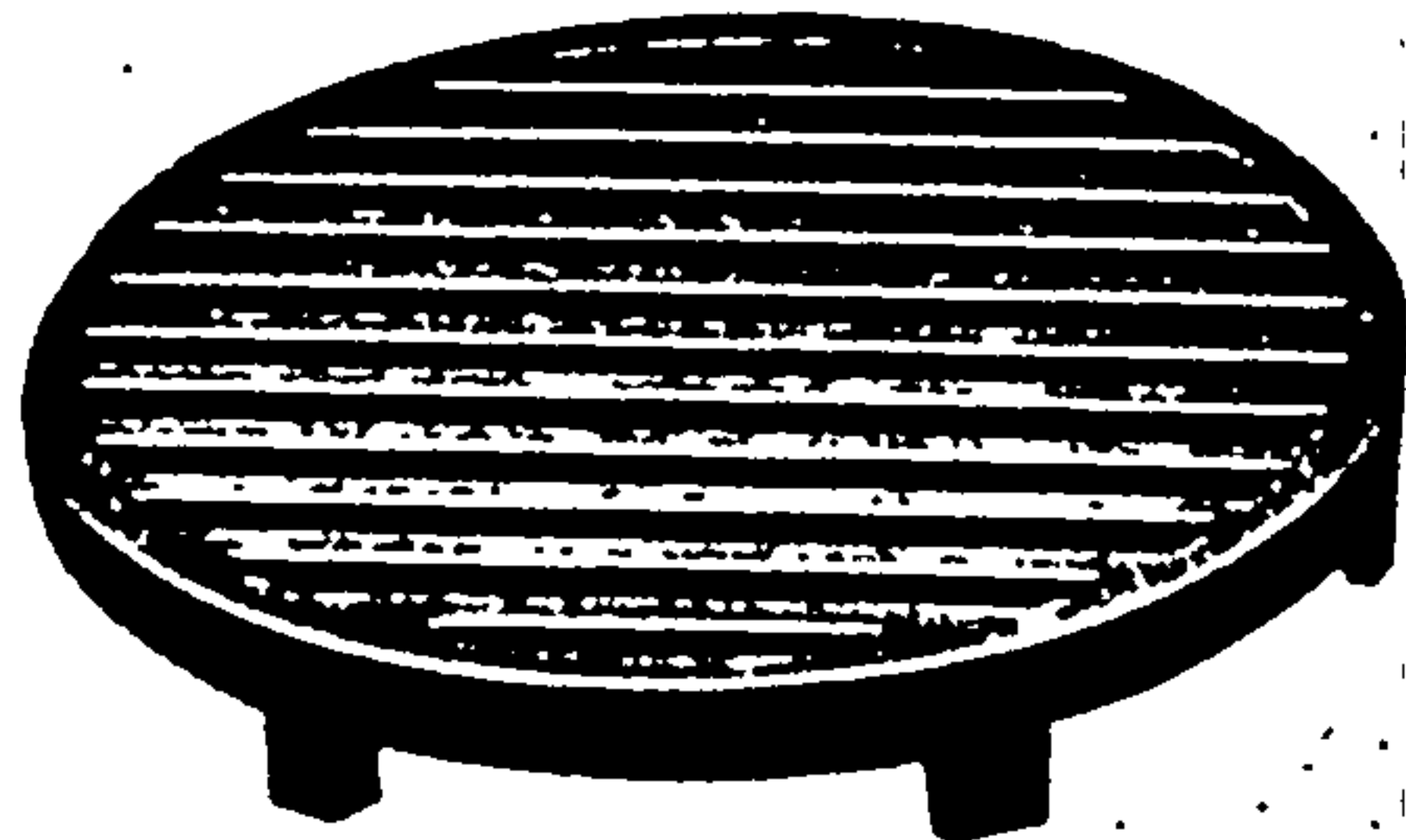
R-4030 Type Grate**



R-4030 Type Grate‡



Showing grate placed in bell of standard vitrified sewer pipe.



Specify: R-4040 Type Grate with Legs

⊗ Catalog number.

② Pipe size.

⊙ Lugs on R-4040 for corrugated pipe if required.

Weight in Pounds		Dimensions in inches		
Heavy Duty	Light Duty	Pipe Size	Grate Dia.	Grate Thickness*
R-4030	R-4040			
6‡	4	4	5‡	1½
13‡	8	6	8	2
25‡	11	8	10‡	2½
25‡	14	10	12‡	2½
38‡	32	12	14‡	2½
70‡	55	15	18‡	2¾
115‡⊗	75	18	22‡	2¾
200‡⊗	100	21	25‡	3
210‡⊗	140	24	29‡	3¼
290‡⊗	155	27	32‡	3½
300‡⊗	180	30	36‡	3¾
525‡⊗	300	36	42‡	4

*For light duty series this figure includes legs. **Slotted openings.

‡Slight Crown. †Square openings. ⊗ Not recommended for bicycle traffic.

For safety standards see pages 88 to 93.

Basin D

- runoff $Q = 1.35$ cfs
- assume even split between inlets @ cleanouts, then Q per inlet = 0.7 cfs
- then by orifices to calculate open area required of grate,

$$Q = CA \sqrt{2gh}$$

$$\text{where } h = 0.25'$$

$$C = 0.6$$

then open area of grate, $A = 0.29$ sq. ft.

use R-4040-10" pipe where A of grate = 0.3 sq. ft.

Basin A-1

assume $h = 0.3'$

then open area required is 0.2996 sq. ft.

use same grate as above

GEOTECHNICAL ENGINEERING
EVALUATION

Old Town Development
Between 19th Street
and San Felipe NW
Albuquerque, New Mexico



**WESTERN
TECHNOLOGIES
INC.**

The Quality People

ARIZONA

Phoenix
3737 East Broadway Road
P.O. Box 21387
Phoenix, Arizona 85036
(602) 437-3737

Mesa
Gateway Plaza
663 West Second Avenue
Mesa, Arizona 85202
(602) 834-3964

Sun City
P.O. Box 2431
Sun City, Arizona 85372
(602) 975-2154

Flagstaff
2400 East Huntington Drive
Flagstaff, Arizona 86001
(602) 774-8708

Pinetop
H C 62, Box 19981
Pinetop, Arizona 85935
(602) 367-3011

Tucson
423 South Olsen Avenue
Tucson, Arizona 85719
(602) 624-8896

Sierra Vista
1827 South Paseo San Luis
Sierra Vista, Arizona 85635
(602) 458-0364

Laughlin/Bullhead City
460 Main Street
P.O. Box 2779
Bullhead City, Arizona 86430
(602) 754-2271

NEW MEXICO

Albuquerque
3808 Academy Parkway North, N.E.
Albuquerque, New Mexico 87109
(505) 345-6586

Farmington
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966

NEVADA

Henderson
3 Sunset Way, Building A, Suite 10
Las Vegas, Nevada 89112
(702) 458-1484

Las Vegas
300 West Boston Avenue
Las Vegas, Nevada 89102
(702) 382-7483

UTAH

St. George
Sunshine Plaza
430 West, 145 North
St. George, Utah 84770
(801) 628-2883

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**WESTERN
TECHNOLOGIES
INC.**

3808 Academy Parkway North, N.E.
Albuquerque, New Mexico 87109
(505) 345-6586

Barker-Bol & Associates
December 2, 1985
209 Gold SW
Albuquerque, New Mexico 87102

Attention: Mr. Andrew Bol

Re: Proposed Old Town Development
Between 19th Street NW
and San Felipe NW
Albuquerque, New Mexico

Job No. 3225J076

Our geotechnical engineering report for the proposed development is attached. The work was performed in accordance with our proposal of October 9, 1985, accepted by you on October 16, 1985, with a signed contract.

Soils at the site generally consisted of two feet of fill overlying natural clays and sands. The native soils have good load bearing capabilities. The report addresses this condition and recommends removal of the fill prior to foundation placement. We are recommending the development be founded on shallow spread footings placed on compacted native soils and/or engineered fill. Slabs-on-grade may be used.

We are prepared to review your plans and specifications for consistency with the recommendations, and to provide the construction observation and testing recommended.

Sincerely,
WESTERN TECHNOLOGIES, INC.
Geotechnical Engineering Services

By: David A. Kondziolka, P.E.

and: Lyle M. Tweet, P.E.

Copies to: Addressee (2)
Robert D. Krause Engineering Company (1)

Geotechnical Engineering Evaluation
Proposed Old Town Development
Between 19th Street NW
and San Felipe NW
Albuquerque, New Mexico

INTRODUCTION

This report contains the results of our geotechnical engineering evaluation for the proposed development to be located in the paved parking area behind the La Hacienda Restaurant, between 19th Street NW and San Felipe NW, and between Old Town Road NW and Mountain Road NW, in Albuquerque, New Mexico. The purpose of these services is to provide information and recommendations relative to foundation design and site preparation.

PROPOSED CONSTRUCTION

We understand the proposed complex will consist of eleven one and two-story, slab-on-grade structures using light commercial construction. The buildings vary in size from approximately 900 square feet to 8000 sq. ft. Wall and column loads are assumed to be light. We anticipate that ground floor levels will be at or slightly above existing site grade. Final site grading plans were not available prior to preparation of this report.

SITE CONDITIONS

Previous site development consists of the buildings shown on the site plan. Fill was observed and other underground developments may exist. A concrete slab was encountered near the surface in Boring 8. The ground surface was very level. Vegetation consisted of some landscaped area around the existing buildings. The direction of site drainage was not visually apparent. Other site features included numerous overhead utility lines.



SCOPE OF SERVICES

Nine borings were drilled to depths of twenty to sixty feet at the locations shown on the site plan. During exploration, subsoils were visually examined and sampled at selected intervals. Existing groundwater conditions were evaluated.

Selected soil samples were tested for water content, density, liquid limit, plasticity index, and compression characteristics. Test results were used in the development of foundation and earthwork recommendations.

INTERPRETATION OF SUBSURFACE CONDITIONS

Exploration: As presented on the Logs of Borings, the natural soils encountered to the full depth of the borings were loose to medium dense. The near-surface soils generally were silty sand with some clay lenses and the underlying soils were fine to medium grained sand with occasional silt and clay lenses.

The existing fill on the site is of variable consistency and water content. Our records do not indicate that the fill was placed under the observation and testing of a geotechnical engineer.

Testing: Laboratory test results indicate that native subsoils at shallow foundation level are of moderate compressibility at existing water contents. Some additional compression occurs when the water content is increased.

Groundwater: During this investigation, groundwater was encountered in all the borings at a depth of 19 to 19.5 feet. An observation pipe was installed in Boring 8 to provide monitoring



capabilities. The depth to the groundwater on December 2, 1985 was 18 feet. The groundwater levels presented represent only current conditions. Groundwater levels during and after construction may fluctuate due to seasonal variations, adjacent construction or development, and other factors.

CONCLUSIONS AND RECOMMENDATIONS

General: The recommendations presented in this report are based on the assumption that the soil conditions do not deviate appreciably from those disclosed by the borings. If variations are encountered during construction or if changes are made in site plan, structural loading, foundation type or floor levels, we should be notified for supplemental recommendations. This report does not encompass the effects, if any, of underlying geology or regional groundwater withdrawal and expresses no opinion regarding their effects on surface movement.

Shallow Foundations: We recommend spread footing foundations bearing upon recompacted native soils and/or engineered fill for the anticipated loading conditions. The existing fill on the site should not be used for support of foundations without removal and recompaction. A design bearing capacity of 2000 psf may be used for footings placed 24 inches below finished grade. The depth of 24 inches should be considered a minimum for frost protection. Finished grade is defined as the lowest adjacent grade for perimeter footings and floor level for interior footings.

Total or differential settlements resulting from the assumed loads are estimated to be 1/4 to 1/2 inch provided that:



- o Foundations are constructed as recommended herein, and
- o No significant increases occur in water contents of foundation soils. Additional foundation movements of approximately equal magnitude could occur if water from any source infiltrates the foundation soils. Therefore, proper drainage should be provided in the final design and during construction.

The design bearing capacities apply to dead loads plus design live load conditions. The design bearing capacity may be increased by one-third when considering total loads that include wind or seismic. Recommended minimum widths of column and wall footings are 24 inches and 16 inches respectively.

Thickened slab sections can be used to support interior partitions provided that:

- o loads do not exceed 500 plf,
- o thickened sections have a minimum width of 12 inches, and
- o thickness and reinforcement are consistent with structural requirements.

All footings, stem walls, and masonry walls should be reinforced to reduce the potential for distress caused by differential foundation movements. The use of joints at openings or other discontinuities in masonry walls is recommended.

Foundation excavations into undisturbed soils should be inspected by the geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.



Earthwork:

o General:

1. The conclusions contained in this report for the proposed construction are contingent upon compliance with recommendations presented in this section.
2. Although underground facilities such as septic tanks, cesspools, basements, and dry wells were not observed, it is likely such features might be encountered during construction.

o Site Clearing:

1. Strip and remove existing fill, vegetation, debris, pavement, and other deleterious materials from the building areas. All exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

o Excavation:

1. We anticipate that excavations for the proposed construction can be accomplished with conventional equipment.

o Foundation Preparation:

1. In footing areas, the upper 8 inches of existing soils are to be scarified and recompactd after footing excavations are completed.



o Interior Slab Preparation:

1. Scarify, moisten, or dry as required, and compact all subgrade soils to a minimum depth of 8 inches. The subgrade preparation is to be accomplished in a manner which will result in uniform water contents and densities after compaction. All subgrade preparation in building areas should extend a minimum of five feet beyond perimeter footings.

o Materials:

1. Clean, on-site native, on-site fill, or imported soils placed at near optimum moisture conditions may be used as fill material for the following:

- o foundation areas
- o interior slab areas
- o backfill

2. Frozen soils should not be used as fill or backfill.

3. Imported soils should conform to the following:

- o Gradation (ASTM C136):
percent finer by weight

6"	100
4"	25-100
No. 4 Sieve	50-100
No. 200 Sieve	60 (max)

- o Maximum expansive
potential(%)* 1.5
- o Maximum soluble
sulfates(%) 0.10

*Measured on a sample compacted to approximately 95 percent of the ASTM D1557 maximum dry density at about 3 percent below optimum water content. The sample is confined under a 100 psf surcharge and submerged.



o Placement and Compaction:

1. Place and compact fill in horizontal lifts using equipment and procedures that will produce recommended water contents and densities throughout the lift.
2. No fill should be placed over frozen ground.
3. Materials should be compacted to the following:

<u>Material</u>	<u>Minimum Percent Compaction (ASTM D1557)</u>
On-site subgrade soils, subbase fill and imported fill:	
Below footings-----	95
Below slabs-on-grade-----	90
Miscellaneous backfill-----	90

4. On-site and imported soils should be compacted at near optimum moisture conditions.

o Conformance:

1. Recommendations for slabs-on-grade and foundations supported on compacted fills or prepared subgrade are dependent upon conformance to "Earthwork" recommendations. To assess compliance with these recommendations, observation and testing should be performed under the direction of a geotechnical engineer.

Surface Drainage:

1. Positive drainage should be provided during construction and maintained throughout the life of the proposed development. Infiltration of water into utility or foundation excavations must be prevented during construction. Planters and other surface features which could retain water in areas adjacent to the building should be eliminated.



2. In areas where sidewalks or paving do not immediately adjoin the structure, we recommend that protective slopes be provided with an outfall of approximately 5 percent for at least 10 feet from perimeter walls. Backfill against footings, exterior walls, and in utility and sprinkler line trenches should be well compacted and free of all construction debris to minimize the possibility of moisture infiltration.

CLOSURE

Our conclusions and recommendations are predicated on observation and testing of the earthwork and foundation preparations directed by a geotechnical engineer. It would be logical for Western Technologies Inc. to provide these services since we are most qualified to determine consistency of field conditions with those data used in our analyses.

Deviations from our recommendations by the plans, written specifications, or field applications shall relieve us of responsibility unless our written concurrence with such deviations has been obtained.



DEFINITION OF TERMINOLOGY

ALLOWABLE SOIL BEARING CAPACITY
ALLOWABLE FOUNDATION PRESSURE

The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.

BACKFILL

A specified material placed and compacted in a confined area.

BASE COURSE

A layer of specified material placed on a subgrade or subbase.

BASE COURSE GRADE

Top of base course.

BENCH

A horizontal surface in a sloped deposit.

CAISSON

A concrete foundation element cast in a circular excavation which may have an enlarged base. Sometimes referred to as a cast-in-place pier.

CONCRETE SLABS-ON-GRADE

A concrete surface layer cast directly upon a base, subbase or subgrade.

CRUSHED ROCK BASE COURSE

A base course composed of crushed rock of a specified gradation.

DIFFERENTIAL SETTLEMENT

Unequal settlement between or within foundation elements of a structure.

ENGINEERED FILL

Specified material placed and compacted to specified density and/or moisture conditions under observation of a representative of a soil engineer.

EXISTING FILL

Materials deposited through the action of man prior to exploration of the site.

EXISTING GRADE

The ground surface at the time of field exploration.

EXPANSIVE POTENTIAL

The potential of a soil to expand (increase in volume) due to the absorption of moisture.

FILL

Materials deposited by the action of man.

FINISHED GRADE

The final grade created as a part of the project.

GRAVEL BASE COURSE

A base course composed of naturally occurring gravel with a specified gradation.

HEAVE

Upward movement.

NATIVE GRADE

The naturally occurring ground surface.

NATIVE SOIL

Naturally occurring on-site soil.

ROCK

A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting or other methods of extraordinary force for excavation.

SAND AND GRAVEL BASE

A base course of sand and gravel of a specified gradation.

SAND BASE COURSE

A base course composed primarily of sand of a specified gradation.

SCARIFY

To mechanically loosen soil or break down existing soil structure.

SETTLEMENT

Downward movement.

SOIL

Any unconsolidated material composed of discrete solid particles, derived from the physical and/or chemical disintegration of vegetable or mineral matter, which can be separated by gentle mechanical means such as agitation in water.

STRIP

To remove from present location.

SUBBASE

A layer of specified material placed to form a layer between the subgrade and base course.

SUBBASE GRADE

Top of subbase.

SUBGRADE

Prepared native soil surface.



METHOD OF SOIL CLASSIFICATION (ASTM D 2487)

COARSE-GRAINED SOILS

LESS THAN 50% FINES*

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LESS THAN 5% FINES	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size
GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LESS THAN 5% FINES	
GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, MORE THAN 12% FINES	
GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, MORE THAN 12% FINES	
SW	WELL-GRADED SANDS OR GRAVELLY SANDS, LESS THAN 5% FINES	SANDS More than half of coarse fraction is smaller than No. 4 sieve size
SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LESS THAN 5% FINES	
SM	SILTY SANDS, SAND-SILT MIXTURES, MORE THAN 12% FINES	
SC	CLAYEY SANDS, SAND-CLAY MIXTURES, MORE THAN 12% FINES	

NOTE:

Coarse grained soils receive dual symbols if they contain 5 to 12% fines (e.g. SW-SM, GP-GC, etc.)

FINE-GRAINED SOILS

MORE THAN 50% FINES*

GROUP SYMBOLS	DESCRIPTION	MAJOR DIVISIONS
ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS	SILTS AND CLAYS Liquid Limit less than 50
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
OL	ORGANIC SILTS OR ORGANIC SILTY-CLAYS OF LOW PLASTICITY	
MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDS OR SILTS, ELASTIC SILTS	SILTS AND CLAYS Liquid Limit more than 50
CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY	
PT	PEAT, MUCK, AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS

NOTE:

Fine grained soils receive dual symbols if their limits plot in the hatched zone on the Plasticity Chart (ML-CL)

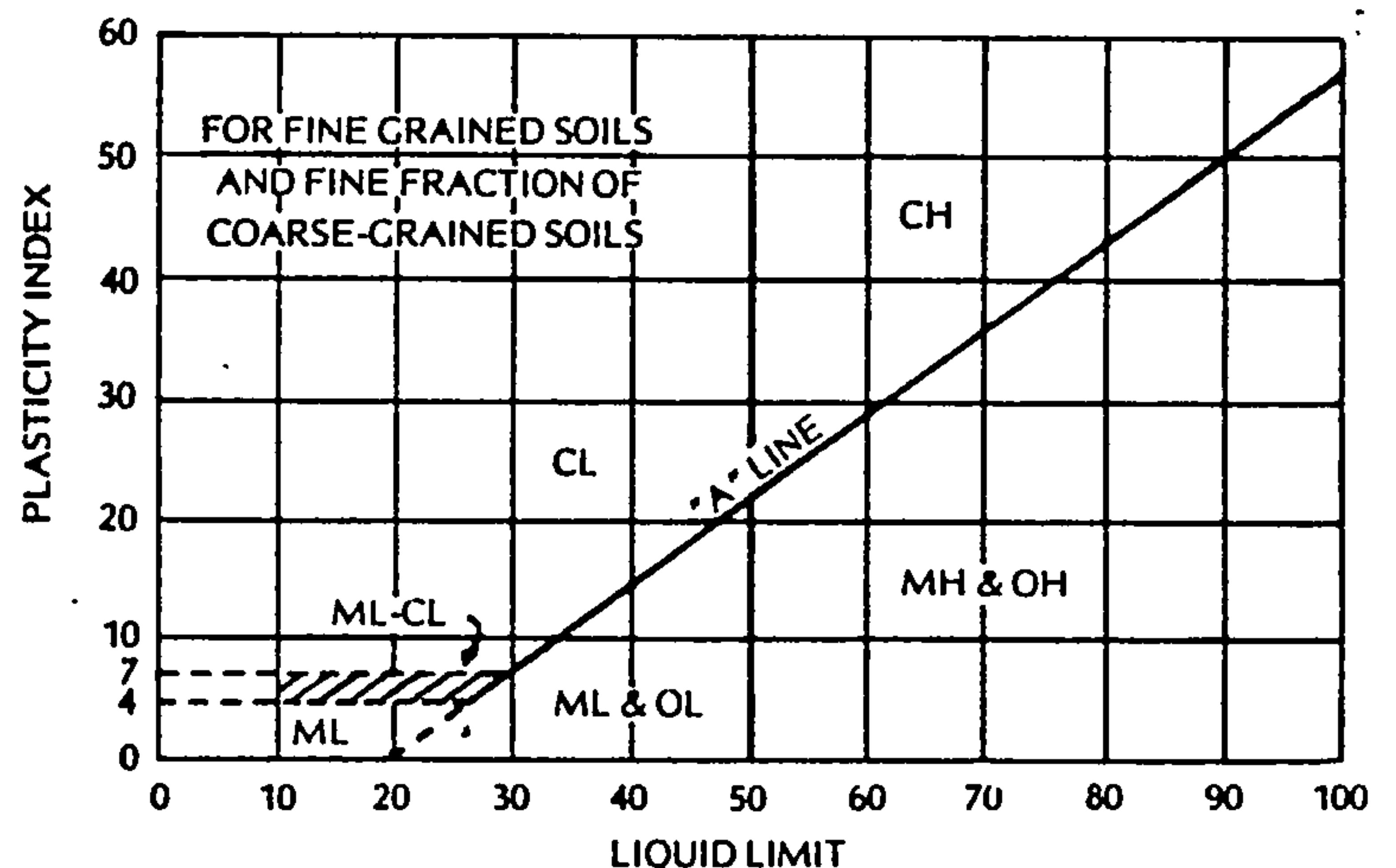
SOIL SIZES

COMPONENT	SIZE RANGE
BOULDERS	ABOVE 12 in.
COBBLES	3 in. to 12 in.
GRAVEL	No. 4 to 3 in.
Coarse	¾ in. to 3 in.
Fine	No. 4 to ¾ in.
SAND	No. 200 to No. 4
Coarse	No. 10 to No. 4
Medium	No. 40 to No. 10
Fine	No. 200 to No. 40
* FINES (Silt or Clay)	BELOW No. 200

NOTE:

Only sizes smaller than three inches are used to classify soils.

PLASTICITY CHART



SOIL PROPERTIES

Job No. 3225J076

Boring No.	Depth, ft.	Soil Class.	Expansion/Compression					Water Soluble Matter, %		Shear Strength					Consolidation		
			Initial Dry Density pcf	Initial Moisture Content, %	Surcharge KSF	+ Expan. - Comp. %	Max. Swell Pressure KSF	Salts	Sulfates	Test Method	Initial Moisture Content, %	Dry Density pcf	C KSF	φ Deg.	Initial Void Ratio	Surcharge KSF	Consol. %
1	1.0	Fill	120 ¹	5.7 ⁴	0.2	-0.02											
					1.0	-1.00											
					2.0	-1.50											
					2.0 ⁵	-2.71											
					4.0	-3.76											
2	3.0	SM	102 ¹	9.3 ⁴	0.2	-0.00											
					1.0	-0.36											
					2.0	-0.56											
					2.0 ⁵	-1.85											
					4.0	-2.79											
5	3.0	SM	104 ¹	16.1 ⁴	0.2	-0.07											
					1.0	-1.06											
					2.0	-1.87											
					2.0 ⁵	-3.00											
					4.0	-3.80											
7	2.0	SM	116 ¹	10.1 ⁴	0.2	-0.01											
					1.0	-0.54											
					2.0	-1.06											
					2.0 ⁵	-3.26											
					4.0	-4.66											

LEGEND

Shear Strength Test Method

DS Direct Shear
DS Direct Shear (saturated)
UC Unconfined Compression
UU Unconsolidated Undrained
CU Consolidated Undrained w/pore press
CU Consolidated Undrained
CD Consolidated Drained
CR Cyclic Consolidated Undrained w/pore press

REMARKS

1. In-situ density.
2. Compacted density (Approx. 95% of ASTM D698 max density at moisture content slightly below optimum)
3. Compacted density (Approx. 95% of ASTM D1557 max density at moisture content slightly below optimum)
4. In-situ moisture.
5. Submerged to approximate saturation.
6. Consolidation % upon saturation
- 7.



PHYSICAL PROPERTIES

Job No. 3225J076

[illegible]

REMARKS

Classification/Particle Size

- Classification/Particle:
1. Visual
 2. Laboratory Tested
 3. Minus #200 Only

Moisture Density Relationship

4. Tested ASTM D-689/AASHTO T-99
5. Tested ASTM D-1557/AASHTO T-180

6. Other _____

Specific Gravity

7. Minus #4
8 Plus #4

Permeability

- 9 Constant Head
10 Falling Head

'R' Value

- 11 Expansion Pressure _____ psf
- 12 Exudation Pressure _____ psi

Note NP = nonplastic

BORING LOG NOTES

The number shown in "LOG OF BORING NO." refers to the approximate location of the same number indicated on the "Site Plan" as positioned in the field by pacing from property lines and/or existing features.

"TYPE/SIZE BORING" refers to the exploratory equipment used in the boring wherein HSA = hollow-stem auger.

"N" in "Blows/Foot" refers to the number of blows of a 140-pound weight, dropped 30 inches, required to advance a two-inch-outside-diameter split-barrel sampler a distance of 1 foot, Standard Penetration Test (ASTM D1586). Refusal to penetration is considered more than 100 blows per foot.

"R" in "Blows/Foot" refers to the number of blows of a 140-pound weight, dropped 30 inches, required to advance a 2.42-inch-inside-diameter ring sampler a distance of 1 foot. Refusal to penetration is considered more than 50 blows per foot.

"Sample Type" refers to the form of sample recovery wherein N = Split-barrel sample and R = Ring sample.

"Dry Density, pcf" refers to the laboratory-determined dry density in pounds per cubic foot. The symbol "NR" indicates that no sample was recovered. The symbol "*" indicates that determination of dry density was not possible.

"Moisture Content, %" refers to the laboratory-determined moisture content in percent (ASTM D2216).

"Unified Class" refers to the soil type as defined by "Method of Soil Classification". The soils were visually classified in the field and, where appropriate, classifications were modified by visual examination of samples in the laboratory and/or by appropriate test.

These notes and boring logs are intended for use in conjunction with the purposes of our services defined in the text. Boring log data should not be construed as part of the construction plans or as defining construction conditions.

Boring logs depict our interpretations of subsurface conditions at the locations and on the date(s) noted. Variations in subsurface conditions and soil characteristics may occur between borings. Groundwater levels may fluctuate due to seasonal variations and other factors.

In general, terms and symbols on the boring logs conform with "Standard Definitions of Terms and Symbols Relating to Soil and Rock Mechanics" (ASTM D653).

LOG OF BORING

Test Boring No. 1

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/81

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—	25	R		2" ASPHALT, FILL, SILTY SAND, some gravel, fine grained, brown, loose, (SM)
—				SILTY SAND, dark brown, fine grained, (SM)
—	7	N		SILTY SAND, brown, fine grained, loose to medium dense, (SM)
<u>5</u>				
—				
—				
—	10	N		
<u>10</u>				SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse grained with depth, medium dense, (SP)
—				
—				
—	12	N		
<u>15</u>				
—				
—				
—	11	N		<u>▽</u>
<u>20</u>				
—				STOPPED AT 20 FEET
—				
—				
—				
<u>25</u>				
—				
—				
—				
<u>30</u>				



LOG OF BORING

Test Boring No. 2

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/81

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf) (%)	Description
—	12	N		2" ASPHALT, FILL, SILTY SAND, some gravel, charcoal, fine grained, brown, loose, (SM)
—	15	R		SILTY SAND, brown, fine grained, loose to medium dense, (SM)
<u>5</u>				
—				SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse grained at 9 feet, medium dense, (SP)
<u>10</u>				
—				
—				
—	4	N		
<u>15</u>				Silty sand lens at 14 feet
—				
—				
—	13	N		<u>▽</u>
<u>20</u>				
—				STOPPED AT 19.5 FEET
—				
—				
—				
<u>25</u>				
—				
—				
—				
<u>30</u>				



LOG OF BORING

Test Boring No. 3

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/8

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—	21	N		2" ASPHALT, FILL, SILTY SAND, some gravel, fine grained, brown, loose, (SM)
—	15	N		CLAYEY SILTY SAND, brown, (SC-SM)
—	5			SAND, very fine grained, brown, (SP)
—				SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse grained with depth, medium dense, (SP)
—	10	R	NR	
10				
—				
—				
—	13	N		
15				Silty sand lens at 14.5 feet
—				
—	6'	N		
—				▽
20				
—				STOPPED AT 19.5 FEET
—				
—				
—				
25				
—				
—				
—				
30				



LOG OF BORING

Test Boring No. 4

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/85

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—	11	N		2" ASPHALT, FILL, SILTY SAND, some gravel, fine grained, brown, loose, (SM)
—	17	R		SILTY SAND, brown, fine grained, loose to medium dense, (SM)
<u>5</u>				Clay lens at 4 feet
—				
—	9	N		SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse grained with depth, medium dense, (SP)
<u>10</u>				Gravelly at 10 feet
—				
—				
—	18	N		
<u>15</u>				
—				
—				
—	8	N		<u>▽</u>
<u>20</u>				
—				STOPPED AT 19.5 FEET
—				
—				
<u>25</u>				
—				
—				
—				
<u>30</u>				



LOG OF BORING

Test Boring No. 5

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/8

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—				2" ASPHALT, FILL, SILTY SAND, some gravel, fine grained, brown, loose, (SM)
—	9	R		SILTY SAND, brown, fine grained, loose to medium dense, (SM)
<u>5</u>				
—	14	N		SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse grained with depth, medium dense, (SP)
<u>10</u>	11	N		
—				
—				
<u>15</u>	11	N		SAND, light brown, coarse grained, poorly graded, (SP)
—				
—				
—				
<u>20</u>				<u>▽</u>
—				
—				STOPPED AT 20.5 FEET
<u>25</u>				
—				
—				
—				
<u>30</u>				



LOG OF BORING

Test Boring No. 6

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/81

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—	17	R		2" ASPHALT, FILL, SILTY SAND, some gravel, fine grained, brown, loose, (SM)
—	9	R		SILTY SAND, brown, fine grained, loose to medium dense, (SM)
5				
—				
—				
—				Clay lens at 7 feet
—	14	N		SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse grained with depth, trace of gravel, occasional cobbles, medium dense, (SP)
10				
—				
—				
—				
—	12	N	NR	
15				
—				
—				
—				
—	12	N		▽
20				
—				STOPPED AT 19.5 FEET
—				
—				
—				
25				
—				
—				
—				
30				



LOG OF BORING

Test Boring No. 7

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/85

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—				2" ASPHALT, FILL, SILTY SAND, some gravel, fine grained, brown, loose, (SM)
—	14	R		SILTY SAND, brown, fine grained, loose to
—	31	N		medium dense, (SM), Clay lens at 3.5 feet
5				
—	21	N		SAND, light brown, fine to medium grained, poorly graded, becomes medium to coarse
—				grained with depth, trace of gravel,
—	13	N		medium dense, (SP)
10				
—				
—				
—				
—				
15	11	N		
—				
—				
—				
—	15	N		
20				
—				
—				
—				
—				
25				
—				
—				
—				
—				
30				

STOPPED AT 19.5 FEET

LOG OF BORING

Test Boring No. 8

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/24/89

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
—				2" ASPHALT, 1'4" CONCRETE SLAB
—	6	N		FILL, silty sand, fine grained, brown, (SM)
—				SAND, light brown, fine to medium grained,
—				poorly graded, becomes medium to coarse
<u>5</u>				grained with depth, trace of gravel,
—	15	R		medium dense, (SP)
—				
—				
—	11	N		
<u>10</u>				
—				
—				
—				
<u>15</u>	21	N		
—				Gravelly at 15.5 feet
—				
—				
—	11	N		<u>▽</u>
<u>20</u>				
—				
—				
—				
<u>25</u>				STOPPED AT 24 FEET, SET PVC PIPE
—				
—				
—				
—				
<u>30</u>				



LOG OF BORING

Test Boring No. 9

Project: Old Town Development

Project No. 3225J076

Type/Size Boring: HSA 6-5/8"

Rig Type: CME-45

Date: 10/25/85

Groundwater Conditions: Groundwater encountered at 19 feet

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	MC (%)	Description
—	16	R			2" ASPHALT, FILL, SILTY SAND, dark brown, trace of gravel, fine grained, (SM)
—	8	N			SAND, light brown, very fine grained, poorly graded, becomes medium to coarse grained with depth, trace of gravel, medium dense, (SP)
5					
—					
—					
10	9	N			
—					
—					
15					
—					
—					
20	11	N			
—					
—					
25	3	N			
—					
—					
30	7	N			



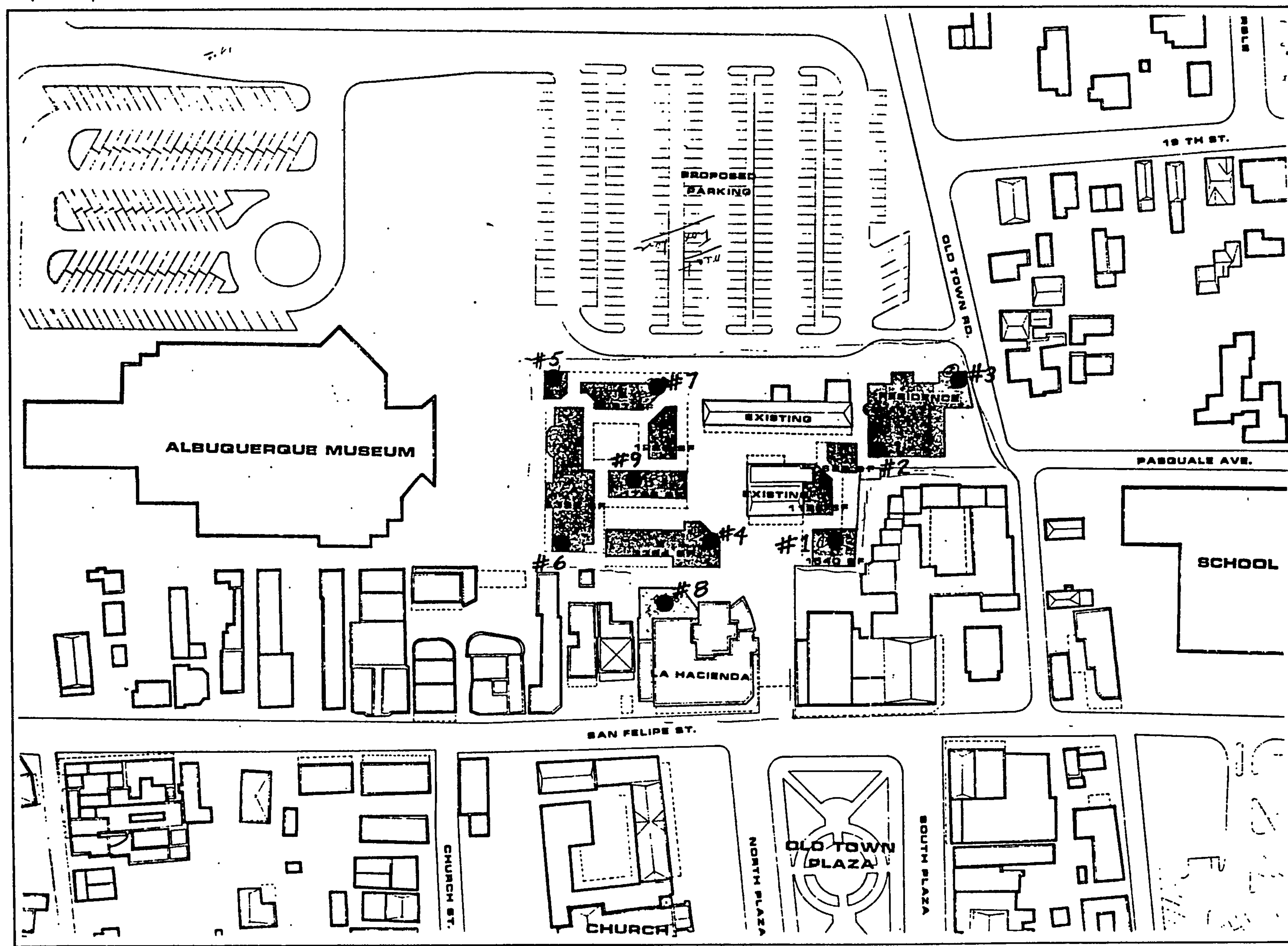
LOG OF BORING

Test Boring No. 9 (Continued)

Project No. 3225J076

Depth (ft)	Blows/ Foot	DD ST	MC (pcf)	Description
<u>31</u>				SAND, medium to coarse grained, light brown some gravel, (SP)
—				
<u>35</u>				
—	19	N		
—				
<u>40</u>				
—	15	N		
—				
<u>45</u>				
—	9	N		
—				
<u>50</u>				
—	6	N		
—				
<u>55</u>				
—	36	N		
—				
<u>60</u>				
—	50/6	N		
STOPPED AT 61.5 FEET				
<u>65</u>				





RUNOFF VOLUME CALCULATIONS

Proposed Conditions

$T_c < 10$ min.
all calculations, $I = 4.65 \text{ in/hr}$

BASIN A - 1:

- use 2.2" of rainfall this area (per Pl. 22.2 D-1)
- from plan, 7392 sq. ft. of area in basin
- assume 100% impervious (no landscaping)

$$\text{Volume} = \frac{2.2}{12} (7392 \text{ ft}^2) = 1355 \text{ cubic feet}$$

$$\text{flow rate} = Q = CIA = \frac{4.65 \text{ in/hr}}{43560} \left(\frac{7392}{43560} \right) = 0.79 \text{ cfs}$$

assume $C=1$

BASIN B:

- from plan, 5520 sq. ft. of total area
- assume 70% impervious (landscaping)
- pervious $CN = 61$, then from 22.2 C-3
composite $CN = 87$

- runoff depth from C-4 is 1.1"

$$\text{Volume} = \frac{1.1}{12} (5520) = 506 \text{ cubic feet}$$

- available area for retention ponding =

$$100' \times 7' \text{ wide} = 700 \text{ sq. ft.}$$

$$\text{required depth of ponding} = \frac{506 \text{ cu. ft.}}{700 \text{ sq. ft.}} = 0.73'$$

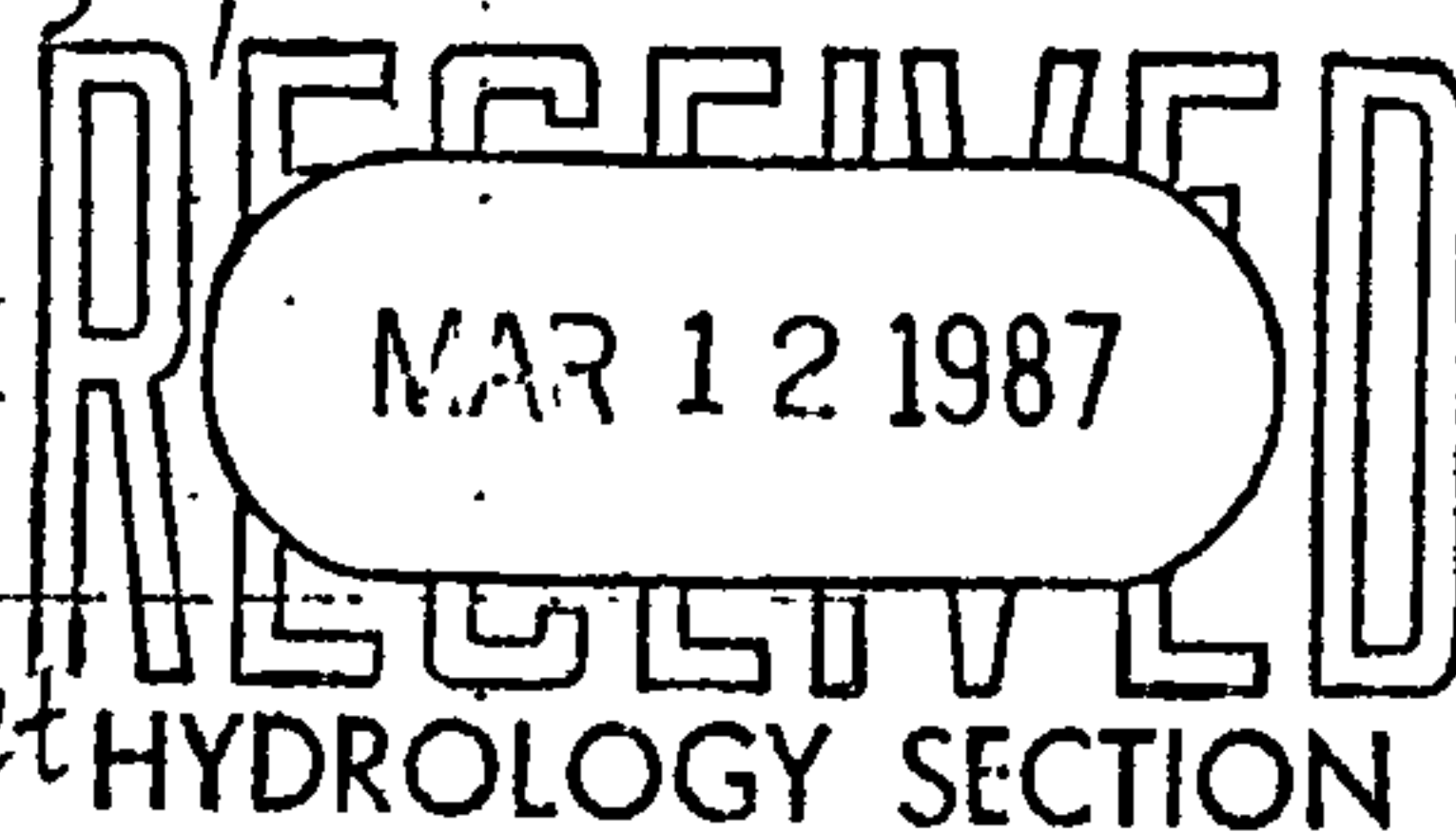
Revised

3-11-87

Jama T.

- assume $C=1$

$$\text{then } Q = CIA = 1.0 (4.65) \left(\frac{5520}{43560} \right) = 0.6 \text{ cfs}$$



BOHANNAN-HUSTON INC.

PROJECT NAME

Old Town site

SHEET

OF

4

PROJECT NO.

BY

Jama T.

DATE

2-16-87

SUBJECT

CH'D

DATE

Basin E-1

- assume 100% impervious (CN = 100)
- then Plate 22.2 C-4 gives direct runoff of 2.2"
- area of basin = 3150 sq. ft.
- volume = $\frac{2.2'}{12} (3150) = 577 \text{ cu. ft.}$
- $Q = CIA = 1.0 (4.65) \frac{3150}{43560} = 0.34 \text{ cfs}$
(assume C = 1.0)

Revised 3-11-87
JT

Basin E

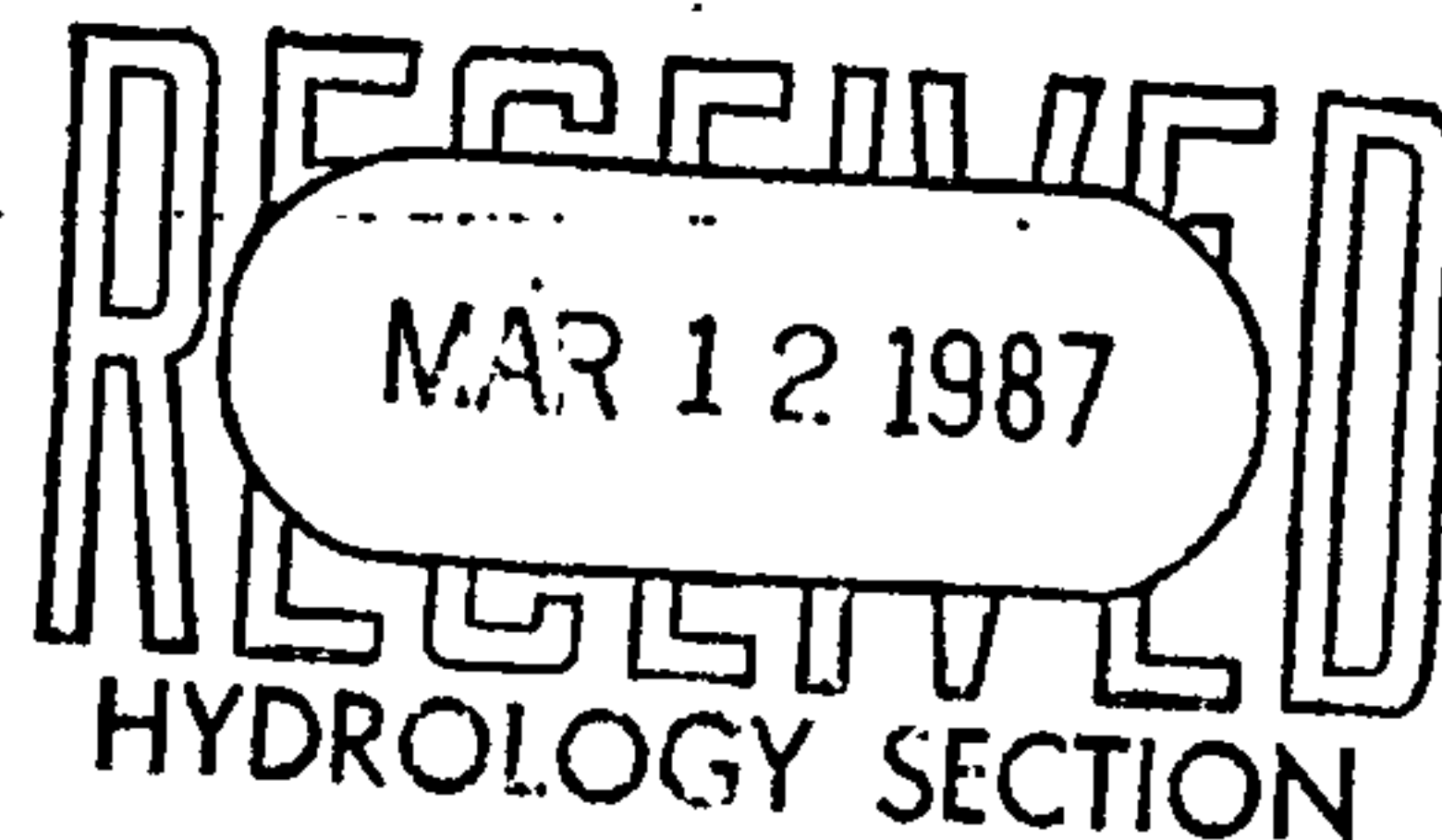
- Rational Method,
 $Q = CIA$

- $I = 4.65 \text{ in/hr}$
 $A = \text{roof (2800 sf) } 0.06 \text{ ac.}$
 $\text{pavement (2950 sf) } 0.07 \text{ ac.}$
 $C = 0.9 \text{ (roof)}$
 0.95 (pavement)

$$Q = 0.9 (0.06) 4.65 = 0.25 \text{ cfs}$$

$$= 0.95 (0.07) 4.65 = 0.31 \text{ cfs}$$

$$\underline{\hspace{1cm}} \\ 0.56 \text{ cfs}$$



BOHANNAN-HUSTON INC.

PROJECT NAME Old Town project SHEET 4 OF 4
PROJECT NO. _____ BY James J DATE 2-16-87
SUBJECT _____ CH'D _____ DATE _____

一、
 二、
 三、

City

X = 375
Y = 1,491
Central 2
State 1
Coordinate
 $\alpha = -0^{\circ}14'2$
ector = 0.9996

12
REBAR

OCT 8 1946

C-31
162

SCALE: 1" = 50'



SAN

(26th Min. R/W) OLD

TOWN

ROAD

N. W.

(R/W Irregular)

The FEMA Floodway Map, also shown on the enclosed plan, reveal that no floodplain exists on or near the site. Site inspection further shows no evidence of significant ponding or flooding in this location.

PROPOSED SITE CONDITIONS

The site is proposed to be developed and graded as shown on the enclosed drainage/grading plan. New buildings will be integrated into and around the existing buildings on the site. Excluding the buildings and landscaping areas, most of the remainder of the site will be overlaid with brick pavers, concrete walk areas, or pavement.

The plan has divided the site into basin areas and has determined flowrates and/or volumes of runoff in a 6-hour, 100-year storm event. Calculations for these values are provided in the Appendix of this report. The results and the proposed methods of managing runoff are tabulated below.

<u>Basin</u>	<u>Runoff Rate</u>	<u>Runoff Volume</u>	<u>Method of Management</u>
A-1	0.8 CFS	1355 CF	8" and 10" private PVC storm sewer line and drop inlet collect the runoff and eventually discharge southerly to existing 24" SS line in Old Town Road.
B	0.6 CFS ~~N/A~~	506 CF	~~Retention~~ of runoff in landscaping and ponding area. Discharged by inlet to proposed storm sewer.
C	4.6 CFS	N/A	Surface flow discharge westerly to San Felipe Road.
D	1.35 CFS	N/A	Drop inlets collect flow from this basin and discharge it into the proposed 8" and 10" storm sewer line described in Basin A-1 above.
E-1	0.3 CFS ~~N/A~~	577 CF	~~Retention~~ of runoff in landscaping and ponding area. Discharged by inlets to proposed storm sewer.
E	0.6 CFS	N/A	Runoff discharges freely to Old Town Road.

RECEIVED
MAR 12 1987
HYDROLOGY SECTION



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

April 8, 1987

James Topmiller
Bohannon-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR LA HACIENDA AT OLD TOWN
(J-13/D37) ENGINEER'S STAMP DATED APRIL 2, 1987

Dear James:

Based on the information provided on your resubmittal of April 7, 1987,
the above referenced plan is approved for Building Permit.

Please be advised that the Certificate of Occupancy will not be released
until concurrence of W.O. acceptance has been submitted.

Please attach a copy of this plan to the construction sets prior to
sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at
768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

March 16, 1987

James Topmiller
Bohannon-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR LA HACIENDA AT OLD TOWN
(J-13/D37) ENGINEER'S STAMP DATED MARCH 12, 1987

Dear James:

Based on the information provided on your resubmittal of March 12, 1987, the above referenced plan is approved for Building Permit.

Please be advised that the building permit will not be issued until concurrence of first review by DRC is received. Also, any underground facilities contained within the drainage plan must be inspected by our field inspector before they are backfilled.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

February 25, 1987

James Topmiller
Sohannan-Huston, Inc.
7500 Jefferson, NE
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR LA HACIENDA AT OLD TOWN
(J-13/D37) RECEIVED FEBRUARY 19, 1987

Dear James:

A preliminary review of your submittal for Building Permit approval has shown that the following information is lacking for this section to begin the review process:

INFORMATION NEEDED

1. Replat, easements or covenants will be required for drainage across lot lines.
2. Per Ordinance No. 63-1982, Section 6 - F, all ponds shall be designed and constructed to be emptied in 24 hours or less. (Basin B and Basin E-1 you have designed for retention.)
3. Proposed tie-in to the existing 24" storm sewer line on Old Town Road must go thru work order process.
4. Is the proposed project going to be built in one complete phase or will it be broken up into different phases? We will need a phasing plan if built in phases.

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

James Topmiller
February 25, 1987
Page 2

FLAN DRAWING

1. Please identify the property lines within the proposed project (Tracts 177, 233-A-2, and 233-A-3).

Please provide this information so that we may process your request as expediently as possible.

Cordially,

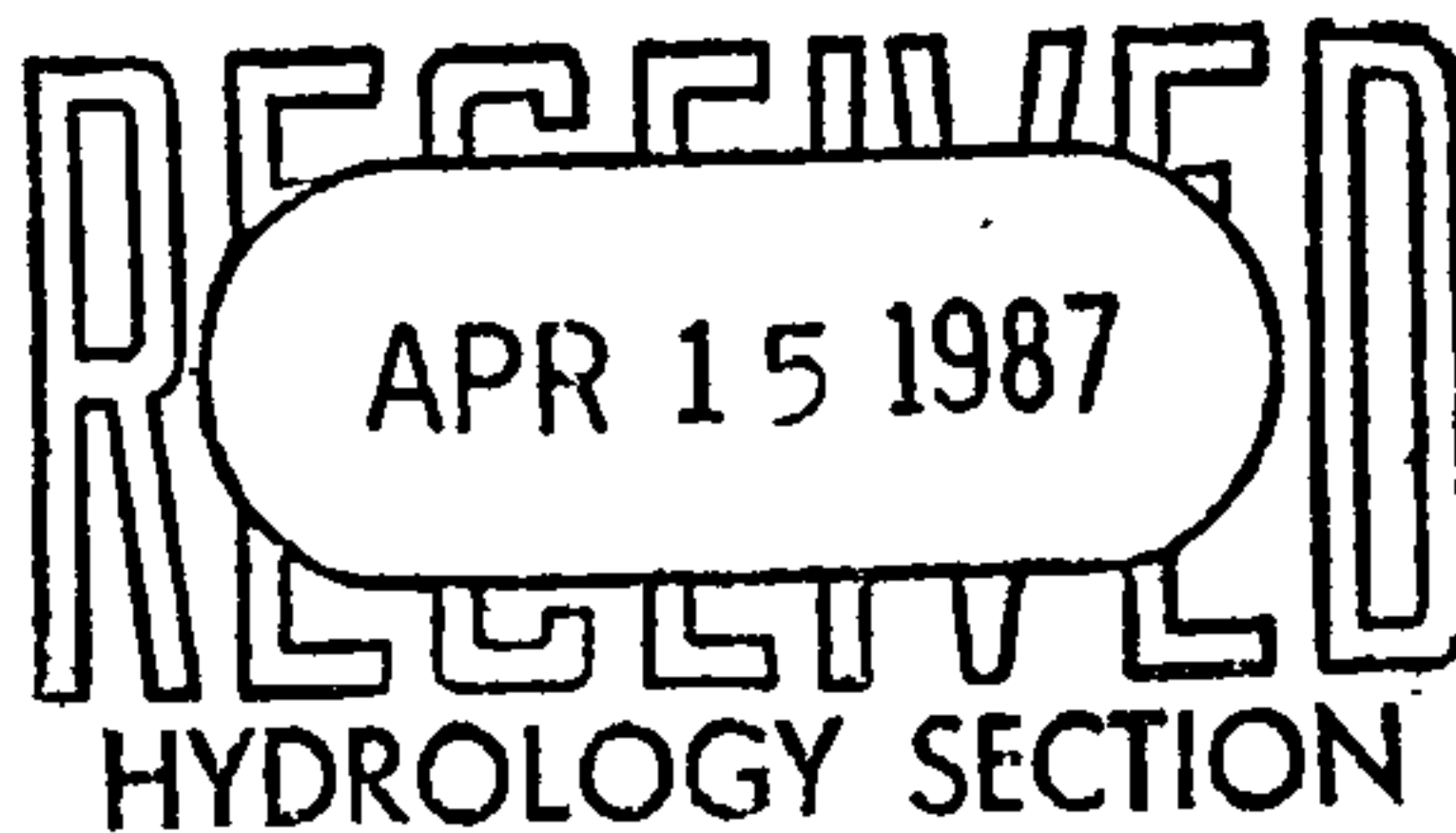


Bernie J. Montoya, C.E.
Engineering Assistant

EJM/bsj

April 15, 1987

Bernie Montoya
Engineering Assistant
Hydrology Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103



Re: Drainage/Grading Plan Revisions for La Hacienda at Old Town
(J-13/D37)

Dear Bernie:

In accordance with my telephone conversation with Roger Green on Tuesday, April 14th, enclosed is a revised drainage and grading plan for the above referenced project. We have made several minor revisions in response to comments received at the preliminary DRC meeting on April 3, 1987.

At the request of Bob Hogrefe, acting DRC chairperson, the storm drain extension (part of City Project No. 3215) was changed from 10" RCP to 12" RCP. The storm drain on site will remain 10" in diameter, however, the slope of the section of pipe tying to the 12" RCP has changed from 0.71% to 2.98%.

We are not requesting any further approval with this submittal; we are merely updating your files. Please call either James Topmiller or myself, if you have any questions or comments.

Sincerely,

Karen L Scharf
Karen L. Scharf
Project Engineer

Enclosure

cc: Les Sheppard

/da
Job No. 71151

PRINCIPALS

LARRY W HUSTON

MICHAEL M EMERY, PE

DANA C WOOD, PE.

ANDRES ARAGON-VIAMONTE

DARRELL L WADE, PE

JAMES V DOMENICK, PE

BRIAN G BURNETT, PE.

BOHANNAN-HUSTON INC.



COURTYARD 1, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 (915) 778-4491

DRAINAGE INFORMATION SHEET

PROJECT TITLE: La Hacienda at Old Town ZONE ATLAS/DRNG. FILE #: J-137037

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: Bohannon-Huston Inc. CONTACT: Karen Scharf

ADDRESS: 7500 Jefferson NE PHONE: 823-1000

OWNER: Sprawl Enterprises, Inc. CONTACT: _____

ADDRESS: 309 Arno NE PHONE: 247-4900/

ARCHITECT: Barker-Freidman & Assoc CONTACT: _____

ADDRESS: 209 Gold SW PHONE: 842-6789

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

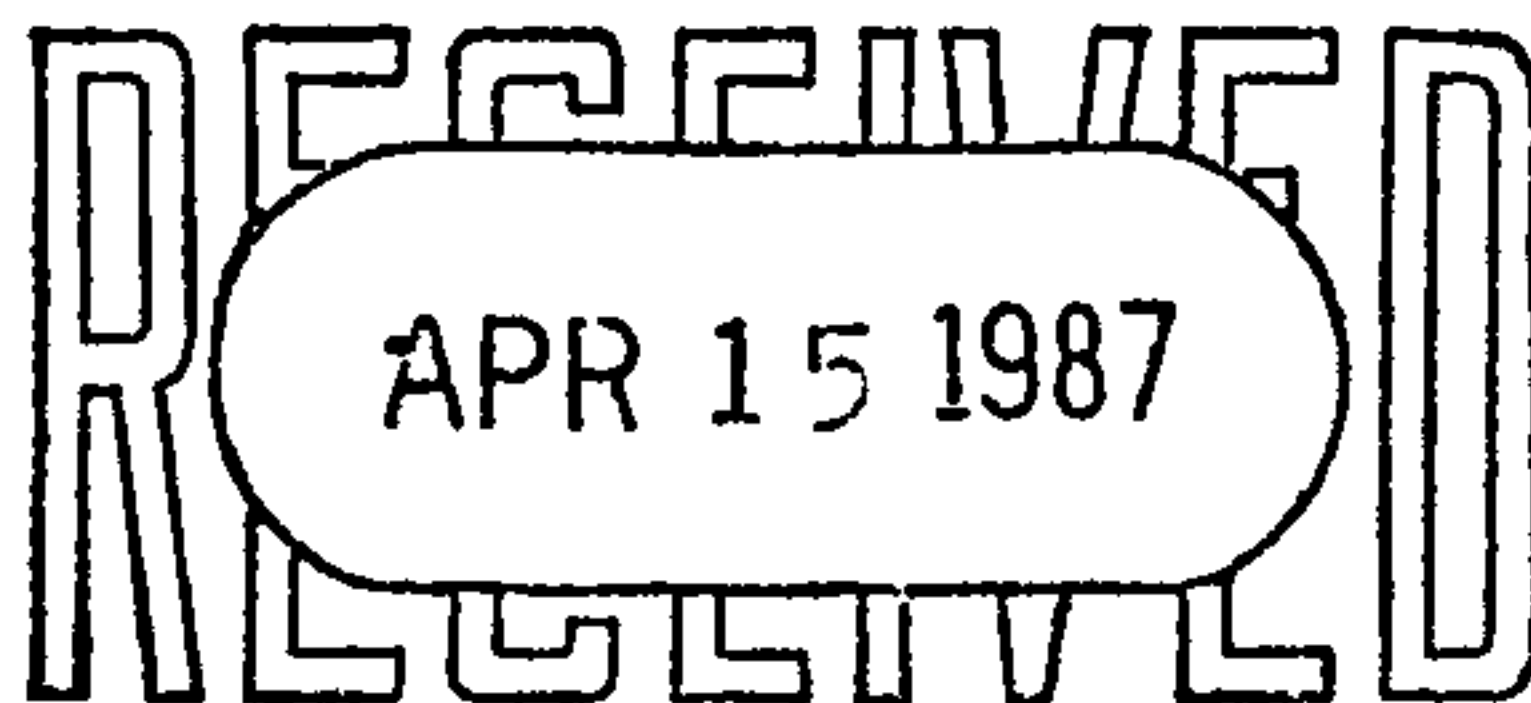
ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

☐ YES

☒ NO

☐ COPY OF CONFERENCE RECORDING SECTION SHEET PROVIDED



DRB NO. 86-615

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☒ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL

☐ PRELIMINARY PLAT APPROVAL

☐ SITE DEVELOPMENT PLAN APPROVAL

☐ FINAL PLAT APPROVAL

☐ BUILDING PERMIT APPROVAL

☐ FOUNDATION PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY APPROVAL

☐ ROUGH GRADING PERMIT APPROVAL

☐ GRADING/PAVING PERMIT APPROVAL

☒ OTHER Update for Files (SPECIFY)

DATE SUBMITTED: 4.15.87

BY: Karen L Scharf

FILE COPY



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

April 8, 1987

James Topmiller
Bohannon-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR LA HACIENDA AT OLD TOWN
(J-13/D37) ENGINEER'S STAMP DATED APRIL 2, 1987

Dear James:

Based on the information provided on your resubmittal of April 7, 1987,
the above referenced plan is approved for Building Permit.

Please be advised that the Certificate of Occupancy will not be released
until concurrence of W.O. acceptance has been submitted.

Please attach a copy of this plan to the construction sets prior to
sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at
768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

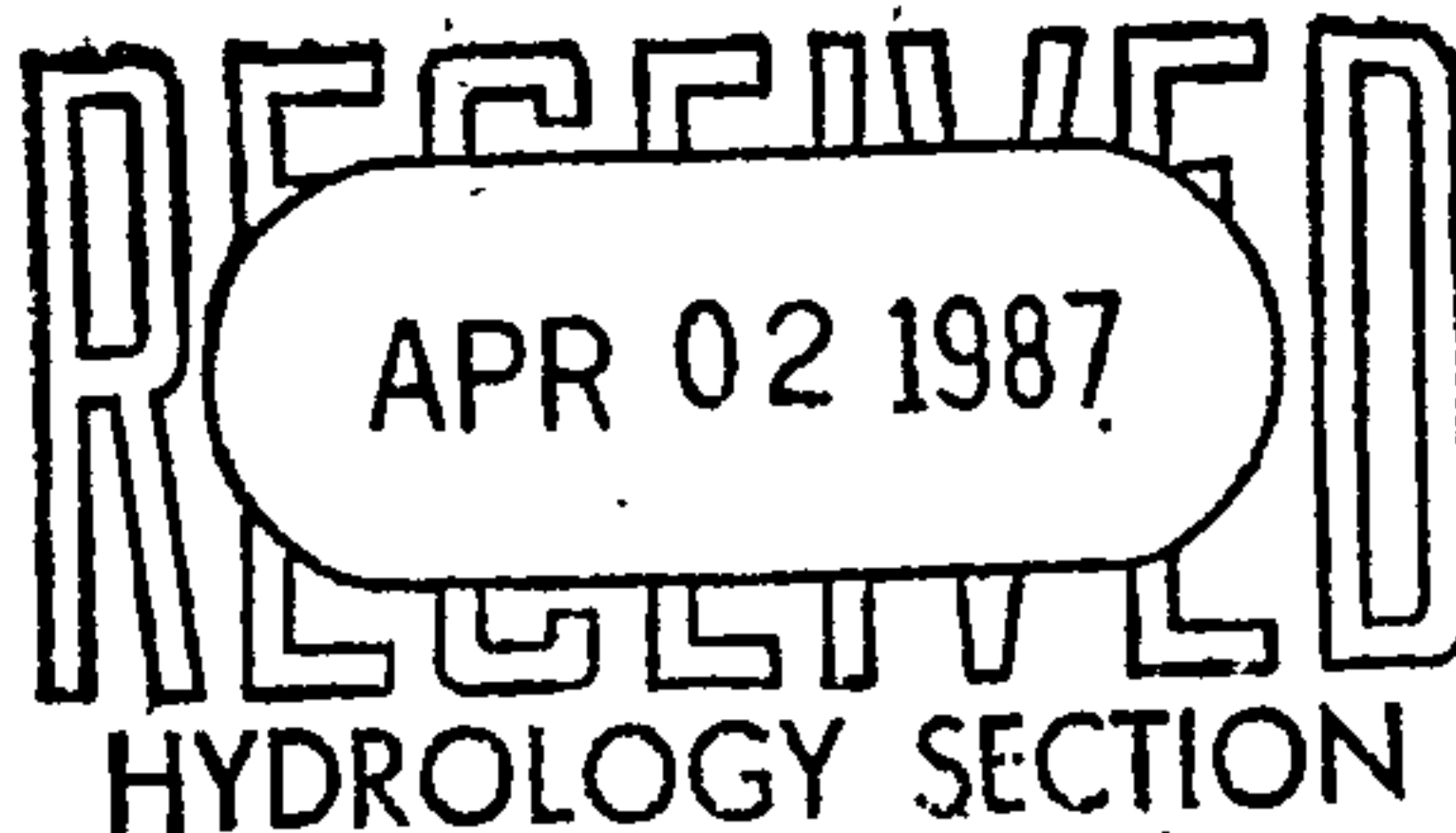
BOHANNAN-HUSTON INC.



COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
 UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
 6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 (915) 778-4491

April 2, 1987

Bernie Montoya
 Engineering Assistant
 Hydrology Department
 City of Albuquerque
 P.O. Box 1293
 Albuquerque, NM 87103



Re: Drainage/Grading Plan Revisions for La Hacienda at Old Town
 (J-13/D37)

Dear Bernie:

Enclosed is an revised drainage/grading plan for the above referenced project. Since receiving your letter dated March 16, 1987 approving the plan for Building Permit, we have made several minor revisions.

The revisions made are as follows: The grate type for cleanouts with inlets has been changed from a Neenah R-4040 to R-4444, Type A. A note has been added which specifies grate type. A note has also been added stating that all underground storm drain facilities must be inspected by an inspector from the Hydrology Department before back-filling. Notes have also been added to cleanout details to provide for cases where the stormdrain mains are 4", 8" or 10" in diameter.

This project is scheduled for preliminary DRC review on Friday, April 3rd. Please call if you have any questions or comments.

Sincerely,

James Topmiller
 James Topmiller, P.E.
 Project Manager

Enclosure

cc: Les Sheppard

KS/da
 Job No. 71151

PRINCIPALS

LARRY W. HUSTON

MICHAEL M. EMERY, PE

DANA C. WOOD, PE.

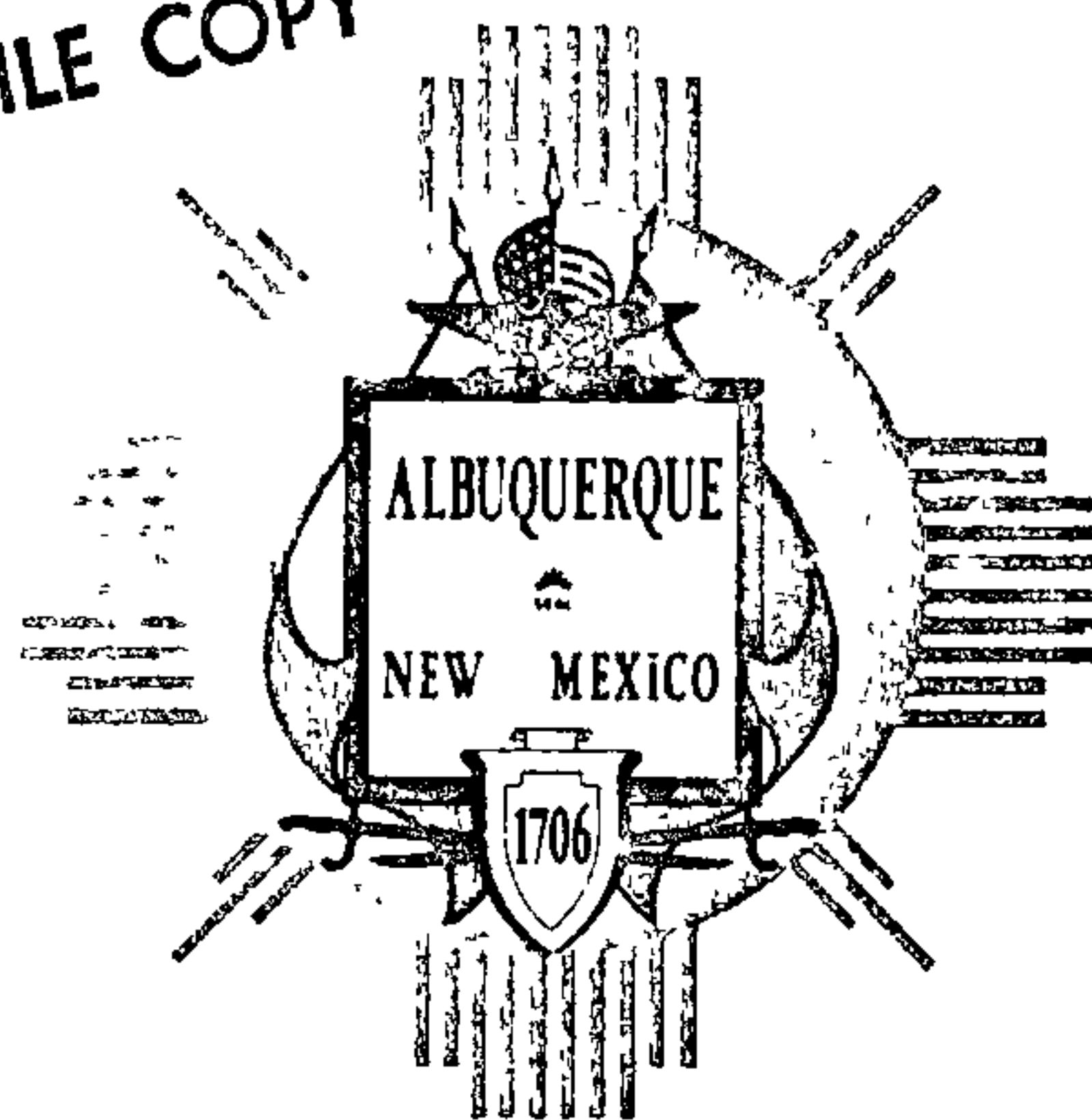
ANDRES ARAGON-VIAMONTE

DARRELL L. WADE, PE

JAMES V. DOMENICK, PE.

BRIAN G. BURNETT, PE

FILE COPY



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

March 16, 1987

James Topmiller
Bohannon-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR LA HACIENDA AT OLD TOWN
(J-13/D37) ENGINEER'S STAMP DATED MARCH 12, 1987

Dear James:

Based on the information provided on your resubmittal of March 12, 1987, the above referenced plan is approved for Building Permit.

Please be advised that the building permit will not be issued until concurrence of first review by DRC is received. Also, any underground facilities contained within the drainage plan must be inspected by our field inspector before they are backfilled.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

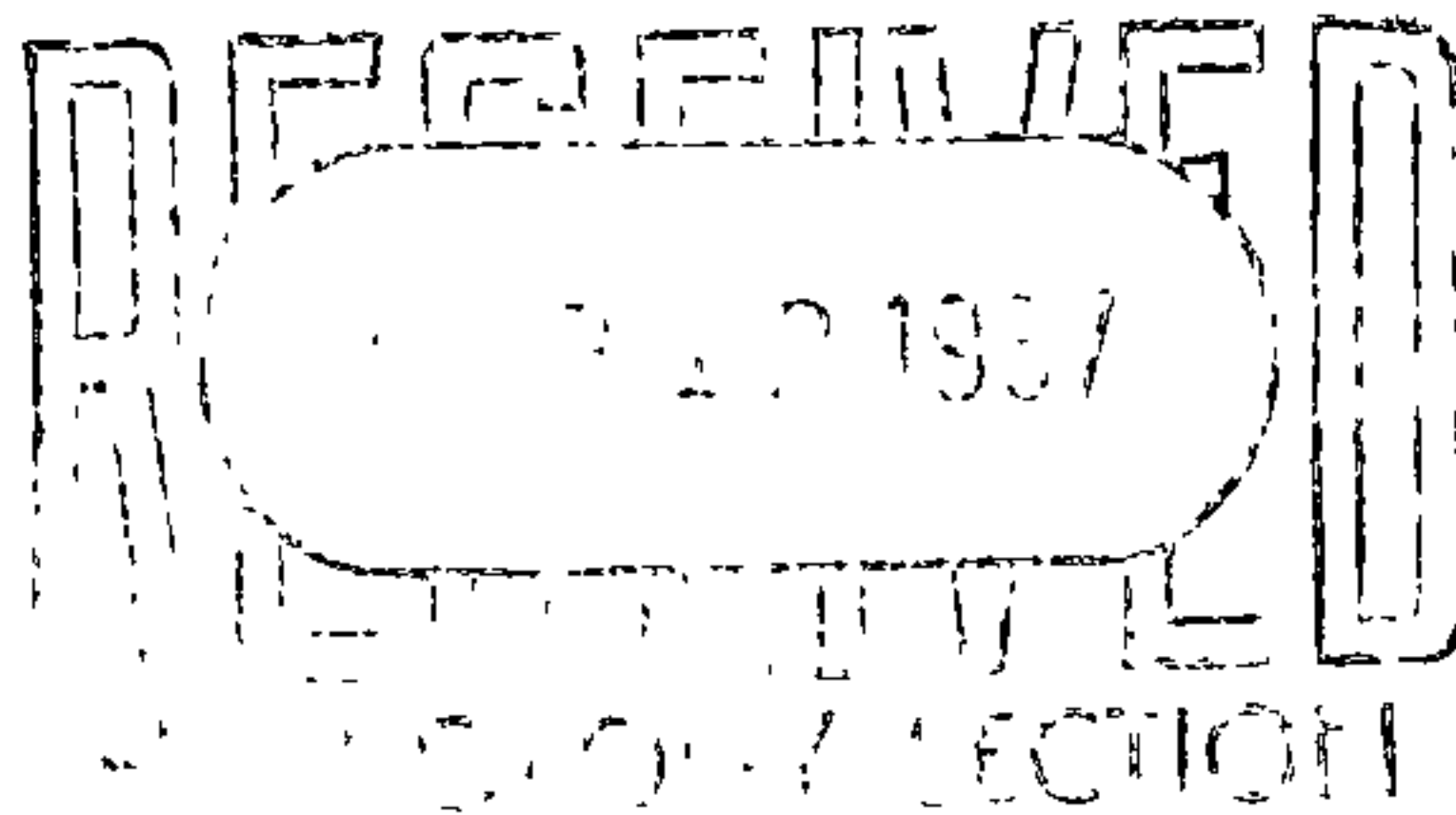
ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

March 11, 1987

Mr. Bernie Montoya, C.E.
 Engineering Assistant
 Utility Development Division
 Hydrology Section
 City of Albuquerque
 P.O. Box 1293
 Albuquerque, NM 87103



Re: Drainage/Grading Plan for La Hacienda at Old Town (J-13/D37)

Dear Bernie:

The purpose of this letter is to respond to and address your comments of February 25, 1987 on the referenced plan. We have addressed the comments below in the order they were presented.

1. Drainage covenants for cross-lot drainage: It has come to our attention that the property had been replatted in September, 1986 into a single tract of land. The new legal description is identified on the enclosed plan. This condition does not, therefore, require the use of cross-lot drainage covenants. Enclosed is a copy of a portion of the replat.
2. Retention ponds: The retention ponds have been eliminated and are now detention ponds with runoff being discharged to an extension of the private storm drain. Please refer to the enclosed plan and revised calculation sheets.
3. Work order process for right-of-way: Construction plans are even now being prepared in compliance with this comment.
4. Phases: Phasing is not proposed.
5. Property lines: Please see Comment #1 above.

I believe we have satisfactorily addressed your comments with this letter and new submittal. If I can answer any questions, please call me.

Sincerely,

James Topmiller
 James Topmiller, P.E.
 Project Manager

cc: Les Sheppard

JT/da
 Job No. 71151

PRINCIPALS

LARRY W. HUSTON

MICHAEL M. EMERY, PE

DANA C. WOOD, PE

ANDRES ARAGON-VIAMONTE

DARRELL L. WADE, PE

JAMES V. DOMENICK, PE

BRIAN G. BURNETT, PE

BOHANNAN-HUSTON INC.



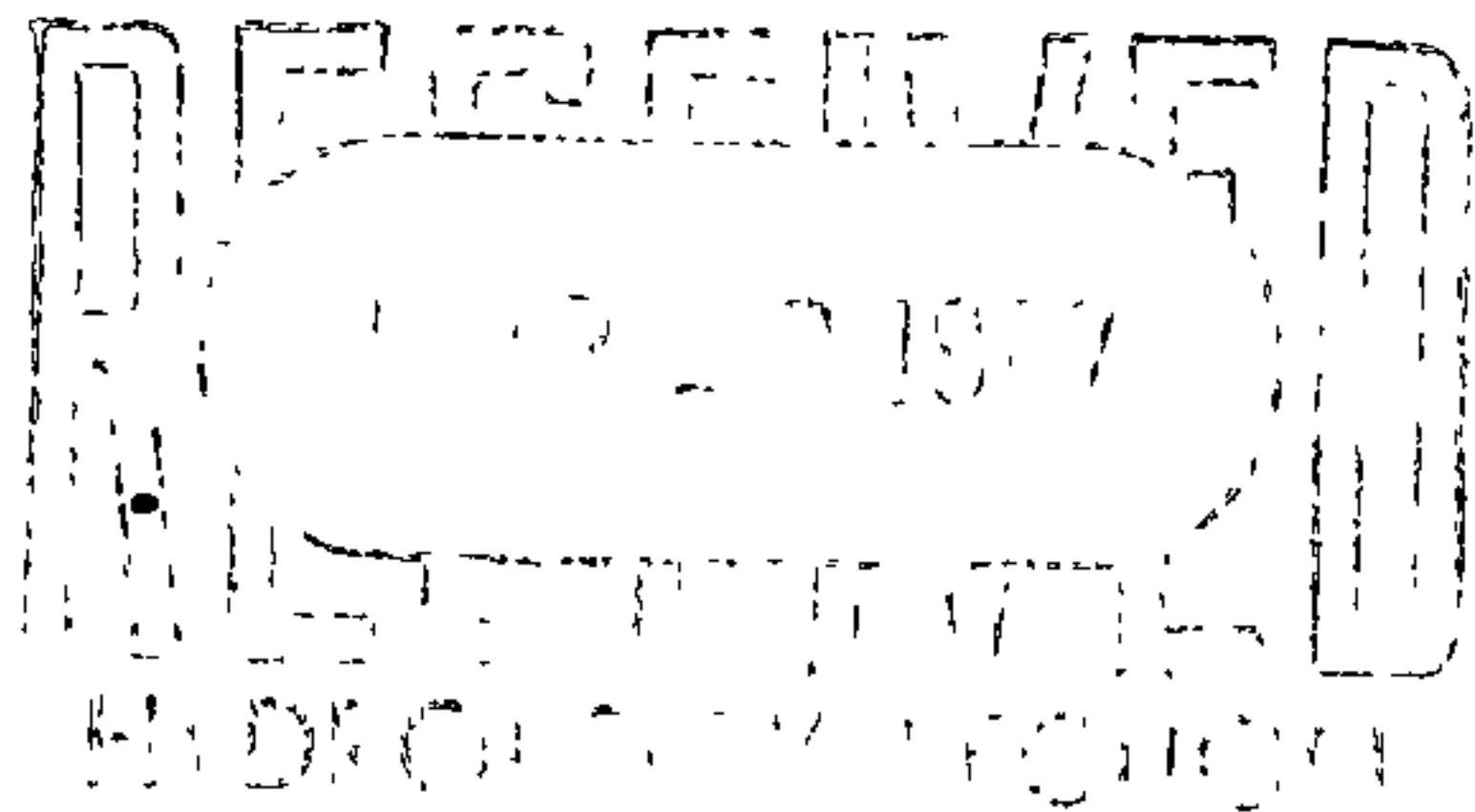
COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
 UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
 6713 VISCOUNT BLVD EL PASO, TEXAS 79925 (915) 778-4491

DRAINAGE INFORMATION SHEET

PROJECT TITLE: LA HACIENDA @ ZONE ATLAS/DRNG. FILE #: J13/D37
LEGAL DESCRIPTION: OLD TOWN TRACT B, PLAT OF LANDS OF
CITY ADDRESS: CASA DE ARMIJO AND
ENGINEERING FIRM: BOHANNAN-HUSTON PLAZA HACIENDA
CONTACT: JAMES TOPMILLER
ADDRESS: 7500 JEFFERSON NE PHONE: 823-1000
OWNER: SPROUL ENTERPRISES CONTACT: _____
ADDRESS: _____ PHONE: _____
ARCHITECT: BARICKER-FRIEDMAN CONTACT: LES SHEPPARD
ADDRESS: 209 GOLD ST. # SW PHONE: 842-6789
SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

☐ YES
☒ NO



DRB NO. _____
EPC NO. _____
PROJ. NO. _____

☐ COPY OF CONFERENCE RECAP
SHEET PROVIDED

TYPE OF SUBMITTAL:

☒ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ SITE DEVELOPMENT PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ ROUGH GRADING PERMIT APPROVAL
☐ GRADING/PAVING PERMIT APPROVAL
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: 3.12.87
BY: James Topmiller

FILE COPY



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

February 25, 1987

James Topmiller
Bohannon-Huston, Inc.
7500 Jefferson, NE
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR LA HACIENDA AT OLD TOWN
(J-13/D37) RECEIVED FEBRUARY 19, 1987

Dear James:

A preliminary review of your submittal for Building Permit approval has shown that the following information is lacking for this section to begin the review process:

INFORMATION NEEDED

1. Replat, easements or covenants will be required for drainage across lot lines.
2. Per Ordinance No. 63-1982, Section e - F, all ponds shall be designed and constructed to be emptied in 24 hours or less. (Basin B and Basin E-1 you have designed for retention.)
3. Proposed tie-in to the existing 24" storm sewer line on Old Town Road must go thru work order process.
4. Is the proposed project going to be built in one complete phase or will it be broken up into different phases? We will need a phasing plan if built in phases.

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

James Topmiller
February 25, 1987
Page 2

PLAN DRAWING

1. Please identify the property lines within the proposed project (Tracts 177, 233-A-2, and 233-A-3).

Please provide this information so that we may process your request as expediently as possible.

Cordially,



Bernie J. Montoya, C.E.
Engineering Assistant

BEM/osj

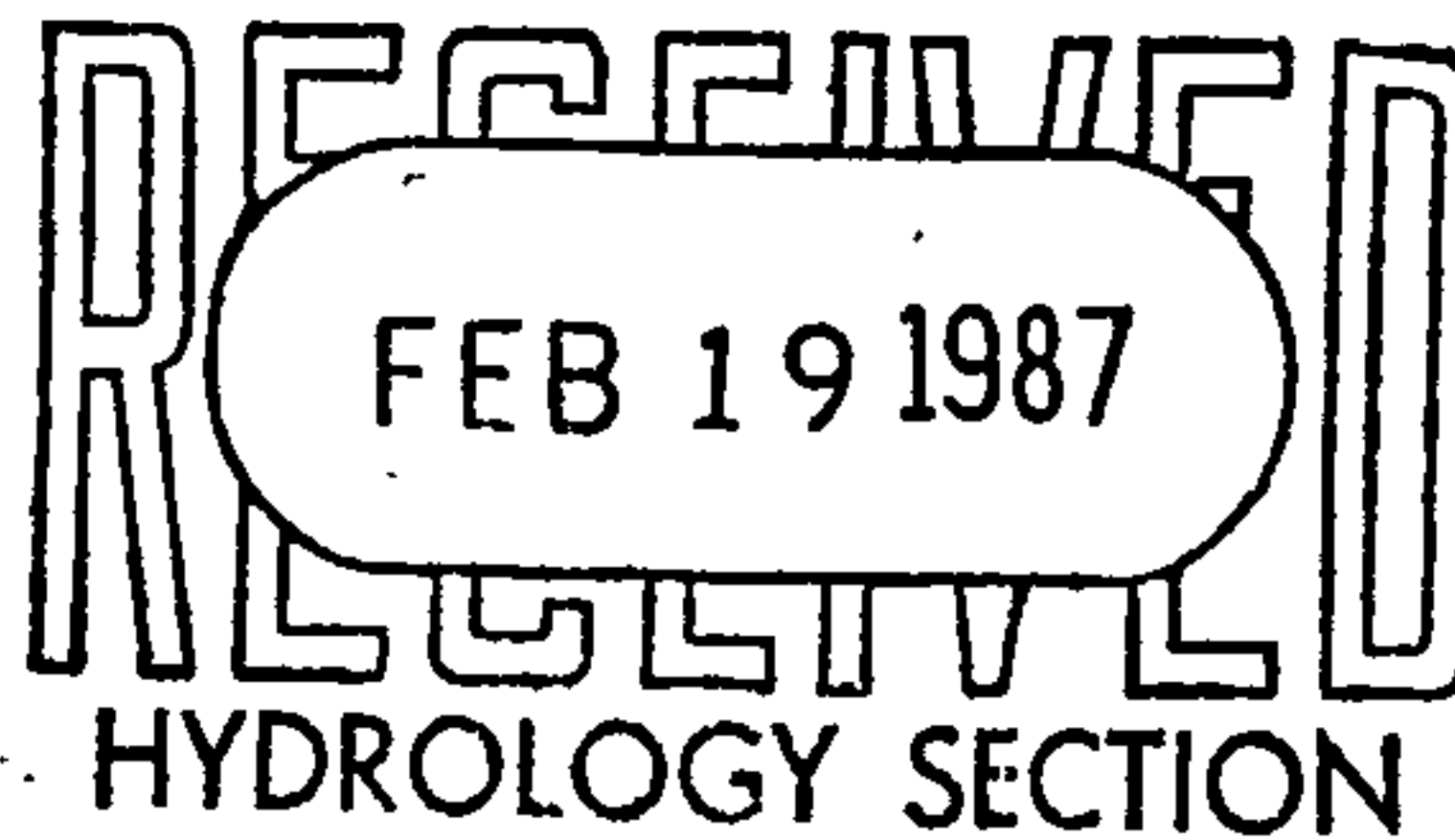
BOHANNAN-HUSTON INC.



COURTYARD I, 7500 JEFFERSON STREET, N.E. ALBUQUERQUE, NEW MEXICO 87109 (505) 823-1000
 UNIVERSITY PLAZA, SUITE 104, 330 GARFIELD SANTA FE, NEW MEXICO 87501 (505) 988-7671
 6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 (915) 778-4491

February 18, 1987

Mr. Fred Aguirre
 City Hydrologist
 Hydrology Department
 City of Albuquerque
 P.O. Box 1293
 Albuquerque, NM 87103



Re: La Hacienda Project at Old Town - Drainage Report Submittal

Dear Fred:

The purpose of this letter is to submit a completed drainage report for your review and comment. The report presents drainage management and grading guidelines for the referenced development in Old Town. We are seeking approval of the report in order to obtain building permits for the site in the near future.

Please contact me if I can answer any questions concerning this submittal.

Sincerely,

James Topmiller, P.E.
 Project Manager

Enclosure

cc: Leslie Sheppard

JT/da
 Job No. 71151

PRINCIPALS

LARRY W HUSTON

MICHAEL M EMERY, PE

DANA C WOOD, PE.

ANDRES ARAGON-VIAMONTE

DARRELL L WADE, PE

JAMES V DOMENICK, PE.

BRIAN G BURNETT, PE

CITY OF ALBUQUERQUE



April 18, 2016

Darby Miera
RBA Architecture Planning Design
1104 Park Ave., SW
Albuquerque, NM

**Re: Plaza Hacienda Addition
Traffic Circulation Layout**
Engineer's/Architect's Stamp dated 3-31-16 (J13-D037)

Dear Mr. Miera,

The TCL submittal received 4-14-16 is approved for Building Permit. A copy of the stamped and signed plan will be needed for each of the building permit plans. Please keep the original to be used for certification of the site for final C.O. for Transportation.

When the site construction is completed and a Certificate of Occupancy (C.O.) is requested, use the original City stamped approved TCL for certification. Redline any minor changes and adjustments that were made in the field. A NM registered architect or engineer must stamp, sign, and date the certification TCL along with indicating that the development was built in "substantial compliance" with the TCL. Submit this certification TCL with a completed Drainage and Transportation Information Sheet to front counter personnel for log in and evaluation by Transportation.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Once verification of certification is completed and approved, notification will be made to Building Safety to issue Final C.O. To confirm that a final C.O. has been issued, call Building Safety at 924-3690.

Sincerely,

Racquel M. Michel, P.E.
Traffic Engineer, Planning Dept.
Development Review Services

\gs via: email
C: CO Clerk, File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2012)

PROJECT TITLE: PLAZA HACIENDA ADDITION ZONE/MAP: J-13-11 D037
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Track B LANDS of Casa de Armijo and PLAZA Hacienda
CITY ADDRESS: City of ABQ, Bernalillo County, NM

ENGINEERING FIRM: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____
EMAIL: _____

OWNER: Joyce Battaglia CONTACT: Joyce Battaglia
ADDRESS: 1919 OLD TOWN RD NW Suite 1 PHONE: (760) 207-8739
CITY, STATE: ABQ NM ZIP CODE: 87104

ARCHITECT: RBA Architecture Planning Design CONTACT: Darby Mjersa
ADDRESS: 1104 Park Ave PHONE: (505) 242-1859
CITY, STATE: ABQ NM ZIP CODE: 87102
EMAIL: darby@rba81.com

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☒ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ OTHER (SPECIFY) _____

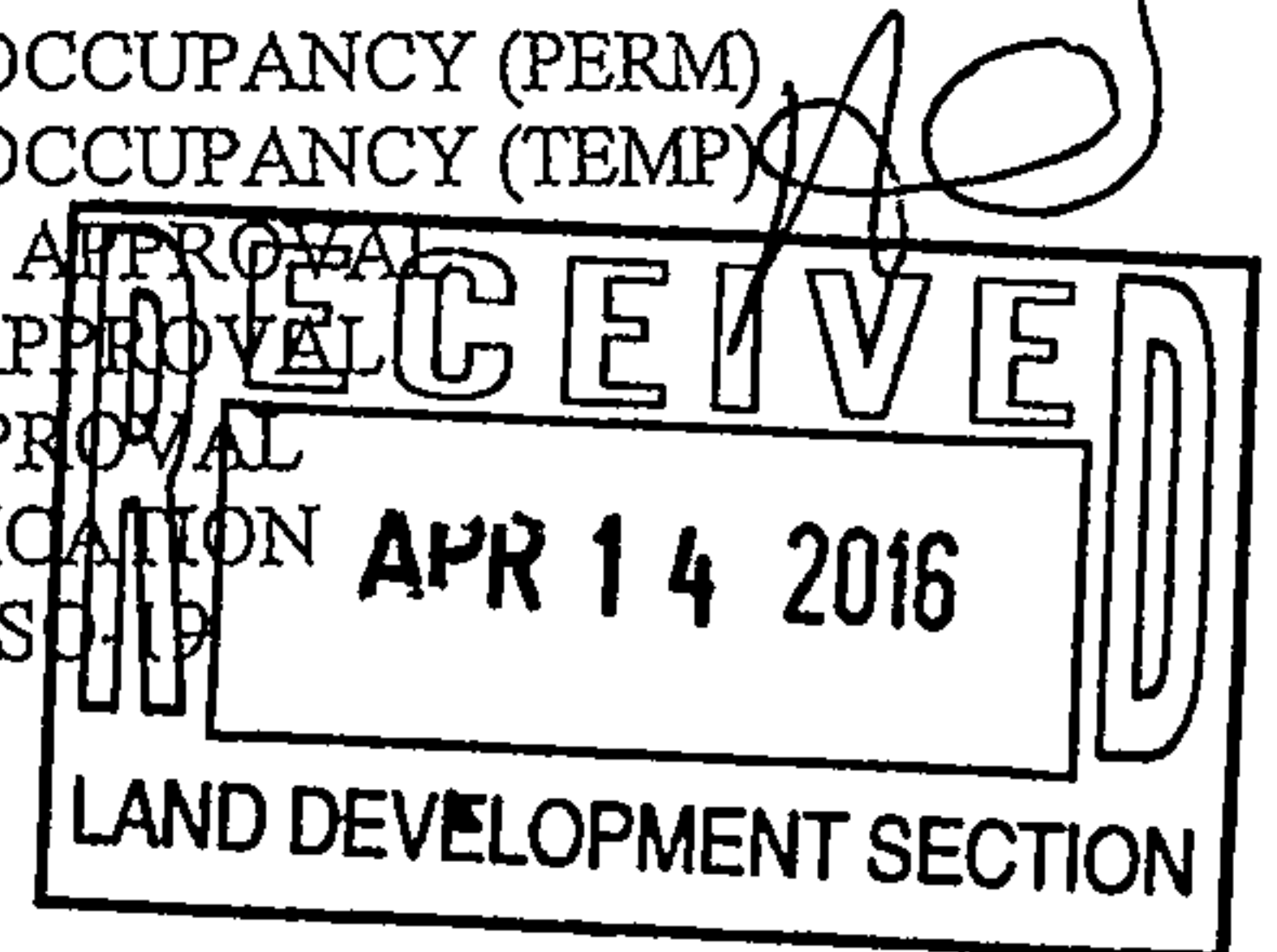
CHECK TYPE OF APPROVAL SOUGHT:
☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ GRADING CERTIFICATION
☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:
☐ YES
☐ NO
☐ COPY PROVIDED

DATE SUBMITTED: 4/14/16 BY: [Signature]

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. Conceptual Grading and Drainage Plan: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. Drainage Plans: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. Drainage Report: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.



CITY OF ALBUQUERQUE



February 22, 2016

Darby Miera
RBA Architecture Planning Design
1104 Park Ave
Albuquerque, NM

**Re: Plaza Hacienda Addition
Traffic Circulation Layout**
Engineer's/Architect's Stamp dated 2-2-16 (J13-D037)

Dear Mr./Ms.,

Based upon the information provided in your submittal received 2-2-16, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. List the number of existing parking spaces required by the zoning code, as well as the proposed number of parking spaces. Please provide the parking calculations for the two new proposed buildings. This location does not have parking requirements; however, if parking is being provided the parking spaces must meet modern standards and federal ADA requirements.
2. Please list the width and length for all existing and proposed parking spaces. Please also detail all drive isle widths between parking space, building, walls or any other objects that affect driving circulation.
3. Please identify all existing sidewalks, curbs, drive pads, walls and anything that influences the parking and circulation on the site.
4. Identify all existing access easements and rights of way with dimensions.
5. Identify the right of way width, medians, curb cuts, and street widths on both San Felipe St. and Old Town Rd.
6. Please detail the width between the proposed new office building and the parking spaces on the east side of the project. Per DPM, a 24 ft. drive isle width must be provided.
7. The ADA access aisles shall have the words "**NO PARKING**" in capital letters, each of which shall be at least one foot high and at least two inches wide, placed at the rear of the parking space so as to be close to where an adjacent vehicle's rear tire would be placed. (66-1-4.1.B NMSA 1978)
8. Per the DPM, a 6 ft. wide ADA accessible pedestrian pathway is required from the HC parking stall access aisles to the building entrances. Please detail ADA ramp from HC parking spaces to building entrance.

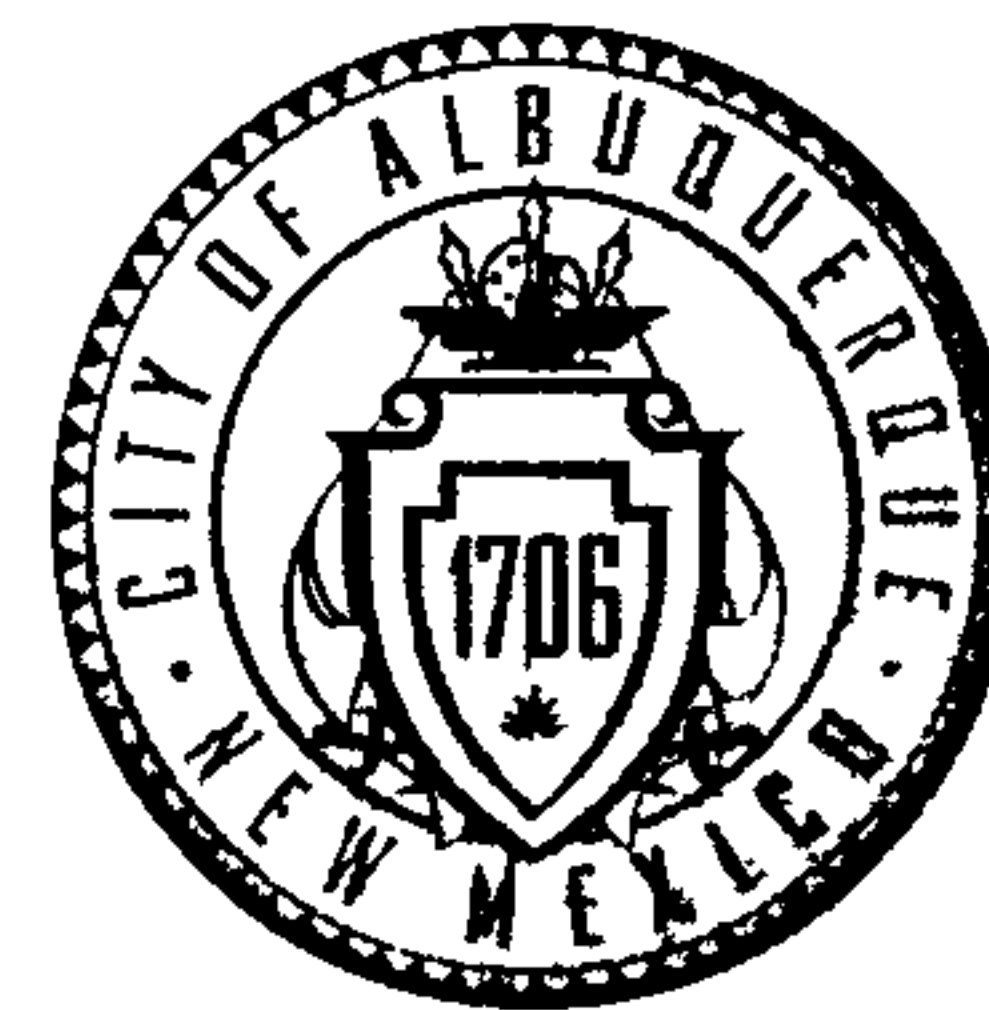
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New Mexico 87103

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9. Provide a min 6" or max 8" high concrete barrier curb or other acceptable barrier between landscaping and parking areas and/or drive aisles. Please call out all existing and proposed barrier curb dimensions.
10. One-way vehicular paths require pavement directional signage and a posted "Do Not Enter" sign at the point of egress.
11. Design delivery vehicle route needs to be shown.
12. Service vehicle and/or refuse vehicle maneuvering must be contained on-site; provide a copy of refuse approval.
13. Please clarify how the site meets clear sight triangle requirements.
14. Please provide a sight distance exhibit (see the *Development Process Manual, Chapter 23, Section 3, Part D.5 Intersection Sight Distance*).
15. Please add the following note to the clear sight triangle: "Landscaping and signage will not interfere with clear sight requirements. Therefore, signs, walls, trees, and shrubbery between 3 and 8 feet tall (as measured from the gutter pan) will not be acceptable in this area."
16. Please include a copy of your shared access agreement with the adjacent property owners.
17. All broken or cracked sidewalk must be replaced with sidewalk and curb & gutter. A build note must be provided referring to the appropriate City Standard drawing.
18. Please include two copies of the traffic circulation layout at the next submittal.

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Resubmit acceptable package along with fully completed Drainage Transportation Information Sheet to front counter personnel for log in and evaluation by Transportation. If you have any questions, please contact Gary Sandoval (505) 924-3675 or me at 924-3991.

Sincerely,

Racquel M. Michel, P.E.
Traffic Engineer, Planning Dept.
Development Review Services

\gs via: email
C: CO Clerk, File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2012)

PROJECT TITLE: PLAZA HACIENDA ADDITION ZONE/MAP: J-13-#D037
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: TRACK B, LANDS OF CASA DE ARMIJO AND PLAZA HACIENDA
CITY ADDRESS: CITY OF ALB., BERNALILLO COUNTY, NM

ENGINEERING FIRM: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY/STATE: _____ ZIP CODE: _____
EMAIL: _____

OWNER: JOYCE BATTAGLIA CONTACT: JOYCE BATTAGLIA
ADDRESS: 1919 OLD TOWN RD NW SUITE 1 PHONE: 505-760-207-8739
CITY/STATE: ALB, NM ZIP CODE: 87104

ARCHITECT: RBA ARCHITECTURE PLANNING DESIGN CONTACT: DARBY MIERA
ADDRESS: 1104 PARK AVE PHONE: 505-242-1859
CITY, STATE: ALB. NM ZIP CODE: 87102
EMAIL: darby@rba281.com

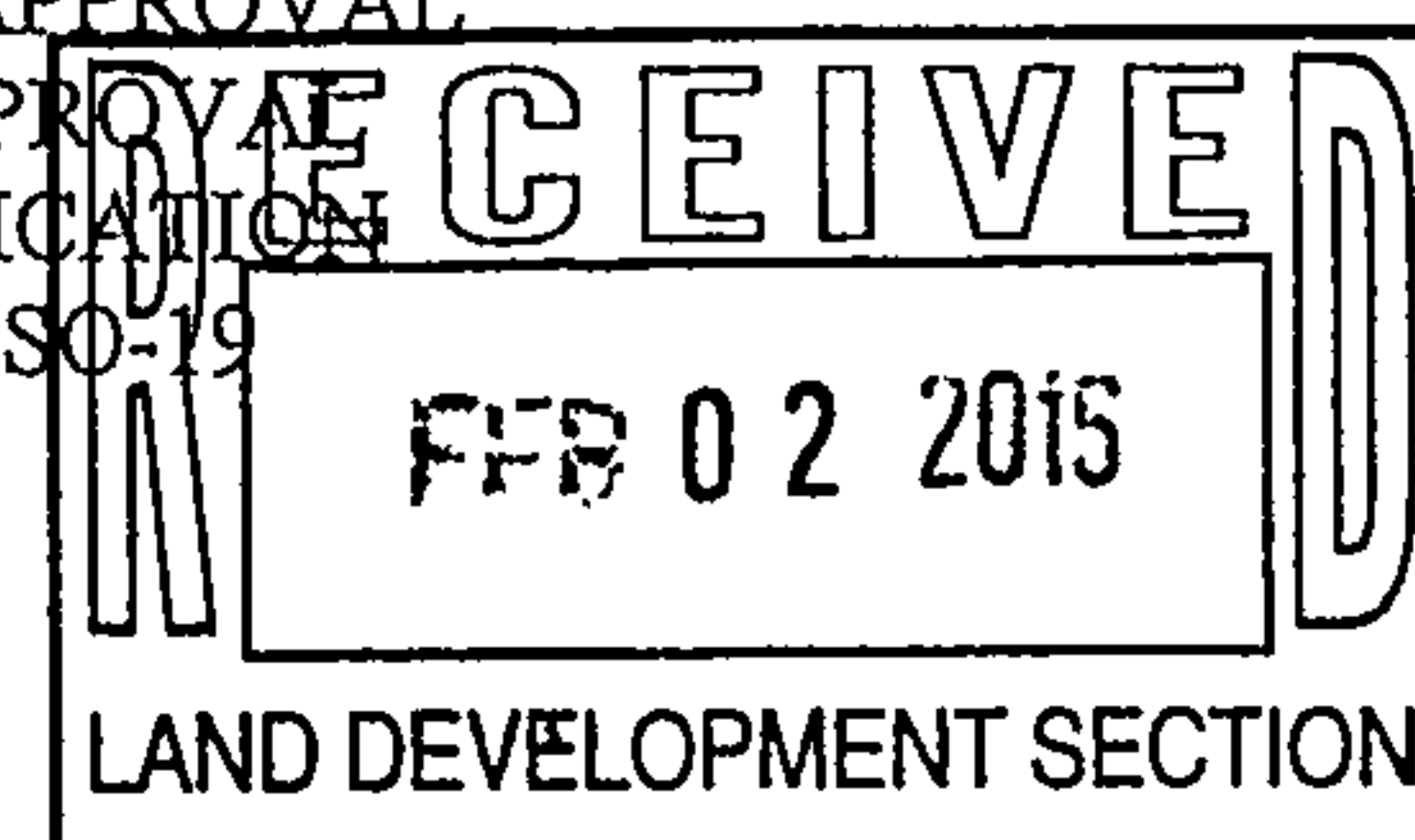
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☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ GRADING CERTIFICATION
☐ OTHER (SPECIFY) SO-19 _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:
☐ YES
☒ NO
☐ COPY PROVIDED



DATE SUBMITTED: 02/02/2016 BY: DARBY MIERA

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Legend

- ☐ Bernalillo County Parcels
- Primary Streets**
 - Urban Principal Arterial
 - BN and SF Railroad
 - Freeway
 - Urban Minor Arterial
- Other Streets**
- Municipal Limits**
 - Corrales
 - Edgewood
 - Los Ranchos
 - Rio Rancho
 - Tijeras
 - UNINCORPORATED
- World Street Map

43891

Notes

0.0 0 0.02 0.0 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
2/22/2016 © City of Albuquerque

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THIS MAP IS NOT TO BE USED FOR LEGAL PURPOSES