

Public Works Department

Martin J. Chávez, Mayor

April 18, 1997

Robert E. Gurulé, Director

Bo K. Johnson, P.E.
Bokay Construction
5905 Azuelo Ct. NW
Albuquerque, New Mexico 87120

RE: Engineer's Certification for Los Campos Subdivision (K21/D28)
Engineer's Stamp Dated 4/9/97.

Dear Mr. Johnson:

Based on the information provided in the submittal of April 9, 1997, the above referenced plan is adequate to satisfy the requirement for Subdivision Certification for release of financial guarantees per the Infrastructure List approved by the D.R.B. on April 16, 1996.

If you should have any questions, or if I may be of further assistance to you, please call me.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Terri Martin (Work Order Number 5437.81)
File

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103



DRAINAGE INFORMATION SHEET

PROJECT TITLE: Los Campos ZONE ATLAS/DRNG. FILE #: K-21
 DRB #: 95-493 EPC #: _____ WORK ORDER #: 5437.81
 LEGAL DESCRIPTION: Los Campos Subdivision
 CITY ADDRESS: South of Lomas between Tomasita and Hotel Circle N.E.
 ENGINEERING FIRM: Bokay Construction, Inc. CONTACT: Bo K. Johnson
 ADDRESS: 5905 Azuelo Ct. N.W. PHONE: 899-9656, 450-4616
 OWNER: Market Center East Land Partners CONTACT: Bo K. Johnson
 ADDRESS: 2103 Wyoming Blvd. N.E. PHONE: 450-4616
 ARCHITECT: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____
 SURVEYOR: Community Sciences Corp. CONTACT: Will
 ADDRESS: Corrales, N.M. PHONE: 897-0000
 CONTRACTOR: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☒ GRADING PLAN --As-Built
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERTIFICATION
☐ OTHER _____

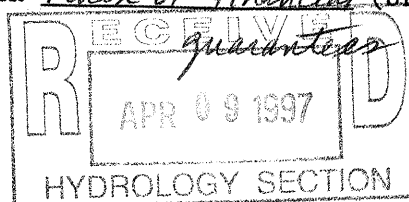
PRE-DESIGN MEETING:

☐ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☒ SUBDIVISION CERTIFICATION
☒ OTHER release of financial guarantee (SPECIFY)

DATE SUBMITTED: 4-9-97
 BY: Bo K. Johnson





Public Works Department

April 18, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

CERTIFICATION OF COMPLETION AND ACCEPTANCE

Bill E. Hooten
General Partner
Market Center East Land Partners, Ltd.
2103 Wyoming Blvd. NE
Albuquerque, NM 87112

RE: LOS CAMPOS; CITY PROJECT NO. 543781; MAP NO. K-21

Dear Mr. Hooten:

This is to certify that the City of Albuquerque accepts the construction of the infrastructure provided in the Work Order Construction Plans, City Project No. 543781 as compliance with completing the required public infrastructure listed in the Subdivision Improvements Agreement (SIA) Market Center East Land Partners, Ltd. and the City of Albuquerque executed on June 5, 1996.

Having satisfied the requirements referenced above, the SIA and any associated Financial Guaranty, held by the City, can now be released. The Contractors one-year warranty period started at the date of acceptance by the Chief Construction Engineer, dated March 20, 1997.

Please be advised this Certificate of Completion and Acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

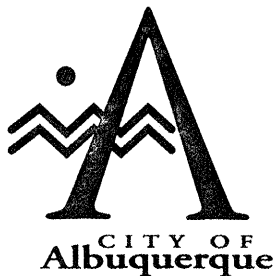
Should you have any questions or issues regarding this project, please contact me.

Sincerely,

Ricardo B. Roybal, P.E.
City Engineer
Dev. & Bld. Services Div.
Public Works Department

Good for You, Albuquerque!





August 13, 1996

Martin J. Chávez, Mayor
Bo Johnson
Bokay Const.
5905 Azuelo NW
Albuquerque, NM 87120

**RE: LOS CAMPOS (K21-D28). GRADING AND DRAINAGE PLAN FOR GRADING
PERMIT APPROVAL. ENGINEER'S STAMP DATED 7-17-96.**

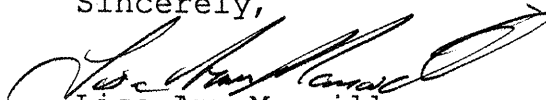
Dear Mr. Johnson:

Based on the information provided on your August 13, 1996
submittal, the above referenced project is approved for Grading
Permit.

An Engineer's Certification will be required for Subdivision
Certification

If I can be of further assistance, please feel free to contact me
at 768-3622.

Sincerely,



Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File



DRAINAGE REPORT

FOR

LOS CAMPOS

Albuquerque, New Mexico

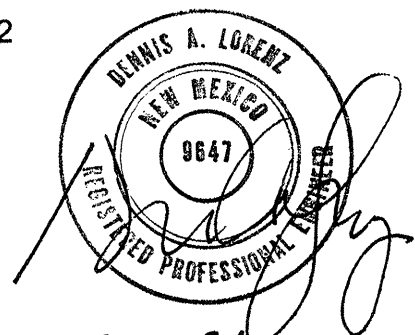
Prepared By:

BRASHER & LORENZ, INC.

Consulting Engineers

4425 Juan Tabo Blvd. NE Suite 202

Albuquerque, New Mexico 87111



3-22-96

12-27-96

March 1996

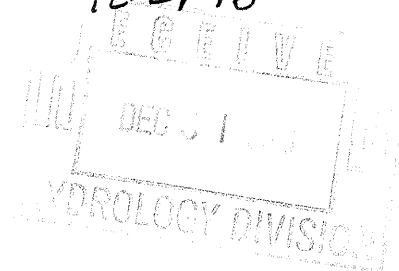


TABLE OF CONTENTS

TITLE	PAGE NO.
PURPOSE AND SCOPE	1
EXISTING CONDITIONS	1
EXISTING DRAINAGE MASTERPLANS	1
PROPOSED CONDITIONS	1
TEMPORARY EROSION CONTROL	5

LIST OF FIGURES AND EXHIBITS

TITLE	PAGE NO.
VICINITY MAP - FIGURE 1	2
FLOOD INSURANCE RATE MAP - FIGURE 2	3
CALCULATIONS	APPENDIX
GRADING AND DRAINAGE PLAN	POCKET
OFF-SITE DRAINAGE BASINS MAP	POCKET

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as **Los Campos**, a townhome complex, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide drainage criteria for the safe management of excess runoff, and design detail for the construction of the required grading, paving and drainage improvements.

EXISTING CONDITIONS

The project site is approximately 6.2 acres in size and is located on Hotel Circle NE, just south of Lomas Boulevard NE. Presently the site is undeveloped. Site topography slopes from east to west at approximately 3 percent. The site is covered with native grasses and vegetation. The site is classified as an infill project.

The site is bounded by Hotel Circle on the west, Tomasita Street east, and developed property on the north and south. No off-site flows impact the site. All undeveloped runoff from the site drains westward to Hotel Circle. Hotel Circle conveys flows south and west to an existing 54 inch storm drain which is the outfall for the project.

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

EXISTING DRAINAGE MASTERPLANS

Drainage management criteria for the site was established by the Drainage Masterplan for Market Centre East, prepared by Espey, Huston & Associates, Inc., 1986. The masterplan recommended construction of the 54 inch storm drain and inlet collection system, which is located at Hotel Circle. From Hotel Circle the storm drain extends west to the I-40 right-of way and eventually outfalls at the I-40 channel. The storm drain was designed to drain the developed flow from the Market Centre East project area, without imposed ponding.

PROPOSED CONDITIONS

As shown by the Plan, the project consists of the development of the property into a townhome complex. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and on-site drainage basins are identified. Details are provided for all drainage improvements recommended by the Plan.

The site will drain by the surface improvements recommended by this plan. The residential street network will direct on-site flows west to Hotel Circle. Since the townhome units will share common walls, the rear yards will drain across lots via a concrete channel located within a 5 foot private drainage easement. At the breaks between buildings the concrete channel will outfall into the adjacent residential street.

DOWNSTREAM CAPACITY

Downstream capacity for this site exists as a result of the construction of the storm drain improvements recommended by the approved Masterplan. The Masterplan determined capacity by sizing the storm drain to accept 100 year developed flows from the Market Centre East area. The Masterplan also demonstrated that street capacity within Hotel Circle existed to adequately convey developed runoff to the outfall. Since the writing of the Masterplan, City drainage criteria has been revised. The AHYMO method of estimating peak runoff rates has resulted in increased project flow rates and volumetric values. Criteria has also changed for determining street capacity. The Masterplan allowed street depths to exceed top of curb height by 0.2 feet, or property line elevation. Current policy limits street depths to curb height, provided driveways and intersections do not create significant turbulence.

As shown by the downstream calculations, the developed peak flow rate for the basin exceeds the Masterplan peak by only 10 cfs. The additional calculated runoff will overflow from Hotel Circle into a paved swale which outfalls into the I-40 right-of-way along the east side of Eubank Boulevard, where an existing area drain will capture the flow. As for the street depths, The calculations demonstrate that the basin is in compliance with the 1986 street depth criteria, but is in violation with current policy. In light of the fact that the project site is the last undeveloped tract within the basin, and that the Masterplan granted free discharge into Hotel Circle, free discharge has been granted for this project provided that no conveyance problems exist from the site to the storm drain collection point (see Pre-Design Conference Recap located in the Appendix). Visual inspection of the subject reach of Hotel Circle noted water blocks at all drives. Water block heights appear to be approximately 12 inches.

TEMPORARY EROSION CONTROL PLAN

1. The intent of this temporary erosion control plan is to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction.
2. The Contractor shall obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
3. After the initial site clearing temporary erosion control berms should be

constructed along the west project boundary.

4. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

CALCULATIONS

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

HYDROLOGY

Precipitation Zone: 4
P360 = 2.90"

BASIN	AREA (ac)	A%	B%	C%	D%	E (in)	Q100 (cfs)	V100 (af)
Site (exist)	6.20	100	0	0	0	0.80	13.6	0.4133
Site (dev)	6.20	0	19	19	62	2.11	28.0	1.0900
A	0.70	0	19	19	62	2.11	3.2	0.1231
B	0.76	0	19	19	62	2.11	3.4	0.1336
C	0.83	0	19	19	62	2.11	3.8	0.1459
D	1.25	0	19	19	62	2.11	5.6	0.2198
E	1.39	0	19	19	62	2.11	6.3	0.2444
F	1.27	0	19	19	62	2.11	5.7	0.2234

PROJECT NAME LOS CAMPOS JOB NO. 6012

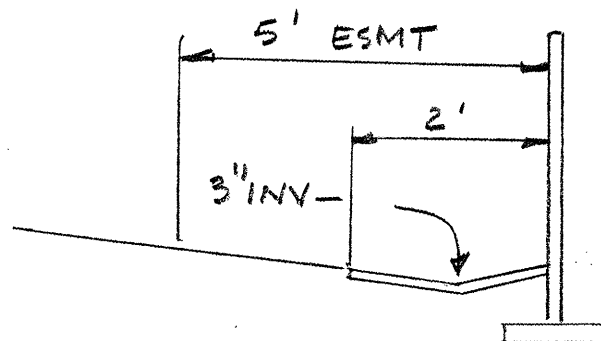
SUBJECT _____

BY _____ CHECKED BY _____ DATE 3-22-96 PAGE 1 OF _____

REV 12-27-96

REAR YARD SWALES

REAR YARDS DRAIN VIA CONC CHANNEL.
ALL ROOFS DRAIN TO STREET.



SECTION

NTS

TYPICALLY:

REAR YARD $A = 11,850 \text{ SF}$

$Q_{100} = 0.9 \text{ CFS}$

SLOPE = 2.3%

% B = 50

% C = 50

REAR YARD $A = 15' \times 790' = 11850 \text{ SF}$

OUTFALL AT HOTEL CIRCLE NE

MAN-MADE CHANNELS

REV 12-27-96

VARIABLES LIST:

Y - FLOW DEPTH

B - CHANNEL BOTTOM WIDTH

S - CHANNEL SLOPE

Q - FLOWRATE

M - CHANNEL SIDE SLOPE

N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

Q (CFS) ? 0.9

B (FT) ? 0

M (FT/FT) ? 3

S (FT/FT) ? .023

N (FT^{1/6}) ? .017

RESULTS

=====

Y= 0.29 FT

A= 0.25 SF

P= 1.84 FT

V= 3.55 FPS

F= 1.64

SUPER-CRITICAL FLOW

<Shift> <Prt Sc> print

<Return> repeat

<Space Bar> back to menu

PROJECT NAME LOS CAMPOS JOB NO. 6012

SUBJECT _____

BY _____ CHECKED BY _____ DATE 3-22-96 PAGE 3 OF _____
REV 12-27-96

SIDEWALK CULVERTS

SW CULVERTS ARE SIZED USING WEIR ANALYSIS AS FOLLOWS:

WEIRS

Enter up to 10 weirs.
Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)	AP #
0.90	1.9	2.500	0.33	R-YARD SWALE
6.60	4.8	2.500	0.67	2
5.60	4.1	2.500	0.67	4
17.60	12.8	2.500	0.67	6

STREET DEPTHS

ANALYSIS POINT	SLOPE (%)	WIDTH (ft)	Q100 (cfs)	DEPTH (ft)	CURB TYPE
1	3.0	28	3.2	0.15	MOUNTABLE
2	3.1	22	6.6	0.20	MOUNTABLE
3	1.4	28	3.8	0.19	MOUNTABLE
4	1.5	22	5.6	0.21	MOUNTABLE
5	2.5	28	11.9	0.26	MOUNTABLE
6	1.7	22	17.6	0.31	MOUNTABLE

AP ①

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.Q (CFS) ? 3.2
S (FT/FT) ? .030

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	100.67	0.017			
0.12	100.00	0.017			
14.12	100.28	0.017			
28.12	100.00	0.017			
28.25	100.67	0.017			

RESULTS

```

=====
Y=      100.15 FT
A=       1.18 SF
P=      15.62 FT
V=       2.72 FPS
F=       1.73  SUPER-CRITICAL FLOW
  
```

<Shift> <Prt Sc> print

<Return> repeat

<Space Bar> back to menu

AP ②

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.Q (CFS) ? 6.6
S (FT/FT) ? .031

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	100.67	0.017			
0.12	100.00	0.017			
11.12	100.22	0.017			
22.12	100.00	0.017			
22.25	100.67	0.017			

RESULTS

```

=====
Y=      100.20 FT
A=       2.00 SF
P=      20.37 FT
V=       3.30 FPS
F=       1.84  SUPER-CRITICAL FLOW
  
```

<Shift> <Prt Sc> print

<Return> repeat

<Space Bar> back to menu

AP (3)

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.Q (CFS) ? 3.8
S (FT/FT) ? .014

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	100.67	0.017			
0.12	100.00	0.017			
14.12	100.28	0.017			
28.12	100.00	0.017			
28.25	100.67	0.017			

RESULTS

=====

Y= 100.19 FT
 A= 1.78 SF
 P= 19.22 FT
 V= 2.13 FPS
 F= 1.23 SUPER-CRITICAL FLOW

<Shift> <Prt Sc> print

<Return> repeat

<Space Bar> back to menu

AP (4)

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.Q (CFS) ? 5.6
S (FT/FT) ? .015

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	100.67	0.017			
0.12	100.00	0.017			
11.12	100.22	0.017			
22.12	100.00	0.017			
22.25	100.67	0.017			

RESULTS

=====

Y= 100.21 FT
 A= 2.32 SF
 P= 21.94 FT
 V= 2.41 FPS
 F= 1.30 SUPER-CRITICAL FLOW

<Shift> <Prt Sc> print

<Return> repeat

<Space Bar> back to menu

AP (5)

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 11.9

S (FT/FT) ? .025

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	100.67	0.017			
0.12	100.00	0.017			
14.12	100.28	0.017			
28.12	100.00	0.017			
28.25	100.67	0.017			

RESULTS

=====

Y= 100.26 FT

A= 3.37 SF

P= 26.45 FT

V= 3.53 FPS

F= 1.73 SUPER-CRITICAL FLOW

<Shift> <Prt Sc> print

<Return> repeat

<Space Bar> back to menu

AP (6)

NATURAL CHANNELS

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y,Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 17.6

S (FT/FT) ? .017

CROSS-SECTION POINTS

DIST	ELEV	COEFF	DIST	ELEV	COEFF
0	100.67	0.017			
0.12	100.00	0.017			
11.12	100.22	0.017			
22.12	100.00	0.017			
22.25	100.67	0.017			

RESULTS

=====

Y= 100.31 FT

A= 4.48 SF

P= 22.64 FT

V= 3.92 FPS

F= 1.54 SUPER-CRITICAL FLOW

<Shift> <Prt Sc> print

<Return> repeat

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ON-SITE

$$A = 6.2 \text{ AC}$$

$$\text{PRECIP ZONE} = 4$$

$$P_{360} = 2.90''$$

$$P_{10 \text{ DAY}} = 5.95''$$

LAND TREATMENT:

ZONING SU-1/C-2 USES

PROPOSED RT TYPE DEV.

$$\text{DENSITY} = 64/6.2 = 10 \text{ DU/AC}$$

PETZ TABLE A-5:

$$\% D = 70 \Rightarrow \% A = 0$$

$$B = 15$$

$$C = 15$$

$$E_W = 2.23''$$

$$V_{100} = 1.1522 \text{ AF}$$

$$= 50,188 \text{ CF}$$

$$V_{10 \text{ DAY}} = 1.1522 + 0.7(6.2)(5.95 - 2.90)/12$$

$$= 2.2553 \text{ AF}$$

$$= 98,240 \text{ CF}$$

$$Q_{100} = 29.0 \text{ CFS}$$

OFF-SITE

BASIN	A	DESCR
A	2.2	MOTEL SITE
B.	2.2 *	OFFICE
C	8.6	TARGET, SHOPS, OFF MAY ETC
D1	3.1	HC - EAST
D2	1.6	HC - WEST
E	4.5	TARGET, PARKING (PIPED)
F	1.8	OFF- MAX
G	2.6	APPLERBES

LAND TREATMENT :

FOR COMMERCIAL USES %D = 90

%A =

B = 5

C = 5

AT SD SYS FROM HC EAST

A = 16.1 AC (A, B, C, D1)

A = 6.2 AC (SITE)

$Q_{100} = 81.4 + 29.0 = 110.4 \text{ CFS}$

AT SD SYS FROM HC WEST

$$A = 6.0 \text{ AC (F, G, D2)}$$

$$Q_{100} = 30.4 \text{ CFS}$$

FROM PRIVATE SD TO PUBLIC SD

$$A = 4.5 \text{ AC (E)}$$

$$Q = 22.8 \text{ CFS}$$

TOTAL Q_{100} AT PUBLIC SD SYS

$$Q_{100} = 110.4 + 30.4 + 22.8 = 163.6 \text{ CFS.}$$

SD SYSTEM

$$\text{PER A/B } Q_{100}(\text{DESIGN}) = 153 \text{ CFS}$$

CHECK STREET DEPTH

WIDTH = 40' FF 6" CURB TYP CROWN

JUST UPSTR FROM SD SYS:

$$\text{SLOPE} = 2.2\% \quad Q_{1/2} = 55 \text{ CFS} \quad d = 0.68'$$

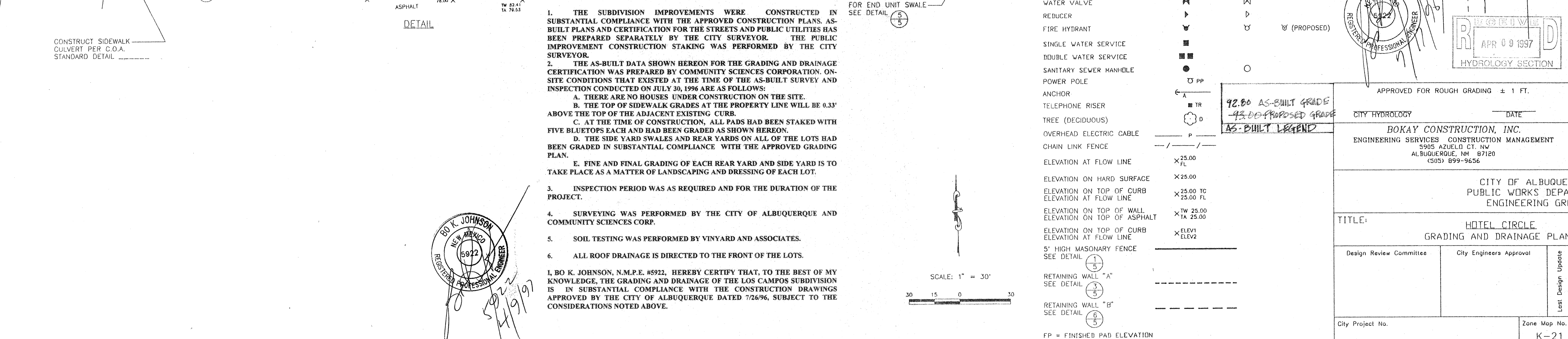
CHECK ST DEPTH AT VARIOUS APS

AP	A	Q	S	D	Q _{MAX} *
1	6.2/2.0	39.1	1.7	0.52'	36 cfs
2	6.2/4.7	52.8	1.7	0.56'	36
3	6.2/7.4	66.5	1.7	0.60	36
4	22.3	110.4	2.2	0.68'	42

* BASED ON $d_{\text{MAX}} = 0.50'$

IF $d_{\text{MAX}} = 0.70'$;

AP	Q _{MAX}
1	100 cfs
2	100
3	100
4	118



ENGINEER'S SEAL						SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
						FIELD NOTES					
						NO.	BY	-DATE			
									VLMK STACKED BY	DATE	
									ACCEPTANCE ACCEPT NAME	DATE	
									FIELDS CONSTRUCTION BY	DATE	
									SURVAINCES CORRECTED BY	DATE	
									MICRO-FILM INFORMATION		
									RECEIVED BY	DATE	
									NL		