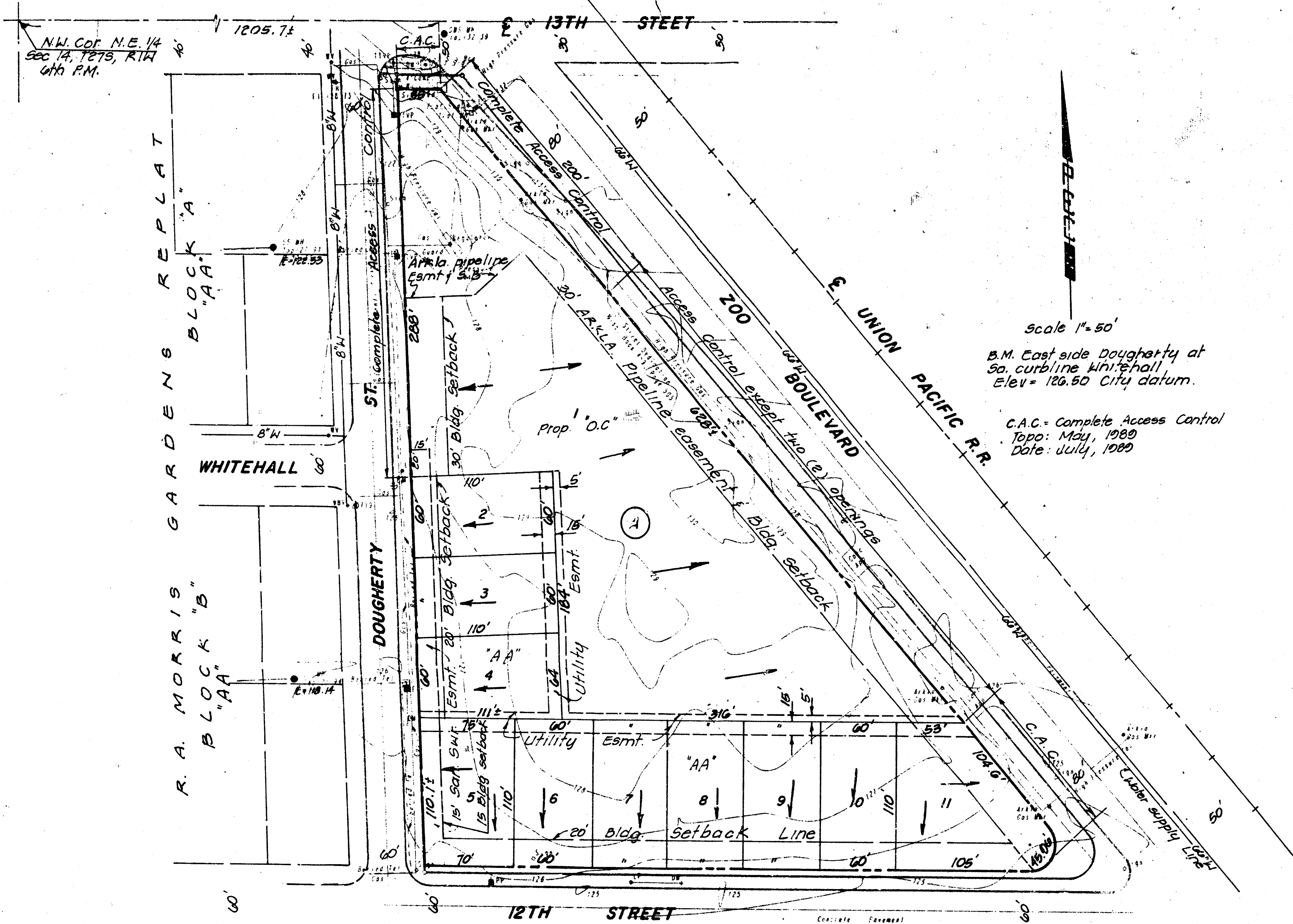


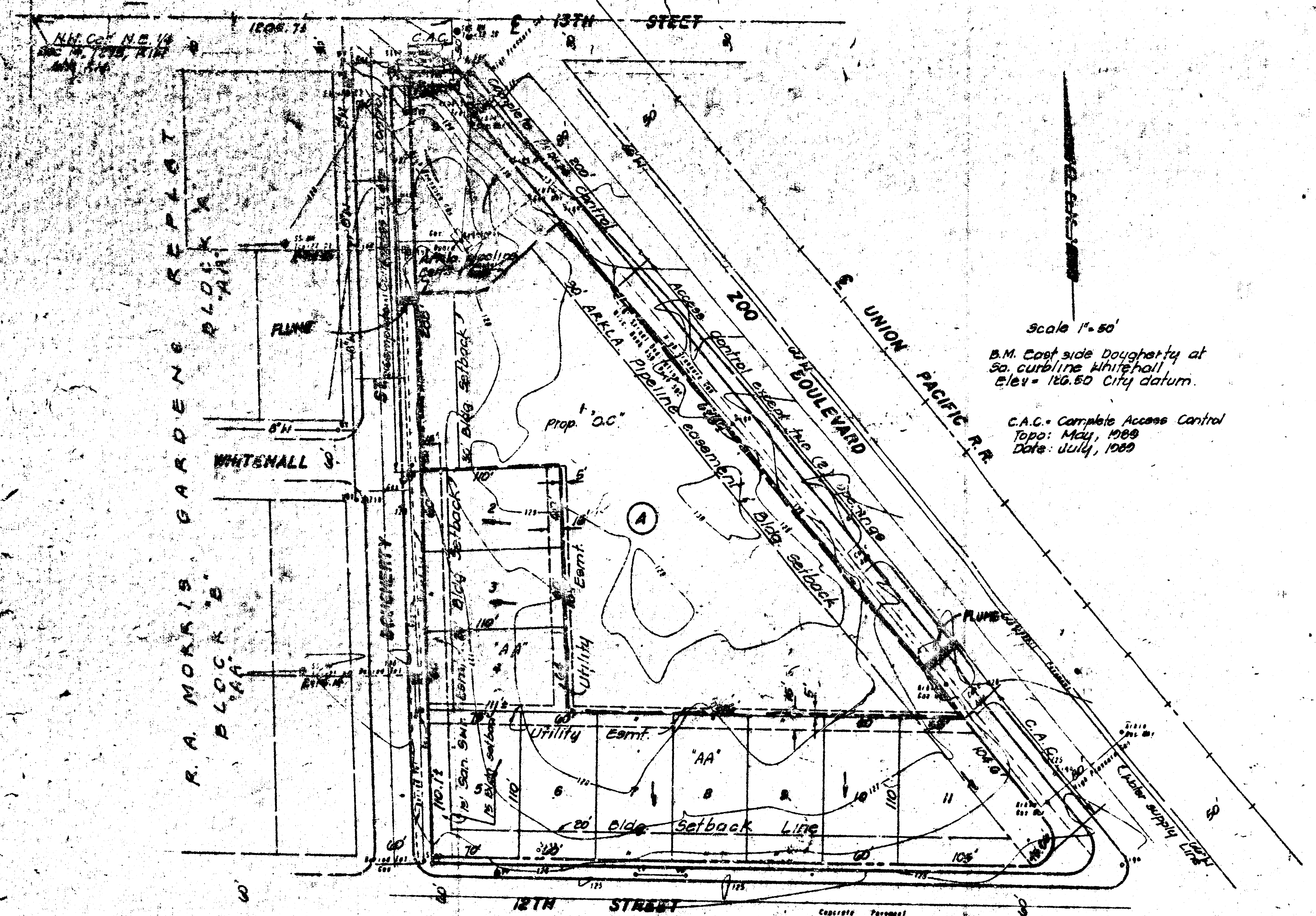


Drainage Concept/Plan
PRELIMINARY PLAT OF
THUNDERBIRD 7TH ADDITION

Owner: Thunderbird Realty Service, Inc.
c/o Dave Entriem
6700 W. Central #104 67212

Engineer: Professional Engineering Consultants p.a.
1440 English 67211

Note: All lots shall be graded
to drain to existing streets via
drives, flumes, and/or other
approved drainage facilities



DRAINAGE PLAN 10-16-89

THUNDERBIRD 7TH ADDITION

Owner: Thunderbird Realty Service, Inc.
c/o Dave Entriem
6700 W. Central #104 67212

Engineer: Professional Engineering Consultants p.a.
1440 English 67211

NOTES:

1. Stormwater detention shall be provided on Lot 1, Block A to store difference between Pre-Developed & Post-Developed conditions.
2. Size & location of flumes shall be determined at time of development of Lot 1, Block A.



PROFESSIONAL
ENGINEERING CONSULTANTS, P.A.
1440 E. English
WICHITA, KANSAS 67211

(316) 262-2691

TO: Mr. Michael E. Lindebak, P.E.
City Engineer
455 North Main
Nichita, KS 67202

LETTER OF TRANSMITTAL

October 16, 1989 36-89140-1352
Mr. Vicky Huang, P.E.
Thunderbird 7th Addition

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐

COPIES	DATE	NO.	DESCRIPTION
2	10-16-89		Drainage Plan & Supporting Calculations

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☒ For review and comment ☐

☐ FOR BIDS DUE _____ 19 _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

Date: 10-3-89 Page 1 of 2

Project: Thunderbird 7th Addition

Item: Drainage

Pre-Developed $Q_{100} = 5.17 \text{ cfs}$

Soil Type	Hyd. Group	Land Use	Cover
Ua	B	Open Space Urban Lawn	0.81

Assume $f_c = 15 \text{ min.}$

$f_{100} = 7.27$

$A = (1/4 \times 320 \times 370) \times (55 \times 140 \times 140) / (5.2 \times 135) = 75,205 \text{ SF} = 1.73 \text{ ac.}$

$Q_{100} = 0.81 \times 7.27 \times 1.73 = 5.2 \text{ cfs}$

Date: 10-3-89 Page 2 of 2

Project: Thunderbird 7th Addition

Item: Drainage

Post-Developed $Q_{100} = 10.2 \text{ cfs}$

Soil Type	Hyd. Group	Land Use	Cover
Ua	B	Neighborhood Business	0.86

Assume $f_c = 15 \text{ min.}$

$f_{100} = 7.37$

$A = 1.73 \text{ ac.}$

$Q_{100} = 0.86 \times 7.37 \times 1.73 = 10.2 \text{ cfs}$