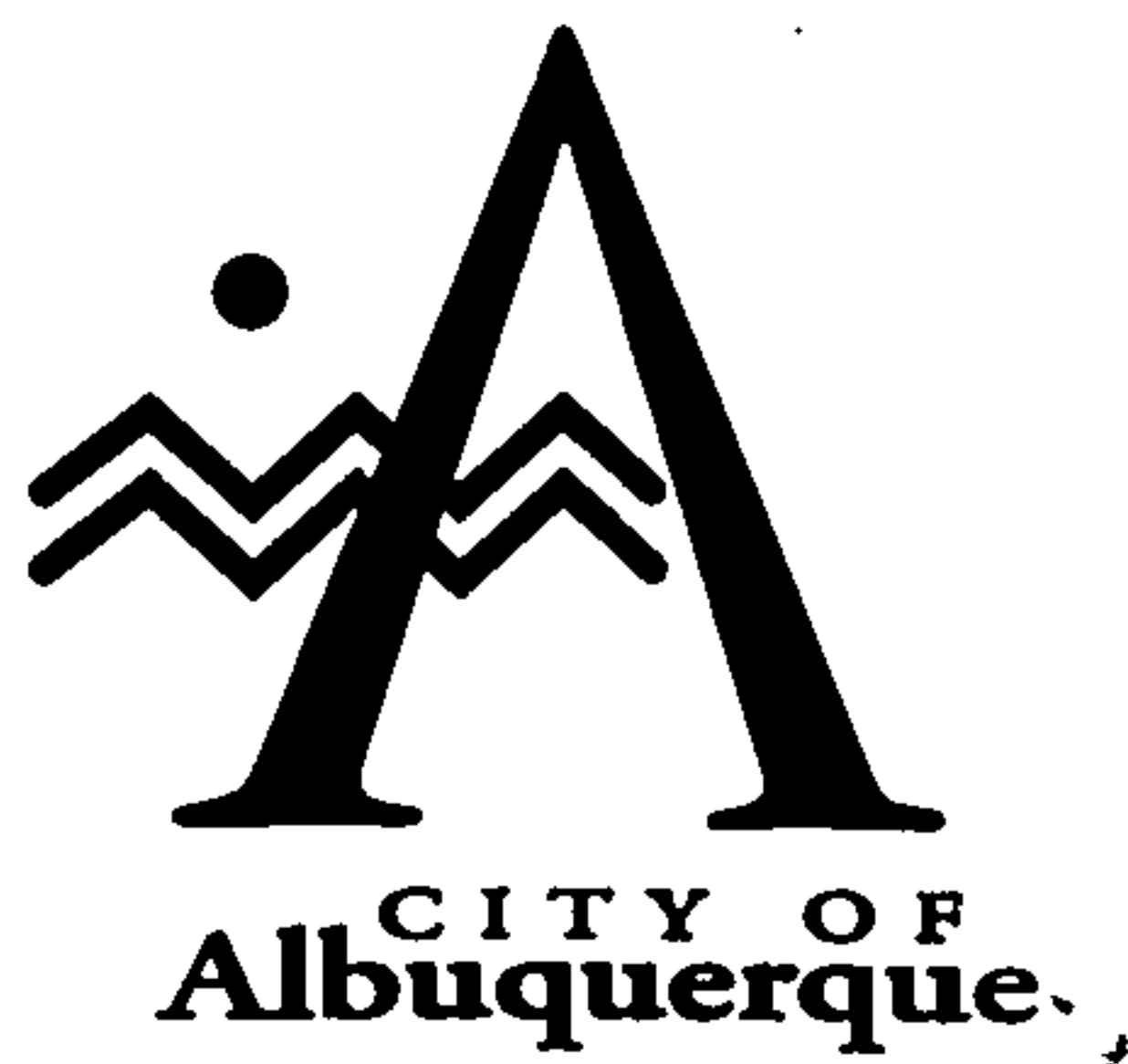




January 9, 1997

Martin J. Chávez, Mayor

Jeff Mortensen
Jeff Mortensen & Associates
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

**RE: CONCEPTUAL DRAINAGE PLAN FOR FIRST CHRISTIAN CHURCH
ADDITION (F21-D35) ENGINEER'S STAMP DATED 12/26/96.**

Dear Mr. Mortensen:

Based on the information provided on your December 27, 1996 submittal, the above referenced site is approved for Site Development Plan for Building Permit.

Please be advised that prior to Building Permit release, the following must be addressed:

1. Amount of run-off discharging through the sidewalk culvert and the capacity of the entrance of the culvert.
2. Six notes and sign-off block from the S.O. 19 format on the plan drawing.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File



DRAINAGE INFORMATION SHEET

960042

PROJECT TITLE: FIRST CHRISTIAN CHURCH ZONE ATLAS/DRNG. FILE #: F21/435

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A-1, FIRST CHRISTIAN CHURCHCITY ADDRESS: 10101 MONTGOMERY BLVD NEENGINEERING FIRM: JEFF MORTENSEN & ASSOC. CONTACT: JEFF MORTENSENADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250OWNER: FIRST CHRISTIAN CHURCH CONTACT: _____ADDRESS: 10101 MONTGOMERY BLVD NE PHONE: 294-0630ARCHITECT: R. D. HABIGER & ASSOC CONTACT: ROBERTADDRESS: 417 SECOND ST SW PHONE: 242-8070SURVEYOR: JEFF MORTENSEN & ASSOC CONTACT: JEFF MORTENSENADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250CONTRACTOR: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

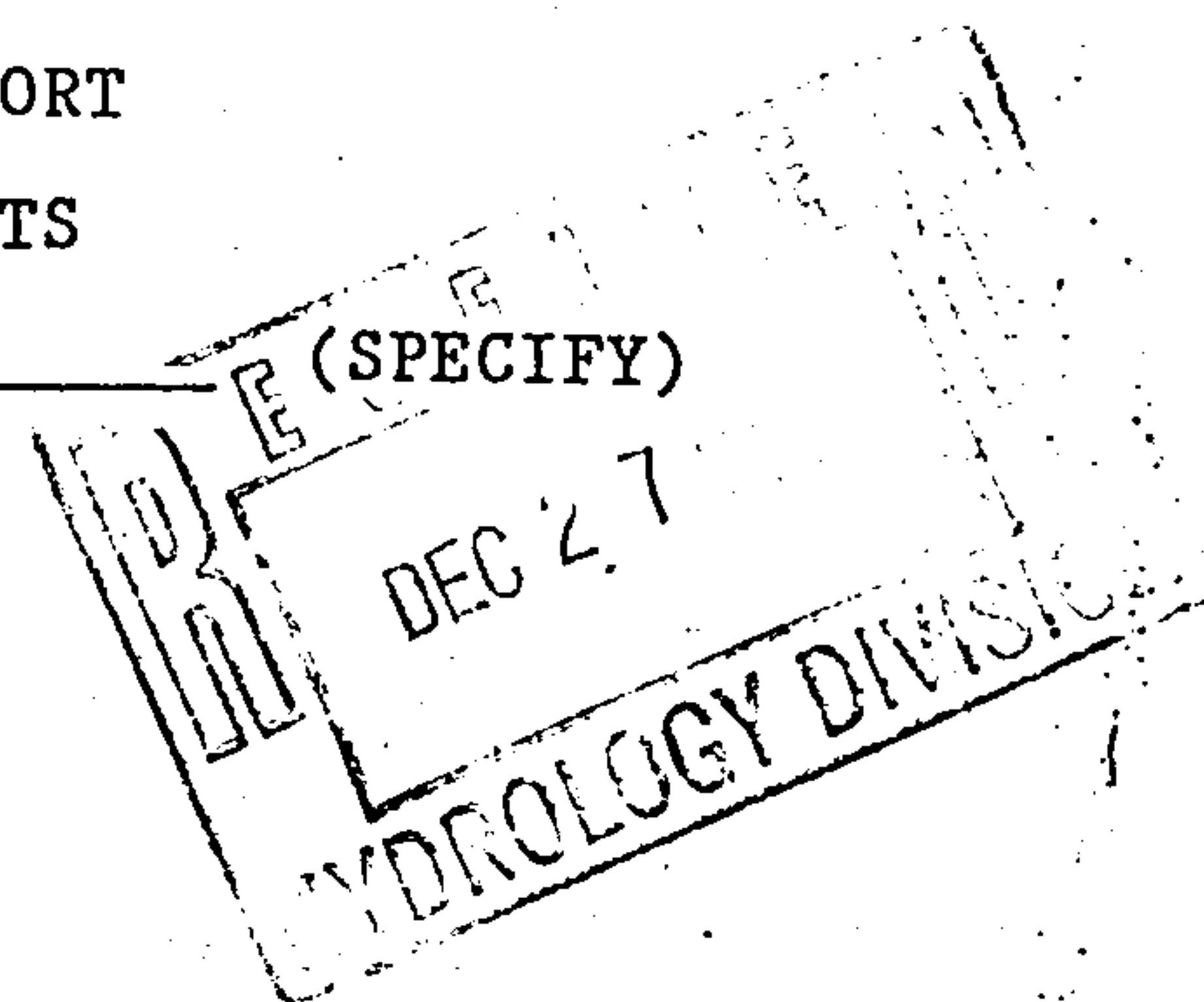
- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☒ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER

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
☐ OTHER _____

DATE SUBMITTED: 12-26-96BY: JEFFREY G. MORTENSEN

Site Characteristics

1. Precipitation Zone = 4
2. $P_{S_{6,100}} \sim S = P_{S_{360}} \sim S = 2.90$ in.
3. Total Area ($A_{S_T} \sim S$) = 2.21 acres
4. Existing Land Treatment

Onsite Basin	96,180/2.21	100
<u>Treatment</u>	<u>Area (sf/ac)</u>	<u>%</u>
B	96,180/2.21	100
Offsite Basin	14,665/0.34	100
<u>Treatment</u>	<u>Area (sf/ac)</u>	<u>%</u>
B	8,475/0.19	57.8
C	1,200/0.03	8.2
D	4,990/0.12	34.0

5. Developed Land Treatment

a. Onsite Basin

<u>Treatment</u>	<u>Area (sf/ac)</u>	<u>%</u>
B	16,135/0.37	16.8
C	1,055/0.02	1.1
D	78,990/1.82	82.1

Existing Condition

A. Onsite Basin

1. Volume

$$E_{S_W} \sim S = (E_{S_A} \sim S A_{S_A} \sim S + E_{S_B} \sim S A_{S_B} \sim S + E_{S_C} \sim S A_{S_C} \sim S + E_{S_D} \sim S A_{S_D} \sim S) / A_{S_T} \sim S$$

$$E_{S_W} \sim S = (1.08)(2.21) / (2.21) = 1.08 \text{ in.}$$

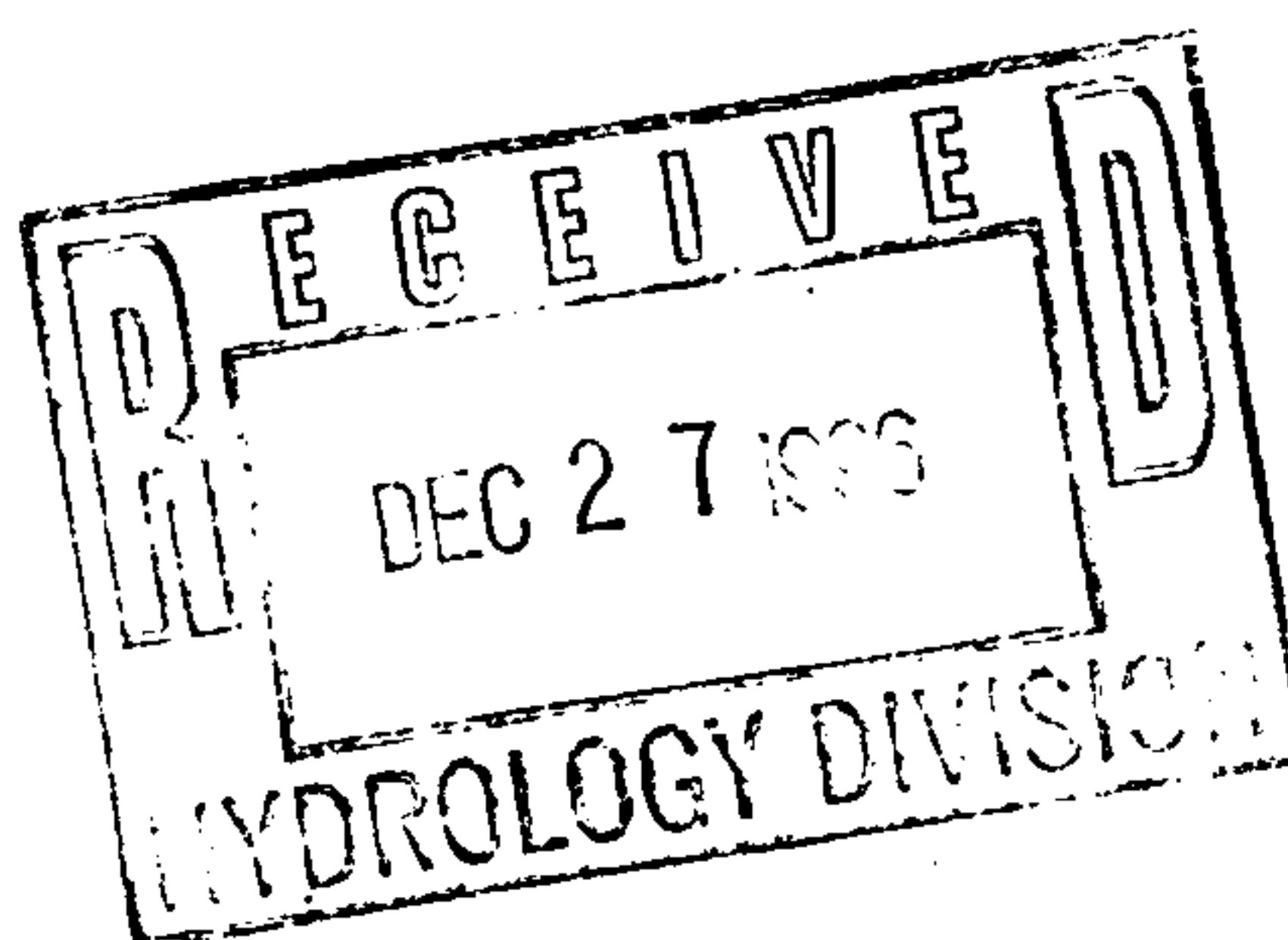
$$V_{S_{100}} \sim S = (E_{S_W} \sim S / 12) A_{S_T} \sim S$$

$$V_{S_{100}} \sim S = (1.08 / 12)(2.21) = 0.1989 \text{ ac. ft.; } 8,665 \text{ cf}$$

2. Peak Discharge

$$Q_{S_p} \sim S = Q_{S_{PA}} \sim S A_{S_A} \sim S + Q_{S_{PB}} \sim S A_{S_B} \sim S + Q_{S_{PC}} \sim S A_{S_C} \sim S + Q_{S_{PD}} \sim S A_{S_D} \sim S$$

$$Q_{S_p} \sim S = Q_{S_{100}} \sim S = (2.92)(2.21) = 6.5 \text{ cfs}$$



B. Offsite Basin

1. Volume

$$E_{wS} = (E_{SA}SA_{SA}S + E_{SB}SA_{SB}S + E_{SC}SA_{SC}S + E_{SD}SA_{SD}S) / A_{TS}$$

$$E_{wS} = [(1.08)(0.19) + (1.46)(0.03) + (2.64)(0.12)] / (0.34) = 1.66 \text{ in.}$$

$$V_{100S} = (E_{wS} / 12) A_{TS}$$

$$V_{100S} = (1.66 / 12)(0.34) = 0.0472 \text{ ac. ft.}; 2,055 \text{ cf}$$

2. Peak Discharge

$$Q_{pS} = Q_{PA}SA_{SA}S + Q_{PB}SA_{SB}S + Q_{PC}SA_{SC}S + Q_{PD}SA_{SD}S$$

$$Q_{pS} = Q_{100S} = (2.92)(0.19) + (3.73)(0.03) + (5.25)(0.12) \\ = 1.3 \text{ cfs (sheet flow)}$$

Developed Condition

A. Onsite Basin

1. Volume

$$E_{wS} = (E_{SA}SA_{SA}S + E_{SB}SA_{SB}S + E_{SC}SA_{SC}S + E_{SD}SA_{SD}S) / A_{TS}$$

$$E_{wS} = [(1.08)(0.37) + (1.46)(0.02) + (2.64)(1.82)] / (2.21) = 2.37 \text{ in.}$$

$$V_{100S} = (E_{wS} / 12) A_{TS}$$

$$V_{100S} = (2.37 / 12)(2.21) = 0.4365 \text{ ac. ft.}; 19,010 \text{ cf}$$

2. Peak Discharge

$$Q_{pS} = Q_{PA}SA_{SA}S + Q_{PB}SA_{SB}S + Q_{PC}SA_{SC}S + Q_{PD}SA_{SD}S$$

$$Q_{pS} = Q_{100S} = (2.92)(0.37) + (3.73)(0.02) + (5.25)(1.82) = 10.7 \text{ cfs}$$

Comparison

$$1. \quad *V_{100S} = 19,010 - 8,665 = 10,345 \text{ cf (increase)}$$

$$2. \quad *Q_{100S} = 10.7 - 6.5 = 4.2 \text{ cfs (increase)}$$