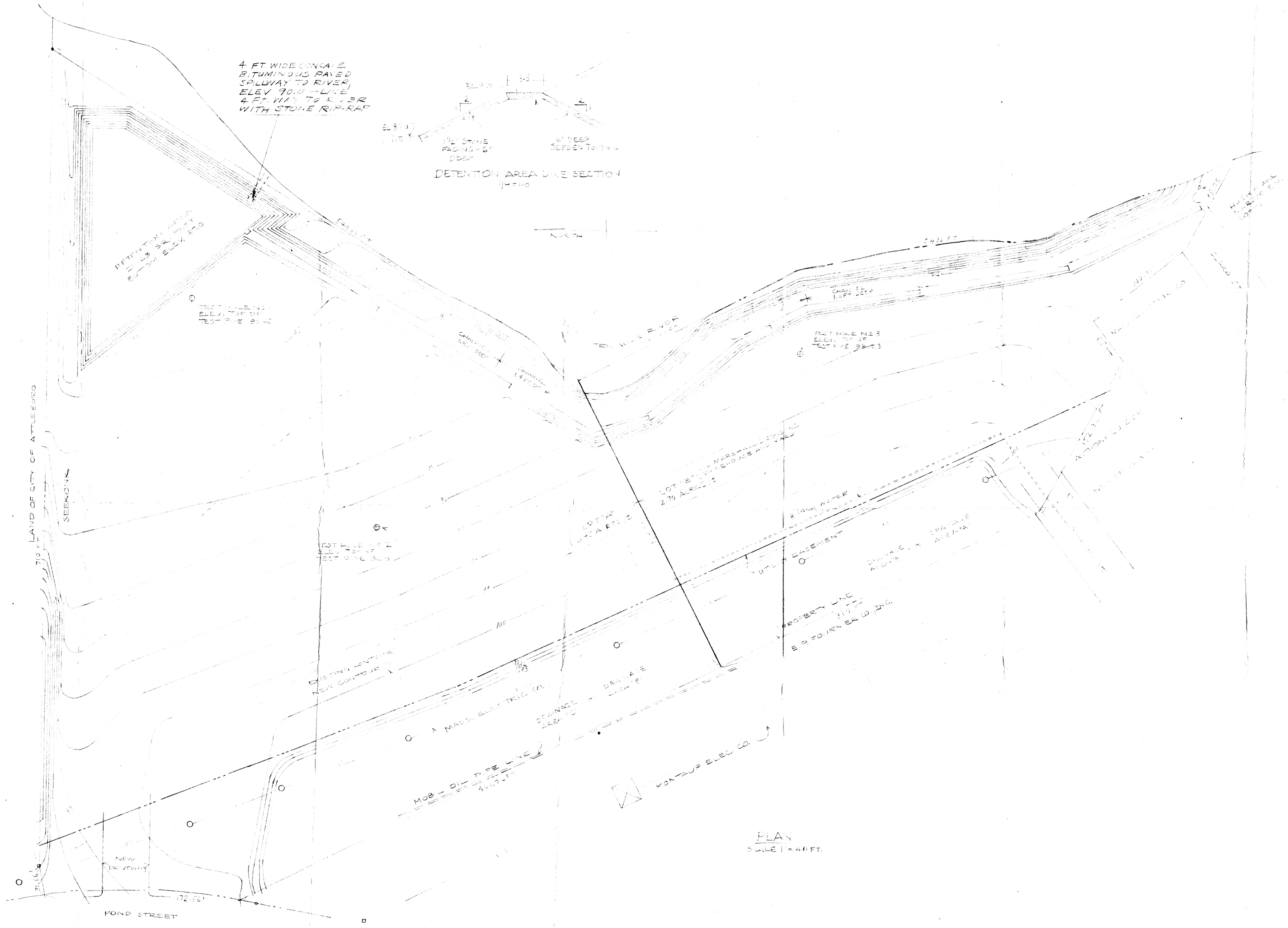

SURFACE DRAINAGE COMPUTATIONS

AREA "A" 49,000 S.F., 1.13 ACRES
AREA "B" 81,000 S.F., 1.86 ACRES
AREA "C" 220,000 S.F., 5.05 ACRES

100 YEAR STORM

CALCULATIONS FOR TIME OF CONCENTRATION
H=95 TO 88 = 7 FEET
L=930 FEET
$TIME_C$ = 10 MIN ON CHART (BASED ON STUDY BY P. Z. ZIRPICH, CIVIL ENGINEERING, VOL 10, NO. 6, JUNE 1940, P.362)
FOR OVERLAND FLOW, CONCRETE, ASPHALT
MULTIPLY BY 0.4, 10 MIN X 0.4 - 4 MIN
THEREFORE HOLDING = 5 MIN MINIMUM

T_C = 5 MIN

100 YEAR STORM RAINFALL INTENSITY = 6.5 IN/HR
(BASED ON CHART OF "INFORMATION FROM TECHNICAL PAPER #25, U. S. WEATHER BUREAU")
C = 0.9 OR 90%
Q = C I A
= (0.9) (6.5) (A_C)

Q_A = (0.9) (6.5) (1.13) = 6.61

Q_B = 10.88

Q_C = 29.54

Q_A = 6.61

Q_{AB} = 17.49 ACCUMULATED

Q_{ABC} = 47.03

GRASSED CHANNEL CALCULATIONS BASED ON DESIGN CHARTS FOR OPEN-CHANNEL FLOW

U.S. DEPT OF COMMERCE, BUREAU OF PUBLIC ROADS
WASHINGTON: 1961

IF D = 1.0 W = 2 + 4 + 2 = 8 FT
IF D = 1.4 W = 2.8 + 4 + 2.8 = 9.6 FT
IF D = 1.8 W = 3.6 + 4 + 3.6 = 11.2 FT
S = 0.0075

AREA "A"
Q = 6.6
S = 0.0075
D = 1.0
V = 2.0 F/S

AREA "B"
Q = 17.49
S = 0.0075
D = 1.4
V = 3.0 F/S

AREA "C"
Q = 47.03
S = 0.0075
D = 1.8
V = 3.9 F/S

DETENTION AREA

100 YEAR STORM
5 MIN CONCENTRATION, 30 MIN DURATION
I = 6.5 A = 8.04 ACRES C = 90%
Q = (0.90) (6.5) (8.04) = 47.03 CFS
30 MIN VOLUME = (47.03 CFS) (30 MIN) (60 SEC) = 84650 CF
DETENTION AREA PROVIDED = 21163SF X 4 FT DEEP = 84,650 CUBIC FEET
(DATA ABOVE PROVIDED BY STANLEY ENGINEERING)

OTHER DATA
LAND SURVEY AND TEST HOLE DATA PREPARED BY : FREDERICK D. BOUFFARD, REG. LAND SURVEYOR
TEST HOLE NO.1
0-7 FT: FINE GRAVEL
7-10 FT: CLAY
10 FT : WATER
TEST HOLE NO.2
0-2 FT: FINE GRAVEL
2-6 FT: GRAVEL MIXED WITH A LITTLE CLAY
6-10 FT: FINE GRAVEL, NO WATER
TEST HOLE NO.3
0-10 FT: COARSE GRAVEL, NO WATER
ALL HOLES DUG 10 FT. BELOW FINISH GRADE 8 FEB. 1973
(EXISTING CONTOURS TAKEN FROM A PLAN BY RAYMOND HOLMES, ENGINEER)

LAND DATA
PART OF LOT NO.51 OF PLAT 32 ON POND STREET RECORDED AT THE REGISTRY OF DEED IN TAUNTON, BOOK 1613, PAGE 1067

BELONGING TO: J. L. MARSHALL & SONS, INC.
560 YORK AVENUE, PAWTUCKET, R. I.

TREES AND BANK ALONG TEN MILE RIVER WILL NOT BE DISTURBED

PROPOSED SUB-DIVISION OF LAND BELONGING TO:

J. L. MARSHALL and SONS, INC.

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