

STORM WATER RUNOFF CALCULATIONS

AREA NO.	ACRES	TC (min)	"C"	"I ₁₀₀ " (IN./HR.)	"Q ₁₀₀ " (cfs)	DISCHARGE TO
A	1.57	10	0.9	9.8	13.8	DET. POND
B	0.13	10	0.9	9.8	1.1	FLOODPLAIN
C*	0.28	10	0.9	9.8	2.5	FLOODPLAIN
D**	0.83	10	0.9	9.8	7.3	FLOODPLAIN
E**	1.18	10	0.9	9.8	10.4	18" RCP

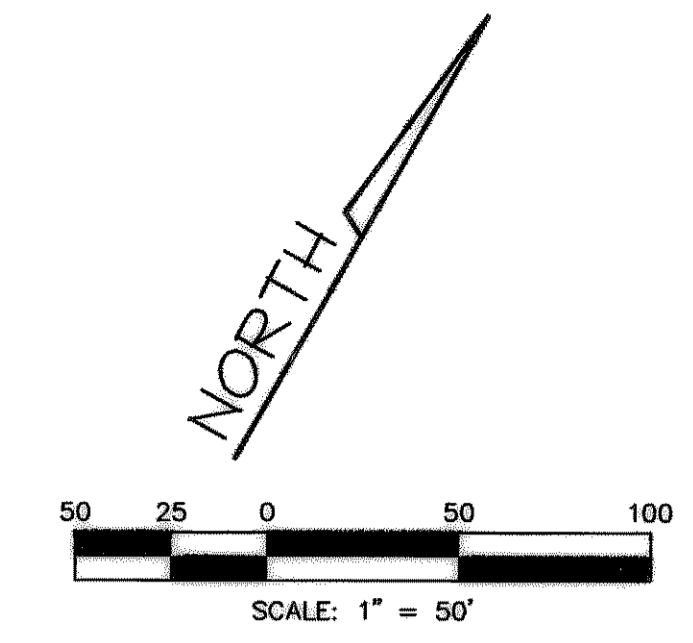
* AREA TO REMAIN UNDEVELOPED NOT INCLUDED IN DETENTION
 ** CURRENTLY UNDEVELOPED. WHEN DEVELOPED FLOW WILL BE DIVERTED TO FUTURE DETENTION POND ON ADJACENT PROPERTY

DETENTION CALCULATIONS

Allowable Discharge
 Area = 1.70 Acres
 C_{res} = 0.35
 I₁₀₀ = 8.3
 TC = 20 min

Q_(allowable) = 5.0 cfs minus 1.2 cfs (Area B) = 3.8 cfs
 Actual Discharge = 3.8 cfs

Storm Duration calculations CA = (0.9)(1.7) = 1.53
 10min = 9.8 Q = 14.99
 20min = 8.3 Q = 12.7
 30min = 6.9 Q = 10.56
 40min = 5.8 Q = 8.87
 50min = 5.0 Q = 7.65
 60min = 4.5 Q = 6.89
 70min = 4.2 Q = 6.43
 80min = 3.9 Q = 5.97
 90min = 3.5 Q = 5.36



RATING TABLE

DEPTH (ft)	DISCHARGE (cfs)
0.0	N/A
0.5	1.10
1.0	2.70
1.5	3.8

DETENTION POND MAX. DEPTH=1.5'
 BASED ON CURRENT DETENTION REQUIRED

RELEASE RATE CALCULATION

STORM EVENT	VOLUME REQ.	DEPTH OF POND	ALLOWABLE DISCHARGE*	ACTUAL DISCHARGE**
10 yr	11,970	0.80'	2.5cfs	1.73 cfs
25 yr	13,770	0.95'	3.1 cfs	2.5 cfs
50 yr	15,060	1.10'	3.4 cfs	2.9 cfs
100 yr	18,396	1.50'	3.8 cfs	3.8 cfs

* ALLOWABLE DISCHARGE IS BASED ON FULLY DEVELOPED FLOWS FROM POND MINUS AREA B DISCHARGES DIRECTLY TO FLOOD PLAIN

Volume Determination

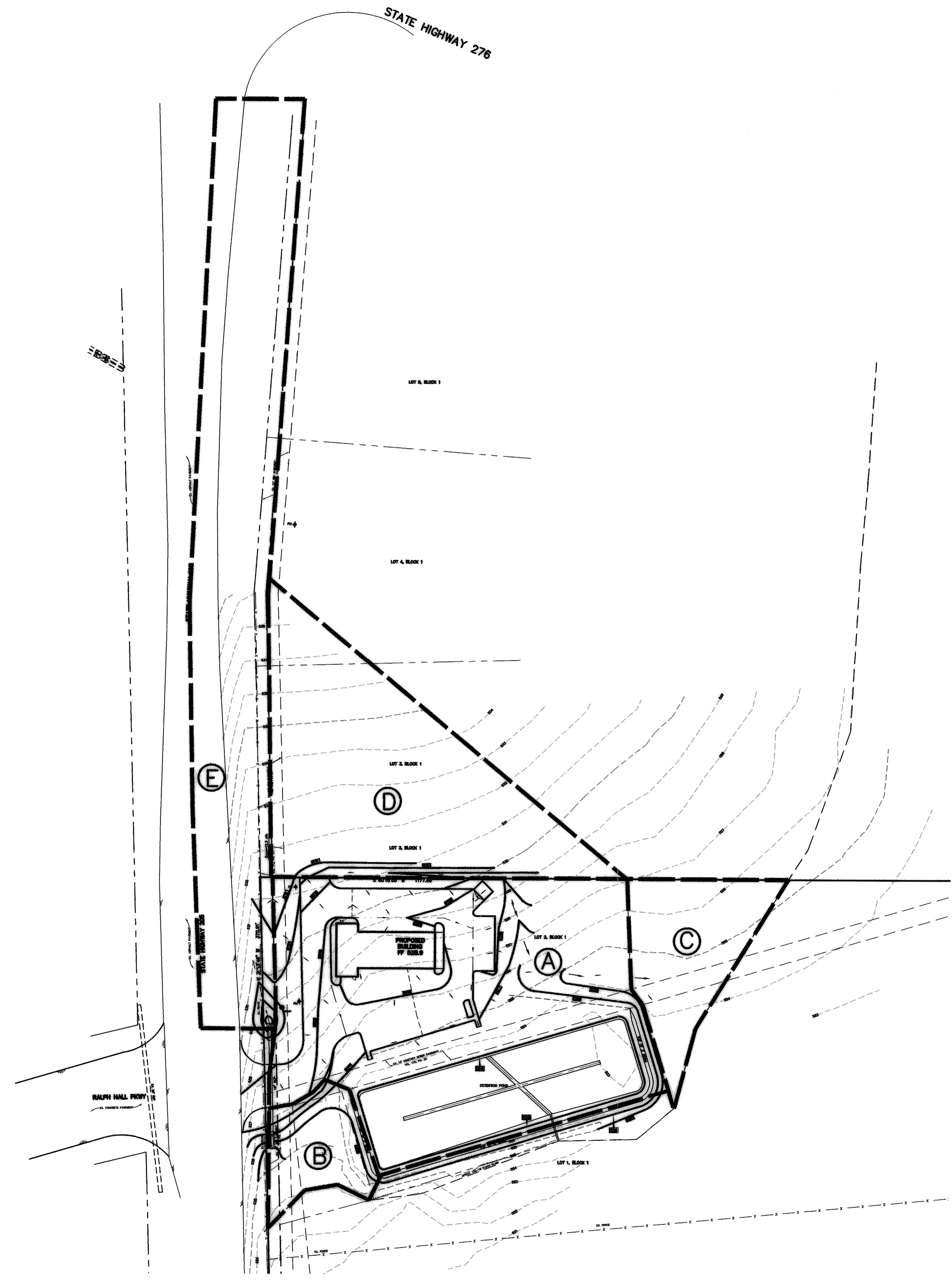
10min	10 x 14.99 x 60 = 8994	0.5 x 20 x 3.8 x 60 = 2280	6714 c.f.
20min	20 x 12.7 x 60 = 15240	0.5 x 30 x 3.8 x 60 = 3420	11820 c.f.
30min	30 x 10.56 x 60 = 19008	0.5 x 40 x 3.8 x 60 = 4560	14448 c.f.
40min	40 x 8.87 x 60 = 21288	0.5 x 50 x 3.8 x 60 = 5700	15588 c.f.
50min	50 x 7.65 x 60 = 22950	0.5 x 60 x 3.8 x 60 = 6840	16110 c.f.
60min	60 x 6.89 x 60 = 24804	0.5 x 70 x 3.8 x 60 = 7950	16824 c.f.
70min	70 x 6.43 x 60 = 27006	0.5 x 80 x 3.8 x 60 = 9120	17886 c.f.
80min	80 x 5.97 x 60 = 28656	0.5 x 90 x 3.8 x 60 = 10260	18396 c.f.*
90min	90 x 5.36 x 60 = 28944	0.5 x 100 x 3.8 x 60 = 11400	17544 c.f.

* Volume Required: 18,396 c.f.
 Volume Provided: 18,500 c.f.
 Max Depth: 1.5 ft

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION WAS SUPPLIED BY OWNER AND SURVEYS PERFORMED BY OTHERS. DESIGN ENGINEER IS NOT RESPONSIBLE FOR DISCREPANCIES RESULTING BETWEEN ACTUAL SITE CONDITIONS AND TOPOGRAPHIC INFORMATION INDICATED. DESIGN ENGINEER SHOULD BE NOTIFIED IMMEDIATELY IF DISCREPANCIES ARE FOUND.

LEGEND

- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA DESIGNATION
- EXISTING CONTOUR
- PROPOSED CONTOUR



RECORD DRAWING

IMPROVEMENTS INDICATED ON THESE PLANS WHERE REVISED IN ACCORDANCE WITH THE ASBUILT SURVEY PERFORMED BY ROCKWALL SURVEYING, INC. AND PROVIDED TO BENTLEY ENGINEERING, INC. ON 06/20/06.
 DATE: JUNE 23, 2006