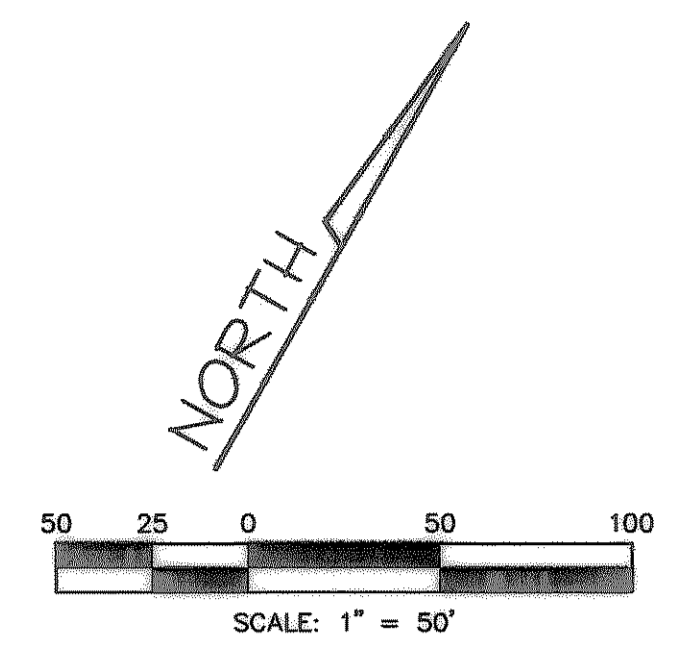
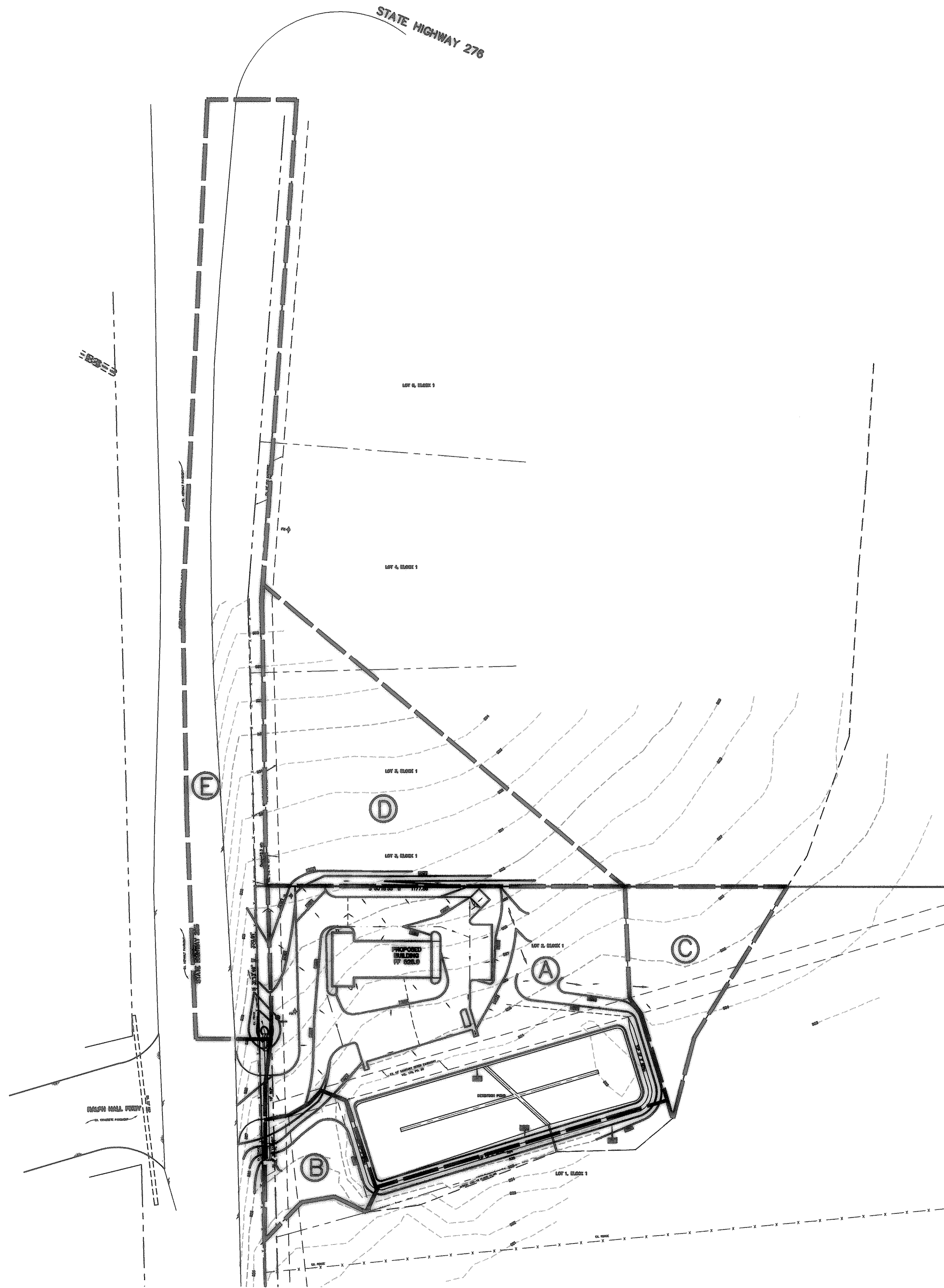


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STORM WATER RUNOFF CALCULATIONS

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 = 9.3
 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 = 7.85
 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 7.85 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 = 7980	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

LEGEND

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

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.

1135 BROADWAY BLVD.
 SUITE 405
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Bentley
 ENGINEERING, INC.

MARC O. BENTLEY
 64980
 LICENSED PROFESSIONAL ENGINEER
 THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MARC O. BENTLEY, P.E. NO. 64980 ON 11/29/05

DRAINAGE AREA MAP
 MEADOWCREEK BUSINESS CENTER LOT 2, BLOCK 1
 CITY OF ROCKWALL, TEXAS

RECORD DRAWING

No. _____ Date _____
 Revision _____

Scale: 1"=50'
 File Name: LUBESITE
 Date: JULY 2005
 Project No.: 25131

Sheet **C3**

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