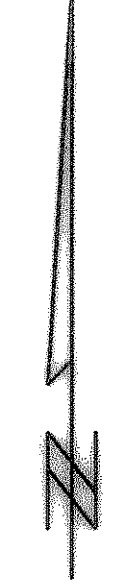
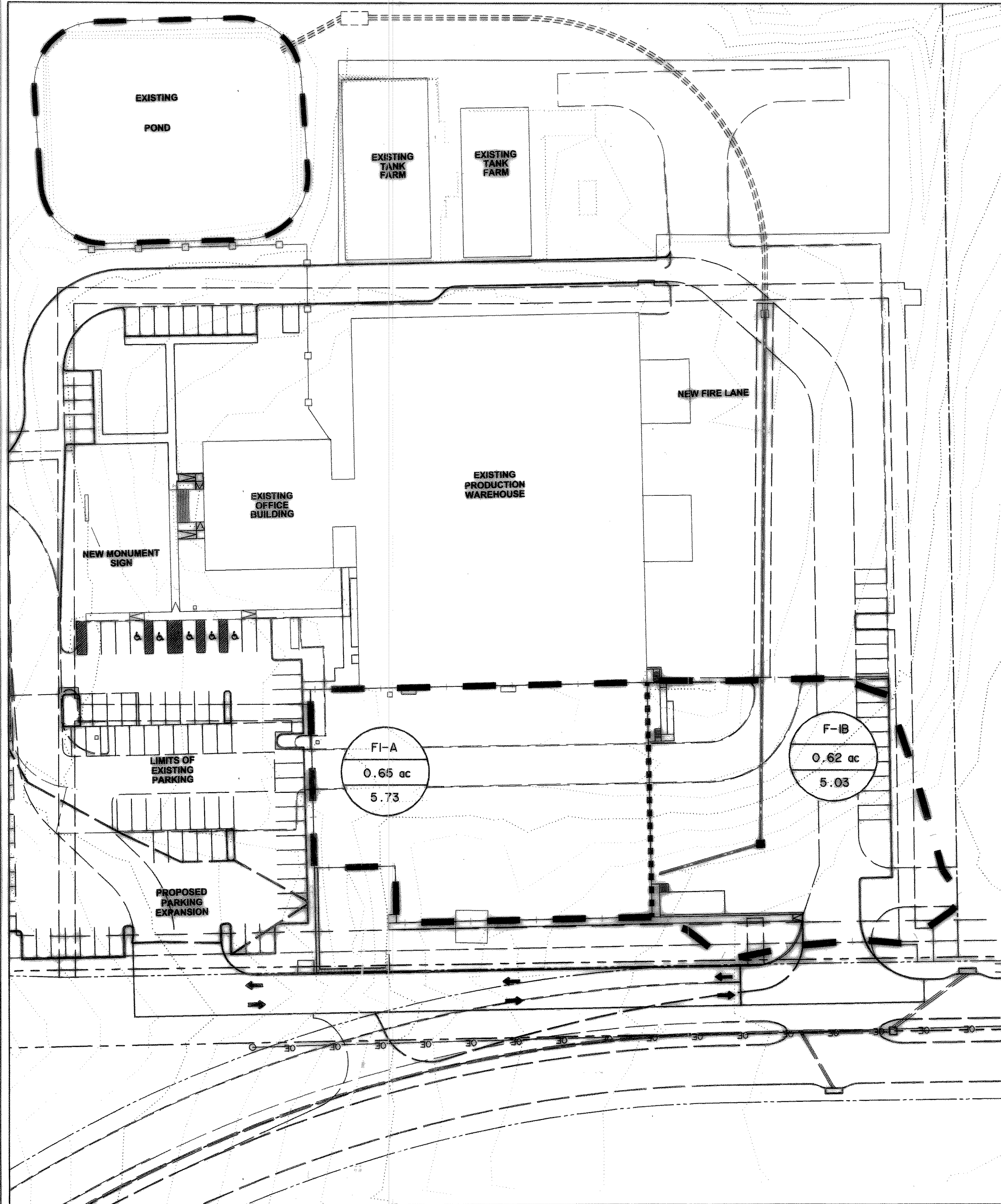


TIME 14:03 FILE: DETENTION-POND-04124_02.dwg



RETENTION REQUIRED:
 FROM TP40, 100Yr/24hr RAINFALL EVENT = 9.7 INCHES (FOR THE ROCKWALL AREA).
 PROPOSED BUILDING EXPANSION + LOADING EXPANSION = 1.27 Ac.
 THEREFORE, STORAGE REQUIREMENTS = 9.7in X 1/2 In/Ft. X 1.27 Ac. X 0.9 = 0.92 Ac. -Ft.
 (USING A C FACTOR OF 0.9)

WHITMORE'S EXISTING WATER TREATMENT POND
 APPROXIMATE POND CAPACITY BASED ON SLOPES OF POND AT 3:1, AND RECORD DRAWINGS
 LENGTH OF BOTTOM OF POND= 117 FT.

POOL ELEVATION	HEIGHT FROM BOTTOM	AREA (SQ. FT.)	$\frac{A_1+A_2+\sqrt{A_1A_2}}{3}$ (AC.)	VOLUME (AC.-FT.)	VOLUME SUM	ADDED STORAGE @ ELEVATION FROM 570 (AC.-FT.)	ADDED STORAGE @ ELEVATION FROM 571 (AC.-FT.)
566	0	10179.00	0	0	0.00	1.18	1.55
566.25	0.25	10487.25	0.237	0.059	0.06	1.12	1.49
566.5	0.5	10800.00	0.244	0.061	0.12	1.06	1.43
566.75	0.75	11117.25	0.252	0.063	0.18	0.99	1.37
567	1	11439.00	0.259	0.065	0.25	0.93	1.31
567.25	1.25	11765.25	0.266	0.067	0.31	0.86	1.25
567.5	1.5	12096.00	0.274	0.068	0.38	0.79	1.17
567.75	1.75	12431.25	0.282	0.070	0.45	0.72	1.10
568	2	12771.00	0.289	0.072	0.53	0.65	1.03
568.25	2.25	13115.25	0.297	0.074	0.60	0.58	0.95
568.5	2.5	13464.00	0.305	0.076	0.68	0.50	0.88
568.75	2.75	13817.25	0.313	0.078	0.75	0.42	0.80
569	3	14175.00	0.321	0.080	0.83	0.34	0.72
570	4	15651.00	0.342	0.342	1.18	-	0.38
571	5	17199.00	0.377	0.377	1.55	-	-

$$\text{Volume} = \left[\frac{A_1 + A_2 + \sqrt{A_1 A_2}}{3} \right] (\Delta \text{Elevation})$$

KEEPING ONE FOOT OF FREEBOARD, THE POND ELEVATION MUST BE AN APPROXIMATE ELEVATION OF 567.0 FT. IN ORDER TO ACHIEVE THE 0.92 AC.-FT. OF REQUIRED STORAGE.

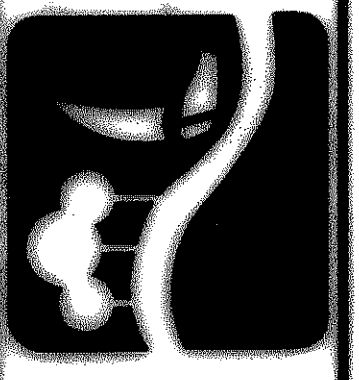
WITH NO FREEBOARD, THE POND ELEVATION MUST BE AN APPROXIMATE ELEVATION OF 568.25 IN ORDER TO ACHIEVE THE 0.92 AC.-FT. OF REQUIRED STORAGE.

THE EXISTING WATER TREATMENT POND HAS EXCESS CAPACITY AND WILL BE USED TO DETAIN FLOWS FROM DRAINAGE AREAS FI-A AND FI-B. THE POND HAS A NORMAL POOL ELEVATION OF 569.00 PER THE PERMIT GRANTED BY TCEQ. TO ACHIEVE THE NEEDED STORAGE OF 0.92 AC.-FT., THE POND ELEVATION WILL NEED TO BE LOWERED TO AN ELEVATION OF 567.0 FT. TO MAINTAIN A ONE FOOT FREEBOARD AFTER THE 100 YR STORM EVENT HAS OCCURRED. THE POND ELEVATION COULD BE LOWERED TO AN ELEVATION OF 568.25 TO ACCOUNT FOR THE REQUIRED STORAGE WITHOUT ANY FREEBOARD.

Ronald Ramirez
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF TEXAS
 No. 81821
 Date Shown Below

RECORD DRAWING
 03/13/07

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CITY OF
ROCKWALL
 WHITMORE EXPANSION

RETENTION ANALYSIS

PRELIMINARY PLAN FOR PROJECT REVIEW.
 NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.
 Prepared by or Under Direct Supervision of
 Ronald Ramirez, PE
 Texas Registration No. 81821
 Date Shown Below

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