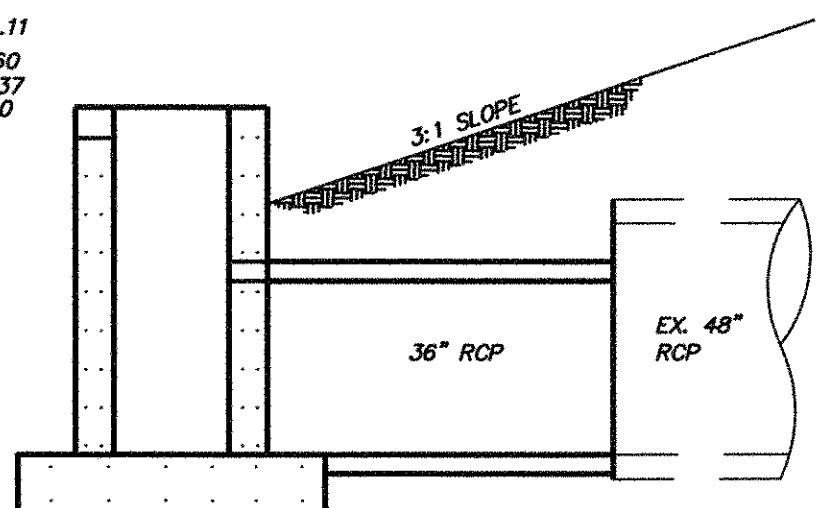
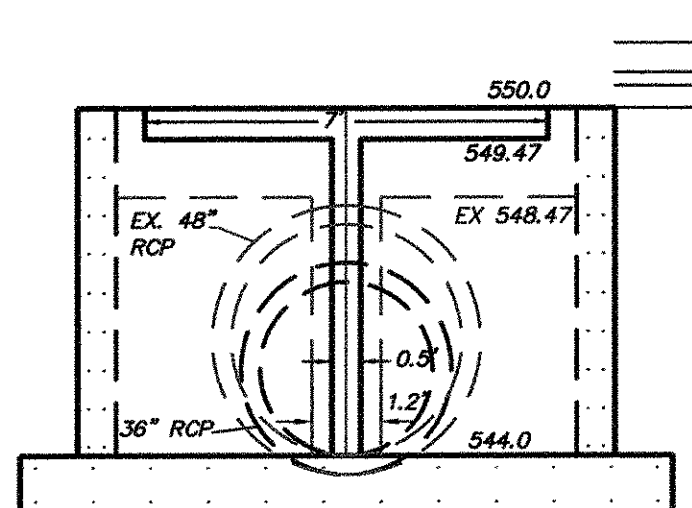
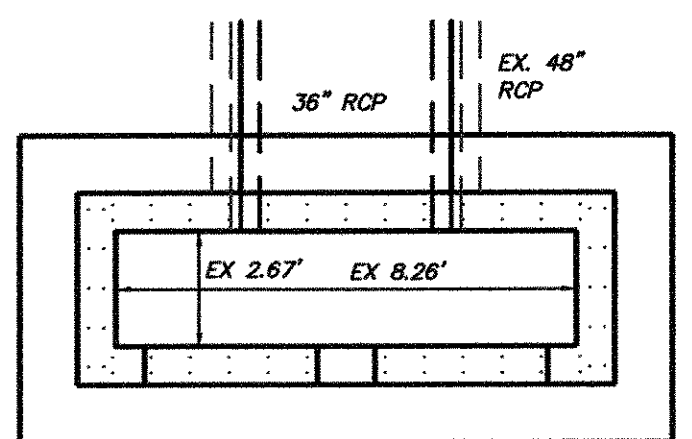


PER A REQUEST BY THE CITY, THE EXISTING DETENTION PONDS AND RELEASE STRUCTURES WERE ANALYZED TO DETERMINE THE POND'S ABILITY TO PERFORM AT LOWER STORM EVENTS. OUR ANALYSIS DETERMINED THAT THE POND FUNCTIONS AS DESIGNED FOR THE 100YR EVENT, HOWEVER, IT FAILED TO ATTENUATE SMALLER STORM SEWER EVENTS. MODIFICATION TO THE EXISTING OUTFALL STRUCTURES ARE PROPOSED WITH THIS PROJECT TO MITIGATE THE DISCHARGES FROM THE SMALLER STORM WATER EVENTS. THE RESULTS TO THESE MODIFICATIONS WAS A RISE IN THE 100 YR WATER SURFACE OF APPROXIMATELY 1' TO AN ELEVATION OF 551.11. THIS ELEVATION STILL REMAINS BELOW THE EMERGENCY OUTFALL FOR THE DETENTION POND AND WELL BELOW THE FINISHED FLOORS OF THE ADJACENT BUILDINGS. THE CALCULATED ALLOWABLE RELEASES AND ACTUAL ROUTED RELEASES OF THE VARIOUS STORM EVENTS IS SHOWN IN THE TABLE BELOW.

EVENT	Qcst ALLOWABLE RELEASE	Qcst ROUTED	ROUTING ELEVATION
5	51.49	33.42	550.00
10	59.72	57.69	550.37
25	77.23	76.50	550.60
100	85.46	80.76	551.11



5 YEAR

PRESENT CONDITIONS	PROPOSED CONDITIONS
C 0.35	C 0.9
Tc 20	Tc 10
I 5	I 6.1
ACRES 29.42	ACRES 29.42
Q 51.49	Q 161.52

DURATION (MIN)	I (IN/HR)
15	5.75
20	5
30	4
40	3.5
50	2.9
60	2.5
120	1.6

10 YEAR

PRESENT CONDITIONS	PROPOSED CONDITIONS
C 0.35	C 0.9
Tc 20	Tc 10
I 5.8	I 7.3
ACRES 29.42	ACRES 29.42
Q 59.72	Q 193.29

DURATION (MIN)	I (IN/HR)
15	6.5
20	5.8
30	4.8
40	4
50	3.5
60	3
120	1.8

25 YEAR

PRESENT CONDITIONS	PROPOSED CONDITIONS
C 0.35	C 0.9
Tc 20	Tc 10
I 7.5	I 8.3
ACRES 29.42	ACRES 29.42
Q 77.23	Q 219.77

DURATION (MIN)	I (IN/HR)
15	7.5
20	6.8
30	5.5
40	4.8
50	4
60	3.5
120	2.25

100 YEAR

PRESENT CONDITIONS	PROPOSED CONDITIONS
C 0.35	C 0.9
Tc 20	Tc 10
I 8.3	I 9.8
ACRES 29.42	ACRES 29.42
Q 85.47	Q 259.48

DURATION (MIN)	I (IN/HR)
15	9
20	8.3
30	6.9
40	5.8
50	5
60	4.5
70	4.1
80	3.9
90	3.6

DURATION (MIN)	INFLOW (CF)	OUTFLOW (CF)	STORAGE REQUIRED (CF)
10	96909.48	30891.00	66018.48
20	158868.00	46336.50	112531.50
30	190641.60	61782.00	128859.60
40	222415.20	77227.50	145187.70
50	230358.60	92673.00	137685.60
60	238302.00	108118.50	130183.50
120	305026.56	200791.50	104235.06

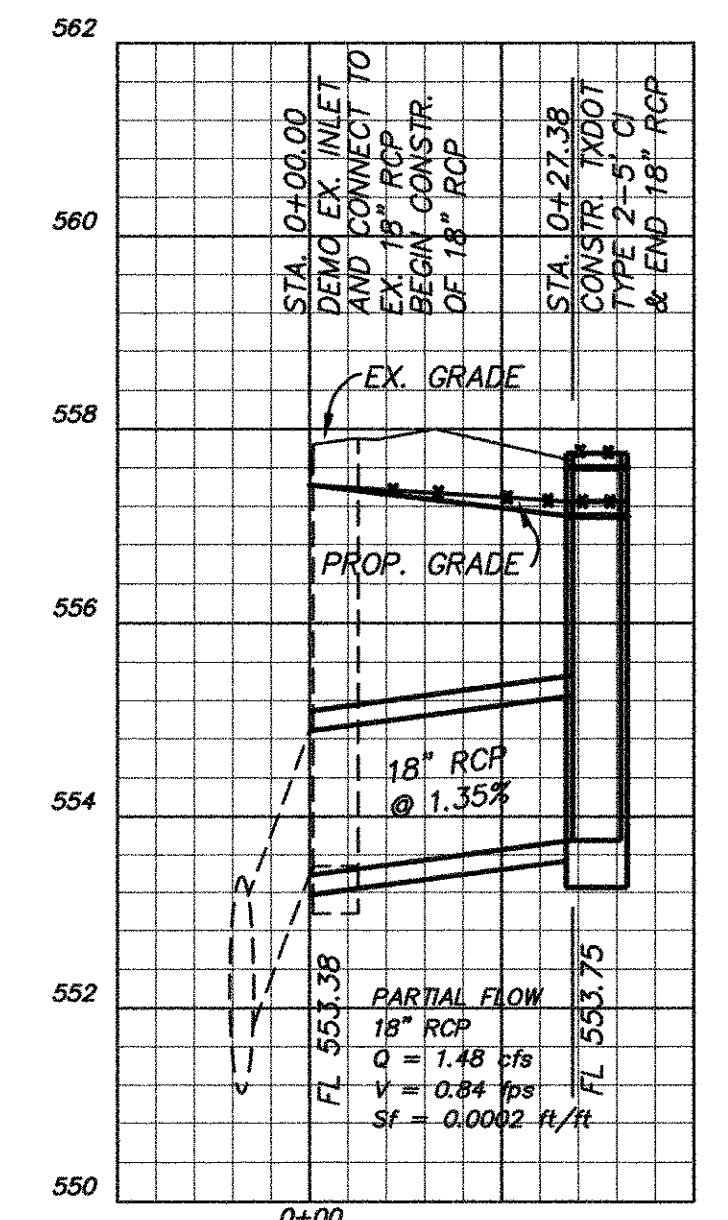
DURATION (MIN)	INFLOW (CF)	OUTFLOW (CF)	STORAGE REQUIRED (CF)
10	115973.64	35833.56	80140.08
20	184286.88	53750.34	130536.54
30	228766.92	71667.12	157102.80
40	254188.80	89583.90	164604.90
50	278019.00	107500.68	170518.32
60	285962.40	125417.46	160544.94
120	343154.88	232918.14	110236.74

DURATION (MIN)	INFLOW (CF)	OUTFLOW (CF)	STORAGE REQUIRED (CF)
10	131860.44	46336.50	85523.94
20	216060.48	69504.75	146555.73
30	262132.20	92673.00	169459.20
40	305026.56	115841.25	189185.31
50	317736.00	139009.50	178726.50
60	333622.80	162177.75	171445.05
120	428943.60	301187.25	127756.35

DURATION (MIN)	INFLOW (CF)	OUTFLOW (CF)	STORAGE REQUIRED (CF)
10	155690.64	51279.06	104411.58
20	263720.88	76918.59	186802.29
30	328856.76	102558.12	226298.64
40	368573.76	128197.65	240376.11
50	397170.00	153837.18	243332.82
60	428943.60	179476.71	249466.89
70	455951.2	205116.24	250834.9
80	495668.2	230755.77	264912.4
90	514732.3	256395.30	258337

STORAGE PROVIDED @ ELEV. 551.10
= 279583.39
INCLUDES BOTH PONDS

LINE "A"



RECORD DRAWING
TO THE BEST OF OUR KNOWLEDGE ALLEN & RIDINGER, HEREBY STATES THAT THIS PLAN IS AS-BUILT. THE INFORMATION PROVIDED IS BASED ON SURVEYING CONDUCTED AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.
DATE: 5/5/10
Michael S. Allen

OWNER:
FLEMING INVESTMENT, INC.
CONTACT: SCOTT FLEMING
1500 McDONALD RD
ROCKWALL, TX 75032
PHONE: (972) 771-1208

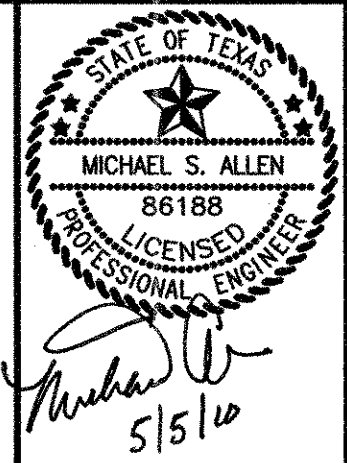
ENGINEER:
ALLEN & RIDINGER CONSULTING, INC.
CONTACT: MICHAEL S. ALLEN, PE
285 W. SOUTHWEST PARKWAY
LEWISVILLE, TX 75067
PHONE: (972) 353-8000
FAX: (972) 353-8011
EMAIL: MALLEN@ALLEN-RIDINGER.COM

DEVELOPER:
PAVILION DEVELOPMENT CO.
CONTACT: WESLEY WALLS
5605 CARNegie BLVD., SUITE 110
CHARLOTTE, NC 28209
PHONE: (704) 537-9287
FAX: (704) 552-1159
EMAIL: WESLEY.WALLS@PAVILIONDEVELOPMENT.COM

NATIONAL TIRE & BATTERY
W. RALPH HALL PKWY.
Lot 5, Block 1
0.943 Acres
Horizon Village Addition
City of Rockwall
Rockwall County, Texas

No.	Date	Revisions	App.
2	4/30/10	PER ASSUMPTS PROVIDED BY OTHERS	MSA
1	3/11/10	ADJUSTED GRADE ON INLET	MSA

Allen & Ridinger Consulting, Inc.
Firm No. 1989
Tel. No. (972) 353-8000
285 W. Southwest Parkway
Lewisville, Texas 75067
Fax No. (972) 353-8011



NATIONAL TIRE & BATTERY (NTB)
W. RALPH HALL PKWY.
CITY OF ROCKWALL, TEXAS

STORM DRAINAGE PLAN

Scale: 1"=20'
Designed by: MSA
Drawn by: MAB
Checked by: MSA
Date: SEPTEMBER 30, 2009
Project No. 082-010