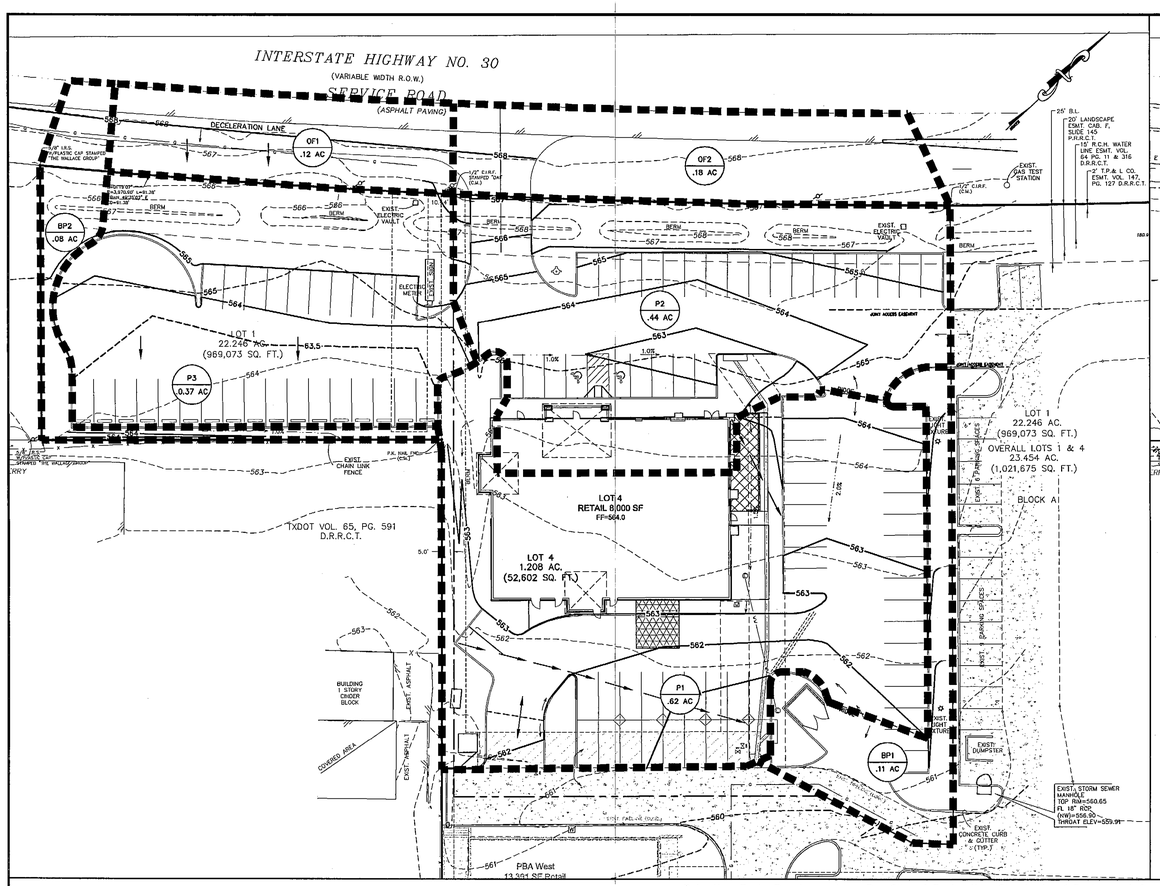

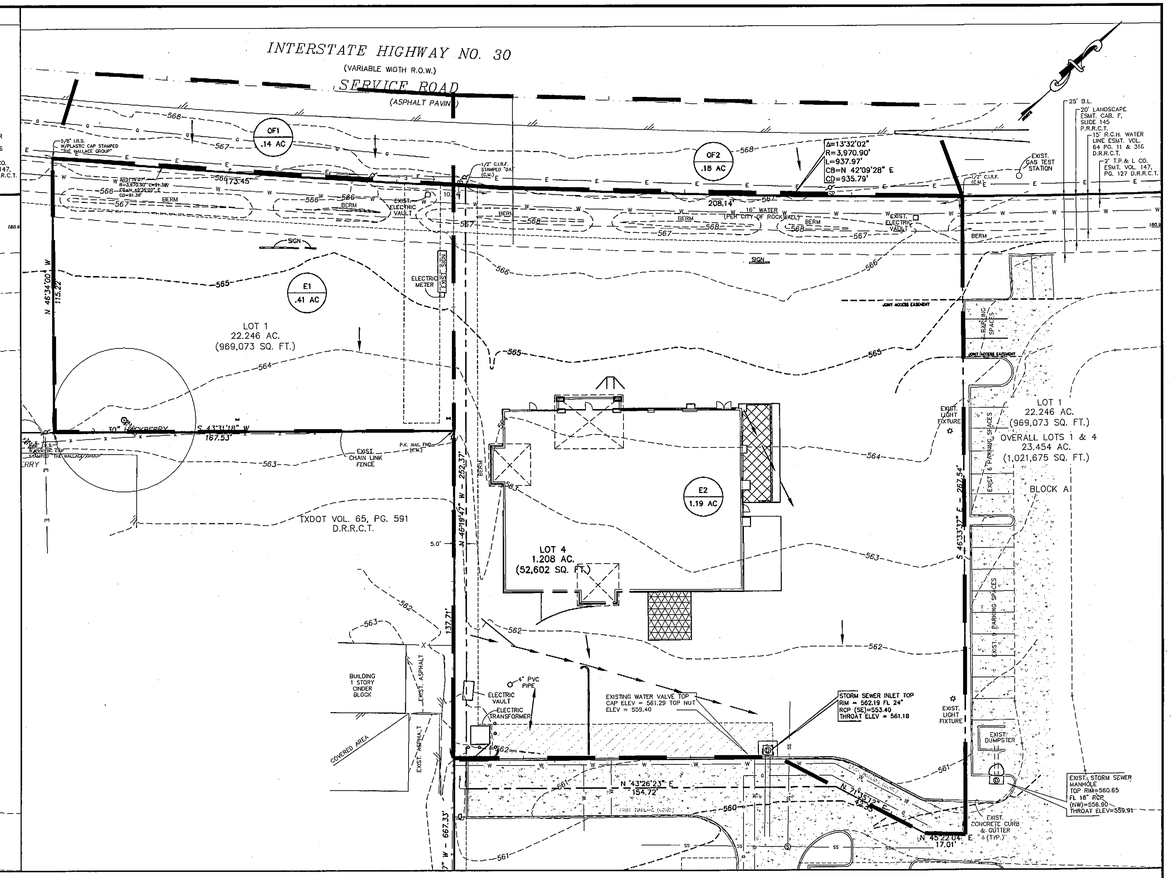

PROPOSED CONDITIONS

Drainage Areas P1, P2, OF2, and BP1 are Accounted For in Rockwall Crossing Phase I Detention Pond. See Rockwall Crossing Plans - Douphrate Engineering - July 2004

Drainage Areas P3, OF1, and BP2 produce 3.4 CFS More than Existing Flows During the 100-YR Storm Fully Developed Conditions. This Flow is to be detained and released overland and directed between TxDot Area and Lot 4 west boundary. See Grading Plan for Detention and Outfall Tables.

100YEAR – Fully Developed Conditions

Drainage Area No.	Drainage Area (s.f.)	Drainage Area (acres)	Runoff Coefficient (C)	Intensity (in./hr)	Peak Flow (cfs)	Inlet Type
P1	27,155	0.62	0.90	9.80	5.5	Area Inlet
P2	19,125	0.44	0.90	9.80	3.9	10' Curb
OF2	7,850	0.18	0.90	9.80	1.6	10' Curb
BP1	4,795	0.11	0.90	9.80	1.0	10' Curb
	58,925	1.35			12.0	

100YEAR – Fully Developed Conditions

Drainage Area No.	Drainage Area (s.f.)	Drainage Area (acres)	Runoff Coefficient (C)	Intensity (in./hr)	Peak Flow (cfs)	Inlet Type
P3	16,150	0.37	0.90	9.80	3.3	Flow to Det.
OF1	5,012	0.12	0.90	9.80	1.0	Flow to Det.
BP2	3,315	0.08	0.90	9.80	0.7	Flow to Det.
	24,447	.56			5.0	

Detention Basin Requirements – Per City of Rockwall – Standards of Design and Construction, Section 3

OnSite Undeveloped Conditions	Q10	Q25	Q50	Q100	
Area E1(Ac.)	0.41	0.41	0.41	0.41	
Runoff Coefficient	0.35	0.35	0.35	0.35	
Time of Concentration (Min.)	20.0	20.0	20.0	20.0	
Rainfall Intensity (in./hr)	5.75	6.67	7.4	8.25	
Undeveloped Flow (cfs)	0.8	1.0	1.1	1.2 cfs	– Allowable Discharge

Offsite Flows – Existing Conditions	Q10	Q25	Q50	Q100	
Areas OF1 (Ac.)	0.14	0.14	0.14	0.14	
Runoff Coefficient	0.35	0.35	0.35	0.35	
Time of Concentration (Min.)	20.0	20.0	20.0	20.0	
Rainfall Intensity (in./hr)	5.75	6.67	7.4	8.25	
Existing Flow (cfs)	0.3	0.3	0.4	0.4 cfs	– Existing Offsite Flows
	1.1	1.3	1.4	1.6 cfs	– Combined Allowable Discharge

SEE TABLE BELOW FOR ALLOWABLE FLOWS V ACTUAL FLOWS

OnSite Developed Conditions	Q10	Q25	Q50	Q100
Area P3 (Ac.)	0.37	0.37	0.37	0.37
Runoff Coefficient	0.9	0.9	0.9	0.9
Time of Concentration (Min.)	10.0	10.0	10.0	10.0
Rainfall Intensity (in./hr)	7.25	8.3	9.0	9.8
Developed Flow (cfs)	2.4	2.8	3.0	3.3

Offsite Flows – Fully Developed Conditions	Q10	Q25	Q50	Q100	
Areas OF1, and BP2 (Ac.)	0.20	0.20	0.20	0.20	
Runoff Coefficient	0.9	0.9	0.9	0.9	
Time of Concentration (Min.)	10.0	10.0	10.0	10.0	
Rainfall Intensity (in./hr)	7.25	8.3	9.0	9.8	
Undeveloped Flow (cfs)	1.3	1.5	1.6	1.8 cfs	– Fully Developed Offsite Flows
	3.7	4.3	4.6	5.0 cfs	– Combined Flows to Pond

Time Increment (Min)	Fig. 3-1 100-YR Intensity (in/hr)	"C" Value	100-YR Offsite & Developed Q (cfs)
10	9.80	0.9	4.9
15	9.00	0.9	4.5
20	8.30	0.9	4.2
30	6.90	0.9	3.5
40	5.80	0.9	2.9
50	5.00	0.9	2.5
60	4.50	0.9	2.3

Cumulative Pond Volume

Inflow (cf)	Outflow (cf)	Storage (cf)
2,950	966	1,984
4,064	1,207	2,857
4,997	1,449	3,549
6,232	1,932	4,300
6,984	2,415	4,570
7,526	2,898	4,629
8,128	3,381	4,748
	Volume =	4,748 CF

*EXISTING CONDITIONS

Based on Drainage Area Map from Rockwall Crossing Plans - Douphrate Engineering - July 2004

100YEAR – Existing Conditions

Drainage Area No.	Drainage Area (s.f.)	Drainage Area (acres)	Runoff Coefficient (C)	Intensity (in./hr)	Peak Flow (cfs)	Inlet Type
E2	52,035	1.19	0.35	8.30	3.5	Area Inlet
OF2	7,652	0.18	0.35	8.30	.5	Area Inlet
	59,687	1.37			4.0	

100YEAR – Existing Conditions

Drainage Area No.	Drainage Area (s.f.)	Drainage Area (acres)	Runoff Coefficient (C)	Intensity (in./hr)	Peak Flow (cfs)	Inlet Type
E1	17,736	0.41	0.35	8.30	1.2	Overland Flow
OF1	6,235	0.14	0.35	8.30	0.4	Overland Flow
	23,971	.55			1.6	

	Q Allowable	Q Actual	W.S. Elev.
100 YR	1.6	1.6	564.10
50 YR	1.4	1.4	564.05
25 YR	1.3	1.3	563.95
10 YR	1.1	1.1	563.85

SEE DETENTION POND TABLE AND OUTFALL TABLE IN GRADING PLAN

DISCLAIMER

TO THE BEST OF OUR KNOWLEDGE, THE WALLACE GROUP, INC. HEREBY STATES THAT THIS PLAN IS AS-BUILT/RECORD DRAWINGS. THE INFORMATION PROVIDED IS BASED ON SURVEYING CONDUCTED AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

REV	DATE	BY	DESCRIPTION

0 15 30 60 (IN FEET)

DESIGNED: RDC
DRAWN: SRM
CHECKED: RDC

STATE OF TEXAS MATTHEW D. MORGAN 96329 LICENSED PROFESSIONAL ENGINEER

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5/1/08 Matt D. Morgan
DATE NAME

E N G I N E E R S S U R V E Y O R S
A R C H I T E C T S P L A N N E R S
THE WALLACE GROUP INC.

ROCKWALL CROSSING
8000 SQ. FT. RETAIL BUILDING
DRAINAGE AREA MAP

SHEET C5.1 OF 12 SHEETS

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