RUNOFF COMPUTATIONS

DRAINAGE AREA																
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I_e (in/hr)	Q_e (cfs)
A1	1.16	0.219					0.938		0.616	0.713	4.60	10.00	5	6.93	4.94
A2	1.02	0.555					0.464		0.741	0.756	4.70	10.00	5	6.93	5.23
A3	7.29						7.285		0.550	4.007	5.63	10.00	5	6.93	27.75
A4	0.41	0.283					0.124		0.794	0.322	3.10	10.00	5	6.93	2.23
A5	3.32						3.320		0.550	1.826	9.90	10.00	5	6.93	12.65
A6	0.20	0.175					0.021		0.863	0.168	2.00	10.00	5	6.93	1.17
A7	0.28						0.277		0.550	0.152	3.00	10.00	5	6.93	1.06
A8	0.32	0.286					0.036		0.861	0.277	3.00	10.00	5	6.93	1.92
B1	0.69	0.546					0.140		0.829	0.569	3.00	10.00	5	6.93	3.94
B2	0.35	0.313					0.034		0.865	0.301	3.00	10.00	5	6.93	2.08
B3	0.33	0.295					0.034		0.863	0.285	3.00	10.00	5	6.93	1.97
B4	0.33	0.298					0.032		0.866	0.286	3.00	10.00	5	6.93	1.98
C1	0.22	0.200					0.023		0.864	0.193	3.00	10.00	5	6.93	1.33
C2	0.34	0.306					0.033		0.866	0.294	3.00	10.00	5	6.93	2.04
C3	0.22	0.197					0.022		0.865	0.189	3.00	10.00	5	6.93	1.31
C4	0.31	0.277					0.031		0.865	0.266	3.00	10.00	5	6.93	1.85
C5	0.39	0.276					0.113		0.798	0.310	4.00	10.00	5	6.93	2.15
C6	0.47	0.312					0.157		0.783	0.367	5.00	10.00	5	6.93	2.54
C7	0.06	0.058							0.900	0.052	1.00	10.00	5	6.93	0.36
C8	0.15	0.091	0.059						0.880	0.132	2.00	10.00	5	6.93	0.91
D1	0.05	0.053							0.899	0.048	3.00	10.00	5	6.93	0.33
D2	0.11	0.092					0.014		0.854	0.090	3.00	10.00	5	6.93	0.62
D3	0.19	0.165					0.025		0.853	0.162	3.00	10.00	5	6.93	1.12
D4	0.77	0.770							0.900	0.693	3.00	10.00	5	6.93	4.80
D5	3.00		3.001						0.850	2.551	12.00	12.00	5	6.40	16.33
D6	1.29	0.117	1.169						0.855	1.100	8.00	10.00	5	6.93	7.62
D7	3.71	0.019	3.693						0.850	3.156	14.00	14.00	5	5.96	18.80
D8	0.61	0.287	0.323						0.874	0.533	8.00	10.00	5	6.93	3.69
D9	0.97	0.258	0.711						0.863	0.836	9.00	10.00	5	6.93	5.80
D10	0.38	0.296	0.088						0.889	0.341	3.00	10.00	5	6.93	2.36
D11	9.62	0.033	9.583						0.850	8.174	22.00	22.00	5	4.70	38.46
D12	0.72	0.228	0.490						0.866	0.623	3.00	10.00	5	6.93	4.31
D13	0.55	0.202	0.344						0.868	0.473	5.00	10.00	5	6.93	3.28
E1	0.14						0.139		0.550	0.076	4.70	10.00	5	6.93	0.53
E2	1.44	0.129					1.306		0.581	0.834	3.00	10.00	5	6.93	5.78
E3	0.38						0.377		0.550	0.207	3.00	10.00	5	6.93	1.44
F1	0.26	0.173	0.087						0.883	0.230	3.00	10.00	5	6.93	1.59
F2	0.29	0.185	0.104						0.882	0.255	3.00	10.00	5	6.93	1.76
F3	0.65	0.653							0.900	0.588	5.00	10.00	5	6.93	4.07
F4	0.13	0.132							0.900	0.119	1.00	10.00	5	6.93	0.82
F5	0.42	0.063	0.353						0.858	0.357	5.00	10.00	5	6.93	2.47
F6	0.54	0.086	0.458						0.858	0.467	5.00	10.00	5	6.93	3.23
F7	0.49	0.074	0.415						0.858	0.420	5.00	10.00	5	6.93	2.91
F8	0.59	0.161	0.426						0.864	0.508	6.00	10.00	5	6.93	3.52
F9	0.33	0.120	0.210						0.868	0.286	2.00	10.00	5	6.93	1.99
F10	1.12		1.121						0.850	0.953	5.00	10.00	5	6.93	6.60
F11	8.12		8.120						0.850	6.902	12.00	12.00	5	6.40	44.17
F12	0.18	0.109	0.074						0.880	0.161	3.00	10.00	5	6.93	1.11
F13	0.99		0.987						0.850	0.839	8.00	10.00	5	6.93	5.81
F14	0.59	0.154	0.434						0.863	0.507	6.00	10.00	5	6.93	3.51
F15	0.47		0.472						0.850	0.401	7.00	10.00	5	6.93	2.78
F16	1.31		1.310						0.850	1.114	8.00	10.00	5	6.93	7.72
F17	0.83	0.266	0.566						0.866	0.721	8.00	10.00	5	6.93	4.99
F18	0.95		0.945						0.850	0.803	5.00	10.00	5	6.93	5.57
F19	0.37	0.216	0.151						0.879	0.322	3.00	10.00	5	6.93	2.23
F20	0.83	0.244	0.588						0.865	0.720	8.00	10.00	5	6.93	4.98
F21	0.39	0.251	0.135						0.883	0.341	5.00	10.00	5	6.93	2.36
F22	1.44	0.278	0.963		0.200				0.847	1.220	9.00	10.00	5	6.93	8.45
F23	0.81	0.279	0.533						0.867	0.704	8.00	10.00	5	6.93	4.88
F25-1	5.41		5.411						0.850	4.599	10.00	10.00	5	6.93	31.86
F25-2	2.71		2.709						0.850	2.303	11.00	11.00	5	6.65	15.32
FJ	0.40	0.291		0.113					0.872	0.352	5.00	10.00	5	6.93	2.44

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 1 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	388
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=G:\JOBS\22451C-SH205\Drainage\2451cadC01.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:55

RUNOFF COMPUTATIONS

DRAINAGE AREA																
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I_a (in/hr)	Q_a (cfs)
G1	0.32	0.178	0.144						0.878	0.283	6.00	10.00	5	6.93	1.96
G2	0.37	0.229	0.136						0.881	0.322	6.00	10.00	5	6.93	2.23
G3	0.55	0.379	0.173						0.884	0.488	8.00	10.00	5	6.93	3.38
G4	0.46	0.052	0.410						0.856	0.395	5.00	10.00	5	6.93	2.74
G5	0.49	0.102	0.387						0.860	0.421	6.00	10.00	5	6.93	2.92
G6	0.25	0.107	0.140						0.872	0.215	3.00	10.00	5	6.93	1.49
H1	0.55	0.552							0.900	0.497	3.00	10.00	5	6.93	3.44
H2	0.14	0.137							0.900	0.123	8.00	10.00	5	6.93	0.85
I1	0.28	0.238	0.045						0.892	0.252	5.00	10.00	5	6.93	1.75
I2	0.30	0.112	0.190						0.869	0.262	5.00	10.00	5	6.93	1.82
I3	2.35		2.351						0.850	1.998	8.00	10.00	5	6.93	13.84
I4	0.49	0.148	0.343						0.865	0.426	5.00	10.00	5	6.93	2.95
I5	0.27	0.097	0.170						0.868	0.233	5.00	10.00	5	6.93	1.61
I6	1.12	0.122	0.994						0.855	0.954	8.00	10.00	5	6.93	6.61
I7	0.10	0.060		0.036					0.862	0.083	1.00	10.00	5	6.93	0.57
I8	0.20	0.138		0.063					0.869	0.174	1.00	10.00	5	6.93	1.21
I8A	0.84			0.836					0.800	0.669	5.00	10.00	5	6.93	4.63
J2	0.22	0.179		0.040		0.001			0.881	0.194	2.00	10.00	5	6.93	1.34
J3	1.94	1.944							0.900	1.750	9.00	10.00	5	6.93	12.12
K1	0.71	0.359		0.346					0.851	0.600	6.00	10.00	5	6.93	4.16
K2	0.57	0.174		0.393					0.831	0.471	6.00	10.00	5	6.93	3.26
K3	0.59	0.402	0.184						0.884	0.518	7.00	10.00	5	6.93	3.59
K4	0.72	0.412		0.305					0.857	0.614	8.00	10.00	5	6.93	4.26
K5	0.54	0.441		0.097					0.882	0.475	6.00	10.00	5	6.93	3.29
K7	0.24	0.189	0.055						0.889	0.217	3.00	10.00	5	6.93	1.50
L1	31.35			31.346					0.800	25.077	20.00	20.00	5	4.96	124.35
L2	0.76	0.425		0.334					0.856	0.650	5.00	10.00	5	6.93	4.50
L3	1.23			1.229					0.800	0.983	7.00	10.00	5	6.93	6.81
L4	0.39	0.363		0.022					0.894	0.344	4.00	10.00	5	6.93	2.38
L5	0.38			0.381					0.800	0.305	8.00	10.00	5	6.93	2.11
L6A	0.13			0.128					0.800	0.102	1.00	10.00	5	6.93	0.71
L6B	0.43	0.385		0.038		0.008			0.888	0.383	4.00	10.00	5	6.93	2.65
L7	1.16	1.155							0.900	1.040	8.00	10.00	5	6.93	7.20
M1	1.02	0.082	0.687		0.248				0.832	0.846	7.00	10.00	5	6.93	5.86
M2	0.47	0.168	0.301						0.868	0.406	3.00	10.00	5	6.93	2.82
M3	0.50	0.216	0.098		0.183				0.839	0.417	7.00	10.00	5	6.93	2.89
M4	0.35	0.263	0.037		0.048				0.875	0.305	3.00	10.00	5	6.93	2.11
M5	0.42	0.224			0.193				0.835	0.348	4.00	10.00	5	6.93	2.41
M6	0.41	0.212			0.202				0.832	0.344	4.00	10.00	5	6.93	2.38
M7	0.51	0.396			0.086			0.026	0.843	0.428	5.00	10.00	5	6.93	2.97
M8	0.22	0.192						0.023	0.829	0.178	2.00	10.00	5	6.93	1.24
N1	0.31				0.305				0.760	0.232	3.00	10.00	5	6.93	1.61
N2	4.12	0.489			3.632				0.777	3.202	10.00	10.00	5	6.93	22.17
O1	0.36	0.162				0.194			0.791	0.282	3.00	10.00	5	6.93	1.95
O2	0.39					0.391			0.700	0.274	3.00	10.00	5	6.93	1.90
O3	0.39	0.300	0.054			0.039			0.873	0.343	3.00	10.00	5	6.93	2.38
O4	4.66			4.633		0.030			0.799	3.726	12.00	12.00	5	6.40	23.85
O5	0.58	0.322		0.262					0.855	0.499	10.00	10.00	5	6.93	3.46
O6A	0.01	0.005		0.007					0.842	0.010	1.00	10.00	5	6.93	0.07
O6B	1.10	0.364		0.733					0.833	0.914	7.00	10.00	5	6.93	6.33
O7	15.16			15.157					0.800	12.126	15.00	15.00	5	5.76	69.83
O8	0.34	0.200	0.136						0.880	0.296	3.00	10.00	5	6.93	2.05
O9	0.80	0.190		0.607					0.824	0.657	3.00	10.00	5	6.93	4.55
O10	0.59	0.291		0.297					0.849	0.499	7.00	10.00	5	6.93	3.46
O11	0.40	0.148		0.257					0.837	0.338	5.00	10.00	5	6.93	2.34
O12	0.71	0.159	0.554						0.861	0.614	3.00	10.00	5	6.93	4.25
P1	0.31	0.276						0.033	0.830	0.257	3.00	10.00	5	6.93	1.78
P2	0.73	0.617	0.018					0.091	0.817	0.593	5.00	10.00	5	6.93	4.11
Q1	0.31	0.273				0.037			0.876	0.272	3.00	10.00	5	6.93	1.88
Q2	0.73	0.617				0.109			0.870	0.632	6.00	10.00	5	6.93	4.37
R1	0.20	0.174						0.022	0.827	0.162	2.00	10.00	5	6.93	1.13
R2	0.49	0.158				0.329	0.005		0.763	0.375	6.00	10.00	5	6.93	2.60
R3	4.06					3.006	1.054		0.661	2.684	11.00	11.00	5	6.65	17.85
S1	1.10	1.095							0.900	0.986	8.00	10.00	5	6.93	6.82

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 2 OF 13

DIST. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	389
CONT.	SECT.	JOB	
0451	01	032. ETC	

RUNOFF COMPUTATIONS

DRAINAGE AREA																
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I_a (in/hr)	Q_a (cfs)
AA2	0.48	0.246		0.236					0.851	0.410	7.00	10.00	5	6.93	2.84
AA3	0.69	0.202		0.484		0.001	0.001		0.829	0.570	7.00	10.00	5	6.93	3.95
AA4	0.44	0.125		0.318					0.828	0.366	6.50	10.00	5	6.93	2.53
AA5	0.36	0.162		0.190			0.003		0.844	0.300	7.00	10.00	5	6.93	2.08
AA6	0.44	0.170		0.268			0.005		0.835	0.370	7.00	10.00	5	6.93	2.56
AA7	0.86	0.267		0.464		0.130	0.001		0.816	0.703	15.20	15.20	5	5.72	4.02
AA8	0.26	0.043				0.211	0.001		0.734	0.187	8.00	10.00	5	6.93	1.30
AA9	0.38	0.058				0.321	0.004		0.729	0.277	10.60	10.60	5	6.76	1.87
BB1	1.49	0.118					1.372		0.578	0.861	12.00	12.00	5	6.40	5.51
BB2	0.13	0.062					0.066		0.720	0.092	1.00	10.00	5	6.93	0.64
CC1	0.56	0.286		0.271					0.851	0.474	10.80	10.80	5	6.70	3.18
CC2	0.44	0.347		0.087					0.880	0.383	10.00	10.00	5	6.93	2.65
CC3	0.29	0.247		0.018		0.024			0.878	0.253	10.00	10.00	5	6.93	1.75
CC4	0.57	0.162				0.245	0.160		0.715	0.405	10.65	10.65	5	6.75	2.74
CC5	0.37	0.200				0.165	0.001		0.809	0.296	8.00	10.00	5	6.93	2.05
DD1	0.52	0.292		0.224					0.857	0.443	5.00	10.00	5	6.93	3.07
DD2	0.34	0.150		0.188					0.844	0.284	8.00	10.00	5	6.93	1.97
DD3	0.46	0.271		0.188					0.859	0.393	6.00	10.00	5	6.93	2.73
DD4	0.48	0.321		0.040		0.118			0.842	0.403	8.00	10.00	5	6.93	2.79
DD5	0.23	0.227				0.005			0.896	0.208	3.00	10.00	5	6.93	1.44
EE1	0.42	0.213		0.203					0.851	0.354	4.00	10.00	5	6.93	2.45
EE2	0.62	0.235		0.382					0.838	0.517	4.00	10.00	5	6.93	3.58
EE3	0.82	0.142		0.676					0.817	0.668	6.00	10.00	5	6.93	4.63
EE4	0.55	0.001		0.416		0.133			0.776	0.427	8.00	10.00	5	6.93	2.96
EE5	0.77	0.339		0.352		0.080			0.834	0.643	8.00	10.00	5	6.93	4.45
EE6	0.28	0.276		0.003		0.001			0.898	0.251	5.00	10.00	5	6.93	1.74
FF1	0.90	0.364				0.536			0.781	0.703	10.00	10.00	5	6.93	4.87
FF2	3.17	0.469				2.700			0.730	2.313	16.00	16.00	5	5.58	12.89
FF3	0.22	0.189				0.031			0.872	0.191	5.00	10.00	5	6.93	1.33
FF4	0.38	0.258				0.126			0.834	0.320	8.00	10.00	5	6.93	2.22
GG1	0.41	0.179		0.227					0.844	0.343	6.00	10.00	5	6.93	2.38
GG2	0.77	0.045		0.721					0.806	0.617	9.00	10.00	5	6.93	4.28
GG3	0.68	0.327		0.348					0.848	0.572	9.00	10.00	5	6.93	3.97
GG4	0.69	0.432		0.254					0.863	0.592	9.00	10.00	5	6.93	4.10
HH1	0.29	0.286							0.900	0.257	5.00	10.00	5	6.93	1.78
HH2	0.20	0.196							0.900	0.176	3.00	10.00	5	6.93	1.22
HH3	0.14	0.139							0.900	0.125	5.00	10.00	5	6.93	0.86
JJ1	0.82			0.819					0.800	0.655	10.80	10.80	5	6.70	4.40
JJ1A	0.55			0.548					0.800	0.438	7.00	10.00	5	6.93	3.04
JJ1B	0.20	0.196							0.900	0.176	5.00	10.00	5	6.93	1.22
JJ2A	1.04			1.038					0.800	0.830	7.00	10.00	5	6.93	5.75
JJ2B	0.25	0.148		0.106					0.858	0.218	5.00	10.00	5	6.93	1.51
JJ2C	0.82	0.001		0.819					0.800	0.655	4.00	10.00	5	6.93	4.54
JJ3	0.03	0.032							0.900	0.029	1.00	10.00	5	6.93	0.20
JJ4	0.12	0.116							0.900	0.104	3.00	10.00	5	6.93	0.72
JJ5	0.08	0.076							0.900	0.068	2.00	10.00	5	6.93	0.47
KK1	0.11	0.106							0.900	0.095	4.00	10.00	5	6.93	0.66
KK2	0.22	0.220				0.004			0.897	0.201	7.00	10.00	5	6.93	1.39
KK3	0.33	0.188			0.139				0.840	0.275	4.00	10.00	5	6.93	1.91
LL1	0.26	0.139			0.119				0.835	0.215	5.00	10.00	5	6.93	1.49
LL1A	0.51				0.508				0.760	0.386	5.00	10.00	5	6.93	2.67
LL2A	0.03	0.034							0.900	0.031	1.00	10.00	5	6.93	0.21
LL2B	0.04	0.038							0.900	0.034	1.00	10.00	5	6.93	0.24
LL2C	0.04	0.039							0.899	0.035	1.00	10.00	5	6.93	0.24
LL3	0.04	0.039							0.900	0.035	1.00	10.00	5	6.93	0.24
LL4	0.60	0.158			0.437				0.797	0.474	10.00	10.00	5	6.93	3.28
LL5	0.89			0.885					0.800	0.708	11.00	11.00	5	6.65	4.71

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 3 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	390
CONT.	SECT.	JOB	
0451	01	032, ETC	

RUNOFF COMPUTATIONS

DRAINAGE AREA																
AREA ID	TOTAL AREA (acre)	PAVEMENT C = 0.90	INDUSTRIAL C = 0.85	BUSINESS C = 0.80	APARTMENT C = 0.76	SM BUS/ROW C = 0.7	RESIDENTIAL C = 0.55	CEM/PARK C = 0.25	Composite C	Composite CA	To CAL (min)	To USED (min)	DES FREQ (yr)	I_a (in/hr)	Q_a (cfs)
MM1	0.04	0.038							0.897	0.034	6.00	10.00	5	6.93	0.24
MM1A	0.56				0.556				0.760	0.423	6.00	10.00	5	6.93	2.93
MM2	0.06	0.061							0.899	0.055	6.00	10.00	5	6.93	0.38
MM3A	0.08	0.083							0.900	0.075	1.00	10.00	5	6.93	0.52
MM3B	0.66	0.103			0.556	0.001			0.782	0.516	12.80	12.80	5	6.21	3.20
MM4	0.04	0.036							0.900	0.032	1.00	10.00	5	6.93	0.22
MM4A	0.68	0.034				0.646			0.710	0.483	8.00	10.00	5	6.93	3.34
MM5	0.04	0.044							0.900	0.040	1.00	10.00	5	6.93	0.27
MM6	0.05	0.051							0.900	0.046	2.00	10.00	5	6.93	0.32
MM7	0.27	0.082				0.186			0.761	0.204	10.00	10.00	5	6.93	1.41
MM8	0.49	0.085				0.401			0.735	0.357	10.60	10.60	5	6.76	2.41
MM9	0.42	0.126				0.297			0.760	0.321	9.00	10.00	5	6.93	2.22
MM10	0.91	0.117				0.791			0.726	0.659	12.60	12.60	5	6.26	4.13
MM11	0.07	0.058				0.009			0.873	0.058	3.00	10.00	5	6.93	0.40
MM12	0.28	0.173				0.104			0.825	0.229	7.00	10.00	5	6.93	1.58
MM13	0.94	0.141				0.796			0.730	0.683	16.80	16.80	5	5.44	3.72
MM14	0.88	0.066				0.811			0.715	0.626	16.80	16.80	5	5.44	3.41
MM15	0.75	0.019				0.734			0.705	0.531	13.20	13.20	5	6.12	3.25
MM16	1.00	0.100				0.902			0.720	0.721	11.40	11.40	5	6.55	4.73
MM16A	0.35	0.110				0.243			0.762	0.269	2.00	10.00	5	6.93	1.86
MM16B	0.27	0.152				0.119			0.812	0.220	2.00	10.00	5	6.93	1.52
MM17	0.42	0.127				0.293			0.760	0.319	2.00	10.00	5	6.93	2.21
MM18	1.51						1.510		0.550	0.831	13.80	13.80	5	6.00	4.98
MM19	0.35	0.004		0.350					0.801	0.284	5.00	10.00	5	6.93	1.97
MM20	1.68	0.079		1.597					0.805	1.349	12.00	12.00	5	6.40	8.63
MM21	1.68	0.079		1.597					0.805	1.349	1.00	10.00	5	6.93	9.34
MM23	0.35	0.004		0.350					0.801	0.284	1.00	10.00	5	6.93	1.97
NN1	0.10	0.096							0.900	0.086	2.00	10.00	5	6.93	0.60
NN2	0.25	0.247				0.004			0.897	0.225	6.00	10.00	5	6.93	1.56
NN3	0.20	0.201				0.004			0.896	0.183	4.00	10.00	5	6.93	1.27
NN4	0.33	0.302				0.025			0.885	0.289	6.00	10.00	5	6.93	2.00
NN5	0.20	0.191				0.004			0.896	0.175	5.00	10.00	5	6.93	1.21
NN6	0.43	0.066		0.364					0.815	0.350	5.00	10.00	5	6.93	2.43
NN7	0.21	0.195		0.011					0.895	0.184	4.00	10.00	5	6.93	1.27
NN8	0.54	0.023		0.514					0.804	0.432	7.00	10.00	5	6.93	2.99
NN9	0.19	0.183		0.006					0.897	0.170	5.00	10.00	5	6.93	1.18
NN10	0.19	0.179		0.015					0.892	0.173	4.00	10.00	5	6.93	1.20
NN11	0.10	0.274				0.010			0.880	0.090	4.00	10.00	5	6.93	0.62
NN12	0.12	0.101		0.020					0.883	0.108	5.00	10.00	5	6.93	0.75
NN13	0.37	0.317		0.053					0.886	0.327	5.00	10.00	5	6.93	2.27
PP1	0.12	0.104				0.018			0.870	0.105	3.00	10.00	5	6.93	0.73
PP2	0.06	0.049				0.015			0.853	0.055	3.00	10.00	5	6.93	0.38
PP3	0.12	0.115				0.002			0.897	0.104	5.00	10.00	5	6.93	0.72
PP4	0.17	0.168				0.001			0.898	0.152	5.00	10.00	5	6.93	1.05
PP5	0.39	0.253		0.013		0.124			0.833	0.325	5.00	10.00	5	6.93	2.25
PP6	0.26	0.224		0.032					0.887	0.227	7.00	10.00	5	6.93	1.57
PP7	0.24	0.214		0.030					0.888	0.216	5.00	10.00	5	6.93	1.50
QQ1	0.53	0.448				0.078			0.870	0.458	3.00	10.00	5	6.93	3.17

Parsons Brinckerhoff Quade & Douglas, Inc.
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SH 205

HYDRAULIC COMPUTATION SHEET

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	391
CONT.	SECT.	JOB	
0451	01	032, ETC	

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet In Sag				Drop Inlet										
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longl Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longl Slope Left (sag) (%)	Longl Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-A1	A1	35.40' RT SH205CL STA 9+80.00	0.25	0.25	3.0	2.00	15	20.0	2.50	10.81	0.22	17.21										1.00	0.22	4.94	4.82	0.12	CI-A2	0.015
CI-A2	A2	42.00' RT SH205CL STA 15+50.00	0.25	0.25	3.0	2.00	15	12.0	2.06	11.55	0.23	17.72										0.50	0.23	5.35	5.17	0.18	CI-A4	0.015
DI-A3	A3	62.50' RT SH205CL STA 16+00.00															3	7.67	2	11.19	15.92	1.10	1.09	27.75	28.35			
CI-A4	A4	42.00' RT SH205CL STA 18+30.00	0.25	0.25	3.0	2.00	10	12.5	0.35	11.95	0.24	7.66										0.50	0.24	2.42	2.42			0.015
CI-A6	A6	42.00' RT SH205CL STA 20+09.00	0.25	0.25	3.0	2.00	10	12.0	0.35	9.10	0.18	4.50										0.50	0.18	1.17	1.17			0.015
DI-A7	A7	66.00' RT SH205CL STA 20+09.00															1	3.00	2	4.62	8.58	0.50	0.19	1.06	4.68			
CI-A8	A8	42.00' RT SH205CL STA 24+30.00	0.25	0.25	3.0	2.00	10	12.0	0.25	11.72	0.23	6.16										0.50	0.23	1.92	1.92			0.015
CI-B1	B1	42.00' LT SH205CL STA 15+45.00	0.25	0.25	3.0	2.00	15	12.0	2.09	10.27	0.21	14.22										0.50	0.21	3.94	3.94			0.015
CI-B2	B2	42.00' LT SH205CL STA 18+50.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.30	0.23	6.89										0.50	0.23	2.08	2.08			0.015
CI-B3	B3	42.00' LT SH205CL STA 21+50.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.07	0.22	6.62										0.50	0.22	1.97	1.97			0.015
CI-B4	B4	42.00' LT SH205CL STA 24+30.00	0.25	0.25	3.0	2.00	10	12.5	0.25	11.86	0.24	6.29										0.50	0.24	1.98	1.98			0.015
CI-C1	C1	42.00' RT SH205CL STA 25+80.00	0.25	0.25	3.0	2.00	10	12.0	0.28	9.97	0.20	4.81										0.50	0.20	1.33	1.33			0.015
CI-C2	C2	42.00' RT SH205CL STA 27+80.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.21	0.22	6.78										0.50	0.22	2.04	2.04			0.015
CI-C3	C3	42.00' RT SH205CL STA 30+70.00	0.25	0.25	3.0	2.00	10	12.0	0.35	9.51	0.19	4.91										0.50	0.19	1.31	1.31			0.015
CI-C4	C4	42.00' RT SH205CL STA 32+60.00	0.25	0.25	3.0	2.00	10	12.0	1.41	8.32	0.17	7.65										0.50	0.17	1.85	1.85			0.015
CI-C5	C5	42.00' RT SH205CL STA 35+30.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.68	0.15	9.54										0.50	0.15	2.17	2.17			0.015
CI-C6	C6	42.00' RT SH205CL STA 38+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	8.15	0.16	10.77										0.50	0.16	2.54	2.52	0.02	CI-C5	0.015
CI-C7	C7	42.00' RT SH205CL STA 40+28.00	0.25	0.25	3.0	2.00	5	12.0	2.04	4.21	0.08	2.14										0.50	0.08	0.36	0.36			0.015
CI-C8	C8	53.00' RT SH205CL STA 43+27.00	0.25	0.25	3.0	2.00	10	12.0	0.55	7.64	0.15	3.95										0.50	0.15	0.91	0.91			0.015
CI-D1	D1	42.00' LT SH205CL STA 25+92.00	0.25	0.25	3.0	2.00	5	12.0	0.32	5.77	0.12	1.67										0.50	0.12	0.33	0.33			0.015
CI-D2	D2	42.00' LT SH205CL STA 27+08.00	0.25	0.25	3.0	2.00	5	12.0	0.35	7.20	0.14	2.79										0.50	0.14	0.62	0.62			0.015
CI-D3	D3	42.00' LT SH205CL STA 29+02.00	0.25	0.25	3.0	2.00	5	12.0	0.35	8.97	0.18	4.37										0.50	0.18	1.12	1.12			0.015
CI-D4	D4	33.50' RT RALPH STA 14+55.00	0.25	0.33	3.0	2.00	15	14.0					0.30	0.30	13.91	10.13						0.50	0.22	4.80	16.59			0.015
DI-D5	D5	39.00' LT RALPH STA 14+80.82															3	7.50	2	10.07	14.42	0.88	0.81	16.33	18.37			
EX-CI-D6	D6	33.80' LT RALPH STA 14+55.00	0.25	0.33	3.0	2.00	15	15.0					0.30	0.30	14.58	14.58						0.50	0.30	7.62	16.59			0.015
EX-DI-D7	D7	57.19' LT RALPH STA 12+58.89															1	0.00	0	16.00	16.00	1.00	0.83	18.80	24.70			
CI-D8	D8	52.00' LT SH205CL STA 32+10.00	0.25	0.25	3.0	2.00	15	12.0	1.08	11.78	0.24	13.24										0.50	0.24	4.09	4.09			0.015
CI-D9	D9	52.00' LT SH205CL STA 34+25.00	0.25	0.25	3.0	2.00	15	12.0	2.50	11.47	0.23	19.33										0.50	0.23	5.80	5.41	0.39	CI-D8	0.015
CI-D10	D10	42.00' LT SH205CL STA 36+60.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.93	0.16	10.18										0.50	0.16	2.37	2.36	0.00	CI-D9	0.015
CI-D12	D12	42.00' LT SH205CL STA 40+00.00	0.25	0.25	3.0	2.00	15	12.0	2.18	10.54	0.21	15.28										0.50	0.21	4.31	4.31	0.00	CI-D10	0.015
CI-D13	D13	53.00' LT SH205CL STA 42+25.00	0.25	0.25	3.0	2.00	15	12.0	1.06	10.90	0.22	11.26										0.50	0.22	3.28	3.28			0.015
CI-F1	F1	59.00' RT SH205CL STA 47+96.00	0.25	0.25	3.0	2.00	10	12.0	0.50	9.82	0.20	6.28										0.50	0.20	1.71	1.71			0.015
CI-F2	F2	56.00' RT SH205CL STA 46+30.00	0.25	0.25	3.0	2.00	5	12.0	0.50	9.93	0.20	6.42										0.50	0.20	1.76	1.65	0.12	CI-F1	0.015
CI-F3	F3	92.05' LT SH205CL STA 50+00.00	0.25	0.33	3.0	1.95	15	14.0					0.25	0.25	11.15	12.98						0.50	0.20	4.07	16.59			0.015
CI-F4	F4	48.50' LT SH205CL STA 50+17.00	0.25	0.33	3.0	2.00	15	12.0					0.25	0.25	6.56	6.56						0.50	0.07	0.82	16.59			0.015
CI-F5	F5	62.30' LT SH205CL STA 51+96.50	0.25	0.25	3.0	2.00	15	12.0	1.00	9.90	0.20	9.08										0.50	0.20	2.47	2.47			0.015
CI-F6	F6	57.15' LT SH205CL STA 52+60.00	0.25	0.25	3.0	2.00	15	12.0	1.00	10.95	0.22	11.07										0.50	0.22	3.24	3.24			0.015
CI-F7	F7	55.90' LT SH205CL STA 53+33.00	0.25	0.25	3.0	2.00	10	12.0	1.00	10.52	0.21	10.24										0.50	0.21	2.91	2.91	0.00	CI-F6	0.015
CI-F8	F8	54.57' LT SH205CL STA 54+10.00	0.25	0.25	3.0	2.00	15	12.0	1.00	11.29	0.23	11.75										0.50	0.23	3.52	3.52			0.015
CI-F9	F9	44.80' LT SH205CL STA 55+71.00	0.25	0.25	3.0	2.00	10	12.0	1.00	9.62	0.19	8.59										0.50	0.19	2.29	2.29			0.015
CI-F10	F10	72.20' LT SH205CL STA 56+16.40	0.25	0.25	3.0	2.00	15	15.0	1.00	14.30	0.29	18.31										0.50	0.29	6.60	6.30	0.30	CI-F9	0.015
CI-F12	F12	42.00' LT SH205CL STA 56+70.00	0.25	0.25	3.0	2.00	10	12.0	1.00	8.74	0.18	7.09										0.50	0.18	1.77	1.77			0.015
EX-CI-F13	F13	72.80' LT SH205CL STA 56+71.90	0.25	0.33	3.0	2.00	5	40.0					2.00	2.00	9.73	9.73						0.70	0.56	6.68	6.54			0.015
CI-F14	F14	42.00' LT SH205CL STA 57+77.00	0.25	0.25	3.0	2.00	10	12.0	1.30	11.99	0.24	15.06										0.50	0.24	4.70	4.04	0.66	CI-F12	0.015
CI-F15	F15	90.50' LT SH205CL STA 58+05.00	0.25	0.25	3.0	2.00	5	12.0	1.50	9.59	0.19	10.49										0.50	0.19	2.78	1.91	0.87	EX-CI-F1	0.015
CI-F16	F16	70.30' LT SH205CL STA 58+72.00	0.25	0.25	3.0	2.60	15	12.0	2.53	10.81	0.28	22.58										0.50	0.28	7.72	6.64	1.08	CI-F14	0.015
CI-F17	F17	42.00' LT SH205CL STA 58+95.00	0.25	0.25	3.0	2.00	15	12.0	2.13	11.21	0.22	17.01										0.50	0.22	5.02	4.92	0.11	CI-F14	0.015
CI-F18	F18	70.30' LT SH205CL STA 61+25.00	0.25	0.25	3.0	2.27	15	20.0	1.01	12.37	0.28	15.89										0.50	0.28	5.57	5.54	0.03	CI-F17	0.015
CI-F19	F19	42.00' LT SH205CL STA 61+50.00	0.25	0.25	3.0	2.00	15	12.0	2.40	9.38	0.19	12.77										0.50	0.19	3.32	3.32			0.015
CI-F20	F20	42.00' LT SH205CL STA 63+47.80	0.25	0.25	3.0	2.00	10	12.0	2.40	10.98	0.22	17.40										0.50	0.22	5.06	3.97	1.09	CI-F19	0.015
CI-F21	F21	42.00' LT SH205CL STA 64+17.00	0.25	0.25	3.0	2.00	15	12.0	2.40	10.74	0.22	16.66										0.50	0.22	4.76	4.69	0.08	CI-F20	0.015
CI-F22	F22	22.00' LT YELLOW STA 15+10.00	0.25	0.33	3.0	2.00	15	20.0	0.78	16.46	0.33	20.73										0.50	0.33	8.45	7.62	0.83	CI-F21	0.015
CI-F23	F23	42.00' LT SH205CL STA 65+60.00	0.25	0.25	3.0	2.00	15	12.0	1.55	11.77	0.24	15.87										0.50	0.24	4.88	4.85	0.03	CI-F21	0.015
CI-FJ	FJ	25.00' RT FREB STA 22+15.00	0.25	0.25	3.0	1.43	15	12.0					0.30	0.30	10.85	12.62						0.50	0.14	2.46	16.59			0.015

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

TRENCH DRAIN

			Trench Drain									Trench Drain Grate		
AREA ID	OUTLET ID	LOCATION	Trench Length FT	Trench Width FT	Trench Depth FT	Trench Radius FT	Manning n	Gutter Slope %	Trench Slope %	Trench Capacit CFS	5yr-Des Dischar CFS	5yr-Des Dischar per FT CFS/LF	Min GRT Opening per FT SF/LF	Sheet Flow Cap CFS/LF
TD-MM1A			164	0.33	1	0.17	0.010	0.97%	0.97%		3.34	0.02	0.10	0.09
	TD OUTFALL	49.50'LT SH205CL STA 109+67.40	55.77	0.33	1	0.17	0.010	0.97%	0.97%	1.31	1.14			
	TDO-A	49.50'LT SH205CL STA 110+23.17	55.78	0.33	1	0.17	0.010	0.97%	0.97%	1.31	1.14			
	TDO-B	49.50'LT SH205CL STA 110+78.95	52.45	0.33	1	0.17	0.010	0.97%	0.97%	1.31	1.07			
TD-MM1A			145	0.33	1	0.17	0.010		0.60%		2.93	0.02	0.10	0.09
	TDO-C	49.50'LT SH205CL STA 112+03.73	48.33	0.33	1	0.17	0.010		0.60%	1.03	0.98			
	TDO-D	49.50'LT SH205CL STA 112+52.06	48.08	0.33	1	0.17	0.010		0.60%	1.03	0.97			
	TDO-E	49.50'LT SH205CL STA 113+48.21	48.07	0.33	1	0.17	0.010		0.60%	1.03	0.97			
TD-LL1A			190	0.33	1	0.17	0.010	0.35%	0.60%		2.67	0.01	0.10	0.09
	TDO-F	49.50'LT SH205CL STA 114+51.25	55.77	0.33	1	0.17	0.010	0.35%	0.60%	1.03	0.78			
	TDO-G	49.50'LT SH205CL STA 115+07.02	55.77	0.33	1	0.17	0.010	0.35%	0.60%	1.03	0.78			
	TDO-H	49.50'LT SH205CL STA 115+62.79	55.77	0.33	1	0.17	0.010	0.35%	0.60%	1.03	0.78			

STATE OF TEXAS
K. DAVID GAN
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5/9/2006

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 5 OF 13

DIST. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	392
CONT.	SECT.	JOB	
0451	01	032, ETC	

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet In Sag				Drop Inlet											
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longl Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longl Slope Left (sag) (%)	Longl Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-G1	G1	29.90' RT FREB STA 18+90.00	0.25	0.33	3.0	0.87	15	14.0					0.40	0.40	14.07	14.07						0.50	0.12	1.99	16.59			0.015
CI-G2	G2	25.00' RT FREB STA 18+15.00	0.25	0.25	3.0	1.20	10	12.0	2.50	11.47	0.14	11.01										0.50	0.14	2.48	2.44	0.03	CI-G1	0.015
CI-G3	G3	25.00' RT FREB STA 16+94.00	0.25	0.25	3.0	2.00	10	12.0	2.50	9.38	0.19	13.02										0.50	0.19	3.38	3.14	0.24	CI-G2	0.015
CI-G4	G4	58.95' LT SH205CL STA 46+95.00	0.25	0.25	3.0	2.00	10	12.0	0.50	11.72	0.23	8.85										0.50	0.23	2.74	2.74			0.015
CI-G5	G5	56.30' LT SH205CL STA 46+45.00	0.25	0.25	3.0	2.00	10	12.0	0.50	11.99	0.24	9.25										0.50	0.24	2.92	2.92			0.015
CI-G6	G6	54.40' LT SH205CL STA 45+45.00	0.25	0.25	3.0	2.00	10	12.0	0.50	9.33	0.19	5.67										0.50	0.19	1.49	1.49			0.015
CI-H1	H1	92.20' RT SH205CL STA 50+18.00	0.25	0.33	3.0	2.00	15	12.0					0.25	0.25	10.95	11.46						0.25	0.18	3.44	5.87			0.015
CI-H2	H2	48.50' RT SH205CL STA 50+17.00	0.25	0.33	3.0	2.00	15	12.0					0.25	0.25	6.98	6.28						0.25	0.07	0.85	5.87			0.015
CI-I1	I1	13.00' RT FRWB STA 20+45.00	0.25	0.33	3.0	1.00	15	13.0					0.35	0.35	12.60	12.60						0.50	0.11	1.75	16.59			0.015
CI-I2	I2	13.00' LT FRWB STA 19+55.00	0.25	0.25	3.0	1.03	10	12.0	2.06	11.55	0.12	8.59										0.50	0.12	1.82	1.82			0.015
CI-I4	I4	13.00' LT FRWB STA 18+80.00	0.25	0.25	3.0	2.00	15	12.0	3.00	9.36	0.19	14.25										0.50	0.19	3.69	3.69			0.015
CI-I5	I5	13.00' LT FRWB STA 18+05.00	0.25	0.25	3.0	2.00	5	12.0	3.00	8.00	0.16	10.38										0.50	0.16	2.43	1.68	0.74	CI-I4	0.015
CI-I6	I6	13.00' LT FRWB STA 17+25.00	0.25	0.25	3.0	2.00	15	12.0	3.00	11.65	0.23	21.83										0.50	0.23	6.61	5.80	0.82	CI-I5	0.015
CI-I7	I7	13.00' LT FRWB STA 16+40.00	0.25	0.25	3.0	2.00	5	12.0	2.17	4.95	0.10	3.16										0.50	0.10	0.57	0.57			0.015
CI-I8	I8	13.00' LT FRWB STA 15+83.00	0.25	0.25	3.0	2.00	10	12.0	1.41	7.10	0.14	5.51										0.50	0.14	1.21	1.21			0.015
CI-J2	J2	25.00' RT FREB STA 22+95.00	0.25	0.25	3.0	2.00	5	12.0	0.67	8.48	0.17	5.45										0.50	0.17	1.34	1.33	0.02	CI-FJ	0.015
DI-J3	J3	19.90' LT FREB STA 27+00.00															3	7.67	2	11.19	15.92	0.70	0.62	12.12	8.69			
CI-K1	K1	24.45' LT FRWB STA 22+80.00	0.25	0.25	3.0	2.00	15	12.0					0.30	0.30	11.62	11.62						0.50	0.20	4.16	16.59			0.015
CI-K2	K2	45.80' RT SH205CL STA 53+40.00	0.25	0.25	3.0	2.00	15	12.0	1.00	11.15	0.22	11.46										0.50	0.22	3.40	3.40			0.015
CI-K3	K3	43.00' RT SH205CL STA 55+00.00	0.25	0.25	3.0	2.00	10	12.0	1.00	11.38	0.23	11.92										0.50	0.23	3.59	3.45	0.13	CI-K2	0.015
CI-K4	K4	42.00' RT SH205CL STA 58+87.00	0.25	0.25	3.0	2.00	15	12.0	2.07	10.59	0.21	15.03										0.50	0.21	4.26	4.26			0.015
CI-K5	K5	42.00' RT SH205CL STA 62+30.00	0.25	0.25	3.0	2.00	15	12.0	2.40	9.35	0.19	12.68										0.50	0.19	3.29	3.29			0.015
CI-K7	K7	42.00' RT SH205CL STA 65+85.00	0.25	0.25	3.0	2.00	10	12.0	1.39	7.72	0.15	6.51										0.50	0.15	1.50	1.50			0.015
CI-L2	L2	13.00' LT FRWB STA 23+68.00	0.25	0.25	3.0	2.00	15	12.0	1.52	11.45	0.23	14.94										0.50	0.23	4.50	4.50			0.015
EX-DI-L3	L3	34.30' LT FRWB STA 25+22.30															1	3.00	2	4.62	8.58	0.70	0.64	6.81	4.68			
CI-L4	L4	13.00' LT FRWB STA 26+10.00	0.25	0.25	3.0	2.00	10	12.0	2.00	8.59	0.17	9.75										0.50	0.17	2.39	2.39			0.015
DI-L5	L5	35.00' LT FRWB STA 26+15.00															3	7.50	2	10.07	14.42	0.50	0.17	1.51	7.87			
DI-L6A	L6A	32.00' LT FRWB STA 28+10.00															3	7.50	2	10.07	14.42	0.50	0.10	0.71	7.87			
CI-L6B	L6B	13.00' LT FRWB STA 28+48.00	0.25	0.25	3.0	2.00	10	12.0	2.00	8.92	0.18	10.52										0.50	0.18	2.65	2.64	0.01	CI-L4	0.015
DI-L7	L7	23.00' RT IH30CL STA 27+02.00															3	7.67	2	11.19	15.92	0.50	0.44	7.20	8.69			
EX-GI-S1	S1	0.50' LT IH30CL STA 32+18.78	0.25	0.25	3.0	3.78	10	12.0	1.06	9.61	0.36	16.66										0.50	0.36	6.82	5.51	1.31	0	0.015
DI-M1	M1	56.00' LT SH205CL STA 69+77.00															3	7.50	2	10.07	14.42	0.50	0.41	5.86	7.87			
CI-M2	M2	42.00' LT SH205CL STA 69+77.00	0.25	0.25	3.0	2.00	10	12.0	1.10	10.22	0.20	10.14										0.50	0.20	2.82	2.82	0.00	CI-M4	0.015
CI-M3	M3	63.00' LT SH205CL STA 71+01.00	0.25	0.25	3.0	1.88	5	12.0	1.88	9.69	0.18	11.24										0.50	0.18	2.89	1.89	1.00	CI-M4	0.015
CI-M4	M4	42.00' LT SH205CL STA 72+15.00	0.25	0.25	3.0	2.00	10	12.0	2.60	9.02	0.18	12.30										0.50	0.18	3.11	2.96	0.15	CI-M5	0.015
CI-M5	M5	42.00' LT SH205CL STA 74+60.00	0.25	0.25	3.0	2.00	10	12.0	3.30	8.02	0.16	10.96										0.50	0.16	2.56	2.53	0.03	CI-M6	0.015
CI-M6	M6	42.00' LT SH205CL STA 77+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.99	0.16	10.34										0.50	0.16	2.41	2.41	0.01	CI-M7	0.015
CI-M7	M7	42.00' LT SH205CL STA 79+00.00	0.25	0.25	3.0	2.00	10	12.0	1.68	9.63	0.19	11.20										0.50	0.19	2.97	2.92	0.05	CI-M8	0.015
CI-M8	M8	42.00' LT SH205CL STA 80+70.00	0.25	0.25	3.0	2.00	5	12.0	0.55	8.67	0.17	5.15										0.50	0.17	1.29	1.29	0.00	CI-R1	0.015
CI-N1	N1	19.50' RT JUSTIN STA 14+50.00	0.25	0.25	3.0	0.45	10	20.0	1.65	19.45	0.09	8.48										0.50	0.09	1.61	1.61			0.015
DI-N2	N2	31.70' RT JUSTIN STA 13+64.00															3	7.50	2	10.07	14.42	1.00	1.00	22.17	22.26			
CI-O1	O1	42.00' RT SH205CL STA 80+70.00	0.25	0.25	3.0	2.00	10	12.0	0.55	10.13	0.20	7.02										0.50	0.20	1.95	1.95			0.015
DI-O2	O2	59.00' RT SH205CL STA 79+98.00															3	7.50	2	10.07	14.42	1.00	0.19	1.90	22.26			
CI-O3	O3	42.00' RT SH205CL STA 79+00.00	0.25	0.25	3.0	2.00	10	12.0	1.68	8.85	0.18	9.48										0.50	0.18	2.38	2.38			0.015
CI-O5	O5	28.60' LT JUSTIN STA 16+86.00	0.25	0.25	3.0	2.00	15	12.0	3.03	9.12	0.18	13.60										0.50	0.18	3.46	3.46			0.015
CI-O6A	O6A	28.40' RT JUSTIN STA 16+80.00	0.25	0.25	3.0	2.00	5	12.0	3.03	5.17	0.10	4.14										0.50	0.10	0.76	0.76			0.015
CI-O6B	O6B	28.40' RT JUSTIN STA 16+92.00	0.25	0.25	3.0	2.00	15	12.0	3.03	11.44	0.23	21.18										0.50	0.23	6.33	5.64	0.69	CI-O6A	0.015
CI-O8	O8	42.00' RT SH205CL STA 77+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.74	0.16	9.71										0.50	0.16	2.22	2.22			0.015
CI-O9	O9	42.00' RT SH205CL STA 75+35.00	0.25	0.25	3.0	2.00	15	12.0	3.30	10.22	0.20	17.78										0.50	0.20	4.89	4.71	0.17	CI-O8	0.015
CI-O10	O10	42.00' RT SH205CL STA 73+80.00	0.25	0.25	3.0	2.00	10	12.0	3.30	8.98	0.18	13.76										0.50	0.18	3.46	3.13	0.34	CI-O9	0.015
CI-O11	O11	42.00' RT SH205CL STA 71+30.00	0.25	0.25	3.0	2.00	10	12.0	2.07	8.47	0.17	9.63										0.50	0.17	2.34	2.34			0.015
CI-O12	O12	42.00' RT SH205CL STA 69+81.00	0.25	0.25	3.0	2.00	15	12.0	1.12	11.87	0.24	13.70										0.50	0.24	4.25	4.25			0.015
CI-P1	P1	42.00' LT SH205CL STA 82+35.00	0.25	0.25	3.0	2.00	10	12.0	0.54	9.82	0.20	6.54										0.50	0.20	1.78	1.78			0.015
CI-P2	P2	42.00' LT SH205CL STA 85+05.00	0.25	0.25	3.0	2.00	15	12.0	2.00	10.52	0.21	14.58										0.50	0.21	4.11	4.11			0.015
CI-Q1	Q1	42.00' RT SH205CL STA 82+35.00	0.25	0.25	3.0	2.00	10	12.0	0.54	10.03	0.20	6.82										0.50	0.20	1.88	1.88			0.015
CI-Q2	Q2	42.00' RT SH205CL STA 85+05.00	0.25	0.25	3.0	2.00	15	12.0	2.00	10.77	0.22	15.25										0.50	0.22	4.37	4.37	0.00	CI-Q1	0.015
CI-R1	R1	42.00' LT SH205CL STA 81+53.00	0.25	0.25	3.0	2.00	15	12.0					0.30	0.30	7.13	7.13						0.24	0.08	1.13	5.52			0.015
CI-R2	R2	42.00' RT SH205CL STA 81+53.00	0.25	0.25	3.0	2.00	15	12.0					0.30	0.30	8.05	11.06						0.24	0.15	2.60	5.52			0.015
DI-R3	R3	57.00' RT SH205CL STA 81+53.00															3	7.67	2	11.19	15.92	1.00	0.81	17.85	24.57			

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

DGN=GI:\JOBS\22451C-SH205\Drainage\22451odC06.dgn, ON=10-633
5/9/2006 Plotted 09-MAY-2006 12:56

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SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 6 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	393
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

K David Gan
5/9/2006

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet In Sag				Drop Inlet											
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longl Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longl Slope Left (sag) (%)	Longl Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Area (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Disoharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-NN13	NN13	42.00' LT SH205CL STA 95+00.00	0.25	0.25	3.0	2.00	10	12.0	3.00	7.80	0.16	9.85										0.24	0.16	2.27	2.27			0.015
CI-NN12	NN12	42.00' LT SH205CL STA 96+12.00	0.25	0.25	3.0	2.00	5	12.0	0.94	6.40	0.13	3.59										0.24	0.13	0.75	0.75			0.015
CI-NN11	NN11	42.00' RT SH205CL STA 96+48.00	0.25	0.25	3.0	2.00	10	12.0					0.90	0.90	10.13	11.79						0.24	0.07	0.62	4.17			0.15
CI-NN10	NN10	42.00' RT SH205CL STA 97+56.00	0.25	0.25	3.0	2.00	10	12.0	2.25	6.54	0.13	5.90										0.24	0.13	1.23	1.23			0.015
CI-NN9	NN9	42.00' RT SH205CL STA 99+25.00	0.25	0.25	3.0	2.00	5	12.0	2.25	6.44	0.13	5.70										0.24	0.13	1.18	1.15	0.03	CI-NN10	0.015
CI-NN8	NN8	65.00' RT SH205CL STA 100+96.56	0.25	0.25	3.0	2.19	10	12.0					3.85	4.85	4.27	6.87						0.24	0.19	2.99	4.17			0.015
CI-NN7	NN7	42.00' RT SH205CL STA 100+96.00	0.25	0.25	3.0	2.00	10	12.0	2.25	6.63	0.13	6.07										0.24	0.13	1.27	1.27			0.015
CI-NN6	NN6	68.00' RT SH205CL STA 102+27.26	0.25	0.25	3.0	4.65	10	12.0	1.00	5.80	0.27	8.12										0.30	0.27	2.43	2.43			0.015
CI-NN5	NN5	42.00' RT SH205CL STA 102+67.00	0.25	0.25	3.0	2.00	10	12.0	2.25	7.28	0.15	7.37										0.24	0.15	1.63	1.63			0.015
CI-NN4	NN4	42.00' RT SH205CL STA 104+55.00	0.25	0.25	3.0	2.00	5	12.0	2.25	7.86	0.16	8.64										0.24	0.16	2.00	1.58	0.42	CI-NN5	0.015
CI-NN3	NN3	42.00' RT SH205CL STA 107+58.00	0.25	0.25	3.0	2.00	5	12.0	0.45	9.02	0.18	5.04										0.50	0.18	1.30	1.30			0.015
CI-NN2	NN2	42.00' RT SH205CL STA 109+58.00	0.25	0.25	3.0	2.00	5	12.0	0.35	10.13	0.20	5.57										0.24	0.20	1.56	1.53	0.03	CI-NN3	0.015
CI-NN1	NN1	42.00' RT SH205CL STA 112+07.00	0.25	0.25	3.0	2.00	5	12.0	0.35	7.08	0.14	2.70										0.24	0.14	0.60	0.60			0.015
CI-QQ1	QQ1	42.00' RT SH205CL STA 95+95.00	0.25	0.25	3.0	2.00	15	12.0	1.38	10.23	0.21	11.43										0.24	0.21	3.17	3.17			0.015
CI-PP7	PP7	42.00' LT SH205CL STA 97+28.00	0.25	0.25	3.0	2.00	10	12.0	2.11	7.13	0.14	6.84										0.24	0.14	1.50	1.50			0.015
CI-PP6	PP6	42.00' LT SH205CL STA 99+35.00	0.25	0.25	3.0	2.00	15	12.0	2.25	7.18	0.14	7.17										0.24	0.14	1.57	1.57			0.015
CI-PP5	PP5	42.00' LT SH205CL STA 100+90.00	0.25	0.25	3.0	2.00	10	12.0	2.25	8.21	0.16	9.44										0.24	0.16	2.25	2.25			0.015
CI-PP4	PP4	42.00' LT SH205CL STA 101+72.00	0.25	0.25	3.0	2.00	10	12.0	2.25	6.18	0.12	5.23										0.24	0.12	1.05	1.05			0.015
CI-PP3	PP3	23.50' RT FM740 STA 18+58.39	0.25	0.25	3.0	4.55	5	12.0	3.45	2.96	0.14	4.08										0.24	0.14	0.72	0.72			0.015
CI-PP2	PP2	22.50' LT FM740 STA 18+98.00	0.25	0.25	3.0	0.90	5	12.0					0.35	0.35	9.64	3.20						0.24	0.06	0.38	2.81			0.015
CI-PP1	PP1	42.00' LT SH205CL STA 103+43.00	0.25	0.25	3.0	2.00	10	12.0					5.00	2.50	3.58	4.08						0.24	0.08	0.73	4.17			0.015
DI-MM18	MM18	46.50' LT FM740 STA 17+00.00															3	7.50	2	10.07	14.42	1.00	0.37	4.98	22.26			
CI-MM17	MM17	36.40' LT FM740 STA 17+85.00	0.25	0.25	3.0	2.00	15	12.0	2.35	8.09	0.16	9.38										0.24	0.16	2.21	2.21			0.015
CI-MM16B	MM16B	70.65' LT FM740 STA 18+18.20	0.25	0.25	3.0	2.00	10	12.0	1.00	8.26	0.17	6.32										0.24	0.17	1.52	1.52			0.015
CI-MM16A	MM16A	82.00' LT FM740 STA 18+43.00	0.25	0.25	3.0	2.00	10	12.0	1.00	8.91	0.18	7.37										0.24	0.18	1.86	1.86			0.015
CI-MM16	MM16	100.22' LT SH205CL STA 103+40.00	0.25	0.25	3.0	2.00	15	12.0					0.40	0.40	11.47	11.64						0.24	0.22	4.73	5.52			0.015
CI-MM15	MM15	87.50' LT SH205CL STA 103+72.00	0.25	0.25	3.0	2.00	15	12.0	1.75	9.88	0.20	12.04										0.24	0.20	3.25	3.25			0.015
CI-MM14	MM14	71.75' LT SH205CL STA 104+16.00	0.25	0.25	3.0	2.00	15	12.0	3.00	9.09	0.18	13.43										0.24	0.18	3.41	3.41			0.015
CI-MM13	MM13	55.92' LT SH205CL STA 104+67.00	0.25	0.25	3.0	2.00	15	12.0	2.59	9.85	0.20	14.63										0.24	0.20	3.93	3.93			0.015
CI-MM12	MM12	42.00' LT SH205CL STA 105+69.00	0.25	0.25	3.0	2.00	5	12.0	2.25	7.27	0.15	7.36										0.24	0.15	1.63	1.42	0.21	CI-MM13	0.015
CI-MM11	MM11	14.00' RT BOURN STA 13+28.50	0.25	0.25	3.0	2.00	5	12.0	4.53	3.78	0.08	2.52										0.24	0.08	0.40	0.40			0.015
CI-MM10	MM10	14.00' LT BOURN STA 13+23.50	0.25	0.25	3.0	2.00	15	12.0	4.34	9.11	0.18	16.29										0.24	0.18	4.13	4.08	0.04	CI-MM12	0.015
CI-MM9	MM9	42.00' LT SH205CL STA 107+58.00	0.25	0.25	3.0	2.00	10	12.0	0.45	11.04	0.22	7.50										0.24	0.22	2.22	2.22			0.015
CI-MM8	MM8	42.00' LT SH205CL STA 108+60.00	0.25	0.25	3.0	2.00	10	12.0	0.35	11.94	0.24	7.65										0.24	0.24	2.41	2.41			0.015
CI-MM7	MM7	42.00' LT SH205CL STA 109+38.00	0.25	0.25	3.0	1.92	10	12.0	0.35	10.02	0.19	5.22										0.24	0.19	1.41	1.41			0.015
CI-MM6	MM6	42.00' LT SH205CL STA 109+98.00	0.25	0.25	3.0	0.74	5	12.0	0.35	10.38	0.08	1.75										0.24	0.08	0.32	0.32			0.015
CI-MM5	MM5	7.00' LT SH205CL STA 110+63.00	0.25	0.25	3.0	0.62	5	12.0	0.35	11.00	0.07	1.58										0.24	0.07	0.27	0.27			0.015
CI-MM4	MM4	7.00' LT SH205CL STA 111+15.00	0.25	0.25	3.0	0.62	5	12.0	0.35	10.20	0.06	1.32										0.24	0.06	0.22	0.22			0.015
CI-MM3B	MM3B	14.00' LT ROSS STA 13+32.00	0.25	0.25	3.0	2.00	15	12.0	6.57	7.67	0.15	14.19										0.24	0.15	3.20	3.20			0.015
CI-MM3A	MM3A	14.00' RT ROSS STA 13+35.00	0.25	0.25	3.0	2.00	5	12.0	6.57	3.87	0.08	3.22										0.24	0.08	0.52	0.52			0.015
CI-MM2	MM2	3.00' RT SH205CL STA 112+15.50	0.25	0.25	3.0	2.00	10	12.0	0.35	5.99	0.12	1.89										0.24	0.12	0.38	0.38			0.015
CI-MM1	MM1	3.00' RT SH205CL STA 112+69.00	0.25	0.25	3.0	2.00	5	12.0	0.15	5.93	0.12	1.18										0.24	0.12	0.24	0.24			0.015
CI-KK3	KK3	17.50' RT BOYDSTON STA 15+47.00	0.25	0.25	3.0	2.00	10	12.0	2.87	7.37	0.15	8.57										0.24	0.15	1.91	1.91			0.015
CI-KK2	KK2	42.00' RT SH205CL STA 115+78.00	0.25	0.25	3.0	2.00	10	12.0	0.35	9.71	0.19	5.12										0.24	0.19	1.39	1.39			0.015
CI-KK1	KK1	42.00' RT SH205CL STA 114+00.00	0.25	0.25	3.0	2.00	5	12.0	0.35	7.34	0.15	2.91										0.24	0.15	0.66	0.66			0.015
CI-LL5	LL5	16.00' LT BOYDSTON STA 13+31.50	0.25	0.25	3.0	1.70	15	12.0	4.80	10.40	0.18	18.67										0.24	0.18	4.71	4.46	0.25	CI-HH3	0.015
CI-LL4	LL4	16.00' RT BOYDSTON STA 13+31.50	0.25	0.25	3.0	2.00	15	12.0	4.80	8.21	0.16	13.90										0.24	0.16	3.28	3.28			0.015
CI-LL3	LL3	7.00' LT SH205CL STA 115+70.00	0.25	0.25	3.0	2.00	5	12.0	0.35	5.03	0.10	1.30										0.24	0.10	0.24	0.24			0.015
CI-LL2C	LL2C	7.00' LT SH205CL STA 115+30.00	0.25	0.25	3.0	2.00	5	12.0	0.35	5.06	0.10	1.31										0.24	0.10	0.24	0.24			0.015
CI-LL2B	LL2B	7.00' LT SH205CL STA 114+90.00	0.25	0.25	3.0	2.00	5	12.0	0.35	5.01	0.10	1.28										0.24	0.10	0.24	0.24			0.015
CI-LL2A	LL2A	7.00' LT SH205CL STA 114+50.00	0.25	0.25	3.0	2.00	5	12.0	0.35	4.78	0.10	1.16										0.24	0.10	0.21	0.21			0.015
CI-LL1	LL1	3.00' RT SH205CL STA 113+66.00	0.25	0.25	3.0	2.00	5	12.0					0.30	0.30	8.91	6.64						0.50	0.16	1.49	8.46			0.015

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

DGN=G:\JOBS\22451C-SH205\Drainage\2451adC07.dgn, ON=[0-63]
5/10/2006 Plotted 10-MAY-2006 09:23

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER

K David Gan
5/10/2006

PB Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 7 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	394
CONT.	SECT.	JOB	
0451	01	032, ETC	

INLET COMPUTATIONS

								Curb or Grate Inlet on Grade					Curb Inlet In Sag				Drop Inlet											
Inlet ID	Drainage Area ID	Inlet Location	Curb Dep (ft)	Curb Openin Height (ft)	Curb Dep Width (ft)	Spread X-sect Slope (%)	Inlet Length (ft)	Allowable Ponding width (ft)	Longl Slope (grade) (%)	Comp Ponded Width (Grade) (ft)	Comp Ponded Depth (Grade) (ft)	Inlet Length Req (ft)	Longl Slope Left (sag) (%)	Longl Slope Right (sag) (%)	Ponded Width Left (sag) (ft)	Ponded Width Right (sag) (ft)	Number of Grate	Grate Inlet Length (ft)	Grate Inlet Width (ft)	Grate Inlet Areq (ft^2)	Grate Inlet Perimtr (ft)	Allow Head (ft)	Actual Head (ft)	Discharge (cfs)	Capacity (cfs)	By Pass Flow (cfs)	By Pass Flow to Node	Spread N
CI-HH3	HH3	17.50' LT BOYDSTON STA 15+00.00	0.25	0.25	3.0	2.00	15	12.0	2.87	6.03	0.12	5.62										0.24	0.12	1.12	1.12			0.015
CI-HH2	HH2	42.00' RT SH205CL STA 116+62.00	0.25	0.25	3.0	2.00	10	12.0	0.23	10.51	0.21	4.83										0.24	0.21	1.39	1.39			0.015
CI-HH1	HH1	42.00' RT SH205CL STA 118+80.00	0.25	0.25	3.0	2.00	10	12.0	2.00	7.69	0.15	7.79										0.24	0.15	1.78	1.78			0.015
CI-JJ5	JJ5	3.00' RT SH205CL STA 116+68.00	0.25	0.25	3.0	2.00	5	12.0	0.32	6.58	0.13	2.22										0.24	0.13	0.47	0.47			0.015
CI-JJ4	JJ4	3.00' RT SH205CL STA 117+05.00	0.25	0.25	3.0	1.03	10	12.0	0.90	9.65	0.10	3.72										0.24	0.10	0.72	0.72			0.015
CI-JJ3	JJ3	42.00' LT SH205CL STA 118+05.00	0.25	0.25	3.0	0.93	5	12.0	2.00	5.56	0.05	1.35										0.24	0.05	0.21	0.21			0.015
DI-JJ2C	JJ2C	67.00' LT SH205CL STA 118+62.50				2.80	7.5	20.0	9.00	6.68	0.19											0.24	0.19	4.54	3.52	1.03	CI-JJ2B	0.015
CI-JJ2B	JJ2B	42.00' LT SH205CL STA 118+40.00	0.25	0.25	3.0	1.62	10	12.0	2.00	10.02	0.16	10.48										0.24	0.16	2.54	2.53	0.01	CI-JJ3	0.015
CI-JJ2A	JJ2A	57.45' LT SH205CL STA 119+29.95	0.25	0.25	3.0	2.00	10	12.0					0.50	0.50	11.93	11.93						0.24	0.18	5.75	4.56			0.015
CI-JJ1B	JJ1B	42.00' LT SH205CL STA 119+35.00	0.25	0.25	3.0	2.00	10	12.0	2.00	6.68	0.13	5.81										0.24	0.13	1.22	1.22			0.015
CI-JJ1A	JJ1A	54.50' LT SH205CL STA 120+10.00	0.25	0.25	3.0	1.67	10	12.0					0.50	0.50	4.44	13.37						0.24	0.19	3.04	4.17			0.015
CI-GG4	GG4	34.00' LT SH205SB2 STA 128+44.00	0.25	0.25	3.0	2.00	15	12.0	2.54	10.16	0.20	15.40										0.24	0.20	4.23	4.22	0.01	CI-EE6	0.015
CI-GG3	GG3	34.00' LT SH205SB2 STA 125+55.00	0.25	0.25	3.0	2.00	15	12.0	8.00	8.10	0.16	17.57										0.24	0.16	4.10	3.97	0.13	CI-GG4	0.015
CI-GG2	GG2	13.00' RT KENWAY STA 13+08.50	0.25	0.25	3.0	0.50	15	25.0	0.85	21.20	0.16	16.66										0.24	0.16	4.28	4.21	0.07	CI-GG3	0.015
CI-GG1	GG1	33.99' LT SH205SB2 STA 123+83.81	0.25	0.25	3.0	2.00	10	12.0	8.00	6.61	0.13	11.50										0.24	0.13	2.38	2.32	0.06	CI-GG3	0.015
CI-FF4	FF4	34.00' RT SH205NB2 STA 128+60.00	0.25	0.25	3.0	2.00	15	12.0	2.16	10.23	0.21	14.36										0.24	0.21	3.97	3.97			0.015
CI-FF3	FF3	34.00' RT SH205NB2 STA 126+90.00	0.25	0.25	3.0	2.00	15	12.0	6.21	10.70	0.21	26.88										0.24	0.21	7.59	5.84	1.74	CI-FF4	0.015
CI-FF2	FF2	14.00' RT STORRS STA 10+85.00	0.25	0.25	3.0	2.00	15	12.0	10.00	11.94	0.24	42.28										0.24	0.24	12.89	7.03	5.86	CI-FF3	0.015
CI-FF1	FF1	34.00' RT SH205NB2 STA 125+55.00	0.25	0.25	3.0	2.00	15	12.0	8.00	8.64	0.17	20.03										0.24	0.17	4.87	4.46	0.41	CI-FF3	0.015
CI-EE6	EE6	34.00' LT SH205SB2 STA 129+50.00	0.25	0.25	3.0	2.00	10	12.0					4.00	3.75	5.19	5.25						0.24	0.14	1.76	4.17			0.015
CI-EE5	EE5	34.00' LT SH205SB2 STA 130+40.00	0.25	0.25	3.0	2.00	15	12.0	2.13	10.71	0.21	15.59										0.24	0.21	4.45	4.44	0.01	CI-EE6	0.015
CI-EE4	EE4	34.00' LT SH205SB2 STA 132+75.00	0.25	0.25	3.0	2.00	15	12.0	7.50	7.39	0.15	14.07										0.24	0.15	3.10	3.10			0.015
CI-EE3	EE3	34.00' LT SH205SB2 STA 134+93.00	0.25	0.25	3.0	2.00	15	12.0	4.00	9.66	0.19	17.56										0.24	0.19	4.63	4.49	0.15	CI-EE4	0.015
CI-EE2	EE2	34.00' LT SH205SB2 STA 136+45.00	0.25	0.25	3.0	2.00	15	12.0	5.59	8.24	0.17	15.14										0.24	0.17	3.58	3.58	0.00	CI-EE3	0.015
CI-EE1	EE1	34.00' LT SH205SB2 STA 137+66.00	0.25	0.25	3.0	2.00	15	12.0	6.96	6.86	0.14	11.60										0.24	0.14	2.45	2.45			0.015
CI-DD5	DD5	34.00' RT SH205NB2 STA 129+50.00	0.25	0.25	3.0	2.00	10	12.0					4.00	3.75	4.81	4.87						0.24	0.12	1.44	4.17			0.015
CI-DD4	DD4	34.00' RT SH205NB2 STA 130+40.00	0.25	0.25	3.0	2.00	15	12.0	2.13	8.99	0.18	11.05										0.24	0.18	2.79	2.79			0.015
CI-DD3	DD3	34.00' RT SH205NB2 STA 132+63.00	0.25	0.25	3.0	2.00	15	12.0	7.45	7.05	0.14	12.71										0.24	0.14	2.73	2.73			0.015
CI-DD2	DD2	34.00' RT SH205NB2 STA 134+93.00	0.25	0.25	3.0	2.00	15	12.0	7.50	6.23	0.13	9.84										0.24	0.13	1.97	1.97			0.015
CI-DD1	DD1	34.00' RT SH205NB2 STA 136+31.00	0.25	0.25	3.0	2.00	15	12.0	6.96	7.46	0.15	13.81										0.24	0.15	3.07	3.07			0.015
CI-CC5	CC5	23.00' LT SH205SB2 STA 148+63.00	0.25	0.25	3.0	2.00	10	12.0	2.00	8.11	0.16	8.67										0.24	0.16	2.05	2.05			0.015
CI-CC4	CC4	23.00' RT SH205NB2 STA 149+00.00	0.25	0.25	3.0	2.00	10	12.0	0.50	11.71	0.23	8.84										0.50	0.23	2.74	2.74			0.015
CI-CC3	CC3	23.00' RT SH205NB2 STA 147+15.00	0.25	0.25	3.0	2.00	10	12.0	0.50	9.90	0.20	6.38										0.24	0.20	1.75	1.75			0.015
CI-CC2	CC2	34.00' RT SH205NB2 STA 144+63.00	0.25	0.25	3.0	2.00	15	12.0	2.28	8.71	0.17	10.72										0.24	0.17	2.65	2.65			0.015
CI-CC1	CC1	34.00' RT SH205NB2 STA 141+57.00	0.25	0.25	3.0	2.00	15	12.0	2.60	9.09	0.18	12.50										0.24	0.18	3.18	3.18			0.015
CI-BB2	BB2	14.00' LT ALAMO STA 11+40.00	0.25	0.25	3.0	3.35	5	14.0					0.40	0.40	3.72	5.29						0.47	0.12	0.97	7.71			0.015
CI-BB1	BB1	14.00' RT ALAMO STA 11+46.00	0.25	0.25	3.0	3.34	15	14.0					0.40	0.40	10.07	7.33						0.47	0.24	5.51	15.12			0.015
CI-AA9	AA9	14.00' LT ALAMO STA 10+65.00	0.25	0.25	3.0	2.00	5	8.0	1.97	7.85	0.16	8.06										0.16	0.16	1.87	1.54	0.33	CI-BB2	0.015
CI-AA8	AA8	37.83' LT SH205SB2 STA 147+71.68	0.25	0.25	3.0	2.00	5	12.0	0.13	11.38	0.23	4.23										0.24	0.23	1.30	1.30			0.015
CI-AA7	AA7	34.00' LT SH205SB2 STA 147+38.00	0.25	0.25	3.0	2.00	15	12.0	1.02	11.86	0.24	13.00										0.24	0.24	4.04	4.04			0.015
CI-AA6	AA6	34.00' LT SH205SB2 STA 146+79.00	0.25	0.25	3.0	2.00	10	12.0	2.56	8.41	0.17	10.61										0.24	0.17	2.56	2.55	0.02	CI-AA7	0.015
CI-AA5	AA5	34.00' LT SH205SB2 STA 145+65.00	0.25	0.25	3.0	2.00	10	12.0	3.25	7.44	0.15	9.30										0.24	0.15	2.08	2.08			0.015
CI-AA4	AA4	18.50' LT KAUFMAN STA 17+37.00	0.25	0.25	3.0	2.00	10	12.0	1.41	9.37	0.19	9.71										0.24	0.19	2.53	2.53			0.015
CI-AA3	AA3	34.00' LT SH205SB2 STA 144+32.00	0.25	0.25	3.0	2.00	15	12.0	3.25	9.46	0.19	15.17										0.24	0.19	3.95	3.95	0.00	CI-AA5	0.015
CI-AA2	AA2	34.00' LT SH205SB2 STA 142+90.00	0.25	0.25	3.0	2.00	15	12.0	3.25	8.37	0.17	11.84										0.24	0.17	2.84	2.84			0.015

NOTE: 50% CLOGGING FACTOR WAS APPLIED TO GRATE INLET COMPUTATIONS

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 8 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	395
CONT.	SECT.	JOB	
0451	01	032, ETC	

DGN=d:\JOBS\22451C-SH205\Drainage\2451cdc08.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE A10	JCT-A9-60°BEND	OUT-A1	42"	45.50	45.50	0.012	4.18	516.80	514.90	54.76	222.73	1.18	19.15	2.32	8.10	0.004	0.042	5.69	6.40	3.50	2.92	519.60	519.72	520.10	520.22
LINE A9	MH-A9	JCT-A9-60°BEND	42"	18.57	21.07	0.012	6.59	518.19	516.80	54.76	279.79	1.05	22.57	2.32	8.10	0.004	0.066	13.83	8.10	1.51	2.32	518.31	520.50	521.28	521.53
LINE A8	JCT-A8-60°Y	MH-A9	42"	5.20	7.70	0.012	0.52	518.23	518.19	54.76	78.76	2.15	8.84	2.32	8.10	0.004	0.005	8.43	8.10	2.24	2.32	520.43	520.55	521.53	521.57
LAT A8	CI-A8	JCT-A8-60°Y	24"	4.61	6.12	0.012	13.94	520.58	519.73	1.92	91.51	0.20	11.70	0.48	3.31	0.004	0.139	8.25	1.22	0.26	1.00	519.98	521.58	521.05	521.58
LINE A7B	MH-A7	JCT-A8-60°Y	42"	269.80	272.30	0.012	0.52	519.65	518.23	54.63	78.76	2.15	8.84	2.31	8.10	0.004	0.005	8.84	8.10	2.15	2.31	520.37	521.96	521.59	522.98
LINE A7A	JCT-A6-60°Y	MH-A7	42"	146.20	148.70	0.012	0.52	520.43	519.65	54.63	78.76	2.15	8.84	2.31	8.10	0.004	0.005	8.83	8.10	2.15	2.31	521.80	522.74	523.01	523.76
LAT A6	CI-A6	JCT-A6-60°Y	24"	4.61	6.11	0.012	1.83	522.04	521.93	2.22	33.18	0.35	6.00	0.52	3.44	0.004	0.018	1.85	2.25	0.81	0.71	522.74	522.75	523.76	522.80
LAT A7	DI-A7	CI-A6	24"	22.50	25.00	0.012	1.05	522.30	522.04	1.06	25.05	0.28	3.95	0.35	2.81	0.004	0.010	1.07	0.67	0.71	1.00	522.75	523.30	522.80	523.30
LINE A6	MH-A5	JCT-A6-60°Y	42"	132.80	135.30	0.012	0.52	521.13	520.43	52.81	78.82	2.10	8.78	2.27	7.98	0.004	0.005	8.76	7.98	2.10	2.27	522.53	523.41	523.72	524.40
LINE A5	JCT-A4-60°Y	MH-A5	36"	41.20	43.70	0.012	1.72	522.38	521.63	40.16	94.66	1.36	12.84	2.06	7.75	0.005	0.017	10.79	7.75	1.56	2.06	523.20	524.45	525.01	525.38
LAT A5	JCT-A5-EX 18"	MH-A5	24"	14.00	16.50	0.012	5.85	523.60	522.63	12.65	59.29	0.63	15.01	1.28	5.96	0.005	0.059	10.57	4.03	0.81	1.99	523.45	525.59	525.19	525.59
LINE A4	MH-A3	JCT-A4-60°Y	36"	230.30	232.30	0.012	1.72	526.37	522.38	37.92	94.63	1.32	12.65	2.00	7.56	0.004	0.017	12.45	7.56	1.34	2.00	523.72	528.37	526.13	529.26
LAT A4	CI-A4	JCT-A4-60°Y	24"	4.61	6.11	0.012	4.60	523.67	523.38	2.23	52.55	0.28	8.31	0.52	3.45	0.004	0.046	1.32	1.42	1.06	1.00	524.45	524.67	525.38	524.67
LINE A3	JCT-A2-60°Y	MH-A3	24"	45.70	47.70	0.012	2.52	528.57	527.37	10.17	38.88	0.70	10.42	1.14	5.49	0.004	0.025	9.46	5.49	0.75	1.14	528.12	529.71	529.51	530.18
LAT A3	DI-A3	MH-A3	36"	24.00	27.00	0.012	1.60	526.80	526.37	27.75	91.37	1.13	11.34	1.70	6.70	0.004	0.016	9.18	4.30	1.33	2.57	527.70	529.37	529.01	529.37
LINE A2	MH-A1	JCT-A2-60°Y	24"	260.80	262.30	0.012	2.52	535.17	528.57	4.94	38.88	0.48	8.48	0.78	4.33	0.004	0.025	8.48	4.33	0.48	0.78	529.05	535.95	530.17	536.24
LAT A2	CI-A2	JCT-A2-60°Y	24"	4.61	6.12	0.012	1.77	528.68	528.57	5.23	32.59	0.54	7.61	0.81	4.41	0.004	0.018	2.82	2.81	1.14	1.15	529.71	529.82	530.18	529.84
LINE A1	CI-A1	MH-A1	24"	305.95	309.95	0.012	2.50	542.92	535.17	4.94	38.76	0.48	8.47	0.78	4.33	0.004	0.025	8.45	2.78	0.48	1.10	535.65	544.03	536.77	544.03
LINE B4	CI-B4	OUT-B1	24"	66.90	68.40	0.012	5.24	519.58	516.00	9.98	56.08	0.57	13.48	1.13	5.45	0.004	0.052	12.70	5.45	0.60	1.13	516.60	520.71	519.11	521.17
LINE B3	CI-B3	CI-B4	24"	275.00	280.00	0.012	1.06	522.55	519.58	8.00	25.22	0.77	7.12	1.01	5.05	0.004	0.011	7.12	5.05	0.78	1.01	520.36	523.55	521.14	523.95
LINE B2	CI-B2	CI-B3	24"	295.00	300.00	0.012	0.85	525.10	522.55	6.02	22.60	0.71	6.09	0.87	4.61	0.004	0.009	6.09	4.61	0.71	0.87	523.25	525.96	523.83	526.29
LINE B1	CI-B1	CI-B2	24"	300.00	305.00	0.012	1.21	528.78	525.10	3.94	26.94	0.52	6.12	0.70	4.05	0.004	0.012	6.12	2.51	0.52	1.00	525.61	529.78	526.20	529.78
LINE C1A	JCT-C1-60°BEND	OUT-C1	24"	45.44	45.44	0.012	4.84	518.10	515.90	12.50	53.93	0.66	13.97	1.27	5.93	0.005	0.048	3.98	4.59	2.00	1.62	519.60	519.72	519.85	519.96
LINE C1B	CI-C1	JCT-C1-60°BEND	24"	13.26	14.76	0.012	6.82	519.11	518.10	12.50	64.02	0.60	15.80	1.27	5.93	0.005	0.068	10.76	5.93	0.79	1.27	518.89	520.38	520.70	520.93
LINE C2	CI-C2	CI-C1	24"	195.00	200.00	0.012	1.35	521.80	519.11	11.16	28.44	0.87	8.51	1.20	5.68	0.005	0.013	8.49	5.68	0.87	1.20	519.98	523.00	521.10	523.50
LINE C3	CI-C3	CI-C2	24"	285.00	290.00	0.012	1.04	524.82	521.80	9.13	24.99	0.84	7.33	1.08	5.28	0.004	0.010	7.33	5.28	0.84	1.08	522.64	525.89	523.47	526.33
LINE C4	CI-C4	CI-C3	24"	185.00	190.00	0.012	1.06	526.83	524.82	7.81	25.23	0.76	7.08	1.00	5.01	0.004	0.011	7.08	5.01	0.77	1.00	525.58	527.82	526.36	528.21
LINE C5	CI-C5	CI-C4	24"	265.00	270.00	0.012	2.29	533.02	526.83	5.97	37.11	0.54	8.67	0.86	4.59	0.004	0.023	8.66	4.59	0.54	0.86	527.37	533.88	528.54	534.21
LINE C6	CI-C6	CI-C5	24"	265.00	270.00	0.012	3.00	541.12	533.02	3.82	42.45	0.41	8.38	0.69	4.02	0.004	0.030	8.36	4.02	0.41	0.69	533.43	541.81	534.52	542.06
LINE C7	CI-C7	CI-C6	24"	223.00	228.00	0.012	2.60	547.04	541.12	1.27	39.48	0.25	5.75	0.39	2.96	0.004	0.026	5.75	2.96	0.25	0.39	541.37	547.43	541.88	547.56
LINE C8	CI-C8	CI-C7	24"	294.21	299.21	0.012	1.22	550.68	547.04	0.91	27.04	0.25	3.99	0.33	2.71	0.004	0.012	3.99	0.58	0.25	1.00	547.29	551.68	547.54	551.68
LINE D1A	MH-D1	OUT-D1	48"	40.22	42.72	0.012	3.14	518.24	516.90	86.04	275.90	1.53	19.40	2.81	9.12	0.004	0.031	14.07	9.12	1.96	2.81	518.86	521.06	521.94	522.35
LINE D1B	JCT-D1-90°T	MH-D1	48"	7.00	10.00	0.012	0.73	518.32	518.24	86.04	132.46	2.35	11.22	2.81	9.12	0.004	0.007	9.79	9.12	2.64	2.81	520.88	521.13	522.37	522.42
LAT D1	CI-D1	JCT-D1-90°T	24"	4.00	5.50	0.012	15.05	521.14	520.32	0.33	95.09	0.09	7.05	0.20	2.07	0.004	0.151	6.27	0.21	0.09	1.00	520.41	522.14	521.04	522.14
LINE D1C	JCT-D2-90°T	JCT-D1-90°T	48"	116.00	116.00	0.012	0.72	519.15	518.32	85.82	132.10	2.35	11.19	2.81	9.10	0.004	0.007	10.84	9.10	2.41	2.81	520.73	521.96	522.55	523.25
LAT D2	CI-D2	JCT-D2-90°T	24"	4.00	5.50	0.012	7.22	521.55	521.15	0.62	65.85	0.14	6.62	0.27	2.44	0.004	0.072	0.53	0.40	0.81	1.00	521.96	522.55	522.55	523.25
LINE D2	JCT-D3-90°T	JCT-D2-90°T	48"	194.00	194.00	0.012	0.72	520.55	519.15	85.40	132.15	2.34	11.18	2.80	9.09	0.004	0.007	11.02	9.09	2.37	2.80	521.52	523.35	523.41	524.63
LAT D3	CI-D3	JCT-D3-90°T	24"	4.00	5.50	0.012	3.22	522.73	522.55	1.12	43.97	0.22	5.97	0.37	2.86	0.004	0.032	0.96	0.72	0.80	1.00	523.35	523.73	524.63	523.73
LINE D3	MH-D4	JCT-D3-90°T	48"	187.80	190.80	0.012	0.72	521.93	520.55	85.26	132.10	2.34	11.17	2.80	9.08	0.004	0.007	11.01	9.08	2.37	2.80	522.92	524.72	524.80	526.01
LAT D4	JCT-D7-60°Y	MH-D4	48"	29.36	31.86	0.012	0.42	522.06	521.93	43.70	101.24	1.84	7.76	1.98	7.06	0.003	0.004	4.65	4.84	2.80	2.70	524.72	524.76	526.01	525.10
LAT D5	EX-JCT-D5A-BRK	JCT-D7-60°Y	48"	26.53	26.53	0.012	0.30	522.14	522.06	39.90	85.46	1.92	6.69	1.89	6.85	0.003	0.003	4.42	4.55	2.70	2.63	524.76	524.77	525.10	525.09
EX LAT D5A	JCT-D5-60°Y	EX-JCT-D5A-BRK	48"	52.81	52.81	0.012	0.47	522.39	522.14	39.90	107.07	1.69	7.90	1.89	6.85	0.003	0.005	4.55	4.97	2.63	2.44	524.77	524.83	525.09	525.15
LAT D5B	DI-D5	JCT-D5-60°Y	24"	29.08	30.08	0.012	5.35	526.00	524.39	16.33	56.70	0.74	15.60	1.46	6.66	0.006	0.054	12.21	5.20	0.88	2.00	525.27	528.42	527.60	528.42
LAT D4A	JCT-D4A-20°BEND	JCT-D7-60°Y	24"	7.52	7.52	0.012	2.01	524.21	524.06	4.80	34.73	0.50	7.77	0.77	4.30	0.004	0.020	5.90	4.30	0.61	0.77	524.67	524.98	525.21	525.27
LAT D4B	CI-D4	JCT-D4A-20°BEND	24"	86.43	88.93	0.012	2.01	526.00	524.21	4.80	34.72	0.50	7.76	0.77	4.30	0.004	0.020	7.68	2.76	0.51	1.08	524.72	527.08	525.64	527.08
EX LAT D6A	EX-JCT-D6-60°Y	JCT-D5-60°Y	48"	24.04	24.04	0.012	0.50	522.51	522.39	24.99	109.94	1.30	7.08	1.48	5.93	0.003	0.005	3.12	3.29	2.44	2.33	524.83	524.84	525.15	524.99
EX LAT D6B	EX-CI-D6	EX-JCT-D6-60°Y	30"	17.82	19.82	0.012	4.89	524.98	524.01	7.62	98.29	0.47	11.88	0.92	4.67	0.004	0.049	9.32	3.03	0.56	1.27	524.57	526.25	525.92	526.25
EX LAT D6C	EX-JCT-D7A-SIZE	EX-JCT-D6-60°Y	48"	5.00	5.00	0.012	0.40	522.53	522.51	18.80	98.43	1.19	6.04	1.28	5.45	0.003	0.004	2.47	2.50	2.33	2.31	524.84	524.84	524.99	524.94
EX LAT D7A	EX-JCT-D7B-BRK	EX-JCT-D7A-SIZE	36"	117.64	117.64	0.012	0.49	524.10	523.53	18.80	50.30	1.27	6.60	1.39	5.87	0.004	0.005	6.59	5.87	1.27	1.39	524.80	525.49	525.48	526.03
EX LAT D7B	EX-D1-D7	EX-JCT-D7B-BRK	36"	84.76	84.76	0.012	4.01	527.50	524.10	18.80	144.72	0.73	14.13	1.39	5.87	0.004	0.040	13.12	3.70	0.77	2.03	524.87	529.53	527.55	529.53
LINE D8	JCT-D8-60°Y	MH-D4	30"	106.10	109.10	0.012	1.42	524.97	523.43	50.85	52.91	1.97	12.28	2.31	10.73	0.011	0.014	12.00	10.73	2.01	2.31	525.44	527.28	527.68	529.07
LAT D8	CI-D8	JCT-D8-60°Y	24"	16.17	17.67	0.012	3.02	526.01	525.47	3.69	42.60	0.40	8.32	0.67	3.98	0.004	0.030	1.24	1.74	1.81	1.28	527.28	527.29	529.07	527.31
LINE D9	MH-D9	JCT-D8-60°Y	30"	216.10	218.10	0.012	1.42	528.06	524.97	1.89	12.23	2.28	10.37	0.010	0.014	12.14	10.37	1.91	2.28	526.88	530.35	529.17	532.02
LAT D9	CI-D9	MH-D9	24"	13.00	16.50	0.012	7.84	529.86	528.56	5.80	68.64	0.39	13.30	0.85	4.55	0.004	0.078	10.19	2.89	0.47	1.22	529.04	531.08	530.66	531.08
LINE D10	JCT-D10-60°Y	MH-D9	30"	235.70	237.70	0.012	3.09	535.41	528.06	45.11	78.13	1.36	16.49	2.23	9.77	0.009	0.031	16.17	9.77	1.39	2.23	529.45	537.64	533.52	539.12
LAT D10	CI-D10	JCT-D10-60°Y	24"	4.61	6.12	0.012	8.34	536.42	535.91	2.36	70.78	0.25	10.41	0.53	3.50	0.004	0.083	0.82	1.18	1.73	1.22	537.64	537.64	539.12	537.65
LINE D11	MH-D11	JCT-D10-60°Y	30"	73.80	76.80	0.012	3.09	537.79	535.41	43.60	78.14	1.34	16.35	2.20	9.53	0.009	0.031	14.36	9.53	1.48	2.20	536.89	539.99	540.10	541.40
LAT D11	JCT-D11-27°RCP	MH-D11	27"	21.16	23.16	0.012	17.72	542.14	538.04	38.46	282.49	0.56	24.85	1.53	6.66	0.005	0.177	17.46	4.84	0.72	2.25	538.76	544.59	543.51	544.59
LINE D12	MH-D12	MH-D11	24"	261.00	265.50	0.012	2.94	546.08	538.29	7.59	41.98	0.58	10.14	0.98	4.96	0.004	0.029	10.12	4.96	0.58	0.98	538.86	547.06	540.46	547.44
LAT D12	CI-D12	MH-D12	24"	2.50	5.50	0.012	6.73	546.45	546.08	4.31	63.57	0.35	11.54	0.73	4.16	0.004	0.067	7.22	2.70	0.49	1.01	546.57	547.46	547.38	547.46
LINE D13	JCT-D13-60°BEND	MH-D12	24"	214.80	216.30	0.012	1.61	549.56	546.08	3.28	31.11	0.44	6.43	0.63	3.84	0.004	0.016	6.42	3.84	0.44	0.63	546.52	550.20	547.16	550.42
LINE D13B	CI-D13	JCT-D13-60°BEND	24"	17.34	18.84	0.012	1.61	549.87	549.56	3.28	31.11	0.44	6.43	0.63	3.84	0.004	0.016	5.78	2.09	0.47	1.00	550.04	550.87	550.56	550.87

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 9 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	396
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream (ft)
LINE E1	SET-E1	SET-E0	24"	75.00	75.00	0.012	2.13	517.60	516.00	7.75	35.80	0.63	9.10	0.99	5.00	0.004	0.021	2.47	2.63	2.00	1.78	519.30	519.38	519.40	519.47
DITCH E2	SET-E2	SET-E1	27"	120.39	120.39	0.012	4.03	522.45	517.60	7.22	338.82	0.47	9.25	0.77	3.51	0.003	0.040	9.20	3.51	0.47	0.77	518.07	523.22	519.40	523.41
LINE E2	SET-E2	SET-E3	24"	80.13	80.13	0.012	1.93	524.00	522.45	1.44	34.09	0.28	5.38	0.41	3.06	0.004	0.019	5.37	0.92	0.28	1.00	522.73	525.00	523.18	525.00
LINE F1A	JCT-F0-15°BEND	OUT-F1	5'X4'	15.79	15.79	0.012	1.83	542.83	542.54	165.92	359.40	1.89	17.58	3.25	10.22	0.004	0.018	12.38	10.22	2.68	3.25	545.22	546.08	547.60	547.70
LINE F1B	JCT-FJ-90°T	JCT-F0-15°BEND	5'X4'	46.32	46.32	0.012	1.83	543.68	542.83	165.92	359.08	1.89	17.57	3.25	10.22	0.004	0.018	13.80	10.22	2.41	3.25	545.23	546.92	548.19	548.55
LAT FJ	CI-FJ	JCT-FJ-90°T	24"	3.15	3.20	0.012	9.72	545.99	545.68	2.44	76.40	0.25	11.09	0.54	3.53	0.004	0.097	1.19	1.55	1.25	1.00	546.92	546.99	548.55	547.89
LINE F1C	JCT-FH-90°T	JCT-FJ-90°T	5'X4'	48.56	48.56	0.012	1.83	544.56	543.68	164.05	358.88	1.87	17.51	3.22	10.18	0.004	0.018	13.84	10.18	2.37	3.22	546.05	547.18	549.02	549.39
LINE F1D	JCT-F1-90°T	JCT-FH-90°T	5'X4'	87.60	87.60	0.012	1.83	546.16	544.56	160.75	358.96	1.85	17.42	3.18	10.11	0.004	0.018	14.80	10.11	2.17	3.18	546.73	549.34	550.14	550.93
LAT F1	CI-F1	JCT-F1-90°T	24"	52.78	55.28	0.012	2.46	549.52	548.16	3.36	38.40	0.40	7.51	0.64	3.87	0.004	0.025	7.33	3.87	0.41	0.64	548.57	550.16	549.41	550.39
LAT F2	CI-F2	CI-F1	24"	161.01	166.01	0.012	0.41	550.20	549.52	1.76	15.69	0.45	3.30	0.46	3.23	0.004	0.004	3.30	1.12	0.45	1.00	549.97	551.20	550.14	551.20
LINE F3	MH-F3	JCT-F1-90°T	5'X4'	122.44	125.44	0.012	0.41	546.67	546.16	158.95	169.91	3.20	9.93	3.16	10.08	0.004	0.004	10.00	9.93	3.18	3.20	549.34	549.88	550.93	551.41
LAT F3A	JCT-F3 60°BEND	MH-F3	24"	56.25	59.25	0.012	0.41	548.24	548.00	4.07	15.60	0.70	4.18	0.71	4.09	0.004	0.004	1.33	1.47	1.88	1.65	549.88	549.89	551.41	549.92
LAT F3B	CI-F3	JCT-F3 60°BEND	24"	79.13	81.63	0.012	0.40	548.57	548.24	4.07	15.48	0.70	4.15	0.71	4.09	0.004	0.004	1.47	1.81	1.65	1.35	549.89	549.91	549.92	549.95
LINE F4	JCT-F4 90° T	MH-F3	5'X4'	124.00	127.00	0.012	0.36	547.12	546.67	143.47	158.33	3.12	9.19	2.95	9.74	0.004	0.004	8.96	9.15	3.20	3.14	549.88	550.26	551.41	551.56
LAT F4	CI-F4	JCT-F4 90° T	24"	4.50	4.50	0.012	6.03	549.40	549.12	0.82	60.18	0.16	6.77	0.31	2.63	0.004	0.060	0.45	0.53	1.14	1.00	550.26	550.40	551.56	551.13
LINE F5A	JCT-F5-45°Y	JCT-F4 90° T	5'X4'	68.60	68.60	0.012	0.33	547.35	547.12	143.38	152.50	3.21	8.92	2.95	9.74	0.004	0.003	9.15	9.01	3.14	3.18	550.26	550.53	551.56	551.80
LINE F5B	MH-F5	JCT-F5-45°Y	5'X4'	101.90	104.40	0.012	0.33	547.69	547.35	112.82	152.36	2.68	8.43	2.51	8.99	0.004	0.003	7.09	7.63	3.18	2.96	550.53	550.65	551.80	551.56
LAT F5	CI-F5	MH-F5	24"	15.98	20.48	0.012	1.56	550.01	549.69	2.47	30.63	0.38	5.85	0.55	3.55	0.004	0.016	1.66	1.57	0.96	1.00	550.65	551.01	551.56	551.01
LINE F6	JCT-F6-60°Y	MH-F5	48"	59.11	61.61	0.012	0.82	548.20	547.69	110.92	140.88	2.68	12.42	3.18	10.34	0.005	0.008	11.68	10.34	2.83	3.18	550.52	551.38	552.64	553.04
LAT F6	CI-F6	JCT-F6-60°Y	24"	16.18	17.68	0.012	0.30	550.25	550.20	3.23	13.42	0.67	3.52	0.63	3.83	0.004	0.003	1.67	1.76	1.18	1.13	551.38	551.39	553.04	551.43
LINE F7	JCT-F21-60°Y	JCT-F6-60°Y	48"	73.01	73.01	0.012	1.03	548.95	548.20	108.33	157.93	2.43	13.54	3.15	10.21	0.005	0.010	12.32	10.21	2.64	3.15	550.84	552.10	553.20	553.72
LAT F7	CI-F7	JCT-F21-60°Y	24"	16.22	17.72	0.012	0.32	551.01	550.95	2.91	13.78	0.62	3.48	0.60	3.71	0.004	0.003	1.56	1.65	1.15	1.10	552.10	552.10	553.72	552.14
LINE F8	JCT-F8-60°Y	JCT-F21-60°Y	48"	77.01	77.01	0.012	0.90	549.65	548.95	106.07	147.94	2.51	12.80	3.12	10.09	0.005	0.009	11.92	10.09	2.67	3.12	551.62	552.76	553.83	554.35
LAT F8	CI-F8	JCT-F8-60°Y	24"	16.19	17.69	0.012	0.89	551.80	551.65	3.52	23.06	0.53	5.30	0.66	3.92	0.004	0.009	1.95	2.24	1.12	1.00	552.76	552.80	554.35	552.83
LINE F9	JCT-F9-90°T	JCT-F8-60°Y	48"	165.02	165.02	0.012	0.97	551.25	549.65	103.63	153.42	2.41	13.11	3.08	9.97	0.005	0.010	12.61	9.97	2.49	3.08	552.14	554.33	554.61	555.88
LAT F9	CI-F9	JCT-F9-90°T	24"	7.97	9.47	0.012	3.78	553.61	553.25	1.99	47.66	0.28	7.49	0.49	3.34	0.004	0.038	1.14	1.26	1.08	1.00	554.33	554.61	555.88	554.61
LINE F10	JCT-F10-90°T	JCT-F9-90°T	48"	50.91	50.91	0.012	0.90	551.71	551.25	102.05	147.77	2.44	12.69	3.06	9.89	0.005	0.009	11.50	9.89	2.66	3.06	553.91	554.77	555.97	556.29
LAT F10	CI-F10	JCT-F10-90°T	24"	34.20	36.70	0.012	6.11	555.95	553.71	6.60	60.56	0.45	12.64	0.91	4.74	0.004	0.061	11.27	2.99	0.48	1.32	554.19	557.27	556.18	557.27
LINE F11	MH F11	JCT-F10-90°T	48"	27.71	30.21	0.012	1.17	552.06	551.71	96.09	168.00	2.17	13.82	2.97	9.60	0.005	0.012	11.42	9.60	2.54	2.97	554.25	555.03	556.28	556.47
LAT F11	EX-JCT-F11-36"	MH F11	36"	22.40	24.90	0.012	15.86	557.01	553.06	49.54	287.71	0.84	30.46	2.29	8.55	0.005	0.159	18.90	7.01	1.19	3.00	554.26	559.82	560.98	560.98
LINE F12	JCT-F12-90°T	MH F11	36"	19.78	22.28	0.012	1.11	553.31	553.06	49.30	76.20	1.76	11.46	2.29	8.53	0.005	0.011	9.88	8.53	2.00	2.29	555.06	555.60	556.57	556.73
LAT F12	CI-F12	JCT-F12-90°T	24"	4.00	5.50	0.012	6.27	554.65	554.31	1.11	61.38	0.19	7.51	0.36	2.85	0.004	0.063	0.52	0.71	1.29	1.00	555.60	555.65	556.73	555.65
LINE F14	JCT-F14-90°T	JCT-F12-90°T	36"	107.00	107.00	0.012	1.11	554.50	553.31	48.49	76.18	1.74	11.42	2.27	8.46	0.005	0.011	10.91	8.46	1.81	2.27	555.12	556.77	556.97	557.88
LAT F14	CI-F14	JCT-F14-90°T	24"	4.00	5.50	0.012	5.26	555.79	555.50	3.51	56.21	0.34	9.96	0.66	3.92	0.004	0.053	1.67	2.24	1.27	1.00	556.77	556.79	557.88	556.81
LINE F15	MH F15	JCT-F14-90°T	36"	26.00	28.00	0.012	1.11	554.81	554.50	45.09	76.19	1.66	11.23	2.19	8.16	0.005	0.011	9.75	8.16	1.87	2.19	556.37	557.00	557.84	558.03
LAT F15	CI-F15	MH F15	24"	52.50	56.00	0.012	1.69	556.76	555.81	2.78	31.90	0.40	6.24	0.58	3.67	0.004	0.017	6.14	1.77	0.40	1.00	556.21	557.76	556.80	557.76
LINE F16	JCT-F16-60°Y	MH F15	30"	46.35	48.35	0.012	2.21	556.38	555.31	42.42	66.03	1.46	14.28	2.18	9.34	0.008	0.022	12.27	9.34	1.66	2.18	556.97	558.56	559.31	559.91
LAT F16	CI-F16	JCT-F16-60°Y	24"	37.30	38.80	0.012	9.34	560.50	556.88	7.72	74.89	0.43	15.38	0.99	4.99	0.004	0.093	13.67	3.15	0.47	1.46	557.35	561.96	560.27	561.96
LINE F17	JCT-F17-90°T	JCT-F16-60°Y	30"	41.65	41.65	0.012	2.21	557.30	556.38	34.83	66.01	1.29	13.63	2.01	8.25	0.006	0.022	11.43	8.25	1.49	2.01	557.87	559.30	559.90	560.36
LAT F17	CI-F17	JCT-F17-90°T	24"	4.00	5.50	0.012	2.02	557.91	557.80	4.99	34.82	0.51	7.87	0.79	4.35	0.004	0.020	1.97	2.13	1.51	1.40	559.30	559.31	560.36	559.37
LINE F18	MH F18	JCT-F17-90°T	30"	213.50	215.00	0.012	2.21	562.04	557.30	30.00	66.03	1.18	13.13	1.87	7.63	0.006	0.022	12.94	7.63	1.20	1.87	558.49	563.91	561.10	564.82
LAT F18	CI-F18	MH F18	24"	35.61	39.11	0.012	6.66	565.15	562.54	5.57	63.26	0.40	12.40	0.83	4.50	0.004	0.067	11.34	2.86	0.43	1.19	562.97	566.34	564.98	566.34
LINE F19A	JCT-F19-60°BEND	MH F18	24"	36.20	37.70	0.012	2.40	563.45	562.54	24.44	37.97	1.17	12.84	1.75	8.40	0.009	0.024	11.08	8.40	1.32	1.75	563.87	565.20	565.78	566.29
LINE F19B	CI-F19	JCT-F19-60°BEND	24"	4.61	6.11	0.012	6.95	563.87	563.45	24.44	64.63	0.85	19.14	1.75	8.40	0.009	0.070	10.89	8.40	1.34	1.75	564.79	565.62	566.64	566.72
LINE F20	CI-F20	CI-F19	24"	192.80	197.80	0.012	2.40	568.62	563.87	22.21	37.97	1.10	12.56	1.68	7.88	0.008	0.024	12.42	7.88	1.11	1.68	564.98	570.30	567.38	571.27
LINE F21	CI-F21	CI-F20	24"	64.20	69.20	0.012	0.96	569.28	568.62	17.23	23.95	1.26	8.30	1.50	6.83	0.006	0.010	8.14	6.83	1.28	1.50	569.90	570.78	570.93	571.50
LAT F22A	JCT-F22-60°Y	CI-F21	24"	100.90	103.40	0.012	0.60	569.90	569.28	13.33	18.95	1.24	6.53	1.31	6.09	0.005	0.006	6.53	6.09	1.24	1.31	570.52	571.21	571.18	571.79
LAT F22B	CI-F22	JCT-F22-45°BEND	24"	7.98	7.98	0.012	6.27	570.40	569.90	8.45	61.35	0.50	13.71	1.04	5.14	0.004	0.063	8.60	5.14	0.70	1.04	570.60	571.44	571.76	571.85
LINE F23	CI-F23	JCT-F22-60°Y	24"	80.59	83.09	0.012	3.36	573.19	570.40	8.45	44.91	0.59	10.97	1.04	5.14	0.004	0.034	10.61	3.26	0.60	1.54	571.00	574.73	572.76	574.73
LINE H1	JCT-H1-60°Y	JCT-FH-90°T	24"	37.10	39.60	0.012	0.60	570.14	569.90	4.88	18.94	0.69	5.05	0.78	4.32	0.004	0.006	2.23	2.74	1.31	1.10	571.21	571.24	571.79	571.32
LAT H1	JCT-H2-85°BEND	JCT-H1-60°Y	24"	58.36	58.36	0.012	1.00	547.14	546.56	4.30	24.50	0.57	5.87	0.73	4.16	0.004	0.010	5.79	4.16	0.57	0.73	547.13	547.87	547.66	548.14
LAT H2	CI-H2	JCT-H2-85°BEND	24"	80.61	80.61	0.012	1.15	548.07	547.14	0.85	26.25	0.25	3.83	0.32	2.66	0.004	0.011	3.83	2.66	0.25	0.32	547.39	548.39	547.62	548.50
LINE H2	CI-H1	JCT-H1-60°Y	24"	69.50	72.00	0.012	1.15	548.90	548.07	0.85	26.26	0.25	3.83	0.32	2.66	0.004	0.011	3.83	0.54	0.25	1.00	548.32	549.90	548.55	549.90
LINE G1A	CI-G1	MH-F3	24"	85.85	88.35	0.012	1.00	548.03	547.14	3.44	24.49	0.51	5.50	0.65	3.90	0.004	0.010	5.48	2.19	0.51	1.00	547.65	549.03	548.12	549.03
LINE G1B	MH-G1	CI-G1	24"	120.41	124.91	0.012	0.48	549.28	548.67	14.72	17.03	1.44	6.10	1.38	6.35	0.005	0.005	6.35	6.10	1.38	1.44	550.06	550.71	551.41	551.29
LINE G2	CI-G2	MH-G1	24"	27.59	31.09	0.012	1.04	549.60	549.28	12.76	25.02	1.01	8.00	1.29	5.98	0.005	0.010	7.44	5.98	1.07	1.29	550.35	550.89	551.21	551.44
LINE G3	CI-G3	CI-G2	24"	54.14	58.64	0.012	0.51	549.90	549.60	5.61	17.43	0.78	4.94	0.84	4.51	0.004	0.005	2.63	3.38	1.29	1.04	550.89	550.94	551.44	551.05
LAT G4	CI-G4	MH-G1	24"	73.82	76.32	0.012	0.40	549.91	549.60	7.15	15.49	0.95	4.83	0.95	4.87	0.004	0.004	3.35	4.50	1.29	1.01	550.89	550.92	551.44	551.24
LAT G5	CI-G5	CI-G4	24"	45.25	50.25	0.012	0.40	550.12	549.91	4.41	15.58	0.73	4.27	0.74	4.19	0.004	0.004	2.78	3.37	1.01	0.87	550.92	550.99	551.24	551.11
LAT G6	CI-G6	CI-G5	24"	95.02	100.02	0.012	0.54	550.65	550.12	1.49	17.98	0.39	3.46	0.42	3.09	0.004	0.005	3.46	0.95	0.39	1.00	550.51	551.65	550.69	551.65
LINE I1	CI-I1	JCT-F5-45°Y	36"	57.25	58.75	0.012	0.84	547.85	547.35	34.98	66.39	1.55	9.51	1.92	7.31	0.004	0.008	4.95	5.07	3.00	2.83	550.53	550.67	551.80	551.05
LINE I2A	JCT-I2-60°BEND	CI-I1	30"	22.51	24.01	0.012	1.02	548.59	548.35	33.23	44.88	1.60	10.01	1.96	8.04	0.006	0.010	6.98	7.27	2.33	2.20	550.67	550.79	551.05	551.55
LINE I2B	JCT-I2-60°Y	JCT-I2-60°BEND	30"	76.15	76.15	0.012	1.02	549.37	548.59	33.23	44.88	1.60	10.01	1.96	8.04	0.006	0.010	9.67	8.04	1.65	1.96	550.24	551.33	551.69	552.33
LAT I2	CI-I2	JCT-I2-60°Y	24"	5.20	6.70	0.012	0.74	549.92	549.87	1.82	21.02	0.40	4.10	0.47	3.26	0.004	0.007	0.74	0.77	1.46	1.41	551.33	551.33	552.33	551.34
LINE I3	MH I3	JCT-I2-60°Y	30"	39.50	41.50	0.012	1.02	549.79	549.37	31.41	44.87	1.54	9.89	1.91	7.81	0.006	0.010	9.24	7.81	1.64	1.91	551.00	551.70	552.33	552.65
LAT I3	EX-JCT-I3-18"	MH I3	24"	24.09	26.09	0.012	23.95	556.54	550.29	13.84	119.94	0.46	25.45	1.34	6.19	0.005	0.239	19.57	4.41	0.55	2.00	550.84	558.66	556.82	558.66
LINE I4A	JCT-I4-60°BEND	MH I3	24"	31.65	33.65	0.012	3.88	551.60	550.29	17.57	48.28	0.84	14.15	1.51	6.90	0.006	0.039	11.47	6.90	0.98	1.51	551.27	553.11	553.32	553.85
LINE I4B	CI-I4	JCT-I4-60°BEND	24"	5.16	6.66	0.012	3.88	551.85	551.60	17.57	48.24	0.84	14.15	1.51	6.90	0.006	0.039	8.97	6.90	1.20	1.51	552.79	553.37	554.04	554.11
LINE I5	CI-I5	CI-I4	24"	70.93	75.93	0.012	2.96	554.10	551.85	14.63	42.19	0.81	12.21	1.38	6.34	0.005	0.030	11.41	6.34	0.86	1.38	552.71	555.48	554.74	556.11
LINE I6	CI-I6	CI-I5	24"	75.13	80.13	0.012	3.00	556.50	554.10	13.02	42.41	0.76	11.88	1.30	6.03	0.005	0.030	11.22	6.03	0.79	1.30	554.90	557.80	556.86	558.37
LINE I7	CI-I7	CI-I6	24"	80.00	85.00	0.012	2.69	558.79	556.50	6.41	40.22	0.54	9.37	0.90	4.70	0.004	0.027	9.18	4.70	0.55	0.90	557.05	559.69	558.37	560.03
LINE I8	CI-I8	CI-I7	24"	51.93	56.93	0.012	1.79	559.81	558.79	5.84	32.78	0.57	7.88	0.85	4.56	0.004	0.018	7.58	4.56	0.59	0.85	559.38	560.67	560.28	560.99
LINE I8A	EX-JCT-I8A-18	CI-I8	24"	11.50	13.00	0.012	8.40	560.91	559.81	4.63	71.03	0.35	12.75	0.76	4.25	0.004	0.084	9.53	2.74	0.42	1.06	560.24	561.96	561.66	561.96

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 10 OF 13

DIST. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	397
CONT.	SECT.	JOB	
0451	01	032. ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED
PROFESSIONAL ENGINEER

5/9/2006

DGN=G:\JOBS\22451C-SH205\Drainage\2451cdc10.dgn, ON=[0-63]
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE J2A	JCT-J2-90°T	OUT-J2	24"	9.11	9.11	0.012	3.70	543.84	543.50	13.46	47.14	0.73	12.94	1.32	6.12	0.005	0.037	8.63	6.12	1.00	1.32	544.50	545.16	545.65	545.74
LAT J2	CI-J2	JCT-J2-90°T	24"	4.50	6.00	0.012	6.08	544.20	543.84	1.34	60.45	0.21	7.86	0.40	3.00	0.004	0.061	0.61	0.85	1.32	1.00	545.16	545.20	545.74	545.20
LINE J2B	MH-J3	JCT-J2-90°T	24"	61.66	63.16	0.012	3.70	546.18	543.84	12.12	47.16	0.69	12.58	1.25	5.86	0.005	0.037	11.57	5.86	0.74	1.25	544.57	547.43	546.66	547.96
LINE J3A	JCT-J3-60°BEND	MH-J3	24"	329.66	331.16	0.012	2.72	555.18	546.18	12.12	40.42	0.75	11.24	1.25	5.86	0.005	0.027	11.24	5.86	0.75	1.25	546.93	556.43	548.90	556.97
LINE J3B	DI-J3	JCT-J3-60°BEND	24"	27.23	28.23	0.012	2.72	555.95	555.18	12.12	40.42	0.75	11.25	1.25	5.86	0.005	0.027	9.33	3.90	0.86	1.93	556.05	557.88	557.40	557.88
LINE K1	MH-K1	OUT-K1	30"	51.01	53.01	0.012	0.55	549.80	549.51	20.05	32.87	1.41	7.03	1.52	6.42	0.004	0.005	6.98	6.42	1.42	1.52	550.93	551.32	551.69	551.96
LAT K1	CI-K1	MH-K1	24"	25.80	29.30	0.012	0.58	550.47	550.30	4.16	18.67	0.64	4.78	0.72	4.12	0.004	0.006	2.58	2.65	1.02	1.00	551.32	551.47	551.96	551.47
LINE K2A	JCT-K1-60°BEND	MH-K1	24"	89.74	91.74	0.012	0.89	551.12	550.30	15.89	23.17	1.22	7.95	1.44	6.58	0.006	0.009	7.87	6.58	1.23	1.44	551.53	552.56	552.49	553.23
LINE K2B	JCT-K2-90°T	JCT-K1-60°BEND	24"	11.00	11.00	0.012	0.89	551.22	551.12	15.89	23.18	1.22	7.95	1.44	6.58	0.006	0.009	7.27	6.58	1.31	1.44	552.43	552.66	553.26	553.33
LAT K2	CI-K2	JCT-K2-90°T	24"	4.05	5.55	0.012	6.45	551.58	551.22	3.26	62.24	0.31	10.47	0.63	3.84	0.004	0.064	1.35	1.88	1.44	1.08	552.66	552.66	553.33	552.69
LINE K3	JCT-K3-90°T	JCT-K2-90°T	24"	160.14	160.14	0.012	0.89	552.65	551.22	12.63	23.16	1.05	7.53	1.28	5.96	0.005	0.009	7.51	5.96	1.06	1.28	552.27	553.93	553.15	554.48
LAT K3	CI-K3	JCT-K3-90°T	24"	5.00	6.50	0.012	4.40	552.93	552.65	3.59	51.40	0.36	9.41	0.66	3.94	0.004	0.044	1.69	2.28	1.28	1.00	553.93	553.93	554.48	553.97
LINE K4A	MH-K4	JCT-K3-90°T	24"	58.50	60.00	0.012	0.89	553.18	552.65	9.04	23.16	0.87	6.92	1.07	5.26	0.004	0.009	6.78	5.26	0.88	1.07	553.53	554.26	554.25	554.69
LINE K4B	JCT-K4-90°T	MH-K4	24"	325.50	327.00	0.012	1.28	557.38	553.18	9.04	27.76	0.79	7.90	1.07	5.26	0.004	0.013	7.90	5.26	0.79	1.07	553.97	558.45	554.94	558.88
LAT K4	CI-K4	JCT-K4-90°T	24"	4.00	5.50	0.012	4.76	557.64	557.38	4.26	53.49	0.38	10.18	0.72	4.15	0.004	0.048	2.48	2.70	1.07	1.00	558.45	558.64	558.88	558.64
LINE K5A	MH-K5A	JCT-K4-90°T	24"	11.50	13.00	0.012	1.28	557.55	557.38	4.79	27.77	0.56	6.62	0.77	4.29	0.004	0.013	2.79	3.38	1.07	0.92	558.45	558.47	558.88	558.59
LINE K5B	MH-K5B	MH-K5A	24"	297.00	300.00	0.012	2.39	564.70	557.55	4.79	37.86	0.48	8.25	0.77	4.29	0.004	0.024	8.25	4.29	0.48	0.77	558.03	565.47	559.08	565.76
LINE K5C	JCT-K5-90°T	MH-K5B	24"	28.50	30.00	0.012	1.34	565.11	564.70	4.79	28.37	0.56	6.72	0.77	4.29	0.004	0.013	6.27	4.29	0.58	0.77	565.29	565.88	565.90	566.16
LAT K5	CI-K5	JCT-K5-90°T	24"	4.00	5.50	0.012	3.42	565.29	565.11	3.29	45.31	0.37	8.39	0.63	3.84	0.004	0.034	5.85	2.09	0.47	1.00	565.58	566.29	566.11	566.29
LINE K6	MH-K6	JCT-K5-90°T	24"	268.50	270.00	0.012	1.34	568.73	565.11	1.50	28.38	0.31	4.79	0.42	3.09	0.004	0.013	4.79	3.09	0.31	0.42	565.42	569.15	565.78	569.30
LINE K7	CI-K7	MH-K6	24"	81.52	85.52	0.012	1.49	570.00	568.73	1.50	29.95	0.30	4.97	0.42	3.09	0.004	0.015	4.97	0.96	0.31	1.00	569.03	571.00	569.42	571.00
LINE L1	CI-L2	OUT-L1	24"	8.08	9.58	0.012	0.30	549.95	549.92	4.50	13.42	0.80	3.85	0.75	4.21	0.004	0.003	3.85	2.72	0.80	1.04	550.72	550.99	550.95	550.99
LINE L4	JCT-L5-90°T	JCT-QL2	24"	27.66	27.66	0.012	0.49	552.66	552.53	10.77	17.08	1.15	5.75	1.18	5.61	0.005	0.005	5.75	5.61	1.15	1.18	553.68	553.84	554.20	554.33
LAT L5	DI-L5	JCT-L5-90°T	24"	18.39	19.39	0.012	1.73	553.00	552.66	1.51	32.26	0.30	5.25	0.43	3.10	0.004	0.017	0.79	0.96	1.18	1.00	553.84	554.00	554.33	554.00
LINE L4B	CI-L4	JCT-L5-90°T	24"	10.40	11.90	0.012	0.49	552.72	552.66	12.94	17.13	1.30	5.99	1.29	6.02	0.005	0.005	6.02	6.00	1.29	1.30	553.96	554.02	554.33	554.58
LINE L5	JCT-L6-60°Y	CI-L4	24"	67.30	69.80	0.012	2.43	554.42	552.72	10.56	38.18	0.72	10.39	1.16	5.56	0.005	0.024	9.83	5.56	0.75	1.16	553.47	555.58	554.98	556.06
LAT L7	DI-L7	JCT-L6-60°Y	24"	42.30	43.30	0.012	0.76	554.75	554.42	7.20	21.41	0.80	6.15	0.95	4.88	0.004	0.008	6.02	3.08	0.81	1.40	555.23	556.14	555.79	556.14
LINE L6A	JCT-L6A-60°Y	JCT-L6-60°Y	24"	118.32	118.32	0.012	2.43	557.29	554.42	3.35	38.19	0.40	7.48	0.64	3.87	0.004	0.024	7.46	3.87	0.40	0.64	554.82	557.93	555.69	558.16
LAT L6A	DI-L6A	JCT-L6A-60°Y	24"	20.86	21.86	0.012	5.54	558.50	557.29	0.71	57.69	0.16	6.27	0.29	2.53	0.004	0.055	6.12	0.45	0.16	1.00	557.45	559.50	558.04	559.50
LINE L6B	CI-L6B	JCT-L6A-60°Y	24"	46.67	49.17	0.012	2.43	558.48	557.29	2.65	38.17	0.36	6.98	0.57	3.62	0.004	0.024	6.84	1.69	0.36	1.00	557.65	559.48	558.38	559.48
LINE M1	DI-M1	CI-M2	24"	12.50	15.00	0.012	10.85	575.70	574.07	5.86	80.72	0.37	14.96	0.86	4.57	0.004	0.108	11.16	2.90	0.45	1.23	574.52	576.93	576.47	576.93
LINE M2A	CI-M2	JCT-M2-60°BEND	24"	4.65	6.15	0.012	2.01	574.07	573.95	8.68	34.73	0.68	9.19	1.05	5.19	0.004	0.020	6.62	5.19	0.87	1.05	574.82	575.12	575.50	575.54
LINE M2B	JCT-M2-60°BEND	JCT-M3-90°T	24"	119.10	119.10	0.012	2.01	573.95	571.56	8.68	34.70	0.68	9.18	1.05	5.19	0.004	0.020	9.07	5.19	0.69	1.05	572.25	575.00	573.53	575.42
LAT M3	CI-M3	JCT-M3-90°T	24"	25.00	27.50	0.012	6.32	573.30	571.56	2.89	61.62	0.30	10.03	0.59	3.71	0.004	0.063	9.24	1.84	0.31	1.00	571.87	574.30	573.21	574.30
LINE M3	JCT-M3-90°T	JCT-M4-90°T	24"	113.91	113.91	0.012	2.01	571.56	569.28	11.57	34.70	0.80	9.94	1.22	5.76	0.005	0.020	9.74	5.76	0.81	1.22	570.09	572.78	571.56	573.30
LAT M4	CI-M4	JCT-M4-90°T	24"	4.00	5.50	0.012	7.15	569.67	569.28	2.11	65.52	0.25	9.53	0.50	3.39	0.004	0.071	0.95	1.34	1.33	1.00	570.61	570.67	571.20	570.67
LINE M4A	JCT-M4-90°T	MH-M4	24"	63.50	65.00	0.012	2.01	569.28	567.98	13.67	34.70	0.87	10.39	1.33	6.16	0.005	0.020	9.71	6.16	0.92	1.33	568.89	570.61	570.36	571.20
LINE M4B	MH-M4	JCT-M5-90°T	24"	178.50	180.00	0.012	3.27	567.98	562.08	13.67	44.35	0.76	12.43	1.33	6.16	0.005	0.033	12.34	6.16	0.77	1.33	562.85	569.31	565.22	569.90
LAT M5	CI-M5	JCT-M5-90°T	24"	4.00	5.50	0.012	7.06	562.47	562.08	2.41	65.09	0.26	9.87	0.54	3.52	0.004	0.071	0.99	1.43	1.45	1.06	563.53	563.53	564.21	563.54
LINE M5A	JCT-M5-90°T	MH-M5	24"	68.50	70.00	0.012	3.27	562.08	559.79	16.08	44.35	0.83	12.99	1.45	6.61	0.006	0.033	11.92	6.61	0.89	1.45	560.68	563.53	562.89	564.21
LINE M5B	MH-M5	JCT-M6-90°T	24"	168.50	170.00	0.012	3.30	559.79	554.18	16.08	44.52	0.83	13.03	1.45	6.61	0.006	0.033	12.86	6.61	0.84	1.45	555.02	561.24	557.60	561.91
LAT M6	CI-M6	JCT-M6-90°T	24"	4.00	5.50	0.012	7.95	554.62	554.18	2.38	69.08	0.25	10.26	0.54	3.51	0.004	0.079	0.91	1.33	1.55	1.11	555.73	555.73	556.51	555.74
LINE M6A	JCT-M6-90°T	MH-M6	24"	76.00	78.00	0.012	3.30	554.18	551.60	18.47	44.52	0.90	13.51	1.55	7.08	0.006	0.033	12.48	7.08	0.95	1.55	552.56	555.73	554.99	556.51
LINE M6B	MH-M6	JCT-M7-90°T	30"	120.00	122.00	0.012	1.30	551.10	549.52	41.69	50.69	1.73	11.53	2.16	9.23	0.008	0.013	11.23	9.23	1.77	2.16	551.29	553.27	553.25	554.59
LAT M7	CI-M7	JCT-M7-90°T	24"	4.00	5.50	0.012	0.30	550.03	550.02	2.97	13.42	0.64	3.43	0.60	3.73	0.004	0.003	1.04	1.04	1.71	1.70	551.73	551.73	553.17	551.75
LINE M8	JCT-M7-90°T	JCT-M8-90°T	30"	170.00	170.00	0.012	1.21	549.52	547.46	44.30	48.88	1.87	11.28	2.21	9.64	0.009	0.012	11.18	9.64	1.88	2.21	549.34	551.73	551.28	553.17
LAT M8	CI-M8	JCT-M8-90°T	24"	4.00	5.50	0.012	1.40	548.04	547.96	1.24	29.00	0.28	4.59	0.38	2.93	0.004	0.014	0.43	0.45	1.73	1.65	549.69	549.69	551.17	549.69
LINE M9	JCT-M8-90°T	JCT-RM	30"	83.00	83.00	0.012	1.25	547.46	546.42	45.05	49.65	1.87	11.46	2.23	9.76	0.009	0.012	11.10	9.76	1.93	2.23	548.35	549.69	550.27	551.17
LINE N1	MH-N1	MH-M6	30"	71.28	74.78	0.012	2.11	552.68	551.10	23.57	64.55	1.05	12.12	1.65	6.84	0.005	0.021	11.08	6.84	1.12	1.65	552.22	554.14	554.13	555.06
LAT N1	CI-N1	MH-N1	24"	18.52	22.02	0.012	4.85	554.25	553.18	1.61	53.95	0.24	7.67	0.44	3.15	0.004	0.048	7.18	1.02	0.25	1.00	553.43	555.25	554.24	555.25
LINE N2A	JCT-N2-60°BEND	MH-N1	30"	87.73	89.23	0.012	0.77	553.37	552.68	22.17	39.02	1.35	8.20	1.60	6.67	0.005	0.008	8.08	6.67	1.37	1.60	554.05	554.97	555.06	555.66
LINE N2B	DI-N2	JCT-N2-60°BEND	30"	15.89	16.89	0.012	0.77	553.50	553.37	22.17	38.99	1.35	8.20	1.60	6.67	0.005	0.008	7.53	4.52	1.45	2.49	554.82	555.99	555.70	555.99
LINE O1	JCT-O1-90°T	MH-R2	48"	80.01	83.01	0.012	0.62	545.65	545.14	116.85	122.74	3.12	11.12	3.26	10.66	0.006	0.006	10.32	10.52	3.38	3.31	548.52	548.96	549.56	550.62
LAT O1	CI-O1	JCT-O1-90°T	24"	4.00	5.50	0.012	6.98	548.04	547.65	1.95	64.74	0.24	9.23	0.49	3.32	0.004	0.070	0.90	1.24	1.31	1.00	548.96	549.04	550.62	549.04
LINE O2	JCT-O2-90°T	JCT-O1-90°T	48"	72.00	72.00	0.012	0.62	546.10	545.65	115.65	122.77	3.09	11.11	3.25	10.59	0.006	0.006	10.41	10.57	3.31	3.25	548.96	549.35	550.62	551.04
LAT O2	DI-O2	JCT-O2-90°T	24"	22.50	23.50	0.012	0.42	548.20	548.10	1.90	15.88	0.47	3.40	0.48	3.30	0.004	0.004	0.92	1.01	1.25	1.16	549.35	549.36	551.04	549.37
LINE O3A	JCT-O3-VERT BRK	JCT-O2-90°T	48"	32.00	32.00	0.012	0.62	546.30	546.10	114.50	122.50	3.07	11.08	3.23	10.53	0.006	0.006	10.92	10.53	3.11	3.23	549.21	549.53	551.07	551.25
LINE O3B	JCT-O3-90°T	JCT-O3-VERT BRK	48"	66.00	66.00	0.012	1.98	547.61	546.30	114.50	219.20	2.05	17.63	3.23	10.53	0.006	0.020	14.40	10.53	2.42	3.23	548.72	550.84	551.95	552.56
LAT O3	CI-O3	JCT-O3-90°T	24"	4.00	5.50	0.012	5.89	549.93	549.61	26.00	59.48	0.93	18.30	1.79	8.78	0.010	0.059	10.76	8.78	1.44	1.79	551.05	551.72	552.85	552.92
LAT O4	JCT-O4-EX18"	CI-O3	24"	48.67	49.67	0.012	4.16	552.00	549.93	23.85	50.00	0.97	15.73	1.73	8.25	0.009	0.042	13.35	7.59	1.11	2.00	551.04	555.61	553.82	555.61
LINE O5	JCT-O5-90°T	JCT-O3-90°T	48"	109.50	109.50	0.012	1.98	549.78	547.61	91.56	219.12	1.80	16.66	2.90	9.38	0.005	0.020	14.56	9.38	2.00	2.90	549.61	552.68	552.91	554.05
LAT O5	CI-O5	JCT-O5-90°T	24"	78.10	80.60	0.012	2.16	553.52	551.78	3.46	35.98	0.42	7.24	0.65	3.90	0.004	0.022	7.17	2.20	0.42	1.00	552.20	554.52	553.01	554.52
LINE O6	JCT-O6-90°T	JCT-O5-90°T	48"	55.00	55.00	0.012	1.98	550.87	549.78	88.85	219.01	1.77	16.52	2.86	9.25	0.004	0.020	13.18	9.25	2.12	2.86	551.90	553.73	554.60	555.06
LAT O6A	CI-O6A	JCT-O6-90°T	24"	72.58	75.08	0.012	1.29	553.84	552.87	6.40	27.81	0.65	7.19	0.90	4.70	0.004	0.013	7.07	4.70	0.66	0.90	553.53	554.73	554.31	555.08
LAT O6B	CI-O6B	CI-O6A	24"	8.08	13.08	0.012	2.78	554.20	553.84	6.33	40.84	0.53	9.44	0.89	4.68	0.004	0.028	7.28	2.96	0.64	1.29	554.48	555.49	555.30	555.49
LINE O7	MH-O7	JCT-O6-90°T	48"	15.20	17.70	0.012	1.99	551.22	550.87	83.59	219.25	1.71	16.27	2.77	9.00	0.004	0.020	11.33	9.00	2.28	2.77	553.15	553.99	555.14	555.25
LAT O7	EX-JCT-O7	MH-O7	42"	42.20	45.20	0.012	7.56	555.14	551.72	69.83	299.76	1.15	25.39	2.62	9.04	0.005	0.076	17.90	7.26	1.49	3.50	553.21	559.59	558.20	559.59
LINE O8	JCT-O8-90°T	MH-O7	24"	15.30	17.80	0.012	3.36	553.82	553.22	16.66	44.93	0.84	13.24	1.47	6.72	0.006	0.034	9.85	6.72	1.06	1.47	554.28	555.29	555.79	555.99
LAT O8	CI-O8	JCT-O8-90°T	24"	4.00	5.50	0.012	5.39	554.12	553.82	2.05	56.90	0.26	8.56	0.50	3.37	0.004	0.054	0.83	1.07	1.47	1.18	555.29	555.29	555.99	555.30
LINE O9A	JCT-O9-60°BEND	JCT-O8-90°T	24"	162.70	162.70	0.012	3.36	559.29	553.82	14.61	44.93	0.78	12.78	1.38	6.33	0.005	0.034	12.63	6.33	0.79	1.38	554.61	560.67	557.10	561.29
LAT O9B	CI-O9	JCT-O9-60°BEND	24"	4.61	6.11	0.012	3.37	559.49	559.29	14.61	44.98	0.78	12.79	1.38	6.33	0.005	0.034	8.23	6.33	1.10	1.38	560.39	560.87	561.44	561.49
LINE O10	CI-O10	CI-O9	24"	150.00	155.00	0.012	3.30	564.61	559.49	10.06	44.52	0.65	11.45	1.14	5.47	0.004	0.033	11.36	5.47	0.65	1.14	560.14	565.74	562.16	566.21
LINE O11	CI-O11	CI-O10	24"	245.82	250.82	0.012	2.81	571.66	564.61	6.60	41.08	0.54	9.59	0.91	4.74	0.004	0.028	9.58	4.74	0.54	0.91	565.15	572.57	566.59	572.91
LINE O12	CI-O12	CI-O11	24"	146.12	151.12	0.012	1.57	574.03	571.66	4.25	30.72	0.50	6.87	0.72	4.14	0.004	0.016	6.86	2.70	0.50	1.00	572.16	575.03	572.89	575.03

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 11 OF 13

DIST. NO. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	398
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/9/2006

DGN=G:\JOBS\22451C-SH205\Drainage\2451sdc11.dgn, ON=10-633
5/9/2006 Plotted 09-MAY-2006 12:56

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream
LINE P1	CI-P1	CI-R1	24"	77.00	82.00	0.012	1.38	548.03	546.90	5.89	28.74	0.61	7.19	0.86	4.57	0.004	0.014	7.09	4.57	0.62	0.86	547.52	548.89	548.30	549.21
LINE P2	CI-P2	CI-P1	24"	265.00	270.00	0.012	1.22	551.32	548.03	4.11	27.07	0.53	6.22	0.71	4.10	0.004	0.012	6.22	2.62	0.53	1.00	548.55	552.32	549.16	552.32
LINE Q1	CI-Q1	CI-R2	24"	77.00	82.00	0.012	0.88	548.03	547.31	6.25	22.98	0.71	6.22	0.89	4.66	0.004	0.009	6.18	4.66	0.72	0.89	548.02	548.91	548.62	549.25
LINE Q2	CI-Q2	CI-Q1	24"	265.00	270.00	0.012	1.22	551.32	548.03	4.37	27.07	0.54	6.33	0.74	4.18	0.004	0.012	6.33	2.71	0.54	1.02	548.57	552.34	549.20	552.34
LINE R1	CI-R1	OUT-R1	5'X4'	17.25	18.75	0.012	0.53	544.90	544.80	181.59	193.84	3.21	11.33	3.45	10.53	0.004	0.005	11.01	10.53	3.30	3.45	548.10	548.35	549.98	550.07
LINE R2A	JCT-RM	CI-R1	5'X4'	4.00	5.50	0.012	0.44	544.92	544.90	175.94	175.94	3.37	10.44	3.38	10.42	0.004	0.004	10.21	10.21	3.45	3.45	548.35	548.37	550.07	549.99
LINE R2B	MH-R2	JCT-RM	5'X4'	67.50	70.00	0.012	0.30	545.14	544.92	138.79	146.50	3.23	8.59	2.88	9.63	0.004	0.003	8.05	8.22	3.45	3.38	548.37	548.52	549.99	549.56
LINE R2C	CI-R2	MH-R2	36"	2.50	6.50	0.012	2.62	546.31	546.14	26.33	116.86	0.97	13.35	1.66	6.57	0.004	0.026	4.38	4.70	2.38	2.22	548.52	548.53	549.56	548.82
LINE R3	DI-R3	CI-R2	36"	13.50	16.00	0.012	4.33	547.00	546.31	17.85	150.40	0.70	14.30	1.35	5.77	0.003	0.043	3.19	3.65	2.22	1.96	548.53	548.96	548.82	548.96
LINE QQ1	CI-QQ1	CI-NN11	24"	48.00	53.00	0.012	0.69	555.37	555.01	3.17	20.29	0.54	4.70	0.62	3.81	0.004	0.007	1.19	1.56	1.59	1.23	556.59	556.60	557.42	556.63
LINE PP1	CI-PP1	JCT-PP1	24"	32.24	32.24	0.012	2.24	569.19	568.47	0.73	36.71	0.20	4.62	0.29	2.55	0.004	0.022	4.58	0.47	0.20	1.00	568.66	570.19	568.99	570.19
LINE PP2	JCT-PP1	JCT-PP2	24"	57.57	57.57	0.012	2.24	568.47	567.17	1.11	36.70	0.24	5.24	0.36	2.85	0.004	0.022	5.22	2.85	0.24	0.36	567.41	568.83	567.84	568.95
LAT PP2	CI-PP2	JCT-PP1	24"	17.70	19.20	0.012	0.97	568.65	568.47	0.38	24.08	0.18	2.82	0.21	2.14	0.004	0.010	2.82	0.24	0.18	1.00	568.64	569.65	568.76	569.65
LAT PP3	CI-PP3	JCT-PP2	24"	16.34	17.84	0.012	8.56	568.70	567.17	0.72	71.69	0.14	7.34	0.29	2.54	0.004	0.086	7.10	0.46	0.15	1.00	567.32	569.70	568.12	569.70
LINE PP3	JCT-PP2	CI-PP4	24"	81.70	81.70	0.012	2.24	567.17	565.34	1.83	36.71	0.30	6.09	0.47	3.26	0.004	0.022	6.08	3.26	0.30	0.47	565.65	567.64	566.22	567.81
LINE PP4	CI-PP4	CI-PP5	24"	79.64	79.64	0.012	1.69	565.34	564.00	2.89	31.85	0.41	6.30	0.59	3.70	0.004	0.017	6.26	3.70	0.41	0.59	564.40	565.93	565.02	566.15
LINE PP5	CI-PP5	CI-PP6	24"	154.99	154.99	0.012	2.25	564.00	560.51	5.13	36.76	0.51	8.25	0.80	4.39	0.004	0.023	8.23	4.39	0.51	0.80	561.01	564.79	562.07	565.09
LINE PP6	CI-PP6	CI-PP7	24"	208.67	208.67	0.012	2.23	560.51	555.85	6.71	36.60	0.58	8.87	0.92	4.77	0.004	0.022	8.87	4.77	0.58	0.92	556.44	561.43	557.66	561.78
LINE PP7	CI-PP7	MH-NN1	24"	95.78	100.28	0.012	1.58	555.85	554.27	8.20	30.82	0.71	8.30	1.02	5.09	0.004	0.016	8.18	5.09	0.71	1.02	554.98	556.88	556.02	557.28
LINE NN1	CI-NN1	CI-NN2	24"	244.00	249.00	0.012	0.35	579.50	578.62	0.60	14.50	0.28	2.27	0.27	2.42	0.004	0.003	0.87	0.38	0.54	1.00	579.17	580.50	579.32	580.50
LINE NN2	CI-NN2	CI-NN3	24"	195.00	200.00	0.012	0.30	578.62	578.02	2.16	13.42	0.54	3.13	0.51	3.41	0.004	0.003	2.45	3.13	0.65	0.54	578.67	579.17	578.91	579.32
LINE NN3	CI-NN3	CI-NN4	24"	290.95	290.95	0.012	2.17	578.02	571.71	3.43	36.11	0.42	7.24	0.65	3.89	0.004	0.022	7.24	3.89	0.42	0.65	572.12	578.67	572.94	578.91
LINE NN4	CI-NN4	CI-NN5	24"	176.95	176.95	0.012	2.39	571.71	567.48	5.43	37.89	0.51	8.56	0.82	4.46	0.004	0.024	8.55	4.46	0.51	0.82	567.99	572.53	569.13	572.84
LINE NN5A	CI-NN5	JCT-NN1	24"	34.96	34.96	0.012	3.02	567.48	566.42	6.63	42.59	0.53	9.86	0.91	4.75	0.004	0.030	8.80	4.75	0.58	0.91	567.00	568.39	568.21	568.74
LAT NN6	CI-NN6	JCT-NN1	24"	24.50	27.00	0.012	0.97	566.68	566.42	2.43	24.08	0.43	4.91	0.54	3.53	0.004	0.010	1.41	1.55	1.08	1.00	567.50	567.68	567.93	567.68
LINE NN5B	JCT-NN1	CI-NN7	24"	125.54	125.54	0.012	3.02	566.42	562.63	9.06	42.59	0.63	10.77	1.08	5.27	0.004	0.030	10.64	5.27	0.63	1.08	563.26	567.50	565.03	567.93
LAT NN8	CI-NN8	CI-NN7	24"	20.06	24.06	0.012	0.83	562.83	562.63	2.99	22.33	0.49	4.95	0.60	3.74	0.004	0.008	1.37	1.65	1.31	1.12	563.95	563.95	564.52	563.98
LINE NN7	CI-NN7	CI-NN9	24"	160.49	160.49	0.012	1.46	562.63	560.28	13.33	29.64	0.94	9.18	1.31	6.09	0.005	0.015	9.12	6.09	0.95	1.31	561.23	563.95	562.52	564.52
LINE NN9	CI-NN9	CI-NN10	24"	158.56	158.56	0.012	2.40	560.28	556.48	14.50	37.95	0.86	11.27	1.37	6.31	0.005	0.024	11.14	6.31	0.87	1.37	557.35	561.66	559.28	562.27
LINE NN10	CI-NN10	CI-NN11	24"	101.98	106.98	0.012	1.38	556.48	555.01	15.70	28.77	1.05	9.36	1.43	6.54	0.006	0.014	9.16	6.54	1.07	1.43	556.08	557.91	557.38	558.57
LINE NN11A	CI-NN11	MH-NN1	24"	75.69	79.19	0.012	0.93	555.01	554.27	20.07	23.65	1.42	8.45	1.61	7.41	0.007	0.009	8.37	7.41	1.43	1.61	555.70	556.62	556.79	557.47
LINE NN11B	MH-NN1	JCT-NN2	36"	16.31	18.31	0.012	0.30	553.27	553.21	28.28	39.58	1.88	6.08	1.72	6.74	0.004	0.003	5.88	5.92	1.93	1.92	555.14	555.19	555.71	555.73
LAT NN12	CI-NN12	JCT-NN2	24"	4.62	6.12	0.012	7.50	554.67	554.21	0.75	67.11	0.15	7.08	0.30	2.56	0.004	0.075	0.52	0.47	0.93	1.00	555.14	555.67	555.71	555.67
LINE NN12	JCT-NN2	JCT-NN3	36"	112.00	112.00	0.012	0.30	553.21	552.88	29.02	39.58	1.91	6.12	1.74	6.81	0.004	0.003	5.82	6.04	1.99	1.93	554.87	555.14	555.48	555.71
LAT NN13	CI-NN13	JCT-NN3	24"	4.62	6.12	0.012	5.60	554.22	553.88	2.27	57.98	0.27	8.94	0.52	3.46	0.004	0.056	1.46	1.44	0.99	1.00	554.87	555.22	555.48	555.22
LINE NN13A	JCT-NN3	MH-NN2	36"	55.71	55.71	0.012	0.30	552.88	552.71	31.29	39.58	2.01	6.21	1.81	7.00	0.004	0.003	6.37	6.28	1.97	1.99	554.68	554.87	555.31	555.48
LINE NN13B	MH-NN2	OUT-NN0	36"	76.22	78.22	0.012	0.31	552.71	552.47	31.29	40.10	1.99	6.27	1.81	7.00	0.004	0.003	7.00	6.37	1.81	1.97	554.28	554.68	555.05	555.31
LINE MM1	CI-MM1	CI-MM2	24"	48.50	53.50	0.012	1.20	580.63	579.99	0.24	26.85	0.13	2.65	0.17	1.89	0.005	0.012	2.65	0.15	0.13	1.00	580.12	581.63	580.23	581.63
LINE MM2	CI-MM2	JCT-MM3-90° T	24"	63.45	65.94	0.012	0.35	579.99	579.75	0.62	14.52	0.28	2.30	0.27	2.45	0.004	0.004	0.40	0.56	1.00	0.77	580.75	580.75	581.05	580.76
LAT MM3B	CI-MM3B	CI-MM3A	24"	23.20	26.20	0.012	0.75	582.11	581.91	5.83	21.26	0.72	5.77	0.85	4.56	0.004	0.008	5.55	2.89	0.74	1.23	582.65	583.34	583.13	583.14
LAT MM3A	CI-MM3A	JCT-MM3-90° T	24"	60.85	63.35	0.012	3.41	581.91	579.75	6.28	45.25	0.50	10.13	0.89	4.67	0.004	0.034	9.73	4.67	0.52	0.89	580.27	582.80	581.75	583.14
LINE MM3	JCT-MM3-90° T	CI-MM4	24"	32.58	35.08	0.012	0.30	579.75	579.65	6.81	13.42	1.01	4.29	0.93	4.79	0.004	0.003	4.71	4.34	0.94	1.00	580.59	580.75	580.95	581.05
LINE MM4	CI-MM4	CI-MM5	24"	47.00	52.00	0.012	0.93	579.65	579.17	6.97	23.62	0.74	6.54	0.94	4.83	0.004	0.009	6.38	4.83	0.76	0.94	579.92	580.59	580.56	580.95
LINE MM5	CI-MM5	JCT-MM5-60° BEND	36"	36.38	37.88	0.012	0.44	579.17	579.00	7.18	16.25	0.93	5.01	0.95	4.87	0.004	0.004	3.83	4.21	1.15	1.07	580.15	580.23	580.33	580.46
LINE MM6	JCT-MM5-60° BEND	CI-MM6	24"	44.30	46.80	0.012	0.44	579.00	578.79	7.18	16.28	0.93	5.02	0.95	4.87	0.004	0.004	3.36	3.83	1.29	1.15	580.08	580.15	580.44	580.33
LINE MM7	CI-MM6	CI-MM7	24"	55.00	60.00	0.012	0.35	578.79	578.58	10.31	14.54	1.24	5.02	1.15	5.52	0.004	0.004	4.50	4.83	1.37	1.29	579.95	580.08	580.34	580.44
LINE MM8	CI-MM7	CI-MM8	24"	73.00	78.00	0.012	0.39	578.58	578.28	11.46	15.20	1.30	5.32	1.22	5.74	0.005	0.004	4.49	5.01	1.51	1.37	579.79	579.95	580.23	580.34
LINE MM9	CI-MM8	CI-MM9	24"	97.00	102.00	0.012	0.35	578.28	577.92	13.49	14.57	1.52	5.27	1.32	6.12	0.005	0.004	5.35	5.29	1.50	1.51	579.42	579.79	579.92	580.23
LINE MM10	CI-MM9	MH-MM11	24"	48.31	52.31	0.012	0.58	577.92	577.62	15.24	18.65	1.38	6.62	1.41	6.45	0.005	0.006	5.71	6.04	1.58	1.50	579.20	579.42	580.02	579.92
LAT MM10	CI-MM10	CI-MM11	24"	23.54	26.54	0.012	0.84	578.74	578.51	4.13	22.40	0.58	5.44	0.71	4.11	0.004	0.008	5.23	2.63	0.60	1.00	579.11	579.74	579.54	579.74
LAT MM11	CI-MM11	MH-MM11	24"	25.85	30.35	0.012	2.95	578.51	577.62	4.48	42.12	0.44	8.73	0.74	4.21	0.004	0.030	7.89	4.21	0.47	0.74	578.09	579.26	579.06	579.53
LINE MM11	MH-MM11	JCT-MM12-60° Y	24"	140.74	140.74	0.012	2.32	577.62	574.35	19.38	37.36	1.02	12.00	1.58	7.27	0.007	0.023	11.73	7.27	1.04	1.58	575.39	579.20	577.53	580.02
LAT MM12	CI-MM12	JCT-MM12-60° Y	24"	4.62	6.12	0.012	6.96	574.77	574.35	1.58	64.65	0.22	8.66	0.44	3.14	0.004	0.070	0.58	0.80	1.63	1.20	575.97	575.98	576.85	575.98
LINE MM12	JCT-MM12-60° Y	JCT-MM13-60° Y	24"	108.21	108.21	0.012	2.30	574.35	571.86	20.58	37.16	1.06	12.13	1.63	7.52	0.007	0.023	11.65	7.52	1.10	1.63	572.96	575.97	575.07	576.85
LAT MM13	CI-MM13	JCT-MM13-60° Y	24"	4.63	6.13	0.012	5.56	572.20	571.86	3.72	57.77	0.34	10.33	0.68	3.98	0.004	0.056	1.30	1.63	1.70	1.36	573.56	573.56	574.57	573.59
LINE MM13A	JCT-MM13-60° Y	MH-MM14	24"	34.57	36.07	0.012	1.61	571.86	571.28	22.91	31.05	1.28	10.81	1.70	8.04	0.008	0.016	9.79	8.04	1.40	1.70	572.68	573.56	574.17	574.57
LINE MM13B	MH-MM14	JCT-MM14-60° Y	36"	18.27	19.77	0.012	0.38	569.02	568.95	22.91	44.50	1.53	6.34	1.54	6.26	0.004	0.004	5.60	5.69	1.69	1.67	570.64	570.69	571.27	571.18
LAT MM14	CI-MM14	JCT-MM14-60° Y	24"	4.62	6.12	0.012	2.79	570.12	569.95	3.41	40.97	0.39	7.90	0.65	3.89	0.004	0.028	5.73	2.17	0.49	1.00	570.44	571.12	570.95	571.12
LINE MM14	JCT-MM14-60° Y	JCT-MM15-60° Y	36"	49.34	49.34	0.012	0.38	568.95	568.76	26.23	44.48	1.66	6.55	1.65	6.56	0.004	0.004	5.77	6.41	1.84	1.69	570.60	570.64	571.23	571.27
LAT MM15	CI-MM15	JCT-MM15-60° Y	24"	4.63	6.13	0.012	7.63	570.23	569.76	3.25	67.71	0.30	11.10	0.63	3.83	0.004	0.076	7.32	2.07	0.40	1.00	570.16	571.23	571.00	571.23
LINE MM15	JCT-MM15-60° Y	JCT-MM16-60° Y	36"	36.66	36.66	0.012	0.38	568.76	568.62	29.00	44.65	1.76	6.72	1.74	6.81	0.004	0.004	6.00	6.38	1.94	1.84	570.56	570.60	571.28	571.23
LAT MM16	CI-MM16	JCT-MM16-60° Y	24"	4.63	6.13	0.012	2.09	569.75	569.62	4.73	35.41	0.49	7.84	0.77	4.28	0.004	0.021	3.26	2.75	0.94	1.07	570.56	570.82	571.28	570.82
LINE MM16A	JCT-MM16-60° Y	JCT-MM16A-90° T	36"	41.38	41.38	0.012	0.38	568.62	568.47	32.80	44.51	1.92	6.89	1.86	7.13	0.004	0.004	6.58	6.79	1.99	1.94	570.46	570.56	571.19	571.28
LAT MM16A	CI-MM16A	JCT-MM16A-90° T	24"	36.16	38.66	0.012	7.18	572.24	569.47	1.86	65.66	0.23	9.20	0.47	3.28	0.004	0.072	9.04	1.19	0.23	1.00	569.70	573.24	570.98	573.24
LINE MM16B	JCT-MM16A-90° T	JCT-MM16B-60° Y	36"	50.62	50.62	0.012	0.38	568.47	568.27	34.15	44.50	1.97	6.94	1.90	7.24	0.004	0.004	6.64	6.85	2.05	1.99	570.32	570.46	571.05	571.19
LAT MM16B	CI-MM16B	JCT-MM16B-60° Y	24"	37.77	40.27	0.012	7.37	572.24	569.27	1.52	66.52	0.21	8.73	0.43	3.10	0.004	0.074	8.62	0.97	0.21	1.00	569.48	573.24	570.65	573.24
LINE MM17	JCT-MM16B-60° Y	JCT-MM17-60° Y	36"	28.39	28.39	0.012	0.38	568.27	568.17	35.20	44.56	2.01	6.99	1.93	7.33	0.004	0.004	6.73	6.84	2.08	2.05	570.25	570.32	571.02	571.05
LAT MM17	CI-MM17	JCT-MM17-60° Y	24"	4.74	6.24	0.012	9.06	569.73	569.17	2.21	73.77	0.24	10.51	0.52	3.44	0.004	0.091	7.32	1.41	0.31	1.00	569.47	570.73	570.31	570.73
LINE MM17A	JCT-MM17-60° Y	MH-MM18	36"	83.36	85.36	0.012	0.38	568.17	567.84	36.83	44.58	2.08	7.05	1.97	7.47	0.004	0.004	7.02	7.04	2.09	2.08	569.93	570.25	570.88	571.02
LAT MM18	DI-MM18	MH-MM18	24"	14.36	17.36	0.012	2.36	572.25	571.84	4.98	37.66	0.49	8.32	0.79	4.35	0.004	0.024	6.95	2.78	0.56	1.11	572.40	573.36	573.15	573.36
LINE MM17B	MH-MM18	OUT-MM0	36"	92.83	94.83	0.012	1.23	567.84	566.67	41.02	80.26	1.52	11.42	2.09	7.82	0.005	0.012	10.72	7.82	1.60	2.09	568.27	569.93	570.06	570.88
LINE MM21	SET-MM21	SET-MM20	4'x2'	73.34	73.34	0.012	1.36	557.00	556.00	55.34	88.28	1.17	11.82	1.81	7.64	0.004	0.014	10.81	7.64	1.28	1.81	557.28	558.81	559.10	559.72
LINE MM22	SET-MM23	SET-MM22	4'x2'	89.68	89.68	0.012	1.68	564.00	562.49	46.00	98.10	0.96	12.02	1.60	7.18	0.004	0.017	11.19	5.75	1.03	2.00	563.52	566.89	565.47	566.89

Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

Texas Department of Transportation

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 12 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	399
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER
5/10/2006

DGN=G:\JOBS\22451C-SH205\Drai\page\2451adc12.dgn, ON=10-633
5/10/2006 Plotted 10-MAY-2006 09:23

SEWER COMPUTATIONS

Link - ID	Upstream Node	Downstream Node	SIZE	Actual Length (ft)	Hydraulic Length (ft)	Manning's N Value	Slope (%)	Invert Upstream (ft)	Invert Downstream (ft)	Discharge (cfs)	Capacity (cfs)	Uniform Depth (ft)	Uniform Velocity (ft/s)	Critical Depth (ft)	Critical Velocity (ft/s)	Critical Slope (%)	Friction Slope (%)	Actual Velocity Downstream (ft/s)	Actual Velocity Upstream (ft/s)	Actual Depth Downstream (ft)	Actual Depth Upstream (ft)	HGL Downstream (ft)	HGL Upstream (ft)	EGL Downstream (ft)	EGL Upstream (ft)
LINE LL1	CI-LL1	CI-LL2A	24"	79.63	84.63	0.012	0.70	580.55	579.96	1.49	20.50	0.37	3.80	0.42	3.09	0.004	0.007	3.80	0.95	0.37	1.00	580.32	581.55	580.55	581.55
LINE LL2A	CI-LL2A	CI-LL2B	24"	35.00	40.00	0.012	0.35	579.96	579.82	1.67	14.50	0.46	3.08	0.45	3.19	0.004	0.004	2.82	3.08	0.49	0.46	580.30	580.41	580.46	580.56
LINE LL2B	CI-LL2B	CI-LL2C	24"	35.00	40.00	0.012	0.35	579.82	579.68	1.89	14.50	0.49	3.19	0.49	3.29	0.004	0.004	2.58	3.18	0.57	0.49	580.24	580.30	580.37	580.46
LINE LL2C	CI-LL2C	CI-LL3	24"	35.00	40.00	0.012	0.35	579.68	579.54	2.11	14.50	0.52	3.29	0.50	3.39	0.004	0.003	2.17	2.88	0.70	0.57	580.23	580.24	580.25	580.37
LINE LL3A	CI-LL3	MH-LL1	24"	28.00	32.00	0.012	1.85	579.54	578.94	2.32	33.33	0.36	6.10	0.53	3.49	0.004	0.019	1.09	2.39	1.28	0.70	580.23	580.23	580.78	580.25
LAT LL5A	CI-LL5	CI-LL4	24"	27.00	30.00	0.012	1.83	581.06	580.51	4.90	33.12	0.52	7.55	0.78	4.32	0.004	0.018	6.90	2.77	0.56	1.10	581.07	582.16	581.81	582.16
LAT LL5B	CI-LL4	MH-LL1	24"	59.14	63.14	0.012	2.49	580.51	578.94	10.83	38.65	0.72	10.56	1.18	5.62	0.005	0.025	9.86	5.62	0.76	1.18	579.71	581.69	581.22	582.18
LINE LL3B	MH-LL1	MH-LL2	24"	46.32	49.32	0.012	1.28	578.94	578.31	12.71	27.69	0.95	8.63	1.28	5.97	0.005	0.013	8.11	5.97	1.00	1.28	579.31	580.23	580.34	580.78
EXIST LL3B	MH-LL2	OUT-LL0	24"	90.60	92.10	0.012	1.43	578.31	577.00	14.61	29.27	1.00	9.31	1.38	6.33	0.005	0.014	9.05	6.33	1.02	1.38	578.02	579.69	579.30	580.32
LINE KK1	CI-KK1	CI-KK2	24"	173.00	178.00	0.012	0.35	579.47	578.85	0.66	14.50	0.29	2.34	0.28	2.49	0.004	0.004	0.52	0.42	0.85	1.00	579.69	580.47	579.71	580.47
LINE KK2	CI-KK2	MH-LL2	24"	18.80	22.80	0.012	2.34	578.85	578.31	2.05	37.49	0.32	6.39	0.50	3.37	0.004	0.023	0.89	1.62	1.38	0.85	579.69	579.69	580.32	579.71
LINE KK3	CI-KK3	OUT-KK3	24"	5.50	7.00	0.012	1.45	577.10	577.00	1.91	29.50	0.34	5.28	0.48	3.30	0.004	0.014	4.47	1.21	0.39	1.00	577.39	578.10	577.70	578.10
LINE HH1	CI-HH1	CI-HH2	24"	213.00	218.00	0.012	1.54	582.02	578.66	1.78	30.43	0.33	5.29	0.46	3.24	0.004	0.015	5.29	1.14	0.33	1.00	578.99	583.02	579.43	583.02
LINE HH2	CI-HH2	MH-JJ1	24"	12.50	17.00	0.012	2.92	578.66	578.16	3.17	41.88	0.37	7.86	0.62	3.81	0.004	0.029	1.16	1.72	1.63	1.14	579.79	579.80	580.68	579.82
LINE JJ1A	CI-JJ1A	JCT-JJ1A	24"	15.01	16.51	0.012	0.75	583.75	583.63	3.04	21.20	0.51	4.79	0.61	3.76	0.004	0.007	4.59	1.93	0.53	1.00	584.15	584.75	584.48	584.75
LINE JJ1B	JCT-JJ1A	CI-JJ1B	24"	65.00	67.50	0.012	0.75	583.63	583.12	3.04	21.22	0.51	4.79	0.61	3.76	0.004	0.007	4.78	3.76	0.51	0.61	583.63	584.24	584.31	583.99
LINE JJ2A	CI-JJ1B	JCT-JJ1	24"	19.50	22.00	0.012	1.86	583.12	582.71	4.26	33.46	0.48	7.31	0.73	4.15	0.004	0.019	2.32	4.03	1.13	0.74	583.84	583.86	584.31	583.94
LAT JJ2	CI-JJ2A	JCT-JJ1	24"	23.25	24.75	0.012	8.85	584.90	582.71	5.75	72.89	0.38	13.84	0.85	4.54	0.004	0.088	11.66	2.88	0.43	1.22	583.14	586.12	585.26	586.12
LINE JJ2B	JCT-JJ1	JCT-JJ2	24"	50.50	50.50	0.012	1.86	582.71	581.77	10.01	33.45	0.75	9.30	1.13	5.46	0.004	0.019	8.61	5.46	0.79	1.13	582.56	583.84	583.72	584.31
LAT JJ2C	DI-JJ2C	JCT-JJ2	24"	25.00	26.00	0.012	8.96	584.10	581.77	4.54	73.37	0.34	12.97	0.75	4.23	0.004	0.090	11.34	2.73	0.37	1.05	582.14	585.15	584.15	585.15
LINE JJ2C	JCT-JJ2	CI-JJ2B	24"	20.00	22.50	0.012	1.87	581.77	581.35	14.56	33.48	0.92	10.28	1.38	6.32	0.005	0.019	8.58	6.32	1.06	1.38	582.41	583.14	583.56	583.77
LINE JJ3	CI-JJ2B	CI-JJ3	24"	30.00	35.00	0.012	1.33	581.35	580.88	16.07	28.26	1.08	9.28	1.45	6.61	0.006	0.013	8.47	6.61	1.16	1.45	582.05	582.80	583.16	583.47
LINE JJ4	CI-JJ3	CI-JJ4	24"	104.28	109.28	0.012	1.36	580.88	579.40	16.27	28.56	1.08	9.39	1.45	6.65	0.006	0.014	9.20	6.65	1.10	1.45	580.50	582.34	581.82	583.03
LINE JJ5A	CI-JJ4	CI-JJ5	24"	32.00	37.00	0.012	0.68	579.40	579.15	16.99	20.15	1.41	7.19	1.49	6.79	0.006	0.007	7.16	6.79	1.41	1.49	580.56	580.89	581.36	581.60
LINE JJ5B	CI-JJ5	MH-JJ1	24"	42.72	45.72	0.012	2.16	579.15	578.16	17.46	35.99	0.98	11.37	1.51	6.88	0.006	0.022	10.09	6.88	1.08	1.51	579.24	580.66	580.83	581.39
LINE JJ5C	MH-JJ1	JCT-JJ5B	24"	58.34	59.84	0.012	1.02	578.16	577.56	20.63	24.69	1.40	8.80	1.63	7.53	0.007	0.010	8.62	7.53	1.43	1.63	578.98	579.79	580.14	580.68
LAT JJ5	CI-HH3	JCT-JJ5B	24"	6.41	7.91	0.012	1.84	577.70	577.56	0.86	33.22	0.22	4.53	0.32	2.67	0.004	0.018	0.31	0.34	1.66	1.51	579.22	579.22	580.14	579.22
LINE JJ5D	JCT-JJ5B	MH-JJ2	24"	4.05	5.55	0.012	1.03	577.56	577.50	21.50	24.84	1.44	8.90	1.66	7.72	0.008	0.010	8.13	7.72	1.57	1.66	579.07	579.22	580.10	580.14
EXIST JJ5C	MH-JJ2	OUT-JJ0	24"	53.51	55.01	0.012	1.53	577.50	576.66	21.50	30.29	1.25	10.46	1.66	7.72	0.008	0.015	9.79	7.72	1.32	1.66	577.98	579.16	579.47	580.08
LINE GG1A	CI-GG1	JCT-GG1	24"	27.45	29.95	0.012	9.90	573.96	570.99	2.38	77.09	0.24	11.07	0.54	3.51	0.004	0.099	10.54	1.51	0.25	1.00	571.24	574.96	572.99	574.96
LAT GG2	CI-GG2	JCT-GG1	24"	52.54	55.04	0.012	1.04	571.56	570.99	4.28	24.98	0.56	5.94	0.73	4.15	0.004	0.010	5.85	2.70	0.57	1.01	571.56	572.57	572.09	572.57
LINE GG1B	JCT-GG1	CI-GG3	24"	139.73	142.23	0.012	9.89	570.99	556.92	6.65	77.09	0.40	15.03	0.91	4.75	0.004	0.099	14.97	4.75	0.40	0.91	557.32	571.91	560.83	572.26
LINE GG3	CI-GG3	CI-GG4	24"	283.46	288.46	0.012	6.54	556.92	538.05	10.62	62.68	0.56	14.86	1.17	5.58	0.005	0.065	14.83	5.58	0.56	1.17	538.61	558.09	542.04	558.57
LINE GG4A	CI-GG4	JCT-GG2	24"	22.38	24.88	0.012	7.07	538.05	536.29	14.72	65.17	0.65	16.76	1.38	6.35	0.005	0.071	12.57	6.35	0.80	1.38	537.09	539.43	539.55	540.06
LINE GG4B	JCT-GG2	OUT-GG0	24"	67.74	67.74	0.012	6.26	536.29	532.05	14.72	61.31	0.67	16.04	1.38	6.35	0.005	0.063	14.66	6.35	0.71	1.38	532.76	537.67	536.11	538.30
LINE FF1A	CI-FF1	JCT-FF1	24"	29.65	32.15	0.012	8.29	559.92	557.25	4.87	70.58	0.36	12.88	0.78	4.32	0.004	0.083	11.59	2.77	0.38	1.09	557.64	561.01	559.74	561.01
LAT FF2	CI-FF2	JCT-FF1	24"	29.68	32.18	0.012	0.76	557.50	557.25	12.89	21.42	1.12	7.13	1.29	6.01	0.005	0.008	5.19	4.10	1.48	2.00	558.73	559.52	559.44	559.52
LINE FF1B	JCT-FF1	CI-FF3	24"	99.56	102.07	0.012	8.29	557.25	548.79	16.77	70.57	0.66	18.41	1.48	6.75	0.006	0.083	17.61	6.75	0.69	1.48	549.47	558.73	554.31	559.44
LINE FF3	CI-FF3	CI-FF4	24"	166.45	171.45	0.012	3.57	548.79	542.67	17.78	46.29	0.86	13.77	1.52	6.94	0.006	0.036	13.57	6.94	0.87	1.52	543.54	550.31	546.41	551.06
LINE FF4	CI-FF4	OUT-FF0	24"	73.79	76.29	0.012	2.74	542.67	540.59	19.44	40.54	0.98	12.77	1.59	7.28	0.007	0.027	11.81	7.28	1.04	1.59	541.62	544.26	543.80	545.08
LINE EE1	CI-EE1	CI-EE2	24"	125.25	125.25	0.012	5.56	580.35	573.39	2.45	57.77	0.28	9.13	0.55	3.54	0.004	0.056	9.13	1.56	0.28	1.00	573.67	581.35	574.96	581.35
LINE EE2	CI-EE2	CI-EE3	24"	163.13	163.13	0.012	5.55	573.39	564.33	6.03	57.74	0.44	11.91	0.87	4.61	0.004	0.056	11.90	4.61	0.44	0.87	564.77	574.26	566.98	574.59
LINE EE3	CI-EE3	CI-EE4	24"	200.45	200.45	0.012	5.79	564.33	552.74	10.66	58.94	0.58	14.24	1.17	5.58	0.005	0.058	14.19	5.58	0.58	1.17	553.31	565.50	556.46	565.98
LINE EE4	CI-EE4	CI-EE5	24"	218.43	218.43	0.012	5.08	552.74	541.65	13.62	55.21	0.68	14.56	1.33	6.15	0.005	0.051	14.52	6.15	0.68	1.33	542.33	554.06	545.62	554.65
LINE EE5A	CI-EE5	JCT-EE1	24"	21.78	24.28	0.012	6.33	541.65	540.11	18.07	61.66	0.74	17.05	1.53	7.00	0.006	0.063	12.54	7.00	0.94	1.53	541.05	543.18	543.50	543.94
LINE EE5B	JCT-EE1	JCT-EE2	24"	67.73	67.73	0.012	6.33	540.11	535.83	18.07	61.65	0.74	17.05	1.53	7.00	0.006	0.063	15.31	7.00	0.80	1.53	536.65	541.64	540.29	542.41
LAT EE6	CI-EE6	JCT-EE2	24"	4.58	6.08	0.012	14.29	536.70	535.83	1.74	92.64	0.19	11.46	0.46	3.22	0.004	0.143	0.65	1.11	1.60	1.00	537.43	537.70	538.27	537.70
LINE EE5C	JCT-EE2	OUT-EE0	24"	7.77	7.77	0.012	6.27	535.83	535.34	19.81	61.34	0.78	17.42	1.60	7.36	0.007	0.063	10.33	7.36	1.17	1.60	536.51	537.43	538.18	538.27
LINE DD1	CI-DD1	CI-DD2	24"	131.40	136.40	0.012	7.55	579.38	569.09	3.07	67.32	0.29	10.86	0.61	3.77	0.004	0.075	10.82	1.95	0.29	1.00	569.38	580.38	571.21	580.38
LINE DD2	CI-DD2	CI-DD3	24"	222.85	222.85	0.012	8.41	569.09	550.34	5.04	71.09	0.36	13.08	0.79	4.36	0.004	0.084	13.06	4.36	0.36	0.79	550.70	569.88	553.37	570.17
LINE DD3	CI-DD3	CI-DD4	24"	220.51	225.51	0.012	3.19	550.34	543.15	7.76	43.75	0.57	10.51	0.99	5.00	0.004	0.032	10.49	5.00	0.57	0.99	543.72	551.33	545.44	551.72
LINE DD4	CI-DD4	CI-DD5	24"	86.03	91.03	0.012	1.60	543.15	541.70	10.56	30.97	0.81	8.92	1.16	5.56	0.005	0.016	8.69	5.56	0.82	1.16	542.52	544.31	543.69	543.85
LINE DD5	CI-DD5	OUT-DD0	24"	8.24	10.74	0.012	10.20	541.70	540.60	12.00	78.25	0.53	18.03	1.24	5.84	0.005	0.102	3.82	3.86	2.00	1.93	543.60	543.63	543.83	543.85
LINE CC1	CI-CC1	CI-CC2	24"	300.54	305.54	0.012	2.59	585.78	577.88	3.18	39.42	0.38	7.53	0.62	3.81	0.004	0.026	7.53	2.02	0.38	1.00	578.26	586.78	579.15	586.78
LINE CC2A	CI-CC2	JCT-CC1	24"	102.99	105.49	0.012	1.01	577.88	576.81	5.59	24.68	0.65	6.35	0.84	4.50	0.004	0.010	6.33	4.50	0.65	0.84	577.46	578.71	578.08	579.03
LINE CC2B	JCT-CC1	CI-CC3	24"	143.08	145.59	0.012	1.01	576.81	575.33	5.59	24.68	0.65	6.35	0.84	4.50	0.004	0.010	6.34	4.50	0.65	0.84	575.98	577.64	576.61	577.96
LINE CC3	CI-CC3	CI-CC5	24"	181.11	184.11	0.012	2.87	575.33	570.05	7.06	41.51	0.56	9.85	0.94	4.85	0.004	0.029	9.83	4.85	0.56	0.94	570.61	576.28	572.12	576.64
LAT CC4A	CI-CC4	JCT-CC2	24"	40.54	42.04	0.012	1.99	574.39	573.55	2.74	34.58	0.38	6.57	0.58	3.65	0.004	0.020	6.38	1.74	0.39	1.00	573.94	575.39	574.57	575.39
LAT CC4B	JCT-CC2	CI-CC5	24"	173.32	175.82	0.012	1.99	573.55	570.05	2.74	34.58	0.38	6.57	0.58	3.65	0.004	0.020	6.57	3.65	0.38	0.58	570.43	574.13	571.10	574.33
LINE CC5A	CI-CC5	JCT-CC3	24"	36.59	39.09	0.012	1.63	570.05	569.41	11.40	31.28	0.84	9.17	1.21	5.72	0.005	0.016	8.30	5.72	0.90	1.21	570.31	571.26	571.39	571.77
LINE CC5B	JCT-CC3	CI-AA9	24"	54.29	55.79	0.012	1.52	569.41	568.56	11.40	30.23	0.85	8.95	1.21	5.72	0.005	0.015	8.41	5.72	0.89	1.21	569.46	570.62	570.56	571.13
LAT BB1	CI-BB1	CI-BB2	24"	23.77	26.77	0.012	0.49	568.33	568.19	5.51	17.22	0.78	4.88	0.83	4.48	0.004	0.005	2.23	2.43	1.47	1.35	569.66	569.68	569.72	569.76
LINE BB2	CI-BB2	MH-AA1	24"	94.85	98.85	0.012	0.50	568.19	567.70	6.08	17.30	0.82	5.02	0.87	4.62	0.004	0.005	1.97	2.46	1.91	1.47	569.61	569.66	571.46	569.72
LINE AA2A	CI-AA2	JCT-AA1	24"	108.25	110.75	0.012	3.25	582.67	579.07	2.84	44.18	0.34	7.90	0.59	3.69	0.004	0.033	7.89	1.81	0.34	1.00	579.41	583.67	580.39	583.67
LAT AA4	CI-AA4	JCT-AA1	24"	46.43	48.93	0.012	3.78	580.92	579.07	2.53	47.63	0.31	8.05	0.55	3.57	0.004	0.038	7.88	1.61	0.32	1.00	579.39	581.92	580.36	581.92
LINE AA2B	JCT-AA1	CI-AA3	24"	28.75	31.25	0.012	3.25	579.07	578.06	5.38	44.17	0.47	9.52	0.82	4.45	0.004	0.032	8.49	4.45	0.51	0.82	578.57	579.89	579.69	580.20
LINE AA3	CI-AA3	CI-AA5	24"	128.00	133.00	0.012	3.25	578.06	573.73	9.33	44.18	0.62	11.15	1.09	5.32	0.004	0.033	11.04	5.32	0.63	1.09	574.36	579.15	576.26	579.59
LINE AA5	CI-AA5	CI-AA6	24"	116.55	121.55	0.012	2.97	573.73	570.12	11.40	42.27	0.71	11.42	1.21	5.73	0.005	0.030	11.20	5.73	0.72	1.21	570.84	574.94	572.79	575.45
LINE AA6	CI-AA6	CI-AA7	24"	61.04	66.04	0.012	1.60	570.12	569.06	13.97	30.99	0.94	9.61	1.35	6.21	0.005	0.016	9.09	6.21	0.98	1.35	570.04	571.46	571.33	572.06
LINE AA7	CI-AA7	CI-AA8	24"	33.68	38.68	0.012	0.70	569.06	568.79	15.56	20.46	1.31	7.17	1.42	6.51	0.006	0.007	5.41	5.78	1.72	1.60	570.51	570.66	571.03	571.11
LINE AA8	CI-AA8	CI-AA9	24"	34.63	39.63	0.012	0.58	568.79	568.56	16.58	18.59	1.47	6.69	1.47	6.71	0.006	0.006	5.49	5.76	1.84	1.72	570.40	570.51	571.77	571.03
LINE AA9A	CI-AA9	MH-AA1	24"	40.20	43.20	0.012	2.00	568.56	567.70	28.39	34.65	1.38	12.31	1.84	9.41	0.012	0.020	11.20	9.41	1.51	1.84	569.21	570.40	571.16	571.77
EXIST AA9B	MH-AA1	OUT-AA0	24"	26.99	26.99	0.013	2.33	567.70	567.07	33.75	34.56	1.60	12.54	1.91	10.92	0.019	0.023	11.70	10.92	1.73	1.91	568.80	569.61	570.93	571.46

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Parsons Brinckerhoff Quade & Douglas, Inc.
2777 Stemmons Freeway
Suite 1333
Dallas, TX 75207

SH 205

HYDRAULIC COMPUTATION SHEET

SHEET 13 OF 13

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	(SEE TITLE SHEET)	SH 205

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	ROCKWALL	400
CONT.	SECT.	JOB	
0451	01	032, ETC	

STATE OF TEXAS
K. DAVID GAN
92574
LICENSED PROFESSIONAL ENGINEER

K. David Gan
5/9/2006