

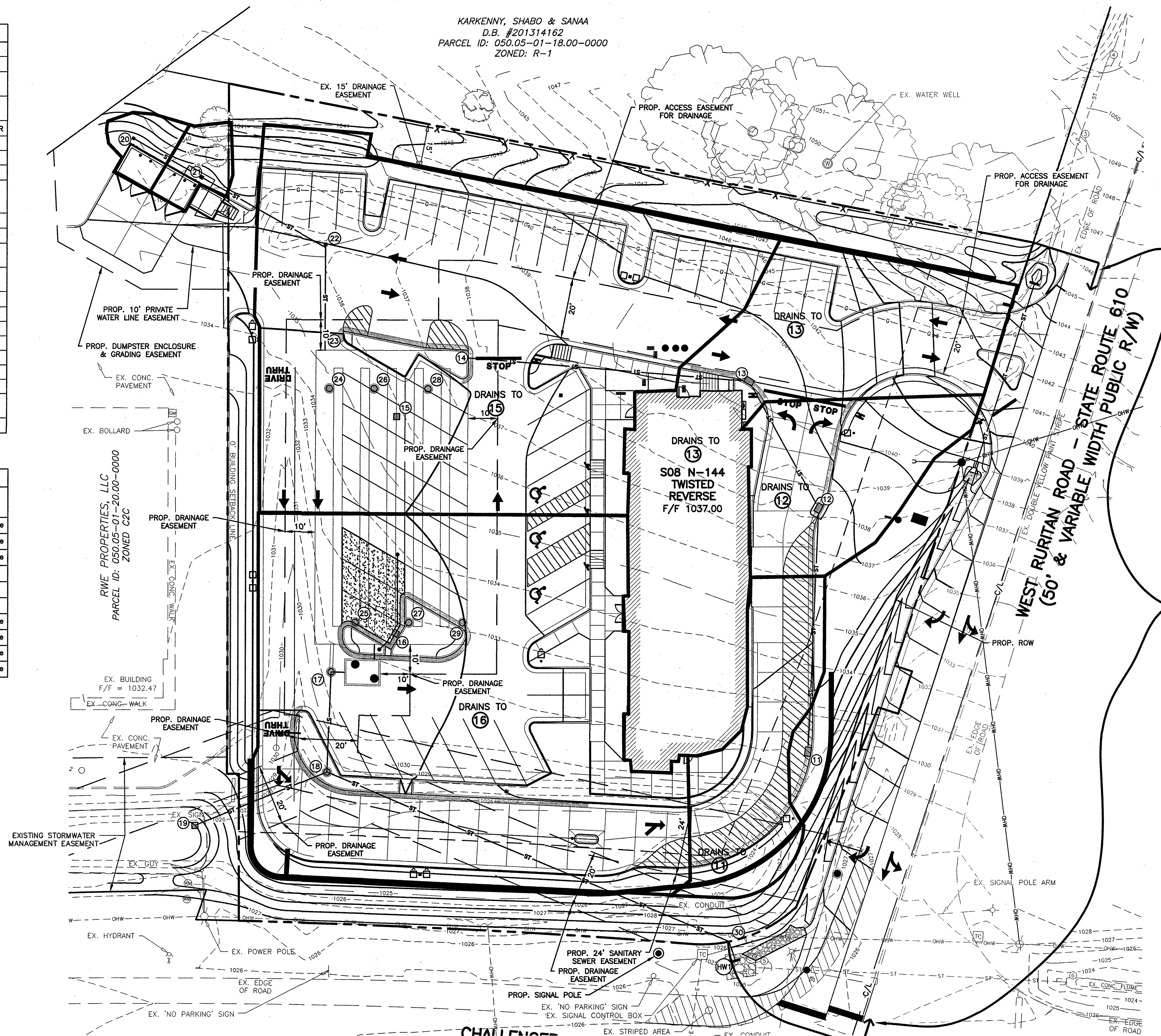
STORM SEWER STRUCTURE SCHEDULE					
STRUCTURE	TOP	INVERT	SIZE		TYPE
11	1035.10	1032.10	12"	NW	PROP. CURB INLET*1
12	1035.85	1031.59	12"	SE	PROP. CURB INLET*1
13	1036.20	1031.24	12"	E	PROP. CURB INLET*1
14	1030.76	1031.34	12"	NE	PROP. 12" STUB - USE FERNCO COUPLER
15	1034.40	1026.25	15"	SE	PROP. CATCH BASIN TYPE 1*1
16	1034.40	1026.25	15"	NW	PROP. CATCH BASIN TYPE 1*1
17	1035.00	SEE DETAIL C-3.12			PROP. OUTLET CONTROL STRUCTURE ¹
18	1035.75	1024.47 1024.47 1024.37	24" 18" 24"	S NW NE	PROP. STM. M.H. ¹
19	1027.00	1024.75	24"	N	PROP. OUTLET CONTROL STRUCTURE ¹
20	1036.19	1034.69	6"	NE	PROP. YARD DRAIN
21	1036.19	1034.42 1034.32	6" 6"	SW SE	PROP. YARD DRAIN
22	1036.00	1033.84 1033.74	6" 6"	SW SE	PROP. CLEANOUT
23	1032.09	1031.25	6"	NW	PROP. 6" STUB - USE FERNCO COUPLER
24	1034.68	1027.25			PROP. ACCESS LOCATION
25	1035.00	1027.25			PROP. ACCESS LOCATION
26	1034.70	1027.25			PROP. ACCESS LOCATION
27	1035.00	1027.25			PROP. ACCESS LOCATION
28	1034.87	1027.25			PROP. ACCESS LOCATION
29	1035.00	1027.25			PROP. ACCESS LOCATION
30	1026.07	1023.51 1023.41 1023.37	24" 24" 24"	SW E W	PROP. STM. M.H. ¹
HW1		1023.37	24"	W	PROP. HEADWALL (101.01)

* - WITH GRATE INLET SKIMMER FOR WATER QUALITY.
 1 - SHALL HAVE INLET SHAPING PER VDOT 15-1. SEE SHEET C-3.7

STORM SEWER PIPE SCHEDULE					
FROM STRUCTURE	TO STRUCTURE	PIPE SIZE, IN.	PIPE LENGTH, FT.	PIPE SLOPE	PIPE TYPE
11	12	12	81.6	0.50%	Corrugated HDPE N-12 Pipe
12	13	12	48.7	0.51%	Corrugated HDPE N-12 Pipe
13	14	12	94.4	0.51%	Corrugated HDPE N-12 Pipe
17	18	18	33.6	5.30%	Reinforced Concrete Pipe
18	30	24	146.4	0.59%	Reinforced Concrete Pipe
19	18	24	47.6	0.59%	Reinforced Concrete Pipe
20	21	6	26.3	1.03%	Corrugated HDPE N-12 Pipe
21	22	6	47.8	1.00%	Corrugated HDPE N-12 Pipe
22	23	6	34.2	7.28%	Corrugated HDPE N-12 Pipe
30	HW1	24	6.8	0.59%	Corrugated HDPE N-12 Pipe

EXISTING STORM SEWER STRUCTURE SCHEDULE

- EX. END OF PIPE INV. 1047.48, 15" NW
- EX. END OF PIPE INV. 1049.02, 15" SE
- EX. END OF PIPE INV. 1023.29, 18" NE
- EX. END OF PIPE INV. 1022.59, 18" SW



FOR RIGHT-OF-WAY IMPROVEMENTS, SEE "CHICK-FIL-A VDOT RIGHT OF WAY IMPROVEMENTS" PLANS PREPARED BY MATTERN AND CRAIG

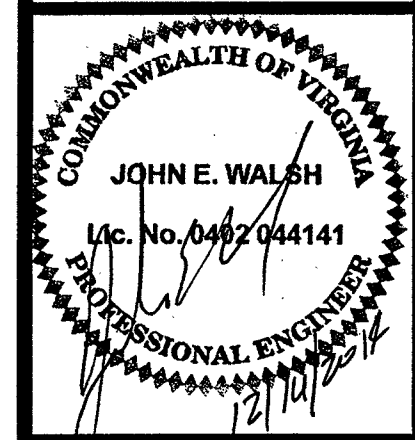
10-YEAR STORM EVENT STORM SEWER CALCULATIONS																								
From Structure	To Structure	Line Length (ft)	Increment Area (acres)	Total Area (acres)	Runoff Coef. C	Increment C x A	Total C x A	Inlet Time (min)	Time of Concentration (min)	Rainfall Intensity (in/hr)	Total Runoff (cfs)	Additional Flow (cfs)	Total Flow (cfs)	Capacity Full (cfs)	Velocity (ft/s)	Pipe Size (in)	Pipe Slope (%)	In/Elev Down (ft)	In/Elev Up (ft)	HGL Down (ft)	HGL Up (ft)	Gnd/Rim Down (ft)	Gnd/Rim Up (ft)	Line ID
13	14	94.6	0.21	0.37	0.90	0.19	0.31	5.0	8.7	5.1	1.57	0.00	1.57	2.20	2.14	12	0.51	1030.76	1031.24	1031.84	1032.07	1035.20	1036.20	N-12 HDPE STM. SEW.
12	13	48.7	0.09	0.16	0.60	0.05	0.12	5.0	7.8	5.3	0.62	0.00	0.62	2.19	1.14	12	0.50	1031.34	1031.59	1032.14	1032.16	1036.20	1036.85	N-12 HDPE STM. SEW.
11	12	81.2	0.07	0.07	0.90	0.06	0.06	5.0	5.0	6.0	0.38	0.00	0.38	2.19	1.59	12	0.50	1031.69	1032.10	1032.16	1032.37	1035.85	1035.10	N-12 HDPE STM. SEW.
30	HW1	6.8										0.00	3.53	15.09	1.30	24	0.59	1023.37	1023.41	1025.00	1025.00	1025.10	1026.07	RCP STM. SEW.
18	30	146.4										0.00	3.53	15.02	2.26	24	0.59	1023.51	1024.37	1025.01	1025.15	1026.07	1035.75	RCP STM. SEW.
19	18	47.6										3.44	3.44	15.03	3.33	24	0.59	1024.47	1024.75	1025.30	1025.40	1035.75	1027.00	RCP STM. SEW.
17	18	33.6										0.00	0.00	11.96	0.82	18	1.73	1024.47	1025.05	1025.30	1025.76	1035.75	1036.00	RCP STM. SEW.
22	23	34.2	0.00	0.02	0.00	0.00	0.01	5.0	10.5	4.8	0.05	0.05	1.31	0.42	6	7.28	1031.25	1033.74	1033.96	1034.43	1036.20	1036.00	1036.00	N-12 HDPE STM. SEW.
21	22	47.7	0.01	0.02	0.50	0.01	0.01	5.0	7.9	5.3	0.05	0.00	0.05	0.49	1.51	6	1.01	1033.84	1034.32	1033.96	1034.43	1036.19	1036.19	N-12 HDPE STM. SEW.
20	21	26.3	0.01	0.01	0.50	0.01	0.01	5.0	5.0	6.0	0.03	0.00	0.03	0.49	1.38	6	1.02	1034.42	1034.69	1034.50	1034.76	1036.19	1036.19	N-12 HDPE STM. SEW.
25-YEAR STORM EVENT STORM SEWER CALCULATIONS																								
From Structure	To Structure	Line Length (ft)	Increment Area (acres)	Total Area (acres)	Runoff Coef. C	Increment C x A	Total C x A	Inlet Time (min)	Time of Concentration (min)	Rainfall Intensity (in/hr)	Total Runoff (cfs)	Additional Flow (cfs)	Total Flow (cfs)	Capacity Full (cfs)	Velocity (ft/s)	Pipe Size (in)	Pipe Slope (%)	In/Elev Down (ft)	In/Elev Up (ft)	HGL Down (ft)	HGL Up (ft)	Gnd/Rim Down (ft)	Gnd/Rim Up (ft)	Line ID
13	14	94.6	0.21	0.37	0.90	0.19	0.31	5.0	8.8	5	1.54	0.00	1.54	2.20	2.10	12	0.51	1030.76	1031.24	1031.84	1032.06	1035.20	1036.20	N-12 HDPE STM. SEW.
12	13	48.7	0.09	0.16	0.60	0.05	0.12	5.0	7.8	5.2	0.61	0.00	0.61	2.19	1.14	12	0.50	1031.34	1031.59	1032.13	1032.15	1036.20	1036.85	N-12 HDPE STM. SEW.
11	12	81.2	0.07	0.07	0.90	0.06	0.06	5.0	5.0	6	0.38	0.00	0.38	2.19	1.60	12	0.50	1031.69	1032.10	1032.17	1032.37	1035.85	1035.10	N-12 HDPE STM. SEW.
30	HW1	6.8										0.00	5.44	15.09	2.01	24	0.59	1023.37	1023.41	1025.01	1025.01	1026.07	1027.00	RCP STM. SEW.
18	30	146.4										0.00	5.44	15.02	3.13	24	0.59	1023.51	1024.37	1025.01	1025.07	1026.07	1035.75	RCP STM. SEW.
19	18	47.6										4.93	4.93	15.03	3.56	24	0.59	1024.47	1024.75	1025.51	1025.55	1035.75	1027.00	RCP STM. SEW.
17	18	33.6										0.51	0.51	11.96	1.41	18	1.73	1024.47	1025.05	1025.51	1025.51	1035.75	1035.00	RCP STM. SEW.
22	23	34.2	0.00	0.02	0.00	0.00	0.01	5.0	10.5	4.7	0.05	0.05	1.31	0.41	6	7.28	1031.25	1033.74	1033.96	1034.43	1036.20	1036.00	1036.00	N-12 HDPE STM. SEW.
21	22	47.7	0.01	0.02	0.50	0.01	0.01	5.0	7.9	5.2	0.05	0.00	0.05	0.49	1.50	6	1.01	1033.84	1034.32	1033.96	1034.43	1036.19	1036.19	N-12 HDPE STM. SEW.
20	21	26.3	0.01	0.01	0.50	0.01	0.01	5.0	5.0	6	0.03	0.00	0.03	0.49	1.38	6	1.02	1034.42	1034.69	1034.50	1034.77	1036.19	1036.19	N-12 HDPE STM. SEW.



Chick-fil-A

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

NO.	DATE	BY	DESCRIPTION
1	6/6/2014	BCS	PER PLANNING COMMISSION
2	6/17/2014	BCS	PER PLANNING COMMISSION
3	10/17/2014	BCS	PER PLANNING COMMISSION
4	12/12/2014	BCS	FOR CONSTRUCTION



GBC DESIGN, INC.
 565 White Pond Dr. Akron, OH 44320-1123
 Phone 330-836-0228 Fax 330-836-5782

STORE #3375
Challenger Avenue
S08 N-144-R Twisted
Purchase Parcel

3814 Challenger Avenue NE
Roanoke, VA 24012

SHEET TITLE
DRAINAGE PLAN

DWG EDITION V8.5
REVISION 1-2014

Job No. : 46189D
Store : 3375
Date : 8/25/14
Drawn By : B.A.W.
Checked By: A.S.W.

Sheet

C-3.10