

STORM SEWER CALCULATIONS FOR

DENTAL OFFICE STROTHER CROSSING

PROJECT NO. 190164

July 2, 2019





2608 North Stadium Boulevard Columbia, Missouri 65202 (573) 447-0292

Stormwater Narrative

The current land use for Lot 4A of the Strother Crossing, Plat No. 1-A development is vacant. The proposed use is dental office. The detention and water quality requirements for this development are being met by utilizing a regional detention facility located downstream of this development.

Stormwater runoff for this project will be collected with curb inlets and nyloplast drain catch basins. The collected stormwater will be discharged into an existing stormsewer network located along the private loop drive that has been constructed as part of the Strother Crossing development. It is understood that the storm sewer design is only required to carry the 10 year storm event as stated on the Preliminary Development Plan for the Strother Crossing development. The proposed stormsewer network has been design to carry the 10 year storm event and allows for an overland flow route for the larger storm events. Emergency overland flows have also been provided in the event a nylopast drain becomes clogged. Refer to attached stormsewer calculations and drainage area map.



PROJECT: Definal Office - Strottler Crossing	PROJECT:	Dental Office - Strother Crossing	
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CALCULATED BY: ____ JEE ___ CHECKED BY: ____ TDC

DATE: 07/02/19 PROJECT NO: 190164

STORM HYDROLOGY / GUTTER / INLET CALCLULATIONS **DESCRIPTION OVERLAND FLOW HYDROLOGY GUTTER AND INLET HYDRAULICS** NOTES THEORETICAL INLET CAPACITY RUNOFF COEFFICIENT WIDTH OF GUTTER FLOW TIME OF CONCENTRATION RAINFALL INTENSITY DEPTH OF GUTTER FLOW **GUTTER SLOPE** STRUCTURE LABEL DESIGN INLET CAPACITY INLET BYPASS FLOW RUNOFF GUTTER FLOW INLET TYPE δ acres acres in/hr cfs cfs ft/ft ft ft cfs cfs cfs min 1 1E ND ٠5 0.53 0.21 0.11 7.4 0.82 12" Nyloplast Drain Basin (0.19' head) 2 1D ND **4**5 0.44 0.21 0.09 7.4 0.68 12" Nyloplast Drain Basin (0.17' head) CI 0.34 3 1C **<**5 0.92 0.31 7.4 2.31 8.80 7.04 4 1B CI **4**5 0.80 0.25 0.20 7.4 1.48 8.80 7.04 CI 0.32 1A **4**5 0.85 0.27 7.4 2.01 8.80 7.04



PROJECT: Dental Office - Strother Crossin	g
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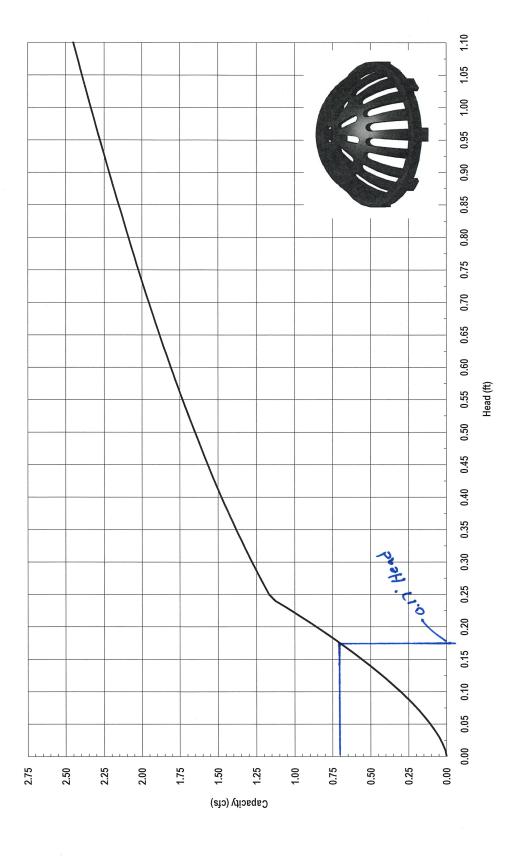
	STORM HYDROLOGY / GUTTER / INLET CALCLULATIONS															
DES	SCRIPT	RIPTION OVERLAND FLOW HYDROLOGY								GUTT	ER AND	INLE7	HYDRA	ULICS	NOTES	
AREA NO.	STRUCTURE LABEL	INLET TYPE	IME OF CONCENTRATION	RUNOFF COEFFICIENT	AREA	CA	RAINFALL INTENSITY	RUNOFF	GUTTER FLOW	GUTTER SLOPE	WIDTH OF GUTTER FLOW	DEPTH OF GUTTER FLOW	THEORETICAL INLET CAPACITY	DESIGN INLET CAPACITY	INLET BYPASS FLOW	
			min		acres	acres	in/hr	cfs	cfs	ft/ft	ft	ft	cfs	cfs	cfs	



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	STORM DRAIN PIPE SIZE											
DESCR	IPTION				STORM DRAIN HYDRAULICS							NOTES
AREA NO.	UPSTREAM STRUCTURE LABEL	TIME OF CONCENTRATION	Č		BAINFALL INTENSITY	RUNOFF	STORM DRAIN SLOPE	STORM DRAIN DIAMETER	STOFM DRAIN. MATERIAL	CAPACITY FLOWING FULL	VELOCITY FLOWING FULL	
	STREAN	TIME (ADDED	CUMUL.	RA		SIC		RCP, CMP, OR HDPE			
	J.	min	acres	acres	in/hr	cfs	ft/ft	in		cfs	fps	
LINE 1										-		
1	1E	. 5		0.11	7.40	0.82	0.005	12	HDPE	2.73	3.47	
2	1D	. 5	0.09	0.20	7.40	1.51	0.005	15	HDPE	4.95	4.03	
3	1C	√ 5	0.31	0.52	7.40	3.82	0.005	15	HDPE	4.95	4.03	
4	1B	. 5	0.20	0.72	7.40	5.30	0.008	15	HDPE	6.26	5.10	
5	1A	. 5	0.27	0.99	7.40	7.31	0.012	15	HDPE	7.66	6.25	
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Structure #10



