

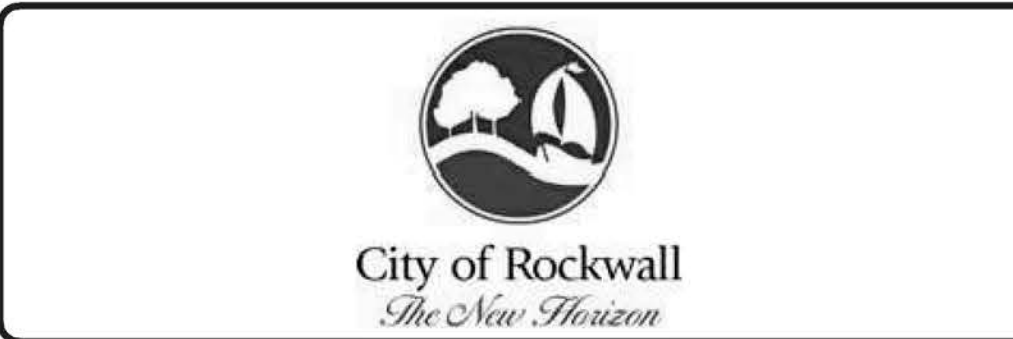
Drawing: PA PROJECTS\RWL18219\CAD\Sheet\CALCS\PHASE 1 - NORTH\28 DRAINAGE AREA MAP CALCS.dwg dt: Sep 27, 2019 - 10:37:07 am by: j_baldwin
 Layout: 28 DRAINAGE AREA MAP CALCS - XBP-SD.dwg → Add-ventilation → Add-paving.dwg → Add-paving.dwg → Add-SCHOOL SITE.dwg

INLET DESIGN CALCULATIONS TABLE																																											
INLET ID	LOCATION				DESIGN STORM FREQUENCY	AREA RUNOFF					BYPASS FROM UPSTREAM CxA	TOTAL GUTTER FLOW Qa	GUTTER FLOW										MAXIMUM ALLOWABLE FLOW BASED ON MAX. ALLOWABLE PONING WIDTH Qallow gutter (one side)	INLET CAPACITY										REMARKS									
	ALIGNMENT	STATION	OFFSET	YRS		C	AREA ID	TIME OF CONCENTRATION Tc	INTENSITY I	AREA A			RUNOFF Q	THROUGHFARE TYPE	ON-GRADE/SAG	MANNING'S n	LONGITUDNAL SLOPE	CROWN TYPE	CROSS SLOPE Sx	DEPRESSION		PONING WIDTH/SPREAD		DEPTH OF GUTTER FLOW		DEPRESSED GUTTER SECTION		SECTION BEYOND DEPRESSION		CONVEYANCE		RATIO OF DEPRESSION FLOW TO TOTAL FLOW Ed	EQUIVALENT CROSS SLOPE Se		INLET LENGTH		INLET CAPACITY Qc	FLOW Qbypass	C'A	TO INLET ID			
																				DEPTH a	WIDTH W	(ALLOW) Tallow		(ACTUAL) Tactual	(ALLOW) Yallow	(ACTUAL) Yactual	AREA Aw	WETTED PERIMETER Pw	AREA A0	WETTED PERIMETER P0	DEPRESSION SECTION Kw				SECTION BEYOND DEPRESSION K0	REQUIRED Lreq'd					ACTUAL Lactual		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
A1	HIGHLAND DR.	21+85.30	20.2 LT	100	0.50	A-1	10	9.80	0.13	0.64	0.00	0.64	RES COLLEC.	ON-GRADE	0.0175	0.024	ROOF TOP	0.025	0.50	2.00	20.00	4.64	0.50	0.12	31.23	0.68	2.07	0.09	2.64	27.57	0.76	0.97	0.27	4.05	10.00	4.10	0.00	0.00	A3				
A2	HIGHLAND DR.	21+80.02	20.2 RT	100	0.50	A-2	10	9.80	0.84	4.12	0.00	4.12	RES COLLEC.	ON-GRADE	0.0175	0.024	ROOF TOP	0.025	0.50	2.00	20.00	9.33	0.50	0.23	31.23	0.92	2.07	0.67	7.33	45.16	11.60	0.80	0.22	9.87	10.00	4.10	0.02	0.00	A4				
A3	HIGHLAND DR.	19+31.08	20 LT	100	0.50	A-3 & A-5	10	9.80	1.55	7.60	0.00	7.60	RES COLLEC.	SAG	0.0175	0.010	ROOF TOP	0.025	0.50	2.00	20.00	13.84	0.50	0.35	20.16	1.14	2.07	1.75	11.84	65.13	41.61	0.61	0.18	5.74	10.00	11.06	0.00	0.00	N/A				
A4	HIGHLAND DR.	19+31.80	20 RT	100	0.50	A-4 & A-6	10	9.80	2.25	11.03	0.02	11.04	RES COLLEC.	SAG	0.0175	0.010	ROOF TOP	0.025	0.50	2.00	20.00	15.91	0.50	0.40	20.16	1.25	2.07	2.42	13.91	75.29	64.01	0.54	0.16	9.96	10.00	11.06	0.00	0.00	N/A				
A7	HIGHLAND DR.	11+58.52	18 LT	100	0.50	A-7	10	9.80	3.11	15.24		15.24	RES COLLEC.	N/A	0.0175	0.0225	ROOF TOP	0.039	0.50	2.00	18.00	11.69	0.50	0.46	47.91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
A8	HIGHLAND DR.	10+99.52	18 RT	100	0.50	A-8	10	9.80	1.95	9.56		9.56	RES COLLEC.	N/A	0.0175	0.012	ROOF TOP	0.039	0.50	2.00	18.00	11.04	0.50	0.43	34.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
A9	HIGHLAND DR.	2+00.64	18 LT	100	0.50	A-9	10	9.80	0.63	3.09		3.09	RES COLLEC.	N/A	0.0175	0.007	ROOF TOP	0.028	0.50	2.00	18.00	9.83	0.50	0.28	15.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
A10	HIGHLAND DR.	2+00.65	18 RT	100	0.50	A-10	10	9.80	2.78	13.62		13.62	RES COLLEC.	N/A	0.0175	0.007	ROOF TOP	0.028	0.50	2.00	18.00	17.16	0.50	0.48	15.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
DRIFTWOOD STREET CAPACITY CHECK (IMMEDIATELY DIS OF INTERSECTION)																																											
RT SIDE	DRIFTWOOD ST.			100	0.5	A-7	10	9.80	3.11	15.24		15.24	RES	N/A	0.0175	0.020	ROOF TOP	0.0385	0.50	2.00	13.00	12.05	0.50	0.46	18.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	DRIFTWOOD IMMEDIATELY DIS OF INTERSECTION	
LT SIDE	DRIFTWOOD ST.			100	0.5	A-8	10	9.80	1.95	9.56		9.56	RES	N/A	0.0175	0.020	ROOF TOP	0.0385	0.50	2.00	13.00	10.11	0.50	0.39	18.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	DRIFTWOOD IMMEDIATELY DIS OF INTERSECTION

STORM SEWER CALCULATIONS TABLE																																									
SYSTEM ID	CONDUIT PROPERTIES											INCREMENTAL DRAINAGE AREA										HGL										HEADLOSS CALCULATIONS									REMARKS
	COLLECTION POINT STATION		LENGT H "L"	# OF BARRELS	PIPE SIZE (INCHES)	BOX		TYPE	AREA (FT ²)	WETTED PERIMETER Pw (FT)	HYDRAULIC RADIUS (FT)	MANNING'S n	FLOWLINE ELEVATION		SLOPE (FT/FT)	INLET ID	AREA (ACRES)	RUNOFF COEFF	INCREMENTAL CA	ACCUMULATED CA	UP-STREAM Tc (MIN)	DESIGN STORM FREQUENCY (YR)	INTENSITY I (IN/HR)	RUNOFF Q (CFS)	CONDUIT CAPACITY Qc (CFS)	PARTIAL FLOW (YES/NO)	VELOCITY V (FT/S)	TIME IN CONDUIT (MIN)	FRICION SLOPE Sf (FT/FT)	FRICTION HEAD LOSS (FT)	U/S	DIS	V ₁ /2g (FT)	V ₂ /2g (FT)	JUNCTION TYPE	COEFF K _f	HEAD LOSS H _f (FT)	DESIGN HGL	TOP OF CURB ELEV.	HGL DEPTH BELOW TIC (FT)	
	US	DIS				SPAN (FT)	RISE (FT)						UPSTREAM	DOWNSTREAM																											
EXISTING TRUNK LINE A																																									
EX LINE A	01+79.74	01+33.87	45.9	1	24	-	-	RCP	3.14	6.28	0.50	0.013	546.83	546.51	0.007	A3	1.55	0.50	0.78	0.78	10.0	100	9.80	7.60	18.90	YES	6.01	0.13	0.0004	0.020	549.24	549.24	-	0.56	INLET	1.25	0.70	549.94	551.15	1.21	
EX LINE A	01+33.87	01+22.47	11.4	1	24	-	-	RCP	3.14	6.28	0.50	0.013	546.51	546.43	0.007	-	-	-	0.00	0.78	10.0	100	9.80	7.60	18.95	YES	6.03	0.03	0.0004	0.005	548.99	548.99	0.56	0.57	60d BEND	0.43	0.24	549.24	-	2.01	
EX LINE A	01+22.47	01+00.00	22.5	1	27	-	-	RCP	3.98	7.07	0.56	0.013	546.43	546.27	0.007	A4	2.25	0.50	1.13	1.90	10.0	100	9.79	18.61	26.13	YES	6.57	0.06	0.0008	0.018	548.52	548.52	0.57	0.67	WYE	0.35	0.47	548.99	551.00	2.01	
STARTING HGL																																									
LATERAL A1																																									
EX LAT LINE	01+21.40	01+00.00	21.4	1	18	-	-	RCP	1.77	4.71	0.38	0.013	547.24	546.95	0.014	A3	0.17	0.50	0.09	0.09	10.0	100	9.80	0.83	12.23	YES	6.92	0.05	0.0001	0.002	548.99	548.99	-	0.74	INLET	1.25	0.93	549.92	551.00	1.08	
*INSIDE TOP OF PIPE ELEVATION AT OUTFALL IS USED FOR THE STARTING HGL.																																									

no.	revision	by	date

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scale when bar is 1 inch long
 horiz N/A
 vert N/A
 SEP 2019



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CITY OF ROCKWALL, TEXAS
HIGHLAND DRIVE RECONSTRUCTION, PHASE I
 (DRIFTWOOD STREET TO BEDFORD FALLS LANE)
DRAINAGE AREA MAP CALCS

tnp project RWL18219
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