*Captured runoff includes bypass and crown crossover from upstream and excludes bypass at this inlet
**Takes into account travel time

STORM LINE 1-A

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
1091	1070	21.00	21.00	RCP	2.41	5.50	0.44	0.013	556.59	554.73	A6	2.71	0.50	1.36	1.36	10.00	100	9.80	13.3	12.6	12.6	5.24	0.0884	47.2	yes	0.07	0.0063	0.13	560.57	560.44		0.43	Inlet A6	1.25	0.53	561.10	563.75	2.65	
1070	1029	41.00	21.00	RCP	2.41	5.50	0.44	0.013	554.73	554.20	-	0.00	0.50	0.00	1.36	10.07	100	9.79			12.6	5.24	0.0130	18.1	no	0.13	0.0063	0.26	560.28	560.02	0.43	0.43	45 Deg Bend	0.37	0.16	560.44	563.02	2.58	
1029	1025	4.00	27.00	RCP	3.98	7.07	0.56	0.013	554.20	554.15	-	0.00	0.50	0.00	1.36	10.20	100	9.76			12.6	3.17	0.0130	35.4	no	0.02	0.0016	0.01	559.85	559.84	0.43	0.16	Pipe Size Change	-	0.17	560.02	563.02	3.00	
1025	886	139.00	27.00	RCP	3.98	7.07	0.56	0.013	554.15	552.34	A7	2.74	0.50	1.37	2.73	10.22	100	9.76	13.4	12.6	25.2	6.33	0.0130	35.4	no	0.37	0.0066	0.91	559.30	558.39	0.16	0.62	45 Deg Wye	0.50	0.54	559.84	563.02	3.18	
886	770	116.00	42.00	RCP	9.62	11.00	0.88	0.013	552.34	551.35	A17, X1,X10	14.17	0.50	7.09	9.81	10.58	100	9.68	62.8	62.8	87.2	9.07	0.0085	93.0	no	0.21	0.0075	0.87	557.27	556.40	0.62	1.28	Manhole/Junction at 90 Deg	0.25	1.12	558.39	560.80	2.41	
770	744	26.00	42.00	RCP	9.62	11.00	0.88	0.013	551.35	551.13	A5	1.48	0.50	0.74	10.55	10.80	100	9.64	8.0	5.7	92.8	9.65	0.0085	93.0	yes	0.04	0.0085	0.22	555.59	555.37	1.28	1.45	45 Deg Wye	0.50	0.81	556.40	560.22	3.82	
744	399	344.67	42.00	RCP	9.62	11.00	0.88	0.013	551.13	544.93	-	0.00	0.50	0.00	9.81	10.80	100	9.64	0.0	0.0	87.2	9.07	0.0180	135.3	yes	0.63	0.0075	2.58	554.80	552.22	1.28	1.28	Manhole/90deg Turn	0.55	0.57	556.40	560.00	3.60	
399	384	14.91	42.00	RCP	9.62	11.00	0.88	0.013	544.93	544.79	-	0.00	0.50	0.00	10.55	10.84	100	9.63	0.0	0.0	92.8	9.65	0.0090	95.7	no	0.03	0.0085	0.13	550.96	550.84	1.45	1.45	Size Change	0.13	1.26	555.37	560.00	4.63	
384	372	12.42	54.00	RCP	15.90	14.14	1.13	0.013	544.79	544.68	A4	1.94	0.50	0.97	11.52	10.87	100	9.63	10.3	8.0	100.7	6.33	0.0090	187.1	no	0.03	0.0026	0.03	550.74	550.70	1.45	0.62	60 Deg Wye	0.50	0.10	550.84	553.10	2.26	
372	336	36.00	54.00	RCP	15.90	14.14	1.13	0.013	544.68	544.36	A3	1.00	0.50	0.50	12.02	10.90	100	9.62	4.9	4.8	105.4	6.63	0.0090	187.1	no	0.09	0.0029	0.10	550.33	550.23	0.62	0.68	45 Deg Wye	0.50	0.37	550.70	553.03	2.33	
336	159	177.00	60.00	RCP	19.63	15.71	1.25	0.013	544.36	542.15	A8-11	9.60	0.50	4.80	16.82	10.99	100	9.60	47.0	46.9	151.4	7.71	0.0125	292.0	n o	0.38	0.0034	0.60	549.48	548.88	0.68	0.92	Manhole/Junction at 90 Deg	0.25	0.75	550.23	552.55	2.32	
159	152	7.00	60.00	RCP	19.63	15.71	1.25	0.013	542.15	542.12	A2	1.17	0.50	0.59	17.41	11.37	100	9.53	8.1	8.1	159.3	8.11	0.0040	165.2	no	0.01	0.0037	0.03	548.18	548.16	0.92	1.02	60 Deg Wye	0.35	0.70	548.88	551.28	2.40	
152	132	20.00	60.00	RCP	19.63	15.71	1.25	0.013	542.12	542.04	A1	0.52	0.50	0.26	17.67	11.39	100	9.52	2.6	2.6	161.8	8.24	0.0040	165.2	no	0.04	0.0038	0.08	547.61	547.54	1.02	1.05	45 Deg Wye	0.50	0.54	548.16	551.28	3.12	
132	124	8.00	60.00	RCP	19.63	15.71	1.25	0.013	542.04	542.01	-	0.00	0.50	0.00	17.67	11.43	100	9.51	0.0	0.0	161.8	8.24	0.0040	165.2	no	0.02	0.0038	0.03	547.15	547.12	1.05	1.05	45 Deg Bend	0.37	0.39	547.54	551.50	3.96	
124	0	124.00	60.00	RCP	19.63	15.71	1.25	0.013	542.01	541.51	-	0.00	0.50	0.00	17.67	11.45	100	9.51	0.0	0.0	161.8	8.24	0.0040	165.2	no	0.25	0.0038	0.48	546.73	546.25	1.05	1.05	45 Deg Bend	0.37	0.39	547.12	551.50	4.38	

OUTFALL VELOCITY CONTROLLED BY DISSIPATORS

STORM LAT A1

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
21	0	21.00	21.00	RCP	2.41	5.50	0.44	0.013	546.68	543.74	A1	0.52	0.50	0.26	0.26	10.00	100	9.80	2.6	2.6	2.6	1.08	0.1400	59.4	no	0.32	0.0003	0.01	548.16	548.16		0.02	Inlet A1	1.25	0.02	548.19	551.28	3.09	

STORM LAT A2

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
17	0	17.00	21.00	RCP	2.41	5.50	0.44	0.013	546.33	543.78	A2	1.17	0.50	0.59	0.59	10.00	100	9.80	8.1	8.1	8.1	3.37	0.1500	61.5	no	0.08	0.0026	0.04	548.93	548.88		0.18	Inlet A2	1.25	0.22	549.15	551.28	2.13	

STORM LAT A3

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
20	0	20.00	21.00	RCP	2.41	5.50	0.44	0.013	546.38	543.78	A3	1.00	0.50	0.50	0.50	10.00	100	9.80	4.9	4.9	4.9	2.04	0.1300	57.3	no	0.16	0.0010	0.02	550.72	550.70		0.06	Inlet A3	1.25	0.08	550.80	553.10	2.30	

STORM LAT A4

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
16	0	16.00	21.00	RCP	2.41	5.50	0.44	0.013	548.38	546.62	A4	1.94	0.50	0.97	0.97	10.00	100	9.80	10.3	8.0	8.0	3.33	0.1100	52.7	no	0.08	0.0025	0.04	550.88	550.84		0.17	Inlet A4	1.25	0.21	551.09	553.22	2.13	

STORM LAT A5

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
17	0	17.00	21.00	RCP	2.41	5.50	0.44	0.013	555.89	553.68	A5	1.48	0.50	0.74	0.74	10.00	100	9.80	8.0	5.7	5.7	2.37	0.1300	57.3	no	0.12	0.0013	0.02	556.42	556.40		0.09	Inlet A5	1.25	0.11	556.53	560.10	3.57	

STORM LAT A7

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
21	0	21.00	21.00	RCP	2.41	5.50	0.44	0.013	559.06	557.28	A7	2.71	0.50	1.36	1.36	10.00	100	9.80	13.3	12.6	12.6	5.24	0.0846	46.2	yes	0.07	0.0063	0.13	559.98	559.84		0.43	Inlet A7	1.25	0.53	560.51	563.03	2.52	

STORM LAT A17

Stations U/S	D/S	Length (ft)	Pipe Size (in)	Type	Pipe Area (ft^2)	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation Up Stream	Flowline Elevation Down Stream	Basin Area Name	Basin Area (Ac)	Runoff Coeff C	Incre-mental C*A	Accum-ulated C*A	U/S Tc (min)	Design Storm Freq (yr)	Intensity I	Basin Runoff Q_{10} (cfs)	*Runoff Captured Q_{10} (cfs)	**Accumulated Runoff Q_{10} (cfs)	Velocity V (fps)	Pipe Slope (ft/ft)	Pipe Capacity Q (cfs)	Partial Flow (yes/no)	Time in Conduit (min)	Friction Slope S_f	Friction Headloss (ft)	HGL U/S	HGL D/S	Headloss $V_1^2/2g$	Calculations $V_2^2/2g$	Jct Type	Coeff K_j	Headloss H_L	Design HGL	Top of Curb Elev.	HGL Depth Below T/C (ft)	Remark
285	260	25.18	36.00	RCP	7.07	9.42	0.75	0.013	562.53	558.23	X1,X10	12.61	0.50	6.31	6.31	10.00	100	9.80	55.2	55.5	55.2	7.81	0.1707	276.3	yes	0.05	0.0068	0.17	562.27	562.09		0.95	Inlet	1.25	1.18	563.45	565.55	2.10	
260	245	14.25	36.00	RCP	7.07	9.42	0.75	0.013	554.99	554.75		1.56	0.50	0.78	7.09	10.05	100	9.79			55.2	7.81	0.0170	87.2	yes	0.03	0.0068	0.10	562.00	561.23	0.95	0.95	Connect to Ex	0.10	0.09	562.09	563.84		
245	205	40.78	36.00	RCP	7.07	9.42	0.75	0.013	555.44	554.75	A17	1.56	0.50	0.78	7.87	10.08	100	9.78	7.6	7.6	62.8	8.88	0.0170	87.2	yes	0.08	0.0088	0.36	560.86	560.50	0.95	1.23	Inlet	0.30	0.37	561.23	563.84	2.61	
205	0	204.70	36.00	RCP	7.07	9.42	0.75	0.013	558.23	554.75		0.00	0.50	0.00	7.87	10.16	100	9.77			62.8	8.88	0.0170	87.2	yes	0.38	0.0088	1.81	560.19	558.39	1.23	1.23	30 Deg Bend	0.25	0.31	560.50	564.00	3.50	

RECORD DRAWINGS

The information contained hereon was provided by the contractor based on their field installation. The undersigned registered professional engineer did not provide inspection on this project, and therefore makes no warrants concerning the accuracy or completeness of the information provided.

NOVEMBER 29, 2023

Dayton C. Macatee, P.E. – Macatee Engineering, L.L.C. (Tx. Reg. No. F-456) **Date**
12655 N. Central Expy Suite 420, Dallas, Texas 75243 ~ Tel: 214-373-1180

CITY OF ROCKWALL MONUMENT "COR-2"
ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" +/-866' EAST OF INTERSECTION OF WILLIAMS STREET AND CARUTH LANE, AND 50' SOUTH OF CL OF WILLIAMS STREET. N: 7029731.124, E: 2598589.314, ELEV=529.10

CITY OF ROCKWALL MONUMENT "COR-4"
ALUMINUM DISK STAMPED "CITY OF ROCKWALL SURVEY MONUMENT" ON NORTH SIDE OF DALTON ROAD +/-210' WEST OF INTERSECTION OF SH 205 AND DALTON ROAD, AND 10' NORTH OF CURB LINE. N: 7040336.992, E: 2592422.633, ELEV=541.67

STATE OF TEXAS
DAYTON C. MACATEE
65028
REGISTERED
PROFESSIONAL ENGINEER

05/27/2022
DAYTON MACATEE
ENGINEERING, LLC
TX. REG. NO. F-456

DRAINAGE CALCULATIONS

WINDING CREEK

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

MACATEE CIVIL ENGINEERING

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DESIGNED	CHECKED	DATE	DWG FILE	PROJECT #	SHEET NO.
BCP	SDA	11/29/2023	WC_DAM	SKO_WC	27 OF 53