

SUB-AREA A										
TRIBUTARY SUBAREA	FLOW TYPE #	LENGTH (FT)	AVG. SLOPE (%)	VELOCITY AVG. (FT/SEC)	Tc (MINUTES)	100-YEAR INTENSITY (IN/HR)	LANDUSE + (%)	COMPOSITE C VALUE	DRAINAGE AREA (ACRES)	Q (CFS)
A1	1 and 3	690	1.99	1.66	6.9	9.89	60/40	0.77	0.78	6.0

SUB-AREA B										
TRIBUTARY SUBAREA	FLOW TYPE #	LENGTH (FT)	AVG. SLOPE (%)	VELOCITY AVG. (FT/SEC)	Tc (MINUTES)	5-YEAR INTENSITY (IN/HR)	LANDUSE + (%)	COMPOSITE C VALUE	DRAINAGE AREA (ACRES)	Q (CFS)
B1	1,2 and 3	425	2.18	0.80	8.9	5.75	50/50	0.59	0.95	3.2
B2	1 and 3	390	2.05	0.77	8.4	5.75	100/0	0.88	0.50	2.5

SUB-AREA A										
TRIBUTARY SUBAREA	FLOW TYPE #	LENGTH (FT)	AVG. SLOPE (%)	VELOCITY AVG. (FT/SEC)	Tc (MINUTES)	5-YEAR INTENSITY (IN/HR)	LANDUSE + (%)	COMPOSITE C VALUE	DRAINAGE AREA (ACRES)	Q (CFS)
A2-West	1 and 3	175	1.14	0.74	3.9	6.53	80/20	0.76	0.41	2.2
A2-East	3	200	1.88	2.94	1.1					
A3	1 and 2	325	2.69	0.57	9.4	5.54	33/67	0.5	0.64	1.8
A4	1 and 3	505	2.82	2.13	3.9	6.53	80/20	0.76	0.82	4.1
A5	1,2 and 3	190	1.58	0.24	13.0	4.84	50/50	0.59	0.47	1.3
A6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0
A7	1 and 3	110	1.14	1.25	1.5	6.53	90/10	0.82	0.2	1.1
A8	1 and 3	175	2.00	1.15	2.5	6.53	100/0	0.88	0.25	1.4
A9	1 and 3	230	2.50	0.67	5.7	6.53	62/38	0.66	0.39	1.7
A10	1 and 3	280	2.77	1.30	3.6	6.53	80/20	0.76	0.63	3.1
A11	1 and 3	130	2.31	1.93	1.1	6.53	80/20	0.76	0.25	1.2
A12	1 and 3	295	1.95	1.33	3.7	6.53	75/25	0.74	0.42	2.0
A13	1, 2 and 3	345	1.09	1.63	3.5	6.53	70/30	0.71	0.89	4.1
A14	1,2 and 3	375	1.13	1.47	4.3	6.53	60/40	0.65	0.55	2.3
A15	N/A	N/A	N/A	N/A	< 5	6.53	75/25	0.74	0.17	0.8
A16-South	1 and 3	185	2.30	0.73	4.2	6.53	80/20	0.76	0.69	3.2
A16-North	1	85	5.00	0.28	5.1					
A17	1,2 and 3	190	2.63	0.32	9.8	5.54	60/40	0.65	0.23	0.8
A18	1,2, and 3	285	1.14	1.44	3.3	6.53	90/10	0.82	0.64	3.4

SUB-AREA C										
TRIBUTARY SUBAREA	FLOW TYPE #	LENGTH (FT)	AVG. SLOPE (%)	VELOCITY AVG. (FT/SEC)	Tc (MINUTES)	100-YEAR INTENSITY (IN/HR)	LANDUSE + (%)	COMPOSITE C VALUE	DRAINAGE AREA (ACRES)	Q (CFS)
C1-North	1,2 and 3	500	1.00	1.81	14.0	7.57	65/35	0.79	2.00	12.0
C1-South	1 and 3	755	0.66	0.90	14.0	7.57	42/58	0.70	2.56	13.6
C2-North	1 and 3	295	0.93	1.04	14.0	7.57	80/20	0.85	0.44	2.8
C2-South	1 and 3	215	0.81	0.56	14.0	7.57	70/30	0.81	0.30	1.8
C3	1,2 and 3	1910	0.88	0.98	32.5	5.22	15/85	0.60	12.99	40.6

LINE NUMBER	FROM STRUCTURE	TYPE	TO STRUCTURE	TYPE	LENGTH (FEET)	DIAMETER (INCH)	INVERT U/S ELEV.	U/S HGL ELEV.	INVERT D/S ELEV.	D/S HGL ELEV.	SLOPE (%)	RIM U/S ELEV.	RIM D/S ELEV.	INLET Q (CFS)	BYPASS Q (CFS)	PIPE Q (CFS)	FULL PIPE (CFS)	VELOCITY AVG. (CFS)	SPREAD (FEET)
1	A1	2- Type II DbL	A2	10' Type 1	242	18	1389.77	1390.47	1386.39	1387.33	1.40	1393.93	1392.19	6.0	0.6	5.4	10.8	3.1	7.9
2	A9	10' Type 1	A8	10' Type 1	113	23 X 14	1399.01	1399.69	1398.65	1399.57	0.32	1401.83	1402.21	1.7	0.0	1.7	5.2	1.0	< 2.0
2	A8	10' Type 1	A7	10' Type 1	155	18	1398.55	1399.27	1397.57	1399.11	0.63	1402.21	1404.61	1.4	0.0	3.1	7.2	1.8	< 2.0
2	A7	10' Type 1	A6	10' Type 1	83	24	1397.07	1398.98	1395.72	1398.91	1.64	1404.61	1405.10	1.1	0.0	7.3	25.2	2.3	3.2
2	A6	10' Type 1	A5	10' Type 1	218	30	1395.22	1397.86	1394.35	1396.85	0.40	1405.10	1402.12	0.0	0.0	25.1	22.5	5.1	< 2.0
2	A5	10' Type 1	A3	10' Type 1	240	30	1393.85	1395.08	1388.70	1389.93	2.15	1404.12	1396.01	1.3	0.0	26.4	52.3	5.4	< 2.0
2	A3	10' Type 1	A2	10' Type 1	228	36	1388.20	1389.67	1385.57	1387.52	1.16	1396.01	1392.19	1.8	0.0	32.2	62.4	4.6	< 2.0
3	A4	10' Type 1	A3	10' Type 1	68	18	1392.39	1393.27	1392.18	1393.06	0.32	1395.69	1396.01	4.0	0.1	4.0	5.2	2.3	4.7
4	A13	10' Type 1	A14	10' Type 1	98	18	1405.64	1406.46	1405.25	1406.07	0.40	1409.78	1409.13	4.1	0.0	4.1	5.8	2.3	8.4
4	A14	10' Type 1	A16	10' Type 1	137	24	1404.75	1405.71	1401.15	1403.58	2.64	1409.13	1406.77	2.3	0.0	7.2	31.9	2.3	4.1
4	A16	10' Type 1	A12	10' Type 1	106	24	1398.15	1402.39	1397.20	1401.79	0.90	1406.77	1406.89	3.2	0.0	14.6	18.6	4.6	5.7
4	A12	10' Type 1	A11	10' Type 1	76	24	1397.10	1401.01	1396.42	1400.48	1.61	1406.89	1404.77	2.0	0.0	16.6	24.9	5.3	2.4
4	A11	10' Type 1	A6	10' Type 1	93	24	1395.79	1399.65	1395.32	1398.91	0.50	1404.77	1405.18	1.2	0.0	17.8	13.9	5.7	< 2.0
5	A18	Single Drop	A17	2- Type II DbL	33	18	1405.50	1405.90	1404.22	1404.83	3.90	1409.41	1408.18	3.4	0.0	3.4	18.0	1.9	N/A
5	A17	2- Type II DbL	MH	Manhole	46	18	1403.99	1404.51	1403.04	1403.73	2.10	1408.18	1407.17	0.8	0.0	3.9	13.2	2.2	< 2.0
5	MH	Manhole	A16	10' Type 1	65	18	1402.94	1403.73	1401.65	1403.58	2.00	1407.17	1406.98	0.0	0.0	3.9	12.9	2.2	N/A
6	A10	10' Type 1	A7	10' Type 1	105	18	1401.70	1402.45	1401.37	1402.11	0.32	1405.14	1404.78	3.1	0.0	3.1	5.2	1.8	3.0
7	C1	10' Type 1	C2	10' Type 1	89	36	1400.12	1407.79	1399.68	1407.59	0.50	1408.77	1408.64	34.2	0.0	34.2	41.0	4.8	15.4
7	C2	10' Type 1	Manhole	Manhole	66	36	1399.77	1406.93	1399.35	1406.75	0.50	1408.64	1408.62	3.3	0.0	37.5	41.0	5.3	15.4
7	Manhole	Manhole	WSU Inlet	N/A	44	36	1399.25	1405.57	1399.02	1405.25	0.52	1408.62	N/A	0.0	0.0	59.0	41.8	8.3	N/A
8	17th Project	Pipe	Manhole	Manhole	103	30	1400.28	1407.05	1399.85	1406.75	0.42	N/A	1408.62	N/A	0.0	24.1	23.1	4.9	N/A
9	B1	10' Type 1	B2	10' Type 1	73	24	1395.39	1396.01	1395.10	1395.82	0.40	1404.64	1403.97	3.2	0.0	3.2	12.4	1.0	5.0
9	B2	10' Type 1	Manhole	Manhole	191	24	1395.00	1395.82	1394.15	1395.00	0.45	1403.97	1396.77	2.5	0.0	5.7	13.2	1.8	3.6

RATIONAL HYDROLOGY CALCULATION METHOD USED.

- # ① SHEET FLOW
- ② SHALLOW CONCENTRATED FLOW
- ③ OPEN CHANNEL DITCH FLOW
- ④ OPEN CHANNEL PIPE FLOW
- ⑤ OTHER

+ ROOF OR PAVEMENT / GRASS (HSG-C)
5-YEAR (C=0.88) / 5-YEAR, 4% SLOPE (C=0.30)

OR

ROOF OR PAVEMENT / GRASS (HSG-C)
100-YEAR (C=0.93) / 100-YEAR, 4% SLOPE (C=0.54)

GENERAL NOTES:

- * RAINFALL INTENSITY TO BE FOR THE DESIGN OF 2-YEAR(RESIDENTIAL), 5-YEAR(COMMERCIAL), 10 YEAR(DOWNTOWN) AND 100-YEAR(CROSS-CULVERTS).
- A DRAINAGE MAP IS INCLUDED AS A SEPARATE SHEET.
- OPTIONAL ALTERNATE PIPE LISTED ON THIS SHEET MAY BE FURNISHED IN LIEU OF THE PIPE LISTED UNDER THE BID ITEM "STORM SEWER".
- UNLESS OTHERWISE SPECIFIED, A CONTINUOUS SYSTEM OF STORM SEWER SHALL BE OF THE SAME TYPE MATERIAL.
- THE QUANTITIES, DIMENSIONS AND FLOWLINES GIVEN ON THIS SHEET ARE TO BE USED IF THE FOLLOWING TYPES OF "SMOOTH PIPES" ARE FURNISHED: RCP, VCP-ES, BCCM-FP, & RCHPE.
- GUTTER SPREAD SAHLL BE IN ACCORDANCE WITH THE CITY DESIGN MANUAL.
- SPREAD IS MEASURED FROM FACE OF CURB. 16'-0" SPREAD IS ALLOWABLE.

8. LINE 10 AND IT'S ASSOCIATED DROP INLET EXIST TO CAPTURE STORM WATER RUNOFF IN AREAS TOO LOW TO DRAIN INTO OLIVER STREET. AS SUCH, THE LINE AND INLET ARE NOT DESIGNED FOR SPECIFIC STORM WATER EVENT.



TABLE FOR STORMWATER SEWER DESIGN INFORMATION

CITY ENGINEER
GARY JANZEN, P.E.

PROJECT NUMBER 472-85213	OCA NUMBER 707089	DATE SEPT. 2016
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CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		DESIGN JRA	DRAWN WNJ
SHEET		103 OF 125	