

HYDRAULIC CALCULATIONS

| COLLECTION POINT INLETS OR MANHOLES | | DISTANCE BETWEEN COLLECTION POINTS | INCREMENTAL DRAINAGE AREA | | | | TIME @ UPSTREAM STATION (MIN.) | INTENSITY "I-100" (IN./HR) | 100 YR. STORM RUNOFF "Q" | SLOPE OF HYDRAULIC GRADIENT (FT./FT.) | STORM SEWER SIZE | VELOCITY "V" (F.P.S.) | FLOW TIME IN SEWER (MIN.) | TIME @ DOWNSTREAM STATION (MIN.) | VELOCITY HEAD (FEET) | HYDRAULIC GRADE AT UPSTREAM STATION | HYDRAULIC GRADE AT DOWNSTREAM STATION | HYDRAULIC GRADE AT INLETS | COMMENTS |
|-------------------------------------|--------------------|------------------------------------|---------------------------|----------------|-------------------|--------------|--------------------------------|----------------------------|--------------------------|---------------------------------------|------------------|-----------------------|---------------------------|----------------------------------|----------------------|-------------------------------------|---------------------------------------|---------------------------|--------------|
| UPSTREAM STATION | DOWNSTREAM STATION | | INCREM. AREA NO. | AREA "A" (AC.) | RUNOFF COEFF. "C" | INCREM. "CA" | | | | | | | | | | | | | |
| LINE 'A' | | | | | | | | | | | | | | | | | | | |
| 1070.00 | 1059.84 | 10.16 | A-11 | 6.30 | 0.90 | 5.67 | 5.67 | 11.99 | 8.26 | 46.8 | 0.0049 | 36 | 6.62 | 0.03 | 12.02 | 0.68 | 622.54 | 622.49 | |
| 1059.84 | 1027.15 | 32.69 | A-10 | 1.15 | 0.90 | 1.04 | 6.71 | 12.02 | 8.25 | 55.3 | 0.0069 | 36 | 7.83 | 0.07 | 12.09 | 0.95 | 622.22 | 622.00 | |
| 1027.15 | 812.42 | 214.73 | LINE F | 6.12 | 0.80 | 4.90 | 11.60 | 12.09 | 8.24 | 95.6 | 0.0090 | 42 | 9.93 | 0.36 | 12.45 | 1.53 | 620.70 | 618.76 | |
| 812.42 | 763.83 | 48.59 | A-9 | 0.38 | 0.90 | 0.34 | 11.94 | 12.45 | 8.16 | 97.4 | 0.0094 | 42 | 10.13 | 0.08 | 12.53 | 1.59 | 618.70 | 618.25 | |
| 763.83 | 731.15 | 32.68 | A-8 | 0.64 | 0.90 | 0.58 | 12.52 | 12.53 | 8.14 | 101.9 | 0.0071 | 45 | 9.23 | 0.06 | 12.58 | 1.32 | 618.38 | 618.15 | |
| 731.15 | 547.84 | 183.31 | LINE E,H | 14.89 | 0.90 | 13.40 | 25.92 | 12.58 | 8.13 | 210.7 | 0.0065 | 60 | 10.73 | 0.28 | 12.87 | 1.79 | 615.41 | 614.21 | PARTIAL FLOW |
| 547.84 | 500.00 | 47.84 | A-7 | 0.96 | 0.50 | 0.48 | 26.40 | 12.87 | 8.07 | 213.0 | 0.0067 | 60 | 10.85 | 0.07 | 12.94 | 1.83 | 614.17 | 613.85 | PARTIAL FLOW |
| 500.00 | 471.65 | 28.35 | NA | NA | 0.90 | 0.00 | 26.40 | 12.94 | 8.05 | 212.7 | 0.0067 | 60 | 10.83 | 0.04 | 12.99 | 1.82 | 612.77 | 612.58 | PARTIAL FLOW |
| 471.65 | 459.03 | 12.62 | A-5,A-6 | 0.83 | 0.90 | 0.75 | 27.15 | 12.99 | 8.05 | 218.4 | 0.0070 | 60 | 11.12 | 0.02 | 13.01 | 1.92 | 612.48 | 612.39 | |
| 459.03 | 441.91 | 17.12 | LINE D | 1.54 | 0.90 | 1.39 | 28.53 | 13.01 | 8.04 | 229.5 | 0.0047 | 66 | 9.66 | 0.03 | 13.03 | 1.45 | 612.38 | 612.30 | |
| 441.91 | 394.32 | 57.59 | A-4 | 0.69 | 0.90 | 0.62 | 29.15 | 13.03 | 8.04 | 234.3 | 0.0049 | 66 | 9.86 | 0.10 | 13.13 | 1.51 | 612.24 | 611.96 | |
| 394.32 | 271.65 | 112.67 | A-3 | 0.65 | 0.90 | 0.59 | 29.74 | 13.13 | 8.02 | 238.4 | 0.0050 | 66 | 10.03 | 0.19 | 13.32 | 1.56 | 611.91 | 611.34 | |
| 271.65 | 212.46 | 59.19 | A-2 | 0.33 | 0.90 | 0.30 | 30.04 | 13.32 | 7.98 | 239.6 | 0.0051 | 66 | 10.09 | 0.10 | 13.42 | 1.58 | 611.32 | 611.02 | |
| 212.46 | 100.00 | 112.46 | LINE B,C,G | 9.61 | 0.90 | 8.65 | 38.69 | 13.42 | 7.96 | 313.1 | 0.0053 | 72 | 10.89 | 0.17 | 13.59 | 1.84 | 609.73 | 609.14 | |
| LAT. 'A-2' | | | | | | | | | | | | | | | | | | | |
| 5.00 | 0.00 | 5.00 | A-2 | 0.33 | 0.90 | 0.30 | 0.30 | 10.00 | 8.74 | 2.6 | 0.0006 | 18 | 1.47 | 0.06 | 10.06 | 0.03 | 612.87 | 612.87 | 612.92 |
| LAT. 'A-3' | | | | | | | | | | | | | | | | | | | |
| 42.76 | 0.00 | 42.76 | A-3 | 0.65 | 0.90 | 0.59 | 0.59 | 10.00 | 8.74 | 5.1 | 0.0010 | 21 | 2.13 | 0.34 | 10.34 | 0.07 | 613.45 | 613.40 | |
| LAT. 'A-4' | | | | | | | | | | | | | | | | | | | |
| 23.08 | 0.00 | 23.08 | A-4 | 0.69 | 0.90 | 0.62 | 0.62 | 10.00 | 8.74 | 5.4 | 0.0012 | 21 | 2.26 | 0.17 | 10.17 | 0.08 | 613.70 | 613.67 | |
| LAT. 'A-5 & A-6' | | | | | | | | | | | | | | | | | | | |
| 3.46 | 0.00 | 3.46 | A-5 & A-6 | 0.83 | 0.90 | 0.75 | 0.75 | 10.00 | 8.74 | 6.5 | 0.0039 | 18 | 3.70 | 0.02 | 10.02 | 0.21 | 614.20 | 614.19 | 614.52 |
| LAT. 'A-7' | | | | | | | | | | | | | | | | | | | |
| 19.63 | 0.00 | 19.63 | A-7 | 0.96 | 0.50 | 0.48 | 0.48 | 10.00 | 8.74 | 4.2 | 0.0007 | 21 | 1.74 | 0.19 | 10.19 | 0.05 | 612.91 | 612.90 | |
| LAT. 'A-8' | | | | | | | | | | | | | | | | | | | |
| 19.63 | 0.00 | 19.63 | A-8 | 0.64 | 0.90 | 0.58 | 0.58 | 10.00 | 8.74 | 5.0 | 0.0010 | 21 | 2.09 | 0.16 | 10.16 | 0.07 | 619.66 | 619.64 | |
| LAT. 'A-9' | | | | | | | | | | | | | | | | | | | |
| 3.46 | 0.00 | 3.46 | A-9 | 0.38 | 0.90 | 0.34 | 0.34 | 10.00 | 8.74 | 3.0 | 0.0008 | 18 | 1.69 | 0.03 | 10.03 | 0.04 | 620.25 | 620.25 | 620.32 |
| LAT. 'A-10' | | | | | | | | | | | | | | | | | | | |
| 26.63 | 0.00 | 26.63 | A-10 | 1.15 | 0.90 | 1.04 | 1.04 | 10.00 | 8.74 | 9.0 | 0.0033 | 21 | 3.76 | 0.12 | 10.12 | 0.22 | 623.04 | 622.95 | 623.37 |
| LINE 'B' | | | | | | | | | | | | | | | | | | | |
| 1160.00 | 1155.00 | 5.00 | B-9 | 1.29 | 0.90 | 1.16 | 1.16 | 10.00 | 8.74 | 10.2 | 0.0020 | 24 | 3.23 | 0.03 | 10.03 | 0.16 | 619.63 | 619.62 | |
| 1155.00 | 1150.00 | 5.00 | B-8 | 0.14 | 0.90 | 0.13 | 1.29 | 10.03 | 8.74 | 11.2 | 0.0025 | 24 | 3.58 | 0.02 | 10.05 | 0.20 | 619.58 | 619.57 | |
| 1150.00 | 835.00 | 315.00 | B-7 | 0.14 | 0.90 | 0.13 | 1.41 | 10.05 | 8.73 | 12.3 | 0.0030 | 24 | 3.93 | 1.34 | 11.39 | 0.24 | 619.53 | 618.59 | |
| 835.00 | 830.00 | 5.00 | B-6 | 0.50 | 0.90 | 0.45 | 1.86 | 11.39 | 8.40 | 15.6 | 0.0015 | 30 | 3.19 | 0.03 | 11.41 | 0.16 | 618.63 | 618.62 | |
| 830.00 | 825.00 | 5.00 | B-5 | 0.32 | 0.90 | 0.29 | 2.15 | 11.41 | 8.39 | 18.0 | 0.0019 | 30 | 3.68 | 0.02 | 11.43 | 0.21 | 618.57 | 618.56 | |
| 825.00 | 565.00 | 260.00 | B-4 | 0.33 | 0.90 | 0.30 | 2.45 | 11.43 | 8.39 | 20.5 | 0.0025 | 30 | 4.18 | 1.04 | 12.47 | 0.27 | 618.50 | 617.85 | |
| 565.00 | 556.00 | 7.00 | B-3 | 0.26 | 0.90 | 0.23 | 2.68 | 12.47 | 8.15 | 21.9 | 0.0028 | 30 | 4.46 | 0.03 | 12.50 | 0.31 | 617.81 | 617.79 | |
| 556.00 | 448.50 | 109.50 | B-2 | 0.16 | 0.90 | 0.14 | 2.83 | 12.50 | 8.15 | 23.0 | 0.0032 | 30 | 4.69 | 0.39 | 12.89 | 0.34 | 617.76 | 617.41 | |
| 448.50 | 231.07 | 217.43 | B-1 | 0.12 | 0.90 | 0.11 | 2.93 | 12.89 | 8.07 | 23.7 | 0.0033 | 30 | 4.82 | 0.75 | 13.64 | 0.36 | 617.39 | 616.67 | |
| 231.07 | 225.04 | 6.03 | LINE G | 1.05 | 0.90 | 0.95 | 3.88 | 13.64 | 7.92 | 30.7 | 0.0021 | 36 | 4.34 | 0.02 | 13.66 | 0.29 | 616.65 | 616.63 | |
| 225.04 | 87.39 | 137.65 | LINE C | 5.30 | 0.90 | 4.77 | 8.65 | 13.66 | 7.91 | 68.4 | 0.0105 | 36 | 9.68 | 0.24 | 13.90 | 1.45 | 615.40 | 613.95 | PARTIAL FLOW |
| 87.39 | 0.00 | 87.39 | B-10 | 0.32 | 0.90 | 0.29 | 8.94 | 13.90 | 7.86 | 70.3 | 0.0111 | 36 | 9.94 | 0.15 | 14.04 | 1.54 | 613.87 | 612.90 | |
| LAT. 'B-10' | | | | | | | | | | | | | | | | | | | |
| 5.00 | 0.00 | 5.00 | B-10 | 0.32 | 0.90 | 0.29 | 0.29 | 10.00 | 8.74 | 2.5 | 0.0006 | 18 | 1.42 | 0.06 | 10.06 | 0.03 | 612.40 | 612.40 | 612.45 |
| LAT. 'B-1' | | | | | | | | | | | | | | | | | | | |
| 42.76 | 0.00 | 42.76 | B-1 | 0.12 | 0.90 | 0.11 | 0.11 | 10.00 | 8.74 | 0.9 | 0.0001 | 18 | 0.53 | 1.33 | 11.33 | 0.00 | 620.03 | 620.03 | 620.04 |
| LAT. 'B-2' | | | | | | | | | | | | | | | | | | | |
| 23.08 | 0.00 | 23.08 | B-2 | 0.16 | 0.90 | 0.14 | 0.14 | 10.00 | 8.74 | 1.3 | 0.0001 | 18 | 0.71 | 0.54 | 10.54 | 0.01 | 624.24 | 624.24 | 624.26 |
| LAT. 'B-3' | | | | | | | | | | | | | | | | | | | |
| 23.08 | 0.00 | 23.08 | B-3 | 0.26 | 0.90 | 0.23 | 0.23 | 10.00 | 8.74 | 2.0 | 0.0004 | 18 | 1.16 | 0.33 | 10.33 | 0.02 | -0.00 | -0.01 | 0.03 |

RECORD DRAWING 5/1/98

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ISSUED FOR CONSTRUCTION
MARCH 28, 1996

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KENNETH A. ROBERTS, P.E. 55446 ON MARCH 28, 1996.



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| STORM WATER CALCULATIONS | | | | | |
| HYDRAULIC CALCULATIONS | | | | | |
| ADDISON CIRCLE | | | | | |
| PHASE I PUBLIC INFRASTRUCTURE | | | | | |
| TOWN OF ADDISON, TEXAS | | | | | |
| Huitt-Zollers, Inc./Engineering/Architecture Dallas, Fort Worth, Houston, El Paso, Phoenix, Tustin, Ontario, San Clemente | | | | | |
| DESIGN | DRAWN | APPR. | SCALE | DATE | PROJECT NO. |
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