

ENGINEER \_\_\_\_\_ JOB No. 94-306 DATE 16 NOV 1995 PROJECT Cherrywood Parc - Plot 2 & 3

HYDRAULIC COMPUTATIONS

| LINE  |       | PIPE CHARACTERISTICS |         |            |            |            | STRUCT. TOPS |        | DEPTH HYD. GRADE | ELEV. HYD. GRD. |        | HYD. GRADE | FRICT. HEAD LOSS | VEL. | $\frac{V^2}{2g}$ | VHL | TURN LOSS         | INLETS       |            | FLOW REQUIREMENTS              |      |         | PIPE CAP. |       |
|-------|-------|----------------------|---------|------------|------------|------------|--------------|--------|------------------|-----------------|--------|------------|------------------|------|------------------|-----|-------------------|--------------|------------|--------------------------------|------|---------|-----------|-------|
| UPPER | LOWER | LENGTH               | SIZE    | F.L. GRADE | F.L. UPPER | F.L. LOWER | UPPER        | LOWER  |                  | UPPER           | LOWER  |            |                  |      |                  |     | STREET GRADE      | CAPACITY     | DRNG. AREA | P.I.                           | Q    | TOTAL Q |           |       |
| CI    | FI    | 165'                 | 12" AOS | 1.47%      | 512.70     | 510.27     | 520.0        | 515.2  | 6.30             | 513.42          | 512.77 | .0040      | .65              | 3.1  | .15              | .15 | $\frac{.08}{50}$  | LOW          | 4.0        | 0.92 AS                        | 2.64 | 2.43    | 2.43      | 4.68  |
| AI    | MH    | 106'                 | 12" AOS | 1.5%       | 526.00     | 524.41     | 529.8        | 532.3  | 2.72             | 526.52          | 525.41 | .0105      | 1.11             | 5.0  | .39              | .39 | $\frac{0.17}{40}$ | 2 SIDES OPEN | 5.50       | 1.50 AS                        | 2.64 | 3.96    | 3.96      | 4.73  |
| MH    | CI    | 72'                  | 15" RCP | 1.0%       | 524.21     | 523.49     | 532.3        | 531.5  | 6.89             | 525.01          | 524.74 | .0037      | 0.27             | 3.2  | .16              | .17 | $\frac{0.08}{45}$ | —            | —          | —                              | —    | —       | 3.96      | 6.47  |
| CI    | AI    | 99'                  | 15" AOS | 2.5%       | 523.29     | 520.82     | 531.5        | 525.1  | 6.76             | 523.33          | 522.07 | .0128      | 1.26             | 6.5  | .66              | .77 | $\frac{0.42}{75}$ | LOW          | 4.0        | 1.50 AS                        | 2.64 | 3.96    | 7.92      | 11.08 |
| AI    | AI    | 156'                 | 15" AOS | 4.5%       | 520.62     | 513.60     | 525.1        | 521.5  | 3.03             | 517.42          | 514.85 | .0165      | 2.57             | 7.3  | .83              | .33 | —                 | 2 SIDES OPEN | 5.50       | 0.41 AS                        | 2.64 | 1.08    | 9.00      | 14.87 |
| AI    | AI    | 313'                 | 21" AOS | 1.0%       | 513.40     | 510.27     | 521.5        | 515.2  | 6.65             | 514.69          | 512.77 | .0061      | 1.92             | 5.6  | .49              | .05 | —                 | 2 SIDES OPEN | 5.50       | 1.68 AS                        | 2.64 | 4.44    | 13.44     | 17.15 |
| AI    | FE    | 24'                  | 24" RCP | 1.0%       | 510.07     | 509.83     | 515.2        | —      | 2.43             | 512.64          | 512.50 | .0060      | 0.14             | 5.6  | .49              | .13 | —                 | 2 SIDES OPEN | 5.50       | 2.43 c.f.s. FROM CI 2-28       | 2.64 | 1.69    | 17.56     | 22.62 |
| AI    | CI    | 121'                 | 15" AOS | 2.4%       | 520.00     | 517.10     | 524.4        | 523.41 | 3.15             | 519.07          | 518.35 | .0059      | 0.72             | 4.4  | .30              | .30 | $\frac{.05}{150}$ | 8 SIDES OPEN | 8.25       | 2.04 AS                        | 2.64 | 5.39    | 5.39      | 10.86 |
| CI    | CI    | 37'                  | 15" RCP | 2.5%       | 516.90     | 515.98     | 523.41       | 523.51 | 5.06             | 517.68          | 517.23 | .0121      | 0.45             | 5.8  | .52              | .39 | $\frac{.09}{150}$ | 1.15%        | 2.23       | 0.02 c.f.s. BY-PASS FROM 2-13  | 2.64 | 1.72    | 7.13      | 10.22 |
| CI    | FE    | 141'                 | 15" AOS | 2.4%       | 515.78     | 512.40     | 523.51       | —      | 6.28             | 515.90          | 513.65 | .0159      | 2.25             | 7.2  | .81              | .52 | —                 | 1.15%        | 2.23       | 0.65 AS                        | 2.64 | 1.72    | 8.85      | 10.86 |
| CI    | CI    | 34'                  | 15" RCP | 1.0%       | 530.55     | 530.21     | 535.12       | 535.12 | 3.32             | 531.48          | 531.48 | .0001      | —                | 0.6  | .01              | .01 | $\frac{.1}{450}$  | 4.1%         | 1.17       | 0.27 AS                        | 2.64 | 0.71    | 0.71      | 6.47  |
| AI    | MH    | 164'                 | 15" AOS | 1.0%       | 534.50     | 532.86     | 539.0        | 542.4  | 3.25             | 534.79          | 534.11 | .0042      | 0.68             | 3.7  | .21              | .21 | $\frac{.14}{150}$ | OPEN 4 SIDES | 11.0       | OFF-SITE ON-SITE USE           | 2.64 | 0.16    | 4.52      | 7.01  |
| MH    | CI    | 136'                 | 15" AOS | 1.8%       | 532.66     | 530.21     | 542.4        | 535.12 | 8.29             | 532.05          | 531.48 | .0042      | 0.57             | 3.7  | .21              | —   | $\frac{.11}{500}$ | —            | —          | —                              | —    | —       | 4.52      | 9.40  |
| CI    | CI    | 45'                  | 15" AOS | 1.8%       | 530.01     | 529.20     | 535.12       | 535.47 | 3.64             | 530.83          | 530.45 | .0083      | 0.38             | 5.2  | .42              | .36 | $\frac{.29}{400}$ | 4.1%         | 1.17       | 0.02 c.f.s. BY-PASS TO CI 2-19 | 2.64 | 1.17    | 6.40      | 9.40  |
| CI    | CI    | 52'                  | 15" AOS | 1.8%       | 529.00     | 528.06     | 535.47       | 534.15 | 5.02             | 529.44          | 529.31 | .0122      | 0.63             | 5.8  | .52              | .19 | $\frac{.26}{500}$ | 3.28%        | 1.46       | 0.28 AS                        | 2.64 | 0.74    | 7.14      | 8.68  |
| CI    | FE    | 128'                 | 15" AOS | 4.89%      | 527.86     | 521.60     | 534.15       | —      | 4.84             | 524.50          | 522.85 | .0129      | 1.65             | 6.5  | .66              | .26 | —                 | 3.28%        | 1.46       | 0.31 AS                        | 2.64 | 0.82    | 7.96      | 15.50 |

ENGINEER \_\_\_\_\_ JOB No. 94-306 DATE Nov 6 1995 PROJECT CHERRYWOOD PARC - PLAT 2 & PLAT 3

HYDRAULIC COMPUTATIONS

| LINE  |       | PIPE CHARACTERISTICS |                  |            |            |            | STRUCT. TOPS |        | DEPTH HYD. GRADE | ELEV. HYD. GRD. |        | HYD. GRADE | FRICT. HEAD LOSS | VEL. | $\frac{V^2}{2g}$ | VHL  | TURN LOSS          | INLETS       |                     | FLOW REQUIREMENTS                     |                  |                |        | PIPE CAP. |       |
|-------|-------|----------------------|------------------|------------|------------|------------|--------------|--------|------------------|-----------------|--------|------------|------------------|------|------------------|------|--------------------|--------------|---------------------|---------------------------------------|------------------|----------------|--------|-----------|-------|
| UPPER | LOWER | LENGTH               | SIZE             | F.L. GRADE | F.L. UPPER | F.L. LOWER | UPPER        | LOWER  | UPPER            | LOWER           |        |            |                  |      |                  |      | STREET GRADE       | CAPACITY     | DRNG. AREA          | P.I.                                  | Q                | TOTAL Q        |        |           |       |
|       |       |                      |                  |            |            |            |              |        |                  |                 |        |            |                  |      |                  |      |                    |              |                     |                                       |                  |                |        |           |       |
| CI    | CI    | 34'                  | 15"RCP           | 1.0%       | 532.40     | 532.06     | 536.64       | 536.64 | 2.99             | 533.12          | 533.12 | .0002      | 0.01             | 0.8  | .01              | .01  | —                  | Low          | 4.0                 | 0.38AS                                | 2.64             | 1.00           | 1.00   | 6.47      |       |
| CI    | MH    | 17'                  | 15"ADS           | 1.0%       | 531.86     | 531.69     | 536.64       | 537.6  | 3.53             | 532.22          | 532.17 | .0029      | 0.05             | 3.1  | .15              | .20  | 10 $\frac{11}{90}$ | Low          | 4.0                 | 0.77C.R. BYPASS FROM CI 2-3<br>0.75AS | 2.64             | -1.98          | 3.75   | 7.01      |       |
|       |       |                      |                  |            |            |            |              |        |                  |                 |        |            |                  |      |                  |      |                    |              |                     |                                       |                  |                |        |           |       |
| AI    | MH    | 73'                  | 12"ADS           | 7.0%       | 538.00     | 532.89     | 542.0        | 537.6  | 3.00             | 534.08          | 532.17 | .0253      | 1.85             | 7.8  | .95              | .95  | 10 $\frac{67}{90}$ | 3 SIDES OPEN | 8.25                | OFF-SITE<br>OR 2.64                   | 2.64             | 1.03           | 5.12   | 6.15      | 10.22 |
|       |       |                      |                  |            |            |            |              |        |                  |                 |        |            |                  |      |                  |      |                    |              |                     |                                       |                  |                |        |           |       |
| OS    | MH    | 70.25'               | RADIAL<br>54"RCP | 0.96%      | 530.43     | 529.76     | 539.0        | 538.8  | 3.27             | 535.73          | 535.73 | .0052      | 0.36             | 8.9  | 1.23             | 1.23 | 11 $\frac{14}{80}$ | LOW          | ON-SITE<br>OFF-SITE | 20.25AS<br>77.43AS                    | 2.64             | 53.46<br>88.26 | 141.72 | 192.73    |       |
| MH    | DCI   | 63.31'               | 54"RCP           | 0.96%      | 529.76     | 529.15     | 538.8        | 540.15 | 3.43             | 534.00          | 533.65 | .0055      | 0.35             | 9.2  | 1.32             | 0.17 | —                  | —            | —                   | T.O. FROM<br>FUTURE CI                | 4.75             | —              | 146.47 | 192.73    |       |
| DCI   | CI    | 47.69'               | 54"RCP           | 0.96%      | 529.15     | 528.69     | 540.15       | 540.15 | 6.50             | 533.47          | 533.19 | .0058      | 0.28             | 9.4  | 1.37             | 0.10 | —                  | 3.2%         | 4.78                | 1.14AS                                | 2.64             | 3.01           | 149.48 | 192.73    |       |
| CI    | MH    | 105.80'              | 54"RCP           | 0.96%      | 528.69     | 527.67     | 540.15       | 537.2  | 6.96             | 532.79          | 532.17 | .0059      | 0.62             | 9.5  | 1.40             | 0.06 | —                  | 3.2%         | 1.50                | 0.86AS                                | 2.64             | 2.27           | 150.98 | 192.73    |       |
| MH    | MH    | 133.52'              | RADIAL<br>54"RCP | 0.96%      | 527.67     | 526.39     | 537.2        | 537.8  | 5.03             | 531.96          | 531.07 | .0067      | 0.89             | 10.1 | 1.59             | 0.31 | 10 $\frac{17}{90}$ | —            | —                   | T.O. FROM<br>T.O. FROM                | CI 2-7<br>CI 2-6 | 3.75<br>6.15   | 160.88 | 192.73    |       |
| MH    | FE    | 104.62'              | 54"RCP           | 0.96%      | 526.39     | 525.39     | 537.8        | —      | 6.73             | 530.59          | 529.89 | .0067      | 0.70             | 10.1 | 1.59             | —    | —                  | —            | —                   | —                                     | —                | —              | 160.88 | 192.73    |       |

Ultimate

R=50

R=85

31