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# PROJECT SILVER EAGLE - STORM SEWER AREAS

1/18/2022

PINNACLE ENGINEERING GROUP

20725 WATERTOWN ROAD | SUITE 100 | BROOKFIELD, WI 53186 | WWW.PINNACLE-ENGR.COM |

PLAN | DESIGN | DELIVER

PEG JOB# 1540.00A

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**

NORTH DOCKS AND WEST ROAD

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6** min DESIGN INTENSITY (I): **6.5** in/hr

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
|                |                    |                      | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       |             |               |           |                     | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     |            |           |             |
| Notes          | Upstream Structure | Downstream Structure | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) | Rim/Toc Up | Invert Up | Invert Down |
|                | MH 1.0             | IN 2.0               | 0.39   | 0.90                     | 2.28                    | 2.28                  | 66.20       | 12            | 0.50      | 0.012               | 0.23  | 0.33             | 75%              | 3.89                  | 2.94                | 946.08     | 937.21    | 936.88      |
|                | IN 2.1             | IN 2.0               | 0.33   | 0.90                     | 1.93                    | 1.93                  | 38.00       | 10            | 1.00      | 0.012               | 0.25  | 0.38             | 73%              | 4.85                  | 2.55                | 945.85     | 942.67    | 942.29      |
|                | IN 2.0             | IN 3.0               | 0.57   | 0.90                     | 3.33                    | 7.55                  | 195.20      | 18            | 0.65      | 0.012               | 0.86  | 1.27             | 74%              | 5.80                  | 9.87                | 945.85     | 936.88    | 935.61      |
| OFFSITE        | IN 3.1             | IN 3.0               | 0.00   | 0.90                     | 12.93                   | 12.93                 | 117.60      | 24            | 1.20      | 0.012               | 0.33  | 1.41             | 49%              | 8.46                  | 28.88               | 945.50     | 940.50    | 939.09      |
|                | IN 3.0             | IN 5.0               | 0.88   | 0.90                     | 5.15                    | 25.62                 | 170.00      | 36            | 0.40      | 0.012               | 0.21  | 0.68             | 55%              | 6.65                  | 49.16               | 944.15     | 935.61    | 934.93      |
|                | MH 4.0             | IN 5.0               | 0.57   | 0.90                     | 3.33                    | 3.33                  | 85.10       | 15            | 0.91      | 0.012               | 0.19  | 0.77             | 50%              | 5.44                  | 7.18                | 944.85     | 937.28    | 936.51      |
|                | PLUG 5.1           | IN 5.0               | 2.23   | 0.90                     | 13.05                   | 13.05                 | 170.00      | 24            | 0.80      | 0.012               | 0.48  | 1.36             | 57%              | 7.28                  | 23.58               | 946.00     | 940.21    | 938.85      |
|                | IN 5.0             | IN 7.0               | 0.82   | 0.90                     | 4.80                    | 46.80                 | 170.00      | 36            | 0.59      | 0.012               | 0.71  | 1.00             | 75%              | 8.80                  | 59.70               | 944.15     | 934.93    | 933.93      |
|                | MH 6.0             | IN 7.0               | 1.12   | 0.90                     | 6.55                    | 6.55                  | 85.00       | 15            | 1.10      | 0.012               | 0.75  | 0.94             | 79%              | 6.76                  | 7.90                | 945.85     | 937.21    | 936.27      |
|                | IN 7.0             | IN 9.0               | 0.82   | 0.90                     | 4.80                    | 58.15                 | 170.00      | 42            | 0.69      | 0.012               | 0.48  | 1.17             | 60%              | 9.99                  | 97.39               | 944.15     | 933.74    | 932.57      |
|                | MH 8.0             | IN 9.0               | 0.90   | 0.90                     | 5.27                    | 5.27                  | 85.50       | 15            | 0.70      | 0.012               | 0.48  | 0.60             | 79%              | 5.40                  | 6.30                | 945.85     | 937.44    | 936.84      |
|                | IN 9.0             | MH 10.0              | 0.80   | 0.90                     | 4.68                    | 68.10                 | 150.00      | 42            | 0.50      | 0.012               | 0.59  | 0.75             | 78%              | 9.04                  | 82.90               | 945.85     | 932.57    | 931.82      |
|                | MH 10.0            | IN 11.0              | 0.78   | 0.90                     | 4.56                    | 72.66                 | 20.00       | 42            | 0.60      | 0.012               | 0.09  | 0.12             | 77%              | 9.87                  | 90.82               | 944.35     | 931.82    | 931.70      |
|                | IN 11.0            | IN 13.0              | 0.73   | 0.90                     | 4.27                    | 76.93                 | 170.00      | 42            | 0.60      | 0.012               | 0.85  | 1.02             | 80%              | 9.95                  | 90.82               | 944.15     | 931.70    | 930.68      |
|                | MH 12.0            | IN 13.0              | 1.27   | 0.90                     | 7.43                    | 7.43                  | 85.70       | 18            | 1.00      | 0.012               | 0.37  | 0.86             | 61%              | 6.86                  | 12.24               | 945.85     | 934.77    | 933.91      |
|                | IN 13.0            | IN 15.0              | 0.82   | 0.90                     | 4.80                    | 89.16                 | 170.00      | 48            | 0.40      | 0.012               | 0.56  | 0.68             | 80%              | 8.87                  | 105.87              | 946.00     | 930.68    | 930.00      |
|                | PLUG 15.1          | IN 15.0              | 2.41   | 0.90                     | 14.10                   | 14.10                 | 119.50      | 24            | 0.80      | 0.012               | 0.40  | 0.96             | 61%              | 7.41                  | 23.58               | 946.00     | 934.54    | 933.58      |
|                | MH 14.0            | IN 15.0              | 0.54   | 0.90                     | 3.16                    | 3.16                  | 86.00       | 12            | 1.00      | 0.012               | 0.58  | 0.86             | 73%              | 5.48                  | 4.15                | 945.85     | 935.69    | 934.83      |
|                | IN 15.0            | IN 16.0              | 0.81   | 0.90                     | 4.74                    | 111.15                | 170.00      | 60            | 0.40      | 0.012               | 0.26  | 0.68             | 59%              | 9.58                  | 191.95              | 944.15     | 930.00    | 929.32      |
|                | IN 16.0            | IN 17.0              | 0.72   | 0.90                     | 4.21                    | 115.36                | 202.00      | 60            | 0.30      | 0.012               | 0.34  | 0.61             | 68%              | 8.63                  | 166.23              | 944.00     | 929.32    | 928.71      |
| OFFSITE        | IN 142.3           | MH 142.2             | 8.96   | 0.90                     | 52.40                   | 52.40                 | 10.30       | 42            | 0.70      | 0.012               | 0.09  | 0.11             | 56%              | 9.81                  | 98.09               | 955.16     | 943.11    | 943.69      |
|                | IN 147.0           | IN 145.0             | 1.48   | 0.90                     | 8.66                    | 8.66                  | 150.60      | 24            | 0.20      | 0.012               | 0.19  | 0.30             | 71%              | 3.87                  | 11.79               | 945.85     | 941.72    | 941.42      |
|                | IN 145.0           | IN 144.0             | 1.87   | 0.90                     | 10.94                   | 19.60                 | 316.20      | 30            | 0.25      | 0.012               | 0.62  | 0.79             | 78%              | 5.11                  | 23.90               | 946.35     | 941.42    | 940.63      |
|                | IN 144.0           | IN 143.0             | 0.71   | 0.90                     | 4.15                    | 25.74                 | 166.50      | 30            | 0.36      | 0.012               | 0.48  | 0.60             | 85%              | 6.19                  | 28.68               | 947.30     | 940.63    | 940.03      |
|                | IN 143.0           | IN 142.1             | 0.69   | 0.90                     | 4.04                    | 31.24                 | 178.40      | 36            | 0.48      | 0.012               | 0.70  | 0.86             | 59%              | 7.47                  | 53.85               | 947.80     | 940.03    | 939.17      |
|                | MH 142.2           | IN 142.0             | 0.00   | 0.90                     | 0.00                    | 83.64                 | 30.60       | 48            | 0.33      | 0.013               | 0.08  | 0.10             | 89%              | 7.48                  | 88.76               | 947.80     | 939.17    | 939.07      |
|                | IN 142.0           | IN 141.0             | 0.75   | 0.90                     | 4.39                    | 89.55                 | 183.40      | 60            | 0.37      | 0.013               | 0.54  | 0.68             | 55%              | 8.32                  | 170.41              | 948.45     | 939.07    | 938.39      |
|                | IN 141.0           | ES 140.0             | 0.44   | 0.90                     | 2.57                    | 92.53                 | 198.30      | 60            | 0.45      | 0.013               | 0.73  | 0.89             | 52%              | 9.03                  | 187.93              | 945.55     | 938.39    | 937.50      |
|                | IN 144.1           | IN 144.0             | 0.34   | 0.90                     | 1.99                    | 1.99                  | 30.00       | 12            | 1.00      | 0.012               | 0.73  | 0.89             | 51%              | 4.95                  | 4.15                | 945.55     | 938.39    | 937.50      |
|                | IN 143.1           | IN 143.0             | 0.25   | 0.90                     | 1.46                    | 1.46                  | 30.00       | 12            | 1.00      | 0.012               | 0.73  | 0.89             | 41%              | 4.57                  | 4.15                | 945.55     | 938.39    | 937.50      |
|                | IN 142.1           | IN 142.1             | 0.26   | 0.90                     | 1.52                    | 1.52                  | 30.00       | 12            | 1.00      | 0.012               | 0.73  | 0.89             | 42%              | 4.62                  | 4.15                | 945.55     | 938.39    | 944.20      |
|                | IN 141.1           | IN 141.0             | 0.07   | 0.90                     | 0.41                    | 0.41                  | 30.00       | 12            | 1.00      | 0.012               | 0.73  | 0.89             | 16%              | 3.20                  | 4.15                | 945.55     | 938.39    | 944.70      |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**  
 LOCATION OR RUN

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6** min DESIGN INTENSITY (I): **6.5** in/hr

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | 216                | 215                  | 0.10   | 0.90                     | 0.59                    | 0.59                  | 88.00       | 10            | 1.00      | 0.012               | 0.05  | 0.88             | 30%              | 3.60                  | 2.55                | 947.25     | 943.60    | 942.72      |
|                | 215                | 214                  | 0.21   | 0.90                     | 1.23                    | 1.81                  | 90.00       | 10            | 2.00      | 0.012               | 0.53  | 1.80             | 53%              | 6.27                  | 3.61                | 947.15     | 942.72    | 940.92      |
|                | 214                | 213                  | 0.26   | 0.90                     | 1.52                    | 3.33                  | 49.00       | 12            | 2.00      | 0.012               | 0.37  | 0.98             | 58%              | 7.30                  | 5.87                | 947.00     | 940.76    | 939.78      |
|                | 213                | 212                  | 0.17   | 0.90                     | 0.99                    | 4.33                  | 22.40       | 12            | 2.00      | 0.012               | 0.28  | 0.45             | 71%              | 7.71                  | 5.87                | 947.15     | 939.78    | 939.33      |
|                | 212                | 211                  | 0.11   | 0.90                     | 0.64                    | 4.97                  | 30.00       | 15            | 2.00      | 0.012               | 0.15  | 0.60             | 50%              | 8.07                  | 10.65               | 947.05     | 939.08    | 938.48      |
|                | 211                | ES 210               | 0.07   | 0.90                     | 0.41                    | 5.38                  | 48.90       | 15            | 2.00      | 0.013               | 0.34  | 0.98             | 57%              | 7.75                  | 9.83                | 947.05     | 938.48    | 937.50      |
|                | 226                | 225                  | 0.11   | 0.90                     | 0.64                    | 0.64                  | 88.00       | 10            | 1.00      | 0.012               | 0.06  | 0.88             | 32%              | 3.70                  | 2.55                | 947.25     | 943.60    | 942.72      |
|                | 225                | 224                  | 0.25   | 0.90                     | 1.46                    | 2.11                  | 90.00       | 12            | 2.00      | 0.012               | 0.27  | 1.80             | 41%              | 6.50                  | 5.87                | 947.15     | 942.56    | 940.76      |
|                | 224                | 223                  | 0.10   | 0.90                     | 0.59                    | 2.69                  | 49.00       | 12            | 2.00      | 0.012               | 0.24  | 0.98             | 49%              | 6.93                  | 5.87                | 947.00     | 940.76    | 939.78      |
|                | 223                | 222                  | 0.13   | 0.90                     | 0.76                    | 3.45                  | 22.40       | 12            | 2.00      | 0.012               | 0.18  | 0.45             | 60%              | 7.35                  | 5.87                | 947.15     | 939.78    | 939.33      |
|                | 222                | 221                  | 0.10   | 0.90                     | 0.59                    | 4.04                  | 30.00       | 15            | 2.00      | 0.012               | 0.10  | 0.60             | 43%              | 7.65                  | 10.65               | 947.05     | 939.08    | 938.48      |
|                | 221                | ES 220               | 0.13   | 0.90                     | 0.76                    | 4.80                  | 48.90       | 15            | 2.00      | 0.013               | 0.27  | 0.98             | 52%              | 7.54                  | 9.83                | 947.05     | 938.48    | 937.50      |
|                | 236                | 235                  | 0.10   | 0.90                     | 0.59                    | 0.59                  | 88.00       | 10            | 1.00      | 0.012               | 0.05  | 0.88             | 30%              | 3.60                  | 2.55                | 947.25     | 943.61    | 942.73      |
|                | 235                | 234                  | 0.25   | 0.90                     | 1.46                    | 2.05                  | 90.00       | 10            | 2.00      | 0.012               | 0.67  | 1.80             | 58%              | 6.46                  | 3.61                | 947.15     | 942.73    | 940.93      |
|                | 234                | 233                  | 0.25   | 0.90                     | 1.46                    | 3.51                  | 49.00       | 12            | 2.00      | 0.012               | 0.41  | 0.98             | 61%              | 7.38                  | 5.87                | 947.00     | 940.77    | 939.79      |
|                | 233                | 232                  | 0.10   | 0.90                     | 0.59                    | 5.56                  | 22.40       | 12            | 2.00      | 0.012               | 0.46  | 0.45             | 89%              | 7.92                  | 5.87                | 947.15     | 939.79    | 939.34      |
|                | 232                | 231                  | 0.12   | 0.90                     | 0.70                    | 6.26                  | 30.00       | 15            | 2.00      | 0.012               | 0.24  | 0.60             | 60%              | 8.53                  | 10.65               | 947.05     | 939.09    | 938.49      |
|                | 231                | ES 230               | 0.06   | 0.90                     | 0.35                    | 6.61                  | 49.51       | 15            | 2.00      | 0.013               | 0.52  | 0.99             | 66%              | 8.11                  | 9.83                | 947.05     | 938.49    | 937.50      |
|                | 233.2              | 233.1                | 0.08   | 0.90                     | 0.47                    | 0.47                  | 36.30       | 10            | 3.00      | 0.012               | 0.01  | 1.09             | 17%              | 5.01                  | 4.42                | 947.05     | 943.26    | 942.17      |
|                | 233.1              | 233                  | 0.17   | 0.90                     | 0.99                    | 1.46                  | 73.80       | 10            | 3.00      | 0.012               | 0.28  | 2.21             | 39%              | 6.90                  | 4.42                | 947.05     | 942.17    | 939.95      |
|                | 254.1              | 254                  | 0.48   | 0.90                     | 2.81                    | 2.81                  | 30.00       | 10            | 2.00      | 0.012               | 0.42  | 0.60             | 75%              | 6.89                  | 3.61                | 966.25     | 961.25    | 960.65      |
|                | 254                | 253                  | 0.51   | 0.90                     | 2.98                    | 5.79                  | 169.00      | 24            | 3.25      | 0.012               | 0.09  | 5.49             | 19%              | 9.73                  | 47.53               | 966.25     | 957.49    | 951.99      |
|                | 253.1              | 253                  | 0.23   | 0.90                     | 1.35                    | 1.35                  | 30.00       | 10            | 2.00      | 0.012               | 0.10  | 0.60             | 42%              | 5.81                  | 3.61                | 960.05     | 953.76    | 953.16      |
|                | 253                | 252                  | 0.76   | 0.90                     | 4.45                    | 11.58                 | 189.10      | 30            | 2.10      | 0.012               | 0.13  | 3.97             | 24%              | 9.94                  | 69.27               | 960.05     | 949.49    | 945.52      |
|                | 252.1              | 252                  | 1.17   | 0.90                     | 6.84                    | 6.84                  | 30.00       | 15            | 2.00      | 0.012               | 0.29  | 0.60             | 64%              | 8.70                  | 10.65               | 951.35     | 947.37    | 946.77      |
|                | 252                | 251                  | 0.11   | 0.90                     | 0.64                    | 19.07                 | 93.70       | 30            | 1.40      | 0.012               | 0.17  | 1.31             | 39%              | 9.86                  | 56.56               | 951.35     | 943.52    | 942.21      |
|                | 251.1              | 251                  | 0.11   | 0.90                     | 0.64                    | 0.64                  | 30.00       | 10            | 0.30      | 0.012               | 0.02  | 0.09             | 50%              | 2.38                  | 1.40                | 947.10     | 943.97    | 943.88      |
|                | 251                | ES 250.0             | 0.07   | 0.90                     | 0.41                    | 20.12                 | 71.10       | 24            | 1.00      | 0.013               | 0.56  | 0.71             | 79%              | 8.14                  | 24.33               | 947.30     | 940.71    | 940.00      |
|                | 245.1              | 245                  | 0.10   | 0.90                     | 0.59                    | 0.59                  | 45.00       | 10            | 0.50      | 0.012               | 0.03  | 0.23             | 38%              | 2.80                  | 1.81                | 947.00     | 943.76    | 943.53      |
| *              | 245                | 244                  | 0.15   | 0.90                     | 0.88                    | 1.46                  | 111.20      | 12            | 0.50      | 0.012               | 0.16  | 0.56             | 53%              | 3.54                  | 2.94                | 947.00     | 943.37    | 942.81      |
|                | 244.1              | 244                  | 0.07   | 0.90                     | 0.41                    | 0.41                  | 33.40       | 10            | 2.00      | 0.012               | 0.01  | 0.67             | 18%              | 4.17                  | 3.61                | 947.00     | 943.65    | 942.98      |
|                | 244                | 243                  | 0.08   | 0.90                     | 0.47                    | 2.34                  | 114.40      | 12            | 0.80      | 0.012               | 0.42  | 0.92             | 63%              | 4.72                  | 3.71                | 947.00     | 942.81    | 941.90      |
|                | 243.1              | 243                  | 0.07   | 0.90                     | 0.41                    | 0.41                  | 30.00       | 10            | 2.00      | 0.012               | 0.01  | 0.60             | 18%              | 4.17                  | 3.61                | 947.00     | 942.66    | 942.06      |
|                | 243                | 242                  | 0.07   | 0.90                     | 0.41                    | 3.16                  | 127.90      | 12            | 0.80      | 0.012               | 0.86  | 1.02             | 81%              | 4.98                  | 3.71                | 947.00     | 941.90    | 940.87      |
|                | 242.1              | 242                  | 0.12   | 0.90                     | 0.70                    | 0.70                  | 30.00       | 10            | 2.00      | 0.012               | 0.03  | 0.60             | 26%              | 4.87                  | 3.61                | 947.00     | 941.64    | 941.04      |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**  
LOCATION OR RUN

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6 min** DESIGN INTENSITY (I): **6.5 in/hr** Intensity calculated using SEWRPC IDF equations.

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | IN 122.0           | IN 113.0             | 0.10   | 0.90                     | 0.59                    | 13.00                 | 128.00      | 24            | 1.05      | 0.012               | 0.36  | 1.34             | 51%              | 8.06                  | 27.01               | 947.25     | 941.11    | 939.77      |
|                | IN 113.0           | IN 105.0             | 0.11   | 0.90                     | 0.64                    | 25.00                 | 128.00      | 30            | 0.60      | 0.012               | 0.41  | 0.77             | 67%              | 7.65                  | 37.02               | 947.25     | 939.27    | 938.50      |
|                | IN 105.0           | IN 97.0              | 0.09   | 0.90                     | 0.53                    | 38.00                 | 128.00      | 30            | 0.80      | 0.012               | 0.94  | 1.02             | 84%              | 9.22                  | 42.75               | 947.25     | 938.50    | 937.47      |
|                | IN 97.0            | IN 90.0              | 1.00   | 0.90                     | 5.85                    | 56.00                 | 128.00      | 36            | 0.70      | 0.012               | 0.77  | 0.90             | 82%              | 9.71                  | 65.03               | 947.25     | 936.97    | 936.08      |
|                | IN 90.0            | IN 82.0              | 1.00   | 0.90                     | 5.85                    | 73.00                 | 128.00      | 42            | 0.60      | 0.012               | 0.57  | 0.77             | 77%              | 9.88                  | 90.82               | 947.25     | 935.58    | 934.81      |
|                | IN 82.0            | IN 73.0              | 1.00   | 0.90                     | 5.85                    | 87.00                 | 128.00      | 48            | 0.40      | 0.012               | 0.40  | 0.51             | 78%              | 8.84                  | 105.87              | 947.25     | 934.31    | 933.80      |
|                | IN 73.0            | IN 65.0              | 1.00   | 0.90                     | 5.85                    | 102.00                | 128.00      | 60            | 0.45      | 0.012               | 0.17  | 0.58             | 53%              | 9.82                  | 203.59              | 947.25     | 932.80    | 932.22      |
|                | IN 65.0            | IN 57.0              | 1.00   | 0.90                     | 5.85                    | 112.00                | 128.00      | 60            | 0.45      | 0.013               | 0.24  | 0.58             | 60%              | 9.44                  | 187.93              | 947.25     | 932.22    | 931.65      |
|                | IN 57.0            | IN 53.0              | 1.00   | 0.90                     | 5.85                    | 102.00                | 128.00      | 60            | 0.45      | 0.013               | 0.20  | 0.58             | 56%              | 9.24                  | 187.93              | 947.25     | 931.65    | 931.07      |
|                | IN 53.0            | IN 52.0              | 1.00   | 0.90                     | 5.85                    | 125.00                | 86.60       | 60            | 0.45      | 0.013               | 0.20  | 0.39             | 66%              | 9.67                  | 187.93              | 947.25     | 931.07    | 930.68      |
|                | IN 52.0            | IN 51.0              | 1.00   | 0.90                     | 5.85                    | 126.00                | 24.00       | 60            | 0.45      | 0.013               | 0.06  | 0.11             | 66%              | 9.69                  | 187.93              | 947.25     | 930.68    | 930.57      |
|                | IN 51.0            | ES 50.0              | 1.00   | 0.90                     | 5.85                    | 128.00                | 127.20      | 60            | 0.45      | 0.013               | 0.31  | 0.57             | 67%              | 9.72                  | 187.93              | 947.25     | 930.57    | 930.00      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | BC 121.1           | MH 121.0             | 0.24   | 0.90                     | 1.40                    | 1.40                  | 31.00       | 8             | 2.08      | 0.012               | 0.36  | 0.64             | 68%              | 5.93                  | 2.03                | 948.45     | 945.44    | 944.80      |
|                | BC 121.4           | MH 121.0             | 0.32   | 0.90                     | 1.87                    | 1.87                  | 95.10       | 10            | 2.08      | 0.012               | 0.59  | 1.98             | 54%              | 6.42                  | 3.68                | 948.45     | 946.78    | 944.80      |
|                | MH 121.0           | IN 120.0             | 0.00   | 0.90                     | 0.00                    | 1.87                  | 63.20       | 15            | 0.50      | 0.012               | 0.05  | 0.32             | 41%              | 3.75                  | 5.32                | 948.45     | 945.11    | 944.79      |
|                | IN 120.0           | IN 119.0             | 0.18   | 0.90                     | 1.05                    | 2.93                  | 53.70       | 15            | 0.50      | 0.012               | 0.09  | 0.27             | 57%              | 4.20                  | 5.32                | 948.45     | 944.79    | 944.52      |
|                | IN 119.0           | IN 118.0             | 0.20   | 0.90                     | 1.17                    | 4.10                  | 88.00       | 15            | 0.80      | 0.012               | 0.30  | 0.70             | 61%              | 5.44                  | 6.73                | 948.45     | 944.52    | 943.82      |
|                | IN 118.0           | IN 117.0             | 0.25   | 0.90                     | 1.46                    | 5.56                  | 72.00       | 15            | 0.80      | 0.012               | 0.45  | 0.58             | 79%              | 5.76                  | 6.73                | 948.45     | 943.82    | 943.24      |
|                | IN 117.0           | IN 116.0             | 0.25   | 0.90                     | 1.46                    | 7.02                  | 37.00       | 18            | 0.50      | 0.012               | 0.14  | 0.19             | 77%              | 5.13                  | 8.66                | 948.45     | 943.24    | 943.06      |
|                | IN 116.0           | IN 115.0             | 0.22   | 0.90                     | 1.29                    | 8.31                  | 37.00       | 18            | 1.08      | 0.012               | 0.20  | 0.40             | 65%              | 7.25                  | 12.72               | 948.45     | 943.06    | 942.66      |
|                | IN 115.0           | IN 114.0             | 0.25   | 0.90                     | 1.46                    | 9.77                  | 72.00       | 24            | 0.30      | 0.012               | 0.11  | 0.22             | 67%              | 4.66                  | 14.44               | 948.45     | 942.66    | 942.44      |
|                | IN 114.0           | IN 113.0             | 0.25   | 0.90                     | 1.46                    | 11.23                 | 88.00       | 24            | 1.64      | 0.012               | 0.18  | 1.44             | 39%              | 9.16                  | 33.76               | 948.45     | 942.44    | 941.00      |
|                | IN 113.0           | IN 105.0             | 0.11   | 0.90                     | 0.64                    | 11.88                 | 128.00      | 30            | 0.50      | 0.012               | 0.09  | 0.64             | 41%              | 5.95                  | 33.80               | 948.45     | 939.62    | 938.98      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | BC 112.1           | MH 112.0             | 0.47   | 0.90                     | 2.75                    | 2.75                  | 10.00       | 10            | 2.08      | 0.012               | 0.13  | 0.21             | 72%              | 6.98                  | 3.68                | 950.00     | 943.76    | 943.55      |
|                | BC 112.4           | MH 112.0             | 0.42   | 0.90                     | 2.46                    | 2.46                  | 54.10       | 10            | 2.08      | 0.012               | 0.58  | 1.13             | 66%              | 6.83                  | 3.68                | 950.00     | 944.68    | 943.55      |
|                | MH 112.0           | IN 111.0             | 0.00   | 0.90                     | 0.00                    | 5.21                  | 49.00       | 18            | 0.30      | 0.012               | 0.10  | 0.15             | 75%              | 3.95                  | 6.70                | 949.80     | 943.70    | 943.55      |
|                | IN 111.0           | IN 110.0             | 0.35   | 0.90                     | 2.05                    | 7.25                  | 88.00       | 18            | 0.53      | 0.012               | 0.36  | 0.47             | 78%              | 5.29                  | 8.91                | 947.35     | 941.22    | 940.75      |
|                | IN 110.0           | IN 109.0             | 0.18   | 0.90                     | 1.05                    | 8.31                  | 72.50       | 18            | 0.70      | 0.012               | 0.39  | 0.51             | 77%              | 6.07                  | 10.24               | 947.15     | 940.75    | 940.24      |
|                | IN 109.0           | IN 108.0             | 0.19   | 0.90                     | 1.11                    | 9.42                  | 36.60       | 18            | 0.90      | 0.012               | 0.25  | 0.33             | 77%              | 6.88                  | 11.61               | 947.50     | 940.24    | 939.91      |
|                | IN 108.0           | IN 107.0             | 0.14   | 0.90                     | 0.82                    | 10.24                 | 36.60       | 18            | 1.00      | 0.012               | 0.30  | 0.37             | 80%              | 7.29                  | 12.24               | 947.15     | 939.91    | 939.55      |
|                | IN 107.0           | IN 106.0             | 0.19   | 0.90                     | 1.11                    | 11.35                 | 72.00       | 24            | 0.30      | 0.012               | 0.15  | 0.22             | 75%              | 4.79                  | 14.44               | 947.15     | 939.55    | 939.33      |
|                | IN 106.0           | IN 105.0             | 0.18   | 0.90                     | 1.05                    | 12.40                 | 88.00       | 24            | 0.40      | 0.012               | 0.23  | 0.35             | 72%              | 5.48                  | 16.67               | 947.80     | 939.33    | 938.98      |
|                | IN 105.0           | IN 97.0              | 0.09   | 0.90                     | 0.53                    | 24.80                 | 128.00      | 30            | 0.80      | 0.012               | 0.40  | 1.02             | 59%              | 8.54                  | 42.75               | 947.20     | 946.67    | 945.64      |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**MONCHES**  
 LOCATION OR RUN

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6** min DESIGN INTENSITY (I): **6.5** in/hr

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | BC 104.1           | MH 104.0             | 0.46   | 0.90                     | 2.69                    | 2.69                  | 15.00       | 10            | 2.08      | 0.012               | 0.19  | 0.31             | 71%              | 6.95                  | 3.68                | 950.00     | 946.26    | 945.95      |
|                | BC 104.3           | MH 104.0             | 0.36   | 0.90                     | 2.11                    | 2.11                  | 15.00       | 10            | 2.08      | 0.012               | 0.12  | 0.31             | 59%              | 6.60                  | 3.68                | 950.00     | 945.95    | 945.63      |
|                | BC 104.5           | MH 104.0             | 0.59   | 0.90                     | 3.45                    | 3.45                  | 96.80       | 15            | 2.08      | 0.012               | 0.24  | 2.01             | 38%              | 7.45                  | 10.86               | 950.00     | 945.63    | 943.62      |
|                | MH 104.0           | MH 103.0             | 0.00   | 0.90                     | 0.00                    | 8.25                  | 48.00       | 18            | 0.65      | 0.012               | 0.25  | 0.31             | 79%              | 5.87                  | 9.87                | 949.60     | 943.62    | 943.31      |
|                | MH 103.0           | IN 102.0             | 0.00   | 0.90                     | 0.00                    | 8.25                  | 88.00       | 18            | 0.65      | 0.012               | 0.46  | 0.57             | 79%              | 5.87                  | 9.87                | 949.00     | 943.31    | 942.74      |
|                | IN 102.0           | IN 101.0             | 0.56   | 0.90                     | 3.28                    | 11.52                 | 72.00       | 24            | 0.30      | 0.012               | 0.16  | 0.22             | 76%              | 4.80                  | 14.44               | 947.15     | 942.24    | 942.02      |
|                | IN 101.0           | IN 100.0             | 0.27   | 0.90                     | 1.58                    | 13.10                 | 37.00       | 24            | 0.40      | 0.012               | 0.11  | 0.15             | 75%              | 5.53                  | 16.67               | 947.15     | 942.02    | 941.87      |
|                | IN 100.0           | IN 99.0              | 0.24   | 0.90                     | 1.40                    | 14.51                 | 37.00       | 24            | 0.50      | 0.012               | 0.13  | 0.19             | 75%              | 6.18                  | 18.64               | 947.50     | 941.87    | 941.69      |
|                | IN 99.0            | IN 98.0              | 0.27   | 0.90                     | 1.58                    | 16.09                 | 71.50       | 24            | 0.60      | 0.012               | 0.31  | 0.43             | 76%              | 6.78                  | 20.42               | 947.15     | 941.69    | 941.26      |
|                | IN 98.0            | IN 97.0              | 0.27   | 0.90                     | 1.58                    | 17.67                 | 88.00       | 24            | 0.70      | 0.012               | 0.46  | 0.62             | 77%              | 7.34                  | 22.06               | 947.15     | 941.26    | 940.64      |
|                | IN 97.0            | IN 90.0              | 0.13   | 0.90                     | 0.76                    | 56.16                 | 69.10       | 36            | 0.70      | 0.012               | 0.42  | 0.48             | 82%              | 9.71                  | 65.03               | 947.25     | 939.64    | 939.16      |
|                | BC 96.4            | MH 96.0              | 0.26   | 0.90                     | 1.52                    | 1.52                  | 12.70       | 10            | 2.08      | 0.012               | 0.05  | 0.26             | 46%              | 6.09                  | 3.68                | 950.00     |           |             |
|                | BC 96.7            | MH 96.0              | 0.42   | 0.90                     | 2.46                    | 2.46                  | 32.60       | 10            | 2.08      | 0.012               | 0.35  | 0.68             | 66%              | 6.83                  | 3.68                | 950.00     | 943.24    | 942.56      |
|                | BC 96.3            | MH 96.0              | 0.42   | 0.90                     | 2.46                    | 2.46                  | 37.80       | 10            | 2.08      | 0.012               | 0.41  | 0.79             | 66%              | 6.83                  | 3.68                | 950.00     | 942.56    | 941.78      |
|                | MH 96.0            | IN 95.0              | 0.00   | 0.90                     | 0.00                    | 6.44                  | 134.30      | 18            | 0.80      | 0.012               | 0.43  | 1.07             | 60%              | 6.09                  | 10.95               | 949.60     | 941.78    | 940.70      |
|                | IN 95.0            | IN 94.0              | 0.56   | 0.90                     | 3.28                    | 9.71                  | 72.00       | 18            | 0.90      | 0.012               | 0.52  | 0.65             | 80%              | 6.91                  | 11.61               | 947.15     | 940.70    | 940.05      |
|                | IN 94.0            | IN 93.0              | 0.27   | 0.90                     | 1.58                    | 11.29                 | 37.00       | 24            | 0.40      | 0.012               | 0.08  | 0.15             | 67%              | 5.38                  | 16.67               | 947.15     | 940.05    | 939.91      |
|                | IN 93.0            | IN 92.0              | 0.24   | 0.90                     | 1.40                    | 12.69                 | 72.00       | 24            | 0.50      | 0.012               | 0.19  | 0.36             | 67%              | 6.02                  | 18.64               | 947.50     | 939.91    | 939.55      |
|                | IN 92.0            | IN 91.0              | 0.27   | 0.90                     | 1.58                    | 14.27                 | 72.00       | 24            | 0.50      | 0.012               | 0.24  | 0.36             | 74%              | 6.16                  | 18.64               | 947.15     | 939.55    | 939.19      |
|                | IN 91.0            | IN 90.0              | 0.27   | 0.90                     | 1.58                    | 15.85                 | 88.00       | 24            | 0.60      | 0.012               | 0.37  | 0.53             | 75%              | 6.76                  | 20.42               | 947.15     | 939.19    | 938.66      |
|                | IN 90.0            | IN 82.0              | 0.12   | 0.90                     | 0.70                    | 72.72                 | 128.00      | 42            | 0.60      | 0.012               | 0.57  | 0.77             | 77%              | 9.87                  | 90.82               | 946.60     | 938.66    | 937.89      |
|                | BC 89.4            | MH 89.0              | 0.26   | 0.90                     | 1.52                    | 1.52                  | 32.60       | 10            | 2.08      | 0.012               | 0.13  | 0.68             | 46%              | 6.09                  | 3.68                | 950.00     | 945.93    | 945.25      |
|                | BC 89.1            | MH 89.0              | 0.61   | 0.90                     | 3.57                    | 3.57                  | 37.80       | 12            | 2.08      | 0.012               | 0.32  | 0.79             | 60%              | 7.52                  | 5.99                | 950.00     | 946.04    | 945.25      |
|                | MH 89.0            | IN 88.0              | 0.00   | 0.90                     | 0.00                    | 5.09                  | 46.30       | 15            | 0.80      | 0.012               | 0.24  | 0.37             | 73%              | 5.68                  | 6.73                | 950.00     | 945.62    | 945.25      |
|                | IN 88.0            | IN 87.0              | 0.23   | 0.90                     | 1.35                    | 6.44                  | 88.00       | 18            | 0.50      | 0.012               | 0.28  | 0.44             | 72%              | 5.06                  | 8.66                | 947.35     | 936.73    | 936.29      |
|                | IN 87.0            | IN 86.0              | 0.21   | 0.90                     | 1.23                    | 7.66                  | 72.50       | 18            | 0.70      | 0.012               | 0.33  | 0.51             | 72%              | 5.99                  | 10.24               | 947.15     | 936.29    | 935.78      |
|                | IN 86.0            | IN 85.0              | 0.21   | 0.90                     | 1.23                    | 8.89                  | 36.60       | 18            | 0.80      | 0.012               | 0.22  | 0.29             | 78%              | 6.49                  | 10.95               | 947.15     | 935.78    | 935.49      |
|                | IN 85.0            | IN 84.0              | 0.20   | 0.90                     | 1.17                    | 10.06                 | 37.40       | 18            | 1.00      | 0.012               | 0.29  | 0.37             | 78%              | 7.27                  | 12.24               | 947.50     | 935.49    | 935.12      |
|                | IN 84.0            | IN 83.0              | 0.20   | 0.90                     | 1.17                    | 11.23                 | 71.50       | 24            | 0.50      | 0.012               | 0.15  | 0.36             | 61%              | 5.87                  | 18.64               | 947.15     | 935.12    | 934.76      |
|                | IN 83.0            | IN 82.0              | 0.20   | 0.90                     | 1.17                    | 12.40                 | 88.00       | 24            | 0.50      | 0.012               | 0.23  | 0.44             | 66%              | 6.00                  | 18.64               | 947.15     | 934.76    | 934.32      |
|                | IN 82.0            | IN 73.0              | 0.09   | 0.90                     | 0.53                    | 85.64                 | 128.00      | 48            | 0.40      | 0.012               | 0.39  | 0.51             | 77%              | 8.82                  | 105.87              | 946.80     | 934.32    | 933.81      |
|                | BC 81.5            | MH 81.0              | 0.31   | 0.90                     | 1.81                    | 1.81                  | 155.50      | 10            | 2.08      | 0.012               | 0.91  | 3.23             | 52%              | 6.37                  | 3.68                | 950.00     | 948.48    | 945.25      |
| *              | BC 81.3            | MH 81.0              | 0.31   | 0.90                     | 1.81                    | 1.81                  | 100.50      | 10            | 2.08      | 0.012               | 0.59  | 2.09             | 52%              | 6.37                  | 3.68                | 950.00     | 947.34    | 945.25      |
|                | BC 81.1            | MH 81.0              | 0.27   | 0.90                     | 1.58                    | 1.58                  | 10.00       | 8             | 2.08      | 0.012               | 0.15  | 0.21             | 75%              | 6.06                  | 2.03                | 950.00     | 945.46    | 945.25      |
|                | MH 81.0            | IN 80.0              | 0.00   | 0.90                     | 0.00                    | 5.21                  | 88.90       | 15            | 0.80      | 0.012               | 0.49  | 0.71             | 74%              | 5.71                  | 6.73                | 949.60     | 943.49    | 942.78      |
|                | IN 80.0            | IN 79.0              | 0.41   | 0.90                     | 2.40                    | 7.61                  | 67.30       | 18            | 0.80      | 0.012               | 0.30  | 0.54             | 68%              | 6.32                  | 10.95               | 948.30     | 942.78    | 942.24      |
|                | IN 79.0            | IN 78.0              | 0.21   | 0.90                     | 1.23                    | 8.83                  | 87.50       | 18            | 0.80      | 0.012               | 0.53  | 0.70             | 77%              | 6.49                  | 10.95               | 946.90     | 942.24    | 941.54      |
|                | IN 78.0            | IN 77.0              | 0.22   | 0.90                     | 1.29                    | 10.12                 | 72.00       | 18            | 1.00      | 0.012               | 0.57  | 0.72             | 79%              | 7.28                  | 12.24               | 946.40     | 941.54    | 940.82      |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**  
 LOCATION OR RUN

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6 min** DESIGN INTENSITY (I): **6.5 in/hr**

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | BC 72.6            | MH 72.0              | 0.24   | 0.90                     | 1.40                    | 1.40                  | 33.40       | 8             | 2.08      | 0.012               | 0.38  | 0.69             | 68%              | 5.93                  | 2.03                | 950.00     | 946.09    | 945.40      |
|                | BC 72.3            | MH 72.0              | 0.16   | 0.90                     | 0.94                    | 0.94                  | 23.30       | 8             | 2.08      | 0.012               | 0.12  | 0.48             | 50%              | 5.40                  | 2.03                | 950.00     | 945.88    | 945.40      |
|                | MH 72.0            | IN 71.0              | 0.00   | 0.90                     | 0.00                    | 2.34                  | 63.00       | 12            | 2.68      | 0.012               | 0.23  | 1.69             | 40%              | 7.44                  | 6.80                | 950.00     | 947.09    | 945.40      |
|                | IN 71.0            | IN 70.0              | 0.17   | 0.90                     | 0.99                    | 3.33                  | 52.60       | 12            | 1.00      | 0.012               | 0.39  | 0.53             | 77%              | 5.53                  | 4.15                | 948.30     | 942.68    | 942.15      |
|                | IN 70.0            | IN 69.0              | 0.20   | 0.90                     | 1.17                    | 4.50                  | 88.00       | 15            | 0.80      | 0.012               | 0.36  | 0.70             | 66%              | 5.55                  | 6.73                | 946.15     | 942.15    | 941.45      |
|                | IN 69.0            | IN 68.0              | 0.21   | 0.90                     | 1.23                    | 5.73                  | 72.00       | 15            | 0.90      | 0.012               | 0.48  | 0.65             | 77%              | 6.09                  | 7.14                | 945.65     | 941.45    | 940.80      |
|                | IN 68.0            | IN 67.0              | 0.21   | 0.90                     | 1.23                    | 6.96                  | 37.00       | 15            | 1.25      | 0.012               | 0.37  | 0.46             | 79%              | 7.20                  | 8.42                | 945.65     | 940.80    | 940.34      |
|                | IN 67.0            | IN 66.1              | 0.19   | 0.90                     | 1.11                    | 8.07                  | 37.00       | 18            | 0.70      | 0.012               | 0.19  | 0.26             | 76%              | 6.05                  | 10.24               | 946.15     | 940.34    | 940.08      |
|                | IN 66.1            | IN 66.0              | 0.21   | 0.90                     | 1.23                    | 9.30                  | 72.00       | 24            | 0.40      | 0.012               | 0.10  | 0.29             | 57%              | 5.16                  | 16.67               | 946.30     | 940.08    | 939.79      |
|                | IN 66.0            | IN 65.0              | 0.21   | 0.90                     | 1.23                    | 10.53                 | 88.00       | 24            | 0.40      | 0.012               | 0.16  | 0.35             | 63%              | 5.30                  | 16.67               | 947.15     | 939.79    | 939.44      |
|                | IN 65.0            | IN 57.0              | 0.10   | 0.90                     | 0.59                    | 112.38                | 128.00      | 60            | 0.45      | 0.013               | 0.24  | 0.58             | 61%              | 9.45                  | 187.93              | 947.80     | 932.85    | 932.28      |
|                | IN 64.0            | IN 63.0              | 0.24   | 0.90                     | 1.40                    | 1.40                  | 88.00       | 10            | 0.70      | 0.012               | 0.31  | 0.62             | 65%              | 3.95                  | 2.14                | 945.40     | 941.50    | 940.88      |
|                | IN 63.0            | IN 61.0              | 0.21   | 0.90                     | 1.23                    | 2.63                  | 72.00       | 12            | 0.70      | 0.012               | 0.33  | 0.50             | 73%              | 4.58                  | 3.47                | 944.90     | 940.88    | 940.38      |
|                | IN 61.0            | IN 60.0              | 0.21   | 0.90                     | 1.23                    | 3.86                  | 37.00       | 15            | 0.70      | 0.012               | 0.11  | 0.26             | 62%              | 5.09                  | 6.30                | 944.90     | 940.38    | 940.12      |
|                | IN 60.0            | IN 59.0              | 0.19   | 0.90                     | 1.11                    | 4.97                  | 37.00       | 15            | 0.70      | 0.012               | 0.19  | 0.26             | 76%              | 5.35                  | 6.30                | 945.25     | 940.12    | 939.86      |
|                | IN 59.0            | IN 58.0              | 0.21   | 0.90                     | 1.23                    | 6.20                  | 72.00       | 18            | 0.50      | 0.012               | 0.21  | 0.36             | 70%              | 5.02                  | 8.66                | 945.55     | 939.86    | 939.50      |
|                | IN 58.0            | IN 57.0              | 0.21   | 0.90                     | 1.23                    | 7.43                  | 88.00       | 18            | 0.60      | 0.012               | 0.38  | 0.53             | 75%              | 5.59                  | 9.48                | 947.15     | 939.50    | 938.97      |
|                | IN 57.0            | IN 53.0              | 0.10   | 0.90                     | 0.59                    | 120.39                | 128.00      | 60            | 0.45      | 0.013               | 0.27  | 0.58             | 64%              | 9.60                  | 187.93              | 946.80     | 932.28    | 931.70      |
|                | IN 56.0            | IN 55.0              | 0.20   | 0.90                     | 1.17                    | 1.17                  | 37.00       | 10            | 0.80      | 0.012               | 0.09  | 0.30             | 54%              | 3.99                  | 2.28                | 944.50     | 927.56    | 927.27      |
|                | IN 55.0            | IN 54.0              | 0.22   | 0.90                     | 1.29                    | 2.46                  | 72.00       | 12            | 0.80      | 0.012               | 0.29  | 0.58             | 66%              | 4.77                  | 3.71                | 944.80     | 927.27    | 926.69      |
|                | IN 54.0            | IN 53.0              | 0.22   | 0.90                     | 1.29                    | 3.74                  | 88.00       | 15            | 0.60      | 0.012               | 0.25  | 0.53             | 64%              | 4.77                  | 5.83                | 947.15     | 926.69    | 926.16      |
|                | IN 53.0            | IN 52.0              | 0.10   | 0.90                     | 0.59                    | 8.19                  | 86.60       | 60            | 0.45      | 0.013               | 0.00  | 0.39             | 9%               | 4.55                  | 187.93              | 946.80     | 926.16    | 925.77      |
|                | IN 52.0            | IN 51.0              | 0.11   | 0.90                     | 0.64                    | 8.83                  | 24.00       | 60            | 0.45      | 0.013               | 0.00  | 0.11             | 10%              | 4.66                  | 187.93              | 946.90     | 925.77    | 925.67      |
|                | IN 51.0            | ES 50.0              | 0.06   | 0.90                     | 0.35                    | 9.18                  | 148.20      | 60            | 0.45      | 0.013               | 0.00  | 0.67             | 10%              | 4.71                  | 187.93              | 946.80     | 925.67    | 925.00      |
|                | MH 112.0           | IN 111.0             | 0.89   | 0.90                     | 5.21                    | 5.21                  | 49.00       | 18            | 0.30      | 0.012               | 0.10  | 0.15             | 75%              | 3.95                  | 6.70                | 949.50     | 941.37    | 941.22      |
|                | IN 111.0           | IN 110.0             | 0.35   | 0.90                     | 2.05                    | 7.25                  | 88.00       | 18            | 0.53      | 0.012               | 0.36  | 0.47             | 78%              | 5.29                  | 8.91                | 947.35     | 941.22    | 940.75      |
|                | IN 110.0           | IN 109.0             | 0.18   | 0.90                     | 1.05                    | 8.31                  | 72.50       | 18            | 0.70      | 0.012               | 0.39  | 0.51             | 77%              | 6.07                  | 10.24               | 947.15     | 940.75    | 940.25      |
|                | IN 109.0           | IN 108.0             | 0.19   | 0.90                     | 1.11                    | 9.42                  | 36.60       | 18            | 0.90      | 0.012               | 0.25  | 0.33             | 77%              | 6.88                  | 11.61               | 947.15     | 940.25    | 939.92      |
|                | IN 108.0           | IN 107.0             | 0.14   | 0.90                     | 0.82                    | 10.24                 | 36.60       | 18            | 1.00      | 0.012               | 0.30  | 0.37             | 80%              | 7.29                  | 12.24               | 947.50     | 939.92    | 939.55      |
|                | IN 107.0           | IN 106.0             | 0.19   | 0.90                     | 1.11                    | 11.35                 | 72.00       | 24            | 0.30      | 0.012               | 0.15  | 0.22             | 75%              | 4.79                  | 14.44               | 947.15     | 939.55    | 939.34      |
|                | IN 106.0           | IN 105.0             | 0.18   | 0.90                     | 1.05                    | 12.40                 | 88.00       | 24            | 0.40      | 0.012               | 0.23  | 0.35             | 72%              | 5.48                  | 16.67               | 947.15     | 939.34    | 938.98      |
|                | IN 105.0           | IN 97.0              | 0.09   | 0.90                     | 0.53                    | 22.11                 | 128.00      | 30            | 0.80      | 0.012               | 0.32  | 1.02             | 54%              | 8.31                  | 42.75               | 947.25     | 938.98    | 937.96      |



**STORM SEWER COMPUTATIONS**  
**FOR**  
**MONCHES**  
 LOCATION OR RUN

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6 min** DESIGN INTENSITY (I): **6.5 in/hr**

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | BC 1.5             | WYE 1.1              | 0.08   | 0.90                     | 0.47                    | 0.47                  | 98.70       | 10            | 1.04      | 0.012               | 0.04  | 1.03             | 45%              | 4.28                  | 2.60                |            |           |             |
|                | BC 1.2             | WYE 1.1              | 0.13   | 0.90                     | 0.76                    | 0.76                  | 46.00       | 8             | 1.04      | 0.012               | 0.16  | 0.48             | 55%              | 3.95                  | 1.44                |            |           |             |
|                | WYE 1.1            | MH 1.0               | 0.00   | 0.90                     | 0.00                    | 1.23                  | 14.00       | 10            | 1.04      | 0.012               | 0.04  | 0.15             | 68%              | 4.87                  | 2.60                |            |           |             |
|                | BC 1.10            | WYE 1.6              | 0.02   | 0.90                     | 0.12                    | 0.12                  | 50.80       | 8             | 1.04      | 0.012               | 0.00  | 0.53             | 14%              | 2.35                  | 1.44                |            |           |             |
|                | BC 1.7             | WYE 1.6              | 0.08   | 0.90                     | 0.47                    | 0.47                  | 20.00       | 8             | 1.04      | 0.012               | 0.03  | 0.21             | 38%              | 3.49                  | 1.44                |            |           |             |
|                | WYE 1.6            | MH 1.0               | 0.00   | 0.90                     | 0.00                    | 0.59                  | 35.40       | 8             | 1.04      | 0.012               | 0.07  | 0.37             | 45%              | 3.70                  | 1.44                |            |           |             |
|                | BC 4.3             | MH 4.0               | 0.12   | 0.90                     | 0.70                    | 0.70                  | 69.10       | 8             | 1.04      | 0.012               | 0.20  | 0.72             | 52%              | 3.87                  | 1.44                |            |           |             |
|                | BC 4.4             | MH 4.0               | 0.20   | 0.90                     | 1.17                    | 1.17                  | 50.80       | 8             | 2.08      | 0.012               | 0.41  | 1.06             | 59%              | 5.70                  | 2.03                |            |           |             |
|                | BC 4.7             | MH 4.0               | 0.25   | 0.90                     | 1.46                    | 1.46                  | 69.10       | 8             | 2.08      | 0.012               | 0.86  | 1.44             | 70%              | 5.97                  | 2.03                |            |           |             |
|                | BC 6.3             | MH 6.0               | 0.32   | 0.90                     | 1.87                    | 1.87                  | 69.10       | 10            | 2.08      | 0.012               | 0.43  | 1.44             | 54%              | 6.42                  | 3.68                |            |           |             |
|                | BC 6.4             | MH 6.0               | 0.40   | 0.90                     | 2.34                    | 2.34                  | 50.80       | 10            | 2.08      | 0.012               | 0.49  | 1.06             | 63%              | 6.76                  | 3.68                |            |           |             |
|                | BC 6.7             | MH 6.0               | 0.40   | 0.90                     | 2.34                    | 2.34                  | 69.10       | 10            | 2.08      | 0.012               | 0.67  | 1.44             | 63%              | 6.76                  | 3.68                |            |           |             |
|                | BC 8.3             | MH 8.0               | 0.36   | 0.90                     | 2.11                    | 2.11                  | 58.20       | 10            | 1.04      | 0.012               | 0.46  | 0.61             | 77%              | 5.00                  | 2.60                |            |           |             |
|                | BC 8.4             | MH 8.0               | 0.30   | 0.90                     | 1.76                    | 1.76                  | 10.00       | 10            | 1.04      | 0.012               | 0.05  | 0.10             | 66%              | 4.84                  | 2.60                |            |           |             |
|                | BC 8.7             | WYE 8.5              | 0.12   | 0.90                     | 0.70                    | 0.70                  | 10.00       | 8             | 1.04      | 0.012               | 0.03  | 0.10             | 52%              | 3.87                  | 1.44                |            |           |             |
|                | BC 8.8             | WYE 8.6              | 0.12   | 0.90                     | 0.70                    | 0.70                  | 10.00       | 8             | 1.04      | 0.012               | 0.03  | 0.10             | 52%              | 3.87                  | 1.44                |            |           |             |
|                | WYE 8.6            | WYE 8.5              | 0.00   | 0.90                     | 0.00                    | 0.70                  | 6.90        | 10            | 1.04      | 0.012               | 0.01  | 0.07             | 34%              | 3.84                  | 2.60                |            |           |             |
|                | WYE 8.5            | MH 8.0               | 0.00   | 0.90                     | 0.00                    | 1.40                  | 42.30       | 10            | 1.04      | 0.012               | 0.15  | 0.44             | 56%              | 4.60                  | 2.60                |            |           |             |
|                | BC 10.3            | WYE 10.2             | 0.43   | 0.90                     | 2.52                    | 2.52                  | 25.70       | 10            | 2.08      | 0.012               | 0.29  | 0.53             | 67%              | 6.86                  | 3.68                |            |           |             |
|                | WYE 10.2           | WYE 10.1             | 0.00   | 0.90                     | 0.00                    | 2.52                  | 52.90       | 10            | 2.08      | 0.012               | 0.59  | 1.10             | 67%              | 6.86                  | 3.68                |            |           |             |
| *              | BC 10.5            | WYE 10.1             | 0.30   | 0.90                     | 1.76                    | 1.76                  | 25.70       | 12            | 2.08      | 0.012               | 0.05  | 0.53             | 36%              | 6.28                  | 5.99                |            |           |             |
|                | WYE 10.1           | MH 10.0              | 0.00   | 0.90                     | 0.00                    | 4.27                  | 52.90       | 12            | 2.08      | 0.012               | 0.65  | 1.10             | 70%              | 7.81                  | 5.99                |            |           |             |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**

**DESIGN DATA**

County: **Dane**    Design Storm: **10** yr    Storm Duration: **6** min    DESIGN INTENSITY (I): **6.5** in/hr

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | IN 292.0           | IN 291.0             | 0.07   | 0.90                     | 0.41                    | 0.41                  | 40.70       | 12            | 0.40      | 0.012               | 0.00  | 0.16             | 23%              | 2.31                  | 2.63                | 928.75     | 925.76    | 925.59      |
|                | IN 291.0           | ES 290.0             | 0.05   | 0.90                     | 0.29                    | 0.70                  | 148.10      | 12            | 0.40      | 0.012               | 0.05  | 0.59             | 33%              | 2.68                  | 2.63                | 929.00     | 925.59    | 925.00      |
|                | IN 282.0           | IN 281.0             | 0.07   | 0.90                     | 0.41                    | 0.41                  | 30.00       | 12            | 1.00      | 0.012               | 0.00  | 0.30             | 16%              | 3.20                  | 4.15                | 932.80     | 927.00    | 926.70      |
|                | IN 281.0           | ES 280.0             | 0.05   | 0.90                     | 0.29                    | 0.70                  | 84.80       | 12            | 2.01      | 0.012               | 0.03  | 1.70             | 19%              | 4.79                  | 5.89                | 932.30     | 926.70    | 925.00      |
|                | IN 272.0           | IN 271.0             | 0.07   | 0.90                     | 0.41                    | 0.41                  | 30.00       | 10            | 1.00      | 0.012               | 0.01  | 0.30             | 23%              | 3.26                  | 2.55                | 937.05     | 933.39    | 933.09      |
|                | IN 271.0           | ES 270.0             | 0.05   | 0.90                     | 0.29                    | 0.70                  | 64.40       | 12            | 1.44      | 0.012               | 0.02  | 0.93             | 21%              | 4.25                  | 4.98                | 937.25     | 932.93    | 932.00      |
|                | IN 262.0           | IN 261.0             | 0.07   | 0.90                     | 0.41                    | 0.41                  | 30.00       | 10            | 1.00      | 0.012               | 0.01  | 0.30             | 23%              | 3.26                  | 2.55                | 941.80     | 936.39    | 936.09      |
|                | IN 261.0           | ES 260.0             | 0.05   | 0.90                     | 0.29                    | 0.70                  | 64.40       | 12            | 1.44      | 0.012               | 0.02  | 0.93             | 21%              | 4.25                  | 4.98                | 942.00     | 935.93    | 935.00      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | IN 245.1           | IN 245               | 0.10   | 0.90                     | 0.59                    | 0.59                  | 45.00       | 10            | 0.50      | 0.012               | 0.03  | 0.23             | 38%              | 2.80                  | 1.81                | 947.00     | 943.76    | 943.53      |
|                | IN 245             | IN 244               | 0.15   | 0.90                     | 0.88                    | 1.46                  | 111.20      | 12            | 0.50      | 0.012               | 0.16  | 0.56             | 53%              | 3.54                  | 2.94                | 947.00     | 943.37    | 942.81      |
|                | IN 244.1           | IN 244               | 0.07   | 0.90                     | 0.41                    | 0.41                  | 33.40       | 10            | 2.00      | 0.012               | 0.01  | 0.67             | 18%              | 4.17                  | 3.61                | 947.00     | 943.65    | 942.98      |
|                | IN 244             | IN 243               | 0.08   | 0.90                     | 0.47                    | 2.34                  | 114.40      | 12            | 0.80      | 0.012               | 0.42  | 0.92             | 63%              | 4.72                  | 3.71                | 947.00     | 942.81    | 941.90      |
|                | IN 243.1           | IN 243               | 0.07   | 0.90                     | 0.41                    | 0.41                  | 30.00       | 10            | 2.00      | 0.012               | 0.01  | 0.60             | 18%              | 4.17                  | 3.61                | 947.00     | 942.66    | 942.06      |
|                | IN 243             | IN 242               | 0.07   | 0.90                     | 0.41                    | 3.16                  | 127.90      | 12            | 0.80      | 0.012               | 0.86  | 1.02             | 81%              | 4.98                  | 3.71                | 947.00     | 941.90    | 940.87      |
|                | IN 242.1           | IN 242               | 0.12   | 0.90                     | 0.70                    | 0.70                  | 30.00       | 10            | 2.00      | 0.012               | 0.03  | 0.60             | 26%              | 4.87                  | 3.61                | 947.00     | 941.64    | 941.04      |
|                | IN 242             | IN 241               | 0.12   | 0.90                     | 0.70                    | 4.56                  | 128.70      | 15            | 0.80      | 0.012               | 0.55  | 1.03             | 67%              | 5.57                  | 6.73                | 947.00     | 940.62    | 939.59      |
|                | IN 241.1           | IN 241               | 0.12   | 0.90                     | 0.70                    | 0.70                  | 30.00       | 10            | 2.00      | 0.012               | 0.03  | 0.60             | 26%              | 4.87                  | 3.61                | 947.10     | 940.61    | 940.01      |
|                | IN 241             | ES 240.0             | 0.06   | 0.90                     | 0.35                    | 5.62                  | 69.80       | 15            | 3.00      | 0.013               | 0.53  | 2.09             | 50%              | 9.13                  | 12.04               | 946.90     | 939.59    | 937.50      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | 254.1              | 254                  | 0.48   | 0.90                     | 2.81                    | 2.81                  | 30.00       | 10            | 1.00      | 0.012               | 0.42  | 0.30             | 75%              | 6.89                  | 3.61                | 966.25     | 963.17    | 962.87      |
|                | 254                | 253                  | 0.51   | 0.90                     | 2.98                    | 5.79                  | 169.00      | 15            | 3.05      | 0.012               | 1.16  | 5.15             | 19%              | 9.73                  | 47.53               | 966.25     | 961.60    | 956.45      |
|                | 253.1              | 253                  | 0.23   | 0.90                     | 1.35                    | 1.35                  | 30.00       | 10            | 2.00      | 0.012               | 0.10  | 0.60             | 42%              | 5.81                  | 3.61                | 960.05     | 957.47    | 956.87      |
|                | 253                | 252                  | 0.76   | 0.90                     | 4.45                    | 11.58                 | 189.10      | 18            | 2.00      | 0.012               | 1.96  | 3.78             | 24%              | 9.94                  | 69.27               | 960.05     | 949.92    | 946.14      |
|                | 252.1              | 252                  | 1.17   | 0.90                     | 6.84                    | 6.84                  | 30.00       | 15            | 1.20      | 0.012               | 0.29  | 0.36             | 64%              | 8.70                  | 10.65               | 951.35     | 947.75    | 947.39      |
|                | 252                | 251                  | 0.11   | 0.90                     | 0.64                    | 19.07                 | 93.70       | 24            | 1.40      | 0.012               | 0.57  | 1.31             | 39%              | 9.86                  | 56.56               | 951.35     | 944.36    | 943.05      |
|                | 251                | 251.1                | 0.11   | 0.90                     | 0.64                    | 0.64                  | 30.00       | 24            | 1.00      | 0.012               | 0.00  | 0.30             | 50%              | 2.38                  | 1.40                | 947.10     | 943.05    | 942.75      |
|                | 251.1              | ES 250.0             | 0.07   | 0.90                     | 0.41                    | 20.12                 | 58.60       | 24            | 1.00      | 0.013               | 0.46  | 0.59             | 79%              | 8.14                  | 24.33               | 947.30     | 940.59    | 940.00      |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**  
 LOCATION OR RUN

**DESIGN DATA**

County: **Dane** Design Storm: **10** yr Storm Duration: **6 min** DESIGN INTENSITY (I): **6.5 in/hr**

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | 156                | 155                  | 0.10   | 0.90                     | 0.59                    | 0.59                  | 88.00       | 10            | 0.30      | 0.012               | 0.05  | 0.26             | 46%              | 2.32                  | 1.40                | 947.25     | 943.73    | 943.46      |
|                | 155                | 154                  | 0.28   | 0.90                     | 1.64                    | 2.22                  | 90.00       | 12            | 0.70      | 0.012               | 0.30  | 0.63             | 64%              | 4.43                  | 3.47                | 947.15     | 943.30    | 942.67      |
|                | 154                | 153                  | 0.26   | 0.90                     | 1.52                    | 3.74                  | 49.00       | 15            | 0.50      | 0.012               | 0.14  | 0.25             | 69%              | 4.43                  | 5.32                | 947.00     | 942.42    | 942.17      |
|                | 153                | 152                  | 0.10   | 0.90                     | 0.59                    | 4.33                  | 22.40       | 15            | 0.50      | 0.012               | 0.09  | 0.11             | 78%              | 4.55                  | 5.32                | 947.15     | 942.17    | 942.06      |
|                | 152                | 151                  | 0.34   | 0.90                     | 1.99                    | 6.32                  | 30.00       | 15            | 1.20      | 0.012               | 0.24  | 0.36             | 74%              | 6.98                  | 8.25                | 947.05     | 942.06    | 941.70      |
|                | 151                | ES 150               | 0.14   | 0.90                     | 0.82                    | 7.14                  | 34.90       | 15            | 2.00      | 0.013               | 0.43  | 0.70             | 71%              | 8.24                  | 9.83                | 947.05     | 941.70    | 941.00      |
|                | 166                | 165                  | 0.11   | 0.90                     | 0.64                    | 0.64                  | 88.00       | 10            | 0.30      | 0.012               | 0.06  | 0.26             | 50%              | 2.38                  | 1.40                | 947.25     | 943.73    | 943.47      |
|                | 165                | 164                  | 0.25   | 0.90                     | 1.46                    | 2.11                  | 90.00       | 12            | 0.70      | 0.012               | 0.27  | 0.63             | 61%              | 4.38                  | 3.47                | 947.15     | 943.30    | 942.67      |
|                | 164                | 163                  | 0.29   | 0.90                     | 1.70                    | 3.80                  | 49.00       | 15            | 0.50      | 0.012               | 0.14  | 0.25             | 70%              | 4.45                  | 5.32                | 947.00     | 942.42    | 942.17      |
|                | 163                | 162                  | 0.10   | 0.90                     | 0.59                    | 4.39                  | 22.40       | 15            | 0.50      | 0.012               | 0.09  | 0.11             | 79%              | 4.55                  | 5.32                | 947.15     | 942.17    | 942.06      |
|                | 162                | 161                  | 0.10   | 0.90                     | 0.59                    | 4.97                  | 30.00       | 15            | 1.20      | 0.012               | 0.15  | 0.36             | 61%              | 6.65                  | 8.25                | 947.05     | 942.06    | 941.70      |
|                | 161                | ES 160               | 0.13   | 0.90                     | 0.76                    | 5.73                  | 35.10       | 15            | 2.00      | 0.013               | 0.28  | 0.70             | 59%              | 7.86                  | 9.83                | 947.05     | 941.70    | 941.00      |
|                | 171.3              | 171.2                | 0.15   | 0.90                     | 0.88                    | 0.88                  | 88.00       | 10            | 0.50      | 0.012               | 0.12  | 0.44             | 52%              | 3.11                  | 1.81                | 947.25     | 944.59    | 944.15      |
|                | 171.2              | 171.1                | 0.14   | 0.90                     | 0.82                    | 1.70                  | 90.00       | 12            | 0.50      | 0.012               | 0.17  | 0.45             | 59%              | 3.66                  | 2.94                | 947.15     | 943.98    | 943.53      |
|                | 171.1              | 170                  | 0.17   | 0.90                     | 0.99                    | 2.69                  | 163.40      | 12            | 0.70      | 0.012               | 0.79  | 1.14             | 74%              | 4.60                  | 3.47                | 947.00     | 943.53    | 942.39      |
|                | 176                | 175                  | 0.12   | 0.90                     | 0.70                    | 0.70                  | 88.00       | 10            | 0.30      | 0.012               | 0.08  | 0.26             | 53%              | 2.43                  | 1.40                | 947.25     | 944.09    | 943.82      |
|                | 175                | 174                  | 0.27   | 0.90                     | 1.58                    | 2.28                  | 90.00       | 12            | 0.70      | 0.012               | 0.31  | 0.63             | 65%              | 4.46                  | 3.47                | 947.15     | 943.66    | 943.03      |
|                | 174                | 173                  | 0.33   | 0.90                     | 1.93                    | 4.21                  | 49.00       | 15            | 0.50      | 0.012               | 0.18  | 0.25             | 76%              | 4.53                  | 5.32                | 947.00     | 942.78    | 942.53      |
|                | 173                | 172                  | 0.21   | 0.90                     | 1.23                    | 5.44                  | 22.40       | 15            | 0.80      | 0.012               | 0.14  | 0.18             | 77%              | 5.75                  | 6.73                | 947.15     | 942.53    | 942.35      |
|                | 172                | 171                  | 0.29   | 0.90                     | 1.70                    | 7.14                  | 30.00       | 18            | 0.70      | 0.012               | 0.12  | 0.21             | 68%              | 5.91                  | 10.24               | 947.05     | 942.10    | 941.89      |
|                | 171                | ES 150               | 0.18   | 0.90                     | 1.05                    | 10.88                 | 49.51       | 18            | 1.80      | 0.013               | 0.53  | 0.89             | 70%              | 8.80                  | 15.16               | 947.05     | 941.89    | 941.00      |
|                | 196                | 195                  | 0.09   | 0.90                     | 0.53                    | 0.53                  | 88.00       | 10            | 0.30      | 0.012               | 0.04  | 0.26             | 43%              | 2.26                  | 1.40                | 946.80     | 943.50    | 943.24      |
|                | 195                | 194                  | 0.23   | 0.90                     | 1.35                    | 1.87                  | 90.00       | 12            | 0.70      | 0.012               | 0.21  | 0.63             | 56%              | 4.26                  | 3.47                | 947.15     | 943.07    | 942.44      |
|                | 194                | 193                  | 0.29   | 0.90                     | 1.70                    | 3.57                  | 49.00       | 15            | 0.50      | 0.012               | 0.13  | 0.25             | 66%              | 4.39                  | 5.32                | 947.00     | 942.19    | 941.95      |
|                | 193                | 192                  | 0.10   | 0.90                     | 0.59                    | 4.15                  | 22.40       | 15            | 0.70      | 0.012               | 0.08  | 0.16             | 65%              | 5.18                  | 6.30                | 947.15     | 941.95    | 941.79      |
|                | 192                | 191                  | 0.24   | 0.90                     | 1.40                    | 5.56                  | 30.00       | 15            | 1.00      | 0.012               | 0.19  | 0.30             | 72%              | 6.33                  | 7.53                | 947.05     | 941.79    | 941.49      |
|                | 191                | ES 190               | 0.06   | 0.90                     | 0.35                    | 5.91                  | 48.90       | 15            | 1.00      | 0.013               | 0.41  | 0.49             | 81%              | 5.97                  | 6.95                | 947.05     | 941.49    | 941.00      |
|                | 206                | 205                  | 0.18   | 0.90                     | 1.05                    | 1.05                  | 88.00       | 10            | 0.30      | 0.012               | 0.17  | 0.26             | 73%              | 2.65                  | 1.40                | 947.25     | 943.78    | 943.51      |
|                | 205                | 204                  | 0.14   | 0.90                     | 0.82                    | 1.87                  | 90.00       | 12            | 0.50      | 0.012               | 0.21  | 0.45             | 64%              | 3.74                  | 2.94                | 947.15     | 943.35    | 942.90      |
| *              | 204                | 203                  | 0.17   | 0.90                     | 0.99                    | 2.87                  | 49.00       | 15            | 0.40      | 0.012               | 0.08  | 0.20             | 61%              | 3.84                  | 4.76                | 947.00     | 942.65    | 942.45      |
|                | 203                | 202                  | 0.07   | 0.90                     | 0.41                    | 3.28                  | 22.40       | 15            | 0.50      | 0.012               | 0.05  | 0.11             | 62%              | 4.31                  | 5.32                | 947.15     | 942.45    | 942.34      |
|                | 202                | 201                  | 0.08   | 0.90                     | 0.47                    | 3.74                  | 30.00       | 15            | 1.20      | 0.012               | 0.09  | 0.36             | 49%              | 6.21                  | 8.25                | 947.05     | 942.34    | 941.98      |
|                | 201                | ES 200               | 0.08   | 0.90                     | 0.47                    | 4.21                  | 48.90       | 15            | 2.00      | 0.013               | 0.21  | 0.98             | 47%              | 7.29                  | 9.83                | 947.05     | 941.98    | 941.00      |

**STORM SEWER COMPUTATIONS**  
**FOR**  
**SILVER EAGLE**  
 100 YEAR ON EAST SIDE

**DESIGN DATA**

County: **Dane** Design Storm: **100** yr Storm Duration: **6 min** DESIGN INTENSITY (I): **9.5 in/hr**

| STRUCTURE DATA |                    |                      | DRAINAGE AREA AND FLOW DATA                      |                          |                         |                       | PIPE DATA   |               |           |                     | PIPE CAPACITY INFORMATION   |                  |                  |                       |                     | ELEVATIONS |           |             |
|----------------|--------------------|----------------------|--|--------------------------|-------------------------|-----------------------|-------------|---------------|-----------|---------------------|---|------------------|------------------|-----------------------|---------------------|------------|-----------|-------------|
| Notes          | Upstream Structure | Downstream Structure | Flow is determined by Rational Method<br>Q = CIA |                          |                         |                       | Length (ft) | Diameter (in) | Slope (%) | Manning Coefficient | Pipe capacity is determined by Manning's Equation<br>Q = 1.486/n AR <sup>2/3</sup> S <sup>1/2</sup> |                  |                  |                       |                     | Rim/Toc Up | Invert Up | Invert Down |
|                |                    |                      | Individual Acres A                               | Individual Coefficient C | Individual Flow Q (cfs) | Cumulative Flow (cfs) |             |               |           |                     | Required Drop (ft)  | Actual Drop (ft) | Percent Full (%) | Actual Velocity (fps) | Max. Capacity (cfs) |            |           |             |
|                | IN 17.0            | IN 20.0              | 24.80  | 0.90                     | 212.04                  | 212.04                | 156.50      | 72            | 0.30      | 0.012               | 0.33  | 0.47             | 75%              | 9.97                  | 270.31              | 944.00     | 930.10    | 929.63      |
|                | IN 20.0            | IN 23.0              | 3.43   | 0.90                     | 29.33                   | 241.37                | 200.00      | 84            | 0.25      | 0.012               | 0.24  | 0.50             | 65%              | 9.72                  | 372.22              | 944.00     | 929.63    | 929.13      |
|                | IN 23.0            | IN 26.0              | 4.29   | 0.90                     | 36.68                   | 278.05                | 247.60      | 84            | 0.25      | 0.012               | 0.40  | 0.62             | 72%              | 10.00                 | 372.22              | 944.00     | 929.13    | 928.51      |
|                | IN 26.0            | IN 27.0              | 3.62   | 0.90                     | 30.95                   | 309.00                | 224.50      | 84            | 0.25      | 0.012               | 0.45  | 0.56             | 79%              | 10.17                 | 372.22              | 944.30     | 928.51    | 927.95      |
|                | IN 27.0            | IN 28.0              | 0.18   | 0.90                     | 1.54                    | 310.54                | 88.00       | 84            | 0.25      | 0.012               | 0.18  | 0.22             | 79%              | 10.17                 | 372.22              | 944.65     | 927.95    | 927.73      |
|                | IN 28.0            | IN 29.0              | 0.22   | 0.90                     | 1.88                    | 312.42                | 72.00       | 84            | 0.25      | 0.012               | 0.15  | 0.18             | 80%              | 10.18                 | 372.22              | 944.15     | 927.73    | 927.55      |
|                | IN 29.0            | IN 30.0              | 0.22   | 0.90                     | 1.88                    | 314.30                | 870.30      | 84            | 0.25      | 0.012               | 1.79  | 2.18             | 80%              | 10.19                 | 372.22              | 944.15     | 927.55    | 925.38      |
|                | IN 30.0            | IN 38.0              | 0.15   | 0.90                     | 1.28                    | 315.58                | 24.00       | 84            | 0.25      | 0.012               | 0.05  | 0.06             | 80%              | 10.19                 | 372.22              | 943.50     | 925.38    | 925.32      |
|                | IN 38.0            | ES 39                | 0.07   | 0.90                     | 0.60                    | 316.18                | 108.80      | 84            | 0.29      | 0.013               | 0.27  | 0.32             | 81%              | 10.14                 | 370.06              | 943.15     | 925.32    | 925.00      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | IN 32.4            | IN 32.3              | 0.15   | 0.90                     | 1.28                    | 1.28                  | 250.40      | 12            | 0.15      | 0.012               | 0.28  | 0.38             | 76%              | 2.14                  | 1.61                | 936.00     | 933.47    | 933.09      |
|                | IN 32.3            | IN 32.2              | 0.20   | 0.90                     | 1.71                    | 2.99                  | 200.00      | 15            | 0.50      | 0.012               | 0.37  | 1.00             | 58%              | 4.22                  | 5.32                | 939.25     | 933.09    | 932.09      |
|                | IN 32.2            | IN 32.1              | 0.37   | 0.90                     | 3.16                    | 6.16                  | 200.00      | 18            | 0.60      | 0.012               | 0.59  | 1.20             | 65%              | 5.39                  | 9.48                | 940.25     | 932.09    | 930.89      |
|                | IN 32.1            | MH 32.0              | 0.56   | 0.90                     | 4.79                    | 10.94                 | 155.80      | 24            | 0.80      | 0.012               | 0.31  | 1.25             | 50%              | 6.98                  | 23.58               | 941.90     | 930.89    | 929.65      |
|                | MH 32.0            | IN 31.0              | 0.00   | 0.90                     | 0.00                    | 10.94                 | 44.10       | 24            | 0.80      | 0.012               | 0.09  | 0.35             | 50%              | 6.98                  | 23.58               | 943.70     | 929.65    | 929.29      |
|                | IN 31.0            | IN 36.0              | 0.41   | 0.90                     | 3.51                    | 14.45                 | 110.30      | 24            | 0.80      | 0.012               | 0.38  | 0.88             | 62%              | 7.45                  | 23.58               | 943.70     | 929.29    | 928.41      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | IN 36.4            | IN 36.3              | 0.15   | 0.90                     | 1.28                    | 1.28                  | 250.90      | 12            | 0.25      | 0.012               | 0.28  | 0.63             | 62%              | 2.63                  | 2.08                | 936.00     | 932.25    | 931.63      |
|                | IN 36.3            | IN 36.2              | 0.20   | 0.90                     | 1.71                    | 2.99                  | 200.00      | 12            | 0.70      | 0.012               | 1.20  | 1.40             | 82%              | 4.67                  | 3.47                | 939.26     | 931.63    | 930.23      |
|                | IN 36.2            | IN 36.1              | 0.20   | 0.90                     | 1.71                    | 4.70                  | 200.00      | 15            | 0.50      | 0.012               | 0.90  | 1.00             | 83%              | 4.59                  | 5.32                | 941.25     | 930.23    | 929.23      |
|                | IN 36.1            | IN 36.0              | 0.21   | 0.90                     | 1.80                    | 6.50                  | 199.70      | 18            | 0.80      | 0.012               | 0.65  | 1.60             | 60%              | 6.11                  | 10.95               | 943.70     | 929.23    | 927.63      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | IN 36.0            | IN 37.0              | 0.52   | 0.90                     | 4.45                    | 25.39                 | 120.90      | 30            | 1.02      | 0.012               | 0.39  | 1.23             | 55%              | 9.42                  | 48.27               | 943.70     | 928.67    | 927.44      |
|                | IN 37.1            | IN 37.0              | 0.06   | 0.90                     | 0.51                    | 0.51                  | 24.00       | 10            | 1.00      | 0.012               | 0.01  | 0.24             | 27%              | 3.47                  | 2.55                | 944.65     | 927.44    | 927.20      |
|                | IN 37.0            | IN 38.0              | 0.18   | 0.90                     | 1.54                    | 27.45                 | 165.00      | 30            | 1.10      | 0.012               | 0.63  | 1.82             | 57%              | 9.88                  | 50.13               | 944.30     | 927.20    | 925.38      |
|                |                    |                      |  |                          |                         |                       |             |               |           |                     |   |                  |                  |                       |                     |            |           |             |
|                | IN 109.0           | IN 108.0             | 0.19   | 0.90                     | 1.62                    | 1.62                  | 36.60       | 24            | 0.80      | 0.012               | 0.00  | 0.29             | 13%              | 4.09                  | 23.58               | 948.45     | 937.79    | 937.50      |
|                | IN 108.0           | IN 107.0             | 0.14   | 0.90                     | 1.20                    | 2.82                  | 36.60       | 24            | 0.80      | 0.012               | 0.00  | 0.29             | 19%              | 4.80                  | 23.58               | 948.45     | 937.79    | 937.50      |
|                | IN 107.0           | IN 106.0             | 0.19   | 0.90                     | 1.62                    | 4.45                  | 72.00       | 24            | 0.80      | 0.012               | 0.02  | 0.58             | 26%              | 5.47                  | 23.58               | 948.45     | 938.08    | 937.50      |
|                | IN 106.0           | IN 105.0             | 0.18   | 0.90                     | 1.54                    | 5.99                  | 88.00       | 24            | 0.80      | 0.012               | 0.05  | 0.70             | 32%              | 5.94                  | 23.58               | 948.45     | 938.20    | 937.50      |
|                | IN 105.0           | IN 97.0              | 0.09   | 0.90                     | 0.77                    | 32.15                 | 128.00      | 30            | 1.00      | 0.012               | 0.67  | 1.28             | 66%              | 9.86                  | 47.80               | 948.45     | 946.92    | 945.64      |